

问候。

首先借此机会，非常感谢您使用本公司的产品目录。这次我们更新了产品目录的内容，发表了最新版本的[KG3002CN目录]。本公司的理念是当客户使用本公司产品时的[简单][方便][更上一层楼]。本产品目录刊载了各种可使客户省去追加加工麻烦的方便的产品，可直接使用。另外本公司也可以接受客户的特殊定制产品的要求，为您设计只属于您的全新的KG齿轮。

董事总经理 井田齐昭  
Managing Director Tadaaki Ida

A letter of greeting

We are pleased to publish the updated comprehensive catalogue of KG3002CN series. We always fabricate our products based on the point of our valued customers.

Our concept of products has Easy, Convenient and advantage edge products. Features of our new products save customer's expenses on the additional machining work to the gears, and can use as it stands. Please make the full use of our features KG STOCK GEARS on the designing and purchasing.



### KG 齿轮综合目录的内容

KG 规格齿轮信息  
KG STOCK GEARS KG 规格齿轮的详细内容

### The Contents of KG-General Catalogue.

- 1) Information of KG STOCK GEARS.
- 2) Edittion of Dimensions.

**We design Gears to your requirements.**

# KG 齿轮情报

## KG Gear - Information

新产品  
NEW PRODUCTS

我们新推出了青色 POM 齿轮系列。本系列齿轮使用符合美国 欧盟市场的与食品接触用材规范的 POM 材料。非常适用于食品包装机械领域。

New BLUE POM GEARS adapted to relevant regulations for the food industries in the US and EU markets. The gears are suitable for uses in food machinery and packaging machines.



|                      | 模数<br>MODULE | 齿数<br>Number of Teeth                              |
|----------------------|--------------|--|
| 直齿轮<br>Spur Gears    | 0.5 ~ 3.0    | 12 ~ 120   |
| 斜齿轮<br>Helical Gears | 1.0 ~ 3.0    | 10 ~ 26  |
| 齿条<br>Racks          | 0.5 ~ 3.0    | 全长 200mm ~ 1000mm<br>Overall length 200mm ~ 1000mm |
| 蜗轮<br>Worm Wheel     | 0.5 ~ 1.5    | 20 ~ 100   |
| 等径锥齿轮<br>Miter Gears | 0.8 ~ 3.0    | 20 ~ 30  |

青色 POM 系列材料，符合以下管理规定，或由材料厂家发表了自我宣言。

Material of BLUE POM GEARS adapted to the following regulations or self-declaration by material manufacturer.

| 用途<br>Uses              | 各国的管理规定<br>Regulations   |
|-------------------------|--|
| 食品接触用途<br>Food contact  | NO.10/2011(EU),FDA(美国), NSF 51 (美国), 3A-DAIRY (美国;乳制品), Health Canada (加拿大), JHOSPA Positive List, 日本厚生省告示第 370 号<br>NO.10/2011 (EU), FDA (USA), NSF 51 (USA), 3A-DAIRY (USA; Dairy product), Health Canada (CANADA), JHOSPA Positive List, MHLW Notification No.370 (JAPAN) |
| 饮用水用途<br>Drinking water | NSF61 (美国), KTW W270 (德国), WRAS (英国), ACS (法国)<br>NSF 61 (USA), KTW W270 (GERMANY), WRAS (UK), ACS (FRANCE)  |

请注意

- 不得用于酒精浓度超过 15% 的食品。
- 关于使用本产品时的安全性，请用本产品组装最终机构后，要在此机构的实际运作环境下确认安全后，再继续使用。
- 青色 POM 齿轮系列，是在有可能受到切削液影响的环境下制作的。

Caution

- Please note that BLUE POM GEARS cannot be used for contacting foods of its alcohol percentage is 15 or more.
- When using BLUE POM GEARS under actual useage condition, we request you to carefully check the safety of your products before production.
- We make BLUE POM GEARS in an environment where cutting oil and variety of other oil may adhere to the gears.

### 青色 POM 齿轮系列孔径的精度

Fitting tolerance of bore dimensions for KG products with Poly Acetal.

聚缩醛树脂的切削加工品（射出成型品除外）的齿轮孔公差：加工管理公差为 H9

聚缩醛树脂的由于其材料特性，会出现由于受老化和温度影响的齿寸变化。聚缩醛树脂产品齿孔的加工管理公差为 H9。但是由于 KG 规格齿轮会有库存的环节。所以到客户手上时可能已经出现了尺寸的变化。

Fitting tolerance of bore dimensions for KG Miter and Bevel gears with Poly Acetal except Injection molded types are by the working control's tolerance of H9. The working control H9 for the gears with Poly Acetal maybe affected to change the dimension's tolerance due to the characteristic of secular change and fluctuation of temperature that may occur after our production in a period of storage time.

# 总合目录

|               | 名称 (材料)  | 页数        |
|---------------|--|-----------|
| <b>齿轮箱</b>    |  <p>HY-BOX, BS-BOX, BSB-BOX, BSH-BOX<br/>B-SET, WS-BOX</p>  | P31~P46   |
| <b>无侧隙直齿轮</b> |  <p>ASG (材料: 铬钼钢), NSG (材料: 铬钼钢)<br/>NS (材料: S45C, AL), NSU (材料: 不锈钢)</p>   | P47~P53   |
| <b>研磨直齿轮</b>  |  <p>SG (材料: 铬钼钢), SGE (材料: S45C)</p>  | P55~P81   |
| <b>直齿轮</b>    |  <p>S (材料: S45C, 不锈钢, 黄铜, 青色 POM<br/>白色 POM(黄铜衬套), 白色 POM<br/>黑色 POM)</p>   | P83~P212  |
| <b>齿条</b>     |  <p>RKG (材料: 铬钼钢, S45C)<br/>RK (材料: S45C, 不锈钢, 黄铜, 青色 POM)<br/>ORK (材料: 不锈钢), RKGP (材料: S45C)<br/>SGP (材料: 铬钼钢), RKP (材料: 黄铜, S45C)<br/>SP (材料: S45C)</p> | P213~P225 |
| <b>内齿轮</b>    |  <p>IS (材料: 黄铜, S45C)</p>   | P227~P230 |
| <b>斜齿轮</b>    |  <p>螺旋角 45°<br/>H (材料: S45C, 不锈钢, 白色 POM, 青色 POM)</p>   | P231~P243 |
| <b>等径锥齿轮</b>  |  <p>MG (材料: 铬钼钢), MF (材料: 铬钼钢)<br/>M (材料: S45C, 不锈钢, 黄铜, 白色 POM(黄铜衬套)<br/>青色 POM, 白色 POM, 黑色 POM)<br/>MGH (材料: S45C), ML (材料: S45C, 不锈钢)</p>              | P245~P281 |
| <b>锥齿轮</b>    |  <p>BG (材料: 铬钼钢)<br/>B (材料: S45C, 不锈钢, 快削黄铜, 黑色 POM)</p>  | P282~P297 |
| <b>蜗杆和蜗轮</b>  |  <p>W (材料: 不锈钢, S45C)<br/>G (材料: 黄铜, 青色 POM, 白色 POM(黄铜衬套)<br/>白色 POM, C6191BE, CAC702, FC200)</p>   | P299~P331 |

# 用照片选齿轮

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RACKS

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等径锥齿轮  
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BEVEL GEARS

蜗轮·蜗杆  
WORMS AND WORM WHEELS

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| 齿轮箱  |   |   |   |  |   |   |
|------|---|---|---|--|---|---|
| 系列   | HY-BOX  | BS-BOX  | BSB-BOX   | BSH-BOX  | B-SET   | WS-BOX  |
| 形状   |  |  |  |  |  |  |
| 页数   | P34   | P36   | P38   | P40  | P42   | P44   |
| 轴的位置 | 交叉轴   | L型和T型   | L型  | L型和T型  | L型  | 交叉轴   |
| 侧隙   | 20'   | 15' ~ 20'   | 15'   | 10' ~ 15'  | —   | 25' ~ 40'   |
| 内部齿轮 | 准双曲面  | 直齿锥齿轮   | 直齿锥齿轮   | 螺旋锥齿轮  | 直齿锥齿轮   | 蜗轮蜗杆  |

| 消除侧隙齿轮  |   |   |   |  |   |
|---------|---|---|---|--|---|
| 系列 / 材料 | ASG SCM435,440  | NSG SCM435,440  | NS S45C   | NSU SUS304   | NS AL   |
| 形状      |  |  |  |  |  |
| 页数      | P50   | P50   | P52   | P52  | P52   |
| 模数      | m 1 ~ 2   | m 0.5 ~ 1   | m 0.8 ~ 1   | m 0.5  | m 0.5 ~ 1   |
| 消侧隙结构   | 螺栓  | 弹簧  | 弹簧  | 弹簧   | 弹簧  |
| 齿部处理    | 高频热处理·研磨  | 研磨  | 软氮化·切削  | 特氟隆·切削   | 切削  |

| 直齿轮     |   |   |   |  |   |   |
|---------|---|---|---|--|---|---|
| 系列 / 材料 | SG SCM435,440   | SGE S45C  | S S45C  | S S45C   | S SUS304  | S 黄铜  |
| 形状      |  |  |  |  |  |  |
| 页数      | P58   | P74   | P84   | P160   | P164  | P176  |
| 模数      | m 0.5 ~ 3   | m 0.5 ~ 3   | m 0.5 ~ 5   | m 0.5 ~ 3  | m 0.5 ~ 2   | m 0.3 ~ 0.8   |
| 精度等级    | JIS N5级   | JIS N7级   | JIS N8级   | JIS N9级  | JIS N9级   | JIS N9级~  |
| 齿部处理    | 高频热处理·研磨  | 高频热处理·研磨  | 切削  | 高频热处理·切削   | 切削  | 切削  |

| 直齿轮     |   |   |   |  |   |
|---------|---|---|---|--|---|
| 系列 / 材料 | S 青色 POM  | S 白色 POM (黄铜衬套)   | S 白色 POM  | S 白色 POM   | S 黑色 POM  |
| 形状      |  |  |  |  |  |
| 页数      | P188  | P210  | P198  | P204   | P212  |
| 模数      | m 0.5 ~ 3   | m 1   | m 0.5 ~ 1   | m 0.5 ~ 1  | m 0.5   |
| 精度等级    | JIS N9 ~ 10级  | JIS N9 ~ 10级  | JIS N9 ~ 10级  | JIS N9 ~ 10级   | JIS N11级  |
| 齿部处理    | 切削  | 切削  | 切削  | 切削   | 注塑成形  |

| 模数尺寸齿条  |   |   |   |  |   |   |
|---------|---|---|---|--|---|---|
| 系列 / 材料 | RKG SCM435,440  | RKG S45C  | RK S45C   | ORK SUS304   | RK SUS304   | RK 快削黄铜   |
| 形状      |  |  |  |  |  |  |
| 页数      | P214  | P215  | P216  | P218   | P218  | P220  |
| 模数      | m 1 ~ 3   | m 0.5 ~ 1.5   | m 1 ~ 5   | m 0.5 ~ 1  | m 0.5 ~ 2   | m 0.3 ~ 0.8   |
| 热处理     | 高频热处理   | 材料调质  | —   | —  | —   | —   |
| 齿部处理    | 研磨  | 研磨  | 切削  | 切削   | 切削  | 切削  |

# 用照片选齿轮

| 模数尺寸齿条  |           | CP 尺寸齿条和 CP 尺寸直齿轮 |                 |          |         |          |
|---------|-----------|-------------------|-----------------|----------|---------|----------|
| 系列 / 材料 | RK 青色 POM | RKGP S45C         | SGP SCM435, 440 | RKP 快削黄铜 | SP S45C | RKP S45C |
| 形状      |           |                   |                 |          |         |          |
| 页数      | P221      | P222              | P222            | P224     | P224    | P225     |
| 模数      | m 0.5 ~ 3 | CP2 ~ 5           | CP2 ~ 5         | CP2      | CP2     | CP5 · 10 |
| 热处理     | —         | 材料调质              | 高频热处理           | —        | —       | —        |
| 齿部处理    | 切削        | 研磨                | 研磨              | 切削       | 切削      | 切削       |

| CP 尺寸齿条和 CP 尺寸直齿轮 |          | 内齿轮     |             | 斜齿轮 (螺旋角度 45°) |         |            |
|-------------------|----------|---------|-------------|----------------|---------|------------|
| 系列 / 材料           | SP S45C  | 系列 / 材料 | IS 黄铜       | IS S45C        | 系列 / 材料 | H S45C     |
| 形状                |          | 形状      |             |                | 形状      |            |
| 页数                | P225     | 页数      | P228        | P228           | 页数      | P234       |
| 模数                | CP5 · 10 | 模数      | m 0.5 ~ 0.8 | m 1            | 模数      | m 1 ~ 3    |
| 热处理               | —        | 齿部处理    | 切削          | 切削             | 精度等级    | JIS N9 级   |
| 齿部处理              | 切削       | 齿数      | 60 ~ 120    | 60 ~ 120       | 齿部处理    | 高频热处理 · 切削 |

| 斜齿轮 (螺旋角度 45°) |           |               |               | 等径锥齿轮 齿数比 1 : 1 |            |                |
|----------------|-----------|---------------|---------------|-----------------|------------|----------------|
| 系列 / 材料        | H SUS304  | H 白色 POM      | H 青色 POM      | 系列 / 材料         | MG SCM440  | MF SCM435, 440 |
| 形状             |           |               |               | 形状              |            |                |
| 页数             | P236      | P238          | P240          | 页数              | P250       | P252           |
| 模数             | m 1 ~ 1.5 | m 1 ~ 1.5     | m 1 ~ 3       | 模数              | m 1.5 ~ 3  | m 1.5 ~ 3      |
| 精度等级           | JIS N9 级  | JIS N9 ~ 10 级 | JIS N9 ~ 10 级 | 齿型              | 螺旋锥齿       | 螺旋锥齿           |
| 齿部处理           | 切削        | 切削            | 切削            | 精度等级            | JIS 1 级    | JIS 2 级        |
|                |           |               |               | 齿部处理            | 高频热处理 · 研磨 | 高频热处理 · 精铣     |

| 等径锥齿轮 齿数比 1 : 1 |         |            |            |           |           |           |
|-----------------|---------|------------|------------|-----------|-----------|-----------|
| 系列 / 材料         | M S45C  | M S45C     | MGH S45C   | ML S45C   | ML SUS304 | M S45C    |
| 形状              |         |            |            |           |           |           |
| 页数              | P254    | P256       | P258       | P262      | P262      | P264      |
| 模数              | m 1 ~ 3 | m 1 ~ 4    | m 1 ~ 2.25 | m 1 ~ 2.5 | m 0.8 ~ 2 | m 0.5 ~ 5 |
| 齿型              | 螺旋锥齿    | 螺旋锥齿       | 螺旋锥齿       | 直齿锥齿      | 直齿锥齿      | 直齿锥齿      |
| 精度等级            | JIS 3 级 | JIS 4 级    | JIS 4 级    | JIS3 级    | JIS4 级    | JIS 3 级   |
| 齿部处理            | 切削      | 高频热处理 · 切削 | 高频热处理 · 切削 | 切削        | 切削        | 切削        |

| 等径锥齿轮 齿数比 1 : 1 |            |            |           |           |           |                 |
|-----------------|------------|------------|-----------|-----------|-----------|-----------------|
| 系列 / 材料         | M S45C     | MGH S45C   | M SUS304  | M SUS304  | M 黄铜      | M 白色 POM (黄铜衬套) |
| 形状              |            |            |           |           |           |                 |
| 页数              | P268       | P272       | P274      | P274      | P276      | P276            |
| 模数              | m 1.5 ~ 5  | m 2.5 ~ 5  | m 0.8 ~ 3 | m 0.5 ~ 1 | m 0.5 ~ 1 | m 1.5           |
| 齿型              | 直齿锥齿       | 直齿锥齿       | 直齿锥齿      | 直齿锥齿      | 直齿锥齿      | 直齿锥齿            |
| 精度等级            | JIS 4 级    | JIS 4 级    | JIS 4 级   | —         | JIS 4 级   | JIS 5 ~ 6 级     |
| 齿部处理            | 高频热处理 · 切削 | 高频热处理 · 切削 | 切削        | MIM 注塑成形  | 切削        | 切削              |

# 用照片选齿轮

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 锥齿轮 BEVEL GEARS  
 蜗轮·蜗杆 WORMS AND WORM WHEELS  
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| 等径锥齿轮 齿数比 1 : 1 |             |             |           | 锥齿轮 齿数比 1 : 2 / 1 : 3 |                |         |
|-----------------|-------------|-------------|-----------|-----------------------|----------------|---------|
| 系列 / 材料         | M 青色 POM    | M 白色 POM    | M 黑色 POM  | 系列 / 材料               | BG SCM435, 440 | B S45C  |
| 形状              |             |             |           | 形状                    |                |         |
| 页数              | P278        | P280        | P280      | 页数                    | P282           | P284    |
| 模数              | m 0.8 ~ 3   | m 1 ~ 1.5   | m 0.5 ~ 1 | 模数                    | m 1.5 ~ 2.5    | m 1 ~ 3 |
| 齿型              | 直齿锥齿        | 直齿锥齿        | 直齿锥齿      | 齿的类型                  | 螺旋锥齿           | 螺旋锥齿    |
| 精度等级            | JIS 5 ~ 6 级 | JIS 5 ~ 6 级 | —         | 精度等级                  | JIS 1 级        | JIS 3 级 |
| 齿部处理            | 切削          | 切削          | 注塑成形      | 齿部处理                  | 高频热处理·研磨       | 切削      |

| 锥齿轮 齿数比 1 : 2 / 1 : 3 |          |           |           |           |             |          |
|-----------------------|----------|-----------|-----------|-----------|-------------|----------|
| 系列 / 材料               | B S45C   | B S45C    | B S45C    | B SUS304  | B 快削黄铜      | B 黑色 POM |
| 形状                    |          |           |           |           |             |          |
| 页数                    | P286     | P288      | P292      | P296      | P296        | P297     |
| 模数                    | m 1 ~ 3  | m 0.5 ~ 5 | m 1.5 ~ 5 | m 0.8 ~ 2 | m 0.5 ~ 0.8 | m 0.8    |
| 齿型                    | 螺旋锥齿     | 直齿锥齿      | 直齿锥齿      | 直齿锥齿      | 直齿锥齿        | 直齿锥齿     |
| 精度等级                  | JIS 4 级  | JIS 3 级   | JIS 4 级   | JIS 4 级   | JIS 4 级     | —        |
| 齿部处理                  | 高频热处理·切削 | 切削        | 高频热处理·切削  | 切削        | 切削          | 注塑成形     |

| 蜗杆和蜗轮 模数 0.5 到 5 |            |        |            |            |          |            |
|------------------|------------|--------|------------|------------|----------|------------|
| 系列 / 材料          | W50 SUS304 | G50 黄铜 | G50 青色 POM | W80 SUS304 | W80 S45C | G80 CAC702 |
| 形状               |            |        |            |            |          |            |
| 页数               | P304       | P304   | P304       | P306       | P307     | P306       |
| 模数               | m 0.5      | m 0.5  | m 0.5      | m 0.8      | m 0.8    | m 0.8      |
| 齿部处理             | 精密冷轧       | 切削     | 切削         | 精密冷轧       | 精密冷轧     | 切削         |

| 蜗杆和蜗轮 模数 0.5 到 5 |            |            |           |         |           |           |
|------------------|------------|------------|-----------|---------|-----------|-----------|
| 系列 / 材料          | G80 青色 POM | G80 白色 POM | W1 SUS304 | W1 S45C | G1 白色 POM | G1 青色 POM |
| 形状               |            |            |           |         |           |           |
| 页数               | P306       | P306       | P308      | P309    | P308      | P308      |
| 模数               | m 0.8      | m 0.8      | m 1       | m 1     | m 1       | m 1       |
| 齿部处理             | 切削         | 切削         | 精密冷轧      | 精密冷轧    | 切削        | 切削        |

| 蜗杆和蜗轮 模数 0.5 到 5 |                    |          |            |              |             |           |
|------------------|--------------------|----------|------------|--------------|-------------|-----------|
| 系列 / 材料          | G1 CAC702, C6191BE | G1 FC200 | W1.25 S45C | G1.25 白色 POM | W1.5 SUS304 | W1.5 S45C |
| 形状               |                    |          |            |              |             |           |
| 页数               | P310               | P310     | P312       | P312         | P314        | P315      |
| 模数               | m 1                | m 1      | m 1.25     | m 1.25       | m 1.5       | m 1.5     |
| 齿部处理             | 切削                 | 切削       | 精密冷轧       | 切削           | 精密冷轧        | 精密冷轧      |

# 用照片选齿轮

| 蜗杆和蜗轮 模数 0.5 到 5 |             |             |                      |            |         |           |
|------------------|-------------|-------------|----------------------|------------|---------|-----------|
| 系列 / 材料          | G1.5 白色 POM | G1.5 青色 POM | G1.5 CAC702, G6191BE | G1.5 FC200 | W2 S45C | G2 CAC702 |
| 形状               |             |             |                      |            |         |           |
| 页数               | P314        | P314        | P316                 | P316       | P318    | P318      |
| 模数               | m 1.5       | m 1.5       | m 1.5                | m 1.5      | m 2     | m 2       |
| 齿部处理             | 切削          | 切削          | 切削                   | 切削         | 精密冷轧    | 切削        |

| 蜗杆和蜗轮 模数 0.5 到 5 |          |           |             |         |           |          |
|------------------|----------|-----------|-------------|---------|-----------|----------|
| 系列 / 材料          | G2 FC200 | W2.5 S45C | G2.5 CAC702 | W3 S45C | G3 CAC702 | G3 FC200 |
| 形状               |          |           |             |         |           |          |
| 页数               | P320     | P322      | P322        | P324    | P324      | P326     |
| 模数               | m 2      | m 2.5     | m 2.5       | m 3     | m 3       | m 3      |
| 齿部处理             | 切削       | 切削        | 切削          | 切削      | 切削        | 切削       |

| 蜗杆和蜗轮 模数 0.5 到 5 |         |           |          |         |          |
|------------------|---------|-----------|----------|---------|----------|
| 系列 / 材料          | W4 S45C | G4 CAC702 | G4 FC200 | W5 S45C | G5 FC200 |
| 形状               |         |           |          |         |          |
| 页数               | P328    | P328      | P328     | P330    | P330     |
| 模数               | m 4     | m 4       | m 4      | m 5     | m 5      |
| 齿部处理             | 切削      | 切削        | 切削       | 切削      | 切削       |

## 用英文字母选齿轮

| 字母  | 产品型号                    | 种类             | 页数          | 材料              | 精度           | 加工特点        |
|-----|-------------------------|----------------|-------------|-----------------|--------------|-------------|
| A   | ASG1S ~ ASG2S           | 控制侧隙齿轮         | P50 ~ P51   | SCM435·440      | JIS1 级       | 齿面高频淬火 / 研磨 |
|     | B50B ~ B80B             | 直齿锥齿轮          | P296        | 黄铜              | JIS4 级       | 切削齿         |
| B   | B80DM                   | 直齿锥齿轮          | P297        | 黑色 POM          | —            | 注塑成型        |
|     | B50S ~ B5S              | 直齿锥齿轮          | P288 ~ P291 | S45C            | JIS3 级       | 切削齿         |
|     | B1.5S-H ~ B5S-H         | 直齿锥齿轮          | P292 ~ P295 | S45C            | JIS4 级       | 齿面高频淬火      |
|     | B1S-L ~ B3S-L           | 螺旋锥齿轮          | P284 ~ P285 | S45C            | JIS3 级       | 切削齿         |
|     | B1S-R ~ B3S-R           | 螺旋锥齿轮          | P284 ~ P285 | S45C            | JIS3 级       | 切削齿         |
|     | B1S-L-H ~ B3S-L-H       | 螺旋锥齿轮          | P286 ~ P287 | S45C            | JIS4 级       | 齿面高频淬火      |
|     | B1S-R-H ~ B3S-R-H       | 螺旋锥齿轮          | P286 ~ P287 | S45C            | JIS4 级       | 齿面高频淬火      |
|     | B80SU ~ B2SU            | 直齿锥齿轮          | P296 ~ P297 | SUS304          | JIS4 级       | 切削齿         |
|     | BE40L ~ BE88L           | L 型齿轮组         | P42 ~ P43   | 铝 (外壳) / 塑料     | —            | —           |
|     | BG1.5S-L-H ~ BG2.5S-L-H | 螺旋锥齿轮          | P282 ~ P283 | SCM440          | JIS1 级       | 齿面高频淬火 / 研磨 |
|     | BG1.5S-R-H ~ BG2.5S-R-H | 螺旋锥齿轮          | P282 ~ P283 | SCM440          | JIS1 级       | 齿面高频淬火 / 研磨 |
|     | BS35L ~ BS105L          | L 型齿轮箱 BOX     | P36 ~ P37   | 铝 (外壳)          | —            | —           |
|     | BS45T ~ BS105T          | T 型齿轮箱 BOX     | P36 ~ P37   | 铝 (外壳)          | —            | —           |
|     | BSB65L ~ BSB105L        | L 型齿轮箱 BOX     | P38 ~ P39   | 铝 (外壳)          | —            | —           |
|     | BSH70L ~ BSH170L        | L 型齿轮箱 BOX     | P40 ~ P41   | 铝或灰铸铁 (外壳)      | —            | —           |
|     | BSH70T ~ BSH145T        | T 型齿轮箱 BOX     | P40 ~ P41   | 铝或灰铸铁 (外壳)      | —            | —           |
| G   | G80A ~ G4A              | 蜗轮             | P306 ~ P329 | CAC702, C6191BE | —            | 切削齿         |
|     | G50B                    | 蜗轮             | P304 ~ P305 | 黄铜              | —            | 切削齿         |
|     | G50BP ~ G1.5BP          | 蜗轮             | P304 ~ P315 | 青色 POM          | —            | 切削齿         |
|     | G1C ~ G5C               | 蜗轮             | P310 ~ P331 | FC200           | —            | 切削齿         |
|     | G80D ~ G1.5D            | 蜗轮             | P306 ~ P315 | 白色 POM          | —            | 切削齿         |
|     | G1DB ~ G1.5DB           | 蜗轮             | P308 ~ P315 | 白色 POM(黄铜)      | —            | 切削齿         |
| H   | H1BP-L ~ H3BP-L         | 斜齿轮            | P240 ~ P243 | 青色 POM          | JIS N 9~10 级 | 切削齿         |
|     | H1BP-R ~ H3BP-R         | 斜齿轮            | P240 ~ P243 | 青色 POM          | JIS N 9~10 级 | 切削齿         |
|     | H1D-L ~ H1.5D-L         | 斜齿轮            | P238 ~ P239 | 白色 POM          | JIS N 9~10 级 | 切削齿         |
|     | H1D-R ~ H1.5D-R         | 斜齿轮            | P238 ~ P239 | 白色 POM          | JIS N 9~10 级 | 切削齿         |
|     | H1S-L ~ H3S-L           | 斜齿轮            | P234 ~ P235 | S45C            | JIS N 9 级    | 齿面高频淬火      |
|     | H1S-R ~ H3S-R           | 斜齿轮            | P234 ~ P235 | S45C            | JIS N 9 级    | 齿面高频淬火      |
|     | H1SU-L ~ H1.5SU-L       | 斜齿轮            | P236 ~ P237 | SUS304          | JIS N 9 级    | 切削齿         |
|     | H1SU-R ~ H1.5SU-R       | 斜齿轮            | P236 ~ P237 | SUS304          | JIS N 9 级    | 切削齿         |
| I   | HY70R ~ HY150R          | 交叉轴准双曲面齿轮箱 BOX | P34 ~ P35   | 铝 (外壳)          | —            | —           |
|     | IS50B ~ IS80B           | 内齿轮            | P228        | 黄铜              | —            | 切削齿         |
| M   | IS1S                    | 内齿轮            | P228        | S45C            | —            | 切削齿         |
|     | M50B ~ M1B              | 直齿等径锥齿轮        | P276        | 黄铜              | JIS4 级       | 切削齿         |
|     | M80BP ~ M3BP            | 直齿等径锥齿轮        | P278 ~ P279 | 青色 POM          | JIS5~6 级     | 切削齿         |
|     | M1D ~ M1.5D             | 直齿等径锥齿轮        | P280 ~ P281 | 白色 POM          | JIS5~6 级     | 切削齿         |
|     | M1.5DB                  | 直齿等径锥齿轮        | P276        | 白色 POM(黄铜)      | JIS5~6 级     | 切削齿         |
|     | M50DM ~ M1DM            | 直齿等径锥齿轮        | P280 ~ P281 | 黑色 POM          | —            | 注塑成型        |
|     | M50S ~ M5 S             | 直齿等径锥齿轮        | P264 ~ P267 | S45C            | JIS3 级       | 切削齿         |
|     | M1.5 S -H ~ M5S -H      | 直齿等径锥齿轮        | P268 ~ P271 | S45C            | JIS4 级       | 齿面高频淬火      |
|     | M1 S -L ~ M3S-L         | 螺旋等径锥齿轮        | P254 ~ P255 | S45C            | JIS3 级       | 齿面高频淬火      |
|     | M1 S -R ~ M3S-R         | 螺旋等径锥齿轮        | P254 ~ P255 | S45C            | JIS3 级       | 齿面高频淬火      |
|     | M1 S -L -H ~ M3S-L-H    | 螺旋等径锥齿轮        | P256 ~ P259 | S45C            | JIS4 级       | 齿面高频淬火      |
|     | M1 S -R -H ~ M3S-R-H    | 螺旋等径锥齿轮        | P256 ~ P259 | S45C            | JIS4 级       | 齿面高频淬火      |
|     | M80SU ~ M3SU            | 直齿等径锥齿轮        | P274 ~ P275 | SUS304          | JIS4 级       | 切削齿         |
|     | M50SUM ~ M1SUM          | 直齿等径锥齿轮        | P274 ~ P275 | SUS304          | —            | MIM 注塑成型    |
| 技术资 | MF1.5S-L-H ~ MF3S-L-H   | 螺旋等径锥齿轮        | P252 ~ P253 | SCM435·440      | JIS2 级       | 齿面精铣        |
|     | MF1.5S-R-H ~ MF3S-R-H   | 螺旋等径锥齿轮        | P252 ~ P253 | SCM435·440      | JIS2 级       | 齿面精铣        |



# 用英文字母选齿轮

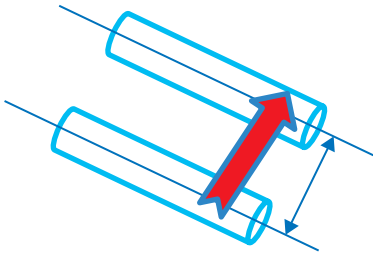
| 字母               | 产品型号                  | 种类             | 页数          | 材料           | 精度           | 加工特点           |
|------------------|-----------------------|----------------|-------------|--------------|--------------|----------------|
| M                | ML1S ~ ML2.5S         | 直齿等径锥齿轮        | P262 ~ P263 | S45C         | JIS3 级       | 简易锁            |
|                  | ML80SU ~ ML2SU        | 直齿等径锥齿轮        | P262 ~ P263 | SUS304       | JIS4 级       | 简易锁            |
|                  | MG1.5S-L-H ~ MG3S-L-H | 螺旋等径锥齿轮        | P250 ~ P251 | SCM440       | JIS1 级       | 齿面高频淬火         |
|                  | MG1.5S-R-H ~ MG3S-R-H | 螺旋等径锥齿轮        | P250 ~ P251 | SCM440       | JIS1 级       | 齿面高频淬火         |
|                  | MGH                   | 直齿等径锥齿轮        | P272 ~ P273 | S45C         | JIS4 级       | 齿面高频淬火         |
|                  | MGH-L                 | 螺旋等径锥齿轮        | P258 ~ P259 | S45C         | JIS4 级       | 齿面高频淬火         |
|                  | MGH-R                 | 螺旋等径锥齿轮        | P258 ~ P259 | S45C         | JIS4 级       | 齿面高频淬火         |
| N                | NS50AL ~ NS1AL        | 消侧隙齿轮          | P52 ~ P53   | 铝            | JIS5 级       | 切削齿            |
|                  | NS80S ~ NS1S          | 消侧隙齿轮          | P52 ~ P53   | S45C         | JIS4 级       | 切削齿            |
|                  | NS50SU                | 消侧隙齿轮          | P52 ~ P53   | SUS304       | JIS5 级       | 切削齿            |
|                  | NSG50S ~ NSG1S        | 消侧隙齿轮          | P50 ~ P51   | SCM435·440   | JIS1 级       | 齿面研磨           |
| O                | ORK50SU ~ ORK1SU      | 圆齿条            | P218        | SUS304       | —            | 切削齿            |
| R                | RK30B ~ RK80B         | 方齿条            | P220        | 黄铜           | —            | 切削齿            |
|                  | RK50BP ~ RK3BP        | 方齿条            | P221        | 青色 POM       | —            | 切削齿            |
|                  | RK1SD ~ RK5SD         | 方齿条            | P216 ~ P217 | S45C         | —            | 切削齿            |
|                  | RK50SU ~ RK2SU        | 方齿条            | P218 ~ P219 | SUS304       | —            | 切削齿            |
|                  | RKG50S ~ RKG1.5S      | 方齿条            | P215        | S45C         | —            | 齿面研磨           |
|                  | RKG1S-H ~ RKG3S-H     | 方齿条            | P214        | SCM435, 440  | —            | 齿面高频淬火 / 研磨    |
|                  | RKGP2S ~ RKGP5S       | 方齿条            | P222        | S45C         | —            | 齿面高频淬火 / 研磨    |
|                  | RKP2B                 | 方齿条            | P224        | 黄铜           | —            | 切削齿            |
| RKP5SD ~ RKP10SD | 方齿条                   | P225           | S45C        | —            | 切削齿          |                |
| S                | S30B ~ S80B           | 直齿轮            | P176 ~ P187 | 黄铜           | JIS N9 级~    | 切削齿            |
|                  | S50BP ~ S3BP          | 直齿轮            | P188 ~ P197 | 青色 POM       | JIS N 9~10 级 | 切削齿            |
|                  | S50D ~ S1D            | 直齿轮            | P198 ~ P209 | 白色 POM       | JIS N 9~10 级 | 切削齿            |
|                  | S1DB                  | 直齿轮            | P210        | 白色 POM( 黄铜 ) | JIS N 9~10 级 | 切削齿            |
|                  | S50DM                 | 直齿轮            | P212        | 黑色 POM       | JIS N 11 级   | 注塑成型           |
|                  | S50S ~ S5S            | 直齿轮            | P84 ~ P158  | S45C         | JIS N 8 级    | 切削齿            |
|                  | S50S-H ~ S3S-H        | 直齿轮            | P160 ~ P163 | S45C         | JIS N 9 级    | 齿面高频淬火         |
|                  | S50SU ~ S2SU          | 直齿轮            | P164 ~ P174 | SUS304       | JIS N 9 级    | 切削齿            |
|                  | SG50S ~ SG3S          | 研磨直齿轮          | P58 ~ P73   | SCM435, 440  | JIS N 5 级    | 齿面研磨           |
|                  | SGE50S ~ SGS3S        | 研磨直齿轮          | P74 ~ P81   | S45C         | JIS N 7 级    | 齿面高频淬火 / 研磨    |
|                  | SGP2S ~ SGP5S         | CP 齿条用研磨小齿轮    | P222 ~ P223 | SCM435·440   | JIS N 5 级    | CP 齿面高频淬火 / 研磨 |
|                  | SP2S ~ SP10S          | CP 齿条用小齿轮      | P224 ~ P225 | S45C         | JIS N 8 级    | CP 切削齿         |
| W                | W50SU-R ~ W1SU-R      | 蜗杆             | P304 ~ P314 | SUS304       | —            | 冷轧             |
|                  | W1S-L ~ W3S-L         | 蜗杆             | P309 ~ P325 | S45C         | —            | 冷轧 or 切削齿      |
|                  | W80S-R ~ W5S-R        | 蜗杆             | P307 ~ P331 | S45C         | —            | 冷轧 or 切削齿      |
|                  | WS55R ~ WS90R         | 交叉轴蜗轮蜗杆齿轮箱 BOX | P44 ~ P45   | 铝 ( 外壳 )     | —            | —              |

检索方法说明：螺旋锥齿轮以外都是以头几个文字和最后一个文字为，排列基准和方法。

- 等径锥齿轮 M1S30R\*2610H ➡ M( 模数 )S-R-H
- 蜗杆 W1S R1+B ➡ W( 模数 )S-R
- 齿条 RKG1S5-1015H ➡ RKG( 模数 )S-H
- 直齿轮 S50S100B-0506H ➡ S( 模数 )S-H

# 根据使用方法寻找齿轮

## 用平行轴传递力量：直齿轮 · 斜齿轮 · 消除侧隙齿轮



### 装配时的注意点：

- ①中心距离：KG 生产的直齿轮，斜齿轮，消除侧隙齿轮，在安装时推荐正公差的安装距离。
- ②轴承尽量靠近齿轮，牢固固定。
- ③斜齿轮旋转时会出现径向力，请使用推力轴承等抵消径向力。

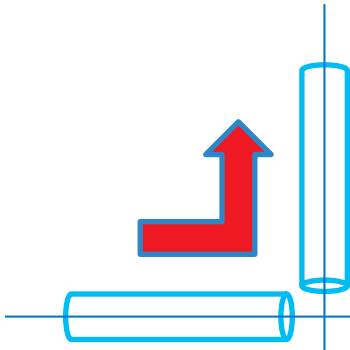


| 使用案例           | 推荐使用的齿轮系列                   |
|----------------|-----------------------------|
| 高扭矩 · 静音 · 高精度 | SG、ASG(控制侧隙齿轮)              |
| 高扭矩 · 静音 · 经济型 | SGE                         |
| 高扭矩 · 经济型      | 尾部有 H 的高频热处理过的齿轮            |
| 提高来回运动时的位置误差   | ASG, NSG, NS, NSU           |
| 医疗设备，食品和饮用水包装  | 青色 POM 直齿轮，青色 POM 斜齿轮       |
| 使用于潮湿又有水的环境    | SUS304 和青色 POM 材料制作的直齿轮和斜齿轮 |

## 用 90 度角传达力量：等径锥齿轮和锥齿轮

### 安装时的注意点：

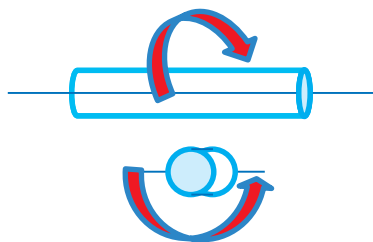
- ①装配距离：请严格准受 KG 指定的装配距离。
  - ②齿面啮合的确认：请确认两个锥齿轮的齿面的啮合是否良好。
  - ③锥齿轮旋转时会出现径向力，请使用推力轴承等抵消径向力。
- ★轴的强度：安装齿轮的轴的强度不够时，受到负荷会出现弯曲变形的现象。同时要注意垂直度和平行度。



| 使用案例           | 推荐使用的齿轮系列                    |
|----------------|------------------------------|
| 高扭矩 · 静音 · 高精度 | MG, BG                       |
| 静音 · 经济型       | MF (容许传达扭矩是研磨品的 60%)         |
| 高扭矩 · 经济型      | MGH, 尾部有 H 的高频热处理过的等径锥齿轮和锥齿轮 |
| 追求精度高，安装方便     | B-型齿轮箱 (B-BOX, BSH-BOX)      |
| 医疗设备，食品和饮用水包装  | 青色 POM 等径锥齿轮                 |
| 使用于潮湿又有水的环境    | SUS304 和青色 POM 材料制作的锥齿轮      |

# 根据使用方法寻找齿轮

## 90 度交叉轴传达力量：蜗轮和蜗杆，斜齿轮



蜗轮蜗杆安装时的注意点：

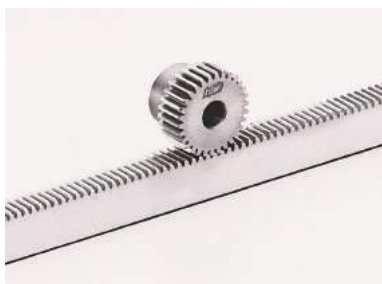
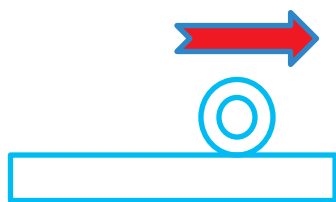
- ①安装距离：请根据 KG 齿轮的对蜗轮蜗杆的安装距离来安装。
- ②轴承尽量靠近齿轮，牢固固定。
- ③进行试运行：这样会增加齿轮齿面的接触面积提高齿面强度。
- ④润滑：低速时请使用润滑脂，高速时，请使用油池润滑。润滑油量是在下面是蜗杆的情况下到蜗杆的中心为止。蜗杆在上面时到蜗轮直径的 1/3 左右。

斜齿轮的安装注意点：

斜齿轮的 90 度交叉为点接触，所以齿轮的消耗会比平行轴更快。但是安装所需难度要比锥齿轮要小。

| 使用案例        | 推荐使用齿轮系列                                    |
|-------------|---|
| 医疗，食品，饮用水包装 | SUS304 蜗杆，青色 POM 蜗轮，青色 POM 斜齿轮              |
| 高精度安装和安装便利性 | WS 齿轮箱、HY 齿轮箱                               |
| 潮湿的环境       | SUS304 蜗杆，青铜和 POM 材料的蜗轮，SUS304 和 POM 材料的斜齿轮 |

## 由旋转运动转为直线运动：齿条和 CP 齿条

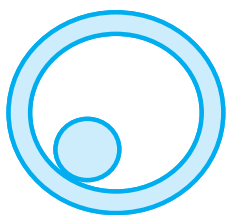


使用中的注意点：

齿轮的消耗往往比齿条要快。所以通常对齿轮选择更强的材料。请遵守 KG 设定的啮合高度。模数规格和 CP 规格单位完全不同所以并没有互换性。

| 使用案例         | 推荐使用齿轮系列                  |
|--------------|---------------------------|
| 高扭矩，高精度，静音效果 | RKG 和 SG、RKG 和 ASG        |
| 旋转一周时移动距离为整数 | RKG 和 SGP（高精度静音）、RKP 和 SP |
| 医疗，食品，饮用水包装  | 青色 POM 的齿条和齿轮             |
| 消除侧隙         | 请配合模数相同的 NSG、NS、NSU、ASG。  |
| 潮湿的环境        | SUS304、青色 POM 的齿条和齿轮      |

## 内齿轮和外齿轮的啮合和行星齿轮机构：使用内齿轮和直齿轮的力量传递。



内齿轮的装配上的注意点：

干涉：如果内齿轮和直齿轮的齿数差距过小，会出现由于干涉无法正常安装的现象，所以装配时请确认安装的基本条件。详细请确认内齿轮的介绍部分。

| 使用案例  | 推荐齿轮系列       |
|-------|--------------|
| 行星减速机 | IS 内齿轮、S 直齿轮 |

# RoHS 宣言

我们协育齿轮工业株式会社认为，在全球范围内的环境保护是目前全人类所面临的最主要的课题之一。我们正在进行对环保的持续性的投入，努力降低对环境的压力，为了实现可持续发展的经济社会而做出不懈的努力。所谓RoHS的指令是，指不可使用所规定的6种物质。其6种不可使用的物质分别为[铅，水银，镉，六价铬，特定溴素阻燃剂 (PBB和PBDE)]。



从2011年3月份开始协育齿轮株式会社的全部的库存产品已经对应RoHS指令。在产品目录上已经标出表示对应RoHS指令的标志。从2006年11月份所生产的黄铜产品，开始采用降低铬含量的原材料，以对应欧盟RoHS指令。但是这并不意味着包括流动库存在内的所有的本公司产品都能对应RoHS指令。如果您需要对应欧盟RoHS指令的产品，烦请给我们明确的指示。

KYOUIKU GEAR MFG CO LTD thinks that the global environmental conservation is one of most important issue for all mankind and makes an effort for continuous reduction of the environmental load. Therefore, we contribute to realize of the economic society, which can be developed continuously.

In the RoHS compliance that must not use exceeded contents on the regulation of the six substances, the Lead, Mercury, Cadmium, Hexavalent chromium and Polybrominated biphenyls (PBB), Polybrominated diphenyl ether (PBDE)

We have been produced our products with RoHS compliance since March 2011. We indicate the marks of RoHS compliance on our product' s pages in KG catalogue.

Since November 2006, we are supplying the products with RoHS compliance as we had adopted the material of low cadmium for ISO CuZn39Pb3 and CuZn38Pb2 in our brass products. However, the distribution inventories are not compliant to all products.

Please inform us clearly when require for the products with RoHS compliance before ordering.

## 关于 KG 齿轮产品的 制造编码

您拿到的本公司产品的标签上会印有产品代码和制造编码。烦请您将这个制造编码进行保管。这样有利于我司对产品进行跟进调查服务，并可迅速而准确的答复您对各种产品的咨询。

Regarding the traceability number, we printed the commodity and production's numbers on the label of KG- products . In order for customers to trace the enquiry of KG products conveniently after purchased.

### 产品标签样版

Label sample of KG products



响应客户需求对规格齿轮进行**追加工**。可从一个开始加工。



**KG STOCK GEARS (规格齿轮)** 准备了各种齿数，齿宽，孔径等。因此，应该可以满足对应相当广范围的客户需求。另外为了满足客户的多样化的需求，我们同时接受对规格齿轮的追加工（二次加工）订单。

To meet customers' further demands, we make gears with additional machining to our standard products.

请根据客户的图纸发出加工指示和下订单。

When enquiries, please provide drawing with our standard product's catalogue No.

# KG STOCK GEARS 的追加工的注意点

KG的每一个齿轮系列里都准备了不同的轴孔直径。为了避免降低KG齿轮的使用精度和性能，请尽量避免对轴孔的追加工。如果一定需要进行轴孔的追加工，请使用F类型(有-号的)。

KG STOCK GEARS have variety of bore size in each number of teeth. We make the best use of the precision and quality performance of KG STOCK GEARS to customers. Please install KG STOCK GEARS without any additional machining because KG STOCK GEARS are complete finished gears.

However if additional machining on the KG STOCK GEARS are necessary, please select F-type of KG STOCK GEARS that indicate a minus (-) sign in our KG Gears Catalogue Part Number.

为了防止产生刮痕和齿轮的损坏，请用软爪三爪卡盘进行定心。

In order to prevent scratches and damage to the gear, provide scroll chuck without mechanical hardening and ternary scroll chuck to F-type of KG STOCK GEARS as without Tread hole / without Setscrew.

追加工时的最大加工直径，请控制在轮毂直径的60-70%左右。

The tentative maximum bore dimension can be 60-70% from hub diameter for additional machining job.

## KG 齿部研磨直齿轮追加工的注意点

### Precaution to prevent additional machining for KG-Ground Spur gears.

#### 追加工工艺的注意点

##### Precaution for additional process.

请尽量避免对KG公司研磨齿轮的轴孔进行追加工。齿轮的精度会因为这些追加工而降低。另外如果进行键槽的追加工，节距误差会出现有微小增加的倾向。而且齿根圆和键槽的距离越近，其误差增加倾向就越显著。追加工后的齿轮精度会降低(大约1-2等级)。

We provide the best use of the precision and quality performance of KG Ground Spur Gears to customer. Please install KG Ground Spur Gears without any additional machining in order to prevent deterioration of KG Ground Spur Gears.

Any Additional machining of Keyway to KG Ground Spur Gears will deteriorate the KG Ground Spur Gears due to increasing pitch error compared with before processed. However dimension of Keyway close to root diameter of KG Ground Spur Gears will result in deterioration of 1- 2 classes.

#### 轴孔内径的追加工

##### Precaution for additional machining to bore.

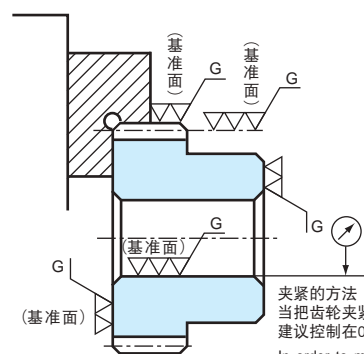
一定要使用软爪三爪卡盘，进行对产品的卡紧。要从轴孔的孔面开始进行定心(因为齿轮切割研磨时，是以轴孔孔面和侧面为最初的基准面。)，使产品的芯的误差尽量缩小。如图进行卡紧，外围和侧面由于和轴孔孔面一样切削后进行过研磨，并且是基准面，所以定心的时候误差会比较小，比较容易定心。

外径较小的齿轮，由于轴孔孔面也可能受淬火的影响而硬化，因此切削性不太好。请注意。

We recommend that provide scroll chuck without mechanical hardening to obtain locating of center.

The right drawing example shown is highly recommended to obtain the locating of center easily due to dimensions of outer and side grinding processed.

Note that normally a small size of gear (Pinion) is low machinability after heat treatment.



夹紧的方法  
当把齿轮夹紧时，尽量要让跳动接近于0。  
建议控制在0.003mm以内。

In order to maintain the quality performance of KG Ground Spur Gear after the additional machining, the run-out of the gear to the chuck should be 0 to 0.003mm.

# 注：追加工的注意点

## 注：关于对KG齿轮的轴孔内径的追加工

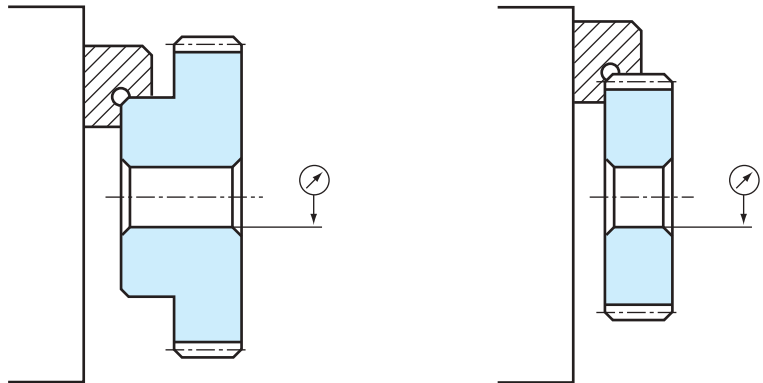
Precaution for additional machining to bore diameter of KG STOCK GEARS.

### 关于直齿轮，斜齿轮的追加工

Precaution for additional machining to Spur, Helical gears and Ratchet.

当对齿的外围进行卡紧时，请注意齿的变形。

Beware deformation of the gears when chucking at outer diameter.



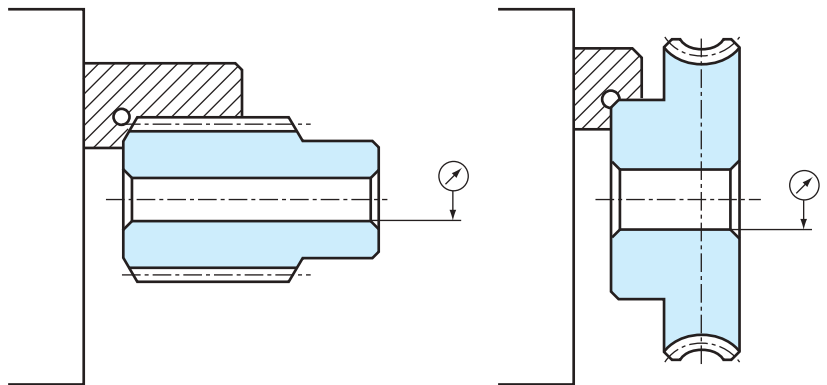
### 关于对KG蜗杆和蜗轮的追加工

Precaution for additional machining to Worm gear and Worm wheel.

当对精密冷轧的蜗杆进行追加工时，要注意卡紧的深度越深越好，如果卡紧的部位是齿的外围，请注意齿的变形。

Make the best use of the precision and quality performance of KG-Worm gear and Worm wheel to the best of machining ability that deep chucking to the gear is best result. Beware of deformation of the gears.

We provide the best use of the precision and quality performance of KG-Worm and Worm wheel after additional machining. Deep chucking to the gear is highly recommended but beware of deformation.



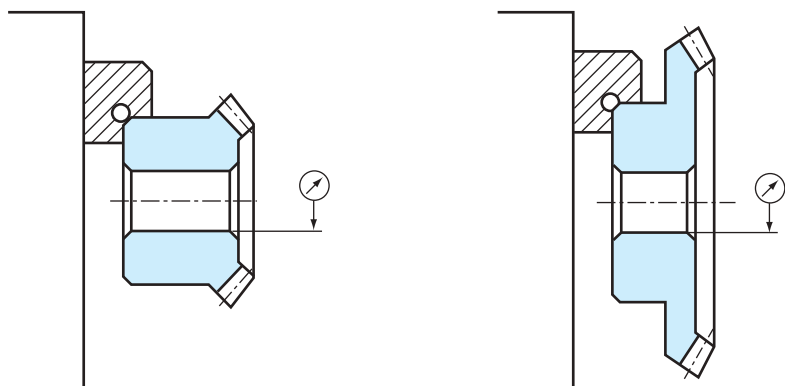
### 关于锥齿轮，等径锥齿轮的追加工

Precaution for additional machining to Miter and Bevel gears.

模数M2.0以上时，齿的外围部分以轴心平衡的方向进行了切角，所以可以进行卡紧。但是这样时一定要注意齿的变形。

Module 2.0 and above has been machined flat as respected shaft center to parallel.

Tip diameter can be chucked. Beware deformation of the gears.



注意，进行卡紧时不要对有刻印的部位进行卡紧。（刻印面的起伏变化，会影响定心的准确度。）

Caution! do not chuck at area of KG-mark when performing additional machining.

对进行过高频淬火的齿轮进行追加工时，靠近齿部的部位会由于淬火而硬化。另外外径较小的（小齿数）齿轮，很有可能齿孔面也受淬火的影响而硬化。因而切削性变差。

Due to induction hardening, take note that surface near to the gear tooth area may be low machinability due to the heat treatment processed.

Also, the bore diameter of small size gears (Pinion) may not be easily machined.

# 特殊订制产品 ( 客户自定义产品 )



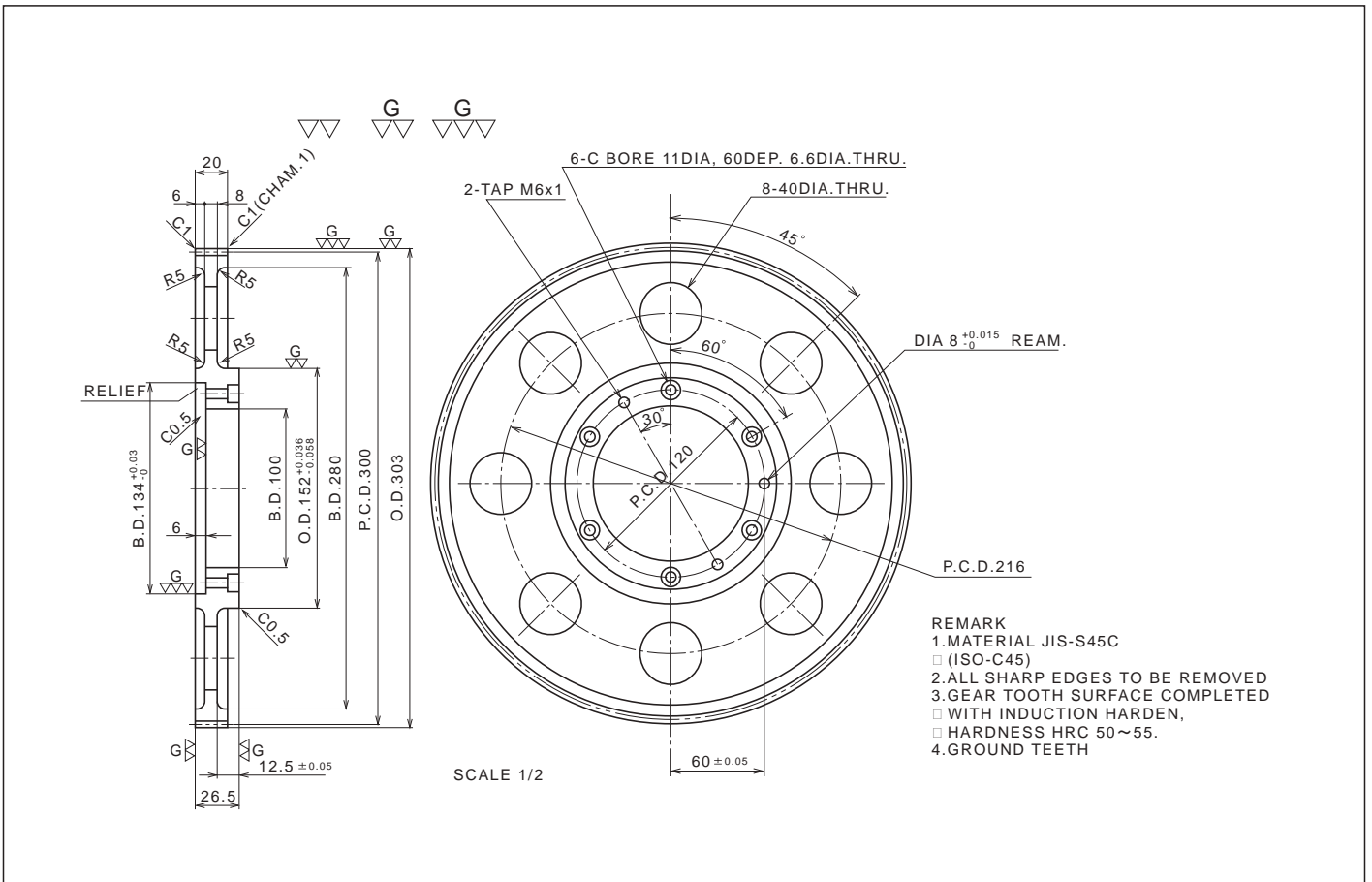
KG-STOCK GEARS (本公司常规齿轮产品) 在齿数, 齿宽, 轴孔直径, 轮毂直径等方面都准备了多种产品。我们认为这些产品种类应该可以满足大多数情况的客户需求。所以您在进行机械设计时请先确认KG-STOCK GEARS里有没有您所需的产品。如果KG-STOCK GEARS中的产品无法满足您的需求, 请给我们设计图纸。

本公司将发挥常年制作精密小规格齿轮的技术能力, 为您生产常规产品以外的客户自定义产品。关于价格和交货时间请与我们联系进一步协商。

如果在设计上有不明白的地方, 您可联系我们。我们除了技术部门之外, 在各地的分店也有经验丰富的技术服务人员, 他们会竭诚为您服务。

KG-STOCK GEARS has a wide selection of the variety with Number of Teeth, Face Width, Bore Diameters and Hub Diameter. Please select your suitable gear from our KG-catalogue when you work out a design.

With our professional engineers and our past experience, we are able to provide advice and accurate information to our customer for customizes make gears. Price and delivery lead time of the customize make gears are negotiable. Do not hesitate to call us for discussion.





# 关于订制齿轮（由客户设计的齿轮）

响应客户需求的**订制齿轮**，可从 1 个开始提供生产。



我们将灵活运用本公司生产精密小型规格齿轮的经验技术，接受订制齿轮（由客户设计的齿轮）的制作要求。

We make customized gears with our past experience and know-how of precise and small standard gears from 1pc.

可对应小模数的小型齿轮·直齿轮·锥齿轮。并具备良好的质量检测体系。  
We make precise and small Spur and Bevel gears with full inspection systems.



我们也能生产模数0.3的直齿轮和锥齿轮。  
We are able to make module 0.3 Spur and Bevel gears.



为了检测小模数·小型齿轮，备有NIKON公司制作的高精度非接触式传感器3D系统「HN-C303P」  
We inspect precise and small gears with non-contact sensor 3D metrology system "HN-C3030P" from Nikon.

## 订制齿轮时的各类因素确认表

When enquiries, please refer to and check the following table.

Dimension with ○ mark in your specification sheet or drawing help with our quick consideration.

|                      | 尺寸<br>Size | 材料<br>Material | 齿数<br>No. of teeth | 形状<br>Shape | 外径<br>Outsied diameter | 螺旋角和方向<br>Herical angle and direction of thread | 头数<br>Number of thread | 配对齿轮齿数<br>No. of teeth of mating gears | 装配距离<br>Locating distance | 热处理<br>Heat treatment | 表面处理<br>Surface treatment |
|----------------------|------------|----------------|--------------------|-------------|------------------------|---|------------------------|--|---------------------------|-----------------------|---------------------------|
| 直齿轮<br>Spur Gears    | ○          | ○              | ○                  | ○           |                        |   |                        |  |                           | ○                     | ○                         |
| 齿条<br>Rack Gears     | ○          | ○              |                    | ○           |                        |   |                        |  |                           | ○                     | ○                         |
| 斜齿轮<br>Herical Gears | ○          | ○              | ○                  | ○           |                        | ○   |                        | ○                                      |                           | ○                     | ○                         |
| 蜗轮<br>Worm Gears     | ○          | ○              | ○                  | ○           | ○                      | ○   | ○                      | ○                                      | ○                         | ○                     | ○                         |
| 锥齿轮<br>Bevel Gears   | ○          | ○              | ○                  | ○           |                        | ○   |                        | ○                                      |                           | ○                     | ○                         |

请根据客户的图纸和规格说明书给KG公司发出指示和订单。

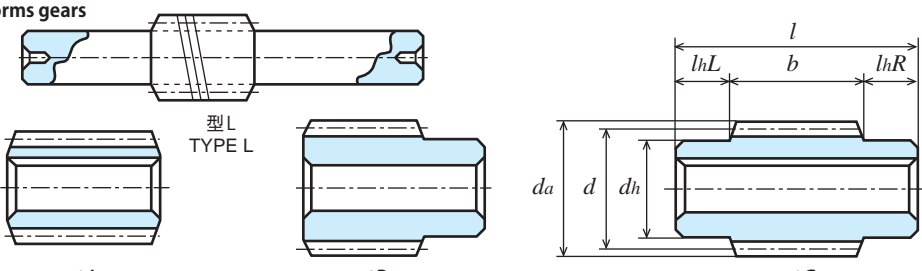
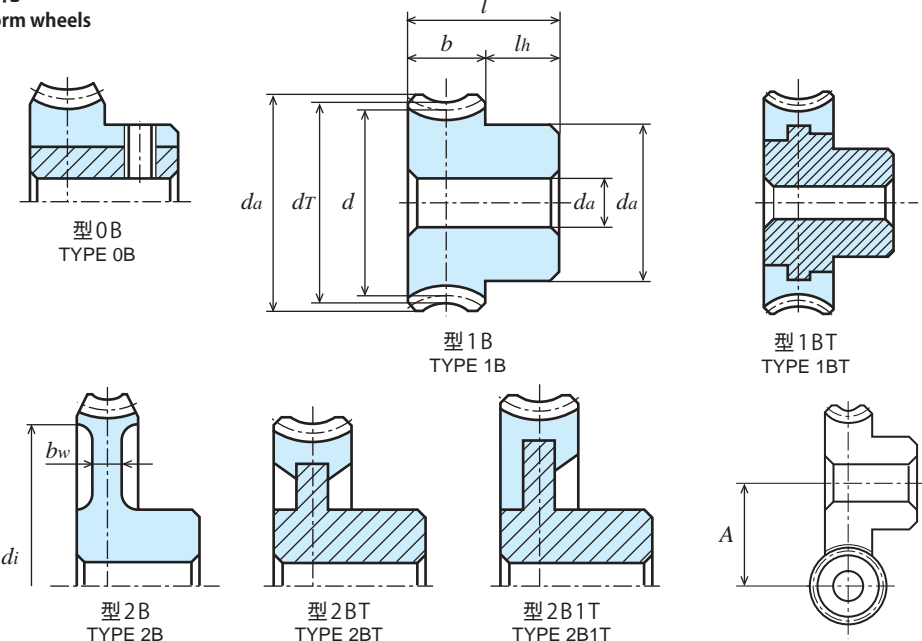
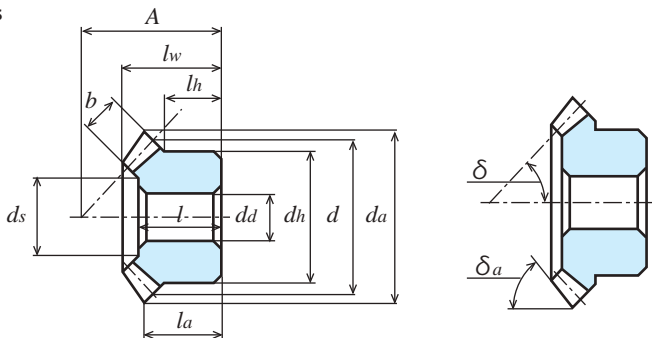
也有可能由于本公司的设备的原因而无法满足客户的需求。

We may not able to meet some requirements due to our capacity and equipments.

# KG 齿轮的符号和术语 - 表 (1)

| KG 齿轮的类型和简单图纸<br>Simple drawings and Types of KG STOCK GEARS. |  | 齿轮术语<br>Gear terms.   | 符号<br>Vocabularies                                    |
|---|--|---|---|
| <b>直齿轮和斜齿轮</b><br><b>Spur and Helical gears.</b>              |  | 齿顶圆直径 Tip diameter<br>分度圆直径 Reference diameter<br>轮毂直径 Hub diameter<br>内径 Bore diameter<br>全长 Overall length<br>齿宽 Face width<br>轮毂长度 Hub projection      | $d_a$<br>$d$<br>$d_h$<br>$d_a$<br>$l$<br>$b$<br>$l_h$ |
| <b>内齿轮</b><br><b>Internal gears.</b>                          |  | 齿顶圆直径 Tip diameter<br>分度圆直径 Reference diameter<br>齿根圆直径 Root diameter<br>齿顶圆直径 Outside diameter of Ring<br>齿宽 Face width                                  | $d_a$<br>$d$<br>$d_f$<br>$D$<br>$b$                   |
| <b>齿条</b><br><b>Racks</b>                                     |  | 全长 Overall length<br>啮合高 Datum line<br>齿宽 Face width<br>全齿高 Overall Thickness<br>轴径 Shaft diameter<br>有效啮合长度 Effective Datum length<br>柄长度 Length of stem | $l$<br>$h''$<br>$b$<br>$h$<br>$d_h$<br>$b_e$<br>$l_h$ |
| <b>齿条和小齿轮</b><br><b>Racks and Pinions</b>                     |  | 装配距离 Locating distance  | $a$   |

# KG 齿轮的符号和术语 - 表 (2)

| KG 齿轮的类型和简单图纸<br>Simple drawings and Types of KG STOCK GEARS.  | 齿轮术语<br>Gear terms.  | 符号<br>Vocabularies |
|--|--|--------------------|
| <p><b>蜗杆齿轮</b><br/>Worms gears</p>  <p>型A<br/>TYPE A</p> <p>型L<br/>TYPE L</p> <p>型B<br/>TYPE B</p> <p>型C<br/>TYPE C</p>  | <p>齿顶圆直径 Tip diameter <math>d_a</math></p> <p>分度圆直径 Reference diameter <math>d</math></p> <p>轮毂直径 Hub diameter <math>d_h</math></p> <p>内径 Bore diameter <math>d_a</math></p> <p>全长 Overall length <math>l</math></p> <p>齿宽 Face width <math>b</math></p> <p>轮毂长度 Hub projection <math>l_h</math></p>   |                    |
| <p><b>蜗轮</b><br/>Worm wheels</p>  <p>型0B<br/>TYPE 0B</p> <p>型1B<br/>TYPE 1B</p> <p>型1BT<br/>TYPE 1BT</p> <p>型2B<br/>TYPE 2B</p> <p>型2BT<br/>TYPE 2BT</p> <p>型2B1T<br/>TYPE 2B1T</p> | <p>齿顶圆直径 Tip diameter <math>d_a</math></p> <p>蜗轮的喉部圆直径 Throat diameter <math>d_r</math></p> <p>节圆直径 Pitch diameter <math>d</math></p> <p>轮毂直径 Hub diameter <math>d_h</math></p> <p>内径 Bore diameter <math>d_a</math></p> <p>全长 Overall length <math>l</math></p> <p>齿宽 Face width <math>b</math></p> <p>轮毂长度 Hub projection <math>l_h</math></p> <p>轮辋内径 Dimension of Rim <math>d_i</math></p> <p>腹板厚度 Thickness of Web <math>b_w</math></p> <p>啮合中心距 Center distance <math>A</math></p> |                    |
| <p><b>等径锥齿轮 / 锥齿轮</b><br/>Miter and Bevel gears</p>   | <p>装配距离 Locating distance <math>A</math></p> <p>齿顶圆直径 Tip diameter <math>d_a</math></p> <p>分度圆直径 Reference diameter <math>d</math></p> <p>轮毂直径 Hub diameter <math>d_h</math></p> <p>内径 Bore diameter <math>d_a</math></p> <p>齿顶角 Tip angle <math>\delta_a</math></p> <p>分锥角 Pitch angle <math>\delta</math></p> <p>齿宽 Face width <math>b</math></p> <p>轮毂长度 Hub projection <math>l_h</math></p> <p>全长 Overall length <math>l_w</math></p> <p><math>l_a</math></p>                        |                    |

# ISO 规格和 JIS 规格的统一化

## 引言

伴随JIS规格向ISO规格的统一，很多JIS规格(包括Technical report)，正在不断地被改编或重新制订。关于齿轮方面的JIS规格和JGMA规格(日本齿轮工业会规格)正进行按次更改。编辑本商品产品目录时，JIS规格和JGMA规格还并没有完全改编完成，而且也有一些规格虽然已经被废止，但是编辑产品目录的[齿轮技术资料]时，还是需要旧的JIS规格和JGMA规格。

为此，我们在进行编辑时，尽力使用新的JIS规格和JGMA规格。但是在新规格里不存在的一些部分，或者如果不使用旧规格无法说明的部分，我们依然采用旧规格来解释。并在旧规格前标明了[旧]字。并在[齿轮的尺寸]篇也有新旧规格并列的部分。

本公司尽量密切注视ISO规格，JIS规格和JGMA规格等的修订情况而进行宣传册的改编，但是就算是这些规格被制定改编，本宣传册中所使用的内容不一定会马上跟着改编。

对此，敬请理解。

Firstly, as standardizing at the coordination of ISO standard from JIS standard, most of JIS-standard (included Technical report) has been making revision and replacement.

In due time JIS standard and JGMA standard (Japan Gear Manufacturers Association) for the gears shall be revised to a new edition as time to come. However JIS standard and JGMA standard are not complete and some standard was abolished when we started the new edition of KG catalogue. However an old JIS and JGMA standard are essential reference of gears for KG-new catalogue.

Therefore we had adopted the latest JIS and JGMA standard as latest as possible in our new edition KG-catalogue. However if we found inexplicability and nonexistence standard, we introduced the old and new standards to our new edition KG-catalogue.

With respect to the new edition of ISO, JIS and JGMA standards, new edition KG-catalogue is unable to adopt the latest revised ISO, JIS and JGMA standards. We seek your understanding for our latest edition of KG-catalogue.

## 关于 KG-STOCK GEARS (本公司规格齿轮产品) 的精度

### Precision of KG STOCK GEARS.

到现在为止长期被使用的 JIS B 1702 : 1995确认(直齿轮和斜齿轮的精度)被废止，被分为JIS B 1702-1 : 1998(圆桶齿轮—精度等级 第一部：关于齿轮的齿面的误差的定义和容许值)以及JIS B 1702-2 : 1998(圆筒齿轮—精度等级 第二部：两齿面啮合误差与齿沟的误差的定义与精度容许值)的2个规定。

关于这些内容，如果与旧JIS B1702相比较，模数和基准圆直径的区分有所不同，所以如果问到旧JIS4级相当于新的JIS的几级时，无法进行详细的对应与说明。

但可以作为大概的指标来说

新的JIS精度等级 = 旧JIS精度等级 + 4 ;

但是齿数比较小或齿数过大时，会出现上述规律无法对应的问题。

The Two Regulations had enacted that JIS B 1702-1:1998 (Cylindrical gears - Precision and Classification Article 1: Definition of Error and Amount of Permissible for a Gear flank) and JIS B 1702-2:1998 (Cylindrical gears - Precision and Classification Article 2: Error of Tooth to Tooth Working, Definition of Run out and Amount of Precision) in place of JIS B 1702: 1995, confirmed (Precision for the Spur and Helical gears) was discontinued after so many years used.

When new JIS compared with old JIS B 1702, the new JIS is unable to be equivalent to the Old JIS class 4 detail, due to different classification of Module and Reference diameter (call Pitch Diameter of old JIS).

The rough outline of the theory is New JIS precision class = Old JIS precision class plus(+) 4, however comparatively range of small or big number of teeth are unable to cover the above classification.

### 新旧齿轮用语比较例 (可以看到同一指标的英语表现方法有所不同)

#### Comparison of new and old gear's terms

|                     |                   |
|---------------------|-------------------|
| JIS B0102 : 1999    | JIS B0102 : 1993  |
| reference diameter  | pitch diameter    |
| tooth depth         | whole depth       |
| working tooth depth | working depth     |
| pitch angle         | pitch cone angle  |
| tip angle           | tip cone angle    |
| root angle          | root cone angle   |
| spiral angle        | helix angel       |
| locating distance   | mounting distance |

本产品目录中的[齿轮的尺寸]篇中，有一些部分没有被更换成新JIS规格。

Some of the old standard still remain unchanged in our new KG-catalogue for the Dimensions of the Gears.

# KG STOCK GEARS 的精度等级

## KG 研磨直齿轮的精度等级相当于新 JIS (JIS B 1702) 5 级

System of accuracy of KG-Ground Spur Gear is equivalent to JIS B1702-1 class 5.

## ISO C45材料的KG直齿轮的精度相当于新JIS8 (JIS B 1702) 8 - 9级

System of accuracy of KG-Spur Gear with ISO C45 is equivalent to JIS B1702-1 class 8-9.

JIS B 1702-1 中所规定的对齿轮测定项目中，KG齿轮的精度等级如下

System of accuracy of KG-STOCK GEARS based on JIS B 1702-1 standards are as follows.

|                                      |  |
|--------------------------------------|--|
| 单齿距误差<br>Single pitch deviation      | JIS B 1702-1 7级<br>JIS B1702-1 class 7 |
| 齿距累积误差<br>Total cumulative deviation | JIS B 1702-1 8级<br>JIS B1702-1 class 8 |
| 齿形误差<br>Tooth profile deviation      | JIS B 1702-1 8级<br>JIS B1702-1 class 8 |
| 齿圈径向跳动<br>Run out                    | JIS B 1702-1 8级<br>JIS B1702-1 class 8 |

注：本公司的齿轮在新JIS规格的等级分类中是属于[相当于新JIS8级]的程度。

用[相当于]这一词的原因是，如果齿形误差，齿圈径向跳动等持续性的保持在新JIS8级以上，那么也就可以说本公司的齿轮达到了新JIS规格8级。但是现实是如果那么做，会大大的提高常规齿轮的制造成本。所以KG齿轮现在的状态是[相当于新JIS8级]。

Although we are able to provide the gear with JIS B1702-1 class 8 for tooth profile deviation and runout. In order to maintain the demand so that economically price to be as competitive as possible. Therefore, we manufacturing by equivalent at the JIS B1702-1 class 8 gear.

## C45之外的，黄铜，不锈钢，聚缩醛树脂的直齿轮，斜齿轮的精度等级

Regarding the system of accuracy of Spur and Helical gears with materials of SUS 304, Brass and Poly Acetal.

|  |  |
|--|--|
| SUS (不锈钢) 材料的直齿轮，斜齿轮<br>Spur and Helical gears with SUS-stainless steel                            | JIS B1702-1 9级<br>JIS B1702-1 class 9          |
| 黄铜材料的直齿轮 (铆接类除外)<br>Spur gears with Brass except riveted type.                                     | JIS B1702-1 9级<br>JIS B1702-1 class 9          |
| 聚缩醛树脂材料的直齿轮，斜齿轮 (射出成型类除外)<br>Spur and Helical gears with Poly Acetal except Injection molded type. | JIS B1702-1。9-10 级<br>JIS B1702-1 class 9 - 10 |

## KG的等径锥齿轮和锥齿轮的精度等级

System of accuracy of KG-Miter and Bevel gears.

|   |  |
|---|--|
| ISO 34CrMo4, 42CrMo4合金结构钢材料的精密锥齿轮<br>Fine Cut Miter Gear with ISO 34CrMo4, 42CrMo4 steel              | JIS B 1704 2级<br>JIS B 1704 class 2          |
| C45碳钢材料的等径锥齿轮 / 锥齿轮<br>Miter and Bevel gears with C45-carbon steel.                                   | JIS B 1704 3级<br>JIS B 1704 class 3          |
| C45碳钢材料的等径锥齿轮 / 锥齿轮的高周波淬火<br>Miter and Bevel gears completed Induction harden.                        | JIS B 1704 4级<br>JIS B 1704 class 4          |
| SUS304 (不锈钢) 材料的等径锥齿轮 / 锥齿轮<br>Miter and Bevel gears with SUS-stainless steel.                        | JIS B 1704 4级<br>JIS B 1704 class 4          |
| 黄铜材料的等径锥齿轮 / 锥齿轮<br>Miter and Bevel gears with Brass.   | JIS B 1704 4级<br>JIS B 1704 class 4          |
| 聚缩醛树脂材料的等径锥齿轮 / 锥齿轮 (射出成型类除外)<br>Miter and Bevel gears with Poly Acetal except Injection molded type. | JIS B 1704 5 和 6级<br>JIS B 1704 class 5 or 6 |

## 聚缩醛树脂材料产品的孔径的精度

Fitting tolerance of bore dimensions for KG products with Poly Acetal.

聚缩醛树脂材料的切削加工产品 (除了射出成型品) 的孔径尺寸公差，加工管理公差为H9。聚缩醛树脂材料因为其特性，经过年月时间的推移老化，温度变化而发生尺寸的变化。尽管管理公差是H9，但因为KG STOCK GEARS 的生产运输的需要，生产后要库存一段时间。所以本产品到达客户手中时，可能已经发生了尺寸变化。

Fitting tolerance of bore dimensions for KG Miter and Bevel gears with Poly Acetal except Injection molded types are by the working control's tolerance of H9. The working control H9 for the gears with Poly Acetal maybe affected to change the dimension's tolerance due to the characteristic of secular change and fluctuation of temperature that may occur after our production in a period of storage time.

关于精度方面的更多的详细资料和数据，请参考本公司技术资料。

For more details of system of accuracy, refer to KG-Technical Data.

# KG 无侧隙齿轮和齿轮箱的特点

## 当使用无侧隙齿轮时的注意点

### Summarize Information of Anti Backlash Spur gears.

如果您考虑降低直齿轮的侧隙，请参考以下内容。

In compliance with the wish to obtain small backlash

| 项目<br>Description        |   | 齿轮的性能<br>Gear performance   |                                 |                          | 材料，表面处理<br>Material and Surface treatment              |                       |   |                       |
|--------------------------|---|-----------------------------|---------------------------------|--------------------------|--|-----------------------|---|-----------------------|
|                          |   | 齿轮加工精度<br>Gear finishing    | 侧隙的调整<br>Adjustment of backlash | 动力传达<br>Transmissibility | 类型<br>Type   | 材料<br>Material        | 表面处理<br>Surface treatment                 | 耐腐蚀性<br>Anticorrosion |
| 产品型号<br>Catalogue number |   |                             |                                 |                          |  |                       |   |                       |
| NS - 系列<br>NS series     | NSG - 系列<br>NSG series<br>(无侧隙齿轮)<br>Anti backlash gear | ◎<br>齿面研磨处理<br>Ground teeth | 不需要<br>Not necessary            | ○                        | 圆弧弹簧型<br>Circular Arc Spring<br>线圈弹簧型<br>Coiled Spring | SCM435                | —   | —                     |
|                          | NS - 系列<br>NS series<br>(无侧隙齿轮)<br>Anti backlash gear   | ○                           | 不需要<br>Not necessary            | ○                        | 圆弧弹簧型<br>Circular Arc Spring<br>线圈弹簧型<br>Coiled Spring | 铝<br>Aluminum<br>S45C | 铝阳极氧化处理<br>Anodized<br>盐浴软氮化处理<br>Isonite | —<br>△                |
|                          | NSU - 系列<br>NSU series<br>(无侧隙齿轮)<br>Anti backlash gear | ○                           | 不需要<br>Not necessary            | ○                        | 线圈弹簧型<br>Coiled Spring                                 | SUS304                | 特氟纶表面处理<br>Applied treatment<br>of Teflon | ◎                     |
| ASG                      | ASG - 系列<br>ASG series<br>(可控侧隙研磨直齿轮)                   | ◎<br>齿面研磨处理<br>Ground teeth | 需要<br>Necessary                 | ◎                        | 固定螺栓<br>Fixed Bolt                                     | SCM435                | —   | —                     |

如需更详细的情报，请查阅本产品目录的相应部分。  
Please refer more details inside KG catalogue

## 当使用 HY-BOX, W-BOX、B-BOX, B-SET 时的注意点

### Summarize Information of HY-BOX, W-BOX, B-BOX and B-SET.

为了节约成本，减少工作时间

For cost saving and reduce working time.

| 项目<br>Description        |                                   | 齿轮的性能<br>Gear performance  | 侧隙<br>Backlash           | 动力传达<br>Transmissibility | 类型<br>Type         | 轴承<br>Bearing            | 润滑<br>Lubrication   | 功能<br>Function  |
|--------------------------|-----------------------------------|--|--------------------------|--------------------------|--------------------|--------------------------|---|---|
| 产品型号<br>Catalogue number |                                   |  |                          |                          |                    |                          |   |   |
|                          | HY - 系列<br>HY series<br>(HY-BOX)  | ◎<br>使用精密齿轮<br>Precision gear used                               | ◎<br>20' 以下<br>Below 20' | ◎                        | 密封型<br>Sealed type | 球轴承<br>Ball bearing      | 封入润滑脂<br>Grease sealed  | 高减速比<br>High gear ratio<br>高效率<br>High Efficiency<br>高精度<br>High precision<br>高强度<br>High performance |
|                          | BSH - 系列<br>BSH series<br>(B-BOX) | ◎<br>使用精密齿轮<br>Precision gear used                               | ◎<br>15' 以下<br>Below 15' | ◎                        | 密封型<br>Sealed type | 球轴承<br>Ball bearing      | 封入润滑脂<br>Grease sealed  | 高精度<br>High precision<br>紧凑设计<br>Compact  |
|                          | BS - 系列<br>BS series<br>(B-BOX)   | ◎  | ◎<br>20' 以下<br>Below 20' | ◎                        | 密封型<br>Sealed type | 球轴承<br>Ball bearing      | 封入润滑脂<br>Grease sealed  | 高精度<br>High precision<br>紧凑设计<br>Compact  |
|                          | BE - 系列<br>BE series<br>(B-SET)   | ○  | ○                        | ○                        | 开放型<br>Opened type | 无油轴承<br>Oil Free bearing | 要定期给齿面涂<br>上润滑脂<br>Necessary to apply<br>grease to teeth regularly. | 低成本<br>Competitive price  |
|                          | WS 系列<br>WS series<br>(W-BOX)     | ◎<br>使用精密冷轧蜗杆<br>Precision Cold<br>Rolled processed<br>Worm used | ◎<br>40' 以下              | ◎                        | 密封型<br>Sealed type | 球轴承<br>Ball bearing      | 润滑油润滑   | 高速规格<br>High Speed<br>高减速比<br>High gear ratio<br>紧凑设计<br>Compact                                      |

如需更详细的情报，请查阅本产品目录的相应部分。  
Please refer more details inside KG catalogue

# KG STOCK GEARS 的側隙

什么是侧隙：当两个齿轮啮合时的齿面间的缝隙和空间。

用以下表格，表示把本公司齿轮，用所定的装配距离（中心距离）组装后的侧隙。

What is the Backlash? There are PLY or CLEARANCE when matching the gears. Please refer to the pair of backlash amount for KG STOCK GEARS when setting appointed center distance as follows.

## 直齿轮的侧隙量 (条件：使用同一种材料的一对齿轮之间的啮合)

Backlash amount of Spur gear (the same material and one pair of gear engagement)

| 模数 (m)<br>Module   | 材料<br>Material | 侧隙 (mm)<br>Backlash                |
|--|----------------|------------------------------------|
| 模数0.9以下的产品的侧隙为0.02到0.06<br>Range from below M=0.9 is 0.02-0.06 |                |                                    |
| 模数范围超过 0.9 在 3.0 以下时<br>Range from M=0.9 to M=3.0              | D、SU、BS        | $0.06 \times m \sim 0.12 \times m$ |
|  | S              | $0.04 \times m \sim 0.10 \times m$ |
|  | SCM            | $0.04 \times m \sim 0.08 \times m$ |
| 模数范围超过 3.0 在 5.0 以下时<br>Range from M= 3 to M=5                 | S              | $0.06 \times m \sim 0.12 \times m$ |

D：聚缩醛树脂；SU：SUS304；S：S45C；SCM:SCM435,440(研磨品)；BS：黄铜

D: Acetal, SU : SUS304, S : S45C, SCM : SCM435,440, BS : Brass

## 蜗轮的侧隙 (一对蜗轮蜗杆啮合时)

Backlash of Worm gear pair(One pair of gear engagement)

| 装配距离<br>Center distance  | 侧隙<br>Backlash |
|--|----------------|
| 模数0.8以下产品的侧隙为，0.06到0.15<br>Range from below M=0.8 is 0.06-0.15 |                |
| 50 以下<br>Below 50  | 0.08 ~ 0.20    |
| 装配距离超过 50 在 150 以下时<br>Range from 50 to 150.                   | 0.15 ~ 0.30    |
| 装配距离超过 150 在 300 以下时<br>Range from 150 to 300.                 | 0.30 ~ 0.50    |

## 锥齿轮的齿隙 (一对锥齿轮的啮合)

Backlash of Bevel gear (one pair of gear engagement)

| 模数 (m)<br>Module                             | 侧隙<br>Backlash  |                 |
|--|---|-----------------|
|  | SCM435, S45C, SUS304, 黄铜<br>SCM435, S45C, SUS304, Brass | 聚缩醛树脂<br>Acetal |
| 模数 0.9 以下<br>Range below M=0.9               | 0.02 ~ 0.08   | 0.03 ~ 0.10     |
| 模数超过 0.9 在 2 以下<br>Range from M=0.9 to M=2.0 | 0.05 ~ 0.12   | 0.05 ~ 0.16     |
| 模数超过 2 在 4 以下<br>Range from M=2 to M=4       | 0.06 ~ 0.15   | —               |
| 模数超过 4 在 6 以下<br>Range from M=4 to M=6       | 0.08 ~ 0.20   | —               |

## 研磨螺旋锥齿轮的侧隙 (一对相应锥齿轮的啮合)

Backlash of Ground Bevel gear (one pair of gear engagement)

| 模数 (m)<br>Module | 侧隙 (mm)<br>Backlash |
|------------------|---------------------|
|                  | SCM440              |
| M=1.5            | 0.03 ~ 0.06         |
| M=2              | 0.04 ~ 0.08         |
| M=2.5            | 0.05 ~ 0.1          |
| M=3              | 0.06 ~ 0.12         |

# 关于容许传达动力表的说明

本产品目录中记载的容许传达动力表中的 [弯曲强度] [齿面强度] [蜗轮容许扭矩齿面强度] 的表采用JGMA式 (日本齿轮工业会规格)(树脂齿轮除外)。由于齿轮的种类, 模数大小等原因, 会出现JGMA式的适用范围外的情况。所以本书的数据仅供参考。

The Bending Strength, Surface Durability and Allowable Transfer Capability Torque of Worm Wheel are introduced by using JGMA (Japan Gear Manufacturers Association) formula except Poly Acetal material. This JGMA formula does not apply to every gear, or some is reference only. Therefore refer to the below classification of reference 1 for Kind of the gear and Module size.

## JGMA式的适用范围节选 (表1)

### Applicable range for JGMA formula (Reference 1)

| 齿轮的种类<br>Kind of Gears     | JGMA 规格号码<br>JGMA standard | 模数尺寸<br>Range of Module                     | 分度圆直径<br>Pitch Diameter  |
|----------------------------|----------------------------|---|--|
| 直齿轮<br>Spur gear           | JGMA401 - 01               | 1.5 ~ 25mm                                  | 分度圆直径 25 ~ 3200mm<br>Pitch diameter                            |
| 斜齿轮<br>Helical gear        | JGMA402 - 01               |   |  |
| 锥齿轮<br>Bevel gear          | JGMA403 - 01               | 外端正向模数 1.5 ~ 25mm<br>Outertransverse module | 外端分度圆直径 1600mm 以下<br>Below 1600mm of Outer pitch diameter      |
| 螺旋锥齿轮<br>Spiral bevel gear | JGMA404 - 01               |   | 外端分度圆直径 1000mm 以下<br>Below 1000mm of Outer pitch diameter      |
| 蜗轮齿轮<br>Worm gear pair     | JGMA405 - 01               | 轴向模数 1.0 ~ 25mm<br>Metric axial module      | 蜗轮齿轮分度圆直径 900mm 以下<br>Below 900mm Pitch diameter of Worm wheel |

## (1) 直齿轮及斜齿轮的弯曲强度, 齿面强度

### Bending Strength and Surface Durability for Spur and Helical gears.

| 项目<br>Descriptions   | 材料<br>Material   | SCM435<br>[ISO34CrMo4]  | S45C (ISO C45)                 |                         | (!) SUS304             | (!) C3604B             | 聚缩醛树脂<br>Poly Acetal      |
|--|--|-------------------------|--------------------------------|-------------------------|------------------------|------------------------|---------------------------|
|  | 高频淬火<br>Induction<br>hardening   | —                       | 高频淬火<br>Induction<br>hardening |                         |                        |                        |                           |
| 所适用计算式<br>Calculation  | 直齿轮和斜齿轮的弯曲强度计算式 JGMA 401 - 01<br>Calculation for Bending strength of Spur and Helical gears as JGMA 401-01.<br>直齿轮和斜齿轮的齿面强度计算式 JGMA 402 - 01<br>Calculation for Surface durability of Spur and Helical gears as JGMA 402-01. |                         |                                |                         |                        |                        | Louis 的式<br>Louis formula |
| 配对齿轮<br>Matching gear  | 同一齿数及同一材料<br>The same number of teeth and same material  |                         |                                |                         |                        |                        | —                         |
| 容许弯曲应力<br>Stress of Allowable Bending<br>$:\sigma F_{lim}$                           | 36.5kgf/mm <sup>2</sup>  | 21.0kgf/mm <sup>2</sup> | 25.0kgf/mm <sup>2</sup>        | 10.5kgf/mm <sup>2</sup> | 4.2kgf/mm <sup>2</sup> | 3.4kgf/mm <sup>2</sup> |                           |
| 容许赫兹应力<br>Stress of Allowable Hertz<br>$:\sigma H_{lim}$                             | 121kgf/mm <sup>2</sup>   | —                       | 106.5kgf/mm <sup>2</sup>       | —                       | —                      | —                      |                           |
| 寿命中的齿啮合次数<br>The number of times of engagement<br>between two gears during life span | 10 <sup>7</sup> 次以上<br>Above 10 to the power of 7.<br>( $K_L=1.0$ )  |                         |                                |                         |                        |                        | —                         |
| 来自原动机的冲击<br>Impact from motor side.  | 均一负荷<br>Flat load  |                         |                                |                         |                        |                        | —                         |
| 来自从动机械的冲击<br>Impact from load  | 中程度的冲击<br>Average impact<br>( $K_\alpha=1.25$ )  |                         |                                |                         |                        |                        | —                         |
| 润滑方式及油的粘着度<br>Lubricating system and Oil viscosity                                   | 润滑油润滑 100cSt (50°C)<br>Oil Lubrication.<br>( $Z_L=1.0$ )   |                         |                                |                         |                        |                        | —                         |
| 齿轮的支承方法<br>Method of supporting gear   | 两轴承对称支承两侧<br>Double supporting with plane symmetry to both bearing   |                         |                                |                         |                        |                        | —                         |
| 对齿根弯曲破坏的安全率<br>Safety Factor of Tooth Breakage<br>$:\sigma F$                        | 1.2  |                         |                                |                         |                        |                        | —                         |
| 对齿面强度的安全率<br>Factor of safety at Surface strength<br>$:\sigma H$                     | 1.15   |                         |                                |                         |                        |                        | —                         |
| 负荷方向<br>Load direction   | 负荷方向为恒定<br>One-way direction   |                         |                                |                         |                        |                        | —                         |

负荷的作用方向为正负变化 (包括齿轮齿条结构), 或中间齿轮机构的时候, 容许传达能力是所标值的2/3。

容许传达能力表的齿面强度不适用于空转齿轮, 或与大齿轮在两处啮合的小齿轮 (二档齿轮)。

注 (!) 如果在JGMA401-01和JGMA402-01中没有相应的规格, 请以JGMA6101-01和JGMA6102-01为准。

在本产品目录中记载的容许传达能力表中的弯曲强度, 本书用转速 $n=100[\text{min}^{-1}]$ 时的容许传达扭矩值 $[\text{N} \cdot \text{m}]$ 表示在各表。(表示范围: 模数1-5, 材料C45)

Regarding the amount of allowable transfer capability, load direction is the reversible and the middle gear become 2/3 (including rack pinion).

Surface Durability in Allowable transfer capability table that the formula does not apply to Idler gear or mid gear engaged with 2 gears.

Note (!) Sub standard JGMA401-01 and JGMA402-01 equivalent to JGMA 6101-01 and JGMA6102-01.

The Amount of Allowable transfer torque  $[\text{N} \cdot \text{m}]$  at the number of revolution per minute  $n=100 [\text{N} \cdot \text{m}]$  to each reference compare with Bending strength of Allowable transfer capability table (Range: Module 1.0 to 5.0 with ISO C45 carbon steel) in KG-catalogue.



# 关于容许传达动力表的说明

## (2) 锥齿轮的弯曲强度，齿面强度

### Bending strength and Surface durability for Bevel gears.

| 项目<br>Descriptions   | 材料<br>Material    | SCM435   | SCM440   | S45C                    |                             | (2) SUS304              |
|--|-------------------|--|--|-------------------------|-----------------------------|-------------------------|
|  |                   | 高频淬火<br>Induction hardening  | 齿面研磨，高频淬火<br>Ground tooth<br>Induction hardening | —                       | 高频淬火<br>Induction hardening |                         |
| 使用计算式<br>Calculation   |                   | 锥齿轮的弯曲强度计算式 JGMA 403-01<br>Calculation for Bending strength of Bevel gears as JGMA 403-01.   |  |                         |                             |                         |
|  |                   | 锥齿轮的齿面强度计算式 JGMA 404-01<br>Calculation for Surface durability of Bevel gears as JGMA 404-01. |  |                         |                             |                         |
| 配对齿轮<br>Matching gear  |                   | 所选定产品的配对齿轮<br>Nominative Matching gear.  |  |                         |                             |                         |
| 容许弯曲应力<br>Stress of Allowable Bending  | $:\sigma F_{lim}$ | 31.0kgf/mm <sup>2</sup>  | 31.0kgf/mm <sup>2</sup>                          | 19.0kgf/mm <sup>2</sup> | 22.0kgf/mm <sup>2</sup>     | 10.5kgf/mm <sup>2</sup> |
| 容许赫兹应力<br>Stress of Allowable Hertz  | $:\sigma H_{lim}$ | 109.0kgf/mm <sup>2</sup>   | 115.0kgf/mm <sup>2</sup>                         | 54.0kgf/mm <sup>2</sup> | 85.0kgf/mm <sup>2</sup>     | —                       |
| 寿命中的齿啮合次数<br>The number of times of engagement<br>between two gears during life span |                   | 10 <sup>7</sup> 次以上<br>Above 10 to the power of 7. (K <sub>L</sub> =1.0)                     |  |                         |                             |                         |
| 来自原动机的冲击<br>Impact from motor side.  |                   | 均一负荷<br>Flat load  |  |                         |                             |                         |
| 来自从动机械的冲击<br>Impact from load  |                   | 中程度的冲击<br>Average impact (K <sub>O</sub> =1.25)  |  |                         |                             |                         |
| 润滑方式及油的粘着度<br>Lubricating system and Oil viscosity                                   |                   | 润滑油润滑 100cSt (50°C)<br>Oil Lubrication. (Z <sub>L</sub> =1.0)                                |  |                         |                             |                         |
| 轴，齿轮箱等的刚性<br>Stiffness of gear shaft and gearbox.                                    |                   | 普通<br>Standard   |  |                         |                             |                         |
| 齿轮的支撑方法<br>Supporting condition of the gear  |                   | 两个齿轮各单侧支撑<br>Overhang condition<br>(K <sub>Mβ</sub> =1.8) (K <sub>Mβ</sub> =2.1)             |  |                         |                             |                         |
| 对齿根弯曲破损的可靠度系数<br>Coefficient of reliability of Tooth Breakage                        | $:K_R$            | 1.2  |  |                         |                             |                         |
| 对齿面强度的可靠度系数<br>Coefficient of reliability at Surface strength                        | $:C_R$            | 1.15   |  |                         |                             |                         |
| 负荷方向<br>Load direction   |                   | 负荷方向为恒定<br>One-way direction   |  |                         |                             |                         |

负荷方向为正逆转时各种齿轮的容许传达表中的数据的数据的2/3。

注 (2) 如果在JGMA403-01和JGMA404-01中没有相应的规格，请以JGMA6101-01和JGMA6102-01为准。

Regarding the amount of allowable transfer capability, load direction is the reversible and the middle gear become 2/3.

Note (2) Sub standard JGMA403-01 and JGMA404-01 equivalent to JGMA 6101-01 and JGMA6102-01.

## (3) 圆柱形蜗轮蜗杆齿面强度

### Surface durability of Cylindrical worm gear pair.

| 项目<br>Descriptions   | 蜗轮的材料<br>Material of Wheel | C3604B<br>黄铜<br>Brass  | FC200<br>普通铸铁<br>Cast iron  | CAC702<br>铝青铜<br>Aluminum Bronze |
|--|----------------------------|--|---|----------------------------------|
|  | 使用计算式<br>Calculation       |  | 圆柱形蜗轮蜗杆强度计算式<br>Calculation for Surface strength of Cylindrical worm gear pair. |                                  |
| 对齿面强度的容许应力系数<br>Coefficient of Allowable Stress at Surface strength : $\sigma F_{lim}$ |                            | 0.42   | 0.63  | 0.56                             |
| 预期寿命<br>Effective life period  |                            | 26,000 小时<br>26,000 hours  |   |                                  |
| 润滑油润滑<br>Oil Lubrication.  |                            | 使用添加齿轮用极压添加剂的，有适当粘度的润滑油<br>Provided extreme additive lubricant oil with proper viscosity. (Z <sub>L</sub> =1.0)  |   |                                  |
| 润滑方式<br>Lubricating system   |                            | 油池润滑法<br>Oil bath Lubrication (Z <sub>M</sub> =1.0)  |   |                                  |
| 轮齿接触<br>Surface contact  |                            | 相当于 JIS B 1741 (轮齿接触) 的区分 A 的轮齿接触<br>This Surface contact is equivalent to classification A of JIS B1741 (Surface contact) (K <sub>C</sub> =1.0)                               |   |                                  |
| 启动状况<br>Starting condition   |                            | 启动时的扭矩为额定扭矩的 200% 以下。1 小时中的启动次数 2 次以下<br>Starting torque should below 200 % from rating torque and the number of starting time should less than 2 times. (K <sub>S</sub> =1.0) |   |                                  |
| 来自原动机的冲击<br>Impact from motor side.  |                            | 均匀负载<br>Flat load  |   |                                  |
| 来自从动机械的冲击<br>Impact from load  |                            | 均匀负载<br>Flat load (K <sub>n</sub> =1.0)  |   |                                  |

Regarding the amount of allowable transfer capability, load direction is the reversible and the middle gear become 2/3.

Note (1) Sub standard JGMA403-01 and JGMA404-01 equivalent to JGMA 6101-01 and JGMA6102-01.

# 常规直齿轮的扭矩计算

## 求常规直齿轮的容许传达扭矩

To calculate Allowable transfer torque of KG STOCK GEARS.

## 根据规格直齿轮的条件选择齿轮

To select KG-STOCK GEARS from usage condition of Spur gear.

## 计算例：求规格齿轮的容许传达扭矩 T [N.m]

For example 1. To calculate Allowable transfer torque: T[N.m]

(1) 当所使用规格直齿轮 S2S40B-2016F 时。

- |              |              |
|--------------|--------------|
| 1) 模数 $m=2$  | 3) 齿宽 20[mm] |
| 2) 齿数 $z=40$ | 4) 孔径 16[mm] |

(2) 齿轮的使用条件

- 1) 直齿轮的齿数比  $u=1:1$
- 2) 直齿轮的旋转速度  $n=100[\text{min}^{-1}]$
- 3) 关系到直齿轮的强度计算的诸条件 (参考JGMA401-01)
  - a) 齿轮在齿轮箱内进行油池润滑法润滑。
  - b) 齿轮轴的轴承在齿轮的两侧进行支撑。
  - c) 从原动机侧给齿轮均匀负载。
  - d) 被动机械给齿轮中程度的冲击。
  - e) 齿轮在寿命中所受的啮合次数为 $10^7$ 以下。

(3) 在本产品目录的容许传达动力表 (KW) 的弯曲强度中, 求得容许传达扭矩

- 1) 根据上述条件 (1) (2) 确认本宣传册的容许传达动力表 (kW) 的数据。

$$KW=1.61[\text{单位kW}]$$

- 2) 将动力kW[单位kW]换算成扭矩。

$$\text{根据 } T=9549.7 \frac{\text{kW}}{n} \quad n=100$$

$$T=9549.7 \times \frac{1.61}{100}=153.75[\text{N.m}]$$

从上述计算式中可以得出, 规格齿轮S2S40B-2016F的容许传达扭矩为

$$T=153.75[\text{N.m}]$$

结论: 这个齿轮在上述的条件下, 可以在输入扭矩 $T=153.75[\text{N.m}]$ 以下使用。

(1) For example, calculating KG — STOCK GEAR S2S 40B-2016F

- |                        |                    |
|------------------------|--------------------|
| 1) Module M2.0         | 3) Face width 20mm |
| 2) No. of teeth $z=40$ | 4) Bore 16mm       |

(2) Usage condition of Spur gear.

- 1) Gear ratio of Spur gear  $u=1:1$
- 2) The number of revolution  $n=100 / \text{min}$
- 3) Providing conditions with usage of gear for strength calculation. Please refer to Calculation for Bending strength of Spur and Helical gears as JGMA401-01.
  - a) The gear is in gearbox with lubricant oil.
  - b) Bearing in gearbox should position on both sides. Bearings are plane symmetry.
  - c) Receiving load from a motor side is a flat load or less.
  - d) Receiving impact from a load side is an Average or less.
  - e) During gear life period, the number of times for set of gear engagement is below  $10^7$  times.

(3) To calculate Allowable torque from Allowable transfer capability table (kW) with Bending strength in KG-catalogue.

- 1) Base on Usage Candition of Spur Gear stated above (1) and (2) that obtain a numerical value from Allowable transfer capability table in KG-catalogue.

$$KW=1.61[\text{kW}]$$

- 2) Convert to Torque [N.m] from power kW[kW]

$$\text{Gained } T=9549.7 \frac{\text{kW}}{n} = 9549.7 \times \frac{1.61}{100}=153.75[\text{N.m}]$$

Therefore selected S2S 38B-2016F as Allowable transfer torque  $T=153.75[\text{N.m}]$

This gear can be used unless exceed range of Input torque  $T=153.75[\text{N.m}]$

# 常规直齿轮的扭矩计算

## 计算例 2. 根据使用条件, 选择规格直齿轮

For example 2. To select KG STOCK GEARS from conditions of Spur gear.

(1) 齿轮的使用条件 (客户的实际使用参数)

- 1) 作用于直齿轮的最大标称扭矩  $T=142[\text{N.m}]$  (包含安全系数)
- 2) 直齿轮的转速  $n=100[\text{min}^{-1}]$
- 3) 直齿轮的齿宽  $b=10-30[\text{mm}]$
- 4) 直齿轮的轴间距离  $a=70-100[\text{mm}]$
- 5) 齿数比  $u=1:1$
- 6) 关于直齿轮的强度计算的条件 (参考JGMA401-01)
  - a) 齿轮是在齿轮箱内进行油池润滑法润滑。
  - b) 齿轮轴的轴承在齿轮的两边进行支撑。
  - c) 原动机输入均匀负载。
  - d) 从被动机械受到中程度冲击。
  - e) 在齿轮的寿命中的啮合次数为 $10^7$ 。

(2) 将作用于直齿轮的轴扭矩:  $T(\text{N.m})$ , 换算成容许传达动力表 (kW) 的弯曲强度动力:  $kW[\text{kW}]$ 。

$$kW = \frac{T \cdot n}{9549.7} = \frac{142 \times 100}{9549.7} 1.487[\text{kW}]$$

(3) 在规格齿轮中选择

1) 直齿轮的选定条件

- a) 模数选为  $m2$  (例)
- b) 齿数 中心距离:  $a=70-100[\text{mm}]$   
齿数比  $u=1:1$   
因此齿数在 35-50 (个) 之间
- c) 齿宽  $b=10-30[\text{mm}]$
- d) 转数  $n=100[\text{min}^{-1}]$
- e) 动力  $kW=1.487[\text{kW}]$

2) 直齿轮的选择。

- a) 在本宣传册, 寻找直齿轮 模数 $M=2.0$  齿数 $Z=35-50$  (个) 的页面。
- b) 确认容许传达动力表 (kW) 弯曲强度表。  
转速 确认 $n=100[\text{min}^{-1}]$ 的栏。  
动力 寻找数据在 $kW=1.487[\text{kW}]$ 以上的齿数和齿宽。

根据以上条件。

齿数:  $Z=38$  [个]; 齿宽:  $b=20$  [mm] 材料 ISO C45为条件

在容许传达动力表中确认到:  $kW=1.51[\text{kW}]$

根据标称动力的计算结果:  $kW=1.487[\text{kW}]$ 。

在相互对比中可以取得结论

容许传达能力  $\geq$  标称动力

c) 相对应规格齿轮产品编号

推崇使用尺寸大于S2S38B-2016F的齿轮。

英文请确认下一页。

Please refer to the English translation that continued on the next following page.

# 常规直齿轮的扭矩计算

(1) Usage condition of Spur gear. (Give us the specification by customer)

- (1) Action to Spur gear with maximum normal torque is  $T=142$  [N.m] included factor of safety.
- (2) The number of revolution  $n=100$  / min
- (3) Face width of Spur gear  $b=10-30$  [mm]
- (4) Center distance of Spur gear  $a=70-100$  [mm]
- (5) Gear ratio of Spur gear  $u=1:1$
- (6) Providing conditions with usage of gear for strength calculation. Please refer to Calculation for Bending strength of Spur and Helical gears as JGMA401-01.
  - a) The gear is in gearbox with lubricant oil.
  - d) Bearing in gearbox should position on both sides. Bearings are plane symmetry.
  - c) Receiving load from a motor side is a flat load or less.
  - d) Receiving impact from a load side is an Average or less.
  - e) During gear life period, the number of times for set of gear engagement is below  $10^7$  times.

(2) Convert to Power kW [kW] of Allowable transfer capability table with Bending strength from axial torque T [N.m] with action to Spur gear.

$$kW = \frac{T \cdot n}{9549.7} = \frac{142 \times 100}{9549.7} 1.487 [kW]$$

(3) To select KG-STOCK GEARS

- 1) Selected condition of Spur gear.
  - a) Module  $M=2.0$  (eg)
  - b) No. of teeth Center distance  $a=70-100$  [mm]  
Gear ratio  $u=1:1$

Therefore we verify the No. of teeth of 35-50z.

- c) Face width  $b=10-30$  [mm]
- d) The number of revolution  $n=110$  [min<sup>-1</sup>]
- e) Power  $kW=1.487$  [kW]

2) Selection of KG STOCK GEARS

- a) Please refer the page for Module 2.0 and Number of teeth 35 to 50 from the catalogue of KG-Spur gear.
- b) Refer to Allowable transfer capability table (kW) of Bending strength.

The number of revolution

Observing the column of  $n=100$  [min<sup>-1</sup>] for your selection.

Power

Look up numerical value of  $kW=1.487$  [kW] or more

Concluded,

On condition that Number of teeth:  $z=38$  [z], Face width:  $b=20$  [mm] and material: S45C

Obtained  $kW=1.51$  [kW] from Allowable transfer capability table.

Compared with action to Spur gear with maximum normal torque is  $T=142$  [N.m] included factor of safety.

Can be judged (Allowable transfer capability)  $\geq$  (Normal power).

- c) Can be searched your suitable S2S 38B-2016F as our recommendation only.

## 动力换算公式 The Conversion formula of Power

1) 计算方式 Calculate Torque from

$T$ : 扭矩 (Torque) [N · m]

$$T = 9549.7 \frac{kW}{n} \Leftrightarrow kW = \frac{T \cdot n}{9549.7}$$

$T$ : 扭矩 (Torque) [kgf · m]

$$T = 973.8 \frac{kW}{n} \Leftrightarrow kW = \frac{T \cdot n}{973.8}$$

$T$ : 扭矩 (Torque) [kgf · m]

$$T = \frac{F_t \cdot r}{1000} \Leftrightarrow F_t = \frac{1000 \cdot T}{r}$$

2) 转换到 SI 单位 Convert to Standard Integer

1 [kgf · m] = 9.80665 [N · m]

1 [W] = 1 [N · m/s]

在此  $n$ : 转速 [min<sup>-1</sup>] Revolution per minute [min<sup>-1</sup>]

Hereby  $r$ : 分度圆半径 [毫米] Reference radius [mm]

(变位齿轮时是啮合圆半径)

(In case of Shifted gears as working Radius)

$T$ : 扭矩 Torque [N · m]

$kW$ : 动力 Power [kW]

$F_t$ : 正面啮合圆的切向力 [N]

Tangential Force of pitch circle [N]

# 齿轮的符号和术语

## KG 采用 JIS 规定符号

We have been adopting the symbol of JIS.

关于齿轮图纸各部位的尺寸符号有很多种。我们KG齿轮公司采用JIS规格、参考文献中所使用的符号。

The Vocabulary of each dimension for the gear's drawing in various usages includes many different fields. KG has been adopting the symbols as there is reference literature of JIS standard and gear.

## 齿轮的符号和术语

### The Vocabulary of Gear and Gear terms.

用于齿轮计算的齿轮符号，由JIS B 0121-1999(齿轮符号)规定。

关于齿轮的术语由JIS B 0102 (齿轮术语) 规定。

With regard to the Vocabulary of gear for gear calculation, define JIS B 0121-1999(Gear vocabulary).

With regard to the Gear terms, define JIS B 0102(Gear terms)

关于直线和圆周方面的相关尺寸 The relative dimension of the Rectilinear and Circumference

| 齿轮术语<br>Gear Terms                     | 符号<br>Vocabularies |
|--|--------------------|
| 中心距离<br>center distance                | $a$                |
| 统称齿距时<br>when you call pitch           | $P$                |
| 分度圆齿距<br>reference pitch               | $P$                |
| 端面齿距<br>transverse pitch               | $P_t$              |
| 法向齿距<br>normal pitch                   | $P_n$              |
| 轴向齿距<br>axial pitch                    | $P_x$              |
| 法向齿距 (基圆齿距)<br>base pitch              | $P_b$              |
| 端面法向齿距<br>transverse base pitch        | $P_{bt}$           |
| 法向公法线齿距<br>normal base pitch           | $P_{bn}$           |
| 齿高<br>tooth depth                      | $h$                |
| 齿顶高<br>addendum                        | $h_a$              |
| 齿根高<br>dedendum                        | $h_f$              |
| 固定弦齿高<br>chordal addendum              | $h$                |
| 啮合齿高<br>working tooth depth            | $h'$               |
| 统称齿厚时<br>when you call tooth thickness | $s$                |
| 齿厚<br>tooth thickness                  | $s$                |
| 基圆上的齿厚<br>base circle                  | $s_b$              |
| 固定弦齿厚<br>chordal tooth thickness       | $s$                |
| 公法线齿厚<br>sector span                   | $w$                |
| 分度圆槽宽<br>spacewidth                    | $e$                |
| 齿顶间隙<br>bottom clearance               | $c$                |
| 周向侧隙<br>circumferential backlash       | $j$                |
| 法向侧隙<br>normal backlash                | $j_n$              |
| 齿宽<br>facewidth                        | $b$                |
| 有效齿宽<br>effective facewidth            | $b'$ 和 $b_w$       |
| 蜗杆导程<br>lead                           | $P_z$              |
| 啮合长度<br>length of path of contact      | $g_a$              |
| 渐近啮合长度<br>length of approach path      | $g_f$              |
| 渐远啮合长度<br>length of recess path        | $g_a$              |
| 重叠啮合长度<br>overlap length               | $g_\beta$          |
| 统称直径时<br>when you call diameter        | $d$                |
| 分度圆直径<br>reference diameter            | $d$                |
| 啮合圆 (节圆) 直径<br>working pitch diameter  | $d'$ 和 $d_w$       |
| 齿顶圆直径<br>tip diameter                  | $d_a$              |
| 基圆直径<br>base diameter                  | $d_b$              |
| 齿根圆直径<br>root diameter                 | $d_f$              |
| 齿根圆直径<br>when you call radius          | $r$                |
| 分度圆半径<br>reference radius              | $r$                |
| 啮合圆 (节圆) 半径<br>working pitch radius    | $r'$ 和 $r_w$       |
| 齿顶圆半径<br>tip radius                    | $r_a$              |
| 基圆半径<br>base radius                    | $r_b$              |
| 齿根圆半径<br>root radius                   | $r_f$              |
| 曲率半径<br>curvature radius               | $\rho$             |
| 统称锥距<br>when you call cone distance    | $R$                |
| 锥距<br>cone distance                    | $R_c$              |
| 中点锥距<br>mean cone distance             | $R_m$              |
| 内锥距<br>inner cone distance             | $R_i$              |
| 背锥距<br>back cone distance              | $R_v$              |
| 装配距离<br>locating distance              | $A$                |

角度相关尺寸 The Angulars

| 齿轮术语<br>Gear Terms                        | 符号<br>Vocabularies     |
|---|------------------------|
| 统称压力角时<br>when you call pressure angle    | $\alpha$               |
| 分度圆压力角<br>reference pressure angle        | $\alpha$               |
| 啮合压力角<br>working pressure angle           | $\alpha'$ 和 $\alpha_w$ |
| 刀具压力角<br>cutter pressure angle            | $\alpha_o$             |
| 端面压力角<br>transverse pressure angle        | $\alpha_t$             |
| 法向压力角<br>normal pressure angle            | $\alpha_n$             |
| 轴向压力角<br>axial pressure angle             | $\alpha_x$             |
| 统称螺旋角时<br>when you call helix angle       | $\beta$                |
| 分度圆螺旋角<br>reference cylinder helix angle  | $\beta$                |
| 齿顶圆螺旋角<br>tip cylinder helix angle        | $\beta_a$              |
| 基圆螺旋角<br>base cylinder helix angle        | $\beta_b$              |
| 统称蜗杆中圆柱导程角时<br>when you call lead angle   | $\gamma$               |
| 中圆柱导程角<br>reference cylinder lead angle   | $\gamma$               |
| 齿顶圆导程角<br>tip cylinder lead angle         | $\gamma_a$             |
| 基圆导程角<br>base cylinder lead angle         | $\gamma_b$             |
| 轴交角<br>shaft angle                        | $\Sigma$               |
| 统称圆锥角时<br>when you call angle             | $\delta$               |
| 螺距角<br>pitch angle                        | $\delta$               |
| 顶锥角<br>tip angle                          | $\delta_s$             |
| 根锥角<br>root angle                         | $\delta_f$             |
| 齿顶角<br>addendum angle                     | $\theta_a$             |
| 齿根角<br>dedendum angle                     | $\theta_f$             |
| 端面作用角<br>transverse angle of transmission | $\phi_a$               |
| 重叠角<br>overlap angle                      | $\phi_\beta$           |
| 总作用角<br>total angle of transmission       | $\phi_\gamma$          |
| 冕状齿轮的齿距角<br>angle pitch of crown gear     | $\tau$                 |
| 渐开线 $\alpha$                              | $\text{inv } \alpha$   |

齿数和齿轮比 The Number of teeth and Gear ratio

| 齿轮术语<br>Gear Terms                                   | 符号<br>Vocabularies |
|--|--------------------|
| 齿数<br>number of teeth                                | $z$                |
| 当量直齿轮齿数<br>equivalent number of teeth                | $z_v$              |
| 条数或小齿轮齿数<br>number of thread                         | $z_1$              |
| 齿数比<br>gear ratio                                    | $u$                |
| 速度传送比<br>transmission ratio                          | $i$                |
| 模数<br>module   | $m$                |
| 端面模数<br>transverse module                            | $m_t$              |
| 法向模数<br>normal module                                | $m_n$              |
| 轴向模数<br>axial module                                 | $m_x$              |
| 啮合率<br>contact ratio                                 | $\epsilon$         |
| 端面啮合率<br>transverse contact ratio                    | $\epsilon_a$       |
| 重叠啮合率<br>overlap contact ratio                       | $\epsilon_\beta$   |
| 总啮合率<br>total contact ratio                          | $\epsilon_\gamma$  |
| 滑移率<br>specific sliding                              | $\sigma$           |
| 角速度<br>angular velocity                              | $\omega$           |
| 线速度<br>linear velocity                               | $v$                |
| 转速<br>revolution per minute                          | $n$                |
| 变位系数<br>rack shift coefficient                       | $x$                |
| 中心距离变位系数<br>center distance modification coefficient | $y$                |

# 与 KG 变位直齿轮相互啮合时的直齿轮和齿条的推荐中心距离

## 与KG变位直齿轮相互啮合时的直齿轮的推荐中心距离表（单位mm）

关于本表格：本表格所表现的是模数m=1的时候，不同齿数齿轮相互啮合的中心距离ax。

当齿轮模数变化时请在具体数据上乘以相应模数。例：模数为2，两个齿轮的齿数为8时，中心距离为 8.779×2(模数)。

(目前KG公司的模数1以上的变位直齿轮的变位系数为X=0.5。)

| 齿数   | 8变位    | 9变位    | 10变位   | 11变位   |
|------|--------|--------|--------|--------|
| 8变位  | 8.779  | 9.286  | 9.792  | 10.298 |
| 9变位  | 9.286  | 9.792  | 10.299 | 10.804 |
| 10变位 | 9.792  | 10.299 | 10.804 | 11.310 |
| 11变位 | 10.299 | 10.804 | 11.310 | 11.815 |
| 12   | 10.437 | 10.939 | 11.441 | 11.943 |
| 13   | 10.939 | 11.441 | 11.943 | 12.445 |
| 14   | 11.441 | 11.953 | 12.445 | 12.946 |
| 15   | 11.943 | 12.445 | 12.946 | 13.448 |
| 16   | 12.445 | 12.946 | 13.448 | 13.949 |
| 17   | 12.946 | 13.448 | 13.949 | 14.451 |
| 18   | 13.448 | 13.949 | 14.451 | 14.952 |
| 19   | 13.949 | 14.451 | 14.952 | 15.453 |
| 20   | 14.451 | 14.952 | 15.453 | 15.954 |
| 21   | 14.952 | 15.453 | 15.954 | 16.455 |
| 22   | 15.453 | 15.954 | 16.455 | 16.956 |
| 23   | 15.954 | 16.455 | 16.956 | 17.457 |
| 24   | 16.455 | 16.956 | 17.457 | 17.958 |
| 25   | 16.956 | 17.457 | 17.958 | 18.459 |
| 26   | 17.457 | 17.958 | 18.459 | 18.960 |
| 27   | 17.958 | 18.459 | 18.960 | 19.461 |
| 28   | 18.459 | 18.960 | 19.461 | 19.962 |
| 29   | 18.960 | 19.461 | 19.962 | 20.463 |
| 30   | 19.461 | 19.962 | 20.463 | 20.963 |
| 32   | 20.463 | 20.963 | 21.464 | 21.965 |
| 34   | 21.464 | 21.965 | 22.465 | 22.966 |
| 35   | 21.965 | 22.465 | 22.966 | 23.467 |
| 36   | 22.465 | 22.966 | 23.467 | 23.967 |
| 38   | 23.467 | 23.967 | 24.468 | 24.968 |
| 40   | 24.468 | 24.968 | 25.469 | 25.969 |
| 42   | 25.469 | 25.969 | 26.470 | 26.970 |
| 44   | 26.470 | 26.970 | 27.471 | 27.971 |

| 齿数  | 8变位    | 9变位    | 10变位   | 11变位   |
|-----|--------|--------|--------|--------|
| 45  | 26.970 | 27.471 | 27.971 | 28.472 |
| 46  | 27.471 | 27.971 | 28.472 | 28.972 |
| 48  | 28.472 | 28.972 | 29.473 | 29.973 |
| 50  | 29.473 | 29.973 | 30.473 | 30.974 |
| 52  | 30.473 | 30.974 | 31.474 | 31.974 |
| 54  | 31.474 | 31.974 | 32.475 | 32.975 |
| 55  | 31.974 | 32.475 | 32.975 | 33.475 |
| 56  | 32.475 | 32.975 | 33.475 | 33.976 |
| 58  | 33.475 | 33.976 | 34.476 | 34.976 |
| 60  | 34.476 | 34.976 | 35.477 | 35.977 |
| 62  | 35.477 | 35.977 | 36.477 | 36.977 |
| 64  | 36.477 | 36.977 | 37.478 | 37.978 |
| 65  | 36.977 | 37.478 | 37.978 | 38.478 |
| 66  | 37.478 | 37.978 | 38.478 | 38.979 |
| 68  | 38.478 | 38.979 | 39.479 | 39.979 |
| 70  | 39.479 | 39.979 | 40.879 | 40.979 |
| 72  | 40.479 | 40.979 | 41.480 | 41.980 |
| 75  | 41.980 | 42.480 | 42.980 | 43.480 |
| 80  | 44.481 | 44.981 | 45.481 | 45.981 |
| 84  | 49.482 | 46.982 | 47.482 | 47.982 |
| 85  | 46.982 | 47.482 | 47.982 | 48.482 |
| 90  | 49.483 | 49.983 | 50.483 | 50.983 |
| 95  | 51.983 | 52.483 | 52.984 | 53.484 |
| 96  | 52.483 | 52.984 | 53.484 | 53.984 |
| 100 | 54.484 | 54.984 | 55.484 | 55.985 |
| 105 | 56.985 | 57.485 | 57.985 | 58.485 |
| 108 | 58.485 | 58.985 | 59.485 | 59.985 |
| 110 | 59.485 | 59.985 | 60.485 | 60.986 |
| 112 | 60.485 | 60.986 | 61.486 | 61.986 |
| 115 | 61.986 | 62.486 | 62.986 | 63.486 |
| 120 | 64.486 | 64.987 | 65.487 | 65.987 |

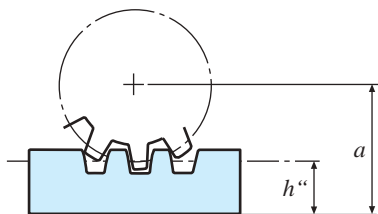
## 与KG公司变位直齿轮相互啮合的齿条的装配距离

$$a = h'' + \frac{m \times z}{2} + xm$$

请确认这里

- a : 装配距离（从齿条底部到直齿轮中心的距离）
- h'' : 齿条的啮合高度（具体数据请确认产品目录齿条部分）

- m : 模数
  - x : 变位系数
  - z : 齿数
- （模数1以上时  
齿数8~11时变位系数X=0.5。  
齿数12以上为变位系数X=0。）





## 齿轮系统 GEAR SYSTEMS

# HY-BOX B-BOX® W-BOX B-SET

图案设计注册完毕  
Registered of TRADE MARK

### 产品型号的解读方法 Reference of Catalogue Number

WS 75 R - 040  
HY 70 R - 005  
BS 45 L - 001  
BS 80 T - 002  
BSH 140 L - 001  
BE 40 L - 001  
BE 70 L - 002 B

| 齿轮的种类<br>Kind of Product  | 从背面到轴端的距离<br>Distance from back face to shaft end | 轴的位置与整体形状类型<br>Direction of Shaft Type of Body   | 齿数比<br>Gear Ratio   | 轴的粗细类型<br>Identification of Shaft diameter   |
|---|---|--|---|--|
| HY : Hypoid Gearbox (准双曲面齿轮箱)<br>BS : Bevel Gearbox (锥齿轮箱)<br>BSH : Bevel Gearbox (锥齿轮箱)<br>BE : Bevel Gear Set (锥齿轮组)<br>WS : Worm Gearbox (蜗杆齿轮箱) | 单位 : mm<br>Dimension : millimeter                 | R : R型 (HY齿轮箱或WS齿轮箱时) 输出轴的所在位置<br>R : Pinion shaft is shown on the front, and gear shaft is shown on the right side.<br>L : L型 (指齿轮箱形状)<br>L : Type L<br>T : T型 (指齿轮箱形状)<br>T : Type T | 001 : (齿数比 1 : 1)<br>001 : (ratio 1 : 1)<br>002 : (齿数比 2 : 1)<br>002 : (ratio 2 : 1)<br>005 : (齿数比 5 : 1)<br>005 : (ratio 5 : 1)<br>010 : (齿数比10 : 1)<br>010 : (ratio 10 : 1) | A : 轴的直径较细<br>A : Shaft diameter is small.<br>B : 轴的直径较粗<br>B : Shaft diameter is large. |

### 齿轮箱系统的特征

#### The Feature of Gear Systems

- 1) 采用了紧凑而简单的设计。
  - 2) 因为齿轮箱完全封闭，不仅有防尘作用，而且有保障操作与运转安全的功能。
  - 3) 内藏高精度KG齿轮，在主装时进行了精准的嵌入和固定。在侧隙方面BS类型在15' ~ 20'以下。BSH类型在10' ~ 15'以下，HY-BOX类型在20'以下、W-BOX在25' ~ 40'以下。(齿数比在2以上时，所述侧隙是齿轮轴方向的侧隙。)
  - 4) 此类产品带有固定用螺纹孔，可以简单的进行固定安装。
  - 5) 大部分产品的润滑方式为齿轮箱内封润滑脂。(BS类型产品没有进行封油措施。W-BOX产品使用润滑油润滑。)
  - 6) 齿轮箱旋转时有一定的噪音，但多数属于正常范围。原因是由于油脂移位引起。
  - 7) 本系列产品写入的侧隙为KG公司装配时的侧隙。
- 1) Compact and Simple design.
  - 2) Completely sealed casing provide safety and dust free during operation.
  - 3) With built in accuracy of KG-Bevel Gear, when assembled gearbox, backlash of assembly provided 15' to 20' and less for BS type. 10' to 15' and less for BSH type, and 20' for HY-BOX, 25' to 40' for W-BOX. (The above values shown a gear axes side backlash, if gearbox with ratio for 2 or more.)
  - 4) Come with pre tap holes for easy mounting.
  - 5) Lubricated with high quality grease before sealed.(The oilseal of BS type is not provided.) (W-BOX is oil lubrication.)

### 安装时的注意事项与基准面

#### Precaution of Mounting base and Installation.

- 1) B-BOX, HY-BOX, W-BOX的任何一面都可以作为安装基准面。B-SET则只能以两侧为安装基准面。
  - 2) 当把齿轮箱和齿轮组安装到基准面时，需确保齿轮轴与对方轴之间的平衡，同时轴芯要对上。建议其同轴度 (Coaxiality) 的误差在0.05mm。
  - 3) 连接齿轮轴和对方轴时。请使用拥有良好柔软性的联轴器，才能减少平衡度误差，并更加容易装配。
  - 4) 需要选择耐震，稳定的安装基座。需要提高安装基座的刚性。
  - 5) 请安装于通风良好的环境。建议使用环境：B-BOX在摄氏-20度~ 50度；HY-BOX, W-BOX在-10度~ 40度。
  - 6) 不要让齿轮受到任何形式的径向力或轴向力。
  - 7) 开始使用后会有侧隙增加的倾向，但这属于正常的变化。
- 1) All of surface on the body for B-BOX and HY-BOX, W-BOX can be used as mounting base. The mounting base of B-SET is both sides of body.
  - 2) When assembly of Gear Systems to the match base, provide accurate parallelism and shaft center between gear shaft and match shaft. Accuracy of alignment 0.05 millimeters and less recommended.
  - 3) When connecting B-BOX to match shaft with the coupling. The flexible coupling will reduce misalignment and easy installation.
  - 4) Prevent vibration and provide stable mounting base.
  - 5) The surrounding of well ventilated area, temperature of -20°C to 50°C for B-BOX, and -10°C to 40°C for HY-BOX, W-BOX are recommended.

### 使用中的注意事项

#### Precaution of the Usage

- 1) 运行过程中绝对不要触摸箱体。并注意防止加工在轴部的键槽和露出在外的弧形扣环吸卷异物。
  - 2) 使用时如果出现异常音或齿轮箱体温度异常上升等情况，请立即停止运行，并加以确认和改善出现异常的原因之后再次运行。
  - 3) B-SET如果处于可以运行或要开始运行的状态时，请务必把所附属的简易塑料壳装到B-SET上。如果因运行中的振动或者其他原因，导致塑料壳脱离时，建议用螺丝将塑料壳固定，以避免发生事故。如果所附属的塑料壳出现老化，请购买新的塑料壳。(另有销售)
  - 4) 我们建议在正式运行B-BOX, HY-BOX, W-BOX之前，先进行跑合运转。具体方法是用正常符合的1/2 ~ 1/3负荷运行6个小时以上。
  - 5) 用于增速 (传动) 时，比用于等速和减速时温度和噪音更容易上升。另外所传达的动力也会相应变少。
- 1) Do not touch the gearbox, shaft and key during operation.
  - 2) Stop operation and check fault if there is any problems such as unusual noise and high temperature occur from the gearbox. Do not start the machine until the fault has been clarified.
  - 3) Make sure that body of B-SET properly covered by plastic, we recommend mounting holes to be tightened with screws on the plastic cover to prevent vibrations and other causes to occur during operation. Plastic cover is available for purchase as spare parts for maintenance used when time to be replaced and the aged deterioration.
  - 4) To warm up B-BOX and HY BOX, W-BOX we recommend to apply 1/2 to 1/3 of normal loads for over six hours.
  - 5) Power to output shaft, noise level and temperature will increase when gear is rotating at high speed and the power transfer will also be decreased. The opposite is true at low speed.



### 追加工时的注意事项

#### Precaution of Additional Works.

- 1) 为了防止追加工时金属屑等掉入轴承部，请先做好防尘措施，然后再进行加工。
  - 2) 当对齿轮轴进行追加工时，请注意不要使齿轮轴和其他部分变形。要注意保护好封油圈。另外对外壳进行追加工时，为了避免产生意外损害，在加工前请与我司联系。
- 1) Before machining, ensure that the bearing portion is covered, so that waste objects will not be inserted into.
  - 2) Beware of shaft deformation and other parts when additional machining works on the body and tap hole. To avoid damage of the gearbox, please contact us before machining job.

### 关于动力传输

#### Reading the Power Transfer.

- 1) 为了让B-BOX (BS和BSH)， B-SET， HY-BOX发挥最大的性能，以及达到理想的使用寿命。事先请确认容许传达能力扭矩表。并在表格中所表示的转速和扭矩以下进行实际运行。
  - 2) 使用中请注意不要让B-BOX (BS) B-SET， HY-BOX， W-BOX的小齿轮轴受到径向力或轴向力。这些轴如果受到径向力，请考虑另设可承受其负荷的机构。  
关于B-BOX (BSH)， HY-BOX， W-BOX的齿轮轴的径向力负荷，请确认别图的径向力负荷容许值以及其负荷作用位置。
  - 3) 容许动力传递表的数据是KG公司公司内自行测定的结果。
- 1) For best performance and lifespan of the B-BOX (BS and BSH), B-SET, HY-BOX and W-BOX, please refer to the Allowable transfer capability torque table. Regarding the range of Input torque (N.cm) and Input revolution/min for B-BOX (BS and BSH), B-SET, HY-BOX and W-BOX should not exceed the figures indicated inside the Allowable transfer capability torque table.
  - 2) Avoid overhang load and thrust load to axes of B-BOX(BS), B-SET, HY-BOX and W-BOX following installation method. For allowable amount of overhang load and location of load on the gear axes, please refer to the catalogue. In case there are overhang and thrust load, it is necessary to design an extra preventable equipment.

### 齿轮的输入输出速度比和齿轮的平面图

#### Gear layout (Input, Output and Ratio)

| 齿数比<br>Ratio  | L 形状<br>Type L  | T 形状<br>Type T  |
|---|---|---|
| X 轴为输入轴<br>X shaft as input shaft<br><br><b>2 : 1</b><br><br>旋转方向不定，正反均可<br>Reversible Rotation | <p>X 轴 (小 轮)<br/>X Shaft (Pinion)</p> <p>Y 轴 (大 轮)<br/>Y Shaft (Gear)</p> | <p>X 轴 (小 轮)<br/>X Shaft (Pinion)</p> <p>Y 轴 (大 轮)<br/>Y Shaft (Gear)</p> |
| <b>1 : 1</b><br><br>旋转方向不定，正反均可<br>Reversible Rotation  | <p>X 轴<br/>X Shaft (Pinion)</p> <p>Y 轴<br/>Y Shaft</p>                    | <p>X 轴<br/>X Shaft</p> <p>Y 轴<br/>Y Shaft</p>                             |

本产品会在功能上没有障碍的情况下会进行尺寸变更，恕不另行通知。  
Dimensions and descriptions of KG Bevel Gear Components are subject to change without notice.

# HY-BOX : 准双曲面齿轮箱

## HY-BOXES



GEAR BOX

### 内部准双曲面齿轮说明

| 产品型号       | 小齿轮         | 齿轮           |
|------------|-------------|--------------|
| HY70R-005  | m 0.75 × 8T | m 0.75 × 40T |
| HY90R-010  | m 0.71 × 7T | m 0.71 × 70T |
| HY95R-005  | m 1.1 × 8T  | m 1.1 × 40T  |
| HY120R-010 | m 1.0 × 7T  | m 1.0 × 70T  |
| HY125R-005 | m 1.5 × 8T  | m 1.5 × 40T  |
| HY150R-010 | m 1.45 × 6T | m 1.45 × 60T |

内部齿轮种类：准双曲面齿轮

齿轮标记的说明：m1.0×20T时意味模数为1，齿数20。

单位：mm

| 外壳材料               | 外壳表面处理 | 输入轴材料        | 输出轴材料 | 润滑方式  | 侧隙     |
|--------------------|--------|--------------|-------|-------|--------|
| 铝 (A5052P · A5056) | 黑色阳极氧化 | SCM435 · 440 | S45C  | 封入润滑脂 | 20' 以下 |

★ KG 齿轮箱是以小齿轮为输入轴，大齿轮为输出轴来设计的。

★轴的旋转方向：HY-BOX 以输入轴端面为正面，将输入轴以顺时针方向旋转时，输出轴会逆时针方向旋转。反之亦然。请确认参考图。

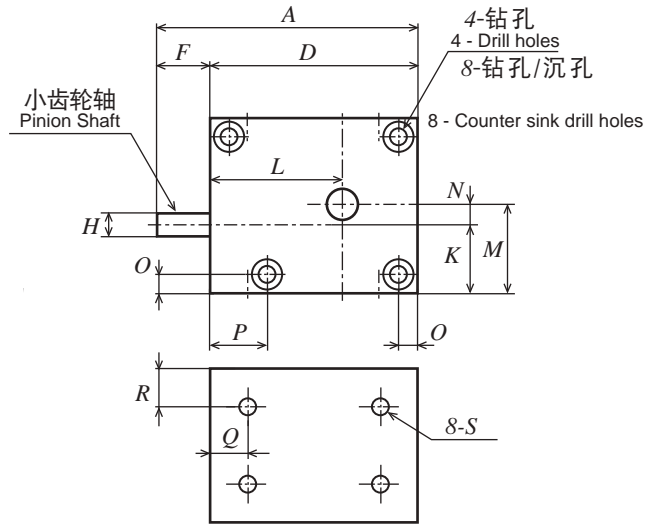
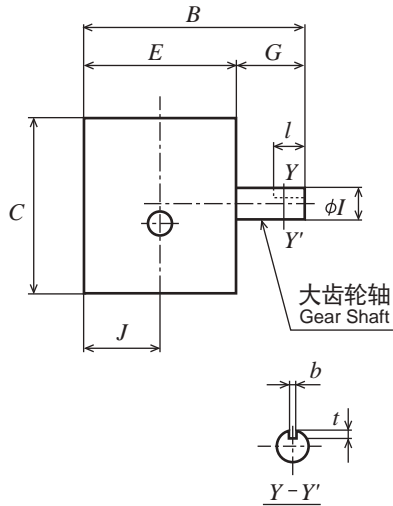
★侧隙为：固定输入轴后测定输出轴所得出的侧隙。

| 产品型号<br>Catalogue Number | 齿数比<br>Gear Ratio | A   | B  | C  | D   | E  | F  | G  | 轴直径<br>Shaft        |                     | J    | K    | L  | M    |
|--------------------------|-------------------|-----|----|----|-----|----|----|----|---------------------|---------------------|------|------|----|------|
|                          |                   |     |    |    |     |    |    |    | 输入轴<br>$\phi H(h7)$ | 输出轴<br>$\phi I(h7)$ |      |      |    |      |
| HY 70R - 005             | 5                 | 70  | 58 | 45 | 55  | 40 | 15 | 18 | $\phi 6$            | $\phi 8$            | 20   | 17.5 | 36 | 22.5 |
| HY 90R - 010             | 10                | 90  | 68 | 60 | 75  | 50 | 15 | 18 | $\phi 6$            | $\phi 8$            | 25   | 20   | 47 | 30   |
| HY 95R - 005             | 5                 | 95  | 75 | 60 | 75  | 50 | 20 | 25 | $\phi 8$            | $\phi 12$           | 25   | 20   | 49 | 30   |
| HY 120R - 010            | 10                | 120 | 80 | 80 | 100 | 55 | 20 | 25 | $\phi 8$            | $\phi 12$           | 27.5 | 25   | 62 | 40   |
| HY 125R - 005            | 5                 | 125 | 85 | 80 | 100 | 55 | 25 | 30 | $\phi 12$           | $\phi 15$           | 27.5 | 30   | 65 | 40   |
| HY 150R - 010            | 10                | 150 | 90 | 95 | 125 | 60 | 25 | 30 | $\phi 12$           | $\phi 15$           | 30   | 32.5 | 77 | 47.5 |

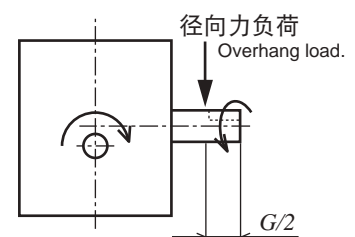
### 容许传达能力 输入扭矩表

Allowable transfer capability torque table

| 产品型号<br>Catalogue Numbers | 输入转动速度min <sup>-1</sup> (rpm)和输入扭矩 (N · cm)<br>Input Revolution/min Input Torque (N · cm) |        |        |        |          |          |          |          |
|---------------------------|---|--------|--------|--------|----------|----------|----------|----------|
|                           | 100rpm  | 250rpm | 500rpm | 800rpm | 1,000rpm | 1,500rpm | 2,000rpm | 2,500rpm |
| HY 70R - 005              | 76.0  | 71.8   | 66.0   | 59.0   | 53.9     | 44.2     | 36.6     | 28.4     |
| HY 90R - 010              | 75.8  | 70.8   | 63.8   | 56.0   | 50.7     | 41.3     | 34.3     | 27.3     |
| HY 95R - 005              | 247.4   | 232.1  | 211.8  | 187.7  | 170.3    | 137.7    | 112.6    | 86.0     |
| HY 120R - 010             | 186.3   | 172.7  | 155.7  | 136.6  | 123.5    | 100.0    | 82.7     | 65.0     |
| HY 125R - 005             | 414.8   | 400.6  | 377.6  | 345.4  | 319.8    | 266.9    | 223.0    | 173.9    |
| HY 150R - 010             | 357.2   | 336.1  | 307.3  | 272.1  | 246.5    | 197.5    | 159.2    | 118.1    |



| 偏移<br>offset | N  | O  | P  | Q  | R  | 螺纹孔<br>Set Screw |             |                               | Counter Sinks & Drill Holes     |                               |   | 键槽<br>Key Way |    |    | 侧隙<br>Backlash | 径向力负荷容许量<br>Maximum overhang load<br>(N) | 重量<br>Weight<br>W(kg) | 产品型号<br>Catalogue Number |
|--------------|----|----|----|----|----|------------------|-------------|-------------------------------|---------------------------------|-------------------------------|---|---------------|----|----|----------------|--|-----------------------|--------------------------|
|              |    |    |    |    |    | 8-S              | 深度<br>Depth | 钻孔径<br>Drill Hole<br>Diameter | 沉孔径<br>Counter Sink<br>Diameter | 沉孔深度<br>Counter Sink<br>Depth | b | t             | l  |    |                |  |                       |                          |
| 5            | 5  | 14 | 10 | 10 | 10 | 8-M3             | 5           | φ3.2                          | φ6.5                            | 3.2                           | - | -             | -  | 20 | 19             | 0.3                                      | HY 70R - 005          |                          |
| 10           | 7  | 26 | 12 | 12 | 12 | 8-M4             | 6           | φ4.2                          | φ8.0                            | 4.3                           | - | -             | -  |    | 19             | 0.6                                      | HY 90R - 010          |                          |
| 10           | 7  | 28 | 12 | 12 | 12 | 8-M4             | 6           | φ4.2                          | φ8.0                            | 4.3                           | - | -             | -  |    | 39             | 0.7                                      | HY 95R - 005          |                          |
| 15           | 10 | 27 | 15 | 12 | 12 | 8-M5             | 8           | φ5.2                          | φ9.5                            | 5.3                           | - | -             | -  |    | 39             | 1.3                                      | HY 120R - 010         |                          |
| 10           | 10 | 27 | 18 | 12 | 12 | 8-M5             | 8           | φ5.2                          | φ9.5                            | 5.3                           | 5 | 3             | 20 |    | 54             | 1.4                                      | HY 125R - 005         |                          |
| 15           | 10 | 27 | 20 | 12 | 12 | 8-M5             | 8           | φ5.2                          | φ9.5                            | 5.3                           | 5 | 3             | 20 |    | 54             | 2.2                                      | HY 150R - 010         |                          |



径向力负荷位置和旋转方向  
Load position of overhang and direction of the rotation.

# BS-BOX : 锥齿轮箱

## B-BOXES (BS)

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 齿箱信息 INFORMATION  
 齿箱 GEAR BOXES  
 齿轴 ANTI BACKLASH SPUR GEARS  
 齿轴 GROUND SPUR GEARS  
 齿轴 SPUR GEARS  
 齿轴 RACKS  
 齿轴 INTERNAL GEARS  
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GEAR BOX

### 内部直齿锥齿轮说明

| 产品型号                  | 小齿轮          | 齿轮           |
|-----------------------|--------------|--------------|
| BS35L-001             | m 0.4 × 20T  | m 0.4 × 20T  |
| BS45L-001/BS45T-001   | m 0.5 × 20T  | m 0.5 × 20T  |
| BS65L-001/BS65T-001   | m 0.8 × 20T  | m 0.8 × 20T  |
| BS80L-001/BS80T-001   | m 1.0 × 20T  | m 1.0 × 20T  |
| BS90L-001/BS90T-001   | m 1.25 × 20T | m 1.25 × 20T |
| BS105L-001/BS105T-001 | m 1.5 × 20T  | m 1.5 × 20T  |
| BS65L-002/BS65T-002   | m 0.6 × 14T  | m 0.6 × 28T  |
| BS80L-002/BS80T-002   | m 0.8 × 13T  | m 0.8 × 26T  |
| BS90L-002/BS90T-002   | m 1.0 × 13T  | m 1.0 × 26T  |
| BS105L-002/BS105T-002 | m 1.25 × 13T | m 1.25 × 26T |

内部齿轮种类：直齿锥齿轮

齿轮标记的说明：m1.0×20T 时意味模数为 1，齿数 20。

单位：mm

| 外壳材料                      | 外壳表面处理 | 输入轴材料  | 输出轴材料  | 润滑方式  | 侧隙           |
|---------------------------|--------|--------|--------|-------|--------------|
| 铝 (A5056 · A6061 · A6063) | 黑色阳极氧化 | SUS303 | SUS303 | 封入润滑脂 | 15' ~ 20' 以下 |

★ KG 齿轮箱是以小齿轮为输入轴，大齿轮为输出轴来设计的。

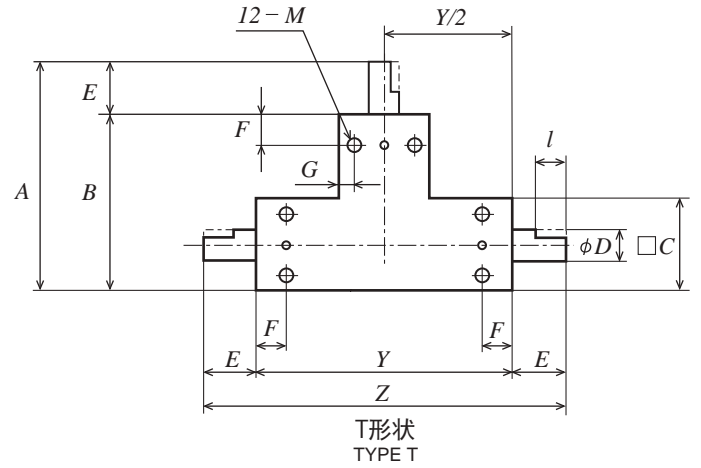
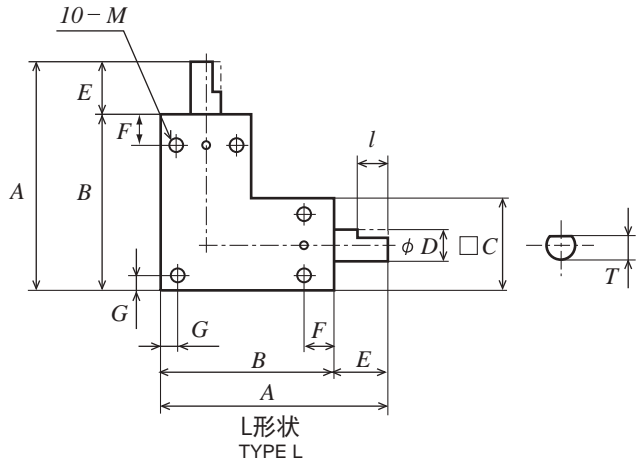
★侧隙为：固定输入轴后测定输出轴所得出的侧隙。各个产品的侧隙量请在产品型号表格中确认。

★ D 型轴并无位相。

| 产品型号<br>Catalogue Number | 形状<br>Type | 齿数比<br>Gear Ratio |     |     |    |     |    | 输入·输出<br>轴 径<br>Shaft<br>φD(h7) | E  |
|--------------------------|------------|-------------------|-----|-----|----|-----|----|---------------------------------|----|
|                          |            |                   | Z   | Y   | C  | A   | B  |                                 |    |
| BS 35 L - 001            | L          | 1                 | -   | -   | 14 | 35  | 27 | φ 3                             | 8  |
| BS 45 L - 001            |            |                   | -   | -   | 18 | 45  | 33 | φ 4                             | 12 |
| BS 65 L - 001            |            |                   | -   | -   | 25 | 65  | 50 | φ 6                             | 15 |
| BS 80 L - 001            |            |                   | -   | -   | 30 | 80  | 60 | φ 8                             | 20 |
| BS 90 L - 001            |            |                   | -   | -   | 35 | 90  | 70 | φ 10                            | 20 |
| BS 105 L - 001           |            |                   | -   | -   | 40 | 105 | 80 | φ 12                            | 25 |
| BS 65 L - 002            | L          | 2                 | -   | -   | 25 | 65  | 50 | φ 6                             | 15 |
| BS 80 L - 002            |            |                   | -   | -   | 30 | 80  | 60 | φ 8                             | 20 |
| BS 90 L - 002            |            |                   | -   | -   | 35 | 90  | 70 | φ 10                            | 20 |
| BS 105 L - 002           |            |                   | -   | -   | 40 | 105 | 80 | φ 12                            | 25 |
| BS 45 T - 001            | T          | 1                 | 72  | 48  | 18 | 45  | 33 | φ 4                             | 12 |
| BS 65 T - 001            |            |                   | 105 | 75  | 25 | 65  | 50 | φ 6                             | 15 |
| BS 80 T - 001            |            |                   | 130 | 90  | 30 | 80  | 60 | φ 8                             | 20 |
| BS 90 T - 001            |            |                   | 145 | 105 | 35 | 90  | 70 | φ 10                            | 20 |
| BS 105 T - 001           |            |                   | 170 | 120 | 40 | 105 | 80 | φ 12                            | 25 |
| BS 65 T - 002            | T          | 2                 | 105 | 75  | 25 | 65  | 50 | φ 6                             | 15 |
| BS 80 T - 002            |            |                   | 130 | 90  | 30 | 80  | 60 | φ 8                             | 20 |
| BS 90 T - 002            |            |                   | 145 | 105 | 35 | 90  | 70 | φ 10                            | 20 |
| BS 105 T - 002           |            |                   | 170 | 120 | 40 | 105 | 80 | φ 12                            | 25 |

### 容许传达能力 输入扭矩表 Allowable transfer capability torque table

| 产品型号<br>Catalogue Numbers |               | 输入转动速度min <sup>-1</sup> (rpm)和输入扭矩 (N · cm)<br>Input Revolution/min Input Torque (N · cm) |        |        |        |        |          |          |          |
|---------------------------|---------------|---|--------|--------|--------|--------|----------|----------|----------|
|                           |               | 50rpm   | 100rpm | 250rpm | 500rpm | 800rpm | 1,000rpm | 1,500rpm | 2,000rpm |
| BS 35 L - 001             |               | 7.1   | 7.0    | 6.8    | 6.5    | 6.2    | 6.0      | 5.5      | 5.3      |
| BS 45 L - 001             | BS 45 T - 001 | 18.7  | 18.6   | 18.1   | 17.3   | 16.5   | 16.0     | 15.0     | 14.0     |
| BS 65 L - 001             | BS 65 T - 001 | 73.7  | 72.6   | 69.8   | 65.6   | 61.0   | 58.4     | 52.6     | 47.9     |
| BS 80 L - 001             | BS 80 T - 001 | 137.9   | 135.6  | 129.1  | 119.5  | 109.7  | 104.0    | 92.0     | 82.6     |
| BS 90 L - 001             | BS 90 T - 001 | 271.8   | 266.1  | 250.4  | 228.0  | 205.8  | 193.3    | 167.8    | 148.2    |
| BS 105L - 001             | BS 105T - 001 | 442.6   | 431.6  | 401.6  | 360.0  | 320.1  | 298.1    | 254.3    | 221.9    |
| BS 65 L - 002             | BS 65 T - 002 | 20.2  | 20.1   | 19.7   | 19.0   | 18.3   | 17.8     | 16.7     | 15.7     |
| BS 80 L - 002             | BS 80 T - 002 | 39.8  | 39.5   | 38.4   | 36.8   | 35.1   | 34.0     | 31.5     | 29.5     |
| BS 90 L - 002             | BS 90 T - 002 | 77.6  | 76.7   | 74.3   | 70.5   | 66.4   | 64.0     | 58.6     | 54.0     |
| BS 105 L - 002            | BS 105T - 002 | 141.5   | 139.6  | 134.0  | 125.7  | 116.9  | 111.7    | 100.7    | 91.5     |



| F  | G   | 轴端形状<br>Shape of Shaft end |     |   | 螺纹孔<br>Set Screw |             | 侧隙<br>Backlash<br>( ' ) | 重量<br>Weight<br>W(g) | 产品型号<br>Catalogue Number |
|----|-----|----------------------------|-----|---|------------------|-------------|-------------------------|----------------------|--------------------------|
|    |     | $\phi D$                   | T   | l | M                | 深度<br>Depth |                         |                      |                          |
| 4  | 2   | D                          | 2.7 | 5 | 10-M2            | 4           | 15                      | 27                   | BS 35 L - 001            |
| 5  | 3   | D                          | 3.3 | 8 | 10-M3            | 4           |                         | 55                   | BS 45 L - 001            |
| 12 | 3.5 | $\phi$                     | -   | - | 10-M4            | 6           |                         | 175                  | BS 65 L - 001            |
| 15 | 5   | $\phi$                     | -   | - | 10-M5            | 6           |                         | 290                  | BS 80 L - 001            |
| 15 | 5   | $\phi$                     | -   | - | 10-M5            | 7           |                         | 496                  | BS 90 L - 001            |
| 20 | 5   | $\phi$                     | -   | - | 10-M6            | 7           |                         | 725                  | BS 105 L - 001           |
| 12 | 3.5 | $\phi$                     | -   | - | 10-M4            | 6           |                         | 175                  | BS 65 L - 002            |
| 15 | 5   | $\phi$                     | -   | - | 10-M5            | 6           |                         | 290                  | BS 80 L - 002            |
| 15 | 5   | $\phi$                     | -   | - | 10-M5            | 7           |                         | 496                  | BS 90 L - 002            |
| 20 | 5   | $\phi$                     | -   | - | 10-M6            | 7           |                         | 725                  | BS 105 L - 002           |
| 5  | 3   | D                          | 3.3 | 8 | 12-M3            | 4           |                         | 75                   | BS 45 T - 001            |
| 12 | 3.5 | $\phi$                     | -   | - | 12-M4            | 6           |                         | 246                  | BS 65 T - 001            |
| 15 | 5   | $\phi$                     | -   | - | 12-M5            | 6           |                         | 410                  | BS 80 T - 001            |
| 15 | 5   | $\phi$                     | -   | - | 12-M5            | 7           |                         | 679                  | BS 90 T - 001            |
| 20 | 5   | $\phi$                     | -   | - | 12-M6            | 7           |                         | 991                  | BS 105 T - 001           |
| 12 | 3.5 | $\phi$                     | -   | - | 12-M4            | 6           |                         | 246                  | BS 65 T - 002            |
| 15 | 5   | $\phi$                     | -   | - | 12-M5            | 6           |                         | 410                  | BS 80 T - 002            |
| 15 | 5   | $\phi$                     | -   | - | 12-M5            | 7           |                         | 679                  | BS 90 T - 002            |
| 20 | 5   | $\phi$                     | -   | - | 12-M6            | 7           |                         | 991                  | BS 105 T - 002           |



GEAR BOX

### 内部直齿锥齿轮说明

| 产品型号           | 小齿轮          | 齿轮           |
|----------------|--------------|--------------|
| BSB65L-001A/B  | m 0.8 × 20T  | m 0.8 × 20T  |
| BSB80L-001A/B  | m 1.0 × 20T  | m 1.0 × 20T  |
| BSB90L-001A/B  | m 1.25 × 20T | m 1.25 × 20T |
| BSB105L-001A/B | m 1.5 × 20T  | m 1.5 × 20T  |

内部齿轮种类：直齿锥齿轮

齿轮标记的说明：m1.0×20T 时意味模数为 1，齿数 20。

单位：mm

| 外壳材料                      | 外壳表面处理 | 输入轴材料  | 输出轴材料  | 润滑方式  | 侧隙     |
|---------------------------|--------|--------|--------|-------|--------|
| 铝 (A5056 · A6061 · A6063) | 黑色阳极氧化 | SUS303 | SUS303 | 封入润滑脂 | 15' 以下 |

★ KG 齿轮箱是以小齿轮为输入轴，大齿轮为输出轴来设计的。★侧隙为：固定输入轴后测定输出轴所得出的侧隙。

★ A 和 B 的区别：产品型号尾部有 B 字母的产品，相比有 A 字母的产品，孔径大 1mm 到 2mm。轴径相同。

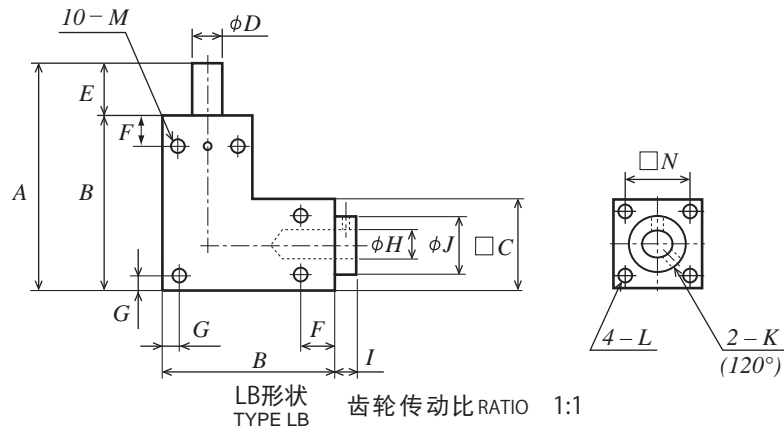
★ 与 BSB 型齿轮箱（简称 LB 型）的中空部分相连接注意点：

- ①对方轴为圆轴时，请在 120 度的（确认图纸）螺丝定位处加工平面。理由：把圆轴表面的与螺丝的接触部削平，增加与螺丝顶部接触面积。
- ②当轴为阶梯状时为了防止应力集中，请设定较大的 R（角处加工半径）。

| 产品型号<br>Catalogue Number | 形状<br>Type | 齿数比<br>Gear Ratio | □<br>C | A   | B  | 轴直径<br>Shaft<br>φD(h7) | 孔径<br>Bore |               | E  | I |
|--------------------------|------------|-------------------|--------|-----|----|------------------------|------------|---------------|----|---|
|                          |            |                   |        |     |    |                        | φH(H7)     | 有效深度<br>Depth |    |   |
| BSB 65L - 001A           | LB         | 1                 | 25     | 65  | 50 | φ 6                    | φ 5        | 15            | 15 | 5 |
| BSB 65L - 001B           |            |                   | 25     | 65  | 50 | φ 6                    | φ 6        | 15            | 15 | 5 |
| BSB 80L - 001A           |            |                   | 30     | 80  | 60 | φ 8                    | φ 6        | 19            | 20 | 5 |
| BSB 80L - 001B           |            |                   | 30     | 80  | 60 | φ 8                    | φ 8        | 19            | 20 | 5 |
| BSB 90L - 001A           |            |                   | 35     | 90  | 70 | φ 10                   | φ 8        | 19            | 20 | 6 |
| BSB 90L - 001B           |            |                   | 35     | 90  | 70 | φ 10                   | φ 10       | 19            | 20 | 6 |
| BSB 105L - 001A          |            |                   | 40     | 105 | 80 | φ 12                   | φ 10       | 23            | 25 | 6 |
| BSB 105L - 001B          |            |                   | 40     | 105 | 80 | φ 12                   | φ 12       | 23            | 25 | 6 |

### 容许传达能力 输入扭矩表 Allowable transfer capability torque table

| 产品型号<br>Catalogue Numbers | 输入转动速度 min <sup>-1</sup> (rpm) 和输入扭矩 (N · cm)<br>Input Revolution/min Input Torque (N · cm) |        |        |        |        |          |          |          |
|---------------------------|---|--------|--------|--------|--------|----------|----------|----------|
|                           | 50rpm   | 100rpm | 250rpm | 500rpm | 800rpm | 1,000rpm | 1,500rpm | 2,000rpm |
| BSB 65L - 001A/B          | 73.7  | 72.6   | 69.8   | 65.6   | 61.0   | 58.4     | 52.6     | 47.9     |
| BSB 80L - 001A/B          | 137.9   | 135.6  | 129.1  | 119.5  | 109.7  | 104.0    | 92.0     | 82.6     |
| BSB 90L - 001A/B          | 271.8   | 266.1  | 250.4  | 228.0  | 205.8  | 193.3    | 167.8    | 148.2    |
| BSB 105L - 001A/B         | 442.6   | 431.6  | 401.6  | 360.0  | 320.1  | 298.1    | 254.3    | 221.9    |



| $\phi J$ | 2-K(120°) | F  | G   | 螺纹孔<br>Set Screw |             | 螺纹孔<br>Set Screw |                |             | 侧隙<br>Backlash<br>( ' ) | 重量<br>Weight<br>W(g) | 产品型号<br>Catalogue Number |
|----------|-----------|----|-----|------------------|-------------|------------------|----------------|-------------|-------------------------|----------------------|--------------------------|
|          |           |    |     | 10-M             | 深度<br>Depth | 4-L              | $\square$<br>N | 深度<br>Depth |                         |                      |                          |
| 16       | 2-M3      | 12 | 3.5 | 10-M4            | 6           | 4-M3             | 19             | 6           | 15                      | 169                  | <b>BSB 65L - 001A</b>    |
| 16       | 2-M3      | 12 | 3.5 | 10-M4            | 6           | 4-M3             | 19             | 6           |                         | 167                  | <b>BSB 65L - 001B</b>    |
| 19       | 2-M3      | 15 | 5   | 10-M5            | 6           | 4-M3             | 23             | 8           |                         | 293                  | <b>BSB 80L - 001A</b>    |
| 19       | 2-M3      | 15 | 5   | 10-M5            | 6           | 4-M3             | 23             | 8           |                         | 289                  | <b>BSB 80L - 001B</b>    |
| 21       | 2-M4      | 15 | 5   | 10-M5            | 7           | 4-M4             | 25             | 8           |                         | 465                  | <b>BSB 90L - 001A</b>    |
| 21       | 2-M4      | 15 | 5   | 10-M5            | 7           | 4-M4             | 25             | 8           |                         | 460                  | <b>BSB 90L - 001B</b>    |
| 26       | 2-M4      | 20 | 5   | 10-M6            | 7           | 4-M4             | 30             | 10          |                         | 722                  | <b>BSB 105L - 001A</b>   |
| 26       | 2-M4      | 20 | 5   | 10-M6            | 7           | 4-M4             | 30             | 10          |                         | 713                  | <b>BSB 105L - 001B</b>   |



安装 B-BOX 和电机的例子。  
Example of installing B-BOX and motor.

# BSH-BOX : BSH 强化型

## B-BOXES (BSH)

### 内部螺旋锥齿轮说明



GEAR BOX

| 产品型号                    | 小齿轮          | 齿轮           |
|-------------------------|--------------|--------------|
| BSH70L-001/BSH70T-001   | m 0.8 × 19T  | m 0.8 × 19T  |
| BSH85L-001/BSH85T-001   | m 1.0 × 19T  | m 1.0 × 19T  |
| BSH95L-001/BSH95T-001   | m 1.25 × 18T | m 1.25 × 18T |
| BSH115L-001/BSH115T-001 | m 1.5 × 19T  | m 1.5 × 19T  |
| BSH120L-001/BSH120T-001 | m 1.5 × 19T  | m 1.5 × 19T  |
| BSH140L-001/BSH140T-001 | m 2.0 × 19T  | m 2.0 × 19T  |
| BSH145L-001/BSH145T-001 | m 2.0 × 19T  | m 2.0 × 19T  |
| BSH165L-001             | m 2.5 × 19T  | m 2.5 × 19T  |
| BSH170L-001             | m 2.5 × 19T  | m 2.5 × 19T  |

内部齿轮种类：螺旋锥齿轮

齿轮标记的说明：m1.0×20T 时意味模数为 1，齿数 20。

单位：mm

| 外壳材料                                   | 外壳表面处理          | 输入轴材料         | 输出轴材料         | 润滑方式  | 侧隙           |
|--|-----------------|---------------|---------------|-------|--------------|
| 铝 (A6061 · A6063)<br>灰铸铁 (FC200、FC250) | 黑色阳极氧化，<br>发黑处理 | SUS303 · S45C | SUS303 · S45C | 封入润滑脂 | 10' ~ 15' 以下 |

★ KG 齿轮箱是以小齿轮为输入轴，大齿轮为输出轴来设计的。

★侧隙为：固定输入轴后测定输出轴所得出的侧隙。各个产品的侧隙量请在产品型号表格中确认。

★键槽并无位相。

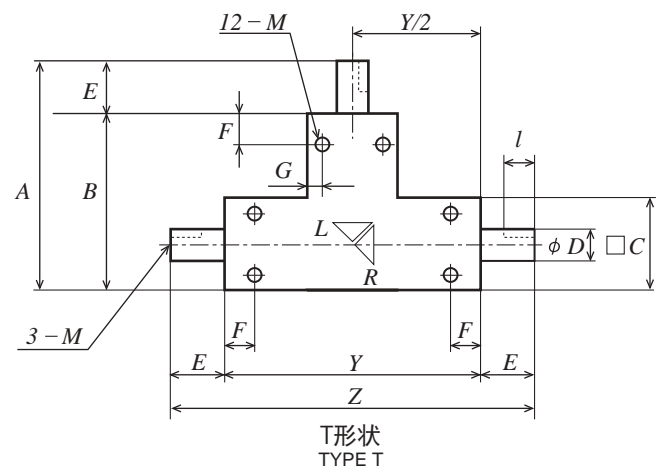
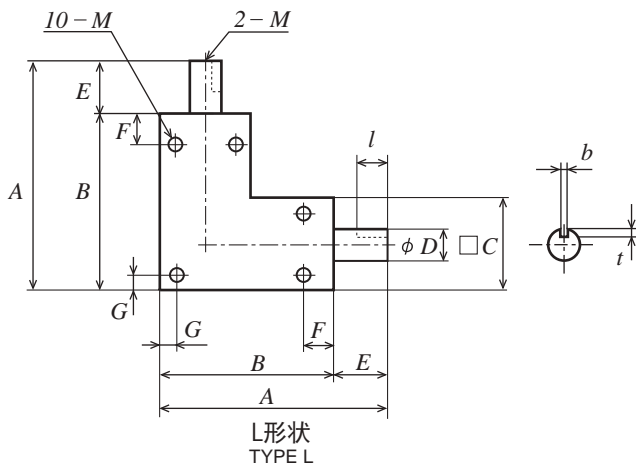
| 产品型号<br>Catalogue Number | 材料<br>Material |  |            | 形状<br>Type | 齿数比<br>Gear Ratio | Z   | Y   | □<br>C | A   | B   | 输入·输出<br>轴径<br>Shaft<br>φD(h7) | E  |
|--------------------------|----------------|--|------------|------------|-------------------|-----|-----|--------|-----|-----|--------------------------------|----|
|                          | 箱体<br>Body     | 箱体表面处理<br>Surface treatment of<br>body | 轴<br>Shaft |            |                   |     |     |        |     |     |                                |    |
| BSH 70L - 001            | AL             | 黑色阳极氧化                                 | SUS303     | L          | 1                 | -   | -   | 27     | 70  | 54  | φ 6                            | 16 |
| BSH 85L - 001            |                |  |            |            |                   | -   | -   | 32     | 85  | 64  | φ 8                            | 21 |
| BSH 95L - 001            |                |  |            |            |                   | -   | -   | 36     | 95  | 72  | φ10                            | 23 |
| BSH 115L - 001           | FC             | 发黑处理                                   | S45C       | L          | 1                 | -   | -   | 45     | 115 | 90  | φ12                            | 25 |
| BSH 120L - 001           |                |  |            |            |                   | -   | -   | 45     | 120 | 90  | φ15                            | 30 |
| BSH 140L - 001           |                |  |            |            |                   | -   | -   | 55     | 140 | 110 | φ15                            | 30 |
| BSH 145L - 001           |                |  |            |            |                   | -   | -   | 55     | 145 | 110 | φ20                            | 35 |
| BSH 165L - 001           |                |  |            |            |                   | -   | -   | 65     | 165 | 130 | φ20                            | 35 |
| BSH 170L - 001           | -              | -                                      | 65         | 170        | 130               | φ25 | 40  |        |     |     |                                |    |
| BSH 70T - 001            | AL             | 黑色阳极氧化                                 | SUS303     | T          | 1                 | 113 | 81  | 27     | 70  | 54  | φ 6                            | 16 |
| BSH 85T - 001            |                |  |            |            |                   | 138 | 96  | 32     | 85  | 64  | φ 8                            | 21 |
| BSH 95T - 001            |                |  |            |            |                   | 154 | 108 | 36     | 95  | 72  | φ10                            | 23 |
| BSH 115T - 001           | FC             | 发黑处理                                   | S45C       | T          | 1                 | 143 | 93  | 45     | 115 | 90  | φ12                            | 25 |
| BSH 120T - 001           |                |  |            |            |                   | 153 | 93  | 45     | 120 | 90  | φ15                            | 30 |
| BSH 140T - 001           |                |  |            |            |                   | 175 | 115 | 55     | 140 | 110 | φ15                            | 30 |
| BSH 145T - 001           |                |  |            |            |                   | 185 | 115 | 55     | 145 | 110 | φ20                            | 35 |

### 容许传达能力 输入扭矩表

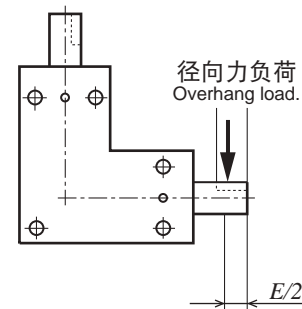
Allowable transfer capability torque table

| 产品型号<br>Catalogue Numbers |                | 输入转动速度 min <sup>-1</sup> (rpm) 和输入扭矩 (N · m)<br>Input Revolution/min Input Torque (N · m) |        |        |         |         |         |         |         |
|---------------------------|----------------|---|--------|--------|---------|---------|---------|---------|---------|
|                           |                | 250rpm  | 500rpm | 800rpm | 1000rpm | 1500rpm | 2000rpm | 2500rpm | 3000rpm |
| BSH 70L - 001             | BSH 70T - 001  | 0.89  | 0.89   | 0.89   | 0.89    | 0.86    | 0.81    | 0.77    | 0.73    |
| BSH 85L - 001             | BSH 85T - 001  | 1.95  | 1.95   | 1.95   | 1.95    | 1.81    | 1.69    | 1.59    | 1.50    |
| BSH 95L - 001             | BSH 95T - 001  | 3.68  | 3.68   | 3.68   | 3.58    | 3.30    | 3.04    | 2.85    | 2.77    |
| BSH 115L - 001            | BSH 115T - 001 | 5.23  | 5.23   | 5.15   | 5.01    | 4.69    | 4.40    | 4.25    | 4.13    |
| BSH 120L - 001            | BSH 120T - 001 | 5.23  | 5.23   | 5.15   | 5.01    | 4.69    | 4.40    | 4.25    | 4.13    |
| BSH 140L - 001            | BSH 140T - 001 | 13.30   | 13.30  | 12.62  | 12.17   | 11.18   | 10.70   | 10.30   | -       |
| BSH 145L - 001            | BSH 145T - 001 | 13.30   | 13.30  | 12.62  | 12.17   | 11.18   | 10.70   | 10.30   | -       |
| BSH 165L - 001            |                | 26.15   | 25.63  | 23.93  | 22.86   | 21.25   | 20.26   | -       | -       |
| BSH 170L - 001            |                | 26.15   | 25.63  | 23.93  | 22.86   | 21.25   | 20.26   | -       | -       |





| F  | G | 键槽<br>Key Way |     |    | 螺孔<br>Set Screw |             | 轴端内的螺纹<br>Set Screw of shaft end |             | 侧隙<br>Backlash<br>( ' ) | 径向力负荷容许量<br>Maximum overhang load<br>(N) | 重量<br>Weight<br>W(kg) | 产品型号<br>Catalogue Number |
|----|---|---------------|-----|----|-----------------|-------------|----------------------------------|-------------|-------------------------|--|-----------------------|--------------------------|
|    |   | b             | t   | l  | M               | 深度<br>Depth | 2-M                              | 深度<br>Depth |                         |  |                       |                          |
| 9  | 4 | -             | -   | -  | 10-M4           | 6           | -                                | -           | 15                      | 25                                       | 0.2                   | <b>BSH 70L - 001</b>     |
| 10 | 5 | 3             | 1.8 | 14 | 10-M5           | 7           | -                                | -           |                         | 36                                       | 0.4                   | <b>BSH 85L - 001</b>     |
| 13 | 5 | 3             | 1.8 | 15 | 10-M5           | 8           | -                                | -           |                         | 58                                       | 0.5                   | <b>BSH 95L - 001</b>     |
| 20 | 5 | 4             | 2.5 | 20 | 10-M5           | 12          | 2-M4                             | 8           | 10                      | 83                                       | 1.8                   | <b>BSH 115L - 001</b>    |
| 20 | 5 | 5             | 3.0 | 25 | 10-M5           | 12          | 2-M4                             | 8           |                         | 83                                       | 1.8                   | <b>BSH 120L - 001</b>    |
| 25 | 6 | 5             | 3.0 | 25 | 10-M6           | 13          | 2-M5                             | 10          |                         | 166                                      | 3.1                   | <b>BSH 140L - 001</b>    |
| 25 | 6 | 6             | 3.5 | 30 | 10-M6           | 13          | 2-M5                             | 10          |                         | 166                                      | 3.2                   | <b>BSH 145L - 001</b>    |
| 25 | 7 | 6             | 3.5 | 30 | 10-M6           | 14          | 2-M5                             | 12          |                         | 245                                      | 5.4                   | <b>BSH 165L - 001</b>    |
| 25 | 7 | 8             | 4.0 | 35 | 10-M6           | 14          | 2-M5                             | 12          |                         | 245                                      | 5.5                   | <b>BSH 170L - 001</b>    |
| 9  | 4 | -             | -   | -  | 12-M4           | 6           | -                                | -           | 15                      | 25                                       | 0.3                   | <b>BSH 70T - 001</b>     |
| 10 | 5 | 3             | 1.8 | 14 | 12-M5           | 7           | -                                | -           |                         | 36                                       | 0.5                   | <b>BSH 85T - 001</b>     |
| 13 | 5 | 3             | 1.8 | 15 | 12-M5           | 8           | -                                | -           |                         | 58                                       | 0.7                   | <b>BSH 95T - 001</b>     |
| 20 | 5 | 4             | 2.5 | 20 | 12-M5           | 12          | 2-M4                             | 8           | 10                      | 83                                       | 2.0                   | <b>BSH 115T - 001</b>    |
| 20 | 5 | 5             | 3.0 | 25 | 12-M5           | 12          | 2-M4                             | 8           |                         | 83                                       | 2.0                   | <b>BSH 120T - 001</b>    |
| 25 | 6 | 5             | 3.0 | 25 | 12-M6           | 13          | 2-M5                             | 10          |                         | 166                                      | 3.4                   | <b>BSH 140T - 001</b>    |
| 25 | 6 | 6             | 3.5 | 30 | 12-M6           | 13          | 2-M5                             | 10          |                         | 166                                      | 3.5                   | <b>BSH 145T - 001</b>    |



径向力负荷位置和旋转方向  
Load position of overhang.

# BE-SET : 锥齿轮组

## B-SETS



GEAR BOX

### 内部直齿锥齿轮说明

| 产品型号                  | 小齿轮          | 齿轮           |
|-----------------------|--------------|--------------|
| BE40L-001             | m 0.5 × 20T  | m 0.5 × 20T  |
| BE55L-001             | m 0.8 × 20T  | m 0.8 × 20T  |
| BE70L-001A/BE70L-001B | m 1.0 × 20T  | m 1.0 × 20T  |
| BE88L-001A/BE88L-001B | m 1.5 × 20T  | m 1.5 × 20T  |
| BE55L-002             | m 0.6 × 14T  | m 0.6 × 28T  |
| BE70L-002A/BE70L-002B | m 0.8 × 13T  | m 0.8 × 26T  |
| BE88L-002A/BE88L-002B | m 1.25 × 13T | m 1.25 × 26T |

内部齿轮种类：直齿锥齿轮

齿轮标记的说明：m1.0×20T时意味模数为1，齿数20。

单位：mm

| 外壳材料              | 外壳表面处理 | 输入轴材料  | 输出轴材料  | 润滑方式        | 侧隙 |
|-------------------|--------|--------|--------|-------------|----|
| 铝 (A5056 · A6063) | 黑色阳极氧化 | SUS303 | SUS303 | 请定期在齿面涂上润滑油 | —  |

★ KG 齿轮箱是以小齿轮为输入轴，大齿轮为输出轴来设计的。★输入轴和输出轴轴径相同。齿轮材料为 S45C，附有塑料壳。

★ A 和 B 的区别：产品型号尾部有 B 字母的产品，相比有 A 字母的产品，轴直径大 2mm。

★安装用螺栓孔 3 - K 也可以作为螺纹底孔来使用。(请确认表 1 和图纸与尺寸表中的蓝色文字)

★侧隙：本产品为经济型产品，所以对侧隙未进行详细测定。

| 产品型号<br>Catalogue Number | 齿数比<br>Gear Ratio | 输入·输出轴径 Shaft |    |    |              |    |     |     |      |      |
|--------------------------|-------------------|---------------|----|----|--------------|----|-----|-----|------|------|
|                          |                   | A             | B  | C  | $\phi D(h8)$ | E  | F   | G   | H    | I    |
| BE40 L - 001             | 1                 | 40            | 30 | 10 | $\phi 4$     | 10 | 5   | 4.5 | 20.5 | 15   |
| BE55 L - 001             |                   | 55            | 40 | 13 | $\phi 5$     | 15 | 6.5 | 5   | 28.5 | 21.5 |
| BE70 L - 001A            |                   | 70            | 50 | 16 | $\phi 6$     | 20 | 8   | 6   | 36   | 27   |
| BE70 L - 001B            |                   | 70            | 50 | 16 | $\phi 8$     | 20 | 8   | 6   | 36   | 27   |
| BE88 L - 001A            |                   | 88            | 63 | 20 | $\phi 10$    | 25 | 10  | 7   | 46   | 33   |
| BE88 L - 001B            |                   | 88            | 63 | 20 | $\phi 12$    | 25 | 10  | 7   | 46   | 33   |
| BE55 L - 002             | 2                 | 55            | 40 | 13 | $\phi 5$     | 15 | 6.5 | 5   | 28.5 | 21.5 |
| BE70 L - 002A            |                   | 70            | 50 | 16 | $\phi 6$     | 20 | 8   | 6   | 36   | 27   |
| BE70 L - 002B            |                   | 70            | 50 | 16 | $\phi 8$     | 20 | 8   | 6   | 36   | 27   |
| BE88 L - 002A            |                   | 88            | 63 | 20 | $\phi 10$    | 25 | 10  | 7   | 46   | 33   |
| BE88 L - 002A            |                   | 88            | 63 | 20 | $\phi 10$    | 25 | 10  | 7   | 46   | 33   |
| BE88 L - 002B            |                   | 88            | 63 | 20 | $\phi 12$    | 25 | 10  | 7   | 46   | 33   |

### 容许传达能力 输入扭矩表

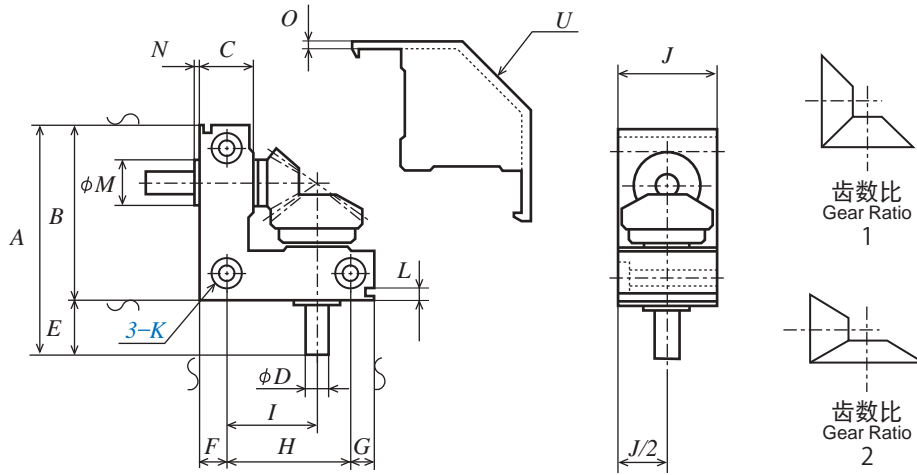
Allowable transfer capability torque table

| 产品型号<br>Catalogue Numbers | 输入转动速度 min <sup>-1</sup> (rpm) 和输入扭矩 (N · cm)<br>Input Revolution/min Input Torque (N · cm) |        |        |        |
|---------------------------|---|--------|--------|--------|
|                           | 50rpm   | 100rpm | 250rpm | 500rpm |
| BE40 L - 001              | 9.8   | 9.7    | 9.4    | 9.0    |
| BE55 L - 001              | 38.6  | 38.0   | 36.5   | 34.3   |
| BE70 L - 001A             | 72.3  | 71.0   | 67.6   | 62.6   |
| BE70 L - 001B             | 72.3  | 71.0   | 67.6   | 62.6   |
| BE88 L - 001A             | 232.3   | 226.5  | 210.8  | 188.9  |
| BE88 L - 001B             | 232.3   | 226.5  | 210.8  | 188.9  |
| BE55 L - 002              | 10.5  | 10.4   | 10.2   | 9.9    |
| BE70 L - 002A             | 20.7  | 20.6   | 20.1   | 19.3   |
| BE70 L - 002B             | 20.7  | 20.6   | 20.1   | 19.3   |
| BE88 L - 002A             | 74.2  | 73.2   | 70.3   | 65.9   |
| BE88 L - 002B             | 74.2  | 73.2   | 70.3   | 65.9   |

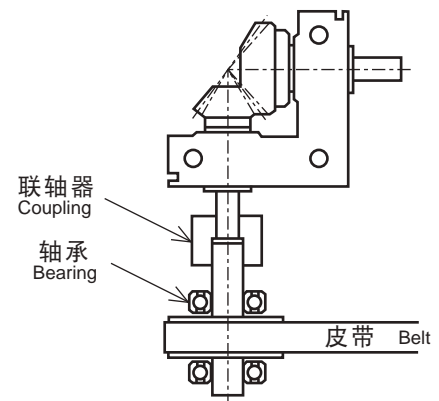
表 1

Table 1

| 产品型号<br>Catalogue Numbers | 钻孔径<br>Drill hole diameter | 适配六角螺栓<br>Acceptable hexagon head bolt | 进行螺纹孔追加加工时<br>Modification of screw thread | 钻孔的最大容许加工径<br>Limitation of drill holes |
|---------------------------|----------------------------|--|--|---|
| BE 40 L                   | $\phi 3.4$                 | M3                                     | M4   | 不可追加加工<br>Not advisable                 |
| BE 55 L                   | $\phi 3.4$                 | M3                                     | M4   | $\phi 5$                                |
| BE 70 L                   | $\phi 4.3$                 | M4                                     | M5   | $\phi 6$                                |
| BE 88 L                   | $\phi 5.2$                 | M5                                     | M6   | $\phi 8$                                |



| J  | Counter Sinks & Drill Holes<br>3-K |                                 |                               | L   | M   | N   | O   | U   | 重量<br>Weight<br>W(g) | 产品型号<br>Catalogue Number |
|----|------------------------------------|---------------------------------|-------------------------------|-----|-----|-----|-----|-----|----------------------|--------------------------|
|    | 钻孔径<br>Drill Hole<br>Diameter      | 沉孔径<br>Counter Sink<br>Diameter | 沉孔深度<br>Counter Sink<br>Depth |     |     |     |     |     |                      |                          |
| 18 | φ3.4                               | φ6.5                            | 3.5                           | 2.5 | φ 7 | 2.1 | 1.7 | C13 | 30                   | <b>BE40 L - 001</b>      |
| 25 | φ3.4                               | φ6.5                            | 3.5                           | 4   | φ 9 | 1.8 | 1.9 | C16 | 85                   | <b>BE55 L - 001</b>      |
| 30 | φ4.3                               | φ8                              | 4.5                           | 4.5 | φ11 | 1.8 | 2.1 | C20 | 155                  | <b>BE70 L - 001A</b>     |
| 30 | φ4.3                               | φ8                              | 4.5                           | 4.5 | φ14 | 2   | 2.1 | C20 | 170                  | <b>BE70 L - 001B</b>     |
| 40 | φ5.2                               | φ9.5                            | 5.5                           | 5   | φ18 | 2   | 2.1 | C27 | 375                  | <b>BE88 L - 001A</b>     |
| 40 | φ5.2                               | φ9.5                            | 5.5                           | 5   | φ19 | 2.2 | 2.1 | C27 | 380                  | <b>BE88 L - 001B</b>     |
| 25 | φ3.4                               | φ6.5                            | 3.5                           | 4   | φ 9 | 1.8 | 1.9 | C16 | 80                   | <b>BE55 L - 002</b>      |
| 30 | φ4.3                               | φ8                              | 4.5                           | 4.5 | φ11 | 1.8 | 2.1 | C20 | 140                  | <b>BE70 L - 002A</b>     |
| 30 | φ4.3                               | φ8                              | 4.5                           | 4.5 | φ14 | 2   | 2.1 | C20 | 165                  | <b>BE70 L - 002B</b>     |
| 40 | φ5.2                               | φ9.5                            | 5.5                           | 5   | φ18 | 2   | 2.1 | C27 | 345                  | <b>BE88 L - 002A</b>     |
| 40 | φ5.2                               | φ9.5                            | 5.5                           | 5   | φ19 | 2.2 | 2.1 | C27 | 375                  | <b>BE88 L - 002B</b>     |



参考图 1  
Reference drawing 1

# WS-BOX : 蜗轮蜗杆齿轮箱

## WORM-BOXES



GEAR BOX

### 内部蜗轮蜗杆说明

| 产品型号      | 蜗杆         | 蜗轮          |
|-----------|------------|-------------|
| WS55R-020 | m 0.5 × 1T | m 0.5 × 20T |
| WS55R-030 | m 0.5 × 1T | m 0.5 × 30T |
| WS60R-040 | m 0.5 × 1T | m 0.5 × 40T |
| WS60R-050 | m 0.5 × 1T | m 0.5 × 50T |
| WS65R-020 | m 0.8 × 1T | m 0.8 × 20T |
| WS65R-030 | m 0.8 × 1T | m 0.8 × 30T |
| WS75R-040 | m 0.8 × 1T | m 0.8 × 40T |
| WS75R-050 | m 0.8 × 1T | m 0.8 × 50T |
| WS80R-010 | m 1.0 × 2T | m 1.0 × 20T |
| WS80R-020 | m 1.0 × 1T | m 1.0 × 20T |
| WS80R-030 | m 1.0 × 1T | m 1.0 × 30T |
| WS90R-040 | m 1.0 × 1T | m 1.0 × 40T |
| WS90R-050 | m 1.0 × 1T | m 1.0 × 50T |

内部齿轮种类：蜗杆和蜗轮

齿轮标记的说明：m1.0×20T 时意味模数为 1，齿数 20。

单位：mm

| 外壳材料               | 外壳表面处理        | 输入轴材料 | 输出轴材料 | 润滑方式  | 侧隙           |
|--------------------|---------------|-------|-------|-------|--------------|
| 铝 (A5052P · A5056) | 黑色或红色<br>阳极氧化 | S45C  | S45C  | 润滑油润滑 | 25' ~ 40' 以下 |

★ KG 的 WS-BOX 以蜗杆轴为输入轴 (φH)、蜗轮轴 (φI) 为输出轴。

★ 以输入轴在下，输出轴在上为基本使用形态来设计。如果与这个设计构想不相符的使用方法使用时，

请在「容许传达输入扭矩表」和「容许传达输出扭矩表」的 75% 以下使用。

★ 侧隙为：固定输入轴后测定输出轴所得出的侧隙。各个产品的侧隙量请在产品型号表格中确认。

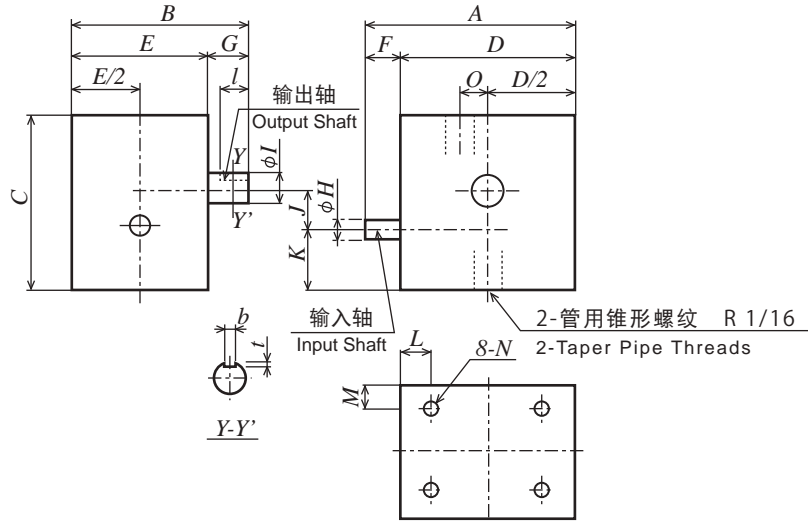
★ 轴的旋转方向：W-BOX 以输入轴端面为正面，将输入轴以顺时针方向旋转时，输出轴也会顺时针方向旋转。反之亦然。请确认参考图。

| 产品型号<br>Catalogue Number | 齿数比<br>Gear Ratio | 箱尺寸<br>Body Size |    |    |    |    | 轴长<br>Shaft Length |    | 轴直径<br>Shaft  |               | 中心距<br>Center Distance<br>J |
|--------------------------|-------------------|------------------|----|----|----|----|--------------------|----|---------------|---------------|-----------------------------|
|                          |                   | A                | B  | C  | D  | E  | F                  | G  | 输入轴<br>φH(h7) | 输出轴<br>φI(h7) |                             |
| WS 55R - 020             | 20                | 55               | 45 | 45 | 45 | 35 | 10                 | 10 | φ 5           | φ 8           | 9.5                         |
| WS 55R - 030             | 30                | 55               | 45 | 45 | 45 | 35 | 10                 | 10 | φ 5           | φ 8           | 12                          |
| WS 60R - 040             | 40                | 60               | 50 | 55 | 50 | 40 | 10                 | 10 | φ 5           | φ 8           | 14.5                        |
| WS 60R - 050             | 50                | 60               | 50 | 55 | 50 | 40 | 10                 | 10 | φ 5           | φ 8           | 17                          |
| WS 65R - 020             | 20                | 65               | 55 | 55 | 50 | 40 | 15                 | 15 | φ 6           | φ 8           | 13.2                        |
| WS 65R - 030             | 30                | 65               | 55 | 55 | 50 | 40 | 15                 | 15 | φ 6           | φ 8           | 17.2                        |
| WS 75R - 040             | 40                | 75               | 60 | 70 | 60 | 45 | 15                 | 15 | φ 6           | φ10           | 21.2                        |
| WS 75R - 050             | 50                | 75               | 60 | 70 | 60 | 45 | 15                 | 15 | φ 6           | φ10           | 25.2                        |
| WS 80R - 010             | 10                | 80               | 65 | 70 | 60 | 45 | 20                 | 20 | φ 8           | φ10           | 18                          |
| WS 80R - 020             | 20                | 80               | 65 | 70 | 60 | 45 | 20                 | 20 | φ 8           | φ10           | 18                          |
| WS 80R - 030             | 30                | 80               | 65 | 70 | 60 | 45 | 20                 | 20 | φ 8           | φ12           | 23                          |
| WS 90R - 040             | 40                | 90               | 75 | 85 | 70 | 50 | 20                 | 25 | φ 8           | φ15           | 28                          |
| WS 90R - 050             | 50                | 90               | 75 | 85 | 70 | 50 | 20                 | 25 | φ 8           | φ15           | 33                          |

### 容许传达能力 输入扭矩表

Allowable transfer capability input torque table

| 产品型号<br>Catalogue Numbers | 输入转动速度min <sup>-1</sup> (rpm)和输入扭矩 (N · cm)<br>Input Revolution/min Input Torque (N · cm) |        |        |          |          |          |          |          |
|---------------------------|---|--------|--------|----------|----------|----------|----------|----------|
|                           | 50rpm   | 100rpm | 500rpm | 1,000rpm | 1,500rpm | 2,000rpm | 2,500rpm | 3,000rpm |
| WS 55R - 020              | 4.0   | 3.5    | 2.0    | 1.5      | 1.2      | 1.0      | 0.9      | 0.9      |
| WS 55R - 030              | 5.7   | 4.9    | 3.0    | 2.2      | 1.8      | 1.6      | 1.4      | 1.3      |
| WS 60R - 040              | 7.3   | 6.3    | 4.0    | 3.0      | 2.5      | 2.1      | 1.9      | 1.8      |
| WS 60R - 050              | 8.9   | 7.7    | 4.9    | 3.7      | 3.0      | 2.7      | 2.2      | 2.2      |
| WS 65R - 020              | 9.9   | 8.5    | 5.1    | 3.9      | 3.1      | 2.7      | 2.5      | 2.3      |
| WS 65R - 030              | 14.1  | 12.3   | 7.6    | 5.7      | 4.8      | 4.2      | 3.7      | 3.5      |
| WS 75R - 040              | 18.0  | 15.8   | 9.9    | 7.5      | 6.3      | 5.5      | 5.0      | 4.6      |
| WS 75R - 050              | 21.9  | 18.9   | 12.3   | 9.3      | 7.9      | 6.9      | 6.3      | 5.8      |
| WS 80R - 010              | 34.5  | 29.7   | 16.9   | 12.7     | 10.4     | 9.1      | 8.1      | 7.3      |
| WS 80R - 020              | 24.9  | 21.4   | 12.0   | 8.9      | 7.2      | 6.3      | 5.6      | 5.1      |
| WS 80R - 030              | 35.2  | 30.6   | 17.8   | 13.1     | 10.8     | 9.5      | 8.5      | 7.8      |
| WS 90R - 040              | 45.1  | 39.0   | 23.3   | 17.2     | 14.3     | 12.6     | 11.3     | 10.4     |
| WS 90R - 050              | 54.7  | 47.4   | 28.6   | 21.4     | 17.7     | 15.6     | 14.1     | 12.9     |

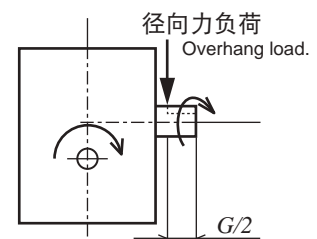


| K    | L  | M | 螺纹孔<br>Set Screw |             | 键槽<br>Key Way |     |    | 管用锥形<br>螺纹<br>Taper Pipe<br>Thread | 侧隙<br>Backlash | 径向力负<br>荷容许量<br>Maximum overhang load | 重量<br>Weight | 产品型号<br>Catalogue Number |
|------|----|---|------------------|-------------|---------------|-----|----|------------------------------------|----------------|---------------------------------------|--------------|--------------------------|
|      |    |   | 8-N              | 深度<br>Depth | b             | t   | l  | O                                  | ( ' )          | (N)                                   | W(kg)        |                          |
| 16.5 | 8  | 7 | 8-M3             | 6           | 3             | 1.8 | 8  | 0                                  | 40             | 24                                    | 0.23         | WS 55R - 020             |
| 16.5 | 8  | 7 | 8-M3             | 6           | 3             | 1.8 | 8  | 0                                  |                | 24                                    | 0.23         | WS 55R - 030             |
| 20   | 8  | 8 | 8-M3             | 6           | 3             | 1.8 | 8  | 0                                  |                | 24                                    | 0.34         | WS 60R - 040             |
| 19   | 8  | 8 | 8-M3             | 6           | 3             | 1.8 | 8  | 8                                  |                | 24                                    | 0.36         | WS 60R - 050             |
| 20.9 | 10 | 8 | 8-M4             | 6           | 3             | 1.8 | 12 | 0                                  | 25             | 20                                    | 0.36         | WS 65R - 020             |
| 18.9 | 10 | 8 | 8-M4             | 6           | 3             | 1.8 | 12 | 8                                  |                | 20                                    | 0.38         | WS 65R - 030             |
| 24   | 10 | 8 | 8-M4             | 8           | 3             | 1.8 | 12 | 0                                  |                | 33                                    | 0.60         | WS 75R - 040             |
| 20   | 10 | 8 | 8-M4             | 8           | 3             | 1.8 | 12 | 15                                 |                | 33                                    | 0.64         | WS 75R - 050             |
| 26   | 10 | 5 | 8-M5             | 10          | 3             | 1.8 | 15 | 0                                  | 25             | 24                                    | 0.61         | WS 80R - 010             |
| 26   | 10 | 5 | 8-M5             | 10          | 3             | 1.8 | 15 | 0                                  |                | 24                                    | 0.61         | WS 80R - 020             |
| 23.5 | 10 | 5 | 8-M5             | 10          | 4             | 2.5 | 15 | 8                                  |                | 44                                    | 0.65         | WS 80R - 030             |
| 28.5 | 10 | 5 | 8-M5             | 10          | 5             | 3   | 20 | 10                                 |                | 58                                    | 0.98         | WS 90R - 040             |
| 21   | 10 | 5 | 8-M5             | 10          | 5             | 3   | 20 | 17                                 |                | 58                                    | 1.02         | WS 90R - 050             |

### 容许传达能力 输出扭矩表

Allowable transfer capability output torque table

| 产品型号<br>Catalogue Numbers | 输入转动速度min <sup>-1</sup> (rpm)和输出扭矩 (N·cm)<br>Input Revolution/min Output Torque (N·cm) |        |        |          |          |          |          |          |
|---------------------------|--|--------|--------|----------|----------|----------|----------|----------|
|                           | 50rpm  | 100rpm | 500rpm | 1,000rpm | 1,500rpm | 2,000rpm | 2,500rpm | 3,000rpm |
| WS 55R - 020              | 27.8   | 25.2   | 18.0   | 14.7     | 13.0     | 11.7     | 10.8     | 10.0     |
| WS 55R - 030              | 59.3   | 54.2   | 39.6   | 32.7     | 29.7     | 26.6     | 24.4     | 23.0     |
| WS 60R - 040              | 101.7  | 92.8   | 69.4   | 57.7     | 51.3     | 46.9     | 43.5     | 41.1     |
| WS 60R - 050              | 153.0  | 140.2  | 106.9  | 89.3     | 79.2     | 72.9     | 67.7     | 63.9     |
| WS 65R - 020              | 84.5   | 75.9   | 53.4   | 44.5     | 37.8     | 35.0     | 32.4     | 30.6     |
| WS 65R - 030              | 179.3  | 164.2  | 119.5  | 98.2     | 86.8     | 79.3     | 73.6     | 69.2     |
| WS 75R - 040              | 306.0  | 281.4  | 207.0  | 172.6    | 153.6    | 139.0    | 129.9    | 122.4    |
| WS 75R - 050              | 465.2  | 424.5  | 319.5  | 266.4    | 238.4    | 217.8    | 202.2    | 192.5    |
| WS 80R - 010              | 191.7  | 171.1  | 112.8  | 90.5     | 77.5     | 69.3     | 63.0     | 58.4     |
| WS 80R - 020              | 192.4  | 174.6  | 120.5  | 98.2     | 85.7     | 78.2     | 72.0     | 67.1     |
| WS 80R - 030              | 409.1  | 374.0  | 265.7  | 218.2    | 191.7    | 175.2    | 162.8    | 152.8    |
| WS 90R - 040              | 697.4  | 638.0  | 463.9  | 382.7    | 337.5    | 309.6    | 288.2    | 271.1    |
| WS 90R - 050              | 1,056.7  | 968.1  | 713.2  | 591.9    | 522.9    | 479.7    | 447.4    | 421.7    |



径向力负荷作用点和旋转方向。  
Load position of overhang and direction of the rotation.

### KG W-BOX 蜗轮蜗杆齿轮箱使用时的注意点

#### Precaution of usage for KG W-BOX

#### 1) 关于跑合运转

在正式开始使用前W-BOX要进行跑合运转。我们推荐在正常负荷的1/2-1/3的为基准，运行约6个小时。

#### 2) 关于交换润滑油

建议使用润滑油为ISO VG680或同效的润滑油。在开始正式运行约50小时为准，进行第一次润滑油交换。之后以6个月为一次的间隔进行油量和污垢的检查，并根据具体情况交换润滑油。W-BOX的外壳和内部的润滑油可能已经达到较高温度，所以交换润滑油时请注意安全。

#### 3) 自锁功能

W-BOX基本上不能进行自锁。所以如果想完全确实的锁住，请另行装配其他的安全装置(如锁定机制，制动器)。

#### 4) 当发生异常音时

如果发生与正常运行时不同的噪音，或有大的震动时就要停止运行，并用手摇来确认齿轮箱转动的轻重。如果有沙粒般的声音时就要交换润滑油。

#### 5) 出现高温状态

如果室温加上W-BOX的温度超过80度以上时，需要停止运行。需要交换润滑油，或对齿轮箱的运行条件进行再确认。

#### 1) Warm up and test run

To warm up and test run for W-BOXES, we recommended applying 1/2 to 1/3 of normal loads for over 6 hour before actual operation.

#### 2) Change of lubricating oil

Use lubricating oil equivalent to ISO VG680 is recommended.

When the machine runs over 50 accumulated hours, this is the tentative deadline to replace the initial lubricating oil.

Subsequently, check the amount of lubricating oil and dirt of oil every 6 months. Replace lubrication oil if necessary.

At the times of changing of lubrication oil, beware of heated body and oil temperature of W-BOX will increase.

#### 3) Self lock

Basically self-locks function will not activate for W-BOXES.

For all range of W-BOXES, in order that the suspension of load to function properly, safety device such as lock device, one-way clutch and others are recommend to be built in separately.

#### 4) Precaution of unusual noise

Stop the operation and check for fault if there are any occurrences such as unusual noise or unbalanced oscillation from W-BOX. Check the shaft's resistance by manually turning a micro coupling between motor and W-BOX to check the gritty-noise from W-BOX, please replace the lubrication oil if necessary.

#### 5) Over heated W-BOX

Stop operation and check the temperature of W-BOX when the temperature of W-BOX is over 80°C (Celsius). Replace lubricating oil and check the conditions of operation if necessary.



# 无侧隙直齿轮

## Anti Backlash Spur Gears

### 产品型号的解读方法 Reference of Catalogue Number

NS 50 AL 60 B + 08 08  
NSG 80 S 80 B + 08 10  
ASG 1 S 70 B - 10 12

| 齿轮的种类和齿面加工种类<br>Kind of Gear   | 模数<br>Module   | 材料<br>Material  | 齿数<br>Number of Teeth  | 形状<br>Type                        | 内径处理<br>Bores Processed   | 齿宽<br>Face Width                | 孔径<br>Bore Diameter             |
|--|--|---|------------------------|-----------------------------------|---|---------------------------------|---------------------------------|
| NS: 无侧隙齿轮<br>Anti Backlash Gears<br>NSG: 无侧隙研磨齿轮<br>Anti Backlash Ground Gears<br>ASG: 控制侧隙研磨齿轮<br>Control Backlash Ground Gears | 表示模数大小。模数1以下时所标数据是实际模数乘以100。<br>例: 模数0.5时所标数据是50。模数0.8时所标数据是80。<br>Expressed the unit of module's size.<br>Module 0.5 and 0.8 as multiple of 100.<br>Example<br>m0.5 → 50<br>m0.8 → 80 | AL: 铝<br>Aluminium<br>S: S45C<br>Carbon Steel<br>不锈钢 S: SCM435-440(ASG)<br>材料: 铬钼钢<br>Chromium Molybdenum Steel<br>SU: SUS304<br>不锈钢<br>Stainless Steel | z: 50~120<br>(ASG) 30~ | B: 有单侧轮毂<br>With Hub on one side. | [+]: 齿轮带有螺纹孔/<br>无固定螺钉<br>NS切削加工<br>NSG磨削加工<br>Machined bore<br>Ground bore<br>Gear with Thread hole / without Set Screw.<br>[-]: 齿轮无螺纹孔/<br>无键槽<br>ASG磨削加工<br>Ground bore<br>Gear without Thread hole / without Key Way. | 单位: mm<br>Dimension: millimeter | 单位: mm<br>Dimension: millimeter |

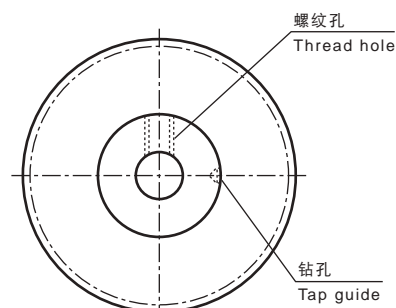
由于机电一体化领域的发展产生了要把齿轮侧隙变为0的要求。KG的无侧隙齿轮满足了其要求。并成为了机电一体化和精密机器所需要的必不可缺的齿轮。

Anti Backlash Spur Gears can provide support to HI-TECH Mechanical, Electrical and Electronics products. It reduces the backlash to zero [0]. An essential product for Mechanical, Electrical and Precision products.

### 本公司无侧隙齿轮和控制侧隙研磨齿轮的特点 Feature of Anti Backlash Spur Gears

- 1) 模数范围从M0.5到M2.0。
- 2) 材质: 铝, 碳钢, 合金钢, 不锈钢。(可控侧隙齿轮是合金钢)。
- 3) 配对齿轮建议使用本公司的齿部研磨齿轮和直齿轮。主要目的是为了达到最佳效果。

- 1) The varieties are from module 0.5 to 2.0.
- 2) Materials: Aluminium, Carbon Steel, Chromium Molybdenum Steel, Stainless Steel.
- 3) KG-Anti Backlash Spur Gear is able to match with other makers, however it is advisable to use KG-Ground Spur Gear series and KG-Spur Gear Series for best result.



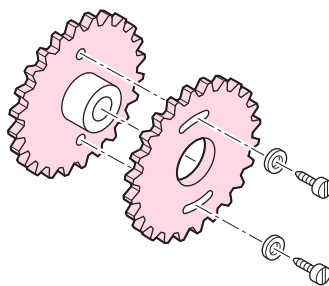
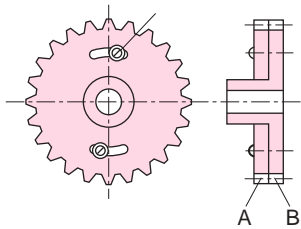
(除ASG系列)  
(Excluded ASG Series)

## 无侧隙直齿轮的机制

### Mechanism of anti Backlash Spur Gears

#### 1. 固定型 (本公司 ASG 系列)

Fixed type (ASG series)

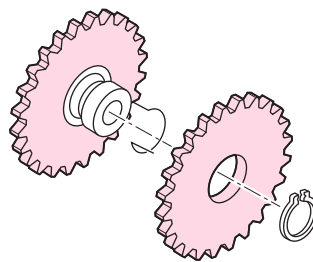
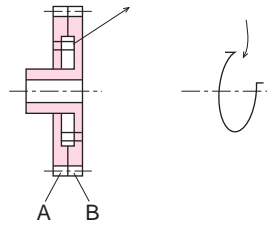


ASG系列齿轮的使用方法：在和配对齿轮进行啮合时，先将螺栓松开，然后移位A和B，使它们的齿夹注对方的齿，将侧隙调到最小，然后拧紧螺栓。能这么做的前提条件是使用精度较高的配对齿轮。

Method of ASG series is to loosen the bolts, then adjust gear A and gear B. This adjustment will allow to slip gear A and B into the match gear at a minimum backlash before tightening the bolt. This ASG series is only suitable for application that needs minimal backlash adjustment and the match gear needs to be high quality.

#### 2. 圆弧弹簧型 (本公司 BS 型)

Circular Arc Spring type (Type BS)

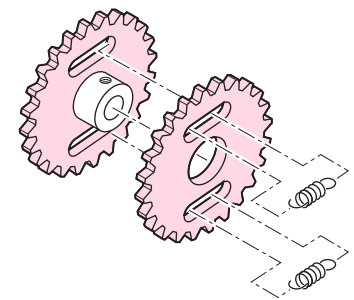
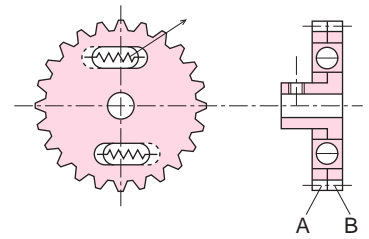


把弧形弹簧置于齿轮A与齿轮B之间，再用其弹簧的力量消除侧隙。使用方法与固定型一样，通过夹住对方齿轮的齿进行使用。这个方法经常用于传达扭矩较低的情况。

Method of BS series is using a Circular Arc Spring to place between gear A and gear B in order to eliminate the backlash. BS series gears are allowable for low torque application.

#### 3. 线圈弹簧型 (本公司 BW 型)

Coiled Spring type (Type BW)



BW系列是和弧形弹簧一样，将齿轮A和齿轮B用弹簧连接，使两个齿轮相互平衡受压，再通过夹住对方齿轮的齿进行使用。以达到消除啮合产生的侧隙。

Method of BW series is the spring suspension of gear A and B. The tension of spring will allow them to slip relatively to each other by the force.

This method will eliminate the backlash once gear A and B engage with the match gear.



## 齿轮啮合原点 n0 的设定方法。 Adjustment of zero points as n0.

- 1) 依照容许传达能力扭矩列表，来选择NS或NSG。
  - 2) NS和NSG系列的调节方法是一样的。首先将B齿轮(对齿轮)固定住，BS形齿轮时，将齿轮A往箭头方向转动(箭头刻在A齿轮表面)；BW形齿轮时使A齿轮慢慢旋转拉伸弹簧，所有的弹簧开始被拉伸，并齿轮A和B的齿刚好相互一致的点为n0点。
  - 3) 务必参照容许传达能力扭矩列表，不要超出所使用无侧隙齿轮的最大承受量。
- 1) For selection NS and NSG series, refer to the Allowable Transfer Capability Torque Table.
  - 2) For NS and NSG, all adjustments are similar.  
Rotate the gear with arrow mark indicator to zero point until both gear teeth are fully match with no tension of spring. At zero point pitch where both gear teeth match, rotate two (2) pitches or more according to Allowable Transfer Capability Torque Table.
  - 3) Reference to the Table provided, do not exceed the load maximum limitation of Anti Backlash function.

## 设定容许传达扭矩值的方法。 Method for settlement of Allowable Transfer Torque.

- 1) 齿距参差调谐量的选择方法。  
首先在NS，NSG系列中挑选符合使用条件的无侧隙齿轮，并确认其产品编号。然后在容许传达扭矩的表格中找出超过贵公司所要扭矩的数值，并确认其齿距参差调谐量n。  
如果是NSU系列的产品时请在齿距参差调谐量n为2的情况下使用。请确认NSU系列的容许传达扭矩表数值的范围内使用。
- 2) 容许扭矩的设定方法  
例：假设您采用了NSG系列中的NSG50S60B+0808，假设您所需要的扭矩为15N cm。根据容许传达扭矩表格您要移动齿距(齿距参差调谐量)n=3。移动3个齿，以得到您所需要的啮合扭矩，然后与配对的对方齿轮进行啮合。

### Method of Shifting pitch(n)

Firstly, select suitable Anti backlash Spur Gears from NS and NSG series. Secondly, find the numerical value of shifting pitch of your required torque from the Allowable Transfer Capability Torque Table (Chart).

Example: Your existing require NSG part number is NSG50S 60B+0808, your existing torque speed is 15N per cm, you need to shift 3 pitch in order to get the next largest value inside the Allowable Transfer Capability Torque Table (Chart) and assembly to match your existing gear.

For NSU series, there is a limitation to the shifting of the pitch as according to the Allowable Transfer Capability Torque Table (Chart). The minimum and maximum requirement for the shifting are allowable at 2 pitches.

# ASG : 研磨控制侧隙齿轮

## CONTROL BACKLASH GROUND SPUR GEAR

模数  
MODULE

1 (齿数 70~120) / 1.5 (齿数 40~80) / 2 (齿数 30~60) (普通齿) FULL DEPTH TOOTH



单位: mm

|               |            |     |        |          |      |
|---------------|------------|-----|--------|----------|------|
| 组合前③和④齿轮精度    | 材料         | 压力角 | 热处理    | 齿面硬度     | 齿面加工 |
| JIS B 1702 1级 | SCM435、440 | 20度 | 齿面高频淬火 | HRC49~55 | 齿面研磨 |

- ★未做表面处理。
- ★本产品的容许传达扭矩表的扭矩是为了维持消除侧隙功能时所需要遵守的扭矩。
- ★ASG系列控制侧隙齿轮是通过用螺丝固定③齿轮和④齿轮的位置，来控制侧隙。

| 产品型号<br>Catalogue Number | 模数<br>Module<br><i>m</i> | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 齿顶圆直径<br>Tip Diameter<br><i>d<sub>a</sub></i> | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>d<sub>a</sub>(H7)</i> | 轮毂外径<br>Hub Diameter<br><i>d<sub>h</sub></i> | 轮毂长度<br>Hub Projection<br><i>l<sub>h</sub></i> | 全长<br>Overall Length<br><i>l</i> | 固定螺栓<br>Fixed Bolts | 重量<br>Weight<br><i>W(kg)</i> |
|--------------------------|--------------------------|-----------------------------------|---|---|------------------------------|---|--|--|----------------------------------|---------------------|------------------------------|
| ASG1S 70B - 1012         | 1                        | 70                                | φ 70                                    | φ 72  | 10                           | φ12   | φ40  | 10   | 20                               | 6-M4-φ 54           | 0.39                         |
| ASG1S 80B - 1012         |                          | 80                                | φ 80                                    | φ 82  | 10                           | φ12   | φ45  |  |                                  | 6-M4-φ 62           | 0.51                         |
| ASG1S 100B - 1012        |                          | 100                               | φ100                                    | φ102  | 10                           | φ12   | φ60  |  |                                  | 6-M5-φ 80           | 0.82                         |
| ASG1S 120B - 1015        |                          | 120                               | φ120                                    | φ122  | 10                           | φ15   | φ80  |  |                                  | 6-M5-φ100           | 1.25                         |
| ASG1.5S 40B - 1515       | 1.5                      | 40                                | φ 60                                    | φ 63  | 15                           | φ15   | φ35  | 15   | 30                               | 6-M4-φ 46           | 0.41                         |
| ASG1.5S 50B - 1520       |                          | 50                                | φ 75                                    | φ 78  | 15                           | φ20   | φ45  |  |                                  | 6-M5-φ 58           | 0.64                         |
| ASG1.5S 60B - 1520       |                          | 60                                | φ 90                                    | φ 93  | 15                           | φ20   | φ60  |  |                                  | 6-M5-φ 74           | 1.02                         |
| ASG1.5S 80B - 1520       |                          | 80                                | φ120                                    | φ123  | 15                           | φ20   | φ80  |  |                                  | 6-M6-φ 98           | 1.85                         |
| ASG2S 30B - 2015         | 2                        | 30                                | φ 60                                    | φ 64  | 20                           | φ15   | φ35  | 20   | 40                               | 6-M4-φ 45           | 0.54                         |
| ASG2S 40B - 2020         |                          | 40                                | φ 80                                    | φ 84  | 20                           | φ20   | φ50  |  |                                  | 6-M5-φ 62           | 1.01                         |
| ASG2S 50B - 2020         |                          | 50                                | φ100                                    | φ104  | 20                           | φ20   | φ60  |  |                                  | 6-M6-φ 78           | 1.59                         |
| ASG2S 60B - 2025         |                          | 60                                | φ120                                    | φ124  | 20                           | φ25   | φ80  |  |                                  | 6-M6-φ 98           | 2.42                         |

# NSG : 研磨无侧隙齿轮

## ANTIBACKLASH GROUND SPUR GEARS

模数  
MODULE

0.5 (齿数 60~120) / 0.8 (齿数 50~120) / 1 (齿数 50~120) (普通齿) FULL DEPTH TOOTH



BS 型

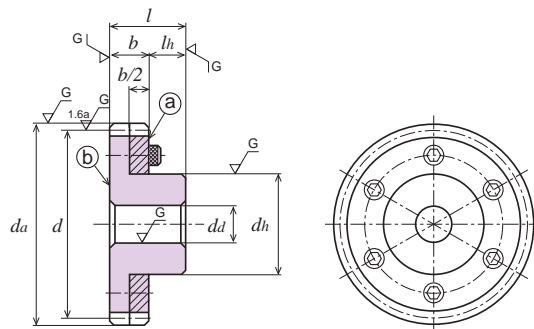
BW 型

单位: mm

|               |            |     |       |         |      |
|---------------|------------|-----|-------|---------|------|
| 单体齿轮精度        | 材料         | 压力角 | 热处理   | 齿面硬度    | 齿面加工 |
| JIS B 1702 1级 | SCM435、440 | 20度 | 材料调质① | Hs40~46 | 齿面研磨 |

- ★未做表面处理。【+】表示齿轮带有螺纹孔 / 带有固定用螺钉。
- ★本产品的容许传达扭矩表的扭矩是为了维持消除侧隙功能时所需要遵守的扭矩。
- ★NSG系列控制侧隙齿轮是通过用弹簧的力量拉拢③齿轮和④齿轮，夹注对方齿轮的齿来消除侧隙。
- ★BS型使用弧形弹簧，BW型使用螺旋弹簧。
- ★容许传达能力表的 *n* 为错位齿数。详细请确认「设定理想扭矩值的方法」。
- ①齿顶圆直径 φ45 以下的产品未进行材料调制。

| 产品型号<br>Catalogue Number | 模数<br>Module<br><i>m</i> | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 齿顶圆直径<br>Tip Diameter<br><i>d<sub>a</sub></i> | 形状<br>Type | 弹簧的数量<br>Number of Springs | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>d<sub>a</sub>(H7)</i> | 轮毂外径<br>Hub Diameter<br><i>d<sub>h</sub></i> | 轮毂长度<br>Hub Projection<br><i>l<sub>h</sub></i> | 全长<br>Overall Length<br><i>l</i> | 螺纹孔<br>Set Screw |                      | 重量<br>Weight<br><i>W(g)</i> |
|--------------------------|--------------------------|-----------------------------------|---|---|------------|----------------------------|------------------------------|---|--|--|----------------------------------|------------------|----------------------|-----------------------------|
|                          |                          |                                   |   |   |            |                            |                              |   |  |  |                                  | <i>M</i>         | <i>l<sub>s</sub></i> |                             |
| NSG50S 60B + 0808        | 0.5                      | 60                                | φ 30                                    | φ 31  | BS         | 1                          | 8                            | φ 8   | φ16  | 8  | 16                               | M4               | 4                    | 45                          |
| NSG50S 70B + 0808        |                          | 70                                | φ 35                                    | φ 36  | BS         | 1                          |                              | φ 8   | φ16  |  |                                  |                  |                      | 61                          |
| NSG50S 80B + 0808        |                          | 80                                | φ 40                                    | φ 41  | BS         | 1                          |                              | φ 8   | φ20  |  |                                  |                  |                      | 87                          |
| NSG50S 90B + 0810        |                          | 90                                | φ 45                                    | φ 46  | BS         | 1                          |                              | φ10   | φ20  |  |                                  |                  |                      | 105                         |
| NSG50S 100B + 0810       |                          | 100                               | φ 50                                    | φ 51  | BS         | 1                          |                              | φ10   | φ20  |  |                                  |                  |                      | 128                         |
| NSG50S 120B + 0810       |                          | 120                               | φ 60                                    | φ 61  | BS         | 1                          |                              | φ10   | φ20  |  |                                  |                  |                      | 182                         |
| NSG80S 50B + 0810        | 0.8                      | 50                                | φ 40                                    | φ 41.6  | BS         | 1                          | 8                            | φ10   | φ20  | 10   | 18                               | M5               | 5                    | 87                          |
| NSG80S 60B + 0810        |                          | 60                                | φ 48                                    | φ 49.6  | BS         | 1                          |                              | φ10   | φ20  |  |                                  |                  |                      | 122                         |
| NSG80S 70B + 0810        |                          | 70                                | φ 56                                    | φ 57.6  | BS         | 1                          |                              | φ10   | φ20  |  |                                  |                  |                      | 152                         |
| NSG80S 80B + 0810        |                          | 80                                | φ 64                                    | φ 65.6  | BW         | 2                          |                              | φ10   | φ20  |  |                                  |                  |                      | 200                         |
| NSG80S 90B + 0810        |                          | 90                                | φ 72                                    | φ 73.6  | BW         | 2                          |                              | φ10   | φ20  |  |                                  |                  |                      | 253                         |
| NSG80S 100B + 0810       |                          | 100                               | φ 80                                    | φ 81.6  | BW         | 2                          |                              | φ10   | φ24  |  |                                  |                  |                      | 324                         |
| NSG80S 120B + 0810       | 120                      | φ 96                              | φ 97.6                                  | BW  | 2          | φ10                        | φ24                          | 463   |  |  |                                  |                  |                      |                             |
| NSG1S 50B + 1010         | 1                        | 50                                | φ 50                                    | φ 52  | BS         | 1                          | 10                           | φ10   | φ20  | 10   | 20                               | M6               | 5                    | 144                         |
| NSG1S 60B + 1010         |                          | 60                                | φ 60                                    | φ 62  | BS         | 1                          |                              | φ10   | φ20  |  |                                  |                  |                      | 212                         |
| NSG1S 70B + 1012         |                          | 70                                | φ 70                                    | φ 72  | BW         | 2                          |                              | φ12   | φ24  |  |                                  |                  |                      | 298                         |
| NSG1S 80B + 1012         |                          | 80                                | φ 80                                    | φ 82  | BW         | 2                          |                              | φ12   | φ24  |  |                                  |                  |                      | 390                         |
| NSG1S 90B + 1012         |                          | 90                                | φ 90                                    | φ 92  | BW         | 3                          |                              | φ12   | φ24  |  |                                  |                  |                      | 495                         |
| NSG1S 100B + 1012        |                          | 100                               | φ100                                    | φ102  | BW         | 3                          |                              | φ12   | φ30  |  |                                  |                  |                      | 632                         |
| NSG1S 120B + 1012        | 120                      | φ120                              | φ122                                    | BW  | 3          | φ12                        | φ30                          | 903   |  |  |                                  |                  |                      |                             |



螺丝固定形 (本图纸仅供参考)  
 The above sketch is for reference only.

### 容许传达动力表 弯曲强度 (kW)

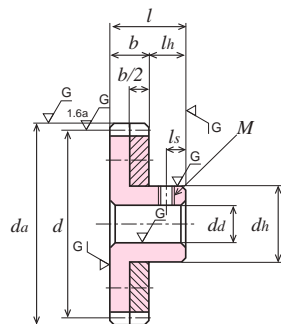
Allowable transfer capability table (kW) Bending Strength

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|---------------------------|---|-------|-------|-------|-------|-------|-------|
|                           | 400   | 800   | 1,200 | 1,500 | 1,800 | 2,500 | 3,000 |
| ASG1S 70B - 1012          | 1.38  | 2.77  | 4.01  | 4.90  | 5.79  | 7.66  | 8.84  |
| ASG1S 80B - 1012          | 1.62  | 3.21  | 4.62  | 5.67  | 6.67  | 8.71  | 10.04 |
| ASG1S 100B - 1012         | 2.09  | 4.05  | 5.84  | 7.13  | 8.27  | 10.70 | 12.40 |
| ASG1S 120B - 1015         | 2.56  | 4.87  | 7.02  | 8.45  | 9.73  | 12.67 | 14.49 |
| ASG1.5S 40B - 1515        | 2.36  | 4.72  | 6.95  | 8.49  | 10.02 | 13.45 | 15.60 |
| ASG1.5S 50B - 1520        | 3.12  | 6.22  | 8.98  | 10.99 | 12.95 | 17.03 | 19.60 |
| ASG1.5S 60B - 1520        | 3.89  | 7.64  | 11.01 | 13.47 | 15.76 | 20.38 | 23.64 |
| ASG1.5S 80B - 1520        | 5.46  | 10.40 | 15.01 | 18.04 | 20.79 | 27.06 | 30.94 |
| ASG2S 30B - 2015          | 3.84  | 7.67  | 11.29 | 13.80 | 16.27 | 21.85 | 23.34 |
| ASG2S 40B - 2020          | 5.60  | 11.10 | 15.99 | 19.59 | 23.06 | 30.11 | 34.71 |
| ASG2S 50B - 2020          | 7.40  | 14.37 | 20.72 | 25.28 | 29.32 | 37.96 | 43.98 |
| ASG2S 60B - 2025          | 9.23  | 17.58 | 25.36 | 30.49 | 35.13 | 45.73 | 52.29 |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|---------------------------|---|-------|-------|-------|-------|-------|-------|
|                           | 400   | 800   | 1,200 | 1,500 | 1,800 | 2,500 | 3,000 |
| ASG1S 70B - 1012          | 0.86  | 1.77  | 2.62  | 3.25  | 3.87  | 5.23  | 6.10  |
| ASG1S 80B - 1012          | 1.14  | 2.33  | 3.43  | 4.25  | 5.06  | 6.74  | 7.85  |
| ASG1S 100B - 1012         | 1.82  | 3.64  | 5.37  | 6.64  | 7.79  | 10.28 | 12.04 |
| ASG1S 120B - 1015         | 2.66  | 5.24  | 7.73  | 9.42  | 10.98 | 14.57 | 16.82 |
| ASG1.5S 40B - 1515        | 0.95  | 1.93  | 2.90  | 3.58  | 4.26  | 5.84  | 6.84  |
| ASG1.5S 50B - 1520        | 1.50  | 3.07  | 4.52  | 5.60  | 6.67  | 8.95  | 10.41 |
| ASG1.5S 60B - 1520        | 2.19  | 4.43  | 6.52  | 8.08  | 9.55  | 12.60 | 14.77 |
| ASG1.5S 80B - 1520        | 3.99  | 7.86  | 11.60 | 14.14 | 16.47 | 21.85 | 23.23 |
| ASG2S 30B - 2015          | 1.26  | 2.58  | 3.86  | 4.77  | 5.69  | 7.78  | 9.12  |
| ASG2S 40B - 2020          | 2.29  | 4.66  | 6.85  | 8.51  | 10.12 | 13.48 | 15.70 |
| ASG2S 50B - 2020          | 3.64  | 7.29  | 10.74 | 13.28 | 15.57 | 20.56 | 24.07 |
| ASG2S 60B - 2025          | 5.32  | 10.48 | 15.47 | 18.85 | 21.95 | 29.13 | 33.64 |



B.S, B.W 形状 (本图纸仅供参考)  
 The above sketch is for reference only.  
 TYPE BS, BW

### 容许传达能力扭矩表

Allowable transfer capability torque table

| 产品型号<br>Catalogue Numbers | 容许传达能力扭矩 (N · cm)<br>Limitation of anti backlash to Fuciton (N · cm) |        |        |        |
|---------------------------|--|--------|--------|--------|
|                           | n2   | n3     | n4     | n5     |
| NSG50S 60B + 0808         | 13.33  | 21.18  | 31.08  | 40.79  |
| NSG50S 70B + 0808         | 10.86  | 16.35  | 24.83  | 32.72  |
| NSG50S 80B + 0808         | 11.50  | 16.47  | 20.79  | 26.93  |
| NSG50S 90B + 0810         | 10.00  | 14.41  | 19.12  | 23.68  |
| NSG50S 100B + 0810        | 8.16   | 12.91  | 17.81  | 22.55  |
| NSG50S 120B + 0810        | 7.25   | 10.39  | 15.29  | 18.43  |
| NSG80S 50B + 0810         | 14.12  | 25.36  | 32.68  | 42.09  |
| NSG80S 60B + 0810         | 13.80  | 19.77  | 28.55  | 35.61  |
| NSG80S 70B + 0810         | 14.46  | 18.85  | 25.26  | 32.58  |
| NSG80S 80B + 0810         | 46.44  | 56.48  | 66.73  | 76.98  |
| NSG80S 90B + 0810         | 50.36  | 64.72  | 76.49  | 92.49  |
| NSG80S 100B + 0810        | 47.59  | 61.19  | 74.53  | 87.33  |
| NSG80S 120B + 0810        | 43.61  | 55.23  | 67.78  | 80.02  |
| NSG1S 50B + 1010          | 18.14  | 27.29  | 35.13  | 47.85  |
| NSG1S 60B + 1010          | 16.86  | 23.92  | 31.77  | 40.99  |
| NSG1S 70B + 1012          | 31.35  | 41.41  | -      | -      |
| NSG1S 80B + 1012          | 33.73  | 46.02  | 56.48  | -      |
| NSG1S 90B + 1012          | 62.66  | 87.08  | 103.55 | -      |
| NSG1S 100B + 1012         | 74.19  | 103.29 | 122.90 | 145.78 |
| NSG1S 120B + 1012         | 81.19  | 109.04 | 139.63 | 160.81 |

# NS : 无侧隙齿轮

## ANTI BACKLASH SPUR GEARS

模数 MODULE **0.8** (齿数 80~120) / **1** (齿数 70~120)

(普通齿) FULL DEPTH TOOTH



单位: mm

| 组合前③和④齿轮精度    | 材料   | 压力角 | 表面处理    | 齿面硬度        |
|---------------|------|-----|---------|-------------|
| JIS B 1702 4级 | S45C | 20度 | 盐浴软氮化处理 | MH v 450 以上 |

- ★本产品的容许传达扭矩表的扭矩是为了维持消除侧隙功能时所遵守的扭矩。
- ★NS 系列控制侧隙齿轮是通过用弹簧的力量拉拢③齿轮和④齿轮， 关注对方齿轮的齿来消除侧隙。
- ★BW 型使用螺旋弹簧。【+】表示齿轮带有螺纹孔 / 带有固定用螺钉。
- ★容许传达能力表的 n 为错位齿数。详细请确认「设定理想扭矩值的方法」。

| 产品型号<br>Catalogue Number | 模数<br>Module<br>m | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 弹簧的数量<br>Number of Springs | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 螺纹孔<br>Set Screw |    | 重量<br>Weight<br>W(g) |
|--------------------------|-------------------|----------------------------|----------------------------------|-----------------------------|------------|----------------------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|------------------|----|----------------------|
|                          |                   |                            |                                  |                             |            |                            |                       |                               |                            |                              |                           | M                | ls |                      |
| NS80S 80B + 0810         | 0.8               | 80                         | φ 64                             | φ 65.6                      | BW         | 2                          | 8                     | φ10                           | φ20                        | 10                           | 18                        | M5               | 5  | 200                  |
| NS80S 90B + 0810         |                   | 90                         | φ 72                             | φ 73.6                      |            | 2                          |                       |                               | 253                        |                              |                           |                  |    |                      |
| NS80S 100B + 0810        |                   | 100                        | φ 80                             | φ 81.6                      |            | 2                          |                       |                               | 324                        |                              |                           |                  |    |                      |
| NS80S 120B + 0810        |                   | 120                        | φ 96                             | φ 97.6                      |            | 2                          |                       |                               | 463                        |                              |                           |                  |    |                      |
| NS1S 70B + 1012          | 1                 | 70                         | φ 70                             | φ 72                        | BW         | 2                          | 10                    | φ12                           | φ24                        | 10                           | 20                        | M6               | 5  | 298                  |
| NS1S 80B + 1012          |                   | 80                         | φ 80                             | φ 82                        |            | 2                          |                       |                               | 390                        |                              |                           |                  |    |                      |
| NS1S 90B + 1012          |                   | 90                         | φ 90                             | φ 92                        |            | 3                          |                       |                               | 495                        |                              |                           |                  |    |                      |
| NS1S 100B + 1012         |                   | 100                        | φ100                             | φ102                        |            | 3                          |                       |                               | 632                        |                              |                           |                  |    |                      |
| NS1S 120B + 1012         |                   | 120                        | φ120                             | φ122                        |            | 3                          |                       |                               | 903                        |                              |                           |                  |    |                      |

# NS : 无侧隙齿轮

## ANTI BACKLASH SPUR GEARS

模数 MODULE **0.5** (齿数 60~120) (普通齿) FULL DEPTH TOOTH



单位: mm

| 组合前③和④齿轮精度    | 材料     | 压力角 | 表面处理 | 齿面硬度 |
|---------------|--------|-----|------|------|
| JIS B 1702 5级 | SUS304 | 20度 | 特氟隆  | —    |

- ★本产品的容许传达扭矩表的扭矩是为了维持消除侧隙功能时所遵守的扭矩。
- ★NSU 系列控制侧隙齿轮是通过用弹簧的力量拉拢③齿轮和④齿轮， 关注对方齿轮的齿来消除侧隙。
- ★BW 型使用螺旋弹簧。【+】表示齿轮带有螺纹孔 / 带有固定用螺钉。
- ★容许传达能力表的 n 为错位齿数。NSU 系列的 n 固定为 2。
- ★进行特氟隆表面处理的原因：防止 SUS304 不锈钢材料的两个齿轮（③和④）出现相互磨损，使其顺利滑动。

| 产品型号<br>Catalogue Number | 模数<br>Module<br>m | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 弹簧的数量<br>Number of Springs | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H8) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 螺纹孔<br>Set Screw |    | 重量<br>Weight<br>W(g) |       |
|--------------------------|-------------------|----------------------------|----------------------------------|-----------------------------|------------|----------------------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|------------------|----|----------------------|-------|
|                          |                   |                            |                                  |                             |            |                            |                       |                               |                            |                              |                           | M                | ls |                      |       |
| NS50SU 60B + 0505        | 0.5               | 60                         | φ30                              | φ31                         | BW         | 2                          | 5                     | φ 5                           | φ12                        | 8                            | 13                        | M3               | 4  | 32.3                 |       |
| NS50SU 70B + 0508        |                   | 70                         | φ35                              | φ36                         |            | 2                          |                       |                               | φ 8                        |                              |                           |                  |    | φ16                  | 45.7  |
| NS50SU 80B + 0508        |                   | 80                         | φ40                              | φ41                         |            | 3                          |                       |                               | φ 8                        |                              |                           |                  |    | φ16                  | 57.4  |
| NS50SU 90B + 0510        |                   | 90                         | φ45                              | φ46                         |            | 3                          |                       |                               | φ10                        |                              |                           |                  |    | φ20                  | 74.9  |
| NS50SU 100B + 0510       |                   | 100                        | φ50                              | φ51                         |            | 3                          |                       |                               | φ10                        |                              |                           |                  |    | φ20                  | 89.7  |
| NS50SU 120B + 0510       |                   | 120                        | φ60                              | φ61                         |            | 4                          |                       |                               | φ10                        |                              |                           |                  |    | φ20                  | 123.9 |

# NS : 无侧隙齿轮

## ANTI BACKLASH SPUR GEARS

模数 MODULE **0.5** (齿数 60~120) / **0.8** (齿数 50~70) / **1** (齿数 50~60) (普通齿) FULL DEPTH TOOTH



单位: mm

| 组合前③和④齿轮精度    | 材料    | 压力角 | 表面处理   | 齿面硬度 |
|---------------|-------|-----|--------|------|
| JIS B 1702 5级 | A5056 | 20度 | 白色阳极氧化 | —    |

- ★本产品的容许传达扭矩表的扭矩是为了维持消除侧隙功能时所遵守的扭矩。
- ★NS 系列控制侧隙齿轮是通过用弹簧的力量拉拢③齿轮和④齿轮， 关注对方齿轮的齿来消除侧隙。
- ★BS 型使用弧形弹簧。【+】表示齿轮带有螺纹孔 / 带有固定用螺钉。
- ★容许传达能力表的 n 为错位齿数。详细请确认「设定理想扭矩值的方法」。

| 产品型号<br>Catalogue Number | 模数<br>Module<br>m | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 弹簧的数量<br>Number of Springs | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H8) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 螺纹孔<br>Set Screw |    | 重量<br>Weight<br>W(g) |    |
|--------------------------|-------------------|----------------------------|----------------------------------|-----------------------------|------------|----------------------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|------------------|----|----------------------|----|
|                          |                   |                            |                                  |                             |            |                            |                       |                               |                            |                              |                           | M                | ls |                      |    |
| NS50AL 60B + 0808        | 0.5               | 60                         | φ 30                             | φ 31                        | BS         | 1                          | 8                     | φ 8                           | φ16                        | 8                            | 16                        | M4               | 4  | 16                   |    |
| NS50AL 70B + 0808        |                   | 70                         | φ 35                             | φ 36                        |            |                            |                       |                               | φ 8                        |                              |                           |                  |    | φ16                  | 21 |
| NS50AL 80B + 0808        |                   | 80                         | φ 40                             | φ 41                        |            |                            |                       |                               | φ 8                        |                              |                           |                  |    | φ20                  | 30 |
| NS50AL 90B + 0810        |                   | 90                         | φ 45                             | φ 46                        |            |                            |                       |                               | φ10                        |                              |                           |                  |    | φ20                  | 36 |
| NS50AL 100B + 0810       |                   | 100                        | φ 50                             | φ 51                        |            |                            |                       |                               | φ10                        |                              |                           |                  |    | φ20                  | 44 |
| NS50AL 120B + 0810       |                   | 120                        | φ 60                             | φ 61                        |            |                            |                       |                               | φ10                        |                              |                           |                  |    | φ20                  | 62 |
| NS80AL 50B + 0810        | 0.8               | 50                         | φ 40                             | φ 41.6                      | BS         | 1                          | 8                     | φ10                           | φ20                        | 10                           | 18                        | M5               | 5  | 30                   |    |
| NS80AL 60B + 0810        |                   | 60                         | φ 48                             | φ 49.6                      |            |                            |                       |                               | φ10                        |                              |                           |                  |    | φ20                  | 42 |
| NS80AL 70B + 0810        |                   | 70                         | φ 56                             | φ 57.6                      |            |                            |                       |                               | φ10                        |                              |                           |                  |    | φ20                  | 52 |
| NS1AL 50B + 1010         | 1                 | 50                         | φ 50                             | φ 52                        | BS         | 1                          | 10                    | φ10                           | φ20                        | 10                           | 20                        | M6               | 5  | 49                   |    |
| NS1AL 60B + 1010         |                   | 60                         | φ 60                             | φ 62                        |            |                            |                       |                               | φ10                        |                              |                           |                  |    | φ20                  | 72 |



ANTI BACKLASH SPUR GEARS

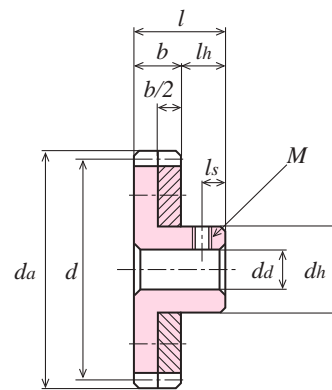
容许传达能力扭矩表

| 产品型号<br>Catalogue Numbers | 容许传达能力扭矩 (N · cm)<br>Limitation of anti backlash to Funicton (N · cm) |            |            |            |
|---------------------------|---|------------|------------|------------|
|                           | <i>n</i> 2  | <i>n</i> 3 | <i>n</i> 4 | <i>n</i> 5 |
| NS80S 80B + 0810          | 46.44   | 56.48      | 66.73      | 76.98      |
| NS80S 90B + 0810          | 50.36   | 64.72      | 76.49      | 92.49      |
| NS80S 100B + 0810         | 47.59   | 61.19      | 74.53      | 87.33      |
| NS80S 120B + 0810         | 43.61   | 55.23      | 67.78      | 80.02      |
| NS1S 70B + 1012           | 31.35   | 41.41      | -          | -          |
| NS1S 80B + 1012           | 33.73   | 46.02      | 56.48      | -          |
| NS1S 90B + 1012           | 62.66   | 87.08      | 103.55     | -          |
| NS1S 100B + 1012          | 74.19   | 103.29     | 122.90     | 145.78     |
| NS1S 120B + 1012          | 81.19   | 109.04     | 139.63     | 160.81     |

容许传达能力扭矩表

Allowable transfer capability torque table

| 产品型号<br>Catalogue Numbers | 容许传达能力扭矩 (N · cm)<br>Limitation of anti backlash to Funicton (N · cm) |
|---------------------------|---|
|                           | <i>n</i> 2  |
| NS50SU 60B + 0505         | 9.71  |
| NS50SU 70B + 0508         | 11.17   |
| NS50SU 80B + 0508         | 16.18   |
| NS50SU 90B + 0510         | 19.49   |
| NS50SU 100B + 0510        | 30.69   |
| NS50SU 120B + 0510        | 39.85   |



BS, BW 形状 (本图纸仅供参考)  
The above sketch is for reference only.  
TYPE BS, BW

容许传达能力扭矩表

| 产品型号<br>Catalogue Numbers | 容许传达能力扭矩 (N · cm)<br>Limitation of anti backlash to Funicton (N · cm) |            |            |            |
|---------------------------|---|------------|------------|------------|
|                           | <i>n</i> 2  | <i>n</i> 3 | <i>n</i> 4 | <i>n</i> 5 |
| NS50AL 60B + 0808         | 13.33   | 21.18      | 31.08      | 40.79      |
| NS50AL 70B + 0808         | 10.86   | 16.35      | 24.83      | 32.72      |
| NS50AL 80B + 0808         | 11.50   | 16.47      | 20.79      | 26.93      |
| NS50AL 90B + 0810         | 10.00   | 14.41      | 19.12      | 23.68      |
| NS50AL 100B + 0810        | 8.16  | 12.91      | 17.81      | 22.55      |
| NS50AL 120B + 0810        | 7.25  | 10.39      | 15.29      | 18.43      |
| NS80AL 50B + 0810         | 14.12   | 25.36      | 32.68      | 42.09      |
| NS80AL 60B + 0810         | 13.80   | 19.77      | 28.55      | 35.61      |
| NS80AL 70B + 0810         | 14.46   | 18.85      | 25.26      | 32.58      |
| NS1AL 50B + 1010          | 18.14   | 27.29      | 35.13      | 47.85      |
| NS1AL 60B + 1010          | 16.86   | 23.92      | 31.77      | 40.99      |

# Memo

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# 研磨直齿轮

## Ground Spur Gears

### 产品型号的解读方法 Reference of Catalogue Number

SG 50 S 50 B - 80 08  
 SG 80 S 100 B \* 08 20  
 SG 2 S 40 B - 20 20  
 SGE 3 S 80 B - 30 22

| 齿轮的种类<br>Kind of Gear  | 模数<br>Module   | 材料<br>Material   | 齿数<br>Number of Teeth | 形状<br>Type   | 内径处理<br>Bores Processed   | 齿宽<br>Face Width                  | 孔径<br>Bore Diameter               |
|--|--|--|-----------------------|--|---|-----------------------------------|-----------------------------------|
| SG: 研磨直齿轮<br>Ground Spur Gears<br>SGE: 研磨直齿轮<br>(JIS N7)<br>GROUND SPUR GEARS<br>(JIS class 7) | m : 0.5 0.8 1.0 1.5 2.0<br>表示模数大小。模数1<br>以下时所标数据是实<br>际模数乘以100。<br>例：模数0.5时所标数<br>据是50。模数0.8时所<br>标数据是80。<br>Expressed the unit of<br>module's size.<br>Module 0.5 and 0.8 as<br>multiple of 100.<br>Example<br>m0.5 → 50<br>m0.8 → 80 | SG产品时：<br>【S】：SCM435, 440<br>齿部高频淬火<br>HRC49 ~ 55<br>Material : Chromium<br>Molybdenum Steel,<br>complete with high<br>frequency Induction<br>Hardening. (HRC49 to 55).<br>SGE产品时：<br>【S】：S45C<br>齿部高频淬火<br>HRC47 ~ 53<br>Material : carbon steel<br>Complete with high<br>frequency Induction<br>Hardening. (HRC47 to 53) | Z : 14 ~ 120          | L : 两侧有实心轴<br>with Solid shaft on both<br>side.<br>B : 单侧轮毂<br>with Hub on one side. | SG :<br>[-] : 磨削加工<br>Ground bore.<br>无固定螺纹孔/无固定<br>螺钉<br>without threaded hole /<br>without Set Screw.<br>标号[*]表示齿轮带<br>有两个螺纹孔/无固定<br>螺钉<br>with two threaded holes /<br>without Set Screw.<br>SGE :<br>[-] : 车削加工<br>Without Threaded hole /<br>without Set Screw | 单位 : mm<br>Dimension : millimeter | 单位 : mm<br>Dimension : millimeter |

本产品是在实现半导体制造装置等机电一体化的精密机器人和机床机械的运行中，为了实现其精确的，运作，而不可缺少的精密齿轮。

KG GROUND SPUR GEARS are useful for Mechatronic fields and Semiconductor manufacturing equipment, which require steady and accurate motion for Machine Tools and other precision instruments.

### SG 系列研磨直齿轮的特点

#### Feature of SG Ground Spur Gears.

- 1) 拥有模数M0.5到M3.0之间的共7种大小规格的产品。
- 2) 材料方面使用铬钼合金钢 (SCM435, 440 ; 或ISO34CrMo4, 42CrMo4), 并进行了高频淬火, 使硬度达到HRC49-55。对齿孔和轮毂可进行追加工。
- 3) 精度等级为JIS B1702-1 (ISO)5级。
- 4) 对齿孔面, 齿顶圆, 齿轮侧面, 轮毂侧面进行了研磨。当需要进行追加工时都可成为加工基准面。
- 5) 同时也准备了双轴类型小齿轮。

- 1) Size : Module 0.5 to 3.0 with wide range are available in seven sizes.
- 2) Material : Chromium Molybdenum Steel, complete with high frequency Induction Hardened. (HRC49 to 55).
- 3) System of accuracy: JIS B 1702-1(ISO) class 5.
- 4) Bore diameter, Tip diameter and other surfaces are ground so that chucking base can be performed when additional machining is required.
- 5) We have Ground Spur Gear with Solid shaft on both ends for Pinion, size ranging from M0.5 to 2.0.

### 对 SG 系列研磨直齿轮进行追加工时的注意点

#### Precaution for additional process of SG Ground Spur Gears.

我们努力给客户提供高精度, 高品质的研磨直齿轮产品。KG研磨直齿轮尽量不要进行齿孔的追加工。如果进行追加工, 就有可能降低齿轮的精度。如果使用过程中避免不了进行追加工时, 请注意以下注意事项。

We provide high precision and high quality performance of KG Ground Spur Gears to customer. KG Ground Spur Gears do not require additional machining by our customer. This will therefore prevent deterioration of KG Ground Spur Gears, which has been vigorously checked by KG before delivery to customer.

However, due to your 'special' requirement that need additional machining to KG-Ground Spur Gear, please note the following information.

### 对 SG 系列研磨直齿轮的孔径进行追加工时的注意点

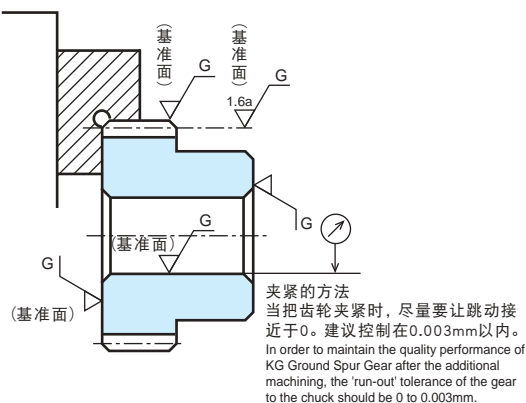
#### Precaution for additional machining to bore diameter of SG Ground Spur Gears.

- 1) 一定要使用软爪三爪卡盘, 进行对产品的卡紧。要从齿孔的孔面开始进行定心(因为齿轮磨削时, 是以齿孔孔面和侧面为最初的基准面。)
- 2) 因为齿顶圆与侧面是研磨面, 所以如右图的方法进行卡紧, 较容易得到定心。
- 3) 齿顶圆较小(如小齿轮)的齿轮, 齿孔内面很可能受到了热处理的影响而变硬所以切削起来可能有难度。
- 4) 对齿孔进行追加工时, 最大加工半径不要超过轮毂直径的60%-70%。

Additional machining for bore diameter is not advisable for our KG Ground Spur Gears.

Additional machining might be affected the precision class, as for the gear increased pitch deviation by additional key way process, may cause 1 or 2 class decline.

- 1) We recommend the use of three-jaw chuck (scroll chuck) that is not surface hardened for centering of the gear.
- 2) The drawing shown on the right is highly recommended to follow, in order to obtain the centering easier because the gear has been ground.
- 3) Due to induction hardening, the bore diameter of small size gears (Pinion) may not be easily machined.
- 4) The maximum bore dimension should not exceed 60-70% of the hub diameter if additional machining is required. Machining will be easier if you follow the instruction (refer to the above picture).





### 对 SG 系列研磨直齿轮的其它部分进行追加加工时的注意点

#### Precaution for additional process for other parts of SG Ground Spur Gear.

- 1) 使用软爪三爪卡盘卡紧的方法与齿孔加工时的方法相同。对轮毂进行卡紧时，也必须要从齿孔面进行定心。
- 2) 有双轴的 (L)型齿轮的轴部，由于受到热处理的影响而硬化，可能不太容易切削。
- 3) 模数小且齿数少的齿轮，与2) 的情况相同，有可能硬化到了齿孔面。
- 4) 凡是离齿部近的部分，因为受到热处理的影响而已经变硬。请注意。

- 1) Method of chucking is the same as in the boring process. Please take note of the centering location when chucking to the gear hub.
- 2) Due to the heat treatment, both sides of the solid shaft areas of the 'Type L' are low in machinability.
- 3) Heat treatment on specific surface of small module size gear for Pinion will affect the hardening of the whole gear module.
- 4) Take note that surface near to the gear tooth area may be low machinability due to the heat treatment processed.

### 本公司也接受特殊规格的订制研磨齿轮

#### Customize make Ground Gears.

齿轮种类： 齿轮和斜齿轮  
 模数： 从模数：0.3 0.4 0.5 0.6 0.75 0.8  
 1.0 1.25 1.5 1.75 2.0 2.25  
 2.5 2.75 3.0 4.0 5.0

DP英寸单位：请提供您的图纸。另外，交货期和生产所需时间都可以洽谈。

齿数与齿顶圆直径等： 10齿到500齿  
 齿顶圆直径：  $da = 8\text{mm}$ 到350mm  
 齿宽： 最大200mm  
 螺旋角： 最大45° (左，右螺旋角)  
 可保证精度等级： 本公司可以制作JIS B 1702 0级，相当于，ISO标准4级的齿轮

Our gear products: Spur, Helical and other gears.  
 Our sizes: Module from 0.3, 0.4, 0.5, 0.6, 0.75, 0.8, 1.0, 1.25, 1.5, 1.75, 2.0, 2.25, 2.5, 2.75, 3.0, 4.0 and 5.0.  
 Our capability of D.P (inch) size: Please provide your drawing to us. Price, delivery and lead-time are negotiable. Do not hesitate to contact us for discussion.

Number of teeth and maximum tip diameter.  
 No. of teeth: range from 10z to 500z  
 Tip diameter:  $da=8.0\text{mm}$  up to 350.00mm  
 Face width: Maximum 200.0mm  
 Helix: Maximum 45 degree (Right /Left helix)  
 We are able to fabricate gears with standard that are above JIS B 1702 class 0 equivalent ISO 4.

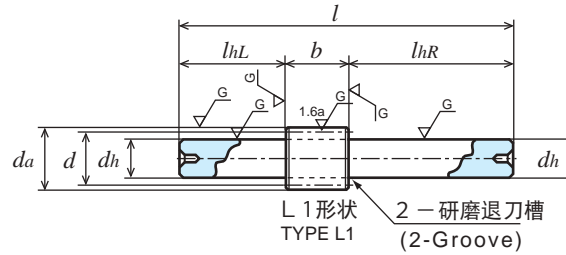
# 研磨直齿轮 (SG 系列)

SG GROUND SPUR GEARS

模数  
MODULE

0.5 (齿数 20 ~ 120)

(普通齿)  
FULL DEPTH TOOTH

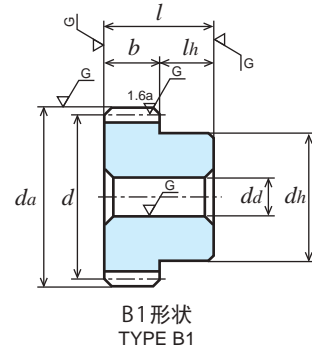
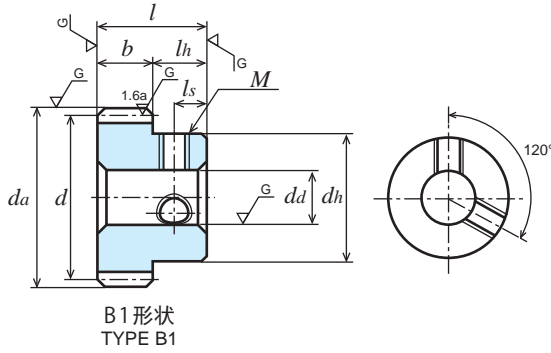


单位: mm

| 精度              | 材料         | 压力角 | 热处理    | 齿面硬度       | 侧隙①         |
|-----------------|------------|-----|--------|------------|-------------|
| JIS B 1702-1 5级 | SCM435、440 | 20度 | 齿面高频淬火 | HRC49 ~ 55 | 0.02 ~ 0.06 |

★未做表面处理。【\*】表示带有两个螺纹孔，无固定用螺钉。  
★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。  
①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 螺纹孔<br>Set Screw |    | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|------------------|----|----------------------|
|                          |                            |                                  |                             |            |                       |                               |                            |                              |                           | M                | ls |                      |
| SG50S 20L - 0806         | 20                         | φ10                              | φ11                         | L1         | 8                     | -                             | φ 6 (h7)                   | L22 R50                      | 80                        | -                | -  | 20.8                 |
| SG50S 22L - 0808         | 22                         | φ11                              | φ12                         | L1         | 8                     | -                             | φ 8 (h7)                   | L22 R50                      | 80                        | -                | -  | 34.2                 |
| SG50S 24L - 0810         | 24                         | φ12                              | φ13                         | L1         | 8                     | -                             | φ10 (h7)                   | L22 R50                      | 80                        | -                | -  | 51.1                 |
| SG50S 25L - 0810         | 25                         | φ12.5                            | φ13.5                       | L1         | 8                     | -                             | φ10 (h7)                   | L22 R50                      | 80                        | -                | -  | 51.7                 |
| SG50S 26L - 0810         | 26                         | φ13                              | φ14                         | L1         | 8                     | -                             | φ10 (h7)                   | L22 R50                      | 80                        | -                | -  | 52.4                 |
| SG50S 28B - 0805         | 28                         | φ14                              | φ15                         | B1         | 8                     | φ 5                           | φ10                        | 8                            | 16                        | -                | -  | 12.1                 |
| SG50S 30B - 0805         | 30                         | φ15                              | φ16                         | B1         | 8                     | φ 5                           | φ12                        | 8                            | 16                        | -                | -  | 15.6                 |
| SG50S 30B - 0806         | 30                         | φ15                              | φ16                         | B1         | 8                     | φ 6                           | φ12                        | 8                            | 16                        | -                | -  | 14.5                 |
| SG50S 30B * 0806         | 30                         | φ15                              | φ16                         | B1         | 8                     | φ 6                           | φ12                        | 8                            | 16                        | 2-M3             | 4  | 14.4                 |
| SG50S 32B - 0805         | 32                         | φ16                              | φ17                         | B1         | 8                     | φ 5                           | φ12                        | 8                            | 16                        | -                | -  | 17.2                 |
| SG50S 32B - 0806         | 32                         | φ16                              | φ17                         | B1         | 8                     | φ 6                           | φ12                        | 8                            | 16                        | -                | -  | 16.1                 |
| SG50S 35B - 0805         | 35                         | φ17.5                            | φ18.5                       | B1         | 8                     | φ 5                           | φ14                        | 8                            | 16                        | -                | -  | 22.2                 |
| SG50S 36B - 0806         | 36                         | φ18                              | φ19                         | B1         | 8                     | φ 6                           | φ16                        | 8                            | 16                        | -                | -  | 24.9                 |
| SG50S 36B - 0808         | 36                         | φ18                              | φ19                         | B1         | 8                     | φ 8                           | φ16                        | 8                            | 16                        | -                | -  | 22.1                 |
| SG50S 40B - 0806         | 40                         | φ20                              | φ21                         | B1         | 8                     | φ 6                           | φ16                        | 8                            | 16                        | -                | -  | 28.6                 |
| SG50S 40B - 0808         | 40                         | φ20                              | φ21                         | B1         | 8                     | φ 8                           | φ16                        | 8                            | 16                        | -                | -  | 25.9                 |
| SG50S 40B * 0808         | 40                         | φ20                              | φ21                         | B1         | 8                     | φ 8                           | φ16                        | 8                            | 16                        | 2-M4             | 4  | 25.5                 |
| SG50S 45B - 0808         | 45                         | φ22.5                            | φ23.5                       | B1         | 8                     | φ 8                           | φ16                        | 8                            | 16                        | -                | -  | 31.1                 |
| SG50S 48B - 0808         | 48                         | φ24                              | φ25                         | B1         | 8                     | φ 8                           | φ20                        | 8                            | 16                        | -                | -  | 34.5                 |
| SG50S 50B - 0808         | 50                         | φ25                              | φ26                         | B1         | 8                     | φ 8                           | φ20                        | 8                            | 16                        | -                | -  | 43.9                 |
| SG50S 50B - 0810         | 50                         | φ25                              | φ26                         | B1         | 8                     | φ10                           | φ20                        | 8                            | 16                        | -                | -  | 40.4                 |
| SG50S 50B * 0810         | 50                         | φ25                              | φ26                         | B1         | 8                     | φ10                           | φ20                        | 8                            | 16                        | 2-M4             | 4  | 40.0                 |
| SG50S 54B - 0808         | 54                         | φ27                              | φ28                         | B1         | 8                     | φ 8                           | φ20                        | 8                            | 16                        | -                | -  | 49.0                 |
| SG50S 55B - 0808         | 55                         | φ27.5                            | φ28.5                       | B1         | 8                     | φ 8                           | φ20                        | 8                            | 16                        | -                | -  | 50.4                 |
| SG50S 56B - 0808         | 56                         | φ28                              | φ29                         | B1         | 8                     | φ 8                           | φ20                        | 8                            | 16                        | -                | -  | 51.7                 |
| SG50S 60B - 0808         | 60                         | φ30                              | φ31                         | B1         | 8                     | φ 8                           | φ22                        | 8                            | 16                        | -                | -  | 61.5                 |
| SG50S 60B - 0810         | 60                         | φ30                              | φ31                         | B1         | 8                     | φ10                           | φ22                        | 8                            | 16                        | -                | -  | 58.0                 |
| SG50S 60B * 0810         | 60                         | φ30                              | φ31                         | B1         | 8                     | φ10                           | φ22                        | 8                            | 16                        | 2-M4             | 4  | 57.6                 |
| SG50S 64B - 0808         | 64                         | φ32                              | φ33                         | B1         | 8                     | φ 8                           | φ22                        | 8                            | 16                        | -                | -  | 67.6                 |
| SG50S 70B - 0808         | 70                         | φ35                              | φ36                         | B1         | 8                     | φ 8                           | φ22                        | 8                            | 16                        | -                | -  | 77.4                 |
| SG50S 72B - 0808         | 72                         | φ36                              | φ37                         | B1         | 8                     | φ 8                           | φ25                        | 8                            | 16                        | -                | -  | 87.8                 |
| SG50S 75B - 0808         | 75                         | φ37.5                            | φ38.5                       | B1         | 8                     | φ 8                           | φ25                        | 8                            | 16                        | -                | -  | 93.2                 |
| SG50S 80B - 0808         | 80                         | φ40                              | φ41                         | B1         | 8                     | φ 8                           | φ25                        | 8                            | 16                        | -                | -  | 102.7                |
| SG50S 80B - 0810         | 80                         | φ40                              | φ41                         | B1         | 8                     | φ10                           | φ25                        | 8                            | 16                        | -                | -  | 99.2                 |
| SG50S 80B - 0812         | 80                         | φ40                              | φ41                         | B1         | 8                     | φ12                           | φ25                        | 8                            | 16                        | -                | -  | 94.9                 |
| SG50S 80B * 0812         | 80                         | φ40                              | φ41                         | B1         | 8                     | φ12                           | φ25                        | 8                            | 16                        | 2-M5             | 4  | 94.1                 |
| SG50S 90B - 0810         | 90                         | φ45                              | φ46                         | B1         | 8                     | φ10                           | φ30                        | 8                            | 16                        | -                | -  | 133.5                |
| SG50S 96B - 0810         | 96                         | φ48                              | φ49                         | B1         | 8                     | φ10                           | φ30                        | 8                            | 16                        | -                | -  | 147.1                |



| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 螺纹孔<br>Set Screw |    | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|------------------|----|----------------------|
|                          |                            |                                  |                             |            |                       |                               |                            |                              |                           | M                | ls |                      |
| SG50S 100B - 0810        | 100                        | φ50                              | φ51                         | B1         | 8                     | φ10                           | φ30                        | 8                            | 16                        | -                | -  | 156.7                |
| SG50S 100B - 0812        | 100                        | φ50                              | φ51                         | B1         | 8                     | φ12                           | φ30                        | 8                            | 16                        | -                | -  | 152.4                |
| SG50S 100B * 0812        | 100                        | φ50                              | φ51                         | B1         | 8                     | φ12                           | φ30                        | 8                            | 16                        | 2-M5             | 4  | 151.5                |
| SG50S 108B - 0810        | 108                        | φ54                              | φ55                         | B1         | 8                     | φ10                           | φ35                        | 8                            | 16                        | -                | -  | 193.0                |
| SG50S 112B - 0810        | 112                        | φ56                              | φ57                         | B1         | 8                     | φ10                           | φ35                        | 8                            | 16                        | -                | -  | 203.8                |
| SG50S 120B - 0810        | 120                        | φ60                              | φ61                         | B1         | 8                     | φ10                           | φ35                        | 8                            | 16                        | -                | -  | 226.6                |

### 容许传达动力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

| 齿数<br>z | 齿宽<br>b | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |          |          |          |          |          |          |
|---------|---------|---|----------|----------|----------|----------|----------|----------|
|         |         | 400   | 800      | 1,200    | 1,500    | 1,800    | 2,500    | 3,000    |
| 20      | 8       | 108.04                                      | 216.08   | 324.12   | 405.15   | 486.18   | 675.25   | 810.30   |
| 22      | 8       | 124.31                                      | 248.63   | 372.94   | 466.17   | 559.41   | 776.95   | 932.34   |
| 24      | 8       | 140.85                                      | 281.70   | 422.54   | 528.18   | 633.81   | 880.30   | 1,056.36 |
| 25      | 8       | 149.23                                      | 298.46   | 447.69   | 559.61   | 671.53   | 932.68   | 1,119.22 |
| 26      | 8       | 157.67                                      | 315.34   | 473.01   | 591.26   | 709.51   | 985.43   | 1,182.52 |
| 28      | 8       | 174.71                                      | 349.41   | 524.12   | 655.15   | 786.18   | 1,091.91 | 1,310.30 |
| 30      | 8       | 191.83                                      | 383.66   | 575.50   | 719.37   | 863.24   | 1,198.95 | 1,438.74 |
| 32      | 8       | 209.19                                      | 418.38   | 627.57   | 784.46   | 941.35   | 1,307.43 | 1,568.92 |
| 35      | 8       | 235.49                                      | 470.97   | 706.46   | 883.07   | 1,059.69 | 1,471.79 | 1,766.14 |
| 36      | 8       | 244.32                                      | 488.63   | 732.95   | 916.18   | 1,099.42 | 1,526.97 | 1,832.36 |
| 40      | 8       | 279.89                                      | 559.78   | 839.67   | 1,049.58 | 1,259.50 | 1,749.30 | 2,091.76 |
| 42      | 8       | 297.82                                      | 595.64   | 893.46   | 1,116.83 | 1,340.19 | 1,861.38 | 2,217.10 |
| 44      | 8       | 315.62                                      | 631.24   | 946.87   | 1,183.58 | 1,420.30 | 1,972.64 | 2,340.50 |
| 45      | 8       | 324.64                                      | 649.28   | 973.91   | 1,217.39 | 1,460.87 | 2,028.99 | 2,402.69 |
| 48      | 8       | 351.79                                      | 703.58   | 1,055.38 | 1,319.22 | 1,583.07 | 2,190.95 | 2,588.62 |
| 50      | 8       | 369.97                                      | 739.94   | 1,109.91 | 1,387.38 | 1,664.86 | 2,296.66 | 2,711.92 |
| 52      | 8       | 388.21                                      | 776.41   | 1,164.62 | 1,455.78 | 1,746.93 | 2,402.07 | 2,834.73 |
| 54      | 8       | 406.49                                      | 812.98   | 1,219.47 | 1,524.34 | 1,829.21 | 2,507.08 | 2,956.93 |
| 55      | 8       | 415.65                                      | 831.31   | 1,246.96 | 1,558.70 | 1,870.44 | 2,559.46 | 3,017.83 |
| 56      | 8       | 424.83                                      | 849.65   | 1,274.47 | 1,593.09 | 1,911.71 | 2,611.72 | 3,078.57 |
| 60      | 8       | 461.62                                      | 923.25   | 1,384.87 | 1,731.08 | 2,077.30 | 2,819.79 | 3,320.04 |
| 64      | 8       | 498.57                                      | 997.13   | 1,495.70 | 1,869.62 | 2,242.66 | 3,023.11 | 3,559.67 |
| 70      | 8       | 554.23                                      | 1,108.46 | 1,662.69 | 2,078.37 | 2,475.56 | 3,332.20 | 3,927.74 |
| 72      | 8       | 572.84                                      | 1,145.69 | 1,718.53 | 2,148.17 | 2,552.72 | 3,433.30 | 4,049.63 |
| 75      | 8       | 600.84                                      | 1,201.61 | 1,802.41 | 2,253.02 | 2,667.98 | 3,584.01 | 4,231.63 |
| 80      | 8       | 647.54                                      | 1,295.08 | 1,942.62 | 2,419.70 | 2,858.90 | 3,839.99 | 4,532.93 |
| 90      | 8       | 740.43                                      | 1,480.87 | 2,221.30 | 2,740.03 | 3,231.68 | 4,345.90 | 5,120.65 |
| 96      | 8       | 796.77                                      | 1,593.54 | 2,389.35 | 2,931.46 | 3,453.87 | 4,647.97 | 5,470.63 |
| 100     | 8       | 834.38                                      | 1,668.76 | 2,494.32 | 3,058.06 | 3,600.58 | 4,847.65 | 5,701.55 |
| 108     | 8       | 909.75                                      | 1,819.50 | 2,702.70 | 3,308.89 | 3,893.39 | 5,243.00 | 6,135.59 |
| 112     | 8       | 947.51                                      | 1,895.02 | 2,806.16 | 3,433.16 | 4,042.91 | 5,438.74 | 6,345.45 |
| 120     | 8       | 1,023.12                                    | 2,046.24 | 3,011.40 | 3,679.20 | 4,339.67 | 5,826.04 | 6,757.02 |

### 容许传达动力表 齿面强度 (W)

Allowable transfer capability table (W) Surface Durability

|     |   | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |          |          |          |          |          |          |
|-----|---|---|----------|----------|----------|----------|----------|----------|
|     |   | 400   | 800      | 1,200    | 1,500    | 1,800    | 2,500    | 3,000    |
| 20  | 8 | 25.17                                       | 50.59    | 76.25    | 95.65    | 115.17   | 161.15   | 194.36   |
| 22  | 8 | 30.61                                       | 61.55    | 92.81    | 116.45   | 140.25   | 196.36   | 236.91   |
| 24  | 8 | 36.59                                       | 73.62    | 111.05   | 139.38   | 167.91   | 235.22   | 283.88   |
| 25  | 8 | 39.79                                       | 80.07    | 120.81   | 151.65   | 182.72   | 256.03   | 309.05   |
| 26  | 8 | 43.13                                       | 86.81    | 131.00   | 164.46   | 198.18   | 277.76   | 335.34   |
| 28  | 8 | 50.22                                       | 101.12   | 152.66   | 191.71   | 231.06   | 324.02   | 391.30   |
| 30  | 8 | 57.86                                       | 116.57   | 176.05   | 221.13   | 266.60   | 374.03   | 451.82   |
| 32  | 8 | 66.06                                       | 133.15   | 201.17   | 252.76   | 304.79   | 427.81   | 516.93   |
| 35  | 8 | 79.42                                       | 160.18   | 242.14   | 304.34   | 367.11   | 515.63   | 623.27   |
| 36  | 8 | 84.16                                       | 169.76   | 256.68   | 322.65   | 389.24   | 546.82   | 661.05   |
| 40  | 8 | 104.51                                      | 211.00   | 319.25   | 401.49   | 484.56   | 681.25   | 821.03   |
| 42  | 8 | 115.54                                      | 233.37   | 353.22   | 444.30   | 536.33   | 754.32   | 905.72   |
| 44  | 8 | 127.15                                      | 256.91   | 388.98   | 489.39   | 590.86   | 831.31   | 994.49   |
| 45  | 8 | 133.17                                      | 269.12   | 407.53   | 512.79   | 619.17   | 871.29   | 1,040.39 |
| 48  | 8 | 152.08                                      | 307.52   | 465.92   | 586.43   | 708.29   | 993.65   | 1,184.13 |
| 50  | 8 | 165.41                                      | 334.61   | 507.12   | 638.42   | 771.20   | 1,078.73 | 1,284.96 |
| 52  | 8 | 179.32                                      | 362.89   | 550.15   | 692.72   | 836.93   | 1,167.23 | 1,389.78 |
| 54  | 8 | 193.81                                      | 392.37   | 595.01   | 749.36   | 905.50   | 1,259.13 | 1,498.55 |
| 55  | 8 | 201.28                                      | 407.56   | 618.14   | 778.55   | 940.85   | 1,306.36 | 1,554.41 |
| 56  | 8 | 208.89                                      | 423.05   | 641.73   | 808.33   | 976.92   | 1,354.43 | 1,611.25 |
| 60  | 8 | 240.80                                      | 488.02   | 740.72   | 933.35   | 1,128.33 | 1,555.13 | 1,848.36 |
| 64  | 8 | 275.06                                      | 557.86   | 847.18   | 1,067.84 | 1,290.76 | 1,769.21 | 2,101.33 |
| 70  | 8 | 330.89                                      | 671.79   | 1,020.99 | 1,287.52 | 1,545.96 | 2,115.13 | 2,518.03 |
| 72  | 8 | 350.69                                      | 712.23   | 1,082.72 | 1,365.57 | 1,636.03 | 2,236.98 | 2,665.11 |
| 75  | 8 | 381.51                                      | 775.21   | 1,178.89 | 1,487.18 | 1,775.81 | 2,425.83 | 2,893.33 |
| 80  | 8 | 435.87                                      | 886.40   | 1,348.78 | 1,696.04 | 2,021.16 | 2,761.77 | 3,293.88 |
| 90  | 8 | 555.93                                      | 1,132.30 | 1,724.83 | 2,149.18 | 2,557.83 | 3,501.66 | 4,169.72 |
| 96  | 8 | 635.27                                      | 1,295.04 | 1,973.12 | 2,446.11 | 2,908.90 | 3,986.43 | 4,742.36 |
| 100 | 8 | 691.23                                      | 1,409.92 | 2,142.24 | 2,654.41 | 3,154.91 | 4,326.43 | 5,143.47 |
| 108 | 8 | 810.54                                      | 1,655.11 | 2,500.92 | 3,095.63 | 3,677.90 | 5,046.42 | 5,969.89 |
| 112 | 8 | 873.91                                      | 1,785.46 | 2,690.44 | 3,328.44 | 3,958.21 | 5,426.21 | 6,400.03 |
| 120 | 8 | 1,008.14                                    | 2,061.81 | 3,089.65 | 3,818.25 | 4,549.00 | 6,224.91 | 7,298.89 |

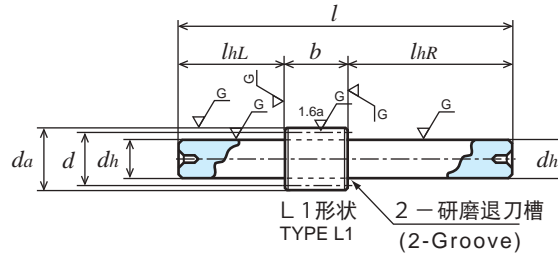
# 研磨直齿轮 (SG 系列)

SG GROUND SPUR GEARS

模数  
MODULE

0.8 (齿数 15 ~ 120)

(普通齿)  
FULL DEPTH TOOTH

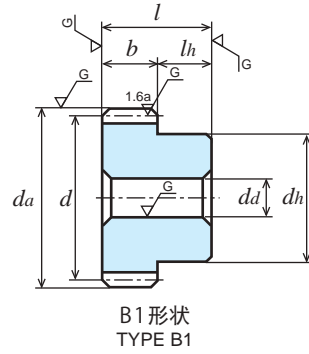
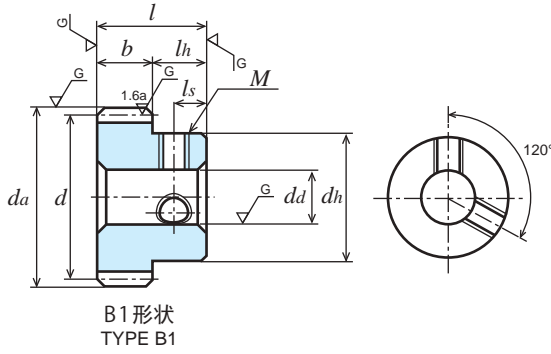


单位: mm

| 精度              | 材料         | 压力角 | 热处理    | 齿面硬度       | 侧隙①         |
|-----------------|------------|-----|--------|------------|-------------|
| JIS B 1702-1 5级 | SCM435、440 | 20度 | 齿面高频淬火 | HRC49 ~ 55 | 0.02 ~ 0.06 |

★未做表面处理。【\*】表示带有两个螺纹孔，无固定用螺钉。  
★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。  
①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 螺纹孔<br>Set Screw |    | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|------------------|----|----------------------|
|                          |                            |                                  |                             |            |                       |                               |                            |                              |                           | M                | ls |                      |
| SG80S 15L - 0806         | 15                         | φ12                              | φ13.6                       | L1         | 8                     | -                             | φ 6 (h7)                   | L22 R60                      | 90                        | -                | -  | 25.1                 |
| SG80S 16L - 0806         | 16                         | φ12.8                            | φ14.4                       | L1         | 8                     | -                             | φ 6 (h7)                   | L22 R60                      | 90                        | -                | -  | 26.1                 |
| SG80S 18L - 0808         | 18                         | φ14.4                            | φ16                         | L1         | 8                     | -                             | φ 8 (h7)                   | L22 R60                      | 90                        | -                | -  | 42.3                 |
| SG80S 20L - 0810         | 20                         | φ16                              | φ17.6                       | L1         | 8                     | -                             | φ10 (h7)                   | L22 R60                      | 90                        | -                | -  | 62.7                 |
| SG80S 22B - 0806         | 22                         | φ17.6                            | φ19.2                       | B1         | 8                     | φ 6                           | φ14                        | 10                           | 18                        | -                | -  | 23.2                 |
| SG80S 24L - 0810         | 24                         | φ19.2                            | φ20.8                       | L1         | 8                     | -                             | φ10 (h7)                   | L22 R60                      | 90                        | -                | -  | 68.3                 |
| SG80S 24B - 0806         | 24                         | φ19.2                            | φ20.8                       | B1         | 8                     | φ 6                           | φ16                        | 10                           | 18                        | -                | -  | 29.8                 |
| SG80S 25L - 0810         | 25                         | φ20                              | φ21.6                       | L1         | 8                     | -                             | φ10 (h7)                   | L22 R60                      | 90                        | -                | -  | 69.8                 |
| SG80S 25B - 0806         | 25                         | φ20                              | φ21.6                       | B1         | 8                     | φ 6                           | φ16                        | 10                           | 18                        | -                | -  | 31.3                 |
| SG80S 28B - 0808         | 28                         | φ22.4                            | φ24                         | B1         | 8                     | φ 8                           | φ18                        | 10                           | 18                        | -                | -  | 37.4                 |
| SG80S 30B - 0810         | 30                         | φ24                              | φ25.6                       | B1         | 8                     | φ10                           | φ20                        | 10                           | 18                        | -                | -  | 41.7                 |
| SG80S 30B * 0810         | 30                         | φ24                              | φ25.6                       | B1         | 8                     | φ10                           | φ20                        | 10                           | 18                        | 2-M4             | 5  | 41.3                 |
| SG80S 32B - 0810         | 32                         | φ25.6                            | φ27.2                       | B1         | 8                     | φ10                           | φ20                        | 10                           | 18                        | -                | -  | 45.6                 |
| SG80S 35B - 0810         | 35                         | φ28                              | φ29.6                       | B1         | 8                     | φ10                           | φ20                        | 10                           | 18                        | -                | -  | 51.9                 |
| SG80S 36B - 0810         | 36                         | φ28.8                            | φ30.4                       | B1         | 8                     | φ10                           | φ20                        | 10                           | 18                        | -                | -  | 54.1                 |
| SG80S 40B - 0810         | 40                         | φ32                              | φ33.6                       | B1         | 8                     | φ10                           | φ25                        | 10                           | 18                        | -                | -  | 77.4                 |
| SG80S 40B * 0812         | 40                         | φ32                              | φ33.6                       | B1         | 8                     | φ12                           | φ25                        | 10                           | 18                        | 2-M5             | 5  | 71.5                 |
| SG80S 45B - 0810         | 45                         | φ36                              | φ37.6                       | B1         | 8                     | φ10                           | φ25                        | 10                           | 18                        | -                | -  | 90.8                 |
| SG80S 48B - 0810         | 48                         | φ38.4                            | φ40                         | B1         | 8                     | φ10                           | φ25                        | 10                           | 18                        | -                | -  | 99.5                 |
| SG80S 50B - 0810         | 50                         | φ40                              | φ41.6                       | B1         | 8                     | φ10                           | φ25                        | 10                           | 18                        | -                | -  | 105.6                |
| SG80S 50B * 0812         | 50                         | φ40                              | φ41.6                       | B1         | 8                     | φ12                           | φ25                        | 10                           | 18                        | 2-M5             | 5  | 100.0                |
| SG80S 54B - 0810         | 54                         | φ43.2                            | φ44.8                       | B1         | 8                     | φ10                           | φ25                        | 10                           | 18                        | -                | -  | 118.7                |
| SG80S 55B - 0810         | 55                         | φ44                              | φ45.6                       | B1         | 8                     | φ10                           | φ25                        | 10                           | 18                        | -                | -  | 122.1                |
| SG80S 56B - 0810         | 56                         | φ44.8                            | φ46.4                       | B1         | 8                     | φ10                           | φ25                        | 10                           | 18                        | -                | -  | 125.6                |
| SG80S 60B - 0810         | 60                         | φ48                              | φ49.6                       | B1         | 8                     | φ10                           | φ25                        | 10                           | 18                        | -                | -  | 140.1                |
| SG80S 60B * 0812         | 60                         | φ48                              | φ49.6                       | B1         | 8                     | φ12                           | φ25                        | 10                           | 18                        | 2-M5             | 5  | 134.8                |
| SG80S 64B - 0812         | 64                         | φ51.2                            | φ52.8                       | B1         | 8                     | φ12                           | φ30                        | 10                           | 18                        | -                | -  | 167.6                |
| SG80S 70B - 0812         | 70                         | φ56                              | φ57.6                       | B1         | 8                     | φ12                           | φ30                        | 10                           | 18                        | -                | -  | 192.9                |
| SG80S 72B - 0812         | 72                         | φ57.6                            | φ59.2                       | B1         | 8                     | φ12                           | φ30                        | 10                           | 18                        | -                | -  | 201.9                |
| SG80S 75B - 0812         | 75                         | φ60                              | φ61.6                       | B1         | 8                     | φ12                           | φ30                        | 10                           | 18                        | -                | -  | 215.7                |
| SG80S 80B - 0812         | 80                         | φ64                              | φ65.6                       | B1         | 8                     | φ12                           | φ30                        | 10                           | 18                        | -                | -  | 240.0                |
| SG80S 80B * 0815         | 80                         | φ64                              | φ65.6                       | B1         | 8                     | φ15                           | φ30                        | 10                           | 18                        | 2-M6             | 5  | 230.3                |
| SG80S 90B - 0812         | 90                         | φ72                              | φ73.6                       | B1         | 8                     | φ12                           | φ35                        | 10                           | 18                        | -                | -  | 313.2                |
| SG80S 96B - 0812         | 96                         | φ76.8                            | φ78.4                       | B1         | 8                     | φ12                           | φ35                        | 10                           | 18                        | -                | -  | 348.2                |
| SG80S 100B - 0812        | 100                        | φ80                              | φ81.6                       | B1         | 8                     | φ12                           | φ35                        | 10                           | 18                        | -                | -  | 372.8                |
| SG80S 100B * 0820        | 100                        | φ80                              | φ81.6                       | B1         | 8                     | φ20                           | φ35                        | 10                           | 18                        | 2-M6             | 5  | 344.9                |
| SG80S 108B - 0812        | 108                        | φ86.4                            | φ88                         | B1         | 8                     | φ12                           | φ40                        | 10                           | 18                        | -                | -  | 448.0                |
| SG80S 112B - 0812        | 112                        | φ89.6                            | φ91.2                       | B1         | 8                     | φ12                           | φ40                        | 10                           | 18                        | -                | -  | 475.6                |



| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>$z$ | 分度圆直径<br>Reference Diameter<br>$d$ | 齿顶圆直径<br>Tip Diameter<br>$d_a$ | 形状<br>Type | 齿宽<br>Face Width<br>$b$ | 孔径<br>Bore Diameter<br>$d_d(H7)$ | 轮毂外径<br>Hub Diameter<br>$d_h$ | 轮毂长度<br>Hub Projection<br>$l_h$ | 全长<br>Overall Length<br>$l$ | 螺纹孔<br>Set Screw |       | 重量<br>Weight<br>W(g) |
|--------------------------|------------------------------|------------------------------------|--------------------------------|------------|-------------------------|----------------------------------|-------------------------------|---------------------------------|-----------------------------|------------------|-------|----------------------|
|                          |                              |                                    |                                |            |                         |                                  |                               |                                 |                             | $M$              | $l_s$ |                      |
| <b>SG80S 120B - 0812</b> | 120                          | $\phi 96$                          | $\phi 97.6$                    | B1         | 8                       | $\phi 12$                        | $\phi 40$                     | 10                              | 18                          | -                | -     | 533.8                |
| <b>SG80S 120B * 0820</b> | 120                          | $\phi 96$                          | $\phi 97.6$                    | B1         | 8                       | $\phi 20$                        | $\phi 40$                     | 10                              | 18                          | 2-M6             | 5     | 506.4                |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br>$z$ | 齿宽<br>$b$ | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |       |       |       |       |       |
|-----------|-----------|---|------|-------|-------|-------|-------|-------|
|           |           | 400   | 800  | 1,200 | 1,500 | 1,800 | 2,500 | 3,000 |
| 15        | 8         | 0.17  | 0.35 | 0.52  | 0.66  | 0.79  | 1.10  | 1.32  |
| 16        | 8         | 0.19  | 0.39 | 0.58  | 0.73  | 0.88  | 1.22  | 1.46  |
| 18        | 8         | 0.23  | 0.47 | 0.70  | 0.88  | 1.06  | 1.47  | 1.76  |
| 20        | 8         | 0.27  | 0.55 | 0.82  | 1.03  | 1.24  | 1.72  | 2.07  |
| 22        | 8         | 0.31  | 0.63 | 0.95  | 1.19  | 1.43  | 1.98  | 2.38  |
| 24        | 8         | 0.36  | 0.72 | 1.08  | 1.35  | 1.62  | 2.25  | 2.70  |
| 25        | 8         | 0.38  | 0.76 | 1.14  | 1.43  | 1.71  | 2.38  | 2.85  |
| 28        | 8         | 0.44  | 0.89 | 1.34  | 1.67  | 2.01  | 2.79  | 3.31  |
| 30        | 8         | 0.49  | 0.98 | 1.47  | 1.84  | 2.20  | 3.05  | 3.61  |
| 32        | 8         | 0.53  | 1.07 | 1.60  | 2.00  | 2.40  | 3.31  | 3.91  |
| 35        | 8         | 0.60  | 1.20 | 1.80  | 2.26  | 2.71  | 3.70  | 4.36  |
| 36        | 8         | 0.62  | 1.25 | 1.87  | 2.34  | 2.81  | 3.83  | 4.51  |
| 40        | 8         | 0.71  | 1.43 | 2.14  | 2.68  | 3.21  | 4.34  | 5.10  |
| 45        | 8         | 0.82  | 1.65 | 2.48  | 3.11  | 3.69  | 4.97  | 5.86  |
| 48        | 8         | 0.90  | 1.80 | 2.70  | 3.37  | 3.99  | 5.35  | 6.32  |
| 50        | 8         | 0.94  | 1.89 | 2.84  | 3.53  | 4.18  | 5.61  | 6.63  |
| 54        | 8         | 1.04  | 2.08 | 3.12  | 3.86  | 4.56  | 6.13  | 7.22  |
| 55        | 8         | 1.06  | 2.12 | 3.19  | 3.94  | 4.65  | 6.25  | 7.37  |
| 56        | 8         | 1.08  | 2.17 | 3.29  | 4.02  | 4.74  | 6.38  | 7.52  |
| 60        | 8         | 1.18  | 2.36 | 3.54  | 4.34  | 5.12  | 6.89  | 8.11  |
| 64        | 8         | 1.27  | 2.55 | 3.80  | 4.66  | 5.49  | 7.39  | 8.69  |
| 70        | 8         | 1.42  | 2.84 | 4.20  | 5.14  | 6.05  | 8.14  | 9.50  |
| 72        | 8         | 1.47  | 2.93 | 4.33  | 5.30  | 6.24  | 8.39  | 9.77  |
| 75        | 8         | 1.54  | 3.08 | 4.53  | 5.53  | 6.52  | 8.76  | 10.16 |
| 80        | 8         | 1.66  | 3.32 | 4.85  | 5.92  | 6.99  | 9.34  | 10.80 |
| 90        | 8         | 1.90  | 3.79 | 5.48  | 6.70  | 7.90  | 10.43 | 12.02 |
| 96        | 8         | 2.04  | 4.06 | 5.85  | 7.17  | 8.44  | 11.07 | 12.74 |
| 100       | 8         | 2.14  | 4.23 | 6.10  | 7.48  | 8.80  | 11.49 | 13.25 |
| 108       | 8         | 2.33  | 4.59 | 6.61  | 8.09  | 9.50  | 12.31 | 14.25 |
| 112       | 8         | 2.43  | 4.76 | 6.86  | 8.39  | 9.82  | 12.71 | 14.74 |
| 120       | 8         | 2.62  | 5.11 | 7.36  | 8.99  | 10.47 | 13.54 | 15.70 |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|---|-------|-------|-------|-------|-------|-------|
| 400   | 800   | 1,200 | 1,500 | 1,800 | 2,500 | 3,000 |
| 0.036                                       | 0.075 | 0.11  | 0.13  | 0.16  | 0.23  | 0.28  |
| 0.041                                       | 0.084 | 0.12  | 0.15  | 0.19  | 0.26  | 0.32  |
| 0.053                                       | 0.107 | 0.16  | 0.20  | 0.24  | 0.34  | 0.41  |
| 0.066                                       | 0.133 | 0.20  | 0.25  | 0.30  | 0.42  | 0.51  |
| 0.080                                       | 0.162 | 0.24  | 0.30  | 0.37  | 0.52  | 0.63  |
| 0.096                                       | 0.193 | 0.29  | 0.36  | 0.44  | 0.62  | 0.75  |
| 0.104                                       | 0.211 | 0.31  | 0.40  | 0.48  | 0.68  | 0.82  |
| 0.131                                       | 0.266 | 0.40  | 0.50  | 0.61  | 0.86  | 1.03  |
| 0.15  | 0.30  | 0.46  | 0.58  | 0.70  | 0.99  | 1.18  |
| 0.17  | 0.35  | 0.53  | 0.67  | 0.81  | 1.13  | 1.34  |
| 0.20  | 0.42  | 0.64  | 0.80  | 0.97  | 1.35  | 1.61  |
| 0.22  | 0.44  | 0.68  | 0.85  | 1.03  | 1.43  | 1.70  |
| 0.27  | 0.55  | 0.84  | 1.06  | 1.29  | 1.76  | 2.10  |
| 0.35  | 0.71  | 1.08  | 1.36  | 1.63  | 2.23  | 2.66  |
| 0.40  | 0.81  | 1.23  | 1.56  | 1.86  | 2.54  | 3.03  |
| 0.43  | 0.88  | 1.34  | 1.69  | 2.02  | 2.76  | 3.29  |
| 0.51  | 1.04  | 1.58  | 1.98  | 2.35  | 3.22  | 3.84  |
| 0.53  | 1.08  | 1.64  | 2.05  | 2.44  | 3.34  | 3.98  |
| 0.55  | 1.12  | 1.70  | 2.13  | 2.53  | 3.47  | 4.13  |
| 0.63  | 1.29  | 1.97  | 2.44  | 2.90  | 3.98  | 4.74  |
| 0.72  | 1.48  | 2.24  | 2.78  | 3.30  | 4.53  | 5.38  |
| 0.87  | 1.79  | 2.69  | 3.33  | 3.96  | 5.43  | 6.40  |
| 0.93  | 1.89  | 2.85  | 3.52  | 4.19  | 5.74  | 6.75  |
| 1.01  | 2.06  | 3.09  | 3.82  | 4.55  | 6.22  | 7.30  |
| 1.15  | 2.36  | 3.52  | 4.34  | 5.18  | 7.06  | 8.25  |
| 1.47  | 3.02  | 4.45  | 5.51  | 6.56  | 8.83  | 10.29 |
| 1.68  | 3.43  | 5.06  | 6.27  | 7.46  | 9.98  | 11.61 |
| 1.83  | 3.73  | 5.48  | 6.80  | 8.09  | 10.78 | 12.56 |
| 2.15  | 4.35  | 6.40  | 7.94  | 9.42  | 12.45 | 14.57 |
| 2.32  | 4.68  | 6.89  | 8.54  | 10.10 | 13.33 | 15.62 |
| 2.68  | 5.37  | 7.92  | 9.80  | 11.53 | 15.20 | 17.82 |

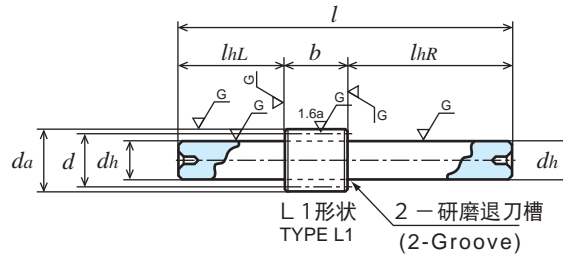
# 研磨直齿轮 (SG 系列)

SG GROUND SPUR GEARS

模数  
MODULE

1 (齿数 14 ~ 56)

(普通齿)  
FULL DEPTH TOOTH

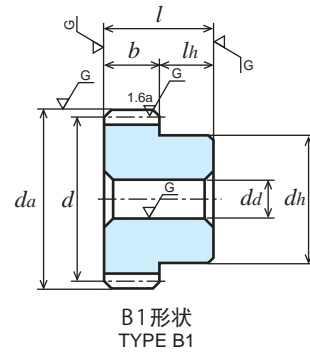
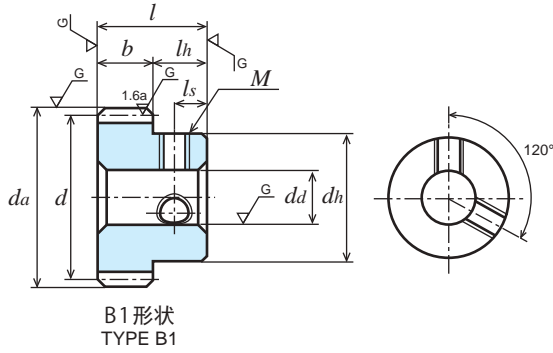


单位: mm

| 精度              | 材料         | 压力角 | 热处理    | 齿面硬度       | 侧隙①         |
|-----------------|------------|-----|--------|------------|-------------|
| JIS B 1702-1 5级 | SCM435、440 | 20度 | 齿面高频淬火 | HRC49 ~ 55 | 0.04 ~ 0.08 |

★未做表面处理。【\*】表示带有两个螺纹孔，无固定用螺钉。  
★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。  
①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 螺纹孔<br>Set Screw |    | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|------------------|----|----------------------|
|                          |                            |                                  |                             |            |                       |                               |                            |                              |                           | M                | ls |                      |
| SG1S 14L - 1008          | 14                         | φ14                              | φ16                         | L1         | 10                    | -                             | φ 8 (h7)                   | L25 R60                      | 95                        | -                | -  | 45.3                 |
| SG1S 15L - 1010          | 15                         | φ15                              | φ17                         | L1         | 10                    | -                             | φ10 (h7)                   | L25 R60                      | 95                        | -                | -  | 65.9                 |
| SG1S 16L - 1010          | 16                         | φ16                              | φ18                         | L1         | 10                    | -                             | φ10 (h7)                   | L25 R60                      | 95                        | -                | -  | 67.8                 |
| SG1S 17B - 1006          | 17                         | φ17                              | φ19                         | B1         | 10                    | φ 6                           | φ12                        | 10                           | 20                        | -                | -  | 22.1                 |
| SG1S 18L - 1010          | 18                         | φ18                              | φ20                         | L1         | 10                    | -                             | φ10 (h7)                   | L25 R60                      | 95                        | -                | -  | 71.9                 |
| SG1S 18B - 1008          | 18                         | φ18                              | φ20                         | B1         | 10                    | φ 8                           | φ15                        | 10                           | 20                        | -                | -  | 25.8                 |
| SG1S 20B - 1008          | 20                         | φ20                              | φ22                         | B1         | 10                    | φ 8                           | φ16                        | 10                           | 20                        | -                | -  | 32.3                 |
| SG1S 20B * 1008          | 20                         | φ20                              | φ22                         | B1         | 10                    | φ 8                           | φ16                        | 10                           | 20                        | 2-M4             | 5  | 32.0                 |
| SG1S 20B * 1010          | 20                         | φ20                              | φ22                         | B1         | 10                    | φ10                           | φ16                        | 10                           | 20                        | 2-M4             | 5  | 27.7                 |
| SG1S 21B - 1008          | 21                         | φ21                              | φ23                         | B1         | 10                    | φ 8                           | φ16                        | 10                           | 20                        | -                | -  | 34.9                 |
| SG1S 22B - 1008          | 22                         | φ22                              | φ24                         | B1         | 10                    | φ 8                           | φ18                        | 10                           | 20                        | -                | -  | 41.7                 |
| SG1S 23B - 1008          | 23                         | φ23                              | φ25                         | B1         | 10                    | φ 8                           | φ18                        | 10                           | 20                        | -                | -  | 44.4                 |
| SG1S 24B - 1008          | 24                         | φ24                              | φ26                         | B1         | 10                    | φ 8                           | φ20                        | 10                           | 20                        | -                | -  | 51.9                 |
| SG1S 24B * 1008          | 24                         | φ24                              | φ26                         | B1         | 10                    | φ 8                           | φ20                        | 10                           | 20                        | 2-M4             | 5  | 51.4                 |
| SG1S 24B * 1010          | 24                         | φ24                              | φ26                         | B1         | 10                    | φ10                           | φ20                        | 10                           | 20                        | 2-M4             | 5  | 47.1                 |
| SG1S 25B - 1008          | 25                         | φ25                              | φ27                         | B1         | 10                    | φ 8                           | φ20                        | 10                           | 20                        | -                | -  | 55.0                 |
| SG1S 26B - 1008          | 26                         | φ26                              | φ28                         | B1         | 10                    | φ 8                           | φ20                        | 10                           | 20                        | -                | -  | 58.1                 |
| SG1S 27B - 1008          | 27                         | φ27                              | φ29                         | B1         | 10                    | φ 8                           | φ20                        | 10                           | 20                        | -                | -  | 61.3                 |
| SG1S 28B - 1008          | 28                         | φ28                              | φ30                         | B1         | 10                    | φ 8                           | φ20                        | 10                           | 20                        | -                | -  | 64.7                 |
| SG1S 30B - 1010          | 30                         | φ30                              | φ32                         | B1         | 10                    | φ10                           | φ26                        | 10                           | 20                        | -                | -  | 84.3                 |
| SG1S 30B * 1010          | 30                         | φ30                              | φ32                         | B1         | 10                    | φ10                           | φ26                        | 10                           | 20                        | 2-M4             | 5  | 83.7                 |
| SG1S 30B * 1012          | 30                         | φ30                              | φ32                         | B1         | 10                    | φ12                           | φ26                        | 10                           | 20                        | 2-M4             | 5  | 78.5                 |
| SG1S 32B - 1010          | 32                         | φ32                              | φ34                         | B1         | 10                    | φ10                           | φ26                        | 10                           | 20                        | -                | -  | 91.9                 |
| SG1S 34B - 1010          | 34                         | φ34                              | φ36                         | B1         | 10                    | φ10                           | φ26                        | 10                           | 20                        | -                | -  | 100.0                |
| SG1S 35B - 1010          | 35                         | φ35                              | φ37                         | B1         | 10                    | φ10                           | φ26                        | 10                           | 20                        | -                | -  | 104.2                |
| SG1S 36B - 1010          | 36                         | φ36                              | φ38                         | B1         | 10                    | φ10                           | φ26                        | 10                           | 20                        | -                | -  | 108.6                |
| SG1S 38B - 1010          | 38                         | φ38                              | φ40                         | B1         | 10                    | φ10                           | φ26                        | 10                           | 20                        | -                | -  | 117.6                |
| SG1S 40B - 1010          | 40                         | φ40                              | φ42                         | B1         | 10                    | φ10                           | φ26                        | 10                           | 20                        | -                | -  | 127.1                |
| SG1S 40B - 1012          | 40                         | φ40                              | φ42                         | B1         | 10                    | φ12                           | φ26                        | 10                           | 20                        | -                | -  | 121.7                |
| SG1S 40B - 1015          | 40                         | φ40                              | φ42                         | B1         | 10                    | φ15                           | φ26                        | 10                           | 20                        | -                | -  | 111.8                |
| SG1S 42B - 1010          | 42                         | φ42                              | φ44                         | B1         | 10                    | φ10                           | φ35                        | 10                           | 20                        | -                | -  | 170.9                |
| SG1S 44B - 1010          | 44                         | φ44                              | φ46                         | B1         | 10                    | φ10                           | φ35                        | 10                           | 20                        | -                | -  | 181.4                |
| SG1S 45B - 1012          | 45                         | φ45                              | φ47                         | B1         | 10                    | φ12                           | φ35                        | 10                           | 20                        | -                | -  | 181.5                |
| SG1S 48B - 1012          | 48                         | φ48                              | φ50                         | B1         | 10                    | φ12                           | φ35                        | 10                           | 20                        | -                | -  | 198.5                |
| SG1S 50B - 1012          | 50                         | φ50                              | φ52                         | B1         | 10                    | φ12                           | φ35                        | 10                           | 20                        | -                | -  | 210.6                |
| SG1S 50B - 1015          | 50                         | φ50                              | φ52                         | B1         | 10                    | φ15                           | φ35                        | 10                           | 20                        | -                | -  | 200.6                |
| SG1S 50B - 1016          | 50                         | φ50                              | φ52                         | B1         | 10                    | φ16                           | φ35                        | 10                           | 20                        | -                | -  | 196.8                |



| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 齿顶圆直径<br>Tip Diameter<br><i>da</i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>da</i> (H7) | 轮毂外径<br>Hub Diameter<br><i>dh</i> | 轮毂长度<br>Hub Projection<br><i>lh</i> | 全长<br>Overall Length<br><i>l</i> | 螺纹孔<br>Set Screw |           | 重量<br>Weight<br><i>W</i> (g) |
|--------------------------|-----------------------------------|---|------------------------------------|------------|------------------------------|---------------------------------------|-----------------------------------|-------------------------------------|----------------------------------|------------------|-----------|------------------------------|
|                          |                                   |   |                                    |            |                              |                                       |                                   |                                     |                                  | <i>M</i>         | <i>ls</i> |                              |
| SG1S 52B - 1012          | 52                                | φ52                                     | φ54                                | B1         | 10                           | φ12                                   | φ35                               | 10                                  | 20                               | -                | -         | 228.4                        |
| SG1S 54B - 1012          | 54                                | φ54                                     | φ56                                | B1         | 10                           | φ12                                   | φ35                               | 10                                  | 20                               | -                | -         | 236.0                        |
| SG1S 55B - 1012          | 55                                | φ55                                     | φ57                                | B1         | 10                           | φ12                                   | φ35                               | 10                                  | 20                               | -                | -         | 248.1                        |
| SG1S 56B - 1012          | 56                                | φ56                                     | φ58                                | B1         | 10                           | φ12                                   | φ35                               | 10                                  | 20                               | -                | -         | 249.5                        |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |       |       |       |       |       |
|----------------|----------------|---|------|-------|-------|-------|-------|-------|
|                |                | 400   | 800  | 1,200 | 1,500 | 1,800 | 2,500 | 3,000 |
| 14             | 10             | 0.30  | 0.61 | 0.92  | 1.15  | 1.38  | 1.92  | 2.30  |
| 15             | 10             | 0.34  | 0.68 | 1.03  | 1.29  | 1.55  | 2.15  | 2.58  |
| 16             | 10             | 0.38  | 0.76 | 1.14  | 1.43  | 1.72  | 2.39  | 2.87  |
| 17             | 10             | 0.42  | 0.84 | 1.26  | 1.57  | 1.89  | 2.63  | 3.15  |
| 18             | 10             | 0.46  | 0.92 | 1.38  | 1.72  | 2.07  | 2.87  | 3.45  |
| 20             | 10             | 0.54  | 1.08 | 1.62  | 2.02  | 2.43  | 3.37  | 4.03  |
| 21             | 10             | 0.58  | 1.16 | 1.74  | 2.17  | 2.61  | 3.62  | 4.32  |
| 22             | 10             | 0.62  | 1.24 | 1.86  | 2.33  | 2.79  | 3.88  | 4.60  |
| 23             | 10             | 0.66  | 1.32 | 1.98  | 2.48  | 2.98  | 4.14  | 4.89  |
| 24             | 10             | 0.70  | 1.40 | 2.11  | 2.64  | 3.16  | 4.38  | 5.18  |
| 25             | 10             | 0.74  | 1.49 | 2.23  | 2.79  | 3.35  | 4.63  | 5.46  |
| 26             | 10             | 0.78  | 1.57 | 2.36  | 2.95  | 3.54  | 4.87  | 5.75  |
| 27             | 10             | 0.83  | 1.66 | 2.49  | 3.11  | 3.73  | 5.12  | 6.04  |
| 28             | 10             | 0.87  | 1.74 | 2.62  | 3.27  | 3.93  | 5.37  | 6.33  |
| 30             | 10             | 0.95  | 1.91 | 2.87  | 3.59  | 4.31  | 5.85  | 6.89  |
| 32             | 10             | 1.04  | 2.09 | 3.13  | 3.92  | 4.70  | 6.34  | 7.46  |
| 34             | 10             | 1.13  | 2.26 | 3.40  | 4.25  | 5.07  | 6.83  | 8.05  |
| 35             | 10             | 1.17  | 2.35 | 3.53  | 4.41  | 5.25  | 7.07  | 8.34  |
| 36             | 10             | 1.22  | 2.44 | 3.66  | 4.58  | 5.44  | 7.32  | 8.63  |
| 38             | 10             | 1.31  | 2.62 | 3.93  | 4.93  | 5.81  | 7.80  | 9.21  |
| 40             | 10             | 1.40  | 2.88 | 4.20  | 5.23  | 6.18  | 8.30  | 9.80  |
| 42             | 10             | 1.49  | 2.98 | 4.47  | 5.54  | 6.54  | 8.79  | 10.37 |
| 44             | 10             | 1.58  | 3.16 | 4.73  | 5.85  | 6.90  | 9.28  | 10.94 |
| 45             | 10             | 1.62  | 3.25 | 4.87  | 6.01  | 7.08  | 9.53  | 11.23 |
| 48             | 10             | 1.76  | 3.52 | 5.27  | 6.47  | 7.62  | 10.26 | 12.08 |
| 50             | 10             | 1.85  | 3.70 | 5.53  | 6.78  | 7.98  | 10.75 | 12.64 |
| 52             | 10             | 1.94  | 3.88 | 5.78  | 7.09  | 8.34  | 11.23 | 13.18 |
| 54             | 10             | 2.03  | 4.06 | 6.04  | 7.39  | 8.70  | 11.71 | 13.71 |
| 55             | 10             | 2.08  | 4.16 | 6.16  | 7.54  | 8.88  | 11.95 | 13.97 |
| 56             | 10             | 2.12  | 4.25 | 6.29  | 7.70  | 9.06  | 12.19 | 14.23 |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |       |       |       |       |       |
|---|------|-------|-------|-------|-------|-------|
| 400   | 800  | 1,200 | 1,500 | 1,800 | 2,500 | 3,000 |
| 0.062                                       | 0.12 | 0.19  | 0.23  | 0.28  | 0.40  | 0.48  |
| 0.072                                       | 0.14 | 0.22  | 0.27  | 0.33  | 0.46  | 0.56  |
| 0.082                                       | 0.16 | 0.25  | 0.31  | 0.38  | 0.53  | 0.64  |
| 0.093                                       | 0.18 | 0.28  | 0.35  | 0.43  | 0.60  | 0.73  |
| 0.105                                       | 0.21 | 0.32  | 0.40  | 0.48  | 0.68  | 0.82  |
| 0.130                                       | 0.26 | 0.39  | 0.50  | 0.60  | 0.85  | 1.02  |
| 0.144                                       | 0.29 | 0.44  | 0.55  | 0.67  | 0.94  | 1.13  |
| 0.158                                       | 0.32 | 0.48  | 0.61  | 0.73  | 1.03  | 1.24  |
| 0.174                                       | 0.35 | 0.53  | 0.67  | 0.81  | 1.14  | 1.35  |
| 0.190                                       | 0.38 | 0.58  | 0.73  | 0.88  | 1.24  | 1.48  |
| 0.20  | 0.41 | 0.63  | 0.79  | 0.96  | 1.34  | 1.60  |
| 0.22  | 0.45 | 0.68  | 0.86  | 1.04  | 1.45  | 1.73  |
| 0.24  | 0.49 | 0.74  | 0.93  | 1.13  | 1.57  | 1.87  |
| 0.26  | 0.52 | 0.80  | 1.01  | 1.22  | 1.69  | 2.01  |
| 0.30  | 0.61 | 0.92  | 1.16  | 1.41  | 1.94  | 2.31  |
| 0.34  | 0.69 | 1.05  | 1.33  | 1.61  | 2.21  | 2.62  |
| 0.38  | 0.79 | 1.20  | 1.51  | 1.82  | 2.49  | 2.96  |
| 0.41  | 0.83 | 1.27  | 1.60  | 1.93  | 2.64  | 3.14  |
| 0.43  | 0.89 | 1.35  | 1.70  | 2.04  | 2.79  | 3.33  |
| 0.49  | 0.99 | 1.51  | 1.91  | 2.27  | 3.11  | 3.71  |
| 0.54  | 1.11 | 1.69  | 2.12  | 2.53  | 3.45  | 4.12  |
| 0.60  | 1.23 | 1.87  | 2.34  | 2.79  | 3.81  | 4.54  |
| 0.66  | 1.35 | 2.06  | 2.57  | 3.06  | 4.18  | 4.98  |
| 0.69  | 1.42 | 2.16  | 2.69  | 3.20  | 4.38  | 5.21  |
| 0.79  | 1.62 | 2.47  | 3.06  | 3.64  | 4.98  | 5.93  |
| 0.86  | 1.76 | 2.68  | 3.32  | 3.94  | 5.41  | 6.43  |
| 0.94  | 1.91 | 2.90  | 3.59  | 4.26  | 5.85  | 6.94  |
| 1.01  | 2.07 | 3.13  | 3.87  | 4.60  | 6.31  | 7.46  |
| 1.05  | 2.15 | 3.24  | 4.01  | 4.77  | 6.54  | 7.73  |
| 1.09  | 2.23 | 3.36  | 4.16  | 4.95  | 6.78  | 8.00  |

# 研磨直齿轮 (SG 系列)

SG GROUND SPUR GEARS

模数  
MODULE

1 (齿数 60~120)

(普通齿)  
FULL DEPTH TOOTH



单位: mm

| 精度               | 材料         | 压力角  | 热处理    | 齿面硬度       | 侧隙①         |
|------------------|------------|------|--------|------------|-------------|
| JIS B 1702-1 5 级 | SCM435、440 | 20 度 | 齿面高频淬火 | HRC49 ~ 55 | 0.04 ~ 0.08 |

★未做表面处理。【\*】表示带有两个螺纹孔，无固定用螺钉。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 齿顶圆直径<br>Tip Diameter<br><i>da</i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>da(H7)</i> | 轮毂外径<br>Hub Diameter<br><i>dh</i> | 轮毂长度<br>Hub Projection<br><i>lh</i> | 全长<br>Overall Length<br><i>l</i> | 螺纹孔<br>Set Screw |           | 重量<br>Weight<br><i>W(g)</i> |
|--------------------------|-----------------------------------|---|------------------------------------|------------|------------------------------|--------------------------------------|-----------------------------------|-------------------------------------|----------------------------------|------------------|-----------|-----------------------------|
|                          |                                   |   |                                    |            |                              |                                      |                                   |                                     |                                  | <i>M</i>         | <i>ls</i> |                             |
| SG1S 60B - 1012          | 60                                | φ 60                                    | φ 62                               | B1         | 10                           | φ12                                  | φ40                               | 10                                  | 20                               | -                | -         | 300.9                       |
| SG1S 60B - 1015          | 60                                | φ 60                                    | φ 62                               | B1         | 10                           | φ15                                  | φ40                               | 10                                  | 20                               | -                | -         | 291.0                       |
| SG1S 60B - 1018          | 60                                | φ 60                                    | φ 62                               | B1         | 10                           | φ18                                  | φ40                               | 10                                  | 20                               | -                | -         | 278.9                       |
| SG1S 64B - 1012          | 64                                | φ 64                                    | φ 66                               | B1         | 10                           | φ12                                  | φ40                               | 10                                  | 20                               | -                | -         | 331.3                       |
| SG1S 70B - 1012          | 70                                | φ 70                                    | φ 72                               | B1         | 10                           | φ12                                  | φ40                               | 10                                  | 20                               | -                | -         | 380.6                       |
| SG1S 72B - 1012          | 72                                | φ 72                                    | φ 74                               | B1         | 10                           | φ12                                  | φ45                               | 10                                  | 20                               | -                | -         | 424.0                       |
| SG1S 75B - 1012          | 75                                | φ 75                                    | φ 77                               | B1         | 10                           | φ12                                  | φ45                               | 10                                  | 20                               | -                | -         | 451.0                       |
| SG1S 80B - 1012          | 80                                | φ 80                                    | φ 82                               | B1         | 10                           | φ12                                  | φ45                               | 10                                  | 20                               | -                | -         | 498.5                       |
| SG1S 80B - 1015          | 80                                | φ 80                                    | φ 82                               | B1         | 10                           | φ15                                  | φ45                               | 10                                  | 20                               | -                | -         | 488.6                       |
| SG1S 80B - 1020          | 80                                | φ 80                                    | φ 82                               | B1         | 10                           | φ20                                  | φ45                               | 10                                  | 20                               | -                | -         | 467.1                       |
| SG1S 90B - 1015          | 90                                | φ 90                                    | φ 92                               | B1         | 10                           | φ15                                  | φ50                               | 10                                  | 20                               | -                | -         | 621.8                       |
| SG1S 96B - 1015          | 96                                | φ 96                                    | φ 98                               | B1         | 10                           | φ15                                  | φ50                               | 10                                  | 20                               | -                | -         | 690.2                       |
| SG1S 100B - 1012         | 100                               | φ100                                    | φ102                               | B1         | 10                           | φ12                                  | φ50                               | 10                                  | 20                               | -                | -         | 748.1                       |
| SG1S 100B - 1015         | 100                               | φ100                                    | φ102                               | B1         | 10                           | φ15                                  | φ50                               | 10                                  | 20                               | -                | -         | 738.2                       |
| SG1S 100B - 1020         | 100                               | φ100                                    | φ102                               | B1         | 10                           | φ20                                  | φ50                               | 10                                  | 20                               | -                | -         | 716.8                       |
| SG1S 108B - 1015         | 108                               | φ108                                    | φ110                               | B1         | 10                           | φ15                                  | φ50                               | 10                                  | 20                               | -                | -         | 840.1                       |
| SG1S 112B - 1015         | 112                               | φ112                                    | φ114                               | B1         | 10                           | φ15                                  | φ50                               | 10                                  | 20                               | -                | -         | 894.0                       |
| SG1S 120B - 1015         | 120                               | φ120                                    | φ122                               | B1         | 10                           | φ15                                  | φ50                               | 10                                  | 20                               | -                | -         | 1007.7                      |

## 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |       |       |       |       |       |
|----------------|----------------|---|------|-------|-------|-------|-------|-------|
|                |                | 400   | 800  | 1,200 | 1,500 | 1,800 | 2,500 | 3,000 |
| 60             | 10             | 2.31  | 4.62 | 6.79  | 8.30  | 9.79  | 13.14 | 15.24 |
| 64             | 10             | 2.49  | 4.99 | 7.29  | 8.90  | 10.51 | 14.04 | 16.24 |
| 70             | 10             | 2.77  | 5.54 | 8.03  | 9.82  | 11.58 | 15.34 | 17.69 |
| 72             | 10             | 2.86  | 5.73 | 8.28  | 10.12 | 11.94 | 15.76 | 18.16 |
| 75             | 10             | 3.00  | 5.99 | 8.64  | 10.58 | 12.47 | 16.39 | 18.86 |
| 80             | 10             | 3.24  | 6.42 | 9.25  | 11.33 | 13.34 | 17.42 | 20.08 |
| 90             | 10             | 3.70  | 7.26 | 10.47 | 12.80 | 14.98 | 19.37 | 22.47 |
| 96             | 10             | 3.98  | 7.77 | 11.20 | 13.68 | 15.92 | 20.59 | 23.88 |
| 100            | 10             | 4.17  | 8.10 | 11.68 | 14.25 | 16.53 | 21.40 | 24.80 |
| 108            | 10             | 4.55  | 8.76 | 12.64 | 15.34 | 17.73 | 23.01 | 26.60 |
| 112            | 10             | 4.74  | 9.09 | 13.11 | 15.86 | 18.32 | 23.80 | 27.48 |
| 120            | 10             | 5.12  | 9.74 | 14.05 | 16.89 | 19.46 | 25.34 | 28.97 |

## 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |  |
|---|-------|-------|-------|-------|-------|-------|--|
| 400   | 800   | 1,200 | 1,500 | 1,800 | 2,500 | 3,000 |  |
| 1.26  | 2.58  | 3.86  | 4.77  | 5.69  | 7.78  | 9.12  |  |
| 1.44  | 2.95  | 4.39  | 5.43  | 6.47  | 8.82  | 10.31 |  |
| 1.73  | 3.56  | 5.26  | 6.50  | 7.75  | 10.47 | 12.20 |  |
| 1.84  | 3.77  | 5.56  | 6.88  | 8.20  | 11.04 | 12.86 |  |
| 2.00  | 4.09  | 6.03  | 7.47  | 8.90  | 11.93 | 13.88 |  |
| 2.29  | 4.66  | 6.85  | 8.51  | 10.12 | 13.48 | 15.70 |  |
| 2.92  | 5.90  | 8.69  | 10.77 | 12.74 | 16.80 | 19.69 |  |
| 3.34  | 6.72  | 9.90  | 12.25 | 14.41 | 19.00 | 22.28 |  |
| 3.64  | 7.29  | 10.74 | 13.28 | 15.57 | 20.56 | 24.07 |  |
| 4.27  | 8.50  | 12.53 | 15.42 | 18.01 | 23.84 | 27.84 |  |
| 4.61  | 9.13  | 13.48 | 16.53 | 19.29 | 25.55 | 29.80 |  |
| 5.32  | 10.48 | 15.47 | 18.85 | 21.95 | 29.13 | 33.64 |  |



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# 研磨直齿轮 (SG 系列)

SG GROUND SPUR GEARS

模数  
MODULE

1.5 (齿数 14 ~ 120)

(普通齿)  
FULL DEPTH TOOTH



单位: mm

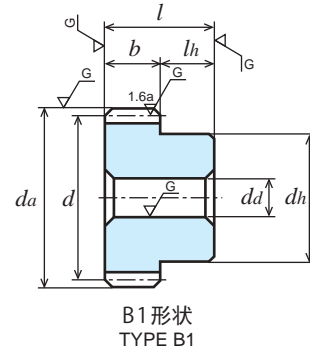
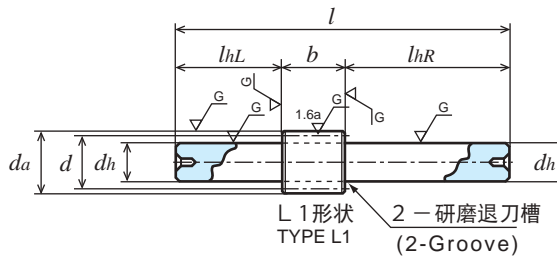
| 精度               | 材料         | 压力角  | 热处理    | 齿面硬度       | 侧隙①         |
|------------------|------------|------|--------|------------|-------------|
| JIS B 1702-1 5 级 | SCM435、440 | 20 度 | 齿面高频淬火 | HRC49 ~ 55 | 0.06 ~ 0.12 |

★未做表面处理。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 齿顶圆直径<br>Tip Diameter<br><i>d<sub>a</sub></i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>d</i> (H7) | 轮毂外径<br>Hub Diameter<br><i>d<sub>h</sub></i> | 轮毂长度<br>Hub Projection<br><i>l<sub>h</sub></i> | 全长<br>Overall Length<br><i>l</i> | 重量<br>Weight<br><i>W</i> (kg) |
|--------------------------|-----------------------------------|---|---|------------|------------------------------|--------------------------------------|--|--|----------------------------------|-------------------------------|
| SG1.5S 14L - 1512        | 14                                | φ 21                                    | φ 24  | L1         | 15                           | -                                    | φ12(h7)                                      | L25 R60  | 100                              | 0.12                          |
| SG1.5S 15L - 1512        | 15                                | φ22.5                                   | φ25.5   | L1         | 15                           | -                                    | φ12(h7)                                      | L25 R60  | 100                              | 0.12                          |
| SG1.5S 15B - 1510        | 15                                | φ22.5                                   | φ25.5   | B1         | 15                           | φ10                                  | φ18  | 15   | 30                               | 0.06                          |
| SG1.5S 16L - 1512        | 16                                | φ 24                                    | φ 27  | L1         | 15                           | -                                    | φ12(h7)                                      | L25 R60  | 100                              | 0.13                          |
| SG1.5S 16B - 1510        | 16                                | φ 24                                    | φ 27  | B1         | 15                           | φ10                                  | φ18  | 15   | 30                               | 0.06                          |
| SG1.5S 18L - 1512        | 18                                | φ 27                                    | φ 30  | L1         | 15                           | -                                    | φ12(h7)                                      | L25 R60  | 100                              | 0.14                          |
| SG1.5S 18B - 1512        | 18                                | φ 27                                    | φ 30  | B1         | 15                           | φ12                                  | φ22  | 15   | 30                               | 0.08                          |
| SG1.5S 20B - 1512        | 20                                | φ 30                                    | φ 33  | B1         | 15                           | φ12                                  | φ22  | 15   | 30                               | 0.10                          |
| SG1.5S 22B - 1512        | 22                                | φ 33                                    | φ 36  | B1         | 15                           | φ12                                  | φ25  | 15   | 30                               | 0.13                          |
| SG1.5S 24B - 1515        | 24                                | φ 36                                    | φ 39  | B1         | 15                           | φ15                                  | φ30  | 15   | 30                               | 0.16                          |
| SG1.5S 25B - 1515        | 25                                | φ37.5                                   | φ40.5   | B1         | 15                           | φ15                                  | φ30  | 15   | 30                               | 0.17                          |
| SG1.5S 26B - 1515        | 26                                | φ 39                                    | φ 42  | B1         | 15                           | φ15                                  | φ30  | 15   | 30                               | 0.18                          |
| SG1.5S 28B - 1515        | 28                                | φ 42                                    | φ 45  | B1         | 15                           | φ15                                  | φ30  | 15   | 30                               | 0.20                          |
| SG1.5S 30B - 1515        | 30                                | φ 45                                    | φ 48  | B1         | 15                           | φ15                                  | φ35  | 15   | 30                               | 0.26                          |
| SG1.5S 32B - 1515        | 32                                | φ 48                                    | φ 51  | B1         | 15                           | φ15                                  | φ35  | 15   | 30                               | 0.28                          |
| SG1.5S 34B - 1515        | 34                                | φ 51                                    | φ 54  | B1         | 15                           | φ15                                  | φ35  | 15   | 30                               | 0.31                          |
| SG1.5S 35B - 1515        | 35                                | φ52.5                                   | φ55.5   | B1         | 15                           | φ15                                  | φ35  | 15   | 30                               | 0.36                          |
| SG1.5S 36B - 1515        | 36                                | φ 54                                    | φ 57  | B1         | 15                           | φ15                                  | φ40  | 15   | 30                               | 0.37                          |
| SG1.5S 40B - 1515        | 40                                | φ 60                                    | φ 63  | B1         | 15                           | φ15                                  | φ40  | 15   | 30                               | 0.44                          |
| SG1.5S 42B - 1515        | 42                                | φ 63                                    | φ 66  | B1         | 15                           | φ15                                  | φ40  | 15   | 30                               | 0.47                          |
| SG1.5S 45B - 1520        | 45                                | φ 67.5                                  | φ 70.5  | B1         | 15                           | φ20                                  | φ50  | 15   | 30                               | 0.57                          |
| SG1.5S 48B - 1520        | 48                                | φ 72                                    | φ 75  | B1         | 15                           | φ20                                  | φ50  | 15   | 30                               | 0.63                          |
| SG1.5S 50B - 1520        | 50                                | φ 75                                    | φ 78  | B1         | 15                           | φ20                                  | φ50  | 15   | 30                               | 0.67                          |
| SG1.5S 52B - 1520        | 52                                | φ 78                                    | φ 81  | B1         | 15                           | φ20                                  | φ50  | 15   | 30                               | 0.72                          |
| SG1.5S 55B - 1520        | 55                                | φ 82.5                                  | φ 85.5  | B1         | 15                           | φ20                                  | φ50  | 15   | 30                               | 0.78                          |
| SG1.5S 56B - 1520        | 56                                | φ 84                                    | φ 87  | B1         | 15                           | φ20                                  | φ50  | 15   | 30                               | 0.80                          |
| SG1.5S 60B - 1520        | 60                                | φ 90                                    | φ 93  | B1         | 15                           | φ20                                  | φ60  | 15   | 30                               | 1.00                          |
| SG1.5S 64B - 1520        | 64                                | φ 96                                    | φ 99  | B1         | 15                           | φ20                                  | φ60  | 15   | 30                               | 1.10                          |
| SG1.5S 70B - 1520        | 70                                | φ105                                    | φ108  | B1         | 15                           | φ20                                  | φ60  | 15   | 30                               | 1.27                          |
| SG1.5S 72B - 1520        | 72                                | φ108                                    | φ111  | B1         | 15                           | φ20                                  | φ60  | 15   | 30                               | 1.33                          |
| SG1.5S 75B - 1520        | 75                                | φ112.5                                  | φ115.5  | B1         | 15                           | φ20                                  | φ60  | 15   | 30                               | 1.42                          |
| SG1.5S 80B - 1520        | 80                                | φ120                                    | φ123  | B1         | 15                           | φ20                                  | φ60  | 15   | 30                               | 1.58                          |
| SG1.5S 90B - 1525        | 90                                | φ135                                    | φ138  | B1         | 15                           | φ25                                  | φ70  | 15   | 30                               | 2.01                          |
| SG1.5S 100B - 1525       | 100                               | φ150                                    | φ153  | B1         | 15                           | φ25                                  | φ70  | 15   | 30                               | 2.40                          |
| SG1.5S 112B - 1525       | 112                               | φ168                                    | φ171  | B1         | 15                           | φ25                                  | φ70  | 15   | 30                               | 2.93                          |
| SG1.5S 120B - 1525       | 120                               | φ180                                    | φ183  | B1         | 15                           | φ25                                  | φ70  | 15   | 30                               | 3.31                          |



容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br>$z$ | 齿宽<br>$b$ | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|-----------|-----------|---|-------|-------|-------|-------|-------|-------|
|           |           | 400   | 800   | 1,200 | 1,500 | 1,800 | 2,500 | 3,000 |
| 14        | 15        | 1.03  | 2.07  | 3.11  | 3.89  | 4.67  | 6.49  | 7.73  |
| 15        | 15        | 1.16  | 2.32  | 3.49  | 4.36  | 5.23  | 7.27  | 8.61  |
| 16        | 15        | 1.29  | 2.58  | 3.87  | 4.84  | 5.81  | 8.04  | 9.50  |
| 18        | 15        | 1.55  | 3.11  | 4.66  | 5.82  | 6.99  | 9.58  | 11.30 |
| 20        | 15        | 1.82  | 3.65  | 5.47  | 6.84  | 8.20  | 11.14 | 13.11 |
| 22        | 15        | 2.10  | 4.20  | 6.29  | 7.87  | 9.41  | 12.69 | 14.94 |
| 24        | 15        | 2.38  | 4.75  | 7.13  | 8.91  | 10.59 | 14.25 | 16.80 |
| 25        | 15        | 2.52  | 5.04  | 7.55  | 9.44  | 11.18 | 15.02 | 17.74 |
| 26        | 15        | 2.66  | 5.32  | 7.98  | 9.96  | 11.77 | 15.81 | 18.67 |
| 28        | 15        | 2.95  | 5.90  | 8.84  | 10.97 | 12.96 | 17.41 | 20.54 |
| 30        | 15        | 3.24  | 6.47  | 9.71  | 11.98 | 14.13 | 19.00 | 22.39 |
| 32        | 15        | 3.53  | 7.06  | 10.59 | 12.99 | 15.30 | 20.59 | 24.24 |
| 34        | 15        | 3.83  | 7.65  | 11.42 | 13.99 | 16.47 | 22.18 | 26.08 |
| 35        | 15        | 3.97  | 7.95  | 11.83 | 14.49 | 17.05 | 22.97 | 26.94 |
| 36        | 15        | 4.12  | 8.25  | 12.25 | 15.00 | 17.64 | 23.76 | 27.81 |
| 40        | 15        | 4.72  | 9.45  | 13.90 | 16.98 | 20.03 | 26.90 | 31.19 |
| 42        | 15        | 5.03  | 10.05 | 14.72 | 17.97 | 21.22 | 28.40 | 32.85 |
| 45        | 15        | 5.48  | 10.96 | 15.94 | 19.47 | 22.98 | 30.55 | 35.27 |
| 48        | 15        | 5.94  | 11.87 | 17.16 | 20.98 | 24.74 | 32.67 | 37.64 |
| 50        | 15        | 6.24  | 12.44 | 17.96 | 21.99 | 25.91 | 34.07 | 39.20 |
| 52        | 15        | 6.55  | 13.02 | 18.76 | 22.99 | 27.07 | 35.44 | 40.80 |
| 55        | 15        | 7.01  | 13.87 | 19.98 | 24.48 | 28.79 | 37.47 | 43.26 |
| 56        | 15        | 7.17  | 14.15 | 20.39 | 24.97 | 29.36 | 38.14 | 44.07 |
| 60        | 15        | 7.79  | 15.29 | 22.03 | 26.94 | 31.52 | 40.76 | 47.28 |
| 64        | 15        | 8.41  | 16.41 | 23.65 | 28.88 | 33.62 | 43.48 | 50.43 |
| 70        | 15        | 9.35  | 18.07 | 26.06 | 31.71 | 36.68 | 47.56 | 55.02 |
| 72        | 15        | 9.67  | 18.62 | 26.86 | 32.60 | 37.68 | 48.90 | 56.52 |
| 75        | 15        | 10.14                                       | 19.44 | 28.05 | 33.92 | 39.16 | 50.88 | 58.74 |
| 80        | 15        | 10.93                                       | 20.80 | 30.01 | 36.08 | 41.57 | 54.12 | 61.89 |
| 90        | 15        | 12.49                                       | 23.55 | 33.71 | 40.22 | 46.39 | 60.33 | 67.34 |
| 100       | 15        | 14.03                                       | 26.28 | 37.20 | 44.20 | 51.28 | 65.34 | 72.38 |
| 112       | 15        | 15.78                                       | 29.50 | 41.21 | 49.15 | 56.93 | 70.67 | -     |
| 120       | 15        | 16.94                                       | 31.61 | 43.79 | 52.40 | 60.57 | 73.96 | -     |

容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |  |
|---|-------|-------|-------|-------|-------|-------|--|
| 400   | 800   | 1,200 | 1,500 | 1,800 | 2,500 | 3,000 |  |
| 0.21  | 0.43  | 0.66  | 0.83  | 1.00  | 1.41  | 1.69  |  |
| 0.24  | 0.50  | 0.76  | 0.96  | 1.16  | 1.63  | 1.95  |  |
| 0.28  | 0.57  | 0.87  | 1.09  | 1.32  | 1.86  | 2.20  |  |
| 0.36  | 0.74  | 1.12  | 1.41  | 1.70  | 2.36  | 2.81  |  |
| 0.45  | 0.92  | 1.39  | 1.75  | 2.12  | 2.92  | 3.47  |  |
| 0.55  | 1.11  | 1.69  | 2.14  | 2.57  | 3.53  | 4.19  |  |
| 0.66  | 1.34  | 2.03  | 2.56  | 3.07  | 4.19  | 5.00  |  |
| 0.72  | 1.45  | 2.21  | 2.79  | 3.33  | 4.55  | 5.42  |  |
| 0.78  | 1.58  | 2.40  | 3.02  | 3.60  | 4.92  | 5.87  |  |
| 0.90  | 1.84  | 2.80  | 3.51  | 4.18  | 5.71  | 6.81  |  |
| 1.04  | 2.12  | 3.23  | 4.03  | 4.80  | 6.57  | 7.82  |  |
| 1.19  | 2.43  | 3.70  | 4.59  | 5.45  | 7.47  | 8.89  |  |
| 1.35  | 2.75  | 4.18  | 5.18  | 6.15  | 8.44  | 10.03 |  |
| 1.43  | 2.93  | 4.43  | 5.49  | 6.52  | 8.94  | 10.60 |  |
| 1.52  | 3.10  | 4.69  | 5.80  | 6.90  | 9.46  | 11.19 |  |
| 1.89  | 3.87  | 5.79  | 7.16  | 8.53  | 11.67 | 13.69 |  |
| 2.09  | 4.28  | 6.39  | 7.89  | 9.41  | 12.83 | 15.01 |  |
| 2.41  | 4.94  | 7.33  | 9.06  | 10.81 | 14.65 | 17.10 |  |
| 2.76  | 5.66  | 8.34  | 10.32 | 12.30 | 16.56 | 19.29 |  |
| 3.00  | 6.14  | 9.04  | 11.21 | 13.34 | 17.90 | 20.82 |  |
| 3.26  | 6.64  | 9.78  | 12.13 | 14.43 | 19.27 | 22.43 |  |
| 3.66  | 7.44  | 10.94 | 13.57 | 16.14 | 21.42 | 25.00 |  |
| 3.80  | 7.71  | 11.35 | 14.07 | 16.72 | 22.15 | 25.88 |  |
| 4.39  | 8.86  | 13.04 | 16.15 | 19.11 | 25.19 | 29.54 |  |
| 5.02  | 10.08 | 14.85 | 18.37 | 21.61 | 28.51 | 33.41 |  |
| 6.05  | 12.05 | 17.77 | 21.91 | 25.62 | 33.87 | 39.60 |  |
| 6.41  | 12.75 | 18.80 | 23.12 | 27.02 | 35.75 | 41.76 |  |
| 6.98  | 13.82 | 20.40 | 25.00 | 29.18 | 38.65 | 45.08 |  |
| 7.99  | 15.72 | 23.20 | 28.27 | 32.93 | 43.70 | 50.47 |  |
| 10.21                                       | 19.93 | 29.21 | 35.32 | 41.18 | 54.56 | 61.49 |  |
| 12.68                                       | 24.63 | 35.71 | 43.00 | 50.42 | 65.43 | 73.16 |  |
| 15.93                                       | 30.91 | 44.24 | 53.46 | 62.57 | 79.05 | -     |  |
| 18.29                                       | 35.47 | 50.34 | 61.03 | 71.27 | 88.54 | -     |  |

# 研磨直齿轮 (SG 系列)

SG GROUND SPUR GEARS

模数  
MODULE

2 (齿数 14 ~ 100)

(普通齿)  
FULL DEPTH TOOTH



单位: mm

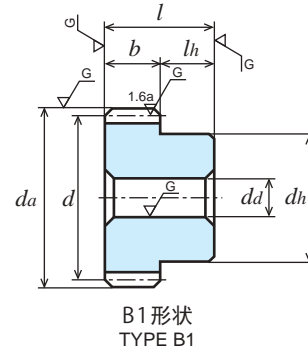
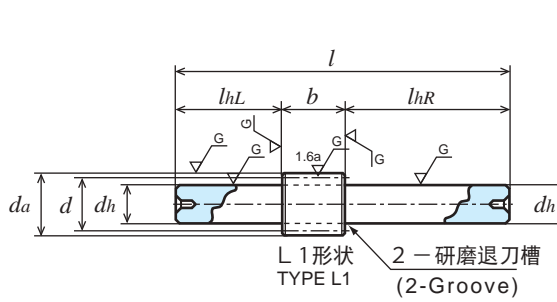
| 精度               | 材料         | 压力角  | 热处理    | 齿面硬度       | 侧隙①         |
|------------------|------------|------|--------|------------|-------------|
| JIS B 1702-1 5 级 | SCM435、440 | 20 度 | 齿面高频淬火 | HRC49 ~ 55 | 0.08 ~ 0.16 |

★未做表面处理。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 齿顶圆直径<br>Tip Diameter<br><i>d<sub>a</sub></i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>d</i> (H7) | 轮毂外径<br>Hub Diameter<br><i>d<sub>h</sub></i> | 轮毂长度<br>Hub Projection<br><i>l<sub>h</sub></i> | 全长<br>Overall Length<br><i>l</i> | 重量<br>Weight<br><i>W</i> (kg) |
|--------------------------|-----------------------------------|---|---|------------|------------------------------|--------------------------------------|--|--|----------------------------------|-------------------------------|
| SG2S 14L - 2012          | 14                                | φ 28                                    | φ 32  | L1         | 20                           | -                                    | φ12 (h7)                                     | L25 R60  | 105                              | 0.17                          |
| SG2S 14B - 2012          | 14                                | φ 28                                    | φ 32  | B1         | 20                           | φ12                                  | φ22  | 20   | 40                               | 0.12                          |
| SG2S 15L - 2012          | 15                                | φ 30                                    | φ 34  | L1         | 20                           | -                                    | φ12 (h7)                                     | L25 R60  | 105                              | 0.19                          |
| SG2S 15B - 2012          | 15                                | φ 30                                    | φ 34  | B1         | 20                           | φ12                                  | φ22  | 20   | 40                               | 0.13                          |
| SG2S 16L - 2015          | 16                                | φ 32                                    | φ 36  | L1         | 20                           | -                                    | φ15 (h7)                                     | L25 R60  | 105                              | 0.24                          |
| SG2S 16B - 2012          | 16                                | φ 32                                    | φ 36  | B1         | 20                           | φ12                                  | φ25  | 20   | 40                               | 0.17                          |
| SG2S 17B - 2012          | 17                                | φ 34                                    | φ 38  | B1         | 20                           | φ12                                  | φ25  | 20   | 40                               | 0.18                          |
| SG2S 18L - 2015          | 18                                | φ 36                                    | φ 40  | L1         | 20                           | -                                    | φ15 (h7)                                     | L25 R60  | 105                              | 0.28                          |
| SG2S 18B - 2015          | 18                                | φ 36                                    | φ 40  | B1         | 20                           | φ15                                  | φ30  | 20   | 40                               | 0.21                          |
| SG2S 20B - 2015          | 20                                | φ 40                                    | φ 44  | B1         | 20                           | φ15                                  | φ30  | 20   | 40                               | 0.25                          |
| SG2S 21B - 2015          | 21                                | φ 42                                    | φ 46  | B1         | 20                           | φ15                                  | φ30  | 20   | 40                               | 0.27                          |
| SG2S 22B - 2015          | 22                                | φ 44                                    | φ 48  | B1         | 20                           | φ15                                  | φ30  | 20   | 40                               | 0.29                          |
| SG2S 23B - 2015          | 23                                | φ 46                                    | φ 50  | B1         | 20                           | φ15                                  | φ30  | 20   | 40                               | 0.31                          |
| SG2S 24B - 2015          | 24                                | φ 48                                    | φ 52  | B1         | 20                           | φ15                                  | φ40  | 20   | 40                               | 0.42                          |
| SG2S 25B - 2015          | 25                                | φ 50                                    | φ 54  | B1         | 20                           | φ15                                  | φ40  | 20   | 40                               | 0.45                          |
| SG2S 26B - 2015          | 26                                | φ 52                                    | φ 56  | B1         | 20                           | φ15                                  | φ40  | 20   | 40                               | 0.47                          |
| SG2S 27B - 2015          | 27                                | φ 54                                    | φ 58  | B1         | 20                           | φ15                                  | φ40  | 20   | 40                               | 0.50                          |
| SG2S 28B - 2015          | 28                                | φ 56                                    | φ 60  | B1         | 20                           | φ15                                  | φ40  | 20   | 40                               | 0.53                          |
| SG2S 30B - 2015          | 30                                | φ 60                                    | φ 64  | B1         | 20                           | φ15                                  | φ40  | 20   | 40                               | 0.58                          |
| SG2S 32B - 2020          | 32                                | φ 64                                    | φ 68  | B1         | 20                           | φ20                                  | φ50  | 20   | 40                               | 0.71                          |
| SG2S 34B - 2020          | 34                                | φ 68                                    | φ 72  | B1         | 20                           | φ20                                  | φ50  | 20   | 40                               | 0.77                          |
| SG2S 35B - 2020          | 35                                | φ 70                                    | φ 74  | B1         | 20                           | φ20                                  | φ50  | 20   | 40                               | 0.81                          |
| SG2S 36B - 2020          | 36                                | φ 72                                    | φ 76  | B1         | 20                           | φ20                                  | φ50  | 20   | 40                               | 0.84                          |
| SG2S 38B - 2020          | 38                                | φ 76                                    | φ 80  | B1         | 20                           | φ20                                  | φ60  | 20   | 40                               | 1.05                          |
| SG2S 40B - 2020          | 40                                | φ 80                                    | φ 84  | B1         | 20                           | φ20                                  | φ60  | 20   | 40                               | 1.13                          |
| SG2S 42B - 2020          | 42                                | φ 84                                    | φ 88  | B1         | 20                           | φ20                                  | φ60  | 20   | 40                               | 1.21                          |
| SG2S 44B - 2020          | 44                                | φ 88                                    | φ 92  | B1         | 20                           | φ20                                  | φ60  | 20   | 40                               | 1.29                          |
| SG2S 45B - 2020          | 45                                | φ 90                                    | φ 94  | B1         | 20                           | φ20                                  | φ60  | 20   | 40                               | 1.34                          |
| SG2S 48B - 2020          | 48                                | φ 96                                    | φ100  | B1         | 20                           | 20                                   | φ60  | 20   | 40                               | 1.47                          |
| SG2S 50B - 2020          | 50                                | φ100                                    | φ104  | B1         | 20                           | 20                                   | φ60  | 20   | 40                               | 1.57                          |
| SG2S 52B - 2020          | 52                                | φ104                                    | φ108  | B1         | 20                           | 20                                   | φ60  | 20   | 40                               | 1.67                          |
| SG2S 54B - 2020          | 54                                | φ108                                    | φ112  | B1         | 20                           | 20                                   | φ60  | 20   | 40                               | 1.78                          |
| SG2S 55B - 2020          | 55                                | φ110                                    | φ114  | B1         | 20                           | 20                                   | φ60  | 20   | 40                               | 1.83                          |
| SG2S 56B - 2020          | 56                                | φ112                                    | φ116  | B1         | 20                           | 20                                   | φ60  | 20   | 40                               | 1.88                          |
| SG2S 60B - 2025          | 60                                | φ120                                    | φ124  | B1         | 20                           | 25                                   | φ70  | 20   | 40                               | 2.21                          |
| SG2S 64B - 2025          | 64                                | φ128                                    | φ132  | B1         | 20                           | 25                                   | φ70  | 20   | 40                               | 2.45                          |
| SG2S 70B - 2025          | 70                                | φ140                                    | φ144  | B1         | 20                           | 25                                   | φ70  | 20   | 40                               | 2.85                          |
| SG2S 72B - 2025          | 72                                | φ144                                    | φ148  | B1         | 20                           | 25                                   | φ80  | 20   | 40                               | 3.17                          |
| SG2S 75B - 2025          | 75                                | φ150                                    | φ154  | B1         | 20                           | 25                                   | φ80  | 20   | 40                               | 3.39                          |
| SG2S 80B - 2025          | 80                                | φ160                                    | φ164  | B1         | 20                           | 25                                   | φ80  | 20   | 40                               | 3.77                          |
| SG2S 90B - 2025          | 90                                | φ180                                    | φ184  | B1         | 20                           | 25                                   | φ80  | 20   | 40                               | 4.60                          |
| SG2S 100B - 2030         | 100                               | φ200                                    | φ204  | B1         | 20                           | 30                                   | φ80  | 20   | 40                               | 5.46                          |



### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br>z | 齿宽<br>b | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |        |        |        |
|---------|---------|---|-------|-------|-------|--------|--------|--------|
|         |         | 400   | 800   | 1,200 | 1,500 | 1,800  | 2,500  | 3,000  |
| 14      | 20      | 2.46  | 4.92  | 7.39  | 9.23  | 11.08  | 15.13  | 17.84  |
| 15      | 20      | 2.76  | 5.52  | 8.28  | 10.35 | 12.42  | 16.85  | 19.84  |
| 16      | 20      | 3.06  | 6.12  | 9.19  | 11.48 | 13.77  | 18.58  | 21.86  |
| 17      | 20      | 3.37  | 6.74  | 10.11 | 12.63 | 15.08  | 20.32  | 23.94  |
| 18      | 20      | 3.68  | 7.36  | 11.04 | 13.80 | 16.40  | 22.06  | 26.02  |
| 20      | 20      | 4.32  | 8.64  | 12.96 | 16.15 | 19.08  | 25.63  | 30.25  |
| 21      | 20      | 4.64  | 9.29  | 13.93 | 17.29 | 20.41  | 27.43  | 32.36  |
| 22      | 20      | 4.97  | 9.94  | 14.92 | 18.44 | 21.75  | 29.25  | 34.47  |
| 23      | 20      | 5.30  | 10.61 | 15.91 | 19.59 | 23.09  | 31.06  | 36.59  |
| 24      | 20      | 5.63  | 11.27 | 16.90 | 20.73 | 24.42  | 32.87  | 38.68  |
| 25      | 20      | 5.97  | 11.94 | 17.84 | 21.88 | 25.76  | 34.68  | 40.79  |
| 26      | 20      | 6.31  | 12.61 | 18.79 | 23.03 | 27.09  | 36.49  | 42.84  |
| 27      | 20      | 6.65  | 13.29 | 19.75 | 24.17 | 28.44  | 38.30  | 44.83  |
| 28      | 20      | 6.99  | 13.98 | 20.70 | 25.32 | 29.82  | 40.11  | 46.80  |
| 30      | 20      | 7.67  | 15.35 | 22.59 | 27.59 | 32.55  | 43.69  | 50.68  |
| 32      | 20      | 8.37  | 16.76 | 24.48 | 29.87 | 35.28  | 47.14  | 54.51  |
| 34      | 20      | 9.07  | 18.14 | 26.36 | 32.21 | 38.01  | 50.49  | 58.27  |
| 35      | 20      | 9.42  | 18.84 | 27.30 | 33.38 | 39.37  | 52.14  | 60.13  |
| 36      | 20      | 9.77  | 19.54 | 28.24 | 34.54 | 40.73  | 53.78  | 61.97  |
| 38      | 20      | 10.48                                       | 20.87 | 30.11 | 36.87 | 43.43  | 57.03  | 65.60  |
| 40      | 20      | 11.20                                       | 22.20 | 31.97 | 39.19 | 46.12  | 60.23  | 69.43  |
| 42      | 20      | 11.91                                       | 23.52 | 33.89 | 41.49 | 48.80  | 63.37  | 73.24  |
| 44      | 20      | 12.62                                       | 24.82 | 35.77 | 43.76 | 51.30  | 66.42  | 76.96  |
| 45      | 20      | 12.99                                       | 25.48 | 36.72 | 44.90 | 52.55  | 67.94  | 78.82  |
| 48      | 20      | 14.07                                       | 27.44 | 39.56 | 48.31 | 56.23  | 72.72  | 84.34  |
| 50      | 20      | 14.80                                       | 28.74 | 41.44 | 50.56 | 58.64  | 75.93  | 87.96  |
| 52      | 20      | 15.53                                       | 30.04 | 43.31 | 52.74 | 61.03  | 79.10  | 91.54  |
| 54      | 20      | 16.26                                       | 31.33 | 45.17 | 54.83 | 63.38  | 82.24  | 95.07  |
| 55      | 20      | 16.63                                       | 31.97 | 46.10 | 55.87 | 64.54  | 83.80  | 96.81  |
| 56      | 20      | 16.99                                       | 32.61 | 47.03 | 56.90 | 65.70  | 85.35  | 98.55  |
| 60      | 20      | 18.46                                       | 35.16 | 50.71 | 60.97 | 70.25  | 91.46  | 104.57 |
| 64      | 20      | 19.94                                       | 37.77 | 54.34 | 64.96 | 74.72  | 97.43  | 109.96 |
| 70      | 20      | 22.17                                       | 41.66 | 59.39 | 70.76 | 81.78  | 105.82 | 117.59 |
| 72      | 20      | 22.90                                       | 42.94 | 61.04 | 72.65 | 84.09  | 108.14 | 120.01 |
| 75      | 20      | 23.95                                       | 44.86 | 63.49 | 75.44 | 87.52  | 111.53 | 123.54 |
| 80      | 20      | 25.68                                       | 48.04 | 67.49 | 80.31 | 93.15  | 116.96 | -      |
| 90      | 20      | 29.06                                       | 54.23 | 75.12 | 89.89 | 103.90 | 126.88 | -      |
| 100     | 20      | 32.41                                       | 60.17 | 82.79 | 99.19 | 113.41 | -      | -      |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |        |        |       |
|---|-------|-------|-------|--------|--------|-------|
| 400   | 800   | 1,200 | 1,500 | 1,800  | 2,500  | 3,000 |
| 0.52  | 1.06  | 1.60  | 2.02  | 2.44   | 3.39   | 4.03  |
| 0.60  | 1.22  | 1.85  | 2.33  | 2.82   | 3.89   | 4.62  |
| 0.69  | 1.39  | 2.12  | 2.67  | 3.23   | 4.42   | 5.25  |
| 0.78  | 1.58  | 2.40  | 3.08  | 3.65   | 4.99   | 5.94  |
| 0.88  | 1.78  | 2.71  | 3.41  | 4.09   | 5.59   | 6.66  |
| 1.09  | 2.22  | 3.37  | 4.24  | 5.05   | 6.90   | 8.23  |
| 1.21  | 2.45  | 3.73  | 4.68  | 5.57   | 7.62   | 9.08  |
| 1.33  | 2.70  | 4.11  | 5.14  | 6.11   | 8.37   | 9.97  |
| 1.45  | 2.96  | 4.51  | 5.62  | 6.68   | 9.15   | 10.89 |
| 1.59  | 3.24  | 4.93  | 6.12  | 7.27   | 9.97   | 11.86 |
| 1.73  | 3.52  | 5.36  | 6.64  | 7.89   | 10.82  | 12.86 |
| 1.87  | 3.82  | 5.80  | 7.18  | 8.53   | 11.70  | 13.88 |
| 2.03  | 4.14  | 6.25  | 7.74  | 9.19   | 12.62  | 14.92 |
| 2.18  | 4.66  | 6.73  | 8.32  | 9.90   | 13.57  | 16.00 |
| 2.52  | 5.15  | 7.72  | 9.55  | 11.37  | 15.56  | 18.25 |
| 2.88  | 5.90  | 8.79  | 10.85 | 12.95  | 17.64  | 20.62 |
| 3.27  | 6.69  | 9.92  | 12.27 | 14.63  | 19.81  | 23.11 |
| 3.47  | 7.11  | 10.51 | 13.00 | 15.50  | 20.93  | 24.40 |
| 3.68  | 7.54  | 11.12 | 13.76 | 16.40  | 22.08  | 25.72 |
| 4.12  | 8.41  | 12.38 | 15.35 | 18.27  | 24.47  | 28.45 |
| 4.58  | 9.32  | 13.71 | 17.01 | 20.24  | 26.95  | 31.41 |
| 5.07  | 10.28 | 15.13 | 18.76 | 22.30  | 29.54  | 34.50 |
| 5.58  | 11.29 | 16.62 | 20.59 | 24.40  | 32.22  | 37.73 |
| 5.85  | 11.81 | 17.38 | 21.53 | 25.47  | 33.59  | 39.39 |
| 6.69  | 13.44 | 19.80 | 24.49 | 28.82  | 38.01  | 44.55 |
| 7.28  | 14.58 | 21.49 | 26.56 | 31.15  | 41.12  | 48.14 |
| 7.90  | 15.76 | 23.24 | 28.68 | 33.55  | 44.34  | 51.85 |
| 8.55  | 16.99 | 25.07 | 30.83 | 36.03  | 47.67  | 55.67 |
| 8.88  | 17.63 | 26.01 | 31.93 | 37.30  | 49.37  | 57.63 |
| 9.22  | 18.27 | 26.96 | 33.05 | 38.58  | 51.10  | 59.61 |
| 10.65                                       | 20.95 | 30.93 | 37.69 | 43.91  | 58.26  | 67.29 |
| 12.18                                       | 23.87 | 35.16 | 42.59 | 49.53  | 65.82  | 75.02 |
| 14.69                                       | 28.59 | 41.75 | 50.41 | 58.89  | 77.64  | 87.09 |
| 15.58                                       | 30.26 | 44.06 | 53.14 | 62.17  | 81.44  | 91.23 |
| 16.91                                       | 32.84 | 47.61 | 57.34 | 67.23  | 87.25  | 97.54 |
| 19.26                                       | 37.38 | 53.80 | 64.88 | 76.04  | 97.20  | -     |
| 24.39                                       | 47.29 | 67.12 | 81.37 | 95.03  | 118.05 | -     |
| 30.11                                       | 58.13 | 81.94 | 99.45 | 114.85 | -      | -     |

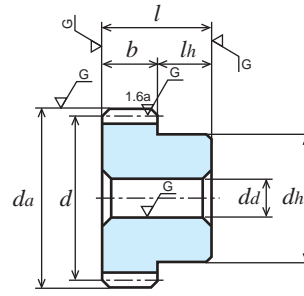
# 研磨直齿轮 (SG 系列)

SG GROUND SPUR GEARS

模数  
MODULE

2.5 (齿数 14 ~ 80)

(普通齿)  
FULL DEPTH TOOTH



B1 形状  
TYPE B1

单位: mm

| 精度               | 材料         | 压力角  | 热处理    | 齿面硬度       | 侧隙①       |
|------------------|------------|------|--------|------------|-----------|
| JIS B 1702-1 5 级 | SCM435、440 | 20 度 | 齿面高频淬火 | HRC49 ~ 55 | 0.1 ~ 0.2 |

★未做表面处理。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 重量<br>Weight<br>W(kg) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|-----------------------|
| SG2.5S 14B - 2515        | 14                         | φ35                              | φ40                         | B1         | 25                    | φ15                           | φ28                        | 20                           | 45                        | 0.2                   |
| SG2.5S 15B - 2515        | 15                         | φ37.5                            | φ42.5                       | B1         | 25                    | φ15                           | φ28                        | 20                           | 45                        | 0.3                   |
| SG2.5S 16B - 2515        | 16                         | φ40                              | φ45                         | B1         | 25                    | φ15                           | φ28                        | 20                           | 45                        | 0.3                   |
| SG2.5S 18B - 2520        | 18                         | φ45                              | φ50                         | B1         | 25                    | φ20                           | φ38                        | 20                           | 45                        | 0.4                   |
| SG2.5S 20B - 2520        | 20                         | φ50                              | φ55                         | B1         | 25                    | φ20                           | φ38                        | 20                           | 45                        | 0.5                   |
| SG2.5S 24B - 2520        | 24                         | φ60                              | φ65                         | B1         | 25                    | φ20                           | φ50                        | 20                           | 45                        | 0.8                   |
| SG2.5S 25B - 2520        | 25                         | φ62.5                            | φ67.5                       | B1         | 25                    | φ20                           | φ50                        | 20                           | 45                        | 0.8                   |
| SG2.5S 28B - 2520        | 28                         | φ70                              | φ75                         | B1         | 25                    | φ20                           | φ60                        | 20                           | 45                        | 1.1                   |
| SG2.5S 30B - 2520        | 30                         | φ75                              | φ80                         | B1         | 25                    | φ20                           | φ60                        | 20                           | 45                        | 1.2                   |
| SG2.5S 32B - 2520        | 32                         | φ80                              | φ85                         | B1         | 25                    | φ20                           | φ60                        | 20                           | 45                        | 1.3                   |
| SG2.5S 35B - 2525        | 35                         | φ87.5                            | φ92.5                       | B1         | 25                    | φ25                           | φ70                        | 20                           | 45                        | 1.6                   |
| SG2.5S 36B - 2525        | 36                         | φ90                              | φ95                         | B1         | 25                    | φ25                           | φ70                        | 20                           | 45                        | 1.7                   |
| SG2.5S 40B - 2525        | 40                         | φ100                             | φ105                        | B1         | 25                    | φ25                           | φ70                        | 20                           | 45                        | 2.0                   |
| SG2.5S 45B - 2525        | 45                         | φ112.5                           | φ117.5                      | B1         | 25                    | φ25                           | φ70                        | 20                           | 45                        | 2.4                   |
| SG2.5S 48B - 2525        | 48                         | φ120                             | φ125                        | B1         | 25                    | φ25                           | φ70                        | 20                           | 45                        | 2.5                   |
| SG2.5S 50B - 2530        | 50                         | φ125                             | φ130                        | B1         | 25                    | φ30                           | φ80                        | 20                           | 45                        | 2.8                   |
| SG2.5S 55B - 2530        | 55                         | φ137.5                           | φ142.5                      | B1         | 25                    | φ30                           | φ80                        | 20                           | 45                        | 3.4                   |
| SG2.5S 56B - 2530        | 56                         | φ140                             | φ145                        | B1         | 25                    | φ30                           | φ80                        | 20                           | 45                        | 3.5                   |
| SG2.5S 60B - 2530        | 60                         | φ150                             | φ155                        | B1         | 25                    | φ30                           | φ80                        | 20                           | 45                        | 4.0                   |
| SG2.5S 64B - 2530        | 64                         | φ160                             | φ165                        | B1         | 25                    | φ30                           | φ80                        | 20                           | 45                        | 4.5                   |
| SG2.5S 70B - 2530        | 70                         | φ175                             | φ180                        | B1         | 25                    | φ30                           | φ90                        | 20                           | 45                        | 5.4                   |
| SG2.5S 72B - 2530        | 72                         | φ180                             | φ185                        | B1         | 25                    | φ30                           | φ90                        | 20                           | 45                        | 5.7                   |
| SG2.5S 75B - 2530        | 75                         | φ187.5                           | φ192.5                      | B1         | 25                    | φ30                           | φ90                        | 20                           | 45                        | 6.1                   |
| SG2.5S 80B - 2530        | 80                         | φ200                             | φ205                        | B1         | 25                    | φ30                           | φ90                        | 20                           | 45                        | 6.9                   |

## 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |        |        |        |        |        |
|----------------|----------------|---|-------|--------|--------|--------|--------|--------|
|                |                | 400   | 800   | 1,200  | 1,500  | 1,800  | 2,500  | 3,000  |
| 14             | 25             | 4.81  | 9.62  | 14.42  | 18.03  | 21.48  | 28.91  | 34.08  |
| 15             | 25             | 5.39  | 10.78 | 16.17  | 20.21  | 23.93  | 32.14  | 37.95  |
| 16             | 25             | 5.98  | 11.96 | 17.94  | 22.35  | 26.40  | 35.46  | 41.86  |
| 18             | 25             | 7.19  | 14.38 | 21.57  | 26.60  | 31.38  | 42.19  | 49.72  |
| 20             | 25             | 8.44  | 16.88 | 25.23  | 30.94  | 36.42  | 49.04  | 57.68  |
| 24             | 25             | 11.00                                       | 22.01 | 32.39  | 39.57  | 46.67  | 62.66  | 72.67  |
| 25             | 25             | 11.66                                       | 23.32 | 34.18  | 41.73  | 49.27  | 65.97  | 76.34  |
| 28             | 25             | 13.65                                       | 27.30 | 39.56  | 48.36  | 57.05  | 75.55  | 87.13  |
| 30             | 25             | 14.99                                       | 29.87 | 43.11  | 52.78  | 62.19  | 81.77  | 94.10  |
| 32             | 25             | 16.34                                       | 32.40 | 46.67  | 57.20  | 67.33  | 87.92  | 101.35 |
| 35             | 25             | 18.40                                       | 36.19 | 52.15  | 63.81  | 74.84  | 96.92  | 112.26 |
| 36             | 25             | 19.09                                       | 37.45 | 53.97  | 66.00  | 77.24  | 99.87  | 115.86 |
| 40             | 25             | 21.87                                       | 42.47 | 61.23  | 74.71  | 86.65  | 112.19 | 129.97 |
| 45             | 25             | 25.36                                       | 48.64 | 70.16  | 84.85  | 97.96  | 127.28 | 146.94 |
| 48             | 25             | 27.48                                       | 52.33 | 75.48  | 90.76  | 104.57 | 136.13 | 155.65 |
| 50             | 25             | 28.90                                       | 54.85 | 79.00  | 94.63  | 108.89 | 141.94 | 160.97 |
| 55             | 25             | 32.47                                       | 61.12 | 87.29  | 104.08 | 120.17 | 156.12 | 173.61 |
| 56             | 25             | 33.19                                       | 62.36 | 88.91  | 105.93 | 122.43 | 158.43 | 176.03 |
| 60             | 25             | 35.94                                       | 67.32 | 95.27  | 113.22 | 131.34 | 167.37 | 185.40 |
| 64             | 25             | 38.61                                       | 72.24 | 101.49 | 120.77 | 140.07 | 175.88 | -      |
| 70             | 25             | 42.59                                       | 79.53 | 110.56 | 132.11 | 152.83 | 187.90 | -      |
| 72             | 25             | 43.91                                       | 81.94 | 113.52 | 135.82 | 157.00 | 191.72 | -      |
| 75             | 25             | 45.87                                       | 85.53 | 117.88 | 141.33 | 163.16 | 197.29 | -      |
| 80             | 25             | 49.13                                       | 91.20 | 125.49 | 150.35 | 171.91 | -      | -      |

## 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |        |        |        |        |        |
|---|-------|--------|--------|--------|--------|--------|
| 400   | 800   | 1,200  | 1,500  | 1,800  | 2,500  | 3,000  |
| 1.03  | 2.10  | 3.19   | 4.02   | 4.83   | 6.61   | 7.87   |
| 1.19  | 2.42  | 3.68   | 4.65   | 5.55   | 7.58   | 9.04   |
| 1.36  | 2.77  | 4.21   | 5.30   | 6.32   | 8.63   | 10.29  |
| 1.74  | 3.54  | 5.39   | 6.72   | 7.99   | 10.94  | 13.03  |
| 2.16  | 4.41  | 6.69   | 8.30   | 9.86   | 13.52  | 16.07  |
| 3.15  | 6.44  | 9.66   | 11.93  | 14.22  | 19.45  | 22.81  |
| 3.43  | 7.02  | 10.48  | 12.94  | 15.43  | 21.07  | 24.64  |
| 4.34  | 8.89  | 13.14  | 16.26  | 19.37  | 26.16  | 30.51  |
| 5.00  | 10.23 | 15.07  | 18.68  | 22.24  | 29.83  | 34.70  |
| 5.72  | 11.65 | 17.13  | 21.26  | 25.30  | 33.69  | 39.26  |
| 6.89  | 13.95 | 20.53  | 25.44  | 30.17  | 39.85  | 46.65  |
| 7.31  | 14.76 | 21.73  | 26.92  | 31.84  | 41.99  | 49.24  |
| 9.10  | 18.22 | 26.86  | 33.20  | 38.93  | 51.40  | 60.18  |
| 11.63                                       | 23.04 | 34.00  | 41.67  | 48.64  | 64.42  | 75.14  |
| 13.31                                       | 26.19 | 38.67  | 47.12  | 54.88  | 72.83  | 84.11  |
| 14.49                                       | 28.44 | 41.94  | 50.91  | 59.22  | 78.68  | 90.11  |
| 17.69                                       | 34.47 | 50.42  | 60.92  | 71.11  | 94.11  | 105.66 |
| 18.36                                       | 35.74 | 52.18  | 63.02  | 73.62  | 97.04  | 108.86 |
| 21.14                                       | 41.06 | 59.51  | 71.67  | 84.04  | 109.06 | 121.93 |
| 24.07                                       | 46.72 | 67.25  | 81.09  | 95.05  | 121.50 | -      |
| 28.82                                       | 55.88 | 79.59  | 96.37  | 112.64 | 140.91 | -      |
| 30.49                                       | 59.11 | 83.90  | 101.71 | 118.78 | 147.57 | -      |
| 33.09                                       | 64.11 | 90.53  | 109.96 | 128.25 | 157.71 | -      |
| 37.64                                       | 72.66 | 102.43 | 124.31 | 143.57 | -      | -      |

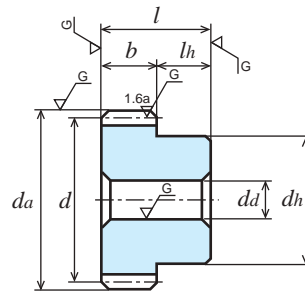
# 研磨直齿轮 (SG 系列)

SG GROUND SPUR GEARS

模数  
MODULE

**3**  
(齿数 14 ~ 80)

(普通齿)  
FULL DEPTH TOOTH



B1 形状  
TYPE B1

单位: mm

| 精度               | 材料         | 压力角  | 热处理    | 齿面硬度       | 侧隙①         |
|------------------|------------|------|--------|------------|-------------|
| JIS B 1702-1 5 级 | SCM435、440 | 20 度 | 齿面高频淬火 | HRC49 ~ 55 | 0.12 ~ 0.24 |

★未做表面处理。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 重量<br>Weight<br>W(kg) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|-----------------------|
| SG3S 14B - 3015          | 14                         | φ 42                             | φ 48                        | B1         | 30                    | φ15                           | φ 34                       | 20                           | 50                        | 0.4                   |
| SG3S 15B - 3015          | 15                         | φ 45                             | φ 51                        | B1         | 30                    | φ15                           | φ 36                       | 20                           | 50                        | 0.5                   |
| SG3S 16B - 3015          | 16                         | φ 48                             | φ 54                        | B1         | 30                    | φ15                           | φ 36                       | 20                           | 50                        | 0.5                   |
| SG3S 18B - 3020          | 18                         | φ 54                             | φ 60                        | B1         | 30                    | φ20                           | φ 45                       | 20                           | 50                        | 0.7                   |
| SG3S 20B - 3020          | 20                         | φ 60                             | φ 66                        | B1         | 30                    | φ20                           | φ 45                       | 20                           | 50                        | 0.8                   |
| SG3S 24B - 3020          | 24                         | φ 72                             | φ 78                        | B1         | 30                    | φ20                           | φ 50                       | 20                           | 50                        | 1.1                   |
| SG3S 25B - 3020          | 25                         | φ 75                             | φ 81                        | B1         | 30                    | φ20                           | φ 50                       | 20                           | 50                        | 1.2                   |
| SG3S 28B - 3025          | 28                         | φ 84                             | φ 90                        | B1         | 30                    | φ25                           | φ 60                       | 20                           | 50                        | 1.6                   |
| SG3S 30B - 3025          | 30                         | φ 90                             | φ 96                        | B1         | 30                    | φ25                           | φ 60                       | 20                           | 50                        | 1.7                   |
| SG3S 32B - 3025          | 32                         | φ 96                             | φ102                        | B1         | 30                    | φ25                           | φ 60                       | 20                           | 50                        | 1.9                   |
| SG3S 35B - 3030          | 35                         | φ105                             | φ111                        | B1         | 30                    | φ30                           | φ 70                       | 20                           | 50                        | 2.3                   |
| SG3S 36B - 3030          | 36                         | φ108                             | φ114                        | B1         | 30                    | φ30                           | φ 70                       | 20                           | 50                        | 2.5                   |
| SG3S 40B - 3030          | 40                         | φ120                             | φ126                        | B1         | 30                    | φ30                           | φ 70                       | 20                           | 50                        | 3.0                   |
| SG3S 45B - 3030          | 45                         | φ135                             | φ141                        | B1         | 30                    | φ30                           | φ 80                       | 20                           | 50                        | 3.9                   |
| SG3S 48B - 3030          | 48                         | φ144                             | φ150                        | B1         | 30                    | φ30                           | φ 80                       | 20                           | 50                        | 4.3                   |
| SG3S 50B - 3030          | 50                         | φ150                             | φ156                        | B1         | 30                    | φ30                           | φ 80                       | 20                           | 50                        | 4.6                   |
| SG3S 55B - 3035          | 55                         | φ165                             | φ171                        | B1         | 30                    | φ35                           | φ 90                       | 20                           | 50                        | 5.6                   |
| SG3S 56B - 3035          | 56                         | φ168                             | φ174                        | B1         | 30                    | φ35                           | φ 90                       | 20                           | 50                        | 5.8                   |
| SG3S 60B - 3035          | 60                         | φ180                             | φ186                        | B1         | 30                    | φ35                           | φ 90                       | 20                           | 50                        | 6.6                   |
| SG3S 64B - 3040          | 64                         | φ192                             | φ198                        | B1         | 30                    | φ40                           | φ 90                       | 20                           | 50                        | 7.3                   |
| SG3S 70B - 3040          | 70                         | φ210                             | φ216                        | B1         | 30                    | φ40                           | φ100                       | 20                           | 50                        | 8.8                   |
| SG3S 72B - 3040          | 72                         | φ216                             | φ222                        | B1         | 30                    | φ40                           | φ100                       | 20                           | 50                        | 9.3                   |
| SG3S 75B - 3040          | 75                         | φ225                             | φ231                        | B1         | 30                    | φ40                           | φ100                       | 20                           | 50                        | 10.0                  |
| SG3S 80B - 3040          | 80                         | φ240                             | φ246                        | B1         | 30                    | φ40                           | φ100                       | 20                           | 50                        | 11.3                  |



## 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |        |        |        |        |        |        |
|----------------|----------------|---|--------|--------|--------|--------|--------|--------|
|                |                | 400   | 800    | 1,200  | 1,500  | 1,800  | 2,500  | 3,000  |
| 14             | 30             | 8.31  | 16.62  | 24.93  | 30.93  | 36.51  | 49.07  | 57.88  |
| 15             | 30             | 9.31  | 18.62  | 27.93  | 34.46  | 40.64  | 54.65  | 64.40  |
| 16             | 30             | 10.33                                       | 20.67  | 30.99  | 38.02  | 44.79  | 60.28  | 70.95  |
| 18             | 30             | 12.42                                       | 24.84  | 36.90  | 45.18  | 53.16  | 71.59  | 83.78  |
| 20             | 30             | 14.59                                       | 29.17  | 42.93  | 52.45  | 61.87  | 83.06  | 96.33  |
| 24             | 30             | 19.01                                       | 38.01  | 54.95  | 67.21  | 79.24  | 104.65 | 120.57 |
| 25             | 30             | 20.15                                       | 40.15  | 57.96  | 70.95  | 83.59  | 109.93 | 126.49 |
| 28             | 30             | 23.59                                       | 46.57  | 67.09  | 82.15  | 96.61  | 125.47 | 145.00 |
| 30             | 30             | 25.90                                       | 50.82  | 73.23  | 89.55  | 104.80 | 135.50 | 157.19 |
| 32             | 30             | 28.24                                       | 55.08  | 79.39  | 96.95  | 112.84 | 145.94 | 169.26 |
| 35             | 30             | 31.79                                       | 61.43  | 88.58  | 107.77 | 124.68 | 161.66 | 187.02 |
| 36             | 30             | 32.98                                       | 63.54  | 91.64  | 111.22 | 128.56 | 166.83 | 192.84 |
| 40             | 30             | 37.79                                       | 71.94  | 103.77 | 124.77 | 143.76 | 187.16 | 214.00 |
| 45             | 30             | 43.83                                       | 82.62  | 118.23 | 141.06 | 162.71 | 211.59 | 236.20 |
| 48             | 30             | 47.47                                       | 89.00  | 126.51 | 150.58 | 174.29 | 224.14 | 248.74 |
| 50             | 30             | 49.77                                       | 93.24  | 131.94 | 156.80 | 181.90 | 231.80 | 256.76 |
| 55             | 30             | 55.48                                       | 103.74 | 145.22 | 173.05 | 200.54 | 250.00 | -      |
| 56             | 30             | 56.62                                       | 105.82 | 147.83 | 176.30 | 204.19 | 253.49 | -      |
| 60             | 30             | 61.14                                       | 114.10 | 158.07 | 189.13 | 218.62 | 266.97 | -      |
| 64             | 30             | 65.63                                       | 122.26 | 168.12 | 201.71 | 232.50 | -      | -      |
| 70             | 30             | 72.29                                       | 133.62 | 184.00 | 220.08 | 249.18 | -      | -      |
| 72             | 30             | 74.50                                       | 137.34 | 189.20 | 226.08 | 254.51 | -      | -      |
| 75             | 30             | 77.78                                       | 142.85 | 196.93 | 234.96 | 262.28 | -      | -      |
| 80             | 30             | 83.22                                       | 151.85 | 209.58 | 247.54 | 274.71 | -      | -      |

## 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |        |        |        |        |        |        |
|---|--------|--------|--------|--------|--------|--------|
| 400   | 800    | 1,200  | 1,500  | 1,800  | 2,500  | 3,000  |
| 1.81  | 3.68   | 5.60   | 7.02   | 8.36   | 11.43  | 13.62  |
| 2.08  | 4.25   | 6.47   | 8.06   | 9.59   | 13.13  | 15.64  |
| 2.38  | 4.86   | 7.40   | 9.17   | 10.91  | 14.95  | 17.78  |
| 3.04  | 6.21   | 9.38   | 11.61  | 13.79  | 18.92  | 22.39  |
| 3.78  | 7.73   | 11.59  | 14.32  | 17.06  | 23.34  | 27.37  |
| 5.52  | 11.31  | 16.68  | 20.65  | 24.60  | 33.13  | 38.59  |
| 6.01  | 12.28  | 18.09  | 22.41  | 26.69  | 35.79  | 41.64  |
| 7.60  | 15.42  | 22.69  | 28.14  | 33.45  | 44.30  | 51.76  |
| 8.77  | 17.71  | 26.08  | 32.30  | 38.21  | 50.39  | 59.08  |
| 10.03                                       | 20.15  | 29.69  | 36.74  | 43.23  | 57.01  | 66.83  |
| 12.09                                       | 24.10  | 35.54  | 43.81  | 51.24  | 67.75  | 79.19  |
| 12.82                                       | 25.49  | 37.60  | 46.25  | 54.04  | 71.51  | 83.51  |
| 15.97                                       | 31.43  | 46.40  | 56.54  | 65.86  | 87.40  | 100.93 |
| 20.43                                       | 39.86  | 58.41  | 70.63  | 82.36  | 109.12 | 122.99 |
| 23.37                                       | 45.39  | 66.08  | 79.71  | 93.26  | 122.16 | 136.84 |
| 25.37                                       | 49.27  | 71.42  | 86.01  | 100.85 | 130.87 | 146.32 |
| 30.73                                       | 59.63  | 85.52  | 103.27 | 120.93 | 153.45 | -      |
| 31.86                                       | 61.82  | 88.47  | 106.92 | 125.14 | 158.10 | -      |
| 36.59                                       | 70.93  | 100.68 | 122.05 | 142.54 | 177.08 | -      |
| 41.63                                       | 80.62  | 113.58 | 138.05 | 160.74 | -      | -      |
| 49.78                                       | 95.73  | 135.04 | 163.59 | 187.06 | -      | -      |
| 52.66                                       | 101.01 | 142.56 | 172.51 | 196.11 | -      | -      |
| 57.11                                       | 109.17 | 154.16 | 186.25 | 209.93 | -      | -      |
| 64.93                                       | 123.36 | 174.37 | 208.50 | 233.57 | -      | -      |

# 研磨直齿轮 (SGE 系列)

## SG GROUND SPUR GEARS

模数  
MODULE

0.5  
(齿数 30~120)

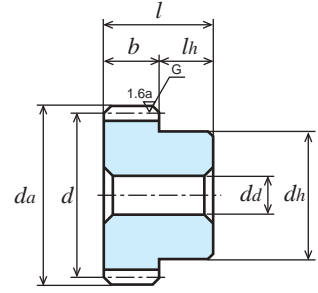
/0.8  
(齿数 25~120)

/1  
(齿数 20~120)

/1.5  
(齿数 20~100)

(普通齿)

FULL DEPTH TOOTH



B1 形状  
TYPE B1

单位: mm

| 精度               | 材料   | 压力角  | 热处理    | 齿面硬度       | 侧隙①   |
|------------------|------|------|--------|------------|-------|
| JIS B 1702-1 7 级 | S45C | 20 度 | 齿面高频淬火 | HRC47 ~ 53 | 请确认 ② |

★未做表面处理。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①同一种材料，一样的齿轮相互啮合时的理想值。

②侧隙: m0.5: 0.02 ~ 0.06; m 0.8: 0.02 ~ 0.06; m 1: 0.04 ~ 0.1; m1.5: 0.06 ~ 0.15;

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>di(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|----------------------|
| SGE50S 30B - 0504        | 30                         | φ 15                             | φ 16                        | B1         | 5                     | φ 4                           | φ 12                       | 8                            | 13                        | 12.7                 |
| SGE50S 40B - 0504        | 40                         | φ 20                             | φ 21                        | B1         | 5                     | φ 4                           | φ 15                       | 8                            | 13                        | 22.1                 |
| SGE50S 50B - 0504        | 50                         | φ 25                             | φ 26                        | B1         | 5                     | φ 4                           | φ 18                       | 8                            | 13                        | 33.9                 |
| SGE50S 60B - 0505        | 60                         | φ 30                             | φ 31                        | B1         | 5                     | φ 5                           | φ 22                       | 8                            | 13                        | 49.5                 |
| SGE50S 70B - 0505        | 70                         | φ 35                             | φ 36                        | B1         | 5                     | φ 5                           | φ 25                       | 8                            | 13                        | 66.5                 |
| SGE50S 80B - 0506        | 80                         | φ 40                             | φ 41                        | B1         | 5                     | φ 6                           | φ 28                       | 8                            | 13                        | 85.0                 |
| SGE50S 90B - 0506        | 90                         | φ 45                             | φ 46                        | B1         | 5                     | φ 6                           | φ 32                       | 8                            | 13                        | 109.9                |
| SGE50S 100B - 0506       | 100                        | φ 50                             | φ 51                        | B1         | 5                     | φ 6                           | φ 35                       | 8                            | 13                        | 134.4                |
| SGE50S 120B - 0506       | 120                        | φ 60                             | φ 61                        | B1         | 5                     | φ 6                           | φ 42                       | 8                            | 13                        | 194.9                |
| SGE80S 25B - 0805        | 25                         | φ 20                             | φ 21.6                      | B1         | 8                     | φ 5                           | φ 16                       | 10                           | 18                        | 32.5                 |
| SGE80S 30B - 0805        | 30                         | φ 24                             | φ 25.6                      | B1         | 8                     | φ 5                           | φ 20                       | 10                           | 18                        | 50.1                 |
| SGE80S 40B - 0806        | 40                         | φ 32                             | φ 33.6                      | B1         | 8                     | φ 6                           | φ 25                       | 10                           | 18                        | 84.7                 |
| SGE80S 50B - 0806        | 50                         | φ 40                             | φ 41.6                      | B1         | 8                     | φ 6                           | φ 28                       | 10                           | 18                        | 122.9                |
| SGE80S 60B - 0806        | 60                         | φ 48                             | φ 49.6                      | B1         | 8                     | φ 6                           | φ 34                       | 10                           | 18                        | 180.5                |
| SGE80S 70B - 0808        | 70                         | φ 56                             | φ 57.6                      | B1         | 8                     | φ 8                           | φ 40                       | 10                           | 18                        | 245.7                |
| SGE80S 80B - 0808        | 80                         | φ 64                             | φ 65.6                      | B1         | 8                     | φ 8                           | φ 45                       | 10                           | 18                        | 319.2                |
| SGE80S 90B - 0808        | 90                         | φ 72                             | φ 73.6                      | B1         | 8                     | φ 8                           | φ 50                       | 10                           | 18                        | 402.1                |
| SGE80S 100B - 0810       | 100                        | φ 80                             | φ 81.6                      | B1         | 8                     | φ 10                          | φ 60                       | 10                           | 18                        | 525.8                |
| SGE80S 120B - 0810       | 120                        | φ 96                             | φ 97.6                      | B1         | 8                     | φ 10                          | φ 70                       | 10                           | 18                        | 744.7                |
| SGE1S 20B - 1005         | 20                         | φ 20                             | φ 22                        | B1         | 10                    | φ 5                           | φ 16                       | 10                           | 20                        | 37.0                 |
| SGE1S 25B - 1005         | 25                         | φ 25                             | φ 27                        | B1         | 10                    | φ 5                           | φ 20                       | 10                           | 20                        | 59.7                 |
| SGE1S 30B - 1006         | 30                         | φ 30                             | φ 32                        | B1         | 10                    | φ 6                           | φ 25                       | 10                           | 20                        | 89.1                 |
| SGE1S 40B - 1006         | 40                         | φ 40                             | φ 42                        | B1         | 10                    | φ 6                           | φ 30                       | 10                           | 20                        | 149.1                |
| SGE1S 50B - 1008         | 50                         | φ 50                             | φ 52                        | B1         | 10                    | φ 8                           | φ 35                       | 10                           | 20                        | 221.0                |
| SGE1S 60B - 1008         | 60                         | φ 60                             | φ 62                        | B1         | 10                    | φ 8                           | φ 42                       | 10                           | 20                        | 321.9                |
| SGE1S 70B - 1010         | 70                         | φ 70                             | φ 72                        | B1         | 10                    | φ 10                          | φ 55                       | 10                           | 20                        | 442.9                |
| SGE1S 80B - 1010         | 80                         | φ 80                             | φ 82                        | B1         | 10                    | φ 10                          | φ 60                       | 10                           | 20                        | 603.1                |
| SGE1S 90B - 1010         | 90                         | φ 90                             | φ 92                        | B1         | 10                    | φ 10                          | φ 65                       | 10                           | 20                        | 746.3                |
| SGE1S 100B - 1010        | 100                        | φ 100                            | φ 102                       | B1         | 10                    | φ 10                          | φ 70                       | 10                           | 20                        | 904.9                |
| SGE1S 120B - 1010        | 120                        | φ 120                            | φ 122                       | B1         | 10                    | φ 10                          | φ 90                       | 10                           | 20                        | 1373.2               |
| SGE1.5S 20B - 1506       | 20                         | φ 30                             | φ 33                        | B1         | 15                    | φ 6                           | φ 25                       | 15                           | 30                        | 0.1 (kg)             |
| SGE1.5S 25B - 1508       | 25                         | φ 37.5                           | φ 40.5                      | B1         | 15                    | φ 8                           | φ 30                       | 15                           | 30                        | 0.2 (kg)             |
| SGE1.5S 30B - 1508       | 30                         | φ 45                             | φ 48                        | B1         | 15                    | φ 8                           | φ 38                       | 15                           | 30                        | 0.3 (kg)             |
| SGE1.5S 40B - 1508       | 40                         | φ 60                             | φ 63                        | B1         | 15                    | φ 8                           | φ 50                       | 15                           | 30                        | 0.6 (kg)             |
| SGE1.5S 50B - 1510       | 50                         | φ 75                             | φ 78                        | B1         | 15                    | φ 10                          | φ 60                       | 15                           | 30                        | 0.8 (kg)             |
| SGE1.5S 60B - 1510       | 60                         | φ 90                             | φ 93                        | B1         | 15                    | φ 10                          | φ 65                       | 15                           | 30                        | 1.1 (kg)             |
| SGE1.5S 70B - 1510       | 70                         | φ 105                            | φ 108                       | B1         | 15                    | φ 10                          | φ 75                       | 15                           | 30                        | 1.5 (kg)             |
| SGE1.5S 80B - 1510       | 80                         | φ 120                            | φ 123                       | B1         | 15                    | φ 10                          | φ 85                       | 15                           | 30                        | 2.0 (kg)             |
| SGE1.5S 90B - 1512       | 90                         | φ 135                            | φ 138                       | B1         | 15                    | φ 12                          | φ 95                       | 15                           | 30                        | 2.5 (kg)             |
| SGE1.5S 100B - 1515      | 100                        | φ 150                            | φ 153                       | B1         | 15                    | φ 15                          | φ 105                      | 15                           | 30                        | 3.1 (kg)             |

容许传达动力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |          |          |          |          |          |          |
|---------------------------|---|----------|----------|----------|----------|----------|----------|
|                           | 400   | 800      | 1,200    | 1,500    | 1,800    | 2,500    | 3,000    |
| SGE50S 30B - 0504         | 80.54                                       | 161.08   | 241.63   | 296.60   | 347.96   | 459.16   | 531.69   |
| SGE50S 40B - 0504         | 117.09                                      | 234.19   | 342.60   | 415.43   | 484.22   | 630.05   | 727.71   |
| SGE50S 50B - 0504         | 154.49                                      | 307.53   | 438.50   | 528.52   | 612.15   | 795.67   | 929.77   |
| SGE50S 60B - 0505         | 192.53                                      | 375.41   | 530.54   | 635.73   | 732.48   | 965.31   | 1,123.08 |
| SGE50S 70B - 0505         | 230.93                                      | 441.27   | 618.60   | 737.06   | 855.34   | 1,128.41 | 1,315.49 |
| SGE50S 80B - 0506         | 269.57                                      | 505.05   | 702.44   | 837.49   | 979.47   | 1,288.25 | 1,505.79 |
| SGE50S 90B - 0506         | 308.09                                      | 566.09   | 781.45   | 941.83   | 1,098.54 | 1,448.09 | 1,687.94 |
| SGE50S 100B - 0506        | 345.37                                      | 625.52   | 862.40   | 1,044.07 | 1,214.70 | 1,604.66 | 1,865.27 |
| SGE50S 120B - 0506        | 414.57                                      | 738.59   | 1,029.96 | 1,240.25 | 1,447.40 | 1,904.73 | 2,221.44 |
| SGE80S 25B - 0805         | 257.23                                      | 514.46   | 752.38   | 912.43   | 1,063.43 | 1,383.75 | 1,598.07 |
| SGE80S 30B - 0805         | 329.81                                      | 659.29   | 941.65   | 1,136.20 | 1,317.84 | 1,707.70 | 1,997.37 |
| SGE80S 40B - 0806         | 479.71                                      | 927.82   | 1,307.05 | 1,562.49 | 1,797.72 | 2,380.47 | 2,765.49 |
| SGE80S 50B - 0806         | 632.84                                      | 1,185.57 | 1,648.92 | 1,966.00 | 2,299.31 | 3,024.09 | 3,534.52 |
| SGE80S 60B - 0806         | 788.13                                      | 1,432.30 | 1,970.04 | 2,387.61 | 2,780.45 | 3,670.23 | 4,270.98 |
| SGE80S 70B - 0808         | 929.75                                      | 1,667.30 | 2,314.57 | 2,792.93 | 3,250.73 | 4,290.73 | 4,995.68 |
| SGE80S 80B - 0808         | 1,067.88                                    | 1,890.71 | 2,647.87 | 3,183.03 | 3,723.73 | 4,896.66 | 5,706.20 |
| SGE80S 90B - 0808         | 1,200.89                                    | 2,101.81 | 2,966.46 | 3,579.91 | 4,176.82 | 5,493.79 | 6,382.94 |
| SGE80S 100B - 0810        | 1,331.42                                    | 2,334.79 | 3,277.69 | 3,969.25 | 4,619.06 | 6,077.09 | 7,106.74 |
| SGE80S 120B - 0810        | 1,581.73                                    | 2,784.19 | 3,915.35 | 4,716.56 | 5,495.21 | 7,256.77 | 8,708.13 |

容许传达动力表 齿面强度 (W)

Allowable transfer capability table (W) Surface Durability

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |          |          |          |          |          |          |
|---------------------------|---|----------|----------|----------|----------|----------|----------|
|                           | 400   | 800      | 1,200    | 1,500    | 1,800    | 2,500    | 3,000    |
| SGE50S 30B - 0504         | 23.40                                       | 48.25    | 73.71    | 91.38    | 108.03   | 144.51   | 168.88   |
| SGE50S 40B - 0504         | 42.74                                       | 88.14    | 131.25   | 160.74   | 188.91   | 249.31   | 290.12   |
| SGE50S 50B - 0504         | 68.24                                       | 140.01   | 203.27   | 247.30   | 288.79   | 380.74   | 448.75   |
| SGE50S 60B - 0505         | 100.00                                      | 200.97   | 289.16   | 349.83   | 406.41   | 543.35   | 637.24   |
| SGE50S 70B - 0505         | 138.12                                      | 272.07   | 388.19   | 467.15   | 546.46   | 731.33   | 859.50   |
| SGE50S 80B - 0506         | 182.72                                      | 352.81   | 499.54   | 601.50   | 709.14   | 945.96   | 1,114.64 |
| SGE50S 90B - 0506         | 233.83                                      | 442.88   | 622.34   | 757.42   | 890.63   | 1,190.99 | 1,399.33 |
| SGE50S 100B - 0506        | 290.20                                      | 541.88   | 760.46   | 929.62   | 1,090.21 | 1,461.16 | 1,712.07 |
| SGE50S 120B - 0506        | 416.54                                      | 765.05   | 1,085.93 | 1,320.47 | 1,553.44 | 2,073.87 | 2,437.97 |
| SGE80S 25B - 0805         | 68.40                                       | 141.06   | 210.02   | 257.25   | 302.18   | 398.84   | 464.43   |
| SGE80S 30B - 0805         | 100.25                                      | 206.60   | 300.37   | 365.97   | 427.76   | 562.45   | 663.17   |
| SGE80S 40B - 0806         | 183.16                                      | 365.19   | 523.66   | 632.11   | 733.20   | 984.91   | 1,153.54 |
| SGE80S 50B - 0806         | 292.33                                      | 564.56   | 799.31   | 962.34   | 1,134.54 | 1,513.68 | 1,783.55 |
| SGE80S 60B - 0806         | 428.08                                      | 801.96   | 1,122.84 | 1,374.15 | 1,613.15 | 2,160.32 | 2,533.88 |
| SGE80S 70B - 0808         | 581.53                                      | 1,074.99 | 1,519.00 | 1,851.10 | 2,171.74 | 2,907.99 | 3,413.28 |
| SGE80S 80B - 0808         | 756.77                                      | 1,381.16 | 1,969.08 | 2,390.32 | 2,818.63 | 3,760.20 | 4,417.24 |
| SGE80S 90B - 0808         | 953.11                                      | 1,719.57 | 2,470.54 | 3,010.83 | 3,540.97 | 4,725.01 | 5,533.69 |
| SGE80S 100B - 0810        | 1,169.89                                    | 2,114.84 | 3,022.20 | 3,695.86 | 4,335.34 | 5,786.57 | 6,821.14 |
| SGE80S 120B - 0810        | 1,661.95                                    | 3,015.64 | 4,316.82 | 5,251.26 | 6,167.25 | 8,262.29 | 9,994.37 |

容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|---------------------------|---|-------|-------|-------|-------|-------|-------|
|                           | 400   | 800   | 1,200 | 1,500 | 1,800 | 2,500 | 3,000 |
| SGE1S 20B - 1005          | 0.37  | 0.73  | 1.07  | 1.30  | 1.51  | 1.96  | 2.27  |
| SGE1S 25B - 1005          | 0.50  | 1.00  | 1.43  | 1.72  | 1.99  | 2.59  | 3.02  |
| SGE1S 30B - 1006          | 0.64  | 1.26  | 1.78  | 2.13  | 2.45  | 3.23  | 3.76  |
| SGE1S 40B - 1006          | 0.94  | 1.76  | 2.44  | 2.91  | 3.40  | 4.48  | 5.23  |
| SGE1S 50B - 1008          | 1.23  | 2.23  | 3.07  | 3.72  | 4.33  | 5.72  | 6.64  |
| SGE1S 60B - 1008          | 1.50  | 2.68  | 3.73  | 4.49  | 5.24  | 6.90  | 8.05  |
| SGE1S 70B - 1010          | 1.77  | 3.10  | 4.36  | 5.26  | 6.14  | 8.08  | 9.39  |
| SGE1S 80B - 1010          | 2.02  | 3.54  | 4.97  | 6.02  | 7.01  | 9.22  | 10.78 |
| SGE1S 90B - 1010          | 2.26  | 3.98  | 5.59  | 6.75  | 7.85  | 10.31 | 12.32 |
| SGE1S 100B - 1010         | 2.50  | 4.41  | 6.20  | 7.46  | 8.70  | 11.57 | 13.88 |
| SGE1S 120B - 1010         | 2.95  | 5.23  | 7.37  | 8.89  | 10.32 | 14.17 | 17.01 |
| SGE1.5S 20B - 1506        | 1.23  | 2.40  | 3.40  | 4.07  | 4.69  | 6.18  | 7.19  |
| SGE1.5S 25B - 1508        | 1.70  | 3.21  | 4.48  | 5.32  | 6.22  | 8.18  | 9.56  |
| SGE1.5S 30B - 1508        | 2.17  | 3.99  | 5.51  | 6.65  | 7.75  | 10.22 | 11.91 |
| SGE1.5S 40B - 1508        | 3.08  | 5.49  | 7.66  | 9.22  | 10.76 | 14.16 | 16.52 |
| SGE1.5S 50B - 1510        | 3.95  | 6.91  | 9.73  | 11.76 | 13.71 | 18.04 | 20.93 |
| SGE1.5S 60B - 1510        | 4.78  | 8.39  | 11.80 | 14.24 | 16.56 | 21.74 | 25.99 |
| SGE1.5S 70B - 1510        | 5.57  | 9.82  | 13.82 | 16.63 | 19.38 | 25.98 | 31.17 |
| SGE1.5S 80B - 1510        | 6.32  | 11.19 | 15.77 | 19.01 | 22.09 | 30.33 | 36.39 |
| SGE1.5S 90B - 1512        | 7.03  | 12.59 | 17.67 | 21.29 | 24.95 | 34.66 | 41.59 |
| SGE1.5S 100B - 1515       | 7.76  | 13.95 | 19.58 | 23.51 | 28.11 | 39.04 | 46.85 |

容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|---------------------------|---|-------|-------|-------|-------|-------|-------|
|                           | 400   | 800   | 1,200 | 1,500 | 1,800 | 2,500 | 3,000 |
| SGE1S 20B - 1005          | 0.09  | 0.18  | 0.26  | 0.32  | 0.38  | 0.50  | 0.58  |
| SGE1S 25B - 1005          | 0.14  | 0.28  | 0.41  | 0.49  | 0.58  | 0.76  | 0.90  |
| SGE1S 30B - 1006          | 0.20  | 0.40  | 0.58  | 0.70  | 0.81  | 1.09  | 1.27  |
| SGE1S 40B - 1006          | 0.37  | 0.71  | 1.00  | 1.20  | 1.42  | 1.89  | 2.23  |
| SGE1S 50B - 1008          | 0.58  | 1.08  | 1.52  | 1.86  | 2.18  | 2.92  | 3.42  |
| SGE1S 60B - 1008          | 0.83  | 1.53  | 2.17  | 2.64  | 3.11  | 4.15  | 4.88  |
| SGE1S 70B - 1010          | 1.13  | 2.04  | 2.93  | 3.56  | 4.19  | 5.59  | 6.56  |
| SGE1S 80B - 1010          | 1.46  | 2.64  | 3.78  | 4.62  | 5.42  | 7.23  | 8.53  |
| SGE1S 90B - 1010          | 1.84  | 3.33  | 4.76  | 5.80  | 6.80  | 9.05  | 10.91 |
| SGE1S 100B - 1010         | 2.25  | 4.08  | 5.84  | 7.10  | 8.34  | 11.25 | 13.61 |
| SGE1S 120B - 1010         | 3.17  | 5.79  | 8.30  | 10.10 | 11.83 | 16.48 | 19.94 |
| SGE1.5S 20B - 1506        | 0.30  | 0.60  | 0.87  | 1.05  | 1.22  | 1.63  | 1.91  |
| SGE1.5S 25B - 1508        | 0.48  | 0.93  | 1.33  | 1.59  | 1.88  | 2.50  | 2.95  |
| SGE1.5S 30B - 1508        | 0.70  | 1.33  | 1.87  | 2.27  | 2.67  | 3.57  | 4.20  |
| SGE1.5S 40B - 1508        | 1.25  | 2.30  | 3.26  | 3.96  | 4.66  | 6.22  | 7.62  |
| SGE1.5S 50B - 1510        | 1.94  | 3.49  | 5.01  | 6.11  | 7.18  | 9.58  | 11.21 |
| SGE1.5S 60B - 1510        | 2.75  | 4.99  | 7.14  | 8.70  | 10.20 | 13.58 | 16.37 |
| SGE1.5S 70B - 1510        | 3.70  | 6.72  | 9.63  | 11.70 | 13.75 | 18.69 | 22.61 |
| SGE1.5S 80B - 1510        | 4.76  | 8.68  | 12.45 | 15.16 | 17.75 | 24.73 | 29.91 |
| SGE1.5S 90B - 1512        | 5.93  | 10.93 | 15.62 | 19.01 | 22.46 | 31.65 | 38.28 |
| SGE1.5S 100B - 1515       | 7.24  | 13.42 | 19.16 | 23.24 | 28.01 | 39.46 | 47.73 |

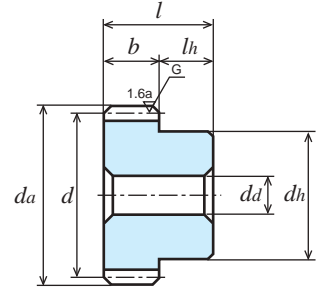
# 研磨直齿轮 (SGE 系列)

SG GROUND SPUR GEARS

模数  
MODULE

2 (齿数 14 ~ 100)

(普通齿)  
FULL DEPTH TOOTH



B1 形状  
TYPE B1

单位: mm

| 精度              | 材料   | 压力角 | 热处理    | 齿面硬度       | 侧隙①        |
|-----------------|------|-----|--------|------------|------------|
| JIS B 1702-1 7级 | S45C | 20度 | 齿面高频淬火 | HRC47 ~ 53 | 0.08 ~ 0.2 |

★未做表面处理。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>d <sub>i</sub> (H7) | 轮毂外径<br>Hub Diameter<br>d <sub>h</sub> | 轮毂长度<br>Hub Projection<br>l <sub>h</sub> | 全长<br>Overall Length<br>l | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|--|--|--|---------------------------|----------------------|
| SGE2S 14B - 2008         | 14                         | φ 28                             | φ 32                        | B1         | 20                    | φ 8  | φ 22                                   | 20                                       | 40                        | 140.8                |
| SGE2S 15B - 2008         | 15                         | φ 30                             | φ 34                        | B1         | 20                    | φ 8  | φ 24                                   | 20                                       | 40                        | 166.4                |
| SGE2S 16B - 2008         | 16                         | φ 32                             | φ 36                        | B1         | 20                    | φ 8  | φ 26                                   | 20                                       | 40                        | 194.1                |
| SGE2S 18B - 2008         | 18                         | φ 36                             | φ 40                        | B1         | 20                    | φ 8  | φ 30                                   | 20                                       | 40                        | 255.3                |
| SGE2S 20B - 2008         | 20                         | φ 40                             | φ 44                        | B1         | 20                    | φ 8  | φ 34                                   | 20                                       | 40                        | 321.1                |
| SGE2S 24B - 2008         | 24                         | φ 48                             | φ 52                        | B1         | 20                    | φ 8  | φ 42                                   | 20                                       | 40                        | 486.5                |
| SGE2S 25B - 2008         | 25                         | φ 50                             | φ 54                        | B1         | 20                    | φ 8  | φ 40                                   | 20                                       | 40                        | 531.9                |
| SGE2S 28B - 2010         | 28                         | φ 56                             | φ 60                        | B1         | 20                    | φ 10                                       | φ 50                                   | 20                                       | 40                        | 671.2                |
| SGE2S 30B - 2010         | 30                         | φ 60                             | φ 64                        | B1         | 20                    | φ 10                                       | φ 50                                   | 20                                       | 40                        | 779.8                |
| SGE2S 32B - 2010         | 32                         | φ 64                             | φ 68                        | B1         | 20                    | φ 10                                       | φ 58                                   | 20                                       | 40                        | 896.3                |
| SGE2S 35B - 2010         | 35                         | φ 70                             | φ 74                        | B1         | 20                    | φ 10                                       | φ 60                                   | 20                                       | 40                        | 1024.8               |
| SGE2S 36B - 2010         | 36                         | φ 72                             | φ 76                        | B1         | 20                    | φ 10                                       | φ 60                                   | 20                                       | 40                        | 1.06 (kg)            |
| SGE2S 40B - 2010         | 40                         | φ 80                             | φ 84                        | B1         | 20                    | φ 10                                       | φ 60                                   | 20                                       | 40                        | 1.20 (kg)            |
| SGE2S 45B - 2012         | 45                         | φ 90                             | φ 94                        | B1         | 20                    | φ 12                                       | φ 65                                   | 20                                       | 40                        | 1.49 (kg)            |
| SGE2S 48B - 2012         | 48                         | φ 96                             | φ 100                       | B1         | 20                    | φ 12                                       | φ 70                                   | 20                                       | 40                        | 1.71 (kg)            |
| SGE2S 50B - 2012         | 50                         | φ 100                            | φ 104                       | B1         | 20                    | φ 12                                       | φ 70                                   | 20                                       | 40                        | 1.80 (kg)            |
| SGE2S 55B - 2012         | 55                         | φ 110                            | φ 114                       | B1         | 20                    | φ 12                                       | φ 80                                   | 20                                       | 40                        | 2.25 (kg)            |
| SGE2S 56B - 2012         | 56                         | φ 112                            | φ 116                       | B1         | 20                    | φ 12                                       | φ 80                                   | 20                                       | 40                        | 2.30 (kg)            |
| SGE2S 60B - 2012         | 60                         | φ 120                            | φ 124                       | B1         | 20                    | φ 12                                       | φ 85                                   | 20                                       | 40                        | 2.62 (kg)            |
| SGE2S 64B - 2015         | 64                         | φ 128                            | φ 132                       | B1         | 20                    | φ 15                                       | φ 90                                   | 20                                       | 40                        | 2.97 (kg)            |
| SGE2S 70B - 2015         | 70                         | φ 140                            | φ 144                       | B1         | 20                    | φ 15                                       | φ 100                                  | 20                                       | 40                        | 3.59 (kg)            |
| SGE2S 72B - 2015         | 72                         | φ 144                            | φ 148                       | B1         | 20                    | φ 15                                       | φ 100                                  | 20                                       | 40                        | 3.74 (kg)            |
| SGE2S 75B - 2015         | 75                         | φ 150                            | φ 154                       | B1         | 20                    | φ 15                                       | φ 110                                  | 20                                       | 40                        | 4.22 (kg)            |
| SGE2S 80B - 2015         | 80                         | φ 160                            | φ 164                       | B1         | 20                    | φ 15                                       | φ 115                                  | 20                                       | 40                        | 4.72 (kg)            |
| SGE2S 90B - 2015         | 90                         | φ 180                            | φ 184                       | B1         | 20                    | φ 15                                       | φ 130                                  | 20                                       | 40                        | 6.01 (kg)            |
| SGE2S 100B - 2015        | 100                        | φ 200                            | φ 204                       | B1         | 20                    | φ 15                                       | φ 140                                  | 20                                       | 40                        | 7.28 (kg)            |

## 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 产 品 型 号<br>Catalogue Numbers | 旋 转 速 度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|------------------------------|--|-------|-------|-------|-------|-------|-------|
|                              | 400  | 800   | 1,200 | 1,500 | 1,800 | 2,500 | 3,000 |
| SGE2S 14B - 2008             | 1.64   | 3.23  | 4.58  | 5.51  | 6.36  | 8.33  | 9.71  |
| SGE2S 15B - 2008             | 1.86   | 3.63  | 5.14  | 6.15  | 7.09  | 9.34  | 10.87 |
| SGE2S 16B - 2008             | 2.08   | 4.02  | 5.66  | 6.77  | 7.79  | 10.32 | 11.99 |
| SGE2S 18B - 2008             | 2.49   | 4.75  | 6.64  | 7.91  | 9.20  | 12.12 | 14.15 |
| SGE2S 20B - 2008             | 2.92   | 5.47  | 7.61  | 9.07  | 10.61 | 13.96 | 16.31 |
| SGE2S 24B - 2008             | 3.79   | 6.89  | 9.48  | 11.49 | 13.38 | 17.67 | 20.56 |
| SGE2S 25B - 2008             | 4.00   | 7.25  | 9.99  | 12.09 | 14.07 | 18.59 | 21.61 |
| SGE2S 28B - 2010             | 4.62   | 8.28  | 11.5  | 13.87 | 16.15 | 21.31 | 24.81 |
| SGE2S 30B - 2010             | 5.02   | 8.95  | 12.48 | 15.03 | 17.54 | 23.09 | 26.92 |
| SGE2S 32B - 2010             | 5.43   | 9.61  | 13.47 | 16.19 | 18.94 | 24.90 | 29.02 |
| SGE2S 35B - 2010             | 6.03   | 10.58 | 14.92 | 17.99 | 21.00 | 27.62 | 32.11 |
| SGE2S 36B - 2010             | 6.23   | 10.91 | 15.40 | 18.58 | 21.68 | 28.51 | 33.13 |
| SGE2S 40B - 2010             | 7.02   | 12.31 | 17.28 | 20.93 | 24.36 | 32.05 | 37.48 |
| SGE2S 45B - 2012             | 7.98   | 14.02 | 19.71 | 23.79 | 27.67 | 36.32 | 43.42 |
| SGE2S 48B - 2012             | 8.54   | 15.04 | 21.14 | 25.47 | 29.68 | 39.19 | 47.03 |
| SGE2S 50B - 2012             | 8.91   | 15.70 | 22.09 | 26.58 | 30.99 | 41.20 | 49.44 |
| SGE2S 55B - 2012             | 9.82   | 17.34 | 24.42 | 29.40 | 34.23 | 46.25 | 55.50 |
| SGE2S 56B - 2012             | 10.00  | 17.66 | 24.88 | 29.96 | 34.87 | 47.27 | 56.72 |
| SGE2S 60B - 2012             | 10.70  | 18.94 | 26.69 | 32.18 | 37.39 | 51.34 | 61.60 |
| SGE2S 64B - 2015             | 11.39  | 20.28 | 28.48 | 34.37 | 39.90 | 55.42 | 66.51 |
| SGE2S 70B - 2015             | 12.39  | 22.24 | 31.22 | 37.57 | 44.34 | 61.58 | 73.89 |
| SGE2S 72B - 2015             | 12.72  | 22.89 | 32.12 | 38.62 | 45.82 | 63.63 | 76.36 |
| SGE2S 75B - 2015             | 13.27  | 23.85 | 33.46 | 40.18 | 48.04 | 66.73 | 80.07 |
| SGE2S 80B - 2015             | 14.17  | 25.43 | 35.66 | 43.13 | 51.76 | 71.89 | -     |
| SGE2S 90B - 2015             | 15.92  | 28.48 | 39.89 | 49.29 | 59.15 | 82.16 | -     |
| SGE2S 100B - 2015            | 17.63  | 31.51 | 44.42 | 55.52 | 66.63 | -     | -     |

## 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 产 品 型 号<br>Catalogue Numbers | 旋 转 速 度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|------------------------------|--|-------|-------|-------|-------|-------|-------|
|                              | 400  | 800   | 1,200 | 1,500 | 1,800 | 2,500 | 3,000 |
| SGE2S 14B - 2008             | 0.35   | 0.70  | 1.01  | 1.23  | 1.43  | 1.90  | 2.23  |
| SGE2S 15B - 2008             | 0.4  | 0.8   | 1.16  | 1.40  | 1.63  | 2.17  | 2.55  |
| SGE2S 16B - 2008             | 0.46   | 0.91  | 1.31  | 1.58  | 1.83  | 2.46  | 2.88  |
| SGE2S 18B - 2008             | 0.59   | 1.15  | 1.64  | 1.97  | 2.31  | 3.09  | 3.63  |
| SGE2S 20B - 2008             | 0.73   | 1.41  | 2.00  | 2.41  | 2.84  | 3.78  | 4.46  |
| SGE2S 24B - 2008             | 1.07   | 2.00  | 2.81  | 3.44  | 4.03  | 5.40  | 6.33  |
| SGE2S 25B - 2008             | 1.16   | 2.17  | 3.04  | 3.72  | 4.36  | 5.84  | 6.85  |
| SGE2S 28B - 2010             | 1.45   | 2.69  | 3.80  | 4.63  | 5.43  | 7.27  | 8.53  |
| SGE2S 30B - 2010             | 1.67   | 3.06  | 4.34  | 5.28  | 6.21  | 8.30  | 9.75  |
| SGE2S 32B - 2010             | 1.89   | 3.45  | 4.92  | 5.98  | 7.05  | 9.4   | 11.04 |
| SGE2S 35B - 2010             | 2.26   | 4.08  | 5.85  | 7.12  | 8.38  | 11.19 | 13.11 |
| SGE2S 36B - 2010             | 2.38   | 4.30  | 6.18  | 7.53  | 8.85  | 11.81 | 13.83 |
| SGE2S 40B - 2010             | 2.92   | 5.29  | 7.56  | 9.24  | 10.84 | 14.47 | 17.05 |
| SGE2S 45B - 2012             | 3.67   | 6.65  | 9.52  | 11.60 | 13.60 | 18.11 | 21.83 |
| SGE2S 48B - 2012             | 4.15   | 7.54  | 10.79 | 13.13 | 15.42 | 20.66 | 24.99 |
| SGE2S 50B - 2012             | 4.49   | 8.16  | 11.68 | 14.19 | 16.68 | 22.50 | 27.22 |
| SGE2S 55B - 2012             | 5.38   | 9.80  | 14.05 | 17.08 | 20.04 | 27.47 | 33.23 |
| SGE2S 56B - 2012             | 5.57   | 10.14 | 14.54 | 17.68 | 20.75 | 28.53 | 34.51 |
| SGE2S 60B - 2012             | 6.34   | 11.57 | 16.60 | 20.21 | 23.67 | 32.97 | 39.88 |
| SGE2S 64B - 2015             | 7.16   | 13.13 | 18.78 | 22.89 | 26.78 | 37.74 | 45.65 |
| SGE2S 70B - 2015             | 8.45   | 15.65 | 22.36 | 27.17 | 32.32 | 45.53 | 55.08 |
| SGE2S 72B - 2015             | 8.91   | 16.53 | 23.61 | 28.67 | 34.28 | 48.30 | 58.43 |
| SGE2S 75B - 2015             | 9.65   | 17.89 | 25.55 | 30.98 | 37.34 | 52.62 | 63.65 |
| SGE2S 80B - 2015             | 10.96  | 20.27 | 28.94 | 35.34 | 42.75 | 60.23 | -     |
| SGE2S 90B - 2015             | 13.79  | 25.42 | 36.25 | 45.23 | 54.71 | 77.09 | -     |
| SGE2S 100B - 2015            | 16.91  | 31.14 | 44.68 | 56.40 | 68.23 | -     | -     |

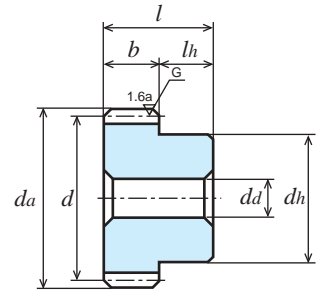
# 研磨直齿轮 (SGE 系列)

SG GROUND SPUR GEARS

模数  
MODULE

2.5 (齿数 14 ~ 80)

(普通齿)  
FULL DEPTH TOOTH



B1 形状  
TYPE B1

单位: mm

| 精度              | 材料   | 压力角 | 热处理    | 齿面硬度       | 侧隙①        |
|-----------------|------|-----|--------|------------|------------|
| JIS B 1702-1 7级 | S45C | 20度 | 齿面高频淬火 | HRC47 ~ 53 | 0.1 ~ 0.25 |

★未做表面处理。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>d <sub>d</sub> (H7) | 轮毂外径<br>Hub Diameter<br>d <sub>h</sub> | 轮毂长度<br>Hub Projection<br>l <sub>h</sub> | 全长<br>Overall Length<br>l | 重量<br>Weight<br>W(kg) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|--|--|--|---------------------------|-----------------------|
| SGE2.5S 14B - 2510       | 14                         | φ 35                             | φ 40                        | B1         | 25                    | φ10  | φ 28                                   | 20                                       | 45                        | 258.1 (g)             |
| SGE2.5S 15B - 2510       | 15                         | φ 37.5                           | φ 42.5                      | B1         | 25                    | φ10  | φ 30                                   | 20                                       | 45                        | 300.3 (g)             |
| SGE2.5S 16B - 2510       | 16                         | φ 40                             | φ 45                        | B1         | 25                    | φ10  | φ 32                                   | 20                                       | 45                        | 345.5 (g)             |
| SGE2.5S 18B - 2510       | 18                         | φ 45                             | φ 50                        | B1         | 25                    | φ10  | φ 38                                   | 20                                       | 45                        | 463.0 (g)             |
| SGE2.5S 20B - 2510       | 20                         | φ 50                             | φ 55                        | B1         | 25                    | φ10  | φ 42                                   | 20                                       | 45                        | 569.3 (g)             |
| SGE2.5S 24B - 2510       | 24                         | φ 60                             | φ 65                        | B1         | 25                    | φ10  | φ 50                                   | 20                                       | 45                        | 836.5 (g)             |
| SGE2.5S 25B - 2510       | 25                         | φ 62.5                           | φ 67.5                      | B1         | 25                    | φ10  | φ 52                                   | 20                                       | 45                        | 948.6 (g)             |
| SGE2.5S 28B - 2510       | 28                         | φ 70                             | φ 75                        | B1         | 25                    | φ10  | φ 60                                   | 20                                       | 45                        | 1.17                  |
| SGE2.5S 30B - 2512       | 30                         | φ 75                             | φ 80                        | B1         | 25                    | φ12  | φ 65                                   | 20                                       | 45                        | 1.34                  |
| SGE2.5S 32B - 2512       | 32                         | φ 80                             | φ 85                        | B1         | 25                    | φ12  | φ 70                                   | 20                                       | 45                        | 1.55                  |
| SGE2.5S 35B - 2512       | 35                         | φ 87.5                           | φ 92.5                      | B1         | 25                    | φ12  | φ 70                                   | 20                                       | 45                        | 1.75                  |
| SGE2.5S 36B - 2512       | 36                         | φ 90                             | φ 95                        | B1         | 25                    | φ12  | φ 70                                   | 20                                       | 45                        | 1.82                  |
| SGE2.5S 40B - 2512       | 40                         | φ100                             | φ105                        | B1         | 25                    | φ12  | φ 70                                   | 20                                       | 45                        | 2.10                  |
| SGE2.5S 45B - 2515       | 45                         | φ112.5                           | φ117.5                      | B1         | 25                    | φ15  | φ 75                                   | 20                                       | 45                        | 2.58                  |
| SGE2.5S 48B - 2515       | 48                         | φ120                             | φ125                        | B1         | 25                    | φ15  | φ 80                                   | 20                                       | 45                        | 2.95                  |
| SGE2.5S 50B - 2515       | 50                         | φ125                             | φ130                        | B1         | 25                    | φ15  | φ 90                                   | 20                                       | 45                        | 3.33                  |
| SGE2.5S 55B - 2515       | 55                         | φ137.5                           | φ142.5                      | B1         | 25                    | φ15  | φ 95                                   | 20                                       | 45                        | 3.97                  |
| SGE2.5S 56B - 2515       | 56                         | φ140                             | φ145                        | B1         | 25                    | φ15  | φ 95                                   | 20                                       | 45                        | 4.08                  |
| SGE2.5S 60B - 2515       | 60                         | φ150                             | φ155                        | B1         | 25                    | φ15  | φ105                                   | 20                                       | 45                        | 4.75                  |
| SGE2.5S 64B - 2520       | 64                         | φ160                             | φ165                        | B1         | 25                    | φ20  | φ110                                   | 20                                       | 45                        | 5.33                  |
| SGE2.5S 70B - 2520       | 70                         | φ175                             | φ180                        | B1         | 25                    | φ20  | φ125                                   | 20                                       | 45                        | 6.52                  |
| SGE2.5S 72B - 2520       | 72                         | φ180                             | φ185                        | B1         | 25                    | φ20  | φ125                                   | 20                                       | 45                        | 6.82                  |
| SGE2.5S 75B - 2520       | 75                         | φ187.5                           | φ192.5                      | B1         | 25                    | φ20  | φ130                                   | 20                                       | 45                        | 7.24                  |
| SGE2.5S 80B - 2520       | 80                         | φ200                             | φ205                        | B1         | 25                    | φ20  | φ140                                   | 20                                       | 45                        | 8.45                  |

## 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |        |        |        |
|---------------------------|---|-------|-------|-------|--------|--------|--------|
|                           | 400   | 800   | 1,200 | 1,500 | 1,800  | 2,500  | 3,000  |
| SGE2.5S 14B - 2510        | 3.21  | 6.14  | 8.60  | 10.25 | 11.89  | 15.69  | 18.29  |
| SGE2.5S 15B - 2510        | 3.64  | 6.89  | 9.61  | 11.42 | 13.35  | 17.56  | 20.53  |
| SGE2.5S 16B - 2510        | 4.06  | 7.61  | 10.58 | 12.61 | 14.75  | 19.40  | 22.68  |
| SGE2.5S 18B - 2510        | 4.87  | 8.95  | 12.35 | 14.89 | 17.36  | 22.89  | 26.68  |
| SGE2.5S 20B - 2510        | 5.68  | 10.28 | 14.18 | 17.16 | 19.97  | 26.38  | 30.67  |
| SGE2.5S 24B - 2510        | 7.23  | 12.88 | 17.96 | 21.62 | 25.24  | 33.21  | 38.73  |
| SGE2.5S 25B - 2510        | 7.61  | 13.51 | 18.89 | 22.72 | 26.56  | 34.93  | 40.73  |
| SGE2.5S 28B - 2510        | 8.77  | 15.38 | 21.68 | 26.13 | 30.51  | 40.13  | 46.66  |
| SGE2.5S 30B - 2512        | 9.52  | 16.68 | 23.49 | 28.39 | 33.09  | 43.52  | 50.51  |
| SGE2.5S 32B - 2512        | 10.27                                       | 18.02 | 25.29 | 30.63 | 35.64  | 46.89  | 54.84  |
| SGE2.5S 35B - 2512        | 11.39                                       | 20.00 | 28.10 | 33.95 | 39.47  | 51.86  | 61.67  |
| SGE2.5S 36B - 2512        | 11.75                                       | 20.66 | 29.03 | 35.04 | 40.77  | 53.50  | 63.96  |
| SGE2.5S 40B - 2512        | 13.20                                       | 23.25 | 32.71 | 39.35 | 45.89  | 61.00  | 73.20  |
| SGE2.5S 45B - 2515        | 14.94                                       | 26.39 | 37.17 | 44.76 | 52.10  | 70.67  | 84.80  |
| SGE2.5S 48B - 2515        | 15.96                                       | 28.24 | 39.80 | 47.98 | 55.75  | 76.54  | 91.85  |
| SGE2.5S 50B - 2515        | 16.62                                       | 29.53 | 41.53 | 50.10 | 58.15  | 80.47  | 96.56  |
| SGE2.5S 55B - 2515        | 18.25                                       | 32.72 | 45.94 | 55.31 | 65.04  | 90.34  | 108.41 |
| SGE2.5S 56B - 2515        | 18.57                                       | 33.35 | 46.81 | 56.34 | 66.47  | 92.32  | 110.78 |
| SGE2.5S 60B - 2515        | 19.94                                       | 35.84 | 50.29 | 60.38 | 72.19  | 100.27 | 120.32 |
| SGE2.5S 64B - 2520        | 21.34                                       | 38.30 | 53.70 | 64.95 | 77.94  | 108.25 | -      |
| SGE2.5S 70B - 2520        | 23.40                                       | 41.90 | 58.71 | 72.16 | 86.59  | 120.27 | -      |
| SGE2.5S 72B - 2520        | 24.08                                       | 43.08 | 60.35 | 74.57 | 89.49  | 124.28 | -      |
| SGE2.5S 75B - 2520        | 25.10                                       | 44.84 | 62.78 | 78.19 | 93.83  | 130.32 | -      |
| SGE2.5S 80B - 2520        | 26.76                                       | 47.82 | 67.40 | 84.25 | 101.10 | -      | -      |

## 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |        |       |
|---------------------------|---|-------|-------|-------|-------|--------|-------|
|                           | 400   | 800   | 1,200 | 1,500 | 1,800 | 2,500  | 3,000 |
| SGE2.5S 14B - 2510        | 0.69  | 1.36  | 1.94  | 2.34  | 2.73  | 3.66   | 4.30  |
| SGE2.5S 15B - 2510        | 0.80  | 1.56  | 2.21  | 2.65  | 3.13  | 4.17   | 4.92  |
| SGE2.5S 16B - 2510        | 0.91  | 1.76  | 2.50  | 3.01  | 3.55  | 4.73   | 5.57  |
| SGE2.5S 18B - 2510        | 1.17  | 2.21  | 3.11  | 3.79  | 4.45  | 5.95   | 7.00  |
| SGE2.5S 20B - 2510        | 1.45  | 2.71  | 3.80  | 4.65  | 5.45  | 7.31   | 8.56  |
| SGE2.5S 24B - 2510        | 2.08  | 3.83  | 5.43  | 6.60  | 7.77  | 10.37  | 12.19 |
| SGE2.5S 25B - 2510        | 2.26  | 4.13  | 5.88  | 7.14  | 8.41  | 11.22  | 13.19 |
| SGE2.5S 28B - 2510        | 2.82  | 5.10  | 7.31  | 8.90  | 10.48 | 13.98  | 16.39 |
| SGE2.5S 30B - 2512        | 3.23  | 5.82  | 8.35  | 10.19 | 11.97 | 15.97  | 18.69 |
| SGE2.5S 32B - 2512        | 3.66  | 6.61  | 9.44  | 11.55 | 13.55 | 18.08  | 21.32 |
| SGE2.5S 35B - 2512        | 4.35  | 7.87  | 11.26 | 13.73 | 16.10 | 21.46  | 25.72 |
| SGE2.5S 36B - 2512        | 4.59  | 8.32  | 11.90 | 14.50 | 17.00 | 22.64  | 27.28 |
| SGE2.5S 40B - 2512        | 5.61  | 10.20 | 14.60 | 17.74 | 20.86 | 28.13  | 34.02 |
| SGE2.5S 45B - 2515        | 7.02  | 12.79 | 18.33 | 22.30 | 26.16 | 36.00  | 43.54 |
| SGE2.5S 48B - 2515        | 7.93  | 14.46 | 20.75 | 25.26 | 29.59 | 41.21  | 49.85 |
| SGE2.5S 50B - 2515        | 8.56  | 15.67 | 22.43 | 27.33 | 31.97 | 44.89  | 54.30 |
| SGE2.5S 55B - 2515        | 10.22                                       | 18.89 | 26.99 | 32.81 | 38.90 | 54.81  | 66.30 |
| SGE2.5S 56B - 2515        | 10.56                                       | 19.56 | 27.95 | 33.96 | 40.40 | 56.90  | 68.85 |
| SGE2.5S 60B - 2515        | 12.07                                       | 22.36 | 31.94 | 38.73 | 46.68 | 65.77  | 79.56 |
| SGE2.5S 64B - 2520        | 13.70                                       | 25.33 | 36.17 | 44.17 | 53.44 | 75.29  | -     |
| SGE2.5S 70B - 2520        | 16.31                                       | 30.11 | 42.94 | 53.30 | 64.47 | 90.84  | -     |
| SGE2.5S 72B - 2520        | 17.23                                       | 31.78 | 45.31 | 56.54 | 68.39 | 96.36  | -     |
| SGE2.5S 75B - 2520        | 18.65                                       | 34.35 | 48.97 | 61.59 | 74.50 | 104.97 | -     |
| SGE2.5S 80B - 2520        | 21.13                                       | 38.93 | 55.85 | 70.50 | 85.28 | -      | -     |

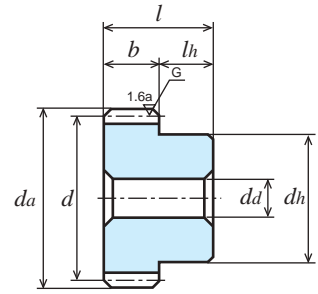
# 研磨直齿轮 (SGE 系列)

SG GROUND SPUR GEARS

模数  
MODULE

**3**  
(齿数 14 ~ 80)

(普通齿)  
FULL DEPTH TOOTH



B1 形状  
TYPE B1

单位: mm

| 精度               | 材料   | 压力角  | 热处理    | 齿面硬度       | 侧隙①        |
|------------------|------|------|--------|------------|------------|
| JIS B 1702-1 7 级 | S45C | 20 度 | 齿面高频淬火 | HRC47 ~ 53 | 0.12 ~ 0.3 |

★未做表面处理。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 齿顶圆直径<br>Tip Diameter<br><i>da</i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>da(H7)</i> | 轮毂外径<br>Hub Diameter<br><i>dh</i> | 轮毂长度<br>Hub Projection<br><i>lh</i> | 全长<br>Overall Length<br><i>l</i> | 重量<br>Weight<br><i>W(kg)</i> |
|--------------------------|-----------------------------------|---|------------------------------------|------------|------------------------------|--------------------------------------|-----------------------------------|-------------------------------------|----------------------------------|------------------------------|
| SGE3S 14B - 3012         | 14                                | φ 42                                    | φ 48                               | B1         | 30                           | φ12                                  | φ 34                              | 20                                  | 50                               | 0.43                         |
| SGE3S 15B - 3012         | 15                                | φ 45                                    | φ 51                               | B1         | 30                           | φ12                                  | φ 36                              | 20                                  | 50                               | 0.49                         |
| SGE3S 16B - 3012         | 16                                | φ 48                                    | φ 54                               | B1         | 30                           | φ12                                  | φ 40                              | 20                                  | 50                               | 0.58                         |
| SGE3S 18B - 3012         | 18                                | φ 54                                    | φ 60                               | B1         | 30                           | φ12                                  | φ 46                              | 20                                  | 50                               | 0.76                         |
| SGE3S 20B - 3012         | 20                                | φ 60                                    | φ 66                               | B1         | 30                           | φ12                                  | φ 52                              | 20                                  | 50                               | 0.95                         |
| SGE3S 24B - 3012         | 24                                | φ 72                                    | φ 78                               | B1         | 30                           | φ12                                  | φ 60                              | 20                                  | 50                               | 1.36                         |
| SGE3S 25B - 3012         | 25                                | φ 75                                    | φ 81                               | B1         | 30                           | φ12                                  | φ 60                              | 20                                  | 50                               | 1.43                         |
| SGE3S 28B - 3012         | 28                                | φ 84                                    | φ 90                               | B1         | 30                           | φ12                                  | φ 70                              | 20                                  | 50                               | 1.87                         |
| SGE3S 30B - 3012         | 30                                | φ 90                                    | φ 96                               | B1         | 30                           | φ12                                  | φ 75                              | 20                                  | 50                               | 2.13                         |
| SGE3S 32B - 3015         | 32                                | φ 96                                    | φ102                               | B1         | 30                           | φ15                                  | φ 75                              | 20                                  | 50                               | 2.33                         |
| SGE3S 35B - 3015         | 35                                | φ105                                    | φ111                               | B1         | 30                           | φ15                                  | φ 80                              | 20                                  | 50                               | 2.76                         |
| SGE3S 36B - 3015         | 36                                | φ108                                    | φ114                               | B1         | 30                           | φ15                                  | φ 80                              | 20                                  | 50                               | 2.88                         |
| SGE3S 40B - 3015         | 40                                | φ120                                    | φ126                               | B1         | 30                           | φ15                                  | φ 85                              | 20                                  | 50                               | 3.47                         |
| SGE3S 45B - 3015         | 45                                | φ135                                    | φ141                               | B1         | 30                           | φ15                                  | φ 90                              | 20                                  | 50                               | 4.31                         |
| SGE3S 48B - 3015         | 48                                | φ144                                    | φ150                               | B1         | 30                           | φ15                                  | φ100                              | 20                                  | 50                               | 5.01                         |
| SGE3S 50B - 3015         | 50                                | φ150                                    | φ156                               | B1         | 30                           | φ15                                  | φ105                              | 20                                  | 50                               | 5.43                         |
| SGE3S 55B - 3015         | 55                                | φ165                                    | φ171                               | B1         | 30                           | φ15                                  | φ120                              | 20                                  | 50                               | 6.75                         |
| SGE3S 56B - 3015         | 56                                | φ168                                    | φ174                               | B1         | 30                           | φ15                                  | φ120                              | 20                                  | 50                               | 6.94                         |
| SGE3S 60B - 3015         | 60                                | φ180                                    | φ186                               | B1         | 30                           | φ15                                  | φ130                              | 20                                  | 50                               | 7.98                         |
| SGE3S 64B - 3020         | 64                                | φ192                                    | φ198                               | B1         | 30                           | φ20                                  | φ130                              | 20                                  | 50                               | 8.79                         |
| SGE3S 70B - 3020         | 70                                | φ210                                    | φ216                               | B1         | 30                           | φ20                                  | φ150                              | 20                                  | 50                               | 10.78                        |
| SGE3S 72B - 3020         | 72                                | φ216                                    | φ222                               | B1         | 30                           | φ20                                  | φ150                              | 20                                  | 50                               | 11.30                        |
| SGE3S 75B - 3020         | 75                                | φ225                                    | φ231                               | B1         | 30                           | φ20                                  | φ160                              | 20                                  | 50                               | 12.03                        |
| SGE3S 80B - 3020         | 80                                | φ240                                    | φ246                               | B1         | 30                           | φ20                                  | φ170                              | 20                                  | 50                               | 14.06                        |



## 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |        |        |        |        |        |
|---------------------------|---|-------|--------|--------|--------|--------|--------|
|                           | 400   | 800   | 1,200  | 1,500  | 1,800  | 2,500  | 3,000  |
| SGE3S 14B - 3012          | 5.55  | 10.31 | 14.30  | 17.13  | 20.01  | 26.34  | 30.75  |
| SGE3S 15B - 3012          | 6.29  | 11.55 | 15.95  | 19.22  | 22.42  | 29.56  | 34.45  |
| SGE3S 16B - 3012          | 7.01  | 12.74 | 17.53  | 21.24  | 24.74  | 32.66  | 38.00  |
| SGE3S 18B - 3012          | 8.31  | 14.94 | 20.70  | 25.00  | 29.06  | 38.42  | 44.70  |
| SGE3S 20B - 3012          | 9.61  | 17.12 | 23.88  | 28.75  | 33.56  | 44.16  | 51.50  |
| SGE3S 24B - 3012          | 12.19                                       | 21.34 | 30.11  | 36.34  | 42.40  | 55.77  | 64.80  |
| SGE3S 25B - 3012          | 12.83                                       | 22.47 | 31.65  | 38.25  | 44.59  | 58.65  | 68.07  |
| SGE3S 28B - 3012          | 14.74                                       | 25.87 | 36.33  | 43.93  | 51.06  | 67.19  | 79.27  |
| SGE3S 30B - 3012          | 15.98                                       | 28.09 | 39.47  | 47.64  | 55.43  | 72.74  | 86.96  |
| SGE3S 32B - 3015          | 17.21                                       | 30.30 | 42.61  | 51.32  | 59.80  | 78.97  | 94.76  |
| SGE3S 35B - 3015          | 19.03                                       | 33.57 | 47.25  | 56.84  | 66.26  | 88.80  | 106.56 |
| SGE3S 36B - 3015          | 19.63                                       | 34.64 | 48.78  | 58.70  | 68.39  | 92.10  | 110.52 |
| SGE3S 40B - 3015          | 21.97                                       | 38.89 | 54.81  | 66.08  | 76.77  | 105.40 | 126.48 |
| SGE3S 45B - 3015          | 24.78                                       | 44.34 | 62.27  | 75.02  | 87.93  | 122.12 | 146.54 |
| SGE3S 48B - 3015          | 26.43                                       | 47.57 | 66.77  | 80.28  | 95.23  | 132.26 | 158.85 |
| SGE3S 50B - 3015          | 27.65                                       | 49.70 | 69.74  | 83.74  | 100.12 | 139.05 | 166.86 |
| SGE3S 55B - 3015          | 30.64                                       | 54.94 | 77.03  | 93.66  | 112.40 | 156.10 | -      |
| SGE3S 56B - 3015          | 31.23                                       | 55.98 | 78.46  | 95.72  | 114.86 | 159.53 | -      |
| SGE3S 60B - 3015          | 33.58                                       | 60.06 | 84.13  | 103.96 | 124.75 | 173.26 | -      |
| SGE3S 64B - 3020          | 35.88                                       | 64.08 | 89.78  | 112.23 | 134.68 | -      | -      |
| SGE3S 70B - 3020          | 39.28                                       | 70.25 | 99.75  | 124.69 | 149.63 | -      | -      |
| SGE3S 72B - 3020          | 40.39                                       | 72.28 | 103.09 | 128.86 | 154.63 | -      | -      |
| SGE3S 75B - 3020          | 42.04                                       | 75.29 | 108.09 | 135.12 | 162.14 | -      | -      |
| SGE3S 80B - 3020          | 44.76                                       | 80.24 | 116.46 | 145.58 | 174.69 | -      | -      |

## 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |        |        |        |       |
|---------------------------|---|-------|-------|--------|--------|--------|-------|
|                           | 400   | 800   | 1,200 | 1,500  | 1,800  | 2,500  | 3,000 |
| SGE3S 14B - 3012          | 1.21  | 2.33  | 3.28  | 3.97   | 4.68   | 6.25   | 7.35  |
| SGE3S 15B - 3012          | 1.40  | 2.66  | 3.73  | 4.54   | 5.34   | 7.15   | 8.40  |
| SGE3S 16B - 3012          | 1.61  | 3.01  | 4.21  | 5.15   | 6.05   | 8.10   | 9.50  |
| SGE3S 18B - 3012          | 2.03  | 3.76  | 5.31  | 6.47   | 7.58   | 10.17  | 11.93 |
| SGE3S 20B - 3012          | 2.50  | 4.59  | 6.52  | 7.92   | 9.32   | 12.44  | 14.63 |
| SGE3S 24B - 3012          | 3.57  | 6.45  | 9.26  | 11.29  | 13.28  | 17.72  | 20.75 |
| SGE3S 25B - 3012          | 3.87  | 6.99  | 10.02 | 12.23  | 14.36  | 19.17  | 22.43 |
| SGE3S 28B - 3012          | 4.82  | 8.72  | 12.47 | 15.23  | 17.85  | 23.82  | 28.33 |
| SGE3S 30B - 3012          | 5.51  | 9.98  | 14.28 | 17.40  | 20.40  | 27.16  | 32.74 |
| SGE3S 32B - 3015          | 6.23  | 11.31 | 16.19 | 19.69  | 23.13  | 30.98  | 37.48 |
| SGE3S 35B - 3015          | 7.39  | 13.44 | 19.26 | 23.40  | 27.50  | 37.38  | 45.22 |
| SGE3S 36B - 3015          | 7.80  | 14.19 | 20.34 | 24.72  | 29.02  | 39.66  | 47.97 |
| SGE3S 40B - 3015          | 9.51  | 17.36 | 24.90 | 30.31  | 35.50  | 49.45  | 59.82 |
| SGE3S 45B - 3015          | 11.85                                       | 21.86 | 31.25 | 38.02  | 44.92  | 63.29  | 76.56 |
| SGE3S 48B - 3015          | 13.36                                       | 24.79 | 35.42 | 43.00  | 51.42  | 72.45  | 87.64 |
| SGE3S 50B - 3015          | 14.48                                       | 26.84 | 38.33 | 46.48  | 56.01  | 78.92  | 95.47 |
| SGE3S 55B - 3015          | 17.45                                       | 32.27 | 46.04 | 56.54  | 68.39  | 96.37  | -     |
| SGE3S 56B - 3015          | 18.08                                       | 33.40 | 47.66 | 58.71  | 71.02  | 100.07 | -     |
| SGE3S 60B - 3015          | 20.68                                       | 38.13 | 54.37 | 67.85  | 82.07  | 115.64 | -     |
| SGE3S 64B - 3020          | 23.44                                       | 43.14 | 61.53 | 77.67  | 93.95  | -      | -     |
| SGE3S 70B - 3020          | 27.86                                       | 51.36 | 74.24 | 93.71  | 113.35 | -      | -     |
| SGE3S 72B - 3020          | 29.4  | 54.25 | 78.75 | 99.41  | 120.25 | -      | -     |
| SGE3S 75B - 3020          | 31.79                                       | 58.70 | 85.78 | 108.28 | 130.98 | -      | -     |
| SGE3S 80B - 3020          | 35.97                                       | 66.47 | 98.20 | 123.96 | 149.95 | -      | -     |

# Memo

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技术数据  
REFERENCE DATA



# 直齿轮

## Spur Gears

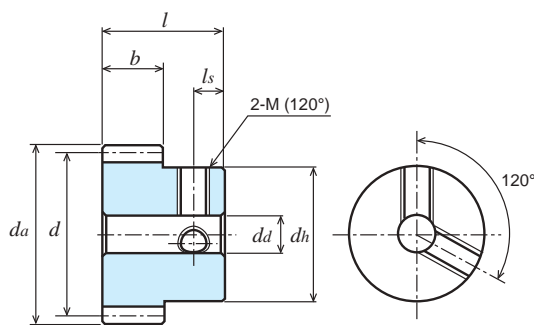
### 产品型号的解读方法 Reference of Catalogue Numbers

S1S25A - 0806F  
= 0806  
S1S25B - 0806F  
+ 0806  
\* 0806

| 齿轮的种类<br>Kind of Gear | 模数<br>Module   | 材料<br>Material   | 齿数<br>Number of Teeth | 形状<br>Type   | 内径处理<br>Bores Processed  | 齿宽<br>Face Width   | 孔径<br>Bore Diameter             | 追加工用产品<br>Gear for the item of additional machining   |
|-----------------------|--|--|-----------------------|--|--|--|---------------------------------|---|
| S: 直齿轮<br>Spur gears  | m:<br>0.3, 0.5<br>0.75, 0.8<br>1.0, 1.25<br>1.5, 2.0<br>2.5, 3.0<br>4.0, 5.0 | S: S45C (C45) 碳素钢<br>Carbon Steel<br>B: 黄铜<br>Brass<br>D: 聚缩醛树脂<br>(机械加工品)<br>Poly Acetal (Machined)<br>SU: 不锈钢<br>Stainless Steel<br>DM: 聚缩醛树脂<br>(射出成型品)<br>Poly Acetal (Injection molded)<br>DB: 聚缩醛树脂<br>(带有黄铜衬套)<br>Acetal (with Brass Bushing) | 齿数z: 8~120            | A: 无轮毂<br>Hub less.<br>B: 单侧轮毂<br>With Hub on one side.<br>BF: 单侧轮毂,<br>追加工用产品<br>Gera for the item of<br>additional machining.<br>L: 双侧实心轴<br>With Solid shaft on both<br>side.<br>K: 圆筒状齿轮<br>Bar of gear. | [一]: 除K1和L1型,<br>齿轮无键槽/<br>无螺纹孔<br>Gear without key way /<br>without threaded hole,<br>except types of K1 and<br>L1.<br>[+]: 齿轮带有螺<br>纹孔 / 带有<br>固定螺钉 /<br>无固定螺钉<br>Gear with threaded<br>hole / with set screw.<br>/ without set screw.<br>(Please refer the details)<br>[*]: 齿轮带有两个<br>螺纹孔 /<br>带有两个固<br>定螺钉<br>Gear with two threaded<br>holes / with two set<br>screws.<br>[=]: 齿轮带有键<br>槽 / 带有键<br>Gear with key way /<br>with key.<br>[#]: 齿轮带有键槽 /<br>带有键带有螺<br>纹孔 / 带有固<br>定螺钉。<br>Gear with key way and<br>threaded hole / with<br>key and screw. | 单位: 毫米<br>Dimension: millimeter<br><br>KG 标准齿轮的齿宽<br>有标准齿宽 (轻负<br>荷) 和加宽齿宽 (重<br>负荷)。<br>您可以在我司的产<br>品中选择符合您条<br>件的产品。<br><br>Types of Face Width:<br>We have Wide-face<br>width for Heavy load,<br>and Standard-face width<br>for Light load. | 单位: mm<br>Dimension: millimeter | F型齿轮。可作为<br>追加工用产品来<br>使用。<br>F type and N type<br>gears are meant for<br>additional machining.<br>H: 齿部高频淬<br>火 HRC47~<br>53<br>Complete with high<br>frequency induction<br>hardening (HRC47~<br>53). |

有时产品外观会和照片有所不同，并非质量问题，并不影响使用。

There is a case to see the difference in the appearance of the spur gears with the same catalogue number, but system of accuracy remained.



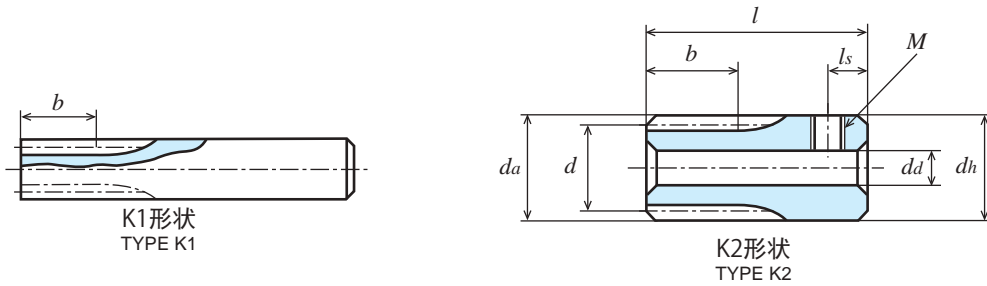
单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|------|-----|-----|------|-------------|
| JIS B 1702-1 8级 | S45C | 20度 | —   | —    | 0.02 ~ 0.06 |

B1形状  
TYPE B1

★未做表面处理。【\*】带有两个螺纹孔，有两个固定用螺钉。  
★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。  
①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 螺纹孔<br>Set Screw |    | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|------------------|----|----------------------|
|                          |                            |                                  |                             |            |                       |                               |                            |                              |                           | 2-M(120°)        | ls |                      |
| S50S 10K - 1006          | 10                         | φ 5                              | φ 6                         | K1         | 10                    | -                             | φ 6                        | 45                           | 55                        | -                | -  | 11.5                 |
| S50S 12K - 1007          | 12                         | φ 6                              | φ 7                         | K1         | 10                    | -                             | φ 7                        | 45                           | 55                        | -                | -  | 15.8                 |
| S50S 14K - 1008          | 14                         | φ 7                              | φ 8                         | K1         | 10                    | -                             | φ 8                        | 45                           | 55                        | -                | -  | 20.8                 |
| S50S 15K * 0803          | 15                         | φ 7.5                            | φ 8.5                       | K2         | 8                     | φ3(H8)                        | φ 8.5                      | 10                           | 18                        | 2-M3             | 3  | 6.0                  |
| S50S 16K * 0803          | 16                         | φ 8                              | φ 9                         | K2         | 8                     | φ3(H8)                        | φ 9                        | 10                           | 18                        | 2-M3             | 3  | 6.9                  |
| S50S 18K * 0804          | 18                         | φ 9                              | φ 10                        | K2         | 8                     | φ4(H8)                        | φ 10                       | 10                           | 18                        | 2-M3             | 3  | 8.1                  |
| S50S 20K * 0804          | 20                         | φ 10                             | φ 11                        | K2         | 8                     | φ4(H8)                        | φ 11                       | 10                           | 18                        | 2-M3             | 3  | 10.3                 |
| S50S 21K * 0804          | 21                         | φ 10.5                           | φ 11.5                      | K2         | 8                     | φ4(H8)                        | φ 11.5                     | 10                           | 18                        | 2-M3             | 3  | 11.5                 |
| S50S 22K * 0804          | 22                         | φ 11                             | φ 12                        | K2         | 8                     | φ4(H8)                        | φ 12                       | 10                           | 18                        | 2-M3             | 3  | 12.7                 |
| S50S 24K * 0804          | 24                         | φ 12                             | φ 13                        | K2         | 8                     | φ4(H8)                        | φ 13                       | 10                           | 18                        | 2-M3             | 3  | 15.4                 |
| S50S 25B * 0804          | 25                         | φ 12.5                           | φ 13.5                      | B1         | 8                     | φ4(H8)                        | φ 10                       | 8                            | 16                        | 2-M3             | 4  | 10.8                 |
| S50S 26B * 0804          | 26                         | φ 13                             | φ 14                        | B1         | 8                     | φ4(H8)                        | φ 10                       | 8                            | 16                        | 2-M3             | 4  | 11.4                 |
| S50S 27B * 0804          | 27                         | φ 13.5                           | φ 14.5                      | B1         | 8                     | φ4(H8)                        | φ 10                       | 8                            | 16                        | 2-M3             | 4  | 12.1                 |
| S50S 28B * 0804          | 28                         | φ 14                             | φ 15                        | B1         | 8                     | φ4(H8)                        | φ 10                       | 8                            | 16                        | 2-M3             | 4  | 12.8                 |
| S50S 30B * 0805          | 30                         | φ 15                             | φ 16                        | B1         | 8                     | φ5(H8)                        | φ 12                       | 8                            | 16                        | 2-M3             | 4  | 15.4                 |
| S50S 30BF - 0504         | 30                         | φ 15                             | φ 16                        | B1         | 5                     | φ4(H8)                        | φ 12                       | 8                            | 13                        | -                | -  | 12.7                 |
| S50S 30B * 0805          | 30                         | φ 15                             | φ 16                        | B1         | 8                     | φ5                            | φ 12                       | 8                            | 16                        | 2-M3             | 4  | 15.4                 |
| S50S 32B * 0505          | 32                         | φ 16                             | φ 17                        | B1         | 5                     | φ5                            | φ 12                       | 8                            | 13                        | 2-M3             | 4  | 12.7                 |
| S50S 35B * 0505          | 35                         | φ 17.5                           | φ 18.5                      | B1         | 5                     | φ5                            | φ 12                       | 8                            | 13                        | 2-M3             | 4  | 14.2                 |
| S50S 36B * 0505          | 36                         | φ 18                             | φ 19                        | B1         | 5                     | φ5                            | φ 12                       | 8                            | 13                        | 2-M3             | 4  | 14.8                 |
| S50S 40BF - 0504         | 40                         | φ 20                             | φ 21                        | B1         | 5                     | φ4(H8)                        | φ 15                       | 8                            | 13                        | -                | -  | 22.1                 |
| S50S 40B * 0505          | 40                         | φ 20                             | φ 21                        | B1         | 5                     | φ5                            | φ 15                       | 8                            | 13                        | 2-M3             | 4  | 21.0                 |
| S50S 42B * 0505          | 42                         | φ 21                             | φ 22                        | B1         | 5                     | φ5                            | φ 15                       | 8                            | 13                        | 2-M3             | 4  | 22.3                 |
| S50S 44B * 0505          | 44                         | φ 22                             | φ 23                        | B1         | 5                     | φ5                            | φ 15                       | 8                            | 13                        | 2-M3             | 4  | 23.6                 |
| S50S 45B * 0505          | 45                         | φ 22.5                           | φ 23.5                      | B1         | 5                     | φ5                            | φ 15                       | 8                            | 13                        | 2-M3             | 4  | 24.3                 |
| S50S 48B * 0505          | 48                         | φ 24                             | φ 25                        | B1         | 5                     | φ5                            | φ 15                       | 8                            | 13                        | 2-M3             | 4  | 26.4                 |
| S50S 50BF - 0504         | 50                         | φ 25                             | φ 26                        | B1         | 5                     | φ4(H8)                        | φ 18                       | 8                            | 13                        | -                | -  | 33.9                 |
| S50S 50B * 0505          | 50                         | φ 25                             | φ 26                        | B1         | 5                     | φ5                            | φ 15                       | 8                            | 13                        | 2-M3             | 4  | 27.9                 |
| S50S 52B * 0505          | 52                         | φ 26                             | φ 27                        | B1         | 5                     | φ5                            | φ 15                       | 8                            | 13                        | 2-M3             | 4  | 29.5                 |
| S50S 54B * 0505          | 54                         | φ 27                             | φ 28                        | B1         | 5                     | φ5                            | φ 15                       | 8                            | 13                        | 2-M3             | 4  | 31.1                 |
| S50S 55B * 0505          | 55                         | φ 27.5                           | φ 28.5                      | B1         | 5                     | φ5                            | φ 15                       | 8                            | 13                        | 2-M3             | 4  | 32.0                 |
| S50S 56B * 0505          | 56                         | φ 28                             | φ 29                        | B1         | 5                     | φ5                            | φ 15                       | 8                            | 13                        | 2-M3             | 4  | 32.8                 |
| S50S 60BF - 0505         | 60                         | φ 30                             | φ 31                        | B1         | 5                     | φ5                            | φ 22                       | 8                            | 13                        | -                | -  | 49.5                 |
| S50S 60B * 0506          | 60                         | φ 30                             | φ 31                        | B1         | 5                     | φ6                            | φ 18                       | 8                            | 13                        | 2-M4             | 4  | 39.9                 |
| S50S 64B * 0506          | 64                         | φ 32                             | φ 33                        | B1         | 5                     | φ6                            | φ 18                       | 8                            | 13                        | 2-M4             | 4  | 43.7                 |
| S50S 70BF - 0505         | 70                         | φ 35                             | φ 36                        | B1         | 5                     | φ5                            | φ 25                       | 8                            | 13                        | -                | -  | 66.5                 |
| S50S 70B * 0506          | 70                         | φ 35                             | φ 36                        | B1         | 5                     | φ6                            | φ 18                       | 8                            | 13                        | 2-M4             | 4  | 49.9                 |
| S50S 72B * 0506          | 72                         | φ 36                             | φ 37                        | B1         | 5                     | φ6                            | φ 18                       | 8                            | 13                        | 2-M4             | 4  | 52.1                 |
| S50S 75B * 0506          | 75                         | φ 37.5                           | φ 38.5                      | B1         | 5                     | φ6                            | φ 18                       | 8                            | 13                        | 2-M4             | 4  | 55.5                 |
| S50S 80BF - 0506         | 80                         | φ 40                             | φ 41                        | B1         | 5                     | φ6                            | φ 28                       | 8                            | 13                        | -                | -  | 85.0                 |
| S50S 80B * 0508          | 80                         | φ 40                             | φ 41                        | B1         | 5                     | φ8                            | φ 22                       | 8                            | 13                        | 2-M4             | 4  | 67.0                 |



| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>$z$ | 分度圆直径<br>Reference Diameter<br>$d$ | 齿顶圆直径<br>Tip Diameter<br>$d_a$ | 形状<br>Type | 齿宽<br>Face Width<br>$b$ | 孔径<br>Bore Diameter<br>$d_d(H7)$ | 轮毂外径<br>Hub Diameter<br>$d_h$ | 轮毂长度<br>Hub Projection<br>$l_h$ | 全长<br>Overall Length<br>$l$ | 螺纹孔<br>Set Screw |       | 重量<br>Weight<br>$W(g)$ |
|--------------------------|------------------------------|------------------------------------|--------------------------------|------------|-------------------------|----------------------------------|-------------------------------|---------------------------------|-----------------------------|------------------|-------|------------------------|
|                          |                              |                                    |                                |            |                         |                                  |                               |                                 |                             | $2-M(120^\circ)$ | $l_s$ |                        |
| S50S 90BF - 0506         | 90                           | $\phi 45$                          | $\phi 46$                      | B1         | 5                       | $\phi 6$                         | $\phi 32$                     | 8                               | 13                          | -                | -     | 109.9                  |
| S50S 90B * 0508          | 90                           | $\phi 45$                          | $\phi 46$                      | B1         | 5                       | $\phi 8$                         | $\phi 22$                     | 8                               | 13                          | 2-M4             | 4     | 80.1                   |
| S50S 96B * 0508          | 96                           | $\phi 48$                          | $\phi 49$                      | B1         | 5                       | $\phi 8$                         | $\phi 22$                     | 8                               | 13                          | 2-M4             | 4     | 88.7                   |
| S50S 100BF - 0506        | 100                          | $\phi 50$                          | $\phi 51$                      | B1         | 5                       | $\phi 6$                         | $\phi 35$                     | 8                               | 13                          | -                | -     | 134.4                  |
| S50S 100B * 0508         | 100                          | $\phi 50$                          | $\phi 51$                      | B1         | 5                       | $\phi 8$                         | $\phi 25$                     | 8                               | 13                          | 2-M4             | 4     | 101.4                  |
| S50S 110B * 0508         | 110                          | $\phi 55$                          | $\phi 56$                      | B1         | 5                       | $\phi 8$                         | $\phi 25$                     | 8                               | 13                          | 2-M4             | 4     | 117.6                  |
| S50S 120BF - 0506        | 120                          | $\phi 60$                          | $\phi 61$                      | B1         | 5                       | $\phi 6$                         | $\phi 42$                     | 8                               | 13                          | -                | -     | 194.9                  |
| S50S 120B * 0508         | 120                          | $\phi 60$                          | $\phi 61$                      | B1         | 5                       | $\phi 8$                         | $\phi 25$                     | 8                               | 13                          | 2-M4             | 4     | 135.4                  |

### 容许传达动力表 弯曲强度 (W)

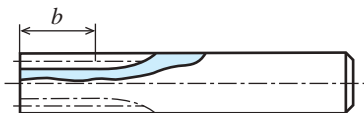
Allowable transfer capability table (W) Bending Strength

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |        |        |        |        |        |
|---------------------------|---|-------|--------|--------|--------|--------|--------|
|                           | 10  | 100   | 200    | 400    | 800    | 1,200  | 1,500  |
| S50S 10K - 1006           | 0.62  | 6.19  | 12.38  | 24.77  | 49.53  | 74.30  | 92.87  |
| S50S 12K - 1007           | 0.85  | 8.49  | 16.98  | 33.96  | 67.91  | 101.87 | 127.33 |
| S50S 14K - 1008           | 1.11  | 11.07 | 22.13  | 44.26  | 88.53  | 132.79 | 165.99 |
| S50S 15K * 0803           | 0.99  | 9.92  | 19.84  | 39.68  | 79.37  | 119.05 | 148.81 |
| S50S 16K * 0803           | 1.10  | 11.01 | 22.02  | 44.04  | 88.08  | 132.12 | 165.15 |
| S50S 18K * 0804           | 1.32  | 13.24 | 26.47  | 52.94  | 105.88 | 158.82 | 198.53 |
| S50S 20K * 0804           | 1.55  | 15.54 | 31.08  | 62.16  | 124.32 | 186.48 | 233.10 |
| S50S 21K * 0804           | 1.67  | 16.70 | 33.40  | 66.81  | 133.62 | 200.43 | 250.53 |
| S50S 22K * 0804           | 1.79  | 17.88 | 35.76  | 71.52  | 143.04 | 214.57 | 268.21 |
| S50S 24K * 0804           | 2.03  | 20.26 | 40.52  | 81.04  | 162.07 | 243.11 | 303.88 |
| S50S 25B * 0804           | 2.15  | 21.46 | 42.93  | 85.86  | 172.72 | 257.57 | 321.97 |
| S50S 26B * 0804           | 2.27  | 22.68 | 45.36  | 90.71  | 181.43 | 272.14 | 339.11 |
| S50S 27B * 0804           | 2.39  | 23.90 | 47.80  | 95.60  | 191.20 | 286.80 | 355.29 |
| S50S 28B * 0804           | 2.51  | 25.13 | 50.26  | 100.52 | 201.03 | 301.55 | 371.39 |
| S50S 30B * 0805           | 2.76  | 27.59 | 55.18  | 110.37 | 220.74 | 331.11 | 403.12 |
| S50S30BF - 0504           | 1.73  | 17.28 | 34.56  | 69.11  | 138.22 | 207.34 | 252.89 |
| S50S 30B * 0805           | 2.76  | 27.59 | 55.18  | 110.37 | 220.74 | 331.11 | 403.12 |
| S50S 32B * 0505           | 1.88  | 18.81 | 37.61  | 75.22  | 150.44 | 225.49 | 271.63 |
| S50S 35B * 0505           | 2.12  | 21.17 | 42.34  | 84.68  | 169.36 | 250.30 | 300.66 |
| S50S 36B * 0505           | 2.20  | 21.96 | 43.93  | 87.85  | 175.71 | 258.48 | 310.20 |
| S50S40BF - 0504           | 2.51  | 25.13 | 50.26  | 100.53 | 201.05 | 290.27 | 347.13 |
| S50S 40B * 0505           | 2.52  | 25.16 | 50.32  | 100.65 | 201.29 | 290.74 | 347.65 |
| S50S 42B * 0505           | 2.68  | 26.77 | 53.55  | 107.09 | 214.19 | 306.59 | 365.96 |
| S50S 44B * 0505           | 2.84  | 28.37 | 56.75  | 113.49 | 226.99 | 322.02 | 383.71 |
| S50S 45B * 0505           | 2.92  | 29.18 | 58.37  | 116.74 | 233.47 | 329.75 | 392.59 |
| S50S 48B * 0505           | 3.16  | 31.63 | 63.25  | 126.50 | 252.80 | 352.63 | 418.79 |
| S50S50BF - 0504           | 3.31  | 33.09 | 66.18  | 132.36 | 263.04 | 365.67 | 433.52 |
| S50S 50B * 0505           | 3.33  | 33.26 | 66.52  | 133.04 | 264.20 | 367.63 | 435.89 |
| S50S 52B * 0505           | 3.49  | 34.90 | 69.80  | 139.60 | 275.51 | 382.44 | 452.72 |
| S50S 54B * 0505           | 3.65  | 36.54 | 73.08  | 146.17 | 286.71 | 397.03 | 469.26 |
| S50S 55B * 0505           | 3.74  | 37.37 | 74.73  | 149.46 | 292.27 | 404.26 | 477.43 |
| S50S 56B * 0505           | 3.82  | 38.19 | 76.38  | 152.76 | 297.80 | 411.43 | 485.53 |
| S50S60BF - 0505           | 4.13  | 41.26 | 82.52  | 165.03 | 318.33 | 437.29 | 515.20 |
| S50S 60B * 0506           | 4.15  | 41.50 | 83.00  | 165.99 | 319.68 | 439.63 | 517.25 |
| S50S 64B * 0506           | 4.48  | 44.82 | 89.64  | 179.28 | 341.14 | 467.04 | 547.92 |
| S50S70BF - 0505           | 4.94  | 49.53 | 99.06  | 198.12 | 370.27 | 503.89 | 587.45 |
| S50S 70B * 0506           | 4.98  | 49.82 | 99.65  | 199.30 | 372.55 | 506.74 | 592.05 |
| S50S 72B * 0506           | 5.15  | 51.50 | 102.99 | 205.99 | 382.81 | 519.61 | 606.27 |
| S50S 75B * 0506           | 5.40  | 54.01 | 108.02 | 216.04 | 398.01 | 538.57 | 627.16 |
| S50S80BF - 0506           | 5.78  | 57.80 | 115.61 | 231.21 | 419.70 | 565.46 | 662.85 |
| S50S 80B * 0508           | 5.82  | 58.21 | 116.42 | 232.85 | 422.85 | 569.31 | 668.04 |
| S50S90BF - 0506           | 6.61  | 66.08 | 132.15 | 264.30 | 466.61 | 622.01 | 746.10 |
| S50S 90B * 0508           | 6.66  | 66.56 | 133.13 | 266.25 | 470.10 | 626.91 | 752.57 |
| S50S 96B * 0508           | 7.16  | 71.63 | 143.26 | 286.28 | 497.59 | 660.77 | 802.70 |
| S50S 100BF - 0506         | 7.43  | 74.35 | 148.70 | 295.30 | 511.01 | 683.58 | 829.35 |
| S50S 100B * 0508          | 7.50  | 75.01 | 150.02 | 297.93 | 515.45 | 688.64 | 835.69 |
| S50S 110B * 0508          | 8.35  | 83.48 | 166.96 | 326.48 | 558.60 | 757.32 | 916.71 |
| S50S 120BF - 0506         | 9.11  | 91.10 | 182.20 | 351.01 | 593.95 | 816.78 | 986.42 |
| S50S 120B * 0508          | 9.20  | 91.98 | 183.95 | 354.27 | 599.68 | 824.59 | 995.68 |

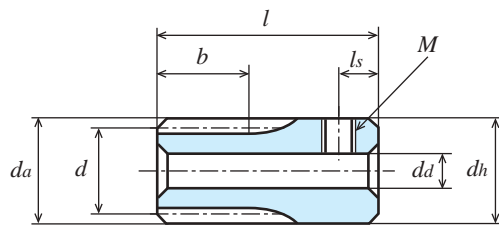
### 容许传达动力表 齿面强度 (W)

Allowable transfer capability table (W) Surface Durability

|      | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |        |        |        |       |
|------|---|-------|-------|--------|--------|--------|-------|
|      | 10  | 100   | 200   | 400    | 800    | 1,200  | 1,500 |
| 0.08 | 0.84  | 1.68  | 3.77  | 7.54   | 11.31  | 12.57  |       |
| -    | -   | -     | -     | -      | -      | -      | -     |
| -    | -   | -     | -     | -      | -      | -      | -     |
| -    | -   | -     | -     | -      | -      | -      | -     |
| 0.16 | 1.57  | 3.14  | 6.70  | 13.40  | 18.85  | 23.56  |       |
| -    | -   | -     | -     | -      | -      | -      | -     |
| -    | -   | -     | -     | -      | -      | -      | -     |
| -    | -   | -     | -     | -      | -      | -      | -     |
| 0.26 | 2.62  | 5.24  | 10.47 | 20.94  | 30.16  | 36.13  |       |
| -    | -   | -     | -     | -      | -      | -      | -     |
| -    | -   | -     | -     | -      | -      | -      | -     |
| -    | -   | -     | -     | -      | -      | -      | -     |
| 0.38 | 3.77  | 7.54  | 15.50 | 30.16  | 41.47  | 50.26  |       |
| -    | -   | -     | -     | -      | -      | -      | -     |
| -    | -   | -     | -     | -      | -      | -      | -     |
| 0.52 | 5.24  | 10.47 | 21.36 | 40.21  | 56.55  | 65.97  |       |
| -    | -   | -     | -     | -      | -      | -      | -     |
| -    | -   | -     | -     | -      | -      | -      | -     |
| 0.69 | 7.02  | 14.03 | 28.48 | 52.78  | 71.63  | 86.39  |       |
| -    | -   | -     | -     | -      | -      | -      | -     |
| -    | -   | -     | -     | -      | -      | -      | -     |
| 0.89 | 8.90  | 18.01 | 36.44 | 65.34  | 89.22  | 109.95 |       |
| -    | -   | -     | -     | -      | -      | -      | -     |
| -    | -   | -     | -     | -      | -      | -      | -     |
| 1.11 | 11.20                                       | 22.41 | 45.24 | 79.58  | 110.58 | 136.65 |       |
| -    | -   | -     | -     | -      | -      | -      | -     |
| -    | -   | -     | -     | -      | -      | -      | -     |
| 1.63 | 16.44                                       | 33.09 | 64.50 | 112.25 | 159.59 | 197.91 |       |
| -    | -   | -     | -     | -      | -      | -      | -     |



K1形状  
TYPE K1



K2形状  
TYPE K2

单位: mm

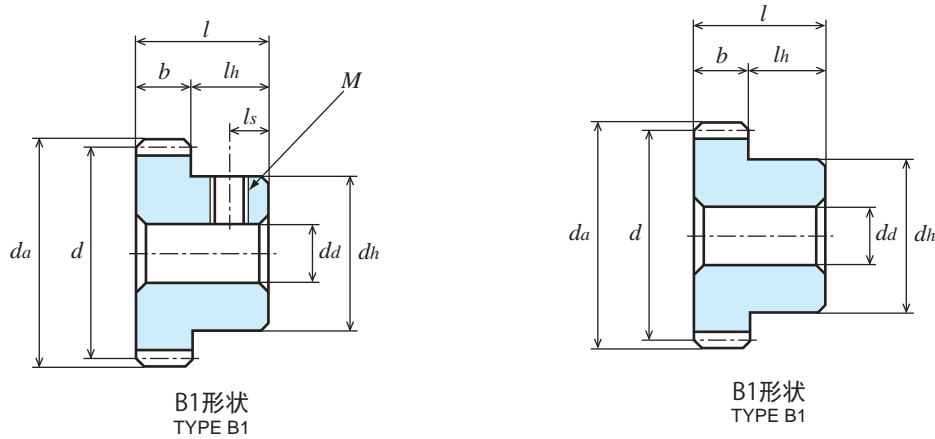
| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|------|-----|-----|------|-------------|
| JIS B 1702-1 8级 | S45C | 20度 | —   | —    | 0.02 ~ 0.06 |

★未做表面处理。【+】带有螺纹孔，有固定用螺钉。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 齿顶圆直径<br>Tip Diameter<br><i>da</i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>da(H7)</i> | 轮毂外径<br>Hub Diameter<br><i>dh</i> | 轮毂长<br>Hub Projection<br><i>lh</i> | 全长<br>Overall Length<br><i>l</i> | 螺纹孔<br>Set Screw |           | 重量<br>Weight<br><i>W(g)</i> |
|--------------------------|-----------------------------------|---|------------------------------------|------------|------------------------------|--------------------------------------|-----------------------------------|------------------------------------|----------------------------------|------------------|-----------|-----------------------------|
|                          |                                   |   |                                    |            |                              |                                      |                                   |                                    |                                  | <i>M</i>         | <i>ls</i> |                             |
| S75S 10K - 0809          | 10                                | φ 7.5                                   | φ 9                                | K1         | 8                            | -                                    | φ 9                               | 47                                 | 55                               | -                | -         | 26.3                        |
| S75S 12K - 0811          | 12                                | φ 9                                     | φ 10.5                             | K1         | 8                            | -                                    | φ 11                              | 47                                 | 55                               | -                | -         | 39.1                        |
| S75S 14K + 0805          | 14                                | φ 10.5                                  | φ 12                               | K2         | 8                            | φ5(H8)                               | φ 12                              | 12                                 | 20                               | M3               | 3         | 12.9                        |
| S75S 15K + 0805          | 15                                | φ 11.25                                 | φ 12.75                            | K2         | 8                            | φ5(H8)                               | φ 12.75                           | 12                                 | 20                               | M3               | 3         | 15.0                        |
| S75S 16B + 0805          | 16                                | φ 12                                    | φ 13.5                             | B1         | 8                            | φ5(H8)                               | φ 10                              | 7                                  | 15                               | M4               | 3.5       | 8.9                         |
| S75S 18B + 0805          | 18                                | φ 13.5                                  | φ 15                               | B1         | 8                            | φ5(H8)                               | φ 11                              | 7                                  | 15                               | M4               | 3.5       | 11.7                        |
| S75S 20B + 0806          | 20                                | φ 15                                    | φ 16.5                             | B1         | 8                            | φ6                                   | φ 12                              | 7                                  | 15                               | M4               | 3.5       | 13.8                        |
| S75S 24B + 0806          | 24                                | φ 18                                    | φ 19.5                             | B1         | 8                            | φ6                                   | φ 14                              | 7                                  | 15                               | M4               | 3.5       | 20.8                        |
| S75S 25B + 0806          | 25                                | φ 18.75                                 | φ 20.25                            | B1         | 8                            | φ6                                   | φ 14                              | 7                                  | 15                               | M4               | 3.5       | 22.2                        |
| S75S 28B + 0806          | 28                                | φ 21                                    | φ 22.5                             | B1         | 8                            | φ6                                   | φ 14                              | 7                                  | 15                               | M4               | 3.5       | 26.6                        |
| S75S 30B + 0806          | 30                                | φ 22.5                                  | φ 24                               | B1         | 8                            | φ6                                   | φ 15                              | 7                                  | 15                               | M4               | 3.5       | 31.0                        |
| S75S 32B + 0606          | 32                                | φ 24                                    | φ 25.5                             | B1         | 6                            | φ6                                   | φ 15                              | 9                                  | 15                               | M4               | 4         | 30.1                        |
| S75S 35B + 0606          | 35                                | φ 26.25                                 | φ 27.75                            | B1         | 6                            | φ6                                   | φ 18                              | 9                                  | 15                               | M4               | 4         | 39.7                        |
| S75S 36B + 0606          | 36                                | φ 27                                    | φ 28.5                             | B1         | 6                            | φ6                                   | φ 18                              | 9                                  | 15                               | M4               | 4         | 41.2                        |
| S75S 40B + 0606          | 40                                | φ 30                                    | φ 31.5                             | B1         | 6                            | φ6                                   | φ 20                              | 9                                  | 15                               | M4               | 4         | 51.7                        |
| S75S 45B + 0606          | 45                                | φ 33.75                                 | φ 35.25                            | B1         | 6                            | φ6                                   | φ 20                              | 9                                  | 15                               | M4               | 4         | 60.5                        |
| S75S 48B + 0606          | 48                                | φ 36                                    | φ 37.5                             | B1         | 6                            | φ6                                   | φ 20                              | 9                                  | 15                               | M4               | 4         | 66.3                        |
| S75S 50B + 0606          | 50                                | φ 37.5                                  | φ 39                               | B1         | 6                            | φ6                                   | φ 20                              | 9                                  | 15                               | M4               | 4         | 70.4                        |
| S75S 56B + 0606          | 56                                | φ 42                                    | φ 43.5                             | B1         | 6                            | φ6                                   | φ 20                              | 9                                  | 15                               | M4               | 4         | 83.6                        |
| S75S 60B + 0606          | 60                                | φ 45                                    | φ 46.5                             | B1         | 6                            | φ6                                   | φ 22                              | 9                                  | 15                               | M4               | 4         | 97.9                        |
| S75S 64B + 0606          | 64                                | φ 48                                    | φ 49.5                             | B1         | 6                            | φ6                                   | φ 22                              | 9                                  | 15                               | M4               | 4         | 108.2                       |
| S75S 70B + 0606          | 70                                | φ 52.5                                  | φ 54                               | B1         | 6                            | φ6                                   | φ 22                              | 9                                  | 15                               | M4               | 4         | 124.9                       |
| S75S 72B + 0606          | 72                                | φ 54                                    | φ 55.5                             | B1         | 6                            | φ6                                   | φ 25                              | 9                                  | 15                               | M4               | 4         | 138.5                       |
| S75S 80B + 0608          | 80                                | φ 60                                    | φ 61.5                             | B1         | 6                            | φ8                                   | φ 25                              | 9                                  | 15                               | M4               | 4         | 161.3                       |
| S75S 90B + 0608          | 90                                | φ 67.5                                  | φ 69                               | B1         | 6                            | φ8                                   | φ 30                              | 9                                  | 15                               | M4               | 4         | 211.8                       |
| S75S 100B + 0608         | 100                               | φ 75                                    | φ 76.5                             | B1         | 6                            | φ8                                   | φ 30                              | 9                                  | 15                               | M4               | 4         | 251.3                       |
| S75S 120B + 0608         | 120                               | φ 90                                    | φ 91.5                             | B1         | 6                            | φ8                                   | φ 30                              | 9                                  | 15                               | M4               | 4         | 342.9                       |
| S80S 25BF - 0805         | 25                                | φ 20                                    | φ 21.6                             | B1         | 8                            | φ5(H8)                               | φ 16                              | 10                                 | 18                               |                  |           | 32.5                        |
| S80S 30BF - 0805         | 30                                | φ 24                                    | φ 25.6                             | B1         | 8                            | φ5(H8)                               | φ 20                              | 10                                 | 18                               |                  |           | 50.1                        |
| S80S 40BF - 0806         | 40                                | φ 32                                    | φ 33.6                             | B1         | 8                            | φ6(H8)                               | φ 25                              | 10                                 | 18                               |                  |           | 84.7                        |
| S80S 50BF - 0806         | 50                                | φ 40                                    | φ 41.6                             | B1         | 8                            | φ6(H8)                               | φ 28                              | 10                                 | 18                               |                  |           | 122.9                       |
| S80S 60BF - 0806         | 60                                | φ 48                                    | φ 49.6                             | B1         | 8                            | φ6(H8)                               | φ 34                              | 10                                 | 18                               |                  |           | 180.5                       |
| S80S 70BF - 0808         | 70                                | φ 56                                    | φ 57.6                             | B1         | 8                            | φ8                                   | φ 40                              | 10                                 | 18                               |                  |           | 245.7                       |



| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 螺纹孔<br>Set Screw |    | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|------------------|----|----------------------|
|                          |                            |                                  |                             |            |                       |                               |                            |                              |                           | M                | ls |                      |
| S80S 80BF - 0808         | 80                         | φ64                              | φ65.6                       | B1         | 8                     | φ 8                           | φ45                        | 10                           | 18                        |                  |    | 319.2                |
| S80S 90BF - 0808         | 90                         | φ72                              | φ73.6                       | B1         | 8                     | φ 8                           | φ50                        | 10                           | 18                        |                  |    | 402.1                |
| S80S 100BF - 0810        | 100                        | φ80                              | φ81.6                       | B1         | 8                     | φ10                           | φ60                        | 10                           | 18                        |                  |    | 525.8                |
| S80S 120BF - 0810        | 120                        | φ96                              | φ97.6                       | B1         | 8                     | φ10                           | φ70                        | 10                           | 18                        |                  |    | 744.7                |

容许传达动力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |        |        |          |          |          |          |
|---------------------------|---|--------|--------|----------|----------|----------|----------|
|                           | 10  | 100    | 200    | 400      | 800      | 1,200    | 1,500    |
| S75S 10K - 0809           | 1.10  | 11.07  | 22.14  | 44.29    | 88.59    | 132.88   | 166.10   |
| S75S 12K - 0811           | 1.53  | 15.28  | 30.56  | 61.12    | 122.24   | 183.36   | 229.20   |
| S75S 14K + 0805           | 1.99  | 19.92  | 39.84  | 79.67    | 159.35   | 239.02   | 298.77   |
| S75S 15K + 0805           | 2.23  | 22.32  | 44.64  | 89.29    | 178.58   | 267.86   | 334.83   |
| S75S 16B + 0805           | 2.48  | 24.77  | 49.54  | 99.09    | 198.18   | 297.27   | 371.59   |
| S75S 18B + 0805           | 2.98  | 29.78  | 59.56  | 119.12   | 238.23   | 357.35   | 442.68   |
| S75S 20B + 0806           | 3.50  | 34.97  | 69.93  | 139.86   | 279.72   | 419.58   | 510.83   |
| S75S 24B + 0806           | 4.56  | 45.58  | 91.17  | 182.33   | 364.66   | 536.45   | 643.79   |
| S75S 25B + 0806           | 4.83  | 48.30  | 96.59  | 193.18   | 386.36   | 564.46   | 676.47   |
| S75S 28B + 0806           | 5.65  | 56.54  | 113.08 | 226.16   | 452.32   | 647.45   | 772.83   |
| S75S 30B + 0806           | 6.21  | 62.08  | 124.17 | 248.66   | 496.66   | 701.46   | 835.14   |
| S75S 32B + 0606           | 5.08  | 50.78  | 101.55 | 203.10   | 405.88   | 566.16   | 672.37   |
| S75S 35B + 0606           | 5.72  | 57.16  | 114.32 | 228.63   | 450.54   | 625.02   | 739.59   |
| S75S 36B + 0606           | 5.93  | 59.30  | 118.60 | 237.20   | 465.26   | 644.30   | 761.51   |
| S75S 40B + 0606           | 6.79  | 67.94  | 135.87 | 271.74   | 523.34   | 719.70   | 846.78   |
| S75S 45B + 0606           | 7.88  | 78.80  | 157.59 | 315.19   | 593.54   | 809.50   | 947.38   |
| S75S 48B + 0606           | 8.54  | 85.39  | 170.78 | 341.55   | 634.74   | 861.57   | 1,005.26 |
| S75S 50B + 0606           | 8.98  | 89.80  | 179.60 | 359.20   | 661.75   | 895.45   | 1,042.75 |
| S75S 56B + 0606           | 10.31                                       | 103.12 | 206.23 | 412.46   | 740.57   | 993.21   | 1,176.28 |
| S75S 60B + 0606           | 11.20                                       | 112.05 | 224.09 | 448.18   | 791.32   | 1,055.28 | 1,266.80 |
| S75S 64B + 0606           | 12.10                                       | 121.01 | 242.03 | 483.67   | 840.68   | 1,116.37 | 1,356.16 |
| S75S 70B + 0606           | 13.45                                       | 134.52 | 269.05 | 530.18   | 912.13   | 1,227.65 | 1,487.91 |
| S75S 72B + 0606           | 13.90                                       | 139.04 | 278.08 | 545.45   | 935.29   | 1,264.36 | 1,531.23 |
| S75S 80B + 0608           | 15.72                                       | 157.17 | 314.34 | 605.38   | 1,024.75 | 1,409.08 | 1,701.45 |
| S75S 90B + 0608           | 17.97                                       | 179.72 | 359.44 | 676.87   | 1,128.44 | 1,583.37 | 1,911.84 |
| S75S 100B + 0608          | 20.25                                       | 202.52 | 405.04 | 746.20   | 1,239.53 | 1,753.91 | 2,124.81 |
| S75S 120B + 0608          | 24.83                                       | 248.33 | 496.67 | 876.93   | 1,484.26 | 2,095.89 | 2,535.81 |
| S80S 25BF - 0805          | 5.52  | 55.18  | 110.37 | 220.74   | 441.48   | 637.09   | 761.80   |
| S80S 30BF - 0805          | 7.07  | 70.68  | 141.37 | 282.73   | 565.46   | 848.19   | 936.16   |
| S80S 40BF - 0806          | 10.28                                       | 102.83 | 205.66 | 411.32   | 782.43   | 1,071.87 | 1,256.58 |
| S80S 50BF - 0806          | 13.57                                       | 135.71 | 271.42 | 542.84   | 985.16   | 1,326.95 | 1,556.59 |
| S80S60BF - 0806           | 16.90                                       | 169.01 | 338.02 | 675.62   | 1,174.49 | 1,559.42 | 1,894.30 |
| S80S70BF - 0808           | 20.27                                       | 202.73 | 405.46 | 790.39   | 1,349.57 | 1,834.61 | 2,219.44 |
| S80S80BF - 0808           | 23.68                                       | 236.76 | 473.52 | 900.97   | 1,512.09 | 2,102.26 | 2,535.16 |
| S80S90BF - 0808           | 27.05                                       | 270.48 | 540.96 | 1,005.69 | 1,663.72 | 2,358.61 | 2,854.02 |
| S80S100BF - 0810          | 30.47                                       | 304.72 | 609.44 | 1,106.63 | 1,850.53 | 2,609.92 | 3,168.16 |
| S80S120BF - 0810          | 37.33                                       | 373.31 | 746.20 | 1,296.79 | 2,210.75 | 3,123.87 | 3,771.32 |

容许传达动力表 齿面强度 (W)

Allowable transfer capability table (W) Surface Durability

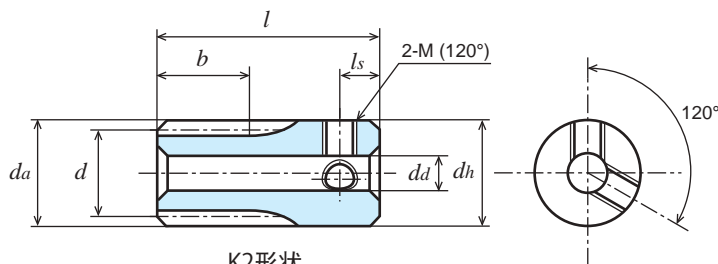
|      | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |        |        |        |        |        |       |
|------|---|--------|--------|--------|--------|--------|-------|
|      | 10  | 100    | 200    | 400    | 800    | 1,200  | 1,500 |
| 0.26 | 2.62  | 5.24   | 10.47  | 20.94  | 31.41  | 37.70  |       |
| 0.38 | 3.77  | 7.54   | 15.50  | 31.00  | 43.98  | 51.83  |       |
| 0.69 | 7.02  | 14.03  | 28.06  | 54.45  | 75.40  | 89.53  |       |
| 1.12 | 11.20                                       | 22.41  | 45.24  | 83.77  | 115.61 | 138.22 |       |
| 1.63 | 16.44                                       | 32.88  | 66.60  | 118.12 | 162.10 | 201.05 |       |
| 2.25 | 22.72                                       | 45.66  | 90.06  | 158.33 | 222.42 | 274.88 |       |
| 2.98 | 30.05                                       | 60.53  | 116.86 | 203.57 | 291.53 | 362.84 |       |
| 3.83 | 38.54                                       | 77.70  | 147.02 | 252.99 | 371.95 | 464.94 |       |
| 4.78 | 48.17                                       | 97.18  | 180.11 | 314.15 | 463.68 | 581.17 |       |
| 7.02 | 70.79                                       | 143.04 | 254.25 | 454.88 | 682.33 | 851.34 |       |

# 直齿轮

## SPUR GEARS

模数  
MODULE **1** (齿数 8 ~ 20)

(普通齿)  
FULL DEPTH TOOTH



K2形状  
TYPE K2

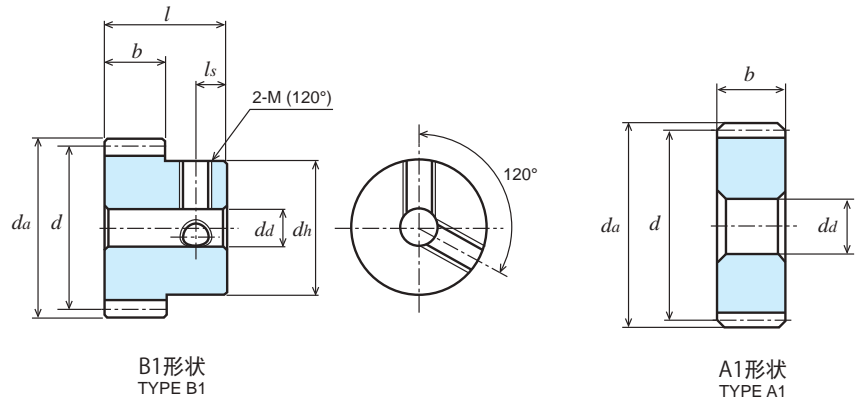
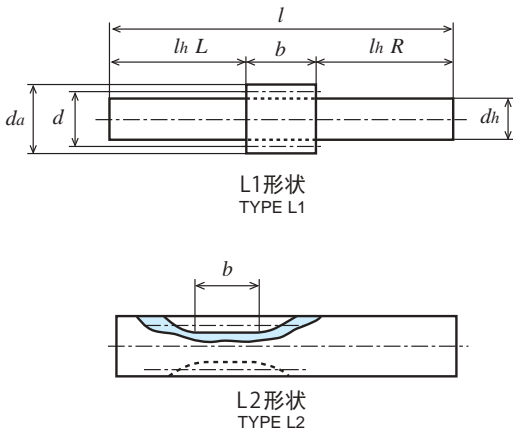
单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|------|-----|-----|------|-------------|
| JIS B 1702-1 8级 | S45C | 20度 | -   | -    | 0.04 ~ 0.10 |

- ★未做表面处理。【\*】带有两个螺纹孔，有两个固定用螺钉。
- ★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。
- ★KG 的规格齿轮有「标准齿宽」(轻负荷用)和传达扭矩更大的「加宽齿宽」(重负荷用)。请根据用途选择。
- ★【变位】是变位系数 X = 0.5 的变位齿轮。①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>d <sub>d</sub> (H7) | 轮毂外径<br>Hub Diameter<br>d <sub>h</sub> | 轮毂长度<br>Hub Projection<br>l <sub>h</sub> | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b <sub>2</sub> × t <sub>2</sub> | 螺纹孔<br>Set Screw |    | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|--|--|--|---------------------------|--|------------------|----|----------------------|
|                          |                            |                                  |                             |            |                       |  |  |  |                           |  | 2-M(120°)        | ls |                      |
| S1S 8L - 1206            | 8                          | 【变位】                             | φ10.64                      | L1         | 12                    | -  | φ 6 (h9)                               | L16 R32                                  | 60                        | -  | -                | -  | 16.7                 |
| S1S 8L - 1210F           | 8                          | 【变位】                             | φ10.64                      | L2         | 12                    | -  | φ10.64                                 | L16 R32                                  | 60                        | -  | -                | -  | 39.5                 |
| S1S 10L - 1208           | 10                         | 【变位】                             | φ12.66                      | L1         | 12                    | -  | φ 8 (h9)                               | L16 R32                                  | 60                        | -  | -                | -  | 27.9                 |
| S1S 10L - 1212F          | 10                         | 【变位】                             | φ12.66                      | L2         | 12                    | -  | φ12.66                                 | L16 R32                                  | 60                        | -  | -                | -  | 56.4                 |
| S1S 12K * 1206           | 12                         |                                  | φ12                         | K2         | 12                    | φ6(H8)                                     | φ14                                    | 18                                       | 30                        | -  | 2-M4             | 5  | 25.1                 |
| S1S 13K * 1206           | 13                         |                                  | φ13                         | K2         | 12                    | φ6(H8)                                     | φ15                                    | 18                                       | 30                        | -  | 2-M4             | 5  | 30.1                 |
| S1S 14A - 0805F          | 14                         |                                  | φ14                         | A1         | 8                     | φ5   | -                                      | -  | 8                         | -  | -                | -  | 8.4                  |
| S1S 14A - 0806           | 14                         |                                  | φ14                         | A1         | 8                     | φ6   | -                                      | -  | 8                         | -  | -                | -  | 7.9                  |
| S1S 14A - 1206           | 14                         |                                  | φ14                         | A1         | 12                    | φ6   | -                                      | -  | 12                        | -  | -                | -  | 11.8                 |
| S1S 14B - 0805           | 14                         |                                  | φ14                         | B1         | 8                     | φ5(H8)                                     | φ11                                    | 8  | 16                        | -  | -                | -  | 13.0                 |
| S1S 14B - 1005           | 14                         |                                  | φ14                         | B1         | 10                    | φ5(H8)                                     | φ11                                    | 10                                       | 20                        | -  | -                | -  | 16.47                |
| S1S 14K * 0806           | 14                         |                                  | φ14                         | K2         | 8                     | φ6(H8)                                     | φ16                                    | 17                                       | 25                        | -  | 2-M4             | 4  | 30.1                 |
| S1S 14K * 1206           | 14                         |                                  | φ14                         | K2         | 12                    | φ6(H8)                                     | φ16                                    | 18                                       | 30                        | -  | 2-M5             | 5  | 35.0                 |
| S1S 15A - 0805F          | 15                         |                                  | φ15                         | A1         | 8                     | φ5   | -                                      | -  | 8                         | -  | -                | -  | 9.9                  |
| S1S 15A - 0806           | 15                         |                                  | φ15                         | A1         | 8                     | φ6   | -                                      | -  | 8                         | -  | -                | -  | 9.3                  |
| S1S 15A - 1206           | 15                         |                                  | φ15                         | A1         | 12                    | φ6   | -                                      | -  | 12                        | -  | -                | -  | 14.0                 |
| S1S 15B - 0805           | 15                         |                                  | φ15                         | B1         | 8                     | φ5(H8)                                     | φ12                                    | 8  | 16                        | -  | -                | -  | 15.7                 |
| S1S 15B - 1005           | 15                         |                                  | φ15                         | B1         | 10                    | φ5(H8)                                     | φ12                                    | 10                                       | 20                        | -  | -                | -  | 19.68                |
| S1S 15K * 0806           | 15                         |                                  | φ15                         | K2         | 8                     | φ6(H8)                                     | φ17                                    | 17                                       | 25                        | -  | 2-M4             | 4  | 35.0                 |
| S1S 15K * 1206           | 15                         |                                  | φ15                         | K2         | 12                    | φ6(H8)                                     | φ17                                    | 18                                       | 30                        | -  | 2-M5             | 5  | 40.7                 |
| S1S 16A - 0805F          | 16                         |                                  | φ16                         | A1         | 8                     | φ5   | -                                      | -  | 8                         | -  | -                | -  | 11.4                 |
| S1S 16A - 0806           | 16                         |                                  | φ16                         | A1         | 8                     | φ6   | -                                      | -  | 8                         | -  | -                | -  | 10.9                 |
| S1S 16A - 1208           | 16                         |                                  | φ16                         | A1         | 12                    | φ8   | -                                      | -  | 12                        | -  | -                | -  | 14.2                 |
| S1S 16B - 0805           | 16                         |                                  | φ16                         | B1         | 8                     | φ5(H8)                                     | φ13                                    | 8  | 16                        | -  | -                | -  | 18.5                 |
| S1S 16B - 1005           | 16                         |                                  | φ16                         | B1         | 10                    | φ5(H8)                                     | φ13                                    | 10                                       | 20                        | -  | -                | -  | 23.13                |
| S1S 16K * 0806           | 16                         |                                  | φ16                         | K2         | 8                     | φ6(H8)                                     | φ18                                    | 17                                       | 25                        | -  | 2-M4             | 4  | 40.0                 |
| S1S 16K * 0808           | 16                         |                                  | φ16                         | K2         | 8                     | φ8(H8)                                     | φ18                                    | 17                                       | 25                        | -  | 2-M4             | 4  | 35.9                 |
| S1S 16K * 1208           | 16                         |                                  | φ16                         | K2         | 12                    | φ8(H8)                                     | φ18                                    | 18                                       | 30                        | -  | 2-M5             | 5  | 41.8                 |
| S1S 17A - 0805F          | 17                         |                                  | φ17                         | A1         | 8                     | φ5   | -                                      | -  | 8                         | -  | -                | -  | 13.0                 |
| S1S 17A - 1208F          | 17                         |                                  | φ17                         | A1         | 12                    | φ8   | -                                      | -  | 12                        | -  | -                | -  | 16.7                 |
| S1S 17B - 0805           | 17                         |                                  | φ17                         | B1         | 8                     | φ5(H8)                                     | φ14                                    | 8  | 16                        | -  | -                | -  | 21.5                 |
| S1S 17B - 1005           | 17                         |                                  | φ17                         | B1         | 10                    | φ5(H8)                                     | φ14                                    | 10                                       | 20                        | -  | -                | -  | 26.84                |
| S1S 17K * 0808           | 17                         |                                  | φ17                         | K2         | 8                     | φ8(H8)                                     | φ19                                    | 17                                       | 25                        | -  | 2-M4             | 4  | 41.3                 |
| S1S 17K * 1208           | 17                         |                                  | φ17                         | K2         | 12                    | φ8(H8)                                     | φ19                                    | 18                                       | 30                        | -  | 2-M5             | 5  | 48.2                 |
| S1S 18A - 0805F          | 18                         |                                  | φ18                         | A1         | 8                     | φ5   | -                                      | -  | 8                         | -  | -                | -  | 14.8                 |
| S1S 18A - 0806           | 18                         |                                  | φ18                         | A1         | 8                     | φ6   | -                                      | -  | 8                         | -  | -                | -  | 14.2                 |
| S1S 18A - 1208           | 18                         |                                  | φ18                         | A1         | 12                    | φ8   | -                                      | -  | 12                        | -  | -                | -  | 19.2                 |
| S1S 18B * 0806           | 18                         |                                  | φ18                         | B1         | 8                     | φ6   | φ14                                    | 8  | 16                        | -  | 2-M4             | 4  | 21.5                 |
| S1S 18B - 1006           | 18                         |                                  | φ18                         | B1         | 10                    | φ6(H8)                                     | φ15                                    | 10                                       | 20                        | -  | -                | -  | 29.43                |
| S1S 18B * 1008           | 18                         |                                  | φ18                         | B1         | 10                    | φ8   | φ15                                    | 10                                       | 20                        | -  | 2-M5             | 5  | 25.1                 |
| S1S 18K * 0808           | 18                         |                                  | φ18                         | K2         | 8                     | φ8(H8)                                     | φ20                                    | 17                                       | 25                        | -  | 2-M4             | 4  | 47.1                 |
| S1S 18K * 1208           | 18                         |                                  | φ18                         | K2         | 12                    | φ8(H8)                                     | φ20                                    | 18                                       | 30                        | -  | 2-M4             | 4  | 55.6                 |
| S1S 19A - 0806F          | 19                         |                                  | φ19                         | A1         | 8                     | φ6   | -                                      | -  | 8                         | -  | -                | -  | 16.0                 |
| S1S 19A - 1208F          | 19                         |                                  | φ19                         | A1         | 12                    | φ8   | -                                      | -  | 12                        | -  | -                | -  | 22.0                 |





| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 齿顶圆直径<br>Tip Diameter<br><i>da</i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>dd(H7)</i> | 轮毂外径<br>Hub Diameter<br><i>dh</i> | 轮毂长度<br>Hub Projection<br><i>lh</i> | 全长<br>Overall Length<br><i>l</i> | 键槽<br>Key Way<br><i>b<sub>2</sub> × t<sub>2</sub></i> | 螺纹孔<br>Set Screw |           | 重量<br>Weight<br><i>W(g)</i> |
|--------------------------|-----------------------------------|---|------------------------------------|------------|------------------------------|--------------------------------------|-----------------------------------|-------------------------------------|----------------------------------|---|------------------|-----------|-----------------------------|
|                          |                                   |   |                                    |            |                              |                                      |                                   |                                     |                                  |   | 2-M(120°)        | <i>ls</i> |                             |
| S1S 19B - 0806F          | 19                                | φ19                                     | φ21                                | B1         | 8                            | φ6                                   | φ16                               | 8                                   | 16                               | -   | -                | -         | 26.9                        |
| S1S 19B - 1208F          | 19                                | φ19                                     | φ21                                | B1         | 12                           | φ8                                   | φ16                               | 8                                   | 20                               | -   | -                | -         | 31.4                        |
| S1S 20A - 0806F          | 20                                | φ20                                     | φ22                                | A1         | 8                            | φ6                                   | -                                 | -                                   | 8                                | -   | -                | -         | 18.0                        |
| S1S 20A - 0808           | 20                                | φ20                                     | φ22                                | A1         | 8                            | φ8                                   | -                                 | -                                   | 8                                | -   | -                | -         | 15.0                        |
| S1S 20A - 1208F          | 20                                | φ20                                     | φ22                                | A1         | 12                           | φ8                                   | -                                 | -                                   | 12                               | -   | -                | -         | 24.9                        |
| S1S 20A = 1210           | 20                                | φ20                                     | φ22                                | A1         | 12                           | φ10                                  | -                                 | -                                   | 12                               | 3 × 1.4   | -                | -         | 19.2                        |
| S1S 20B - 0806F          | 20                                | φ20                                     | φ22                                | B1         | 8                            | φ6                                   | φ16                               | 8                                   | 16                               | -   | -                | -         | 28.8                        |
| S1S 20B * 0806           | 20                                | φ20                                     | φ22                                | B1         | 8                            | φ6                                   | φ16                               | 8                                   | 16                               | -   | 2-M4             | 4         | 28.0                        |
| S1S 20B * 0808           | 20                                | φ20                                     | φ22                                | B1         | 8                            | φ8                                   | φ16                               | 8                                   | 16                               | -   | 2-M4             | 4         | 25.4                        |
| S1S 20BF - 1005          | 20                                | φ20                                     | φ22                                | B1         | 10                           | φ5(H8)                               | φ16                               | 10                                  | 20                               | -   | -                | -         | 37.0                        |
| S1S 20B - 1006           | 20                                | φ20                                     | φ22                                | B1         | 10                           | φ6(H8)                               | φ16                               | 10                                  | 20                               | -   | -                | -         | 36.03                       |
| S1S 20B * 1008           | 20                                | φ20                                     | φ22                                | B1         | 10                           | φ8                                   | φ16                               | 10                                  | 20                               | -   | 2-M5             | 5         | 31.5                        |
| S1S 20B - 1206F          | 20                                | φ20                                     | φ22                                | B1         | 12                           | φ6(H8)                               | φ16                               | 8                                   | 20                               | -   | -                | -         | 37.8                        |
| S1S 20B * 1206           | 20                                | φ20                                     | φ22                                | B1         | 12                           | φ6(H8)                               | φ16                               | 8                                   | 20                               | -   | 2-M4             | 4         | 37.0                        |
| S1S 20B * 1208           | 20                                | φ20                                     | φ22                                | B1         | 12                           | φ8                                   | φ16                               | 8                                   | 20                               | -   | 2-M4             | 4         | 33.7                        |

### 容许传达动力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |        |        |        |        |          |          |
|----------------|----------------|---|--------|--------|--------|--------|----------|----------|
|                |                | 10  | 100    | 200    | 400    | 800    | 1,200    | 1,500    |
| 8              | 12             | 3.21  | 32.15  | 64.29  | 128.58 | 257.16 | 385.74   | 482.18   |
| 10             | 12             | 4.43  | 44.29  | 88.59  | 177.17 | 354.34 | 531.52   | 664.40   |
| 12             | 12             | 4.07  | 40.75  | 81.49  | 162.99 | 325.97 | 488.96   | 611.20   |
| 13             | 12             | 4.68  | 46.85  | 93.69  | 187.38 | 374.77 | 562.15   | 700.48   |
| 14             | 8              | 3.54  | 35.41  | 70.82  | 141.64 | 283.28 | 424.92   | 523.34   |
| 14             | 10             | 3.98  | 39.79  | 79.58  | 159.17 | 318.34 | 477.50   | 596.88   |
| 14             | 12             | 5.31  | 53.12  | 106.23 | 212.46 | 424.92 | 637.38   | 785.01   |
| 15             | 8              | 3.97  | 39.68  | 79.37  | 158.73 | 317.47 | 476.20   | 579.76   |
| 15             | 10             | 4.50  | 45.03  | 90.06  | 180.11 | 360.22 | 540.33   | 675.41   |
| 15             | 12             | 5.95  | 59.53  | 119.05 | 238.10 | 476.20 | 714.30   | 869.64   |
| 16             | 8              | 4.40  | 44.04  | 88.08  | 176.16 | 352.32 | 528.05   | 636.11   |
| 16             | 10             | 5.03  | 50.26  | 100.53 | 201.05 | 402.11 | 603.16   | 753.95   |
| 16             | 12             | 6.61  | 66.06  | 132.12 | 264.24 | 528.48 | 792.08   | 954.16   |
| 17             | 8              | 4.85  | 48.46  | 96.92  | 193.84 | 387.68 | 575.64   | 692.11   |
| 17             | 10             | 5.48  | 54.77  | 109.53 | 219.06 | 438.13 | 657.19   | 821.49   |
| 17             | 12             | 7.27  | 72.69  | 145.38 | 290.76 | 581.53 | 863.46   | 1,038.17 |
| 18             | 8              | 5.29  | 52.94  | 105.88 | 217.76 | 423.52 | 623.05   | 747.71   |
| 18             | 10             | 6.62  | 66.18  | 132.35 | 264.7  | 529.41 | 778.81   | 934.63   |
| 18             | 12             | 7.94  | 79.41  | 158.82 | 317.64 | 635.29 | 934.57   | 1,121.56 |
| 19             | 8              | 6.68  | 66.81  | 133.62 | 267.24 | 534.47 | 765.05   | 913.19   |
| 19             | 12             | 10.02                                       | 100.21 | 200.43 | 400.86 | 801.71 | 1,147.57 | 1,369.79 |
| 20             | 8              | 6.22  | 62.16  | 124.32 | 248.64 | 497.28 | 718.27   | 858.87   |
| 20             | 10             | 7.82  | 78.22  | 156.44 | 312.89 | 625.78 | 904.74   | 1,080.66 |
| 20             | 12             | 9.32  | 93.24  | 186.48 | 372.96 | 745.92 | 1,077.41 | 1,288.30 |

### 容许传达动力表 齿面强度 (W)

Allowable transfer capability table (W) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |      |       |       |       |       |
|---|------|------|-------|-------|-------|-------|
| 10  | 100  | 200  | 400   | 800   | 1,200 | 1,500 |
| -   | -    | -    | -     | -     | -     | -     |
| -   | -    | -    | -     | -     | -     | -     |
| -   | -    | -    | -     | -     | -     | -     |
| -   | -    | -    | -     | -     | -     | -     |
| 0.14  | 1.36 | 2.72 | 5.45  | 10.89 | 16.34 | 20.42 |
| -   | -    | -    | -     | -     | -     | -     |
| 0.16  | 1.57 | 3.14 | 6.28  | 12.57 | 20.11 | 23.56 |
| -   | -    | -    | -     | -     | -     | -     |
| -   | -    | -    | -     | -     | -     | -     |
| 0.19  | 1.88 | 3.77 | 7.54  | 15.08 | 22.62 | 28.27 |
| -   | -    | -    | -     | -     | -     | -     |
| -   | -    | -    | -     | -     | -     | -     |
| 0.20  | 1.99 | 4.19 | 8.38  | 16.75 | 25.13 | 29.84 |
| -   | -    | -    | -     | -     | -     | -     |
| 0.26  | 2.62 | 5.24 | 10.47 | 20.94 | 31.41 | 39.27 |
| -   | -    | -    | -     | -     | -     | -     |
| -   | -    | -    | -     | -     | -     | -     |
| 0.32  | 3.25 | 6.49 | 12.98 | 25.97 | 38.95 | 45.55 |
| -   | -    | -    | -     | -     | -     | -     |

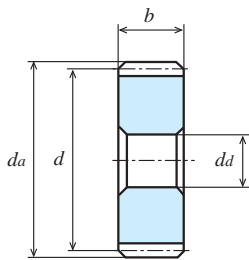
# 直齿轮

SPUR GEARS

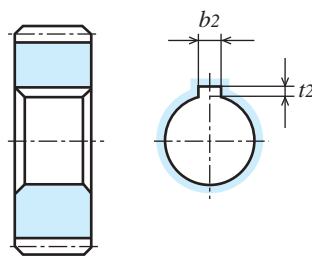
模数  
MODULE

1 (齿数 21 ~ 28)

(普通齿)  
FULL DEPTH TOOTH



A1形状  
TYPE A1



A1形状  
TYPE A1

单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|------|-----|-----|------|-------------|
| JIS B 1702-1 8级 | S45C | 20度 | —   | —    | 0.04 ~ 0.10 |

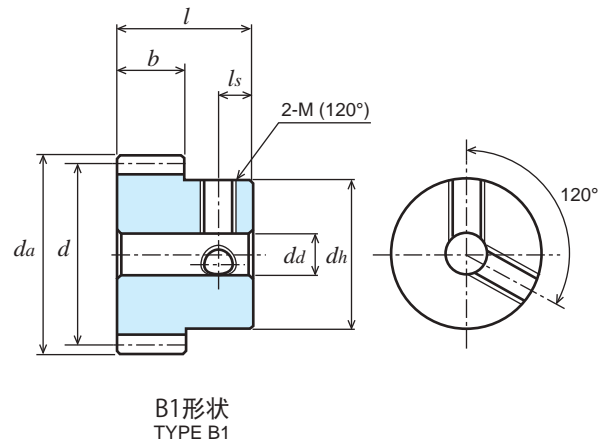
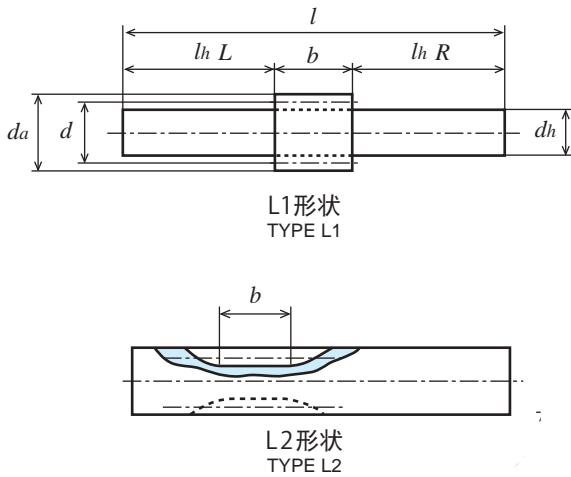
★未做表面处理。【\*】带有两个螺纹孔，有两个固定用螺钉。【=】带有键槽，有键。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★KG 的规格齿轮有「标准齿宽」(轻负荷用)和传达扭矩更大的「加宽齿宽」(重负荷用)。请根据用途选择。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>dd(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b2 × t2 | 螺纹孔<br>Set Screw |    | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|--------------------------|------------------|----|----------------------|
|                          |                            |                                  |                             |            |                       |                               |                            |                              |                           |                          | 2-M(120°)        | ls |                      |
| S1S 21A - 0806F          | 21                         | φ21                              | φ23                         | A1         | 8                     | φ6                            | -                          | -                            | 8                         | -                        | -                | -  | 19.1                 |
| S1S 21A - 1210F          | 21                         | φ21                              | φ23                         | A1         | 12                    | φ10                           | -                          | -                            | 12                        | -                        | -                | -  | 22.8                 |
| S1S 21B - 0806F          | 21                         | φ21                              | φ23                         | B1         | 8                     | φ6                            | φ18                        | 8                            | 16                        | -                        | -                | -  | 33.3                 |
| S1S 21B - 1208F          | 21                         | φ21                              | φ23                         | B1         | 12                    | φ8                            | φ18                        | 8                            | 20                        | -                        | -                | -  | 48.6                 |
| S1S 22A - 0806F          | 22                         | φ22                              | φ24                         | A1         | 8                     | φ6                            | -                          | -                            | 8                         | -                        | -                | -  | 22.1                 |
| S1S 22A - 1210F          | 22                         | φ22                              | φ24                         | A1         | 12                    | φ10                           | -                          | -                            | 12                        | -                        | -                | -  | 28.4                 |
| S1S 22B - 0806F          | 22                         | φ22                              | φ24                         | B1         | 8                     | φ6                            | φ18                        | 8                            | 16                        | -                        | -                | -  | 36.3                 |
| S1S 22B - 1208F          | 22                         | φ22                              | φ24                         | B1         | 12                    | φ8                            | φ18                        | 8                            | 20                        | -                        | -                | -  | 43.9                 |
| S1S 23A - 0806F          | 23                         | φ23                              | φ25                         | A1         | 8                     | φ6                            | -                          | -                            | 8                         | -                        | -                | -  | 24.3                 |
| S1S 23A - 1210F          | 23                         | φ23                              | φ25                         | A1         | 12                    | φ10                           | -                          | -                            | 12                        | -                        | -                | -  | 31.7                 |
| S1S 23B - 0806F          | 23                         | φ23                              | φ25                         | B1         | 8                     | φ6                            | φ20                        | 8                            | 16                        | -                        | -                | -  | 42.3                 |
| S1S 23B - 1208F          | 23                         | φ23                              | φ25                         | B1         | 12                    | φ8                            | φ20                        | 8                            | 20                        | -                        | -                | -  | 51.0                 |
| S1S 24A - 0806F          | 24                         | φ24                              | φ26                         | A1         | 8                     | φ6                            | -                          | -                            | 8                         | -                        | -                | -  | 26.6                 |
| S1S 24A - 0808           | 24                         | φ24                              | φ26                         | A1         | 8                     | φ8                            | -                          | -                            | 8                         | -                        | -                | -  | 25.3                 |
| S1S 24A - 1208F          | 24                         | φ24                              | φ26                         | A1         | 12                    | φ8                            | -                          | -                            | 12                        | -                        | -                | -  | 37.9                 |
| S1S 24A = 1210           | 24                         | φ24                              | φ26                         | A1         | 12                    | φ10                           | -                          | -                            | 12                        | 3 × 1.4                  | -                | -  | 34.8                 |
| S1S 24B - 0806           | 24                         | φ24                              | φ26                         | B1         | 8                     | φ6                            | φ16                        | 8                            | 16                        | -                        | -                | -  | 37.5                 |
| S1S 24B * 0806           | 24                         | φ24                              | φ26                         | B1         | 8                     | φ6                            | φ16                        | 8                            | 16                        | -                        | 2-M4             | 4  | 36.7                 |
| S1S 24B * 0808           | 24                         | φ24                              | φ26                         | B1         | 8                     | φ8                            | φ16                        | 8                            | 16                        | -                        | 2-M4             | 4  | 34.1                 |
| S1S 24B - 1006           | 24                         | φ24                              | φ26                         | B1         | 10                    | φ6(H8)                        | φ20                        | 10                           | 20                        | -                        | -                | -  | 55.77                |
| S1S 24B * 1008           | 24                         | φ24                              | φ26                         | B1         | 10                    | φ8                            | φ20                        | 10                           | 20                        | -                        | 2-M5             | 5  | 50.7                 |
| S1S 24B - 1208F          | 24                         | φ24                              | φ26                         | B1         | 12                    | φ8                            | φ20                        | 8                            | 20                        | -                        | -                | -  | 54.5                 |
| S1S 24B * 1208           | 24                         | φ24                              | φ26                         | B1         | 12                    | φ8                            | φ20                        | 8                            | 20                        | -                        | 2-M4             | 4  | 53.5                 |
| S1S 24B * 1210           | 24                         | φ24                              | φ26                         | B1         | 12                    | φ10                           | φ20                        | 8                            | 20                        | -                        | 2-M5             | 4  | 48.7                 |
| S1S 25A - 0806F          | 25                         | φ25                              | φ27                         | A1         | 8                     | φ6                            | -                          | -                            | 8                         | -                        | -                | -  | 29.1                 |
| S1S 25A - 0808           | 25                         | φ25                              | φ27                         | A1         | 8                     | φ8                            | -                          | -                            | 8                         | -                        | -                | -  | 27.7                 |
| S1S 25A = 0810           | 25                         | φ25                              | φ27                         | A1         | 8                     | φ10                           | -                          | -                            | 8                         | 3 × 1.4                  | -                | -  | 25.6                 |
| S1S 25A - 1208F          | 25                         | φ25                              | φ27                         | A1         | 12                    | φ8                            | -                          | -                            | 12                        | -                        | -                | -  | 41.5                 |
| S1S 25A = 1210           | 25                         | φ25                              | φ27                         | A1         | 12                    | φ10                           | -                          | -                            | 12                        | 3 × 1.4                  | -                | -  | 38.5                 |
| S1S 25B - 0806           | 25                         | φ25                              | φ27                         | B1         | 8                     | φ6                            | φ16                        | 8                            | 16                        | -                        | -                | -  | 39.9                 |
| S1S 25B * 0806           | 25                         | φ25                              | φ27                         | B1         | 8                     | φ6                            | φ16                        | 8                            | 16                        | -                        | 2-M4             | 4  | 39.1                 |
| S1S 25B * 0808           | 25                         | φ25                              | φ27                         | B1         | 8                     | φ8                            | φ16                        | 8                            | 16                        | -                        | 2-M4             | 4  | 36.5                 |
| S1S 25BF - 1005          | 25                         | φ25                              | φ27                         | B1         | 10                    | φ5(H8)                        | φ20                        | 10                           | 20                        | -                        | -                | -  | 59.7                 |
| S1S 25B - 1006           | 25                         | φ25                              | φ27                         | B1         | 10                    | φ6(H8)                        | φ20                        | 10                           | 20                        | -                        | -                | -  | 58.79                |
| S1S 25B * 1008           | 25                         | φ25                              | φ27                         | B1         | 10                    | φ8                            | φ20                        | 10                           | 20                        | -                        | 2-M5             | 5  | 53.8                 |
| S1S 25B - 1208F          | 25                         | φ25                              | φ27                         | B1         | 12                    | φ8                            | φ20                        | 8                            | 20                        | -                        | -                | -  | 58.1                 |
| S1S 25B * 1208           | 25                         | φ25                              | φ27                         | B1         | 12                    | φ8                            | φ20                        | 8                            | 20                        | -                        | 2-M4             | 4  | 57.1                 |
| S1S 25B * 1210           | 25                         | φ25                              | φ27                         | B1         | 12                    | φ10                           | φ20                        | 8                            | 20                        | -                        | 2-M5             | 4  | 52.4                 |
| S1S 26A - 0806F          | 26                         | φ26                              | φ28                         | A1         | 8                     | φ6                            | -                          | -                            | 8                         | -                        | -                | -  | 31.6                 |
| S1S 26A - 1208F          | 26                         | φ26                              | φ28                         | A1         | 12                    | φ8                            | -                          | -                            | 12                        | -                        | -                | -  | 45.3                 |
| S1S 26B - 0806F          | 26                         | φ26                              | φ28                         | B1         | 8                     | φ6                            | φ22                        | 8                            | 16                        | -                        | -                | -  | 53.7                 |
| S1S 26B - 1208F          | 26                         | φ26                              | φ28                         | B1         | 12                    | φ8                            | φ22                        | 8                            | 20                        | -                        | -                | -  | 66.0                 |



| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 齿顶圆直径<br>Tip Diameter<br><i>da</i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>dd(H7)</i> | 轮毂外径<br>Hub Diameter<br><i>dh</i> | 轮毂度<br>Hub Projection<br><i>lh</i> | 全长<br>Overall Length<br><i>l</i> | 键槽<br>Key Way<br><i>b<sub>2</sub> × t<sub>2</sub></i> | 螺纹孔<br>Set Screw |           | 重量<br>Weight<br><i>W(g)</i> |
|--------------------------|-----------------------------------|---|------------------------------------|------------|------------------------------|--------------------------------------|-----------------------------------|------------------------------------|----------------------------------|---|------------------|-----------|-----------------------------|
|                          |                                   |   |                                    |            |                              |                                      |                                   |                                    |                                  |   | 2-M(120°)        | <i>ls</i> |                             |
| S1S 27A - 0806F          | 27                                | φ27                                     | φ29                                | A1         | 8                            | φ 6                                  | -                                 | -                                  | 8                                | -   | -                | -         | 34.2                        |
| S1S 27A - 1208F          | 27                                | φ27                                     | φ29                                | A1         | 12                           | φ 8                                  | -                                 | -                                  | 12                               | -   | -                | -         | 49.2                        |
| S1S 27B - 0806F          | 27                                | φ27                                     | φ29                                | B1         | 8                            | φ 6                                  | φ24                               | 8                                  | 16                               | -   | -                | -         | 60.8                        |
| S1S 27B - 1208F          | 27                                | φ27                                     | φ29                                | B1         | 12                           | φ 8                                  | φ24                               | 8                                  | 20                               | -   | -                | -         | 74.5                        |
| S1S 28A - 0806F          | 28                                | φ28                                     | φ30                                | A1         | 8                            | φ 6                                  | -                                 | -                                  | 8                                | -   | -                | -         | 36.9                        |
| S1S 28A - 0808           | 28                                | φ28                                     | φ30                                | A1         | 8                            | φ 8                                  | -                                 | -                                  | 8                                | -   | -                | -         | 35.5                        |
| S1S 28A - 1208F          | 28                                | φ28                                     | φ30                                | A1         | 12                           | φ 8                                  | -                                 | -                                  | 12                               | -   | -                | -         | 55.3                        |
| S1S 28A = 1210           | 28                                | φ28                                     | φ30                                | A1         | 12                           | φ10                                  | -                                 | -                                  | 12                               | 3 × 1.4   | -                | -         | 50.2                        |
| S1S 28A = 1212           | 28                                | φ28                                     | φ30                                | A1         | 12                           | φ12                                  | -                                 | -                                  | 12                               | 4 × 1.8   | -                | -         | 46.7                        |
| S1S 28B - 0806           | 28                                | φ28                                     | φ30                                | B1         | 8                            | φ 6                                  | φ20                               | 8                                  | 16                               | -   | -                | -         | 54.9                        |
| S1S 28B * 0806           | 28                                | φ28                                     | φ30                                | B1         | 8                            | φ 6                                  | φ20                               | 8                                  | 16                               | -   | 2-M4             | 4         | 53.7                        |
| S1S 28B * 0808           | 28                                | φ28                                     | φ30                                | B1         | 8                            | φ 8                                  | φ20                               | 8                                  | 16                               | -   | 2-M4             | 4         | 51.1                        |
| S1S 28B * 0810           | 28                                | φ28                                     | φ30                                | B1         | 8                            | φ10                                  | φ20                               | 8                                  | 16                               | -   | 2-M5             | 4         | 52.0                        |
| S1S 28B - 1008           | 28                                | φ28                                     | φ30                                | B1         | 10                           | φ 8(H7)                              | φ24                               | 10                                 | 20                               | -   | -                | -         | 76.01                       |
| S1S 28B * 1010           | 28                                | φ28                                     | φ30                                | B1         | 10                           | φ10                                  | φ24                               | 10                                 | 20                               | -   | 2-M5             | 5         | 69.7                        |
| S1S 28B - 1210F          | 28                                | φ28                                     | φ30                                | B1         | 12                           | φ10                                  | φ24                               | 8                                  | 20                               | -   | -                | -         | 74.1                        |
| S1S 28B * 1210           | 28                                | φ28                                     | φ30                                | B1         | 12                           | φ10                                  | φ24                               | 8                                  | 20                               | -   | 2-M5             | 4         | 72.3                        |
| S1S 28B * 1212           | 28                                | φ28                                     | φ30                                | B1         | 12                           | φ12                                  | φ24                               | 8                                  | 20                               | -   | 2-M5             | 4         | 67.1                        |

### 容许传达动力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |        |        |        |          |          |          |
|----------------|----------------|---|--------|--------|--------|----------|----------|----------|
|                |                | 10  | 100    | 200    | 400    | 800      | 1,200    | 1,500    |
| 21             | 8              | 6.68  | 66.81  | 133.62 | 267.24 | 534.47   | 765.05   | 913.19   |
| 21             | 12             | 10.02                                       | 100.21 | 200.43 | 400.86 | 801.71   | 1,147.57 | 1,369.79 |
| 22             | 8              | 7.15  | 71.52  | 143.04 | 286.09 | 572.18   | 811.72   | 967.23   |
| 22             | 12             | 10.73                                       | 107.28 | 214.57 | 429.13 | 858.27   | 1,217.58 | 1,450.84 |
| 23             | 8              | 7.63  | 76.28  | 152.56 | 305.11 | 610.23   | 858.05   | 1,020.71 |
| 23             | 12             | 11.44                                       | 114.42 | 228.84 | 457.67 | 915.34   | 1,287.07 | 1,531.06 |
| 24             | 8              | 8.10  | 81.04  | 162.07 | 324.14 | 647.77   | 903.58   | 1,073.09 |
| 24             | 10             | 10.13                                       | 101.29 | 202.59 | 405.18 | 809.71   | 1,129.47 | 1,341.36 |
| 24             | 12             | 12.16                                       | 121.55 | 243.11 | 486.21 | 971.65   | 1,355.36 | 1,609.63 |
| 25             | 8              | 8.59  | 85.86  | 171.72 | 343.43 | 687.04   | 949.04   | 1,125.25 |
| 25             | 10             | 10.78                                       | 107.75 | 215.50 | 431.01 | 855.31   | 1,189.99 | 1,412.09 |
| 25             | 12             | 12.88                                       | 128.79 | 257.57 | 515.15 | 1,023.05 | 1,423.56 | 1,687.87 |
| 26             | 8              | 9.07  | 90.71  | 181.43 | 362.85 | 716.14   | 994.08   | 1,176.77 |
| 26             | 12             | 13.61                                       | 136.07 | 272.14 | 544.28 | 1,074.21 | 1,491.12 | 1,765.15 |
| 27             | 8              | 9.56  | 95.60  | 191.20 | 382.40 | 750.06   | 1,038.69 | 1,227.65 |
| 27             | 12             | 14.34                                       | 143.40 | 286.80 | 573.60 | 1,125.09 | 1,558.03 | 1,841.47 |
| 28             | 8              | 10.05                                       | 100.52 | 201.03 | 402.06 | 783.81   | 1,082.86 | 1,277.89 |
| 28             | 10             | 12.56                                       | 125.65 | 251.29 | 502.58 | 979.76   | 1,353.58 | 1,597.36 |
| 28             | 12             | 15.08                                       | 150.77 | 301.55 | 603.10 | 1,175.71 | 1,624.29 | 1,916.83 |

### 容许传达动力表 齿面强度 (W)

Allowable transfer capability table (W) Surface Durability

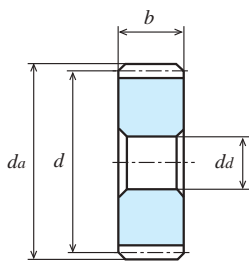
| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |       |       |       |       |       |   |
|---|------|-------|-------|-------|-------|-------|---|
| 10  | 100  | 200   | 400   | 800   | 1,200 | 1,500 |   |
| -   | -    | -     | -     | -     | -     | -     | - |
| -   | -    | -     | -     | -     | -     | -     | - |
| -   | -    | -     | -     | -     | -     | -     | - |
| -   | -    | -     | -     | -     | -     | -     | - |
| -   | -    | -     | -     | -     | -     | -     | - |
| 0.47  | 4.71 | 9.63  | 19.27 | 38.54 | 54.03 | 65.97 |   |
| -   | -    | -     | -     | -     | -     | -     | - |
| -   | -    | -     | -     | -     | -     | -     | - |
| 0.51  | 5.13 | 10.47 | 20.94 | 41.89 | 59.06 | 70.68 |   |
| -   | -    | -     | -     | -     | -     | -     | - |
| -   | -    | -     | -     | -     | -     | -     | - |
| -   | -    | -     | -     | -     | -     | -     | - |
| -   | -    | -     | -     | -     | -     | -     | - |
| 0.66  | 6.60 | 13.19 | 26.81 | 52.78 | 74.14 | 87.96 |   |
| -   | -    | -     | -     | -     | -     | -     | - |

# 直齿轮

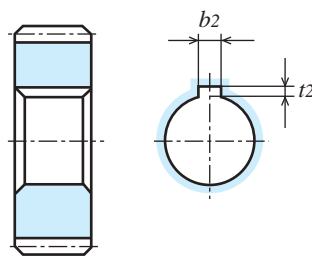
## SPUR GEARS

模数 **1** (齿数 30 ~ 36)

(普通齿)  
FULL DEPTH TOOTH



A1形状  
TYPE A1



A1形状  
TYPE A1

单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|------|-----|-----|------|-------------|
| JIS B 1702-1 8级 | S45C | 20度 | —   | —    | 0.04 ~ 0.10 |

★未做表面处理。【\*】带有两个螺纹孔，有两个固定用螺钉。【=】带有键槽，有键。

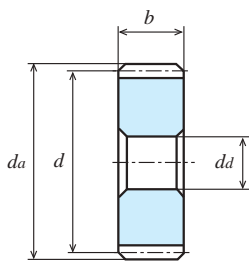
★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★KG 的规格齿轮有「标准齿宽」(轻负荷用)和传达扭矩更大的「加宽齿宽」(重负荷用)。请根据用途选择。

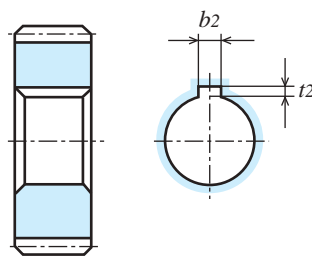
①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>dd(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b2 × t2 | 螺纹孔<br>Set Screw |    | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|--------------------------|------------------|----|----------------------|
|                          |                            |                                  |                             |            |                       |                               |                            |                              |                           |                          | 2-M(120°)        | ls |                      |
| S1S 30A - 0808F          | 30                         | φ30                              | φ32                         | A1         | 8                     | φ8                            | -                          | -                            | 8                         | -                        | -                | -  | 41.2                 |
| S1S 30A = 0810           | 30                         | φ30                              | φ32                         | A1         | 8                     | φ10                           | -                          | -                            | 8                         | 3 × 1.4                  | -                | -  | 39.2                 |
| S1S 30A = 1010           | 30                         | φ30                              | φ32                         | A1         | 10                    | φ10                           | -                          | -                            | 10                        | 3 × 1.4                  | -                | -  | 49.0                 |
| S1S 30A - 1208F          | 30                         | φ30                              | φ32                         | A1         | 12                    | φ8                            | -                          | -                            | 12                        | -                        | -                | -  | 61.9                 |
| S1S 30A = 1210           | 30                         | φ30                              | φ32                         | A1         | 12                    | φ10                           | -                          | -                            | 12                        | 3 × 1.4                  | -                | -  | 58.8                 |
| S1S 30A = 1212           | 30                         | φ30                              | φ32                         | A1         | 12                    | φ12                           | -                          | -                            | 12                        | 4 × 1.8                  | -                | -  | 55.3                 |
| S1S 30B - 0806           | 30                         | φ30                              | φ32                         | B1         | 8                     | φ6                            | φ24                        | 8                            | 16                        | -                        | -                | -  | 69.3                 |
| S1S 30B * 0806           | 30                         | φ30                              | φ32                         | B1         | 8                     | φ6                            | φ24                        | 8                            | 16                        | -                        | 2-M4             | 4  | 67.8                 |
| S1S 30B * 0808           | 30                         | φ30                              | φ32                         | B1         | 8                     | φ8                            | φ24                        | 8                            | 16                        | -                        | 2-M4             | 4  | 65.2                 |
| S1S 30B * 0810           | 30                         | φ30                              | φ32                         | B1         | 8                     | φ10                           | φ24                        | 8                            | 16                        | -                        | 2-M5             | 4  | 61.1                 |
| S1S 30B * 0812           | 30                         | φ30                              | φ32                         | B1         | 8                     | φ12                           | φ24                        | 8                            | 16                        | -                        | 2-M5             | 4  | 57.1                 |
| S1S 30BF - 1006          | 30                         | φ30                              | φ32                         | B1         | 10                    | φ6(H8)                        | φ25                        | 10                           | 20                        | -                        | -                | -  | 89.1                 |
| S1S 30B - 1008           | 30                         | φ30                              | φ32                         | B1         | 10                    | φ8                            | φ25                        | 10                           | 20                        | -                        | -                | -  | 86.19                |
| S1S 30B * 1010           | 30                         | φ30                              | φ32                         | B1         | 10                    | φ10                           | φ25                        | 10                           | 20                        | -                        | 2-M5             | 5  | 79.8                 |
| S1S 30B - 1210           | 30                         | φ30                              | φ32                         | B1         | 12                    | φ10                           | φ24                        | 8                            | 20                        | -                        | -                | -  | 82.7                 |
| S1S 30B * 1210           | 30                         | φ30                              | φ32                         | B1         | 12                    | φ10                           | φ24                        | 8                            | 20                        | -                        | 2-M5             | 4  | 80.9                 |
| S1S 30B * 1212           | 30                         | φ30                              | φ32                         | B1         | 12                    | φ12                           | φ24                        | 8                            | 20                        | -                        | 2-M5             | 4  | 75.7                 |
| S1S 32A - 0608F          | 32                         | φ32                              | φ34                         | A1         | 6                     | φ8                            | -                          | -                            | 6                         | -                        | -                | -  | 35.5                 |
| S1S 32A = 0610           | 32                         | φ32                              | φ34                         | A1         | 6                     | φ10                           | -                          | -                            | 6                         | 3 × 1.4                  | -                | -  | 34.0                 |
| S1S 32A = 0612           | 32                         | φ32                              | φ34                         | A1         | 6                     | φ12                           | -                          | -                            | 6                         | 4 × 1.8                  | -                | -  | 32.2                 |
| S1S 32A - 1008F          | 32                         | φ32                              | φ34                         | A1         | 10                    | φ8                            | -                          | -                            | 10                        | -                        | -                | -  | 59.2                 |
| S1S 32A = 1010           | 32                         | φ32                              | φ34                         | A1         | 10                    | φ10                           | -                          | -                            | 10                        | 3 × 1.4                  | -                | -  | 56.6                 |
| S1S 32A = 1012           | 32                         | φ32                              | φ34                         | A1         | 10                    | φ12                           | -                          | -                            | 10                        | 4 × 1.8                  | -                | -  | 53.7                 |
| S1S 32B - 0606           | 32                         | φ32                              | φ34                         | B1         | 6                     | φ6                            | φ24                        | 10                           | 16                        | -                        | -                | -  | 69.9                 |
| S1S 32B * 0606           | 32                         | φ32                              | φ34                         | B1         | 6                     | φ6                            | φ24                        | 10                           | 16                        | -                        | 2-M4             | 4  | 68.4                 |
| S1S 32B * 0608           | 32                         | φ32                              | φ34                         | B1         | 6                     | φ8                            | φ24                        | 10                           | 16                        | -                        | 2-M4             | 4  | 65.8                 |
| S1S 32B * 0610           | 32                         | φ32                              | φ34                         | B1         | 6                     | φ10                           | φ24                        | 10                           | 16                        | -                        | 2-M5             | 5  | 61.7                 |
| S1S 32B * 0612           | 32                         | φ32                              | φ34                         | B1         | 6                     | φ12                           | φ24                        | 10                           | 16                        | -                        | 2-M5             | 5  | 57.7                 |
| S1S 32B - 1010           | 32                         | φ32                              | φ34                         | B1         | 10                    | φ10                           | φ24                        | 10                           | 20                        | -                        | -                | -  | 86.4                 |
| S1S 32B * 1010           | 32                         | φ32                              | φ34                         | B1         | 10                    | φ10                           | φ24                        | 10                           | 20                        | -                        | 2-M5             | 5  | 84.5                 |
| S1S 32B * 1012           | 32                         | φ32                              | φ34                         | B1         | 10                    | φ12                           | φ24                        | 10                           | 20                        | -                        | 2-M5             | 5  | 79.4                 |
| S1S 34A - 0608F          | 34                         | φ34                              | φ36                         | A1         | 6                     | φ8                            | -                          | -                            | 6                         | -                        | -                | -  | 40.4                 |
| S1S 34A - 1008F          | 34                         | φ34                              | φ36                         | A1         | 10                    | φ8                            | -                          | -                            | 10                        | -                        | -                | -  | 67.3                 |
| S1S 34B - 0606F          | 34                         | φ34                              | φ36                         | B1         | 6                     | φ6                            | φ28                        | 10                           | 16                        | -                        | -                | -  | 87.6                 |
| S1S 34B - 1010F          | 34                         | φ34                              | φ36                         | B1         | 10                    | φ10                           | φ28                        | 10                           | 20                        | -                        | -                | -  | 107.3                |
| S1S 35A - 0608F          | 35                         | φ35                              | φ37                         | A1         | 6                     | φ8                            | -                          | -                            | 6                         | -                        | -                | -  | 43.0                 |
| S1S 35A = 0610           | 35                         | φ35                              | φ37                         | A1         | 6                     | φ10                           | -                          | -                            | 6                         | 3 × 1.4                  | -                | -  | 41.4                 |
| S1S 35A = 0612           | 35                         | φ35                              | φ37                         | A1         | 6                     | φ12                           | -                          | -                            | 6                         | 4 × 1.8                  | -                | -  | 39.7                 |
| S1S 35A - 1008F          | 35                         | φ35                              | φ37                         | A1         | 10                    | φ8                            | -                          | -                            | 10                        | -                        | -                | -  | 71.6                 |
| S1S 35A = 1010           | 35                         | φ35                              | φ37                         | A1         | 10                    | φ10                           | -                          | -                            | 10                        | 3 × 1.4                  | -                | -  | 69.0                 |
| S1S 35A = 1012           | 35                         | φ35                              | φ37                         | A1         | 10                    | φ12                           | -                          | -                            | 10                        | 4 × 1.8                  | -                | -  | 66.1                 |
| S1S 35A = 1015           | 35                         | φ35                              | φ37                         | A1         | 10                    | φ15                           | -                          | -                            | 10                        | 5 × 2.3                  | -                | -  | 60.8                 |





A1形状  
TYPE A1



A1形状  
TYPE A1

单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|------|-----|-----|------|-------------|
| JIS B 1702-1 8级 | S45C | 20度 | —   | —    | 0.04 ~ 0.10 |

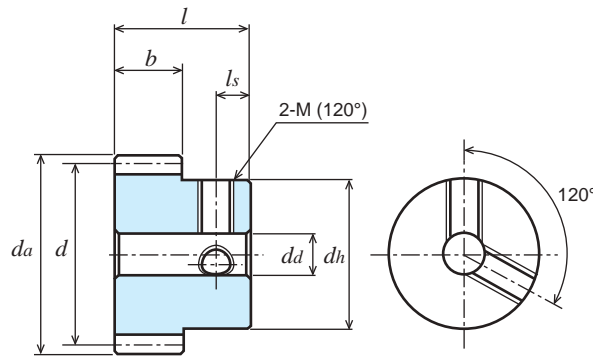
★未做表面处理。【\*】带有两个螺纹孔，有两个固定用螺钉。【=】带有键槽，有键。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★KG 的规格齿轮有「标准齿宽」(轻负荷用)和传达扭矩更大的「加宽齿宽」(重负荷用)。请根据用途选择。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>dd(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b2 × t2 | 螺纹孔<br>Set Screw |    | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|--------------------------|------------------|----|----------------------|
|                          |                            |                                  |                             |            |                       |                               |                            |                              |                           |                          | 2-M(120°)        | ls |                      |
| S1S 38A - 0608F          | 38                         | φ38                              | φ40                         | A1         | 6                     | φ8                            | -                          | -                            | 6                         | -                        | -                | -  | 51.1                 |
| S1S 38A - 1008F          | 38                         | φ38                              | φ40                         | A1         | 10                    | φ8                            | -                          | -                            | 10                        | -                        | -                | -  | 85.1                 |
| S1S 38B - 0608F          | 38                         | φ38                              | φ40                         | B1         | 6                     | φ8                            | φ25                        | 10                           | 16                        | -                        | -                | -  | 85.6                 |
| S1S 38B - 1010F          | 38                         | φ38                              | φ40                         | B1         | 10                    | φ10                           | φ30                        | 10                           | 20                        | -                        | -                | -  | 132.2                |
| S1S 40A - 0608F          | 40                         | φ40                              | φ42                         | A1         | 6                     | φ8                            | -                          | -                            | 6                         | -                        | -                | -  | 56.8                 |
| S1S 40A = 0610           | 40                         | φ40                              | φ42                         | A1         | 6                     | φ10                           | -                          | -                            | 6                         | 3 × 1.4                  | -                | -  | 55.3                 |
| S1S 40A = 0612           | 40                         | φ40                              | φ42                         | A1         | 6                     | φ12                           | -                          | -                            | 6                         | 4 × 1.8                  | -                | -  | 53.5                 |
| S1S 40A - 1008F          | 40                         | φ40                              | φ42                         | A1         | 10                    | φ8                            | -                          | -                            | 10                        | -                        | -                | -  | 94.7                 |
| S1S 40A = 1010           | 40                         | φ40                              | φ42                         | A1         | 10                    | φ10                           | -                          | -                            | 10                        | 3 × 1.4                  | -                | -  | 92.2                 |
| S1S 40A = 1012           | 40                         | φ40                              | φ42                         | A1         | 10                    | φ12                           | -                          | -                            | 10                        | 4 × 1.8                  | -                | -  | 89.2                 |
| S1S 40A = 1015           | 40                         | φ40                              | φ42                         | A1         | 10                    | φ15                           | -                          | -                            | 10                        | 5 × 2.3                  | -                | -  | 83.9                 |
| S1S 40B - 0608           | 40                         | φ40                              | φ42                         | B1         | 6                     | φ8                            | φ24                        | 10                           | 16                        | -                        | -                | -  | 88.4                 |
| S1S 40B * 0608           | 40                         | φ40                              | φ42                         | B1         | 6                     | φ8                            | φ24                        | 10                           | 16                        | -                        | 2-M4             | 4  | 87.1                 |
| S1S 40B * 0610           | 40                         | φ40                              | φ42                         | B1         | 6                     | φ10                           | φ24                        | 10                           | 16                        | -                        | 2-M5             | 5  | 83.1                 |
| S1S 40B * 0612           | 40                         | φ40                              | φ42                         | B1         | 6                     | φ12                           | φ24                        | 10                           | 16                        | -                        | 2-M5             | 5  | 79.0                 |
| S1S 40BF - 1006          | 40                         | φ40                              | φ42                         | B1         | 10                    | φ6(H8)                        | φ30                        | 10                           | 20                        | -                        | -                | -  | 149.1                |
| S1S 40B - 1010F          | 40                         | φ40                              | φ42                         | B1         | 10                    | φ10                           | φ30                        | 10                           | 20                        | -                        | -                | -  | 141.8                |
| S1S 40B * 1010           | 40                         | φ40                              | φ42                         | B1         | 10                    | φ10                           | φ30                        | 10                           | 20                        | -                        | 2-M5             | 5  | 139.3                |
| S1S 40B * 1012           | 40                         | φ40                              | φ42                         | B1         | 10                    | φ12                           | φ30                        | 10                           | 20                        | -                        | 2-M5             | 5  | 134.1                |
| S1S 40B * 1015           | 40                         | φ40                              | φ42                         | B1         | 10                    | φ15                           | φ30                        | 10                           | 20                        | -                        | 2-M5             | 5  | 124.5                |
| S1S 42A - 0608F          | 42                         | φ42                              | φ44                         | A1         | 6                     | φ8                            | -                          | -                            | 6                         | -                        | -                | -  | 62.9                 |
| S1S 42A - 1008F          | 42                         | φ42                              | φ44                         | A1         | 10                    | φ8                            | -                          | -                            | 10                        | -                        | -                | -  | 104.8                |
| S1S 42B - 0608F          | 42                         | φ42                              | φ44                         | B1         | 6                     | φ8                            | φ28                        | 10                           | 16                        | -                        | -                | -  | 107.3                |
| S1S 42B - 1010F          | 42                         | φ42                              | φ44                         | B1         | 10                    | φ10                           | φ30                        | 10                           | 20                        | -                        | -                | -  | 151.9                |
| S1S 44A - 0608F          | 44                         | φ44                              | φ46                         | A1         | 6                     | φ8                            | -                          | -                            | 6                         | -                        | -                | -  | 69.3                 |
| S1S 44A - 1008F          | 44                         | φ44                              | φ46                         | A1         | 10                    | φ8                            | -                          | -                            | 10                        | -                        | -                | -  | 115.4                |
| S1S 44B - 0608F          | 44                         | φ44                              | φ46                         | B1         | 6                     | φ8                            | φ28                        | 10                           | 16                        | -                        | -                | -  | 113.6                |
| S1S 44B - 1010F          | 44                         | φ44                              | φ46                         | B1         | 10                    | φ10                           | φ30                        | 10                           | 20                        | -                        | -                | -  | 162.5                |
| S1S 45A - 0608F          | 45                         | φ45                              | φ47                         | A1         | 6                     | φ8                            | -                          | -                            | 6                         | -                        | -                | -  | 72.5                 |
| S1S 45A = 0610           | 45                         | φ45                              | φ47                         | A1         | 6                     | φ10                           | -                          | -                            | 6                         | 3 × 1.4                  | -                | -  | 71.0                 |
| S1S 45A = 0612           | 45                         | φ45                              | φ47                         | A1         | 6                     | φ12                           | -                          | -                            | 6                         | 4 × 1.8                  | -                | -  | 69.2                 |
| S1S 45A - 1008F          | 45                         | φ45                              | φ47                         | A1         | 10                    | φ8                            | -                          | -                            | 10                        | -                        | -                | -  | 120.9                |
| S1S 45A = 1010           | 45                         | φ45                              | φ47                         | A1         | 10                    | φ10                           | -                          | -                            | 10                        | 3 × 1.4                  | -                | -  | 118.4                |
| S1S 45A = 1012           | 45                         | φ45                              | φ47                         | A1         | 10                    | φ12                           | -                          | -                            | 10                        | 4 × 1.8                  | -                | -  | 115.4                |
| S1S 45A = 1015           | 45                         | φ45                              | φ47                         | A1         | 10                    | φ15                           | -                          | -                            | 10                        | 5 × 2.3                  | -                | -  | 110.1                |
| S1S 45B - 0608           | 45                         | φ45                              | φ47                         | B1         | 6                     | φ8                            | φ24                        | 10                           | 16                        | -                        | -                | -  | 104.2                |
| S1S 45B * 0608           | 45                         | φ45                              | φ47                         | B1         | 6                     | φ8                            | φ24                        | 10                           | 16                        | -                        | 2-M4             | 4  | 102.9                |
| S1S 45B * 0610           | 45                         | φ45                              | φ47                         | B1         | 6                     | φ10                           | φ24                        | 10                           | 16                        | -                        | 2-M5             | 5  | 98.8                 |
| S1S 45B * 0612           | 45                         | φ45                              | φ47                         | B1         | 6                     | φ12                           | φ24                        | 10                           | 16                        | -                        | 2-M5             | 5  | 94.7                 |
| S1S 45B - 1010F          | 45                         | φ45                              | φ47                         | B1         | 10                    | φ10                           | φ30                        | 10                           | 20                        | -                        | -                | -  | 168.0                |
| S1S 45B * 1010           | 45                         | φ45                              | φ47                         | B1         | 10                    | φ10                           | φ30                        | 10                           | 20                        | -                        | 2-M5             | 5  | 165.5                |
| S1S 45B * 1012           | 45                         | φ45                              | φ47                         | B1         | 10                    | φ12                           | φ30                        | 10                           | 20                        | -                        | 2-M5             | 5  | 160.3                |
| S1S 45B * 1015           | 45                         | φ45                              | φ47                         | B1         | 10                    | φ15                           | φ30                        | 10                           | 20                        | -                        | 2-M5             | 5  | 150.7                |
| S1S 46A - 0608F          | 46                         | φ46                              | φ48                         | A1         | 6                     | φ8                            | -                          | -                            | 6                         | -                        | -                | -  | 75.9                 |
| S1S 46A - 1010F          | 46                         | φ46                              | φ48                         | A1         | 10                    | φ10                           | -                          | -                            | 10                        | -                        | -                | -  | 124.3                |



B1形状  
TYPE B1

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>$z$ | 分度圆直径<br>Reference Diameter<br>$d$ | 齿顶圆直径<br>Tip Diameter<br>$d_a$ | 形状<br>Type | 齿宽<br>Face Width<br>$b$ | 孔径<br>Bore Diameter<br>$dd(H7)$ | 轮毂外径<br>Hub Diameter<br>$d_h$ | 轮毂长度<br>Hub Projection<br>$l_h$ | 全长<br>Overall Length<br>$l$ | 键槽<br>Key Way<br>$b_2 \times t_2$ | 螺纹孔<br>Set Screw |       | 重量<br>Weight<br>$W(g)$ |
|--------------------------|------------------------------|------------------------------------|--------------------------------|------------|-------------------------|---------------------------------|-------------------------------|---------------------------------|-----------------------------|-----------------------------------|------------------|-------|------------------------|
|                          |                              |                                    |                                |            |                         |                                 |                               |                                 |                             |                                   | $2-M(120^\circ)$ | $l_s$ |                        |
| S1S 46B - 0608F          | 46                           | $\phi 46$                          | $\phi 48$                      | B1         | 6                       | $\phi 8$                        | $\phi 30$                     | 10                              | 16                          | -                                 | -                | -     | 127.5                  |
| S1S 46B - 1010F          | 46                           | $\phi 46$                          | $\phi 48$                      | B1         | 10                      | $\phi 10$                       | $\phi 30$                     | 10                              | 20                          | -                                 | -                | -     | 173.6                  |
| S1S 48A - 0608F          | 48                           | $\phi 48$                          | $\phi 50$                      | A1         | 6                       | $\phi 8$                        | -                             | -                               | 6                           | -                                 | -                | -     | 82.9                   |
| S1S 48A = 0610           | 48                           | $\phi 48$                          | $\phi 50$                      | A1         | 6                       | $\phi 10$                       | -                             | -                               | 6                           | $3 \times 1.4$                    | -                | -     | 81.3                   |
| S1S 48A = 0612           | 48                           | $\phi 48$                          | $\phi 50$                      | A1         | 6                       | $\phi 12$                       | -                             | -                               | 6                           | $4 \times 1.8$                    | -                | -     | 79.6                   |
| S1S 48A - 1010F          | 48                           | $\phi 48$                          | $\phi 50$                      | A1         | 10                      | $\phi 10$                       | -                             | -                               | 10                          | -                                 | -                | -     | 135.9                  |
| S1S 48A = 1012           | 48                           | $\phi 48$                          | $\phi 50$                      | A1         | 10                      | $\phi 12$                       | -                             | -                               | 10                          | $4 \times 1.8$                    | -                | -     | 132.6                  |
| S1S 48A = 1015           | 48                           | $\phi 48$                          | $\phi 50$                      | A1         | 10                      | $\phi 15$                       | -                             | -                               | 10                          | $5 \times 2.3$                    | -                | -     | 127.3                  |
| S1S 48B - 0608           | 48                           | $\phi 48$                          | $\phi 50$                      | B1         | 6                       | $\phi 8$                        | $\phi 24$                     | 10                              | 16                          | -                                 | -                | -     | 114.5                  |
| S1S 48B * 0608           | 48                           | $\phi 48$                          | $\phi 50$                      | B1         | 6                       | $\phi 8$                        | $\phi 24$                     | 10                              | 16                          | -                                 | 2-M4             | 4     | 113.2                  |
| S1S 48B * 0610           | 48                           | $\phi 48$                          | $\phi 50$                      | B1         | 6                       | $\phi 10$                       | $\phi 24$                     | 10                              | 16                          | -                                 | 2-M5             | 5     | 109.1                  |
| S1S 48B * 0612           | 48                           | $\phi 48$                          | $\phi 50$                      | B1         | 6                       | $\phi 12$                       | $\phi 24$                     | 10                              | 16                          | -                                 | 2-M5             | 5     | 105.0                  |
| S1S 48B - 1010           | 48                           | $\phi 48$                          | $\phi 50$                      | B1         | 10                      | $\phi 10$                       | $\phi 30$                     | 10                              | 20                          | -                                 | -                | -     | 185.3                  |
| S1S 48B * 1010           | 48                           | $\phi 48$                          | $\phi 50$                      | B1         | 10                      | $\phi 10$                       | $\phi 30$                     | 10                              | 20                          | -                                 | 2-M5             | 5     | 182.7                  |
| S1S 48B * 1012           | 48                           | $\phi 48$                          | $\phi 50$                      | B1         | 10                      | $\phi 12$                       | $\phi 30$                     | 10                              | 20                          | -                                 | 2-M5             | 5     | 177.5                  |
| S1S 48B * 1015           | 48                           | $\phi 48$                          | $\phi 50$                      | B1         | 10                      | $\phi 15$                       | $\phi 30$                     | 10                              | 20                          | -                                 | 2-M5             | 5     | 167.9                  |

### 容许传达动力表 弯曲强度 (W)

T (N · m)

Allowable transfer capability table (W) Bending Strength

| 齿数<br>$z$ | 齿宽<br>$b$ | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |        |        |        |          |          |          | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|-----------|-----------|---|--------|--------|--------|----------|----------|----------|---|
|           |           | 10  | 100    | 200    | 400    | 800      | 1,200    | 1,500    | 100   |
| 38        | 6         | 11.31                                       | 113.08 | 226.15 | 452.31 | 830.87   | 1,123.15 | 1,307.07 | 10.79                                       |
| 38        | 10        | 18.85                                       | 188.46 | 376.92 | 753.85 | 1,384.78 | 1,871.91 | 2,178.45 | 17.99                                       |

### 容许传达动力表 弯曲强度 (W)

### 容许传达动力表 齿面强度 (W)

Allowable transfer capability table (W) Bending Strength

Allowable transfer capability table (W) Surface Durability

| 齿数<br>$z$ | 齿宽<br>$b$ | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |        |        |        |          |          |          | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |        |        |        |
|-----------|-----------|---|--------|--------|--------|----------|----------|----------|---|-------|-------|-------|--------|--------|--------|
|           |           | 10  | 100    | 200    | 400    | 800      | 1,200    | 1,500    | 10  | 100   | 200   | 400   | 800    | 1,200  | 1,500  |
| 40        | 6         | 12.08                                       | 120.78 | 241.55 | 483.10 | 877.30   | 1,181.18 | 1,386.01 | -   | -     | -     | -     | -      | -      | -      |
| 40        | 10        | 20.08                                       | 200.84 | 401.69 | 803.38 | 1,459.31 | 1,964.04 | 2,304.26 | 1.39  | 13.93 | 28.06 | 56.55 | 104.72 | 144.51 | 171.21 |

### 容许传达动力表 弯曲强度 (W)

T (N · m)

Allowable transfer capability table (W) Bending Strength

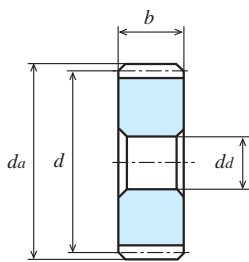
| 齿数<br>$z$ | 齿宽<br>$b$ | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |          |          |          |          |          |          | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|-----------|-----------|---|----------|----------|----------|----------|----------|----------|---|
|           |           | 10  | 100      | 200      | 400      | 800      | 1,200    | 1,500    | 100   |
| 42        | 6         | 12.85                                       | 128.51   | 257.02   | 514.05   | 922.98   | 1,237.83 | 1,465.99 | 12.27                                       |
| 42        | 10        | 21.42                                       | 214.19   | 428.37   | 856.75   | 1,538.29 | 2,063.06 | 2,443.32 | 20.45                                       |
| 44        | 6         | 13.62                                       | 136.19   | 272.39   | 544.77   | 967.23   | 1,292.26 | 1,544.38 | 13.00                                       |
| 44        | 10        | 22.70                                       | 226.99   | 453.98   | 907.95   | 1,612.04 | 2,153.77 | 2,573.97 | 21.67                                       |
| 45        | 6         | 14.01                                       | 140.08   | 280.17   | 560.34   | 989.34   | 1,319.35 | 1,583.81 | 13.37                                       |
| 45        | 10        | 23.35                                       | 233.47   | 466.95   | 933.89   | 1,648.90 | 2,198.92 | 2,639.68 | 22.29                                       |
| 46        | 6         | 14.40                                       | 143.98   | 287.96   | 575.93   | 1,011.26 | 1,346.11 | 1,623.07 | 13.74                                       |
| 46        | 10        | 24.00                                       | 239.97   | 479.94   | 959.88   | 1,685.44 | 2,243.51 | 2,705.12 | 22.91                                       |
| 48        | 6         | 0.015(kW)                                   | 0.15(kW) | 0.30(kW) | 0.60(kW) | 1.05(kW) | 1.40(kW) | 1.70(kW) | 14.32                                       |
| 48        | 10        | 0.025(kW)                                   | 0.25(kW) | 0.50(kW) | 1.01(kW) | 1.75(kW) | 2.33(kW) | 2.83(kW) | 23.87                                       |

# 直齿轮

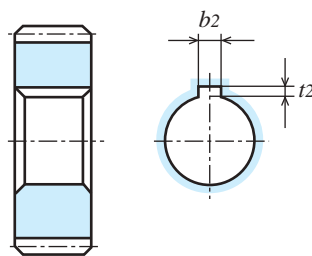
## SPUR GEARS

模数  
MODULE **1** (齿数 50 ~ 60)

(普通齿)  
FULL DEPTH TOOTH



A1形状  
TYPE A1



A1形状  
TYPE A1

单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|------|-----|-----|------|-------------|
| JIS B 1702-1 8级 | S45C | 20度 | —   | —    | 0.04 ~ 0.10 |

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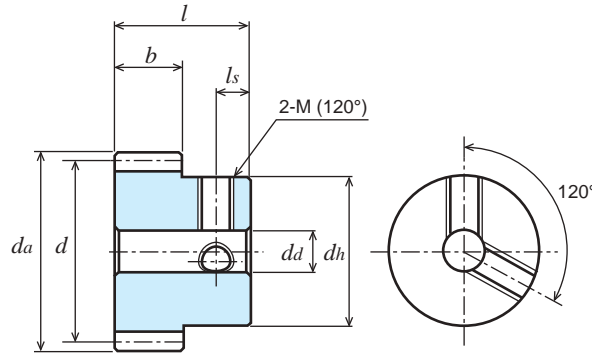
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①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>dd(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b2 × t2 | 螺纹孔<br>Set Screw |    | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|--------------------------|------------------|----|----------------------|
|                          |                            |                                  |                             |            |                       |                               |                            |                              |                           |                          | 2-M(120°)        | ls |                      |
| S1S 50A - 0610F          | 50                         | φ50                              | φ52                         | A1         | 6                     | φ10                           | -                          | -                            | 6                         | -                        | -                | -  | 88.8                 |
| S1S 50A = 0612           | 50                         | φ50                              | φ52                         | A1         | 6                     | φ12                           | -                          | -                            | 6                         | 4 × 1.8                  | -                | -  | 86.8                 |
| S1S 50A - 1008F          | 50                         | φ50                              | φ52                         | A1         | 10                    | φ8                            | -                          | -                            | 10                        | -                        | -                | -  | 150.2                |
| S1S 50A = 1010           | 50                         | φ50                              | φ52                         | A1         | 10                    | φ10                           | -                          | -                            | 10                        | 3 × 1.4                  | -                | -  | 147.6                |
| S1S 50A = 1012           | 50                         | φ50                              | φ52                         | A1         | 10                    | φ12                           | -                          | -                            | 10                        | 4 × 1.8                  | -                | -  | 144.7                |
| S1S 50A = 1015           | 50                         | φ50                              | φ52                         | A1         | 10                    | φ15                           | -                          | -                            | 10                        | 5 × 2.3                  | -                | -  | 139.4                |
| S1S 50B - 0608           | 50                         | φ50                              | φ52                         | B1         | 6                     | φ8                            | φ24                        | 10                           | 16                        | -                        | -                | -  | 121.8                |
| S1S 50B * 0608           | 50                         | φ50                              | φ52                         | B1         | 6                     | φ8                            | φ24                        | 10                           | 16                        | -                        | 2-M4             | 4  | 120.4                |
| S1S 50B * 0610           | 50                         | φ50                              | φ52                         | B1         | 6                     | φ10                           | φ24                        | 10                           | 16                        | -                        | 2-M5             | 5  | 116.4                |
| S1S 50B * 0612           | 50                         | φ50                              | φ52                         | B1         | 6                     | φ12                           | φ24                        | 10                           | 16                        | -                        | 2-M5             | 5  | 112.3                |
| S1S50BF - 1008           | 50                         | φ50                              | φ52                         | B1         | 10                    | φ8                            | φ35                        | 10                           | 20                        | -                        | -                | -  | 221.0                |
| S1S 50B - 1010           | 50                         | φ50                              | φ52                         | B1         | 10                    | φ10                           | φ30                        | 10                           | 20                        | -                        | -                | -  | 197.4                |
| S1S 50B * 1010           | 50                         | φ50                              | φ52                         | B1         | 10                    | φ10                           | φ30                        | 10                           | 20                        | -                        | 2-M5             | 5  | 194.8                |
| S1S 50B * 1012           | 50                         | φ50                              | φ52                         | B1         | 10                    | φ12                           | φ30                        | 10                           | 20                        | -                        | 2-M5             | 5  | 189.6                |
| S1S 50B * 1015           | 50                         | φ50                              | φ52                         | B1         | 10                    | φ15                           | φ30                        | 10                           | 20                        | -                        | 2-M5             | 5  | 180.0                |
| S1S 52A - 0610F          | 52                         | φ52                              | φ54                         | A1         | 6                     | φ10                           | -                          | -                            | 6                         | -                        | -                | -  | 96.3                 |
| S1S 52A - 1010F          | 52                         | φ52                              | φ54                         | A1         | 10                    | φ10                           | -                          | -                            | 10                        | -                        | -                | -  | 160.5                |
| S1S 52B - 0610F          | 52                         | φ52                              | φ54                         | B1         | 6                     | φ10                           | φ40                        | 10                           | 16                        | -                        | -                | -  | 188.8                |
| S1S 52B - 1010F          | 52                         | φ52                              | φ54                         | B1         | 10                    | φ10                           | φ46                        | 10                           | 20                        | -                        | -                | -  | 284.8                |
| S1S 54A - 0610F          | 54                         | φ54                              | φ56                         | A1         | 6                     | φ10                           | -                          | -                            | 6                         | -                        | -                | -  | 104.2                |
| S1S 54A - 1010F          | 54                         | φ54                              | φ56                         | A1         | 10                    | φ10                           | -                          | -                            | 10                        | -                        | -                | -  | 173.6                |
| S1S 54B - 0610F          | 54                         | φ54                              | φ56                         | B1         | 6                     | φ10                           | φ40                        | 10                           | 16                        | -                        | -                | -  | 196.7                |
| S1S 54B - 1010F          | 54                         | φ54                              | φ56                         | B1         | 10                    | φ10                           | φ46                        | 10                           | 20                        | -                        | -                | -  | 297.9                |
| S1S 55A - 0610F          | 55                         | φ55                              | φ57                         | A1         | 6                     | φ10                           | -                          | -                            | 6                         | -                        | -                | -  | 108.2                |
| S1S 55A - 1010F          | 55                         | φ55                              | φ57                         | A1         | 10                    | φ10                           | -                          | -                            | 10                        | -                        | -                | -  | 180.3                |
| S1S 55B - 0610F          | 55                         | φ55                              | φ57                         | B1         | 6                     | φ10                           | φ40                        | 10                           | 16                        | -                        | -                | -  | 200.7                |
| S1S 55B - 1010F          | 55                         | φ55                              | φ57                         | B1         | 10                    | φ10                           | φ46                        | 10                           | 20                        | -                        | -                | -  | 304.6                |
| S1S 56A - 0610F          | 56                         | φ56                              | φ58                         | A1         | 6                     | φ10                           | -                          | -                            | 6                         | -                        | -                | -  | 112.3                |
| S1S 56A = 0612           | 56                         | φ56                              | φ58                         | A1         | 6                     | φ12                           | -                          | -                            | 6                         | 4 × 1.8                  | -                | -  | 110.3                |
| S1S 56A - 1010F          | 56                         | φ56                              | φ58                         | A1         | 10                    | φ10                           | -                          | -                            | 10                        | -                        | -                | -  | 187.2                |
| S1S 56A = 1012           | 56                         | φ56                              | φ58                         | A1         | 10                    | φ12                           | -                          | -                            | 10                        | 4 × 1.8                  | -                | -  | 183.9                |
| S1S 56A = 1015           | 56                         | φ56                              | φ58                         | A1         | 10                    | φ15                           | -                          | -                            | 10                        | 5 × 2.3                  | -                | -  | 178.6                |
| S1S 56B - 0610           | 56                         | φ56                              | φ58                         | B1         | 6                     | φ10                           | φ24                        | 10                           | 16                        | -                        | -                | -  | 141.7                |
| S1S 56B * 0610           | 56                         | φ56                              | φ58                         | B1         | 6                     | φ10                           | φ24                        | 10                           | 16                        | -                        | 2-M5             | 5  | 139.9                |
| S1S 56B * 0612           | 56                         | φ56                              | φ58                         | B1         | 6                     | φ12                           | φ24                        | 10                           | 16                        | -                        | 2-M5             | 5  | 135.8                |
| S1S 56B - 1010           | 56                         | φ56                              | φ58                         | B1         | 10                    | φ10                           | φ30                        | 10                           | 20                        | -                        | -                | -  | 236.7                |
| S1S 56B * 1010           | 56                         | φ56                              | φ58                         | B1         | 10                    | φ10                           | φ30                        | 10                           | 20                        | -                        | 2-M5             | 5  | 234.0                |
| S1S 56B * 1012           | 56                         | φ56                              | φ58                         | B1         | 10                    | φ12                           | φ30                        | 10                           | 20                        | -                        | 2-M5             | 5  | 228.9                |
| S1S 56B * 1015           | 56                         | φ56                              | φ58                         | B1         | 10                    | φ15                           | φ30                        | 10                           | 20                        | -                        | 2-M5             | 5  | 219.3                |
| S1S 58A - 0610F          | 58                         | φ58                              | φ60                         | A1         | 6                     | φ10                           | -                          | -                            | 6                         | -                        | -                | -  | 114.6                |
| S1S 58A - 1010F          | 58                         | φ58                              | φ60                         | A1         | 10                    | φ10                           | -                          | -                            | 10                        | -                        | -                | -  | 195.1                |
| S1S 58B - 0610F          | 58                         | φ58                              | φ60                         | B1         | 6                     | φ10                           | φ40                        | 10                           | 16                        | -                        | -                | -  | 213.2                |
| S1S 58B - 1010F          | 58                         | φ58                              | φ60                         | B1         | 10                    | φ10                           | φ50                        | 10                           | 20                        | -                        | -                | -  | 361.5                |





B1形状  
TYPE B1

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 齿顶圆直径<br>Tip Diameter<br><i>da</i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>dd(H7)</i> | 轮毂外径<br>Hub Diameter<br><i>dh</i> | 轮毂长度<br>Hub Projection<br><i>lh</i> | 全长<br>Overall Length<br><i>l</i> | 键槽<br>Key Way<br><i>b<sub>2</sub> × t<sub>2</sub></i> | 螺纹孔<br>Set Screw |           | 重量<br>Weight<br><i>W(g)</i> |
|--------------------------|-----------------------------------|---|------------------------------------|------------|------------------------------|--------------------------------------|-----------------------------------|-------------------------------------|----------------------------------|---|------------------|-----------|-----------------------------|
|                          |                                   |   |                                    |            |                              |                                      |                                   |                                     |                                  |   | 2-M(120°)        | <i>ls</i> |                             |
| S1S 60A - 0610F          | 60                                | φ60                                     | φ62                                | A1         | 6                            | φ10                                  | -                                 | -                                   | 6                                | -   | -                | -         | 129.5                       |
| S1S 60A = 0612           | 60                                | φ60                                     | φ62                                | A1         | 6                            | φ12                                  | -                                 | -                                   | 6                                | 4 × 1.8   | -                | -         | 127.5                       |
| S1S 60A - 1010F          | 60                                | φ60                                     | φ62                                | A1         | 10                           | φ10                                  | -                                 | -                                   | 10                               | -   | -                | -         | 215.8                       |
| S1S 60A = 1010           | 60                                | φ60                                     | φ62                                | A1         | 10                           | φ10                                  | -                                 | -                                   | 10                               | 3 × 1.4   | -                | -         | 215.5                       |
| S1S 60A = 1012           | 60                                | φ60                                     | φ62                                | A1         | 10                           | φ12                                  | -                                 | -                                   | 10                               | 4 × 1.8   | -                | -         | 212.5                       |
| S1S 60A = 1015           | 60                                | φ60                                     | φ62                                | A1         | 10                           | φ15                                  | -                                 | -                                   | 10                               | 5 × 2.3   | -                | -         | 207.2                       |
| S1S 60B - 0610           | 60                                | φ60                                     | φ62                                | B1         | 6                            | φ10                                  | φ30                               | 10                                  | 16                               | -   | -                | -         | 178.9                       |
| S1S 60B * 0610           | 60                                | φ60                                     | φ62                                | B1         | 6                            | φ10                                  | φ30                               | 10                                  | 16                               | -   | 2-M5             | 5         | 176.3                       |
| S1S 60B * 0612           | 60                                | φ60                                     | φ62                                | B1         | 6                            | φ12                                  | φ30                               | 10                                  | 16                               | -   | 2-M5             | 5         | 172.2                       |
| S1S 60B * 0615           | 60                                | φ60                                     | φ62                                | B1         | 6                            | φ15                                  | φ30                               | 10                                  | 16                               | -   | 2-M5             | 5         | 164.6                       |
| S1S 60BF - 1008          | 60                                | φ60                                     | φ62                                | B1         | 10                           | φ8                                   | φ42                               | 10                                  | 20                               | -   | -                | -         | 321.9                       |
| S1S 60B - 1010           | 60                                | φ60                                     | φ62                                | B1         | 10                           | φ10                                  | φ30                               | 10                                  | 20                               | -   | -                | -         | 265.3                       |
| S1S 60B * 1010           | 60                                | φ60                                     | φ62                                | B1         | 10                           | φ10                                  | φ30                               | 10                                  | 20                               | -   | 2-M5             | 5         | 262.7                       |
| S1S 60B * 1012           | 60                                | φ60                                     | φ62                                | B1         | 10                           | φ12                                  | φ30                               | 10                                  | 20                               | -   | 2-M5             | 5         | 257.5                       |
| S1S 60B * 1015           | 60                                | φ60                                     | φ62                                | B1         | 10                           | φ15                                  | φ30                               | 10                                  | 20                               | -   | 2-M5             | 5         | 247.9                       |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|----------------|----------------|---|-------|-------|-------|-------|-------|-------|
|                |                | 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| 50             | 6              | 0.015                                       | 0.15  | 0.31  | 0.63  | 1.09  | 1.46  | 1.77  |
| 50             | 10             | 0.026                                       | 0.260 | 0.530 | 1.050 | 1.820 | 2.430 | 2.950 |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|---|-------|-------|-------|-------|-------|-------|
| 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| -   | -     | -     | -     | -     | -     | -     |
| 0.002                                       | 0.020 | 0.050 | 0.090 | 0.160 | 0.220 | 0.270 |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |      |      |      |       |       |
|----------------|----------------|---|------|------|------|------|-------|-------|
|                |                | 10  | 100  | 200  | 400  | 800  | 1,200 | 1,500 |
| 52             | 6              | 0.016                                       | 0.16 | 0.33 | 0.66 | 1.13 | 1.53  | 1.85  |
| 52             | 10             | 0.027                                       | 0.27 | 0.55 | 1.10 | 1.89 | 2.55  | 3.09  |
| 54             | 6              | 0.017                                       | 0.17 | 0.35 | 0.68 | 1.17 | 1.59  | 1.93  |
| 54             | 10             | 0.029                                       | 0.29 | 0.58 | 1.14 | 1.96 | 2.65  | 3.21  |
| 55             | 6              | 0.017                                       | 0.17 | 0.35 | 0.70 | 1.20 | 1.62  | 1.96  |
| 55             | 10             | 0.029                                       | 0.29 | 0.59 | 1.16 | 2.00 | 2.71  | 3.28  |
| 56             | 6              | 0.018                                       | 0.18 | 0.36 | 0.71 | 1.22 | 1.65  | 2.00  |
| 56             | 10             | 0.030                                       | 0.30 | 0.61 | 1.19 | 2.03 | 2.76  | 3.34  |
| 58             | 6              | 0.019                                       | 0.19 | 0.38 | 0.74 | 1.25 | 1.72  | 2.08  |
| 58             | 10             | 0.031                                       | 0.31 | 0.63 | 1.23 | 2.09 | 2.87  | 3.47  |

### T (N · m)

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|---|
| 100   |
| 15.27                                       |
| 25.78                                       |
| 16.23                                       |
| 27.69                                       |
| 16.23                                       |
| 27.69                                       |
| 17.18                                       |
| 28.64                                       |
| 18.14                                       |
| 29.60                                       |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|----------------|----------------|---|-------|-------|-------|-------|-------|-------|
|                |                | 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| 60             | 6              | 0.019                                       | 0.19  | 0.39  | 0.76  | 1.29  | 1.78  | 2.15  |
| 60             | 10             | 0.033                                       | 0.330 | 0.660 | 1.270 | 2.150 | 2.960 | 3.570 |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

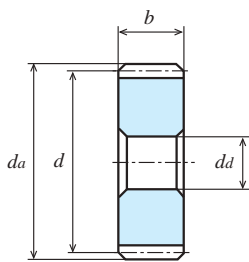
| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|---|-------|-------|-------|-------|-------|-------|
| 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| -   | -     | -     | -     | -     | -     | -     |
| 0.003                                       | 0.030 | 0.070 | 0.130 | 0.230 | 0.320 | 0.400 |

# 直齿轮

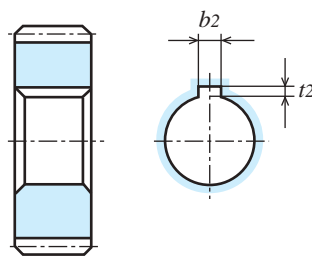
## SPUR GEARS

模数  
MODULE **1** (齿数 62 ~ 75)

(普通齿)  
FULL DEPTH TOOTH



A1形状  
TYPE A1



A1形状  
TYPE A1

单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|------|-----|-----|------|-------------|
| JIS B 1702-1 8级 | S45C | 20度 | —   | —    | 0.04 ~ 0.10 |

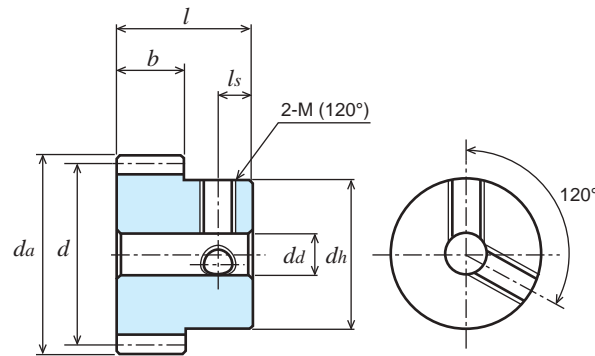
★未做表面处理。【\*】带有两个螺纹孔，有两个固定用螺钉。【=】带有键槽，有键。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★KG 的规格齿轮有「标准齿宽」(轻负荷用)和传达扭矩更大的「加宽齿宽」(重负荷用)。请根据用途选择。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>dd(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b2 × t2 | 螺纹孔<br>Set Screw |    | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|--------------------------|------------------|----|----------------------|
|                          |                            |                                  |                             |            |                       |                               |                            |                              |                           |                          | 2-M(120°)        | ls |                      |
| S1S 62A - 0610F          | 62                         | φ62                              | φ64                         | A1         | 6                     | φ10                           | -                          | -                            | 6                         | -                        | -                | -  | 138.5                |
| S1S 62A - 1010F          | 62                         | φ62                              | φ64                         | A1         | 10                    | φ10                           | -                          | -                            | 10                        | -                        | -                | -  | 230.8                |
| S1S 62B - 0610F          | 62                         | φ62                              | φ64                         | B1         | 6                     | φ10                           | φ40                        | 10                           | 16                        | -                        | -                | -  | 231.0                |
| S1S 62B - 1010F          | 62                         | φ62                              | φ64                         | B1         | 10                    | φ10                           | φ50                        | 10                           | 20                        | -                        | -                | -  | 378.8                |
| S1S 64A - 0610F          | 64                         | φ64                              | φ66                         | A1         | 6                     | φ10                           | -                          | -                            | 6                         | -                        | -                | -  | 147.8                |
| S1S 64A = 0612           | 64                         | φ64                              | φ66                         | A1         | 6                     | φ12                           | -                          | -                            | 6                         | 4 × 1.8                  | -                | -  | 145.9                |
| S1S 64A - 1010F          | 64                         | φ64                              | φ66                         | A1         | 10                    | φ10                           | -                          | -                            | 10                        | -                        | -                | -  | 246.4                |
| S1S 64A = 1012           | 64                         | φ64                              | φ66                         | A1         | 10                    | φ12                           | -                          | -                            | 10                        | 4 × 1.8                  | -                | -  | 243.1                |
| S1S 64A = 1015           | 64                         | φ64                              | φ66                         | A1         | 10                    | φ15                           | -                          | -                            | 10                        | 5 × 2.3                  | -                | -  | 237.8                |
| S1S 64B - 0610           | 64                         | φ64                              | φ66                         | B1         | 6                     | φ10                           | φ30                        | 10                           | 16                        | -                        | -                | -  | 177.3                |
| S1S 64B * 0610           | 64                         | φ64                              | φ66                         | B1         | 6                     | φ10                           | φ30                        | 10                           | 16                        | -                        | 2-M5             | 5  | 175.5                |
| S1S 64B * 0612           | 64                         | φ64                              | φ66                         | B1         | 6                     | φ12                           | φ30                        | 10                           | 16                        | -                        | 2-M5             | 5  | 171.4                |
| S1S 64B - 1010           | 64                         | φ64                              | φ66                         | B1         | 10                    | φ10                           | φ30                        | 10                           | 20                        | -                        | -                | -  | 295.9                |
| S1S 64B * 1010           | 64                         | φ64                              | φ66                         | B1         | 10                    | φ10                           | φ30                        | 10                           | 20                        | -                        | 2-M5             | 5  | 293.3                |
| S1S 64B * 1012           | 64                         | φ64                              | φ66                         | B1         | 10                    | φ12                           | φ30                        | 10                           | 20                        | -                        | 2-M5             | 5  | 288.1                |
| S1S 64B * 1015           | 64                         | φ64                              | φ66                         | B1         | 10                    | φ15                           | φ30                        | 10                           | 20                        | -                        | 2-M5             | 5  | 278.5                |
| S1S 65A - 0610F          | 65                         | φ65                              | φ67                         | A1         | 6                     | φ10                           | -                          | -                            | 6                         | -                        | -                | -  | 152.6                |
| S1S 65A - 1010F          | 65                         | φ65                              | φ67                         | A1         | 10                    | φ10                           | -                          | -                            | 10                        | -                        | -                | -  | 254.3                |
| S1S 65B - 0610F          | 65                         | φ65                              | φ67                         | B1         | 6                     | φ10                           | φ40                        | 10                           | 16                        | -                        | -                | -  | 245.1                |
| S1S 65B - 1010F          | 65                         | φ65                              | φ67                         | B1         | 10                    | φ10                           | φ50                        | 10                           | 20                        | -                        | -                | -  | 402.3                |
| S1S 66A - 0610F          | 66                         | φ66                              | φ68                         | A1         | 6                     | φ10                           | -                          | -                            | 6                         | -                        | -                | -  | 157.4                |
| S1S 66A - 1010F          | 66                         | φ66                              | φ68                         | A1         | 10                    | φ10                           | -                          | -                            | 10                        | -                        | -                | -  | 262.4                |
| S1S 66B - 0610F          | 66                         | φ66                              | φ68                         | B1         | 6                     | φ10                           | φ40                        | 10                           | 16                        | -                        | -                | -  | 249.9                |
| S1S 66B - 1010F          | 66                         | φ66                              | φ68                         | B1         | 10                    | φ10                           | φ50                        | 10                           | 20                        | -                        | -                | -  | 410.4                |
| S1S 68A - 0610F          | 68                         | φ68                              | φ70                         | A1         | 6                     | φ10                           | -                          | -                            | 6                         | -                        | -                | -  | 167.4                |
| S1S 68A - 1010F          | 68                         | φ68                              | φ70                         | A1         | 10                    | φ10                           | -                          | -                            | 10                        | -                        | -                | -  | 278.9                |
| S1S 68B - 0610F          | 68                         | φ68                              | φ70                         | B1         | 6                     | φ10                           | φ40                        | 10                           | 16                        | -                        | -                | -  | 259.8                |
| S1S 68B - 1010F          | 68                         | φ68                              | φ70                         | B1         | 10                    | φ10                           | φ50                        | 10                           | 20                        | -                        | -                | -  | 426.9                |
| S1S 70A - 0610F          | 70                         | φ70                              | φ72                         | A1         | 6                     | φ10                           | -                          | -                            | 6                         | -                        | -                | -  | 177.6                |
| S1S 70A - 1010F          | 70                         | φ70                              | φ72                         | A1         | 10                    | φ10                           | -                          | -                            | 10                        | -                        | -                | -  | 295.9                |
| S1S 70B - 0610F          | 70                         | φ70                              | φ72                         | B1         | 6                     | φ10                           | φ40                        | 10                           | 16                        | -                        | -                | -  | 270.0                |
| S1S 70B - 1010F          | 70                         | φ70                              | φ72                         | B1         | 10                    | φ10                           | φ50                        | 10                           | 20                        | -                        | -                | -  | 442.9                |
| S1S 70BF - 1010          | 70                         | φ70                              | φ72                         | B1         | 10                    | φ10                           | φ55                        | 10                           | 20                        | -                        | -                | -  | 442.9                |
| S1S 72A - 0610F          | 72                         | φ72                              | φ74                         | A1         | 6                     | φ10                           | -                          | -                            | 6                         | -                        | -                | -  | 188.1                |
| S1S 72A = 0612           | 72                         | φ72                              | φ74                         | A1         | 6                     | φ12                           | -                          | -                            | 6                         | 4 × 1.8                  | -                | -  | 186.1                |
| S1S 72A - 1010F          | 72                         | φ72                              | φ74                         | A1         | 10                    | φ10                           | -                          | -                            | 10                        | -                        | -                | -  | 313.4                |
| S1S 72A = 1012           | 72                         | φ72                              | φ74                         | A1         | 10                    | φ12                           | -                          | -                            | 10                        | 4 × 1.8                  | -                | -  | 310.2                |
| S1S 72A = 1015           | 72                         | φ72                              | φ74                         | A1         | 10                    | φ15                           | -                          | -                            | 10                        | 5 × 2.3                  | -                | -  | 304.8                |
| S1S 72B - 0610           | 72                         | φ72                              | φ74                         | B1         | 6                     | φ10                           | φ30                        | 10                           | 16                        | -                        | -                | -  | 217.6                |
| S1S 72B * 0610           | 72                         | φ72                              | φ74                         | B1         | 6                     | φ10                           | φ30                        | 10                           | 16                        | -                        | 2-M5             | 5  | 215.7                |
| S1S 72B * 0612           | 72                         | φ72                              | φ74                         | B1         | 6                     | φ12                           | φ30                        | 10                           | 16                        | -                        | 2-M5             | 5  | 211.6                |
| S1S 72B - 1010           | 72                         | φ72                              | φ74                         | B1         | 10                    | φ10                           | φ30                        | 10                           | 20                        | -                        | -                | -  | 363.0                |
| S1S 72B * 1010           | 72                         | φ72                              | φ74                         | B1         | 10                    | φ10                           | φ30                        | 10                           | 20                        | -                        | 2-M5             | 5  | 360.4                |
| S1S 72B * 1012           | 72                         | φ72                              | φ74                         | B1         | 10                    | φ12                           | φ30                        | 10                           | 20                        | -                        | 2-M5             | 5  | 355.2                |
| S1S 72B * 1015           | 72                         | φ72                              | φ74                         | B1         | 10                    | φ15                           | φ30                        | 10                           | 20                        | -                        | 2-M5             | 5  | 345.6                |



B1形状  
TYPE B1

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 齿顶圆直径<br>Tip Diameter<br><i>da</i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>da</i> (H7) | 轮毂外径<br>Hub Diameter<br><i>dh</i> | 轮毂长度<br>Hub Projection<br><i>lh</i> | 全长<br>Overall Length<br><i>l</i> | 键槽<br>Key Way<br><i>b<sub>2</sub> × t<sub>2</sub></i> | 螺纹孔<br>Set Screw |           | 重量<br>Weight<br><i>W</i> (g) |
|--------------------------|-----------------------------------|---|------------------------------------|------------|------------------------------|---------------------------------------|-----------------------------------|-------------------------------------|----------------------------------|---|------------------|-----------|------------------------------|
|                          |                                   |   |                                    |            |                              |                                       |                                   |                                     |                                  |   | 2-M(120°)        | <i>ls</i> |                              |
| S1S 75A - 0610F          | 75                                | φ75                                     | φ77                                | A1         | 6                            | φ10                                   | -                                 | -                                   | 6                                | -   | -                | -         | 204.4                        |
| S1S 75A - 1010F          | 75                                | φ75                                     | φ77                                | A1         | 10                           | φ10                                   | -                                 | -                                   | 10                               | -   | -                | -         | 340.6                        |
| S1S 75B - 0610F          | 75                                | φ75                                     | φ77                                | B1         | 6                            | φ10                                   | φ40                               | 10                                  | 16                               | -   | -                | -         | 296.9                        |
| S1S 75B - 1010F          | 75                                | φ75                                     | φ77                                | B1         | 10                           | φ10                                   | φ50                               | 10                                  | 20                               | -   | -                | -         | 488.6                        |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |      |      |      |       |       | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|----------------|----------------|---|------|------|------|------|-------|-------|---|
|                |                | 10  | 100  | 200  | 400  | 800  | 1,200 | 1,500 | 100   |
| 62             | 6              | 0.020                                       | 0.20 | 0.41 | 0.79 | 1.33 | 1.84  | 2.22  | 19.09                                       |
| 62             | 10             | 0.034                                       | 0.34 | 0.69 | 1.32 | 2.22 | 3.08  | 3.71  | 32.46                                       |
| 64             | 6              | 0.021                                       | 0.21 | 0.43 | 0.81 | 1.37 | 1.91  | 2.30  | 20.05                                       |
| 64             | 10             | 0.035                                       | 0.35 | 0.71 | 1.36 | 2.29 | 3.18  | 3.83  | 33.42                                       |

### T (N · m)

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |      |      |      |       |       | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|----------------|----------------|---|------|------|------|------|-------|-------|---|-------|-------|-------|-------|-------|-------|
|                |                | 10  | 100  | 200  | 400  | 800  | 1,200 | 1,500 | 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| 65             | 6              | 0.021                                       | 0.21 | 0.43 | 0.83 | 1.39 | 1.94  | 2.34  | -   | -     | -     | -     | -     | -     | -     |
| 65             | 10             | 0.036                                       | 0.36 | 0.73 | 1.38 | 2.32 | 3.23  | 3.90  | -   | -     | -     | -     | -     | -     | -     |
| 66             | 6              | 0.022                                       | 0.22 | 0.44 | 0.84 | 1.41 | 1.97  | 2.38  | -   | -     | -     | -     | -     | -     | -     |
| 66             | 10             | 0.037                                       | 0.37 | 0.74 | 1.40 | 2.35 | 3.28  | 3.96  | -   | -     | -     | -     | -     | -     | -     |
| 68             | 6              | 0.023                                       | 0.23 | 0.46 | 0.86 | 1.44 | 2.03  | 2.45  | -   | -     | -     | -     | -     | -     | -     |
| 68             | 10             | 0.038                                       | 0.38 | 0.77 | 1.44 | 2.41 | 3.38  | 4.09  | -   | -     | -     | -     | -     | -     | -     |
| 70             | 6              | 0.023                                       | 0.23 | 0.47 | 0.94 | 1.48 | 2.09  | 2.53  | -   | -     | -     | -     | -     | -     | -     |
| 70             | 10             | 0.040                                       | 0.40 | 0.79 | 1.48 | 2.46 | 3.47  | 4.19  | 0.005                                       | 0.050 | 0.090 | 0.170 | 0.300 | 0.440 | 0.550 |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |      |      |      |       |       | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|----------------|----------------|---|------|------|------|------|-------|-------|---|
|                |                | 10  | 100  | 200  | 400  | 800  | 1,200 | 1,500 | 100   |
| 72             | 6              | 0.024                                       | 0.24 | 0.49 | 0.91 | 1.52 | 2.15  | 2.60  | 22.91                                       |
| 72             | 10             | 0.041                                       | 0.41 | 0.82 | 1.53 | 2.53 | 3.59  | 4.34  | 39.15                                       |
| 75             | 6              | 0.025                                       | 0.25 | 0.51 | 0.95 | 1.58 | 2.24  | 2.72  | 23.87                                       |
| 75             | 10             | 0.043                                       | 0.43 | 0.86 | 1.59 | 2.64 | 3.74  | 4.53  | 41.06                                       |

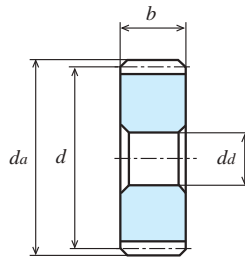
### T (N · m)

# 直齿轮

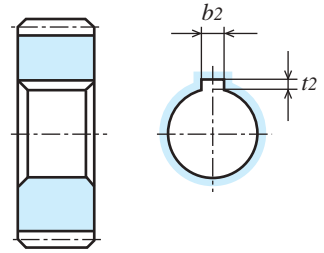
## SPUR GEARS

模数  
MODULE **1** (齿数 80 ~ 110)

(普通齿)  
FULL DEPTH TOOTH



A1形状  
TYPE A1



A1形状  
TYPE A1

单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|------|-----|-----|------|-------------|
| JIS B 1702-1 8级 | S45C | 20度 | —   | —    | 0.04 ~ 0.10 |

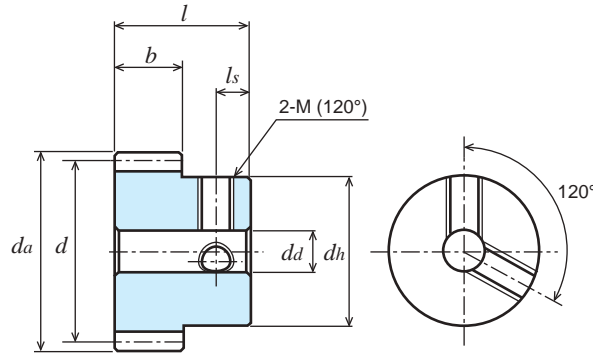
★未做表面处理。【\*】带有两个螺纹孔，有两个固定用螺钉。【=】带有键槽，有键。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★KG 的规格齿轮有「标准齿宽」(轻负荷用)和传达扭矩更大的「加宽齿宽」(重负荷用)。请根据用途选择。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>dd(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b2 × t2 | 螺纹孔<br>Set Screw |    | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|--------------------------|------------------|----|----------------------|
|                          |                            |                                  |                             |            |                       |                               |                            |                              |                           |                          | 2-M(120°)        | ls |                      |
| S1S 80A - 0610F          | 80                         | φ80                              | φ82                         | A1         | 6                     | φ10                           | -                          | -                            | 6                         | -                        | -                | -  | 233.1                |
| S1S 80A = 0612           | 80                         | φ80                              | φ82                         | A1         | 6                     | φ12                           | -                          | -                            | 6                         | 4 × 1.8                  | -                | -  | 231.1                |
| S1S 80A = 0615           | 80                         | φ80                              | φ82                         | A1         | 6                     | φ15                           | -                          | -                            | 6                         | 5 × 2.3                  | -                | -  | 227.9                |
| S1S 80A - 1010F          | 80                         | φ80                              | φ82                         | A1         | 10                    | φ10                           | -                          | -                            | 10                        | -                        | -                | -  | 388.4                |
| S1S 80A = 1010           | 80                         | φ80                              | φ82                         | A1         | 10                    | φ10                           | -                          | -                            | 10                        | 3 × 1.4                  | -                | -  | 388.1                |
| S1S 80A = 1012           | 80                         | φ80                              | φ82                         | A1         | 10                    | φ12                           | -                          | -                            | 10                        | 4 × 1.8                  | -                | -  | 385.1                |
| S1S 80A = 1015           | 80                         | φ80                              | φ82                         | A1         | 10                    | φ15                           | -                          | -                            | 10                        | 5 × 2.3                  | -                | -  | 379.8                |
| S1S 80A = 1016           | 80                         | φ80                              | φ82                         | A1         | 10                    | φ16                           | -                          | -                            | 10                        | 5 × 2.3                  | -                | -  | 377.9                |
| S1S 80B - 0610           | 80                         | φ80                              | φ82                         | B1         | 6                     | φ10                           | φ30                        | 10                           | 16                        | -                        | -                | -  | 282.6                |
| S1S 80B * 0610           | 80                         | φ80                              | φ82                         | B1         | 6                     | φ10                           | φ30                        | 10                           | 16                        | -                        | 2-M5             | 5  | 279.9                |
| S1S 80B * 0612           | 80                         | φ80                              | φ82                         | B1         | 6                     | φ12                           | φ30                        | 10                           | 16                        | -                        | 2-M5             | 5  | 275.9                |
| S1S 80B * 0615           | 80                         | φ80                              | φ82                         | B1         | 6                     | φ15                           | φ30                        | 10                           | 16                        | -                        | 2-M5             | 5  | 268.3                |
| S1S 80BF - 1010          | 80                         | φ80                              | φ82                         | B1         | 10                    | φ10                           | φ60                        | 10                           | 20                        | -                        | -                | -  | 603.1                |
| S1S 80B - 1010           | 80                         | φ80                              | φ82                         | B1         | 10                    | φ10                           | φ32                        | 10                           | 20                        | -                        | -                | -  | 445.7                |
| S1S 80B * 1010           | 80                         | φ80                              | φ82                         | B1         | 10                    | φ10                           | φ32                        | 10                           | 20                        | -                        | 2-M5             | 5  | 442.8                |
| S1S 80B * 1012           | 80                         | φ80                              | φ82                         | B1         | 10                    | φ12                           | φ32                        | 10                           | 20                        | -                        | 2-M5             | 5  | 437.6                |
| S1S 80B * 1015           | 80                         | φ80                              | φ82                         | B1         | 10                    | φ15                           | φ32                        | 10                           | 20                        | -                        | 2-M5             | 5  | 428.0                |
| S1S 80B * 1016           | 80                         | φ80                              | φ82                         | B1         | 10                    | φ16                           | φ32                        | 10                           | 20                        | -                        | 2-M5             | 5  | 424.3                |
| S1S 84A - 0610F          | 84                         | φ84                              | φ86                         | A1         | 6                     | φ10                           | -                          | -                            | 6                         | -                        | -                | -  | 257.3                |
| S1S 84A - 1010F          | 84                         | φ84                              | φ86                         | A1         | 10                    | φ10                           | -                          | -                            | 10                        | -                        | -                | -  | 428.9                |
| S1S 84B - 0610F          | 84                         | φ84                              | φ86                         | B1         | 6                     | φ10                           | φ50                        | 10                           | 16                        | -                        | -                | -  | 405.3                |
| S1S 84B - 1010F          | 84                         | φ84                              | φ86                         | B1         | 10                    | φ10                           | φ50                        | 10                           | 20                        | -                        | -                | -  | 576.8                |
| S1S 85A - 0610F          | 85                         | φ85                              | φ87                         | A1         | 6                     | φ10                           | -                          | -                            | 6                         | -                        | -                | -  | 263.6                |
| S1S 85A - 1010F          | 85                         | φ85                              | φ87                         | A1         | 10                    | φ10                           | -                          | -                            | 10                        | -                        | -                | -  | 439.3                |
| S1S 85B - 0610F          | 85                         | φ85                              | φ87                         | B1         | 6                     | φ10                           | φ50                        | 10                           | 16                        | -                        | -                | -  | 411.5                |
| S1S 85B - 1010F          | 85                         | φ85                              | φ87                         | B1         | 10                    | φ10                           | φ50                        | 10                           | 20                        | -                        | -                | -  | 587.3                |
| S1S 90A - 0610F          | 90                         | φ90                              | φ92                         | A1         | 6                     | φ10                           | -                          | -                            | 6                         | -                        | -                | -  | 295.9                |
| S1S 90A - 1010F          | 90                         | φ90                              | φ92                         | A1         | 10                    | φ10                           | -                          | -                            | 10                        | -                        | -                | -  | 493.2                |
| S1S 90B - 0610F          | 90                         | φ90                              | φ92                         | B1         | 6                     | φ10                           | φ50                        | 10                           | 16                        | -                        | -                | -  | 443.9                |
| S1S 90B - 1010F          | 90                         | φ90                              | φ92                         | B1         | 10                    | φ10                           | φ50                        | 10                           | 20                        | -                        | -                | -  | 641.2                |
| S1S 90BF - 1010          | 90                         | φ90                              | φ92                         | B1         | 10                    | φ10                           | φ65                        | 10                           | 20                        | -                        | -                | -  | 746.3                |
| S1S 96A - 0610F          | 96                         | φ96                              | φ98                         | A1         | 6                     | φ10                           | -                          | -                            | 6                         | -                        | -                | -  | 337.2                |
| S1S 96A - 1010F          | 96                         | φ96                              | φ98                         | A1         | 10                    | φ10                           | -                          | -                            | 10                        | -                        | -                | -  | 562.0                |
| S1S 96B - 0610F          | 96                         | φ96                              | φ98                         | B1         | 6                     | φ10                           | φ50                        | 10                           | 16                        | -                        | -                | -  | 485.2                |
| S1S 96B - 1010F          | 96                         | φ96                              | φ98                         | B1         | 10                    | φ10                           | φ50                        | 10                           | 20                        | -                        | -                | -  | 710.0                |
| S1S 100A - 0610F         | 100                        | φ100                             | φ102                        | A1         | 6                     | φ10                           | -                          | -                            | 6                         | -                        | -                | -  | 366.2                |
| S1S 100A = 0612          | 100                        | φ100                             | φ102                        | A1         | 6                     | φ12                           | -                          | -                            | 6                         | 4 × 1.8                  | -                | -  | 364.3                |
| S1S 100A = 0615          | 100                        | φ100                             | φ102                        | A1         | 6                     | φ15                           | -                          | -                            | 6                         | 5 × 2.3                  | -                | -  | 361.1                |
| S1S 100A - 1010F         | 100                        | φ100                             | φ102                        | A1         | 10                    | φ10                           | -                          | -                            | 10                        | -                        | -                | -  | 610.4                |
| S1S 100A = 1010          | 100                        | φ100                             | φ102                        | A1         | 10                    | φ10                           | -                          | -                            | 10                        | 3 × 1.4                  | -                | -  | 610.0                |
| S1S 100A = 1012          | 100                        | φ100                             | φ102                        | A1         | 10                    | φ12                           | -                          | -                            | 10                        | 4 × 1.8                  | -                | -  | 607.1                |
| S1S 100A = 1015          | 100                        | φ100                             | φ102                        | A1         | 10                    | φ15                           | -                          | -                            | 10                        | 5 × 2.3                  | -                | -  | 601.8                |
| S1S 100A = 1016          | 100                        | φ100                             | φ102                        | A1         | 10                    | φ16                           | -                          | -                            | 10                        | 5 × 2.3                  | -                | -  | 599.9                |
| S1S 100A = 1018          | 100                        | φ100                             | φ102                        | A1         | 10                    | φ18                           | -                          | -                            | 10                        | 6 × 2.8                  | -                | -  | 595.2                |



B1形状  
TYPE B1

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>dd(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b <sub>2</sub> × t <sub>2</sub> | 螺纹孔<br>Set Screw |       | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|--|------------------|-------|----------------------|
|                          |                            |                                  |                             |            |                       |                               |                            |                              |                           |  | 2-M(120°)        | ls    |                      |
| S1S 100B - 0610          | 100                        | φ100                             | φ102                        | B1         | 6                     | φ10                           | φ30                        | 10                           | 16                        | -  | -                | 415.8 |                      |
| S1S 100B * 0610          | 100                        | φ100                             | φ102                        | B1         | 6                     | φ10                           | φ30                        | 10                           | 16                        | -  | 2-M5 5           | 413.2 |                      |
| S1S 100B * 0612          | 100                        | φ100                             | φ102                        | B1         | 6                     | φ12                           | φ30                        | 10                           | 16                        | -  | 2-M5 5           | 409.1 |                      |
| S1S 100B * 0615          | 100                        | φ100                             | φ102                        | B1         | 6                     | φ15                           | φ30                        | 10                           | 16                        | -  | 2-M5 5           | 401.5 |                      |
| S1S 100BF - 1010         | 100                        | φ100                             | φ102                        | B1         | 10                    | φ10                           | φ70                        | 10                           | 20                        | -  | -                | 904.9 |                      |
| S1S 100B - 1012          | 100                        | φ100                             | φ102                        | B1         | 10                    | φ12                           | φ36                        | 10                           | 20                        | -  | -                | 679.1 |                      |
| S1S 100B * 1012          | 100                        | φ100                             | φ102                        | B1         | 10                    | φ12                           | φ36                        | 10                           | 20                        | -  | 2-M5 5           | 676.0 |                      |
| S1S 100B * 1015          | 100                        | φ100                             | φ102                        | B1         | 10                    | φ15                           | φ36                        | 10                           | 20                        | -  | 2-M5 5           | 666.4 |                      |
| S1S 100B * 1016          | 100                        | φ100                             | φ102                        | B1         | 10                    | φ16                           | φ36                        | 10                           | 20                        | -  | 2-M5 5           | 662.7 |                      |
| S1S 100B * 1018          | 100                        | φ100                             | φ102                        | B1         | 10                    | φ18                           | φ36                        | 10                           | 20                        | -  | 2-M5 5           | 654.6 |                      |
| S1S 105A - 0610F         | 105                        | φ105                             | φ107                        | A1         | 6                     | φ10                           | -                          | -                            | 6                         | -  | -                | 404.1 |                      |
| S1S 105A - 1010F         | 105                        | φ105                             | φ107                        | A1         | 10                    | φ10                           | -                          | -                            | 10                        | -  | -                | 673.6 |                      |
| S1S 105B - 0610F         | 105                        | φ105                             | φ107                        | B1         | 6                     | φ10                           | φ50                        | 10                           | 16                        | -  | -                | 552.1 |                      |
| S1S 105B - 1012F         | 105                        | φ105                             | φ107                        | B1         | 10                    | φ12                           | φ50                        | 10                           | 20                        | -  | -                | 816.1 |                      |
| S1S 110A - 0610F         | 110                        | φ110                             | φ112                        | A1         | 6                     | φ10                           | -                          | -                            | 6                         | -  | -                | 443.9 |                      |
| S1S 110A - 1010F         | 110                        | φ110                             | φ112                        | A1         | 10                    | φ10                           | -                          | -                            | 10                        | -  | -                | 739.8 |                      |
| S1S 110B - 0610F         | 110                        | φ110                             | φ112                        | B1         | 6                     | φ10                           | φ50                        | 10                           | 16                        | -  | -                | 591.9 |                      |
| S1S 110B - 1012F         | 110                        | φ110                             | φ112                        | B1         | 10                    | φ12                           | φ50                        | 10                           | 20                        | -  | -                | 882.4 |                      |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br>z | 齿宽<br>b | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|---------|---------|---|-------|-------|-------|-------|-------|-------|
|         |         | 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| 80      | 6       | 0.027                                       | 0.27  | 0.55  | 1.01  | 1.69  | 2.39  | 2.90  |
| 80      | 10      | 0.046                                       | 0.460 | 0.920 | 1.680 | 2.810 | 3.960 | 4.810 |
| 84      | 6       | 0.029                                       | 0.29  | 0.59  | 1.06  | 1.78  | 2.51  | 3.04  |
| 84      | 10      | 0.049                                       | 0.49  | 0.98  | 1.76  | 2.96  | 4.19  | 5.07  |
| 85      | 6       | 0.029                                       | 0.29  | 0.59  | 1.07  | 1.80  | 2.54  | 3.08  |
| 85      | 10      | 0.049                                       | 0.49  | 0.99  | 1.78  | 3.00  | 4.24  | 5.13  |
| 90      | 6       | 0.031                                       | 0.31  | 0.63  | 1.12  | 1.90  | 2.69  | 3.26  |
| 90      | 10      | 0.053                                       | 0.530 | 1.060 | 1.870 | 3.160 | 4.460 | 5.400 |
| 96      | 6       | 0.034                                       | 0.34  | 0.68  | 1.19  | 2.03  | 2.87  | 3.47  |
| 96      | 10      | 0.057                                       | 0.57  | 1.14  | 1.99  | 3.39  | 4.79  | 5.78  |
| 100     | 6       | 0.036                                       | 0.36  | 0.71  | 1.23  | 2.11  | 2.99  | 3.61  |
| 100     | 10      | 0.060                                       | 0.600 | 1.180 | 2.040 | 3.500 | 4.950 | 5.970 |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |   |
|---|-------|-------|-------|-------|-------|-------|---|
| 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |   |
| -   | -     | -     | -     | -     | -     | -     | - |
| 0.006                                       | 0.060 | 0.120 | 0.220 | 0.390 | 0.580 | 0.730 |   |
| -   | -     | -     | -     | -     | -     | -     | - |
| -   | -     | -     | -     | -     | -     | -     | - |
| -   | -     | -     | -     | -     | -     | -     | - |
| -   | -     | -     | -     | -     | -     | -     | - |
| 0.008                                       | 0.080 | 0.160 | 0.280 | 0.500 | 0.740 | 0.930 |   |
| -   | -     | -     | -     | -     | -     | -     | - |
| -   | -     | -     | -     | -     | -     | -     | - |
| 0.010                                       | 0.100 | 0.190 | 0.340 | 0.620 | 0.930 | 1.160 |   |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br>z | 齿宽<br>b | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |      |      |      |       |       |
|---------|---------|---|------|------|------|------|-------|-------|
|         |         | 10  | 100  | 200  | 400  | 800  | 1,200 | 1,500 |
| 105     | 6       | 0.038                                       | 0.38 | 0.74 | 1.28 | 2.22 | 3.14  | 3.80  |
| 105     | 10      | 0.063                                       | 0.63 | 1.24 | 2.14 | 3.70 | 5.23  | 6.33  |
| 110     | 6       | 0.040                                       | 0.40 | 0.78 | 1.34 | 2.32 | 3.28  | 4.00  |
| 110     | 10      | 0.066                                       | 0.66 | 1.30 | 2.23 | 3.87 | 5.47  | 6.67  |

### T (N·m)

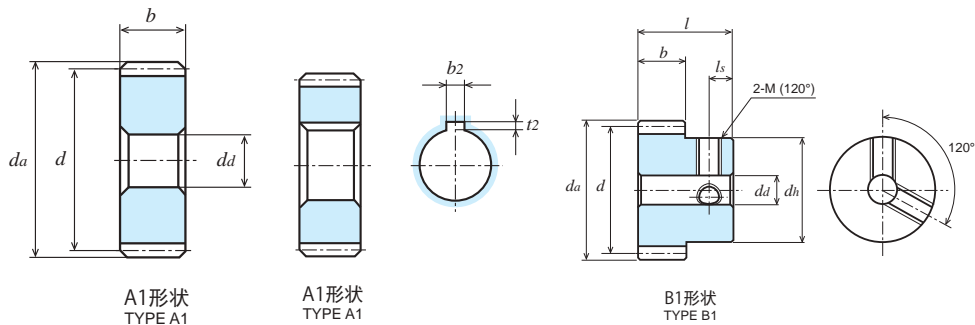
| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|---|
| 100   |
| 36.28                                       |
| 60.16                                       |
| 38.19                                       |
| 63.02                                       |

# 直齿轮

## SPUR GEARS

模数 **1** (齿数 115 ~ 120)  
MODULE

(普通齿)  
FULL DEPTH TOOTH



单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|------|-----|-----|------|-------------|
| JIS B 1702-1 8级 | S45C | 20度 | —   | —    | 0.04 ~ 0.10 |

★未做表面处理。【\*】带有两个螺纹孔，有两个固定用螺钉。【=】带有键槽，有键。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★KG 的规格齿轮有「标准齿宽」(轻负荷用)和传达扭矩更大的「加宽齿宽」(重负荷用)。请根据用途选择。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>dd(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b <sub>2</sub> × l <sub>2</sub> | 螺纹孔<br>Set Screw |    | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|--|------------------|----|----------------------|
|                          |                            |                                  |                             |            |                       |                               |                            |                              |                           |  | 2-M(120°)        | ls |                      |
| S1S 115A - 0610F         | 115                        | φ115                             | φ117                        | A1         | 6                     | φ10                           | -                          | -                            | 6                         | -  | -                | -  | 485.5                |
| S1S 115A - 1010F         | 115                        | φ115                             | φ117                        | A1         | 10                    | φ10                           | -                          | -                            | 10                        | -  | -                | -  | 809.2                |
| S1S 115B - 0610F         | 115                        | φ115                             | φ117                        | B1         | 6                     | φ10                           | φ50                        | 10                           | 16                        | -  | -                | -  | 633.5                |
| S1S 115B - 1012F         | 115                        | φ115                             | φ117                        | B1         | 10                    | φ12                           | φ50                        | 10                           | 20                        | -  | -                | -  | 951.7                |
| S1S 120A - 0610F         | 120                        | φ120                             | φ122                        | A1         | 6                     | φ10                           | -                          | -                            | 6                         | -  | -                | -  | 529.0                |
| S1S 120A = 0612          | 120                        | φ120                             | φ122                        | A1         | 6                     | φ12                           | -                          | -                            | 6                         | 4 × 1.8  | -                | -  | 527.0                |
| S1S 120A = 0615          | 120                        | φ120                             | φ122                        | A1         | 6                     | φ15                           | -                          | -                            | 6                         | 5 × 2.3  | -                | -  | 523.8                |
| S1S 120A = 0616          | 120                        | φ120                             | φ122                        | A1         | 6                     | φ16                           | -                          | -                            | 6                         | 5 × 2.3  | -                | -  | 522.7                |
| S1S 120A - 1010F         | 120                        | φ120                             | φ122                        | A1         | 10                    | φ10                           | -                          | -                            | 10                        | -  | -                | -  | 881.6                |
| S1S 120A = 1010          | 120                        | φ120                             | φ122                        | A1         | 10                    | φ10                           | -                          | -                            | 10                        | 3 × 1.4  | -                | -  | 881.3                |
| S1S 120A = 1012          | 120                        | φ120                             | φ122                        | A1         | 10                    | φ12                           | -                          | -                            | 10                        | 4 × 1.8  | -                | -  | 878.4                |
| S1S 120A = 1015          | 120                        | φ120                             | φ122                        | A1         | 10                    | φ15                           | -                          | -                            | 10                        | 5 × 2.3  | -                | -  | 873.0                |
| S1S 120A = 1016          | 120                        | φ120                             | φ122                        | A1         | 10                    | φ16                           | -                          | -                            | 10                        | 5 × 2.3  | -                | -  | 871.1                |
| S1S 120A = 1018          | 120                        | φ120                             | φ122                        | A1         | 10                    | φ18                           | -                          | -                            | 10                        | 6 × 2.8  | -                | -  | 866.5                |
| S1S 120B - 0610          | 120                        | φ120                             | φ122                        | B1         | 6                     | φ10                           | φ30                        | 10                           | 16                        | -  | -                | -  | 578.7                |
| S1S 120B * 0610          | 120                        | φ120                             | φ122                        | B1         | 6                     | φ10                           | φ30                        | 10                           | 16                        | -  | 2-M5             | 5  | 576.1                |
| S1S 120B * 0612          | 120                        | φ120                             | φ122                        | B1         | 6                     | φ12                           | φ30                        | 10                           | 16                        | -  | 2-M5             | 5  | 572.0                |
| S1S 120B * 0615          | 120                        | φ120                             | φ122                        | B1         | 6                     | φ15                           | φ30                        | 10                           | 16                        | -  | 2-M5             | 5  | 564.4                |
| S1S 120BF - 1010         | 120                        | φ120                             | φ122                        | B1         | 10                    | φ10                           | φ90                        | 10                           | 20                        | -  | -                | -  | 1373.2               |
| S1S 120B - 1012          | 120                        | φ120                             | φ122                        | B1         | 10                    | φ12                           | φ36                        | 10                           | 20                        | -  | -                | -  | 950.6                |
| S1S 120B * 1012          | 120                        | φ120                             | φ122                        | B1         | 10                    | φ12                           | φ36                        | 10                           | 20                        | -  | 2-M5             | 5  | 947.4                |
| S1S 120B * 1015          | 120                        | φ120                             | φ122                        | B1         | 10                    | φ15                           | φ36                        | 10                           | 20                        | -  | 2-M5             | 5  | 937.8                |
| S1S 120B * 1016          | 120                        | φ120                             | φ122                        | B1         | 10                    | φ16                           | φ36                        | 10                           | 20                        | -  | 2-M5             | 5  | 934.1                |
| S1S 120B * 1018          | 120                        | φ120                             | φ122                        | B1         | 10                    | φ18                           | φ36                        | 10                           | 20                        | -  | 2-M5             | 5  | 926.0                |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br>z | 齿宽<br>b | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |      |      |      |       |       | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|---------|---------|---|------|------|------|------|-------|-------|---|
|         |         | 10  | 100  | 200  | 400  | 800  | 1,200 | 1,500 | 100   |
| 115     | 6       | 0.042                                       | 0.42 | 0.81 | 1.39 | 2.42 | 3.42  | 4.21  | 40.10                                       |
| 115     | 10      | 0.070                                       | 0.70 | 1.36 | 2.31 | 4.03 | 5.71  | 7.01  | 66.84                                       |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br>z | 齿宽<br>b | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|---------|---------|---|-------|-------|-------|-------|-------|-------|
|         |         | 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| 120     | 6       | 0.044                                       | 0.44  | 0.85  | 1.43  | 2.52  | 3.56  | 4.41  |
| 120     | 10      | 0.073                                       | 0.730 | 1.400 | 2.380 | 4.160 | 5.890 | 7.290 |

### T (N · m)

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|---|-------|-------|-------|-------|-------|-------|
| 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| -   | -     | -     | -     | -     | -     | -     |
| 0.014                                       | 0.140 | 0.280 | 0.480 | 0.910 | 1.360 | 1.740 |

# Memo

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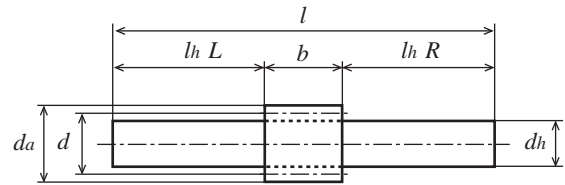
技术数据  
REFERENCE DATA

# 直齿轮

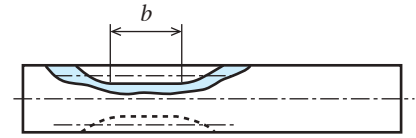
## SPUR GEARS

模数  
MODULE 1.25 (齿数 8 ~ 27)

(普通齿)  
FULL DEPTH TOOTH



L1形状  
TYPE L1



L2形状  
TYPE L2

单位 : mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|------|-----|-----|------|-------------|
| JIS B 1702-1 8级 | S45C | 20度 | -   | -    | 0.04 ~ 0.10 |

★未做表面处理。 ★【变位】是变位系数 X=0.5 的变位齿轮

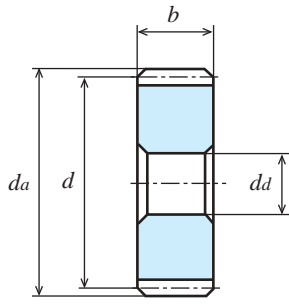
★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★KG 的规格齿轮有「标准齿宽」(轻负荷用)和传达扭矩更大的「加宽齿宽」(重负荷用)。请根据用途选择。

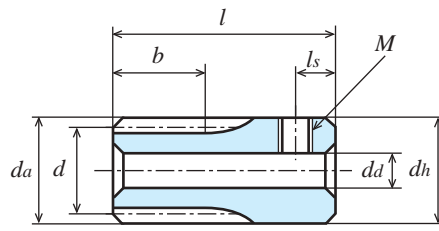
①同一种材料,一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 分度圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|-------------------------------|---------------------------|------------------------------|---------------------------|----------------------|
| S1.25S 8L - 1507         | 8                          | 【变位】                             | φ13.3                       | L1         | 15                    | -                             | φ 7 (h9)                  | L20 R40                      | 75                        | 29.8                 |
| S1.25S 8L - 1513F        | 8                          | 【变位】                             | φ13.3                       | L2         | 15                    | -                             | φ13.3                     | L20 R40                      | 75                        | 77.1                 |
| S1.25S 9L - 1514F        | 9                          | 【变位】                             | φ14.56                      | L2         | 15                    | -                             | φ14.56                    | L20 R40                      | 75                        | 92.9                 |
| S1.25S 10L - 1510        | 10                         | 【变位】                             | φ15.83                      | L1         | 15                    | -                             | φ10(h9)                   | L20 R40                      | 75                        | 54.5                 |
| S1.25S 10L - 1515F       | 10                         | 【变位】                             | φ15.83                      | L2         | 15                    | -                             | φ15.83                    | L20 R40                      | 75                        | 110.2                |
| S1.25S 11L - 1517F       | 11                         | 【变位】                             | φ17.1                       | L2         | 15                    | -                             | φ17.1                     | L20 R40                      | 75                        | 129.0                |
| S1.25S 12K - 1508        | 12                         | φ15                              | φ17.5                       | K2         | 15                    | φ 8(H8)                       | φ17.5                     | 22.5                         | 37.5                      | 48.5                 |
| S1.25S 13K - 1508        | 13                         | φ16.25                           | φ18.75                      | K2         | 15                    | φ 8(H8)                       | φ18.75                    | 22.5                         | 37.5                      | 58.4                 |
| S1.25S 14A - 1506        | 14                         | φ17.5                            | φ20                         | A1         | 15                    | φ 6                           | -                         | -                            | 15                        | 25.0                 |
| S1.25S 14K - 1508        | 14                         | φ17.5                            | φ20                         | K2         | 15                    | φ 8(H8)                       | φ20                       | 22.5                         | 37.5                      | 69.0                 |
| S1.25S 15A - 1506        | 15                         | φ18.75                           | φ21.25                      | A1         | 15                    | φ 6                           | -                         | -                            | 15                        | 29.2                 |
| S1.25S 15K - 1508        | 15                         | φ18.75                           | φ21.25                      | K2         | 15                    | φ 8(H8)                       | φ21.25                    | 22.5                         | 37.5                      | 80.4                 |
| S1.25S 16A - 1506        | 16                         | φ20                              | φ22.5                       | A1         | 15                    | φ 6                           | -                         | -                            | 15                        | 33.7                 |
| S1.25S 16K - 1508        | 16                         | φ20                              | φ22.5                       | K2         | 15                    | φ 8(H8)                       | φ22.5                     | 22.5                         | 37.5                      | 92.4                 |
| S1.25S 17A - 1506        | 17                         | φ21.25                           | φ23.75                      | A1         | 15                    | φ 6                           | -                         | -                            | 15                        | 38.4                 |
| S1.25S 17K - 1508        | 17                         | φ21.25                           | φ23.75                      | K2         | 15                    | φ 8(H8)                       | φ23.75                    | 22.5                         | 37.5                      | 105.2                |
| S1.25S 18A - 1006F       | 18                         | φ22.5                            | φ25                         | A1         | 10                    | φ 6                           | -                         | -                            | 10                        | 29.0                 |
| S1.25S 18A - 1508F       | 18                         | φ22.5                            | φ25                         | A1         | 15                    | φ 8                           | -                         | -                            | 15                        | 40.9                 |
| S1.25S 18B - 1006F       | 18                         | φ22.5                            | φ25                         | B1         | 10                    | φ 6(H8)                       | φ16                       | 15                           | 25                        | 48.5                 |
| S1.25S 18B - 1508F       | 18                         | φ22.5                            | φ25                         | B1         | 15                    | φ 8(H8)                       | φ16                       | 15                           | 30                        | 58.7                 |
| S1.25S 19A - 1006F       | 19                         | φ23.75                           | φ26.25                      | A1         | 10                    | φ 6                           | -                         | -                            | 10                        | 32.6                 |
| S1.25S 19A - 1508F       | 19                         | φ23.75                           | φ26.25                      | A1         | 15                    | φ 8                           | -                         | -                            | 15                        | 46.3                 |
| S1.25S 19B - 1006F       | 19                         | φ23.75                           | φ26.25                      | B1         | 10                    | φ 6(H8)                       | φ16                       | 15                           | 25                        | 52.9                 |
| S1.25S 19B - 1508F       | 19                         | φ23.75                           | φ26.25                      | B1         | 15                    | φ 8(H8)                       | φ16                       | 15                           | 30                        | 64.0                 |
| S1.25S 20A - 1008F       | 20                         | φ25                              | φ27.5                       | A1         | 10                    | φ 8                           | -                         | -                            | 10                        | 34.6                 |
| S1.25S 20A - 1510F       | 20                         | φ25                              | φ27.5                       | A1         | 15                    | φ10                           | -                         | -                            | 15                        | 48.6                 |
| S1.25S 20B - 1008F       | 20                         | φ25                              | φ27.5                       | B1         | 10                    | φ 8(H8)                       | φ20                       | 15                           | 25                        | 65.7                 |
| S1.25S 20B - 1510F       | 20                         | φ25                              | φ27.5                       | B1         | 15                    | φ10(H8)                       | φ20                       | 15                           | 30                        | 76.3                 |
| S1.25S 21A - 1008F       | 21                         | φ26.25                           | φ28.75                      | A1         | 10                    | φ 8                           | -                         | -                            | 10                        | 38.5                 |
| S1.25S 21A - 1510F       | 21                         | φ26.25                           | φ28.75                      | A1         | 15                    | φ10                           | -                         | -                            | 15                        | 54.5                 |
| S1.25S 21B - 1008F       | 21                         | φ26.25                           | φ28.75                      | B1         | 10                    | φ 8(H8)                       | φ20                       | 15                           | 25                        | 69.6                 |
| S1.25S 21B - 1510F       | 21                         | φ26.25                           | φ28.75                      | B1         | 15                    | φ10(H8)                       | φ20                       | 15                           | 30                        | 82.2                 |
| S1.25S 22A - 1008F       | 22                         | φ27.5                            | φ30                         | A1         | 10                    | φ 8                           | -                         | -                            | 10                        | 42.7                 |
| S1.25S 22A - 1510F       | 22                         | φ27.5                            | φ30                         | A1         | 15                    | φ10                           | -                         | -                            | 15                        | 60.7                 |
| S1.25S 22B - 1008F       | 22                         | φ27.5                            | φ30                         | B1         | 10                    | φ 8(H8)                       | φ20                       | 15                           | 25                        | 73.8                 |
| S1.25S 22B - 1510F       | 22                         | φ27.5                            | φ30                         | B1         | 15                    | φ10(H8)                       | φ20                       | 15                           | 30                        | 88.4                 |
| S1.25S 23A - 1008F       | 23                         | φ28.75                           | φ31.25                      | A1         | 10                    | φ 8                           | -                         | -                            | 10                        | 47.0                 |
| S1.25S 23A - 1510F       | 23                         | φ28.75                           | φ31.25                      | A1         | 15                    | φ10                           | -                         | -                            | 15                        | 67.2                 |
| S1.25S 23B - 1008F       | 23                         | φ28.75                           | φ31.25                      | B1         | 10                    | φ 8(H8)                       | φ24                       | 15                           | 25                        | 94.4                 |
| S1.25S 23B - 1510F       | 23                         | φ28.75                           | φ31.25                      | B1         | 15                    | φ10(H8)                       | φ24                       | 15                           | 30                        | 111.2                |
| S1.25S 24A - 1008F       | 24                         | φ30                              | φ32.5                       | A1         | 10                    | φ 8                           | -                         | -                            | 10                        | 51.5                 |
| S1.25S 24A - 1510F       | 24                         | φ30                              | φ32.5                       | A1         | 15                    | φ10                           | -                         | -                            | 15                        | 74.0                 |
| S1.25S 24B - 1008F       | 24                         | φ30                              | φ32.5                       | B1         | 10                    | φ 8(H8)                       | φ24                       | 15                           | 25                        | 98.9                 |
| S1.25S 24B - 1510F       | 24                         | φ30                              | φ32.5                       | B1         | 15                    | φ10(H8)                       | φ24                       | 15                           | 30                        | 118.0                |

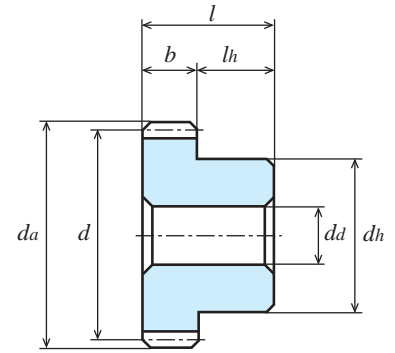




A1形状  
TYPE A1



K2形状  
TYPE K2



B1形状  
TYPE B1

| 产品型号<br>Catalogue Number  | 齿数<br>Number of Teeth<br>$z$ | 分度圆直径<br>Reference Diameter<br>$d$ | 分度圆直径<br>Tip Diameter<br>$d_a$ | 形状<br>Type | 齿宽<br>Face Width<br>$b$ | 孔径<br>Bore Diameter<br>$d_a(H7)$ | 轮毂外径<br>Hub Diameter<br>$d_h$ | 轮毂长度<br>Hub Projection<br>$l_h$ | 全长<br>Overall Length<br>$l$ | 重量<br>Weight<br>$W(g)$ |
|---------------------------|------------------------------|------------------------------------|--------------------------------|------------|-------------------------|----------------------------------|-------------------------------|---------------------------------|-----------------------------|------------------------|
| <b>S1.25S 25A - 1008F</b> | 25                           | $\phi 31.25$                       | $\phi 33.75$                   | A1         | 10                      | $\phi 8$                         | -                             | -                               | 10                          | 56.3                   |
| <b>S1.25S 25A - 1510F</b> | 25                           | $\phi 31.25$                       | $\phi 33.75$                   | A1         | 15                      | $\phi 10$                        | -                             | -                               | 15                          | 81.1                   |
| <b>S1.25S 25B - 1008F</b> | 25                           | $\phi 31.25$                       | $\phi 33.75$                   | B1         | 10                      | $\phi 8(H8)$                     | $\phi 24$                     | 15                              | 25                          | 103.6                  |
| <b>S1.25S 25B - 1510F</b> | 25                           | $\phi 31.25$                       | $\phi 33.75$                   | B1         | 15                      | $\phi 10(H8)$                    | $\phi 24$                     | 15                              | 30                          | 125.1                  |
| <b>S1.25S 26A - 1008F</b> | 26                           | $\phi 32.5$                        | $\phi 35$                      | A1         | 10                      | $\phi 8$                         | -                             | -                               | 10                          | 61.2                   |
| <b>S1.25S 26A - 1510F</b> | 26                           | $\phi 32.5$                        | $\phi 35$                      | A1         | 15                      | $\phi 10$                        | -                             | -                               | 15                          | 88.4                   |
| <b>S1.25S 26B - 1008F</b> | 26                           | $\phi 32.5$                        | $\phi 35$                      | B1         | 10                      | $\phi 8(H8)$                     | $\phi 28$                     | 15                              | 25                          | 127.8                  |
| <b>S1.25S 26B - 1510F</b> | 26                           | $\phi 32.5$                        | $\phi 35$                      | B1         | 15                      | $\phi 10(H8)$                    | $\phi 28$                     | 15                              | 30                          | 151.7                  |
| <b>S1.25S 27A - 1008F</b> | 27                           | $\phi 33.75$                       | $\phi 36.25$                   | A1         | 10                      | $\phi 8$                         | -                             | -                               | 10                          | 66.3                   |
| <b>S1.25S 27A - 1510F</b> | 27                           | $\phi 33.75$                       | $\phi 36.25$                   | A1         | 15                      | $\phi 10$                        | -                             | -                               | 15                          | 96.1                   |
| <b>S1.25S 27B - 1008F</b> | 27                           | $\phi 33.75$                       | $\phi 36.25$                   | B1         | 10                      | $\phi 8(H8)$                     | $\phi 28$                     | 15                              | 25                          | 132.9                  |
| <b>S1.25S 27B - 1510F</b> | 27                           | $\phi 33.75$                       | $\phi 36.25$                   | B1         | 15                      | $\phi 10(H8)$                    | $\phi 28$                     | 15                              | 30                          | 159.3                  |

### 容许传动力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

### T (N · m)

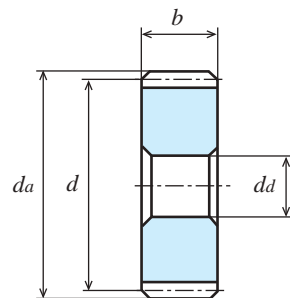
| 齿数<br>$z$ | 齿宽<br>$b$ | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |        |        |          |          |          |          |     | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|-----------|-----------|---|--------|--------|----------|----------|----------|----------|-----|---|
|           |           | 10  | 100    | 200    | 400      | 800      | 1,200    | 1,500    |     |   |
| 8         | 15        | 6.28  | 62.78  | 125.57 | 251.14   | 502.27   | 753.41   | 941.76   | 100 | 5.99  |
| 9         | 15        | 7.45  | 74.50  | 149.01 | 298.02   | 596.04   | 894.06   | 1,117.57 | 100 | 7.11  |
| 10        | 15        | 8.66  | 86.57  | 173.14 | 346.28   | 692.56   | 1,038.85 | 1,286.84 | 100 | 8.26  |
| 11        | 15        | 9.89  | 98.90  | 197.79 | 395.59   | 791.18   | 1,186.76 | 1,448.70 | 100 | 9.44  |
| 12        | 15        | 7.96  | 79.58  | 159.17 | 318.33   | 636.66   | 954.99   | 1,162.68 | 100 | 7.59  |
| 13        | 15        | 9.15  | 91.50  | 182.99 | 365.98   | 731.97   | 1,094.50 | 1,317.82 | 100 | 8.73  |
| 14        | 15        | 10.37                                       | 103.74 | 207.48 | 414.96   | 829.93   | 1,226.57 | 1,473.36 | 100 | 9.90  |
| 15        | 15        | 11.63                                       | 116.26 | 232.52 | 465.04   | 930.08   | 1,358.82 | 1,628.45 | 100 | 11.10                                       |
| 16        | 15        | 12.90                                       | 129.02 | 258.04 | 516.09   | 1,032.18 | 1,490.87 | 1,782.70 | 100 | 12.32                                       |
| 17        | 15        | 14.20                                       | 141.97 | 283.95 | 567.90   | 1,135.79 | 1,622.13 | 1,935.40 | 100 | 13.55                                       |
| 18        | 10        | 10.34                                       | 103.40 | 206.80 | 413.60   | 827.19   | 1,168.29 | 1,390.93 | 100 | 9.87  |
| 18        | 15        | 15.51                                       | 155.10 | 310.20 | 620.40   | 1,240.79 | 1,752.43 | 2,086.40 | 100 | 14.81                                       |
| 19        | 10        | 11.24                                       | 112.40 | 224.79 | 449.59   | 899.18   | 1,256.02 | 1,492.27 | 100 | 10.73                                       |
| 19        | 15        | 16.86                                       | 168.60 | 337.19 | 674.38   | 1,348.77 | 1,884.04 | 2,238.40 | 100 | 16.10                                       |
| 20        | 10        | 12.14                                       | 121.41 | 242.81 | 485.63   | 964.43   | 1,341.98 | 1,591.14 | 100 | 11.59                                       |
| 20        | 15        | 18.21                                       | 182.11 | 364.22 | 728.44   | 1,446.64 | 2,012.97 | 2,386.72 | 100 | 17.39                                       |
| 21        | 10        | 13.05                                       | 130.49 | 260.97 | 521.95   | 1,028.53 | 1,426.86 | 1,688.42 | 100 | 12.46                                       |
| 21        | 15        | 19.57                                       | 195.73 | 391.46 | 782.92   | 1,542.80 | 2,140.29 | 2,532.63 | 100 | 18.69                                       |
| 22        | 10        | 13.97                                       | 139.69 | 279.38 | 558.77   | 1,092.64 | 1,511.30 | 1,784.85 | 100 | 13.33                                       |
| 22        | 15        | 20.95                                       | 209.54 | 419.08 | 838.15   | 1,638.95 | 2,266.94 | 2,677.28 | 100 | 20.01                                       |
| 23        | 10        | 14.90                                       | 148.98 | 297.96 | 595.92   | 1,156.41 | 1,594.85 | 1,879.96 | 100 | 14.22                                       |
| 23        | 15        | 22.35                                       | 223.47 | 446.94 | 893.89   | 1,734.62 | 2,392.28 | 2,819.94 | 100 | 21.34                                       |
| 24        | 10        | 15.83                                       | 158.27 | 316.55 | 633.09   | 1,219.25 | 1,676.71 | 1,972.78 | 100 | 15.11                                       |
| 24        | 15        | 23.74                                       | 237.41 | 474.82 | 949.64   | 1,828.87 | 2,515.06 | 2,959.16 | 100 | 22.67                                       |
| 25        | 10        | 16.77                                       | 167.69 | 335.38 | 670.77   | 1,282.11 | 1,758.20 | 2,064.90 | 100 | 16.01                                       |
| 25        | 15        | 25.15                                       | 251.54 | 503.07 | 1,006.15 | 1,923.16 | 2,637.29 | 3,097.35 | 100 | 24.02                                       |
| 26        | 10        | 17.72                                       | 177.18 | 354.35 | 708.70   | 1,344.52 | 1,838.70 | 2,155.62 | 100 | 16.92                                       |
| 26        | 15        | 26.58                                       | 265.76 | 531.53 | 1,063.05 | 2,016.78 | 2,758.05 | 3,233.43 | 100 | 25.37                                       |
| 27        | 10        | 18.67                                       | 186.72 | 373.44 | 746.88   | 1,406.47 | 1,918.21 | 2,244.93 | 100 | 17.83                                       |
| 27        | 15        | 28.01                                       | 280.08 | 560.16 | 1,120.31 | 2,109.71 | 2,877.31 | 3,367.39 | 100 | 26.74                                       |

# 直齿轮

## SPUR GEARS

模数  
MODULE **1.25** (齿数 28 ~ 48)

(普通齿)  
FULL DEPTH TOOTH



单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|------|-----|-----|------|-------------|
| JIS B 1702-1 8级 | S45C | 20度 | —   | —    | 0.04 ~ 0.10 |

★未做表面处理。

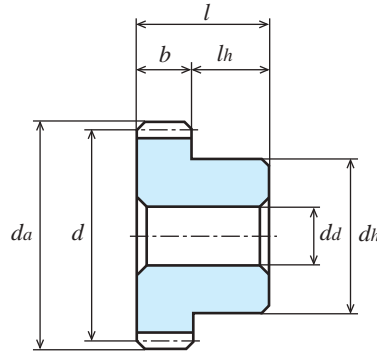
★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★KG 的规格齿轮有「标准齿宽」(轻负荷用)和传达扭矩更大的「加宽齿宽」(重负荷用)。请根据用途选择。

①同一种材料, 一样的齿轮相互啮合时的理想值。

A1形状  
TYPE A1

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 分度圆直径<br>Tip Diameter<br><i>da</i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>da</i> (H7) | 轮毂径<br>Hub Diameter<br><i>dh</i> | 轮毂长度<br>Hub Projection<br><i>lh</i> | 全长<br>Overall Length<br><i>l</i> | 重量<br>Weight<br><i>W</i> (g) |
|--------------------------|-----------------------------------|---|------------------------------------|------------|------------------------------|---------------------------------------|----------------------------------|-------------------------------------|----------------------------------|------------------------------|
| S1.25S 28A - 1008F       | 28                                | φ35                                     | φ37.5                              | A1         | 10                           | φ 8                                   | -                                | -                                   | 10                               | 71.6                         |
| S1.25S 28A - 1510F       | 28                                | φ35                                     | φ37.5                              | A1         | 15                           | φ10                                   | -                                | -                                   | 15                               | 104.0                        |
| S1.25S 28B - 1008F       | 28                                | φ35                                     | φ37.5                              | B1         | 10                           | φ 8(H8)                               | φ28                              | 15                                  | 25                               | 138.2                        |
| S1.25S 28B - 1510F       | 28                                | φ35                                     | φ37.5                              | B1         | 15                           | φ10(H8)                               | φ28                              | 15                                  | 30                               | 167.3                        |
| S1.25S 29A - 1008F       | 29                                | φ36.25                                  | φ38.75                             | A1         | 10                           | φ 8                                   | -                                | -                                   | 10                               | 77.1                         |
| S1.25S 29A - 1510F       | 29                                | φ36.25                                  | φ38.75                             | A1         | 15                           | φ10                                   | -                                | -                                   | 15                               | 112.3                        |
| S1.25S 29B - 1008F       | 29                                | φ36.25                                  | φ38.75                             | B1         | 10                           | φ 8(H8)                               | φ28                              | 15                                  | 25                               | 143.7                        |
| S1.25S 29B - 1510F       | 29                                | φ36.25                                  | φ38.75                             | B1         | 15                           | φ10(H8)                               | φ28                              | 15                                  | 30                               | 175.5                        |
| S1.25S 30A - 1008F       | 30                                | φ37.5                                   | φ40                                | A1         | 10                           | φ 8                                   | -                                | -                                   | 10                               | 82.8                         |
| S1.25S 30A - 1510F       | 30                                | φ37.5                                   | φ40                                | A1         | 15                           | φ10                                   | -                                | -                                   | 15                               | 120.8                        |
| S1.25S 30B - 1008F       | 30                                | φ37.5                                   | φ40                                | B1         | 10                           | φ 8(H8)                               | φ30                              | 15                                  | 25                               | 160.1                        |
| S1.25S 30B - 1510F       | 30                                | φ37.5                                   | φ40                                | B1         | 15                           | φ10(H8)                               | φ30                              | 15                                  | 30                               | 194.8                        |
| S1.25S 32A - 0810F       | 32                                | φ40                                     | φ42.5                              | A1         | 8                            | φ10                                   | -                                | -                                   | 8                                | 74.0                         |
| S1.25S 32A - 1312F       | 32                                | φ40                                     | φ42.5                              | A1         | 13                           | φ12                                   | -                                | -                                   | 13                               | 116.7                        |
| S1.25S 32B - 0810F       | 32                                | φ40                                     | φ42.5                              | B1         | 8                            | φ10                                   | φ30                              | 10                                  | 18                               | 123.3                        |
| S1.25S 32B - 1312F       | 32                                | φ40                                     | φ42.5                              | B1         | 13                           | φ12                                   | φ30                              | 12                                  | 25                               | 172.6                        |
| S1.25S 34A - 0810F       | 34                                | φ42.5                                   | φ45                                | A1         | 8                            | φ10                                   | -                                | -                                   | 8                                | 84.2                         |
| S1.25S 34A - 1312F       | 34                                | φ42.5                                   | φ45                                | A1         | 13                           | φ12                                   | -                                | -                                   | 13                               | 133.2                        |
| S1.25S 34B - 0810F       | 34                                | φ42.5                                   | φ45                                | B1         | 8                            | φ10                                   | φ30                              | 10                                  | 18                               | 133.5                        |
| S1.25S 34B - 1312F       | 34                                | φ42.5                                   | φ45                                | B1         | 13                           | φ12                                   | φ30                              | 12                                  | 25                               | 189.2                        |
| S1.25S 35A - 0810F       | 35                                | φ43.75                                  | φ46.25                             | A1         | 8                            | φ10                                   | -                                | -                                   | 8                                | 89.5                         |
| S1.25S 35A - 1312F       | 35                                | φ43.75                                  | φ46.25                             | A1         | 13                           | φ12                                   | -                                | -                                   | 13                               | 141.9                        |
| S1.25S 35B - 0810F       | 35                                | φ43.75                                  | φ46.25                             | B1         | 8                            | φ10                                   | φ36                              | 10                                  | 18                               | 163.2                        |
| S1.25S 35B - 1312F       | 35                                | φ43.75                                  | φ46.25                             | B1         | 13                           | φ12                                   | φ36                              | 12                                  | 25                               | 227.1                        |
| S1.25S 36A - 0810F       | 36                                | φ45                                     | φ47.5                              | A1         | 8                            | φ10                                   | -                                | -                                   | 8                                | 95.0                         |
| S1.25S 36A - 1312F       | 36                                | φ45                                     | φ47.5                              | A1         | 13                           | φ12                                   | -                                | -                                   | 13                               | 150.8                        |
| S1.25S 36B - 0810F       | 36                                | φ45                                     | φ47.5                              | B1         | 8                            | φ10                                   | φ36                              | 10                                  | 18                               | 168.7                        |
| S1.25S 36B - 1312F       | 36                                | φ45                                     | φ47.5                              | B1         | 13                           | φ12                                   | φ36                              | 12                                  | 25                               | 236.0                        |
| S1.25S 38A - 0810F       | 38                                | φ47.5                                   | φ50                                | A1         | 8                            | φ10                                   | -                                | -                                   | 8                                | 106.4                        |
| S1.25S 38A - 1312F       | 38                                | φ47.5                                   | φ50                                | A1         | 13                           | φ12                                   | -                                | -                                   | 13                               | 169.3                        |
| S1.25S 38B - 0810F       | 38                                | φ47.5                                   | φ50                                | B1         | 8                            | φ10                                   | φ36                              | 10                                  | 18                               | 180.1                        |
| S1.25S 38B - 1312F       | 38                                | φ47.5                                   | φ50                                | B1         | 13                           | φ12                                   | φ36                              | 12                                  | 25                               | 254.5                        |
| S1.25S 40A - 0810F       | 40                                | φ50                                     | φ52.5                              | A1         | 8                            | φ10                                   | -                                | -                                   | 8                                | 118.4                        |
| S1.25S 40A - 1312F       | 40                                | φ50                                     | φ52.5                              | A1         | 13                           | φ12                                   | -                                | -                                   | 13                               | 188.8                        |
| S1.25S 40B - 0810F       | 40                                | φ50                                     | φ52.5                              | B1         | 8                            | φ10                                   | φ40                              | 10                                  | 18                               | 210.9                        |
| S1.25S 40B - 1312F       | 40                                | φ50                                     | φ52.5                              | B1         | 13                           | φ12                                   | φ40                              | 12                                  | 25                               | 296.6                        |
| S1.25S 42A - 0810F       | 42                                | φ52.5                                   | φ55                                | A1         | 8                            | φ10                                   | -                                | -                                   | 8                                | 131.0                        |
| S1.25S 42A - 1312F       | 42                                | φ52.5                                   | φ55                                | A1         | 13                           | φ12                                   | -                                | -                                   | 13                               | 209.4                        |
| S1.25S 42B - 0810F       | 42                                | φ52.5                                   | φ55                                | B1         | 8                            | φ10                                   | φ40                              | 10                                  | 18                               | 223.5                        |
| S1.25S 42B - 1312F       | 42                                | φ52.5                                   | φ55                                | B1         | 13                           | φ12                                   | φ40                              | 12                                  | 25                               | 317.1                        |
| S1.25S 44A - 0810F       | 44                                | φ55                                     | φ57.5                              | A1         | 8                            | φ10                                   | -                                | -                                   | 8                                | 144.3                        |
| S1.25S 44A - 1312F       | 44                                | φ55                                     | φ57.5                              | A1         | 13                           | φ12                                   | -                                | -                                   | 13                               | 230.9                        |
| S1.25S 44B - 0810F       | 44                                | φ55                                     | φ57.5                              | B1         | 8                            | φ10                                   | φ40                              | 10                                  | 18                               | 236.8                        |
| S1.25S 44B - 1312F       | 44                                | φ55                                     | φ57.5                              | B1         | 13                           | φ12                                   | φ40                              | 12                                  | 25                               | 338.6                        |



B1形状  
TYPE B1

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>$z$ | 分度圆直径<br>Reference Diameter<br>$d$ | 分度圆直径<br>Tip Diameter<br>$d_a$ | 形状<br>Type | 齿宽<br>Face Width<br>$b$ | 孔径<br>Bore Diameter<br>$d_d(H7)$ | 轮毂外径<br>Hub Diameter<br>$d_h$ | 轮毂长度<br>Hub Projection<br>$l_h$ | 全长<br>Overall Length<br>$l$ | 重量<br>Weight<br>$W(g)$ |
|--------------------------|------------------------------|------------------------------------|--------------------------------|------------|-------------------------|----------------------------------|-------------------------------|---------------------------------|-----------------------------|------------------------|
| S1.25S 45A - 0810F       | 45                           | $\phi 56.25$                       | $\phi 58.75$                   | A1         | 8                       | $\phi 10$                        | -                             | -                               | 8                           | 151.1                  |
| S1.25S 45A - 1312F       | 45                           | $\phi 56.25$                       | $\phi 58.75$                   | A1         | 13                      | $\phi 12$                        | -                             | -                               | 13                          | 242.1                  |
| S1.25S 45B - 0810F       | 45                           | $\phi 56.25$                       | $\phi 58.75$                   | B1         | 8                       | $\phi 10$                        | $\phi 40$                     | 10                              | 18                          | 243.6                  |
| S1.25S 45B - 1312F       | 45                           | $\phi 56.25$                       | $\phi 58.75$                   | B1         | 13                      | $\phi 12$                        | $\phi 40$                     | 12                              | 25                          | 349.8                  |
| S1.25S 46A - 0810F       | 46                           | $\phi 57.5$                        | $\phi 60$                      | A1         | 8                       | $\phi 10$                        | -                             | -                               | 8                           | 158.1                  |
| S1.25S 46A - 1312F       | 46                           | $\phi 57.5$                        | $\phi 60$                      | A1         | 13                      | $\phi 12$                        | -                             | -                               | 13                          | 253.5                  |
| S1.25S 46B - 0810F       | 46                           | $\phi 57.5$                        | $\phi 60$                      | B1         | 8                       | $\phi 10$                        | $\phi 40$                     | 10                              | 18                          | 250.6                  |
| S1.25S 46B - 1312F       | 46                           | $\phi 57.5$                        | $\phi 60$                      | B1         | 13                      | $\phi 12$                        | $\phi 40$                     | 12                              | 25                          | 361.2                  |
| S1.25S 48A - 0810F       | 48                           | $\phi 60$                          | $\phi 62.5$                    | A1         | 8                       | $\phi 10$                        | -                             | -                               | 8                           | 172.6                  |
| S1.25S 48A - 1312F       | 48                           | $\phi 60$                          | $\phi 62.5$                    | A1         | 13                      | $\phi 12$                        | -                             | -                               | 13                          | 277.0                  |
| S1.25S 48B - 0810F       | 48                           | $\phi 60$                          | $\phi 62.5$                    | B1         | 8                       | $\phi 10$                        | $\phi 40$                     | 10                              | 18                          | 265.1                  |
| S1.25S 48B - 1312F       | 48                           | $\phi 60$                          | $\phi 62.5$                    | B1         | 13                      | $\phi 12$                        | $\phi 40$                     | 12                              | 25                          | 384.7                  |

容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

T (N · m)

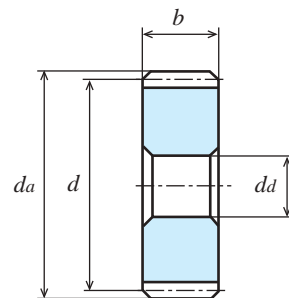
| 齿数<br>$z$ | 齿宽<br>$b$ | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |      |      |      |       |       | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|-----------|-----------|---|------|------|------|------|-------|-------|---|
|           |           | 10  | 100  | 200  | 400  | 800  | 1,200 | 1,500 |   |
| 28        | 10        | 0.019                                       | 0.19 | 0.39 | 0.78 | 1.46 | 1.99  | 2.33  | 100   |
| 28        | 15        | 0.029                                       | 0.29 | 0.58 | 1.17 | 2.20 | 2.99  | 3.49  | 18.14                                       |
| 29        | 10        | 0.020                                       | 0.20 | 0.41 | 0.82 | 1.52 | 2.07  | 2.41  | 27.69                                       |
| 29        | 15        | 0.030                                       | 0.30 | 0.61 | 1.23 | 2.29 | 3.11  | 3.62  | 19.09                                       |
| 30        | 10        | 0.021                                       | 0.21 | 0.43 | 0.86 | 1.58 | 2.14  | 2.50  | 28.64                                       |
| 30        | 15        | 0.032                                       | 0.32 | 0.64 | 1.29 | 2.38 | 3.22  | 3.75  | 20.05                                       |
| 32        | 8         | 0.018                                       | 0.18 | 0.37 | 0.75 | 1.36 | 1.83  | 2.15  | 30.55                                       |
| 32        | 13        | 0.030                                       | 0.30 | 0.61 | 1.22 | 2.21 | 2.98  | 3.50  | 17.18                                       |
| 34        | 8         | 0.020                                       | 0.20 | 0.40 | 0.81 | 1.45 | 1.95  | 2.32  | 28.64                                       |
| 34        | 13        | 0.033                                       | 0.33 | 0.66 | 1.32 | 2.37 | 3.17  | 3.77  | 19.09                                       |
| 35        | 8         | 0.021                                       | 0.21 | 0.42 | 0.84 | 1.50 | 2.01  | 2.40  | 31.51                                       |
| 35        | 13        | 0.034                                       | 0.34 | 0.68 | 1.37 | 2.44 | 3.27  | 3.90  | 20.05                                       |
| 36        | 8         | 0.021                                       | 0.21 | 0.43 | 0.87 | 1.55 | 2.06  | 2.48  | 32.46                                       |
| 36        | 13        | 0.035                                       | 0.35 | 0.71 | 1.42 | 2.52 | 3.36  | 4.03  | 20.05                                       |
| 38        | 8         | 0.023                                       | 0.23 | 0.47 | 0.94 | 1.64 | 2.17  | 2.64  | 33.42                                       |
| 38        | 13        | 0.038                                       | 0.38 | 0.76 | 1.53 | 2.66 | 3.53  | 4.29  | 21.96                                       |
| 40        | 8         | 0.025                                       | 0.25 | 0.50 | 0.99 | 1.72 | 2.31  | 2.80  | 36.28                                       |
| 40        | 13        | 0.040                                       | 0.40 | 0.81 | 1.62 | 2.80 | 3.75  | 4.55  | 23.87                                       |
| 42        | 8         | 0.026                                       | 0.26 | 0.53 | 1.05 | 1.81 | 2.44  | 2.96  | 38.19                                       |
| 42        | 13        | 0.043                                       | 0.43 | 0.87 | 1.71 | 2.94 | 3.97  | 4.81  | 34.82                                       |
| 44        | 8         | 0.028                                       | 0.28 | 0.56 | 1.10 | 1.89 | 2.57  | 3.11  | 41.06                                       |
| 44        | 13        | 0.046                                       | 0.46 | 0.92 | 1.80 | 3.08 | 4.18  | 5.06  | 26.73                                       |
| 45        | 8         | 0.029                                       | 0.29 | 0.58 | 1.13 | 1.94 | 2.63  | 3.19  | 43.92                                       |
| 45        | 13        | 0.047                                       | 0.47 | 0.94 | 1.84 | 3.15 | 4.28  | 5.18  | 27.69                                       |
| 46        | 8         | 0.030                                       | 0.29 | 0.59 | 1.16 | 1.98 | 2.70  | 3.27  | 44.88                                       |
| 46        | 13        | 0.048                                       | 0.48 | 0.97 | 1.89 | 3.21 | 4.39  | 5.31  | 27.69                                       |
| 48        | 8         | 0.031                                       | 0.31 | 0.63 | 1.21 | 2.06 | 2.83  | 3.42  | 45.83                                       |
| 48        | 13        | 0.051                                       | 0.51 | 1.02 | 1.97 | 3.35 | 4.60  | 5.56  | 29.60                                       |
|           |           |   |      |      |      |      |       |       | 48.70                                       |

# 直齿轮

## SPUR GEARS

模数  
MODULE **1.25** (齿数 50 ~ 72)

(普通齿)  
FULL DEPTH TOOTH



单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|------|-----|-----|------|-------------|
| JIS B 1702-1 8级 | S45C | 20度 | —   | —    | 0.04 ~ 0.10 |

★未做表面处理。

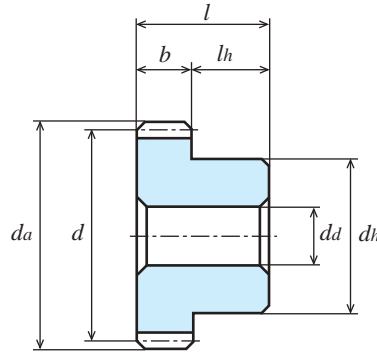
★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★KG 的规格齿轮有「标准齿宽」(轻负荷用)和传达扭矩更大的「加宽齿宽」(重负荷用)。请根据用途选择。

①同一种材料, 一样的齿轮相互啮合时的理想值。

A1形状  
TYPE A1

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 分度圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|-------------------------------|---------------------------|------------------------------|---------------------------|----------------------|
| S1.25S 50A - 0812F       | 50                         | φ62.5                            | φ65                         | A1         | 8                     | φ12                           | -                         | -                            | 8                         | 185.6                |
| S1.25S 50A - 1314F       | 50                         | φ62.5                            | φ65                         | A1         | 13                    | φ14                           | -                         | -                            | 13                        | 297.4                |
| S1.25S 50B - 0812F       | 50                         | φ62.5                            | φ65                         | B1         | 8                     | φ12                           | φ45                       | 10                           | 18                        | 301.5                |
| S1.25S 50B - 1314F       | 50                         | φ62.5                            | φ65                         | B1         | 13                    | φ14                           | φ45                       | 12                           | 25                        | 432.7                |
| S1.25S 52A - 0812F       | 52                         | φ65                              | φ67.5                       | A1         | 8                     | φ12                           | -                         | -                            | 8                         | 201.3                |
| S1.25S 52A - 1314F       | 52                         | φ65                              | φ67.5                       | A1         | 13                    | φ14                           | -                         | -                            | 13                        | 322.9                |
| S1.25S 52B - 0812F       | 52                         | φ65                              | φ67.5                       | B1         | 8                     | φ12                           | φ45                       | 10                           | 18                        | 317.3                |
| S1.25S 52B - 1314F       | 52                         | φ65                              | φ67.5                       | B1         | 13                    | φ14                           | φ45                       | 12                           | 25                        | 458.2                |
| S1.25S 54A - 0812F       | 54                         | φ67.5                            | φ70                         | A1         | 8                     | φ12                           | -                         | -                            | 8                         | 217.6                |
| S1.25S 54A - 1314F       | 54                         | φ67.5                            | φ70                         | A1         | 13                    | φ14                           | -                         | -                            | 13                        | 349.5                |
| S1.25S 54B - 0812F       | 54                         | φ67.5                            | φ70                         | B1         | 8                     | φ12                           | φ45                       | 10                           | 18                        | 333.6                |
| S1.25S 54B - 1314F       | 54                         | φ67.5                            | φ70                         | B1         | 13                    | φ14                           | φ45                       | 12                           | 25                        | 484.8                |
| S1.25S 55A - 0812F       | 55                         | φ68.75                           | φ71.25                      | A1         | 8                     | φ12                           | -                         | -                            | 8                         | 226.0                |
| S1.25S 55A - 1314F       | 55                         | φ68.75                           | φ71.25                      | A1         | 13                    | φ14                           | -                         | -                            | 13                        | 363.1                |
| S1.25S 55B - 0812F       | 55                         | φ68.75                           | φ71.25                      | B1         | 8                     | φ12                           | φ45                       | 10                           | 18                        | 342.1                |
| S1.25S 55B - 1314F       | 55                         | φ68.75                           | φ71.25                      | B1         | 13                    | φ14                           | φ45                       | 12                           | 25                        | 498.4                |
| S1.25S 56A - 0812F       | 56                         | φ70                              | φ72.5                       | A1         | 8                     | φ12                           | -                         | -                            | 8                         | 234.6                |
| S1.25S 56A - 1314F       | 56                         | φ70                              | φ72.5                       | A1         | 13                    | φ14                           | -                         | -                            | 13                        | 377.0                |
| S1.25S 56B - 0812F       | 56                         | φ70                              | φ72.5                       | B1         | 8                     | φ12                           | φ45                       | 10                           | 18                        | 350.6                |
| S1.25S 56B - 1314F       | 56                         | φ70                              | φ72.5                       | B1         | 13                    | φ14                           | φ45                       | 12                           | 25                        | 512.3                |
| S1.25S 58A - 0812F       | 58                         | φ72.5                            | φ75                         | A1         | 8                     | φ12                           | -                         | -                            | 8                         | 252.2                |
| S1.25S 58A - 1314F       | 58                         | φ72.5                            | φ75                         | A1         | 13                    | φ14                           | -                         | -                            | 13                        | 405.6                |
| S1.25S 58B - 0812F       | 58                         | φ72.5                            | φ75                         | B1         | 8                     | φ12                           | φ45                       | 10                           | 18                        | 368.1                |
| S1.25S 58B - 1314F       | 58                         | φ72.5                            | φ75                         | B1         | 13                    | φ14                           | φ45                       | 12                           | 25                        | 540.9                |
| S1.25S 60A - 0812F       | 60                         | φ75                              | φ77.5                       | A1         | 8                     | φ12                           | -                         | -                            | 8                         | 270.3                |
| S1.25S 60A - 1314F       | 60                         | φ75                              | φ77.5                       | A1         | 13                    | φ14                           | -                         | -                            | 13                        | 435.1                |
| S1.25S 60B - 0812F       | 60                         | φ75                              | φ77.5                       | B1         | 8                     | φ12                           | φ50                       | 10                           | 18                        | 415.6                |
| S1.25S 60B - 1314F       | 60                         | φ75                              | φ77.5                       | B1         | 13                    | φ14                           | φ50                       | 12                           | 25                        | 605.6                |
| S1.25S 62A - 0812F       | 62                         | φ77.5                            | φ80                         | A1         | 8                     | φ12                           | -                         | -                            | 8                         | 289.1                |
| S1.25S 62A - 1314F       | 62                         | φ77.5                            | φ80                         | A1         | 13                    | φ14                           | -                         | -                            | 13                        | 465.7                |
| S1.25S 62B - 0812F       | 62                         | φ77.5                            | φ80                         | B1         | 8                     | φ12                           | φ50                       | 10                           | 18                        | 434.4                |
| S1.25S 62B - 1314F       | 62                         | φ77.5                            | φ80                         | B1         | 13                    | φ14                           | φ50                       | 12                           | 25                        | 636.2                |
| S1.25S 64A - 0812F       | 64                         | φ80                              | φ82.5                       | A1         | 8                     | φ12                           | -                         | -                            | 8                         | 308.6                |
| S1.25S 64A - 1314F       | 64                         | φ80                              | φ82.5                       | A1         | 13                    | φ14                           | -                         | -                            | 13                        | 497.2                |
| S1.25S 64B - 0812F       | 64                         | φ80                              | φ82.5                       | B1         | 8                     | φ12                           | φ50                       | 10                           | 18                        | 453.8                |
| S1.25S 64B - 1314F       | 64                         | φ80                              | φ82.5                       | B1         | 13                    | φ14                           | φ50                       | 12                           | 25                        | 667.7                |
| S1.25S 65A - 0812F       | 65                         | φ81.25                           | φ83.75                      | A1         | 8                     | φ12                           | -                         | -                            | 8                         | 318.5                |
| S1.25S 65A - 1314F       | 65                         | φ81.25                           | φ83.75                      | A1         | 13                    | φ14                           | -                         | -                            | 13                        | 513.4                |
| S1.25S 65B - 0812F       | 65                         | φ81.25                           | φ83.75                      | B1         | 8                     | φ12                           | φ50                       | 10                           | 18                        | 463.8                |
| S1.25S 65B - 1314F       | 65                         | φ81.25                           | φ83.75                      | B1         | 13                    | φ14                           | φ50                       | 12                           | 25                        | 683.9                |
| S1.25S 66A - 0812F       | 66                         | φ82.5                            | φ85                         | A1         | 8                     | φ12                           | -                         | -                            | 8                         | 328.6                |
| S1.25S 66A - 1314F       | 66                         | φ82.5                            | φ85                         | A1         | 13                    | φ14                           | -                         | -                            | 13                        | 529.8                |
| S1.25S 66B - 0812F       | 66                         | φ82.5                            | φ85                         | B1         | 8                     | φ12                           | φ50                       | 10                           | 18                        | 473.9                |
| S1.25S 66B - 1314F       | 66                         | φ82.5                            | φ85                         | B1         | 13                    | φ14                           | φ50                       | 12                           | 25                        | 700.3                |



B1形状  
TYPE B1

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>$z$ | 分度圆直径<br>Reference Diameter<br>$d$ | 分度圆直径<br>Tip Diameter<br>$d_a$ | 形状<br>Type | 齿宽<br>Face Width<br>$b$ | 孔径<br>Bore Diameter<br>$d_d(H7)$ | 轮毂外径<br>Hub Diameter<br>$d_h$ | 轮毂长度<br>Hub Projection<br>$l_h$ | 全长<br>Overall Length<br>$l$ | 重量<br>Weight<br>$W(g)$ |
|--------------------------|------------------------------|------------------------------------|--------------------------------|------------|-------------------------|----------------------------------|-------------------------------|---------------------------------|-----------------------------|------------------------|
| S1.25S 68A - 0812F       | 68                           | φ85                                | φ87.5                          | A1         | 8                       | φ12                              | -                             | -                               | 8                           | 349.3                  |
| S1.25S 68A - 1314F       | 68                           | φ85                                | φ87.5                          | A1         | 13                      | φ14                              | -                             | -                               | 13                          | 563.4                  |
| S1.25S 68B - 0812F       | 68                           | φ85                                | φ87.5                          | B1         | 8                       | φ12                              | φ50                           | 10                              | 18                          | 494.5                  |
| S1.25S 68B - 1314F       | 68                           | φ85                                | φ87.5                          | B1         | 13                      | φ14                              | φ50                           | 12                              | 25                          | 733.8                  |
| S1.25S 70A - 0814F       | 70                           | φ87.5                              | φ90                            | A1         | 8                       | φ14                              | -                             | -                               | 8                           | 368.0                  |
| S1.25S 70A - 1316F       | 70                           | φ87.5                              | φ90                            | A1         | 13                      | φ16                              | -                             | -                               | 13                          | 593.1                  |
| S1.25S 70B - 0814F       | 70                           | φ87.5                              | φ90                            | B1         | 8                       | φ14                              | φ55                           | 10                              | 18                          | 542.4                  |
| S1.25S 70B - 1316F       | 70                           | φ87.5                              | φ90                            | B1         | 13                      | φ16                              | φ55                           | 12                              | 25                          | 798.0                  |
| S1.25S 72A - 0814F       | 72                           | φ90                                | φ92.5                          | A1         | 8                       | φ14                              | -                             | -                               | 8                           | 389.8                  |
| S1.25S 72A - 1316F       | 72                           | φ90                                | φ92.5                          | A1         | 13                      | φ16                              | -                             | -                               | 13                          | 628.7                  |
| S1.25S 72B - 0814F       | 72                           | φ90                                | φ92.5                          | B1         | 8                       | φ14                              | φ55                           | 10                              | 18                          | 564.3                  |
| S1.25S 72B - 1316F       | 72                           | φ90                                | φ92.5                          | B1         | 13                      | φ16                              | φ55                           | 12                              | 25                          | 833.6                  |

容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

T (N · m)

| 齿数<br>$z$ | 齿宽<br>$b$ | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |      |      |      |       |       | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|-----------|-----------|---|------|------|------|------|-------|-------|---|
|           |           | 10  | 100  | 200  | 400  | 800  | 1,200 | 1,500 | 100   |
| 50        | 8         | 0.033                                       | 0.33 | 0.66 | 1.27 | 2.14 | 2.96  | 3.57  | 31.51                                       |
| 50        | 13        | 0.054                                       | 0.54 | 1.08 | 2.06 | 3.47 | 4.81  | 5.80  | 51.56                                       |
| 52        | 8         | 0.034                                       | 0.34 | 0.69 | 1.32 | 2.21 | 3.09  | 3.72  | 32.46                                       |
| 52        | 13        | 0.056                                       | 0.56 | 1.13 | 2.15 | 3.60 | 5.02  | 6.06  | 53.47                                       |
| 54        | 8         | 0.036                                       | 0.36 | 0.73 | 1.37 | 2.29 | 3.21  | 3.88  | 34.37                                       |
| 54        | 13        | 0.059                                       | 0.59 | 1.18 | 2.23 | 3.72 | 5.23  | 6.31  | 56.34                                       |
| 55        | 8         | 0.037                                       | 0.37 | 0.74 | 1.40 | 2.33 | 3.28  | 3.96  | 35.33                                       |
| 55        | 13        | 0.060                                       | 0.60 | 1.21 | 2.27 | 3.78 | 5.33  | 6.44  | 57.29                                       |
| 56        | 8         | 0.038                                       | 0.38 | 0.76 | 1.42 | 2.36 | 3.34  | 4.04  | 36.28                                       |
| 56        | 13        | 0.062                                       | 0.62 | 1.24 | 2.32 | 3.84 | 5.43  | 6.57  | 59.20                                       |
| 58        | 8         | 0.039                                       | 0.39 | 0.79 | 1.47 | 2.44 | 3.47  | 4.19  | 37.24                                       |
| 58        | 13        | 0.064                                       | 0.64 | 1.29 | 2.40 | 3.97 | 5.63  | 6.82  | 61.11                                       |
| 60        | 8         | 0.041                                       | 0.41 | 0.82 | 1.52 | 2.53 | 3.59  | 4.35  | 39.15                                       |
| 60        | 13        | 0.067                                       | 0.67 | 1.34 | 2.48 | 4.12 | 5.84  | 7.07  | 63.98                                       |
| 62        | 8         | 0.043                                       | 0.43 | 0.86 | 1.57 | 2.63 | 3.71  | 4.50  | 41.06                                       |
| 62        | 13        | 0.070                                       | 0.70 | 1.40 | 2.56 | 4.27 | 6.03  | 7.32  | 66.84                                       |
| 64        | 8         | 0.044                                       | 0.44 | 0.89 | 1.62 | 2.72 | 3.83  | 4.65  | 42.01                                       |
| 64        | 13        | 0.072                                       | 0.72 | 1.45 | 2.64 | 4.42 | 6.23  | 7.57  | 68.75                                       |
| 65        | 8         | 0.045                                       | 0.45 | 0.91 | 1.65 | 2.76 | 3.90  | 4.73  | 42.97                                       |
| 65        | 13        | 0.074                                       | 0.74 | 1.48 | 2.68 | 4.49 | 6.34  | 7.69  | 70.66                                       |
| 66        | 8         | 0.046                                       | 0.46 | 0.92 | 1.67 | 2.81 | 3.96  | 4.81  | 43.92                                       |
| 66        | 13        | 0.075                                       | 0.75 | 1.51 | 2.72 | 4.56 | 6.44  | 7.81  | 71.62                                       |
| 68        | 8         | 0.048                                       | 0.48 | 0.96 | 1.72 | 2.90 | 4.09  | 4.96  | 45.83                                       |
| 68        | 13        | 0.078                                       | 0.78 | 1.56 | 2.80 | 4.71 | 6.65  | 8.06  | 74.48                                       |
| 70        | 8         | 0.049                                       | 0.49 | 0.99 | 1.77 | 2.98 | 4.22  | 5.11  | 46.79                                       |
| 70        | 13        | 0.080                                       | 0.80 | 1.61 | 2.87 | 4.85 | 6.85  | 8.30  | 76.39                                       |
| 72        | 8         | 0.051                                       | 0.51 | 1.02 | 1.81 | 3.07 | 4.34  | 5.25  | 48.70                                       |
| 72        | 13        | 0.083                                       | 0.84 | 1.67 | 2.96 | 5.00 | 7.06  | 8.55  | 80.21                                       |

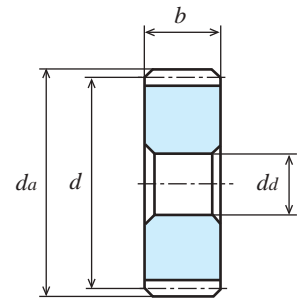
# 直齿轮

## SPUR GEARS

模数  
MODULE

1.25 (齿数 75 ~ 120)

(普通齿)  
FULL DEPTH TOOTH



单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|------|-----|-----|------|-------------|
| JIS B 1702-1 8级 | S45C | 20度 | —   | —    | 0.04 ~ 0.10 |

★未做表面处理。

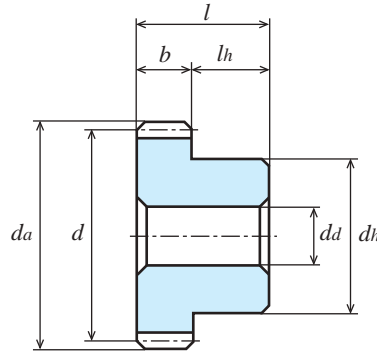
★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★KG 的规格齿轮有「标准齿宽」(轻负荷用)和传达扭矩更大的「加宽齿宽」(重负荷用)。请根据用途选择。

①同一种材料,一样的齿轮相互啮合时的理想值。

A1形状  
TYPE A1

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 分度圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外直径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 重量<br>Weight<br>W(kg) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|-------------------------------|-----------------------------|------------------------------|---------------------------|-----------------------|
| S1.25S 75A - 0814F       | 75                         | φ 93.75                          | φ 96.25                     | A1         | 8                     | φ14                           | -                           | -                            | 8                         | 0.42                  |
| S1.25S 75A - 1316F       | 75                         | φ 93.75                          | φ 96.25                     | A1         | 13                    | φ16                           | -                           | -                            | 13                        | 0.68                  |
| S1.25S 75B - 0814F       | 75                         | φ 93.75                          | φ 96.25                     | B1         | 8                     | φ14                           | φ55                         | 10                           | 18                        | 0.60                  |
| S1.25S 75B - 1316F       | 75                         | φ 93.75                          | φ 96.25                     | B1         | 13                    | φ16                           | φ55                         | 12                           | 25                        | 0.89                  |
| S1.25S 80A - 0814F       | 80                         | φ100                             | φ102.5                      | A1         | 8                     | φ14                           | -                           | -                            | 8                         | 0.48                  |
| S1.25S 80A - 1316F       | 80                         | φ100                             | φ102.5                      | A1         | 13                    | φ16                           | -                           | -                            | 13                        | 0.78                  |
| S1.25S 80B - 0814F       | 80                         | φ100                             | φ102.5                      | B1         | 8                     | φ14                           | φ60                         | 10                           | 18                        | 0.69                  |
| S1.25S 80B - 1316F       | 80                         | φ100                             | φ102.5                      | B1         | 13                    | φ16                           | φ60                         | 12                           | 25                        | 1.03                  |
| S1.25S 84A - 0814F       | 84                         | φ105                             | φ107.5                      | A1         | 8                     | φ14                           | -                           | -                            | 8                         | 0.53                  |
| S1.25S 84A - 1316F       | 84                         | φ105                             | φ107.5                      | A1         | 13                    | φ16                           | -                           | -                            | 13                        | 0.86                  |
| S1.25S 84B - 0814F       | 84                         | φ105                             | φ107.5                      | B1         | 8                     | φ14                           | φ60                         | 10                           | 18                        | 0.74                  |
| S1.25S 84B - 1316F       | 84                         | φ105                             | φ107.5                      | B1         | 13                    | φ16                           | φ60                         | 12                           | 25                        | 1.11                  |
| S1.25S 85A - 0814F       | 85                         | φ106.25                          | φ108.75                     | A1         | 8                     | φ14                           | -                           | -                            | 8                         | 0.55                  |
| S1.25S 85A - 1316F       | 85                         | φ106.25                          | φ108.75                     | A1         | 13                    | φ16                           | -                           | -                            | 13                        | 0.88                  |
| S1.25S 85B - 0814F       | 85                         | φ106.25                          | φ108.75                     | B1         | 8                     | φ14                           | φ60                         | 10                           | 18                        | 0.76                  |
| S1.25S 85B - 1316F       | 85                         | φ106.25                          | φ108.75                     | B1         | 13                    | φ16                           | φ60                         | 12                           | 25                        | 1.13                  |
| S1.25S 90A - 0816F       | 90                         | φ112.5                           | φ115                        | A1         | 8                     | φ16                           | -                           | -                            | 8                         | 0.61                  |
| S1.25S 90A - 1318F       | 90                         | φ112.5                           | φ115                        | A1         | 13                    | φ18                           | -                           | -                            | 13                        | 0.99                  |
| S1.25S 90B - 0816F       | 90                         | φ112.5                           | φ115                        | B1         | 8                     | φ16                           | φ65                         | 10                           | 18                        | 0.86                  |
| S1.25S 90B - 1318F       | 90                         | φ112.5                           | φ115                        | B1         | 13                    | φ18                           | φ65                         | 12                           | 25                        | 1.28                  |
| S1.25S 95A - 0816F       | 95                         | φ118.75                          | φ121.25                     | A1         | 8                     | φ16                           | -                           | -                            | 8                         | 0.68                  |
| S1.25S 95A - 1318F       | 95                         | φ118.75                          | φ121.25                     | A1         | 13                    | φ18                           | -                           | -                            | 13                        | 1.10                  |
| S1.25S 95B - 0816F       | 95                         | φ118.75                          | φ121.25                     | B1         | 8                     | φ16                           | φ65                         | 10                           | 18                        | 0.93                  |
| S1.25S 95B - 1318F       | 95                         | φ118.75                          | φ121.25                     | B1         | 13                    | φ18                           | φ65                         | 12                           | 25                        | 1.39                  |
| S1.25S 96A - 0816F       | 96                         | φ120                             | φ122.5                      | A1         | 8                     | φ16                           | -                           | -                            | 8                         | 0.70                  |
| S1.25S 96A - 1318F       | 96                         | φ120                             | φ122.5                      | A1         | 13                    | φ18                           | -                           | -                            | 13                        | 1.13                  |
| S1.25S 96B - 0816F       | 96                         | φ120                             | φ122.5                      | B1         | 8                     | φ16                           | φ65                         | 10                           | 18                        | 0.94                  |
| S1.25S 96B - 1318F       | 96                         | φ120                             | φ122.5                      | B1         | 13                    | φ18                           | φ65                         | 12                           | 25                        | 1.42                  |
| S1.25S 100A - 0816F      | 100                        | φ125                             | φ127.5                      | A1         | 8                     | φ16                           | -                           | -                            | 8                         | 0.76                  |
| S1.25S 100A - 1318F      | 100                        | φ125                             | φ127.5                      | A1         | 13                    | φ18                           | -                           | -                            | 13                        | 1.23                  |
| S1.25S 100B - 0816F      | 100                        | φ125                             | φ127.5                      | B1         | 8                     | φ16                           | φ65                         | 10                           | 18                        | 1.00                  |
| S1.25S 100B - 1318F      | 100                        | φ125                             | φ127.5                      | B1         | 13                    | φ18                           | φ65                         | 12                           | 25                        | 1.52                  |
| S1.25S 105A - 0816F      | 105                        | φ131.25                          | φ133.75                     | A1         | 8                     | φ16                           | -                           | -                            | 8                         | 0.84                  |
| S1.25S 105A - 1318F      | 105                        | φ131.25                          | φ133.75                     | A1         | 13                    | φ18                           | -                           | -                            | 13                        | 1.35                  |
| S1.25S 105B - 0816F      | 105                        | φ131.25                          | φ133.75                     | B1         | 8                     | φ16                           | φ70                         | 10                           | 18                        | 1.12                  |
| S1.25S 105B - 1318F      | 105                        | φ131.25                          | φ133.75                     | B1         | 13                    | φ18                           | φ70                         | 12                           | 25                        | 1.69                  |
| S1.25S 110A - 0818F      | 110                        | φ137.5                           | φ140                        | A1         | 8                     | φ18                           | -                           | -                            | 8                         | 0.92                  |
| S1.25S 110A - 1320F      | 110                        | φ137.5                           | φ140                        | A1         | 13                    | φ20                           | -                           | -                            | 13                        | 1.48                  |
| S1.25S 110B - 0818F      | 110                        | φ137.5                           | φ140                        | B1         | 8                     | φ18                           | φ75                         | 10                           | 18                        | 1.24                  |
| S1.25S 110B - 1320F      | 110                        | φ137.5                           | φ140                        | B1         | 13                    | φ20                           | φ75                         | 12                           | 25                        | 1.87                  |
| S1.25S 115A - 0818F      | 115                        | φ143.75                          | φ146.25                     | A1         | 8                     | φ18                           | -                           | -                            | 8                         | 1.00                  |
| S1.25S 115A - 1320F      | 115                        | φ143.75                          | φ146.25                     | A1         | 13                    | φ20                           | -                           | -                            | 13                        | 1.62                  |
| S1.25S 115B - 0818F      | 115                        | φ143.75                          | φ146.25                     | B1         | 8                     | φ18                           | φ75                         | 10                           | 18                        | 1.33                  |
| S1.25S 115B - 1320F      | 115                        | φ143.75                          | φ146.25                     | B1         | 13                    | φ20                           | φ75                         | 12                           | 25                        | 2.01                  |



B1形状  
TYPE B1

| 产品型号<br>Catalogue Number   | 齿数<br>Number of Teeth<br>$z$ | 分度圆直径<br>Reference Diameter<br>$d$ | 分度圆直径<br>Tip Diameter<br>$d_a$ | 形状<br>Type | 齿宽<br>Face Width<br>$b$ | 孔径<br>Bore Diameter<br>$d_d(H7)$ | 轮毂外径<br>Hub Diameter<br>$d_h$ | 轮毂长度<br>Hub Projection<br>$l_h$ | 全长<br>Overall Length<br>$l$ | 重量<br>Weight<br>$W(kg)$ |
|----------------------------|------------------------------|------------------------------------|--------------------------------|------------|-------------------------|----------------------------------|-------------------------------|---------------------------------|-----------------------------|-------------------------|
| <b>S1.25S 120A - 0818F</b> | 120                          | $\phi 150$                         | $\phi 152.5$                   | A1         | 8                       | $\phi 18$                        | -                             | -                               | 8                           | 1.09                    |
| <b>S1.25S 120A - 1320F</b> | 120                          | $\phi 150$                         | $\phi 152.5$                   | A1         | 13                      | $\phi 20$                        | -                             | -                               | 13                          | 1.77                    |
| <b>S1.25S 120B - 0818F</b> | 120                          | $\phi 150$                         | $\phi 152.5$                   | B1         | 8                       | $\phi 18$                        | $\phi 80$                     | 10                              | 18                          | 1.47                    |
| <b>S1.25S 120B - 1320F</b> | 120                          | $\phi 150$                         | $\phi 152.5$                   | B1         | 13                      | $\phi 20$                        | $\phi 80$                     | 12                              | 25                          | 2.22                    |

容许传达动力表 弯曲强度 (kW)

T (N · m)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br>$z$ | 齿宽<br>$b$ | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |      |      |      |       |       | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|-----------|-----------|---|------|------|------|------|-------|-------|---|
|           |           | 10  | 100  | 200  | 400  | 800  | 1,200 | 1,500 | 100   |
| 75        | 8         | 0.054                                       | 0.54 | 1.08 | 1.88 | 3.20 | 4.53  | 5.47  | 51.56                                       |
| 75        | 13        | 0.087                                       | 0.88 | 1.76 | 3.07 | 5.22 | 7.37  | 8.90  | 84.03                                       |
| 80        | 8         | 0.058                                       | 0.58 | 1.15 | 2.00 | 3.42 | 4.84  | 5.84  | 55.38                                       |
| 80        | 13        | 0.094                                       | 0.95 | 1.88 | 3.25 | 5.57 | 7.87  | 9.49  | 90.72                                       |
| 84        | 8         | 0.061                                       | 0.61 | 1.21 | 2.08 | 3.59 | 5.07  | 6.15  | 58.25                                       |
| 84        | 13        | 0.099                                       | 1.00 | 1.97 | 3.39 | 5.84 | 8.25  | 10.00 | 95.49                                       |
| 85        | 8         | 0.062                                       | 0.62 | 1.22 | 2.10 | 3.63 | 5.13  | 6.23  | 59.20                                       |
| 85        | 13        | 0.101                                       | 1.01 | 1.99 | 3.42 | 5.91 | 8.35  | 10.13 | 96.45                                       |
| 90        | 8         | 0.066                                       | 0.66 | 1.29 | 2.21 | 3.84 | 5.43  | 6.65  | 63.02                                       |
| 90        | 13        | 0.108                                       | 1.08 | 2.11 | 3.60 | 6.25 | 8.84  | 10.82 | 103.13                                      |
| 95        | 8         | 0.070                                       | 0.70 | 1.36 | 2.31 | 4.04 | 5.73  | 7.07  | 66.84                                       |
| 95        | 13        | 0.115                                       | 1.15 | 2.22 | 3.76 | 6.58 | 9.31  | 11.50 | 109.82                                      |
| 96        | 8         | 0.071                                       | 0.71 | 1.37 | 2.33 | 4.09 | 5.78  | 7.16  | 67.80                                       |
| 96        | 13        | 0.116                                       | 1.16 | 2.24 | 3.79 | 6.65 | 9.41  | 11.64 | 110.77                                      |
| 100       | 8         | 0.075                                       | 0.75 | 1.43 | 2.41 | 4.26 | 6.02  | 7.50  | 71.62                                       |
| 100       | 13        | 0.122                                       | 1.22 | 2.33 | 3.92 | 6.93 | 9.78  | 12.19 | 116.50                                      |
| 105       | 8         | 0.079                                       | 0.79 | 1.50 | 2.51 | 4.47 | 6.33  | -     | 75.44                                       |
| 105       | 13        | 0.129                                       | 1.29 | 2.44 | 4.08 | 7.27 | 10.30 | -     | 123.19                                      |
| 110       | 8         | 0.083                                       | 0.83 | 1.57 | 2.60 | 4.69 | 6.68  | -     | 79.26                                       |
| 110       | 13        | 0.136                                       | 1.36 | 2.55 | 4.23 | 7.61 | 10.85 | -     | 129.87                                      |
| 115       | 8         | 0.087                                       | 0.88 | 1.63 | 2.70 | 4.89 | 7.02  | -     | 84.03                                       |
| 115       | 13        | 0.143                                       | 1.43 | 2.65 | 4.38 | 7.95 | 11.40 | -     | 136.56                                      |
| 120       | 8         | 0.091                                       | 0.92 | 1.69 | 2.81 | 5.10 | 7.36  | -     | 87.85                                       |
| 120       | 13        | 0.149                                       | 1.49 | 2.75 | 4.57 | 8.29 | 11.96 | -     | 142.29                                      |

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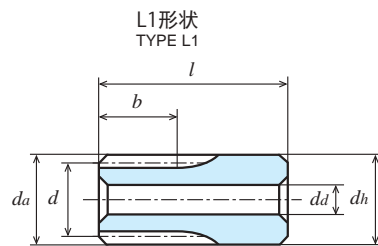
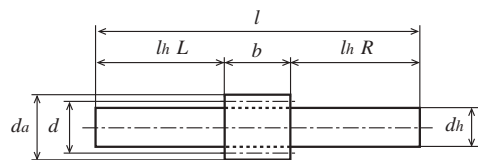
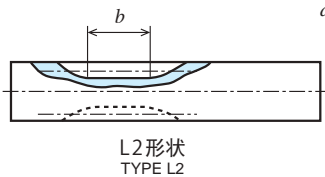
# 直齿轮

## SPUR GEARS

模数  
MODULE

1.5 (齿数 8 ~ 20)

(普通齿)  
FULL DEPTH TOOTH



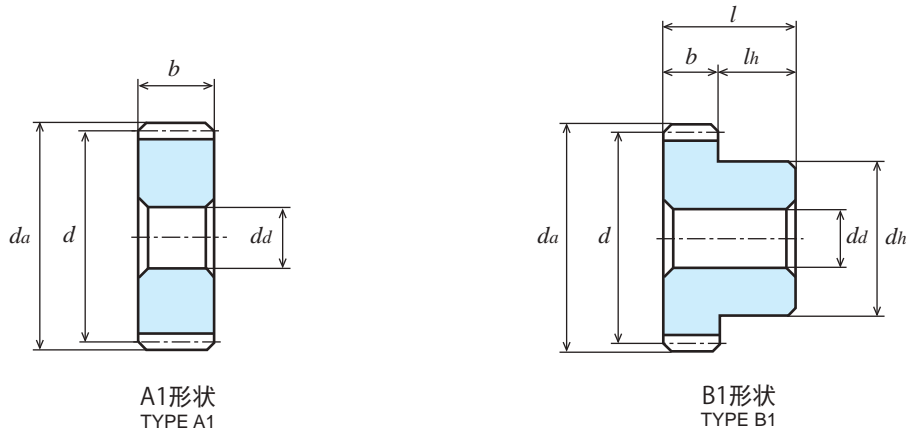
单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|------|-----|-----|------|-------------|
| JIS B 1702-1 8级 | S45C | 20度 | —   | —    | 0.06 ~ 0.15 |

- ★未做表面处理。【#】表示带有键槽和键，螺纹孔和固定用螺钉；【=】表示带有键槽和键。
- ★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。
- ★KG 的规格齿轮有「标准齿宽」(轻负荷用)和传达扭矩更大的「加宽齿宽」(重负荷用)。请根据用途选择。
- ★【变位】是变位系数  $X = 0.5$  的变位齿轮。①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>$z$ | 分度圆直径<br>Reference Diameter<br>$d$ | 分度圆直径<br>Outside Diameter<br>$d_a$ | 形状<br>Type | 齿宽<br>Face Width<br>$b$ | 孔径<br>Bore Diameter<br>$d_i(H7)$ | 轮毂直径<br>Hub Diameter<br>$d_h$ | 轮毂长度<br>Hub Projection<br>$l_h$ | 全长<br>Overall Length<br>$l$ | 键槽<br>Key Way<br>$b_2 \times t_2$ | 螺纹孔<br>Set Screw |       | 重量<br>Weight<br>W(g) |
|--------------------------|------------------------------|------------------------------------|------------------------------------|------------|-------------------------|----------------------------------|-------------------------------|---------------------------------|-----------------------------|-----------------------------------|------------------|-------|----------------------|
|                          |                              |                                    |                                    |            |                         |                                  |                               |                                 |                             |                                   | $M$              | $l_s$ |                      |
| S1.5S 8L-1809            | 8                            | 【变位】 $\phi 15.96$                  | $\phi 15.96$                       | L1         | 18                      | -                                | $\phi 9(H9)$                  | L24 R48                         | 90                          |                                   |                  |       | 56.2                 |
| S1.5S 8L-1816F           | 8                            | 【变位】 $\phi 15.96$                  | $\phi 15.96$                       | L2         | 18                      | -                                | $\phi 15.96$                  | L24 R48                         | 90                          |                                   |                  |       | 133.3                |
| S1.5S 10L-1812           | 10                           | 【变位】 $\phi 19$                     | $\phi 19$                          | L1         | 18                      | -                                | $\phi 12(H9)$                 | L24 R48                         | 90                          |                                   |                  |       | 94.1                 |
| S1.5S 10L-1819F          | 10                           | 【变位】 $\phi 19$                     | $\phi 19$                          | L2         | 18                      | -                                | $\phi 19$                     | L24 R48                         | 90                          |                                   |                  |       | 190.5                |
| S1.5S 12K-1808           | 12                           | $\phi 18$                          | $\phi 21$                          | K2         | 18                      | $\phi 8(H8)$                     | $\phi 21$                     | 22                              | 40                          |                                   |                  |       | 80.0                 |
| S1.5S 13K-1808           | 13                           | $\phi 19.5$                        | $\phi 22.5$                        | K2         | 18                      | $\phi 8(H8)$                     | $\phi 22.5$                   | 22                              | 40                          |                                   |                  |       | 95.1                 |
| S1.5S 14K-1808           | 14                           | $\phi 21$                          | $\phi 24$                          | K2         | 18                      | $\phi 8(H8)$                     | $\phi 24$                     | 22                              | 40                          |                                   |                  |       | 111.3                |
| S1.5S 15A-1208           | 15                           | $\phi 22.5$                        | $\phi 25.5$                        | A1         | 12                      | $\phi 8$                         | -                             | -                               | 12                          |                                   |                  |       | 32.7                 |
| S1.5S 15A-1808           | 15                           | $\phi 22.5$                        | $\phi 25.5$                        | A1         | 18                      | $\phi 8$                         | -                             | -                               | 18                          |                                   |                  |       | 49.1                 |
| S1.5S 15B-1208           | 15                           | $\phi 22.5$                        | $\phi 25.5$                        | B1         | 12                      | $\phi 8$                         | $\phi 18$                     | 10                              | 22                          |                                   |                  |       | 48.8                 |
| S1.5S 15B-1608N          | 15                           | $\phi 22.5$                        | $\phi 25.5$                        | B1         | 16                      | $\phi 8(H8)$                     | $\phi 17$                     | 10                              | 26                          |                                   |                  |       | 57.5                 |
| S1.5S 15B-1808N          | 15                           | $\phi 22.5$                        | $\phi 25.5$                        | B1         | 18                      | $\phi 8(H8)$                     | $\phi 18$                     | 10                              | 28                          |                                   |                  |       | 65.2                 |
| S1.5S 16A-1208           | 16                           | $\phi 24$                          | $\phi 27$                          | A1         | 12                      | $\phi 8$                         | -                             | -                               | 12                          |                                   |                  |       | 37.9                 |
| S1.5S 16A-1608           | 16                           | $\phi 24$                          | $\phi 27$                          | A1         | 16                      | $\phi 8$                         | -                             | -                               | 16                          |                                   |                  |       | 50.5                 |
| S1.5S 16A-1808           | 16                           | $\phi 24$                          | $\phi 27$                          | A1         | 18                      | $\phi 8$                         | -                             | -                               | 18                          |                                   |                  |       | 56.8                 |
| S1.5S 16B-1208           | 16                           | $\phi 24$                          | $\phi 27$                          | B1         | 12                      | $\phi 8$                         | $\phi 20$                     | 10                              | 22                          |                                   |                  |       | 58.6                 |
| S1.5S 16B-1608N          | 16                           | $\phi 24$                          | $\phi 27$                          | B1         | 16                      | $\phi 8(H8)$                     | $\phi 18$                     | 10                              | 26                          |                                   |                  |       | 66.6                 |
| S1.5S 16B-1808N          | 16                           | $\phi 24$                          | $\phi 27$                          | B1         | 18                      | $\phi 8(H8)$                     | $\phi 20$                     | 10                              | 28                          |                                   |                  |       | 77.6                 |
| S1.5S 17B-1208F          | 17                           | $\phi 25.5$                        | $\phi 28.5$                        | B1         | 12                      | $\phi 8$                         | $\phi 20$                     | 10                              | 22                          | -                                 |                  |       | 64.1                 |
| S1.5S 17B-1808           | 17                           | $\phi 25.5$                        | $\phi 28.5$                        | B1         | 18                      | $\phi 8(H8)$                     | $\phi 20$                     | 10                              | 28                          | -                                 |                  |       | 85.8                 |
| S1.5S 18A-1210F          | 18                           | $\phi 27$                          | $\phi 30$                          | A1         | 12                      | $\phi 10$                        | -                             | -                               | 12                          | -                                 |                  |       | 46.5                 |
| S1.5S 18A-1610F          | 18                           | $\phi 27$                          | $\phi 30$                          | A1         | 16                      | $\phi 10$                        | -                             | -                               | 16                          | -                                 |                  |       | 62.1                 |
| S1.5S 18A-1810F          | 18                           | $\phi 27$                          | $\phi 30$                          | A1         | 18                      | $\phi 10$                        | -                             | -                               | 18                          | -                                 |                  |       | 69.8                 |
| S1.5S 18B-1210F          | 18                           | $\phi 27$                          | $\phi 30$                          | B1         | 12                      | $\phi 10$                        | $\phi 22$                     | 10                              | 22                          | -                                 |                  |       | 70.2                 |
| S1.5S 18B-1610           | 18                           | $\phi 27$                          | $\phi 30$                          | B1         | 16                      | $\phi 10$                        | $\phi 21$                     | 10                              | 26                          | -                                 |                  |       | 83.1                 |
| S1.5S 18B-1810           | 18                           | $\phi 27$                          | $\phi 30$                          | B1         | 18                      | $\phi 10$                        | $\phi 22$                     | 10                              | 28                          | -                                 |                  |       | 93.5                 |
| S1.5S 19A-1210F          | 19                           | $\phi 28.5$                        | $\phi 31.5$                        | A1         | 12                      | $\phi 10$                        | -                             | -                               | 12                          | -                                 |                  |       | 52.7                 |
| S1.5S 19A-1810F          | 19                           | $\phi 28.5$                        | $\phi 31.5$                        | A1         | 18                      | $\phi 10$                        | -                             | -                               | 18                          | -                                 |                  |       | 79.0                 |
| S1.5S 19B-1210F          | 19                           | $\phi 28.5$                        | $\phi 31.5$                        | B1         | 12                      | $\phi 10$                        | $\phi 24$                     | 10                              | 22                          | -                                 |                  |       | 82.0                 |
| S1.5S 19B-1810           | 19                           | $\phi 28.5$                        | $\phi 31.5$                        | B1         | 18                      | $\phi 10$                        | $\phi 24$                     | 10                              | 28                          | -                                 |                  |       | 108.5                |
| S1.5S 20A-1010F          | 20                           | $\phi 30$                          | $\phi 33$                          | A1         | 10                      | $\phi 10$                        | -                             | -                               | 10                          | -                                 |                  |       | 49.3                 |
| S1.5S 20A-1210F          | 20                           | $\phi 30$                          | $\phi 33$                          | A1         | 12                      | $\phi 10$                        | -                             | -                               | 12                          | -                                 |                  |       | 59.2                 |
| S1.5S 20A=1212           | 20                           | $\phi 30$                          | $\phi 33$                          | A1         | 12                      | $\phi 12$                        | -                             | -                               | 12                          | 4 × 1.8                           | -                |       | 55.3                 |
| S1.5S 20A=1215           | 20                           | $\phi 30$                          | $\phi 33$                          | A1         | 12                      | $\phi 15$                        | -                             | -                               | 12                          | 5 × 2.3                           | -                |       | 48.9                 |
| S1.5S 20A-1610F          | 20                           | $\phi 30$                          | $\phi 33$                          | A1         | 16                      | $\phi 10$                        | -                             | -                               | 16                          | -                                 |                  |       | 78.9                 |
| S1.5S 20A-1810F          | 20                           | $\phi 30$                          | $\phi 33$                          | A1         | 18                      | $\phi 10$                        | -                             | -                               | 18                          | -                                 |                  |       | 88.8                 |
| S1.5S 20A=1812           | 20                           | $\phi 30$                          | $\phi 33$                          | A1         | 18                      | $\phi 12$                        | -                             | -                               | 18                          | 4 × 1.8                           | -                |       | 82.9                 |
| S1.5S 20A=1815           | 20                           | $\phi 30$                          | $\phi 33$                          | A1         | 18                      | $\phi 15$                        | -                             | -                               | 18                          | 5 × 2.3                           | -                |       | 73.3                 |





A1形状  
TYPE A1

B1形状  
TYPE B1

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 分度圆直径<br>Outside Diameter<br><i>da</i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>di</i> (H7) | 轮毂外径<br>Hub Diameter<br><i>dh</i> | 轮毂长度<br>Hub Projection<br><i>lh</i> | 全长<br>Overall Length<br><i>l</i> | 键槽<br>Key Way<br><i>b<sub>2</sub> × t<sub>2</sub></i> | 螺纹孔<br>Set Screw |           | 重量<br>Weight<br><i>W</i> (g) |
|--------------------------|-----------------------------------|---|--|------------|------------------------------|---------------------------------------|-----------------------------------|-------------------------------------|----------------------------------|---|------------------|-----------|------------------------------|
|                          |                                   |   |  |            |                              |                                       |                                   |                                     |                                  |   | <i>M</i>         | <i>ls</i> |                              |
| S1.5S 20B - 1010F        | 20                                | φ30                                     | φ33                                    | B1         | 10                           | φ10                                   | φ24                               | 10                                  | 20                               | -   | -                | -         | 78.7                         |
| S1.5S 20B - 1210F        | 20                                | φ30                                     | φ33                                    | B1         | 12                           | φ10                                   | φ25                               | 10                                  | 22                               | -   | -                | -         | 91.6                         |
| S1.5S 20B # 1212         | 20                                | φ30                                     | φ33                                    | B1         | 12                           | φ12                                   | φ25                               | 10                                  | 22                               | 4 × 1.8   | M3               | 5         | 84.2                         |
| S1.5S 20B # 1215         | 20                                | φ30                                     | φ33                                    | B1         | 12                           | φ15                                   | φ25                               | 10                                  | 22                               | 5 × 2.3   | M3               | 5         | 72.5                         |
| S1.5S 20BF - 1506        | 20                                | φ30                                     | φ33                                    | B1         | 15                           | φ6(H8)                                | φ25                               | 15                                  | 30                               | -   | -                | -         | 113.1                        |
| S1.5S 20B - 1610         | 20                                | φ30                                     | φ33                                    | B1         | 16                           | φ10                                   | φ24                               | 10                                  | 26                               | -   | -                | -         | 111.4                        |
| S1.5S 20B - 1810         | 20                                | φ30                                     | φ33                                    | B1         | 18                           | φ10                                   | φ25                               | 10                                  | 28                               | -   | -                | -         | 121.2                        |
| S1.5S 20B # 1812         | 20                                | φ30                                     | φ33                                    | B1         | 18                           | φ12                                   | φ25                               | 10                                  | 28                               | 4 × 1.8   | M3               | 5         | 111.8                        |
| S1.5S 20B # 1815         | 20                                | φ30                                     | φ33                                    | B1         | 18                           | φ15                                   | φ25                               | 10                                  | 28                               | 5 × 2.3   | M3               | 5         | 96.9                         |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|----------------|----------------|---|-------|-------|-------|-------|-------|-------|---|
|                |                | 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 | 100   |
| 8              | 18             | 0.010                                       | 0.108 | 0.216 | 0.433 | 0.867 | 1.301 | 1.619 | 10.31                                       |
| 10             | 18             | 0.014                                       | 0.149 | 0.299 | 0.598 | 1.197 | 1.791 | 2.156 | 14.22                                       |
| 12             | 18             | 0.013                                       | 0.137 | 0.275 | 0.550 | 1.100 | 1.618 | 1.942 | 13.08                                       |
| 13             | 18             | 0.015                                       | 0.158 | 0.316 | 0.632 | 1.264 | 1.835 | 2.196 | 15.08                                       |
| 14             | 18             | 0.017                                       | 0.179 | 0.358 | 0.717 | 1.434 | 2.052 | 2.450 | 17.09                                       |
| 15             | 12             | 0.013                                       | 0.133 | 0.267 | 0.535 | 1.071 | 1.513 | 1.801 | 12.70                                       |
| 15             | 16             | 0.017                                       | 0.178 | 0.357 | 0.714 | 1.428 | 2.017 | 2.402 | 16.99                                       |
| 15             | 18             | 0.020                                       | 0.200 | 0.401 | 0.803 | 1.607 | 2.269 | 2.702 | 19.09                                       |
| 16             | 12             | 0.014                                       | 0.148 | 0.297 | 0.594 | 1.188 | 1.657 | 1.968 | 14.13                                       |
| 16             | 16             | 0.019                                       | 0.198 | 0.396 | 0.792 | 1.584 | 2.209 | 2.624 | 18.90                                       |
| 16             | 18             | 0.022                                       | 0.222 | 0.445 | 0.891 | 1.782 | 2.485 | 2.952 | 21.20                                       |
| 17             | 12             | 0.016                                       | 0.164 | 0.327 | 0.654 | 1.295 | 1.800 | 2.133 | 15.66                                       |
| 17             | 18             | 0.024                                       | 0.245 | 0.490 | 0.981 | 1.942 | 2.700 | 3.198 | 23.39                                       |
| 18             | 12             | 0.017                                       | 0.178 | 0.357 | 0.714 | 1.401 | 1.941 | 2.294 | 16.99                                       |
| 18             | 16             | 0.023                                       | 0.238 | 0.476 | 0.952 | 1.869 | 2.588 | 3.059 | 22.72                                       |
| 18             | 18             | 0.026                                       | 0.268 | 0.536 | 1.072 | 2.102 | 2.911 | 3.441 | 25.59                                       |
| 19             | 12             | 0.019                                       | 0.194 | 0.388 | 0.776 | 1.509 | 2.083 | 2.456 | 18.52                                       |
| 19             | 18             | 0.029                                       | 0.291 | 0.582 | 1.165 | 2.264 | 3.125 | 3.685 | 27.78                                       |

### T (N · m)

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|----------------|----------------|---|-------|-------|-------|-------|-------|-------|
|                |                | 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| 20             | 10             | 0.017                                       | 0.174 | 0.349 | 0.699 | 1.346 | 1.852 | 2.179 |
| 20             | 12             | 0.020                                       | 0.209 | 0.419 | 0.839 | 1.616 | 2.222 | 2.614 |
| 20             | 15             | 0.026                                       | 0.260 | 0.530 | 1.060 | 2.030 | 2.800 | 3.290 |
| 20             | 16             | 0.027                                       | 0.279 | 0.559 | 1.118 | 2.154 | 2.963 | 3.486 |
| 20             | 18             | 0.031                                       | 0.314 | 0.629 | 1.258 | 2.424 | 3.333 | 3.922 |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |   |
|---|-------|-------|-------|-------|-------|-------|---|
| 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |   |
| -   | -     | -     | -     | -     | -     | -     | - |
| -   | -     | -     | -     | -     | -     | -     | - |
| 0.001                                       | 0.010 | 0.020 | 0.050 | 0.090 | 0.130 | 0.150 | - |
| -   | -     | -     | -     | -     | -     | -     | - |
| -   | -     | -     | -     | -     | -     | -     | - |

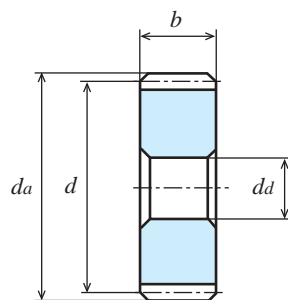
# 直齿轮

## SPUR GEARS

模数  
MODULE

1.5 (齿数 21 ~ 25)

(普通齿)  
FULL DEPTH TOOTH



A1形状  
TYPE A1

单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|------|-----|-----|------|-------------|
| JIS B 1702-1 8级 | S45C | 20度 | —   | —    | 0.06 ~ 0.15 |

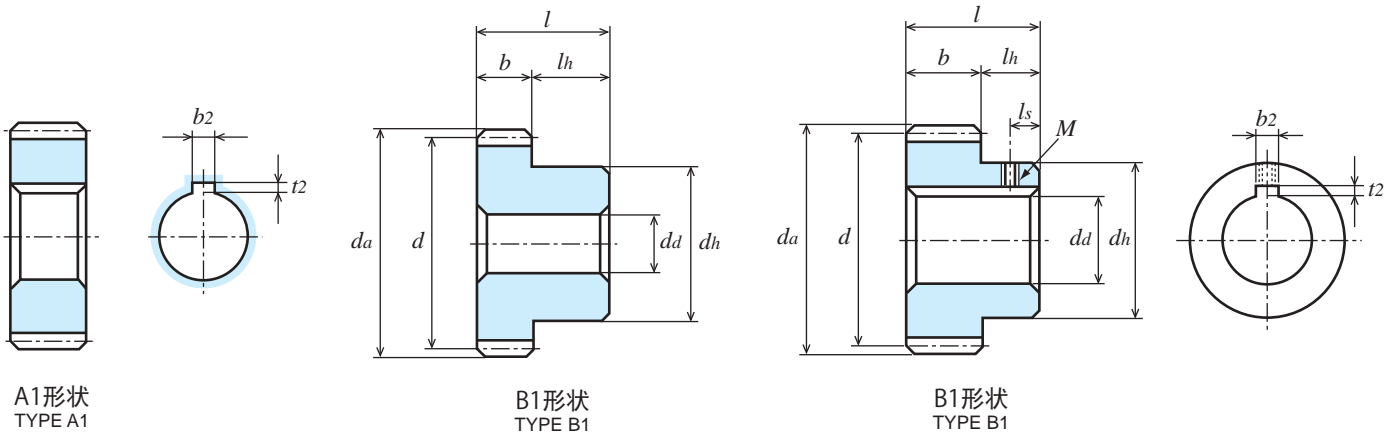
★未做表面处理。[#] 表示带有键槽和键，螺孔和固定用螺钉；[=] 表示带有键槽和键。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★KG 的规格齿轮有「标准齿宽」(轻负荷)和传达扭矩更大的「加宽齿宽」(重负荷)。请根据用途选择。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 分度圆直径<br>Outside Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b2 × t2 | 螺纹孔<br>Set Screw |    | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|---------------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|--------------------------|------------------|----|----------------------|
|                          |                            |                                  |                                 |            |                       |                               |                            |                              |                           |                          | M                | ls |                      |
| S1.5S 21A - 1210F        | 21                         | φ31.5                            | φ34.5                           | A1         | 12                    | φ10                           | -                          | -                            | 12                        | -                        | -                | -  | 66.0                 |
| S1.5S 21A - 1810F        | 21                         | φ31.5                            | φ34.5                           | A1         | 18                    | φ10                           | -                          | -                            | 18                        | -                        | -                | -  | 99.0                 |
| S1.5S 21B - 1210F        | 21                         | φ31.5                            | φ34.5                           | B1         | 12                    | φ10                           | φ26                        | 10                           | 22                        | -                        | -                | -  | 101.5                |
| S1.5S 21B - 1810         | 21                         | φ31.5                            | φ34.5                           | B1         | 18                    | φ10                           | φ26                        | 10                           | 28                        | -                        | -                | -  | 134.6                |
| S1.5S 22A - 1210F        | 22                         | φ33                              | φ36                             | A1         | 12                    | φ10                           | -                          | -                            | 12                        | -                        | -                | -  | 73.2                 |
| S1.5S 22A - 1810F        | 22                         | φ33                              | φ36                             | A1         | 18                    | φ10                           | -                          | -                            | 18                        | -                        | -                | -  | 109.8                |
| S1.5S 22B - 1210F        | 22                         | φ33                              | φ36                             | B1         | 12                    | φ10                           | φ26                        | 10                           | 22                        | -                        | -                | -  | 108.7                |
| S1.5S 22B - 1810         | 22                         | φ33                              | φ36                             | B1         | 18                    | φ10                           | φ26                        | 10                           | 28                        | -                        | -                | -  | 145.4                |
| S1.5S 23A - 1210F        | 23                         | φ34.5                            | φ37.5                           | A1         | 12                    | φ10                           | -                          | -                            | 12                        | -                        | -                | -  | 80.7                 |
| S1.5S 23A - 1810F        | 23                         | φ34.5                            | φ37.5                           | A1         | 18                    | φ10                           | -                          | -                            | 18                        | -                        | -                | -  | 121.0                |
| S1.5S 23B - 1210F        | 23                         | φ34.5                            | φ37.5                           | B1         | 12                    | φ10                           | φ26                        | 10                           | 22                        | -                        | -                | -  | 116.2                |
| S1.5S 23B - 1810         | 23                         | φ34.5                            | φ37.5                           | B1         | 18                    | φ10                           | φ28                        | 10                           | 28                        | -                        | -                | -  | 163.3                |
| S1.5S 24A - 1010F        | 24                         | φ36                              | φ39                             | A1         | 10                    | φ10                           | -                          | -                            | 10                        | -                        | -                | -  | 73.7                 |
| S1.5S 24A - 1210F        | 24                         | φ36                              | φ39                             | A1         | 12                    | φ10                           | -                          | -                            | 12                        | -                        | -                | -  | 88.5                 |
| S1.5S 24A = 1212         | 24                         | φ36                              | φ39                             | A1         | 12                    | φ12                           | -                          | -                            | 12                        | 4 × 1.8                  | -                | -  | 84.6                 |
| S1.5S 24A = 1215         | 24                         | φ36                              | φ39                             | A1         | 12                    | φ15                           | -                          | -                            | 12                        | 5 × 2.3                  | -                | -  | 78.2                 |
| S1.5S 24A - 1610F        | 24                         | φ36                              | φ39                             | A1         | 16                    | φ10                           | -                          | -                            | 16                        | -                        | -                | -  | 118.0                |
| S1.5S 24A - 1812F        | 24                         | φ36                              | φ39                             | A1         | 18                    | φ12                           | -                          | -                            | 18                        | -                        | -                | -  | 127.8                |
| S1.5S 24A = 1815         | 24                         | φ36                              | φ39                             | A1         | 18                    | φ15                           | -                          | -                            | 18                        | 5 × 2.3                  | -                | -  | 117.2                |
| S1.5S 24A = 1816         | 24                         | φ36                              | φ39                             | A1         | 18                    | φ16                           | -                          | -                            | 18                        | 5 × 2.3                  | -                | -  | 113.8                |
| S1.5S 24B - 1010F        | 24                         | φ36                              | φ39                             | B1         | 10                    | φ10                           | φ30                        | 10                           | 20                        | -                        | -                | -  | 123.1                |
| S1.5S 24B - 1210F        | 24                         | φ36                              | φ39                             | B1         | 12                    | φ10                           | φ30                        | 10                           | 22                        | -                        | -                | -  | 137.8                |
| S1.5S 24B # 1212         | 24                         | φ36                              | φ39                             | B1         | 12                    | φ12                           | φ30                        | 10                           | 22                        | 4 × 1.8                  | M3               | 5  | 130.4                |
| S1.5S 24B # 1215         | 24                         | φ36                              | φ39                             | B1         | 12                    | φ15                           | φ30                        | 10                           | 22                        | 5 × 2.3                  | M4               | 5  | 118.5                |
| S1.5S 24B - 1612         | 24                         | φ36                              | φ39                             | B1         | 16                    | φ12                           | φ30                        | 10                           | 26                        | -                        | -                | -  | 160.4                |
| S1.5S 24B - 1812         | 24                         | φ36                              | φ39                             | B1         | 18                    | φ12                           | φ30                        | 10                           | 28                        | -                        | -                | -  | 174.6                |
| S1.5S 24B # 1815         | 24                         | φ36                              | φ39                             | B1         | 18                    | φ15                           | φ30                        | 10                           | 28                        | 5 × 2.3                  | M4               | 5  | 157.6                |
| S1.5S 24B # 1816         | 24                         | φ36                              | φ39                             | B1         | 18                    | φ16                           | φ30                        | 10                           | 28                        | 5 × 2.3                  | M4               | 5  | 152.3                |
| S1.5S 25A - 1010F        | 25                         | φ37.5                            | φ40.5                           | A1         | 10                    | φ10                           | -                          | -                            | 10                        | -                        | -                | -  | 80.5                 |
| S1.5S 25A - 1210F        | 25                         | φ37.5                            | φ40.5                           | A1         | 12                    | φ10                           | -                          | -                            | 12                        | -                        | -                | -  | 96.6                 |
| S1.5S 25A = 1212         | 25                         | φ37.5                            | φ40.5                           | A1         | 12                    | φ12                           | -                          | -                            | 12                        | 4 × 1.8                  | -                | -  | 92.7                 |
| S1.5S 25A = 1215         | 25                         | φ37.5                            | φ40.5                           | A1         | 12                    | φ15                           | -                          | -                            | 12                        | 5 × 2.3                  | -                | -  | 86.3                 |
| S1.5S 25A - 1612F        | 25                         | φ37.5                            | φ40.5                           | A1         | 16                    | φ12                           | -                          | -                            | 16                        | -                        | -                | -  | 124.5                |
| S1.5S 25A - 1812F        | 25                         | φ37.5                            | φ40.5                           | A1         | 18                    | φ12                           | -                          | -                            | 18                        | -                        | -                | -  | 140.1                |
| S1.5S 25A = 1815         | 25                         | φ37.5                            | φ40.5                           | A1         | 18                    | φ15                           | -                          | -                            | 18                        | 5 × 2.3                  | -                | -  | 129.5                |
| S1.5S 25A = 1816         | 25                         | φ37.5                            | φ40.5                           | A1         | 18                    | φ16                           | -                          | -                            | 18                        | 5 × 2.3                  | -                | -  | 126.0                |



| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 分度圆直径<br>Outside Diameter<br><i>d<sub>a</sub></i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>dd(H7)</i> | 轮毂外径<br>Hub Diameter<br><i>d<sub>h</sub></i> | 轮毂长度<br>Hub Projection<br><i>l<sub>h</sub></i> | 全长<br>Overall Length<br><i>l</i> | 键槽<br>Key Way<br><i>b<sub>2</sub> × t<sub>2</sub></i> | 螺纹孔<br>Set Screw |                      | 重量<br>Weight<br><i>W(g)</i> |
|--------------------------|-----------------------------------|---|---|------------|------------------------------|--------------------------------------|--|--|----------------------------------|---|------------------|----------------------|-----------------------------|
|                          |                                   |   |   |            |                              |                                      |  |  |                                  |   | <i>M</i>         | <i>l<sub>s</sub></i> |                             |
| <b>S1.5S 25B - 1010F</b> | 25                                | φ37.5                                   | φ40.5   | B1         | 10                           | φ10                                  | φ30  | 10   | 20                               | -   | -                | -                    | 129.9                       |
| <b>S1.5S 25B - 1210</b>  | 25                                | φ37.5                                   | φ40.5   | B1         | 12                           | φ10                                  | φ30  | 10   | 22                               | -   | -                | -                    | 146.1                       |
| <b>S1.5S 25B # 1212</b>  | 25                                | φ37.5                                   | φ40.5   | B1         | 12                           | φ12                                  | φ30  | 10   | 22                               | 4 × 1.8   | M3               | 5                    | 138.5                       |
| <b>S1.5S 25B # 1215</b>  | 25                                | φ37.5                                   | φ40.5   | B1         | 12                           | φ15                                  | φ30  | 10   | 22                               | 5 × 2.3   | M4               | 5                    | 126.7                       |
| <b>S1.5S 25BF - 1508</b> | 25                                | φ37.5                                   | φ40.5   | B1         | 15                           | φ 8(H8)                              | φ30  | 15   | 30                               | -   | -                | -                    | 200.0                       |
| <b>S1.5S 25B - 1612</b>  | 25                                | φ37.5                                   | φ40.5   | B1         | 16                           | φ12                                  | φ30  | 10   | 26                               | -   | -                | -                    | 171.2                       |
| <b>S1.5S 25B - 1812</b>  | 25                                | φ37.5                                   | φ40.5   | B1         | 18                           | φ12                                  | φ32  | 10   | 28                               | -   | -                | -                    | 194.5                       |
| <b>S1.5S 25B # 1815</b>  | 25                                | φ37.5                                   | φ40.5   | B1         | 18                           | φ15                                  | φ32  | 10   | 28                               | 5 × 2.3   | M4               | 5                    | 177.4                       |
| <b>S1.5S 25B # 1816</b>  | 25                                | φ37.5                                   | φ40.5   | B1         | 18                           | φ16                                  | φ32  | 10   | 28                               | 5 × 2.3   | M4               | 5                    | 172.1                       |
| <b>S1.5S 25B # 1818</b>  | 25                                | φ37.5                                   | φ40.5   | B1         | 18                           | φ18                                  | φ32  | 10   | 28                               | 6 × 2.8   | M4               | 5                    | 159.3                       |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|----------------|----------------|---|-------|-------|-------|-------|-------|-------|
|                |                | 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| 21             | 12             | 0.022                                       | 0.225 | 0.450 | 0.901 | 1.781 | 2.359 | 2.769 |
| 21             | 18             | 0.033                                       | 0.338 | 0.676 | 1.352 | 2.582 | 3.538 | 4.154 |
| 22             | 12             | 0.024                                       | 0.241 | 0.482 | 0.965 | 1.826 | 2.494 | 2.922 |
| 22             | 18             | 0.036                                       | 0.362 | 0.724 | 1.448 | 2.739 | 3.742 | 4.384 |
| 23             | 12             | 0.025                                       | 0.257 | 0.514 | 1.029 | 1.930 | 2.628 | 3.073 |
| 23             | 18             | 0.038                                       | 0.386 | 0.772 | 1.544 | 2.895 | 3.943 | 4.610 |
| 24             | 10             | 0.022                                       | 0.227 | 0.455 | 0.911 | 1.694 | 2.299 | 2.683 |
| 24             | 12             | 0.027                                       | 0.273 | 0.546 | 1.093 | 2.033 | 2.759 | 3.219 |
| 24             | 16             | 0.036                                       | 0.364 | 0.729 | 1.458 | 2.710 | 3.679 | 4.293 |
| 24             | 18             | 0.041                                       | 0.410 | 0.820 | 1.640 | 3.049 | 4.139 | 4.829 |

### T (N · m)

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|---|
| 100   |
| 21.48                                       |
| 32.27                                       |
| 23.01                                       |
| 34.56                                       |
| 24.54                                       |
| 36.86                                       |
| 21.67                                       |
| 26.07                                       |
| 34.76                                       |
| 39.15                                       |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|----------------|----------------|---|-------|-------|-------|-------|-------|-------|
|                |                | 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| 25             | 10             | 0.024                                       | 0.241 | 0.482 | 0.965 | 1.779 | 2.407 | 2.803 |
| 25             | 12             | 0.028                                       | 0.289 | 0.579 | 1.159 | 2.135 | 2.889 | 3.364 |
| 25             | 15             | 0.036                                       | 0.360 | 0.730 | 1.450 | 2.680 | 3.620 | 4.220 |
| 25             | 16             | 0.038                                       | 0.386 | 0.772 | 1.545 | 2.847 | 3.852 | 4.486 |
| 25             | 18             | 0.043                                       | 0.434 | 0.869 | 1.738 | 3.203 | 4.334 | 4.047 |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |   |
|---|-------|-------|-------|-------|-------|-------|---|
| 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |   |
| -   | -     | -     | -     | -     | -     | -     | - |
| 0.002                                       | 0.020 | 0.040 | 0.070 | 0.140 | 0.190 | 0.230 |   |
| -   | -     | -     | -     | -     | -     | -     | - |
| -   | -     | -     | -     | -     | -     | -     | - |

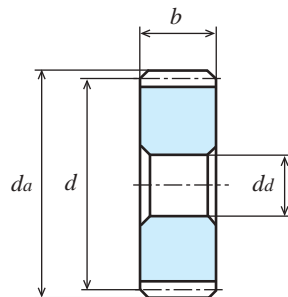
# 直齿轮

## SPUR GEARS

模数  
MODULE

1.5 (齿数 26 ~ 30)

(普通齿)  
FULL DEPTH TOOTH



单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|------|-----|-----|------|-------------|
| JIS B 1702-1 8级 | S45C | 20度 | —   | —    | 0.06 ~ 0.15 |

★未做表面处理。[#]表示带有键槽和键，螺纹孔和固定用螺钉；[=]表示带有键槽和键。

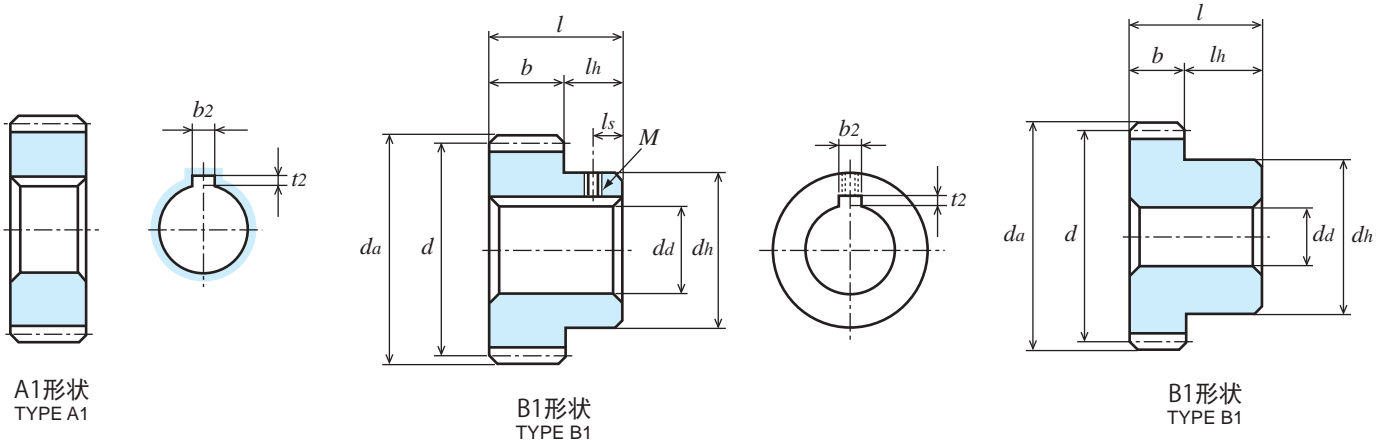
★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★KG 的规格齿轮有「标准齿宽」(轻负荷用)和传达扭矩更大的「加宽齿宽」(重负荷用)。请根据用途选择。

①同一种材料，一样的齿轮相互啮合时的理想值。

A1形状  
TYPE A1

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 分度圆直径<br>Outside Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b <sub>2</sub> × t <sub>2</sub> | 螺纹孔<br>Set Screw |                | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|---------------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|--|------------------|----------------|----------------------|
|                          |                            |                                  |                                 |            |                       |                               |                            |                              |                           |  | M                | l <sub>s</sub> |                      |
| S1.5S 26A - 1210F        | 26                         | φ39                              | φ42                             | A1         | 12                    | φ10                           | -                          | -                            | 12                        | -  | -                | -              | 105.1                |
| S1.5S 26A - 1812F        | 26                         | φ39                              | φ42                             | A1         | 18                    | φ12                           | -                          | -                            | 18                        | -  | -                | -              | 152.8                |
| S1.5S 26B - 1210F        | 26                         | φ39                              | φ42                             | B1         | 12                    | φ10                           | φ32                        | 10                           | 22                        | -  | -                | -              | 162.1                |
| S1.5S 26B - 1812         | 26                         | φ39                              | φ42                             | B1         | 18                    | φ12                           | φ32                        | 10                           | 28                        | -  | -                | -              | 207.2                |
| S1.5S 27A - 1210F        | 27                         | φ40.5                            | φ43.5                           | A1         | 12                    | φ10                           | -                          | -                            | 12                        | -  | -                | -              | 114.0                |
| S1.5S 27A - 1812F        | 27                         | φ40.5                            | φ43.5                           | A1         | 18                    | φ12                           | -                          | -                            | 18                        | -  | -                | -              | 166.0                |
| S1.5S 27B - 1210F        | 27                         | φ40.5                            | φ43.5                           | B1         | 12                    | φ10                           | φ32                        | 10                           | 22                        | -  | -                | -              | 170.9                |
| S1.5S 27B - 1812         | 27                         | φ40.5                            | φ43.5                           | B1         | 18                    | φ12                           | φ36                        | 10                           | 28                        | -  | -                | -              | 237.2                |
| S1.5S 28A - 1012F        | 28                         | φ42                              | φ45                             | A1         | 10                    | φ12                           | -                          | -                            | 10                        | -  | -                | -              | 99.9                 |
| S1.5S 28A - 1210F        | 28                         | φ42                              | φ45                             | A1         | 12                    | φ10                           | -                          | -                            | 12                        | -  | -                | -              | 123.1                |
| S1.5S 28A = 1212         | 28                         | φ42                              | φ45                             | A1         | 12                    | φ12                           | -                          | -                            | 12                        | 4 × 1.8  | -                | -              | 119.2                |
| S1.5S 28A = 1215         | 28                         | φ42                              | φ45                             | A1         | 12                    | φ15                           | -                          | -                            | 12                        | 5 × 2.3  | -                | -              | 112.8                |
| S1.5S 28A - 1612F        | 28                         | φ42                              | φ45                             | A1         | 16                    | φ12                           | -                          | -                            | 16                        | -  | -                | -              | 159.8                |
| S1.5S 28A - 1812F        | 28                         | φ42                              | φ45                             | A1         | 18                    | φ12                           | -                          | -                            | 18                        | -  | -                | -              | 179.8                |
| S1.5S 28A = 1815         | 28                         | φ42                              | φ45                             | A1         | 18                    | φ15                           | -                          | -                            | 18                        | 5 × 2.3  | -                | -              | 169.2                |
| S1.5S 28A = 1820         | 28                         | φ42                              | φ45                             | A1         | 18                    | φ20                           | -                          | -                            | 18                        | 6 × 2.8  | -                | -              | 149.0                |
| S1.5S 28B - 1010F        | 28                         | φ42                              | φ45                             | B1         | 10                    | φ10                           | φ36                        | 10                           | 20                        | -  | -                | -              | 176.3                |
| S1.5S 28B - 1210         | 28                         | φ42                              | φ45                             | B1         | 12                    | φ10                           | φ30                        | 10                           | 22                        | -  | -                | -              | 172.5                |
| S1.5S 28B # 1212         | 28                         | φ42                              | φ45                             | B1         | 12                    | φ12                           | φ30                        | 10                           | 22                        | 4 × 1.8  | M3               | 5              | 165.0                |
| S1.5S 28B # 1215         | 28                         | φ42                              | φ45                             | B1         | 12                    | φ15                           | φ30                        | 10                           | 22                        | 5 × 2.3  | M3               | 5              | 154.1                |
| S1.5S 28B - 1612         | 28                         | φ42                              | φ45                             | B1         | 16                    | φ12                           | φ36                        | 10                           | 26                        | -  | -                | -              | 231.0                |
| S1.5S 28B - 1812         | 28                         | φ42                              | φ45                             | B1         | 18                    | φ12                           | φ36                        | 10                           | 28                        | -  | -                | -              | 251.0                |
| S1.5S 28B # 1815         | 28                         | φ42                              | φ45                             | B1         | 18                    | φ15                           | φ36                        | 10                           | 28                        | 5 × 2.3  | M4               | 5              | 233.8                |
| S1.5S 28B # 1818         | 28                         | φ42                              | φ45                             | B1         | 18                    | φ18                           | φ36                        | 10                           | 28                        | 6 × 2.8  | M5               | 5              | 215.4                |
| S1.5S 28B # 1820         | 28                         | φ42                              | φ45                             | B1         | 18                    | φ20                           | φ36                        | 10                           | 28                        | 6 × 2.8  | M5               | 5              | 202.4                |
| S1.5S 29A - 1210F        | 29                         | φ43.5                            | φ46.5                           | A1         | 12                    | φ10                           | -                          | -                            | 12                        | -  | -                | -              | 132.6                |
| S1.5S 29A - 1812F        | 29                         | φ43.5                            | φ46.5                           | A1         | 18                    | φ12                           | -                          | -                            | 18                        | -  | -                | -              | 194.0                |
| S1.5S 29B - 1210F        | 29                         | φ43.5                            | φ46.5                           | B1         | 12                    | φ10                           | φ38                        | 10                           | 22                        | -  | -                | -              | 215.5                |
| S1.5S 29B - 1812         | 29                         | φ43.5                            | φ46.5                           | B1         | 18                    | φ12                           | φ38                        | 10                           | 28                        | -  | -                | -              | 274.3                |
| S1.5S 30A - 1012F        | 30                         | φ45                              | φ48                             | A1         | 10                    | φ12                           | -                          | -                            | 10                        | -  | -                | -              | 116.0                |
| S1.5S 30A - 1210F        | 30                         | φ45                              | φ48                             | A1         | 12                    | φ10                           | -                          | -                            | 12                        | -  | -                | -              | 142.4                |
| S1.5S 30A = 1212         | 30                         | φ45                              | φ48                             | A1         | 12                    | φ12                           | -                          | -                            | 12                        | 4 × 1.8  | -                | -              | 138.5                |
| S1.5S 30A = 1215         | 30                         | φ45                              | φ48                             | A1         | 12                    | φ15                           | -                          | -                            | 12                        | 5 × 2.3  | -                | -              | 132.1                |
| S1.5S 30A - 1614F        | 30                         | φ45                              | φ48                             | A1         | 16                    | φ14                           | -                          | -                            | 16                        | -  | -                | -              | 180.4                |
| S1.5S 30A - 1814F        | 30                         | φ45                              | φ48                             | A1         | 18                    | φ14                           | -                          | -                            | 18                        | -  | -                | -              | 203.0                |
| S1.5S 30A = 1815         | 30                         | φ45                              | φ48                             | A1         | 18                    | φ15                           | -                          | -                            | 18                        | 5 × 2.3  | -                | -              | 198.1                |
| S1.5S 30A = 1818         | 30                         | φ45                              | φ48                             | A1         | 18                    | φ18                           | -                          | -                            | 18                        | 6 × 2.8  | -                | -              | 186.4                |
| S1.5S 30A = 1820         | 30                         | φ45                              | φ48                             | A1         | 18                    | φ20                           | -                          | -                            | 18                        | 6 × 2.8  | -                | -              | 178.0                |



| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 分度圆直径<br>Outside Diameter<br><i>d<sub>a</sub></i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>dd(H7)</i> | 轮毂外径<br>Hub Diameter<br><i>d<sub>h</sub></i> | 轮毂长度<br>Hub Projection<br><i>l<sub>h</sub></i> | 全长<br>Overall Length<br><i>l</i> | 键槽<br>Key Way<br><i>b<sub>2</sub> × t<sub>2</sub></i> | 螺纹孔<br>Set Screw |                      | 重量<br>Weight<br><i>W(g)</i> |
|--------------------------|-----------------------------------|---|---|------------|------------------------------|--------------------------------------|--|--|----------------------------------|---|------------------|----------------------|-----------------------------|
|                          |                                   |   |   |            |                              |                                      |  |  |                                  |   | <i>M</i>         | <i>l<sub>s</sub></i> |                             |
| <b>S1.5S 30B - 1010F</b> | 30                                | φ45                                     | φ48   | B1         | 10                           | φ10                                  | φ38  | 10   | 20                               | -   | -                | -                    | 201.5                       |
| <b>S1.5S 30B - 1210</b>  | 30                                | φ45                                     | φ48   | B1         | 12                           | φ10                                  | φ30  | 10   | 22                               | -   | -                | -                    | 191.9                       |
| <b>S1.5S 30B # 1212</b>  | 30                                | φ45                                     | φ48   | B1         | 12                           | φ12                                  | φ30  | 10   | 22                               | 4 × 1.8   | M3               | 5                    | 184.3                       |
| <b>S1.5S 30B # 1215</b>  | 30                                | φ45                                     | φ48   | B1         | 12                           | φ15                                  | φ30  | 10   | 22                               | 5 × 2.3   | M4               | 5                    | 172.5                       |
| <b>S1.5S 30BF - 1508</b> | 30                                | φ45                                     | φ48   | B1         | 15                           | φ 8(H8)                              | φ38  | 15   | 30                               | -   | -                | -                    | 307.3                       |
| <b>S1.5S 30B - 1612</b>  | 30                                | φ45                                     | φ48   | B1         | 16                           | φ12                                  | φ38  | 10   | 26                               | -   | -                | -                    | 265.9                       |
| <b>S1.5S 30B - 1812</b>  | 30                                | φ45                                     | φ48   | B1         | 18                           | φ12                                  | φ40  | 10   | 28                               | -   | -                | -                    | 298.7                       |
| <b>S1.5S 30B # 1815</b>  | 30                                | φ45                                     | φ48   | B1         | 18                           | φ15                                  | φ40  | 10   | 28                               | 5 × 2.3   | M4               | 5                    | 281.4                       |
| <b>S1.5S 30B # 1818</b>  | 30                                | φ45                                     | φ48   | B1         | 18                           | φ18                                  | φ40  | 10   | 28                               | 6 × 2.8   | M5               | 5                    | 262.9                       |
| <b>S1.5S 30B # 1820</b>  | 30                                | φ45                                     | φ48   | B1         | 18                           | φ20                                  | φ40  | 10   | 28                               | 6 × 2.8   | M5               | 5                    | 249.9                       |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|----------------|----------------|---|-------|-------|-------|-------|-------|-------|
|                |                | 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| 26             | 12             | 0.030                                       | 0.306 | 0.612 | 1.224 | 2.236 | 3.017 | 3.524 |
| 26             | 18             | 0.045                                       | 0.459 | 0.918 | 1.836 | 3.355 | 4.526 | 5.286 |
| 27             | 12             | 0.032                                       | 0.322 | 0.645 | 1.290 | 2.337 | 3.143 | 3.697 |
| 27             | 18             | 0.048                                       | 0.483 | 0.967 | 1.935 | 3.505 | 4.715 | 5.545 |
| 28             | 10             | 0.028                                       | 0.282 | 0.565 | 1.130 | 2.030 | 2.722 | 3.224 |
| 28             | 12             | 0.033                                       | 0.339 | 0.678 | 1.356 | 2.436 | 3.267 | 3.869 |
| 28             | 16             | 0.045                                       | 0.452 | 0.904 | 1.809 | 3.248 | 4.356 | 5.159 |
| 28             | 18             | 0.050                                       | 0.508 | 1.017 | 2.035 | 3.654 | 4.901 | 5.804 |
| 29             | 12             | 0.035                                       | 0.355 | 0.711 | 1.423 | 2.534 | 3.389 | 4.042 |
| 29             | 18             | 0.053                                       | 0.533 | 1.067 | 2.135 | 3.802 | 5.084 | 6.063 |

### T (N · m)

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|---|
| 100   |
| 29.22                                       |
| 43.83                                       |
| 30.75                                       |
| 46.12                                       |
| 26.73                                       |
| 32.37                                       |
| 43.16                                       |
| 48.51                                       |
| 33.90                                       |
| 50.89                                       |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|----------------|----------------|---|-------|-------|-------|-------|-------|-------|
|                |                | 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| 30             | 10             | 0.031                                       | 0.310 | 0.620 | 1.241 | 2.192 | 2.923 | 3.509 |
| 30             | 12             | 0.037                                       | 0.372 | 0.744 | 1.489 | 2.630 | 3.508 | 4.211 |
| 30             | 15             | 0.047                                       | 0.470 | 0.930 | 1.860 | 3.290 | 4.390 | 5.270 |
| 30             | 16             | 0.049                                       | 0.496 | 0.993 | 1.986 | 3.507 | 4.677 | 5.615 |
| 30             | 18             | 0.055                                       | 0.558 | 1.117 | 2.234 | 3.946 | 5.262 | 6.317 |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|---|-------|-------|-------|-------|-------|-------|
| 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| -   | -     | -     | -     | -     | -     | -     |
| -   | -     | -     | -     | -     | -     | -     |
| 0.003                                       | 0.030 | 0.050 | 0.110 | 0.200 | 0.270 | 0.330 |
| -   | -     | -     | -     | -     | -     | -     |
| -   | -     | -     | -     | -     | -     | -     |

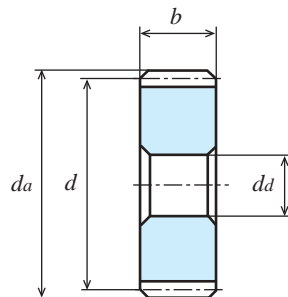
# 直齿轮

## SPUR GEARS

模数  
MODULE

1.5 (齿数 32 ~ 40)

(普通齿)  
FULL DEPTH TOOTH



单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|------|-----|-----|------|-------------|
| JIS B 1702-1 8级 | S45C | 20度 | —   | —    | 0.06 ~ 0.15 |

★未做表面处理。[#] 表示带有键槽和键，螺纹孔和固定用螺钉；[=] 表示带有键槽和键。

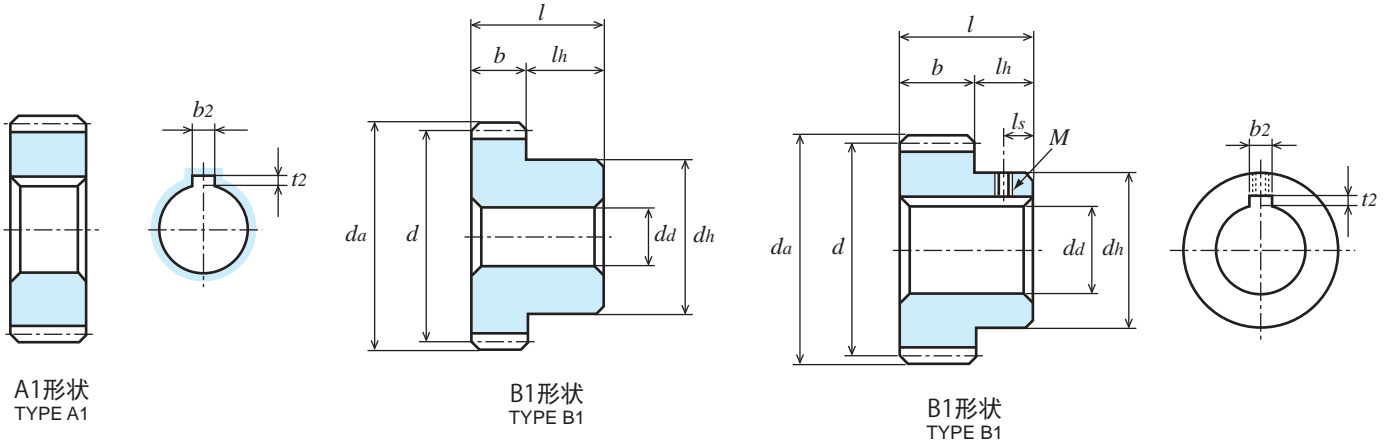
★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★KG 的规格齿轮有「标准齿宽」(轻负荷用)和传达扭矩更大的「加宽齿宽」(重负荷用)。请根据用途选择。

①同一种材料，一样的齿轮相互啮合时的理想值。

A1形状  
TYPE A1

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 分度圆直径<br>Outside Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b2 × t2 | 螺纹孔<br>Set Screw |    | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|---------------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|--------------------------|------------------|----|----------------------|
|                          |                            |                                  |                                 |            |                       |                               |                            |                              |                           |                          | M                | ls |                      |
| S1.5S 32A - 1010F        | 32                         | φ48                              | φ51                             | A1         | 10                    | φ10                           | -                          | -                            | 10                        | -                        | -                | -  | 135.9                |
| S1.5S 32A = 1012         | 32                         | φ48                              | φ51                             | A1         | 10                    | φ12                           | -                          | -                            | 10                        | 4 × 1.8                  | -                | -  | 132.6                |
| S1.5S 32A = 1015         | 32                         | φ48                              | φ51                             | A1         | 10                    | φ15                           | -                          | -                            | 10                        | 5 × 2.3                  | -                | -  | 127.3                |
| S1.5S 32A - 1614F        | 32                         | φ48                              | φ51                             | A1         | 16                    | φ14                           | -                          | -                            | 16                        | -                        | -                | -  | 207.9                |
| S1.5S 32A = 1615         | 32                         | φ48                              | φ51                             | A1         | 16                    | φ15                           | -                          | -                            | 16                        | 5 × 2.3                  | -                | -  | 203.6                |
| S1.5S 32A = 1618         | 32                         | φ48                              | φ51                             | A1         | 16                    | φ18                           | -                          | -                            | 16                        | 6 × 2.8                  | -                | -  | 193.2                |
| S1.5S 32A = 1620         | 32                         | φ48                              | φ51                             | A1         | 16                    | φ20                           | -                          | -                            | 16                        | 6 × 2.8                  | -                | -  | 185.7                |
| S1.5S 32B - 1010         | 32                         | φ48                              | φ51                             | B1         | 10                    | φ10                           | φ30                        | 10                           | 20                        | -                        | -                | -  | 185.3                |
| S1.5S 32B # 1012         | 32                         | φ48                              | φ51                             | B1         | 10                    | φ12                           | φ30                        | 10                           | 20                        | 4 × 1.8                  | M3               | 5  | 178.4                |
| S1.5S 32B # 1015         | 32                         | φ48                              | φ51                             | B1         | 10                    | φ15                           | φ30                        | 10                           | 20                        | 5 × 2.3                  | M4               | 5  | 167.7                |
| S1.5S 32B - 1612         | 32                         | φ48                              | φ51                             | B1         | 16                    | φ12                           | φ40                        | 10                           | 26                        | -                        | -                | -  | 303.0                |
| S1.5S 32B # 1615         | 32                         | φ48                              | φ51                             | B1         | 16                    | φ15                           | φ40                        | 10                           | 26                        | 5 × 2.3                  | M4               | 5  | 286.9                |
| S1.5S 32B # 1618         | 32                         | φ48                              | φ51                             | B1         | 16                    | φ18                           | φ40                        | 10                           | 26                        | 6 × 2.8                  | M5               | 5  | 269.7                |
| S1.5S 32B # 1620         | 32                         | φ48                              | φ51                             | B1         | 16                    | φ20                           | φ40                        | 10                           | 26                        | 6 × 2.8                  | M5               | 5  | 257.6                |
| S1.5S 34A - 1012F        | 34                         | φ51                              | φ54                             | A1         | 10                    | φ12                           | -                          | -                            | 10                        | -                        | -                | -  | 151.5                |
| S1.5S 34A - 1614F        | 34                         | φ51                              | φ54                             | A1         | 16                    | φ14                           | -                          | -                            | 16                        | -                        | -                | -  | 237.2                |
| S1.5S 34B - 1010F        | 34                         | φ51                              | φ54                             | B1         | 10                    | φ10                           | φ44                        | 10                           | 20                        | -                        | -                | -  | 267.4                |
| S1.5S 34B - 1612         | 34                         | φ51                              | φ54                             | B1         | 16                    | φ12                           | φ44                        | 10                           | 26                        | -                        | -                | -  | 353.1                |
| S1.5S 35A - 1012F        | 35                         | φ52.5                            | φ55.5                           | A1         | 10                    | φ12                           | -                          | -                            | 10                        | -                        | -                | -  | 161.1                |
| S1.5S 35A - 1614F        | 35                         | φ52.5                            | φ55.5                           | A1         | 16                    | φ14                           | -                          | -                            | 16                        | -                        | -                | -  | 252.6                |
| S1.5S 35B - 1010F        | 35                         | φ52.5                            | φ55.5                           | B1         | 10                    | φ10                           | φ44                        | 10                           | 20                        | -                        | -                | -  | 277.0                |
| S1.5S 35B - 1612         | 35                         | φ52.5                            | φ55.5                           | B1         | 16                    | φ12                           | φ44                        | 10                           | 26                        | -                        | -                | -  | 368.4                |
| S1.5S 36A - 1012F        | 36                         | φ54                              | φ57                             | A1         | 10                    | φ12                           | -                          | -                            | 10                        | -                        | -                | -  | 170.9                |
| S1.5S 36A = 1015         | 36                         | φ54                              | φ57                             | A1         | 10                    | φ15                           | -                          | -                            | 10                        | 5 × 2.3                  | -                | -  | 165.0                |
| S1.5S 36A = 1016         | 36                         | φ54                              | φ57                             | A1         | 10                    | φ16                           | -                          | -                            | 10                        | 5 × 2.3                  | -                | -  | 163.1                |
| S1.5S 36A - 1614F        | 36                         | φ54                              | φ57                             | A1         | 16                    | φ14                           | -                          | -                            | 16                        | -                        | -                | -  | 268.3                |
| S1.5S 36A = 1615         | 36                         | φ54                              | φ57                             | A1         | 16                    | φ15                           | -                          | -                            | 16                        | 5 × 2.3                  | -                | -  | 264.0                |
| S1.5S 36A = 1618         | 36                         | φ54                              | φ57                             | A1         | 16                    | φ18                           | -                          | -                            | 16                        | 6 × 2.8                  | -                | -  | 253.6                |
| S1.5S 36A = 1620         | 36                         | φ54                              | φ57                             | A1         | 16                    | φ20                           | -                          | -                            | 16                        | 6 × 2.8                  | -                | -  | 246.1                |
| S1.5S 36B - 1010         | 36                         | φ54                              | φ57                             | B1         | 10                    | φ10                           | φ32                        | 10                           | 20                        | -                        | -                | -  | 230.7                |
| S1.5S 36B # 1012         | 36                         | φ54                              | φ57                             | B1         | 10                    | φ12                           | φ32                        | 10                           | 20                        | 4 × 1.8                  | M3               | 5  | 223.8                |
| S1.5S 36B # 1015         | 36                         | φ54                              | φ57                             | B1         | 10                    | φ15                           | φ32                        | 10                           | 20                        | 5 × 2.3                  | M4               | 5  | 213.0                |
| S1.5S 36B # 1016         | 36                         | φ54                              | φ57                             | B1         | 10                    | φ16                           | φ32                        | 10                           | 20                        | 5 × 2.3                  | M4               | 5  | 209.2                |
| S1.5S 36B - 1612         | 36                         | φ54                              | φ57                             | B1         | 16                    | φ12                           | φ40                        | 10                           | 26                        | -                        | -                | -  | 363.5                |
| S1.5S 36B # 1615         | 36                         | φ54                              | φ57                             | B1         | 16                    | φ15                           | φ40                        | 10                           | 26                        | 5 × 2.3                  | M4               | 5  | 347.3                |
| S1.5S 36B # 1618         | 36                         | φ54                              | φ57                             | B1         | 16                    | φ18                           | φ40                        | 10                           | 26                        | 6 × 2.8                  | M5               | 5  | 330.1                |
| S1.5S 36B # 1620         | 36                         | φ54                              | φ57                             | B1         | 16                    | φ20                           | φ40                        | 10                           | 26                        | 6 × 2.8                  | M5               | 5  | 318.0                |
| S1.5S 38A - 1012F        | 38                         | φ57                              | φ60                             | A1         | 10                    | φ12                           | -                          | -                            | 10                        | -                        | -                | -  | 191.4                |
| S1.5S 38A - 1614F        | 38                         | φ57                              | φ60                             | A1         | 16                    | φ14                           | -                          | -                            | 16                        | -                        | -                | -  | 301.2                |
| S1.5S 38B - 1012F        | 38                         | φ57                              | φ60                             | B1         | 10                    | φ12                           | φ50                        | 10                           | 20                        | -                        | -                | -  | 336.7                |
| S1.5S 38B - 1612         | 38                         | φ57                              | φ60                             | B1         | 16                    | φ12                           | φ50                        | 10                           | 26                        | -                        | -                | -  | 451.8                |



| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 分度圆直径<br>Outside Diameter<br><i>da</i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>da</i> (H7) | 轮毂外径<br>Hub Diameter<br><i>dh</i> | 轮毂长度<br>Hub Projection<br><i>lh</i> | 全长<br>Overall Length<br><i>l</i> | 键槽<br>Key Way<br><i>b2</i> × <i>t2</i> | 螺纹孔<br>Set Screw |           | 重量<br>Weight<br><i>W</i> (g) |
|--------------------------|-----------------------------------|---|--|------------|------------------------------|---------------------------------------|-----------------------------------|-------------------------------------|----------------------------------|--|------------------|-----------|------------------------------|
|                          |                                   |   |  |            |                              |                                       |                                   |                                     |                                  |  | <i>M</i>         | <i>ls</i> |                              |
| S1.5S 40A - 1012F        | 40                                | φ60                                     | φ63                                    | A1         | 10                           | φ12                                   | -                                 | -                                   | 10                               | -                                      | -                | -         | 213.1                        |
| S1.5S 40A = 1015         | 40                                | φ60                                     | φ63                                    | A1         | 10                           | φ15                                   | -                                 | -                                   | 10                               | 5 × 2.3                                | -                | -         | 207.2                        |
| S1.5S 40A = 1016         | 40                                | φ60                                     | φ63                                    | A1         | 10                           | φ16                                   | -                                 | -                                   | 10                               | 5 × 2.3                                | -                | -         | 205.3                        |
| S1.5S 40A = 1018         | 40                                | φ60                                     | φ63                                    | A1         | 10                           | φ18                                   | -                                 | -                                   | 10                               | 6 × 2.8                                | -                | -         | 200.7                        |
| S1.5S 40A - 1614F        | 40                                | φ60                                     | φ63                                    | A1         | 16                           | φ14                                   | -                                 | -                                   | 16                               | -                                      | -                | -         | 335.8                        |
| S1.5S 40A = 1615         | 40                                | φ60                                     | φ63                                    | A1         | 16                           | φ15                                   | -                                 | -                                   | 16                               | 5 × 2.3                                | -                | -         | 331.5                        |
| S1.5S 40A = 1618         | 40                                | φ60                                     | φ63                                    | A1         | 16                           | φ18                                   | -                                 | -                                   | 16                               | 6 × 2.8                                | -                | -         | 321.1                        |
| S1.5S 40A = 1620         | 40                                | φ60                                     | φ63                                    | A1         | 16                           | φ20                                   | -                                 | -                                   | 16                               | 6 × 2.8                                | -                | -         | 313.6                        |
| S1.5S 40B - 1012         | 40                                | φ60                                     | φ63                                    | B1         | 10                           | φ12                                   | φ36                               | 10                                  | 20                               | -                                      | -                | -         | 284.3                        |
| S1.5S 40B # 1015         | 40                                | φ60                                     | φ63                                    | B1         | 10                           | φ15                                   | φ36                               | 10                                  | 20                               | 5 × 2.3                                | M4               | 5         | 271.8                        |
| S1.5S 40B # 1016         | 40                                | φ60                                     | φ63                                    | B1         | 10                           | φ16                                   | φ36                               | 10                                  | 20                               | 5 × 2.3                                | M4               | 5         | 268.0                        |
| S1.5S 40B # 1018         | 40                                | φ60                                     | φ63                                    | B1         | 10                           | φ18                                   | φ36                               | 10                                  | 20                               | 6 × 2.8                                | M5               | 5         | 258.6                        |
| S1.5S 40BF - 1508        | 40                                | φ60                                     | φ63                                    | B1         | 15                           | φ 8(H8)                               | φ50                               | 15                                  | 30                               | -                                      | -                | -         | 550.2                        |
| S1.5S 40B - 1612         | 40                                | φ60                                     | φ63                                    | B1         | 16                           | φ12                                   | φ40                               | 10                                  | 26                               | -                                      | -                | -         | 431.0                        |
| S1.5S 40B # 1615         | 40                                | φ60                                     | φ63                                    | B1         | 16                           | φ15                                   | φ40                               | 10                                  | 26                               | 5 × 2.3                                | M4               | 5         | 414.8                        |
| S1.5S 40B # 1618         | 40                                | φ60                                     | φ63                                    | B1         | 16                           | φ18                                   | φ40                               | 10                                  | 26                               | 6 × 2.8                                | M5               | 5         | 397.6                        |
| S1.5S 40B # 1620         | 40                                | φ60                                     | φ63                                    | B1         | 16                           | φ20                                   | φ40                               | 10                                  | 26                               | 6 × 2.8                                | M5               | 5         | 385.6                        |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|----------------|----------------|---|-------|-------|-------|-------|-------|-------|
|                |                | 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| 32             | 10             | 0.033                                       | 0.338 | 0.677 | 1.352 | 2.351 | 3.122 | 3.793 |
| 32             | 16             | 0.054                                       | 0.541 | 1.083 | 2.164 | 3.762 | 4.996 | 6.069 |
| 34             | 10             | 0.036                                       | 0.366 | 0.733 | 1.452 | 2.507 | 3.359 | 4.074 |
| 34             | 16             | 0.058                                       | 0.586 | 1.173 | 2.323 | 4.011 | 5.375 | 6.519 |
| 35             | 10             | 0.038                                       | 0.381 | 0.762 | 1.501 | 2.583 | 3.477 | 4.214 |
| 35             | 16             | 0.060                                       | 0.609 | 1.219 | 2.402 | 4.133 | 5.563 | 6.743 |
| 36             | 10             | 0.039                                       | 0.395 | 0.790 | 1.550 | 2.659 | 3.594 | 4.353 |
| 36             | 16             | 0.063                                       | 0.632 | 1.265 | 2.481 | 4.254 | 5.751 | 6.966 |
| 38             | 10             | 0.042                                       | 0.424 | 0.848 | 1.648 | 2.807 | 3.828 | 4.629 |
| 38             | 16             | 0.067                                       | 0.678 | 1.356 | 2.637 | 4.492 | 6.125 | 7.407 |

### T (N · m)

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |
|---|-------|
| 100   | 32.27 |
|   | 51.66 |
|   | 34.95 |
|   | 55.96 |
|   | 36.38 |
|   | 58.15 |
|   | 37.72 |
|   | 60.35 |
|   | 40.49 |
|   | 64.74 |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|----------------|----------------|---|-------|-------|-------|-------|-------|-------|
|                |                | 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| 40             | 10             | 0.045                                       | 0.452 | 0.905 | 1.744 | 2.952 | 4.060 | 4.902 |
| 40             | 15             | 0.068                                       | 0.680 | 1.360 | 2.610 | 4.420 | 6.080 | 7.340 |
| 40             | 16             | 0.072                                       | 0.724 | 1.449 | 2.791 | 4.724 | 6.496 | 7.844 |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|---|-------|-------|-------|-------|-------|-------|
| 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| -   | -     | -     | -     | -     | -     | -     |
| 0.005                                       | 0.050 | 0.100 | 0.190 | 0.340 | 0.480 | 0.590 |
| -   | -     | -     | -     | -     | -     | -     |

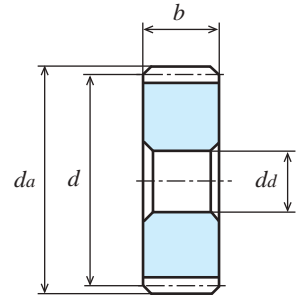
# 直齿轮

## SPUR GEARS

模数  
MODULE

1.5 (齿数 42 ~ 54)

(普通齿)  
FULL DEPTH TOOTH



单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|------|-----|-----|------|-------------|
| JIS B 1702-1 8级 | S45C | 20度 | —   | —    | 0.06 ~ 0.15 |

★未做表面处理。[#] 表示带有键槽和键，螺纹孔和固定用螺钉；[=] 表示带有键槽和键。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

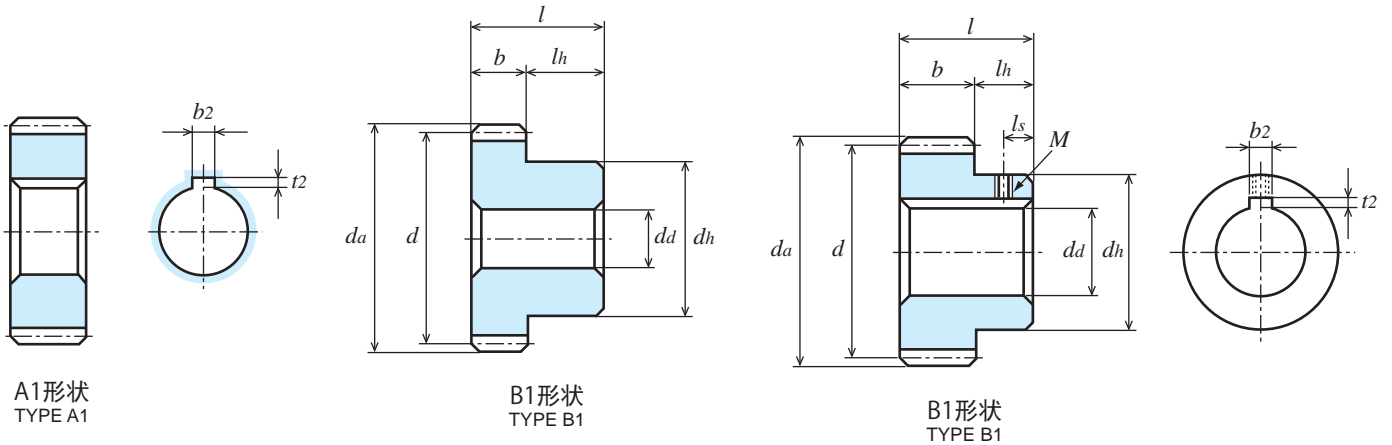
★KG 的规格齿轮有「标准齿宽」(轻负荷用)和传达扭矩更大的「加宽齿宽」(重负荷用)。请根据用途选择。

①同一种材料，一样的齿轮相互啮合时的理想值。

A1形状  
TYPE A1

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 分度圆直径<br>Outside Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b2 × t2 | 螺纹孔<br>Set Screw |    | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|---------------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|--------------------------|------------------|----|----------------------|
|                          |                            |                                  |                                 |            |                       |                               |                            |                              |                           |                          | M                | ls |                      |
| S1.5S 42A - 1012F        | 42                         | φ63                              | φ66                             | A1         | 10                    | φ12                           | -                          | -                            | 10                        | -                        | -                | -  | 235.8                |
| S1.5S 42A - 1612F        | 42                         | φ63                              | φ66                             | A1         | 16                    | φ12                           | -                          | -                            | 16                        | -                        | -                | -  | 377.3                |
| S1.5S 42B - 1012F        | 42                         | φ63                              | φ66                             | B1         | 10                    | φ12                           | φ50                        | 10                           | 20                        | -                        | -                | -  | 381.1                |
| S1.5S 42B - 1612         | 42                         | φ63                              | φ66                             | B1         | 16                    | φ12                           | φ50                        | 10                           | 26                        | -                        | -                | -  | 522.9                |
| S1.5S 44A - 1012F        | 44                         | φ66                              | φ69                             | A1         | 10                    | φ12                           | -                          | -                            | 10                        | -                        | -                | -  | 259.7                |
| S1.5S 44A - 1612F        | 44                         | φ66                              | φ69                             | A1         | 16                    | φ12                           | -                          | -                            | 16                        | -                        | -                | -  | 415.5                |
| S1.5S 44B - 1012F        | 44                         | φ66                              | φ69                             | B1         | 10                    | φ12                           | φ50                        | 10                           | 20                        | -                        | -                | -  | 404.9                |
| S1.5S 44B - 1612         | 44                         | φ66                              | φ69                             | B1         | 16                    | φ12                           | φ50                        | 10                           | 26                        | -                        | -                | -  | 561.1                |
| S1.5S 45A - 1012F        | 45                         | φ67.5                            | φ70.5                           | A1         | 10                    | φ12                           | -                          | -                            | 10                        | -                        | -                | -  | 272.0                |
| S1.5S 45A - 1612F        | 45                         | φ67.5                            | φ70.5                           | A1         | 16                    | φ12                           | -                          | -                            | 16                        | -                        | -                | -  | 435.3                |
| S1.5S 45B - 1012F        | 45                         | φ67.5                            | φ70.5                           | B1         | 10                    | φ12                           | φ50                        | 10                           | 20                        | -                        | -                | -  | 417.3                |
| S1.5S 45B - 1612         | 45                         | φ67.5                            | φ70.5                           | B1         | 16                    | φ12                           | φ50                        | 10                           | 26                        | -                        | -                | -  | 580.9                |
| S1.5S 46A - 1012F        | 46                         | φ69                              | φ72                             | A1         | 10                    | φ12                           | -                          | -                            | 10                        | -                        | -                | -  | 284.7                |
| S1.5S 46A - 1612F        | 46                         | φ69                              | φ72                             | A1         | 16                    | φ12                           | -                          | -                            | 16                        | -                        | -                | -  | 455.4                |
| S1.5S 46B - 1012F        | 46                         | φ69                              | φ72                             | B1         | 10                    | φ12                           | φ50                        | 10                           | 20                        | -                        | -                | -  | 429.9                |
| S1.5S 46B - 1612         | 46                         | φ69                              | φ72                             | B1         | 16                    | φ12                           | φ50                        | 10                           | 26                        | -                        | -                | -  | 601.1                |
| S1.5S 48A - 1014F        | 48                         | φ72                              | φ75                             | A1         | 10                    | φ14                           | -                          | -                            | 10                        | -                        | -                | -  | 307.5                |
| S1.5S 48A = 1015         | 48                         | φ72                              | φ75                             | A1         | 10                    | φ15                           | -                          | -                            | 10                        | 5 × 2.3                  | -                | -  | 304.8                |
| S1.5S 48A = 1016         | 48                         | φ72                              | φ75                             | A1         | 10                    | φ16                           | -                          | -                            | 10                        | 5 × 2.3                  | -                | -  | 302.9                |
| S1.5S 48A = 1018         | 48                         | φ72                              | φ75                             | A1         | 10                    | φ18                           | -                          | -                            | 10                        | 6 × 2.8                  | -                | -  | 298.3                |
| S1.5S 48A - 1616F        | 48                         | φ72                              | φ75                             | A1         | 16                    | φ16                           | -                          | -                            | 16                        | -                        | -                | -  | 486.1                |
| S1.5S 48A = 1620         | 48                         | φ72                              | φ75                             | A1         | 16                    | φ20                           | -                          | -                            | 16                        | 6 × 2.8                  | -                | -  | 469.8                |
| S1.5S 48B - 1012         | 48                         | φ72                              | φ75                             | B1         | 10                    | φ12                           | φ36                        | 10                           | 20                        | -                        | -                | -  | 382.0                |
| S1.5S 48B # 1015         | 48                         | φ72                              | φ75                             | B1         | 10                    | φ15                           | φ36                        | 10                           | 20                        | 5 × 2.3                  | M4               | 5  | 369.5                |
| S1.5S 48B # 1016         | 48                         | φ72                              | φ75                             | B1         | 10                    | φ16                           | φ36                        | 10                           | 20                        | 5 × 2.3                  | M4               | 5  | 365.8                |
| S1.5S 48B # 1018         | 48                         | φ72                              | φ75                             | B1         | 10                    | φ18                           | φ36                        | 10                           | 20                        | 6 × 2.8                  | M5               | 5  | 356.4                |
| S1.5S 48B - 1612         | 48                         | φ72                              | φ75                             | B1         | 16                    | φ12                           | φ40                        | 10                           | 26                        | -                        | -                | -  | 587.3                |
| S1.5S 48B # 1615         | 48                         | φ72                              | φ75                             | B1         | 16                    | φ15                           | φ40                        | 10                           | 26                        | 5 × 2.3                  | M4               | 5  | 571.1                |
| S1.5S 48B # 1620         | 48                         | φ72                              | φ75                             | B1         | 16                    | φ20                           | φ40                        | 10                           | 26                        | 6 × 2.8                  | M5               | 5  | 541.9                |
| S1.5S 50A - 1014F        | 50                         | φ75                              | φ78                             | A1         | 10                    | φ14                           | -                          | -                            | 10                        | -                        | -                | -  | 334.7                |
| S1.5S 50A = 1015         | 50                         | φ75                              | φ78                             | A1         | 10                    | φ15                           | -                          | -                            | 10                        | 5 × 2.3                  | -                | -  | 332.0                |
| S1.5S 50A = 1018         | 50                         | φ75                              | φ78                             | A1         | 10                    | φ18                           | -                          | -                            | 10                        | 6 × 2.8                  | -                | -  | 325.5                |
| S1.5S 50A = 1020         | 50                         | φ75                              | φ78                             | A1         | 10                    | φ20                           | -                          | -                            | 10                        | 6 × 2.8                  | -                | -  | 320.8                |
| S1.5S 50A - 1616F        | 50                         | φ75                              | φ78                             | A1         | 16                    | φ16                           | -                          | -                            | 16                        | -                        | -                | -  | 529.6                |
| S1.5S 50A = 1620         | 50                         | φ75                              | φ78                             | A1         | 16                    | φ20                           | -                          | -                            | 16                        | 6 × 2.8                  | -                | -  | 513.3                |
| S1.5S 50A = 1625         | 50                         | φ75                              | φ78                             | A1         | 16                    | φ25                           | -                          | -                            | 16                        | 8 × 3.3                  | -                | -  | 489.9                |
| S1.5S 50B - 1012         | 50                         | φ75                              | φ78                             | B1         | 10                    | φ12                           | φ40                        | 10                           | 20                        | -                        | -                | -  | 428.0                |
| S1.5S 50B # 1015         | 50                         | φ75                              | φ78                             | B1         | 10                    | φ15                           | φ40                        | 10                           | 20                        | 5 × 2.3                  | M4               | 5  | 415.3                |
| S1.5S 50B # 1018         | 50                         | φ75                              | φ78                             | B1         | 10                    | φ18                           | φ40                        | 10                           | 20                        | 6 × 2.8                  | M5               | 5  | 402.1                |
| S1.5S 50B # 1020         | 50                         | φ75                              | φ78                             | B1         | 10                    | φ20                           | φ40                        | 10                           | 20                        | 6 × 2.8                  | M5               | 5  | 392.8                |
| S1.5S 50BF - 1510        | 50                         | φ75                              | φ78                             | B1         | 15                    | φ10(H8)                       | φ60                        | 15                           | 30                        | -                        | -                | -  | 832.2                |
| S1.5S 50B - 1615         | 50                         | φ75                              | φ78                             | B1         | 16                    | φ15                           | φ50                        | 10                           | 26                        | -                        | -                | -  | 673.4                |
| S1.5S 50B # 1620         | 50                         | φ75                              | φ78                             | B1         | 16                    | φ20                           | φ50                        | 10                           | 26                        | 6 × 2.8                  | M5               | 5  | 640.3                |
| S1.5S 50B # 1625         | 50                         | φ75                              | φ78                             | B1         | 16                    | φ25                           | φ50                        | 10                           | 26                        | 8 × 3.3                  | M6               | 5  | 602.1                |





| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>$z$ | 分度圆直径<br>Reference Diameter<br>$d$ | 分度圆直径<br>Outside Diameter<br>$d_a$ | 形状<br>Type | 齿宽<br>Face Width<br>$b$ | 孔径<br>Bore Diameter<br>$d_d(H7)$ | 轮毂外径<br>Hub Diameter<br>$d_h$ | 轮毂长度<br>Hub Projection<br>$l_h$ | 全长<br>Overall Length<br>$l$ | 键槽<br>Key Way<br>$b_2 \times t_2$ | 螺纹孔<br>Set Screw |       | 重量<br>Weight<br>$W(g)$ |
|--------------------------|------------------------------|------------------------------------|------------------------------------|------------|-------------------------|----------------------------------|-------------------------------|---------------------------------|-----------------------------|-----------------------------------|------------------|-------|------------------------|
|                          |                              |                                    |                                    |            |                         |                                  |                               |                                 |                             |                                   | $M$              | $l_s$ |                        |
| <b>S1.5S 52A - 1014F</b> | 52                           | $\phi 78$                          | $\phi 81$                          | A1         | 10                      | $\phi 14$                        | -                             | -                               | 10                          | -                                 |                  |       | 363.0                  |
| <b>S1.5S 52A - 1616F</b> | 52                           | $\phi 78$                          | $\phi 81$                          | A1         | 16                      | $\phi 16$                        | -                             | -                               | 16                          | -                                 |                  |       | 574.9                  |
| <b>S1.5S 52B - 1014F</b> | 52                           | $\phi 78$                          | $\phi 81$                          | B1         | 10                      | $\phi 14$                        | $\phi 50$                     | 10                              | 20                          | -                                 |                  |       | 505.1                  |
| <b>S1.5S 52B - 1616</b>  | 52                           | $\phi 78$                          | $\phi 81$                          | B1         | 16                      | $\phi 16$                        | $\phi 60$                     | 10                              | 26                          | -                                 |                  |       | 781.6                  |
| <b>S1.5S 54A - 1014F</b> | 54                           | $\phi 81$                          | $\phi 84$                          | A1         | 10                      | $\phi 14$                        | -                             | -                               | 10                          | -                                 |                  |       | 392.4                  |
| <b>S1.5S 54A - 1616F</b> | 54                           | $\phi 81$                          | $\phi 84$                          | A1         | 16                      | $\phi 16$                        | -                             | -                               | 16                          | -                                 |                  |       | 622.0                  |
| <b>S1.5S 54B - 1014F</b> | 54                           | $\phi 81$                          | $\phi 84$                          | B1         | 10                      | $\phi 14$                        | $\phi 50$                     | 10                              | 20                          | -                                 |                  |       | 534.5                  |
| <b>S1.5S 54B - 1616</b>  | 54                           | $\phi 81$                          | $\phi 84$                          | B1         | 16                      | $\phi 16$                        | $\phi 60$                     | 10                              | 26                          | -                                 |                  |       | 828.7                  |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br>$z$ | 齿宽<br>$b$ | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|-----------|-----------|---|-------|-------|-------|-------|-------|-------|---|
|           |           | 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |   |
| 42        | 10        | 0.048                                       | 0.481 | 0.963 | 1.839 | 3.094 | 4.290 | 5.173 | 100   |
| 42        | 16        | 0.077                                       | 0.771 | 1.542 | 2.943 | 4.951 | 6.864 | 8.276 | 45.93                                       |
| 44        | 10        | 0.051                                       | 0.510 | 1.021 | 1.932 | 3.230 | 4.515 | 5.448 | 73.62                                       |
| 44        | 16        | 0.080                                       | 0.820 | 1.630 | 3.090 | 5.170 | 7.220 | 8.720 | 48.70                                       |
| 45        | 10        | 0.052                                       | 0.525 | 1.050 | 1.978 | 3.298 | 4.628 | 5.588 | 78.30                                       |
| 45        | 16        | 0.080                                       | 0.840 | 1.680 | 3.170 | 5.280 | 7.410 | 8.940 | 50.13                                       |
| 46        | 10        | 0.053                                       | 0.539 | 1.079 | 2.024 | 3.365 | 4.740 | 5.727 | 80.21                                       |
| 46        | 16        | 0.090                                       | 0.860 | 1.730 | 3.240 | 5.380 | 7.580 | 9.160 | 51.47                                       |
| 48        | 10        | 0.05  | 0.56  | 1.13  | 2.11  | 3.50  | 4.96  | 6.00  | 82.12                                       |
| 48        | 16        | 0.09  | 0.91  | 1.82  | 3.39  | 5.60  | 7.94  | 9.61  | 53.47                                       |
|           |           |   |       |       |       |       |       |       | 86.90                                       |

### T (N · m)

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br>$z$ | 齿宽<br>$b$ | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|-----------|-----------|---|-------|-------|-------|-------|-------|-------|
|           |           | 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| 50        | 10        | 0.059                                       | 0.59  | 1.19  | 2.20  | 3.66  | 5.18  | 6.28  |
| 50        | 15        | 0.090                                       | 0.890 | 1.790 | 3.290 | 5.470 | 7.740 | 9.380 |
| 50        | 16        | 0.096                                       | 0.96  | 1.92  | 3.53  | 5.86  | 8.30  | 10.05 |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |   |
|---|-------|-------|-------|-------|-------|-------|---|
| 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |   |
| -   | -     | -     | -     | -     | -     | -     | - |
| 0.008                                       | 0.080 | 0.160 | 0.300 | 0.520 | 0.760 | 0.950 |   |
| -   | -     | -     | -     | -     | -     | -     | - |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br>$z$ | 齿宽<br>$b$ | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |      |      |      |       |       |
|-----------|-----------|---|------|------|------|------|-------|-------|
|           |           | 10  | 100  | 200  | 400  | 800  | 1,200 | 1,500 |
| 52        | 10        | 0.062                                       | 0.62 | 1.25 | 2.29 | 3.82 | 5.40  | 6.55  |
| 52        | 16        | 0.101                                       | 1.01 | 2.01 | 3.67 | 6.12 | 8.65  | 10.49 |
| 54        | 10        | 0.065                                       | 0.65 | 1.31 | 2.38 | 3.98 | 5.62  | 6.82  |
| 54        | 16        | 0.105                                       | 1.05 | 2.10 | 3.81 | 6.38 | 9.00  | 10.92 |

### T (N · m)

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|---|
| 100   |
| 59.20                                       |
| 96.45                                       |
| 62.07                                       |
| 100.27                                      |

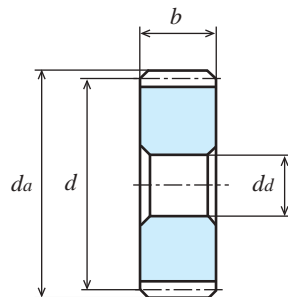
# 直齿轮

## SPUR GEARS

模数  
MODULE

1.5 (齿数 55 ~ 70)

(普通齿)  
FULL DEPTH TOOTH



单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|------|-----|-----|------|-------------|
| JIS B 1702-1 8级 | S45C | 20度 | —   | —    | 0.06 ~ 0.15 |

★未做表面处理。[#] 表示带有键槽和键，螺纹孔和固定用螺钉；[=] 表示带有键槽和键。

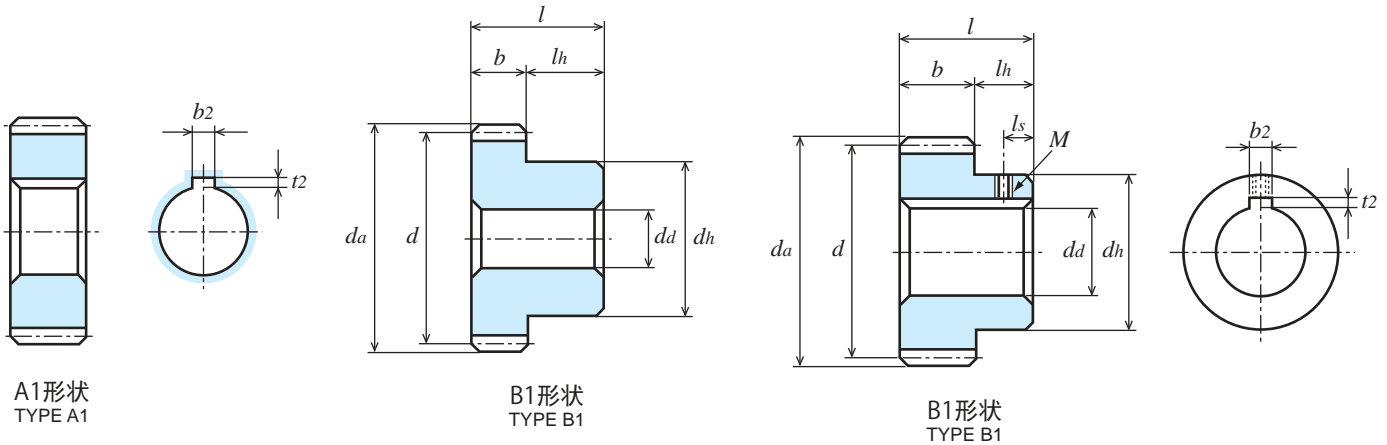
★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★KG 的规格齿轮有「标准齿宽」(轻负荷用)和传达扭矩更大的「加宽齿宽」(重负荷用)。请根据用途选择。

①同一种材料，一样的齿轮相互啮合时的理想值。

A1形状  
TYPE A1

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 分度圆直径<br>Outside Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b <sub>2</sub> × t <sub>2</sub> | 螺纹孔 |    | 轮圈内径<br>Dimension of Rim<br>di | 腹板厚度<br>Thickness of Web<br>bw | 重量<br>Weight<br>W(kg) |
|--------------------------|----------------------------|----------------------------------|---------------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|--|-----|----|--------------------------------|--------------------------------|-----------------------|
|                          |                            |                                  |                                 |            |                       |                               |                            |                              |                           |  | M   | ls |                                |                                |                       |
| S1.5S 55A - 1014F        | 55                         | φ82.5                            | φ85.5                           | A1         | 10                    | φ14                           | -                          | -                            | 10                        | -  | -   | -  | -                              | -                              | 0.41                  |
| S1.5S 55A - 1616F        | 55                         | φ82.5                            | φ85.5                           | A1         | 16                    | φ16                           | -                          | -                            | 16                        | -  | -   | -  | -                              | -                              | 0.65                  |
| S1.5S 55B - 1014F        | 55                         | φ82.5                            | φ85.5                           | B1         | 10                    | φ14                           | φ50                        | 10                           | 20                        | -  | -   | -  | -                              | -                              | 0.55                  |
| S1.5S 55B - 1616         | 55                         | φ82.5                            | φ85.5                           | B1         | 16                    | φ16                           | φ60                        | 10                           | 26                        | -  | -   | -  | -                              | -                              | 0.85                  |
| S1.5S 56A - 1014F        | 56                         | φ84                              | φ87                             | A1         | 10                    | φ14                           | -                          | -                            | 10                        | -  | -   | -  | -                              | -                              | 0.42                  |
| S1.5S 56A = 1015         | 56                         | φ84                              | φ87                             | A1         | 10                    | φ15                           | -                          | -                            | 10                        | 5 × 2.3  | -   | -  | -                              | -                              | 0.42                  |
| S1.5S 56A = 1018         | 56                         | φ84                              | φ87                             | A1         | 10                    | φ18                           | -                          | -                            | 10                        | 6 × 2.8  | -   | -  | -                              | -                              | 0.41                  |
| S1.5S 56A - 1616F        | 56                         | φ84                              | φ87                             | A1         | 16                    | φ16                           | -                          | -                            | 16                        | -  | -   | -  | -                              | -                              | 0.67                  |
| S1.5S 56A = 1620         | 56                         | φ84                              | φ87                             | A1         | 16                    | φ20                           | -                          | -                            | 16                        | 6 × 2.8  | -   | -  | -                              | -                              | 0.65                  |
| S1.5S 56B - 1014         | 56                         | φ84                              | φ87                             | B1         | 10                    | φ14                           | φ40                        | 10                           | 20                        | -  | -   | -  | -                              | -                              | 0.51                  |
| S1.5S 56B # 1015         | 56                         | φ84                              | φ87                             | B1         | 10                    | φ15                           | φ40                        | 10                           | 20                        | 5 × 2.3  | M4  | 5  | -                              | -                              | 0.50                  |
| S1.5S 56B - 1616         | 56                         | φ84                              | φ87                             | B1         | 16                    | φ16                           | φ50                        | 10                           | 26                        | -  | -   | -  | -                              | -                              | 0.81                  |
| S1.5S 56B # 1620         | 56                         | φ84                              | φ87                             | B1         | 16                    | φ20                           | φ50                        | 10                           | 26                        | 6 × 2.8  | M5  | 5  | -                              | -                              | 0.78                  |
| S1.5S 58A - 1014F        | 58                         | φ87                              | φ90                             | A1         | 10                    | φ14                           | -                          | -                            | 10                        | -  | -   | -  | -                              | -                              | 0.45                  |
| S1.5S 58A - 1616F        | 58                         | φ87                              | φ90                             | A1         | 16                    | φ16                           | -                          | -                            | 16                        | -  | -   | -  | -                              | -                              | 0.71                  |
| S1.5S 58B - 1014F        | 58                         | φ87                              | φ90                             | B1         | 10                    | φ14                           | φ50                        | 10                           | 20                        | -  | -   | -  | -                              | -                              | 0.60                  |
| S1.5S 58B - 1616         | 58                         | φ87                              | φ90                             | B1         | 16                    | φ16                           | φ60                        | 10                           | 26                        | -  | -   | -  | -                              | -                              | 0.93                  |
| S1.5S 60A - 1014F        | 60                         | φ90                              | φ93                             | A1         | 10                    | φ14                           | -                          | -                            | 10                        | -  | -   | -  | -                              | -                              | 0.49                  |
| S1.5S 60A = 1015         | 60                         | φ90                              | φ93                             | A1         | 10                    | φ15                           | -                          | -                            | 10                        | 5 × 2.3  | -   | -  | -                              | -                              | 0.48                  |
| S1.5S 60A = 1018         | 60                         | φ90                              | φ93                             | A1         | 10                    | φ18                           | -                          | -                            | 10                        | 6 × 2.8  | -   | -  | -                              | -                              | 0.49                  |
| S1.5S 60A = 1020         | 60                         | φ90                              | φ93                             | A1         | 10                    | φ20                           | -                          | -                            | 10                        | 6 × 2.8  | -   | -  | -                              | -                              | 0.47                  |
| S1.5S 60A - 1616F        | 60                         | φ90                              | φ93                             | A1         | 16                    | φ16                           | -                          | -                            | 16                        | -  | -   | -  | -                              | -                              | 0.77                  |
| S1.5S 60A = 1620         | 60                         | φ90                              | φ93                             | A2         | 16                    | φ20                           | φ40                        | -                            | 16                        | 6 × 2.8  | -   | -  | φ76                            | 8                              | 0.57                  |
| S1.5S 60A = 1625         | 60                         | φ90                              | φ93                             | A2         | 16                    | φ25                           | φ50                        | -                            | 16                        | 8 × 3.3  | -   | -  | φ76                            | 8                              | 0.59                  |
| S1.5S 60B - 1014         | 60                         | φ90                              | φ93                             | B1         | 10                    | φ14                           | φ40                        | 10                           | 20                        | -  | -   | -  | -                              | -                              | 0.57                  |
| S1.5S 60B # 1015         | 60                         | φ90                              | φ93                             | B1         | 10                    | φ15                           | φ40                        | 10                           | 20                        | 5 × 2.3  | M4  | 5  | -                              | -                              | 0.57                  |
| S1.5S 60B # 1018         | 60                         | φ90                              | φ93                             | B1         | 10                    | φ18                           | φ40                        | 10                           | 20                        | 6 × 2.8  | M5  | 5  | -                              | -                              | 0.55                  |
| S1.5S 60B # 1020         | 60                         | φ90                              | φ93                             | B1         | 10                    | φ20                           | φ40                        | 10                           | 20                        | 6 × 2.8  | M5  | 5  | -                              | -                              | 0.55                  |
| S1.5S 60BF - 1510        | 60                         | φ90                              | φ93                             | B1         | 15                    | φ10(H8)                       | φ65                        | 15                           | 30                        | -  | -   | -  | -                              | -                              | 1.12                  |
| S1.5S 60B - 1616         | 60                         | φ90                              | φ93                             | B1         | 16                    | φ16                           | φ50                        | 10                           | 26                        | -  | -   | -  | -                              | -                              | 0.91                  |
| S1.5S 60B # 1620         | 60                         | φ90                              | φ93                             | B3         | 16                    | φ20                           | φ50                        | 10                           | 26                        | 6 × 2.8  | M5  | 5  | φ76                            | 8                              | 0.74                  |
| S1.5S 60B # 1625         | 60                         | φ90                              | φ93                             | B3         | 16                    | φ25                           | φ50                        | 10                           | 26                        | 8 × 3.3  | M6  | 5  | φ76                            | 8                              | 0.70                  |
| S1.5S 64A - 1014F        | 64                         | φ 96                             | φ 99                            | A1         | 10                    | φ14                           | -                          | -                            | 10                        | -  | -   | -  | -                              | -                              | 0.56                  |
| S1.5S 64A = 1015         | 64                         | φ 96                             | φ 99                            | A1         | 10                    | φ15                           | -                          | -                            | 10                        | 5 × 2.3  | -   | -  | -                              | -                              | 0.55                  |
| S1.5S 64A = 1018         | 64                         | φ 96                             | φ 99                            | A1         | 10                    | φ18                           | -                          | -                            | 10                        | 6 × 2.8  | -   | -  | -                              | -                              | 0.55                  |
| S1.5S 64A - 1616F        | 64                         | φ 96                             | φ 99                            | A1         | 16                    | φ16                           | -                          | -                            | 16                        | -  | -   | -  | -                              | -                              | 0.88                  |
| S1.5S 64A = 1620         | 64                         | φ 96                             | φ 99                            | A2         | 16                    | φ20                           | φ40                        | -                            | 16                        | 6 × 2.8  | -   | -  | φ82                            | 8                              | 0.63                  |
| S1.5S 64B - 1014         | 64                         | φ 96                             | φ 99                            | B1         | 10                    | φ14                           | φ40                        | 10                           | 20                        | -  | -   | -  | -                              | -                              | 0.64                  |
| S1.5S 64B # 1015         | 64                         | φ 96                             | φ 99                            | B1         | 10                    | φ15                           | φ40                        | 10                           | 20                        | 5 × 2.3  | M4  | 5  | -                              | -                              | 0.64                  |
| S1.5S 64B - 1616         | 64                         | φ 96                             | φ 99                            | B1         | 16                    | φ16                           | φ50                        | 10                           | 26                        | -  | -   | -  | -                              | -                              | 1.02                  |
| S1.5S 64B # 1620         | 64                         | φ 96                             | φ 99                            | B3         | 16                    | φ20                           | φ50                        | 10                           | 26                        | 6 × 2.8  | M5  | 5  | φ82                            | 8                              | 0.80                  |
| S1.5S 68A - 1014F        | 68                         | φ 102                            | φ 105                           | A1         | 10                    | φ14                           | -                          | -                            | 10                        | -  | -   | -  | -                              | -                              | 0.63                  |
| S1.5S 68A - 1616F        | 68                         | φ 102                            | φ 105                           | A1         | 16                    | φ16                           | -                          | -                            | 16                        | -  | -   | -  | -                              | -                              | 1.00                  |
| S1.5S 68B - 1014F        | 68                         | φ 102                            | φ 105                           | B1         | 10                    | φ14                           | φ50                        | 10                           | 20                        | -  | -   | -  | -                              | -                              | 0.77                  |
| S1.5S 68B - 1616         | 68                         | φ 102                            | φ 105                           | B1         | 16                    | φ16                           | φ60                        | 10                           | 26                        | -  | -   | -  | -                              | -                              | 1.14                  |



| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 分度圆直径<br>Outside Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b2 x t2 | 螺纹孔<br>Set Screw |    | 轮圈内径<br>Dimension of Rim<br>di | 腹板厚度<br>Thickness of Web<br>bw | 重量<br>Weight<br>W(kg) |
|--------------------------|----------------------------|----------------------------------|---------------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|--------------------------|------------------|----|--------------------------------|--------------------------------|-----------------------|
|                          |                            |                                  |                                 |            |                       |                               |                            |                              |                           |                          | M                | ls |                                |                                |                       |
| <b>S1.5S 70A - 1014F</b> | 70                         | φ105                             | φ108                            | A1         | 10                    | φ14                           | -                          | -                            | 10                        | -                        | -                | -  | -                              | 0.67                           |                       |
| <b>S1.5S 70A = 1015</b>  | 70                         | φ105                             | φ108                            | A1         | 10                    | φ15                           | -                          | -                            | 10                        | 5 x 2.3                  | -                | -  | -                              | 0.67                           |                       |
| <b>S1.5S 70A = 1018</b>  | 70                         | φ105                             | φ108                            | A1         | 10                    | φ18                           | -                          | -                            | 10                        | 6 x 2.8                  | -                | -  | -                              | 0.66                           |                       |
| <b>S1.5S 70A - 1616F</b> | 70                         | φ105                             | φ108                            | A1         | 16                    | φ16                           | -                          | -                            | 16                        | -                        | -                | -  | -                              | 1.06                           |                       |
| <b>S1.5S 70A = 1620</b>  | 70                         | φ105                             | φ108                            | A2         | 16                    | φ20                           | φ40                        | -                            | 16                        | 6 x 2.8                  | -                | -  | φ91                            | 8                              | 0.74                  |
| <b>S1.5S 70B - 1014</b>  | 70                         | φ105                             | φ108                            | B1         | 10                    | φ14                           | φ40                        | 10                           | 20                        | -                        | -                | -  | -                              | 0.75                           |                       |
| <b>S1.5S 70B # 1015</b>  | 70                         | φ105                             | φ108                            | B1         | 10                    | φ15                           | φ40                        | 10                           | 20                        | 5 x 2.3                  | M4               | 5  | -                              | 0.75                           |                       |
| <b>S1.5S 70BF - 1510</b> | 70                         | φ105                             | φ108                            | B1         | 15                    | φ10(H8)                       | φ75                        | 15                           | 30                        | -                        | -                | -  | -                              | 1.52                           |                       |
| <b>S1.5S 70B - 1616</b>  | 70                         | φ105                             | φ108                            | B1         | 16                    | φ16                           | φ50                        | 10                           | 26                        | -                        | -                | -  | -                              | 1.20                           |                       |
| <b>S1.5S 70B # 1620</b>  | 70                         | φ105                             | φ108                            | B3         | 16                    | φ20                           | φ50                        | 10                           | 26                        | 6 x 2.8                  | M5               | 5  | φ91                            | 8                              | 0.94                  |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br>z | 齿宽<br>b | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |      |      |      |       |       | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|---------|---------|---|------|------|------|------|-------|-------|---|
|         |         | 10  | 100  | 200  | 400  | 800  | 1,200 | 1,500 | 100   |
| 55      | 10      | 0.067                                       | 0.67 | 1.34 | 2.42 | 4.06 | 5.73  | 6.96  | 63.98                                       |
| 55      | 16      | 0.108                                       | 1.08 | 2.15 | 3.88 | 6.51 | 9.18  | 11.14 | 103.13                                      |
| 56      | 10      | 0.068                                       | 0.68 | 1.37 | 2.46 | 4.14 | 5.85  | 7.09  | 64.93                                       |
| 56      | 16      | 0.110                                       | 1.10 | 2.20 | 3.95 | 6.64 | 9.37  | 11.35 | 105.04                                      |
| 58      | 10      | 0.071                                       | 0.71 | 1.43 | 2.55 | 4.30 | 6.07  | 7.36  | 67.80                                       |
| 58      | 16      | 0.115                                       | 1.15 | 2.29 | 4.09 | 6.89 | 9.73  | 11.78 | 109.82                                      |

### T (N · m)

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br>z | 齿宽<br>b | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |        |
|---------|---------|---|-------|-------|-------|-------|-------|--------|
|         |         | 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500  |
| 60      | 10      | 0.074                                       | 0.74  | 1.49  | 2.63  | 4.46  | 6.30  | 7.62   |
| 60      | 15      | 0.110                                       | 1.110 | 2.230 | 3.930 | 6.660 | 9.400 | 11.380 |
| 60      | 16      | 0.120                                       | 1.20  | 2.39  | 4.22  | 7.14  | 10.09 | 12.20  |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|---|-------|-------|-------|-------|-------|-------|
| 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| -   | -     | -     | -     | -     | -     | -     |
| 0.011                                       | 0.120 | 0.230 | 0.420 | 0.750 | 1.120 | 1.400 |
| -   | -     | -     | -     | -     | -     | -     |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br>z | 齿宽<br>b | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |      |      |      |       |       | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|---------|---------|---|------|------|------|------|-------|-------|---|
|         |         | 10  | 100  | 200  | 400  | 800  | 1,200 | 1,500 | 100   |
| 64      | 10      | 0.080                                       | 0.80 | 1.61 | 2.80 | 4.77 | 6.74  | 8.15  | 76.39                                       |
| 64      | 16      | 0.129                                       | 1.29 | 2.58 | 4.48 | 7.64 | 10.80 | 13.04 | 123.19                                      |
| 68      | 10      | 0.087                                       | 0.87 | 1.72 | 2.96 | 5.08 | 7.19  | 8.67  | 83.08                                       |
| 68      | 16      | 0.139                                       | 1.39 | 2.75 | 4.74 | 8.14 | 11.50 | 13.87 | 132.74                                      |

### T (N · m)

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br>z | 齿宽<br>b | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |        |        |
|---------|---------|---|-------|-------|-------|-------|--------|--------|
|         |         | 10  | 100   | 200   | 400   | 800   | 1,200  | 1,500  |
| 70      | 10      | 0.089                                       | 0.90  | 1.77  | 3.04  | 5.24  | 7.41   | 8.97   |
| 70      | 15      | 0.130                                       | 1.140 | 2.630 | 4.530 | 7.810 | 11.040 | 13.370 |
| 70      | 16      | 0.143                                       | 1.43  | 2.83  | 4.86  | 8.38  | 11.85  | 14.35  |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|---|-------|-------|-------|-------|-------|-------|
| 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| -   | -     | -     | -     | -     | -     | -     |
| 0.016                                       | 0.160 | 0.320 | 0.570 | 1.030 | 1.550 | 1.930 |
| -   | -     | -     | -     | -     | -     | -     |

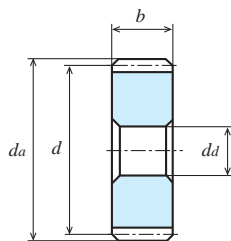
# 直齿轮

## SPUR GEARS

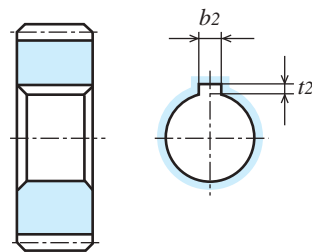
模数  
MODULE

1.5 (齿数 72 ~ 100)

(普通齿)  
FULL DEPTH TOOTH



A1 形状  
TYPE A1



A1 形状  
TYPE A1

单位: mm

| 精度               | 材料   | 压力角  | 热处理 | 齿面硬度 | 侧隙①         |
|------------------|------|------|-----|------|-------------|
| JIS B 1702-1 8 级 | S45C | 20 度 | —   | —    | 0.06 ~ 0.15 |

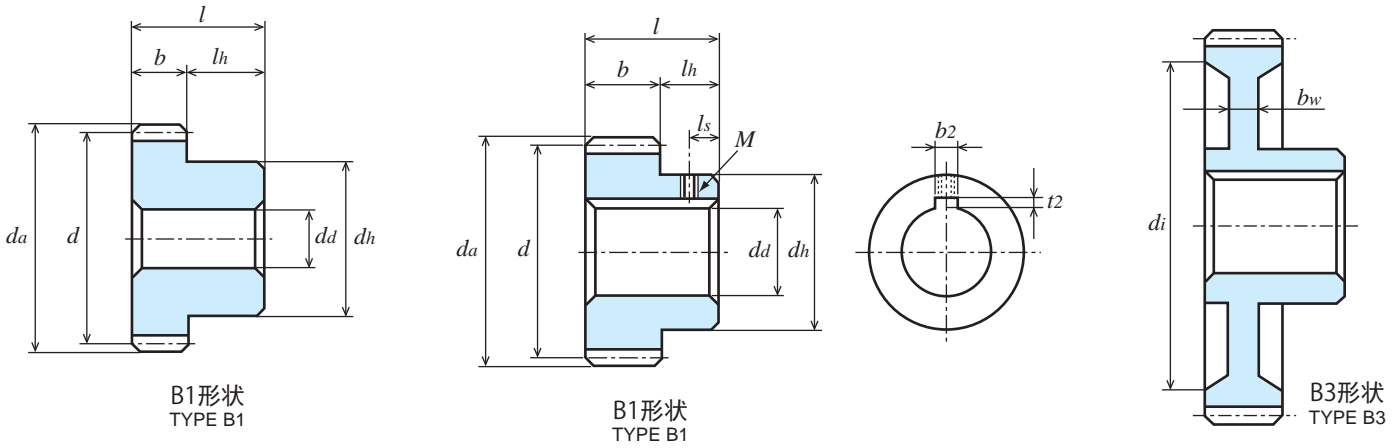
★未做表面处理。[#] 表示带有键槽和键，螺纹孔和固定用螺钉；[=] 表示带有键槽和键。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★KG 的规格齿轮有「标准齿宽」(轻负荷用)和传达扭矩更大的「加宽齿宽」(重负荷用)。请根据用途选择。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 分度圆直径<br>Outside Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b2 × t2 | 螺纹孔<br>Set Screw |    | 轮圈内径<br>Dimension of Rim<br>di | 腹板厚度<br>Thickness of Web<br>bw | 重量<br>Weight<br>W(kg) |
|--------------------------|----------------------------|----------------------------------|---------------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|--------------------------|------------------|----|--------------------------------|--------------------------------|-----------------------|
|                          |                            |                                  |                                 |            |                       |                               |                            |                              |                           |                          | M                | ls |                                |                                |                       |
| S1.5S 72A - 1016F        | 72                         | φ108                             | φ111                            | A1         | 10                    | φ16                           | -                          | -                            | 10                        | -                        | -                | -  | -                              | -                              | 0.70                  |
| S1.5S 72A = 1018         | 72                         | φ108                             | φ111                            | A1         | 10                    | φ18                           | -                          | -                            | 10                        | 6 × 2.8                  | -                | -  | -                              | -                              | 0.70                  |
| S1.5S 72A = 1020         | 72                         | φ108                             | φ111                            | A1         | 10                    | φ20                           | -                          | -                            | 10                        | 6 × 2.8                  | -                | -  | -                              | -                              | 0.69                  |
| S1.5S 72A - 1618F        | 72                         | φ108                             | φ111                            | A1         | 16                    | φ18                           | -                          | -                            | 16                        | -                        | -                | -  | -                              | -                              | 1.12                  |
| S1.5S 72A = 1620         | 72                         | φ108                             | φ111                            | A2         | 16                    | φ20                           | φ40                        | -                            | 16                        | 6 × 2.8                  | -                | -  | φ94                            | 8                              | 0.77                  |
| S1.5S 72A = 1625         | 72                         | φ108                             | φ111                            | A2         | 16                    | φ25                           | φ50                        | -                            | 16                        | 8 × 3.3                  | -                | -  | φ94                            | 8                              | 0.79                  |
| S1.5S 72B - 1016         | 72                         | φ108                             | φ111                            | B1         | 10                    | φ16                           | φ40                        | 10                           | 20                        | -                        | -                | -  | -                              | -                              | 0.79                  |
| S1.5S 72B # 1018         | 72                         | φ108                             | φ111                            | B1         | 10                    | φ18                           | φ40                        | 10                           | 20                        | 6 × 2.8                  | M5               | 5  | -                              | -                              | 0.77                  |
| S1.5S 72B - 1618         | 72                         | φ108                             | φ111                            | B1         | 16                    | φ18                           | φ50                        | 10                           | 26                        | -                        | -                | -  | -                              | -                              | 1.25                  |
| S1.5S 72B # 1620         | 72                         | φ108                             | φ111                            | B3         | 16                    | φ20                           | φ50                        | 10                           | 26                        | 6 × 2.8                  | M5               | 5  | φ94                            | 8                              | 0.94                  |
| S1.5S 75A - 1016F        | 75                         | φ112.5                           | φ115.5                          | A1         | 10                    | φ16                           | -                          | -                            | 10                        | -                        | -                | -  | -                              | -                              | 0.76                  |
| S1.5S 75A - 1618F        | 75                         | φ112.5                           | φ115.5                          | A1         | 16                    | φ18                           | -                          | -                            | 16                        | -                        | -                | -  | -                              | -                              | 1.22                  |
| S1.5S 75B - 1016F        | 75                         | φ112.5                           | φ115.5                          | B1         | 10                    | φ16                           | φ50                        | 10                           | 20                        | -                        | -                | -  | -                              | -                              | 0.90                  |
| S1.5S 75B - 1618         | 75                         | φ112.5                           | φ115.5                          | B1         | 16                    | φ18                           | φ60                        | 10                           | 26                        | -                        | -                | -  | -                              | -                              | 1.42                  |
| S1.5S 80A - 1016F        | 80                         | φ120                             | φ123                            | A1         | 10                    | φ16                           | -                          | -                            | 10                        | -                        | -                | -  | -                              | -                              | 0.87                  |
| S1.5S 80A = 1018         | 80                         | φ120                             | φ123                            | A1         | 10                    | φ18                           | -                          | -                            | 10                        | 6 × 2.8                  | -                | -  | -                              | -                              | 0.87                  |
| S1.5S 80A = 1020         | 80                         | φ120                             | φ123                            | A1         | 10                    | φ20                           | -                          | -                            | 10                        | 6 × 2.8                  | -                | -  | -                              | -                              | 0.86                  |
| S1.5S 80A - 1618F        | 80                         | φ120                             | φ123                            | A1         | 16                    | φ18                           | -                          | -                            | 16                        | -                        | -                | -  | -                              | -                              | 1.39                  |
| S1.5S 80A = 1620         | 80                         | φ120                             | φ123                            | A2         | 16                    | φ20                           | φ40                        | -                            | 16                        | 6 × 2.8                  | -                | -  | φ106                           | 8                              | 0.93                  |
| S1.5S 80A = 1625         | 80                         | φ120                             | φ123                            | A2         | 16                    | φ25                           | φ50                        | -                            | 16                        | 8 × 3.3                  | -                | -  | φ106                           | 8                              | 0.95                  |
| S1.5S 80B - 1016         | 80                         | φ120                             | φ123                            | B1         | 10                    | φ16                           | φ40                        | 10                           | 20                        | -                        | -                | -  | -                              | -                              | 0.96                  |
| S1.5S 80B # 1018         | 80                         | φ120                             | φ123                            | B1         | 10                    | φ18                           | φ40                        | 10                           | 20                        | 6 × 2.8                  | M5               | 5  | -                              | -                              | 0.94                  |
| S1.5S 80B # 1020         | 80                         | φ120                             | φ123                            | B1         | 10                    | φ20                           | φ40                        | 10                           | 20                        | 6 × 2.8                  | M5               | 5  | -                              | -                              | 0.93                  |
| S1.5S 80BF - 1510        | 80                         | φ120                             | φ123                            | B1         | 15                    | φ10(H8)                       | φ85                        | 15                           | 30                        | -                        | -                | -  | -                              | -                              | 2.0                   |
| S1.5S 80B - 1618         | 80                         | φ120                             | φ123                            | B1         | 16                    | φ18                           | φ50                        | 10                           | 26                        | -                        | -                | -  | -                              | -                              | 1.52                  |
| S1.5S 80B # 1620         | 80                         | φ120                             | φ123                            | B3         | 16                    | φ20                           | φ50                        | 10                           | 26                        | 6 × 2.8                  | M5               | 5  | φ106                           | 8                              | 1.10                  |
| S1.5S 80B # 1625         | 80                         | φ120                             | φ123                            | B3         | 16                    | φ25                           | φ50                        | 10                           | 26                        | 8 × 3.3                  | M6               | 5  | φ106                           | 8                              | 1.06                  |
| S1.5S 84A - 1016F        | 84                         | φ126                             | φ129                            | A1         | 10                    | φ16                           | -                          | -                            | 10                        | -                        | -                | -  | -                              | -                              | 0.96                  |
| S1.5S 84A - 1622F        | 84                         | φ126                             | φ129                            | A1         | 16                    | φ22                           | -                          | -                            | 16                        | -                        | -                | -  | -                              | -                              | 1.52                  |
| S1.5S 84B - 1016F        | 84                         | φ126                             | φ129                            | B1         | 10                    | φ16                           | φ60                        | 10                           | 20                        | -                        | -                | -  | -                              | -                              | 1.17                  |
| S1.5S 84B - 1618         | 84                         | φ126                             | φ129                            | B1         | 16                    | φ18                           | φ70                        | 10                           | 26                        | -                        | -                | -  | -                              | -                              | 1.82                  |
| S1.5S 90A - 1016F        | 90                         | φ135                             | φ138                            | A1         | 10                    | φ16                           | -                          | -                            | 10                        | -                        | -                | -  | -                              | -                              | 1.11                  |
| S1.5S 90A - 1622F        | 90                         | φ135                             | φ138                            | A1         | 16                    | φ22                           | -                          | -                            | 16                        | -                        | -                | -  | -                              | -                              | 1.75                  |
| S1.5S 90B - 1016F        | 90                         | φ135                             | φ138                            | B1         | 10                    | φ16                           | φ60                        | 10                           | 20                        | -                        | -                | -  | -                              | -                              | 1.31                  |
| S1.5S 90BF - 1512        | 90                         | φ135                             | φ138                            | B1         | 15                    | φ12                           | φ95                        | 15                           | 30                        | -                        | -                | -  | -                              | -                              | 2.49                  |
| S1.5S 90B - 1618         | 90                         | φ135                             | φ138                            | B1         | 16                    | φ18                           | φ70                        | 10                           | 26                        | -                        | -                | -  | -                              | -                              | 2.05                  |



| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>$z$ | 分度圆直径<br>Reference Diameter<br>$d$ | 分度圆直径<br>Outside Diameter<br>$d_a$ | 形状<br>Type | 齿宽<br>Face Width<br>$b$ | 孔径<br>Bore Diameter<br>$d_a(H7)$ | 轮毂直径<br>Hub Diameter<br>$d_h$ | 轮毂长度<br>Hub Projection<br>$l_h$ | 全长<br>Overall Length<br>$l$ | 键槽<br>Key Way<br>$b_2 \times t_2$ | 螺纹孔<br>Set Screw |       | 轮圈内径<br>Dimension of Rim<br>$d_i$ | 腹板厚度<br>Thickness of Web<br>$b_w$ | 重量<br>Weight<br>W(kg) |
|--------------------------|------------------------------|------------------------------------|------------------------------------|------------|-------------------------|----------------------------------|-------------------------------|---------------------------------|-----------------------------|-----------------------------------|------------------|-------|-----------------------------------|-----------------------------------|-----------------------|
|                          |                              |                                    |                                    |            |                         |                                  |                               |                                 |                             |                                   | $M$              | $l_s$ |                                   |                                   |                       |
| S1.5S 100A - 1016F       | 100                          | φ150                               | φ153                               | A1         | 10                      | φ16                              | -                             | -                               | 10                          | -                                 | -                | -     | -                                 | -                                 | 1.37                  |
| S1.5S 100A = 1018        | 100                          | φ150                               | φ153                               | A1         | 10                      | φ18                              | -                             | -                               | 10                          | 6 × 2.8                           | -                | -     | -                                 | -                                 | 1.37                  |
| S1.5S 100A = 1020        | 100                          | φ150                               | φ153                               | A1         | 10                      | φ20                              | -                             | -                               | 10                          | 6 × 2.8                           | -                | -     | -                                 | -                                 | 1.36                  |
| S1.5S 100A - 1618F       | 100                          | φ150                               | φ153                               | A1         | 16                      | φ18                              | -                             | -                               | 16                          | -                                 | -                | -     | -                                 | -                                 | 2.19                  |
| S1.5S 100A = 1620        | 100                          | φ150                               | φ153                               | A2         | 16                      | φ20                              | φ 40                          | -                               | 16                          | 6 × 2.8                           | -                | -     | φ136                              | 8                                 | 1.38                  |
| S1.5S 100A = 1625        | 100                          | φ150                               | φ153                               | A2         | 16                      | φ25                              | φ 50                          | -                               | 16                          | 8 × 3.3                           | -                | -     | φ136                              | 8                                 | 1.40                  |
| S1.5S 100B - 1016        | 100                          | φ150                               | φ153                               | B1         | 10                      | φ16                              | φ 40                          | 10                              | 20                          | -                                 | -                | -     | -                                 | -                                 | 1.46                  |
| S1.5S 100B # 1018        | 100                          | φ150                               | φ153                               | B1         | 10                      | φ18                              | φ 40                          | 10                              | 20                          | 6 × 2.8                           | M5               | 5     | -                                 | -                                 | 1.44                  |
| S1.5S 100B # 1020        | 100                          | φ150                               | φ153                               | B1         | 10                      | φ20                              | φ 40                          | 10                              | 20                          | 6 × 2.8                           | M5               | 5     | -                                 | -                                 | 1.43                  |
| S1.5S 100BF - 1515       | 100                          | φ150                               | φ153                               | B1         | 15                      | φ15                              | φ105                          | 15                              | 30                          | -                                 | -                | -     | -                                 | -                                 | 3.05                  |
| S1.5S 100B - 1618        | 100                          | φ150                               | φ153                               | B1         | 16                      | φ18                              | φ 50                          | 10                              | 26                          | -                                 | -                | -     | -                                 | -                                 | 2.32                  |
| S1.5S 100B # 1620        | 100                          | φ150                               | φ153                               | B3         | 16                      | φ20                              | φ 50                          | 10                              | 26                          | 6 × 2.8                           | M5               | 5     | φ136                              | 8                                 | 1.55                  |
| S1.5S 100B # 1625        | 100                          | φ150                               | φ153                               | B3         | 16                      | φ25                              | φ 50                          | 10                              | 26                          | 8 × 3.3                           | M6               | 5     | φ136                              | 8                                 | 1.51                  |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br>$z$ | 齿宽<br>$b$ | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |      |      |      |       |       | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|-----------|-----------|---|------|------|------|------|-------|-------|---|
|           |           | 10  | 100  | 200  | 400  | 800  | 1,200 | 1,500 |   |
| 72        | 10        | 0.092                                       | 0.93 | 1.82 | 3.12 | 5.39 | 7.62  | 9.27  | 88.81                                       |
| 72        | 16        | 0.148                                       | 1.48 | 2.91 | 4.99 | 8.62 | 12.19 | 14.83 | 141.33                                      |
| 75        | 10        | 0.097                                       | 0.97 | 1.89 | 3.23 | 5.61 | 7.94  | 9.72  | 92.63                                       |
| 75        | 16        | 0.156                                       | 1.56 | 3.03 | 5.17 | 8.98 | 12.71 | 15.56 | 148.97                                      |

### T (N·m)

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br>$z$ | 齿宽<br>$b$ | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |        |        |       |
|-----------|-----------|---|-------|-------|-------|--------|--------|-------|
|           |           | 10  | 100   | 200   | 400   | 800    | 1,200  | 1,500 |
| 80        | 10        | 0.10  | 1.05  | 2.02  | 3.42  | 5.98   | 8.47   | 10.48 |
| 80        | 15        | 0.16  | 1.56  | 3.01  | 5.09  | 8.91   | 12.61  | 15.60 |
| 80        | 16        | 0.17  | 1.68  | 3.23  | 5.47  | 9.57   | 13.55  | 16.76 |
| 90        | 10        | 0.12  | 1.20  | 2.26  | 3.76  | 6.74   | 9.59   | -     |
| 90        | 15        | 0.180                                       | 1.780 | 3.360 | 5.600 | 10.030 | 14.270 | -     |
| 90        | 16        | 0.19  | 1.92  | 3.61  | 6.02  | 10.79  | 15.34  | -     |
| 100       | 10        | 0.14  | 1.35  | 2.49  | 4.13  | 7.49   | 10.80  | -     |
| 100       | 15        | 0.200                                       | 2.010 | 3.700 | 6.150 | 11.140 | 16.070 | -     |
| 100       | 16        | 0.22  | 2.16  | 3.98  | 6.61  | 11.98  | 17.28  | -     |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

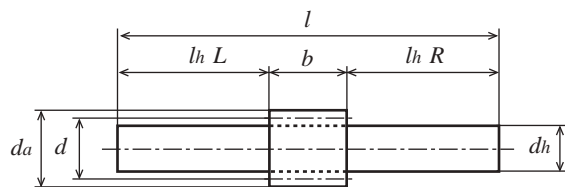
| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |   |
|---|-------|-------|-------|-------|-------|-------|---|
| 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |   |
| -   | -     | -     | -     | -     | -     | -     | - |
| 0.021                                       | 0.210 | 0.420 | 0.730 | 1.360 | 2.040 | 2.610 | - |
| -   | -     | -     | -     | -     | -     | -     | - |
| -   | -     | -     | -     | -     | -     | -     | - |
| 0.027                                       | 0.270 | 0.520 | 0.900 | 1.750 | 2.640 | -     | - |
| -   | -     | -     | -     | -     | -     | -     | - |
| -   | -     | -     | -     | -     | -     | -     | - |
| 0.034                                       | 0.340 | 0.640 | 1.110 | 2.180 | 3.340 | -     | - |
| -   | -     | -     | -     | -     | -     | -     | - |

# 直齿轮

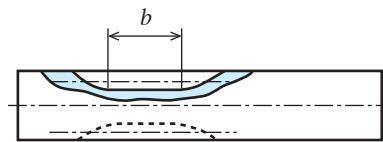
## SPUR GEARS

模数  
MODULE **2** (齿数 8 ~ 19)

(普通齿)  
FULL DEPTH TOOTH



L1形状  
TYPE L1



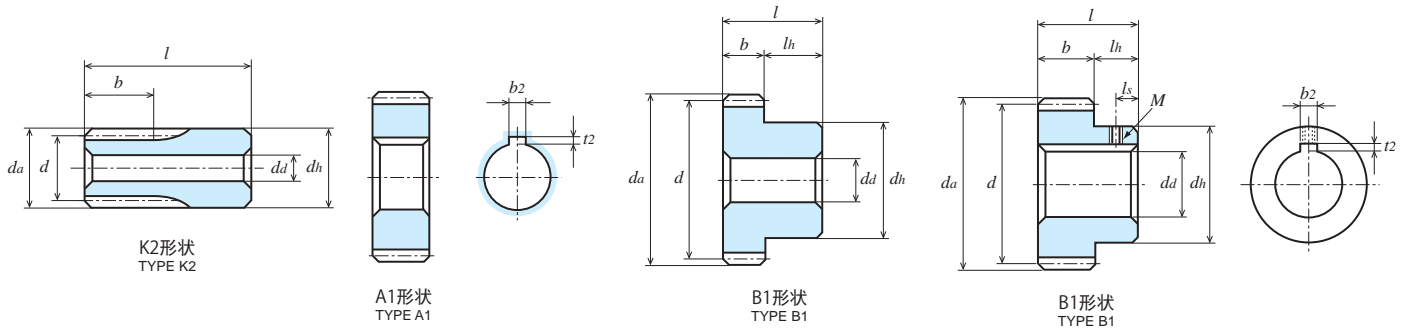
L2形状  
TYPE L2

单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|------|-----|-----|------|-------------|
| JIS B 1702-1 8级 | S45C | 20度 | -   | -    | 0.08 ~ 0.20 |

- ★未做表面处理。【#】表示带有键槽和键，螺纹孔和固定用螺钉；【=】表示带有键槽和键。
- ★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。
- ★KG 的规格齿轮有「标准齿宽」(轻负荷用)和传达扭矩更大的「加宽齿宽」(重负荷用)。请根据用途选择。
- ★【变位】是变位系数 X = 0.5 的变位齿轮。①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 分度圆直径<br>Outside Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b <sub>2</sub> × t <sub>2</sub> | 螺纹孔<br>Set Screw |    | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|---------------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|--|------------------|----|----------------------|
|                          |                            |                                  |                                 |            |                       |                               |                            |                              |                           |  | M                | ls |                      |
| S2S 8L - 2212            | 8                          | 【变位】                             | φ21.28                          | L1         | 22                    | -                             | φ12(h9)                    | L32 R64                      | 118                       |  |                  |    | 129.2                |
| S2S 8L - 2221F           | 8                          | 【变位】                             | φ21.28                          | L2         | 22                    | -                             | φ21.28                     | L32 R64                      | 118                       |  |                  |    | 312.0                |
| S2S 10L - 2216           | 10                         | 【变位】                             | φ25.33                          | L1         | 22                    | -                             | φ16(h9)                    | L32 R64                      | 118                       |  |                  |    | 217.2                |
| S2S 10L - 2225F          | 10                         | 【变位】                             | φ25.33                          | L2         | 22                    | -                             | φ25.33                     | L32 R64                      | 118                       |  |                  |    | 445.4                |
| S2S 12K - 2210           | 12                         |                                  | φ24                             | K2         | 22                    | φ10(H8)                       | φ28                        | 28                           | 50                        |  |                  |    | 182.6                |
| S2S 13K - 2210F          | 13                         |                                  | φ26                             | K2         | 22                    | φ10(H8)                       | φ30                        | 28                           | 50                        |  |                  |    | 216.2                |
| S2S 14A - 1410           | 14                         |                                  | φ28                             | A1         | 14                    | φ10                           | -                          | -                            | 14                        |  |                  |    | 59.0                 |
| S2S 14A - 2010           | 14                         |                                  | φ28                             | A1         | 20                    | φ10                           | -                          | -                            | 20                        |  |                  |    | 84.3                 |
| S2S 14A - 2210           | 14                         |                                  | φ28                             | A1         | 22                    | φ10                           | -                          | -                            | 22                        |  |                  |    | 92.8                 |
| S2S 14B - 1410N          | 14                         |                                  | φ28                             | B1         | 14                    | φ10                           | φ22                        | 10                           | 24                        |  |                  |    | 82.8                 |
| S2S 14BF - 2008          | 14                         |                                  | φ28                             | B1         | 20                    | φ8(H8)                        | φ22                        | 20                           | 40                        |  |                  |    | 140.8                |
| S2S 14B - 2010N          | 14                         |                                  | φ28                             | B1         | 20                    | φ10(H8)                       | φ22                        | 10                           | 30                        |  |                  |    | 108.1                |
| S2S 14B - 2210N          | 14                         |                                  | φ28                             | B1         | 22                    | φ10(H8)                       | φ22                        | 10                           | 32                        |  |                  |    | 116.5                |
| S2S 15A - 1410           | 15                         |                                  | φ30                             | A1         | 14                    | φ10                           | -                          | -                            | 14                        | -  |                  |    | 69.5                 |
| S2S 15A - 2010           | 15                         |                                  | φ30                             | A1         | 20                    | φ10                           | -                          | -                            | 20                        | -  |                  |    | 98.7                 |
| S2S 15A - 2210           | 15                         |                                  | φ30                             | A1         | 22                    | φ10                           | -                          | -                            | 22                        | -  |                  |    | 108.5                |
| S2S 15B - 1410N          | 15                         |                                  | φ30                             | B1         | 14                    | φ10                           | φ24                        | 10                           | 24                        | -  |                  |    | 98.5                 |
| S2S 15BF - 2008          | 15                         |                                  | φ30                             | B1         | 20                    | φ8(H8)                        | φ24                        | 20                           | 40                        | -  |                  |    | 166.4                |
| S2S 15B - 2010N          | 15                         |                                  | φ30                             | B1         | 20                    | φ10(H8)                       | φ24                        | 10                           | 30                        | -  |                  |    | 128.1                |
| S2S 15B - 2210N          | 15                         |                                  | φ30                             | B1         | 22                    | φ10(H8)                       | φ24                        | 10                           | 32                        | -  |                  |    | 138.0                |
| S2S 16A - 1412           | 16                         |                                  | φ32                             | A1         | 14                    | φ12                           | -                          | -                            | 14                        | -  |                  |    | 76.0                 |
| S2S 16A - 2012           | 16                         |                                  | φ32                             | A1         | 20                    | φ12                           | -                          | -                            | 20                        | -  |                  |    | 108.5                |
| S2S 16A - 2212           | 16                         |                                  | φ32                             | A1         | 22                    | φ12                           | -                          | -                            | 22                        | -  |                  |    | 119.4                |
| S2S 16B - 1412N          | 16                         |                                  | φ32                             | B1         | 14                    | φ12                           | φ26                        | 10                           | 24                        | -  |                  |    | 108.8                |
| S2S 16BF - 2008          | 16                         |                                  | φ32                             | B1         | 20                    | φ8(H8)                        | φ26                        | 20                           | 40                        | -  |                  |    | 194.1                |
| S2S 16B - 2012N          | 16                         |                                  | φ32                             | B1         | 20                    | φ12                           | φ26                        | 10                           | 30                        | -  |                  |    | 141.4                |
| S2S 16B - 2212N          | 16                         |                                  | φ32                             | B1         | 22                    | φ12                           | φ26                        | 10                           | 32                        | -  |                  |    | 152.3                |
| S2S 17B - 1412           | 17                         |                                  | φ34                             | B1         | 14                    | φ12                           | φ28                        | 10                           | 24                        | -  |                  |    | 126.9                |
| S2S 17B - 2212           | 17                         |                                  | φ34                             | B1         | 22                    | φ12                           | φ28                        | 10                           | 32                        | -  |                  |    | 176.8                |
| S2S 18A - 1212F          | 18                         |                                  | φ36                             | A1         | 12                    | φ12                           | -                          | -                            | 12                        | -  | -                | -  | 85.2                 |
| S2S 18A - 1412F          | 18                         |                                  | φ36                             | A1         | 14                    | φ12                           | -                          | -                            | 14                        | -  | -                | -  | 99.4                 |
| S2S 18A = 1415           | 18                         |                                  | φ36                             | A1         | 14                    | φ15                           | -                          | -                            | 14                        | 5 × 2.3  | -                | -  | 93.7                 |
| S2S 18A - 2012F          | 18                         |                                  | φ36                             | A1         | 20                    | φ12                           | -                          | -                            | 20                        | -  | -                | -  | 142.1                |
| S2S 18A - 2212F          | 18                         |                                  | φ36                             | A1         | 22                    | φ12                           | -                          | -                            | 22                        | -  | -                | -  | 156.3                |
| S2S 18A = 2215           | 18                         |                                  | φ36                             | A1         | 22                    | φ15                           | -                          | -                            | 22                        | 5 × 2.3  | -                | -  | 143.3                |
| S2S 18B - 1212           | 18                         |                                  | φ36                             | B1         | 12                    | φ12                           | φ29                        | 10                           | 22                        | -  | -                | -  | 128.3                |
| S2S 18B - 1412           | 18                         |                                  | φ36                             | B1         | 14                    | φ12                           | φ30                        | 10                           | 24                        | -  | -                | -  | 146.1                |
| S2S 18B # 1415           | 18                         |                                  | φ36                             | B1         | 14                    | φ15                           | φ30                        | 10                           | 24                        | 5 × 2.3  | M4               | 5  | 131.6                |
| S2S 18BF - 2008          | 18                         |                                  | φ36                             | B1         | 20                    | φ8(H8)                        | φ30                        | 20                           | 40                        | -  | -                | -  | 255.3                |
| S2S 18B - 2012N          | 18                         |                                  | φ36                             | B1         | 20                    | φ12                           | φ30                        | 10                           | 30                        | -  | -                | -  | 188.8                |
| S2S 18B - 2212           | 18                         |                                  | φ36                             | B1         | 22                    | φ12                           | φ30                        | 10                           | 32                        | -  | -                | -  | 203.0                |
| S2S 18B # 2215           | 18                         |                                  | φ36                             | B1         | 22                    | φ15                           | φ30                        | 10                           | 32                        | 5 × 2.3  | M4               | 5  | 183.7                |



| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 分度圆直径<br>Outside Diameter<br><i>da</i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>da(H7)</i> | 轮毂外直径<br>Hub Diameter<br><i>dh</i> | 轮毂长度<br>Hub Projection<br><i>lh</i> | 全长<br>Overall Length<br><i>l</i> | 键槽<br>Key Way<br><i>b2 × t2</i> | 螺纹孔<br>Set Screw |           | 重量<br>Weight<br><i>W(g)</i> |
|--------------------------|-----------------------------------|---|--|------------|------------------------------|--------------------------------------|------------------------------------|-------------------------------------|----------------------------------|---------------------------------|------------------|-----------|-----------------------------|
|                          |                                   |   |  |            |                              |                                      |                                    |                                     |                                  |                                 | <i>M</i>         | <i>ls</i> |                             |
| <b>S2S 19B - 1412</b>    | 19                                | φ38                                     | φ42                                    | B1         | 14                           | φ12                                  | φ32                                | 10                                  | 24                               | -                               | -                | -         | 166.6                       |
| <b>S2S 19B - 2212</b>    | 19                                | φ38                                     | φ42                                    | B1         | 22                           | φ12                                  | φ32                                | 10                                  | 32                               | -                               | -                | -         | 230.7                       |

## 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|----------------|----------------|---|-------|-------|-------|-------|-------|-------|---|
|                |                | 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |   |
| 8              | 22             | 0.023                                       | 0.235 | 0.471 | 0.942 | 1.885 | 2.785 | 3.345 | 22.44                                       |
| 10             | 22             | 0.032                                       | 0.325 | 0.650 | 1.300 | 2.600 | 3.702 | 4.414 | 31.03                                       |
| 12             | 22             | 0.029                                       | 0.298 | 0.597 | 1.195 | 2.388 | 3.331 | 3.956 | 28.45                                       |
| 13             | 22             | 0.034                                       | 0.343 | 0.687 | 1.374 | 2.712 | 3.764 | 4.456 | 32.75                                       |
| 14             | 14             | 0.024                                       | 0.247 | 0.495 | 0.991 | 1.932 | 2.670 | 3.151 | 23.58                                       |
| 14             | 20             | 0.035                                       | 0.354 | 0.708 | 1.416 | 2.761 | 3.814 | 4.501 | 33.80                                       |
| 14             | 22             | 0.038                                       | 0.389 | 0.779 | 1.558 | 3.037 | 4.196 | 4.951 | 37.14                                       |
| 15             | 14             | 0.027                                       | 0.277 | 0.555 | 1.111 | 2.139 | 2.942 | 3.462 | 26.45                                       |
| 15             | 20             | 0.039                                       | 0.396 | 0.793 | 1.587 | 3.056 | 4.203 | 4.946 | 37.81                                       |
| 15             | 22             | 0.043                                       | 0.436 | 0.873 | 1.746 | 3.362 | 4.624 | 5.440 | 41.63                                       |
| 16             | 14             | 0.030                                       | 0.308 | 0.616 | 1.233 | 2.346 | 3.212 | 3.768 | 29.41                                       |
| 16             | 20             | 0.044                                       | 0.440 | 0.880 | 1.761 | 3.352 | 4.589 | 5.383 | 42.01                                       |
| 16             | 22             | 0.048                                       | 0.484 | 0.968 | 1.937 | 3.687 | 5.047 | 5.922 | 46.22                                       |
| 17             | 14             | 0.034                                       | 0.339 | 0.678 | 1.357 | 2.551 | 3.478 | 4.069 | 32.37                                       |
| 17             | 22             | 0.053                                       | 0.533 | 1.066 | 2.132 | 4.009 | 5.465 | 6.393 | 50.89                                       |
| 18             | 12             | 0.031                                       | 0.317 | 0.635 | 1.270 | 2.361 | 3.205 | 3.739 | 30.27                                       |
| 18             | 14             | 0.037                                       | 0.370 | 0.741 | 1.482 | 2.754 | 3.739 | 4.362 | 35.33                                       |
| 18             | 20             | 0.052                                       | 0.529 | 1.058 | 2.117 | 3.935 | 5.341 | 6.232 | 50.51                                       |
| 18             | 22             | 0.058                                       | 0.582 | 1.164 | 2.329 | 4.328 | 5.875 | 6.855 | 55.57                                       |
| 19             | 14             | 0.040                                       | 0.403 | 0.806 | 1.611 | 2.960 | 4.001 | 4.656 | 38.48                                       |
| 19             | 22             | 0.063                                       | 0.633 | 1.266 | 2.532 | 4.651 | 6.287 | 7.317 | 60.44                                       |

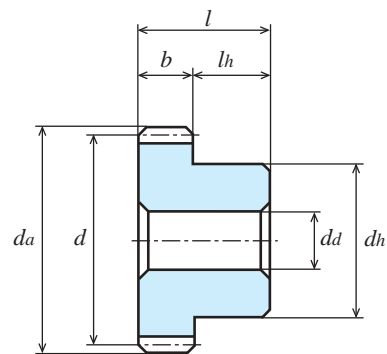
## T (N · m)

# 直齿轮

## SPUR GEARS

模数  
MODULE **2** (齿数 20 ~ 24)

(普通齿)  
FULL DEPTH TOOTH



B1形状  
TYPE B1

单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|------|-----|-----|------|-------------|
| JIS B 1702-1 8级 | S45C | 20度 | —   | —    | 0.08 ~ 0.20 |

★未做表面处理。【#】表示带有键槽和键，螺纹孔和固定用螺钉；【=】表示带有键槽和键。

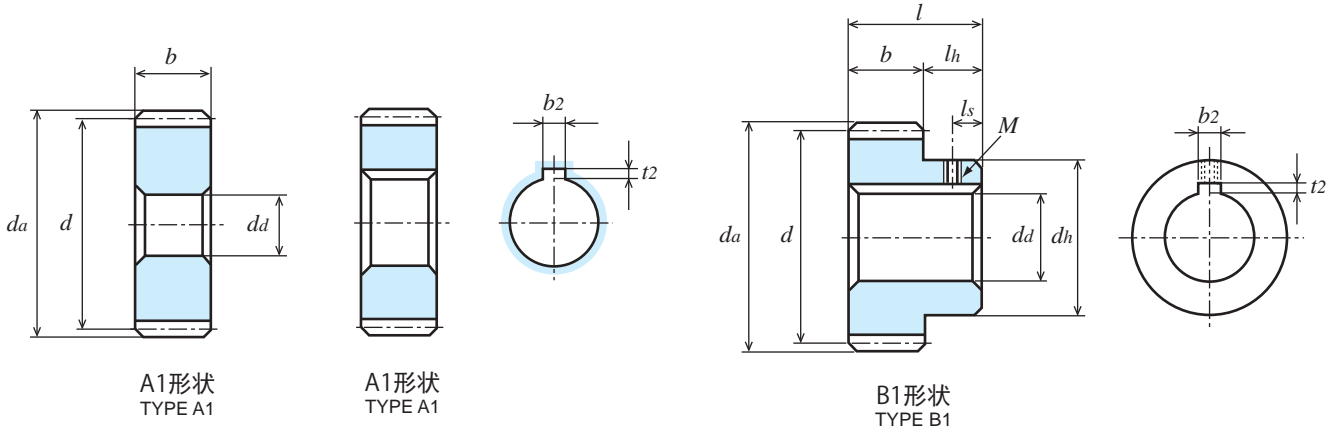
★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★KG 的规格齿轮有「标准齿宽」(轻负荷用)和传达扭矩更大的「加宽齿宽」(重负荷用)。请根据用途选择。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 分度圆直径<br>Outside Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b <sub>2</sub> × t <sub>2</sub> | 螺纹孔<br>Set Screw |    | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|---------------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|--|------------------|----|----------------------|
|                          |                            |                                  |                                 |            |                       |                               |                            |                              |                           |  | M                | ls |                      |
| S2S 20A - 1212F          | 20                         | φ40                              | φ44                             | A1         | 12                    | φ12                           | -                          | -                            | 12                        | -  | -                | -  | 107.7                |
| S2S 20A - 1412F          | 20                         | φ40                              | φ44                             | A1         | 14                    | φ12                           | -                          | -                            | 14                        | -  | -                | -  | 125.7                |
| S2S 20A = 1415           | 20                         | φ40                              | φ44                             | A1         | 14                    | φ15                           | -                          | -                            | 14                        | 5 × 2.3  | -                | -  | 117.4                |
| S2S 20A = 1416           | 20                         | φ40                              | φ44                             | A1         | 14                    | φ16                           | -                          | -                            | 14                        | 5 × 2.3  | -                | -  | 114.7                |
| S2S 20A - 2012F          | 20                         | φ40                              | φ44                             | A1         | 20                    | φ12                           | -                          | -                            | 20                        | -  | -                | -  | 179.5                |
| S2S 20A - 2212F          | 20                         | φ40                              | φ44                             | A1         | 22                    | φ12                           | -                          | -                            | 22                        | -  | -                | -  | 197.5                |
| S2S 20A = 2215           | 20                         | φ40                              | φ44                             | A1         | 22                    | φ15                           | -                          | -                            | 22                        | 5 × 2.3  | -                | -  | 184.5                |
| S2S 20A = 2220           | 20                         | φ40                              | φ44                             | A1         | 22                    | φ20                           | -                          | -                            | 22                        | 6 × 2.8  | -                | -  | 159.9                |
| S2S 20B - 1212           | 20                         | φ40                              | φ44                             | B1         | 12                    | φ12                           | φ33                        | 10                           | 22                        | -  | -                | -  | 162.1                |
| S2S 20B - 1412           | 20                         | φ40                              | φ44                             | B1         | 14                    | φ12                           | φ32                        | 10                           | 24                        | -  | -                | -  | 180.0                |
| S2S 20B # 1415           | 20                         | φ40                              | φ44                             | B1         | 14                    | φ15                           | φ32                        | 10                           | 24                        | 5 × 2.3  | M4               | 5  | 165.4                |
| S2S 20B # 1416           | 20                         | φ40                              | φ44                             | B1         | 14                    | φ16                           | φ32                        | 10                           | 24                        | 5 × 2.3  | M4               | 5  | 160.8                |
| S2S 20BF - 2008          | 20                         | φ40                              | φ44                             | B1         | 20                    | φ8(H8)                        | φ34                        | 20                           | 40                        | -  | -                | -  | 321.1                |
| S2S 20B - 2008H          | 20                         | φ40                              | φ44                             | B1         | 20                    | φ8(H※)                        | φ34                        | 20                           | 40                        | -  | -                | -  | 321.1                |
| S2S 20B - 2012N          | 20                         | φ40                              | φ44                             | B1         | 20                    | φ12                           | φ34                        | 10                           | 30                        | -  | -                | -  | 242.1                |
| S2S 20B - 2212           | 20                         | φ40                              | φ44                             | B1         | 22                    | φ12                           | φ34                        | 10                           | 32                        | -  | -                | -  | 260.1                |
| S2S 20B # 2215           | 20                         | φ40                              | φ44                             | B1         | 22                    | φ15                           | φ34                        | 10                           | 32                        | 5 × 2.3  | M4               | 5  | 240.6                |
| S2S 20B # 2220           | 20                         | φ40                              | φ44                             | B1         | 22                    | φ20                           | φ34                        | 10                           | 32                        | 6 × 2.8  | M4               | 5  | 204.9                |
| S2S 21B - 1412           | 21                         | φ42                              | φ46                             | B1         | 14                    | φ12                           | φ36                        | 10                           | 24                        | -  | -                | -  | 211.0                |
| S2S 21B - 2212           | 21                         | φ42                              | φ46                             | B1         | 22                    | φ12                           | φ36                        | 10                           | 32                        | -  | -                | -  | 290.9                |
| S2S 22B - 1412           | 22                         | φ44                              | φ48                             | B1         | 14                    | φ12                           | φ38                        | 10                           | 24                        | -  | -                | -  | 235.0                |
| S2S 22B - 2212           | 22                         | φ44                              | φ48                             | B1         | 22                    | φ12                           | φ38                        | 10                           | 32                        | -  | -                | -  | 323.4                |
| S2S 23B - 1412           | 23                         | φ46                              | φ50                             | B1         | 14                    | φ12                           | φ40                        | 10                           | 24                        | -  | -                | -  | 260.2                |
| S2S 23B - 2212           | 23                         | φ46                              | φ50                             | B1         | 22                    | φ12                           | φ40                        | 10                           | 32                        | -  | -                | -  | 357.5                |
| S2S 24A - 1214F          | 24                         | φ48                              | φ52                             | A1         | 12                    | φ14                           | -                          | -                            | 12                        | -  | -                | -  | 156.0                |
| S2S 24A - 1412F          | 24                         | φ48                              | φ52                             | A1         | 14                    | φ12                           | -                          | -                            | 14                        | -  | -                | -  | 186.4                |
| S2S 24A = 1415           | 24                         | φ48                              | φ52                             | A1         | 14                    | φ15                           | -                          | -                            | 14                        | 5 × 2.3  | -                | -  | 178.2                |
| S2S 24A = 1416           | 24                         | φ48                              | φ52                             | A1         | 14                    | φ16                           | -                          | -                            | 14                        | 5 × 2.3  | -                | -  | 175.5                |
| S2S 24A - 2014F          | 24                         | φ48                              | φ52                             | A1         | 20                    | φ14                           | -                          | -                            | 20                        | -  | -                | -  | 259.9                |
| S2S 24A - 2214F          | 24                         | φ48                              | φ52                             | A1         | 22                    | φ14                           | -                          | -                            | 22                        | -  | -                | -  | 285.9                |
| S2S 24A = 2215           | 24                         | φ48                              | φ52                             | A1         | 22                    | φ15                           | -                          | -                            | 22                        | 5 × 2.3  | -                | -  | 280.0                |
| S2S 24A = 2220           | 24                         | φ48                              | φ52                             | A1         | 22                    | φ20                           | -                          | -                            | 22                        | 6 × 2.8  | -                | -  | 255.4                |
| S2S 24B - 1214           | 24                         | φ48                              | φ52                             | B1         | 12                    | φ14                           | φ40                        | 10                           | 22                        | -  | -                | -  | 207.1                |
| S2S 24B - 1414           | 24                         | φ48                              | φ52                             | B1         | 14                    | φ14                           | φ32                        | 10                           | 24                        | -  | -                | -  | 233.2                |
| S2S 24B # 1415           | 24                         | φ48                              | φ52                             | B1         | 14                    | φ15                           | φ32                        | 10                           | 24                        | 5 × 2.3  | M4               | 5  | 226.2                |
| S2S 24B # 1416           | 24                         | φ48                              | φ52                             | B1         | 14                    | φ16                           | φ32                        | 10                           | 24                        | 5 × 2.3  | M4               | 5  | 221.6                |
| S2S 24BF - 2008          | 24                         | φ48                              | φ52                             | B1         | 20                    | φ8(H8)                        | φ42                        | 20                           | 40                        | -  | -                | -  | 486.5                |
| S2S 24B - 2014N          | 24                         | φ48                              | φ52                             | B1         | 20                    | φ14                           | φ42                        | 10                           | 30                        | -  | -                | -  | 356.8                |
| S2S 24B - 2214           | 24                         | φ48                              | φ52                             | B1         | 22                    | φ14                           | φ40                        | 10                           | 32                        | -  | -                | -  | 372.7                |
| S2S 24B # 2215           | 24                         | φ48                              | φ52                             | B1         | 22                    | φ15                           | φ40                        | 10                           | 32                        | 5 × 2.3  | M4               | 5  | 363.3                |
| S2S 24B # 2220           | 24                         | φ48                              | φ52                             | B1         | 22                    | φ20                           | φ40                        | 10                           | 32                        | 6 × 2.8  | M5               | 5  | 327.3                |





### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br>$z$ | 齿宽<br>$b$ | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|-----------|-----------|---|-------|-------|-------|-------|-------|-------|
|           |           | 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| 20        | 12        | 0.037                                       | 0.372 | 0.745 | 1.491 | 2.709 | 3.647 | 4.280 |
| 20        | 14        | 0.043                                       | 0.435 | 0.870 | 1.740 | 3.160 | 4.255 | 4.993 |
| 20        | 20        | 0.063                                       | 0.630 | 1.250 | 2.500 | 4.550 | 6.120 | 7.190 |
| 20        | 20        | 0.066                                       | 0.664 | 1.328 | 2.655 | 4.863 | 6.603 | 7.784 |
| 20        | 22        | 0.068                                       | 0.683 | 1.367 | 2.735 | 4.966 | 6.687 | 7.846 |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |   |
|---|-------|-------|-------|-------|-------|-------|---|
| 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |   |
| -   | -     | -     | -     | -     | -     | -     | - |
| 0.003                                       | 0.030 | 0.060 | 0.110 | 0.210 | 0.290 | 0.340 |   |
| 0.012                                       | 0.137 | 0.283 | 0.583 | 1.101 | 1.522 | 1.812 |   |
| -   | -     | -     | -     | -     | -     | -     | - |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br>$z$ | 齿宽<br>$b$ | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |      |      |       |       |       |
|-----------|-----------|---|------|------|------|-------|-------|-------|
|           |           | 10  | 100  | 200  | 400  | 800   | 1,200 | 1,500 |
| 21        | 14        | 0.046                                       | 0.47 | 0.94 | 1.87 | 3.36  | 4.50  | 5.33  |
| 21        | 22        | 0.073                                       | 0.73 | 1.47 | 2.94 | 5.28  | 7.08  | 8.38  |
| 22        | 14        | 0.050                                       | 0.50 | 1.00 | 2.00 | 3.56  | 4.75  | 5.68  |
| 22        | 22        | 0.078                                       | 0.79 | 1.57 | 3.15 | 5.59  | 7.47  | 8.92  |
| 23        | 14        | 0.053                                       | 0.53 | 1.07 | 2.13 | 3.75  | 4.99  | 6.02  |
| 23        | 22        | 0.083                                       | 0.84 | 1.68 | 3.36 | 5.89  | 7.84  | 9.46  |
| 24        | 12        | 0.048                                       | 0.49 | 0.97 | 1.94 | 3.377 | 4.49  | 5.45  |
| 24        | 14        | 0.056                                       | 0.57 | 1.14 | 2.27 | 3.940 | 5.23  | 6.36  |
| 24        | 20        | 0.081                                       | 0.81 | 1.62 | 3.24 | 5.63  | 7.48  | 9.08  |
| 24        | 22        | 0.089                                       | 0.89 | 1.78 | 3.56 | 6.19  | 8.22  | 9.99  |

### T (N · m)

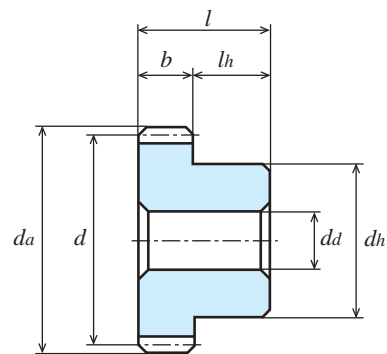
| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|---|
| 100   |
| 44.88                                       |
| 69.71                                       |
| 47.74                                       |
| 75.44                                       |
| 50.61                                       |
| 80.21                                       |
| 46.79                                       |
| 54.43                                       |
| 77.35                                       |
| 84.99                                       |

# 直齿轮

## SPUR GEARS

模数  
MODULE **2** (齿数 25 ~ 29)

(普通齿)  
FULL DEPTH TOOTH



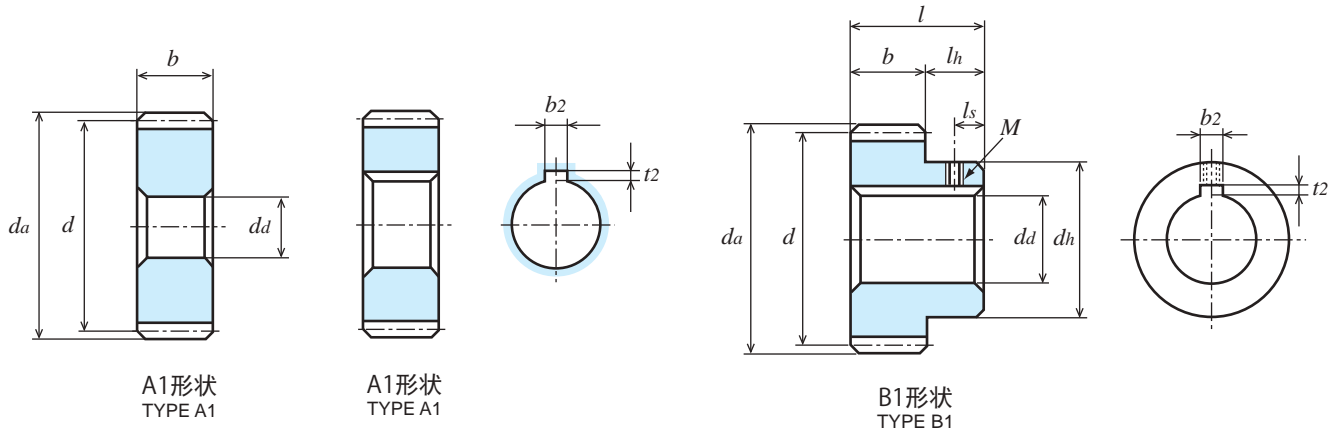
B1形状  
TYPE B1

单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|------|-----|-----|------|-------------|
| JIS B 1702-1 8级 | S45C | 20度 | —   | —    | 0.08 ~ 0.20 |

- ★未做表面处理。【#】表示带有键槽和键，螺孔和固定用螺钉；【=】表示带有键槽和键。
- ★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。
- ★KG 的规格齿轮有「标准齿宽」(轻负荷用)和传达扭矩更大的「加宽齿宽」(重负荷用)。请根据用途选择。
- ①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 分度圆直径<br>Outside Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b2 × t2 | 螺孔<br>Set Screw |    | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|---------------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|--------------------------|-----------------|----|----------------------|
|                          |                            |                                  |                                 |            |                       |                               |                            |                              |                           |                          | M               | ls |                      |
| S2S 25A - 1214F          | 25                         | φ50                              | φ54                             | A1         | 12                    | φ14                           | -                          | -                            | 12                        | -                        | -               | -  | 170.5                |
| S2S 25A - 1414F          | 25                         | φ50                              | φ54                             | A1         | 14                    | φ14                           | -                          | -                            | 14                        | -                        | -               | -  | 198.9                |
| S2S 25A = 1415           | 25                         | φ50                              | φ54                             | A1         | 14                    | φ15                           | -                          | -                            | 14                        | 5 × 2.3                  | -               | -  | 195.1                |
| S2S 25A = 1416           | 25                         | φ50                              | φ54                             | A1         | 14                    | φ16                           | -                          | -                            | 14                        | 5 × 2.3                  | -               | -  | 192.4                |
| S2S 25A - 2014F          | 25                         | φ50                              | φ54                             | A1         | 20                    | φ14                           | -                          | -                            | 20                        | -                        | -               | -  | 284.1                |
| S2S 25A - 2214F          | 25                         | φ50                              | φ54                             | A1         | 22                    | φ14                           | -                          | -                            | 22                        | -                        | -               | -  | 312.5                |
| S2S 25A = 2215           | 25                         | φ50                              | φ54                             | A1         | 22                    | φ15                           | -                          | -                            | 22                        | 5 × 2.3                  | -               | -  | 306.6                |
| S2S 25A = 2220           | 25                         | φ50                              | φ54                             | A1         | 22                    | φ20                           | -                          | -                            | 22                        | 6 × 2.8                  | -               | -  | 281.9                |
| S2S 25B - 1214           | 25                         | φ50                              | φ54                             | B1         | 12                    | φ14                           | φ42                        | 10                           | 22                        | -                        | -               | -  | 221.7                |
| S2S 25B - 1414           | 25                         | φ50                              | φ54                             | B1         | 14                    | φ14                           | φ32                        | 10                           | 24                        | -                        | -               | -  | 250.1                |
| S2S 25B # 1415           | 25                         | φ50                              | φ54                             | B1         | 14                    | φ15                           | φ32                        | 10                           | 24                        | 5 × 2.3                  | M4              | 5  | 243.1                |
| S2S 25B # 1416           | 25                         | φ50                              | φ54                             | B1         | 14                    | φ16                           | φ32                        | 10                           | 24                        | 5 × 2.3                  | M4              | 5  | 238.6                |
| S2S 25BF - 2008          | 25                         | φ50                              | φ54                             | B1         | 20                    | φ8(H8)                        | φ40                        | 20                           | 40                        | -                        | -               | -  | 486.2                |
| S2S 25B - 2014N          | 25                         | φ50                              | φ54                             | B1         | 20                    | φ14                           | φ44                        | 10                           | 30                        | -                        | -               | -  | 391.6                |
| S2S 25B - 2214           | 25                         | φ50                              | φ54                             | B1         | 22                    | φ14                           | φ40                        | 10                           | 32                        | -                        | -               | -  | 399.3                |
| S2S 25B # 2215           | 25                         | φ50                              | φ54                             | B1         | 22                    | φ15                           | φ40                        | 10                           | 32                        | 5 × 2.3                  | M4              | 5  | 389.9                |
| S2S 25B # 2220           | 25                         | φ50                              | φ54                             | B1         | 22                    | φ20                           | φ40                        | 10                           | 32                        | 6 × 2.8                  | M5              | 5  | 353.9                |
| S2S 26B - 1414           | 26                         | φ52                              | φ56                             | B1         | 14                    | φ14                           | φ46                        | 10                           | 24                        | -                        | -               | -  | 335.1                |
| S2S 26B - 2214           | 26                         | φ52                              | φ56                             | B1         | 22                    | φ14                           | φ46                        | 10                           | 32                        | -                        | -               | -  | 458.9                |
| S2S 28A - 1214F          | 28                         | φ56                              | φ60                             | A1         | 12                    | φ14                           | -                          | -                            | 12                        | -                        | -               | -  | 217.5                |
| S2S 28A - 1414F          | 28                         | φ56                              | φ60                             | A1         | 14                    | φ14                           | -                          | -                            | 14                        | -                        | -               | -  | 253.8                |
| S2S 28A = 1415           | 28                         | φ56                              | φ60                             | A1         | 14                    | φ15                           | -                          | -                            | 14                        | 5 × 2.3                  | -               | -  | 250.0                |
| S2S 28A = 1416           | 28                         | φ56                              | φ60                             | A1         | 14                    | φ16                           | -                          | -                            | 14                        | 5 × 2.3                  | -               | -  | 247.3                |
| S2S 28A = 1420           | 28                         | φ56                              | φ60                             | A1         | 14                    | φ20                           | -                          | -                            | 14                        | 6 × 2.8                  | -               | -  | 234.3                |
| S2S 28A - 2016F          | 28                         | φ56                              | φ60                             | A1         | 20                    | φ16                           | -                          | -                            | 20                        | -                        | -               | -  | 355.1                |
| S2S 28A - 2216F          | 28                         | φ56                              | φ60                             | A1         | 22                    | φ16                           | -                          | -                            | 22                        | -                        | -               | -  | 390.6                |
| S2S 28A = 2220           | 28                         | φ56                              | φ60                             | A1         | 22                    | φ20                           | -                          | -                            | 22                        | 6 × 2.8                  | -               | -  | 368.2                |
| S2S 28A = 2225           | 28                         | φ56                              | φ60                             | A1         | 22                    | φ25                           | -                          | -                            | 22                        | 8 × 3.3                  | -               | -  | 336.0                |
| S2S 28B - 1214           | 28                         | φ56                              | φ60                             | B1         | 12                    | φ14                           | φ48                        | 10                           | 22                        | -                        | -               | -  | 304.3                |
| S2S 28B - 1414           | 28                         | φ56                              | φ60                             | B1         | 14                    | φ14                           | φ40                        | 10                           | 24                        | -                        | -               | -  | 340.6                |
| S2S 28B # 1415           | 28                         | φ56                              | φ60                             | B1         | 14                    | φ15                           | φ40                        | 10                           | 24                        | 5 × 2.3                  | M4              | 5  | 333.3                |
| S2S 28B # 1416           | 28                         | φ56                              | φ60                             | B1         | 14                    | φ16                           | φ40                        | 10                           | 24                        | 5 × 2.3                  | M4              | 5  | 328.7                |
| S2S 28B # 1420           | 28                         | φ56                              | φ60                             | B1         | 14                    | φ20                           | φ40                        | 10                           | 24                        | 6 × 2.8                  | M5              | 5  | 306.3                |
| S2S 28BF - 2010          | 28                         | φ56                              | φ60                             | B1         | 20                    | φ10(H8)                       | φ50                        | 20                           | 40                        | -                        | -               | -  | 671.2                |
| S2S 28B - 2016N          | 28                         | φ56                              | φ60                             | B1         | 20                    | φ16                           | φ50                        | 10                           | 30                        | -                        | -               | -  | 493.8                |
| S2S 28B - 2216           | 28                         | φ56                              | φ60                             | B1         | 22                    | φ16                           | φ50                        | 10                           | 32                        | -                        | -               | -  | 529.3                |
| S2S 28B # 2220           | 28                         | φ56                              | φ60                             | B1         | 22                    | φ20                           | φ50                        | 10                           | 32                        | 6 × 2.8                  | M5              | 5  | 495.1                |
| S2S 28B # 2225           | 28                         | φ56                              | φ60                             | B1         | 22                    | φ25                           | φ50                        | 10                           | 32                        | 8 × 3.3                  | M6              | 5  | 448.2                |
| S2S 29B - 1414           | 29                         | φ58                              | φ62                             | B1         | 14                    | φ14                           | φ52                        | 10                           | 24                        | -                        | -               | -  | 428.4                |
| S2S 29B - 2216           | 29                         | φ58                              | φ62                             | B1         | 22                    | φ16                           | φ52                        | 10                           | 32                        | -                        | -               | -  | 572.9                |



### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br>$z$ | 齿宽<br>$b$ | 旋转速度 ( $\text{min}^{-1}$ )<br>revolution/min |       |       |       |       |       |       |
|-----------|-----------|--|-------|-------|-------|-------|-------|-------|
|           |           | 10   | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| 25        | 12        | 0.051  | 0.52  | 1.03  | 2.05  | 3.54  | 4.73  | 5.74  |
| 25        | 14        | 0.060  | 0.60  | 1.20  | 2.39  | 4.13  | 5.52  | 6.70  |
| 25        | 20        | 0.086  | 0.860 | 1.720 | 3.420 | 5.920 | 7.910 | 9.600 |
| 25        | 22        | 0.094  | 0.94  | 1.89  | 3.75  | 6.49  | 8.67  | 10.52 |
| 26        | 14        | 0.063  | 0.63  | 1.27  | 2.51  | 4.32  | 5.80  | 7.03  |
| 26        | 22        | 0.100  | 1.00  | 2.00  | 3.94  | 6.78  | 9.12  | 11.05 |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 ( $\text{min}^{-1}$ )<br>revolution/min |       |       |       |       |       |       |
|--|-------|-------|-------|-------|-------|-------|
| 10   | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| -  | -     | -     | -     | -     | -     | -     |
| 0.004  | 0.040 | 0.090 | 0.180 | 0.320 | 0.440 | 0.550 |
| -  | -     | -     | -     | -     | -     | -     |
| -  | -     | -     | -     | -     | -     | -     |

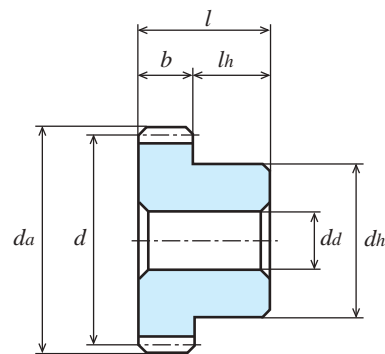
### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br>$z$ | 齿宽<br>$b$ | 旋转速度 ( $\text{min}^{-1}$ )<br>revolution/min |      |      |      |      |       |       |
|-----------|-----------|--|------|------|------|------|-------|-------|
|           |           | 10   | 100  | 200  | 400  | 800  | 1,200 | 1,500 |
| 28        | 12        | 0.060  | 0.60 | 1.21 | 2.35 | 4.01 | 5.46  | 6.60  |
| 28        | 14        | 0.070  | 0.70 | 1.41 | 2.74 | 4.68 | 6.37  | 7.70  |
| 28        | 20        | 0.101  | 1.01 | 2.01 | 3.92 | 6.69 | 9.10  | 11.01 |
| 28        | 22        | 0.111  | 1.11 | 2.21 | 4.31 | 7.36 | 10.01 | 12.11 |
| 29        | 14        | 0.073  | 0.74 | 1.48 | 2.86 | 4.86 | 6.65  | 8.04  |
| 29        | 22        | 0.116  | 1.16 | 2.32 | 4.50 | 7.64 | 10.45 | 12.63 |

### T (N · m)

| 旋转速度 ( $\text{min}^{-1}$ )<br>revolution/min |
|--|
| 100  |
| 57.29  |
| 66.84  |
| 96.45  |
| 106.00                                       |
| 70.66  |
| 110.77                                       |



B1形状  
TYPE B1

单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|------|-----|-----|------|-------------|
| JIS B 1702-1 8级 | S45C | 20度 | —   | —    | 0.08 ~ 0.20 |

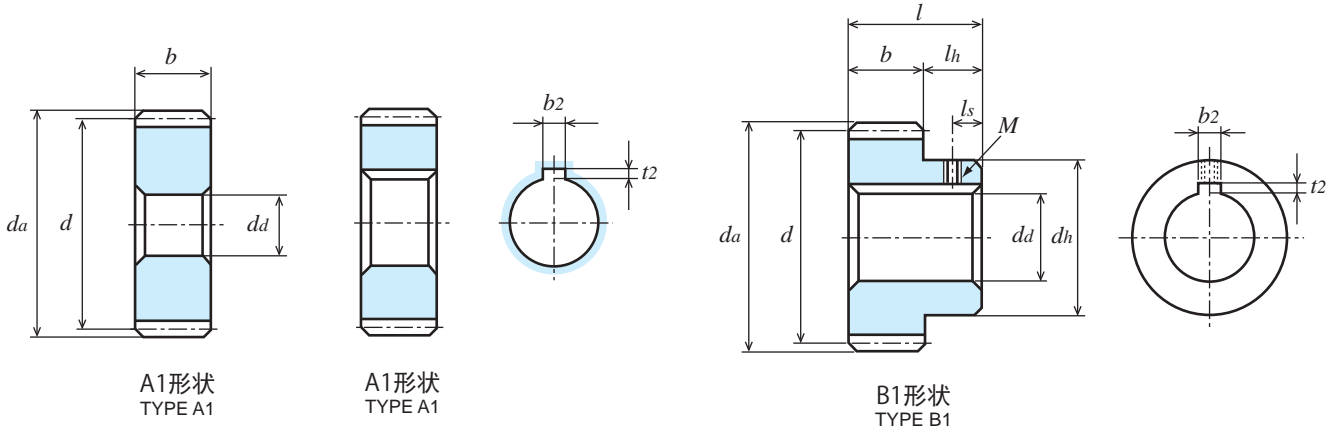
★未做表面处理。[#] 表示带有键槽和键，螺纹孔和固定用螺钉；[=] 表示带有键槽和键。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★KG 的规格齿轮有「标准齿宽」(轻负荷用)和传达扭矩更大的「加宽齿宽」(重负荷用)。请根据用途选择。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 分度圆直径<br>Outside Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b2 × t2 | 螺纹孔<br>Set Screw |    | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|---------------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|--------------------------|------------------|----|----------------------|
|                          |                            |                                  |                                 |            |                       |                               |                            |                              |                           |                          | M                | ls |                      |
| S2S 30A - 1216F          | 30                         | φ60                              | φ64                             | A1         | 12                    | φ16                           | -                          | -                            | 12                        | -                        | -                | -  | 247.4                |
| S2S 30A - 1414F          | 30                         | φ60                              | φ64                             | A1         | 14                    | φ14                           | -                          | -                            | 14                        | -                        | -                | -  | 293.8                |
| S2S 30A = 1415           | 30                         | φ60                              | φ64                             | A1         | 14                    | φ15                           | -                          | -                            | 14                        | 5 × 2.3                  | -                | -  | 290.1                |
| S2S 30A = 1418           | 30                         | φ60                              | φ64                             | A1         | 14                    | φ18                           | -                          | -                            | 14                        | 6 × 2.8                  | -                | -  | 280.9                |
| S2S 30A = 1420           | 30                         | φ60                              | φ64                             | A1         | 14                    | φ20                           | -                          | -                            | 14                        | 6 × 2.8                  | -                | -  | 274.4                |
| S2S 30A - 2016F          | 30                         | φ60                              | φ64                             | A1         | 20                    | φ16                           | -                          | -                            | 20                        | -                        | -                | -  | 412.3                |
| S2S 30A = 2020           | 30                         | φ60                              | φ64                             | A1         | 20                    | φ20                           | -                          | -                            | 20                        | 6 × 2.8                  | -                | -  | 391.9                |
| S2S 30A - 2216F          | 30                         | φ60                              | φ64                             | A1         | 22                    | φ16                           | -                          | -                            | 22                        | -                        | -                | -  | 453.6                |
| S2S 30A = 2220           | 30                         | φ60                              | φ64                             | A1         | 22                    | φ20                           | -                          | -                            | 22                        | 6 × 2.8                  | -                | -  | 431.1                |
| S2S 30A = 2225           | 30                         | φ60                              | φ64                             | A1         | 22                    | φ25                           | -                          | -                            | 22                        | 8 × 3.3                  | -                | -  | 399.0                |
| S2S 30B - 1214           | 30                         | φ60                              | φ64                             | B1         | 12                    | φ14                           | φ52                        | 10                           | 22                        | -                        | -                | -  | 338.6                |
| S2S 30B - 1414           | 30                         | φ60                              | φ64                             | B1         | 14                    | φ14                           | φ40                        | 10                           | 24                        | -                        | -                | -  | 380.6                |
| S2S 30B # 1415           | 30                         | φ60                              | φ64                             | B1         | 14                    | φ15                           | φ40                        | 10                           | 24                        | 5 × 2.3                  | M4               | 5  | 373.3                |
| S2S 30B # 1416           | 30                         | φ60                              | φ64                             | B1         | 14                    | φ16                           | φ40                        | 10                           | 24                        | 5 × 2.3                  | M4               | 5  | 368.8                |
| S2S 30B # 1418           | 30                         | φ60                              | φ64                             | B1         | 14                    | φ18                           | φ40                        | 10                           | 24                        | 6 × 2.8                  | M5               | 5  | 357.5                |
| S2S 30B # 1420           | 30                         | φ60                              | φ64                             | B1         | 14                    | φ20                           | φ40                        | 10                           | 24                        | 6 × 2.8                  | M5               | 5  | 346.3                |
| S2S 30BF - 2010          | 30                         | φ60                              | φ64                             | B1         | 20                    | φ10(H8)                       | φ50                        | 20                           | 40                        | -                        | -                | -  | 723.5                |
| S2S 30B - 2018N          | 30                         | φ60                              | φ64                             | B1         | 20                    | φ18                           | φ54                        | 10                           | 30                        | -                        | -                | -  | 564.1                |
| S2S 30B - 2216           | 30                         | φ60                              | φ64                             | B1         | 22                    | φ16                           | φ50                        | 10                           | 32                        | -                        | -                | -  | 592.3                |
| S2S 30B # 2220           | 30                         | φ60                              | φ64                             | B1         | 22                    | φ20                           | φ50                        | 10                           | 32                        | 6 × 2.8                  | M5               | 5  | 558.1                |
| S2S 30B # 2225           | 30                         | φ60                              | φ64                             | B1         | 22                    | φ25                           | φ50                        | 10                           | 32                        | 8 × 3.3                  | M6               | 5  | 511.1                |
| S2S 32A - 1214F          | 32                         | φ64                              | φ68                             | A1         | 12                    | φ14                           | -                          | -                            | 12                        | -                        | -                | -  | 288.5                |
| S2S 32A = 1215           | 32                         | φ64                              | φ68                             | A1         | 12                    | φ15                           | -                          | -                            | 12                        | 5 × 2.3                  | -                | -  | 285.3                |
| S2S 32A = 1218           | 32                         | φ64                              | φ68                             | A1         | 12                    | φ18                           | -                          | -                            | 12                        | 6 × 2.8                  | -                | -  | 277.5                |
| S2S 32A = 1220           | 32                         | φ64                              | φ68                             | A1         | 12                    | φ20                           | -                          | -                            | 12                        | 6 × 2.8                  | -                | -  | 271.9                |
| S2S 32A - 2016F          | 32                         | φ64                              | φ68                             | A1         | 20                    | φ16                           | -                          | -                            | 20                        | -                        | -                | -  | 473.5                |
| S2S 32A = 2020           | 32                         | φ64                              | φ68                             | A1         | 20                    | φ20                           | -                          | -                            | 20                        | 6 × 2.8                  | -                | -  | 453.1                |
| S2S 32A = 2025           | 32                         | φ64                              | φ68                             | A1         | 20                    | φ25                           | -                          | -                            | 20                        | 8 × 3.3                  | -                | -  | 423.9                |
| S2S 32B - 1214           | 32                         | φ64                              | φ68                             | B1         | 12                    | φ14                           | φ40                        | 10                           | 22                        | -                        | -                | -  | 375.3                |
| S2S 32B # 1215           | 32                         | φ64                              | φ68                             | B1         | 12                    | φ15                           | φ40                        | 10                           | 22                        | 5 × 2.3                  | M4               | 5  | 368.6                |
| S2S 32B # 1220           | 32                         | φ64                              | φ68                             | B1         | 12                    | φ20                           | φ40                        | 10                           | 22                        | 6 × 2.8                  | M5               | 5  | 343.8                |
| S2S 32BF - 2010          | 32                         | φ64                              | φ68                             | B1         | 20                    | φ10(H8)                       | φ58                        | 20                           | 40                        | -                        | -                | -  | 896.3                |
| S2S 32B - 2016           | 32                         | φ64                              | φ68                             | B1         | 20                    | φ16                           | φ50                        | 10                           | 30                        | -                        | -                | -  | 621.2                |
| S2S 32B # 2020           | 32                         | φ64                              | φ68                             | B1         | 20                    | φ20                           | φ50                        | 10                           | 30                        | 6 × 2.8                  | M5               | 5  | 580.1                |
| S2S 32B # 2025           | 32                         | φ64                              | φ68                             | B1         | 20                    | φ25                           | φ50                        | 10                           | 30                        | 8 × 3.3                  | M6               | 5  | 536.0                |
| S2S 34B - 1214           | 34                         | φ68                              | φ72                             | B1         | 12                    | φ14                           | φ60                        | 10                           | 22                        | -                        | -                | -  | 537.8                |
| S2S 34B - 2016           | 34                         | φ68                              | φ72                             | B1         | 20                    | φ16                           | φ60                        | 10                           | 30                        | -                        | -                | -  | 745.3                |
| S2S 35A - 1216F          | 35                         | φ70                              | φ74                             | A1         | 12                    | φ16                           | -                          | -                            | 12                        | -                        | -                | -  | 343.6                |
| S2S 35A - 2020F          | 35                         | φ70                              | φ74                             | A1         | 20                    | φ20                           | -                          | -                            | 20                        | -                        | -                | -  | 554.9                |
| S2S 35B - 1214           | 35                         | φ70                              | φ74                             | B1         | 12                    | φ14                           | φ60                        | 10                           | 22                        | -                        | -                | -  | 558.3                |
| S2S 35BF - 2010          | 35                         | φ70                              | φ74                             | B1         | 20                    | φ10(H8)                       | φ60                        | 20                           | 40                        | -                        | -                | -  | 1024.8               |
| S2S 35B - 2016           | 35                         | φ70                              | φ74                             | B1         | 20                    | φ16                           | φ60                        | 10                           | 30                        | -                        | -                | -  | 779.3                |



| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 分度圆直径<br>Outside Diameter<br><i>da</i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>da</i> (H7) | 轮毂外直径<br>Hub Diameter<br><i>dh</i> | 轮毂长度<br>Hub Projection<br><i>lh</i> | 全长<br>Overall Length<br><i>l</i> | 键槽<br>Key Way<br><i>b</i> × <i>t</i> | 螺纹孔<br>Set Screw |           | 重量<br>Weight<br><i>W</i> (g) |
|--------------------------|-----------------------------------|---|--|------------|------------------------------|---------------------------------------|------------------------------------|-------------------------------------|----------------------------------|--------------------------------------|------------------|-----------|------------------------------|
|                          |                                   |   |  |            |                              |                                       |                                    |                                     |                                  |                                      | <i>M</i>         | <i>ls</i> |                              |
| S2S 36A - 1216F          | 36                                | φ72                                     | φ76                                    | A1         | 12                           | φ16                                   | -                                  | -                                   | 12                               | -                                    | -                | -         | 0.36                         |
| S2S 36A = 1220           | 36                                | φ72                                     | φ76                                    | A1         | 12                           | φ20                                   | -                                  | -                                   | 12                               | 6 × 2.8                              | -                | -         | 0.35                         |
| S2S 36A - 2016F          | 36                                | φ72                                     | φ76                                    | A1         | 20                           | φ16                                   | -                                  | -                                   | 20                               | -                                    | -                | -         | 0.61                         |
| S2S 36A = 2020           | 36                                | φ72                                     | φ76                                    | A1         | 20                           | φ20                                   | -                                  | -                                   | 20                               | 6 × 2.8                              | -                | -         | 0.59                         |
| S2S 36A = 2025           | 36                                | φ72                                     | φ76                                    | A1         | 20                           | φ25                                   | -                                  | -                                   | 20                               | 8 × 3.3                              | -                | -         | 0.56                         |
| S2S 36B - 1214           | 36                                | φ72                                     | φ76                                    | B1         | 12                           | φ14                                   | φ40                                | 10                                  | 22                               | -                                    | -                | -         | 0.46                         |
| S2S 36B # 1215           | 36                                | φ72                                     | φ76                                    | B1         | 12                           | φ15                                   | φ40                                | 10                                  | 22                               | 5 × 2.3                              | M4               | 5         | 0.45                         |
| S2S 36B # 1216           | 36                                | φ72                                     | φ76                                    | B1         | 12                           | φ16                                   | φ40                                | 10                                  | 22                               | 5 × 2.3                              | M4               | 5         | 0.44                         |
| S2S 36B # 1218           | 36                                | φ72                                     | φ76                                    | B1         | 12                           | φ18                                   | φ40                                | 10                                  | 22                               | 6 × 2.8                              | M5               | 5         | 0.43                         |
| S2S 36B # 1220           | 36                                | φ72                                     | φ76                                    | B1         | 12                           | φ20                                   | φ40                                | 10                                  | 22                               | 6 × 2.8                              | M5               | 5         | 0.42                         |
| S2S 36BF - 2010          | 36                                | φ72                                     | φ76                                    | B1         | 20                           | φ10(H8)                               | φ60                                | 20                                  | 40                               | -                                    | -                | -         | 1.06                         |
| S2S 36B - 2016           | 36                                | φ72                                     | φ76                                    | B1         | 20                           | φ16                                   | φ50                                | 10                                  | 30                               | -                                    | -                | -         | 0.75                         |
| S2S 36B # 2020           | 36                                | φ72                                     | φ76                                    | B1         | 20                           | φ20                                   | φ50                                | 10                                  | 30                               | 6 × 2.8                              | M5               | 5         | 0.71                         |
| S2S 36B # 2025           | 36                                | φ72                                     | φ76                                    | B1         | 20                           | φ25                                   | φ50                                | 10                                  | 30                               | 8 × 3.3                              | M6               | 5         | 0.67                         |
| S2S 38B - 1214           | 38                                | φ76                                     | φ80                                    | B1         | 12                           | φ14                                   | φ60                                | 10                                  | 22                               | -                                    | -                | -         | 0.62                         |
| S2S 38B - 2016           | 38                                | φ76                                     | φ80                                    | B1         | 20                           | φ16                                   | φ60                                | 10                                  | 30                               | -                                    | -                | -         | 0.89                         |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |        |
|----------------|----------------|---|-------|-------|-------|-------|-------|--------|
|                |                | 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500  |
| 30             | 12             | 0.066                                       | 0.66  | 1.32  | 2.55  | 4.32  | 5.94  | 7.17   |
| 30             | 14             | 0.077                                       | 0.77  | 1.55  | 2.98  | 5.04  | 6.93  | 8.36   |
| 30             | 20             | 0.110                                       | 1.100 | 2.210 | 4.260 | 7.200 | 9.900 | 11.960 |
| 30             | 22             | 0.121                                       | 1.21  | 2.43  | 4.68  | 7.92  | 10.88 | 13.14  |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |   |
|---|-------|-------|-------|-------|-------|-------|---|
| 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |   |
| -   | -     | -     | -     | -     | -     | -     | - |
| -   | -     | -     | -     | -     | -     | -     | - |
| 0.007                                       | 0.070 | 0.130 | 0.260 | 0.450 | 0.640 | 0.790 |   |
| -   | -     | -     | -     | -     | -     | -     | - |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |      |      |      |       |       |
|----------------|----------------|---|------|------|------|------|-------|-------|
|                |                | 10  | 100  | 200  | 400  | 800  | 1,200 | 1,500 |
| 32             | 12             | 0.072                                       | 0.72 | 1.44 | 2.75 | 4.61 | 6.41  | 7.73  |
| 32             | 20             | 0.120                                       | 1.20 | 2.41 | 4.58 | 7.69 | 10.69 | 12.89 |
| 34             | 12             | 0.078                                       | 0.78 | 1.57 | 2.94 | 4.90 | 6.89  | 8.32  |
| 34             | 20             | 0.130                                       | 1.30 | 2.61 | 4.90 | 8.17 | 11.48 | 13.86 |
| 35             | 12             | 0.081                                       | 0.81 | 1.63 | 3.04 | 5.04 | 7.12  | 8.61  |
| 35             | 20             | 0.135                                       | 1.35 | 2.71 | 5.07 | 8.40 | 11.87 | 14.35 |
| 36             | 12             | 0.084                                       | 0.84 | 1.69 | 3.13 | 5.19 | 7.35  | 8.90  |
| 36             | 20             | 0.141                                       | 1.41 | 2.81 | 5.22 | 8.64 | 12.26 | 14.83 |
| 38             | 12             | 0.090                                       | 0.90 | 1.81 | 3.32 | 5.53 | 7.82  | 9.47  |
| 38             | 20             | 0.151                                       | 1.51 | 3.02 | 5.54 | 9.21 | 13.03 | 15.79 |

### T (N · m)

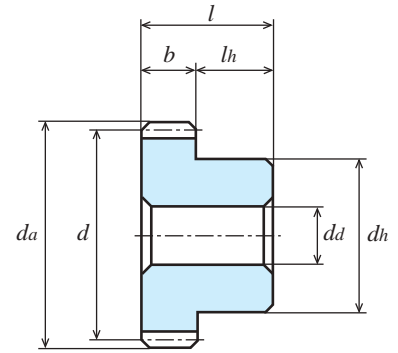
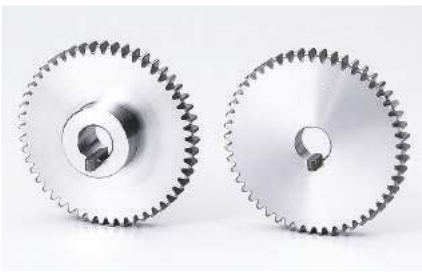
| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|---|
| 100   |
| 68.75                                       |
| 114.59                                      |
| 74.48                                       |
| 124.14                                      |
| 77.35                                       |
| 128.92                                      |
| 80.21                                       |
| 134.65                                      |
| 85.94                                       |
| 144.20                                      |

# 直齿轮

## SPUR GEARS

模数  
MODULE **2** (齿数 40 ~ 52)

(普通齿)  
FULL DEPTH TOOTH



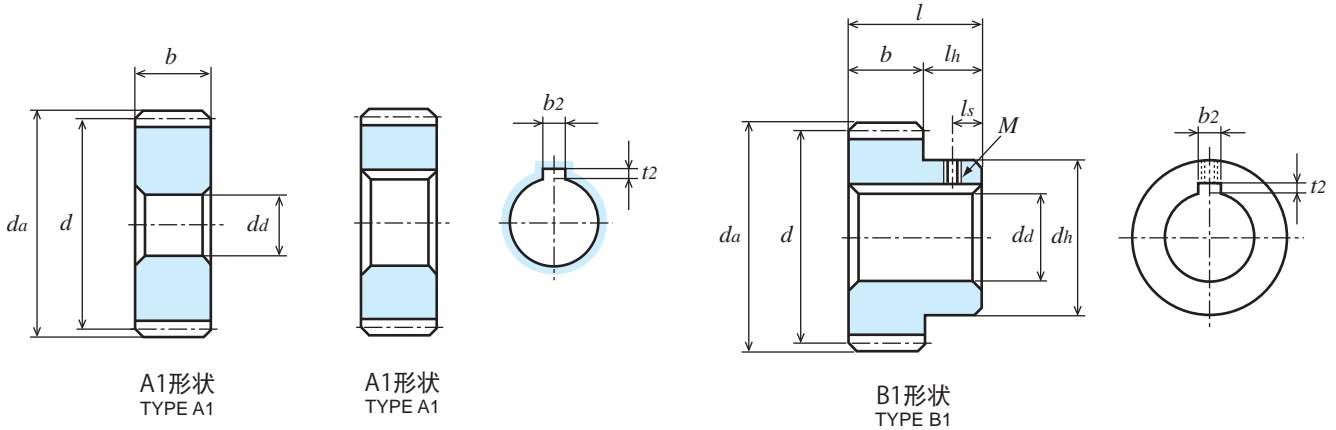
B1形状  
TYPE B1

单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|------|-----|-----|------|-------------|
| JIS B 1702-1 8级 | S45C | 20度 | -   | -    | 0.08 ~ 0.20 |

- ★未做表面处理。[#] 表示带有键槽和键，螺孔和固定用螺钉；[=] 表示带有键槽和键。
- ★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。
- ★KG 的规格齿轮有「标准齿宽」(轻负荷) 和传达扭矩更大的「加宽齿宽」(重负荷)。请根据用途选择。
- ①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 分度圆直径<br>Outside Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b2 × t2 | 螺纹孔<br>Set Screw |    | 重量<br>Weight<br>W(kg) |
|--------------------------|----------------------------|----------------------------------|---------------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|--------------------------|------------------|----|-----------------------|
|                          |                            |                                  |                                 |            |                       |                               |                            |                              |                           |                          | M                | ls |                       |
| S2S 40A - 1216F          | 40                         | φ 80                             | φ 84                            | A1         | 12                    | φ16                           | -                          | -                            | 12                        | -                        | -                | -  | 0.45                  |
| S2S 40A = 1220           | 40                         | φ 80                             | φ 84                            | A1         | 12                    | φ20                           | -                          | -                            | 12                        | 6 × 2.8                  | -                | -  | 0.44                  |
| S2S 40A - 2016F          | 40                         | φ 80                             | φ 84                            | A1         | 20                    | φ16                           | -                          | -                            | 20                        | -                        | -                | -  | 0.76                  |
| S2S 40A = 2020           | 40                         | φ 80                             | φ 84                            | A1         | 20                    | φ20                           | -                          | -                            | 20                        | 6 × 2.8                  | -                | -  | 0.74                  |
| S2S 40A = 2025           | 40                         | φ 80                             | φ 84                            | A1         | 20                    | φ25                           | -                          | -                            | 20                        | 8 × 3.3                  | -                | -  | 0.71                  |
| S2S 40B - 1214           | 40                         | φ 80                             | φ 84                            | B1         | 12                    | φ14                           | φ40                        | 10                           | 22                        | -                        | -                | -  | 0.55                  |
| S2S 40B # 1215           | 40                         | φ 80                             | φ 84                            | B1         | 12                    | φ15                           | φ40                        | 10                           | 22                        | 5 × 2.3                  | M4               | 5  | 0.54                  |
| S2S 40B # 1216           | 40                         | φ 80                             | φ 84                            | B1         | 12                    | φ16                           | φ40                        | 10                           | 22                        | 5 × 2.3                  | M4               | 5  | 0.53                  |
| S2S 40B # 1218           | 40                         | φ 80                             | φ 84                            | B1         | 12                    | φ18                           | φ40                        | 10                           | 22                        | 6 × 2.8                  | M5               | 5  | 0.52                  |
| S2S 40B # 1220           | 40                         | φ 80                             | φ 84                            | B1         | 12                    | φ20                           | φ40                        | 10                           | 22                        | 6 × 2.8                  | M5               | 5  | 0.51                  |
| S2S 40BF - 2010          | 40                         | φ 80                             | φ 84                            | B1         | 20                    | φ10(H8)                       | φ60                        | 20                           | 40                        | -                        | -                | -  | 1.2                   |
| S2S 40B - 2016           | 40                         | φ 80                             | φ 84                            | B1         | 20                    | φ16                           | φ50                        | 10                           | 30                        | -                        | -                | -  | 0.90                  |
| S2S 40B # 2020           | 40                         | φ 80                             | φ 84                            | B1         | 20                    | φ20                           | φ50                        | 10                           | 30                        | 6 × 2.8                  | M5               | 5  | 0.86                  |
| S2S 40B # 2025           | 40                         | φ 80                             | φ 84                            | B1         | 20                    | φ25                           | φ50                        | 10                           | 30                        | 8 × 3.3                  | M6               | 5  | 0.82                  |
| S2S 42B - 1214           | 42                         | φ 84                             | φ 88                            | B1         | 12                    | φ14                           | φ60                        | 10                           | 22                        | -                        | -                | -  | 0.72                  |
| S2S 42B - 2016           | 42                         | φ 84                             | φ 88                            | B1         | 20                    | φ16                           | φ60                        | 10                           | 30                        | -                        | -                | -  | 1.05                  |
| S2S 44B - 1214           | 44                         | φ 88                             | φ 92                            | B1         | 12                    | φ14                           | φ60                        | 10                           | 22                        | -                        | -                | -  | 0.77                  |
| S2S 44B - 2016           | 44                         | φ 88                             | φ 92                            | B1         | 20                    | φ16                           | φ60                        | 10                           | 30                        | -                        | -                | -  | 1.13                  |
| S2S 45A - 1218F          | 45                         | φ 90                             | φ 94                            | A1         | 12                    | φ18                           | -                          | -                            | 12                        | -                        | -                | -  | 0.58                  |
| S2S 45A - 2020F          | 45                         | φ 90                             | φ 94                            | A1         | 20                    | φ20                           | -                          | -                            | 20                        | -                        | -                | -  | 0.95                  |
| S2S 45B - 1214           | 45                         | φ 90                             | φ 94                            | B1         | 12                    | φ14                           | φ60                        | 10                           | 22                        | -                        | -                | -  | 0.80                  |
| S2S 45BF - 2012          | 45                         | φ 90                             | φ 94                            | B1         | 20                    | φ12(H8)                       | φ65                        | 20                           | 40                        | -                        | -                | -  | 1.49                  |
| S2S 45B - 2016           | 45                         | φ 90                             | φ 94                            | B1         | 20                    | φ16                           | φ60                        | 10                           | 30                        | -                        | -                | -  | 1.17                  |
| S2S 46B - 1214           | 46                         | φ 92                             | φ 96                            | B1         | 12                    | φ14                           | φ60                        | 10                           | 22                        | -                        | -                | -  | 0.82                  |
| S2S 46B - 2016           | 46                         | φ 92                             | φ 96                            | B1         | 20                    | φ16                           | φ60                        | 10                           | 30                        | -                        | -                | -  | 1.22                  |
| S2S 48A - 1218F          | 48                         | φ 96                             | φ100                            | A1         | 12                    | φ18                           | -                          | -                            | 12                        | -                        | -                | -  | 0.66                  |
| S2S 48A = 1220           | 48                         | φ 96                             | φ100                            | A1         | 12                    | φ20                           | -                          | -                            | 12                        | 6 × 2.8                  | -                | -  | 0.65                  |
| S2S 48A - 2018F          | 48                         | φ 96                             | φ100                            | A1         | 20                    | φ18                           | -                          | -                            | 20                        | -                        | -                | -  | 1.10                  |
| S2S 48A = 2020           | 48                         | φ 96                             | φ100                            | A1         | 20                    | φ20                           | -                          | -                            | 20                        | 6 × 2.8                  | -                | -  | 1.08                  |
| S2S 48A = 2025           | 48                         | φ 96                             | φ100                            | A1         | 20                    | φ25                           | -                          | -                            | 20                        | 8 × 3.3                  | -                | -  | 1.06                  |
| S2S 48B - 1216           | 48                         | φ 96                             | φ100                            | B1         | 12                    | φ16                           | φ40                        | 10                           | 22                        | -                        | -                | -  | 0.75                  |
| S2S 48B # 1220           | 48                         | φ 96                             | φ100                            | B1         | 12                    | φ20                           | φ40                        | 10                           | 22                        | 6 × 2.8                  | M5               | 5  | 0.72                  |
| S2S 48BF - 2012          | 48                         | φ 96                             | φ100                            | B1         | 20                    | φ12(H8)                       | φ70                        | 20                           | 40                        | -                        | -                | -  | 1.71                  |
| S2S 48B - 2018           | 48                         | φ 96                             | φ100                            | B1         | 20                    | φ18                           | φ50                        | 10                           | 30                        | -                        | -                | -  | 1.23                  |
| S2S 48B # 2020           | 48                         | φ 96                             | φ100                            | B1         | 20                    | φ20                           | φ50                        | 10                           | 30                        | 6 × 2.8                  | M5               | 5  | 1.21                  |
| S2S 48B # 2025           | 48                         | φ 96                             | φ100                            | B1         | 20                    | φ25                           | φ50                        | 10                           | 30                        | 8 × 3.3                  | M6               | 5  | 1.17                  |
| S2S 50A - 1218F          | 50                         | φ100                             | φ104                            | A1         | 12                    | φ18                           | -                          | -                            | 12                        | -                        | -                | -  | 0.72                  |
| S2S 50A = 1220           | 50                         | φ100                             | φ104                            | A1         | 12                    | φ20                           | -                          | -                            | 12                        | 6 × 2.8                  | -                | -  | 0.71                  |
| S2S 50A = 1225           | 50                         | φ100                             | φ104                            | A1         | 12                    | φ25                           | -                          | -                            | 12                        | 8 × 3.3                  | -                | -  | 0.69                  |
| S2S 50A - 2018F          | 50                         | φ100                             | φ104                            | A1         | 20                    | φ18                           | -                          | -                            | 20                        | -                        | -                | -  | 1.19                  |
| S2S 50A = 2020           | 50                         | φ100                             | φ104                            | A1         | 20                    | φ20                           | -                          | -                            | 20                        | 6 × 2.8                  | -                | -  | 1.18                  |
| S2S 50A = 2025           | 50                         | φ100                             | φ104                            | A1         | 20                    | φ25                           | -                          | -                            | 20                        | 8 × 3.3                  | -                | -  | 1.15                  |
| S2S 50A = 2030           | 50                         | φ100                             | φ104                            | A1         | 20                    | φ30                           | -                          | -                            | 20                        | 8 × 3.3                  | -                | -  | 1.12                  |



| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 分度圆直径<br>Outside Diameter<br><i>da</i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>da</i> (H7) | 轮毂外径<br>Hub Diameter<br><i>dh</i> | 轮毂长度<br>Hub Projection<br><i>lh</i> | 全长<br>Overall Length<br><i>l</i> | 键槽<br>Key Way<br><i>b</i> × <i>t</i> <sub>2</sub> | 螺纹孔<br>Set Screw |           | 重量<br>Weight<br><i>W</i> (kg) |
|--------------------------|-----------------------------------|---|--|------------|------------------------------|---------------------------------------|-----------------------------------|-------------------------------------|----------------------------------|---|------------------|-----------|-------------------------------|
|                          |                                   |   |  |            |                              |                                       |                                   |                                     |                                  |   | <i>M</i>         | <i>ls</i> |                               |
| S2S 50B - 1216           | 50                                | φ100                                    | φ104                                   | B1         | 12                           | φ16                                   | φ50                               | 10                                  | 22                               | -   | -                | -         | 0.86                          |
| S2S 50B # 1220           | 50                                | φ100                                    | φ104                                   | B1         | 12                           | φ20                                   | φ50                               | 10                                  | 22                               | 6 × 2.8   | M5               | 5         | 0.84                          |
| S2S 50B # 1225           | 50                                | φ100                                    | φ104                                   | B1         | 12                           | φ25                                   | φ50                               | 10                                  | 22                               | 8 × 3.3   | M6               | 5         | 0.80                          |
| S2S 50BF - 2012          | 50                                | φ100                                    | φ104                                   | B1         | 20                           | φ12(H8)                               | φ70                               | 20                                  | 40                               | -   | -                | -         | 1.8                           |
| S2S 50B - 2018           | 50                                | φ100                                    | φ104                                   | B1         | 20                           | φ18                                   | φ60                               | 10                                  | 30                               | -   | -                | -         | 1.40                          |
| S2S 50B # 2020           | 50                                | φ100                                    | φ104                                   | B1         | 20                           | φ20                                   | φ60                               | 10                                  | 30                               | 6 × 2.8   | M5               | 5         | 1.38                          |
| S2S 50B # 2025           | 50                                | φ100                                    | φ104                                   | B1         | 20                           | φ25                                   | φ60                               | 10                                  | 30                               | 8 × 3.3   | M6               | 5         | 1.33                          |
| S2S 50B # 2030           | 50                                | φ100                                    | φ104                                   | B1         | 20                           | φ30                                   | φ60                               | 10                                  | 30                               | 8 × 3.3   | M6               | 5         | 1.28                          |
| S2S 52B - 1216           | 52                                | φ104                                    | φ108                                   | B1         | 12                           | φ16                                   | φ60                               | 10                                  | 22                               | -   | -                | -         | 0.99                          |
| S2S 52B - 2018           | 52                                | φ104                                    | φ108                                   | B1         | 20                           | φ18                                   | φ60                               | 10                                  | 30                               | -   | -                | -         | 1.50                          |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |        |        |
|----------------|----------------|---|-------|-------|-------|-------|--------|--------|
|                |                | 10  | 100   | 200   | 400   | 800   | 1,200  | 1,500  |
| 40             | 12             | 0.10  | 0.97  | 1.93  | 3.51  | 5.87  | 8.28   | 10.05  |
| 40             | 20             | 0.160                                       | 1.610 | 3.210 | 5.840 | 9.760 | 13.760 | 16.700 |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |      |      |       |       |       |
|----------------|----------------|---|------|------|------|-------|-------|-------|
|                |                | 10  | 100  | 200  | 400  | 800   | 1,200 | 1,500 |
| 42             | 12             | 0.10  | 1.03 | 2.06 | 3.69 | 6.20  | 8.75  | 10.61 |
| 42             | 20             | 0.17  | 1.71 | 3.43 | 6.15 | 10.34 | 14.59 | 17.69 |
| 44             | 12             | 0.11  | 1.09 | 2.18 | 3.87 | 6.53  | 9.22  | 11.17 |
| 44             | 20             | 0.18  | 1.82 | 3.63 | 6.45 | 10.89 | 15.37 | 18.61 |
| 45             | 12             | 0.11  | 1.12 | 2.24 | 3.96 | 6.70  | 9.46  | 11.44 |
| 45             | 20             | 0.19  | 1.87 | 3.74 | 6.60 | 11.16 | 15.76 | 19.07 |
| 46             | 12             | 0.12  | 1.15 | 2.30 | 4.05 | 6.86  | 9.69  | 11.72 |
| 46             | 20             | 0.19  | 1.92 | 3.84 | 6.74 | 11.44 | 16.15 | 19.53 |
| 48             | 12             | 0.12  | 1.21 | 2.43 | 4.22 | 7.19  | 10.16 | 12.27 |
| 48             | 20             | 0.20  | 2.02 | 4.04 | 7.03 | 11.98 | 16.93 | 20.45 |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |        |        |        |
|----------------|----------------|---|-------|-------|-------|--------|--------|--------|
|                |                | 10  | 100   | 200   | 400   | 800    | 1,200  | 1,500  |
| 50             | 12             | 0.13  | 1.28  | 2.54  | 4.39  | 7.52   | 10.62  | 12.81  |
| 50             | 20             | 0.210                                       | 2.120 | 4.210 | 7.280 | 12.470 | 17.630 | 21.270 |
| 52             | 12             | 0.13  | 1.34  | 2.64  | 4.56  | 7.84   | 11.08  | 13.40  |
| 52             | 20             | 0.22  | 2.23  | 4.41  | 7.59  | 13.06  | 18.47  | 22.34  |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|---|-------|-------|-------|-------|-------|-------|
| 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| -   | -     | -     | -     | -     | -     | -     |
| 0.012                                       | 0.120 | 0.240 | 0.450 | 0.790 | 1.160 | 1.450 |

### T (N · m)

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|---|
| 100   |
| 98.36                                       |
| 163.30                                      |
| 104.09                                      |
| 173.80                                      |
| 106.95                                      |
| 178.57                                      |
| 109.82                                      |
| 183.35                                      |
| 115.55                                      |
| 192.90                                      |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|---|-------|-------|-------|-------|-------|-------|
| 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| -   | -     | -     | -     | -     | -     | -     |
| 0.019                                       | 0.190 | 0.390 | 0.690 | 1.240 | 1.860 | 2.320 |
| -   | -     | -     | -     | -     | -     | -     |
| -   | -     | -     | -     | -     | -     | -     |

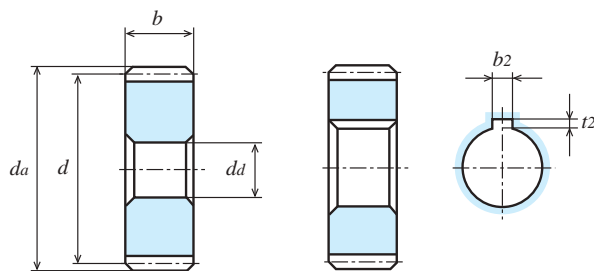
# 直齿轮

## SPUR GEARS

模数  
MODULE

2 (齿数 55 ~ 70)

(普通齿)  
FULL DEPTH TOOTH



A1形状  
TYPE A1

A1形状  
TYPE A1

单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|------|-----|-----|------|-------------|
| JIS B 1702-1 8级 | S45C | 20度 | -   | -    | 0.08 ~ 0.20 |

★未做表面处理。[#] 表示带有键槽和键，螺纹孔和固定用螺钉；[-] 表示带有键槽和键。

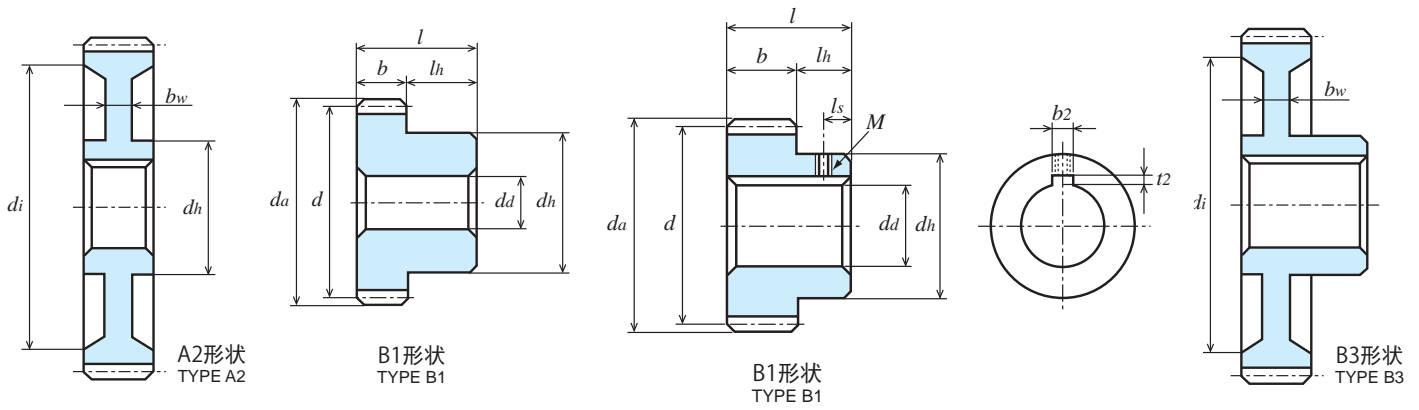
★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★KG 的规格齿轮有「标准齿宽」(轻负荷用)和传达扭矩更大的「加宽齿宽」(重负荷用)。请根据用途选择。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 分度圆直径<br>Outside Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂高度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b2 x t2 | 螺纹孔<br>Set Screw |    | 轮圈内径<br>Dimension of Rim<br>di | 腹板厚度<br>Thickness of Web<br>bw | 重量<br>Weight<br>W(kg) |
|--------------------------|----------------------------|----------------------------------|---------------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|--------------------------|------------------|----|--------------------------------|--------------------------------|-----------------------|
|                          |                            |                                  |                                 |            |                       |                               |                            |                              |                           |                          | M                | ls |                                |                                |                       |
| S2S 55A - 1218F          | 55                         | φ110                             | φ114                            | A1         | 12                    | φ18                           | -                          | -                            | 12                        | -                        | -                | -  | -                              | -                              | 0.87                  |
| S2S 55A - 2020F          | 55                         | φ110                             | φ114                            | A1         | 20                    | φ20                           | -                          | -                            | 20                        | -                        | -                | -  | -                              | -                              | 1.44                  |
| S2S 55B - 1216           | 55                         | φ110                             | φ114                            | B1         | 12                    | φ16                           | φ60                        | 10                           | 22                        | -                        | -                | -  | -                              | -                              | 1.08                  |
| S2S 55BF - 2012          | 55                         | φ110                             | φ114                            | B1         | 20                    | φ12(H8)                       | φ80                        | 20                           | 40                        | -                        | -                | -  | -                              | -                              | 2.25                  |
| S2S 55B - 2018           | 55                         | φ110                             | φ114                            | B1         | 20                    | φ18                           | φ60                        | 10                           | 30                        | -                        | -                | -  | -                              | -                              | 1.66                  |
| S2S 56A - 1218F          | 56                         | φ112                             | φ116                            | A1         | 12                    | φ18                           | -                          | -                            | 12                        | -                        | -                | -  | -                              | -                              | 0.90                  |
| S2S 56A = 1220           | 56                         | φ112                             | φ116                            | A1         | 12                    | φ20                           | -                          | -                            | 12                        | 6 x 2.8                  | -                | -  | -                              | -                              | 0.90                  |
| S2S 56A - 2020F          | 56                         | φ112                             | φ116                            | A1         | 20                    | φ20                           | -                          | -                            | 20                        | -                        | -                | -  | -                              | -                              | 1.50                  |
| S2S 56A = 2025           | 56                         | φ112                             | φ116                            | A1         | 20                    | φ25                           | -                          | -                            | 20                        | 8 x 3.3                  | -                | -  | -                              | -                              | 1.47                  |
| S2S 56B - 1216           | 56                         | φ112                             | φ116                            | B1         | 12                    | φ16                           | φ50                        | 10                           | 22                        | -                        | -                | -  | -                              | -                              | 1.05                  |
| S2S 56B # 1220           | 56                         | φ112                             | φ116                            | B1         | 12                    | φ20                           | φ50                        | 10                           | 22                        | 6 x 2.8                  | M5               | 5  | -                              | -                              | 1.02                  |
| S2S 56BF - 2012          | 56                         | φ112                             | φ116                            | B1         | 20                    | φ12(H8)                       | φ80                        | 20                           | 40                        | -                        | -                | -  | -                              | -                              | 2.30                  |
| S2S 56B - 2018           | 56                         | φ112                             | φ116                            | B1         | 20                    | φ18                           | φ60                        | 10                           | 30                        | -                        | -                | -  | -                              | -                              | 1.71                  |
| S2S 56B # 2020           | 56                         | φ112                             | φ116                            | B1         | 20                    | φ20                           | φ60                        | 10                           | 30                        | 6 x 2.8                  | M5               | 5  | -                              | -                              | 1.69                  |
| S2S 56B # 2025           | 56                         | φ112                             | φ116                            | B1         | 20                    | φ25                           | φ60                        | 10                           | 30                        | 8 x 3.3                  | M6               | 5  | -                              | -                              | 1.65                  |
| S2S 60A - 1220F          | 60                         | φ120                             | φ124                            | A1         | 12                    | φ20                           | -                          | -                            | 12                        | -                        | -                | -  | -                              | -                              | 1.04                  |
| S2S 60A = 1225           | 60                         | φ120                             | φ124                            | A2         | 12                    | φ25                           | φ50                        | -                            | 12                        | 8 x 3.3                  | -                | -  | φ102                           | 6                              | 0.74                  |
| S2S 60A - 2018F          | 60                         | φ120                             | φ124                            | A1         | 20                    | φ18                           | -                          | -                            | 20                        | -                        | -                | -  | -                              | -                              | 1.74                  |
| S2S 60A = 2020           | 60                         | φ120                             | φ124                            | A2         | 20                    | φ20                           | φ40                        | -                            | 20                        | 6 x 2.8                  | -                | -  | φ102                           | 10                             | 1.22                  |
| S2S 60A = 2025           | 60                         | φ120                             | φ124                            | A2         | 20                    | φ25                           | φ50                        | -                            | 20                        | 8 x 3.3                  | -                | -  | φ102                           | 10                             | 1.24                  |
| S2S 60A = 2030           | 60                         | φ120                             | φ124                            | A2         | 20                    | φ30                           | φ60                        | -                            | 20                        | 8 x 3.3                  | -                | -  | φ102                           | 10                             | 1.28                  |
| S2S 60B - 1216           | 60                         | φ120                             | φ124                            | B1         | 12                    | φ16                           | φ50                        | 10                           | 22                        | -                        | -                | -  | -                              | -                              | 1.19                  |
| S2S 60B # 1220           | 60                         | φ120                             | φ124                            | B3         | 12                    | φ20                           | φ50                        | 10                           | 22                        | 6 x 2.8                  | M5               | 5  | φ102                           | 6                              | 1.16                  |
| S2S 60B # 1225           | 60                         | φ120                             | φ124                            | B3         | 12                    | φ25                           | φ50                        | 10                           | 22                        | 8 x 3.3                  | M6               | 5  | φ102                           | 6                              | 1.13                  |
| S2S 60BF - 2012          | 60                         | φ120                             | φ124                            | B1         | 20                    | φ12(H8)                       | φ85                        | 20                           | 40                        | -                        | -                | -  | -                              | -                              | 2.62                  |
| S2S 60B - 2018           | 60                         | φ120                             | φ124                            | B1         | 20                    | φ18                           | φ60                        | 10                           | 30                        | -                        | -                | -  | -                              | -                              | 1.94                  |
| S2S 60B # 2020           | 60                         | φ120                             | φ124                            | B3         | 20                    | φ20                           | φ60                        | 10                           | 30                        | 6 x 2.8                  | M5               | 5  | φ102                           | 10                             | 1.92                  |
| S2S 60B # 2025           | 60                         | φ120                             | φ124                            | B3         | 20                    | φ25                           | φ60                        | 10                           | 30                        | 8 x 3.3                  | M6               | 5  | φ102                           | 10                             | 1.87                  |
| S2S 60B # 2030           | 60                         | φ120                             | φ124                            | B3         | 20                    | φ30                           | φ60                        | 10                           | 30                        | 8 x 3.3                  | M6               | 5  | φ102                           | 10                             | 1.82                  |
| S2S 64A - 1220F          | 64                         | φ128                             | φ132                            | A1         | 12                    | φ20                           | -                          | -                            | 12                        | -                        | -                | -  | -                              | -                              | 1.18                  |
| S2S 64A = 1225           | 64                         | φ128                             | φ132                            | A2         | 12                    | φ25                           | φ50                        | -                            | 12                        | 8 x 3.3                  | -                | -  | φ110                           | 6                              | 0.85                  |
| S2S 64A - 2018F          | 64                         | φ128                             | φ132                            | A1         | 20                    | φ18                           | -                          | -                            | 20                        | -                        | -                | -  | -                              | -                              | 1.98                  |
| S2S 64A = 2020           | 64                         | φ128                             | φ132                            | A2         | 20                    | φ20                           | φ40                        | -                            | 20                        | 6 x 2.8                  | -                | -  | φ110                           | 10                             | 1.36                  |
| S2S 64A = 2025           | 64                         | φ128                             | φ132                            | A2         | 20                    | φ25                           | φ50                        | -                            | 20                        | 8 x 3.3                  | -                | -  | φ110                           | 10                             | 1.39                  |
| S2S 64B - 1216           | 64                         | φ128                             | φ132                            | B1         | 12                    | φ16                           | φ50                        | 10                           | 22                        | -                        | -                | -  | -                              | -                              | 1.33                  |
| S2S 64B # 1220           | 64                         | φ128                             | φ132                            | B3         | 12                    | φ20                           | φ50                        | 10                           | 22                        | 6 x 2.8                  | M5               | 5  | φ110                           | 6                              | 0.97                  |
| S2S 64BF - 2015          | 64                         | φ128                             | φ132                            | B1         | 20                    | φ15                           | φ90                        | 20                           | 40                        | -                        | -                | -  | -                              | -                              | 2.97                  |
| S2S 64B - 2018           | 64                         | φ128                             | φ132                            | B1         | 20                    | φ18                           | φ60                        | 10                           | 30                        | -                        | -                | -  | -                              | -                              | 2.18                  |
| S2S 64B # 2020           | 64                         | φ128                             | φ132                            | B3         | 20                    | φ20                           | φ60                        | 10                           | 30                        | 6 x 2.8                  | M5               | 5  | φ110                           | 10                             | 1.68                  |
| S2S 64B # 2025           | 64                         | φ128                             | φ132                            | B3         | 20                    | φ25                           | φ60                        | 10                           | 30                        | 8 x 3.3                  | M6               | 5  | φ110                           | 10                             | 1.63                  |
| S2S 65A - 1218F          | 65                         | φ130                             | φ134                            | A1         | 12                    | φ18                           | -                          | -                            | 12                        | -                        | -                | -  | -                              | -                              | 1.23                  |
| S2S 65A - 2020F          | 65                         | φ130                             | φ134                            | A1         | 20                    | φ20                           | -                          | -                            | 20                        | -                        | -                | -  | -                              | -                              | 2.04                  |
| S2S 65B - 1216           | 65                         | φ130                             | φ134                            | B1         | 12                    | φ16                           | φ60                        | 10                           | 22                        | -                        | -                | -  | -                              | -                              | 1.44                  |
| S2S 65B - 2018           | 65                         | φ130                             | φ134                            | B1         | 20                    | φ18                           | φ70                        | 10                           | 30                        | -                        | -                | -  | -                              | -                              | 2.33                  |





| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>$z$ | 分度圆直径<br>Reference Diameter<br>$d$ | 分度圆直径<br>Outside Diameter<br>$d_a$ | 形状<br>Type | 齿宽<br>Face Width<br>$b$ | 孔径<br>Bore Diameter<br>$d_a(H7)$ | 轮毂外径<br>Hub Diameter<br>$d_h$ | 轮毂长度<br>Hub Projection<br>$l_h$ | 全长<br>Overall Length<br>$l$ | 键槽<br>Key Way<br>$b_2 \times t_2$ | 螺纹孔<br>Set Screw |       | 轮圈内径<br>Dimension of Rim<br>$d_i$ | 腹板厚度<br>Thickness of Web<br>$b_w$ | 重量<br>Weight<br>W(kg) |
|--------------------------|------------------------------|------------------------------------|------------------------------------|------------|-------------------------|----------------------------------|-------------------------------|---------------------------------|-----------------------------|-----------------------------------|------------------|-------|-----------------------------------|-----------------------------------|-----------------------|
|                          |                              |                                    |                                    |            |                         |                                  |                               |                                 |                             |                                   | $M$              | $l_s$ |                                   |                                   |                       |
| S2S 70A - 1220F          | 70                           | $\phi 140$                         | $\phi 144$                         | A1         | 12                      | $\phi 20$                        | -                             | -                               | 12                          | -                                 | -                | -     | -                                 | -                                 | 1.42                  |
| S2S 70A - 2018F          | 70                           | $\phi 140$                         | $\phi 144$                         | A1         | 20                      | $\phi 18$                        | -                             | -                               | 20                          | -                                 | -                | -     | -                                 | -                                 | 2.38                  |
| S2S 70B - 1216           | 70                           | $\phi 140$                         | $\phi 144$                         | B1         | 12                      | $\phi 16$                        | $\phi 60$                     | 10                              | 22                          | -                                 | -                | -     | -                                 | -                                 | 1.64                  |
| S2S 70BF - 2015          | 70                           | $\phi 140$                         | $\phi 144$                         | B1         | 20                      | $\phi 15$                        | $\phi 100$                    | 20                              | 40                          | -                                 | -                | -     | -                                 | -                                 | 3.59                  |
| S2S 70B - 2018           | 70                           | $\phi 140$                         | $\phi 144$                         | B1         | 20                      | $\phi 18$                        | $\phi 70$                     | 10                              | 30                          | -                                 | -                | -     | -                                 | -                                 | 2.66                  |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br>$z$ | 齿宽<br>$b$ | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |      |      |       |       |       |
|-----------|-----------|---|------|------|------|-------|-------|-------|
|           |           | 10  | 100  | 200  | 400  | 800   | 1,200 | 1,500 |
| 55        | 12        | 0.14  | 1.43 | 2.81 | 4.80 | 8.32  | 11.76 | 14.35 |
| 55        | 20        | 0.24  | 2.39 | 4.68 | 8.00 | 13.86 | 19.61 | 23.91 |
| 56        | 12        | 0.15  | 1.47 | 2.86 | 4.88 | 8.47  | 11.99 | 14.67 |
| 56        | 20        | 0.24  | 2.44 | 4.76 | 8.13 | 14.12 | 19.98 | 24.44 |

### T (N · m)

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|---|
| 100   |
| 136.56                                      |
| 228.23                                      |
| 140.38                                      |
| 233.01                                      |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br>$z$ | 齿宽<br>$b$ | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |        |        |        |
|-----------|-----------|---|-------|-------|-------|--------|--------|--------|
|           |           | 10  | 100   | 200   | 400   | 800    | 1,200  | 1,500  |
| 60        | 12        | 0.16  | 1.59  | 3.07  | 5.19  | 9.10   | 12.88  | 15.94  |
| 60        | 20        | 0.260                                       | 2.640 | 5.090 | 8.610 | 15.080 | 21.350 | 26.410 |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|---|-------|-------|-------|-------|-------|-------|
| 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| -   | -     | -     | -     | -     | -     | -     |
| 0.028                                       | 0.280 | 0.550 | 0.970 | 1.810 | 2.720 | 3.480 |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br>$z$ | 齿宽<br>$b$ | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |      |      |       |       |       |
|-----------|-----------|---|------|------|------|-------|-------|-------|
|           |           | 10  | 100  | 200  | 400  | 800   | 1,200 | 1,500 |
| 64        | 12        | 0.17  | 1.72 | 3.27 | 5.50 | 9.75  | 13.77 | -     |
| 64        | 20        | 0.29  | 2.87 | 5.46 | 9.16 | 16.25 | 22.95 | -     |
| 65        | 12        | 0.18  | 1.75 | 3.33 | 5.57 | 9.91  | 14.02 | -     |
| 65        | 20        | 0.29  | 2.92 | 5.54 | 9.29 | 16.52 | 23.37 | -     |

### T (N · m)

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|---|
| 100   |
| 164.25                                      |
| 274.07                                      |
| 167.12                                      |
| 278.85                                      |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br>$z$ | 齿宽<br>$b$ | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |        |        |       |
|-----------|-----------|---|-------|-------|-------|--------|--------|-------|
|           |           | 10  | 100   | 200   | 400   | 800    | 1,200  | 1,500 |
| 70        | 12        | 0.19  | 1.91  | 3.58  | 5.93  | 10.71  | 15.31  | -     |
| 70        | 20        | 0.320                                       | 3.170 | 5.920 | 9.820 | 17.740 | 25.350 | -     |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

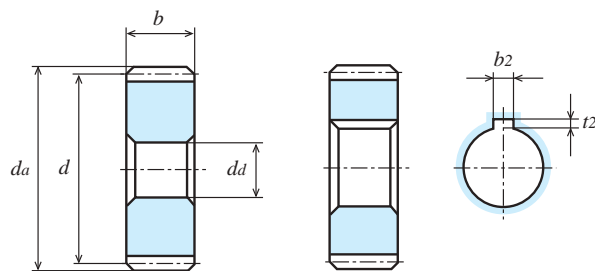
| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|---|-------|-------|-------|-------|-------|-------|
| 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| -   | -     | -     | -     | -     | -     | -     |
| 0.039                                       | 0.390 | 0.750 | 1.290 | 2.510 | 3.810 | -     |

# 直齿轮

## SPUR GEARS

模数 **2** (齿数 72 ~ 100)  
MODULE

(普通齿)  
FULL DEPTH TOOTH



A1形状  
TYPE A1

A1形状  
TYPE A1

单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|------|-----|-----|------|-------------|
| JIS B 1702-1 8级 | S45C | 20度 | —   | —    | 0.08 ~ 0.20 |

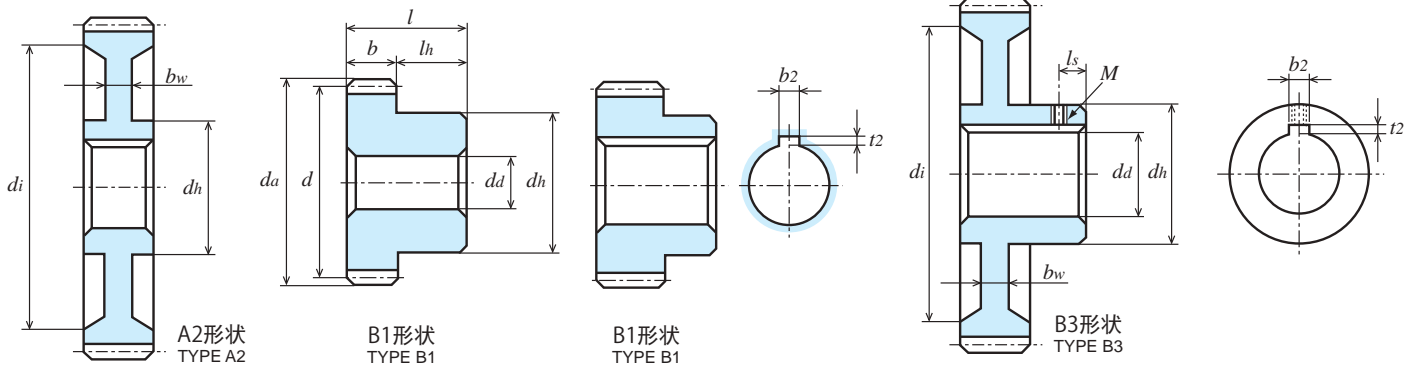
★未做表面处理。[#] 表示带有键槽和键，螺纹孔和固定用螺钉；[=] 表示带有键槽和键。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★KG 的规格齿轮有「标准齿宽」(轻负荷用)和传达扭矩更大的「加宽齿宽」(重负荷用)。请根据用途选择。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 分度圆直径<br>Outside Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂高度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b2 × t2 | 螺纹孔<br>Set Screw |    | 轮圈内径<br>Dimension of Rim<br>di | 腹板厚度<br>Thickness of Web<br>bw | 重量<br>Weight<br>W(kg) |
|--------------------------|----------------------------|----------------------------------|---------------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|--------------------------|------------------|----|--------------------------------|--------------------------------|-----------------------|
|                          |                            |                                  |                                 |            |                       |                               |                            |                              |                           |                          | M                | ls |                                |                                |                       |
| S2S 72A - 1220F          | 72                         | φ144                             | φ148                            | A1         | 12                    | φ20                           | -                          | -                            | 12                        | -                        | -                | -  | -                              | -                              | 1.51                  |
| S2S 72A = 1225           | 72                         | φ144                             | φ148                            | A2         | 12                    | φ25                           | φ50                        | -                            | 12                        | 8 × 3.3                  | -                | -  | φ126                           | 6                              | 1.01                  |
| S2S 72A - 2018F          | 72                         | φ144                             | φ148                            | A1         | 20                    | φ18                           | -                          | -                            | 20                        | -                        | -                | -  | -                              | -                              | 2.52                  |
| S2S 72A = 2025           | 72                         | φ144                             | φ148                            | A2         | 20                    | φ25                           | φ50                        | -                            | 20                        | 8 × 3.3                  | -                | -  | φ126                           | 10                             | 1.70                  |
| S2S 72B - 1218           | 72                         | φ144                             | φ148                            | B1         | 12                    | φ18                           | φ50                        | 10                           | 22                        | -                        | -                | -  | -                              | -                              | 1.65                  |
| S2S 72B # 1220           | 72                         | φ144                             | φ148                            | B3         | 12                    | φ20                           | φ50                        | 10                           | 22                        | 6 × 2.8                  | M5               | 5  | φ126                           | 6                              | 1.15                  |
| S2S 72BF - 2015          | 72                         | φ144                             | φ148                            | B1         | 20                    | φ15                           | φ100                       | 20                           | 40                        | -                        | -                | -  | -                              | -                              | 3.74                  |
| S2S 72B - 2020           | 72                         | φ144                             | φ148                            | B1         | 20                    | φ20                           | φ60                        | 10                           | 30                        | -                        | -                | -  | -                              | -                              | 2.71                  |
| S2S 72B # 2025           | 72                         | φ144                             | φ148                            | B3         | 20                    | φ25                           | φ60                        | 10                           | 30                        | 8 × 3.3                  | M6               | 5  | φ126                           | 10                             | 1.94                  |
| S2S 72B # 2030           | 72                         | φ144                             | φ148                            | B3         | 20                    | φ30                           | φ60                        | 10                           | 30                        | 8 × 3.3                  | M6               | 5  | φ126                           | 10                             | 1.89                  |
| S2S 75A - 1218F          | 75                         | φ150                             | φ154                            | A1         | 12                    | φ18                           | -                          | -                            | 12                        | -                        | -                | -  | -                              | -                              | 1.64                  |
| S2S 75A - 2020F          | 75                         | φ150                             | φ154                            | A1         | 20                    | φ20                           | -                          | -                            | 20                        | -                        | -                | -  | -                              | -                              | 2.73                  |
| S2S 75B - 1218           | 75                         | φ150                             | φ154                            | B1         | 12                    | φ18                           | φ60                        | 10                           | 22                        | -                        | -                | -  | -                              | -                              | 1.84                  |
| S2S 75BF - 2015          | 75                         | φ150                             | φ154                            | B1         | 20                    | φ15                           | φ110                       | 20                           | 40                        | -                        | -                | -  | -                              | -                              | 4.22                  |
| S2S 75B - 2020           | 75                         | φ150                             | φ154                            | B1         | 20                    | φ20                           | φ70                        | 10                           | 30                        | -                        | -                | -  | -                              | -                              | 3.00                  |
| S2S 80A - 1220F          | 80                         | φ160                             | φ164                            | A1         | 12                    | φ20                           | -                          | -                            | 12                        | -                        | -                | -  | -                              | -                              | 1.86                  |
| S2S 80A = 1225           | 80                         | φ160                             | φ164                            | A2         | 12                    | φ25                           | φ50                        | -                            | 12                        | 8 × 3.3                  | -                | -  | φ142                           | 6                              | 1.21                  |
| S2S 80A - 2018F          | 80                         | φ160                             | φ164                            | A1         | 20                    | φ18                           | -                          | -                            | 20                        | -                        | -                | -  | -                              | -                              | 3.12                  |
| S2S 80A = 2025           | 80                         | φ160                             | φ164                            | A2         | 20                    | φ25                           | φ50                        | -                            | 20                        | 8 × 3.3                  | -                | -  | φ142                           | 10                             | 2.03                  |
| S2S 80A = 2030           | 80                         | φ160                             | φ164                            | A2         | 20                    | φ30                           | φ60                        | -                            | 20                        | 8 × 3.3                  | -                | -  | φ142                           | 10                             | 2.07                  |
| S2S 80B - 1218           | 80                         | φ160                             | φ164                            | B1         | 12                    | φ18                           | φ50                        | 10                           | 22                        | -                        | -                | -  | -                              | -                              | 2.01                  |
| S2S 80B # 1220           | 80                         | φ160                             | φ164                            | B3         | 12                    | φ20                           | φ50                        | 10                           | 22                        | 6 × 2.8                  | M5               | 5  | φ142                           | 6                              | 1.35                  |
| S2S 80B # 1225           | 80                         | φ160                             | φ164                            | B3         | 12                    | φ25                           | φ50                        | 10                           | 22                        | 8 × 3.3                  | M6               | 5  | φ142                           | 6                              | 1.32                  |
| S2S 80BF - 2015          | 80                         | φ160                             | φ164                            | B1         | 20                    | φ15                           | φ115                       | 20                           | 40                        | -                        | -                | -  | -                              | -                              | 4.72                  |
| S2S 80B - 2020           | 80                         | φ160                             | φ164                            | B1         | 20                    | φ20                           | φ60                        | 10                           | 30                        | -                        | -                | -  | -                              | -                              | 3.31                  |
| S2S 80B # 2025           | 80                         | φ160                             | φ164                            | B3         | 20                    | φ25                           | φ60                        | 10                           | 30                        | 8 × 3.3                  | M6               | 5  | φ142                           | 10                             | 2.28                  |
| S2S 80B # 2030           | 80                         | φ160                             | φ164                            | B3         | 20                    | φ30                           | φ60                        | 10                           | 30                        | 8 × 3.3                  | M6               | 5  | φ142                           | 10                             | 2.23                  |
| S2S 85A - 1218F          | 85                         | φ170                             | φ174                            | A1         | 12                    | φ18                           | -                          | -                            | 12                        | -                        | -                | -  | -                              | -                              | 2.11                  |
| S2S 85A - 2020F          | 85                         | φ170                             | φ174                            | A1         | 20                    | φ20                           | -                          | -                            | 20                        | -                        | -                | -  | -                              | -                              | 3.51                  |
| S2S 85B - 1218           | 85                         | φ170                             | φ174                            | B1         | 12                    | φ18                           | φ60                        | 10                           | 22                        | -                        | -                | -  | -                              | -                              | 2.32                  |
| S2S 85B - 2020           | 85                         | φ170                             | φ174                            | B1         | 20                    | φ20                           | φ70                        | 10                           | 30                        | -                        | -                | -  | -                              | -                              | 3.79                  |
| S2S 90A - 1218F          | 90                         | φ180                             | φ184                            | A1         | 12                    | φ18                           | -                          | -                            | 12                        | -                        | -                | -  | -                              | -                              | 2.37                  |
| S2S 90A - 2020F          | 90                         | φ180                             | φ184                            | A1         | 20                    | φ20                           | -                          | -                            | 20                        | -                        | -                | -  | -                              | -                              | 3.95                  |
| S2S 90B - 1218           | 90                         | φ180                             | φ184                            | B1         | 12                    | φ18                           | φ60                        | 10                           | 22                        | -                        | -                | -  | -                              | -                              | 2.58                  |
| S2S 90BF - 2015          | 90                         | φ180                             | φ184                            | B1         | 20                    | φ15                           | φ130                       | 20                           | 40                        | -                        | -                | -  | -                              | -                              | 6.01                  |
| S2S 90B - 2020           | 90                         | φ180                             | φ184                            | B1         | 20                    | φ20                           | φ80                        | 10                           | 30                        | -                        | -                | -  | -                              | -                              | 4.32                  |
| S2S 95A - 1218F          | 95                         | φ190                             | φ194                            | A1         | 12                    | φ18                           | -                          | -                            | 12                        | -                        | -                | -  | -                              | -                              | 2.65                  |
| S2S 95A - 2020F          | 95                         | φ190                             | φ194                            | A1         | 20                    | φ20                           | -                          | -                            | 20                        | -                        | -                | -  | -                              | -                              | 4.40                  |
| S2S 95B - 1218           | 95                         | φ190                             | φ194                            | B1         | 12                    | φ18                           | φ60                        | 10                           | 22                        | -                        | -                | -  | -                              | -                              | 2.85                  |
| S2S 95B - 2020           | 95                         | φ190                             | φ194                            | B1         | 20                    | φ20                           | φ80                        | 10                           | 30                        | -                        | -                | -  | -                              | -                              | 4.78                  |



| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 分度圆直径<br>Outside Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b2 × t2 | 螺纹孔<br>Set Screw |    | 轮圈内径<br>Dimension of Rim<br>di | 腹板厚度<br>Thickness of Web<br>bw | 重量<br>Weight<br>W(kg) |
|--------------------------|----------------------------|----------------------------------|---------------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|--------------------------|------------------|----|--------------------------------|--------------------------------|-----------------------|
|                          |                            |                                  |                                 |            |                       |                               |                            |                              |                           |                          | M                | ls |                                |                                |                       |
| S2S 100A - 1220F         | 100                        | φ200                             | φ204                            | A1         | 12                    | φ20                           | -                          | -                            | 12                        | -                        | -                | -  | -                              | -                              | 2.93                  |
| S2S 100A = 1225          | 100                        | φ200                             | φ204                            | A2         | 12                    | φ25                           | φ 50                       | -                            | 12                        | 8 × 3.3                  | -                | -  | φ182                           | 6                              | 1.80                  |
| S2S 100A - 2018F         | 100                        | φ200                             | φ204                            | A1         | 20                    | φ18                           | -                          | -                            | 20                        | -                        | -                | -  | -                              | -                              | 4.89                  |
| S2S 100A = 2025          | 100                        | φ200                             | φ204                            | A2         | 20                    | φ25                           | φ 50                       | -                            | 20                        | 8 × 3.3                  | -                | -  | φ182                           | 10                             | 3.03                  |
| S2S 100A = 2030          | 100                        | φ200                             | φ204                            | A2         | 20                    | φ30                           | φ 60                       | -                            | 20                        | 8 × 3.3                  | -                | -  | φ182                           | 10                             | 3.06                  |
| S2S 100B - 1218          | 100                        | φ200                             | φ204                            | B1         | 12                    | φ18                           | φ 50                       | 10                           | 22                        | -                        | -                | -  | -                              | -                              | 3.07                  |
| S2S 100B # 1220          | 100                        | φ200                             | φ204                            | B3         | 12                    | φ20                           | φ 50                       | 10                           | 22                        | 6 × 2.8                  | M5               | 5  | φ182                           | 6                              | 1.95                  |
| S2S 100B # 1225          | 100                        | φ200                             | φ204                            | B3         | 12                    | φ25                           | φ 50                       | 10                           | 22                        | 8 × 3.3                  | M6               | 5  | φ182                           | 6                              | 1.91                  |
| S2S 100BF - 2015         | 100                        | φ200                             | φ204                            | B1         | 20                    | φ15                           | φ140                       | 20                           | 40                        | -                        | -                | -  | -                              | -                              | 7.28                  |
| S2S 100B - 2020          | 100                        | φ200                             | φ204                            | B1         | 20                    | φ20                           | φ 60                       | 10                           | 30                        | -                        | -                | -  | -                              | -                              | 5.08                  |
| S2S 100B # 2025          | 100                        | φ200                             | φ204                            | B3         | 20                    | φ25                           | φ 60                       | 10                           | 30                        | 8 × 3.3                  | M6               | 5  | φ182                           | 10                             | 3.28                  |
| S2S 100B # 2030          | 100                        | φ200                             | φ204                            | B3         | 20                    | φ30                           | φ 60                       | 10                           | 30                        | 8 × 3.3                  | M6               | 5  | φ182                           | 10                             | 3.22                  |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br>z | 齿宽<br>b | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |        |        |       |       |
|---------|---------|---|-------|-------|--------|--------|-------|-------|
|         |         | 10  | 100   | 200   | 400    | 800    | 1,200 | 1,500 |
| 72      | 12      | 0.20  | 1.98  | 3.67  | 6.08   | 11.03  | 15.82 | -     |
| 72      | 20      | 0.33  | 3.30  | 6.12  | 10.13  | 18.38  | 26.37 | -     |
| 75      | 12      | 0.21  | 2.07  | 3.82  | 6.35   | 11.50  | 16.59 | -     |
| 75      | 20      | 0.35  | 3.46  | 6.37  | 10.58  | 19.14  | 27.65 | -     |
| 80      | 12      | 0.22  | 2.24  | 4.06  | 6.79   | 12.28  | -     | -     |
| 80      | 20      | 0.370                                       | 3.700 | 6.720 | 11.230 | 20.310 | -     | -     |
| 85      | 12      | 0.24  | 2.39  | 4.29  | 7.21   | 13.02  | -     | -     |
| 85      | 20      | 0.40  | 3.99  | 7.14  | 12.02  | 21.71  | -     | -     |
| 90      | 12      | 0.26  | 2.56  | 4.51  | 7.64   | 13.77  | -     | -     |
| 90      | 20      | 0.420                                       | 4.230 | 7.460 | 12.630 | 22.780 | -     | -     |
| 95      | 12      | 0.27  | 2.72  | 4.73  | 8.06   | 14.51  | -     | -     |
| 95      | 20      | 0.45  | 4.53  | 7.89  | 13.43  | 24.18  | -     | -     |
| 100     | 12      | 0.29  | 2.86  | 4.95  | 8.48   | 15.36  | -     | -     |
| 100     | 20      | 0.480                                       | 4.730 | 8.180 | 14.010 | 25.390 | -     | -     |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|---|-------|-------|-------|-------|-------|-------|
| 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| -   | -     | -     | -     | -     | -     | -     |
| -   | -     | -     | -     | -     | -     | -     |
| -   | -     | -     | -     | -     | -     | -     |
| -   | -     | -     | -     | -     | -     | -     |
| 0.051                                       | 0.520 | 0.970 | 1.690 | 3.330 | -     | -     |
| -   | -     | -     | -     | -     | -     | -     |
| -   | -     | -     | -     | -     | -     | -     |
| -   | -     | -     | -     | -     | -     | -     |
| 0.066                                       | 0.670 | 1.210 | 2.150 | 4.260 | -     | -     |
| -   | -     | -     | -     | -     | -     | -     |
| -   | -     | -     | -     | -     | -     | -     |
| 0.082                                       | 0.830 | 1.480 | 2.660 | 5.340 | -     | -     |

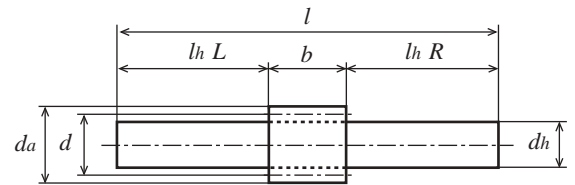
# 直齿轮

## SPUR GEARS

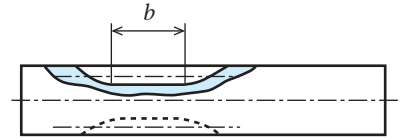
模数  
MODULE

2.5 (齿数 8 ~ 20)

(普通齿)  
FULL DEPTH TOOTH



L1形状  
TYPE L1



L2形状  
TYPE L2

单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①        |
|-----------------|------|-----|-----|------|------------|
| JIS B 1702-1 8级 | S45C | 20度 | -   | -    | 0.1 ~ 0.25 |

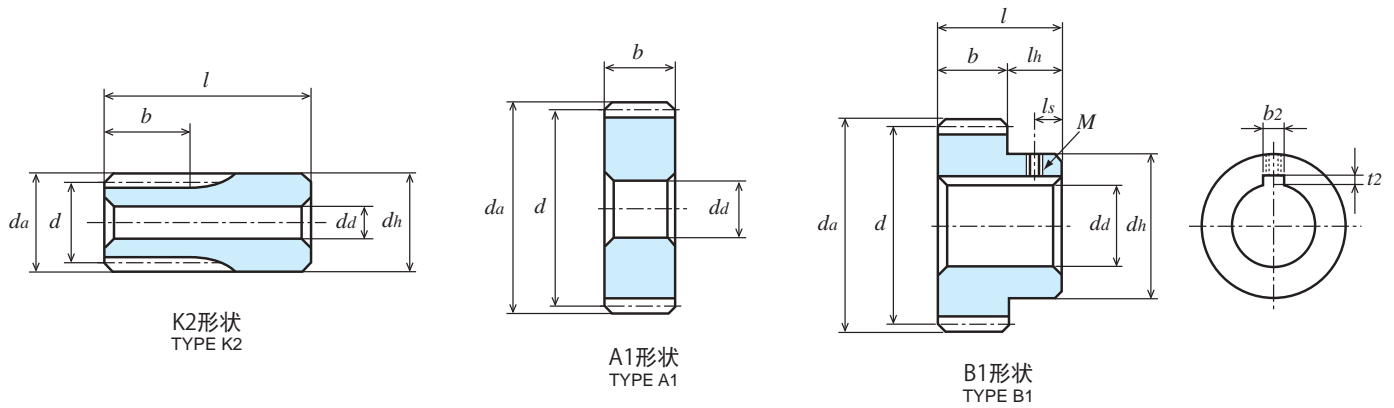
★未做表面处理。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★KG 的规格齿轮有「标准齿宽」(轻负荷用)和传达扭矩更大的「加宽齿宽」(重负荷用)。请根据用途选择。

★【变位】是变位系数 X = 0.5 的变位齿轮。①同一种材料, 一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 分度圆直径<br>Outside Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b <sub>2</sub> × t <sub>2</sub> | 螺纹孔<br>Set Screw |    | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|---------------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|--|------------------|----|----------------------|
|                          |                            |                                  |                                 |            |                       |                               |                            |                              |                           |  | M                | ls |                      |
| S2.5S 8L - 2815          | 8                          | 【变位】                             | φ26.59                          | L1         | 28                    | -                             | φ15(h9)                    | L40 R80                      | 148                       |  |                  |    | 235.5                |
| S2.5S 8L - 2826F         | 8                          | 【变位】                             | φ26.59                          | L2         | 28                    | -                             | φ26.59                     | L40 R80                      | 148                       |  |                  |    | 592.1                |
| S2.5S 10L - 2820         | 10                         | 【变位】                             | φ31.66                          | L1         | 28                    | -                             | φ20(h9)                    | L40 R80                      | 148                       |  |                  |    | 403.8                |
| S2.5S 10L - 2831F        | 10                         | 【变位】                             | φ31.66                          | L2         | 28                    | -                             | φ31.66                     | L40 R80                      | 148                       |  |                  |    | 849.5                |
| S2.5S 12K - 2812         | 12                         |                                  | φ30                             | K2         | 28                    | φ12(H8)                       | φ35                        | 32                           | 60                        |  |                  |    | 343.8                |
| S2.5S 14A - 1612         | 14                         |                                  | φ35                             | A1         | 16                    | φ12                           | -                          | -                            | 16                        |  |                  |    | 106.6                |
| S2.5S 14A - 1812         | 14                         |                                  | φ35                             | A1         | 18                    | φ12                           | -                          | -                            | 18                        |  |                  |    | 120.0                |
| S2.5S 14A - 2512         | 14                         |                                  | φ35                             | A1         | 25                    | φ12                           | -                          | -                            | 25                        |  |                  |    | 166.6                |
| S2.5S 14A - 2812         | 14                         |                                  | φ35                             | A1         | 28                    | φ12                           | -                          | -                            | 28                        |  |                  |    | 186.6                |
| S2.5S 14B - 1612N        | 14                         |                                  | φ35                             | B1         | 16                    | φ12                           | φ27                        | 12                           | 28                        |  |                  |    | 150.0                |
| S2.5S 14B - 1812N        | 14                         |                                  | φ35                             | B1         | 18                    | φ12                           | φ28                        | 12                           | 30                        |  |                  |    | 167.4                |
| S2.5S 14BF - 2510        | 14                         |                                  | φ35                             | B1         | 25                    | φ10(H8)                       | φ28                        | 20                           | 45                        |  |                  |    | 258.1                |
| S2.5S 14B - 2512N        | 14                         |                                  | φ35                             | B1         | 25                    | φ12(H8)                       | φ27                        | 12                           | 37                        |  |                  |    | 210.0                |
| S2.5S 14B - 2812N        | 14                         |                                  | φ35                             | B1         | 28                    | φ12(H8)                       | φ28                        | 12                           | 40                        |  |                  |    | 234.1                |
| S2.5S 15A - 1612         | 15                         |                                  | φ37.5                           | A1         | 16                    | φ12                           | -                          | -                            | 16                        |  |                  |    | 124.5                |
| S2.5S 15A - 1812         | 15                         |                                  | φ37.5                           | A1         | 18                    | φ12                           | -                          | -                            | 18                        |  |                  |    | 140.1                |
| S2.5S 15A - 2512         | 15                         |                                  | φ37.5                           | A1         | 25                    | φ12                           | -                          | -                            | 25                        |  |                  |    | 194.6                |
| S2.5S 15A - 2812         | 15                         |                                  | φ37.5                           | A1         | 28                    | φ12                           | -                          | -                            | 28                        |  |                  |    | 217.9                |
| S2.5S 15B - 1612N        | 15                         |                                  | φ37.5                           | B1         | 16                    | φ12                           | φ30                        | 12                           | 28                        |  |                  |    | 280.6                |
| S2.5S 15B - 1812N        | 15                         |                                  | φ37.5                           | B1         | 18                    | φ12                           | φ30                        | 12                           | 30                        |  |                  |    | 196.1                |
| S2.5S 15BF - 2510        | 15                         |                                  | φ37.5                           | B1         | 25                    | φ10(H8)                       | φ30                        | 20                           | 45                        |  |                  |    | 300.3                |
| S2.5S 15B - 2512N        | 15                         |                                  | φ37.5                           | B1         | 25                    | φ12(H8)                       | φ30                        | 12                           | 37                        |  |                  |    | 250.7                |
| S2.5S 15B - 2812N        | 15                         |                                  | φ37.5                           | B1         | 28                    | φ12(H8)                       | φ30                        | 12                           | 40                        |  |                  |    | 274.0                |
| S2.5S 16A - 1612         | 16                         |                                  | φ40                             | A1         | 16                    | φ12                           | -                          | -                            | 16                        |  |                  |    | 143.6                |
| S2.5S 16A - 1812         | 16                         |                                  | φ40                             | A1         | 18                    | φ12                           | -                          | -                            | 18                        |  |                  |    | 161.6                |
| S2.5S 16A - 2512         | 16                         |                                  | φ40                             | A1         | 25                    | φ12                           | -                          | -                            | 25                        |  |                  |    | 224.4                |
| S2.5S 16A - 2812         | 16                         |                                  | φ40                             | A1         | 28                    | φ12                           | -                          | -                            | 28                        |  |                  |    | 251.4                |
| S2.5S 16B - 1612N        | 16                         |                                  | φ40                             | B1         | 16                    | φ12                           | φ32                        | 12                           | 28                        |  |                  |    | 208.9                |
| S2.5S 16B - 1812N        | 16                         |                                  | φ40                             | B1         | 18                    | φ12                           | φ32                        | 12                           | 30                        |  |                  |    | 226.8                |
| S2.5S 16BF - 2510        | 16                         |                                  | φ40                             | B1         | 25                    | φ10(H8)                       | φ32                        | 20                           | 45                        |  |                  |    | 345.5                |
| S2.5S 16B - 2512N        | 16                         |                                  | φ40                             | B1         | 25                    | φ12(H8)                       | φ32                        | 12                           | 37                        |  |                  |    | 289.7                |
| S2.5S 16B - 2812N        | 16                         |                                  | φ40                             | B1         | 28                    | φ12(H8)                       | φ32                        | 12                           | 40                        |  |                  |    | 316.7                |
| S2.5S 18A - 1612         | 18                         |                                  | φ45                             | A1         | 16                    | φ12                           | -                          | -                            | 16                        |  |                  |    | 185.6                |
| S2.5S 18A - 1812         | 18                         |                                  | φ45                             | A1         | 18                    | φ12                           | -                          | -                            | 18                        |  |                  |    | 208.7                |
| S2.5S 18A - 2512         | 18                         |                                  | φ45                             | A1         | 25                    | φ12                           | -                          | -                            | 25                        |  |                  |    | 289.9                |
| S2.5S 18A - 2814         | 18                         |                                  | φ45                             | A1         | 28                    | φ14                           | -                          | -                            | 28                        |  |                  |    | 315.7                |
| S2.5S 18B - 1612N        | 18                         |                                  | φ45                             | B1         | 16                    | φ12                           | φ36                        | 12                           | 28                        |  |                  |    | 271.0                |
| S2.5S 18B - 1814N        | 18                         |                                  | φ45                             | B1         | 18                    | φ14                           | φ36                        | 12                           | 30                        |  |                  |    | 284.5                |
| S2.5S 18BF - 2510        | 18                         |                                  | φ45                             | B1         | 25                    | φ10(H8)                       | φ38                        | 20                           | 45                        |  |                  |    | 463                  |
| S2.5S 18B - 2512N        | 18                         |                                  | φ45                             | B1         | 25                    | φ12(H8)                       | φ36                        | 12                           | 37                        |  |                  |    | 375.4                |
| S2.5S 18B - 2814N        | 18                         |                                  | φ45                             | B1         | 28                    | φ14                           | φ36                        | 12                           | 40                        |  |                  |    | 397.4                |



| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 分度圆直径<br>Outside Diameter<br><i>da</i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>da</i> (H7) | 轮毂直径<br>Hub Diameter<br><i>dh</i> | 轮毂长度<br>Hub Projection<br><i>lh</i> | 全长<br>Overall Length<br><i>l</i> | 键槽<br>Key Way<br><i>b</i> × <i>t</i> | 螺纹孔<br>Set Screw |           | 重量<br>Weight<br>W(g) |
|--------------------------|-----------------------------------|---|--|------------|------------------------------|---------------------------------------|-----------------------------------|-------------------------------------|----------------------------------|--------------------------------------|------------------|-----------|----------------------|
|                          |                                   |   |  |            |                              |                                       |                                   |                                     |                                  |                                      | <i>M</i>         | <i>ls</i> |                      |
| S2.5S 20A - 1612F        | 20                                | φ50                                     | φ55                                    | A1         | 16                           | φ12                                   | -                                 | -                                   | 16                               | -                                    | -                | -         | 232.4                |
| S2.5S 20A - 1812F        | 20                                | φ50                                     | φ55                                    | A1         | 18                           | φ12                                   | -                                 | -                                   | 18                               | -                                    | -                | -         | 261.5                |
| S2.5S 20A = 1815         | 20                                | φ50                                     | φ55                                    | A1         | 18                           | φ15                                   | -                                 | -                                   | 18                               | 5 × 2.3                              | -                | -         | 250.8                |
| S2.5S 20A = 1820         | 20                                | φ50                                     | φ55                                    | A1         | 18                           | φ20                                   | -                                 | -                                   | 18                               | 6 × 2.8                              | -                | -         | 230.7                |
| S2.5S 20A - 2514F        | 20                                | φ50                                     | φ55                                    | A1         | 25                           | φ14                                   | -                                 | -                                   | 25                               | -                                    | -                | -         | 355.1                |
| S2.5S 20A - 2814F        | 20                                | φ50                                     | φ55                                    | A1         | 28                           | φ14                                   | -                                 | -                                   | 28                               | -                                    | -                | -         | 397.7                |
| S2.5S 20A = 2820         | 20                                | φ50                                     | φ55                                    | A1         | 28                           | φ20                                   | -                                 | -                                   | 28                               | 6 × 2.8                              | -                | -         | 358.8                |
| S2.5S 20A = 2825         | 20                                | φ50                                     | φ55                                    | A1         | 28                           | φ25                                   | -                                 | -                                   | 28                               | 8 × 3.3                              | -                | -         | 317.9                |
| S2.5S 20B - 1612         | 20                                | φ50                                     | φ55                                    | B1         | 16                           | φ12                                   | φ42                               | 12                                  | 28                               | -                                    | -                | -         | 352.5                |
| S2.5S 20B - 1812         | 20                                | φ50                                     | φ55                                    | B1         | 18                           | φ12                                   | φ40                               | 12                                  | 30                               | -                                    | -                | -         | 369.4                |
| S2.5S 20B # 1815         | 20                                | φ50                                     | φ55                                    | B1         | 18                           | φ15                                   | φ40                               | 12                                  | 30                               | 5 × 2.3                              | M4               | 6         | 350.9                |
| S2.5S 20B # 1818         | 20                                | φ50                                     | φ55                                    | B1         | 18                           | φ18                                   | φ40                               | 12                                  | 30                               | 6 × 2.8                              | M5               | 6         | 331.1                |
| S2.5S 20B # 1820         | 20                                | φ50                                     | φ55                                    | B1         | 18                           | φ20                                   | φ40                               | 12                                  | 30                               | 6 × 2.8                              | M5               | 6         | 317.2                |
| S2.5S20BF - 2510         | 20                                | φ50                                     | φ55                                    | B1         | 25                           | φ10(H8)                               | φ42                               | 20                                  | 45                               | -                                    | -                | -         | 569.3                |
| S2.5S 20B - 2514         | 20                                | φ50                                     | φ55                                    | B1         | 25                           | φ14                                   | φ42                               | 12                                  | 37                               | -                                    | -                | -         | 471.4                |
| S2.5S 20B - 2814         | 20                                | φ50                                     | φ55                                    | B1         | 28                           | φ14                                   | φ42                               | 12                                  | 40                               | -                                    | -                | -         | 514.1                |
| S2.5S 20B # 2820         | 20                                | φ50                                     | φ55                                    | B1         | 28                           | φ20                                   | φ42                               | 12                                  | 40                               | 6 × 2.8                              | M5               | 6         | 457.4                |
| S2.5S 20B # 2825         | 20                                | φ50                                     | φ55                                    | B1         | 28                           | φ25                                   | φ42                               | 12                                  | 40                               | 8 × 3.3                              | M5               | 6         | 399.3                |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (W) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |      |      |      |       |       |
|----------------|----------------|---|------|------|------|------|-------|-------|
|                |                | 10  | 100  | 200  | 400  | 800  | 1,200 | 1,500 |
| 8              | 28             | 0.046                                       | 0.46 | 0.93 | 1.87 | 3.74 | 5.31  | 6.33  |
| 10             | 28             | 0.064                                       | 0.64 | 1.29 | 2.58 | 5.07 | 7.02  | 8.29  |
| 12             | 28             | 0.059                                       | 0.59 | 1.18 | 2.37 | 4.57 | 6.29  | 7.40  |
| 14             | 16             | 0.044                                       | 0.44 | 0.88 | 1.77 | 3.30 | 4.50  | 5.25  |
| 14             | 18             | 0.049                                       | 0.49 | 0.99 | 1.99 | 3.72 | 5.06  | 5.91  |
| 14             | 25             | 0.069                                       | 0.69 | 1.38 | 2.76 | 5.17 | 7.03  | 8.21  |
| 14             | 28             | 0.077                                       | 0.77 | 1.55 | 3.10 | 5.79 | 7.88  | 9.20  |
| 15             | 16             | 0.049                                       | 0.49 | 0.99 | 1.98 | 3.65 | 4.94  | 5.75  |
| 15             | 18             | 0.055                                       | 0.55 | 1.11 | 2.23 | 4.11 | 5.56  | 6.47  |
| 15             | 25             | 0.077                                       | 0.78 | 1.55 | 3.10 | 5.71 | 7.73  | 9.00  |
| 15             | 28             | 0.087                                       | 0.87 | 1.74 | 3.47 | 6.40 | 8.66  | 10.08 |
| 16             | 16             | 0.055                                       | 0.55 | 1.10 | 2.20 | 3.99 | 5.38  | 6.31  |
| 16             | 18             | 0.061                                       | 0.61 | 1.23 | 2.47 | 4.49 | 6.05  | 7.10  |
| 16             | 25             | 0.086                                       | 0.86 | 1.72 | 3.44 | 6.25 | 8.41  | 9.87  |
| 16             | 28             | 0.096                                       | 0.96 | 1.93 | 3.85 | 7.00 | 9.42  | 11.06 |
| 18             | 16             | 0.066                                       | 0.66 | 1.32 | 2.64 | 4.67 | 6.23  | 7.48  |
| 18             | 18             | 0.074                                       | 0.74 | 1.48 | 2.97 | 5.25 | 7.01  | 8.41  |
| 18             | 25             | 0.103                                       | 1.03 | 2.07 | 4.14 | 7.30 | 9.74  | 11.69 |
| 18             | 28             | 0.116                                       | 1.16 | 2.32 | 4.63 | 8.18 | 10.91 | 13.09 |

### T (N · m)

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |        |
|---|--------|
| 100   | 43.92  |
| 100   | 61.11  |
| 100   | 56.34  |
| 100   | 42.01  |
| 100   | 46.79  |
| 100   | 65.89  |
| 100   | 73.53  |
| 100   | 46.79  |
| 100   | 52.52  |
| 100   | 74.48  |
| 100   | 83.08  |
| 100   | 52.52  |
| 100   | 58.25  |
| 100   | 82.12  |
| 100   | 91.67  |
| 100   | 63.02  |
| 100   | 70.66  |
| 100   | 98.36  |
| 100   | 110.77 |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (W) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |        |        |
|----------------|----------------|---|-------|-------|-------|-------|--------|--------|
|                |                | 10  | 100   | 200   | 400   | 800   | 1,200  | 1,500  |
| 20             | 16             | 0.077                                       | 0.78  | 1.55  | 3.09  | 5.34  | 7.13   | 8.66   |
| 20             | 18             | 0.087                                       | 0.87  | 1.75  | 3.47  | 6.01  | 8.03   | 9.74   |
| 20             | 25             | 0.122                                       | 1.220 | 2.450 | 4.860 | 8.400 | 11.230 | 13.620 |
| 20             | 28             | 0.136                                       | 1.36  | 2.72  | 5.40  | 9.34  | 12.48  | 15.15  |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|---|-------|-------|-------|-------|-------|-------|
| 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| -   | -     | -     | -     | -     | -     | -     |
| 0.006                                       | 0.060 | 0.110 | 0.230 | 0.400 | 0.550 | 0.680 |
| -   | -     | -     | -     | -     | -     | -     |

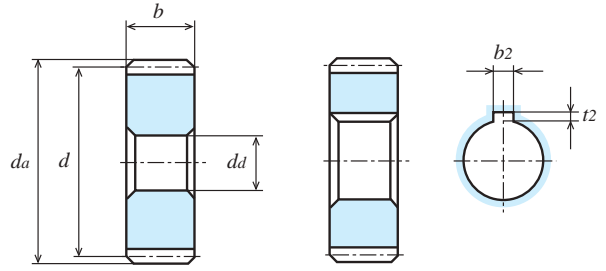
# 直齿轮

## SPUR GEARS

模数  
MODULE

2.5 (齿数 24 ~ 28)

(普通齿)  
FULL DEPTH TOOTH



A1形状  
TYPE A1

A1形状  
TYPE A1

单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①        |
|-----------------|------|-----|-----|------|------------|
| JIS B 1702-1 8级 | S45C | 20度 | -   | -    | 0.1 ~ 0.25 |

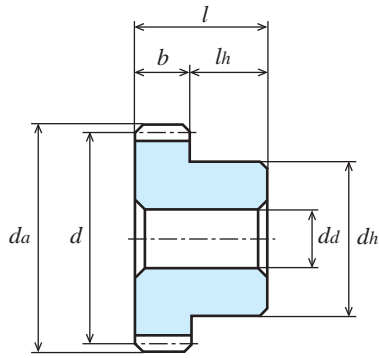
★未做表面处理。[#] 表示带有键槽和键，螺纹孔和固定用螺钉；[=] 表示带有键槽和键。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

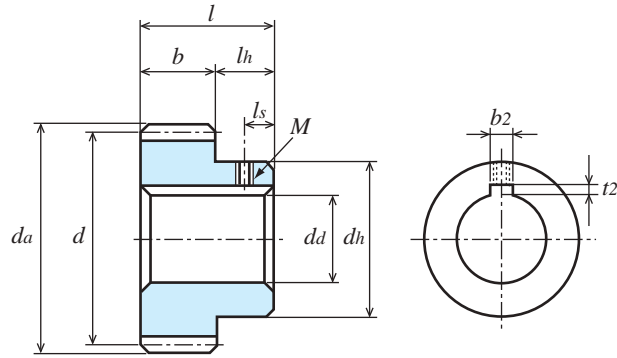
★KG 的规格齿轮有「标准齿宽」(轻负荷用)和传达扭矩更大的「加宽齿宽」(重负荷用)。请根据用途选择。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 分度圆直径<br>Outside Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b2 × t2 | 螺纹孔<br>Set Screw |    | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|---------------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|--------------------------|------------------|----|----------------------|
|                          |                            |                                  |                                 |            |                       |                               |                            |                              |                           |                          | M                | ls |                      |
| S2.5S 24A - 1614F        | 24                         | φ60                              | φ65                             | A1         | 16                    | φ14                           | -                          | -                            | 16                        | -                        | -                | -  | 335.8                |
| S2.5S 24A - 1814F        | 24                         | φ60                              | φ65                             | A1         | 18                    | φ14                           | -                          | -                            | 18                        | -                        | -                | -  | 377.8                |
| S2.5S 24A = 1815         | 24                         | φ60                              | φ65                             | A1         | 18                    | φ15                           | -                          | -                            | 18                        | 5 × 2.3                  | -                | -  | 372.9                |
| S2.5S 24A = 1820         | 24                         | φ60                              | φ65                             | A1         | 18                    | φ20                           | -                          | -                            | 18                        | 6 × 2.8                  | -                | -  | 352.8                |
| S2.5S 24A - 2514F        | 24                         | φ60                              | φ65                             | A1         | 25                    | φ14                           | -                          | -                            | 25                        | -                        | -                | -  | 524.7                |
| S2.5S 24A - 2814F        | 24                         | φ60                              | φ65                             | A1         | 28                    | φ14                           | -                          | -                            | 28                        | -                        | -                | -  | 587.6                |
| S2.5S 24A = 2820         | 24                         | φ60                              | φ65                             | A1         | 28                    | φ20                           | -                          | -                            | 28                        | 6 × 2.8                  | -                | -  | 548.7                |
| S2.5S 24A = 2825         | 24                         | φ60                              | φ65                             | A1         | 28                    | φ25                           | -                          | -                            | 28                        | 8 × 3.3                  | -                | -  | 507.8                |
| S2.5S 24B - 1614         | 24                         | φ60                              | φ65                             | B1         | 16                    | φ14                           | φ50                        | 12                           | 28                        | -                        | -                | -  | 506.6                |
| S2.5S 24B - 1814         | 24                         | φ60                              | φ65                             | B1         | 18                    | φ14                           | φ40                        | 12                           | 30                        | -                        | -                | -  | 482.0                |
| S2.5S 24B # 1815         | 24                         | φ60                              | φ65                             | B1         | 18                    | φ15                           | φ40                        | 12                           | 30                        | 5 × 2.3                  | M4               | 6  | 473.0                |
| S2.5S 24B # 1818         | 24                         | φ60                              | φ65                             | B1         | 18                    | φ18                           | φ40                        | 12                           | 30                        | 6 × 2.8                  | M5               | 6  | 453.3                |
| S2.5S 24B # 1820         | 24                         | φ60                              | φ65                             | B1         | 18                    | φ20                           | φ40                        | 12                           | 30                        | 6 × 2.8                  | M5               | 6  | 439.3                |
| S2.5S 24BF - 2510        | 24                         | φ60                              | φ65                             | B1         | 25                    | φ10(H8)                       | φ50                        | 20                           | 45                        | -                        | -                | -  | 836.5                |
| S2.5S 24B - 2515         | 24                         | φ60                              | φ65                             | B1         | 25                    | φ15                           | φ50                        | 12                           | 37                        | -                        | -                | -  | 689.0                |
| S2.5S 24B - 2815         | 24                         | φ60                              | φ65                             | B1         | 28                    | φ15                           | φ50                        | 12                           | 40                        | -                        | -                | -  | 751.4                |
| S2.5S 24B # 2820         | 24                         | φ60                              | φ65                             | B1         | 28                    | φ20                           | φ50                        | 12                           | 40                        | 6 × 2.8                  | M5               | 6  | 701.4                |
| S2.5S 24B # 2825         | 24                         | φ60                              | φ65                             | B1         | 28                    | φ25                           | φ50                        | 12                           | 40                        | 8 × 3.3                  | M6               | 6  | 642.7                |
| S2.5S 25A - 1614F        | 25                         | φ62.5                            | φ67.5                           | A1         | 16                    | φ14                           | -                          | -                            | 16                        | -                        | -                | -  | 366.0                |
| S2.5S 25A - 1814F        | 25                         | φ62.5                            | φ67.5                           | A1         | 18                    | φ14                           | -                          | -                            | 18                        | -                        | -                | -  | 411.8                |
| S2.5S 25A = 1815         | 25                         | φ62.5                            | φ67.5                           | A1         | 18                    | φ15                           | -                          | -                            | 18                        | 5 × 2.3                  | -                | -  | 406.9                |
| S2.5S 25A = 1820         | 25                         | φ62.5                            | φ67.5                           | A1         | 18                    | φ20                           | -                          | -                            | 18                        | 6 × 2.8                  | -                | -  | 386.7                |
| S2.5S 25A - 2516F        | 25                         | φ62.5                            | φ67.5                           | A1         | 25                    | φ16                           | -                          | -                            | 25                        | -                        | -                | -  | 562.6                |
| S2.5S 25A - 2816F        | 25                         | φ62.5                            | φ67.5                           | A1         | 28                    | φ16                           | -                          | -                            | 28                        | -                        | -                | -  | 630.1                |
| S2.5S 25A = 2820         | 25                         | φ62.5                            | φ67.5                           | A1         | 28                    | φ20                           | -                          | -                            | 28                        | 6 × 2.8                  | -                | -  | 601.6                |
| S2.5S 25A = 2825         | 25                         | φ62.5                            | φ67.5                           | A1         | 28                    | φ25                           | -                          | -                            | 28                        | 8 × 3.3                  | -                | -  | 560.6                |
| S2.5S 25B - 1614         | 25                         | φ62.5                            | φ67.5                           | B1         | 16                    | φ14                           | φ52                        | 12                           | 28                        | -                        | -                | -  | 551.9                |
| S2.5S 25B - 1814         | 25                         | φ62.5                            | φ67.5                           | B1         | 18                    | φ14                           | φ40                        | 12                           | 30                        | -                        | -                | -  | 516.0                |
| S2.5S 25B # 1815         | 25                         | φ62.5                            | φ67.5                           | B1         | 18                    | φ15                           | φ40                        | 12                           | 30                        | 5 × 2.3                  | M4               | 6  | 507.0                |
| S2.5S 25B # 1818         | 25                         | φ62.5                            | φ67.5                           | B1         | 18                    | φ18                           | φ40                        | 12                           | 30                        | 6 × 2.8                  | M5               | 6  | 487.3                |
| S2.5S 25B # 1820         | 25                         | φ62.5                            | φ67.5                           | B1         | 18                    | φ20                           | φ40                        | 12                           | 30                        | 6 × 2.8                  | M5               | 6  | 473.3                |
| S2.5S 25BF - 2510        | 25                         | φ62.5                            | φ67.5                           | B1         | 25                    | φ10(H8)                       | φ52                        | 20                           | 45                        | -                        | -                | -  | 900.9                |
| S2.5S 25B - 2515         | 25                         | φ62.5                            | φ67.5                           | B1         | 25                    | φ15                           | φ52                        | 12                           | 37                        | -                        | -                | -  | 751.3                |
| S2.5S 25B - 2815         | 25                         | φ62.5                            | φ67.5                           | B1         | 28                    | φ15                           | φ50                        | 12                           | 40                        | -                        | -                | -  | 804.3                |
| S2.5S 25B # 2820         | 25                         | φ62.5                            | φ67.5                           | B1         | 28                    | φ20                           | φ50                        | 12                           | 40                        | 6 × 2.8                  | M5               | 6  | 754.3                |
| S2.5S 25B # 2825         | 25                         | φ62.5                            | φ67.5                           | B1         | 28                    | φ25                           | φ50                        | 12                           | 40                        | 8 × 3.3                  | M6               | 6  | 695.5                |
| S2.5S 28A - 1614F        | 28                         | φ70                              | φ75                             | A1         | 16                    | φ14                           | -                          | -                            | 16                        | -                        | -                | -  | 0.46                 |
| S2.5S 28A - 1814F        | 28                         | φ70                              | φ75                             | A1         | 18                    | φ14                           | -                          | -                            | 18                        | -                        | -                | -  | 0.52                 |
| S2.5S 28A = 1815         | 28                         | φ70                              | φ75                             | A1         | 18                    | φ15                           | -                          | -                            | 18                        | 5 × 2.3                  | -                | -  | 0.52                 |
| S2.5S 28A = 1820         | 28                         | φ70                              | φ75                             | A1         | 18                    | φ20                           | -                          | -                            | 18                        | 6 × 2.8                  | -                | -  | 0.50                 |
| S2.5S 28A - 2516F        | 28                         | φ70                              | φ75                             | A1         | 25                    | φ16                           | -                          | -                            | 25                        | -                        | -                | -  | 0.72                 |
| S2.5S 28A - 2816F        | 28                         | φ70                              | φ75                             | A1         | 28                    | φ16                           | -                          | -                            | 28                        | -                        | -                | -  | 0.80                 |
| S2.5S 28A = 2820         | 28                         | φ70                              | φ75                             | A1         | 28                    | φ20                           | -                          | -                            | 28                        | 6 × 2.8                  | -                | -  | 0.77                 |
| S2.5S 28A = 2825         | 28                         | φ70                              | φ75                             | A1         | 28                    | φ25                           | -                          | -                            | 28                        | 8 × 3.3                  | -                | -  | 0.73                 |



B1形状  
TYPE B1



B1形状  
TYPE B1

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 分度圆直径<br>Outside Diameter<br><i>d<sub>a</sub></i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>d<sub>d</sub></i> (H7) | 轮毂外径<br>Hub Diameter<br><i>d<sub>h</sub></i> | 轮毂长度<br>Hub Projection<br><i>l<sub>h</sub></i> | 全长<br>Overall Length<br><i>l</i> | 键槽<br>Key Way<br><i>b<sub>2</sub> × t<sub>2</sub></i> | 螺纹孔<br>Set Screw |                      | 重量<br>Weight<br><i>W</i> (g) |
|--------------------------|-----------------------------------|---|---|------------|------------------------------|--|--|--|----------------------------------|---|------------------|----------------------|------------------------------|
|                          |                                   |   |   |            |                              |  |  |  |                                  |   | <i>M</i>         | <i>l<sub>s</sub></i> |                              |
| S2.5S 28B - 1614         | 28                                | φ70                                     | φ75   | B1         | 16                           | φ14  | φ60  | 12   | 28                               | -   | -                | -                    | 0.72                         |
| S2.5S 28B - 1814         | 28                                | φ70                                     | φ75   | B1         | 18                           | φ14  | φ40  | 12   | 30                               | -   | -                | -                    | 0.63                         |
| S2.5S 28B # 1815         | 28                                | φ70                                     | φ75   | B1         | 18                           | φ15  | φ40  | 12   | 30                               | 5 × 2.3   | M4               | 6                    | 0.62                         |
| S2.5S 28B # 1818         | 28                                | φ70                                     | φ75   | B1         | 18                           | φ18  | φ40  | 12   | 30                               | 6 × 2.8   | M5               | 6                    | 0.60                         |
| S2.5S 28B # 1820         | 28                                | φ70                                     | φ75   | B1         | 18                           | φ20  | φ40  | 12   | 30                               | 6 × 2.8   | M5               | 6                    | 0.58                         |
| S2.5S 28BF - 2510        | 28                                | φ70                                     | φ75   | B1         | 25                           | φ10(H8)  | φ60  | 20   | 45                               | -   | -                | -                    | 1.17                         |
| S2.5S 28B - 2516         | 28                                | φ70                                     | φ75   | B1         | 25                           | φ16  | φ50  | 12   | 37                               | -   | -                | -                    | 0.96                         |
| S2.5S 28B - 2816         | 28                                | φ70                                     | φ75   | B1         | 28                           | φ16  | φ50  | 12   | 40                               | -   | -                | -                    | 0.97                         |
| S2.5S 28B # 2820         | 28                                | φ70                                     | φ75   | B1         | 28                           | φ20  | φ50  | 12   | 40                               | 6 × 2.8   | M5               | 6                    | 0.93                         |
| S2.5S 28B # 2825         | 28                                | φ70                                     | φ75   | B1         | 28                           | φ25  | φ50  | 12   | 40                               | 8 × 3.3   | M6               | 6                    | 0.87                         |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (W) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |      |      |       |       |       |
|----------------|----------------|---|------|------|------|-------|-------|-------|
|                |                | 10  | 100  | 200  | 400  | 800   | 1,200 | 1,500 |
| 24             | 16             | 0.101                                       | 1.01 | 2.03 | 3.90 | 6.60  | 9.08  | 10.97 |
| 24             | 18             | 0.114                                       | 1.14 | 2.28 | 4.39 | 7.43  | 10.22 | 12.34 |
| 24             | 25             | 0.158                                       | 1.58 | 3.17 | 6.10 | 10.32 | 14.19 | 17.13 |
| 24             | 28             | 0.177                                       | 1.77 | 3.55 | 6.83 | 11.56 | 15.89 | 19.19 |

### T (N · m)

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|---|
| 100   |
| 96.45                                       |
| 108.86                                      |
| 150.88                                      |
| 169.02                                      |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (W) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |        |        |        |
|----------------|----------------|---|-------|-------|-------|--------|--------|--------|
|                |                | 10  | 100   | 200   | 400   | 800    | 1,200  | 1,500  |
| 25             | 16             | 0.107                                       | 1.07  | 2.15  | 4.10  | 6.91   | 9.57   | 11.54  |
| 25             | 18             | 0.121                                       | 1.21  | 2.41  | 4.62  | 7.77   | 10.76  | 12.98  |
| 25             | 25             | 0.168                                       | 1.680 | 3.370 | 6.430 | 10.830 | 15.000 | 18.090 |
| 25             | 28             | 0.188                                       | 1.88  | 3.76  | 7.18  | 12.09  | 16.74  | 20.19  |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|---|-------|-------|-------|-------|-------|-------|
| 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| -   | -     | -     | -     | -     | -     | -     |
| -   | -     | -     | -     | -     | -     | -     |
| 0.009                                       | 0.090 | 0.180 | 0.350 | 0.610 | 0.870 | 1.080 |
| -   | -     | -     | -     | -     | -     | -     |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (W) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |      |      |       |       |       |
|----------------|----------------|---|------|------|------|-------|-------|-------|
|                |                | 10  | 100  | 200  | 400  | 800   | 1,200 | 1,500 |
| 28             | 16             | 0.13  | 1.26 | 2.51 | 4.70 | 7.79  | 11.01 | 13.30 |
| 28             | 18             | 0.14  | 1.41 | 2.83 | 5.28 | 8.77  | 12.38 | 14.97 |
| 28             | 25             | 0.20  | 1.96 | 3.93 | 7.34 | 12.18 | 17.20 | 20.79 |
| 28             | 28             | 0.22  | 2.20 | 4.40 | 8.22 | 13.64 | 19.26 | 23.28 |

### T (N · m)

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|---|
| 100   |
| 120.32                                      |
| 134.65                                      |
| 187.17                                      |
| 210.09                                      |

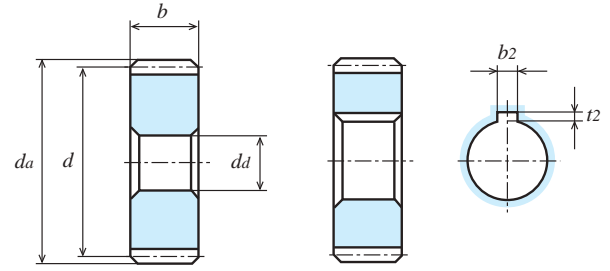
# 直齿轮

## SPUR GEARS

模数  
MODULE

2.5 (齿数 30 ~ 45)

(普通齿)  
FULL DEPTH TOOTH



A1形状  
TYPE A1

A1形状  
TYPE A1

单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①        |
|-----------------|------|-----|-----|------|------------|
| JIS B 1702-1 8级 | S45C | 20度 | -   | -    | 0.1 ~ 0.25 |

★未做表面处理。【#】表示带有键槽和键，螺纹孔和固定用螺钉；【=】表示带有键槽和键。

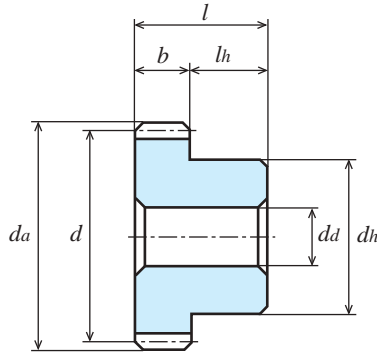
★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★KG 的规格齿轮有「标准齿宽」(轻负荷用)和传达扭矩更大的「加宽齿宽」(重负荷用)。请根据用途选择。

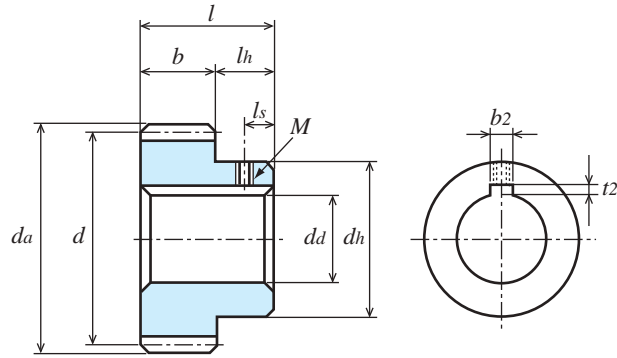
①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 分度圆直径<br>Outside Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b2 × t2 | 螺纹孔<br>Set Screw |    | 重量<br>Weight<br>W(kg) |
|--------------------------|----------------------------|----------------------------------|---------------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|--------------------------|------------------|----|-----------------------|
|                          |                            |                                  |                                 |            |                       |                               |                            |                              |                           |                          | M                | ls |                       |
| S2.5S 30A - 1616F        | 30                         | φ75                              | φ80                             | A1         | 16                    | φ16                           | -                          | -                            | 16                        | -                        | -                | -  | 0.53                  |
| S2.5S 30A - 1816F        | 30                         | φ75                              | φ80                             | A1         | 18                    | φ16                           | -                          | -                            | 18                        | -                        | -                | -  | 0.60                  |
| S2.5S 30A = 1820         | 30                         | φ75                              | φ80                             | A1         | 18                    | φ20                           | -                          | -                            | 18                        | 6 × 2.8                  | -                | -  | 0.58                  |
| S2.5S 30A - 2518F        | 30                         | φ75                              | φ80                             | A1         | 25                    | φ18                           | -                          | -                            | 25                        | -                        | -                | -  | 0.82                  |
| S2.5S 30A = 2520         | 30                         | φ75                              | φ80                             | A1         | 25                    | φ20                           | -                          | -                            | 25                        | 6 × 2.8                  | -                | -  | 0.80                  |
| S2.5S 30A = 2525         | 30                         | φ75                              | φ80                             | A1         | 25                    | φ25                           | -                          | -                            | 25                        | 8 × 3.3                  | -                | -  | 0.77                  |
| S2.5S 30B - 1614         | 30                         | φ75                              | φ80                             | B1         | 16                    | φ14                           | φ65                        | 12                           | 28                        | -                        | -                | -  | 0.83                  |
| S2.5S 30B - 1814         | 30                         | φ75                              | φ80                             | B1         | 18                    | φ14                           | φ40                        | 12                           | 30                        | -                        | -                | -  | 0.71                  |
| S2.5S 30B # 1815         | 30                         | φ75                              | φ80                             | B1         | 18                    | φ15                           | φ40                        | 12                           | 30                        | 5 × 2.3                  | M4               | 6  | 0.70                  |
| S2.5S 30B # 1818         | 30                         | φ75                              | φ80                             | B1         | 18                    | φ18                           | φ40                        | 12                           | 30                        | 6 × 2.8                  | M5               | 6  | 0.68                  |
| S2.5S 30B # 1820         | 30                         | φ75                              | φ80                             | B1         | 18                    | φ20                           | φ40                        | 12                           | 30                        | 6 × 2.8                  | M5               | 6  | 0.66                  |
| S2.5S 30BF - 2512        | 30                         | φ75                              | φ80                             | B1         | 25                    | φ12(H8)                       | φ65                        | 20                           | 45                        | -                        | -                | -  | 1.34                  |
| S2.5S 30B - 2516         | 30                         | φ75                              | φ80                             | B1         | 25                    | φ16                           | φ65                        | 12                           | 37                        | -                        | -                | -  | 1.12                  |
| S2.5S 30B - 2816         | 30                         | φ75                              | φ80                             | B1         | 28                    | φ16                           | φ50                        | 12                           | 40                        | -                        | -                | -  | 1.09                  |
| S2.5S 30B # 2820         | 30                         | φ75                              | φ80                             | B1         | 28                    | φ20                           | φ50                        | 12                           | 40                        | 6 × 2.8                  | M5               | 6  | 1.05                  |
| S2.5S 30B # 2825         | 30                         | φ75                              | φ80                             | B1         | 28                    | φ25                           | φ50                        | 12                           | 40                        | 8 × 3.3                  | M6               | 6  | 0.99                  |
| S2.5S 32A - 1616F        | 32                         | φ80                              | φ85                             | A1         | 16                    | φ16                           | -                          | -                            | 16                        | -                        | -                | -  | 0.61                  |
| S2.5S 32A = 1620         | 32                         | φ80                              | φ85                             | A1         | 16                    | φ20                           | -                          | -                            | 16                        | 6 × 2.8                  | -                | -  | 0.59                  |
| S2.5S 32A = 1625         | 32                         | φ80                              | φ85                             | A1         | 16                    | φ25                           | -                          | -                            | 16                        | 8 × 3.3                  | -                | -  | 0.57                  |
| S2.5S 32A - 2518F        | 32                         | φ80                              | φ85                             | A1         | 25                    | φ18                           | -                          | -                            | 25                        | -                        | -                | -  | 0.94                  |
| S2.5S 32A = 2520         | 32                         | φ80                              | φ85                             | A1         | 25                    | φ20                           | -                          | -                            | 25                        | 6 × 2.8                  | -                | -  | 0.92                  |
| S2.5S 32A = 2525         | 32                         | φ80                              | φ85                             | A1         | 25                    | φ25                           | -                          | -                            | 25                        | 8 × 3.3                  | -                | -  | 0.88                  |
| S2.5S 32A = 2530         | 32                         | φ80                              | φ85                             | A1         | 25                    | φ30                           | -                          | -                            | 25                        | 8 × 3.3                  | -                | -  | 0.84                  |
| S2.5S 32B - 1616         | 32                         | φ80                              | φ85                             | B1         | 16                    | φ16                           | φ50                        | 12                           | 28                        | -                        | -                | -  | 0.77                  |
| S2.5S 32B # 1620         | 32                         | φ80                              | φ85                             | B1         | 16                    | φ20                           | φ50                        | 12                           | 28                        | 6 × 2.8                  | M5               | 6  | 0.74                  |
| S2.5S 32B # 1625         | 32                         | φ80                              | φ85                             | B1         | 16                    | φ25                           | φ50                        | 12                           | 28                        | 8 × 3.3                  | M6               | 6  | 0.70                  |
| S2.5S 32BF - 2512        | 32                         | φ80                              | φ85                             | B1         | 25                    | φ12(H8)                       | φ70                        | 20                           | 45                        | -                        | -                | -  | 1.55                  |
| S2.5S 32B - 2516         | 32                         | φ80                              | φ85                             | B1         | 25                    | φ16                           | φ60                        | 12                           | 37                        | -                        | -                | -  | 1.20                  |
| S2.5S 32B # 2520         | 32                         | φ80                              | φ85                             | B1         | 25                    | φ20                           | φ60                        | 12                           | 37                        | 6 × 2.8                  | M5               | 6  | 1.16                  |
| S2.5S 32B # 2525         | 32                         | φ80                              | φ85                             | B1         | 25                    | φ25                           | φ60                        | 12                           | 37                        | 8 × 3.3                  | M6               | 6  | 1.10                  |
| S2.5S 32B # 2530         | 32                         | φ80                              | φ85                             | B1         | 25                    | φ30                           | φ60                        | 12                           | 37                        | 8 × 3.3                  | M6               | 6  | 1.04                  |
| S2.5S 35BF - 2512        | 35                         | φ87.5                            | φ92.5                           | B1         | 25                    | φ12(H8)                       | φ70                        | 20                           | 45                        | -                        | -                | -  | 1.75                  |
| S2.5S 36A - 1616F        | 36                         | φ90                              | φ95                             | A1         | 16                    | φ16                           | -                          | -                            | 16                        | -                        | -                | -  | 0.77                  |
| S2.5S 36A = 1620         | 36                         | φ90                              | φ95                             | A1         | 16                    | φ20                           | -                          | -                            | 16                        | 6 × 2.8                  | -                | -  | 0.76                  |
| S2.5S 36A = 1625         | 36                         | φ90                              | φ95                             | A1         | 16                    | φ25                           | -                          | -                            | 16                        | 8 × 3.3                  | -                | -  | 0.73                  |
| S2.5S 36A - 2518F        | 36                         | φ90                              | φ95                             | A1         | 25                    | φ18                           | -                          | -                            | 25                        | -                        | -                | -  | 1.20                  |
| S2.5S 36A = 2525         | 36                         | φ90                              | φ95                             | A1         | 25                    | φ25                           | -                          | -                            | 25                        | 8 × 3.3                  | -                | -  | 1.15                  |
| S2.5S 36A = 2530         | 36                         | φ90                              | φ95                             | A1         | 25                    | φ30                           | -                          | -                            | 25                        | 8 × 3.3                  | -                | -  | 1.11                  |
| S2.5S 36B - 1616         | 36                         | φ90                              | φ95                             | B1         | 16                    | φ16                           | φ50                        | 12                           | 28                        | -                        | -                | -  | 0.94                  |
| S2.5S 36B # 1620         | 36                         | φ90                              | φ95                             | B1         | 16                    | φ20                           | φ50                        | 12                           | 28                        | 6 × 2.8                  | M5               | 6  | 0.91                  |
| S2.5S 36B # 1625         | 36                         | φ90                              | φ95                             | B1         | 16                    | φ25                           | φ50                        | 12                           | 28                        | 8 × 3.3                  | M6               | 6  | 0.87                  |
| S2.5S 36BF - 2512        | 36                         | φ90                              | φ95                             | B1         | 25                    | φ12(H8)                       | φ70                        | 20                           | 45                        | -                        | -                | -  | 1.82                  |
| S2.5S 36B - 2518         | 36                         | φ90                              | φ95                             | B1         | 25                    | φ18                           | φ60                        | 12                           | 37                        | -                        | -                | -  | 1.44                  |
| S2.5S 36B # 2525         | 36                         | φ90                              | φ95                             | B1         | 25                    | φ25                           | φ60                        | 12                           | 37                        | 8 × 3.3                  | M6               | 6  | 1.36                  |
| S2.5S 36B # 2530         | 36                         | φ90                              | φ95                             | B1         | 25                    | φ30                           | φ60                        | 12                           | 37                        | 8 × 3.3                  | M6               | 6  | 1.30                  |





B1形状  
TYPE B1



B1形状  
TYPE B1

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 分度圆直径<br>Outside Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂直径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b2 × t2 | 螺纹孔<br>Set Screw |    | 重量<br>Weight<br>W(kg) |
|--------------------------|----------------------------|----------------------------------|---------------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|--------------------------|------------------|----|-----------------------|
|                          |                            |                                  |                                 |            |                       |                               |                            |                              |                           |                          | M                | ls |                       |
| S2.5S 40A - 1616F        | 40                         | φ100                             | φ105                            | A1         | 16                    | φ16                           | -                          | -                            | 16                        | -                        | -                | -  | 0.96                  |
| S2.5S 40A = 1620         | 40                         | φ100                             | φ105                            | A1         | 16                    | φ20                           | -                          | -                            | 16                        | 6 × 2.8                  | -                | -  | 0.94                  |
| S2.5S 40A = 1625         | 40                         | φ100                             | φ105                            | A1         | 16                    | φ25                           | -                          | -                            | 16                        | 8 × 3.3                  | -                | -  | 0.92                  |
| S2.5S 40A - 2518F        | 40                         | φ100                             | φ105                            | A1         | 25                    | φ18                           | -                          | -                            | 25                        | -                        | -                | -  | 1.49                  |
| S2.5S 40A = 2525         | 40                         | φ100                             | φ105                            | A1         | 25                    | φ25                           | -                          | -                            | 25                        | 8 × 3.3                  | -                | -  | 1.44                  |
| S2.5S 40A = 2530         | 40                         | φ100                             | φ105                            | A1         | 25                    | φ30                           | -                          | -                            | 25                        | 8 × 3.3                  | -                | -  | 1.40                  |
| S2.5S 40B - 1616         | 40                         | φ100                             | φ105                            | B1         | 16                    | φ16                           | φ50                        | 12                           | 28                        | -                        | -                | -  | 1.13                  |
| S2.5S 40B # 1620         | 40                         | φ100                             | φ105                            | B1         | 16                    | φ20                           | φ50                        | 12                           | 28                        | 6 × 2.8                  | M5               | 6  | 1.10                  |
| S2.5S 40B # 1625         | 40                         | φ100                             | φ105                            | B1         | 16                    | φ25                           | φ50                        | 12                           | 28                        | 8 × 3.3                  | M6               | 6  | 1.06                  |
| S2.5S 40BF - 2512        | 40                         | φ100                             | φ105                            | B1         | 25                    | φ12(H8)                       | φ70                        | 20                           | 45                        | -                        | -                | -  | 2.1                   |
| S2.5S 40B - 2518         | 40                         | φ100                             | φ105                            | B1         | 25                    | φ18                           | φ60                        | 12                           | 37                        | -                        | -                | -  | 1.73                  |
| S2.5S 40B # 2525         | 40                         | φ100                             | φ105                            | B1         | 25                    | φ25                           | φ60                        | 12                           | 37                        | 8 × 3.3                  | M6               | 6  | 1.66                  |
| S2.5S 40B # 2530         | 40                         | φ100                             | φ105                            | B1         | 25                    | φ30                           | φ60                        | 12                           | 37                        | 8 × 3.3                  | M6               | 6  | 1.59                  |
| S2.5S 45B - 1616         | 45                         | φ112.5                           | φ117.5                          | B1         | 16                    | φ16                           | φ60                        | 12                           | 28                        | -                        | -                | -  | 1.47                  |
| S2.5S 45BF - 2515        | 45                         | φ112.5                           | φ117.5                          | B1         | 25                    | φ15(H8)                       | φ75                        | 20                           | 45                        | -                        | -                | -  | 2.58                  |
| S2.5S 45B - 2518         | 45                         | φ112.5                           | φ117.5                          | B1         | 25                    | φ18                           | φ60                        | 12                           | 37                        | -                        | -                | -  | 2.14                  |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (W) Bending Strength

| 齿数<br>z | 齿宽<br>b | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |        |        |        |
|---------|---------|---|-------|-------|-------|--------|--------|--------|
|         |         | 10  | 100   | 200   | 400   | 800    | 1,200  | 1,500  |
| 30      | 16      | 0.14  | 1.38  | 2.76  | 5.08  | 8.44   | 11.95  | 14.47  |
| 30      | 18      | 0.16  | 1.55  | 3.10  | 5.72  | 9.50   | 13.44  | 16.28  |
| 30      | 25      | 0.220                                       | 2.160 | 4.320 | 7.950 | 13.210 | 18.690 | 22.640 |
| 30      | 28      | 0.24  | 2.41  | 4.82  | 8.89  | 14.77  | 20.91  | 25.33  |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (W) Bending Strength

| 齿数<br>z | 齿宽<br>b | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |      |      |       |       |       |
|---------|---------|---|------|------|------|-------|-------|-------|
|         |         | 10  | 100  | 200  | 400  | 800   | 1,200 | 1,500 |
| 32      | 16      | 0.15  | 1.50 | 3.01 | 5.46 | 9.13  | 12.89 | 15.64 |
| 32      | 25      | 0.24  | 2.35 | 4.70 | 8.54 | 14.27 | 20.14 | 24.44 |
| 35      | 25      | 0.26  | 2.64 | 5.29 | 9.40 | 15.86 | 22.40 | 27.12 |
| 36      | 16      | 0.18  | 1.76 | 3.51 | 6.20 | 10.50 | 14.83 | 17.94 |
| 36      | 25      | 0.27  | 2.75 | 5.49 | 9.69 | 16.41 | 23.17 | 28.03 |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (W) Bending Strength

| 齿数<br>z | 齿宽<br>b | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |        |        |        |        |
|---------|---------|---|-------|-------|--------|--------|--------|--------|
|         |         | 10  | 100   | 200   | 400    | 800    | 1,200  | 1,500  |
| 40      | 16      | 0.20  | 2.01  | 4.00  | 6.92   | 11.85  | 16.74  | 20.19  |
| 40      | 25      | 0.310                                       | 3.140 | 6.230 | 10.780 | 18.470 | 26.100 | 31.480 |
| 45      | 16      | 0.23  | 2.33  | 4.55  | 7.76   | 13.48  | 19.07  | 23.35  |
| 45      | 25      | 0.36  | 3.65  | 7.11  | 12.13  | 21.06  | 29.80  | 36.48  |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|---|-------|-------|-------|-------|-------|-------|
| 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| -   | -     | -     | -     | -     | -     | -     |
| 0.013                                       | 0.130 | 0.270 | 0.500 | 0.860 | 1.270 | 1.590 |
| -   | -     | -     | -     | -     | -     | -     |

### T (N · m)

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|---|
| 100   |
| 143.24                                      |
| 224.41                                      |
| 252.11                                      |
| 168.07                                      |
| 262.61                                      |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|---|-------|-------|-------|-------|-------|-------|
| 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| -   | -     | -     | -     | -     | -     | -     |
| 0.024                                       | 0.240 | 0.480 | 0.860 | 1.550 | 2.320 | 2.900 |
| -   | -     | -     | -     | -     | -     | -     |

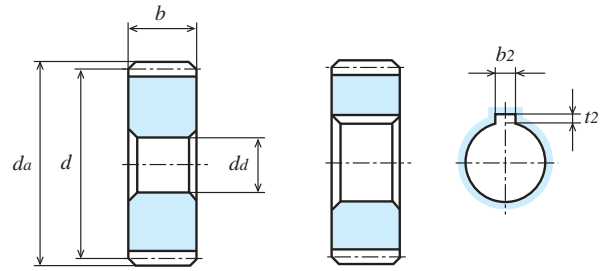
# 直齿轮

## SPUR GEARS

模数  
MODULE

2.5 (齿数 48 ~ 64)

(普通齿)  
FULL DEPTH TOOTH



A1形状  
TYPE A1

A1形状  
TYPE A1

单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①        |
|-----------------|------|-----|-----|------|------------|
| JIS B 1702-1 8级 | S45C | 20度 | —   | —    | 0.1 ~ 0.25 |

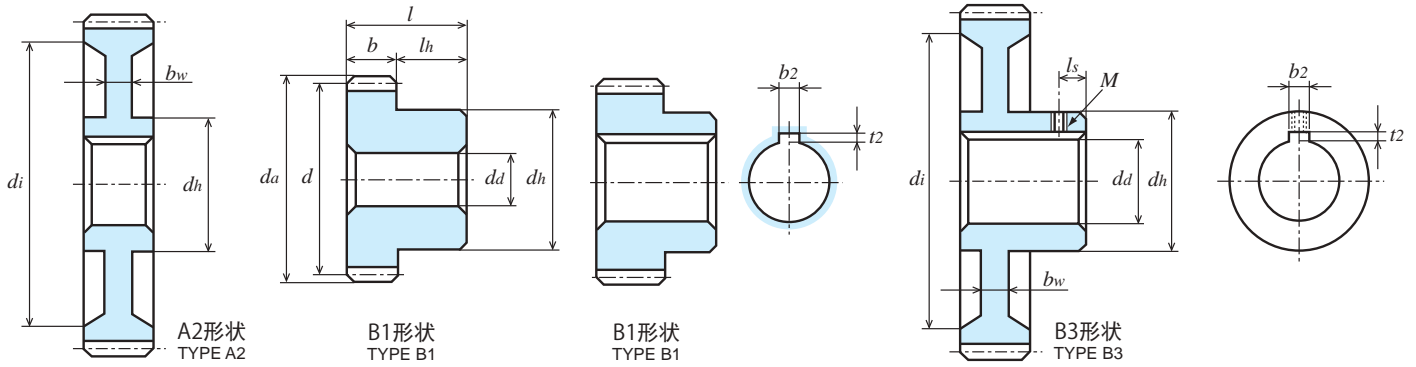
★未做表面处理。[#] 表示带有键槽和键，螺纹孔和固定用螺钉；[=] 表示带有键槽和键。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★KG 的规格齿轮有「标准齿宽」(轻负荷用)和传达扭矩更大的「加宽齿宽」(重负荷用)。请根据用途选择。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 分度圆直径<br>Outside Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂高度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b2 x t2 | 螺纹孔 |    | 轮圈内径<br>Dimension of Rim<br>di | 腹板厚度<br>Thickness of Web<br>bw | 重量<br>Weight<br>W(kg) |
|--------------------------|----------------------------|----------------------------------|---------------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|--------------------------|-----|----|--------------------------------|--------------------------------|-----------------------|
|                          |                            |                                  |                                 |            |                       |                               |                            |                              |                           |                          | M   | ls |                                |                                |                       |
| S2.5S 48A - 1616F        | 48                         | φ120                             | φ125                            | A1         | 16                    | φ16                           | -                          | -                            | 16                        | -                        | -   | -  | -                              | -                              | 1.40                  |
| S2.5S 48A = 1620         | 48                         | φ120                             | φ125                            | A1         | 16                    | φ20                           | -                          | -                            | 16                        | 6 x 2.8                  | -   | -  | -                              | -                              | 1.38                  |
| S2.5S 48A = 1625         | 48                         | φ120                             | φ125                            | A1         | 16                    | φ25                           | -                          | -                            | 16                        | 8 x 3.3                  | -   | -  | -                              | -                              | 1.40                  |
| S2.5S 48A - 2518F        | 48                         | φ120                             | φ125                            | A1         | 25                    | φ18                           | -                          | -                            | 25                        | -                        | -   | -  | -                              | -                              | 2.17                  |
| S2.5S 48A = 2525         | 48                         | φ120                             | φ125                            | A1         | 25                    | φ25                           | -                          | -                            | 25                        | 8 x 3.3                  | -   | -  | -                              | -                              | 2.12                  |
| S2.5S 48A = 2530         | 48                         | φ120                             | φ125                            | A1         | 25                    | φ30                           | -                          | -                            | 25                        | 8 x 3.3                  | -   | -  | -                              | -                              | 2.10                  |
| S2.5S 48B - 1616         | 48                         | φ120                             | φ125                            | B1         | 16                    | φ16                           | φ50                        | 12                           | 28                        | -                        | -   | -  | -                              | -                              | 1.56                  |
| S2.5S 48B # 1620         | 48                         | φ120                             | φ125                            | B1         | 16                    | φ20                           | φ50                        | 12                           | 28                        | 6 x 2.8                  | M5  | 6  | -                              | -                              | 1.53                  |
| S2.5S 48B # 1625         | 48                         | φ120                             | φ125                            | B1         | 16                    | φ25                           | φ50                        | 12                           | 28                        | 8 x 3.3                  | M6  | 6  | -                              | -                              | 1.49                  |
| S2.5S 48BF - 2515        | 48                         | φ120                             | φ125                            | B1         | 25                    | φ15(H8)                       | φ80                        | 20                           | 45                        | -                        | -   | -  | -                              | -                              | 2.95                  |
| S2.5S 48B - 2518         | 48                         | φ120                             | φ125                            | B1         | 25                    | φ18                           | φ60                        | 12                           | 37                        | -                        | -   | -  | -                              | -                              | 2.41                  |
| S2.5S 48B # 2525         | 48                         | φ120                             | φ125                            | B1         | 25                    | φ25                           | φ60                        | 12                           | 37                        | 8 x 3.3                  | M6  | 6  | -                              | -                              | 2.33                  |
| S2.5S 48B # 2530         | 48                         | φ120                             | φ125                            | B1         | 25                    | φ30                           | φ60                        | 12                           | 37                        | 8 x 3.3                  | M6  | 6  | -                              | -                              | 2.27                  |
| S2.5S 50A - 1616F        | 50                         | φ125                             | φ130                            | A1         | 16                    | φ16                           | -                          | -                            | 16                        | -                        | -   | -  | -                              | -                              | 1.52                  |
| S2.5S 50A = 1620         | 50                         | φ125                             | φ130                            | A1         | 16                    | φ20                           | -                          | -                            | 16                        | 6 x 2.8                  | -   | -  | -                              | -                              | 1.50                  |
| S2.5S 50A = 1625         | 50                         | φ125                             | φ130                            | A1         | 16                    | φ25                           | -                          | -                            | 16                        | 8 x 3.3                  | -   | -  | -                              | -                              | 1.50                  |
| S2.5S 50A - 2518F        | 50                         | φ125                             | φ130                            | A1         | 25                    | φ18                           | -                          | -                            | 25                        | -                        | -   | -  | -                              | -                              | 2.36                  |
| S2.5S 50A = 2525         | 50                         | φ125                             | φ130                            | A1         | 25                    | φ25                           | -                          | -                            | 25                        | 8 x 3.3                  | -   | -  | -                              | -                              | 2.31                  |
| S2.5S 50A = 2530         | 50                         | φ125                             | φ130                            | A1         | 25                    | φ30                           | -                          | -                            | 25                        | 8 x 3.3                  | -   | -  | -                              | -                              | 2.26                  |
| S2.5S 50B - 1616         | 50                         | φ125                             | φ130                            | B1         | 16                    | φ16                           | φ50                        | 12                           | 28                        | -                        | -   | -  | -                              | -                              | 1.68                  |
| S2.5S 50B # 1620         | 50                         | φ125                             | φ130                            | B1         | 16                    | φ20                           | φ50                        | 12                           | 28                        | 6 x 2.8                  | M5  | 6  | -                              | -                              | 1.65                  |
| S2.5S 50B # 1625         | 50                         | φ125                             | φ130                            | B1         | 16                    | φ25                           | φ50                        | 12                           | 28                        | 8 x 3.3                  | M6  | 6  | -                              | -                              | 1.61                  |
| S2.5S 50BF - 2515        | 50                         | φ125                             | φ130                            | B1         | 25                    | φ15(H8)                       | φ90                        | 20                           | 45                        | -                        | -   | -  | -                              | -                              | 3.33                  |
| S2.5S 50B - 2518         | 50                         | φ125                             | φ130                            | B1         | 25                    | φ18                           | φ60                        | 12                           | 37                        | -                        | -   | -  | -                              | -                              | 2.60                  |
| S2.5S 50B # 2525         | 50                         | φ125                             | φ130                            | B1         | 25                    | φ25                           | φ60                        | 12                           | 37                        | 8 x 3.3                  | M6  | 6  | -                              | -                              | 2.52                  |
| S2.5S 50B # 2530         | 50                         | φ125                             | φ130                            | B1         | 25                    | φ30                           | φ60                        | 12                           | 37                        | 8 x 3.3                  | M6  | 6  | -                              | -                              | 2.46                  |
| S2.5S 55BF - 2515        | 55                         | φ137.5                           | φ142.5                          | B1         | 25                    | φ15(H8)                       | φ95                        | 20                           | 45                        | -                        | -   | -  | -                              | -                              | 3.97                  |
| S2.5S 56A - 1616F        | 56                         | φ140                             | φ145                            | A1         | 16                    | φ16                           | -                          | -                            | 16                        | -                        | -   | -  | -                              | -                              | 1.91                  |
| S2.5S 56A - 2518F        | 56                         | φ140                             | φ145                            | A1         | 25                    | φ18                           | -                          | -                            | 25                        | -                        | -   | -  | -                              | -                              | 2.97                  |
| S2.5S 56B - 1618         | 56                         | φ140                             | φ145                            | B1         | 16                    | φ18                           | φ60                        | 12                           | 28                        | -                        | -   | -  | -                              | -                              | 2.15                  |
| S2.5S 56BF - 2515        | 56                         | φ140                             | φ145                            | B1         | 25                    | φ15(H8)                       | φ95                        | 20                           | 45                        | -                        | -   | -  | -                              | -                              | 4.08                  |
| S2.5S 56B - 2520         | 56                         | φ140                             | φ145                            | B1         | 25                    | φ20                           | φ60                        | 12                           | 37                        | -                        | -   | -  | -                              | -                              | 3.20                  |
| S2.5S 56B # 2525         | 56                         | φ140                             | φ145                            | B1         | 25                    | φ25                           | φ60                        | 12                           | 37                        | 8 x 3.3                  | M6  | 6  | -                              | -                              | 3.14                  |
| S2.5S 60A - 1616F        | 60                         | φ150                             | φ155                            | A1         | 16                    | φ16                           | -                          | -                            | 16                        | -                        | -   | -  | -                              | -                              | 2.19                  |
| S2.5S 60A = 1625         | 60                         | φ150                             | φ155                            | A2         | 16                    | φ25                           | φ50                        | -                            | 16                        | 8 x 3.3                  | -   | -  | φ127                           | 8                              | 1.51                  |
| S2.5S 60A - 2518F        | 60                         | φ150                             | φ155                            | A1         | 25                    | φ18                           | -                          | -                            | 25                        | -                        | -   | -  | -                              | -                              | 3.42                  |
| S2.5S 60A = 2525         | 60                         | φ150                             | φ155                            | A2         | 25                    | φ25                           | φ50                        | -                            | 25                        | 8 x 3.3                  | -   | -  | φ127                           | 13                             | 2.42                  |
| S2.5S 60A = 2530         | 60                         | φ150                             | φ155                            | A2         | 25                    | φ30                           | φ60                        | -                            | 25                        | 8 x 3.3                  | -   | -  | φ127                           | 13                             | 2.46                  |
| S2.5S 60A = 2535         | 60                         | φ150                             | φ155                            | A2         | 25                    | φ35                           | φ70                        | -                            | 25                        | 10 x 3.3                 | -   | -  | φ127                           | 13                             | 2.51                  |



| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>$z$ | 分度圆直径<br>Reference Diameter<br>$d$ | 分度圆直径<br>Outside Diameter<br>$d_a$ | 形状<br>Type | 齿宽<br>Face Width<br>$b$ | 孔径<br>Bore Diameter<br>$d_a(H7)$ | 轮毂外径<br>Hub Diameter<br>$d_h$ | 轮毂长度<br>Hub Projection<br>$l_h$ | 全长<br>Overall Length<br>$l$ | 键槽<br>Key Way<br>$b_2 \times t_2$ | 螺纹孔<br>Set Screw |       | 轮圈内径<br>Dimension of Rim<br>$d_i$ | 腹板厚度<br>Thickness of Web<br>$b_w$ | 重量<br>Weight<br>W(kg) |
|--------------------------|------------------------------|------------------------------------|------------------------------------|------------|-------------------------|----------------------------------|-------------------------------|---------------------------------|-----------------------------|-----------------------------------|------------------|-------|-----------------------------------|-----------------------------------|-----------------------|
|                          |                              |                                    |                                    |            |                         |                                  |                               |                                 |                             |                                   | $M$              | $l_s$ |                                   |                                   |                       |
| <b>S2.5S 60B - 1618</b>  | 60                           | $\phi 150$                         | $\phi 155$                         | B1         | 16                      | $\phi 18$                        | $\phi 60$                     | 12                              | 28                          | -                                 | -                | -     | -                                 | -                                 | 2.43                  |
| <b>S2.5S 60B # 1625</b>  | 60                           | $\phi 150$                         | $\phi 155$                         | B3         | 16                      | $\phi 25$                        | $\phi 60$                     | 12                              | 28                          | 8 × 3.3                           | M6               | 6     | $\phi 127$                        | 8                                 | 1.78                  |
| <b>S2.5S 60BF - 2515</b> | 60                           | $\phi 150$                         | $\phi 155$                         | B1         | 25                      | $\phi 15(H8)$                    | $\phi 105$                    | 20                              | 45                          | -                                 | -                | -     | -                                 | -                                 | 4.75                  |
| <b>S2.5S 60B - 2520</b>  | 60                           | $\phi 150$                         | $\phi 155$                         | B1         | 25                      | $\phi 20$                        | $\phi 70$                     | 12                              | 37                          | -                                 | -                | -     | -                                 | -                                 | 3.74                  |
| <b>S2.5S 60B # 2525</b>  | 60                           | $\phi 150$                         | $\phi 155$                         | B3         | 25                      | $\phi 25$                        | $\phi 70$                     | 12                              | 37                          | 8 × 3.3                           | M6               | 6     | $\phi 127$                        | 13                                | 2.91                  |
| <b>S2.5S 60B # 2530</b>  | 60                           | $\phi 150$                         | $\phi 155$                         | B3         | 25                      | $\phi 30$                        | $\phi 70$                     | 12                              | 37                          | 8 × 3.3                           | M6               | 6     | $\phi 127$                        | 13                                | 2.85                  |
| <b>S2.5S 60B # 2535</b>  | 60                           | $\phi 150$                         | $\phi 155$                         | B3         | 25                      | $\phi 35$                        | $\phi 70$                     | 12                              | 37                          | 10 × 3.3                          | M8               | 6     | $\phi 127$                        | 13                                | 2.77                  |
| <b>S2.5S 64A - 1616F</b> | 64                           | $\phi 160$                         | $\phi 165$                         | A1         | 16                      | $\phi 16$                        | -                             | -                               | 16                          | -                                 | -                | -     | -                                 | -                                 | 2.50                  |
| <b>S2.5S 64A - 2518F</b> | 64                           | $\phi 160$                         | $\phi 165$                         | A1         | 25                      | $\phi 18$                        | -                             | -                               | 25                          | -                                 | -                | -     | -                                 | -                                 | 3.90                  |
| <b>S2.5S 64B - 1618</b>  | 64                           | $\phi 160$                         | $\phi 165$                         | B1         | 16                      | $\phi 18$                        | $\phi 60$                     | 12                              | 28                          | -                                 | -                | -     | -                                 | -                                 | 2.74                  |
| <b>S2.5S 64BF - 2520</b> | 64                           | $\phi 160$                         | $\phi 165$                         | B1         | 25                      | $\phi 20$                        | $\phi 110$                    | 20                              | 45                          | -                                 | -                | -     | -                                 | -                                 | 5.33                  |
| <b>S2.5S 64B - 2520</b>  | 64                           | $\phi 160$                         | $\phi 165$                         | B1         | 25                      | $\phi 20$                        | $\phi 70$                     | 12                              | 37                          | -                                 | -                | -     | -                                 | -                                 | 4.22                  |
| <b>S2.5S 64B # 2525</b>  | 64                           | $\phi 160$                         | $\phi 165$                         | B3         | 25                      | $\phi 25$                        | $\phi 70$                     | 12                              | 37                          | 8 × 3.3                           | M6               | 6     | $\phi 137$                        | 13                                | 3.20                  |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (W) Bending Strength

| 齿数<br>$z$ | 齿宽<br>$b$ | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |      |       |       |       |       | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|-----------|-----------|---|------|------|-------|-------|-------|-------|---|
|           |           | 10  | 100  | 200  | 400   | 800   | 1,200 | 1,500 | 100   |
| 48        | 16        | 0.25  | 2.53 | 4.87 | 8.25  | 14.45 | 20.45 | 25.30 | 341.60                                      |
| 48        | 25        | 0.40  | 3.95 | 7.61 | 12.89 | 22.58 | 31.95 | 39.53 | 377.21                                      |

### T (N · m)

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (W) Bending Strength

| 齿数<br>$z$ | 齿宽<br>$b$ | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |        |        |        |        |
|-----------|-----------|---|-------|-------|--------|--------|--------|--------|
|           |           | 10  | 100   | 200   | 400    | 800    | 1,200  | 1,500  |
| 50        | 16        | 0.27  | 2.66  | 5.09  | 8.56   | 15.12  | 21.36  | 26.61  |
| 50        | 25        | 0.410                                       | 4.140 | 7.910 | 13.330 | 23.530 | 33.230 | 41.400 |
| 55        | 25        | 0.46  | 4.65  | 8.72  | 14.50  | 26.09  | 37.18  | 46.48  |
| 56        | 16        | 0.31  | 3.06  | 5.71  | 9.47   | 17.11  | 24.44  | -      |
| 56        | 25        | 0.48  | 4.77  | 8.92  | 14.80  | 26.73  | 38.19  | -      |
| 60        | 16        | 0.33  | 3.32  | 6.12  | 10.16  | 18.41  | 26.56  | -      |
| 60        | 25        | 0.52  | 5.19  | 9.56  | 15.87  | 28.76  | 41.50  | -      |
| 60        | 25        | 0.520                                       | 5.160 | 9.500 | 15.790 | 28.600 | 41.270 | -      |
| 64        | 16        | 0.36  | 3.59  | 6.51  | 10.89  | 19.69  | -      | -      |
| 64        | 25        | 0.56  | 5.60  | 10.17 | 17.01  | 30.77  | -      | -      |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |   |
|---|-------|-------|-------|-------|-------|-------|---|
| 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |   |
| -   | -     | -     | -     | -     | -     | -     | - |
| 0.038                                       | 0.390 | 0.750 | 1.310 | 2.470 | 3.710 | 4.770 |   |
| 0.05  | 0.47  | 0.90  | 1.56  | 3.03  | 4.58  | 5.96  |   |
| -   | -     | -     | -     | -     | -     | -     |   |
| -   | -     | -     | -     | -     | -     | -     |   |
| -   | -     | -     | -     | -     | -     | -     |   |
| 0.056                                       | 0.570 | 1.070 | 1.850 | 3.640 | 5.570 | -     |   |
| -   | -     | -     | -     | -     | -     | -     |   |
| -   | -     | -     | -     | -     | -     | -     |   |

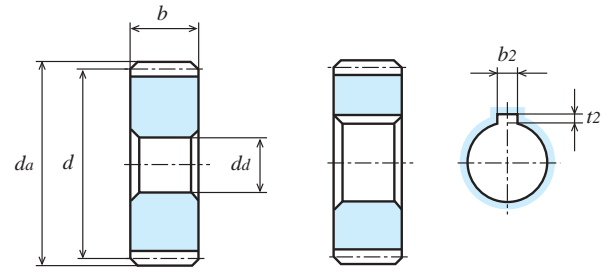
# 直齿轮

## SPUR GEARS

模数  
MODULE

2.5 (齿数 70 ~ 80)

(普通齿)  
FULL DEPTH TOOTH



A1形状  
TYPE A1

A1形状  
TYPE A1

单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①        |
|-----------------|------|-----|-----|------|------------|
| JIS B 1702-1 8级 | S45C | 20度 | —   | —    | 0.1 ~ 0.25 |

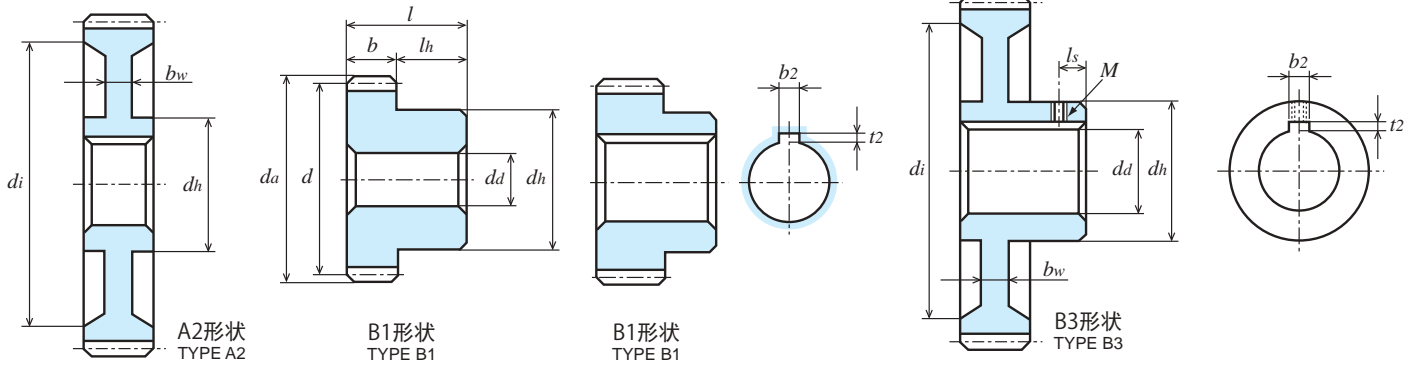
★未做表面处理。[#]表示带有键槽和键，螺孔和固定用螺钉；[=]表示带有键槽和键。

★本产品的容许传达动力表使用JGMA公式。请在P28确认单位换算方法。

★KG的规格齿轮有「标准齿宽」(轻负荷用)和传达扭矩更大的「加宽齿宽」(重负荷用)。请根据用途选择。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 分度圆直径<br>Outside Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b2 × t2 | 螺孔 |    | 轮圈内径<br>Dimension of Rim<br>di | 腹板厚度<br>Thickness of Web<br>bw | 重量<br>Weight<br>W(kg) |
|--------------------------|----------------------------|----------------------------------|---------------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|--------------------------|----|----|--------------------------------|--------------------------------|-----------------------|
|                          |                            |                                  |                                 |            |                       |                               |                            |                              |                           |                          | M  | ls |                                |                                |                       |
| S2.5S 70BF - 2520        | 70                         | φ175                             | φ180                            | B1         | 25                    | φ20                           | φ125                       | 20                           | 45                        | -                        | -  | -  | -                              | -                              | 6.52                  |
| S2.5S 72A - 1616F        | 72                         | φ180                             | φ185                            | A1         | 16                    | φ16                           | -                          | -                            | 16                        | -                        | -  | -  | -                              | -                              | 3.17                  |
| S2.5S 72A - 2518F        | 72                         | φ180                             | φ185                            | A1         | 25                    | φ18                           | -                          | -                            | 25                        | -                        | -  | -  | -                              | -                              | 4.94                  |
| S2.5S 72B - 1618         | 72                         | φ180                             | φ185                            | B1         | 16                    | φ18                           | φ70                        | 12                           | 28                        | -                        | -  | -  | -                              | -                              | 3.50                  |
| S2.5S 72BF - 2520        | 72                         | φ180                             | φ185                            | B1         | 25                    | φ20                           | φ125                       | 20                           | 45                        | -                        | -  | -  | -                              | -                              | 6.82                  |
| S2.5S 72B - 2520         | 72                         | φ180                             | φ185                            | B1         | 25                    | φ20                           | φ70                        | 12                           | 37                        | -                        | -  | -  | -                              | -                              | 5.27                  |
| S2.5S 72B # 2525         | 72                         | φ180                             | φ185                            | B3         | 25                    | φ25                           | φ70                        | 12                           | 37                        | 8 × 3.3                  | M6 | 6  | φ157                           | 13                             | 3.82                  |
| S2.5S 75BF - 2520        | 75                         | φ187.5                           | φ192.5                          | B1         | 25                    | φ20                           | φ130                       | 20                           | 45                        | -                        | -  | -  | -                              | -                              | 7.24                  |
| S2.5S 80A - 1618F        | 80                         | φ200                             | φ205                            | A1         | 16                    | φ18                           | -                          | -                            | 16                        | -                        | -  | -  | -                              | -                              | 3.91                  |
| S2.5S 80A = 1625         | 80                         | φ200                             | φ205                            | A2         | 16                    | φ25                           | φ50                        | -                            | 16                        | 8 × 3.3                  | -  | -  | φ177                           | 8                              | 2.50                  |
| S2.5S 80A - 2520F        | 80                         | φ200                             | φ205                            | A1         | 25                    | φ20                           | -                          | -                            | 25                        | -                        | -  | -  | -                              | -                              | 6.10                  |
| S2.5S 80A = 2525         | 80                         | φ200                             | φ205                            | A2         | 25                    | φ25                           | φ50                        | -                            | 25                        | 8 × 3.3                  | -  | -  | φ177                           | 13                             | 4.02                  |
| S2.5S 80A = 2530         | 80                         | φ200                             | φ205                            | A2         | 25                    | φ30                           | φ60                        | -                            | 25                        | 8 × 3.3                  | -  | -  | φ177                           | 13                             | 4.06                  |
| S2.5S 80A = 2535         | 80                         | φ200                             | φ205                            | A2         | 25                    | φ35                           | φ70                        | -                            | 25                        | 10 × 3.3                 | -  | -  | φ177                           | 13                             | 4.10                  |
| S2.5S 80B - 1618         | 80                         | φ200                             | φ205                            | B1         | 16                    | φ18                           | φ60                        | 12                           | 28                        | -                        | -  | -  | -                              | -                              | 4.16                  |
| S2.5S 80B # 1625         | 80                         | φ200                             | φ205                            | B3         | 16                    | φ25                           | φ60                        | 12                           | 28                        | 8 × 3.3                  | M6 | 6  | φ177                           | 8                              | 2.77                  |
| S2.5S 80BF - 2520        | 80                         | φ200                             | φ205                            | B1         | 25                    | φ20                           | φ140                       | 20                           | 45                        | -                        | -  | -  | -                              | -                              | 8.45                  |
| S2.5S 80B - 2522         | 80                         | φ200                             | φ205                            | B1         | 25                    | φ22                           | φ70                        | 12                           | 37                        | -                        | -  | -  | -                              | -                              | 6.42                  |
| S2.5S 80B # 2525         | 80                         | φ200                             | φ205                            | B3         | 25                    | φ25                           | φ70                        | 12                           | 37                        | 8 × 3.3                  | M6 | 6  | φ177                           | 13                             | 4.51                  |
| S2.5S 80B # 2530         | 80                         | φ200                             | φ205                            | B3         | 25                    | φ30                           | φ70                        | 12                           | 37                        | 8 × 3.3                  | M6 | 6  | φ177                           | 13                             | 4.45                  |
| S2.5S 80B # 2535         | 80                         | φ200                             | φ205                            | B3         | 25                    | φ35                           | φ70                        | 12                           | 37                        | 10 × 3.3                 | M8 | 6  | φ177                           | 13                             | 4.37                  |



容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (W) Bending Strength

| 齿数<br>$z$ | 齿宽<br>$b$ | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |        |        |        |       |       |
|-----------|-----------|---|-------|--------|--------|--------|-------|-------|
|           |           | 10  | 100   | 200    | 400    | 800    | 1,200 | 1,500 |
| 70        | 25        | 0.620                                       | 6.190 | 11.000 | 18.560 | 33.500 | -     | -     |
| 72        | 16        | 0.41  | 4.12  | 7.27   | 12.31  | 22.20  | -     | -     |
| 72        | 25        | 0.64  | 6.44  | 11.37  | 19.24  | 34.69  | -     | -     |
| 75        | 25        | 0.67  | 6.71  | 11.72  | 19.92  | 35.88  | -     | -     |
| 80        | 16        | 0.47  | 4.62  | 8.00   | 13.70  | 24.84  | -     | -     |
| 80        | 25        | 0.720                                       | 7.170 | 12.410 | 21.260 | 38.530 | -     | -     |

容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

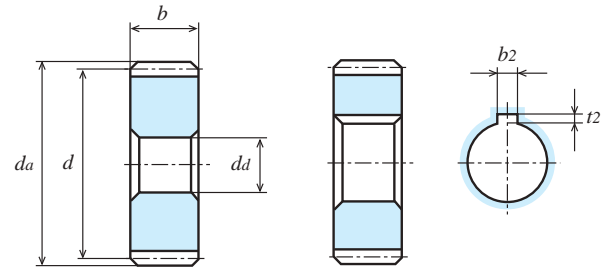
| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|---|-------|-------|-------|-------|-------|-------|
| 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| 0.078                                       | 0.790 | 1.430 | 2.540 | 5.020 | -     | -     |
| -   | -     | -     | -     | -     | -     | -     |
| -   | -     | -     | -     | -     | -     | -     |
| 0.09  | 0.91  | 1.63  | 2.93  | 5.80  | -     | -     |
| -   | -     | -     | -     | -     | -     | -     |
| 0.103                                       | 1.040 | 1.850 | 3.330 | 6.680 | -     | -     |

# 直齿轮

## SPUR GEARS

模数  
MODULE **3** (齿数 14 ~ 24)

(普通齿)  
FULL DEPTH TOOTH



A1形状  
TYPE A1

A1形状  
TYPE A1

单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①        |
|-----------------|------|-----|-----|------|------------|
| JIS B 1702-1 8级 | S45C | 20度 | —   | —    | 0.12 ~ 0.3 |

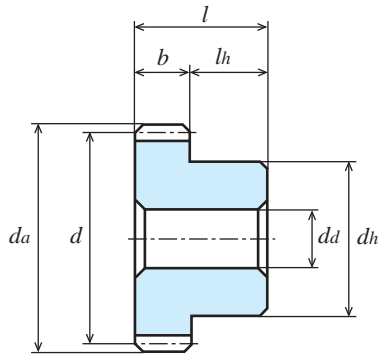
★未做表面处理。[#] 表示带有键槽和键，螺纹孔和固定用螺钉；[=] 表示带有键槽和键。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

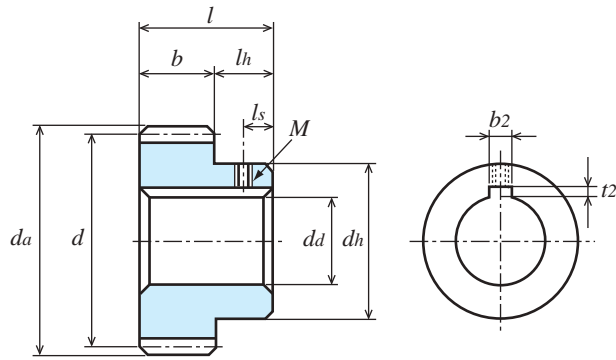
★KG 的规格齿轮有「标准齿宽」(轻负荷用)和传达扭矩更大的「加宽齿宽」(重负荷用)。请根据用途选择。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 分度圆直径<br>Outside Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂直径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b2 × t2 | 螺纹孔<br>Set Screw |     | 重量<br>Weight<br>W(kg) |
|--------------------------|----------------------------|----------------------------------|---------------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|--------------------------|------------------|-----|-----------------------|
|                          |                            |                                  |                                 |            |                       |                               |                            |                              |                           |                          | M                | ls  |                       |
| S3S 14A - 2216           | 14                         | φ42                              | φ48                             | A1         | 22                    | φ16                           | -                          | -                            | 22                        |                          |                  |     | 0.20                  |
| S3S 14A - 3016           | 14                         | φ42                              | φ48                             | A1         | 30                    | φ16                           | -                          | -                            | 30                        |                          |                  |     | 0.28                  |
| S3S 14A - 3516           | 14                         | φ42                              | φ48                             | A1         | 35                    | φ16                           | -                          | -                            | 35                        |                          |                  |     | 0.33                  |
| S3S 14B - 2216N          | 14                         | φ42                              | φ48                             | B1         | 22                    | φ16                           | φ34                        | 13                           | 35                        |                          |                  |     | 0.28                  |
| S3S 14BF - 3012          | 14                         | φ42                              | φ48                             | B1         | 30                    | φ12(H8)                       | φ34                        | 20                           | 50                        |                          |                  |     | 0.43                  |
| S3S 14B - 3016N          | 14                         | φ42                              | φ48                             | B1         | 30                    | φ16                           | φ34                        | 13                           | 43                        |                          |                  |     | 0.35                  |
| S3S 14B - 3516N          | 14                         | φ42                              | φ48                             | B1         | 35                    | φ16(H8)                       | φ34                        | 13                           | 48                        |                          |                  |     | 0.40                  |
| S3S 15A - 2216           | 15                         | φ45                              | φ51                             | A1         | 22                    | φ16                           | -                          | -                            | 22                        |                          |                  |     | 0.24                  |
| S3S 15A - 3016           | 15                         | φ45                              | φ51                             | A1         | 30                    | φ16                           | -                          | -                            | 30                        |                          |                  |     | 0.33                  |
| S3S 15A - 3516           | 15                         | φ45                              | φ51                             | A1         | 35                    | φ16                           | -                          | -                            | 35                        |                          |                  |     | 0.38                  |
| S3S 15B - 2216N          | 15                         | φ45                              | φ51                             | B1         | 22                    | φ16                           | φ36                        | 13                           | 35                        |                          |                  |     | 0.32                  |
| S3S 15BF - 3012          | 15                         | φ45                              | φ51                             | B1         | 30                    | φ12(H8)                       | φ36                        | 20                           | 50                        |                          |                  |     | 0.49                  |
| S3S 15B - 3016N          | 15                         | φ45                              | φ51                             | B1         | 30                    | φ16                           | φ36                        | 13                           | 43                        |                          |                  |     | 0.41                  |
| S3S 15B - 3516N          | 15                         | φ45                              | φ51                             | B1         | 35                    | φ16(H8)                       | φ36                        | 13                           | 48                        |                          |                  |     | 0.47                  |
| S3S 16A - 2216           | 16                         | φ48                              | φ54                             | A1         | 22                    | φ16                           | -                          | -                            | 22                        |                          |                  |     | 0.28                  |
| S3S 16A - 3016           | 16                         | φ48                              | φ54                             | A1         | 30                    | φ16                           | -                          | -                            | 30                        |                          |                  |     | 0.38                  |
| S3S 16A - 3516           | 16                         | φ48                              | φ54                             | A1         | 35                    | φ16                           | -                          | -                            | 35                        |                          |                  |     | 0.44                  |
| S3S 16B - 2216N          | 16                         | φ48                              | φ54                             | B1         | 22                    | φ16                           | φ40                        | 13                           | 35                        |                          |                  |     | 0.39                  |
| S3S 16BF - 3012          | 16                         | φ48                              | φ54                             | B1         | 30                    | φ12(H8)                       | φ40                        | 20                           | 50                        |                          |                  |     | 0.58                  |
| S3S 16B - 3016N          | 16                         | φ48                              | φ54                             | B1         | 30                    | φ16                           | φ40                        | 13                           | 43                        |                          |                  |     | 0.49                  |
| S3S 16B - 3516N          | 16                         | φ48                              | φ54                             | B1         | 35                    | φ16(H8)                       | φ40                        | 13                           | 48                        |                          |                  |     | 0.55                  |
| S3S 18A - 2216           | 18                         | φ54                              | φ60                             | A1         | 22                    | φ16                           | -                          | -                            | 22                        |                          |                  |     | 0.36                  |
| S3S 18A - 3016           | 18                         | φ54                              | φ60                             | A1         | 30                    | φ16                           | -                          | -                            | 30                        |                          |                  |     | 0.49                  |
| S3S 18A - 3518           | 18                         | φ54                              | φ60                             | A1         | 35                    | φ18                           | -                          | -                            | 35                        |                          |                  |     | 0.56                  |
| S3S 18B - 2218N          | 18                         | φ54                              | φ60                             | B1         | 22                    | φ18                           | φ46                        | 13                           | 35                        |                          |                  |     | 0.50                  |
| S3S 18BF - 3012          | 18                         | φ54                              | φ60                             | B1         | 30                    | φ12(H8)                       | φ46                        | 20                           | 50                        |                          |                  |     | 0.76                  |
| S3S 18B - 3018N          | 18                         | φ54                              | φ60                             | B1         | 30                    | φ18                           | φ46                        | 13                           | 43                        |                          |                  |     | 0.62                  |
| S3S 18B - 3516N          | 18                         | φ54                              | φ60                             | B1         | 35                    | φ16(H8)                       | φ46                        | 13                           | 48                        |                          |                  |     | 0.70                  |
| S3S 20A - 2216F          | 20                         | φ60                              | φ66                             | A1         | 22                    | φ16                           | -                          | -                            | 22                        | -                        | -                | -   | 0.45                  |
| S3S 20A = 2220           | 20                         | φ60                              | φ66                             | A1         | 22                    | φ20                           | -                          | -                            | 22                        | 6 × 2.8                  | -                | -   | 0.43                  |
| S3S 20A - 3018F          | 20                         | φ60                              | φ66                             | A1         | 30                    | φ18                           | -                          | -                            | 30                        | -                        | -                | -   | 0.61                  |
| S3S 20A - 3518F          | 20                         | φ60                              | φ66                             | A1         | 35                    | φ18                           | -                          | -                            | 35                        | -                        | -                | -   | 0.71                  |
| S3S 20A = 3525           | 20                         | φ60                              | φ66                             | A1         | 35                    | φ25                           | -                          | -                            | 35                        | 8 × 3.3                  | -                | -   | 0.63                  |
| S3S 20B - 2218           | 20                         | φ60                              | φ66                             | B1         | 22                    | φ18                           | φ40                        | 13                           | 35                        | -                        | -                | -   | 0.55                  |
| S3S 20B # 2220           | 20                         | φ60                              | φ66                             | B1         | 22                    | φ20                           | φ40                        | 13                           | 35                        | 6 × 2.8                  | M5               | 6.5 | 0.53                  |
| S3S 20BF - 3012          | 20                         | φ60                              | φ66                             | B1         | 30                    | φ12(H8)                       | φ52                        | 20                           | 50                        | -                        | -                | -   | 0.92                  |
| S3S 20B - 3018N          | 20                         | φ60                              | φ66                             | B1         | 30                    | φ18                           | φ52                        | 13                           | 43                        | -                        | -                | -   | 0.80                  |
| S3S 20B - 3516           | 20                         | φ60                              | φ66                             | B1         | 35                    | φ16(H8)                       | φ50                        | 13                           | 48                        | -                        | -                | -   | 0.90                  |
| S3S 20B # 3525           | 20                         | φ60                              | φ66                             | B1         | 35                    | φ25                           | φ50                        | 13                           | 48                        | 8 × 3.3                  | M6               | 6.5 | 0.78                  |
| S3S 24A - 2216F          | 24                         | φ72                              | φ78                             | A1         | 22                    | φ16                           | -                          | -                            | 22                        | -                        | -                | -   | 0.67                  |
| S3S 24A = 2220           | 24                         | φ72                              | φ78                             | A1         | 22                    | φ20                           | -                          | -                            | 22                        | 6 × 2.8                  | -                | -   | 0.65                  |
| S3S 24A = 2225           | 24                         | φ72                              | φ78                             | A1         | 22                    | φ25                           | -                          | -                            | 22                        | 8 × 3.3                  | -                | -   | 0.61                  |
| S3S 24A - 3018F          | 24                         | φ72                              | φ78                             | A1         | 30                    | φ18                           | -                          | -                            | 30                        | -                        | -                | -   | 0.90                  |
| S3S 24A - 3518F          | 24                         | φ72                              | φ78                             | A1         | 35                    | φ18                           | -                          | -                            | 35                        | -                        | -                | -   | 1.05                  |
| S3S 24A = 3525           | 24                         | φ72                              | φ78                             | A1         | 35                    | φ25                           | -                          | -                            | 35                        | 8 × 3.3                  | -                | -   | 0.98                  |
| S3S 24A = 3530           | 24                         | φ72                              | φ78                             | A1         | 35                    | φ30                           | -                          | -                            | 35                        | 8 × 3.3                  | -                | -   | 0.92                  |



B1形状  
TYPE B1



B1形状  
TYPE B1

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 分度圆直径<br>Outside Diameter<br><i>da</i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>da</i> (H7) | 轮毂外径<br>Hub Diameter<br><i>dh</i> | 轮毂长度<br>Hub Projection<br><i>lh</i> | 全长<br>Overall Length<br><i>l</i> | 键槽<br>Key Way<br><i>b</i> × <i>t</i> | 螺纹孔<br>Set Screw |           | 重量<br>Weight<br><i>W</i> (kg) |
|--------------------------|-----------------------------------|---|--|------------|------------------------------|---------------------------------------|-----------------------------------|-------------------------------------|----------------------------------|--------------------------------------|------------------|-----------|-------------------------------|
|                          |                                   |   |  |            |                              |                                       |                                   |                                     |                                  |                                      | <i>M</i>         | <i>ls</i> |                               |
| S3S 24B - 2218           | 24                                | φ72                                     | φ78                                    | B1         | 22                           | φ18                                   | φ50                               | 13                                  | 35                               | -                                    | -                | -         | 0.83                          |
| S3S 24B # 2220           | 24                                | φ72                                     | φ78                                    | B1         | 22                           | φ20                                   | φ50                               | 13                                  | 35                               | 6 × 2.8                              | M5               | 6.5       | 0.81                          |
| S3S 24B # 2225           | 24                                | φ72                                     | φ78                                    | B1         | 22                           | φ25                                   | φ50                               | 13                                  | 35                               | 8 × 3.3                              | M6               | 6.5       | 0.76                          |
| S3S 24BF - 3012          | 24                                | φ72                                     | φ78                                    | B1         | 30                           | φ12(H8)                               | φ60                               | 20                                  | 50                               | -                                    | -                | -         | 1.36                          |
| S3S 24B - 3020N          | 24                                | φ72                                     | φ78                                    | B1         | 30                           | φ20                                   | φ60                               | 13                                  | 43                               | -                                    | -                | -         | 1.14                          |
| S3S 24B - 3518           | 24                                | φ72                                     | φ78                                    | B1         | 35                           | φ18                                   | φ60                               | 13                                  | 48                               | -                                    | -                | -         | 1.31                          |
| S3S 24B # 3525           | 24                                | φ72                                     | φ78                                    | B1         | 35                           | φ25                                   | φ60                               | 13                                  | 48                               | 8 × 3.3                              | M6               | 6.5       | 1.21                          |
| S3S 24B # 3530           | 24                                | φ72                                     | φ78                                    | B1         | 35                           | φ30                                   | φ60                               | 13                                  | 48                               | 8 × 3.3                              | M6               | 6.5       | 1.13                          |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |      |      |       |       |       |
|----------------|----------------|---|------|------|------|-------|-------|-------|
|                |                | 10  | 100  | 200  | 400  | 800   | 1,200 | 1,500 |
| 14             | 22             | 0.087                                       | 0.88 | 1.75 | 3.51 | 6.29  | 8.44  | 10.00 |
| 14             | 30             | 0.120                                       | 1.20 | 2.39 | 4.78 | 8.58  | 11.51 | 13.63 |
| 14             | 35             | 0.139                                       | 1.39 | 2.79 | 5.58 | 10.01 | 13.43 | 15.91 |
| 15             | 22             | 0.098                                       | 0.98 | 1.96 | 3.93 | 6.94  | 9.25  | 11.10 |
| 15             | 30             | 0.134                                       | 1.34 | 2.68 | 5.36 | 9.46  | 12.61 | 15.14 |
| 15             | 35             | 0.156                                       | 1.56 | 3.13 | 6.25 | 11.04 | 14.72 | 17.67 |
| 16             | 22             | 0.11  | 1.09 | 2.18 | 4.36 | 7.57  | 10.06 | 12.22 |
| 16             | 30             | 0.15  | 1.49 | 2.97 | 5.94 | 10.33 | 13.71 | 16.66 |
| 16             | 35             | 0.17  | 1.73 | 3.47 | 6.93 | 12.05 | 16.00 | 19.43 |
| 18             | 22             | 0.13  | 1.31 | 2.62 | 5.14 | 8.81  | 11.91 | 14.43 |
| 18             | 30             | 0.18  | 1.79 | 3.57 | 7.01 | 12.02 | 16.25 | 19.68 |
| 18             | 35             | 0.21  | 2.08 | 4.17 | 8.18 | 14.02 | 18.96 | 22.96 |

### T (N · m)

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|---|
| 100   |
| 84.03                                       |
| 114.59                                      |
| 132.74                                      |
| 93.58                                       |
| 127.96                                      |
| 148.97                                      |
| 104.09                                      |
| 142.29                                      |
| 165.21                                      |
| 125.10                                      |
| 170.93                                      |
| 198.63                                      |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (W) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |        |        |        |
|----------------|----------------|---|-------|-------|-------|--------|--------|--------|
|                |                | 10  | 100   | 200   | 400   | 800    | 1,200  | 1,500  |
| 20             | 22             | 0.15  | 1.54  | 3.08  | 5.93  | 10.03  | 13.79  | 16.65  |
| 20             | 30             | 0.210                                       | 2.110 | 4.230 | 8.140 | 13.780 | 18.950 | 22.880 |
| 20             | 35             | 0.24  | 2.45  | 4.90  | 9.43  | 15.96  | 21.94  | 26.50  |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|---|-------|-------|-------|-------|-------|-------|
| 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| -   | -     | -     | -     | -     | -     | -     |
| 0.010                                       | 0.100 | 0.200 | 0.390 | 0.680 | 0.960 | 1.190 |
| -   | -     | -     | -     | -     | -     | -     |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (W) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |      |       |       |       |       |
|----------------|----------------|---|------|------|-------|-------|-------|-------|
|                |                | 10  | 100  | 200  | 400   | 800   | 1,200 | 1,500 |
| 24             | 22             | 0.20  | 2.01 | 4.01 | 7.45  | 12.33 | 17.49 | 21.16 |
| 24             | 30             | 0.27  | 2.73 | 5.47 | 10.17 | 16.82 | 23.85 | 28.85 |
| 24             | 35             | 0.32  | 3.19 | 6.38 | 11.86 | 19.62 | 27.82 | 33.66 |

### T (N · m)

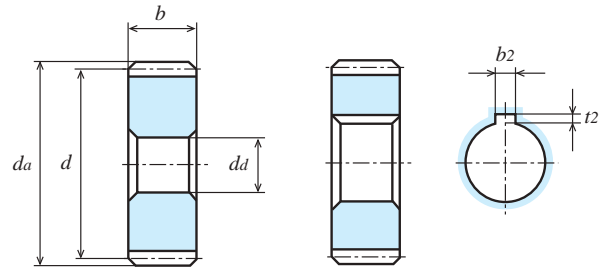
| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|---|
| 100   |
| 191.94                                      |
| 260.70                                      |
| 304.63                                      |

# 直齿轮

## SPUR GEARS

模数  
MODULE **3** (齿数 25 ~ 32)

(普通齿)  
FULL DEPTH TOOTH



A1形状  
TYPE A1

A1形状  
TYPE A1

单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①        |
|-----------------|------|-----|-----|------|------------|
| JIS B 1702-1 8级 | S45C | 20度 | —   | —    | 0.12 ~ 0.3 |

★未做表面处理。【#】表示带有键槽和键，螺纹孔和固定用螺钉；【=】表示带有键槽和键。

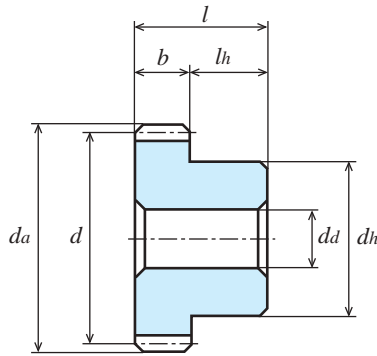
★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★KG 的规格齿轮有「标准齿宽」(轻负荷用)和传达扭矩更大的「加宽齿宽」(重负荷用)。请根据用途选择。

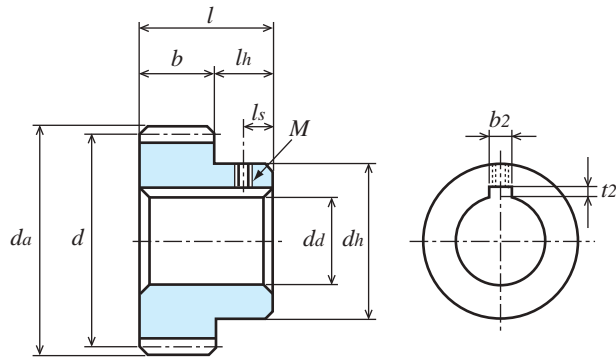
①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 分度圆直径<br>Outside Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b2 × t2 | 螺纹孔<br>Set Screw |     | 重量<br>Weight<br>W(kg) |
|--------------------------|----------------------------|----------------------------------|---------------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|--------------------------|------------------|-----|-----------------------|
|                          |                            |                                  |                                 |            |                       |                               |                            |                              |                           |                          | M                | ls  |                       |
| S3S 25A - 2218F          | 25                         | φ75                              | φ81                             | A1         | 22                    | φ18                           | -                          | -                            | 22                        | -                        | -                | -   | 0.72                  |
| S3S 25A = 2225           | 25                         | φ75                              | φ81                             | A1         | 22                    | φ25                           | -                          | -                            | 22                        | 8 × 3.3                  | -                | -   | 0.67                  |
| S3S 25A - 3018F          | 25                         | φ75                              | φ81                             | A1         | 30                    | φ18                           | -                          | -                            | 30                        | -                        | -                | -   | 0.98                  |
| S3S 25A - 3520F          | 25                         | φ75                              | φ81                             | A1         | 35                    | φ20                           | -                          | -                            | 35                        | -                        | -                | -   | 1.13                  |
| S3S 25A = 3525           | 25                         | φ75                              | φ81                             | A1         | 35                    | φ25                           | -                          | -                            | 35                        | 8 × 3.3                  | -                | -   | 1.07                  |
| S3S 25A = 3530           | 25                         | φ75                              | φ81                             | A1         | 35                    | φ30                           | -                          | -                            | 35                        | 8 × 3.3                  | -                | -   | 1.01                  |
| S3S 25B - 2220           | 25                         | φ75                              | φ81                             | B1         | 22                    | φ20                           | φ50                        | 13                           | 35                        | -                        | -                | -   | 0.88                  |
| S3S 25B # 2225           | 25                         | φ75                              | φ81                             | B1         | 22                    | φ25                           | φ50                        | 13                           | 35                        | 8 × 3.3                  | M6               | 6.5 | 0.82                  |
| S3S 25BF - 3012          | 25                         | φ75                              | φ81                             | B1         | 30                    | φ12(H8)                       | φ60                        | 20                           | 50                        | -                        | -                | -   | 1.43                  |
| S3S 25B - 3020N          | 25                         | φ75                              | φ81                             | B1         | 30                    | φ20                           | φ60                        | 13                           | 43                        | -                        | -                | -   | 1.22                  |
| S3S 25B - 3518           | 25                         | φ75                              | φ81                             | B1         | 35                    | φ18                           | φ60                        | 13                           | 48                        | -                        | -                | -   | 1.41                  |
| S3S 25B # 3525           | 25                         | φ75                              | φ81                             | B1         | 35                    | φ25                           | φ60                        | 13                           | 48                        | 8 × 3.3                  | M6               | 6.5 | 1.31                  |
| S3S 25B # 3530           | 25                         | φ75                              | φ81                             | B1         | 35                    | φ30                           | φ60                        | 13                           | 48                        | 8 × 3.3                  | M6               | 6.5 | 1.22                  |
| S3S 28A - 2218F          | 28                         | φ84                              | φ90                             | A1         | 22                    | φ18                           | -                          | -                            | 22                        | -                        | -                | -   | 0.91                  |
| S3S 28A = 2225           | 28                         | φ84                              | φ90                             | A1         | 22                    | φ25                           | -                          | -                            | 22                        | 8 × 3.3                  | -                | -   | 0.87                  |
| S3S 28A - 3020F          | 28                         | φ84                              | φ90                             | A1         | 30                    | φ20                           | -                          | -                            | 30                        | -                        | -                | -   | 1.23                  |
| S3S 28A - 3520F          | 28                         | φ84                              | φ90                             | A1         | 35                    | φ20                           | -                          | -                            | 35                        | -                        | -                | -   | 1.44                  |
| S3S 28A = 3525           | 28                         | φ84                              | φ90                             | A1         | 35                    | φ25                           | -                          | -                            | 35                        | 8 × 3.3                  | -                | -   | 1.38                  |
| S3S 28A = 3530           | 28                         | φ84                              | φ90                             | A1         | 35                    | φ30                           | -                          | -                            | 35                        | 8 × 3.3                  | -                | -   | 1.32                  |
| S3S 28B - 2220           | 28                         | φ84                              | φ90                             | B1         | 22                    | φ20                           | φ50                        | 13                           | 35                        | -                        | -                | -   | 1.07                  |
| S3S 28B # 2225           | 28                         | φ84                              | φ90                             | B1         | 22                    | φ25                           | φ50                        | 13                           | 35                        | 8 × 3.3                  | M6               | 6.5 | 1.01                  |
| S3S 28BF - 3012          | 28                         | φ84                              | φ90                             | B1         | 30                    | φ12(H8)                       | φ70                        | 20                           | 50                        | -                        | -                | -   | 1.87                  |
| S3S 28B - 3022N          | 28                         | φ84                              | φ90                             | B1         | 30                    | φ22                           | φ60                        | 13                           | 43                        | -                        | -                | -   | 1.47                  |
| S3S 28B - 3518           | 28                         | φ84                              | φ90                             | B1         | 35                    | φ18                           | φ60                        | 13                           | 48                        | -                        | -                | -   | 1.72                  |
| S3S 28B # 3525           | 28                         | φ84                              | φ90                             | B1         | 35                    | φ25                           | φ60                        | 13                           | 48                        | 8 × 3.3                  | M6               | 6.5 | 1.61                  |
| S3S 28B # 3530           | 28                         | φ84                              | φ90                             | B1         | 35                    | φ30                           | φ60                        | 13                           | 48                        | 8 × 3.3                  | M6               | 6.5 | 1.53                  |
| S3S 30A - 2220F          | 30                         | φ90                              | φ96                             | A1         | 22                    | φ20                           | -                          | -                            | 22                        | -                        | -                | -   | 1.04                  |
| S3S 30A = 2225           | 30                         | φ90                              | φ96                             | A1         | 22                    | φ25                           | -                          | -                            | 22                        | 8 × 3.3                  | -                | -   | 1.01                  |
| S3S 30A - 3022F          | 30                         | φ90                              | φ96                             | A1         | 30                    | φ22                           | -                          | -                            | 30                        | -                        | -                | -   | 1.41                  |
| S3S 30A = 3030           | 30                         | φ90                              | φ96                             | A1         | 30                    | φ30                           | -                          | -                            | 30                        | 8 × 3.3                  | -                | -   | 1.33                  |
| S3S 30A - 3522F          | 30                         | φ90                              | φ96                             | A1         | 35                    | φ22                           | -                          | -                            | 35                        | -                        | -                | -   | 1.64                  |
| S3S 30A = 3525           | 30                         | φ90                              | φ96                             | A1         | 35                    | φ25                           | -                          | -                            | 35                        | 8 × 3.3                  | -                | -   | 1.61                  |
| S3S 30A = 3530           | 30                         | φ90                              | φ96                             | A1         | 35                    | φ30                           | -                          | -                            | 35                        | 8 × 3.3                  | -                | -   | 1.55                  |
| S3S 30B - 2218           | 30                         | φ90                              | φ96                             | B1         | 22                    | φ18                           | φ50                        | 13                           | 35                        | -                        | -                | -   | 1.23                  |
| S3S 30B # 2225           | 30                         | φ90                              | φ96                             | B1         | 22                    | φ25                           | φ50                        | 13                           | 35                        | 8 × 3.3                  | M6               | 6.5 | 1.16                  |
| S3S 30BF - 3012          | 30                         | φ90                              | φ96                             | B1         | 30                    | φ12(H8)                       | φ75                        | 20                           | 50                        | -                        | -                | -   | 2.13                  |
| S3S 30B - 3022N          | 30                         | φ90                              | φ96                             | B1         | 30                    | φ22                           | φ60                        | 13                           | 43                        | -                        | -                | -   | 1.66                  |
| S3S 30B - 3520           | 30                         | φ90                              | φ96                             | B1         | 35                    | φ20                           | φ60                        | 13                           | 48                        | -                        | -                | -   | 1.92                  |
| S3S 30B # 3525           | 30                         | φ90                              | φ96                             | B1         | 35                    | φ25                           | φ60                        | 13                           | 48                        | 8 × 3.3                  | M6               | 6.5 | 1.84                  |
| S3S 30B # 3530           | 30                         | φ90                              | φ96                             | B1         | 35                    | φ30                           | φ60                        | 13                           | 48                        | 8 × 3.3                  | M6               | 6.5 | 1.76                  |





B1形状  
TYPE B1



B1形状  
TYPE B1

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 分度圆直径<br>Outside Diameter<br><i>da</i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>da</i> (H7) | 轮毂直径<br>Hub Diameter<br><i>dh</i> | 轮毂长度<br>Hub Projection<br><i>lh</i> | 全长<br>Overall Length<br><i>l</i> | 键槽<br>Key Way<br><i>b2</i> × <i>t2</i> | 螺纹孔<br>Set Screw |           | 重量<br>Weight<br><i>W</i> (kg) |
|--------------------------|-----------------------------------|---|--|------------|------------------------------|---------------------------------------|-----------------------------------|-------------------------------------|----------------------------------|--|------------------|-----------|-------------------------------|
|                          |                                   |   |  |            |                              |                                       |                                   |                                     |                                  |  | <i>M</i>         | <i>ls</i> |                               |
| S3S 32A - 2020F          | 32                                | φ 96                                    | φ102                                   | A1         | 20                           | φ20                                   | -                                 | -                                   | 20                               | -                                      | -                | -         | 1.09                          |
| S3S 32A = 2025           | 32                                | φ 96                                    | φ102                                   | A1         | 20                           | φ25                                   | -                                 | -                                   | 20                               | 8 × 3.3                                | -                | -         | 1.06                          |
| S3S 32A - 3022F          | 32                                | φ 96                                    | φ102                                   | A1         | 30                           | φ22                                   | -                                 | -                                   | 30                               | -                                      | -                | -         | 1.62                          |
| S3S 32A = 3030           | 32                                | φ 96                                    | φ102                                   | A1         | 30                           | φ30                                   | -                                 | -                                   | 30                               | 8 × 3.3                                | -                | -         | 1.53                          |
| S3S 32A - 3222F          | 32                                | φ 96                                    | φ102                                   | A1         | 32                           | φ22                                   | -                                 | -                                   | 32                               | -                                      | -                | -         | 1.72                          |
| S3S 32A = 3225           | 32                                | φ 96                                    | φ102                                   | A1         | 32                           | φ25                                   | -                                 | -                                   | 32                               | 8 × 3.3                                | -                | -         | 1.69                          |
| S3S 32A = 3230           | 32                                | φ 96                                    | φ102                                   | A1         | 32                           | φ30                                   | -                                 | -                                   | 32                               | 8 × 3.3                                | -                | -         | 1.63                          |
| S3S 32B - 2018           | 32                                | φ 96                                    | φ102                                   | B1         | 20                           | φ18                                   | φ50                               | 13                                  | 33                               | -                                      | -                | -         | 1.27                          |
| S3S 32B # 2025           | 32                                | φ 96                                    | φ102                                   | B1         | 20                           | φ25                                   | φ50                               | 13                                  | 33                               | 8 × 3.3                                | M6               | 6.5       | 1.20                          |
| S3S 32BF - 3015          | 32                                | φ 96                                    | φ102                                   | B1         | 30                           | φ15(H8)                               | φ75                               | 20                                  | 50                               | -                                      | -                | -         | 2.33                          |
| S3S 32B - 3025N          | 32                                | φ 96                                    | φ102                                   | B1         | 30                           | φ25                                   | φ65                               | 13                                  | 43                               | -                                      | -                | -         | 1.88                          |
| S3S 32B # 3030           | 32                                | φ 96                                    | φ102                                   | B1         | 30                           | φ30                                   | φ65                               | 13                                  | 43                               | 8 × 3.3                                | M6               | 6.5       | 1.74                          |
| S3S 32B - 3220           | 32                                | φ 96                                    | φ102                                   | B1         | 32                           | φ20                                   | φ60                               | 13                                  | 45                               | -                                      | -                | -         | 2.00                          |
| S3S 32B # 3225           | 32                                | φ 96                                    | φ102                                   | B1         | 32                           | φ25                                   | φ60                               | 13                                  | 45                               | 8 × 3.3                                | M6               | 6.5       | 1.92                          |
| S3S 32B # 3230           | 32                                | φ 96                                    | φ102                                   | B1         | 32                           | φ30                                   | φ60                               | 13                                  | 45                               | 8 × 3.3                                | M6               | 6.5       | 1.85                          |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (W) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |        |        |        |        |
|----------------|----------------|---|-------|-------|--------|--------|--------|--------|
|                |                | 10  | 100   | 200   | 400    | 800    | 1,200  | 1,500  |
| 25             | 22             | 0.21  | 2.12  | 4.25  | 7.83   | 13.01  | 18.40  | 22.29  |
| 25             | 30             | 0.290                                       | 2.910 | 5.820 | 10.710 | 17.800 | 25.180 | 30.510 |
| 25             | 35             | 0.34  | 3.38  | 6.76  | 12.46  | 20.69  | 29.28  | 35.47  |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (W) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |      |       |       |       |       |
|----------------|----------------|---|------|------|-------|-------|-------|-------|
|                |                | 10  | 100  | 200  | 400   | 800   | 1,200 | 1,500 |
| 28             | 22             | 0.25  | 2.49 | 4.98 | 8.93  | 15.01 | 21.18 | 25.68 |
| 28             | 30             | 0.34  | 3.39 | 6.78 | 12.18 | 20.47 | 28.89 | 35.02 |
| 28             | 35             | 0.40  | 3.96 | 7.92 | 14.21 | 23.88 | 33.70 | 40.85 |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (W) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |        |        |        |        |
|----------------|----------------|---|-------|-------|--------|--------|--------|--------|
|                |                | 10  | 100   | 200   | 400    | 800    | 1,200  | 1,500  |
| 30             | 22             | 0.27  | 2.73  | 5.46  | 9.65   | 16.33  | 23.05  | 27.89  |
| 30             | 30             | 0.370                                       | 3.730 | 7.460 | 13.170 | 22.290 | 31.470 | 38.070 |
| 30             | 35             | 0.43  | 4.35  | 8.69  | 15.35  | 25.97  | 36.68  | 44.38  |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (W) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |      |       |       |       |       |
|----------------|----------------|---|------|------|-------|-------|-------|-------|
|                |                | 10  | 100  | 200  | 400   | 800   | 1,200 | 1,500 |
| 32             | 20             | 0.27  | 2.71 | 5.41 | 9.41  | 16.03 | 22.65 | 27.36 |
| 32             | 30             | 0.41  | 4.06 | 8.12 | 14.11 | 24.05 | 33.98 | 41.04 |
| 32             | 32             | 0.43  | 4.33 | 8.66 | 15.05 | 25.66 | 36.25 | 43.78 |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|---|-------|-------|-------|-------|-------|-------|
| 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| -   | -     | -     | -     | -     | -     | -     |
| 0.016                                       | 0.160 | 0.320 | 0.600 | 1.030 | 1.520 | 1.900 |
| -   | -     | -     | -     | -     | -     | -     |

### T (N · m)

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|---|
| 100   |
| 237.78                                      |
| 323.73                                      |
| 378.16                                      |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|---|-------|-------|-------|-------|-------|-------|
| 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| -   | -     | -     | -     | -     | -     | -     |
| 0.023                                       | 0.230 | 0.470 | 0.840 | 1.500 | 2.230 | 2.790 |
| -   | -     | -     | -     | -     | -     | -     |

### T (N · m)

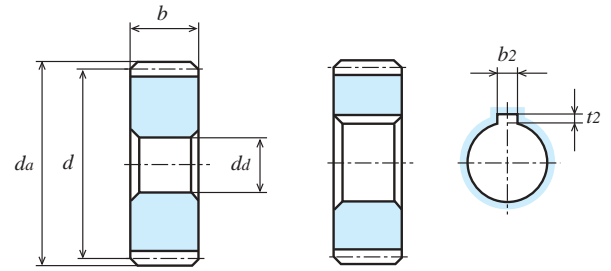
| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|---|
| 100   |
| 258.79                                      |
| 387.71                                      |
| 413.50                                      |

# 直齿轮

## SPUR GEARS

模数  
MODULE **3** (齿数 35 ~ 48)

(普通齿)  
FULL DEPTH TOOTH



A1形状  
TYPE A1

A1形状  
TYPE A1

单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①        |
|-----------------|------|-----|-----|------|------------|
| JIS B 1702-1 8级 | S45C | 20度 | —   | —    | 0.12 ~ 0.3 |

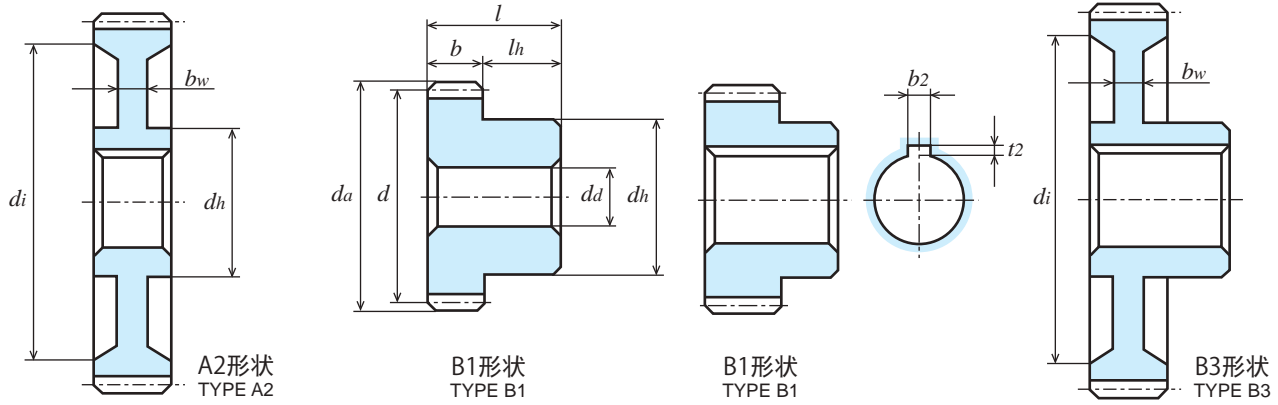
★未做表面处理。[#] 表示带有键槽和键，螺纹孔和固定用螺钉；[=] 表示带有键槽和键。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★KG 的规格齿轮有「标准齿宽」(轻负荷用)和传达扭矩更大的「加宽齿宽」(重负荷用)。请根据用途选择。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 分度圆直径<br>Outside Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外直径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b2 × t2 | 螺纹孔 |     | 轮圈内径<br>Dimension of Rim<br>di | 腹板厚度<br>Thickness of Web<br>bw | 重量<br>Weight<br>W(kg) |
|--------------------------|----------------------------|----------------------------------|---------------------------------|------------|-----------------------|-------------------------------|-----------------------------|------------------------------|---------------------------|--------------------------|-----|-----|--------------------------------|--------------------------------|-----------------------|
|                          |                            |                                  |                                 |            |                       |                               |                             |                              |                           |                          | M   | ls  |                                |                                |                       |
| S3S 35BF - 3015          | 35                         | φ105                             | φ111                            | B1         | 30                    | φ15(H8)                       | φ80                         | 20                           | 50                        | -                        | -   | -   | -                              | -                              | 2.76                  |
| S3S 36A - 2020F          | 36                         | φ108                             | φ114                            | A1         | 20                    | φ20                           | -                           | -                            | 20                        | -                        | -   | -   | -                              | -                              | 1.39                  |
| S3S 36A = 2025           | 36                         | φ108                             | φ114                            | A1         | 20                    | φ25                           | -                           | -                            | 20                        | 8 × 3.3                  | -   | -   | -                              | -                              | 1.36                  |
| S3S 36A = 3030           | 36                         | φ108                             | φ114                            | A1         | 30                    | φ30                           | -                           | -                            | 30                        | 8 × 3.3                  | -   | -   | -                              | -                              | 1.99                  |
| S3S 36A - 3222F          | 36                         | φ108                             | φ114                            | A1         | 32                    | φ22                           | -                           | -                            | 32                        | -                        | -   | -   | -                              | -                              | 2.21                  |
| S3S 36A = 3225           | 36                         | φ108                             | φ114                            | A1         | 32                    | φ25                           | -                           | -                            | 32                        | 8 × 3.3                  | -   | -   | -                              | -                              | 2.17                  |
| S3S 36A = 3230           | 36                         | φ108                             | φ114                            | A1         | 32                    | φ30                           | -                           | -                            | 32                        | 8 × 3.3                  | -   | -   | -                              | -                              | 2.12                  |
| S3S 36B - 2020           | 36                         | φ108                             | φ114                            | B1         | 20                    | φ20                           | φ50                         | 13                           | 33                        | -                        | -   | -   | -                              | -                              | 1.56                  |
| S3S 36B # 2025           | 36                         | φ108                             | φ114                            | B1         | 20                    | φ25                           | φ50                         | 13                           | 33                        | 8 × 3.3                  | M6  | 6.5 | -                              | -                              | 1.50                  |
| S3S 36BF - 3015          | 36                         | φ108                             | φ114                            | B1         | 30                    | φ15(H8)                       | φ80                         | 20                           | 50                        | -                        | -   | -   | -                              | -                              | 2.88                  |
| S3S 36B - 3025N          | 36                         | φ108                             | φ114                            | B1         | 30                    | φ25                           | φ70                         | 13                           | 43                        | -                        | -   | -   | -                              | -                              | 2.39                  |
| S3S 36B # 3035           | 36                         | φ108                             | φ114                            | B1         | 30                    | φ35                           | φ70                         | 13                           | 43                        | 10 × 3.3                 | M8  | 6.5 | -                              | -                              | 2.21                  |
| S3S 36B - 3222           | 36                         | φ108                             | φ114                            | B1         | 32                    | φ22                           | φ60                         | 13                           | 45                        | -                        | -   | -   | -                              | -                              | 2.46                  |
| S3S 36B # 3225           | 36                         | φ108                             | φ114                            | B1         | 32                    | φ25                           | φ60                         | 13                           | 45                        | 8 × 3.3                  | M6  | 6.5 | -                              | -                              | 2.41                  |
| S3S 36B # 3230           | 36                         | φ108                             | φ114                            | B1         | 32                    | φ30                           | φ60                         | 13                           | 45                        | 8 × 3.3                  | M6  | 6.5 | -                              | -                              | 2.33                  |
| S3S 40A - 2020F          | 40                         | φ120                             | φ126                            | A1         | 20                    | φ20                           | -                           | -                            | 20                        | -                        | -   | -   | -                              | -                              | 1.73                  |
| S3S 40A = 2025           | 40                         | φ120                             | φ126                            | A1         | 20                    | φ25                           | -                           | -                            | 20                        | 8 × 3.3                  | -   | -   | -                              | -                              | 1.69                  |
| S3S 40A = 3030           | 40                         | φ120                             | φ126                            | A1         | 30                    | φ30                           | -                           | -                            | 30                        | 8 × 3.3                  | -   | -   | -                              | -                              | 2.49                  |
| S3S 40A - 3222F          | 40                         | φ120                             | φ126                            | A1         | 32                    | φ22                           | -                           | -                            | 32                        | -                        | -   | -   | -                              | -                              | 2.75                  |
| S3S 40A = 3225           | 40                         | φ120                             | φ126                            | A1         | 32                    | φ25                           | -                           | -                            | 32                        | 8 × 3.3                  | -   | -   | -                              | -                              | 2.71                  |
| S3S 40A = 3230           | 40                         | φ120                             | φ126                            | A1         | 32                    | φ30                           | -                           | -                            | 32                        | 8 × 3.3                  | -   | -   | -                              | -                              | 2.66                  |
| S3S 40B - 2020           | 40                         | φ120                             | φ126                            | B1         | 20                    | φ20                           | φ50                         | 13                           | 33                        | -                        | -   | -   | -                              | -                              | 1.90                  |
| S3S 40B # 2025           | 40                         | φ120                             | φ126                            | B1         | 20                    | φ25                           | φ50                         | 13                           | 33                        | 8 × 3.3                  | M6  | 6.5 | -                              | -                              | 1.84                  |
| S3S 40BF - 3015          | 40                         | φ120                             | φ126                            | B1         | 30                    | φ15(H8)                       | φ85                         | 20                           | 50                        | -                        | -   | -   | -                              | -                              | 3.47                  |
| S3S 40B - 3025N          | 40                         | φ120                             | φ126                            | B1         | 30                    | φ25                           | φ70                         | 13                           | 43                        | -                        | -   | -   | -                              | -                              | 2.89                  |
| S3S 40B # 3035           | 40                         | φ120                             | φ126                            | B1         | 30                    | φ35                           | φ70                         | 13                           | 43                        | 10 × 3.3                 | M8  | 6.5 | -                              | -                              | 2.72                  |
| S3S 40B - 3222           | 40                         | φ120                             | φ126                            | B1         | 32                    | φ22                           | φ60                         | 13                           | 45                        | -                        | -   | -   | -                              | -                              | 3.00                  |
| S3S 40B # 3225           | 40                         | φ120                             | φ126                            | B1         | 32                    | φ25                           | φ60                         | 13                           | 45                        | 8 × 3.3                  | M6  | 6.5 | -                              | -                              | 2.95                  |
| S3S 40B # 3230           | 40                         | φ120                             | φ126                            | B1         | 32                    | φ30                           | φ60                         | 13                           | 45                        | 8 × 3.3                  | M6  | 6.5 | -                              | -                              | 2.87                  |
| S3S 45B - 2020           | 45                         | φ135                             | φ141                            | B1         | 20                    | φ20                           | φ70                         | 13                           | 33                        | -                        | -   | -   | -                              | -                              | 2.56                  |
| S3S 45BF - 3015          | 45                         | φ135                             | φ141                            | B1         | 30                    | φ15(H8)                       | φ90                         | 20                           | 50                        | -                        | -   | -   | -                              | -                              | 4.31                  |
| S3S 45B - 3222F          | 45                         | φ135                             | φ141                            | B1         | 32                    | φ22                           | φ70                         | 13                           | 45                        | -                        | -   | -   | -                              | -                              | 3.85                  |
| S3S 48A - 2020F          | 48                         | φ144                             | φ150                            | A1         | 20                    | φ20                           | -                           | -                            | 20                        | -                        | -   | -   | -                              | -                              | 2.51                  |
| S3S 48A = 2025           | 48                         | φ144                             | φ150                            | A2         | 20                    | φ25                           | φ50                         | -                            | 20                        | 8 × 3.3                  | -   | -   | φ116                           | 10                             | 1.84                  |
| S3S 48A = 3030           | 48                         | φ144                             | φ150                            | A2         | 30                    | φ30                           | φ60                         | -                            | 30                        | 8 × 3.3                  | -   | -   | φ116                           | 16                             | 2.89                  |
| S3S 48A - 3222F          | 48                         | φ144                             | φ150                            | A1         | 32                    | φ22                           | -                           | -                            | 32                        | -                        | -   | -   | -                              | -                              | 4.00                  |
| S3S 48A = 3230           | 48                         | φ144                             | φ150                            | A2         | 32                    | φ30                           | φ60                         | -                            | 32                        | 8 × 3.3                  | -   | -   | φ116                           | 16                             | 3.04                  |



| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 分度圆直径<br>Outside Diameter<br><i>da</i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>da(H7)</i> | 轮毂外径<br>Hub Diameter<br><i>dh</i> | 轮毂长度<br>Hub Projection<br><i>lh</i> | 全长<br>Overall Length<br><i>l</i> | 键槽<br>Key Way<br><i>b<sub>2</sub> × t<sub>2</sub></i> | 螺孔       |                      | 轮圈内径<br>Dimension of Rim<br><i>di</i> | 腹板厚度<br>Thickness of Web<br><i>b<sub>w</sub></i> | 重量<br>Weight<br>W(kg) |
|--------------------------|-----------------------------------|---|--|------------|------------------------------|--------------------------------------|-----------------------------------|-------------------------------------|----------------------------------|---|----------|----------------------|---------------------------------------|--|-----------------------|
|                          |                                   |   |  |            |                              |                                      |                                   |                                     |                                  |   | <i>M</i> | <i>l<sub>s</sub></i> |                                       |  |                       |
| S3S 48B - 2020           | 48                                | φ144                                    | φ150                                   | B1         | 20                           | φ20                                  | φ 50                              | 13                                  | 33                               | -   | -        | -                    | -                                     | -  | 2.68                  |
| S3S 48B # 2025           | 48                                | φ144                                    | φ150                                   | B3         | 20                           | φ25                                  | φ 50                              | 13                                  | 33                               | 8 × 3.3   | M6       | 6.5                  | φ116                                  | 10   | 1.99                  |
| S3S 48BF - 3015          | 48                                | φ144                                    | φ150                                   | B1         | 30                           | φ15(H8)                              | φ100                              | 20                                  | 50                               | -   | -        | -                    | -                                     | -  | 5.01                  |
| S3S 48B - 3025N          | 48                                | φ144                                    | φ150                                   | B1         | 30                           | φ25                                  | φ 80                              | 13                                  | 43                               | -   | -        | -                    | -                                     | -  | 4.19                  |
| S3S 48B # 3040           | 48                                | φ144                                    | φ150                                   | B3         | 30                           | φ40                                  | φ 80                              | 13                                  | 43                               | 12 × 3.3  | M8       | 6.5                  | φ116                                  | 16   | 3.38                  |
| S3S 48B - 3222           | 48                                | φ144                                    | φ150                                   | B1         | 32                           | φ22                                  | φ 60                              | 13                                  | 45                               | -   | -        | -                    | -                                     | -  | 4.25                  |
| S3S 48B # 3230           | 48                                | φ144                                    | φ150                                   | B3         | 32                           | φ30                                  | φ 60                              | 13                                  | 45                               | 8 × 3.3   | M6       | 6.5                  | φ116                                  | 16   | 3.25                  |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (W) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |      |       |       |       |       |
|----------------|----------------|---|------|------|-------|-------|-------|-------|
|                |                | 10  | 100  | 200  | 400   | 800   | 1,200 | 1,500 |
| 35             | 30             | 0.46  | 4.57 | 9.00 | 15.49 | 26.68 | 37.73 | 45.69 |
| 36             | 20             | 0.32  | 3.16 | 6.20 | 10.64 | 18.39 | 26.00 | 31.63 |
| 36             | 30             | 0.47  | 4.74 | 9.31 | 15.96 | 27.58 | 39.00 | 47.44 |
| 36             | 32             | 0.51  | 5.06 | 9.93 | 17.02 | 29.42 | 41.60 | 50.60 |

### T (N · m)

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|---|
| 100   |
| 436.42                                      |
| 301.77                                      |
| 452.65                                      |
| 483.21                                      |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (W) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |        |        |        |        |        |
|----------------|----------------|---|-------|--------|--------|--------|--------|--------|
|                |                | 10  | 100   | 200    | 400    | 800    | 1,200  | 1,500  |
| 40             | 20             | 0.36  | 3.62  | 6.98   | 11.81  | 20.69  | 29.29  | 36.23  |
| 40             | 30             | 0.540                                       | 5.420 | 10.440 | 17.680 | 30.970 | 43.830 | 54.230 |
| 40             | 32             | 0.58  | 5.80  | 11.16  | 18.90  | 33.11  | 46.86  | 57.97  |
| 45             | 20             | 0.42  | 4.20  | 7.91   | 13.19  | 23.65  | 33.62  | -      |
| 45             | 30             | 0.63  | 6.28  | 11.83  | 19.73  | 35.35  | 50.26  | -      |
| 45             | 32             | 0.67  | 6.72  | 12.66  | 21.11  | 37.83  | 53.79  | -      |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|---|-------|-------|-------|-------|-------|-------|
| 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| -   | -     | -     | -     | -     | -     | -     |
| 0.042                                       | 0.430 | 0.830 | 1.450 | 2.720 | 4.090 | 5.220 |
| -   | -     | -     | -     | -     | -     | -     |
| 0.054                                       | 0.55  | 1.05  | 1.81  | 3.49  | 5.27  | -     |
| -   | -     | -     | -     | -     | -     | -     |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (W) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |       |       |       |       |
|----------------|----------------|---|------|-------|-------|-------|-------|
|                |                | 10  | 100  | 200   | 400   | 800   | 1,200 |
| 48             | 20             | 0.46  | 4.55 | 8.46  | 14.00 | 25.40 | 36.43 |
| 48             | 30             | 0.68  | 6.83 | 12.69 | 21.01 | 38.10 | 54.65 |
| 48             | 32             | 0.73  | 7.29 | 13.54 | 22.41 | 40.64 | 58.29 |

### T (N · m)

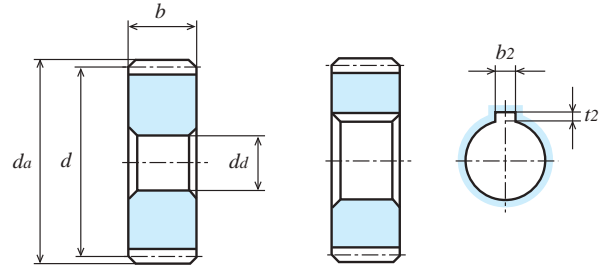
| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|---|
| 100   |
| 434.51                                      |
| 652.24                                      |
| 696.17                                      |

# 直齿轮

## SPUR GEARS

模数 **3** (齿数 50 ~ 80)  
MODULE

(普通齿)  
FULL DEPTH TOOTH



A1形状  
TYPE A1

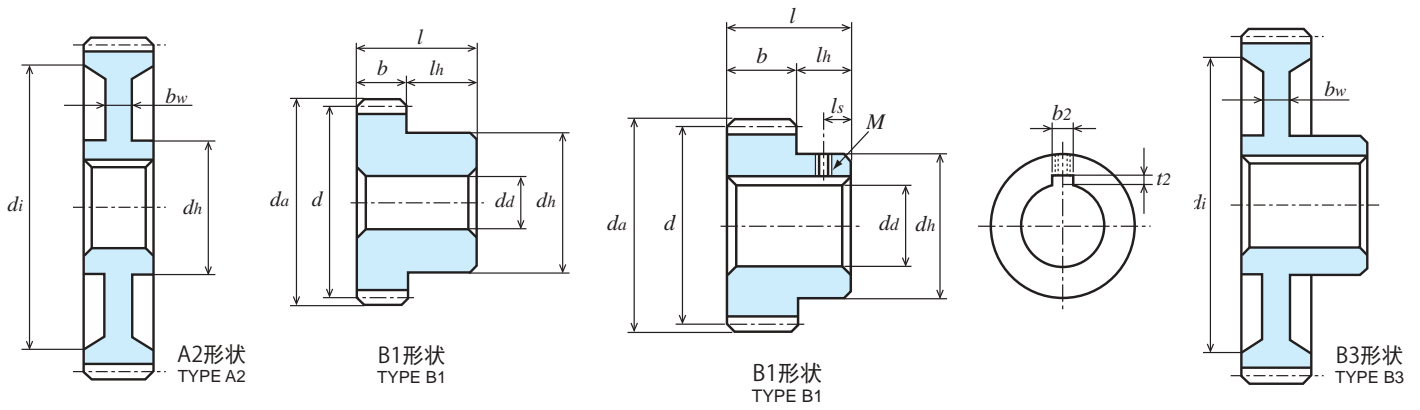
A1形状  
TYPE A1

单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①        |
|-----------------|------|-----|-----|------|------------|
| JIS B 1702-1 8级 | S45C | 20度 | —   | —    | 0.12 ~ 0.3 |

- ★未做表面处理。【#】表示带有键槽和键，螺孔和固定用螺钉；【=】表示带有键槽和键。
- ★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。
- ★KG 的规格齿轮有「标准齿宽」(轻负荷用)和传达扭矩更大的「加宽齿宽」(重负荷用)。请根据用途选择。
- ①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 分度圆直径<br>Outside Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂高度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b2 × t2 | 螺孔 |     | 轮圈内径<br>Dimension of Rim<br>di | 腹板厚度<br>Thickness of Web<br>bw | 重量<br>Weight<br>W(kg) |
|--------------------------|----------------------------|----------------------------------|---------------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|--------------------------|----|-----|--------------------------------|--------------------------------|-----------------------|
|                          |                            |                                  |                                 |            |                       |                               |                            |                              |                           |                          | M  | ls  |                                |                                |                       |
| S3S 50A - 2020F          | 50                         | φ150                             | φ156                            | A1         | 20                    | φ20                           | -                          | -                            | 20                        | -                        | -  | -   | -                              | 2.73                           |                       |
| S3S 50A = 2025           | 50                         | φ150                             | φ156                            | A2         | 20                    | φ25                           | φ 50                       | -                            | 20                        | 8 × 3.3                  | -  | -   | φ122                           | 10                             | 1.97                  |
| S3S 50A = 2030           | 50                         | φ150                             | φ156                            | A2         | 20                    | φ30                           | φ 60                       | -                            | 20                        | 8 × 3.3                  | -  | -   | φ122                           | 10                             | 1.94                  |
| S3S 50A = 3030           | 50                         | φ150                             | φ156                            | A2         | 30                    | φ30                           | φ 60                       | -                            | 30                        | 8 × 3.3                  | -  | -   | φ122                           | 16                             | 3.10                  |
| S3S 50A - 3222F          | 50                         | φ150                             | φ156                            | A1         | 32                    | φ22                           | -                          | -                            | 32                        | -                        | -  | -   | -                              | 4.34                           |                       |
| S3S 50A = 3230           | 50                         | φ150                             | φ156                            | A2         | 32                    | φ30                           | φ 60                       | -                            | 32                        | 8 × 3.3                  | -  | -   | φ122                           | 16                             | 3.25                  |
| S3S 50A = 3235           | 50                         | φ150                             | φ156                            | A2         | 32                    | φ35                           | φ 70                       | -                            | 32                        | 10 × 3.3                 | -  | -   | φ122                           | 16                             | 3.31                  |
| S3S 50B - 2020           | 50                         | φ150                             | φ156                            | B1         | 20                    | φ20                           | φ 60                       | 13                           | 33                        | -                        | -  | -   | -                              | 2.98                           |                       |
| S3S 50B # 2025           | 50                         | φ150                             | φ156                            | B3         | 20                    | φ25                           | φ 60                       | 13                           | 33                        | 8 × 3.3                  | M6 | 6.5 | φ122                           | 10                             | 2.27                  |
| S3S 50B # 2030           | 50                         | φ150                             | φ156                            | B3         | 20                    | φ30                           | φ 60                       | 13                           | 33                        | 8 × 3.3                  | M6 | 6.5 | φ122                           | 10                             | 2.22                  |
| S3S 50BF - 3015          | 50                         | φ150                             | φ156                            | B1         | 30                    | φ15(H8)                       | φ105                       | 20                           | 50                        | -                        | -  | -   | -                              | 5.43                           |                       |
| S3S 50B - 3025N          | 50                         | φ150                             | φ156                            | B1         | 30                    | φ25                           | φ 80                       | 13                           | 43                        | -                        | -  | -   | -                              | 4.51                           |                       |
| S3S 50B # 3040           | 50                         | φ150                             | φ156                            | B3         | 30                    | φ40                           | φ 80                       | 13                           | 43                        | 12 × 3.3                 | M8 | 6.5 | φ122                           | 16                             | 3.58                  |
| S3S 50B - 3222           | 50                         | φ150                             | φ156                            | B1         | 32                    | φ22                           | φ 70                       | 13                           | 45                        | -                        | -  | -   | -                              | 4.70                           |                       |
| S3S 50B # 3230           | 50                         | φ150                             | φ156                            | B3         | 32                    | φ30                           | φ 70                       | 13                           | 45                        | 8 × 3.3                  | M6 | 6.5 | φ122                           | 16                             | 3.69                  |
| S3S 50B # 3235           | 50                         | φ150                             | φ156                            | B3         | 32                    | φ35                           | φ 70                       | 13                           | 45                        | 10 × 3.3                 | M8 | 6.5 | φ122                           | 16                             | 3.60                  |
| S3S 55BF - 3015          | 55                         | φ165                             | φ171                            | B1         | 30                    | φ15(H8)                       | φ120                       | 20                           | 50                        | -                        | -  | -   | -                              | 6.75                           |                       |
| S3S 56A - 2020F          | 56                         | φ168                             | φ174                            | A1         | 20                    | φ20                           | -                          | -                            | 20                        | -                        | -  | -   | -                              | 3.43                           |                       |
| S3S 56A = 2025           | 56                         | φ168                             | φ174                            | A2         | 20                    | φ25                           | φ 50                       | -                            | 20                        | 8 × 3.3                  | -  | -   | φ140                           | 10                             | 2.39                  |
| S3S 56A - 3222F          | 56                         | φ168                             | φ174                            | A1         | 32                    | φ22                           | -                          | -                            | 32                        | -                        | -  | -   | -                              | 5.47                           |                       |
| S3S 56A = 3230           | 56                         | φ168                             | φ174                            | A2         | 32                    | φ30                           | φ 60                       | -                            | 32                        | 8 × 3.3                  | -  | -   | φ140                           | 16                             | 3.93                  |
| S3S 56B - 2020           | 56                         | φ168                             | φ174                            | B1         | 20                    | φ20                           | φ 60                       | 13                           | 33                        | -                        | -  | -   | -                              | 3.69                           |                       |
| S3S 56B # 2025           | 56                         | φ168                             | φ174                            | B3         | 20                    | φ25                           | φ 60                       | 13                           | 33                        | 8 × 3.3                  | M6 | 6.5 | φ140                           | 10                             | 2.70                  |
| S3S 56BF - 3015          | 56                         | φ168                             | φ174                            | B1         | 30                    | φ15(H8)                       | φ120                       | 20                           | 50                        | -                        | -  | -   | -                              | 6.94                           |                       |
| S3S 56B - 3222           | 56                         | φ168                             | φ174                            | B1         | 32                    | φ22                           | φ 70                       | 13                           | 45                        | -                        | -  | -   | -                              | 5.83                           |                       |
| S3S 56B # 3230           | 56                         | φ168                             | φ174                            | B3         | 32                    | φ30                           | φ 70                       | 13                           | 45                        | 8 × 3.3                  | M6 | 6.5 | φ140                           | 16                             | 4.38                  |
| S3S 56B # 3235           | 56                         | φ168                             | φ174                            | B3         | 32                    | φ35                           | φ 70                       | 13                           | 45                        | 10 × 3.3                 | M8 | 6.5 | φ140                           | 16                             | 4.28                  |
| S3S 60A - 2020F          | 60                         | φ180                             | φ186                            | A1         | 20                    | φ20                           | -                          | -                            | 20                        | -                        | -  | -   | -                              | 3.95                           |                       |
| S3S 60A = 2030           | 60                         | φ180                             | φ186                            | A2         | 20                    | φ30                           | φ 60                       | -                            | 20                        | 8 × 3.3                  | -  | -   | φ152                           | 10                             | 2.73                  |
| S3S 60A = 3030           | 60                         | φ180                             | φ186                            | A2         | 30                    | φ30                           | φ 60                       | -                            | 30                        | 8 × 3.3                  | -  | -   | φ152                           | 16                             | 4.24                  |
| S3S 60A - 3222F          | 60                         | φ180                             | φ186                            | A1         | 32                    | φ22                           | -                          | -                            | 32                        | -                        | -  | -   | -                              | 6.30                           |                       |
| S3S 60A = 3230           | 60                         | φ180                             | φ186                            | A2         | 32                    | φ30                           | φ 60                       | -                            | 32                        | 8 × 3.3                  | -  | -   | φ152                           | 16                             | 4.42                  |
| S3S 60A = 3235           | 60                         | φ180                             | φ186                            | A2         | 32                    | φ35                           | φ 70                       | -                            | 32                        | 10 × 3.3                 | -  | -   | φ152                           | 16                             | 4.48                  |
| S3S 60B - 2022           | 60                         | φ180                             | φ186                            | B1         | 20                    | φ22                           | φ 60                       | 13                           | 33                        | -                        | -  | -   | -                              | 4.19                           |                       |
| S3S 60B # 2030           | 60                         | φ180                             | φ186                            | B3         | 20                    | φ30                           | φ 60                       | 13                           | 33                        | 8 × 3.3                  | M6 | 6.5 | φ152                           | 10                             | 2.94                  |
| S3S 60BF - 3015          | 60                         | φ180                             | φ186                            | B1         | 30                    | φ15(H8)                       | φ130                       | 20                           | 50                        | -                        | -  | -   | -                              | 7.98                           |                       |
| S3S 60B - 3025N          | 60                         | φ180                             | φ186                            | B1         | 30                    | φ25                           | φ 80                       | 13                           | 43                        | -                        | -  | -   | -                              | 6.34                           |                       |
| S3S 60B # 3040           | 60                         | φ180                             | φ186                            | B3         | 30                    | φ40                           | φ 80                       | 13                           | 43                        | 12 × 3.3                 | M8 | 6.5 | φ152                           | 16                             | 4.73                  |
| S3S 60B - 3225           | 60                         | φ180                             | φ186                            | B1         | 32                    | φ25                           | φ 70                       | 13                           | 45                        | -                        | -  | -   | -                              | 6.62                           |                       |
| S3S 60B # 3230           | 60                         | φ180                             | φ186                            | B3         | 32                    | φ30                           | φ 70                       | 13                           | 45                        | 8 × 3.3                  | M6 | 6.5 | φ152                           | 16                             | 4.87                  |
| S3S 60B # 3235           | 60                         | φ180                             | φ186                            | B3         | 32                    | φ35                           | φ 70                       | 13                           | 45                        | 10 × 3.3                 | M8 | 6.5 | φ152                           | 16                             | 4.77                  |
| S3S 64A - 2022F          | 64                         | φ192                             | φ198                            | A1         | 20                    | φ22                           | -                          | -                            | 20                        | -                        | -  | -   | -                              | 4.49                           |                       |
| S3S 64A = 2030           | 64                         | φ192                             | φ198                            | A2         | 20                    | φ30                           | φ 60                       | -                            | 20                        | 8 × 3.3                  | -  | -   | φ164                           | 10                             | 3.05                  |
| S3S 64A - 3222F          | 64                         | φ192                             | φ198                            | A1         | 32                    | φ22                           | -                          | -                            | 32                        | -                        | -  | -   | -                              | 7.18                           |                       |
| S3S 64A = 3230           | 64                         | φ192                             | φ198                            | A2         | 32                    | φ30                           | φ 60                       | -                            | 32                        | 8 × 3.3                  | -  | -   | φ164                           | 16                             | 4.94                  |
| S3S 64A = 3235           | 64                         | φ192                             | φ198                            | A2         | 32                    | φ35                           | φ 70                       | -                            | 32                        | 10 × 3.3                 | -  | -   | φ164                           | 16                             | 5.00                  |



| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>$z$ | 分度圆直径<br>Reference Diameter<br>$d$ | 分度圆直径<br>Outside Diameter<br>$d_a$ | 形状<br>Type | 齿宽<br>Face Width<br>$b$ | 孔径<br>Bore Diameter<br>$d_a(H7)$ | 轮毂直径<br>Hub Diameter<br>$d_h$ | 轮毂长度<br>Hub Projection<br>$l_h$ | 全长<br>Overall Length<br>$l$ | 键槽<br>Key Way<br>$b_2 \times t_2$ | 螺纹孔<br>Set Screw<br>$M$ $l_s$ |       | 轮圈内径<br>Dimension of Rim<br>$d_i$ | 腹板厚度<br>Thickness of Web<br>$b_w$ | 重量<br>Weight<br>W(kg) |
|--------------------------|------------------------------|------------------------------------|------------------------------------|------------|-------------------------|----------------------------------|-------------------------------|---------------------------------|-----------------------------|-----------------------------------|-------------------------------|-------|-----------------------------------|-----------------------------------|-----------------------|
|                          |                              |                                    |                                    |            |                         |                                  |                               |                                 |                             |                                   | $M$                           | $l_s$ |                                   |                                   |                       |
| S3S 64B - 2022           | 64                           | $\phi 192$                         | $\phi 198$                         | B1         | 20                      | $\phi 22$                        | $\phi 60$                     | 13                              | 33                          | -                                 | -                             | -     | -                                 | -                                 | 4.74                  |
| S3S 64B # 2030           | 64                           | $\phi 192$                         | $\phi 198$                         | B3         | 20                      | $\phi 30$                        | $\phi 60$                     | 13                              | 33                          | 8 × 3.3                           | M6                            | 6.5   | $\phi 164$                        | 10                                | 3.27                  |
| S3S 64BF - 3020          | 64                           | $\phi 192$                         | $\phi 198$                         | B1         | 30                      | $\phi 20$                        | $\phi 130$                    | 20                              | 50                          | -                                 | -                             | -     | -                                 | -                                 | 8.79                  |
| S3S 64B - 3225           | 64                           | $\phi 192$                         | $\phi 198$                         | B1         | 32                      | $\phi 25$                        | $\phi 70$                     | 13                              | 45                          | -                                 | -                             | -     | -                                 | -                                 | 7.50                  |
| S3S 64B # 3230           | 64                           | $\phi 192$                         | $\phi 198$                         | B3         | 32                      | $\phi 30$                        | $\phi 70$                     | 13                              | 45                          | 8 × 3.3                           | M6                            | 6.5   | $\phi 164$                        | 16                                | 5.38                  |
| S3S 64B # 3235           | 64                           | $\phi 192$                         | $\phi 198$                         | B3         | 32                      | $\phi 35$                        | $\phi 70$                     | 13                              | 45                          | 10 × 3.3                          | M8                            | 6.5   | $\phi 164$                        | 16                                | 5.29                  |
| S3S 70BF - 3020          | 70                           | $\phi 210$                         | $\phi 216$                         | B1         | 30                      | $\phi 20$                        | $\phi 150$                    | 20                              | 50                          | -                                 | -                             | -     | -                                 | -                                 | 10.78                 |
| S3S 72BF - 3020          | 72                           | $\phi 216$                         | $\phi 222$                         | B1         | 30                      | $\phi 20$                        | $\phi 150$                    | 20                              | 50                          | -                                 | -                             | -     | -                                 | -                                 | 11.30                 |
| S3S 75BF - 3020          | 75                           | $\phi 225$                         | $\phi 231$                         | B1         | 30                      | $\phi 20$                        | $\phi 160$                    | 20                              | 50                          | -                                 | -                             | -     | -                                 | -                                 | 12.03                 |
| S3S 80BF - 3020          | 80                           | $\phi 240$                         | $\phi 246$                         | B1         | 30                      | $\phi 20$                        | $\phi 170$                    | 20                              | 50                          | -                                 | -                             | -     | -                                 | -                                 | 14.06                 |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (W) Bending Strength

| 齿数<br>$z$ | 齿宽<br>$b$ | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |        |        |        |        |       |
|-----------|-----------|---|-------|--------|--------|--------|--------|-------|
|           |           | 10  | 100   | 200    | 400    | 800    | 1,200  | 1,500 |
| 50        | 20        | 0.48  | 4.79  | 8.82   | 14.66  | 26.56  | 38.31  | -     |
| 50        | 30        | 0.720                                       | 7.150 | 13.180 | 21.890 | 39.670 | 57.230 | -     |
| 50        | 32        | 0.77  | 7.66  | 14.12  | 23.45  | 42.49  | 61.30  | -     |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|---|-------|-------|-------|-------|-------|-------|
| 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| -   | -     | -     | -     | -     | -     | -     |
| 0.067                                       | 0.680 | 1.280 | 2.220 | 4.360 | 6.680 | -     |
| -   | -     | -     | -     | -     | -     | -     |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (W) Bending Strength

| 齿数<br>$z$ | 齿宽<br>$b$ | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |       |       |       |       |       |
|-----------|-----------|---|------|-------|-------|-------|-------|-------|
|           |           | 10  | 100  | 200   | 400   | 800   | 1,200 | 1,500 |
| 55        | 30        | 0.80  | 8.03 | 14.48 | 24.29 | 43.90 | 64.25 | -     |
| 56        | 20        | 0.55  | 5.50 | 9.87  | 16.59 | 29.97 | -     | -     |
| 56        | 30        | 0.82  | 8.21 | 14.74 | 24.76 | 44.73 | -     | -     |
| 56        | 32        | 0.88  | 8.80 | 15.80 | 26.54 | 47.95 | -     | -     |

### T (N · m)

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|---|
| 100   |
| 766.84                                      |
| 525.23                                      |
| 784.03                                      |
| 840.37                                      |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (W) Bending Strength

| 齿数<br>$z$ | 齿宽<br>$b$ | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |        |        |        |        |       |       |
|-----------|-----------|---|--------|--------|--------|--------|-------|-------|
|           |           | 10  | 100    | 200    | 400    | 800    | 1,200 | 1,500 |
| 60        | 20        | 0.60  | 5.98   | 10.55  | 17.86  | 32.20  | -     | -     |
| 60        | 30        | 0.890                                       | 8.910  | 15.740 | 26.640 | 48.030 | -     | -     |
| 60        | 32        | 0.96  | 9.56   | 16.88  | 28.57  | 51.52  | -     | -     |
| 64        | 20        | 0.65  | 6.45   | 11.21  | 19.11  | 34.42  | -     | -     |
| 64        | 30        | 0.96  | 9.62   | 16.71  | 28.49  | 51.33  | -     | -     |
| 64        | 32        | 1.03  | 10.32  | 17.93  | 30.57  | 55.07  | -     | -     |
| 70        | 30        | 1.070                                       | 10.540 | 18.120 | 31.220 | 57.030 | -     | -     |
| 72        | 30        | 1.10  | 10.84  | 18.58  | 32.12  | 58.93  | -     | -     |
| 75        | 30        | 1.16  | 11.28  | 19.26  | 33.45  | 61.79  | -     | -     |
| 80        | 30        | 1.250                                       | 12.020 | 20.350 | 35.640 | 66.580 | -     | -     |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |        |       |       |
|---|-------|-------|-------|--------|-------|-------|
| 10  | 100   | 200   | 400   | 800    | 1,200 | 1,500 |
| -   | -     | -     | -     | -      | -     | -     |
| 0.099                                       | 1.010 | 1.810 | 3.230 | 6.390  | -     | -     |
| -   | -     | -     | -     | -      | -     | -     |
| 0.113                                       | 1.15  | 2.05  | 3.67  | 7.31   | -     | -     |
| -   | -     | -     | -     | -      | -     | -     |
| 0.137                                       | 1.380 | 2.430 | 4.420 | 8.950  | -     | -     |
| 0.145                                       | 1.45  | 2.56  | 4.69  | 9.53   | -     | -     |
| 0.158                                       | 1.58  | 2.76  | 5.11  | 10.45  | -     | -     |
| 0.181                                       | 1.790 | 3.120 | 5.840 | 12.180 | -     | -     |

# 直齿轮

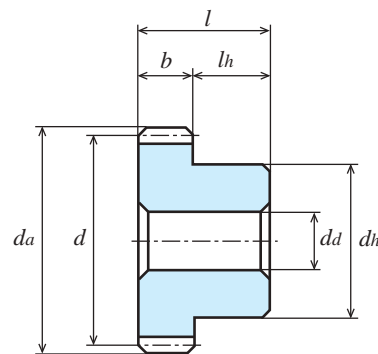
SPUR GEARS

模数  
MODULE

4 (齿数 14 ~ 20) / 5 (齿数 14 ~ 20)

(普通齿)

FULL DEPTH TOOTH



B1形状  
TYPE B1

单位: mm

| 精度              | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①  |
|-----------------|------|-----|-----|------|------|
| JIS B 1702-1 8级 | S45C | 20度 | —   | —    | 请确认② |

★未做表面处理。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①同一种材料，一样的齿轮相互啮合时的理想值。②侧隙：m 4 : 0.24 ~ 0.48； m 5 : 0.3 ~ 0.6

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 分度圆直径<br>Tip Diameter<br><i>d<sub>a</sub></i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>d<sub>d</sub>(H8)</i> | 轮毂外径<br>Hub Diameter<br><i>d<sub>h</sub></i> | 轮毂长度<br>Hub Projection<br><i>l<sub>h</sub></i> | 全长<br>Overall Length<br><i>l</i> | 重量<br>Weight<br><i>W(kg)</i> |
|--------------------------|-----------------------------------|---|---|------------|------------------------------|---|--|--|----------------------------------|------------------------------|
| S4S 14B - 4018N          | 14                                | φ 56                                    | φ 64  | B1         | 40                           | φ 18  | φ 44   | 15   | 55                               | 0.84                         |
| S4S 15B - 4020N          | 15                                | φ 60                                    | φ 68  | B1         | 40                           | φ 20  | φ 48   | 15   | 55                               | 0.97                         |
| S4S 16B - 4020N          | 16                                | φ 64                                    | φ 72  | B1         | 40                           | φ 20  | φ 52   | 15   | 55                               | 1.13                         |
| S4S 18B - 4025N          | 18                                | φ 72                                    | φ 80  | B1         | 40                           | φ 25  | φ 60   | 15   | 55                               | 1.40                         |
| S4S 20B - 4025N          | 20                                | φ 80                                    | φ 88  | B1         | 40                           | φ 25  | φ 68   | 15   | 55                               | 1.80                         |
| S5S 14B - 5020N          | 14                                | φ 70                                    | φ 80  | B1         | 50                           | φ 20  | φ 55   | 15   | 65                               | 1.63                         |
| S5S 15B - 5025N          | 15                                | φ 75                                    | φ 85  | B1         | 50                           | φ 25  | φ 60   | 15   | 65                               | 1.82                         |
| S5S 16B - 5025N          | 16                                | φ 80                                    | φ 90  | B1         | 50                           | φ 25  | φ 65   | 15   | 65                               | 2.11                         |
| S5S 18B - 5025N          | 18                                | φ 90                                    | φ 100   | B1         | 50                           | φ 25  | φ 75   | 15   | 65                               | 2.77                         |
| S5S 20B - 5030N          | 20                                | φ 100                                   | φ 110   | B1         | 50                           | φ 30  | φ 85   | 15   | 65                               | 3.39                         |

## 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (W) Bending Strength

| 齿数<br><i>z</i> | 齿宽<br><i>b</i> | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |       |       |       |       |       | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |
|----------------|----------------|---|------|-------|-------|-------|-------|-------|---|
|                |                | 10  | 100  | 200   | 400   | 800   | 1,200 | 1,500 | 100   |
| 14             | 40             | 0.28  | 2.83 | 5.67  | 11.04 | 18.86 | 25.64 | 31.02 | 270.25                                      |
| 15             | 40             | 0.32  | 3.17 | 6.35  | 12.23 | 20.70 | 28.46 | 34.37 | 302.72                                      |
| 16             | 40             | 0.35  | 3.52 | 7.05  | 13.41 | 22.51 | 31.29 | 37.72 | 336.14                                      |
| 18             | 40             | 0.42  | 4.24 | 8.47  | 15.74 | 26.05 | 36.93 | 44.68 | 404.90                                      |
| 20             | 40             | 0.50  | 4.97 | 9.95  | 18.06 | 30.19 | 42.60 | 51.70 | 474.62                                      |
| 14             | 50             | 0.55  | 5.48 | 10.96 | 20.48 | 33.97 | 47.98 | 58.00 | 523.32                                      |
| 15             | 50             | 0.61  | 6.14 | 12.28 | 22.62 | 37.57 | 53.16 | 64.40 | 586.35                                      |
| 16             | 50             | 0.68  | 6.81 | 13.62 | 24.74 | 41.36 | 58.36 | 70.83 | 650.33                                      |
| 18             | 50             | 0.82  | 8.19 | 16.38 | 28.92 | 48.95 | 69.12 | 83.62 | 782.12                                      |
| 20             | 50             | 0.96  | 9.62 | 19.10 | 33.04 | 56.58 | 79.97 | 96.47 | 918.68                                      |

## T (N · m)

# Memo

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蜗轮蜗杆  
WORMS AND WORM WHEELS

技术数据  
REFERENCE DATA

# S45C 高频淬火直齿轮

## SPUR GEARS

模数  
MODULE

**0.5** (齿数 30~120) / **0.8** (齿数 25~120) / **1** (齿数 14~120)

(普通齿)



单位: mm

| 精度              | 材料   | 压力角 | 热处理    | 齿面硬度     | 侧隙①  |
|-----------------|------|-----|--------|----------|------|
| JIS B 1702-1 9级 | S45C | 20度 | 齿面高频淬火 | HRC47~53 | 请确认② |

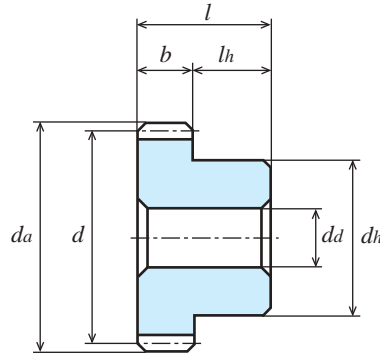
★未做表面处理。热处理后未做齿孔修正。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①同一种材料,一样的齿轮相互啮合时的理想值。②侧隙: m0.5:0.02~0.06; m 0.8:0.02~0.06; m 1:0.04~0.1。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H※) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|----------------------|
| S50S 30B - 0504H         | 30                         | φ 15                             | φ 16                        | B1         | 5                     | φ 4                           | φ12                        | 8                            | 13                        | 12.7                 |
| S50S 40B - 0504H         | 40                         | φ 20                             | φ 21                        | B1         | 5                     | φ 4                           | φ15                        | 8                            | 13                        | 22.1                 |
| S50S 50B - 0504H         | 50                         | φ 25                             | φ 26                        | B1         | 5                     | φ 4                           | φ18                        | 8                            | 13                        | 33.9                 |
| S50S 60B - 0505H         | 60                         | φ 30                             | φ 31                        | B1         | 5                     | φ 5                           | φ22                        | 8                            | 13                        | 49.5                 |
| S50S 70B - 0505H         | 70                         | φ 35                             | φ 36                        | B1         | 5                     | φ 5                           | φ25                        | 8                            | 13                        | 66.5                 |
| S50S 80B - 0506H         | 80                         | φ 40                             | φ 41                        | B1         | 5                     | φ 6                           | φ28                        | 8                            | 13                        | 85.0                 |
| S50S 90B - 0506H         | 90                         | φ 45                             | φ 46                        | B1         | 5                     | φ 6                           | φ32                        | 8                            | 13                        | 109.9                |
| S50S 100B - 0506H        | 100                        | φ 50                             | φ 51                        | B1         | 5                     | φ 6                           | φ35                        | 8                            | 13                        | 134.4                |
| S50S 120B - 0506H        | 120                        | φ 60                             | φ 61                        | B1         | 5                     | φ 6                           | φ42                        | 8                            | 13                        | 194.9                |
| S80S 25B - 0805H         | 25                         | φ 20                             | φ 21.6                      | B1         | 8                     | φ 5                           | φ16                        | 10                           | 18                        | 32.5                 |
| S80S 30B - 0805H         | 30                         | φ 24                             | φ 25.6                      | B1         | 8                     | φ 5                           | φ20                        | 10                           | 18                        | 50.1                 |
| S80S 40B - 0806H         | 40                         | φ 32                             | φ 33.6                      | B1         | 8                     | φ 6                           | φ25                        | 10                           | 18                        | 84.7                 |
| S80S 50B - 0806H         | 50                         | φ 40                             | φ 41.6                      | B1         | 8                     | φ 6                           | φ28                        | 10                           | 18                        | 122.9                |
| S80S 60B - 0806H         | 60                         | φ 48                             | φ 49.6                      | B1         | 8                     | φ 6                           | φ34                        | 10                           | 18                        | 180.5                |
| S80S 70B - 0808H         | 70                         | φ 56                             | φ 57.6                      | B1         | 8                     | φ 8                           | φ40                        | 10                           | 18                        | 245.7                |
| S80S 80B - 0808H         | 80                         | φ 64                             | φ 65.6                      | B1         | 8                     | φ 8                           | φ45                        | 10                           | 18                        | 319.2                |
| S80S 90B - 0808H         | 90                         | φ 72                             | φ 73.6                      | B1         | 8                     | φ 8                           | φ50                        | 10                           | 18                        | 402.1                |
| S80S 100B - 0810H        | 100                        | φ 80                             | φ 81.6                      | B1         | 8                     | φ10                           | φ60                        | 10                           | 18                        | 525.8                |
| S80S 120B - 0810H        | 120                        | φ 96                             | φ 97.6                      | B1         | 8                     | φ10                           | φ70                        | 10                           | 18                        | 744.7                |
| S1S 14B - 1005H          | 14                         | φ 14                             | φ 16                        | B1         | 10                    | φ 5                           | φ11                        | 10                           | 20                        | 16.47                |
| S1S 15B - 1005H          | 15                         | φ 15                             | φ 17                        | B1         | 10                    | φ 5                           | φ12                        | 10                           | 20                        | 19.68                |
| S1S 16B - 1005H          | 16                         | φ 16                             | φ 18                        | B1         | 10                    | φ 5                           | φ13                        | 10                           | 20                        | 23.13                |
| S1S 17B - 1005H          | 17                         | φ 17                             | φ 19                        | B1         | 10                    | φ 5                           | φ14                        | 10                           | 20                        | 26.84                |
| S1S 18B - 1006H          | 18                         | φ 18                             | φ 20                        | B1         | 10                    | φ 6                           | φ15                        | 10                           | 20                        | 29.43                |
| S1S 20B - 1005H          | 20                         | φ 20                             | φ 22                        | B1         | 10                    | φ 5                           | φ16                        | 10                           | 20                        | 37.0                 |
| S1S 24B - 1006H          | 24                         | φ 24                             | φ 26                        | B1         | 10                    | φ 6                           | φ20                        | 10                           | 20                        | 55.77                |
| S1S 25B - 1005H          | 25                         | φ 25                             | φ 27                        | B1         | 10                    | φ 5                           | φ20                        | 10                           | 20                        | 59.7                 |
| S1S 28B - 1008H          | 28                         | φ 28                             | φ 30                        | B1         | 10                    | φ 8                           | φ24                        | 10                           | 20                        | 76.01                |
| S1S 30B - 1006H          | 30                         | φ 30                             | φ 32                        | B1         | 10                    | φ 6                           | φ25                        | 10                           | 20                        | 89.1                 |
| S1S 40B - 1006H          | 40                         | φ 40                             | φ 42                        | B1         | 10                    | φ 6                           | φ30                        | 10                           | 20                        | 149.1                |
| S1S50B - 1008H           | 50                         | φ 50                             | φ 52                        | B1         | 10                    | φ 8                           | φ35                        | 10                           | 20                        | 221.0                |
| S1S 60B - 1008H          | 60                         | φ 60                             | φ 62                        | B1         | 10                    | φ 8                           | φ42                        | 10                           | 20                        | 321.9                |
| S1S 70B - 1010H          | 70                         | φ 70                             | φ 72                        | B1         | 10                    | φ10                           | φ55                        | 10                           | 20                        | 442.9                |
| S1S 80B - 1010H          | 80                         | φ 80                             | φ 82                        | B1         | 10                    | φ10                           | φ60                        | 10                           | 20                        | 603.1                |
| S1S 90B - 1010H          | 90                         | φ 90                             | φ 92                        | B1         | 10                    | φ10                           | φ65                        | 10                           | 20                        | 746.3                |
| S1S 100B - 1010H         | 100                        | φ100                             | φ102                        | B1         | 10                    | φ10                           | φ70                        | 10                           | 20                        | 904.9                |
| S1S 120B - 1010H         | 120                        | φ120                             | φ122                        | B1         | 10                    | φ10                           | φ90                        | 10                           | 20                        | 1373.2               |





B1形状  
TYPE B1

### 容许传达动力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |        |        |          |          |          |          |
|---------------------------|---|--------|--------|----------|----------|----------|----------|
|                           | 10  | 100    | 200    | 400      | 800      | 1,200    | 1,500    |
| S50S30B - 0504H           | 1.83  | 18.30  | 36.59  | 73.18    | 146.37   | 219.55   | 267.95   |
| S50S40B - 0504H           | 2.66  | 26.62  | 53.24  | 106.48   | 212.96   | 308.58   | 370.49   |
| S50S 50B - 0504H          | 3.51  | 35.11  | 70.23  | 140.46   | 279.14   | 390.97   | 465.49   |
| S50S60B - 0505H           | 4.37  | 43.75  | 87.50  | 175.00   | 338.17   | 468.53   | 553.85   |
| S50S70B - 0505H           | 5.25  | 52.48  | 104.97 | 209.94   | 394.79   | 541.28   | 635.58   |
| S50S80B - 0506H           | 6.13  | 61.27  | 122.54 | 245.08   | 448.83   | 609.43   | 718.51   |
| S50S90B - 0506H           | 7.00  | 70.02  | 140.03 | 280.07   | 499.82   | 672.64   | 809.74   |
| S50S 100B - 0506H         | 7.89  | 78.86  | 157.73 | 313.44   | 548.96   | 739.84   | 899.76   |
| S50S 120B - 0506H         | 9.66  | 96.64  | 193.27 | 373.48   | 640.88   | 886.77   | 1073.32  |
| S80S 25B - 0805H          | 5.85  | 58.46  | 116.91 | 233.83   | 467.65   | 677.83   | 813.51   |
| S80S 30B - 0805H          | 7.50  | 74.96  | 149.93 | 299.85   | 599.22   | 841.29   | 1,003.36 |
| S80S 40B - 0806H          | 10.90                                       | 109.02 | 218.04 | 436.08   | 833.49   | 1,149.74 | 1,355.60 |
| S80S 50B - 0806H          | 14.38                                       | 143.82 | 287.65 | 575.29   | 1,053.52 | 1,430.70 | 1,686.59 |
| S80S60B - 0806H           | 17.92                                       | 179.21 | 358.42 | 716.35   | 1,260.04 | 1,688.73 | 2,055.57 |
| S80S70B - 0808H           | 21.50                                       | 214.96 | 429.91 | 840.04   | 1,453.05 | 1,989.95 | 2,412.94 |
| S80S80B - 0808H           | 25.10                                       | 250.96 | 501.93 | 959.31   | 1,633.36 | 2,282.96 | 2,760.51 |
| S80S90B - 0808H           | 28.68                                       | 286.79 | 573.59 | 1,072.86 | 1,801.68 | 2,564.52 | 3,154.83 |
| S80S100B - 0810H          | 32.30                                       | 323.03 | 646.07 | 1,183.16 | 2,005.39 | 2,842.69 | 3,553.37 |
| S80S120B - 0810H          | 39.58                                       | 395.81 | 791.06 | 1,391.49 | 2,400.42 | 3,483.25 | 4,354.06 |
| S1S 14B - 1005H           | 4.71  | 47.12  | 94.24  | 188.49   | 376.98   | 565.46   | 706.83   |
| S1S 15B - 1005H           | 5.34  | 53.41  | 106.81 | 213.62   | 427.24   | 640.86   | 801.07   |
| S1S 16B - 1005H           | 5.92  | 59.16  | 118.33 | 236.66   | 473.31   | 709.97   | 887.46   |
| S1S 17B - 1005H           | 6.42  | 64.19  | 128.38 | 256.76   | 513.52   | 770.29   | 962.86   |
| S1S 18B - 1006H           | 6.93  | 69.32  | 138.64 | 277.29   | 554.57   | 831.86   | 1,039.82 |
| S1S 20B - 1005H           | 8.30  | 82.97  | 165.95 | 331.90   | 663.80   | 962.04   | 1,154.75 |
| S1S 24B - 1006H           | 11.21                                       | 112.05 | 224.09 | 448.18   | 896.36   | 1,187.47 | 1,484.34 |
| S1S 25B - 1005H           | 11.42                                       | 114.18 | 228.36 | 456.71   | 907.56   | 1,271.22 | 1,513.78 |
| S1S 28B - 1008H           | 13.51                                       | 135.08 | 270.17 | 540.33   | 1,080.66 | 1,407.37 | 1,759.22 |
| S1S 30B - 1006H           | 14.64                                       | 146.41 | 292.81 | 585.63   | 1,131.61 | 1,567.73 | 1,853.36 |
| S1S 40B - 1006H           | 21.29                                       | 212.94 | 425.87 | 851.74   | 1,559.77 | 2,118.06 | 2,496.93 |

### 容许传达动力表 齿面强度 (W)

Allowable transfer capability table (W) Surface Durability

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |        |        |          |          |          |          |
|---------------------------|---|--------|--------|----------|----------|----------|----------|
|                           | 10  | 100    | 200    | 400      | 800      | 1,200    | 1,500    |
| S50S30B - 0504H           | 0.40  | 4.39   | 9.07   | 18.66    | 38.52    | 58.75    | 72.53    |
| S50S40B - 0504H           | 0.73  | 8.03   | 16.55  | 34.14    | 70.37    | 103.74   | 125.76   |
| S50S 50B - 0504H          | 1.16  | 12.82  | 26.42  | 54.45    | 111.54   | 159.11   | 191.35   |
| S50S60B - 0505H           | 1.70  | 18.78  | 38.70  | 79.82    | 158.99   | 224.13   | 267.65   |
| S50S70B - 0505H           | 2.34  | 25.93  | 53.46  | 110.22   | 213.68   | 298.20   | 353.60   |
| S50S80B - 0506H           | 3.10  | 34.30  | 70.71  | 145.80   | 275.28   | 380.47   | 452.97   |
| S50S90B - 0506H           | 3.97  | 43.90  | 90.51  | 186.62   | 343.32   | 470.22   | 571.65   |
| S50S 100B - 0506H         | 4.95  | 54.75  | 112.87 | 231.21   | 417.47   | 572.64   | 703.28   |
| S50S 120B - 0506H         | 7.25  | 80.21  | 165.37 | 329.41   | 582.65   | 820.78   | 1003.21  |
| S80S 25B - 0805H          | 1.16  | 12.85  | 26.48  | 54.61    | 112.59   | 166.11   | 201.30   |
| S80S 30B - 0805H          | 1.70  | 18.82  | 38.80  | 80.02    | 164.78   | 235.47   | 283.64   |
| S80S 40B - 0806H          | 3.11  | 34.39  | 70.89  | 146.17   | 287.99   | 404.36   | 481.47   |
| S80S 50B - 0806H          | 4.96  | 54.88  | 113.15 | 233.26   | 440.39   | 608.71   | 724.70   |
| S80S60B - 0806H           | 7.27  | 80.41  | 165.79 | 341.55   | 619.33   | 844.91   | 1,038.64 |
| S80S70B - 0808H           | 10.04                                       | 111.06 | 228.98 | 461.22   | 822.39   | 1,146.49 | 1,403.86 |
| S80S80B - 0808H           | 13.28                                       | 146.92 | 302.91 | 596.81   | 1,047.41 | 1,490.29 | 1,819.73 |
| S80S90B - 0808H           | 17.00                                       | 188.04 | 387.67 | 747.52   | 1,294.06 | 1,874.86 | 2,329.10 |
| S80S100B - 0810H          | 21.20                                       | 234.49 | 483.43 | 912.62   | 1,594.60 | 2,300.94 | 2,904.37 |
| S80S120B - 0810H          | 31.06                                       | 343.56 | 707.81 | 1,283.48 | 2,282.36 | 3,371.30 | 4,255.45 |
| S1S 14B - 1005H           | 0.71  | 7.91   | 16.34  | 33.51    | 67.02    | 100.53   | 125.66   |
| S1S 15B - 1005H           | 0.83  | 9.11   | 18.85  | 38.54    | 79.58    | 119.38   | 149.22   |
| S1S 16B - 1005H           | 0.94  | 10.47  | 20.94  | 41.89    | 90.47    | 135.71   | 169.64   |
| S1S 17B - 1005H           | 1.05  | 11.52  | 23.04  | 50.26    | 100.53   | 150.79   | 188.49   |
| S1S 18B - 1006H           | 1.20  | 13.09  | 27.23  | 54.45    | 108.90   | 163.36   | 204.20   |
| S1S 20B - 1005H           | 1.45  | 16.05  | 33.11  | 68.24    | 140.74   | 207.61   | 251.67   |
| S1S 24B - 1006H           | 2.17  | 24.09  | 48.17  | 96.34    | 192.68   | 287.76   | 361.27   |
| S1S 25B - 1005H           | 2.32  | 25.62  | 52.84  | 108.93   | 223.17   | 318.11   | 382.55   |
| S1S 28B - 1008H           | 3.04  | 32.15  | 64.30  | 128.59   | 257.18   | 385.77   | 482.21   |
| S1S 30B - 1006H           | 3.39  | 37.55  | 77.41  | 159.60   | 317.91   | 448.27   | 535.15   |
| S1S 40B - 1006H           | 6.20  | 68.60  | 141.44 | 291.61   | 550.48   | 760.95   | 905.8    |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|---------------------------|---|-------|-------|-------|-------|-------|-------|
|                           | 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| S1S50B - 1008H            | 0.028                                       | 0.281 | 0.562 | 1.116 | 1.955 | 2.635 | 3.205 |
| S1S 60B - 1008H           | 0.035                                       | 0.350 | 0.700 | 1.353 | 2.321 | 3.212 | 3.888 |
| S1S 70B - 1010H           | 0.042                                       | 0.420 | 0.840 | 1.579 | 2.658 | 3.770 | 4.618 |
| S1S 80B - 1010H           | 0.049                                       | 0.490 | 0.980 | 1.795 | 3.043 | 4.313 | 5.392 |
| S1S 90B - 1010H           | 0.056                                       | 0.560 | 1.120 | 1.999 | 3.427 | 4.929 | 6.162 |
| S1S 100B - 1010H          | 0.063                                       | 0.631 | 1.254 | 2.196 | 3.804 | 5.552 | 6.940 |
| S1S 120B - 1010H          | 0.077                                       | 0.773 | 1.494 | 2.563 | 4.535 | 6.803 | 8.504 |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|---------------------------|---|-------|-------|-------|-------|-------|-------|
|                           | 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| S1S50B - 1008H            | 0.010                                       | 0.109 | 0.226 | 0.462 | 0.835 | 1.145 | 1.407 |
| S1S 60B - 1008H           | 0.015                                       | 0.160 | 0.331 | 0.659 | 1.165 | 1.641 | 2.006 |
| S1S 70B - 1010H           | 0.020                                       | 0.222 | 0.457 | 0.886 | 1.537 | 2.219 | 2.745 |
| S1S 80B - 1010H           | 0.026                                       | 0.293 | 0.604 | 1.141 | 1.993 | 2.876 | 3.631 |
| S1S 90B - 1010H           | 0.034                                       | 0.375 | 0.773 | 1.423 | 2.514 | 3.681 | 4.647 |
| S1S 100B - 1010H          | 0.042                                       | 0.468 | 0.958 | 1.730 | 3.090 | 4.590 | 5.794 |
| S1S 120B - 1010H          | 0.062                                       | 0.685 | 1.365 | 2.415 | 4.405 | 6.726 | 8.490 |

# S45C 高频淬火直齿轮

## SPUR GEARS

模数  
MODULE

1.5 (齿数 20~100) / 2 (齿数 20~100) / 2.5 (齿数 20~80) / 3 (齿数 20~80)

(普通齿)



单位: mm

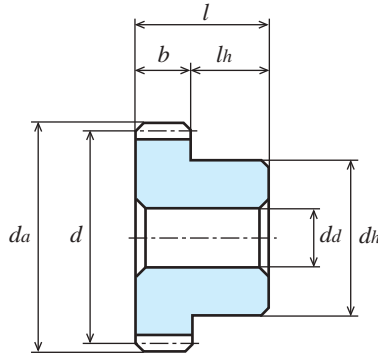
| 精度              | 材料   | 压力角 | 热处理    | 齿面硬度     | 侧隙①  |
|-----------------|------|-----|--------|----------|------|
| JIS B 1702-1 9级 | S45C | 20度 | 齿面高频淬火 | HRC47~53 | 请确认② |

★未做表面处理。热处理后未做齿孔修正。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①同一种材料，一样的齿轮相互啮合时的理想值。②侧隙：m1.5：0.06~0.15；m2：0.08~0.2；m2.5：0.1~0.25；m3：0.12~0.3。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H※) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|----------------------|
| S1.5S 20B-1506H          | 20                         | φ 30                             | φ 33                        | B1         | 15                    | φ 6                           | φ 25                       | 15                           | 30                        | 113.1                |
| S1.5S 25B-1508H          | 25                         | φ 37.5                           | φ 40.5                      | B1         | 15                    | φ 8                           | φ 30                       | 15                           | 30                        | 200.0                |
| S1.5S 30B-1508H          | 30                         | φ 45                             | φ 48                        | B1         | 15                    | φ 8                           | φ 38                       | 15                           | 30                        | 307.3                |
| S1.5S 40B-1508H          | 40                         | φ 60                             | φ 63                        | B1         | 15                    | φ 8                           | φ 50                       | 15                           | 30                        | 550.2                |
| S1.5S 50B-1510H          | 50                         | φ 75                             | φ 78                        | B1         | 15                    | φ 10                          | φ 60                       | 15                           | 30                        | 832.2                |
| S1.5S 60B-1510H          | 60                         | φ 90                             | φ 93                        | B1         | 15                    | φ 10                          | φ 65                       | 15                           | 30                        | 1,118.4              |
| S1.5S 70B-1510H          | 70                         | φ 105                            | φ 108                       | B1         | 15                    | φ 10                          | φ 75                       | 15                           | 30                        | 1.52                 |
| S1.5S 80B-1510H          | 80                         | φ 120                            | φ 123                       | B1         | 15                    | φ 10                          | φ 85                       | 15                           | 30                        | 2.0                  |
| S1.5S 90B-1512H          | 90                         | φ 135                            | φ 138                       | B1         | 15                    | φ 12                          | φ 95                       | 15                           | 30                        | 2.49                 |
| S1.5S 100B-1515H         | 100                        | φ 150                            | φ 153                       | B1         | 15                    | φ 15                          | φ 105                      | 15                           | 30                        | 3.05                 |
| S2S 20B-2008H            | 20                         | φ 40                             | φ 44                        | B1         | 20                    | φ 8                           | φ 34                       | 20                           | 40                        | 321.1                |
| S2S 25B-2008H            | 25                         | φ 50                             | φ 54                        | B1         | 20                    | φ 8                           | φ 40                       | 20                           | 40                        | 486.2                |
| S2S 30B-2010H            | 30                         | φ 60                             | φ 64                        | B1         | 20                    | φ 10                          | φ 50                       | 20                           | 40                        | 723.5                |
| S2S 40B-2010H            | 40                         | φ 80                             | φ 84                        | B1         | 20                    | φ 10                          | φ 60                       | 20                           | 40                        | 1.2(kg)              |
| S2S 50B-2012H            | 50                         | φ 100                            | φ 104                       | B1         | 20                    | φ 12                          | φ 70                       | 20                           | 40                        | 1.8(kg)              |
| S2S 60B-2012H            | 60                         | φ 120                            | φ 124                       | B1         | 20                    | φ 12                          | φ 85                       | 20                           | 40                        | 2.62(kg)             |
| S2S 70B-2015H            | 70                         | φ 140                            | φ 144                       | B1         | 20                    | φ 15                          | φ 100                      | 20                           | 40                        | 3.59(kg)             |
| S2S 80B-2015H            | 80                         | φ 160                            | φ 164                       | B1         | 20                    | φ 15                          | φ 115                      | 20                           | 40                        | 4.72(kg)             |
| S2S 90B-2015H            | 90                         | φ 180                            | φ 184                       | B1         | 20                    | φ 15                          | φ 130                      | 20                           | 40                        | 6.01(kg)             |
| S2S 100B-2015H           | 100                        | φ 200                            | φ 204                       | B1         | 20                    | φ 15                          | φ 140                      | 20                           | 40                        | 7.28(kg)             |
| S2.5S 20B-2510H          | 20                         | φ 50                             | φ 55                        | B1         | 25                    | φ 10                          | φ 42                       | 20                           | 45                        | 569.3                |
| S2.5S 25B-2510H          | 25                         | φ 62.5                           | φ 67.5                      | B1         | 25                    | φ 10                          | φ 52                       | 20                           | 45                        | 900.9                |
| S2.5S 30B-2512H          | 30                         | φ 75                             | φ 80                        | B1         | 25                    | φ 12                          | φ 65                       | 20                           | 45                        | 1.34(kg)             |
| S2.5S 40B-2512H          | 40                         | φ 100                            | φ 105                       | B1         | 25                    | φ 12                          | φ 70                       | 20                           | 45                        | 2.1(kg)              |
| S2.5S 50B-2515H          | 50                         | φ 125                            | φ 130                       | B1         | 25                    | φ 15                          | φ 90                       | 20                           | 45                        | 3.33(kg)             |
| S2.5S 60B-2515H          | 60                         | φ 150                            | φ 155                       | B1         | 25                    | φ 15                          | φ 105                      | 20                           | 45                        | 4.75(kg)             |
| S2.5S 70B-2520H          | 70                         | φ 175                            | φ 180                       | B1         | 25                    | φ 20                          | φ 125                      | 20                           | 45                        | 6.52(kg)             |
| S2.5S 80B-2520H          | 80                         | φ 200                            | φ 205                       | B1         | 25                    | φ 20                          | φ 140                      | 20                           | 45                        | 8.45(kg)             |
| S3S 20B-3012H            | 20                         | φ 60                             | φ 66                        | B1         | 30                    | φ 12                          | φ 52                       | 20                           | 50                        | 0.92(kg)             |
| S3S 25B-3012H            | 25                         | φ 75                             | φ 81                        | B1         | 30                    | φ 12                          | φ 60                       | 20                           | 50                        | 1.43(kg)             |
| S3S 30B-3012H            | 30                         | φ 90                             | φ 96                        | B1         | 30                    | φ 12                          | φ 75                       | 20                           | 50                        | 2.13(kg)             |
| S3S 40B-3015H            | 40                         | φ 120                            | φ 126                       | B1         | 30                    | φ 15                          | φ 85                       | 20                           | 50                        | 3.47(kg)             |
| S3S 50B-3015H            | 50                         | φ 150                            | φ 156                       | B1         | 30                    | φ 15                          | φ 105                      | 20                           | 50                        | 5.43(kg)             |
| S3S 60B-3015H            | 60                         | φ 180                            | φ 186                       | B1         | 30                    | φ 15                          | φ 130                      | 20                           | 50                        | 7.98(kg)             |
| S3S 70B-3020H            | 70                         | φ 210                            | φ 216                       | B1         | 30                    | φ 20                          | φ 150                      | 20                           | 50                        | 10.78(kg)            |
| S3S 80B-3020H            | 80                         | φ 240                            | φ 246                       | B1         | 30                    | φ 20                          | φ 170                      | 20                           | 50                        | 14.06(kg)            |



B1形状  
TYPE B1

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |        |        |        |        |        |        |
|---------------------------|---|--------|--------|--------|--------|--------|--------|
|                           | 10  | 100    | 200    | 400    | 800    | 1,200  | 1,500  |
| S1.5S 20B - 1506H         | 0.028                                       | 0.280  | 0.560  | 1.120  | 2.165  | 2.999  | 3.545  |
| S1.5S 25B - 1508H         | 0.039                                       | 0.385  | 0.771  | 1.541  | 2.860  | 3.903  | 4.568  |
| S1.5S 30B - 1508H         | 0.049                                       | 0.494  | 0.988  | 1.976  | 3.527  | 4.747  | 5.714  |
| S1.5S 40B - 1508H         | 0.072                                       | 0.719  | 1.437  | 2.777  | 4.766  | 6.594  | 7.982  |
| S1.5S 50B - 1510H         | 0.095                                       | 0.948  | 1.896  | 3.518  | 5.929  | 8.424  | 10.429 |
| S1.5S 60B - 1510H         | 0.118                                       | 1.181  | 2.363  | 4.217  | 7.227  | 10.396 | 12.995 |
| S1.5S 70B - 1510H         | 0.142                                       | 1.417  | 2.796  | 4.871  | 8.483  | 12.469 | 15.587 |
| S1.5S 80B - 1510H         | 0.165                                       | 1.65   | 3.20   | 5.49   | 9.71   | 14.56  | 18.20  |
| S1.5S 90B - 1512H         | 0.189                                       | 1.891  | 3.579  | 6.054  | 11.091 | 16.636 | -      |
| S1.5S 100B - 1515H        | 0.213                                       | 2.129  | 3.951  | 6.659  | 12.492 | 18.738 | -      |
| S2S 20B - 2008H           | 0.066                                       | 0.664  | 1.328  | 2.655  | 4.863  | 6.603  | 7.784  |
| S2S 25B - 2008H           | 0.091                                       | 0.913  | 1.827  | 3.630  | 6.359  | 8.569  | 10.420 |
| S2S 30B - 2010H           | 0.117                                       | 1.171  | 2.342  | 4.527  | 7.767  | 10.748 | 13.008 |
| S2S 40B - 2010H           | 0.170                                       | 1.703  | 3.407  | 6.239  | 10.575 | 14.990 | 18.738 |
| S2S 50B - 2012H           | 0.225                                       | 2.247  | 4.466  | 7.822  | 13.550 | 19.776 | 24.720 |
| S2S 60B - 2012H           | 0.280                                       | 2.800  | 5.411  | 9.285  | 16.428 | 24.642 | 30.802 |
| S2S 70B - 2015H           | 0.336                                       | 3.359  | 6.316  | 10.633 | 19.705 | 29.557 | -      |
| S2S 80B - 2015H           | 0.392                                       | 3.921  | 7.181  | 12.171 | 23.005 | -      | -      |
| S2S 90B - 2015H           | 0.448                                       | 4.481  | 7.997  | 13.707 | 26.290 | -      | -      |
| S2S 100B - 2015H          | 0.505                                       | 5.015  | 8.784  | 15.217 | 29.611 | -      | -      |
| S2.5S 20B - 2510H         | 0.130                                       | 1.297  | 2.593  | 5.153  | 9.025  | 12.163 | 14.791 |
| S2.5S 25B - 2510H         | 0.178                                       | 1.784  | 3.568  | 6.848  | 11.693 | 16.282 | 19.684 |
| S2.5S 30B - 2512H         | 0.229                                       | 2.288  | 4.575  | 8.490  | 14.307 | 20.326 | 25.163 |
| S2.5S 40B - 2512H         | 0.333                                       | 3.327  | 6.612  | 11.580 | 20.061 | 29.278 | 36.598 |
| S2.5S 50B - 2515H         | 0.439                                       | 4.389  | 8.423  | 14.383 | 25.750 | 38.625 | 48.281 |
| S2.5S 60B - 2515H         | 0.547                                       | 5.469  | 10.148 | 17.102 | 32.086 | 48.129 | -      |
| S2.5S 70B - 2520H         | 0.656                                       | 6.560  | 11.782 | 20.139 | 38.485 | -      | -      |
| S2.5S 80B - 2520H         | 0.766                                       | 7.610  | 13.328 | 23.090 | 44.931 | -      | -      |
| S3S 20B - 3012H           | 0.224                                       | 2.240  | 4.481  | 8.659  | 14.857 | 20.558 | 24.882 |
| S3S 25B - 3012H           | 0.308                                       | 3.083  | 6.166  | 11.441 | 19.280 | 27.391 | 33.911 |
| S3S 30B - 3012H           | 0.395                                       | 3.953  | 7.906  | 14.109 | 24.182 | 34.786 | 43.482 |
| S3S 40B - 3015H           | 0.575                                       | 5.749  | 11.110 | 19.063 | 33.729 | 50.593 | 63.241 |
| S3S 50B - 3015H           | 0.7585                                      | 7.5845 | 14.074 | 23.717 | 44.496 | 66.74  | -      |
| S3S 60B - 3015H           | 0.9451                                      | 9.4507 | 16.866 | 28.907 | 55.44  | -      | -      |
| S3S 70B - 3020H           | 1.134                                       | 11.184 | 19.485 | 33.932 | 66.503 | -      | -      |
| S3S 80B - 3020H           | 1.323                                       | 12.787 | 21.941 | 38.821 | 77.641 | -      | -      |

### 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |        |        |        |        |        |        |
|---------------------------|---|--------|--------|--------|--------|--------|--------|
|                           | 10  | 100    | 200    | 400    | 800    | 1,200  | 1,500  |
| S1.5S 20B - 1506H         | 0.056                                       | 0.116  | 0.239  | 0.477  | 0.673  | 0.803  | -      |
| S1.5S 25B - 1508H         | 0.008                                       | 0.090  | 0.185  | 0.382  | 0.731  | 1.015  | 1.200  |
| S1.5S 30B - 1508H         | 0.012                                       | 0.132  | 0.272  | 0.560  | 1.030  | 1.411  | 1.715  |
| S1.5S 40B - 1508H         | 0.022                                       | 0.241  | 0.496  | 0.988  | 1.748  | 2.462  | 3.009  |
| S1.5S 50B - 1510H         | 0.035                                       | 0.384  | 0.792  | 1.515  | 2.631  | 3.805  | 4.757  |
| S1.5S 60B - 1510H         | 0.051                                       | 0.563  | 1.160  | 2.134  | 3.771  | 5.522  | 6.970  |
| S1.5S 70B - 1510H         | 0.070                                       | 0.777  | 1.581  | 2.839  | 5.097  | 7.627  | 9.627  |
| S1.5S 80B - 1510H         | 0.093                                       | 1.028  | 2.048  | 3.623  | 6.607  | 10.089 | 12.735 |
| S1.5S 90B - 1512H         | 0.119                                       | 1.316  | 2.568  | 4.477  | 8.456  | 12.912 | -      |
| S1.5S 100B - 1515H        | 0.148                                       | 1.641  | 3.139  | 5.453  | 10.545 | 16.101 | -      |
| S2S 20B - 2008H           | 0.012                                       | 0.137  | 0.283  | 0.583  | 1.101  | 1.522  | 1.812  |
| S2S 25B - 2008H           | 0.020                                       | 0.219  | 0.451  | 0.925  | 1.670  | 2.291  | 2.813  |
| S2S 30B - 2010H           | 0.029                                       | 0.321  | 0.661  | 1.318  | 2.331  | 3.283  | 4.013  |
| S2S 40B - 2010H           | 0.053                                       | 0.586  | 1.209  | 2.282  | 3.986  | 5.752  | 7.261  |
| S2S 50B - 2012H           | 0.085                                       | 0.936  | 1.917  | 3.460  | 6.180  | 9.181  | 11.589 |
| S2S 60B - 2012H           | 0.124                                       | 1.371  | 2.731  | 4.830  | 8.810  | 13.451 | 16.980 |
| S2S 70B - 2015H           | 0.171                                       | 1.893  | 3.670  | 6.370  | 12.168 | 18.579 | -      |
| S2S 80B - 2015H           | 0.226                                       | 2.505  | 4.728  | 8.261  | 16.096 | -      | -      |
| S2S 90B - 2015H           | 0.189                                       | 3.206  | 5.897  | 10.419 | 20.601 | -      | -      |
| S2S 100B - 2015H          | 0.361                                       | 3.972  | 7.171  | 12.807 | 25.689 | -      | -      |
| S2.5S 20B - 2510H         | 0.025                                       | 0.274  | 0.564  | 1.156  | 2.087  | 2.863  | 3.516  |
| S2.5S 25B - 2510H         | 0.039                                       | 0.437  | 0.901  | 1.782  | 3.136  | 4.446  | 5.428  |
| S2.5S 30B - 2512H         | 0.058                                       | 0.640  | 1.320  | 2.524  | 4.385  | 6.342  | 7.928  |
| S2.5S 40B - 2512H         | 0.106                                       | 1.169  | 2.396  | 4.326  | 7.725  | 11.476 | 14.486 |
| S2.5S 50B - 2515H         | 0.169                                       | 1.867  | 3.693  | 6.500  | 11.995 | 18.316 | 23.120 |
| S2.5S 60B - 2515H         | 0.247                                       | 2.735  | 5.231  | 9.088  | 17.575 | 26.836 | -      |
| S2.5S 70B - 2520H         | 0.341                                       | 3.777  | 6.994  | 12.323 | 24.275 | -      | -      |
| S2.5S 80B - 2520H         | 0.452                                       | 4.965  | 8.964  | 16.008 | 32.111 | -      | -      |
| S3S 20B - 3012H           | 0.044                                       | 0.481  | 0.992  | 1.977  | 3.496  | 4.924  | 6.019  |
| S3S 25B - 3012H           | 0.069                                       | 0.768  | 1.584  | 3.029  | 5.262  | 7.610  | 9.514  |
| S3S 30B - 3012H           | 0.102                                       | 1.125  | 2.320  | 4.269  | 7.542  | 11.043 | 13.940 |
| S3S 40B - 3015H           | 0.186                                       | 2.056  | 4.096  | 7.245  | 13.214 | 20.177 | 25.469 |
| S3S 50B - 3015H           | 0.2967                                      | 3.2818 | 6.2774 | 10.905 | 21.09  | 32.203 | -      |
| S3S 60B - 3015H           | 0.4347                                      | 4.8084 | 8.8459 | 15.63  | 30.901 | -      | -      |
| S3S 70B - 3020H           | 0.600                                       | 6.552  | 11.768 | 21.126 | 42.681 | -      | -      |
| S3S 80B - 3020H           | 0.794                                       | 8.488  | 15.014 | 27.385 | 56.459 | -      | -      |

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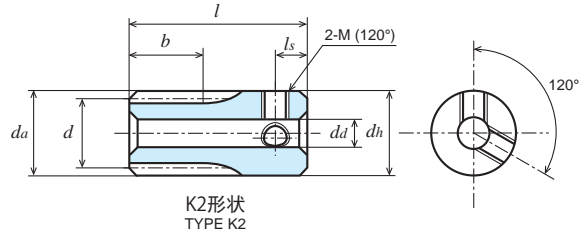
# 不锈钢直齿轮

SPUR GEARS

模数  
MODULE

0.5 (齿数 10 ~ 120)

(普通齿)  
FULL DEPTH TOOTH



K2形状  
TYPE K2

单位: mm

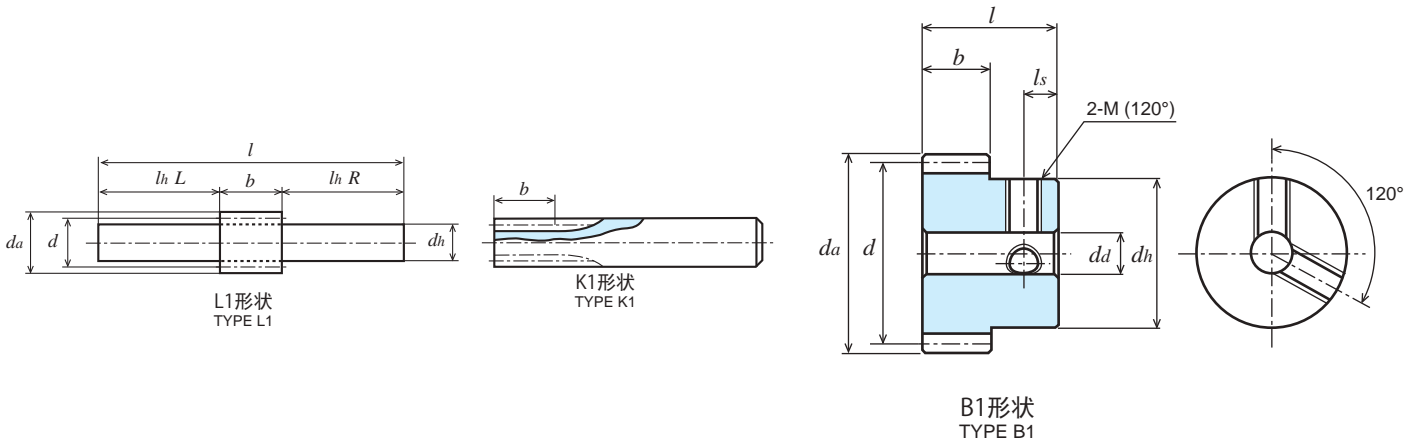
| 精度              | 材料     | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|--------|-----|-----|------|-------------|
| JIS B 1702-1 9级 | SUS304 | 20度 | —   | —    | 0.02 ~ 0.06 |

★未做表面处理。【\*】带有螺纹孔，但无固定用螺钉。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H8) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 螺纹孔<br>Set Screw |    | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|------------------|----|----------------------|
|                          |                            |                                  |                             |            |                       |                               |                            |                              |                           | 2-M(120°)        | ls |                      |
| S50SU 10K — 1006         | 10                         | φ 5                              | φ 6                         | K1         | 10                    | -                             | φ 6                        | 45                           | 55                        | -                | -  | 11.7                 |
| S50SU 12K — 1007         | 12                         | φ 6                              | φ 7                         | K1         | 10                    | -                             | φ 7                        | 45                           | 55                        | -                | -  | 16.0                 |
| S50SU 14K — 1008         | 14                         | φ 7                              | φ 8                         | K1         | 10                    | -                             | φ 8                        | 45                           | 55                        | -                | -  | 21.0                 |
| S50SU 15K — 1008         | 15                         | φ 7.5                            | φ 8.5                       | K1         | 10                    | -                             | φ 8.5                      | 45                           | 55                        | -                | -  | 23.8                 |
| S50SU 16K * 0804         | 16                         | φ 8                              | φ 9                         | K2         | 8                     | φ 4                           | φ 9                        | 10                           | 18                        | 2-M3             | 3  | 6.2                  |
| S50SU 16L — 0805         | 16                         | φ 8                              | φ 9                         | L1         | 8                     | -                             | φ 5 (h9)                   | L22 R50                      | 80                        | -                | -  | 14.4                 |
| S50SU 18K * 0804         | 18                         | φ 9                              | φ 10                        | K2         | 8                     | φ 4                           | φ 10                       | 10                           | 18                        | 2-M3             | 3  | 8.2                  |
| S50SU 18L — 0806         | 18                         | φ 9                              | φ 10                        | L1         | 8                     | -                             | φ 6 (h9)                   | L22 R50                      | 80                        | -                | -  | 20.2                 |
| S50SU 20K * 0804         | 20                         | φ 10                             | φ 11                        | K2         | 8                     | φ 4                           | φ 11                       | 10                           | 18                        | 2-M3             | 3  | 10.4                 |
| S50SU 20L — 0806         | 20                         | φ 10                             | φ 11                        | L1         | 8                     | -                             | φ 6 (h9)                   | L22 R50                      | 80                        | -                | -  | 21.1                 |
| S50SU 24K * 0805         | 24                         | φ 12                             | φ 13                        | K2         | 8                     | φ 5                           | φ 13                       | 10                           | 18                        | 2-M3             | 3  | 14.5                 |
| S50SU 25K * 0805         | 25                         | φ 12.5                           | φ 13.5                      | K2         | 8                     | φ 5                           | φ 13.5                     | 10                           | 18                        | 2-M3             | 3  | 15.9                 |
| S50SU 28K * 0805         | 28                         | φ 14                             | φ 15                        | K2         | 8                     | φ 5                           | φ 15                       | 10                           | 18                        | 2-M3             | 3  | 20.5                 |
| S50SU 30K * 0806         | 30                         | φ 15                             | φ 16                        | K2         | 8                     | φ 6                           | φ 16                       | 10                           | 18                        | 2-M3             | 3  | 22.7                 |
| S50SU 32B * 0506         | 32                         | φ 16                             | φ 17                        | B1         | 5                     | φ 6                           | φ 12                       | 8                            | 13                        | 2-M3             | 4  | 12.0                 |
| S50SU 36B * 0506         | 36                         | φ 18                             | φ 19                        | B1         | 5                     | φ 6                           | φ 12                       | 8                            | 13                        | 2-M3             | 4  | 14.1                 |
| S50SU 40B * 0506         | 40                         | φ 20                             | φ 21                        | B1         | 5                     | φ 6                           | φ 15                       | 8                            | 13                        | 2-M4             | 4  | 20.0                 |
| S50SU 45B * 0506         | 45                         | φ 22.5                           | φ 23.5                      | B1         | 5                     | φ 6                           | φ 15                       | 8                            | 13                        | 2-M4             | 4  | 23.3                 |
| S50SU 48B * 0506         | 48                         | φ 24                             | φ 25                        | B1         | 5                     | φ 6                           | φ 15                       | 8                            | 13                        | 2-M4             | 4  | 25.5                 |
| S50SU 50B * 0506         | 50                         | φ 25                             | φ 26                        | B1         | 5                     | φ 6                           | φ 15                       | 8                            | 13                        | 2-M4             | 4  | 27.0                 |
| S50SU 54B * 0506         | 54                         | φ 27                             | φ 28                        | B1         | 5                     | φ 6                           | φ 15                       | 8                            | 13                        | 2-M4             | 4  | 30.3                 |
| S50SU 56B * 0506         | 56                         | φ 28                             | φ 29                        | B1         | 5                     | φ 6                           | φ 15                       | 8                            | 13                        | 2-M4             | 4  | 32.0                 |
| S50SU 60B * 0508         | 60                         | φ 30                             | φ 31                        | B1         | 5                     | φ 8                           | φ 18                       | 8                            | 13                        | 2-M4             | 4  | 38.2                 |
| S50SU 64B * 0508         | 64                         | φ 32                             | φ 33                        | B1         | 5                     | φ 8                           | φ 18                       | 8                            | 13                        | 2-M4             | 4  | 42.0                 |
| S50SU 70B * 0508         | 70                         | φ 35                             | φ 36                        | B1         | 5                     | φ 8                           | φ 18                       | 8                            | 13                        | 2-M4             | 4  | 48.3                 |
| S50SU 72B * 0508         | 72                         | φ 36                             | φ 37                        | B1         | 5                     | φ 8                           | φ 18                       | 8                            | 13                        | 2-M4             | 4  | 50.5                 |
| S50SU 75B * 0508         | 75                         | φ 37.5                           | φ 38.5                      | B1         | 5                     | φ 8                           | φ 18                       | 8                            | 13                        | 2-M4             | 4  | 53.9                 |
| S50SU 80B * 0510         | 80                         | φ 40                             | φ 41                        | B1         | 5                     | φ 10                          | φ 22                       | 8                            | 13                        | 2-M5             | 4  | 64.3                 |
| S50SU 90B * 0510         | 90                         | φ 45                             | φ 46                        | B1         | 5                     | φ 10                          | φ 22                       | 8                            | 13                        | 2-M5             | 4  | 77.5                 |
| S50SU 100B * 0510        | 100                        | φ 50                             | φ 51                        | B1         | 5                     | φ 10                          | φ 25                       | 8                            | 13                        | 2-M5             | 4  | 98.9                 |
| S50SU 120B * 0510        | 120                        | φ 60                             | φ 61                        | B1         | 5                     | φ 10                          | φ 25                       | 8                            | 13                        | 2-M5             | 4  | 133.2                |



## 容许传达动力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

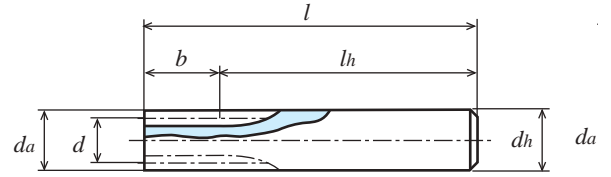
| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |        |        |        |        |
|---------------------------|---|-------|-------|--------|--------|--------|--------|
|                           | 10  | 100   | 200   | 400    | 800    | 1,200  | 1,500  |
| S50SU 10K - 1006          | 0.30  | 3.03  | 6.06  | 12.12  | 24.24  | 36.37  | 45.46  |
| S50SU 12K - 1007          | 0.42  | 4.24  | 8.49  | 16.98  | 33.96  | 50.93  | 63.67  |
| S50SU 14K - 1008          | 0.55  | 5.53  | 11.07 | 22.13  | 44.26  | 66.39  | 82.99  |
| S50SU 15K - 1008          | 0.62  | 6.20  | 12.40 | 24.80  | 49.60  | 74.41  | 93.01  |
| S50SU 16K * 0804          | 0.55  | 5.50  | 11.01 | 22.02  | 44.04  | 66.06  | 82.57  |
| S50SU 16L - 0805          | 0.55  | 5.50  | 11.01 | 22.02  | 44.04  | 66.06  | 82.57  |
| S50SU 18K * 0804          | 0.66  | 6.62  | 13.24 | 26.47  | 52.94  | 79.41  | 99.26  |
| S50SU 18L - 0806          | 0.66  | 6.62  | 13.24 | 26.47  | 52.94  | 79.41  | 99.26  |
| S50SU 20K * 0804          | 0.78  | 7.77  | 15.54 | 31.08  | 62.16  | 93.24  | 116.55 |
| S50SU 20L - 0806          | 0.78  | 7.77  | 15.54 | 31.08  | 62.16  | 93.24  | 116.55 |
| S50SU 24K * 0805          | 1.01  | 10.13 | 20.26 | 40.52  | 81.04  | 121.55 | 151.94 |
| S50SU 25K * 0805          | 1.07  | 10.73 | 21.46 | 42.93  | 85.86  | 128.79 | 160.96 |
| S50SU 28K * 0805          | 1.26  | 12.56 | 25.13 | 50.26  | 100.52 | 150.77 | 185.69 |
| S50SU 30K * 0806          | 1.38  | 13.80 | 27.59 | 55.18  | 110.37 | 165.55 | 201.56 |
| S50SU 32B * 0506          | 0.94  | 9.40  | 18.81 | 37.61  | 75.22  | 112.74 | 135.81 |
| S50SU 36B * 0506          | 1.10  | 10.98 | 21.96 | 43.93  | 87.85  | 129.24 | 155.10 |
| S50SU 40B * 0506          | 1.26  | 12.58 | 25.16 | 50.32  | 100.65 | 145.37 | 173.83 |
| S50SU 45B * 0506          | 1.46  | 14.59 | 29.18 | 58.37  | 116.74 | 164.87 | 196.29 |
| S50SU 48B * 0506          | 1.58  | 15.81 | 31.63 | 63.25  | 126.40 | 176.32 | 209.39 |
| S50SU 50B * 0506          | 1.66  | 16.63 | 33.26 | 66.52  | 132.10 | 183.82 | 217.95 |
| S50SU 54B * 0506          | 1.83  | 18.27 | 36.54 | 73.08  | 143.35 | 198.52 | 234.63 |
| S50SU 56B * 0506          | 1.91  | 19.10 | 38.19 | 76.38  | 148.90 | 205.71 | 242.76 |
| S50SU 60B * 0508          | 2.07  | 20.75 | 41.50 | 83.00  | 159.84 | 219.81 | 258.63 |
| S50SU 64B * 0508          | 2.24  | 22.41 | 44.82 | 89.64  | 170.57 | 233.52 | 273.96 |
| S50SU 70B * 0508          | 2.49  | 24.91 | 49.82 | 99.65  | 186.27 | 253.37 | 296.02 |
| S50SU 72B * 0508          | 2.57  | 25.75 | 51.50 | 102.99 | 191.40 | 259.80 | 303.14 |
| S50SU 75B * 0508          | 2.70  | 27.01 | 54.01 | 108.02 | 199.00 | 269.28 | 313.58 |
| S50SU 80B * 0510          | 2.91  | 29.11 | 58.21 | 116.42 | 211.43 | 284.66 | 334.02 |
| S50SU 90B * 0510          | 3.33  | 33.28 | 66.56 | 133.13 | 235.05 | 313.46 | 376.29 |
| S50SU 100B * 0510         | 3.75  | 37.50 | 75.01 | 148.96 | 257.73 | 344.32 | 417.84 |
| S50SU 120B * 0510         | 4.60  | 45.99 | 91.98 | 177.13 | 299.84 | 412.29 | 497.84 |

# 不锈钢直齿轮

## SPUR GEARS

模数  
MODULE **0.75** (齿数 10 ~ 120)

(普通齿)  
FULL DEPTH TOOTH



K1形状  
TYPE K1

单位: mm

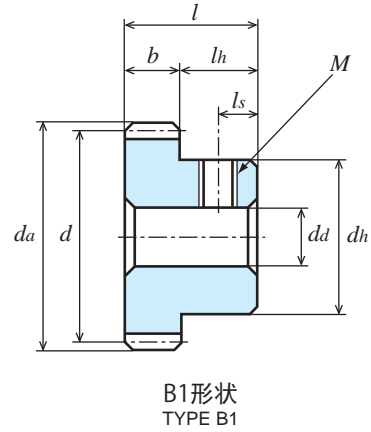
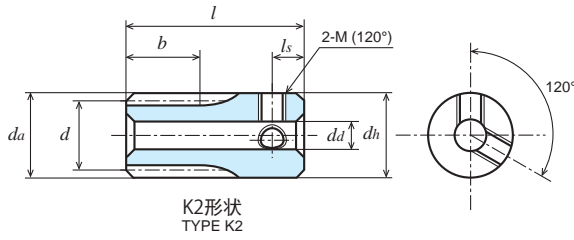
| 精度              | 材料     | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|--------|-----|-----|------|-------------|
| JIS B 1702-1 9级 | SUS304 | 20度 | —   | —    | 0.02 ~ 0.06 |

★未做表面处理。【+】带有螺纹孔，但无固定用螺钉。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H8) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 螺纹孔<br>Set Screw |     | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|------------------|-----|----------------------|
|                          |                            |                                  |                             |            |                       |                               |                            |                              |                           | M                | ls  |                      |
| S75SU 10K - 0809         | 10                         | φ 7.5                            | φ 9                         | K1         | 8                     | -                             | φ 9                        | 47                           | 55                        | -                | -   | 26.5                 |
| S75SU 14K + 0805         | 14                         | φ 10.5                           | φ 12                        | K2         | 8                     | φ5                            | φ12                        | 12                           | 20                        | M3               | 3   | 13.0                 |
| S75SU 15K + 0805         | 15                         | φ 11.25                          | φ 12.75                     | K2         | 8                     | φ5                            | φ12.75                     | 12                           | 20                        | M3               | 3   | 15.2                 |
| S75SU 16B + 0805         | 16                         | φ 12                             | φ 13.5                      | B1         | 8                     | φ5                            | φ10                        | 7                            | 15                        | M3               | 3.5 | 9.1                  |
| S75SU 18B + 0805         | 18                         | φ 13.5                           | φ 15                        | B1         | 8                     | φ5                            | φ11                        | 7                            | 15                        | M3               | 3.5 | 11.9                 |
| S75SU 20B + 0806         | 20                         | φ 15                             | φ 16.5                      | B1         | 8                     | φ6                            | φ12                        | 7                            | 15                        | M4               | 3.5 | 13.9                 |
| S75SU 21B + 0806         | 21                         | φ 15.75                          | φ 17.25                     | B1         | 8                     | φ6                            | φ12                        | 7                            | 15                        | M4               | 3.5 | 15.1                 |
| S75SU 22B + 0806         | 22                         | φ 16.5                           | φ 18                        | B1         | 8                     | φ6                            | φ12                        | 7                            | 15                        | M4               | 3.5 | 16.3                 |
| S75SU 24B + 0806         | 24                         | φ 18                             | φ 19.5                      | B1         | 8                     | φ6                            | φ14                        | 7                            | 15                        | M4               | 3.5 | 21.0                 |
| S75SU 25B + 0806         | 25                         | φ 18.75                          | φ 20.25                     | B1         | 8                     | φ6                            | φ14                        | 7                            | 15                        | M4               | 3.5 | 22.4                 |
| S75SU 26B + 0806         | 26                         | φ 19.5                           | φ 21                        | B1         | 8                     | φ6                            | φ14                        | 7                            | 15                        | M4               | 3.5 | 23.8                 |
| S75SU 28B + 0806         | 28                         | φ 21                             | φ 22.5                      | B1         | 8                     | φ6                            | φ14                        | 7                            | 15                        | M4               | 3.5 | 26.9                 |
| S75SU 30B + 0806         | 30                         | φ 22.5                           | φ 24                        | B1         | 8                     | φ6                            | φ14                        | 7                            | 15                        | M4               | 3.5 | 31.3                 |
| S75SU 32B + 0606         | 32                         | φ24                              | φ25.5                       | B1         | 6                     | φ6                            | φ15                        | 9                            | 15                        | M4               | 4   | 30.4                 |
| S75SU 36B + 0606         | 36                         | φ27                              | φ28.5                       | B1         | 6                     | φ6                            | φ18                        | 9                            | 15                        | M4               | 4   | 41.6                 |
| S75SU 40B + 0606         | 40                         | φ30                              | φ31.5                       | B1         | 6                     | φ6                            | φ20                        | 9                            | 15                        | M4               | 4   | 52.2                 |
| S75SU 44B + 0606         | 44                         | φ33                              | φ34.5                       | B1         | 6                     | φ6                            | φ20                        | 9                            | 15                        | M4               | 4   | 59.2                 |
| S75SU 45B + 0606         | 45                         | φ33.75                           | φ35.25                      | B1         | 6                     | φ6                            | φ20                        | 9                            | 15                        | M4               | 4   | 61.1                 |
| S75SU 48B + 0606         | 48                         | φ36                              | φ37.5                       | B1         | 6                     | φ6                            | φ20                        | 9                            | 15                        | M4               | 4   | 67.0                 |
| S75SU 56B + 0606         | 56                         | φ42                              | φ43.5                       | B1         | 6                     | φ6                            | φ20                        | 9                            | 15                        | M4               | 4   | 84.5                 |
| S75SU 60B + 0606         | 60                         | φ45                              | φ46.5                       | B1         | 6                     | φ6                            | φ22                        | 9                            | 15                        | M4               | 4   | 98.9                 |
| S75SU 72B + 0606         | 72                         | φ54                              | φ55.5                       | B1         | 6                     | φ6                            | φ25                        | 9                            | 15                        | M4               | 4   | 139.9                |
| S75SU 80B + 0608         | 80                         | φ60                              | φ61.5                       | B1         | 6                     | φ8                            | φ25                        | 9                            | 15                        | M4               | 4   | 163.0                |
| S75SU 100B + 0608        | 100                        | φ75                              | φ76.5                       | B1         | 6                     | φ8                            | φ30                        | 9                            | 15                        | M4               | 4   | 253.9                |
| S75SU 120B + 0608        | 120                        | φ90                              | φ91.5                       | B1         | 6                     | φ8                            | φ30                        | 9                            | 15                        | M4               | 4   | 346.3                |



## 容许传达动力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |        |        |        |        |          |          |
|---------------------------|---|--------|--------|--------|--------|----------|----------|
|                           | 10  | 100    | 200    | 400    | 800    | 1,200    | 1,500    |
| S75SU 10K - 0809          | 0.55  | 5.46   | 10.91  | 21.82  | 43.64  | 65.46    | 81.83    |
| S75SU 12K - 0811          | 0.76  | 7.64   | 15.28  | 30.56  | 61.12  | 91.68    | 114.60   |
| S75SU 14K + 0805          | 1.00  | 9.96   | 19.92  | 39.84  | 79.67  | 119.51   | 149.39   |
| S75SU 15K + 0805          | 1.12  | 11.16  | 22.32  | 44.64  | 89.29  | 133.93   | 167.41   |
| S75SU 16B + 0805          | 1.24  | 12.39  | 24.77  | 49.54  | 99.09  | 148.63   | 185.79   |
| S75SU 18B + 0805          | 1.49  | 14.89  | 29.78  | 59.56  | 119.12 | 178.67   | 221.34   |
| S75SU 20B + 0806          | 1.75  | 17.48  | 34.97  | 69.93  | 139.86 | 209.79   | 255.42   |
| S75SU 21B + 0806          | 1.88  | 18.79  | 37.58  | 75.16  | 150.32 | 225.48   | 272.18   |
| S75SU 22B + 0806          | 2.01  | 20.12  | 40.23  | 80.46  | 160.93 | 240.07   | 288.91   |
| S75SU 24B + 0806          | 2.28  | 22.79  | 45.58  | 91.17  | 182.33 | 268.23   | 321.89   |
| S75SU 25B + 0806          | 2.41  | 24.15  | 48.30  | 96.59  | 193.18 | 282.23   | 338.23   |
| S75SU 26B + 0806          | 2.55  | 25.51  | 51.03  | 102.05 | 204.11 | 296.15   | 354.44   |
| S75SU 28B + 0806          | 2.83  | 28.27  | 56.54  | 113.08 | 226.16 | 323.73   | 386.41   |
| S75SU 30B + 0806          | 3.10  | 31.04  | 62.08  | 124.17 | 248.33 | 350.73   | 417.57   |
| S75SU 32B + 0606          | 2.54  | 25.39  | 50.78  | 101.55 | 202.94 | 283.08   | 336.19   |
| S75SU 36B + 0606          | 2.97  | 29.65  | 59.30  | 118.60 | 232.63 | 322.15   | 380.76   |
| S75SU 38B + 0606          | 3.18  | 31.80  | 63.61  | 127.21 | 247.24 | 341.17   | 402.31   |
| S75SU 40B + 0606          | 3.40  | 33.97  | 67.94  | 135.87 | 261.67 | 359.85   | 423.39   |
| S75SU 44B + 0606          | 3.83  | 38.30  | 76.61  | 153.22 | 289.81 | 395.90   | 463.82   |
| S75SU 45B + 0606          | 3.94  | 39.40  | 78.80  | 157.59 | 296.77 | 404.75   | 473.69   |
| S75SU 48B + 0606          | 4.27  | 42.69  | 85.39  | 170.78 | 317.37 | 430.79   | 502.63   |
| S75SU 56B + 0606          | 5.16  | 51.56  | 103.12 | 206.23 | 370.29 | 496.61   | 588.14   |
| S75SU 60B + 0606          | 5.60  | 56.02  | 112.05 | 224.09 | 395.66 | 527.64   | 633.40   |
| S75SU 72B + 0606          | 6.95  | 69.52  | 139.04 | 272.73 | 467.65 | 632.18   | 765.62   |
| S75SU 80B + 0608          | 7.86  | 78.59  | 157.17 | 302.69 | 512.38 | 704.54   | 850.72   |
| S75SU 100B + 0608         | 10.13                                       | 101.26 | 202.52 | 373.10 | 619.77 | 876.96   | 1,062.41 |
| S75SU 120B + 0608         | 12.42                                       | 124.17 | 248.33 | 438.47 | 742.13 | 1,047.95 | 1,267.90 |

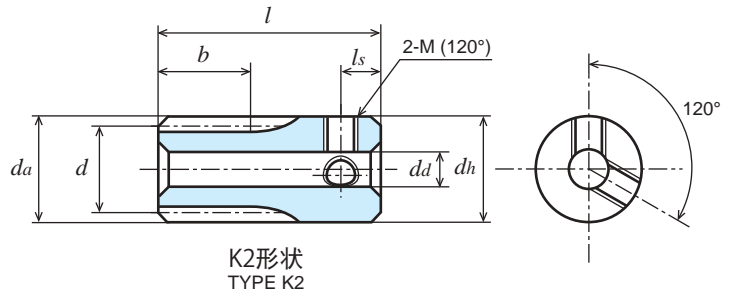
# 不锈钢直齿轮

SPUR GEARS

模数  
MODULE

0.8 (齿数 10 ~ 120)

(普通齿)  
FULL DEPTH TOOTH



K2形状  
TYPE K2

单位: mm

| 精度              | 材料     | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|--------|-----|-----|------|-------------|
| JIS B 1702-1 9级 | SUS304 | 20度 | —   | —    | 0.02 ~ 0.06 |

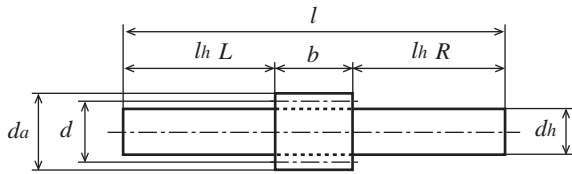
★未做表面处理。【\*】带有螺纹孔，但无固定用螺钉。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

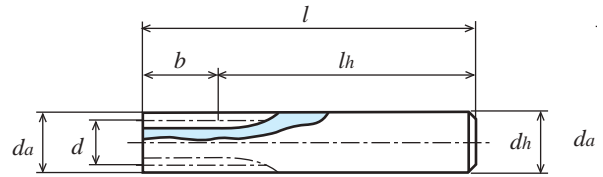
①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H8) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 螺纹孔<br>Set Screw |    | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|------------------|----|----------------------|
|                          |                            |                                  |                             |            |                       |                               |                            |                              |                           | 2-M(120°)        | ls |                      |
| S80SU 10K - 1010         | 10                         | φ 8                              | φ 9.6                       | K1         | 10                    | -                             | φ10                        | 50                           | 60                        | -                | -  | 35.1                 |
| S80SU 12K - 1012         | 12                         | φ 9.6                            | φ 11.2                      | K1         | 10                    | -                             | φ12                        | 50                           | 60                        | -                | -  | 50.6                 |
| S80SU 14K * 0704         | 14                         | φ11.2                            | φ12.8                       | K2         | 7                     | φ 4                           | φ12.8                      | 13                           | 20                        | 2-M3             | 3  | 16.3                 |
| S80SU 14L - 0706         | 14                         | φ11.2                            | φ12.8                       | L1         | 7                     | -                             | φ 6 (h9)                   | L28 R60                      | 95                        | -                | -  | 25.2                 |
| S80SU 15K * 0704         | 15                         | φ12                              | φ13.6                       | K2         | 7                     | φ 4                           | φ13.6                      | 13                           | 20                        | 2-M3             | 3  | 18.8                 |
| S80SU 15L - 0706         | 15                         | φ12                              | φ13.6                       | L1         | 7                     | -                             | φ 6 (h9)                   | L28 R60                      | 95                        | -                | -  | 26.0                 |
| S80SU 16L - 0706         | 16                         | φ12.8                            | φ14.4                       | L1         | 7                     | -                             | φ 6 (h9)                   | L28 R60                      | 95                        | -                | -  | 26.9                 |
| S80SU 16B * 0504         | 16                         | φ12.8                            | φ14.4                       | B1         | 5                     | φ 4                           | φ10                        | 7                            | 12                        | 2-M3             | 3  | 8.0                  |
| S80SU 16B * 0704         | 16                         | φ12.8                            | φ14.4                       | B1         | 7                     | φ 4                           | φ10                        | 7                            | 14                        | 2-M3             | 3  | 9.8                  |
| S80SU 18L - 0708         | 18                         | φ14.4                            | φ16                         | L1         | 7                     | -                             | φ 8 (h9)                   | L28 R60                      | 95                        | -                | -  | 44.1                 |
| S80SU 18B * 0504         | 18                         | φ14.4                            | φ16                         | B1         | 5                     | φ 4                           | φ10                        | 7                            | 12                        | 2-M3             | 3  | 9.3                  |
| S80SU 18B * 0704         | 18                         | φ14.4                            | φ16                         | B1         | 7                     | φ 4                           | φ10                        | 7                            | 14                        | 2-M3             | 3  | 11.7                 |
| S80SU 20L - 0710         | 20                         | φ16                              | φ17.6                       | L1         | 7                     | -                             | φ10 (h9)                   | L28 R60                      | 95                        | -                | -  | 66.0                 |
| S80SU 20B * 0504         | 20                         | φ16                              | φ17.6                       | B1         | 5                     | φ 4                           | φ10                        | 7                            | 12                        | 2-M3             | 3  | 10.9                 |
| S80SU 20B * 0704         | 20                         | φ16                              | φ17.6                       | B1         | 7                     | φ 4                           | φ10                        | 7                            | 14                        | 2-M3             | 3  | 13.9                 |
| S80SU 22B * 0504         | 22                         | φ17.6                            | φ19.2                       | B1         | 5                     | φ 4                           | φ10                        | 7                            | 12                        | 2-M3             | 3  | 12.5                 |
| S80SU 22B * 0704         | 22                         | φ17.6                            | φ19.2                       | B1         | 7                     | φ 4                           | φ10                        | 7                            | 14                        | 2-M3             | 3  | 16.2                 |
| S80SU 24B * 0505         | 24                         | φ19.2                            | φ20.8                       | B1         | 5                     | φ 5                           | φ15                        | 7                            | 12                        | 2-M4             | 4  | 18.6                 |
| S80SU 24B * 0705         | 24                         | φ19.2                            | φ20.8                       | B1         | 7                     | φ 5                           | φ15                        | 7                            | 14                        | 2-M4             | 4  | 22.9                 |
| S80SU 25B * 0505         | 25                         | φ20                              | φ21.6                       | B1         | 5                     | φ 5                           | φ15                        | 7                            | 12                        | 2-M4             | 4  | 19.6                 |
| S80SU 25B * 0705         | 25                         | φ20                              | φ21.6                       | B1         | 7                     | φ 5                           | φ15                        | 7                            | 14                        | 2-M4             | 4  | 24.2                 |
| S80SU 28B * 0505         | 28                         | φ22.4                            | φ24                         | B1         | 5                     | φ 5                           | φ15                        | 7                            | 12                        | 2-M4             | 4  | 22.7                 |
| S80SU 28B * 0705         | 28                         | φ22.4                            | φ24                         | B1         | 7                     | φ 5                           | φ15                        | 7                            | 14                        | 2-M4             | 4  | 28.7                 |
| S80SU 30B * 0505         | 30                         | φ24                              | φ25.6                       | B1         | 5                     | φ 5                           | φ15                        | 7                            | 12                        | 2-M4             | 4  | 25.0                 |
| S80SU 30B * 0705         | 30                         | φ24                              | φ25.6                       | B1         | 7                     | φ 5                           | φ15                        | 7                            | 14                        | 2-M4             | 4  | 31.9                 |
| S80SU 32B * 0505         | 32                         | φ25.6                            | φ27.2                       | B1         | 5                     | φ 5                           | φ15                        | 9                            | 14                        | 2-M4             | 4  | 30.0                 |
| S80SU 36B * 0506         | 36                         | φ28.8                            | φ30.4                       | B1         | 5                     | φ 6                           | φ18                        | 9                            | 14                        | 2-M4             | 4  | 39.9                 |
| S80SU 40B * 0506         | 40                         | φ32                              | φ33.6                       | B1         | 5                     | φ 6                           | φ18                        | 9                            | 14                        | 2-M4             | 4  | 45.9                 |
| S80SU 45B * 0506         | 45                         | φ36                              | φ37.6                       | B1         | 5                     | φ 6                           | φ18                        | 9                            | 14                        | 2-M4             | 4  | 54.4                 |
| S80SU 48B * 0506         | 48                         | φ38.4                            | φ40                         | B1         | 5                     | φ 6                           | φ18                        | 9                            | 14                        | 2-M4             | 4  | 59.9                 |
| S80SU 50B * 0506         | 50                         | φ40                              | φ41.6                       | B1         | 5                     | φ 6                           | φ18                        | 9                            | 14                        | 2-M4             | 4  | 63.9                 |
| S80SU 54B * 0506         | 54                         | φ43.2                            | φ44.8                       | B1         | 5                     | φ 6                           | φ18                        | 9                            | 14                        | 2-M4             | 4  | 72.1                 |
| S80SU 56B * 0506         | 56                         | φ44.8                            | φ46.4                       | B1         | 5                     | φ 6                           | φ18                        | 9                            | 14                        | 2-M4             | 4  | 76.5                 |
| S80SU 60B * 0506         | 60                         | φ48                              | φ49.6                       | B1         | 5                     | φ 6                           | φ18                        | 9                            | 14                        | 2-M4             | 4  | 85.8                 |
| S80SU 64B * 0506         | 64                         | φ51.2                            | φ52.8                       | B1         | 5                     | φ 6                           | φ18                        | 9                            | 14                        | 2-M4             | 4  | 95.7                 |
| S80SU 70B * 0508         | 70                         | φ56                              | φ57.6                       | B1         | 5                     | φ 8                           | φ28                        | 9                            | 14                        | 2-M4             | 4  | 134.4                |
| S80SU 72B * 0508         | 72                         | φ57.6                            | φ59.2                       | B1         | 5                     | φ 8                           | φ28                        | 9                            | 14                        | 2-M4             | 4  | 140.0                |
| S80SU 80B * 0508         | 80                         | φ64                              | φ65.6                       | B1         | 5                     | φ 8                           | φ28                        | 9                            | 14                        | 2-M4             | 4  | 164.3                |
| S80SU 80B * 0510         | 80                         | φ64                              | φ65.6                       | B1         | 5                     | φ10                           | φ28                        | 9                            | 14                        | 2-M4             | 4  | 161.3                |
| S80SU 90B * 0508         | 90                         | φ72                              | φ73.6                       | B1         | 5                     | φ 8                           | φ28                        | 9                            | 14                        | 2-M4             | 4  | 198.1                |
| S80SU 100B * 0508        | 100                        | φ80                              | φ81.6                       | B1         | 5                     | φ 8                           | φ28                        | 9                            | 14                        | 2-M4             | 4  | 236.0                |
| S80SU 100B * 0510        | 100                        | φ80                              | φ81.6                       | B1         | 5                     | φ10                           | φ28                        | 9                            | 14                        | 2-M4             | 4  | 233.0                |
| S80SU 120B * 0508        | 120                        | φ96                              | φ97.6                       | B1         | 5                     | φ 8                           | φ30                        | 9                            | 14                        | 2-M4             | 4  | 330.0                |
| S80SU 120B * 0510        | 120                        | φ96                              | φ97.6                       | B1         | 5                     | φ10                           | φ30                        | 9                            | 14                        | 2-M4             | 4  | 327.1                |

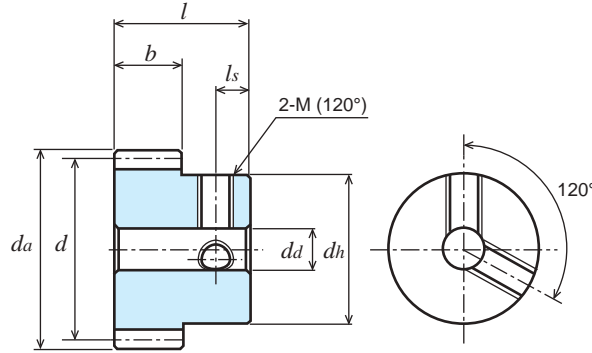




L1形状  
TYPE L1



K1形状  
TYPE K1



B1形状  
TYPE B1

## 容许传达动力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |        |        |        |        |        |          |
|---------------------------|---|--------|--------|--------|--------|--------|----------|
|                           | 10  | 100    | 200    | 400    | 800    | 1,200  | 1,500    |
| S80SU 10K - 1010          | 0.78  | 7.76   | 15.52  | 31.03  | 62.07  | 93.10  | 116.37   |
| S80SU 12K - 1012          | 1.09  | 10.87  | 21.73  | 43.46  | 86.93  | 130.39 | 162.99   |
| S80SU 14K * 0704          | 0.99  | 9.91   | 19.83  | 39.66  | 79.32  | 118.98 | 148.72   |
| S80SU 14L - 0706          | 0.99  | 9.91   | 19.83  | 39.66  | 79.32  | 118.98 | 148.72   |
| S80SU 15K * 0704          | 1.11  | 11.11  | 22.22  | 44.45  | 88.89  | 133.34 | 166.67   |
| S80SU 15L - 0706          | 1.11  | 11.11  | 22.22  | 44.45  | 88.89  | 133.34 | 166.67   |
| S80SU 16L - 0706          | 1.23  | 12.33  | 24.66  | 49.32  | 98.65  | 147.97 | 184.82   |
| S80SU 16B * 0504          | 0.88  | 8.81   | 17.62  | 35.23  | 70.46  | 105.70 | 132.01   |
| S80SU 16B * 0704          | 1.23  | 12.33  | 24.66  | 49.32  | 98.65  | 147.97 | 184.82   |
| S80SU 18L - 0708          | 1.48  | 14.82  | 29.65  | 59.29  | 118.59 | 177.88 | 218.07   |
| S80SU 18B * 0504          | 1.06  | 10.59  | 21.18  | 42.35  | 84.70  | 127.06 | 155.76   |
| S80SU 18B * 0704          | 1.48  | 14.82  | 29.65  | 59.29  | 118.59 | 177.88 | 218.07   |
| S80SU 20L - 0710          | 1.74  | 17.40  | 34.81  | 69.62  | 139.24 | 208.69 | 251.40   |
| S80SU 20B * 0504          | 1.24  | 12.43  | 24.86  | 49.73  | 99.46  | 149.07 | 179.57   |
| S80SU 20B * 0704          | 1.74  | 17.40  | 34.81  | 69.62  | 139.24 | 208.69 | 251.40   |
| S80SU 22B * 0504          | 1.43  | 14.30  | 28.61  | 57.22  | 114.44 | 168.97 | 202.93   |
| S80SU 22B * 0704          | 2.00  | 20.03  | 40.05  | 80.10  | 160.21 | 236.56 | 284.10   |
| S80SU 24B * 0505          | 1.62  | 16.21  | 32.41  | 64.83  | 129.66 | 188.65 | 225.90   |
| S80SU 24B * 0705          | 2.27  | 22.69  | 45.38  | 90.76  | 181.52 | 264.10 | 316.25   |
| S80SU 25B * 0505          | 1.72  | 17.17  | 34.34  | 68.69  | 137.37 | 198.42 | 237.26   |
| S80SU 25B * 0705          | 2.40  | 24.04  | 48.08  | 96.16  | 192.32 | 277.79 | 332.16   |
| S80SU 28B * 0505          | 2.10  | 20.10  | 40.21  | 80.41  | 160.83 | 227.34 | 270.71   |
| S80SU 28B * 0705          | 2.81  | 28.14  | 56.29  | 112.58 | 225.16 | 318.28 | 379.00   |
| S80SU 30B * 0505          | 2.21  | 22.07  | 44.15  | 88.30  | 176.45 | 246.13 | 292.31   |
| S80SU 30B * 0705          | 3.09  | 30.90  | 61.81  | 123.61 | 247.03 | 344.58 | 409.23   |
| S80SU 32B * 0505          | 2.41  | 24.07  | 48.14  | 96.28  | 190.50 | 264.69 | 313.54   |
| S80SU 36B * 0506          | 2.81  | 28.11  | 56.23  | 112.45 | 218.15 | 300.82 | 354.57   |
| S80SU 40B * 0506          | 3.22  | 32.21  | 64.41  | 128.83 | 245.14 | 335.60 | 393.73   |
| S80SU 45B * 0506          | 3.74  | 37.36  | 74.71  | 149.42 | 277.69 | 376.92 | 439.78   |
| S80SU 48B * 0506          | 4.05  | 40.48  | 80.96  | 161.92 | 296.75 | 400.82 | 466.79   |
| S80SU 50B * 0506          | 4.26  | 42.57  | 85.14  | 170.29 | 309.24 | 416.36 | 488.56   |
| S80SU 54B * 0506          | 4.68  | 46.77  | 93.55  | 187.10 | 333.68 | 446.48 | 531.67   |
| S80SU 56B * 0506          | 4.89  | 48.88  | 97.77  | 195.54 | 345.63 | 461.09 | 553.02   |
| S80SU 60B * 0506          | 5.31  | 53.12  | 106.24 | 212.30 | 369.00 | 490.02 | 595.27   |
| S80SU 64B * 0506          | 5.74  | 57.37  | 114.74 | 227.01 | 391.70 | 525.18 | 636.94   |
| S80SU 70B * 0508          | 6.38  | 63.77  | 127.55 | 248.65 | 424.50 | 577.17 | 698.30   |
| S80SU 72B * 0508          | 6.59  | 65.92  | 131.83 | 255.75 | 435.12 | 594.31 | 718.46   |
| S80SU 80B * 0508          | 7.45  | 74.51  | 149.02 | 283.56 | 476.06 | 661.79 | 797.82   |
| S80SU 80B * 0510          | 7.45  | 74.51  | 149.02 | 283.56 | 476.06 | 661.79 | 797.82   |
| S80SU 90B * 0508          | 8.52  | 85.20  | 170.40 | 316.67 | 523.99 | 742.92 | 898.85   |
| S80SU 100B * 0508         | 9.60  | 96.01  | 192.03 | 348.72 | 582.97 | 822.44 | 998.20   |
| S80SU 100B * 0510         | 9.60  | 96.01  | 192.03 | 348.72 | 582.97 | 822.44 | 998.20   |
| S80SU 120B * 0508         | 11.77                                       | 117.73 | 235.28 | 408.93 | 697.12 | 984.92 | 1,189.46 |
| S80SU 120B * 0510         | 11.77                                       | 117.73 | 235.28 | 408.93 | 697.12 | 984.92 | 1,189.46 |

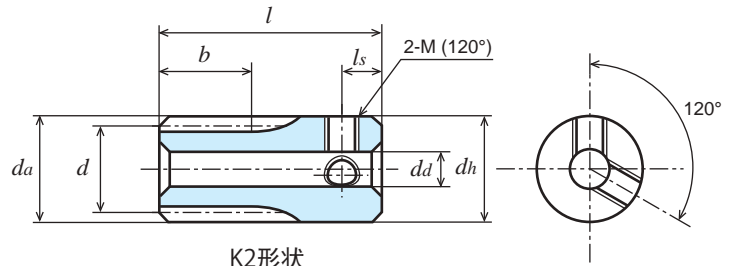
# 不锈钢直齿轮

SPUR GEARS

模数  
MODULE

1 (齿数 14 ~ 120)

(普通齿)  
FULL DEPTH TOOTH



K2形状  
TYPE K2

单位: mm

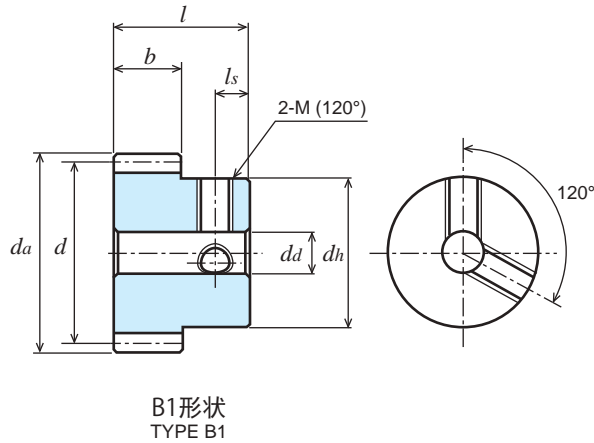
| 精度              | 材料     | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|--------|-----|-----|------|-------------|
| JIS B 1702-1 9级 | SUS304 | 20度 | —   | —    | 0.06 ~ 0.12 |

★未做表面处理。【\*】带有螺纹孔，但无固定用螺钉。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H8) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 螺纹孔<br>Set Screw |    | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|------------------|----|----------------------|
|                          |                            |                                  |                             |            |                       |                               |                            |                              |                           | 2-M(120°)        | ls |                      |
| S1SU 14K * 0806          | 14                         | φ 14                             | φ 16                        | K2         | 8                     | φ 6                           | φ16                        | 17                           | 25                        | 2-M4             | 4  | 30.4                 |
| S1SU 15K * 0806          | 15                         | φ 15                             | φ 17                        | K2         | 8                     | φ 6                           | φ17                        | 17                           | 25                        | 2-M4             | 4  | 35.3                 |
| S1SU 16K * 0806          | 16                         | φ 16                             | φ 18                        | K2         | 8                     | φ 6                           | φ18                        | 17                           | 25                        | 2-M4             | 4  | 40.5                 |
| S1SU 17B * 0806          | 17                         | φ 17                             | φ 19                        | B1         | 8                     | φ 6                           | φ14                        | 8                            | 16                        | 2-M4             | 4  | 19.9                 |
| S1SU 18B * 0806          | 18                         | φ 18                             | φ 20                        | B1         | 8                     | φ 6                           | φ14                        | 8                            | 16                        | 2-M4             | 4  | 21.7                 |
| S1SU 18B * 1006          | 18                         | φ 18                             | φ 20                        | B1         | 10                    | φ 6                           | φ14                        | 10                           | 20                        | 2-M4             | 4  | 27.2                 |
| S1SU 20B * 0806          | 20                         | φ 20                             | φ 22                        | B1         | 8                     | φ 6                           | φ16                        | 8                            | 16                        | 2-M4             | 4  | 28.3                 |
| S1SU 20B * 1006          | 20                         | φ 20                             | φ 22                        | B1         | 10                    | φ 6                           | φ16                        | 10                           | 20                        | 2-M4             | 4  | 35.5                 |
| S1SU 21B * 0806          | 21                         | φ 21                             | φ 23                        | B1         | 8                     | φ 6                           | φ18                        | 8                            | 16                        | 2-M4             | 4  | 33.5                 |
| S1SU 22B * 0806          | 22                         | φ 22                             | φ 24                        | B1         | 8                     | φ 6                           | φ18                        | 8                            | 16                        | 2-M4             | 4  | 35.7                 |
| S1SU 24B * 0806          | 24                         | φ 24                             | φ 26                        | B1         | 8                     | φ 6                           | φ18                        | 8                            | 16                        | 2-M4             | 4  | 40.3                 |
| S1SU 24B * 1006          | 24                         | φ 24                             | φ 26                        | B1         | 10                    | φ 6                           | φ18                        | 10                           | 20                        | 2-M4             | 4  | 50.6                 |
| S1SU 25B * 0806          | 25                         | φ 25                             | φ 27                        | B1         | 8                     | φ 6                           | φ18                        | 8                            | 16                        | 2-M4             | 4  | 42.7                 |
| S1SU 25B * 1006          | 25                         | φ 25                             | φ 27                        | B1         | 10                    | φ 6                           | φ20                        | 10                           | 20                        | 2-M4             | 4  | 58.2                 |
| S1SU 26B * 0806          | 26                         | φ 26                             | φ 28                        | B1         | 8                     | φ 6                           | φ20                        | 8                            | 16                        | 2-M4             | 4  | 48.9                 |
| S1SU 28B * 0806          | 28                         | φ 28                             | φ 30                        | B1         | 8                     | φ 6                           | φ20                        | 8                            | 16                        | 2-M4             | 4  | 54.2                 |
| S1SU 28B * 1006          | 28                         | φ 28                             | φ 30                        | B1         | 10                    | φ 6                           | φ20                        | 10                           | 20                        | 2-M4             | 4  | 68.1                 |
| S1SU 30B * 0806          | 30                         | φ 30                             | φ 32                        | B1         | 8                     | φ 6                           | φ24                        | 8                            | 16                        | 2-M4             | 4  | 68.5                 |
| S1SU 30B * 0806          | 30                         | φ 30                             | φ 32                        | B1         | 8                     | φ 6                           | φ24                        | 8                            | 16                        | 2-M4             | 4  | 68.5                 |
| S1SU 30B * 1006          | 30                         | φ 30                             | φ 32                        | B1         | 10                    | φ 6                           | φ24                        | 10                           | 20                        | 2-M4             | 4  | 86.0                 |
| S1SU 32B * 0606          | 32                         | φ 32                             | φ 34                        | B1         | 6                     | φ 6                           | φ24                        | 10                           | 16                        | 2-M4             | 4  | 69.1                 |
| S1SU 34B * 0606          | 34                         | φ 34                             | φ 36                        | B1         | 6                     | φ 6                           | φ24                        | 10                           | 16                        | 2-M4             | 4  | 74.0                 |
| S1SU 35B * 0606          | 35                         | φ 35                             | φ 37                        | B1         | 6                     | φ 6                           | φ24                        | 10                           | 16                        | 2-M4             | 4  | 76.6                 |
| S1SU 36B * 0608          | 36                         | φ 36                             | φ 38                        | B1         | 6                     | φ 8                           | φ24                        | 10                           | 16                        | 2-M4             | 4  | 76.6                 |
| S1SU 40B * 0608          | 40                         | φ 40                             | φ 42                        | B1         | 6                     | φ 8                           | φ28                        | 10                           | 16                        | 2-M4             | 4  | 100.6                |
| S1SU 42B * 0608          | 42                         | φ 42                             | φ 44                        | B1         | 6                     | φ 8                           | φ28                        | 10                           | 16                        | 2-M4             | 4  | 106.7                |
| S1SU 44B * 0608          | 44                         | φ 44                             | φ 46                        | B1         | 6                     | φ 8                           | φ28                        | 10                           | 16                        | 2-M4             | 4  | 113.1                |
| S1SU 45B * 0608          | 45                         | φ 45                             | φ 47                        | B1         | 6                     | φ 8                           | φ28                        | 10                           | 16                        | 2-M4             | 4  | 116.5                |
| S1SU 48B * 0608          | 48                         | φ 48                             | φ 50                        | B1         | 6                     | φ 8                           | φ28                        | 10                           | 16                        | 2-M4             | 4  | 126.9                |
| S1SU 50B * 0608          | 50                         | φ 50                             | φ 52                        | B1         | 6                     | φ 8                           | φ28                        | 10                           | 16                        | 2-M4             | 4  | 134.2                |
| S1SU 52B * 0608          | 52                         | φ 52                             | φ 54                        | B1         | 6                     | φ 8                           | φ28                        | 10                           | 16                        | 2-M5             | 5  | 140.9                |
| S1SU 54B * 0608          | 54                         | φ 54                             | φ 56                        | B1         | 6                     | φ 8                           | φ28                        | 10                           | 16                        | 2-M5             | 5  | 148.8                |
| S1SU 56B * 0610          | 56                         | φ 56                             | φ 58                        | B1         | 6                     | φ 10                          | φ30                        | 10                           | 16                        | 2-M5             | 5  | 160.6                |
| S1SU 60B * 0610          | 60                         | φ 60                             | φ 62                        | B1         | 6                     | φ 10                          | φ30                        | 10                           | 16                        | 2-M5             | 5  | 178.0                |
| S1SU 64B * 0610          | 64                         | φ 64                             | φ 66                        | B1         | 6                     | φ 10                          | φ30                        | 10                           | 16                        | 2-M5             | 5  | 196.5                |
| S1SU 70B * 0610          | 70                         | φ 70                             | φ 72                        | B1         | 6                     | φ 10                          | φ30                        | 10                           | 16                        | 2-M5             | 5  | 226.6                |
| S1SU 72B * 0610          | 72                         | φ 72                             | φ 74                        | B1         | 6                     | φ 10                          | φ30                        | 10                           | 16                        | 2-M5             | 5  | 237.2                |
| S1SU 80B * 0610          | 80                         | φ 80                             | φ 82                        | B1         | 6                     | φ 10                          | φ30                        | 10                           | 16                        | 2-M5             | 5  | 282.6                |
| S1SU 90B * 0610          | 90                         | φ 90                             | φ 92                        | B1         | 6                     | φ 10                          | φ30                        | 10                           | 16                        | 2-M5             | 5  | 346.1                |
| S1SU 100B * 0610         | 100                        | φ 100                            | φ 102                       | B1         | 6                     | φ 10                          | φ30                        | 10                           | 16                        | 2-M5             | 5  | 417.1                |
| S1SU 120B * 0610         | 120                        | φ 120                            | φ 122                       | B1         | 6                     | φ 10                          | φ30                        | 10                           | 16                        | 2-M5             | 5  | 581.6                |



## 容许传达动力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |        |        |        |          |          |          |
|---------------------------|---|--------|--------|--------|----------|----------|----------|
|                           | 10  | 100    | 200    | 400    | 800      | 1,200    | 1,500    |
| S1SU 14K * 0806           | 1.77  | 17.71  | 35.41  | 70.82  | 141.64   | 212.46   | 261.67   |
| S1SU 15K * 0806           | 1.98  | 19.84  | 39.68  | 79.37  | 158.73   | 238.10   | 289.88   |
| S1SU 16K * 0806           | 2.20  | 22.02  | 44.04  | 88.08  | 176.16   | 264.03   | 318.05   |
| S1SU 17B * 0806           | 2.42  | 24.23  | 48.46  | 96.92  | 193.84   | 287.82   | 346.06   |
| S1SU 18B * 0806           | 2.65  | 26.47  | 52.94  | 105.88 | 211.76   | 311.52   | 373.85   |
| S1SU 18B * 1006           | 3.31  | 33.09  | 66.18  | 132.35 | 264.70   | 389.40   | 467.32   |
| S1SU 20B * 0806           | 3.11  | 31.08  | 62.16  | 124.32 | 248.64   | 359.14   | 429.43   |
| S1SU 20B * 1006           | 3.89  | 38.85  | 77.70  | 155.40 | 310.80   | 448.92   | 536.79   |
| S1SU 21B * 0806           | 3.34  | 33.40  | 66.81  | 133.62 | 267.24   | 382.52   | 456.60   |
| S1SU 22B * 0806           | 3.58  | 35.76  | 71.52  | 143.04 | 286.09   | 405.86   | 483.62   |
| S1SU 24B * 0806           | 4.05  | 40.52  | 81.04  | 162.07 | 323.88   | 451.79   | 536.54   |
| S1SU 24B * 1006           | 5.06  | 50.65  | 101.29 | 202.59 | 404.85   | 564.74   | 670.68   |
| S1SU 25B * 0806           | 4.29  | 42.93  | 85.86  | 171.72 | 341.02   | 474.52   | 562.62   |
| S1SU 25B * 1006           | 5.37  | 53.66  | 107.32 | 214.65 | 426.27   | 593.15   | 703.28   |
| S1SU 26B * 0806           | 4.54  | 45.36  | 90.71  | 181.43 | 358.07   | 497.04   | 588.38   |
| S1SU 28B * 0806           | 5.03  | 50.26  | 100.52 | 201.03 | 391.90   | 541.43   | 638.95   |
| S1SU 28B * 1006           | 6.28  | 62.82  | 125.65 | 251.29 | 489.88   | 676.79   | 798.68   |
| S1SU 30B * 0806           | 5.52  | 55.18  | 110.37 | 220.74 | 425.11   | 584.61   | 687.84   |
| S1SU 30B * 1006           | 6.90  | 68.98  | 137.96 | 275.92 | 531.39   | 730.76   | 859.80   |
| S1SU 32B * 0606           | 4.51  | 45.13  | 90.27  | 180.53 | 343.53   | 470.31   | 551.76   |
| S1SU 34B * 0606           | 4.89  | 48.91  | 97.82  | 195.64 | 367.87   | 501.44   | 586.65   |
| S1SU 35B * 0606           | 5.08  | 50.81  | 101.61 | 203.23 | 379.90   | 516.74   | 603.73   |
| S1SU 36B * 0608           | 5.27  | 52.71  | 105.42 | 210.85 | 391.84   | 531.86   | 620.57   |
| S1SU 40B * 0608           | 6.04  | 60.39  | 120.78 | 241.55 | 438.65   | 590.59   | 693.00   |
| S1SU 42B * 0608           | 6.43  | 64.26  | 128.51 | 257.02 | 461.49   | 618.92   | 733.00   |
| S1SU 44B * 0608           | 6.81  | 68.10  | 136.19 | 272.39 | 483.61   | 646.13   | 772.19   |
| S1SU 45B * 0608           | 7.00  | 70.04  | 140.08 | 280.17 | 494.67   | 659.68   | 791.90   |
| S1SU 48B * 0608           | 7.59  | 75.90  | 151.80 | 303.36 | 527.27   | 700.19   | 850.59   |
| S1SU 50B * 0608           | 7.98  | 79.82  | 159.65 | 317.05 | 548.54   | 732.84   | 889.33   |
| S1SU 52B * 0608           | 8.38  | 83.76  | 167.51 | 330.61 | 569.42   | 765.27   | 927.74   |
| S1SU 54B * 0608           | 8.77  | 87.70  | 175.40 | 344.05 | 589.94   | 797.50   | 965.84   |
| S1SU 56B * 0610           | 9.17  | 91.66  | 183.32 | 357.37 | 610.11   | 829.53   | 1,003.62 |
| S1SU 60B * 0610           | 9.96  | 99.60  | 199.19 | 383.62 | 649.37   | 892.91   | 1,078.17 |
| S1SU 64B * 0610           | 10.76                                       | 107.57 | 215.14 | 409.37 | 687.26   | 955.40   | 1,151.78 |
| S1SU 70B * 0610           | 11.96                                       | 119.58 | 239.15 | 447.06 | 741.67   | 1,047.46 | 1,266.18 |
| S1SU 72B * 0610           | 12.36                                       | 123.59 | 247.19 | 459.37 | 760.11   | 1,077.69 | 1,303.88 |
| S1SU 80B * 0610           | 13.97                                       | 139.71 | 279.42 | 507.42 | 848.29   | 1,196.75 | 1,452.49 |
| S1SU 90B * 0610           | 15.98                                       | 159.75 | 319.50 | 564.12 | 954.81   | 1,348.27 | 1,631.26 |
| S1SU 100B * 0610          | 18.00                                       | 180.02 | 357.51 | 618.54 | 1,059.38 | 1,497.28 | 1,806.04 |
| S1SU 120B * 0610          | 22.07                                       | 220.74 | 425.12 | 719.62 | 1,260.58 | 1,784.16 | 2,207.42 |

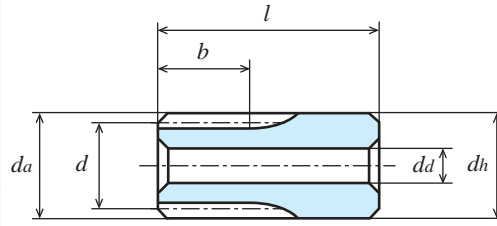
# 不锈钢直齿轮

## SPUR GEARS

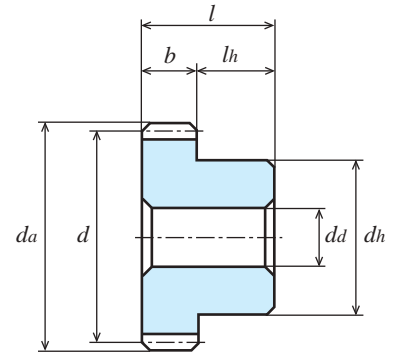
模数  
MODULE

1.5 (齿数 14 ~ 100)

(普通齿)  
FULL DEPTH TOOTH



K2形状  
TYPE K2



B1形状  
TYPE B1

单位: mm

| 精度              | 材料     | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|--------|-----|-----|------|-------------|
| JIS B 1702-1 9级 | SUS304 | 20度 | —   | —    | 0.09 ~ 0.18 |

★未做表面处理。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 齿顶圆直径<br>Tip Diameter<br><i>da</i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>da</i> (H8) | 轮毂外径<br>Hub Diameter<br><i>dh</i> | 轮毂长度<br>Hub Projection<br><i>lh</i> | 全长<br>Overall Length<br><i>l</i> | 重量<br>Weight<br><i>W</i> (g) |
|--------------------------|-----------------------------------|---|------------------------------------|------------|------------------------------|---------------------------------------|-----------------------------------|-------------------------------------|----------------------------------|------------------------------|
| S1.5SU 14K - 1208        | 14                                | φ21                                     | φ24                                | K2         | 12                           | φ 8                                   | φ24                               | 24                                  | 36                               | 104.7                        |
| S1.5SU 15B - 1208        | 15                                | φ22.5                                   | φ25.5                              | B1         | 12                           | φ 8                                   | φ18                               | 10                                  | 22                               | 49.3                         |
| S1.5SU 15B - 1608N       | 15                                | φ22.5                                   | φ25.5                              | B1         | 16                           | φ 8                                   | φ18                               | 10                                  | 26                               | 60.3                         |
| S1.5SU 16B - 1208        | 16                                | φ24                                     | φ27                                | B1         | 12                           | φ 8                                   | φ20                               | 10                                  | 22                               | 59.2                         |
| S1.5SU 16B - 1608N       | 16                                | φ24                                     | φ27                                | B1         | 16                           | φ 8                                   | φ20                               | 10                                  | 26                               | 72.0                         |
| S1.5SU 18B - 1210        | 18                                | φ27                                     | φ30                                | B1         | 12                           | φ10                                   | φ22                               | 10                                  | 22                               | 70.9                         |
| S1.5SU 18B - 1610N       | 18                                | φ27                                     | φ30                                | B1         | 16                           | φ10                                   | φ22                               | 10                                  | 26                               | 86.6                         |
| S1.5SU 20B - 1210        | 20                                | φ30                                     | φ33                                | B1         | 12                           | φ10                                   | φ25                               | 10                                  | 22                               | 92.5                         |
| S1.5SU 20B - 1610N       | 20                                | φ30                                     | φ33                                | B1         | 16                           | φ10                                   | φ25                               | 10                                  | 26                               | 112.4                        |
| S1.5SU 24B - 1210        | 24                                | φ36                                     | φ39                                | B1         | 12                           | φ10                                   | φ30                               | 10                                  | 22                               | 139.2                        |
| S1.5SU 25B - 1210        | 25                                | φ37.5                                   | φ40.5                              | B1         | 12                           | φ10                                   | φ30                               | 10                                  | 22                               | 147.5                        |
| S1.5SU 25B - 1610N       | 25                                | φ37.5                                   | φ40.5                              | B1         | 16                           | φ10                                   | φ30                               | 10                                  | 26                               | 180.0                        |
| S1.5SU 28B - 1210        | 28                                | φ42                                     | φ45                                | B1         | 12                           | φ10                                   | φ30                               | 10                                  | 22                               | 174.2                        |
| S1.5SU 30B - 1210        | 30                                | φ45                                     | φ48                                | B1         | 12                           | φ10                                   | φ30                               | 10                                  | 22                               | 193.7                        |
| S1.5SU 30B - 1610N       | 30                                | φ45                                     | φ48                                | B1         | 16                           | φ10                                   | φ30                               | 10                                  | 26                               | 241.7                        |
| S1.5SU 32B - 1010        | 32                                | φ48                                     | φ51                                | B1         | 10                           | φ10                                   | φ30                               | 10                                  | 20                               | 187.1                        |
| S1.5SU 36B - 1010        | 36                                | φ54                                     | φ57                                | B1         | 10                           | φ10                                   | φ30                               | 10                                  | 20                               | 225.2                        |
| S1.5SU 40B - 1012        | 40                                | φ60                                     | φ63                                | B1         | 10                           | φ12                                   | φ36                               | 10                                  | 20                               | 287.0                        |
| S1.5SU 45B - 1012        | 45                                | φ67.5                                   | φ70.5                              | B1         | 10                           | φ12                                   | φ36                               | 10                                  | 20                               | 346.6                        |
| S1.5SU 48B - 1012        | 48                                | φ72                                     | φ75                                | B1         | 10                           | φ12                                   | φ36                               | 10                                  | 20                               | 385.7                        |
| S1.5SU 50B - 1012        | 50                                | φ 75                                    | φ 78                               | B1         | 10                           | φ12                                   | φ42                               | 10                                  | 20                               | 442.3                        |
| S1.5SU 60B - 1014        | 60                                | φ 90                                    | φ 93                               | B1         | 10                           | φ14                                   | φ50                               | 10                                  | 20                               | 635.8                        |
| S1.5SU 80B - 1016        | 80                                | φ120                                    | φ123                               | B1         | 10                           | φ16                                   | φ60                               | 10                                  | 20                               | 1,089.0                      |
| S1.5SU 90B - 1016        | 90                                | φ135                                    | φ138                               | B1         | 10                           | φ16                                   | φ60                               | 10                                  | 20                               | 1,327.0                      |
| S1.5SU 100B - 1016       | 100                               | φ150                                    | φ153                               | B1         | 10                           | φ16                                   | φ60                               | 10                                  | 20                               | 1,594.0                      |

## 容许传达动力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

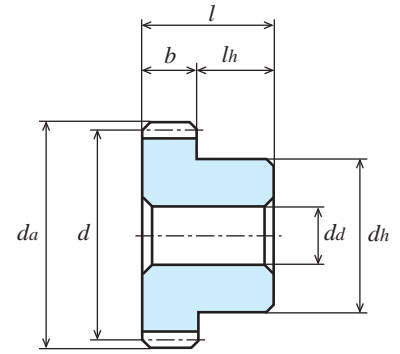
| 产 品 型 号<br>Catalogue Numbers | 旋 转 速 度 (min <sup>-1</sup> )<br>revolution/min |        |          |          |          |          |          |
|------------------------------|--|--------|----------|----------|----------|----------|----------|
|                              | 10   | 100    | 200      | 400      | 800      | 1,200    | 1,500    |
| S1.5SU 14K - 1208            | 5.98   | 59.75  | 119.51   | 239.02   | 478.04   | 684.27   | 816.77   |
| S1.5SU 15B - 1208            | 6.70   | 66.97  | 133.93   | 267.86   | 535.73   | 756.63   | 900.82   |
| S1.5SU 15B - 1608N           | 8.93   | 89.29  | 178.58   | 357.15   | 714.30   | 1,008.84 | 1,201.10 |
| S1.5SU 16B - 1208            | 7.43   | 74.32  | 148.63   | 297.27   | 594.06   | 828.66   | 984.12   |
| S1.5SU 16B - 1608N           | 9.91   | 99.09  | 198.18   | 396.36   | 792.08   | 1,104.88 | 1,312.16 |
| S1.5SU 18B - 1210            | 8.93   | 89.34  | 178.67   | 357.35   | 700.93   | 970.64   | 1,147.22 |
| S1.5SU 18B - 1610N           | 11.91  | 119.12 | 238.23   | 476.46   | 934.57   | 1,294.19 | 1,529.63 |
| S1.5SU 20B - 1210            | 10.49  | 104.90 | 209.79   | 419.58   | 808.06   | 1,111.24 | 1,307.46 |
| S1.5SU 20B - 1610N           | 13.99  | 139.86 | 279.72   | 559.44   | 1,077.41 | 1,481.65 | 1,743.28 |
| S1.5SU 24B - 1210            | 13.67  | 136.75 | 273.50   | 546.99   | 1,016.53 | 1,379.79 | 1,609.91 |
| S1.5SU 25B - 1210            | 14.49  | 144.89 | 289.77   | 579.54   | 1,067.67 | 1,444.72 | 1,682.38 |
| S1.5SU 25B - 1610N           | 19.32  | 193.18 | 386.36   | 772.72   | 1,423.55 | 1,926.29 | 2,243.17 |
| S1.5SU 28B - 1210            | 16.96  | 169.62 | 339.24   | 678.48   | 1,218.22 | 1,633.80 | 1,934.94 |
| S1.5SU 30B - 1210            | 18.62  | 186.25 | 372.50   | 744.99   | 1,315.37 | 1,754.13 | 2,105.74 |
| S1.5SU 30B - 1610N           | 24.83  | 248.33 | 496.66   | 993.32   | 1,753.83 | 2,338.85 | 2,807.65 |
| S1.5SU 32B - 1010            | 16.93  | 169.25 | 338.50   | 676.46   | 1,175.77 | 1,561.35 | 1,896.72 |
| S1.5SU 36B - 1010            | 19.77  | 197.67 | 395.34   | 775.44   | 1,329.66 | 1,797.47 | 2,176.88 |
| S1.5SU 40B - 1012            | 22.65  | 226.45 | 452.91   | 872.24   | 1,476.48 | 2,030.22 | 2,451.46 |
| S1.5SU 45B - 1012            | 26.27  | 262.66 | 525.31   | 989.24   | 1,649.19 | 2,314.06 | 2,794.13 |
| S1.5SU 48B - 1012            | 28.46  | 284.63 | 569.25   | 1,057.90 | 1,750.48 | 2,481.86 | 3,002.75 |
| S1.5SU 50B - 1012            | 29.93  | 299.34 | 598.67   | 1,102.91 | 1,832.09 | 2,592.36 | 3,140.56 |
| S1.5SU 60B - 1014            | 37.35  | 373.48 | 746.97   | 1,318.86 | 2,232.26 | 3,152.13 | 3,813.74 |
| S1.5SU 80B - 1016            | 52.39  | 523.90 | 1,008.96 | 1,707.93 | 2,991.84 | 4,234.47 | 5,239.02 |
| S1.5SU 90B - 1016            | 59.91  | 599.07 | 1,128.12 | 1,880.73 | 3,370.67 | 4,792.53 | -        |
| S1.5SU 100B - 1016           | 67.51  | 675.07 | 1,243.66 | 2,065.89 | 3,743.17 | 5,400.57 | -        |

# 不锈钢直齿轮

## SPUR GEARS

模数  
MODULE **2** (齿数 14 ~ 100)

(普通齿)  
FULL DEPTH TOOTH



B1形状  
TYPE B1

单位: mm

| 精度              | 材料     | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|--------|-----|-----|------|-------------|
| JIS B 1702-1 9级 | SUS304 | 20度 | —   | —    | 0.12 ~ 0.24 |

★未做表面处理。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H8) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|----------------------|
| S2SU 14B - 1410N         | 14                         | φ 28                             | φ 32                        | B1         | 14                    | φ10                           | φ20                        | 10                           | 24                        | 78.3                 |
| S2SU 15B - 1410N         | 15                         | φ 30                             | φ 34                        | B1         | 14                    | φ10                           | φ22                        | 10                           | 24                        | 93.7                 |
| S2SU 18B - 1412N         | 18                         | φ 36                             | φ 40                        | B1         | 14                    | φ12                           | φ28                        | 10                           | 24                        | 140.3                |
| S2SU 20B - 1412N         | 20                         | φ 40                             | φ 44                        | B1         | 14                    | φ12                           | φ30                        | 10                           | 24                        | 174.0                |
| S2SU 24B - 1414N         | 24                         | φ 48                             | φ 52                        | B1         | 14                    | φ14                           | φ36                        | 10                           | 24                        | 252.3                |
| S2SU 25B - 1414N         | 25                         | φ 50                             | φ 54                        | B1         | 14                    | φ14                           | φ36                        | 10                           | 24                        | 269.4                |
| S2SU 30B - 1414N         | 30                         | φ 60                             | φ 64                        | B1         | 14                    | φ14                           | φ40                        | 10                           | 24                        | 384.3                |
| S2SU 32B - 1214N         | 32                         | φ 64                             | φ 68                        | B1         | 12                    | φ14                           | φ45                        | 10                           | 22                        | 405.4                |
| S2SU 35B - 1214N         | 35                         | φ 70                             | φ 74                        | B1         | 12                    | φ14                           | φ45                        | 10                           | 22                        | 465.5                |
| S2SU 36B - 1214N         | 36                         | φ 72                             | φ 76                        | B1         | 12                    | φ14                           | φ45                        | 10                           | 22                        | 486.7                |
| S2SU 40B - 1214N         | 40                         | φ 80                             | φ 84                        | B1         | 12                    | φ14                           | φ50                        | 10                           | 22                        | 607.2                |
| S2SU 45B - 1214N         | 45                         | φ 90                             | φ 94                        | B1         | 12                    | φ14                           | φ60                        | 10                           | 22                        | 802.7                |
| S2SU 48B - 1215N         | 48                         | φ 96                             | φ100                        | B1         | 12                    | φ15                           | φ60                        | 10                           | 22                        | 0.88                 |
| S2SU 50B - 1215N         | 50                         | φ100                             | φ104                        | B1         | 12                    | φ15                           | φ60                        | 10                           | 22                        | 0.94                 |
| S2SU 55B - 1215N         | 55                         | φ110                             | φ114                        | B1         | 12                    | φ15                           | φ60                        | 10                           | 22                        | 1.10                 |
| S2SU 60B - 1215N         | 60                         | φ120                             | φ124                        | B1         | 12                    | φ15                           | φ60                        | 10                           | 22                        | 1.27                 |
| S2SU 64B - 1215N         | 64                         | φ128                             | φ132                        | B1         | 12                    | φ15                           | φ60                        | 10                           | 22                        | 1.42                 |
| S2SU 72B - 1216N         | 72                         | φ144                             | φ148                        | B1         | 12                    | φ16                           | φ60                        | 10                           | 22                        | 1.74                 |
| S2SU 80B - 1216N         | 80                         | φ160                             | φ164                        | B1         | 12                    | φ16                           | φ60                        | 10                           | 22                        | 2.10                 |
| S2SU 90B - 1216N         | 90                         | φ180                             | φ184                        | B1         | 12                    | φ16                           | φ60                        | 10                           | 22                        | 2.61                 |
| S2SU 100B - 1216N        | 100                        | φ200                             | φ204                        | B1         | 12                    | φ16                           | φ60                        | 10                           | 22                        | 3.18                 |

### 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (W) Bending Strength

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|---------------------------|---|-------|-------|-------|-------|-------|-------|
|                           | 10  | 100   | 200   | 400   | 800   | 1,200 | 1,500 |
| S2SU 14B - 1410N          | 0.012                                       | 0.124 | 0.248 | 0.496 | 0.966 | 1.335 | 1.576 |
| S2SU 15B - 1410N          | 0.014                                       | 0.139 | 0.278 | 0.556 | 1.070 | 1.471 | 1.731 |
| S2SU 18B - 1412N          | 0.019                                       | 0.185 | 0.371 | 0.741 | 1.377 | 1.870 | 2.181 |
| S2SU 20B - 1412N          | 0.022                                       | 0.218 | 0.435 | 0.870 | 1.580 | 2.128 | 2.497 |
| S2SU 24B - 1414N          | 0.028                                       | 0.284 | 0.567 | 1.134 | 1.970 | 2.616 | 3.178 |
| S2SU 25B - 1414N          | 0.030                                       | 0.301 | 0.601 | 1.194 | 2.065 | 2.759 | 3.348 |
| S2SU 30B - 1414N          | 0.039                                       | 0.386 | 0.773 | 1.488 | 2.519 | 3.463 | 4.182 |
| S2SU 32B - 1214N          | 0.036                                       | 0.361 | 0.722 | 1.374 | 2.307 | 3.207 | 3.866 |
| S2SU 35B - 1214N          | 0.041                                       | 0.406 | 0.813 | 1.520 | 2.521 | 3.560 | 4.304 |
| S2SU 36B - 1214N          | 0.042                                       | 0.422 | 0.843 | 1.567 | 2.593 | 3.677 | 4.449 |
| S2SU 40B - 1214N          | 0.048                                       | 0.483 | 0.966 | 1.754 | 2.933 | 4.138 | 5.023 |
| S2SU 45B - 1214N          | 0.056                                       | 0.560 | 1.121 | 1.979 | 3.349 | 4.729 | 5.722 |
| S2SU 48B - 1215N          | 0.060                                       | 0.61  | 1.21  | 2.11  | 3.60  | 5.08  | 6.13  |
| S2SU 50B - 1215N          | 0.063                                       | 0.64  | 1.27  | 2.19  | 3.76  | 5.31  | 6.41  |
| S2SU 55B - 1215N          | 0.071                                       | 0.72  | 1.40  | 2.40  | 4.16  | 5.88  | 7.17  |
| S2SU 60B - 1215N          | 0.079                                       | 0.80  | 1.53  | 2.60  | 4.55  | 6.44  | 7.97  |
| S2SU 64B - 1215N          | 0.086                                       | 0.86  | 1.64  | 2.75  | 4.88  | 6.88  | -     |
| S2SU 72B - 1216N          | 0.098                                       | 0.99  | 1.84  | 3.04  | 5.51  | 7.91  | -     |
| S2SU 80B - 1216N          | 0.112                                       | 1.12  | 2.03  | 3.39  | 6.14  | -     | -     |
| S2SU 90B - 1216N          | 0.128                                       | 1.28  | 2.26  | 3.82  | 6.89  | -     | -     |
| S2SU 100B - 1216N         | 0.143                                       | 1.43  | 2.47  | 4.24  | 7.68  | -     | -     |

# Memo

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REFERENCE DATA

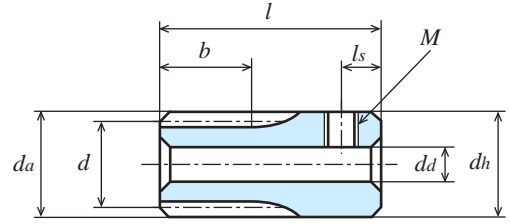
# 黄铜直齿轮

## SPUR GEARS

模数  
MODULE

0.3 (齿数 14 ~ 120)

(普通齿)  
FULL DEPTH TOOTH



K2形状  
TYPE K2

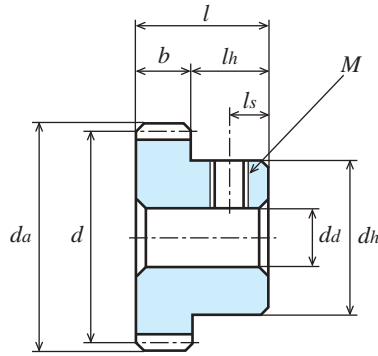
单位: mm

| 精度              | 材料     | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|--------|-----|-----|------|-------------|
| JIS B 1702-1 9级 | C3604B | 20度 | —   | —    | 0.02 ~ 0.06 |

★未做表面处理。【+】带有螺孔，但无固定用螺钉。  
★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。  
①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>d <sub>d</sub> (H8) | 轮毂外径<br>Hub Diameter<br>d <sub>h</sub> | 轮毂长度<br>Hub Projection<br>l <sub>h</sub> | 全长<br>Overall Length<br>l | 螺孔<br>Set Screw |                | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|--|--|--|---------------------------|-----------------|----------------|----------------------|
|                          |                            |                                  |                             |            |                       |  |  |  |                           | M               | l <sub>s</sub> |                      |
| S30B 14K + 0402          | 14                         | φ 4.2                            | φ 4.8                       | K2         | 4                     | φ2   | φ 5                                    | 8  | 12                        | M1.6            | 2.5            | 1.5                  |
| S30B 15K + 0402          | 15                         | φ 4.5                            | φ 5.1                       | K2         | 4                     | φ2   | φ 5.5                                  | 8  | 12                        | M1.6            | 2.5            | 1.8                  |
| S30B 16K + 0402          | 16                         | φ 4.8                            | φ 5.4                       | K2         | 4                     | φ2   | φ 5.5                                  | 8  | 12                        | M1.6            | 2.5            | 1.9                  |
| S30B 18K + 0402          | 18                         | φ 5.4                            | φ 6                         | K2         | 4                     | φ2   | φ 6                                    | 8  | 12                        | M2              | 2.5            | 2.3                  |
| S30B 20B + 0302          | 20                         | φ 6                              | φ 6.6                       | B1         | 3.2                   | φ2   | φ 5                                    | 4.8                                      | 8                         | M1.6            | 2.5            | 1.3                  |
| S30B 24B + 0302          | 24                         | φ 7.2                            | φ 7.8                       | B1         | 3.2                   | φ2   | φ 6                                    | 4.8                                      | 8                         | M2              | 2.5            | 2.0                  |
| S30B 25B + 0302          | 25                         | φ 7.5                            | φ 8.1                       | B1         | 3.2                   | φ2   | φ 6                                    | 4.8                                      | 8                         | M2              | 2.5            | 2.1                  |
| S30B 28B + 0302          | 28                         | φ 8.4                            | φ 9                         | B1         | 3.2                   | φ2   | φ 7                                    | 4.8                                      | 8                         | M2              | 2.5            | 2.8                  |
| S30B 30B + 0302          | 30                         | φ 9                              | φ 9.6                       | B1         | 3.2                   | φ2   | φ 8                                    | 4.8                                      | 8                         | M2              | 2.5            | 3.5                  |
| S30B 32B + 0202          | 32                         | φ 9.6                            | φ 10.2                      | B1         | 2                     | φ2   | φ 8                                    | 6  | 8                         | M2              | 3              | 3.5                  |
| S30B 35B + 0202          | 35                         | φ 10.5                           | φ 11.1                      | B1         | 2                     | φ2   | φ 8                                    | 6  | 8                         | M2              | 3              | 3.8                  |
| S30B 36B + 0203          | 36                         | φ 10.8                           | φ 11.4                      | B1         | 2                     | φ3   | φ 9                                    | 6  | 8                         | M3              | 3              | 4.2                  |
| S30B 40B + 0203          | 40                         | φ 12                             | φ 12.6                      | B1         | 2                     | φ3   | φ 10                                   | 6  | 8                         | M3              | 3              | 5.3                  |
| S30B 45B + 0203          | 45                         | φ 13.5                           | φ 14.1                      | B1         | 2                     | φ3   | φ 10                                   | 6  | 8                         | M3              | 3              | 5.8                  |
| S30B 48B + 0203          | 48                         | φ 14.4                           | φ 15                        | B1         | 2                     | φ3   | φ 10                                   | 6  | 8                         | M3              | 3              | 6.1                  |
| S30B 50B + 0203          | 50                         | φ 15                             | φ 15.6                      | B1         | 2                     | φ3   | φ 10                                   | 6  | 8                         | M3              | 3              | 6.4                  |
| S30B 56B + 0203          | 56                         | φ 16.8                           | φ 17.4                      | B1         | 2                     | φ3   | φ 10                                   | 6  | 8                         | M3              | 3              | 7.1                  |
| S30B 60B + 0203          | 60                         | φ 18                             | φ 18.6                      | B1         | 2                     | φ3   | φ 10                                   | 6  | 8                         | M3              | 3              | 7.7                  |
| S30B 64B + 0203          | 64                         | φ 19.2                           | φ 19.8                      | B1         | 2                     | φ3   | φ 10                                   | 6  | 8                         | M3              | 3              | 8.3                  |
| S30B 66B + 0203          | 66                         | φ 19.8                           | φ 20.4                      | B1         | 2                     | φ3   | φ 10                                   | 6  | 8                         | M3              | 3              | 8.6                  |
| S30B 70B + 0203          | 70                         | φ 21                             | φ 21.6                      | B1         | 2                     | φ3   | φ 10                                   | 6  | 8                         | M3              | 3              | 9.3                  |
| S30B 72B + 0203          | 72                         | φ 21.6                           | φ 22.2                      | B1         | 2                     | φ3   | φ 10                                   | 6  | 8                         | M3              | 3              | 9.6                  |
| S30B 75B + 0203          | 75                         | φ 22.5                           | φ 23.1                      | B1         | 2                     | φ3   | φ 10                                   | 6  | 8                         | M3              | 3              | 10.1                 |
| S30B 80B + 0203          | 80                         | φ 24                             | φ 24.6                      | B1         | 2                     | φ3   | φ 10                                   | 6  | 8                         | M3              | 3              | 11.1                 |
| S30B 90B + 0203          | 90                         | φ 27                             | φ 27.6                      | B1         | 2                     | φ3   | φ 10                                   | 6  | 8                         | M3              | 3              | 13.1                 |
| S30B 96B + 0203          | 96                         | φ 28.8                           | φ 29.4                      | B1         | 2                     | φ3   | φ 10                                   | 6  | 8                         | M3              | 3              | 14.4                 |
| S30B 100B + 0203         | 100                        | φ 30                             | φ 30.6                      | B1         | 2                     | φ3   | φ 10                                   | 6  | 8                         | M3              | 3              | 15.4                 |
| S30B 108B + 0203         | 108                        | φ 32.4                           | φ 33                        | B1         | 2                     | φ3   | φ 10                                   | 6  | 8                         | M3              | 3              | 17.4                 |
| S30B 120B + 0203         | 120                        | φ 36                             | φ 36.6                      | B1         | 2                     | φ3   | φ 10                                   | 6  | 8                         | M3              | 3              | 20.7                 |





B1形状  
TYPE B1

## 容许传达动力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |      |       |       |       |       |
|---------------------------|---|------|------|-------|-------|-------|-------|
|                           | 10  | 100  | 200  | 400   | 800   | 1,200 | 1,500 |
| S30B 14K + 0402           | 0.03  | 0.32 | 0.64 | 1.27  | 2.55  | 3.82  | 4.78  |
| S30B 15K + 0402           | 0.04  | 0.36 | 0.71 | 1.43  | 2.86  | 4.29  | 5.36  |
| S30B 16K + 0402           | 0.04  | 0.40 | 0.79 | 1.59  | 3.17  | 4.76  | 5.95  |
| S30B 18K + 0402           | 0.05  | 0.48 | 0.95 | 1.91  | 3.81  | 5.72  | 7.15  |
| S30B 20B + 0302           | 0.04  | 0.45 | 0.90 | 1.79  | 3.58  | 5.37  | 6.71  |
| S30B 24B + 0302           | 0.06  | 0.58 | 1.17 | 2.33  | 4.67  | 7.00  | 8.75  |
| S30B 25B + 0302           | 0.06  | 0.62 | 1.24 | 2.47  | 4.95  | 7.42  | 9.27  |
| S30B 28B + 0302           | 0.07  | 0.72 | 1.45 | 2.89  | 5.79  | 8.68  | 10.86 |
| S30B 30B + 0302           | 0.08  | 0.79 | 1.59 | 3.18  | 6.36  | 9.54  | 11.92 |
| S30B 32B + 0202           | 0.05  | 0.54 | 1.08 | 2.17  | 4.33  | 6.50  | 8.12  |
| S30B 35B + 0202           | 0.06  | 0.61 | 1.22 | 2.44  | 4.88  | 7.32  | 9.15  |
| S30B 36B + 0203           | 0.06  | 0.63 | 1.27 | 2.53  | 5.06  | 7.59  | 9.49  |
| S30B 40B + 0203           | 0.07  | 0.72 | 1.45 | 2.90  | 5.80  | 8.70  | 10.87 |
| S30B 45B + 0203           | 0.08  | 0.84 | 1.68 | 3.36  | 6.72  | 10.09 | 12.49 |
| S30B 48B + 0203           | 0.09  | 0.91 | 1.82 | 3.64  | 7.29  | 10.93 | 13.40 |
| S30B 50B + 0203           | 0.10  | 0.96 | 1.92 | 3.83  | 7.66  | 11.49 | 13.99 |
| S30B 56B + 0203           | 0.11  | 1.10 | 2.20 | 4.40  | 8.80  | 13.09 | 15.74 |
| S30B 60B + 0203           | 0.12  | 1.20 | 2.39 | 4.78  | 9.56  | 14.07 | 16.88 |
| S30B 64B + 0203           | 0.13  | 1.29 | 2.58 | 5.16  | 10.33 | 15.02 | 17.99 |
| S30B 66B + 0203           | 0.13  | 1.34 | 2.68 | 5.36  | 10.71 | 15.50 | 18.54 |
| S30B 70B + 0203           | 0.14  | 1.43 | 2.87 | 5.74  | 11.48 | 16.43 | 19.61 |
| S30B 72B + 0203           | 0.15  | 1.48 | 2.97 | 5.93  | 11.87 | 16.89 | 20.14 |
| S30B 75B + 0203           | 0.16  | 1.56 | 3.11 | 6.22  | 12.44 | 17.58 | 20.92 |
| S30B 80B + 0203           | 0.17  | 1.68 | 3.35 | 6.71  | 13.40 | 18.69 | 22.20 |
| S30B 90B + 0203           | 0.19  | 1.92 | 3.83 | 7.67  | 15.04 | 20.83 | 24.62 |
| S30B 96B + 0203           | 0.21  | 2.06 | 4.13 | 8.25  | 16.01 | 22.07 | 26.02 |
| S30B 100B + 0203          | 0.22  | 2.16 | 4.32 | 8.64  | 16.64 | 22.89 | 26.93 |
| S30B 108B + 0203          | 0.24  | 2.36 | 4.71 | 9.42  | 17.88 | 24.46 | 28.68 |
| S30B 112B + 0203          | 0.25  | 2.45 | 4.91 | 9.81  | 18.49 | 25.23 | 29.54 |
| S30B 120B + 0203          | 0.26  | 2.65 | 5.30 | 10.60 | 19.69 | 26.73 | 31.19 |

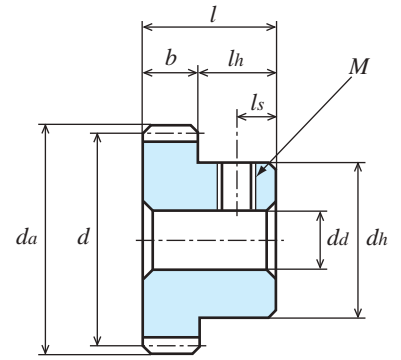
# 黄铜直齿轮

SPUR GEARS

模数  
MODULE

0.5 (齿数 10 ~ 84)

(普通齿)  
FULL DEPTH TOOTH



B1形状  
TYPE B1

单位: mm

| 精度②                     | 材料            | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-------------------------|---------------|-----|-----|------|-------------|
| JIS B 1702-1 9级 ~ 管理范围外 | C3713P、C3604B | 20度 | —   | —    | 0.02 ~ 0.06 |

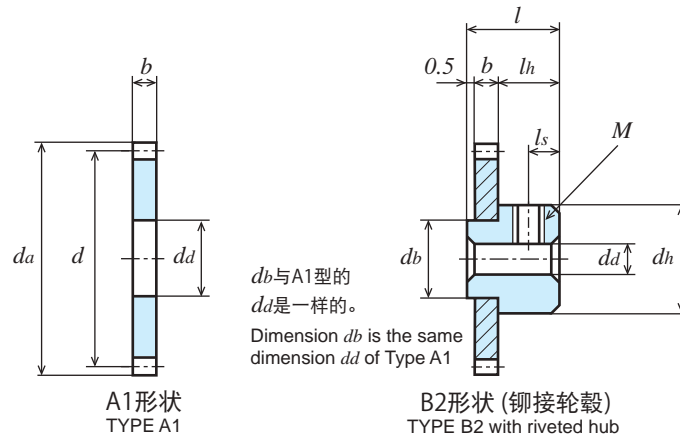
★未做表面处理。【+】带有螺纹孔，但无固定用螺钉。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①同一种材料，一样的齿轮相互啮合时的理想值。② B1, K1, K2 型是 9 级；A1, B2 型在精度管理范围外。

③ A1 型的齿孔 dd 的公差为 0 ~ +0.1mm。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径③<br>Bore Diameter<br>da(H8) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 螺纹孔<br>Set Screw |     | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|--------------------------------|----------------------------|------------------------------|---------------------------|------------------|-----|----------------------|
|                          |                            |                                  |                             |            |                       |                                |                            |                              |                           | M                | ls  |                      |
| S50B 10K - 1006          | 10                         | φ 5                              | φ 6                         | K1         | 10                    | -                              | φ 6                        | 45                           | 55                        | -                | -   | 12.5                 |
| S50B 12K - 1007          | 12                         | φ 6                              | φ 7                         | K1         | 10                    | -                              | φ 7                        | 45                           | 55                        | -                | -   | 17.1                 |
| S50B 14K - 1008          | 14                         | φ 7                              | φ 8                         | K1         | 10                    | -                              | φ 8                        | 45                           | 55                        | -                | -   | 22.5                 |
| S50B 15K + 0803          | 15                         | φ 7.5                            | φ 8.5                       | K2         | 8                     | φ3                             | φ 9                        | 10                           | 18                        | M3               | 3   | 7.2                  |
| S50B 16K + 0803          | 16                         | φ 8                              | φ 9                         | K2         | 8                     | φ3                             | φ 9                        | 10                           | 18                        | M3               | 3   | 7.6                  |
| S50B 18K + 0803          | 18                         | φ 9                              | φ 10                        | K2         | 8                     | φ3                             | φ 10                       | 10                           | 18                        | M3               | 3   | 9.7                  |
| S50B 20K + 0803          | 20                         | φ 10                             | φ 11                        | K2         | 8                     | φ3                             | φ 11                       | 10                           | 18                        | M3               | 3   | 12.2                 |
| S50B 20B + 0303          | 20                         | φ 10                             | φ 11                        | B1         | 3                     | φ3                             | φ 8.2                      | 5                            | 8                         | M3               | 2.5 | 3.8                  |
| S50B 24B + 0303          | 24                         | φ 12                             | φ 13                        | B1         | 3                     | φ3                             | φ 10                       | 5                            | 8                         | M3               | 2.5 | 5.6                  |
| S50B 25B + 0303          | 25                         | φ 12.5                           | φ 13.5                      | B1         | 3                     | φ3                             | φ 10                       | 5                            | 8                         | M3               | 2.5 | 5.8                  |
| S50B 26B + 0303          | 26                         | φ 13                             | φ 14                        | B1         | 3                     | φ3                             | φ 10                       | 5                            | 8                         | M3               | 2.5 | 6.1                  |
| S50B 28B + 0303          | 28                         | φ 14                             | φ 15                        | B1         | 3                     | φ3                             | φ 10                       | 5                            | 8                         | M3               | 2.5 | 6.6                  |
| S50B 30B + 0303          | 30                         | φ 15                             | φ 16                        | B1         | 3                     | φ3                             | φ 10                       | 5                            | 8                         | M3               | 2.5 | 7.2                  |
| S50B 32B + 0303          | 32                         | φ 16                             | φ 17                        | B1         | 3                     | φ3                             | φ 10                       | 5                            | 8                         | M3               | 2.5 | 7.8                  |
| S50B 35B + 0303          | 35                         | φ 17.5                           | φ 18.5                      | B1         | 3                     | φ3                             | φ 10                       | 5                            | 8                         | M3               | 2.5 | 8.8                  |
| S50B 36B + 0303          | 36                         | φ 18                             | φ 19                        | B1         | 3                     | φ3                             | φ 10                       | 5                            | 8                         | M3               | 2.5 | 9.2                  |
| S50B 40A - 0208          | 40                         | φ 20                             | φ 21                        | A1         | 2                     | φ8                             | -                          | -                            | 2                         | -                | -   | 4.5                  |
| S50B 40B + 0203          | 40                         | φ 20                             | φ 21                        | B2         | 2                     | φ3                             | φ 10                       | 5                            | 7.5                       | M3               | 2.5 | 8.1                  |
| S50B 42A - 0208          | 42                         | φ 21                             | φ 22                        | A1         | 2                     | φ8                             | -                          | -                            | 2                         | -                | -   | 5.0                  |
| S50B 42B + 0203          | 42                         | φ 21                             | φ 22                        | B2         | 2                     | φ3                             | φ 10                       | 5                            | 7.5                       | M3               | 2.5 | 8.6                  |
| S50B 45A - 0208          | 45                         | φ 22.5                           | φ 23.5                      | A1         | 2                     | φ8                             | -                          | -                            | 2                         | -                | -   | 5.9                  |
| S50B 45B + 0203          | 45                         | φ 22.5                           | φ 23.5                      | B2         | 2                     | φ3                             | φ 10                       | 5                            | 7.5                       | M3               | 2.5 | 9.5                  |
| S50B 48A - 0208          | 48                         | φ 24                             | φ 25                        | A1         | 2                     | φ8                             | -                          | -                            | 2                         | -                | -   | 6.8                  |
| S50B 48B + 0203          | 48                         | φ 24                             | φ 25                        | B2         | 2                     | φ3                             | φ 10                       | 5                            | 7.5                       | M3               | 2.5 | 10.4                 |
| S50B 50A - 0208          | 50                         | φ 25                             | φ 26                        | A1         | 2                     | φ8                             | -                          | -                            | 2                         | -                | -   | 7.5                  |
| S50B 50B + 0203          | 50                         | φ 25                             | φ 26                        | B2         | 2                     | φ3                             | φ 10                       | 5                            | 7.5                       | M3               | 2.5 | 11.1                 |
| S50B 55A - 0208          | 55                         | φ 27.5                           | φ 28.5                      | A1         | 2                     | φ8                             | -                          | -                            | 2                         | -                | -   | 9.2                  |
| S50B 55B + 0203          | 55                         | φ 27.5                           | φ 28.5                      | B2         | 2                     | φ3                             | φ 10                       | 5                            | 7.5                       | M3               | 2.5 | 12.8                 |
| S50B 56A - 0208          | 56                         | φ 28                             | φ 29                        | A1         | 2                     | φ8                             | -                          | -                            | 2                         | -                | -   | 9.6                  |
| S50B 56B + 0203          | 56                         | φ 28                             | φ 29                        | B2         | 2                     | φ3                             | φ 10                       | 5                            | 7.5                       | M3               | 2.5 | 13.2                 |
| S50B 58A - 0208          | 58                         | φ 29                             | φ 30                        | A1         | 2                     | φ8                             | -                          | -                            | 2                         | -                | -   | 10.4                 |
| S50B 58B + 0203          | 58                         | φ 29                             | φ 30                        | B2         | 2                     | φ3                             | φ 10                       | 5                            | 7.5                       | M3               | 2.5 | 14.0                 |
| S50B 60A - 0208          | 60                         | φ 30                             | φ 31                        | A1         | 2                     | φ8                             | -                          | -                            | 2                         | -                | -   | 11.2                 |
| S50B 60B + 0203          | 60                         | φ 30                             | φ 31                        | B2         | 2                     | φ3                             | φ 10                       | 5                            | 7.5                       | M3               | 2.5 | 14.8                 |
| S50B 62A - 0208          | 62                         | φ 31                             | φ 32                        | A1         | 2                     | φ8                             | -                          | -                            | 2                         | -                | -   | 12.0                 |
| S50B 62B + 0203          | 62                         | φ 31                             | φ 32                        | B2         | 2                     | φ3                             | φ 10                       | 5                            | 7.5                       | M3               | 2.5 | 15.6                 |
| S50B 64A - 0208          | 64                         | φ 32                             | φ 33                        | A1         | 2                     | φ8                             | -                          | -                            | 2                         | -                | -   | 12.8                 |
| S50B 64B + 0203          | 64                         | φ 32                             | φ 33                        | B2         | 2                     | φ3                             | φ 10                       | 5                            | 7.5                       | M3               | 2.5 | 16.4                 |
| S50B 65A - 0208          | 65                         | φ 32.5                           | φ 33.5                      | A1         | 2                     | φ8                             | -                          | -                            | 2                         | -                | -   | 12.3                 |
| S50B 65B + 0203          | 65                         | φ 32.5                           | φ 33.5                      | B2         | 2                     | φ3                             | φ 10                       | 5                            | 7.5                       | M3               | 2.5 | 16.8                 |
| S50B 68A - 0208          | 68                         | φ 34                             | φ 35                        | A1         | 2                     | φ8                             | -                          | -                            | 2                         | -                | -   | 14.6                 |
| S50B 68B + 0203          | 68                         | φ 34                             | φ 35                        | B2         | 2                     | φ3                             | φ 10                       | 5                            | 7.5                       | M3               | 2.5 | 18.2                 |
| S50B 70A - 0208          | 70                         | φ 35                             | φ 36                        | A1         | 2                     | φ8                             | -                          | -                            | 2                         | -                | -   | 15.5                 |
| S50B 70B + 0203          | 70                         | φ 35                             | φ 36                        | B2         | 2                     | φ3                             | φ 10                       | 5                            | 7.5                       | M3               | 2.5 | 19.1                 |



| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 齿顶圆直径<br>Tip Diameter<br><i>da</i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径③<br>Bore Diameter<br><i>da(H8)</i> | 轮毂外径<br>Hub Diameter<br><i>dh</i> | 轮毂长度<br>Hub Projection<br><i>lh</i> | 全长<br>Overall Length<br><i>l</i> | 螺纹孔<br>Set Screw |           | 重量<br>Weight<br><i>W(g)</i> |
|--------------------------|-----------------------------------|---|------------------------------------|------------|------------------------------|---------------------------------------|-----------------------------------|-------------------------------------|----------------------------------|------------------|-----------|-----------------------------|
|                          |                                   |   |                                    |            |                              |                                       |                                   |                                     |                                  | <i>M</i>         | <i>ls</i> |                             |
| <b>S50B 72A - 0208</b>   | 72                                | φ36                                     | φ37                                | A1         | 2                            | φ8                                    | -                                 | -                                   | 2                                | -                | -         | 16.5                        |
| <b>S50B 72B + 0203</b>   | 72                                | φ36                                     | φ37                                | B2         | 2                            | φ3                                    | φ10                               | 5                                   | 7.5                              | M3               | 2.5       | 20.0                        |
| <b>S50B 75A - 0208</b>   | 75                                | φ37.5                                   | φ38.5                              | A1         | 2                            | φ8                                    | -                                 | -                                   | 2                                | -                | -         | 17.9                        |
| <b>S50B 75B + 0203</b>   | 75                                | φ37.5                                   | φ38.5                              | B2         | 2                            | φ3                                    | φ10                               | 5                                   | 7.5                              | M3               | 2.5       | 21.5                        |
| <b>S50B 80A - 0208</b>   | 80                                | φ40                                     | φ41                                | A1         | 2                            | φ8                                    | -                                 | -                                   | 2                                | -                | -         | 20.5                        |
| <b>S50B 80B + 0203</b>   | 80                                | φ40                                     | φ41                                | B2         | 2                            | φ3                                    | φ10                               | 5                                   | 7.5                              | M3               | 2.5       | 24.1                        |
| <b>S50B 84A - 0208</b>   | 84                                | φ42                                     | φ43                                | A1         | 2                            | φ8                                    | -                                 | -                                   | 2                                | -                | -         | 22.7                        |
| <b>S50B 84B + 0203</b>   | 84                                | φ42                                     | φ43                                | B2         | 2                            | φ3                                    | φ10                               | 5                                   | 7.5                              | M3               | 2.5       | 26.3                        |

## 容许传达动力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |      |       |       |       |       |
|---------------------------|---|------|------|-------|-------|-------|-------|
|                           | 10  | 100  | 200  | 400   | 800   | 1,200 | 1,500 |
| S50B 10K - 1006           | 0.12  | 1.21 | 2.42 | 4.85  | 9.70  | 14.55 | 18.18 |
| S50B 12K - 1007           | 0.17  | 1.70 | 3.40 | 6.79  | 13.58 | 20.37 | 25.47 |
| S50B 14K - 1008           | 0.22  | 2.21 | 4.43 | 8.85  | 17.71 | 26.56 | 33.20 |
| S50B 15K + 0803           | 0.20  | 1.98 | 3.97 | 7.94  | 15.87 | 23.81 | 29.76 |
| S50B 16K + 0803           | 0.22  | 2.20 | 4.40 | 8.81  | 17.62 | 26.42 | 33.03 |
| S50B 18K + 0803           | 0.26  | 2.65 | 5.29 | 10.59 | 21.18 | 31.76 | 39.71 |
| S50B 20K + 0803           | 0.31  | 3.11 | 6.22 | 12.43 | 24.86 | 37.30 | 46.62 |
| S50B 20B + 0303           | 0.12  | 1.17 | 2.33 | 4.66  | 9.32  | 13.99 | 17.48 |
| S50B 24B + 0303           | 0.15  | 1.52 | 3.04 | 6.08  | 12.16 | 18.23 | 22.79 |
| S50B 25B + 0303           | 0.16  | 1.61 | 3.22 | 6.44  | 12.88 | 19.32 | 24.15 |
| S50B 26B + 0303           | 0.17  | 1.70 | 3.40 | 6.80  | 13.61 | 20.41 | 25.43 |
| S50B 28B + 0303           | 0.19  | 1.88 | 3.77 | 7.54  | 15.08 | 22.62 | 27.85 |
| S50B 30B + 0303           | 0.21  | 2.07 | 4.14 | 8.28  | 16.56 | 24.83 | 30.23 |
| S50B 32B + 0303           | 0.23  | 2.26 | 4.51 | 9.03  | 18.05 | 27.06 | 32.60 |
| S50B 35B + 0303           | 0.25  | 2.54 | 5.08 | 10.16 | 20.32 | 30.04 | 36.08 |
| S50B 36B + 0303           | 0.26  | 2.64 | 5.27 | 10.54 | 21.08 | 31.02 | 37.22 |
| S50B 40A - 0208           | 0.20  | 2.01 | 4.03 | 8.05  | 16.10 | 23.26 | 27.81 |
| S50B 42A - 0208           | 0.21  | 2.14 | 4.28 | 8.57  | 17.13 | 24.53 | 29.28 |
| S50B 45A - 0208           | 0.23  | 2.33 | 4.67 | 9.34  | 18.68 | 26.38 | 31.41 |
| S50B 48A - 0208           | 0.25  | 2.53 | 5.06 | 10.12 | 20.22 | 28.21 | 33.50 |
| S50B 50A - 0208           | 0.27  | 2.66 | 5.32 | 10.64 | 21.14 | 29.41 | 34.87 |
| S50B 55A - 0208           | 0.30  | 2.99 | 5.98 | 11.96 | 23.38 | 32.34 | 38.19 |
| S50B 56A - 0208           | 0.31  | 3.06 | 6.11 | 12.22 | 23.82 | 32.91 | 38.84 |
| S50B 58A - 0208           | 0.32  | 3.19 | 6.37 | 12.75 | 24.70 | 34.05 | 40.12 |
| S50B 60A - 0208           | 0.33  | 3.32 | 6.64 | 13.28 | 25.57 | 35.17 | 41.38 |
| S50B 62A - 0208           | 0.35  | 3.45 | 6.91 | 13.81 | 26.44 | 36.27 | 42.62 |
| S50B 64A - 0208           | 0.36  | 3.59 | 7.17 | 14.34 | 27.29 | 37.36 | 43.83 |
| S50B 65A - 0208           | 0.37  | 3.65 | 7.30 | 14.61 | 27.72 | 37.90 | 44.43 |
| S50B 66A - 0208           | 0.37  | 3.72 | 7.44 | 14.88 | 28.14 | 38.44 | 45.03 |
| S50B 68A - 0208           | 0.39  | 3.85 | 7.70 | 15.41 | 28.97 | 39.50 | 46.21 |
| S50B 70A - 0208           | 0.40  | 3.99 | 7.97 | 15.94 | 29.80 | 40.54 | 47.36 |
| S50B 72A - 0208           | 0.41  | 4.12 | 8.24 | 16.48 | 30.62 | 41.57 | 48.50 |
| S50B 75A - 0208           | 0.43  | 4.32 | 8.64 | 17.28 | 31.84 | 43.09 | 50.17 |
| S50B 80A - 0208           | 0.47  | 4.66 | 9.31 | 18.63 | 33.83 | 45.55 | 53.44 |
| S50B 84A - 0208           | 0.49  | 4.92 | 9.84 | 19.68 | 35.34 | 47.40 | 56.14 |

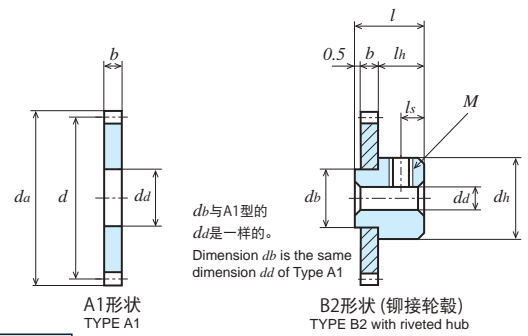
# 黄铜直齿轮

## SPUR GEARS

模数  
MODULE

0.5 (齿数 85 ~ 110)

(普通齿)  
FULL DEPTH TOOTH



单位: mm

| 精度②   | 材料            | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-------|---------------|-----|-----|------|-------------|
| 管理范围外 | C3713P、C3604B | 20度 | —   | —    | 0.02 ~ 0.06 |

★未做表面处理。【+】带有螺孔，但无固定用螺钉。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①同一种材料，一样的齿轮相互啮合时的理想值。② A1, B2 型在精度管理范围外。

③ A1 型的齿孔 dd 的公差为 0 ~ +0.1mm。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径③<br>Bore Diameter<br>dd(H8) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 螺孔<br>Set Screw |     | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|--------------------------------|----------------------------|------------------------------|---------------------------|-----------------|-----|----------------------|
|                          |                            |                                  |                             |            |                       |                                |                            |                              |                           | M               | ls  |                      |
| S50B 85A - 0208          | 85                         | φ42.5                            | φ43.5                       | A1         | 2                     | φ 8                            | -                          | -                            | 2                         | -               | -   | 23.3                 |
| S50B 85B + 0203          | 85                         | φ42.5                            | φ43.5                       | B2         | 2                     | φ 3                            | φ10                        | 5                            | 7.5                       | M3              | 2.5 | 26.9                 |
| S50B 90A - 0208          | 90                         | φ45                              | φ46                         | A1         | 2                     | φ 8                            | -                          | -                            | 2                         | -               | -   | 26.2                 |
| S50B 90B + 0203          | 90                         | φ45                              | φ46                         | B2         | 2                     | φ 3                            | φ10                        | 5                            | 7.5                       | M3              | 2.5 | 29.8                 |
| S50B 95A - 0208          | 95                         | φ47.5                            | φ48.5                       | A1         | 2                     | φ 8                            | -                          | -                            | 2                         | -               | -   | 29.3                 |
| S50B 95B + 0203          | 95                         | φ47.5                            | φ48.5                       | B2         | 2                     | φ 3                            | φ10                        | 5                            | 7.5                       | M3              | 2.5 | 32.9                 |
| S50B 100A - 0212         | 100                        | φ50                              | φ51                         | A1         | 2                     | φ12                            | -                          | -                            | 2                         | -               | -   | 32.5                 |
| S50B 100B + 0203         | 100                        | φ50                              | φ51                         | B2         | 2                     | φ 3                            | φ15                        | 7                            | 9.5                       | M3              | 3.5 | 36.1                 |
| S50B 105A - 0212         | 105                        | φ52.5                            | φ53.5                       | A1         | 2                     | φ12                            | -                          | -                            | 2                         | -               | -   | 36.0                 |
| S50B 105B + 0203         | 105                        | φ52.5                            | φ53.5                       | B2         | 2                     | φ 3                            | φ15                        | 7                            | 9.5                       | M3              | 3.5 | 39.5                 |
| S50B 110A - 0212         | 110                        | φ55                              | φ56                         | A1         | 2                     | φ12                            | -                          | -                            | 2                         | -               | -   | 39.5                 |
| S50B 110B + 0203         | 110                        | φ55                              | φ56                         | B2         | 2                     | φ 3                            | φ15                        | 7                            | 9.5                       | M3              | 3.5 | 43.1                 |

### 容许传达动力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |       |       |       |       |       |
|---------------------------|---|------|-------|-------|-------|-------|-------|
|                           | 10  | 100  | 200   | 400   | 800   | 1,200 | 1,500 |
| S50B 85A - 0208           | 0.50  | 4.99 | 9.98  | 19.95 | 35.72 | 47.87 | 56.82 |
| S50B 90A - 0208           | 0.53  | 5.33 | 10.65 | 21.30 | 37.61 | 50.15 | 60.21 |
| S50B 95A - 0208           | 0.57  | 5.66 | 11.33 | 22.65 | 39.44 | 52.36 | 63.55 |
| S50B 100A - 0212          | 0.60  | 6.00 | 12.00 | 23.83 | 41.24 | 55.09 | 66.86 |
| S50B 105A - 0212          | 0.63  | 6.34 | 12.68 | 24.98 | 42.98 | 57.85 | 70.12 |
| S50B 110A - 0212          | 0.67  | 6.68 | 13.36 | 26.12 | 44.69 | 60.59 | 73.34 |



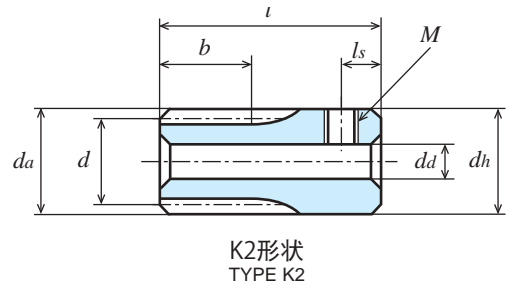
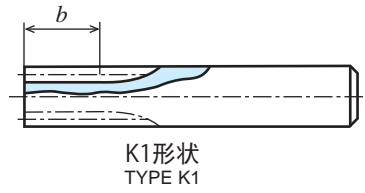
# 黄铜直齿轮

## SPUR GEARS

模数  
MODULE

# 0.75

(普通齿) FULL DEPTH TOOTH  
(齿数 10 ~ 75)



单位: mm

| 精度②                    | 材料            | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|------------------------|---------------|-----|-----|------|-------------|
| JIS B 1702-19级 ~ 管理范围外 | C3713P、C3604B | 20度 | —   | —    | 0.02 ~ 0.06 |

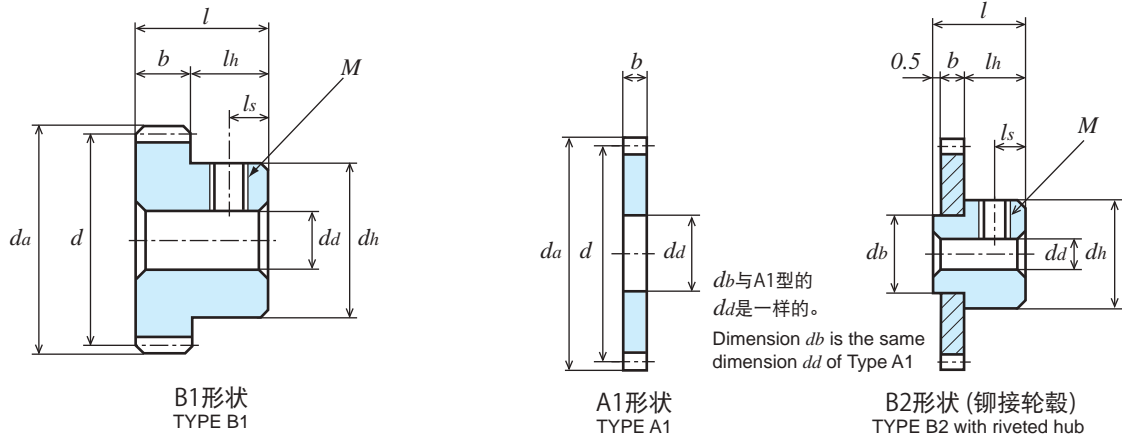
★未做表面处理。【+】带有螺纹孔，但无固定用螺钉。

★本产品的容许传达动力表使用JGMA公式。请在P28确认单位换算方法。

①同一种材料，一样的齿轮相互啮合时的理想值。②B1,K1,K2型是9；B2型和A1型在精度管理范围外。

③A1型的齿孔dd的公差为0 ~ +0.1mm。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径③<br>Bore Diameter<br>da(H8) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 螺纹孔<br>Set Screw |     | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|--------------------------------|----------------------------|------------------------------|---------------------------|------------------|-----|----------------------|
|                          |                            |                                  |                             |            |                       |                                |                            |                              |                           | M                | ls  |                      |
| S75B 10K - 0809          | 10                         | φ 7.5                            | φ 9                         | K1         | 8                     | -                              | φ 9                        | 47                           | 55                        | -                | -   | 28.4                 |
| S75B 12K - 0811          | 12                         | φ 9                              | φ 10.5                      | K1         | 8                     | -                              | φ 11                       | 47                           | 55                        | -                | -   | 42.3                 |
| S75B 14K + 0805          | 14                         | φ 10.5                           | φ 12                        | K2         | 8                     | φ 5                            | φ 12                       | 12                           | 20                        | M3               | 3   | 13.9                 |
| S75B 15K + 0805          | 15                         | φ 11.25                          | φ 12.75                     | K2         | 8                     | φ 5                            | φ 12.75                    | 12                           | 20                        | M3               | 3   | 16.3                 |
| S75B 16K + 0805          | 16                         | φ 12                             | φ 13.5                      | K2         | 8                     | φ 5                            | φ 13.5                     | 12                           | 20                        | M3               | 3   | 18.8                 |
| S75B 16B + 0305          | 16                         | φ 12                             | φ 13.5                      | B1         | 3                     | φ 5                            | φ 10                       | 7                            | 10                        | M3               | 3.5 | 5.8                  |
| S75B 18K + 0805          | 18                         | φ 13.5                           | φ 15                        | K2         | 8                     | φ 5                            | φ 15                       | 12                           | 20                        | M3               | 3   | 24.2                 |
| S75B 18B + 0305          | 18                         | φ 13.5                           | φ 15                        | B1         | 3                     | φ 5                            | φ 11                       | 7                            | 10                        | M3               | 3.5 | 7.5                  |
| S75B 20K + 0805          | 20                         | φ 15                             | φ 16.5                      | K2         | 8                     | φ 5                            | φ 16.5                     | 12                           | 20                        | M3               | 3   | 30.2                 |
| S75B 20B + 0306          | 20                         | φ 15                             | φ 16.5                      | B1         | 3                     | φ 6                            | φ 12                       | 7                            | 10                        | M4               | 3.5 | 8.6                  |
| S75B 24B + 0306          | 24                         | φ 18                             | φ 19.5                      | B1         | 3                     | φ 6                            | φ 14                       | 7                            | 10                        | M4               | 3.5 | 11.7                 |
| S75B 25B + 0306          | 25                         | φ 18.75                          | φ 20.25                     | B1         | 3                     | φ 6                            | φ 14                       | 7                            | 10                        | M4               | 3.5 | 12.3                 |
| S75B 26B + 0306          | 26                         | φ 19.5                           | φ 21                        | B1         | 3                     | φ 6                            | φ 14                       | 7                            | 10                        | M4               | 3.5 | 12.9                 |
| S75B 28B + 0306          | 28                         | φ 21                             | φ 22.5                      | B1         | 3                     | φ 6                            | φ 14                       | 7                            | 10                        | M4               | 3.5 | 14.1                 |
| S75B 30B + 0306          | 30                         | φ 22.5                           | φ 24                        | B1         | 3                     | φ 6                            | φ 15                       | 7                            | 10                        | M4               | 3.5 | 16.7                 |
| S75B 32B + 0306          | 32                         | φ 24                             | φ 25.5                      | B1         | 3                     | φ 6                            | φ 15                       | 7                            | 10                        | M4               | 3.5 | 18.1                 |
| S75B 35B + 0306          | 35                         | φ 26.25                          | φ 27.75                     | B1         | 3                     | φ 6                            | φ 18                       | 7                            | 10                        | M4               | 3.5 | 24.9                 |
| S75B 36B + 0306          | 36                         | φ 27                             | φ 28.5                      | B1         | 3                     | φ 6                            | φ 18                       | 7                            | 10                        | M4               | 3.5 | 25.7                 |
| S75B 40B + 0306          | 40                         | φ 30                             | φ 31.5                      | B1         | 3                     | φ 6                            | φ 20                       | 7                            | 10                        | M4               | 3.5 | 33.8                 |
| S75B 42B + 0306          | 42                         | φ 31.5                           | φ 33                        | B1         | 3                     | φ 6                            | φ 20                       | 7                            | 10                        | M4               | 3.5 | 35.6                 |
| S75B 45B + 0306          | 45                         | φ 33.75                          | φ 35.25                     | B1         | 3                     | φ 6                            | φ 20                       | 7                            | 10                        | M4               | 3.5 | 38.6                 |
| S75B 48B + 0306          | 48                         | φ 36                             | φ 37.5                      | B1         | 3                     | φ 6                            | φ 20                       | 7                            | 10                        | M4               | 3.5 | 41.7                 |
| S75B 50A - 0315          | 50                         | φ 37.5                           | φ 39                        | A1         | 3                     | φ 15                           | -                          | -                            | 3                         | -                | -   | 23.7                 |
| S75B 50B + 0306          | 50                         | φ 37.5                           | φ 39                        | B2         | 3                     | φ 6                            | φ 20                       | 7                            | 10.5                      | M4               | 3.5 | 43.8                 |
| S75B 55A - 0315          | 55                         | φ 41.25                          | φ 42.75                     | A1         | 3                     | φ 15                           | -                          | -                            | 3                         | -                | -   | 29.6                 |
| S75B 55B + 0306          | 55                         | φ 41.25                          | φ 42.75                     | B2         | 3                     | φ 6                            | φ 20                       | 7                            | 10.5                      | M4               | 3.5 | 49.7                 |
| S75B 56A - 0315          | 56                         | φ 42                             | φ 43.5                      | A1         | 3                     | φ 15                           | -                          | -                            | 3                         | -                | -   | 30.8                 |
| S75B 56B + 0306          | 56                         | φ 42                             | φ 43.5                      | B2         | 3                     | φ 6                            | φ 20                       | 7                            | 10.5                      | M4               | 3.5 | 50.9                 |
| S75B 58A - 0315          | 58                         | φ 43.5                           | φ 45                        | A1         | 3                     | φ 15                           | -                          | -                            | 3                         | -                | -   | 33.4                 |
| S75B 58B + 0306          | 58                         | φ 43.5                           | φ 45                        | B2         | 3                     | φ 6                            | φ 20                       | 7                            | 10.5                      | M4               | 3.5 | 53.5                 |
| S75B 60A - 0315          | 60                         | φ 45                             | φ 46.5                      | A1         | 3                     | φ 15                           | -                          | -                            | 3                         | -                | -   | 36.1                 |
| S75B 60B + 0306          | 60                         | φ 45                             | φ 46.5                      | B2         | 3                     | φ 6                            | φ 20                       | 7                            | 10.5                      | M4               | 3.5 | 56.2                 |
| S75B 62A - 0315          | 62                         | φ 46.5                           | φ 48                        | A1         | 3                     | φ 15                           | -                          | -                            | 3                         | -                | -   | 38.8                 |
| S75B 62B + 0306          | 62                         | φ 46.5                           | φ 48                        | B2         | 3                     | φ 6                            | φ 20                       | 7                            | 10.5                      | M4               | 3.5 | 58.9                 |
| S75B 64A - 0315          | 64                         | φ 48                             | φ 49.5                      | A1         | 3                     | φ 15                           | -                          | -                            | 3                         | -                | -   | 41.6                 |
| S75B 64B + 0306          | 64                         | φ 48                             | φ 49.5                      | B2         | 3                     | φ 6                            | φ 20                       | 7                            | 10.5                      | M4               | 3.5 | 61.8                 |
| S75B 65A - 0315          | 65                         | φ 48.75                          | φ 50.25                     | A1         | 3                     | φ 15                           | -                          | -                            | 3                         | -                | -   | 43.1                 |
| S75B 65B + 0306          | 65                         | φ 48.75                          | φ 50.25                     | B2         | 3                     | φ 6                            | φ 20                       | 7                            | 10.5                      | M4               | 3.5 | 63.2                 |
| S75B 66A - 0315          | 66                         | φ 49.5                           | φ 51                        | A1         | 3                     | φ 15                           | -                          | -                            | 3                         | -                | -   | 44.6                 |
| S75B 66B + 0306          | 66                         | φ 49.5                           | φ 51                        | B2         | 3                     | φ 6                            | φ 20                       | 7                            | 10.5                      | M4               | 3.5 | 64.7                 |
| S75B 68A - 0315          | 68                         | φ 51                             | φ 52.5                      | A1         | 3                     | φ 15                           | -                          | -                            | 3                         | -                | -   | 47.6                 |
| S75B 68B + 0306          | 68                         | φ 51                             | φ 52.5                      | B2         | 3                     | φ 6                            | φ 20                       | 7                            | 10.5                      | M4               | 3.5 | 67.7                 |
| S75B 70A - 0315          | 70                         | φ 52.5                           | φ 54                        | A1         | 3                     | φ 15                           | -                          | -                            | 3                         | -                | -   | 50.7                 |
| S75B 70B + 0306          | 70                         | φ 52.5                           | φ 54                        | B2         | 3                     | φ 6                            | φ 20                       | 7                            | 10.5                      | M4               | 3.5 | 70.8                 |



| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>$z$ | 分度圆直径<br>Reference Diameter<br>$d$ | 齿顶圆直径<br>Tip Diameter<br>$d_a$ | 形状<br>Type | 齿宽<br>Face Width<br>$b$ | 孔径③<br>Bore Diameter<br>$d_d(H8)$ | 轮毂外径<br>Hub Diameter<br>$d_h$ | 轮毂长度<br>Hub Projection<br>$l_h$ | 全长<br>Overall Length<br>$l$ | 螺纹孔<br>Set Screw |       | 重量<br>Weight<br>$W(g)$ |
|--------------------------|------------------------------|------------------------------------|--------------------------------|------------|-------------------------|-----------------------------------|-------------------------------|---------------------------------|-----------------------------|------------------|-------|------------------------|
|                          |                              |                                    |                                |            |                         |                                   |                               |                                 |                             | $M$              | $l_s$ |                        |
| <b>S75B 72A - 0315</b>   | 72                           | $\phi 54$                          | $\phi 55.5$                    | A1         | 3                       | $\phi 15$                         | -                             | -                               | 3                           | -                | -     | 53.9                   |
| <b>S75B 72B + 0306</b>   | 72                           | $\phi 54$                          | $\phi 55.5$                    | B2         | 3                       | $\phi 6$                          | $\phi 20$                     | 7                               | 10.5                        | M4               | 3.5   | 74.0                   |
| <b>S75B 75A - 0315</b>   | 75                           | $\phi 56.25$                       | $\phi 57.75$                   | A1         | 3                       | $\phi 15$                         | -                             | -                               | 3                           | -                | -     | 58.9                   |
| <b>S75B 75B + 0306</b>   | 75                           | $\phi 56.25$                       | $\phi 57.75$                   | B2         | 3                       | $\phi 6$                          | $\phi 20$                     | 7                               | 10.5                        | M4               | 3.5   | 79.0                   |

## 容许传达动力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

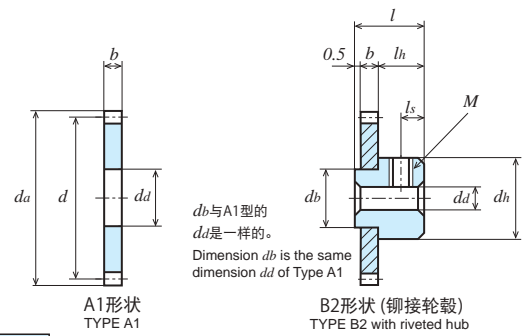
| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |        |        |
|---------------------------|---|-------|-------|-------|-------|--------|--------|
|                           | 10  | 100   | 200   | 400   | 800   | 1,200  | 1,500  |
| S75B 10K - 0809           | 0.22  | 2.18  | 4.36  | 8.73  | 17.46 | 26.18  | 32.73  |
| S75B 12K - 0811           | 0.31  | 3.06  | 6.11  | 12.22 | 24.45 | 36.67  | 45.84  |
| S75B 14K + 0805           | 0.40  | 3.98  | 7.97  | 15.93 | 31.87 | 47.80  | 59.75  |
| S75B 15K + 0805           | 0.45  | 4.46  | 8.93  | 17.86 | 35.72 | 53.57  | 66.97  |
| S75B 16K + 0805           | 0.50  | 4.95  | 9.91  | 19.82 | 39.64 | 59.45  | 74.32  |
| S75B 16B + 0305           | 0.19  | 1.86  | 3.72  | 7.43  | 14.86 | 22.30  | 27.87  |
| S75B 18K + 0805           | 0.60  | 5.96  | 11.91 | 23.82 | 47.65 | 71.47  | 88.54  |
| S75B 18B + 0305           | 0.22  | 2.23  | 4.47  | 8.93  | 17.87 | 26.80  | 33.20  |
| S75B 20K + 0805           | 0.70  | 6.99  | 13.99 | 27.97 | 55.94 | 83.92  | 102.17 |
| S75B 20B + 0306           | 0.26  | 2.62  | 5.24  | 10.49 | 20.98 | 31.47  | 38.31  |
| S75B 24B + 0306           | 0.34  | 3.42  | 6.84  | 13.67 | 27.35 | 40.23  | 48.28  |
| S75B 25B + 0306           | 0.36  | 3.62  | 7.24  | 14.49 | 28.98 | 42.33  | 50.74  |
| S75B 26B + 0306           | 0.38  | 3.83  | 7.65  | 15.31 | 30.62 | 44.42  | 53.17  |
| S75B 28B + 0306           | 0.42  | 4.24  | 8.48  | 16.96 | 33.92 | 48.56  | 57.96  |
| S75B 30B + 0306           | 0.47  | 4.66  | 9.31  | 18.62 | 37.25 | 52.61  | 62.64  |
| S75B 32B + 0306           | 0.51  | 5.08  | 10.16 | 20.31 | 40.59 | 56.62  | 67.24  |
| S75B 35B + 0306           | 0.57  | 5.72  | 11.43 | 22.86 | 45.05 | 62.50  | 73.96  |
| S75B 36B + 0306           | 0.59  | 5.93  | 11.86 | 23.72 | 46.53 | 64.43  | 76.15  |
| S75B 40B + 0306           | 0.68  | 6.79  | 13.59 | 27.17 | 52.33 | 71.97  | 84.68  |
| S75B 42B + 0306           | 0.72  | 7.23  | 14.46 | 28.92 | 55.19 | 75.64  | 88.80  |
| S75B 45B + 0306           | 0.79  | 7.88  | 15.76 | 31.52 | 59.35 | 80.95  | 94.74  |
| S75B 48B + 0306           | 0.85  | 8.54  | 17.08 | 34.16 | 63.47 | 86.16  | 100.53 |
| S75B 50A - 0315           | 0.90  | 8.98  | 17.96 | 35.92 | 66.17 | 89.54  | 104.28 |
| S75B 55A - 0315           | 1.01  | 10.09 | 20.18 | 40.36 | 72.77 | 97.73  | 115.35 |
| S75B 56A - 0315           | 1.03  | 10.31 | 20.62 | 41.25 | 74.06 | 99.32  | 117.63 |
| S75B 58A - 0315           | 1.08  | 10.76 | 21.52 | 43.03 | 76.61 | 102.45 | 122.17 |
| S75B 60A - 0315           | 1.12  | 11.20 | 22.41 | 44.82 | 79.13 | 105.53 | 126.68 |
| S75B 62A - 0315           | 1.17  | 11.65 | 23.30 | 46.61 | 81.62 | 108.54 | 131.16 |
| S75B 64A - 0315           | 1.21  | 12.10 | 24.20 | 48.37 | 84.07 | 111.64 | 135.62 |
| S75B 65A - 0315           | 1.23  | 12.33 | 24.65 | 49.15 | 85.28 | 113.50 | 137.83 |
| S75B 66A - 0315           | 1.26  | 12.55 | 25.10 | 49.93 | 86.48 | 115.37 | 140.04 |
| S75B 68A - 0315           | 1.30  | 13.00 | 26.00 | 51.48 | 88.86 | 119.08 | 144.43 |
| S75B 70A - 0315           | 1.35  | 13.45 | 26.90 | 53.02 | 91.21 | 122.77 | 148.79 |
| S75B 72A - 0315           | 1.39  | 13.90 | 27.81 | 54.55 | 93.53 | 126.44 | 153.12 |
| S75B 75A - 0315           | 1.46  | 14.58 | 29.17 | 56.81 | 96.94 | 131.90 | 159.56 |

# 黄铜直齿轮

## SPUR GEARS

模数  
MODULE **0.75** (齿数 80 ~ 120)

(普通齿)  
FULL DEPTH TOOTH



单位: mm

| 精度②   | 材料            | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-------|---------------|-----|-----|------|-------------|
| 管理范围外 | C3713P、C3604B | 20度 | —   | —    | 0.02 ~ 0.06 |

★未做表面处理。【+】带有螺纹孔，但无固定用螺钉。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①同一种材料，一样的齿轮相互啮合时的理想值。② A1, B2 型在精度管理范围外。

③ A1 型的齿孔 dd 的公差为 0 ~ +0.1mm。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径③<br>Bore Diameter<br>dd(H8) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 螺纹孔<br>Set Screw |     | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|--------------------------------|----------------------------|------------------------------|---------------------------|------------------|-----|----------------------|
|                          |                            |                                  |                             |            |                       |                                |                            |                              |                           | M                | ls  |                      |
| S75B 80A - 0315          | 80                         | φ60                              | φ61.5                       | A1         | 3                     | φ15                            | -                          | -                            | 3                         | -                | -   | 67.6                 |
| S75B 80B + 0306          | 80                         | φ60                              | φ61.5                       | B2         | 3                     | φ6                             | φ20                        | 7                            | 10.5                      | M4               | 3.5 | 87.7                 |
| S75B 85A - 0315          | 85                         | φ63.75                           | φ65.25                      | A1         | 3                     | φ15                            | -                          | -                            | 3                         | -                | -   | 76.9                 |
| S75B 85B + 0306          | 85                         | φ63.75                           | φ65.25                      | B2         | 3                     | φ6                             | φ20                        | 7                            | 10.5                      | M4               | 3.5 | 97.0                 |
| S75B 90A - 0315          | 90                         | φ67.5                            | φ69                         | A1         | 3                     | φ15                            | -                          | -                            | 3                         | -                | -   | 86.7                 |
| S75B 90B + 0306          | 90                         | φ67.5                            | φ69                         | B2         | 3                     | φ6                             | φ20                        | 7                            | 10.5                      | M4               | 3.5 | 106.9                |
| S75B 95A - 0315          | 95                         | φ71.25                           | φ72.75                      | A1         | 3                     | φ15                            | -                          | -                            | 3                         | -                | -   | 97.2                 |
| S75B 95B + 0306          | 95                         | φ71.25                           | φ72.75                      | B2         | 3                     | φ6                             | φ20                        | 7                            | 10.5                      | M4               | 3.5 | 117.3                |
| S75B 100A - 0315         | 100                        | φ75                              | φ76.5                       | A1         | 3                     | φ15                            | -                          | -                            | 3                         | -                | -   | 108.1                |
| S75B 100B + 0306         | 100                        | φ75                              | φ76.5                       | B2         | 3                     | φ6                             | φ20                        | 7                            | 10.5                      | M4               | 3.5 | 128.3                |
| S75B 105A - 0315         | 105                        | φ78.75                           | φ80.25                      | A1         | 3                     | φ15                            | -                          | -                            | 3                         | -                | -   | 119.7                |
| S75B 105B + 0306         | 105                        | φ78.75                           | φ80.25                      | B2         | 3                     | φ6                             | φ20                        | 7                            | 10.5                      | M4               | 3.5 | 139.8                |
| S75B 110A - 0315         | 110                        | φ82.5                            | φ84                         | A1         | 3                     | φ15                            | -                          | -                            | 3                         | -                | -   | 131.8                |
| S75B 110B + 0306         | 110                        | φ82.5                            | φ84                         | B2         | 3                     | φ6                             | φ20                        | 7                            | 10.5                      | M4               | 3.5 | 151.9                |
| S75B 115A - 0315         | 115                        | φ86.25                           | φ87.75                      | A1         | 3                     | φ15                            | -                          | -                            | 3                         | -                | -   | 144.5                |
| S75B 115B + 0306         | 115                        | φ86.25                           | φ87.75                      | B2         | 3                     | φ6                             | φ20                        | 7                            | 10.5                      | M4               | 3.5 | 164.6                |
| S75B 120A - 0315         | 120                        | φ90                              | φ91.5                       | A1         | 3                     | φ15                            | -                          | -                            | 3                         | -                | -   | 157.7                |
| S75B 120B + 0306         | 120                        | φ90                              | φ91.5                       | B2         | 3                     | φ6                             | φ20                        | 7                            | 10.5                      | M4               | 3.5 | 177.8                |

### 容许传达动力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |        |        |        |
|---------------------------|---|-------|-------|-------|--------|--------|--------|
|                           | 10  | 100   | 200   | 400   | 800    | 1,200  | 1,500  |
| S75B 80A - 0315           | 1.57  | 15.72 | 31.43 | 60.54 | 102.48 | 140.91 | 170.15 |
| S75B 85A - 0315           | 1.68  | 16.84 | 33.67 | 64.12 | 107.70 | 149.62 | 180.35 |
| S75B 90A - 0315           | 1.80  | 17.97 | 35.94 | 67.69 | 112.84 | 158.34 | 191.18 |
| S75B 95A - 0315           | 1.91  | 19.11 | 38.22 | 71.19 | 117.82 | 166.93 | 201.90 |
| S75B 100A - 0315          | 2.03  | 20.25 | 40.50 | 74.62 | 123.95 | 175.39 | 212.48 |
| S75B 105A - 0315          | 2.14  | 21.39 | 42.79 | 77.98 | 130.17 | 183.73 | 222.94 |
| S75B 110A - 0315          | 2.25  | 22.54 | 45.08 | 81.28 | 136.32 | 192.36 | 233.28 |
| S75B 115A - 0315          | 2.37  | 23.69 | 47.37 | 84.52 | 142.40 | 201.01 | 243.49 |
| S75B 120A - 0315          | 2.48  | 24.83 | 49.67 | 87.69 | 148.43 | 209.59 | 253.58 |



# Memo

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齿  
SPUR GEARS

齿  
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齿  
HELIICAL GEARS AND SCREW GEARS

伞齿  
MITER GEARS

齿  
BEVEL GEARS

齿  
WORMS AND WORM WHEELS

技术数据  
REFERENCE DATA

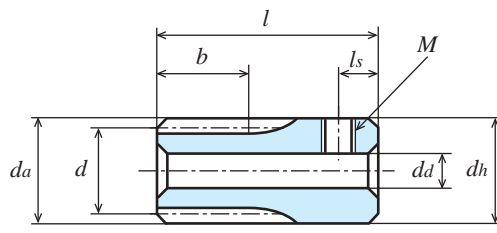
# 黄铜直齿轮

## SPUR GEARS

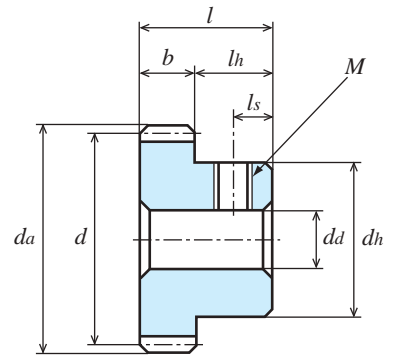
模数  
MODULE

**0.8** (齿数 14 ~ 120)

(普通齿)  
FULL DEPTH TOOTH



K2形状  
TYPE K2



B1形状  
TYPE B1

单位: mm

| 精度              | 材料            | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|-----------------|---------------|-----|-----|------|-------------|
| JIS B 1702-1 9级 | C3604B、C3771B | 20度 | —   | —    | 0.02 ~ 0.06 |

★未做表面处理。【+】带有螺纹孔，但无固定用螺钉。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H8) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 螺纹孔<br>Set Screw |    | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|------------------|----|----------------------|
|                          |                            |                                  |                             |            |                       |                               |                            |                              |                           | M                | ls |                      |
| S80B 14K + 0704          | 14                         | φ11.2                            | φ12.8                       | K2         | 7                     | φ4                            | φ12.8                      | 13                           | 20                        | M3               | 3  | 17.8                 |
| S80B 15K + 0704          | 15                         | φ12                              | φ13.6                       | K2         | 7                     | φ4                            | φ13.6                      | 13                           | 20                        | M3               | 3  | 20.4                 |
| S80B 16B + 0504          | 16                         | φ12.8                            | φ14.4                       | B1         | 5                     | φ4                            | φ10                        | 9                            | 14                        | M3               | 3  | 9.8                  |
| S80B 16B + 0704          | 16                         | φ12.8                            | φ14.4                       | B1         | 7                     | φ4                            | φ10                        | 7                            | 14                        | M3               | 3  | 10.7                 |
| S80B 18B + 0504          | 18                         | φ14.4                            | φ16                         | B1         | 5                     | φ4                            | φ10                        | 9                            | 14                        | M3               | 3  | 11.3                 |
| S80B 18B + 0704          | 18                         | φ14.4                            | φ16                         | B1         | 7                     | φ4                            | φ10                        | 7                            | 14                        | M3               | 3  | 12.7                 |
| S80B 20B + 0504          | 20                         | φ16                              | φ17.6                       | B1         | 5                     | φ4                            | φ10                        | 9                            | 14                        | M3               | 3  | 12.9                 |
| S80B 20B + 0704          | 20                         | φ16                              | φ17.6                       | B1         | 7                     | φ4                            | φ10                        | 7                            | 14                        | M3               | 3  | 15.0                 |
| S80B 24B + 0505          | 24                         | φ19.2                            | φ20.8                       | B1         | 5                     | φ5                            | φ12.5                      | 9                            | 14                        | M3               | 3  | 19.2                 |
| S80B 24B + 0705          | 24                         | φ19.2                            | φ20.8                       | B1         | 7                     | φ5                            | φ12.5                      | 7                            | 14                        | M3               | 3  | 22.0                 |
| S80B 25B + 0505          | 25                         | φ20                              | φ21.6                       | B1         | 5                     | φ5                            | φ12.5                      | 9                            | 14                        | M3               | 3  | 20.2                 |
| S80B 25B + 0705          | 25                         | φ20                              | φ21.6                       | B1         | 7                     | φ5                            | φ12.5                      | 7                            | 14                        | M3               | 3  | 23.5                 |
| S80B 28B + 0505          | 28                         | φ22.4                            | φ24                         | B1         | 5                     | φ5                            | φ12.5                      | 9                            | 14                        | M3               | 3  | 23.6                 |
| S80B 28B + 0705          | 28                         | φ22.4                            | φ24                         | B1         | 7                     | φ5                            | φ12.5                      | 7                            | 14                        | M3               | 3  | 28.2                 |
| S80B 30B + 0505          | 30                         | φ24                              | φ25.6                       | B1         | 5                     | φ5                            | φ12.5                      | 9                            | 14                        | M3               | 3  | 26.1                 |
| S80B 30B + 0705          | 30                         | φ24                              | φ25.6                       | B1         | 7                     | φ5                            | φ12.5                      | 7                            | 14                        | M3               | 3  | 31.7                 |
| S80B 32B + 0505          | 32                         | φ25.6                            | φ27.2                       | B1         | 5                     | φ5                            | φ12.5                      | 9                            | 14                        | M3               | 4  | 28.8                 |
| S80B 36B + 0506          | 36                         | φ28.8                            | φ30.4                       | B1         | 5                     | φ6                            | φ14                        | 9                            | 14                        | M4               | 4  | 35.8                 |
| S80B 40B + 0506          | 40                         | φ32                              | φ33.6                       | B1         | 5                     | φ6                            | φ14                        | 9                            | 14                        | M4               | 4  | 42.3                 |
| S80B 45B + 0506          | 45                         | φ36                              | φ37.6                       | B1         | 5                     | φ6                            | φ14                        | 9                            | 14                        | M4               | 4  | 51.4                 |
| S80B 48B + 0506          | 48                         | φ38.4                            | φ40                         | B1         | 5                     | φ6                            | φ14                        | 9                            | 14                        | M4               | 4  | 57.3                 |
| S80B 50B + 0506          | 50                         | φ40                              | φ41.6                       | B1         | 5                     | φ6                            | φ14                        | 9                            | 14                        | M4               | 4  | 61.5                 |
| S80B 56B + 0506          | 56                         | φ44.8                            | φ46.4                       | B1         | 5                     | φ6                            | φ14                        | 9                            | 14                        | M4               | 4  | 75.1                 |
| S80B 60B + 0506          | 60                         | φ48                              | φ49.6                       | B1         | 5                     | φ6                            | φ14                        | 9                            | 14                        | M4               | 4  | 85.0                 |
| S80B 64B + 0506          | 64                         | φ51.2                            | φ52.8                       | B1         | 5                     | φ6                            | φ16                        | 9                            | 14                        | M4               | 4  | 99.1                 |
| S80B 70B + 0508          | 70                         | φ56                              | φ57.6                       | B1         | 5                     | φ8                            | φ16                        | 9                            | 14                        | M4               | 4  | 113.8                |
| S80B 72B + 0508          | 72                         | φ57.6                            | φ59.2                       | B1         | 5                     | φ8                            | φ16                        | 9                            | 14                        | M4               | 4  | 119.8                |
| S80B 80B + 0508          | 80                         | φ64                              | φ65.6                       | B1         | 5                     | φ8                            | φ16                        | 9                            | 14                        | M4               | 4  | 145.8                |
| S80B 90B + 0508          | 90                         | φ72                              | φ73.6                       | B1         | 5                     | φ8                            | φ20                        | 9                            | 14                        | M4               | 4  | 190.6                |
| S80B 100B + 0508         | 100                        | φ80                              | φ81.6                       | B1         | 5                     | φ8                            | φ24                        | 9                            | 14                        | M4               | 4  | 241.6                |
| S80B 120B + 0508         | 120                        | φ96                              | φ97.6                       | B1         | 5                     | φ8                            | φ30                        | 9                            | 14                        | M4               | 4  | 354.8                |

## 容许传达动力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |        |        |        |        |
|---------------------------|---|-------|-------|--------|--------|--------|--------|
|                           | 10  | 100   | 200   | 400    | 800    | 1,200  | 1,500  |
| S80B 14K + 0704           | 0.40  | 3.97  | 7.93  | 15.86  | 31.73  | 47.59  | 59.49  |
| S80B 15K + 0704           | 0.44  | 4.44  | 8.89  | 17.78  | 35.56  | 53.33  | 66.67  |
| S80B 16B + 0504           | 0.35  | 3.52  | 7.05  | 14.09  | 28.19  | 42.28  | 52.81  |
| S80B 16B + 0704           | 0.49  | 4.93  | 9.86  | 19.73  | 39.46  | 59.19  | 73.93  |
| S80B 18B + 0504           | 0.42  | 4.24  | 8.47  | 16.94  | 33.88  | 50.82  | 62.30  |
| S80B 18B + 0704           | 0.59  | 5.93  | 11.86 | 23.72  | 47.43  | 71.15  | 87.23  |
| S80B 20B + 0504           | 0.50  | 4.97  | 9.95  | 19.89  | 39.78  | 59.63  | 71.83  |
| S80B 20B + 0704           | 0.70  | 6.96  | 13.92 | 27.85  | 55.70  | 83.48  | 100.56 |
| S80B 24B + 0505           | 0.65  | 6.48  | 12.97 | 25.93  | 51.86  | 75.46  | 90.36  |
| S80B 24B + 0705           | 0.91  | 9.08  | 18.15 | 36.30  | 72.61  | 105.64 | 126.50 |
| S80B 25B + 0505           | 0.69  | 6.87  | 13.74 | 27.47  | 54.95  | 79.37  | 94.90  |
| S80B 25B + 0705           | 0.96  | 9.62  | 19.23 | 38.46  | 76.93  | 111.12 | 132.87 |
| S80B 28B + 0505           | 0.80  | 8.04  | 16.08 | 32.17  | 64.33  | 90.94  | 108.29 |
| S80B 28B + 0705           | 1.13  | 11.26 | 22.52 | 45.03  | 90.06  | 127.31 | 151.60 |
| S80B 30B + 0505           | 0.88  | 8.83  | 17.66 | 35.32  | 70.58  | 98.45  | 116.92 |
| S80B 30B + 0705           | 1.24  | 12.36 | 24.72 | 49.45  | 98.81  | 137.88 | 163.69 |
| S80B 32B + 0505           | 0.96  | 9.63  | 19.26 | 38.51  | 76.20  | 105.88 | 125.42 |
| S80B 36B + 0506           | 1.12  | 11.25 | 22.49 | 44.98  | 87.26  | 120.33 | 141.83 |
| S80B 40B + 0506           | 1.28  | 12.88 | 25.77 | 51.53  | 98.05  | 134.24 | 157.49 |
| S80B 45B + 0506           | 1.49  | 14.94 | 29.88 | 59.77  | 111.08 | 150.77 | 175.91 |
| S80B 48B + 0506           | 1.61  | 16.19 | 32.38 | 64.77  | 118.70 | 160.33 | 186.72 |
| S80B 50B + 0506           | 1.70  | 17.03 | 34.06 | 68.12  | 123.70 | 166.54 | 195.42 |
| S80B 56B + 0506           | 1.96  | 19.55 | 39.11 | 78.21  | 138.25 | 184.44 | 221.21 |
| S80B 60B + 0506           | 2.12  | 21.25 | 42.49 | 84.92  | 147.60 | 196.01 | 238.11 |
| S80B 64B + 0506           | 2.29  | 22.95 | 45.90 | 90.81  | 156.68 | 210.07 | 254.77 |
| S80B 70B + 0508           | 2.55  | 25.51 | 51.02 | 99.46  | 169.80 | 230.87 | 297.32 |
| S80B 72B + 0508           | 2.64  | 26.37 | 52.73 | 102.30 | 174.05 | 237.72 | 287.38 |
| S80B 80B + 0508           | 2.98  | 29.80 | 59.61 | 113.43 | 190.42 | 264.72 | 319.13 |
| S80B 90B + 0508           | 3.41  | 34.08 | 68.16 | 126.67 | 209.60 | 297.17 | 359.54 |
| S80B 100B + 0508          | 3.84  | 38.40 | 76.81 | 139.49 | 233.19 | 328.98 | 399.28 |
| S80B 120B + 0508          | 4.71  | 47.09 | 94.11 | 163.57 | 278.85 | 393.97 | 475.79 |

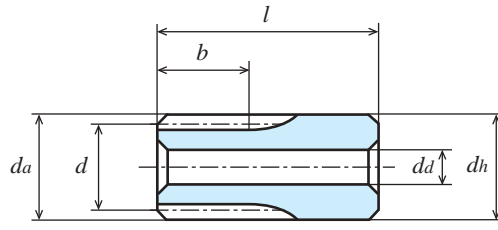
# 青色 POM 直齿轮

## SPUR GEARS

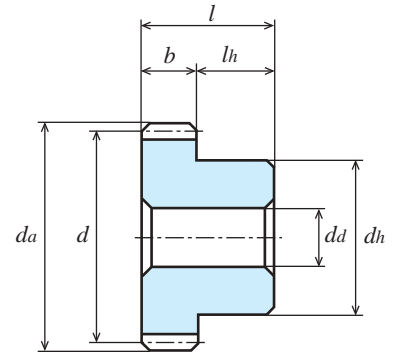
模数  
MODULE

0.5 (齿数 14 ~ 120)

(普通齿)  
FULL DEPTH TOOTH



K2形状  
TYPE K2



B1形状  
TYPE B1

单位: mm

| 精度②                   | 材料     | 压力角  | 加工方法 | 齿面硬度 | 侧隙①         |
|-----------------------|--------|------|------|------|-------------|
| JIS B 1702-1 9 ~ 10 级 | 青色 POM | 20 度 | 切削加工 | —    | 0.02 ~ 0.06 |

★本产品的容许传达动力表使用 LOUIS 公式。请在 P28 确认单位换算方法。

①同一种材料，一样的齿轮相互啮合时的理想值。

②制作时的控制精度。

★由于材料之特性，易产生由经年老化·热胀冷缩而引起的尺寸和精度的变化。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>dd | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|---------------------------|----------------------------|------------------------------|---------------------------|----------------------|
| S50BP 14K - 0803         | 14                         | φ 7                              | φ 8                         | K2         | 8                     | φ3                        | φ 9                        | 10                           | 18                        | 1.1                  |
| S50BP 15K - 0803         | 15                         | φ 7.5                            | φ 8.5                       | K2         | 8                     | φ3                        | φ 9                        | 10                           | 18                        | 1.2                  |
| S50BP 16K - 0803         | 16                         | φ 8                              | φ 9                         | K2         | 8                     | φ3                        | φ 9                        | 10                           | 18                        | 1.3                  |
| S50BP 18K - 0803         | 18                         | φ 9                              | φ10                         | K2         | 8                     | φ3                        | φ10                        | 10                           | 18                        | 1.6                  |
| S50BP 20B - 0503         | 20                         | φ10                              | φ11                         | B1         | 5                     | φ3                        | φ 8                        | 5                            | 10                        | 0.8                  |
| S50BP 24B - 0503         | 24                         | φ12                              | φ13                         | B1         | 5                     | φ3                        | φ10                        | 5                            | 10                        | 1.2                  |
| S50BP 25B - 0503         | 25                         | φ12.5                            | φ13.5                       | B1         | 5                     | φ3                        | φ10                        | 5                            | 10                        | 1.3                  |
| S50BP 28B - 0503         | 28                         | φ14                              | φ15                         | B1         | 5                     | φ3                        | φ12                        | 5                            | 10                        | 1.8                  |
| S50BP 30B - 0503         | 30                         | φ15                              | φ16                         | B1         | 5                     | φ3                        | φ12                        | 5                            | 10                        | 1.9                  |
| S50BP 32B - 0503         | 32                         | φ16                              | φ17                         | B1         | 5                     | φ3                        | φ14                        | 5                            | 10                        | 2.4                  |
| S50BP 36B - 0503         | 36                         | φ18                              | φ19                         | B1         | 5                     | φ3                        | φ15                        | 5                            | 10                        | 2.9                  |
| S50BP 40B - 0503         | 40                         | φ20                              | φ21                         | B1         | 5                     | φ3                        | φ15                        | 5                            | 10                        | 3.3                  |
| S50BP 45B - 0503         | 45                         | φ22.5                            | φ23.5                       | B1         | 5                     | φ3                        | φ18                        | 5                            | 10                        | 4.5                  |
| S50BP 50B - 0503         | 50                         | φ25                              | φ26                         | B1         | 5                     | φ3                        | φ20                        | 5                            | 10                        | 5.6                  |
| S50BP 56B - 0503         | 56                         | φ28                              | φ29                         | B1         | 5                     | φ3                        | φ22                        | 5                            | 10                        | 6.9                  |
| S50BP 60B - 0503         | 60                         | φ30                              | φ31                         | B1         | 5                     | φ3                        | φ24                        | 5                            | 10                        | 8.1                  |
| S50BP 64B - 0503         | 64                         | φ32                              | φ33                         | B1         | 5                     | φ3                        | φ26                        | 5                            | 10                        | 9.3                  |
| S50BP 70B - 0504         | 70                         | φ35                              | φ36                         | B1         | 5                     | φ4                        | φ26                        | 5                            | 10                        | 10.3                 |
| S50BP 72B - 0504         | 72                         | φ36                              | φ37                         | B1         | 5                     | φ4                        | φ28                        | 5                            | 10                        | 11.3                 |
| S50BP 80B - 0504         | 80                         | φ40                              | φ41                         | B1         | 5                     | φ4                        | φ32                        | 5                            | 10                        | 14.3                 |
| S50BP 90B - 0505         | 90                         | φ45                              | φ46                         | B1         | 5                     | φ5                        | φ36                        | 5                            | 10                        | 18.1                 |
| S50BP 100B - 0505        | 100                        | φ50                              | φ51                         | B1         | 5                     | φ5                        | φ40                        | 5                            | 10                        | 22.4                 |
| S50BP 120B - 0505        | 120                        | φ60                              | φ61                         | B1         | 5                     | φ5                        | φ50                        | 5                            | 10                        | 33.5                 |

青色 POM 系列材料，符合以下管理规定，或由材料厂家发表了自我宣言。

| 用途<br>Uses              | 各国的管理规定<br>Regulations  |
|-------------------------|---|
| 食品接触用途<br>Food contact  | NO.10/2011(EU),FDA(美国), NSF 51 (美国), 3A-DAIRY (美国; 乳制品), Health Canada (加拿大), JHOSPA Positive List, 日本厚生省告示第 370 号<br>NO.10/2011 (EU), FDA (USA), NSF 51 (USA), 3A-DAIRY (USA; Dairy product), Health Canada (CANADA), JHOSPA Positive List, MHLW Notification No.370 (JAPAN) |
| 饮用水用途<br>Drinking water | NSF61 (美国), KTW W270 (德国), WRAS (英国), ACS (法国)<br>NSF 61(USA), KTW W270 (GERMANY), WRAS (UK), ACS (FRANCE)  |

请注意

- 1) 不得用于酒精浓度超过 15% 的食品。
- 2) 关于使用本产品时的安全性，请用本产品组装最终机构后，要在此机构的实际运作环境下确认安全后，再继续使用。
- 3) 青色 POM 齿轮系列，是在有可能受到切削液影响的环境下制作的。

## 容许传达动力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |        |        |        |
|---------------------------|---|-------|-------|-------|--------|--------|--------|
|                           | 10  | 100   | 200   | 400   | 800    | 1,200  | 1,500  |
| S50BP 14K - 0803          | 0.22  | 2.24  | 4.48  | 8.95  | 17.89  | 26.82  | 33.50  |
| S50BP 15K - 0803          | 0.24  | 2.40  | 4.80  | 9.59  | 19.17  | 28.73  | 35.88  |
| S50BP 16K - 0803          | 0.26  | 2.56  | 5.12  | 10.23 | 20.44  | 30.64  | 38.27  |
| S50BP 18K - 0803          | 0.29  | 2.88  | 5.76  | 11.51 | 22.99  | 34.45  | 43.03  |
| S50BP 20B - 0503          | 0.18  | 1.76  | 3.52  | 7.04  | 14.02  | 21.02  | 26.28  |
| S50BP 24B - 0503          | 0.22  | 2.22  | 4.44  | 8.86  | 17.71  | 26.56  | 33.10  |
| S50BP 25B - 0503          | 0.23  | 2.34  | 4.68  | 9.32  | 18.65  | 27.88  | 34.85  |
| S50BP 28B - 0503          | 0.27  | 2.68  | 5.37  | 10.73 | 21.40  | 32.11  | 40.02  |
| S50BP 30B - 0503          | 0.30  | 3.01  | 6.03  | 12.05 | 24.04  | 35.98  | 44.97  |
| S50BP 32B - 0503          | 0.33  | 3.25  | 6.51  | 13.02 | 25.98  | 38.88  | 48.60  |
| S50BP 36B - 0503          | 0.37  | 3.75  | 7.49  | 14.95 | 29.85  | 44.77  | 55.75  |
| S50BP 40B - 0503          | 0.44  | 4.36  | 8.71  | 17.42 | 34.72  | 51.98  | 64.87  |
| S50BP 45B - 0503          | 0.50  | 4.98  | 9.97  | 19.91 | 39.70  | 59.37  | 74.11  |
| S50BP 50B - 0503          | 0.56  | 5.61  | 11.21 | 22.40 | 44.68  | 66.85  | 83.34  |
| S50BP 56B - 0503          | 0.64  | 6.37  | 12.74 | 25.42 | 50.67  | 75.73  | 94.45  |
| S50BP 60B - 0503          | 0.70  | 7.01  | 14.02 | 27.97 | 55.71  | 83.30  | 103.79 |
| S50BP 64B - 0503          | 0.75  | 7.53  | 15.04 | 30.02 | 59.81  | 89.37  | 111.38 |
| S50BP 70B - 0504          | 0.83  | 8.30  | 16.58 | 33.10 | 65.91  | 98.43  | 122.38 |
| S50BP 72B - 0504          | 0.86  | 8.56  | 17.11 | 34.13 | 67.96  | 101.51 | 126.11 |
| S50BP 80B - 0504          | 0.96  | 9.59  | 19.16 | 38.23 | 76.12  | 113.65 | 140.74 |
| S50BP 90B - 0505          | 1.09  | 10.88 | 21.73 | 43.34 | 86.20  | 128.25 | 158.66 |
| S50BP 100B - 0505         | 1.24  | 12.35 | 24.67 | 49.20 | 97.81  | 144.96 | 179.11 |
| S50BP 120B - 0505         | 1.50  | 14.98 | 29.91 | 59.61 | 118.34 | 174.25 | 214.73 |

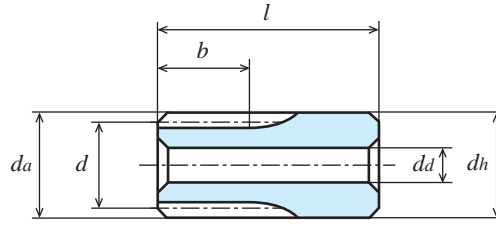
# 青色 POM 直齿轮

## SPUR GEARS

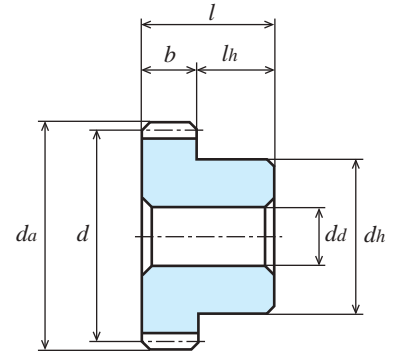
模数  
MODULE

**0.8** (齿数 14 ~ 120)

(普通齿)  
FULL DEPTH TOOTH



K2形状  
TYPE K2



B1形状  
TYPE B1

单位: mm

| 精度②                | 材料     | 压力角 | 加工方法 | 齿面硬度 | 侧隙①         |
|--------------------|--------|-----|------|------|-------------|
| JIS B 1702-1 9~10级 | 青色 POM | 20度 | 切削加工 | —    | 0.02 ~ 0.06 |

★本产品的容许传达动力表使用 LOUIS 公式。请在 P28 确认单位换算方法。

①同一种材料，一样的齿轮相互啮合时的理想值。

②制作时的控制精度。

★由于材料之特性，易产生由经年老化·热胀冷缩而引起的尺寸和精度的变化。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>dd | 轮毂外直径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|---------------------------|-----------------------------|------------------------------|---------------------------|----------------------|
| S80BP 14K - 0703         | 14                         | φ11.2                            | φ12.8                       | K2         | 7                     | φ3                        | φ12.8                       | 13                           | 20                        | 3.1                  |
| S80BP 15K - 0703         | 15                         | φ12                              | φ13.6                       | K2         | 7                     | φ3                        | φ13.6                       | 13                           | 20                        | 3.6                  |
| S80BP 16B - 0503         | 16                         | φ12.8                            | φ14.4                       | B1         | 5                     | φ3                        | φ10                         | 7                            | 12                        | 1.5                  |
| S80BP 18B - 0503         | 18                         | φ14.4                            | φ16                         | B1         | 5                     | φ3                        | φ12                         | 7                            | 12                        | 2.1                  |
| S80BP 20B - 0503         | 20                         | φ16                              | φ17.6                       | B1         | 5                     | φ3                        | φ12                         | 7                            | 12                        | 2.4                  |
| S80BP 22B - 0503         | 22                         | φ17.6                            | φ19.2                       | B1         | 5                     | φ3                        | φ15                         | 7                            | 12                        | 3.3                  |
| S80BP 24B - 0503         | 24                         | φ19.2                            | φ20.8                       | B1         | 5                     | φ3                        | φ16                         | 7                            | 12                        | 3.9                  |
| S80BP 25B - 0503         | 25                         | φ20                              | φ21.6                       | B1         | 5                     | φ3                        | φ16                         | 7                            | 12                        | 4.1                  |
| S80BP 28B - 0503         | 28                         | φ22.4                            | φ24                         | B1         | 5                     | φ3                        | φ20                         | 7                            | 12                        | 5.7                  |
| S80BP 30B - 0503         | 30                         | φ24                              | φ25.6                       | B1         | 5                     | φ3                        | φ20                         | 7                            | 12                        | 6.1                  |
| S80BP 32B - 0503         | 32                         | φ25.6                            | φ27.2                       | B1         | 5                     | φ3                        | φ20                         | 7                            | 12                        | 6.6                  |
| S80BP 36B - 0504         | 36                         | φ28.8                            | φ30.4                       | B1         | 5                     | φ4                        | φ22                         | 7                            | 12                        | 8.1                  |
| S80BP 40B - 0504         | 40                         | φ32                              | φ33.6                       | B1         | 5                     | φ4                        | φ22                         | 7                            | 12                        | 9.2                  |
| S80BP 45B - 0504         | 45                         | φ36                              | φ37.6                       | B1         | 5                     | φ4                        | φ28                         | 7                            | 12                        | 13.0                 |
| S80BP 48B - 0504         | 48                         | φ38.4                            | φ40                         | B1         | 5                     | φ4                        | φ30                         | 7                            | 12                        | 14.9                 |
| S80BP 50B - 0504         | 50                         | φ40                              | φ41.6                       | B1         | 5                     | φ4                        | φ30                         | 7                            | 12                        | 15.6                 |
| S80BP 56B - 0504         | 56                         | φ44.8                            | φ46.4                       | B1         | 5                     | φ4                        | φ35                         | 7                            | 12                        | 20.4                 |
| S80BP 60B - 0504         | 60                         | φ48                              | φ49.6                       | B1         | 5                     | φ4                        | φ38                         | 7                            | 12                        | 23.7                 |
| S80BP 64B - 0504         | 64                         | φ51.2                            | φ52.8                       | B1         | 5                     | φ4                        | φ38                         | 7                            | 12                        | 25.4                 |
| S80BP 70B - 0505         | 70                         | φ56                              | φ57.6                       | B1         | 5                     | φ5                        | φ42                         | 7                            | 12                        | 30.6                 |
| S80BP 72B - 0505         | 72                         | φ57.6                            | φ59.2                       | B1         | 5                     | φ5                        | φ45                         | 7                            | 12                        | 33.7                 |
| S80BP 80B - 0505         | 80                         | φ64                              | φ65.6                       | B1         | 5                     | φ5                        | φ50                         | 7                            | 12                        | 41.7                 |
| S80BP 90B - 0505         | 90                         | φ72                              | φ73.6                       | B1         | 5                     | φ5                        | φ54                         | 7                            | 12                        | 50.9                 |
| S80BP 100B - 0505        | 100                        | φ80                              | φ81.6                       | B1         | 5                     | φ5                        | φ58                         | 7                            | 12                        | 61.1                 |
| S80BP 120B - 0505        | 120                        | φ96                              | φ97.6                       | B1         | 5                     | φ5                        | φ68                         | 7                            | 12                        | 86.4                 |

容许传达动力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

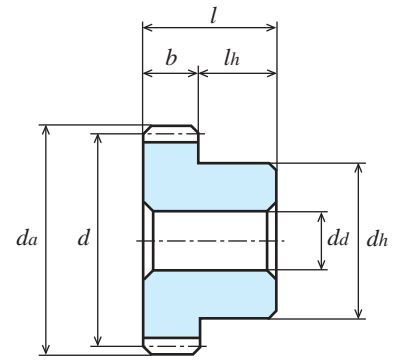
| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |        |        |        |        |
|---------------------------|---|-------|-------|--------|--------|--------|--------|
|                           | 10  | 100   | 200   | 400    | 800    | 1,200  | 1,500  |
| S80BP 14K - 0703          | 0.50  | 5.02  | 10.03 | 20.05  | 40.04  | 59.98  | 74.90  |
| S80BP 15K - 0703          | 0.54  | 5.37  | 10.75 | 21.48  | 42.89  | 64.24  | 80.22  |
| S80BP 16B - 0503          | 0.41  | 4.10  | 8.19  | 16.36  | 32.67  | 48.93  | 61.10  |
| S80BP 18B - 0503          | 0.46  | 4.61  | 9.21  | 18.40  | 36.74  | 55.02  | 68.68  |
| S80BP 20B - 0503          | 0.51  | 5.12  | 10.23 | 20.44  | 40.81  | 61.10  | 76.26  |
| S80BP 22B - 0503          | 0.56  | 5.63  | 11.25 | 22.48  | 44.87  | 67.17  | 83.83  |
| S80BP 24B - 0503          | 0.61  | 6.14  | 12.28 | 24.52  | 48.93  | 73.23  | 91.38  |
| S80BP 25B - 0503          | 0.64  | 6.40  | 12.79 | 25.54  | 50.96  | 76.26  | 95.15  |
| S80BP 28B - 0503          | 0.72  | 7.16  | 14.32 | 28.60  | 57.05  | 85.34  | 106.46 |
| S80BP 30B - 0503          | 0.77  | 7.68  | 15.34 | 30.64  | 61.10  | 91.38  | 113.98 |
| S80BP 32B - 0503          | 0.82  | 8.19  | 16.36 | 32.67  | 65.14  | 97.41  | 121.49 |
| S80BP 36B - 0504          | 0.92  | 9.21  | 18.40 | 36.74  | 73.23  | 109.47 | 136.47 |
| S80BP 40B - 0504          | 1.02  | 10.23 | 20.44 | 40.81  | 81.30  | 121.49 | 151.40 |
| S80BP 45B - 0504          | 1.15  | 11.51 | 22.99 | 45.89  | 91.38  | 136.47 | 169.55 |
| S80BP 48B - 0504          | 1.23  | 12.28 | 24.52 | 48.93  | 97.41  | 145.44 | 180.36 |
| S80BP 50B - 0504          | 1.28  | 12.79 | 25.54 | 50.96  | 101.44 | 151.40 | 187.53 |
| S80BP 56B - 0504          | 1.43  | 14.32 | 28.60 | 57.05  | 113.48 | 168.83 | 208.87 |
| S80BP 60B - 0504          | 1.54  | 15.34 | 30.64 | 61.10  | 121.49 | 180.36 | 222.96 |
| S80BP 64B - 0504          | 1.64  | 16.36 | 32.67 | 65.14  | 129.49 | 191.81 | 236.94 |
| S80BP 70B - 0505          | 1.79  | 17.89 | 35.73 | 71.21  | 141.46 | 208.87 | 257.71 |
| S80BP 72B - 0505          | 1.84  | 18.40 | 36.74 | 73.23  | 145.44 | 214.52 | 264.58 |
| S80BP 80B - 0505          | 2.05  | 20.44 | 40.81 | 81.30  | 161.10 | 236.94 | 291.72 |
| S80BP 90B - 0505          | 2.30  | 22.99 | 45.89 | 91.38  | 180.36 | 264.58 | 323.84 |
| S80BP 100B - 0505         | 2.56  | 25.54 | 50.96 | 101.44 | 199.41 | 291.72 | 355.00 |
| S80BP 120B - 0505         | 3.07  | 30.64 | 61.10 | 121.49 | 236.94 | 342.65 | 414.26 |

# 青色 POM 直齿轮

## SPUR GEARS

模数  
MODULE **1** (齿数 12 ~ 120)

(普通齿)  
FULL DEPTH TOOTH



B1形状  
TYPE B1

单位：mm

| 精度②                | 材料     | 压力角 | 加工方法 | 齿面硬度 | 侧隙①       |
|--------------------|--------|-----|------|------|-----------|
| JIS B 1702-1 9~10级 | 青色 POM | 20度 | 切削加工 | —    | 0.06~0.12 |

★本产品的容许传达动力表使用 LOUIS 公式。请在 P28 确认单位换算方法。

①同一种材料，一样的齿轮相互啮合时的理想值。

②制作时的控制精度。

★由于材料之特性，易产生由经年老化·热胀冷缩而引起的尺寸和精度的变化。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|---------------------------|----------------------------|------------------------------|---------------------------|----------------------|
| S1BP 12B - 1004          | 12                         | φ 12                             | φ 14                        | B1         | 10                    | φ4                        | φ 8                        | 10                           | 20                        | 1.9                  |
| S1BP 14B - 1004          | 14                         | φ 14                             | φ 16                        | B1         | 10                    | φ4                        | φ10                        | 10                           | 20                        | 2.9                  |
| S1BP 15B - 1004          | 15                         | φ 15                             | φ 17                        | B1         | 10                    | φ4                        | φ10                        | 10                           | 20                        | 3.2                  |
| S1BP 16B - 1004          | 16                         | φ 16                             | φ 18                        | B1         | 10                    | φ4                        | φ12                        | 10                           | 20                        | 4.0                  |
| S1BP 17B - 1004          | 17                         | φ 17                             | φ 19                        | B1         | 10                    | φ4                        | φ14                        | 10                           | 20                        | 5.0                  |
| S1BP 18B - 1004          | 18                         | φ 18                             | φ 20                        | B1         | 10                    | φ4                        | φ15                        | 10                           | 20                        | 5.7                  |
| S1BP 20B - 1005          | 20                         | φ 20                             | φ 22                        | B1         | 10                    | φ5                        | φ16                        | 10                           | 20                        | 6.6                  |
| S1BP 22B - 1005          | 22                         | φ 22                             | φ 24                        | B1         | 10                    | φ5                        | φ18                        | 10                           | 20                        | 8.3                  |
| S1BP 23B - 1005          | 23                         | φ 23                             | φ 25                        | B1         | 10                    | φ5                        | φ20                        | 10                           | 20                        | 9.7                  |
| S1BP 24B - 1005          | 24                         | φ 24                             | φ 26                        | B1         | 10                    | φ5                        | φ20                        | 10                           | 20                        | 10.2                 |
| S1BP 25B - 1005          | 25                         | φ 25                             | φ 27                        | B1         | 10                    | φ5                        | φ22                        | 10                           | 20                        | 11.6                 |
| S1BP 26B - 1005          | 26                         | φ 26                             | φ 28                        | B1         | 10                    | φ5                        | φ22                        | 10                           | 20                        | 12.2                 |
| S1BP 28B - 1005          | 28                         | φ 28                             | φ 30                        | B1         | 10                    | φ5                        | φ24                        | 10                           | 20                        | 14.4                 |
| S1BP 30B - 1005          | 30                         | φ 30                             | φ 32                        | B1         | 10                    | φ5                        | φ24                        | 10                           | 20                        | 15.7                 |
| S1BP 32B - 1005          | 32                         | φ 32                             | φ 34                        | B1         | 10                    | φ5                        | φ24                        | 10                           | 20                        | 17.1                 |
| S1BP 34B - 1005          | 34                         | φ 34                             | φ 36                        | B1         | 10                    | φ5                        | φ24                        | 10                           | 20                        | 18.5                 |
| S1BP 35B - 1005          | 35                         | φ 35                             | φ 37                        | B1         | 10                    | φ5                        | φ24                        | 10                           | 20                        | 19.3                 |
| S1BP 36B - 1005          | 36                         | φ 36                             | φ 38                        | B1         | 10                    | φ5                        | φ26                        | 10                           | 20                        | 21.2                 |
| S1BP 38B - 1005          | 38                         | φ 38                             | φ 40                        | B1         | 10                    | φ5                        | φ28                        | 10                           | 20                        | 24.0                 |
| S1BP 40B - 1005          | 40                         | φ 40                             | φ 42                        | B1         | 10                    | φ5                        | φ30                        | 10                           | 20                        | 27.0                 |
| S1BP 42B - 1005          | 42                         | φ 42                             | φ 44                        | B1         | 10                    | φ5                        | φ30                        | 10                           | 20                        | 28.8                 |
| S1BP 44B - 1005          | 44                         | φ 44                             | φ 46                        | B1         | 10                    | φ5                        | φ32                        | 10                           | 20                        | 32.1                 |
| S1BP 45B - 1005          | 45                         | φ 45                             | φ 47                        | B1         | 10                    | φ5                        | φ32                        | 10                           | 20                        | 33.1                 |
| S1BP 48B - 1005          | 48                         | φ 48                             | φ 50                        | B1         | 10                    | φ5                        | φ36                        | 10                           | 20                        | 39.2                 |
| S1BP 50B - 1005          | 50                         | φ 50                             | φ 52                        | B1         | 10                    | φ5                        | φ36                        | 10                           | 20                        | 41.4                 |
| S1BP 52B - 1005          | 52                         | φ 52                             | φ 54                        | B1         | 10                    | φ5                        | φ40                        | 10                           | 20                        | 47.0                 |
| S1BP 55B - 1005          | 55                         | φ 55                             | φ 57                        | B1         | 10                    | φ5                        | φ40                        | 10                           | 20                        | 50.5                 |
| S1BP 56B - 1005          | 56                         | φ 56                             | φ 58                        | B1         | 10                    | φ5                        | φ40                        | 10                           | 20                        | 51.7                 |
| S1BP 60B - 1005          | 60                         | φ 60                             | φ 62                        | B1         | 10                    | φ5                        | φ46                        | 10                           | 20                        | 62.6                 |
| S1BP 64B - 1005          | 64                         | φ 64                             | φ 66                        | B1         | 10                    | φ5                        | φ48                        | 10                           | 20                        | 70.2                 |
| S1BP 65B - 1005          | 65                         | φ 65                             | φ 67                        | B1         | 10                    | φ5                        | φ48                        | 10                           | 20                        | 71.6                 |
| S1BP 70B - 1005          | 70                         | φ 70                             | φ 72                        | B1         | 10                    | φ5                        | φ52                        | 10                           | 20                        | 83.5                 |
| S1BP 72B - 1005          | 72                         | φ 72                             | φ 74                        | B1         | 10                    | φ5                        | φ52                        | 10                           | 20                        | 86.6                 |
| S1BP 75B - 1005          | 75                         | φ 75                             | φ 77                        | B1         | 10                    | φ5                        | φ52                        | 10                           | 20                        | 91.5                 |
| S1BP 80B - 1005          | 80                         | φ 80                             | φ 82                        | B1         | 10                    | φ5                        | φ58                        | 10                           | 20                        | 107.4                |
| S1BP 85B - 1005          | 85                         | φ 85                             | φ 87                        | B1         | 10                    | φ5                        | φ62                        | 10                           | 20                        | 121.8                |
| S1BP 90B - 1005          | 90                         | φ 90                             | φ 92                        | B1         | 10                    | φ5                        | φ65                        | 10                           | 20                        | 135.7                |
| S1BP 100B - 1005         | 100                        | φ100                             | φ102                        | B1         | 10                    | φ5                        | φ70                        | 10                           | 20                        | 164.0                |
| S1BP 120B - 1005         | 120                        | φ120                             | φ122                        | B1         | 10                    | φ5                        | φ84                        | 10                           | 20                        | 236.8                |



## 容许传达动力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |        |        |        |         |         |
|---------------------------|---|-------|--------|--------|--------|---------|---------|
|                           | 10  | 100   | 200    | 400    | 800    | 1,200   | 1,500   |
| S1BP 12B - 1004           | 0.73  | 7.27  | 14.53  | 29.03  | 57.98  | 86.86   | 108.43  |
| S1BP 14B - 1004           | 0.97  | 9.67  | 19.34  | 38.64  | 77.13  | 115.58  | 144.19  |
| S1BP 15B - 1004           | 1.07  | 10.69 | 21.36  | 42.67  | 85.20  | 127.57  | 159.18  |
| S1BP 16B - 1004           | 1.17  | 11.70 | 23.39  | 46.75  | 93.26  | 139.67  | 174.30  |
| S1BP 17B - 1004           | 1.27  | 12.72 | 25.43  | 50.82  | 101.41 | 151.77  | 189.43  |
| S1BP 18B - 1004           | 1.38  | 13.75 | 27.48  | 54.89  | 109.93 | 163.98  | 204.70  |
| S1BP 20B - 1005           | 1.61  | 16.08 | 32.14  | 64.20  | 128.08 | 191.66  | 239.15  |
| S1BP 22B - 1005           | 1.69  | 16.90 | 33.79  | 67.47  | 134.58 | 201.34  | 251.27  |
| S1BP 23B - 1005           | 1.79  | 17.88 | 35.75  | 71.38  | 142.41 | 212.98  | 265.69  |
| S1BP 24B - 1005           | 1.93  | 19.29 | 38.55  | 77.00  | 153.55 | 229.66  | 286.46  |
| S1BP 25B - 1005           | 2.01  | 20.09 | 40.16  | 80.20  | 159.91 | 239.15  | 298.26  |
| S1BP 26B - 1005           | 2.09  | 20.85 | 41.67  | 83.20  | 165.91 | 248.12  | 309.35  |
| S1BP 28B - 1005           | 2.25  | 22.50 | 44.97  | 89.79  | 178.97 | 267.55  | 333.59  |
| S1BP 30B - 1005           | 2.41  | 24.11 | 48.18  | 96.18  | 191.66 | 286.46  | 357.10  |
| S1BP 32B - 1005           | 2.57  | 25.72 | 51.38  | 102.57 | 204.34 | 305.33  | 380.51  |
| S1BP 34B - 1005           | 2.80  | 28.01 | 55.96  | 111.68 | 222.50 | 332.34  | 413.54  |
| S1BP 35B - 1005           | 2.72  | 27.17 | 54.28  | 108.35 | 215.76 | 322.31  | 400.77  |
| S1BP 36B - 1005           | 2.90  | 28.93 | 57.79  | 115.33 | 229.66 | 343.00  | 426.13  |
| S1BP 38B - 1005           | 3.08  | 30.81 | 61.54  | 122.80 | 244.47 | 365.10  | 452.84  |
| S1BP 40B - 1005           | 3.22  | 32.14 | 64.20  | 128.08 | 254.94 | 380.51  | 471.31  |
| S1BP 42B - 1005           | 3.37  | 33.63 | 67.18  | 134.02 | 266.69 | 397.56  | 492.13  |
| S1BP 44B - 1005           | 3.55  | 35.47 | 70.85  | 141.33 | 281.12 | 418.48  | 517.82  |
| S1BP 45B - 1005           | 3.62  | 36.15 | 72.20  | 144.01 | 286.46 | 426.13  | 527.17  |
| S1BP 48B - 1005           | 3.86  | 38.55 | 77.00  | 153.55 | 305.33 | 453.29  | 560.37  |
| S1BP 50B - 1005           | 4.02  | 40.16 | 80.20  | 159.91 | 317.90 | 471.31  | 582.37  |
| S1BP 52B - 1005           | 4.23  | 42.24 | 84.34  | 168.16 | 334.21 | 494.80  | 611.04  |
| S1BP 55B - 1005           | 4.44  | 44.33 | 88.52  | 176.47 | 350.57 | 518.00  | 639.24  |
| S1BP 56B - 1005           | 4.50  | 44.97 | 89.79  | 178.97 | 355.53 | 524.95  | 647.70  |
| S1BP 60B - 1005           | 4.83  | 48.18 | 96.18  | 191.66 | 380.51 | 560.37  | 690.72  |
| S1BP 64B - 1005           | 5.15  | 51.38 | 102.57 | 204.34 | 404.89 | 595.51  | 733.18  |
| S1BP 65B - 1005           | 5.21  | 52.04 | 103.88 | 206.95 | 409.86 | 602.58  | 741.37  |
| S1BP 70B - 1005           | 5.63  | 56.19 | 112.14 | 223.34 | 441.23 | 647.70  | 793.96  |
| S1BP 72B - 1005           | 5.79  | 57.79 | 115.33 | 229.66 | 453.29 | 664.96  | 813.91  |
| S1BP 75B - 1005           | 6.09  | 60.81 | 121.35 | 241.59 | 476.17 | 697.85  | 852.23  |
| S1BP 80B - 1005           | 6.43  | 64.20 | 128.08 | 254.94 | 501.19 | 733.18  | 892.22  |
| S1BP 85B - 1005           | 6.76  | 67.47 | 134.59 | 267.82 | 525.20 | 765.57  | 929.90  |
| S1BP 90B - 1005           | 7.24  | 72.20 | 144.01 | 286.46 | 560.37 | 813.91  | 986.69  |
| S1BP 100B - 1005          | 8.04  | 80.20 | 159.91 | 317.90 | 618.78 | 892.22  | 1073.70 |
| S1BP 120B - 1005          | 9.65  | 96.18 | 191.66 | 380.51 | 733.18 | 1041.15 | 1223.46 |

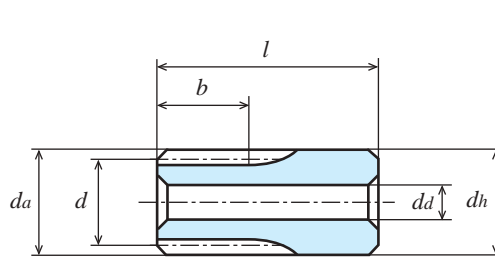
# 青色 POM 直齿轮

## SPUR GEARS

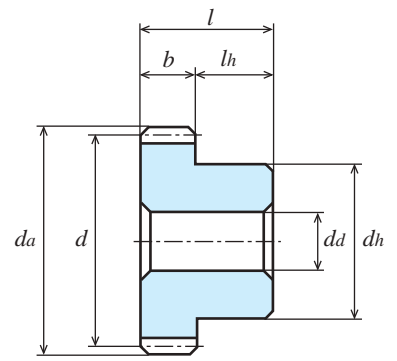
模数  
MODULE

1.5 (齿数 14 ~ 60)

(普通齿)  
FULL DEPTH TOOTH



K2形状  
TYPE K2



B1形状  
TYPE B1

单位: mm

| 精度②                | 材料     | 压力角 | 加工方法 | 齿面硬度 | 侧隙①       |
|--------------------|--------|-----|------|------|-----------|
| JIS B 1702-1 9~10级 | 青色 POM | 20度 | 切削加工 | —    | 0.09~0.18 |

★本产品的容许传达动力表使用 LOUIS 公式。请在 P28 确认单位换算方法。

①同一种材料，一样的齿轮相互啮合时的理想值。

②制作时的控制精度。

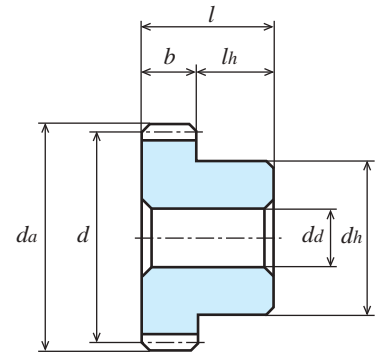
★由于材料之特性，易产生由经年老化·热胀冷缩而引起的尺寸和精度的变化。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>dd | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|---------------------------|----------------------------|------------------------------|---------------------------|----------------------|
| S1.5BP 14K-1806          | 14                         | φ21                              | φ24                         | K2         | 18                    | φ6                        | φ24                        | 22                           | 40                        | 21.0                 |
| S1.5BP 15B-1506          | 15                         | φ22.5                            | φ25.5                       | B1         | 15                    | φ6                        | φ18                        | 15                           | 30                        | 12.4                 |
| S1.5BP 16B-1506          | 16                         | φ24                              | φ27                         | B1         | 15                    | φ6                        | φ18                        | 15                           | 30                        | 13.6                 |
| S1.5BP 18B-1508          | 18                         | φ27                              | φ30                         | B1         | 15                    | φ8                        | φ20                        | 15                           | 30                        | 16.4                 |
| S1.5BP 20B-1508          | 20                         | φ30                              | φ33                         | B1         | 15                    | φ8                        | φ22                        | 15                           | 30                        | 20.6                 |
| S1.5BP 22B-1508          | 22                         | φ33                              | φ36                         | B1         | 15                    | φ8                        | φ24                        | 15                           | 30                        | 25.3                 |
| S1.5BP 24B-1508          | 24                         | φ36                              | φ39                         | B1         | 15                    | φ8                        | φ24                        | 15                           | 30                        | 28.7                 |
| S1.5BP 25B-1508          | 25                         | φ37.5                            | φ40.5                       | B1         | 15                    | φ8                        | φ28                        | 15                           | 30                        | 32.8                 |
| S1.5BP 26B-1508          | 26                         | φ39                              | φ42                         | B1         | 15                    | φ8                        | φ28                        | 15                           | 30                        | 35.9                 |
| S1.5BP 28B-1508          | 28                         | φ42                              | φ45                         | B1         | 15                    | φ8                        | φ30                        | 15                           | 30                        | 41.8                 |
| S1.5BP 30B-1508          | 30                         | φ45                              | φ48                         | B1         | 15                    | φ8                        | φ32                        | 15                           | 30                        | 48.2                 |
| S1.5BP 32B-1508          | 32                         | φ48                              | φ51                         | B1         | 15                    | φ8                        | φ35                        | 15                           | 30                        | 56.2                 |
| S1.5BP 35B-1508          | 35                         | φ52.5                            | φ55.5                       | B1         | 15                    | φ8                        | φ40                        | 15                           | 30                        | 69.9                 |
| S1.5BP 36B-1508          | 36                         | φ54                              | φ57                         | B1         | 15                    | φ8                        | φ40                        | 15                           | 30                        | 72.5                 |
| S1.5BP 40B-1510          | 40                         | φ60                              | φ63                         | B1         | 15                    | φ10                       | φ45                        | 15                           | 30                        | 89.7                 |
| S1.5BP 45B-1510          | 45                         | φ67.5                            | φ70.5                       | B1         | 15                    | φ10                       | φ50                        | 15                           | 30                        | 113.5                |
| S1.5BP 48B-1510          | 48                         | φ72                              | φ75                         | B1         | 15                    | φ10                       | φ55                        | 15                           | 30                        | 132.6                |
| S1.5BP 50B-1510          | 50                         | φ75                              | φ78                         | B1         | 15                    | φ10                       | φ55                        | 15                           | 30                        | 139.9                |
| S1.5BP 55B-1510          | 55                         | φ82.5                            | φ85.5                       | B1         | 15                    | φ10                       | φ60                        | 15                           | 30                        | 136.8                |
| S1.5BP 56B-1510          | 56                         | φ84                              | φ87                         | B1         | 15                    | φ10                       | φ60                        | 15                           | 30                        | 173.2                |
| S1.5BP 60B-1510          | 60                         | φ90                              | φ93                         | B1         | 15                    | φ10                       | φ65                        | 15                           | 30                        | 200.9                |

### 容许传达动力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |        |        |        |         |         |
|---------------------------|---|-------|--------|--------|--------|---------|---------|
|                           | 10  | 100   | 200    | 400    | 800    | 1,200   | 1,500   |
| S1.5BP 14K-1806           | 1.43  | 14.29 | 28.57  | 57.06  | 113.82 | 170.38  | 212.54  |
| S1.5BP 15B-1506           | 1.58  | 15.79 | 31.55  | 63.01  | 125.73 | 188.06  | 234.53  |
| S1.5BP 16B-1506           | 1.73  | 17.29 | 34.55  | 69.02  | 137.63 | 205.83  | 256.74  |
| S1.5BP 18B-1508           | 2.03  | 20.31 | 40.59  | 81.07  | 161.61 | 241.63  | 301.27  |
| S1.5BP 20B-1508           | 2.34  | 23.38 | 46.72  | 93.27  | 185.89 | 277.78  | 346.35  |
| S1.5BP 22B-1508           | 2.65  | 26.45 | 52.85  | 105.49 | 210.11 | 313.93  | 390.88  |
| S1.5BP 24B-1508           | 2.96  | 29.53 | 58.99  | 117.72 | 234.45 | 350.08  | 434.97  |
| S1.5BP 25B-1508           | 3.11  | 31.07 | 62.07  | 123.88 | 246.64 | 368.29  | 456.96  |
| S1.5BP 26B-1508           | 3.27  | 32.62 | 65.16  | 130.04 | 258.84 | 386.41  | 478.95  |
| S1.5BP 28B-1508           | 3.58  | 35.73 | 71.37  | 142.38 | 283.29 | 422.30  | 522.82  |
| S1.5BP 30B-1508           | 4.02  | 40.11 | 80.10  | 159.80 | 317.83 | 472.79  | 584.94  |
| S1.5BP 32B-1508           | 4.34  | 43.33 | 86.54  | 172.58 | 343.16 | 509.38  | 629.80  |
| S1.5BP 35B-1508           | 4.82  | 48.17 | 96.18  | 191.78 | 381.11 | 564.09  | 696.54  |
| S1.5BP 36B-1508           | 4.99  | 49.79 | 99.41  | 198.18 | 393.77 | 582.21  | 718.75  |
| S1.5BP 40B-1510           | 5.80  | 57.95 | 115.70 | 230.55 | 457.75 | 674.13  | 830.90  |
| S1.5BP 45B-1510           | 6.64  | 66.26 | 132.26 | 263.44 | 521.14 | 765.61  | 940.19  |
| S1.5BP 48B-1510           | 7.14  | 71.28 | 142.25 | 283.26 | 559.08 | 820.15  | 1003.96 |
| S1.5BP 50B-1510           | 7.48  | 74.63 | 148.92 | 296.49 | 584.35 | 856.39  | 1045.85 |
| S1.5BP 55B-1510           | 8.32  | 83.00 | 165.59 | 329.53 | 647.04 | 944.88  | 1148.77 |
| S1.5BP 56B-1510           | 8.49  | 84.68 | 168.93 | 336.16 | 659.53 | 962.12  | 1169.00 |
| S1.5BP 60B-1510           | 9.34  | 93.16 | 185.82 | 369.61 | 723.04 | 1049.29 | 1273.12 |



B1形状  
TYPE B1

单位：mm

| 精度②                | 材料     | 压力角 | 加工方法 | 齿面硬度 | 侧隙①       |
|--------------------|--------|-----|------|------|-----------|
| JIS B 1702-1 9~10级 | 青色 POM | 20度 | 切削加工 | —    | 0.12~0.24 |

★本产品的容许传达动力表使用 LOUIS 公式。请在 P28 确认单位换算方法。

①同一种材料，一样的齿轮相互啮合时的理想值。

②制作时的控制精度。

★由于材料之特性，易产生由经年老化·热胀冷缩而引起的尺寸和精度的变化。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>dd | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|---------------------------|----------------------------|------------------------------|---------------------------|----------------------|
| S2BP 12B - 2008          | 12                         | φ 24                             | φ 28                        | B1         | 20                    | φ 8                       | φ18                        | 20                           | 40                        | 16.7                 |
| S2BP 13B - 2008          | 13                         | φ 26                             | φ 30                        | B1         | 20                    | φ 8                       | φ20                        | 20                           | 40                        | 20.6                 |
| S2BP 14B - 2008          | 14                         | φ 28                             | φ 32                        | B1         | 20                    | φ 8                       | φ20                        | 20                           | 40                        | 23.0                 |
| S2BP 15B - 2008          | 15                         | φ 30                             | φ 34                        | B1         | 20                    | φ 8                       | φ22                        | 20                           | 40                        | 27.4                 |
| S2BP 16B - 2010          | 16                         | φ 32                             | φ 36                        | B1         | 20                    | φ10                       | φ24                        | 20                           | 40                        | 30.5                 |
| S2BP 18B - 2010          | 18                         | φ 36                             | φ 40                        | B1         | 20                    | φ10                       | φ30                        | 20                           | 40                        | 43.7                 |
| S2BP 20B - 2010          | 20                         | φ 40                             | φ 44                        | B1         | 20                    | φ10                       | φ30                        | 20                           | 40                        | 50.4                 |
| S2BP 22B - 2010          | 22                         | φ 44                             | φ 48                        | B1         | 20                    | φ10                       | φ32                        | 20                           | 40                        | 60.6                 |
| S2BP 24B - 2010          | 24                         | φ 48                             | φ 52                        | B1         | 20                    | φ10                       | φ36                        | 20                           | 40                        | 74.7                 |
| S2BP 25B - 2010          | 25                         | φ 50                             | φ 54                        | B1         | 20                    | φ10                       | φ36                        | 20                           | 40                        | 79.0                 |
| S2BP 26B - 2010          | 26                         | φ 52                             | φ 56                        | B1         | 20                    | φ10                       | φ40                        | 20                           | 40                        | 90.2                 |
| S2BP 28B - 2010          | 28                         | φ 56                             | φ 60                        | B1         | 20                    | φ10                       | φ40                        | 20                           | 40                        | 99.8                 |
| S2BP 30B - 2010          | 30                         | φ 60                             | φ 64                        | B1         | 20                    | φ10                       | φ45                        | 20                           | 40                        | 119.4                |
| S2BP 32B - 2012          | 32                         | φ 64                             | φ 68                        | B1         | 20                    | φ12                       | φ45                        | 20                           | 40                        | 128.4                |
| S2BP 35B - 2012          | 35                         | φ 70                             | φ 74                        | B1         | 20                    | φ12                       | φ55                        | 20                           | 40                        | 168.3                |
| S2BP 36B - 2012          | 36                         | φ 72                             | φ 76                        | B1         | 20                    | φ12                       | φ55                        | 20                           | 40                        | 174.6                |
| S2BP 40B - 2012          | 40                         | φ 80                             | φ 84                        | B1         | 20                    | φ12                       | φ60                        | 20                           | 40                        | 214.2                |
| S2BP 45B - 2012          | 45                         | φ 90                             | φ 94                        | B1         | 20                    | φ12                       | φ65                        | 20                           | 40                        | 265.6                |
| S2BP 48B - 2012          | 48                         | φ 96                             | φ100                        | B1         | 20                    | φ12                       | φ70                        | 20                           | 40                        | 305.2                |
| S2BP 50B - 2012          | 50                         | φ100                             | φ104                        | B1         | 20                    | φ12                       | φ75                        | 20                           | 40                        | 338.6                |
| S2BP 55B - 2012          | 55                         | φ110                             | φ114                        | B1         | 20                    | φ12                       | φ80                        | 20                           | 40                        | 402.2                |
| S2BP 56B - 2012          | 56                         | φ112                             | φ116                        | B1         | 20                    | φ12                       | φ85                        | 20                           | 40                        | 430.3                |
| S2BP 60B - 2012          | 60                         | φ120                             | φ124                        | B1         | 20                    | φ12                       | φ90                        | 20                           | 40                        | 490.7                |

## 容许传达动力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |        |        |        |        |         |         |
|---------------------------|---|--------|--------|--------|--------|---------|---------|
|                           | 10  | 100    | 200    | 400    | 800    | 1,200   | 1,500   |
| S2BP 12B - 2008           | 1.99  | 19.85  | 39.67  | 79.22  | 158.00 | 236.32  | 294.74  |
| S2BP 13B - 2008           | 2.30  | 22.95  | 45.87  | 91.61  | 182.58 | 273.07  | 340.58  |
| S2BP 14B - 2008           | 2.48  | 24.83  | 49.61  | 99.05  | 197.44 | 295.16  | 368.01  |
| S2BP 15B - 2008           | 2.66  | 26.60  | 53.15  | 106.10 | 211.44 | 316.01  | 393.94  |
| S2BP 16B - 2010           | 2.84  | 28.37  | 56.68  | 113.15 | 225.43 | 336.84  | 419.77  |
| S2BP 18B - 2010           | 3.19  | 31.91  | 63.75  | 127.23 | 253.36 | 378.39  | 470.09  |
| S2BP 20B - 2010           | 3.55  | 35.45  | 70.82  | 141.30 | 281.24 | 419.77  | 519.94  |
| S2BP 22B - 2010           | 3.83  | 38.27  | 76.42  | 152.51 | 303.28 | 451.62  | 558.79  |
| S2BP 24B - 2010           | 4.26  | 42.53  | 84.94  | 169.40 | 336.84 | 500.06  | 618.19  |
| S2BP 25B - 2010           | 4.44  | 44.30  | 88.47  | 176.41 | 350.70 | 519.94  | 642.45  |
| S2BP 26B - 2010           | 4.76  | 47.49  | 94.84  | 189.00 | 375.82 | 556.38  | 686.84  |
| S2BP 28B - 2010           | 4.97  | 49.61  | 99.05  | 197.44 | 392.21 | 579.12  | 714.53  |
| S2BP 30B - 2010           | 5.32  | 53.15  | 106.10 | 211.44 | 419.77 | 618.19  | 761.98  |
| S2BP 32B - 2012           | 5.68  | 56.68  | 113.15 | 225.43 | 446.67 | 656.95  | 808.83  |
| S2BP 35B - 2012           | 6.21  | 61.99  | 123.71 | 246.38 | 486.76 | 714.53  | 875.88  |
| S2BP 36B - 2012           | 6.39  | 63.75  | 127.23 | 253.36 | 500.06 | 733.57  | 897.89  |
| S2BP 40B - 2012           | 7.10  | 70.82  | 141.30 | 281.24 | 552.90 | 808.83  | 984.27  |
| S2BP 45B - 2012           | 7.98  | 79.65  | 158.87 | 316.01 | 618.19 | 897.89  | 1088.49 |
| S2BP 48B - 2012           | 8.52  | 84.94  | 169.40 | 336.84 | 656.95 | 950.04  | 1148.58 |
| S2BP 50B - 2012           | 8.87  | 88.47  | 176.41 | 350.70 | 682.63 | 984.27  | 1184.49 |
| S2BP 55B - 2012           | 9.65  | 96.17  | 191.80 | 381.11 | 737.95 | 1055.63 | 1255.42 |
| S2BP 56B - 2012           | 9.94  | 99.05  | 197.44 | 392.21 | 758.83 | 1084.40 | 1286.48 |
| S2BP 60B - 2012           | 10.64                                       | 106.10 | 211.44 | 419.77 | 808.83 | 1148.58 | 1349.70 |

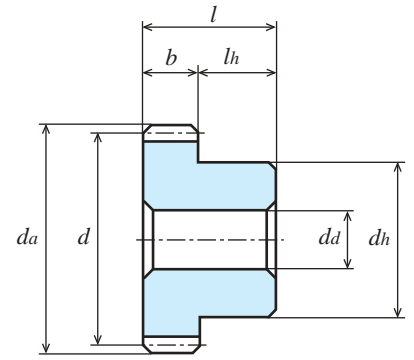
# 青色 POM 直齿轮

## SPUR GEARS

模数  
MODULE

2.5 (齿数 12 ~ 50)

(普通齿)  
FULL DEPTH TOOTH



B1形状  
TYPE B1

单位: mm

| 精度②                | 材料     | 压力角 | 加工方法 | 齿面硬度 | 侧隙①      |
|--------------------|--------|-----|------|------|----------|
| JIS B 1702-1 9~10级 | 青色 POM | 20度 | 切削加工 | —    | 0.15~0.3 |

★本产品的容许传达动力表使用 LOUIS 公式。请在 P28 确认单位换算方法。

①同一种材料，一样的齿轮相互啮合时的理想值。②制作时的控制精度。之后会出现经年老化现象。

★由于材料之特性，易产生由经年老化·热胀冷缩而引起的尺寸和精度的变化。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>dd | 轮毂外直径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|---------------------------|-----------------------------|------------------------------|---------------------------|----------------------|
| S2.5BP 12B-2510          | 12                         | φ 30                             | φ 35                        | B1         | 25                    | φ10                       | φ22                         | 20                           | 45                        | 29.9                 |
| S2.5BP 13B-2510          | 13                         | φ 32.5                           | φ 37.5                      | B1         | 25                    | φ10                       | φ25                         | 20                           | 45                        | 37.3                 |
| S2.5BP 14B-2510          | 14                         | φ 35                             | φ 40                        | B1         | 25                    | φ10                       | φ25                         | 20                           | 45                        | 41.9                 |
| S2.5BP 15B-2510          | 15                         | φ 37.5                           | φ 42.5                      | B1         | 25                    | φ10                       | φ30                         | 20                           | 45                        | 53.0                 |
| S2.5BP 16B-2510          | 16                         | φ 40                             | φ 45                        | B1         | 25                    | φ10                       | φ30                         | 20                           | 45                        | 58.3                 |
| S2.5BP 18B-2510          | 18                         | φ 45                             | φ 50                        | B1         | 25                    | φ10                       | φ34                         | 20                           | 45                        | 75.7                 |
| S2.5BP 20B-2512          | 20                         | φ 50                             | φ 55                        | B1         | 25                    | φ12                       | φ34                         | 20                           | 45                        | 86.6                 |
| S2.5BP 22B-2512          | 22                         | φ 55                             | φ 60                        | B1         | 25                    | φ12                       | φ40                         | 20                           | 45                        | 110.9                |
| S2.5BP 24B-2512          | 24                         | φ 60                             | φ 65                        | B1         | 25                    | φ12                       | φ45                         | 20                           | 45                        | 136.1                |
| S2.5BP 25B-2512          | 25                         | φ 62.5                           | φ 67.5                      | B1         | 25                    | φ12                       | φ45                         | 20                           | 45                        | 144.6                |
| S2.5BP 26B-2512          | 26                         | φ 65                             | φ 70                        | B1         | 25                    | φ12                       | φ50                         | 20                           | 45                        | 163.9                |
| S2.5BP 28B-2512          | 28                         | φ 70                             | φ 75                        | B1         | 25                    | φ12                       | φ50                         | 20                           | 45                        | 182.5                |
| S2.5BP 30B-2512          | 30                         | φ 75                             | φ 80                        | B1         | 25                    | φ12                       | φ60                         | 20                           | 45                        | 226.9                |
| S2.5BP 32B-2515          | 32                         | φ 80                             | φ 85                        | B1         | 25                    | φ15                       | φ60                         | 20                           | 45                        | 244.2                |
| S2.5BP 35B-2515          | 35                         | φ 87.5                           | φ 92.5                      | B1         | 25                    | φ15                       | φ70                         | 20                           | 45                        | 307.7                |
| S2.5BP 36B-2515          | 36                         | φ 90                             | φ 95                        | B1         | 25                    | φ15                       | φ70                         | 20                           | 45                        | 319.9                |
| S2.5BP 40B-2515          | 40                         | φ100                             | φ105                        | B1         | 25                    | φ15                       | φ80                         | 20                           | 45                        | 405.6                |
| S2.5BP 45B-2515          | 45                         | φ112.5                           | φ117.5                      | B1         | 25                    | φ15                       | φ80                         | 20                           | 45                        | 479.0                |
| S2.5BP 48B-2515          | 48                         | φ120                             | φ125                        | B1         | 25                    | φ15                       | φ90                         | 20                           | 45                        | 564.8                |
| S2.5BP 50B-2515          | 50                         | φ125                             | φ130                        | B1         | 25                    | φ15                       | φ90                         | 20                           | 45                        | 598.7                |

### 容许传达动力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |        |        |        |         |         |         |
|---------------------------|---|--------|--------|--------|---------|---------|---------|
|                           | 10  | 100    | 200    | 400    | 800     | 1,200   | 1,500   |
| S2.5BP 12B-2510           | 2.50  | 25.00  | 49.93  | 99.69  | 198.67  | 296.96  | 370.21  |
| S2.5BP 13B-2510           | 2.98  | 29.83  | 59.59  | 118.95 | 236.97  | 354.04  | 441.01  |
| S2.5BP 14B-2510           | 3.33  | 33.27  | 66.47  | 132.67 | 264.23  | 394.68  | 490.71  |
| S2.5BP 15B-2510           | 3.68  | 36.75  | 73.42  | 146.48 | 291.68  | 435.49  | 540.41  |
| S2.5BP 16B-2510           | 4.03  | 40.24  | 80.40  | 160.41 | 319.24  | 476.48  | 590.22  |
| S2.5BP 18B-2510           | 4.73  | 47.29  | 94.44  | 188.35 | 374.71  | 557.41  | 689.61  |
| S2.5BP 20B-2512           | 5.45  | 54.42  | 108.68 | 216.71 | 430.77  | 638.68  | 789.12  |
| S2.5BP 22B-2512           | 6.16  | 61.55  | 122.90 | 245.00 | 486.72  | 719.17  | 887.53  |
| S2.5BP 24B-2512           | 6.88  | 68.71  | 137.17 | 273.35 | 542.66  | 799.21  | 985.05  |
| S2.5BP 25B-2512           | 7.24  | 72.30  | 144.34 | 287.60 | 570.28  | 839.15  | 1033.65 |
| S2.5BP 26B-2512           | 7.60  | 75.91  | 151.53 | 301.85 | 597.84  | 878.99  | 1081.48 |
| S2.5BP 28B-2512           | 8.33  | 83.14  | 165.92 | 330.44 | 652.85  | 958.33  | 1174.72 |
| S2.5BP 30B-2512           | 9.35  | 93.32  | 186.21 | 370.76 | 730.66  | 1070.84 | 1307.76 |
| S2.5BP 32B-2515           | 10.10                                       | 100.80 | 201.12 | 400.31 | 787.02  | 1151.32 | 1401.00 |
| S2.5BP 35B-2515           | 11.23                                       | 112.06 | 223.54 | 444.70 | 871.05  | 1267.43 | 1538.00 |
| S2.5BP 36B-2515           | 11.61                                       | 115.82 | 231.01 | 459.51 | 898.90  | 1305.60 | 1582.75 |
| S2.5BP 40B-2515           | 13.52                                       | 134.80 | 268.78 | 534.33 | 1040.05 | 1499.65 | 1804.74 |
| S2.5BP 45B-2515           | 15.46                                       | 154.11 | 307.17 | 610.18 | 1180.26 | 1686.03 | 1999.02 |
| S2.5BP 48B-2515           | 16.63                                       | 165.76 | 330.32 | 655.78 | 1263.59 | 1794.40 | 2108.53 |
| S2.5BP 50B-2515           | 17.41                                       | 173.53 | 345.76 | 685.60 | 1317.19 | 1860.02 | 2178.46 |



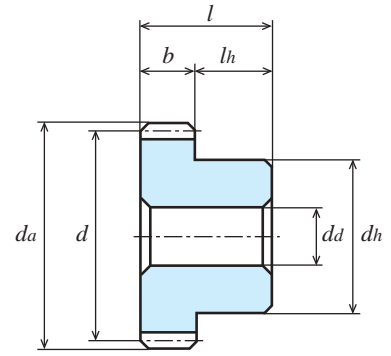
单位：mm

| 精度②                 | 材料     | 压力角  | 加工方法 | 齿面硬度 | 侧隙①         |
|---------------------|--------|------|------|------|-------------|
| JIS B 1702-1 9~10 级 | 青色 POM | 20 度 | 机械加工 | —    | 0.18 ~ 0.36 |

★本产品的容许传达动力表使用 LOUIS 公式。请在 P28 确认单位换算方法。

①同一种材料，一样的齿轮相互啮合时的理想值。②制作时的控制精度。之后会出现经年老化现象。

★由于材料之特性，易产生由经年老化·热胀冷缩而引起的尺寸和精度的变化。



B1 形状  
TYPE B1

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>dd | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|---------------------------|----------------------------|------------------------------|---------------------------|----------------------|
| S3BP 12B - 3012          | 12                         | φ 36                             | φ 42                        | B1         | 30                    | φ12                       | φ 26                       | 20                           | 50                        | 48.7                 |
| S3BP 13B - 3012          | 13                         | φ 39                             | φ 45                        | B1         | 30                    | φ12                       | φ 30                       | 20                           | 50                        | 61.1                 |
| S3BP 14B - 3012          | 14                         | φ 42                             | φ 48                        | B1         | 30                    | φ12                       | φ 30                       | 20                           | 50                        | 69.1                 |
| S3BP 15B - 3012          | 15                         | φ 45                             | φ 51                        | B1         | 30                    | φ12                       | φ 34                       | 20                           | 50                        | 83.4                 |
| S3BP 16B - 3012          | 16                         | φ 48                             | φ 54                        | B1         | 30                    | φ12                       | φ 34                       | 20                           | 50                        | 92.6                 |
| S3BP 18B - 3014          | 18                         | φ 54                             | φ 60                        | B1         | 30                    | φ14                       | φ 40                       | 20                           | 50                        | 139.7                |
| S3BP 20B - 3014          | 20                         | φ 60                             | φ 66                        | B1         | 30                    | φ14                       | φ 50                       | 20                           | 50                        | 162.3                |
| S3BP 22B - 3014          | 22                         | φ 66                             | φ 72                        | B1         | 30                    | φ14                       | φ 50                       | 20                           | 50                        | 187.3                |
| S3BP 24B - 3014          | 24                         | φ 72                             | φ 78                        | B1         | 30                    | φ14                       | φ 55                       | 20                           | 50                        | 226.3                |
| S3BP 25B - 3014          | 25                         | φ 75                             | φ 81                        | B1         | 30                    | φ14                       | φ 55                       | 20                           | 50                        | 240.9                |
| S3BP 26B - 3014          | 26                         | φ 78                             | φ 84                        | B1         | 30                    | φ14                       | φ 65                       | 20                           | 50                        | 282.6                |
| S3BP 28B - 3014          | 28                         | φ 84                             | φ 90                        | B1         | 30                    | φ14                       | φ 65                       | 20                           | 50                        | 314.8                |
| S3BP 30B - 3014          | 30                         | φ 90                             | φ 96                        | B1         | 30                    | φ14                       | φ 70                       | 20                           | 50                        | 364.3                |
| S3BP 32B - 3016          | 32                         | φ 96                             | φ102                        | B1         | 30                    | φ16                       | φ 70                       | 20                           | 50                        | 398.0                |
| S3BP 35B - 3016          | 35                         | φ105                             | φ111                        | B1         | 30                    | φ16                       | φ 80                       | 20                           | 50                        | 491.1                |
| S3BP 36B - 3016          | 36                         | φ108                             | φ114                        | B1         | 30                    | φ16                       | φ 80                       | 20                           | 50                        | 512.3                |
| S3BP 40B - 3018          | 40                         | φ120                             | φ126                        | B1         | 30                    | φ18                       | φ 95                       | 20                           | 50                        | 657.3                |
| S3BP 45B - 3018          | 45                         | φ135                             | φ141                        | B1         | 30                    | φ18                       | φ 95                       | 20                           | 50                        | 1441.4               |
| S3BP 48B - 3018          | 48                         | φ144                             | φ150                        | B1         | 30                    | φ18                       | φ110                       | 20                           | 50                        | 1719.6               |
| S3BP 50B - 3018          | 50                         | φ150                             | φ156                        | B1         | 30                    | φ18                       | φ110                       | 20                           | 50                        | 1929.4               |

## 容许传达动力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |        |        |        |         |         |         |
|---------------------------|---|--------|--------|--------|---------|---------|---------|
|                           | 10  | 100    | 200    | 400    | 800     | 1,200   | 1,500   |
| S3BP 12B - 3012           | 5.45  | 54.39  | 108.70 | 216.93 | 431.98  | 645.19  | 801.22  |
| S3BP 13B - 3012           | 6.30  | 62.89  | 125.70 | 250.69 | 499.19  | 745.03  | 923.86  |
| S3BP 14B - 3012           | 6.85  | 68.38  | 136.59 | 272.49 | 542.23  | 808.24  | 1000.62 |
| S3BP 15B - 3012           | 7.33  | 73.26  | 146.32 | 291.85 | 580.54  | 863.60  | 1068.39 |
| S3BP 16B - 3012           | 7.82  | 78.14  | 156.05 | 311.19 | 618.79  | 918.64  | 1135.66 |
| S3BP 18B - 3014           | 8.80  | 87.89  | 175.49 | 349.84 | 695.13  | 1027.78 | 1268.73 |
| S3BP 20B - 3014           | 9.78  | 97.63  | 194.92 | 388.43 | 771.16  | 1135.66 | 1399.82 |
| S3BP 22B - 3014           | 10.35                                       | 103.24 | 206.18 | 410.89 | 815.87  | 1201.65 | 1480.98 |
| S3BP 24B - 3014           | 11.73                                       | 117.12 | 233.73 | 465.44 | 918.69  | 1347.62 | 1649.49 |
| S3BP 25B - 3014           | 12.22                                       | 121.99 | 243.43 | 484.66 | 955.16  | 1399.82 | 1709.58 |
| S3BP 26B - 3014           | 12.84                                       | 128.12 | 255.51 | 508.82 | 1001.51 | 1465.93 | 1785.67 |
| S3BP 28B - 3014           | 13.69                                       | 136.59 | 272.49 | 542.23 | 1063.88 | 1551.92 | 1885.69 |
| S3BP 30B - 3014           | 14.67                                       | 146.32 | 291.85 | 580.54 | 1135.66 | 1649.49 | 1999.64 |
| S3BP 32B - 3016           | 15.65                                       | 156.05 | 311.19 | 618.79 | 1206.88 | 1745.30 | 2110.03 |
| S3BP 35B - 3016           | 17.11                                       | 170.63 | 340.19 | 676.07 | 1312.65 | 1885.69 | 2255.99 |
| S3BP 36B - 3016           | 17.60                                       | 175.49 | 349.84 | 695.13 | 1347.62 | 1931.61 | 2302.67 |
| S3BP 40B - 3018           | 19.56                                       | 194.92 | 388.43 | 771.16 | 1485.88 | 2110.03 | 2479.51 |
| S3BP 45B - 3018           | 22.00                                       | 219.18 | 436.59 | 863.60 | 1649.49 | 2302.67 | -       |
| S3BP 48B - 3018           | 23.46                                       | 233.73 | 465.44 | 918.64 | 1745.30 | 2410.67 | -       |
| S3BP 50B - 3018           | 24.44                                       | 243.43 | 484.66 | 955.16 | 1808.19 | 2479.51 | -       |

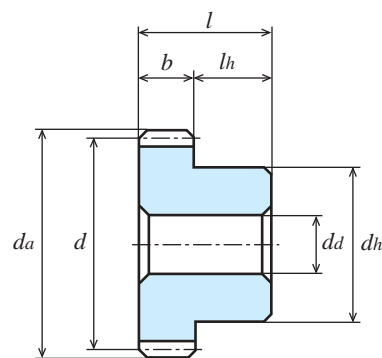
# 白色 POM 直齿轮

## SPUR GEARS

模数  
MODULE

0.5 (齿数 14 ~ 120)

(普通齿)  
FULL DEPTH TOOTH



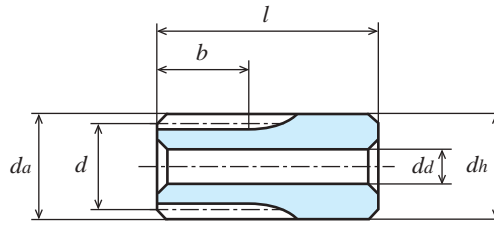
B1形状  
TYPE B1

单位: mm

| 精度②                   | 材料     | 压力角  | 加工方法 | 齿面硬度 | 侧隙①         |
|-----------------------|--------|------|------|------|-------------|
| JIS B 1702-1 9 ~ 10 级 | 白色 POM | 20 度 | 切削加工 | —    | 0.02 ~ 0.06 |

- ★带有不锈钢材质的波形弹簧销，标称直径为  $\phi 1$ 。
- ★本产品的容许传达动力表使用 LOUIS 公式。请在 P28 确认单位换算方法。
- ①同一种材料，一样的齿轮相互啮合时的理想值。②制作时的控制精度。
- ★由于材料之特性，易产生由经年老化·热胀冷缩而引起的尺寸和精度的变化。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>$z$ | 分度圆直径<br>Reference Diameter<br>$d$ | 齿顶圆直径<br>Tip Diameter<br>$d_a$ | 形状<br>Type | 齿宽<br>Face Width<br>$b$ | 孔径<br>Bore Diameter<br>$d_d$ | 轮毂外径<br>Hub Diameter<br>$d_h$ | 轮毂长度<br>Hub Projection<br>$l_h$ | 全长<br>Overall Length<br>$l$ | 重量<br>Weight<br>$W(g)$ |
|--------------------------|------------------------------|------------------------------------|--------------------------------|------------|-------------------------|------------------------------|-------------------------------|---------------------------------|-----------------------------|------------------------|
| S50D 14K - 0803          | 14                           | $\phi 7$                           | $\phi 8$                       | K2         | 8                       | $\phi 3$                     | $\phi 9$                      | 10                              | 18                          | 1.15                   |
| S50D 15K - 0803          | 15                           | $\phi 7.5$                         | $\phi 8.5$                     | K2         | 8                       | $\phi 3$                     | $\phi 9$                      | 10                              | 18                          | 1.22                   |
| S50D 16K - 0803          | 16                           | $\phi 8$                           | $\phi 9$                       | K2         | 8                       | $\phi 3$                     | $\phi 9$                      | 10                              | 18                          | 1.29                   |
| S50D 18K - 0803          | 18                           | $\phi 9$                           | $\phi 10$                      | K2         | 8                       | $\phi 3$                     | $\phi 10$                     | 10                              | 18                          | 1.65                   |
| S50D 20B - 0303          | 20                           | $\phi 10$                          | $\phi 11$                      | B1         | 3                       | $\phi 3$                     | $\phi 8$                      | 5                               | 8                           | 0.61                   |
| S50D 24B - 0303          | 24                           | $\phi 12$                          | $\phi 13$                      | B1         | 3                       | $\phi 3$                     | $\phi 8$                      | 5                               | 8                           | 0.75                   |
| S50D 25B - 0303          | 25                           | $\phi 12.5$                        | $\phi 13.5$                    | B1         | 3                       | $\phi 3$                     | $\phi 8$                      | 5                               | 8                           | 0.79                   |
| S50D 28B - 0303          | 28                           | $\phi 14$                          | $\phi 15$                      | B1         | 3                       | $\phi 3$                     | $\phi 8$                      | 5                               | 8                           | 0.93                   |
| S50D 30B - 0303          | 30                           | $\phi 15$                          | $\phi 16$                      | B1         | 3                       | $\phi 3$                     | $\phi 8$                      | 5                               | 8                           | 0.97                   |
| S50D 32B - 0303          | 32                           | $\phi 16$                          | $\phi 17$                      | B1         | 3                       | $\phi 3$                     | $\phi 8$                      | 5                               | 8                           | 1.13                   |
| S50D 36B - 0303          | 36                           | $\phi 18$                          | $\phi 19$                      | B1         | 3                       | $\phi 3$                     | $\phi 8$                      | 5                               | 8                           | 1.35                   |
| S50D 40B - 0303          | 40                           | $\phi 20$                          | $\phi 21$                      | B1         | 3                       | $\phi 3$                     | $\phi 10$                     | 5                               | 8                           | 1.81                   |
| S50D 45B - 0303          | 45                           | $\phi 22.5$                        | $\phi 23.5$                    | B1         | 3                       | $\phi 3$                     | $\phi 10$                     | 5                               | 8                           | 2.17                   |
| S50D 50B - 0303          | 50                           | $\phi 25$                          | $\phi 26$                      | B1         | 3                       | $\phi 3$                     | $\phi 10$                     | 5                               | 8                           | 2.56                   |
| S50D 56B - 0303          | 56                           | $\phi 28$                          | $\phi 29$                      | B1         | 3                       | $\phi 3$                     | $\phi 10$                     | 5                               | 8                           | 3.09                   |
| S50D 60B - 0303          | 60                           | $\phi 30$                          | $\phi 31$                      | B1         | 3                       | $\phi 3$                     | $\phi 10$                     | 5                               | 8                           | 3.40                   |
| S50D 64B - 0303          | 64                           | $\phi 32$                          | $\phi 33$                      | B1         | 3                       | $\phi 3$                     | $\phi 10$                     | 5                               | 8                           | 3.90                   |
| S50D 70B - 0304          | 70                           | $\phi 35$                          | $\phi 36$                      | B1         | 3                       | $\phi 4$                     | $\phi 12$                     | 5                               | 8                           | 4.70                   |
| S50D 72B - 0304          | 72                           | $\phi 36$                          | $\phi 37$                      | B1         | 3                       | $\phi 4$                     | $\phi 12$                     | 5                               | 8                           | 4.99                   |
| S50D 80B - 0304          | 80                           | $\phi 40$                          | $\phi 41$                      | B1         | 3                       | $\phi 4$                     | $\phi 12$                     | 5                               | 8                           | 6.01                   |
| S50D 90B - 0305          | 90                           | $\phi 45$                          | $\phi 46$                      | B1         | 3                       | $\phi 5$                     | $\phi 14$                     | 5                               | 8                           | 7.64                   |
| S50D 100B - 0305         | 100                          | $\phi 50$                          | $\phi 51$                      | B1         | 3                       | $\phi 5$                     | $\phi 14$                     | 5                               | 8                           | 9.22                   |
| S50D 120B - 0305         | 120                          | $\phi 60$                          | $\phi 61$                      | B1         | 3                       | $\phi 5$                     | $\phi 14$                     | 5                               | 8                           | 12.90                  |



K2形状  
TYPE K2

## 容许传达动力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |       |       |       |        |        |
|---------------------------|---|------|-------|-------|-------|--------|--------|
|                           | 10  | 100  | 200   | 400   | 800   | 1,200  | 1,500  |
| S50D 14K - 0803           | 0.22  | 2.24 | 4.48  | 8.95  | 17.89 | 26.82  | 33.50  |
| S50D 15K - 0803           | 0.24  | 2.40 | 4.80  | 9.59  | 19.17 | 28.73  | 35.88  |
| S50D 16K - 0803           | 0.26  | 2.56 | 5.12  | 10.23 | 20.44 | 30.64  | 38.27  |
| S50D 18K - 0803           | 0.29  | 2.88 | 5.76  | 11.51 | 22.99 | 34.45  | 43.03  |
| S50D 20B - 0303           | 0.12  | 1.20 | 2.40  | 4.79  | 9.58  | 14.35  | 17.92  |
| S50D 24B - 0303           | 0.17  | 1.74 | 3.48  | 6.96  | 13.90 | 20.82  | 25.99  |
| S50D 25B - 0303           | 0.18  | 1.81 | 3.63  | 7.25  | 14.47 | 21.68  | 27.07  |
| S50D 28B - 0303           | 0.20  | 2.03 | 4.06  | 8.12  | 16.21 | 24.27  | 30.30  |
| S50D 30B - 0303           | 0.22  | 2.18 | 4.35  | 8.70  | 17.36 | 25.99  | 32.45  |
| S50D 32B - 0303           | 0.23  | 2.32 | 4.64  | 9.27  | 18.51 | 27.71  | 34.59  |
| S50D 36B - 0303           | 0.26  | 2.61 | 5.22  | 10.43 | 20.82 | 31.16  | 38.88  |
| S50D 40B - 0303           | 0.29  | 2.90 | 5.80  | 11.59 | 23.12 | 34.59  | 43.16  |
| S50D 45B - 0303           | 0.33  | 3.26 | 6.52  | 13.03 | 25.99 | 38.88  | 48.50  |
| S50D 50B - 0303           | 0.36  | 3.63 | 7.25  | 14.47 | 28.86 | 43.16  | 53.83  |
| S50D 56B - 0303           | 0.41  | 4.06 | 8.12  | 16.21 | 32.30 | 48.29  | 60.21  |
| S50D 60B - 0303           | 0.44  | 4.35 | 8.70  | 17.36 | 34.59 | 51.70  | 64.45  |
| S50D 64B - 0303           | 0.46  | 4.64 | 9.27  | 18.51 | 36.88 | 55.11  | 68.68  |
| S50D 70B - 0304           | 0.51  | 5.08 | 10.14 | 20.24 | 40.31 | 60.21  | 74.86  |
| S50D 72B - 0304           | 0.52  | 5.22 | 10.43 | 20.82 | 41.45 | 61.91  | 76.91  |
| S50D 80B - 0304           | 0.58  | 5.80 | 11.59 | 23.12 | 46.01 | 68.68  | 85.07  |
| S50D 90B - 0305           | 0.65  | 6.52 | 13.03 | 25.99 | 51.70 | 76.91  | 95.15  |
| S50D 100B - 0305          | 0.73  | 7.25 | 14.47 | 28.86 | 57.38 | 85.07  | 105.11 |
| S50D 120B - 0305          | 0.87  | 8.70 | 17.36 | 34.59 | 68.68 | 101.14 | 124.67 |

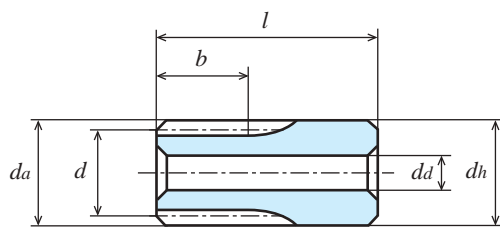
# 白色 POM 直齿轮

## SPUR GEARS

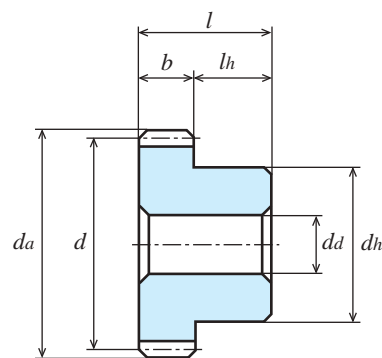
模数  
MODULE

**0.8** (齿数 14 ~ 120)

(普通齿)  
FULL DEPTH TOOTH



K2形状  
TYPE K2



B1形状  
TYPE B1

单位: mm

| 精度②                   | 材料     | 压力角  | 加工方法 | 齿面硬度 | 侧隙①         |
|-----------------------|--------|------|------|------|-------------|
| JIS B 1702-1 9 ~ 10 级 | 白色 POM | 20 度 | 切削加工 | —    | 0.02 ~ 0.06 |

★带有不锈钢材质的波形弹簧销。

★波形弹簧销标称直径: 齿数 14 ~ 64 时  $\phi 1$ 、齿数 70 ~ 100 时  $\phi 1.4$ 、齿数 120 时没有。

★本产品的容许传达动力表使用 LOUIS 公式。请在 P28 确认单位换算方法。

①同一种材料, 一样的齿轮相互啮合时的理想值。②制作时的控制精度。

★由于材料之特性, 易产生由经年老化·热胀冷缩而引起的尺寸和精度的变化。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>$z$ | 分度圆直径<br>Reference Diameter<br>$d$ | 齿顶圆直径<br>Tip Diameter<br>$d_a$ | 形状<br>Type | 齿宽<br>Face Width<br>$b$ | 孔径<br>Bore Diameter<br>$d_d$ | 轮毂外径<br>Hub Diameter<br>$d_h$ | 轮毂长度<br>Hub Projection<br>$l_h$ | 全长<br>Overall Length<br>$l$ | 重量<br>Weight<br>$W(g)$ |
|--------------------------|------------------------------|------------------------------------|--------------------------------|------------|-------------------------|------------------------------|-------------------------------|---------------------------------|-----------------------------|------------------------|
| S80D 14K - 0704          | 14                           | $\phi 11.2$                        | $\phi 12.8$                    | K2         | 7                       | $\phi 4$                     | $\phi 12.8$                   | 13                              | 20                          | 3.0                    |
| S80D 15K - 0704          | 15                           | $\phi 12$                          | $\phi 13.6$                    | K2         | 7                       | $\phi 4$                     | $\phi 13.6$                   | 13                              | 20                          | 3.4                    |
| S80D 16B - 0504          | 16                           | $\phi 12.8$                        | $\phi 14.4$                    | B1         | 5                       | $\phi 4$                     | $\phi 10$                     | 9                               | 14                          | 1.7                    |
| S80D 18B - 0504          | 18                           | $\phi 14.4$                        | $\phi 16$                      | B1         | 5                       | $\phi 4$                     | $\phi 10$                     | 9                               | 14                          | 1.9                    |
| S80D 20B - 0504          | 20                           | $\phi 16$                          | $\phi 17.6$                    | B1         | 5                       | $\phi 4$                     | $\phi 10$                     | 9                               | 14                          | 2.2                    |
| S80D 22B - 0505          | 22                           | $\phi 17.6$                        | $\phi 19.2$                    | B1         | 5                       | $\phi 5$                     | $\phi 12.5$                   | 9                               | 14                          | 2.9                    |
| S80D 24B - 0505          | 24                           | $\phi 19.2$                        | $\phi 20.8$                    | B1         | 5                       | $\phi 5$                     | $\phi 12.5$                   | 9                               | 14                          | 3.2                    |
| S80D 25B - 0505          | 25                           | $\phi 20$                          | $\phi 21.6$                    | B1         | 5                       | $\phi 5$                     | $\phi 12.5$                   | 9                               | 14                          | 3.4                    |
| S80D 28B - 0505          | 28                           | $\phi 22.4$                        | $\phi 24$                      | B1         | 5                       | $\phi 5$                     | $\phi 12.5$                   | 9                               | 14                          | 4.0                    |
| S80D 30B - 0505          | 30                           | $\phi 24$                          | $\phi 25.6$                    | B1         | 5                       | $\phi 5$                     | $\phi 12.5$                   | 9                               | 14                          | 4.4                    |
| S80D 32B - 0505          | 32                           | $\phi 25.6$                        | $\phi 27.2$                    | B1         | 5                       | $\phi 5$                     | $\phi 12.5$                   | 9                               | 14                          | 4.8                    |
| S80D 36B - 0506          | 36                           | $\phi 28.8$                        | $\phi 30.4$                    | B1         | 5                       | $\phi 6$                     | $\phi 14$                     | 9                               | 14                          | 6.0                    |
| S80D 40B - 0506          | 40                           | $\phi 32$                          | $\phi 33.6$                    | B1         | 5                       | $\phi 6$                     | $\phi 14$                     | 9                               | 14                          | 7.1                    |
| S80D 45B - 0506          | 45                           | $\phi 36$                          | $\phi 37.6$                    | B1         | 5                       | $\phi 6$                     | $\phi 14$                     | 9                               | 14                          | 8.6                    |
| S80D 48B - 0506          | 48                           | $\phi 38.4$                        | $\phi 40$                      | B1         | 5                       | $\phi 6$                     | $\phi 14$                     | 9                               | 14                          | 9.6                    |
| S80D 50B - 0506          | 50                           | $\phi 40$                          | $\phi 41.6$                    | B1         | 5                       | $\phi 6$                     | $\phi 14$                     | 9                               | 14                          | 10.3                   |
| S80D 56B - 0506          | 56                           | $\phi 44.8$                        | $\phi 46.4$                    | B1         | 5                       | $\phi 6$                     | $\phi 14$                     | 9                               | 14                          | 12.6                   |
| S80D 60B - 0506          | 60                           | $\phi 48$                          | $\phi 49.6$                    | B1         | 5                       | $\phi 6$                     | $\phi 14$                     | 9                               | 14                          | 14.2                   |
| S80D 64B - 0506          | 64                           | $\phi 51.2$                        | $\phi 52.8$                    | B1         | 5                       | $\phi 6$                     | $\phi 14$                     | 9                               | 14                          | 15.9                   |
| S80D 70B - 0508          | 70                           | $\phi 56$                          | $\phi 57.6$                    | B1         | 5                       | $\phi 8$                     | $\phi 16$                     | 9                               | 14                          | 19.0                   |
| S80D 72B - 0508          | 72                           | $\phi 57.6$                        | $\phi 59.2$                    | B1         | 5                       | $\phi 8$                     | $\phi 16$                     | 9                               | 14                          | 20.1                   |
| S80D 80B - 0508          | 80                           | $\phi 64$                          | $\phi 65.6$                    | B1         | 5                       | $\phi 8$                     | $\phi 16$                     | 9                               | 14                          | 24.2                   |
| S80D 90B - 0508          | 90                           | $\phi 72$                          | $\phi 73.6$                    | B1         | 5                       | $\phi 8$                     | $\phi 20$                     | 9                               | 14                          | 31.7                   |
| S80D 100B - 0508         | 100                          | $\phi 80$                          | $\phi 81.6$                    | B1         | 5                       | $\phi 8$                     | $\phi 24$                     | 9                               | 14                          | 40.2                   |
| S80D 120B - 0508         | 120                          | $\phi 96$                          | $\phi 97.6$                    | B1         | 5                       | $\phi 8$                     | $\phi 30$                     | 9                               | 14                          | 59.0                   |



# Memo

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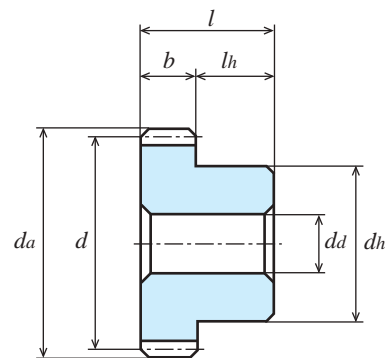
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# 白色 POM 直齿轮

## SPUR GEARS

模数  
MODULE **1** (齿数 12 ~ 120)

(普通齿)  
FULL DEPTH TOOTH



单位: mm

| 精度②                 | 材料     | 压力角  | 加工方法 | 齿面硬度 | 侧隙①         |
|---------------------|--------|------|------|------|-------------|
| JIS B 1702-1 9~10 级 | 白色 POM | 20 度 | 切削加工 | —    | 0.02 ~ 0.06 |

★带有不锈钢材质的波形弹簧销。

★波形弹簧销标称直径: 齿数 12 ~ 18 时  $\phi 1$ 、齿数 20 ~ 80 时  $\phi 1.4$ 、齿数 90 ~ 120 时没有。

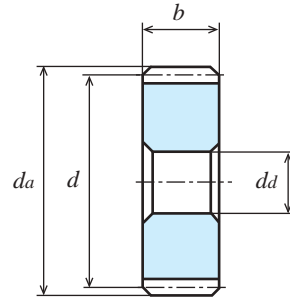
★本产品的容许传达动力表使用 LOUIS 公式。请在 P28 确认单位换算方法。

①同一种材料, 一样的齿轮相互啮合时的理想值。②制作时的控制精度。

★由于材料之特性, 易产生由经年老化·热胀冷缩而引起的尺寸和精度的变化。

B1形状  
TYPE B1

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>$z$ | 分度圆直径<br>Reference Diameter<br>$d$ | 齿顶圆直径<br>Tip Diameter<br>$d_a$ | 形状<br>Type | 齿宽<br>Face Width<br>$b$ | 孔径<br>Bore Diameter<br>$d_d$ | 轮毂外直径<br>Hub Diameter<br>$d_h$ | 轮毂长度<br>Hub Projection<br>$l_h$ | 全长<br>Overall Length<br>$l$ | 重量<br>Weight<br>W(g) |
|--------------------------|------------------------------|------------------------------------|--------------------------------|------------|-------------------------|------------------------------|--------------------------------|---------------------------------|-----------------------------|----------------------|
| S1D 12A - 1206           | 12                           | $\phi 12$                          | $\phi 14$                      | A1         | 12                      | $\phi 6$                     | -                              | -                               | 12                          | 1.4                  |
| S1D 14A - 1206           | 14                           | $\phi 14$                          | $\phi 16$                      | A1         | 12                      | $\phi 6$                     | -                              | -                               | 12                          | 2.1                  |
| S1D 15A - 1206           | 15                           | $\phi 15$                          | $\phi 17$                      | A1         | 12                      | $\phi 6$                     | -                              | -                               | 12                          | 2.5                  |
| S1D 16A - 1206           | 16                           | $\phi 16$                          | $\phi 18$                      | A1         | 12                      | $\phi 6$                     | -                              | -                               | 12                          | 2.9                  |
| S1D 17B - 0806           | 17                           | $\phi 17$                          | $\phi 19$                      | B1         | 8                       | $\phi 6$                     | $\phi 14$                      | 8                               | 16                          | 3.7                  |
| S1D 18B - 0808           | 18                           | $\phi 18$                          | $\phi 20$                      | B1         | 8                       | $\phi 8$                     | $\phi 15$                      | 8                               | 16                          | 3.7                  |
| S1D 20B - 0808           | 20                           | $\phi 20$                          | $\phi 22$                      | B1         | 8                       | $\phi 8$                     | $\phi 16$                      | 8                               | 16                          | 4.7                  |
| S1D 22B - 0808           | 22                           | $\phi 22$                          | $\phi 24$                      | B1         | 8                       | $\phi 8$                     | $\phi 18$                      | 8                               | 16                          | 6.0                  |
| S1D 23B - 0808           | 23                           | $\phi 23$                          | $\phi 25$                      | B1         | 8                       | $\phi 8$                     | $\phi 18$                      | 8                               | 16                          | 6.4                  |
| S1D 24B - 0808           | 24                           | $\phi 24$                          | $\phi 26$                      | B1         | 8                       | $\phi 8$                     | $\phi 18$                      | 8                               | 16                          | 6.8                  |
| S1D 25B - 0808           | 25                           | $\phi 25$                          | $\phi 27$                      | B1         | 8                       | $\phi 8$                     | $\phi 18$                      | 8                               | 16                          | 7.3                  |
| S1D 26B - 0808           | 26                           | $\phi 26$                          | $\phi 28$                      | B1         | 8                       | $\phi 8$                     | $\phi 20$                      | 8                               | 16                          | 8.4                  |
| S1D 28B - 0808           | 28                           | $\phi 28$                          | $\phi 30$                      | B1         | 8                       | $\phi 8$                     | $\phi 20$                      | 8                               | 16                          | 9.4                  |
| S1D 30B - 0808           | 30                           | $\phi 30$                          | $\phi 32$                      | B1         | 8                       | $\phi 8$                     | $\phi 20$                      | 8                               | 16                          | 10.4                 |
| S1D 32B - 0608           | 32                           | $\phi 32$                          | $\phi 34$                      | B1         | 6                       | $\phi 8$                     | $\phi 20$                      | 8                               | 14                          | 9.4                  |
| S1D 34B - 0608           | 34                           | $\phi 34$                          | $\phi 36$                      | B1         | 6                       | $\phi 8$                     | $\phi 20$                      | 8                               | 14                          | 10.2                 |
| S1D 35B - 0608           | 35                           | $\phi 35$                          | $\phi 37$                      | B1         | 6                       | $\phi 8$                     | $\phi 20$                      | 8                               | 14                          | 10.7                 |
| S1D 36B - 0608           | 36                           | $\phi 36$                          | $\phi 38$                      | B1         | 6                       | $\phi 8$                     | $\phi 20$                      | 8                               | 14                          | 11.2                 |
| S1D 38B - 0608           | 38                           | $\phi 38$                          | $\phi 40$                      | B1         | 6                       | $\phi 8$                     | $\phi 20$                      | 8                               | 14                          | 12.2                 |
| S1D 40B - 0608           | 40                           | $\phi 40$                          | $\phi 42$                      | B1         | 6                       | $\phi 8$                     | $\phi 20$                      | 8                               | 14                          | 13.2                 |
| S1D 42B - 0608           | 42                           | $\phi 42$                          | $\phi 44$                      | B1         | 6                       | $\phi 8$                     | $\phi 20$                      | 8                               | 14                          | 14.3                 |
| S1D 44B - 0608           | 44                           | $\phi 44$                          | $\phi 46$                      | B1         | 6                       | $\phi 8$                     | $\phi 20$                      | 8                               | 14                          | 15.4                 |
| S1D 45B - 0608           | 45                           | $\phi 45$                          | $\phi 47$                      | B1         | 6                       | $\phi 8$                     | $\phi 20$                      | 8                               | 14                          | 16.0                 |
| S1D 48B - 0608           | 48                           | $\phi 48$                          | $\phi 50$                      | B1         | 6                       | $\phi 8$                     | $\phi 20$                      | 8                               | 14                          | 17.9                 |
| S1D 50B - 0608           | 50                           | $\phi 50$                          | $\phi 52$                      | B1         | 6                       | $\phi 8$                     | $\phi 20$                      | 8                               | 14                          | 19.2                 |
| S1D 52B - 0608           | 52                           | $\phi 52$                          | $\phi 54$                      | B1         | 6                       | $\phi 8$                     | $\phi 20$                      | 8                               | 14                          | 20.5                 |
| S1D 55B - 0608           | 55                           | $\phi 55$                          | $\phi 57$                      | B1         | 6                       | $\phi 8$                     | $\phi 20$                      | 8                               | 14                          | 22.7                 |
| S1D 56B - 0608           | 56                           | $\phi 56$                          | $\phi 58$                      | B1         | 6                       | $\phi 8$                     | $\phi 20$                      | 8                               | 14                          | 23.4                 |
| S1D 60B - 0608           | 60                           | $\phi 60$                          | $\phi 62$                      | B1         | 6                       | $\phi 8$                     | $\phi 20$                      | 8                               | 14                          | 26.5                 |
| S1D 64B - 0608           | 64                           | $\phi 64$                          | $\phi 66$                      | B1         | 6                       | $\phi 8$                     | $\phi 20$                      | 8                               | 14                          | 29.8                 |
| S1D 70B - 0608           | 70                           | $\phi 70$                          | $\phi 72$                      | B1         | 6                       | $\phi 8$                     | $\phi 20$                      | 8                               | 14                          | 35.1                 |
| S1D 72B - 0608           | 72                           | $\phi 72$                          | $\phi 74$                      | B1         | 6                       | $\phi 8$                     | $\phi 20$                      | 8                               | 14                          | 37.0                 |
| S1D 80B - 0608           | 80                           | $\phi 80$                          | $\phi 82$                      | B1         | 6                       | $\phi 8$                     | $\phi 20$                      | 8                               | 14                          | 45.1                 |
| S1D 90B - 0608           | 90                           | $\phi 90$                          | $\phi 92$                      | B1         | 6                       | $\phi 8$                     | $\phi 30$                      | 8                               | 14                          | 60.8                 |
| S1D 100B - 0608          | 100                          | $\phi 100$                         | $\phi 102$                     | B1         | 6                       | $\phi 8$                     | $\phi 30$                      | 8                               | 14                          | 73.4                 |
| S1D 120B - 0608          | 120                          | $\phi 120$                         | $\phi 122$                     | B1         | 6                       | $\phi 8$                     | $\phi 30$                      | 8                               | 14                          | 102.7                |



A1形状  
TYPE A1

## 容许传达动力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |        |        |        |        |        |
|---------------------------|---|-------|--------|--------|--------|--------|--------|
|                           | 10  | 100   | 200    | 400    | 800    | 1,200  | 1,500  |
| S1D 12A - 1206            | 0.88  | 8.82  | 17.64  | 35.25  | 70.40  | 105.44 | 131.66 |
| S1D 14A - 1206            | 1.03  | 10.29 | 20.57  | 41.11  | 82.09  | 122.93 | 153.47 |
| S1D 15A - 1206            | 1.10  | 11.03 | 22.04  | 44.05  | 87.93  | 131.66 | 164.35 |
| S1D 16A - 1206            | 1.18  | 11.76 | 23.51  | 46.98  | 93.77  | 140.39 | 175.23 |
| S1D 17B - 0804            | 0.83  | 8.33  | 16.65  | 33.27  | 66.41  | 99.41  | 124.07 |
| S1D 18B - 0804            | 0.88  | 8.82  | 17.63  | 35.22  | 70.30  | 105.22 | 131.31 |
| S1D 20B - 0805            | 0.98  | 9.80  | 19.59  | 39.13  | 78.07  | 116.82 | 145.76 |
| S1D 22B - 0805            | 1.08  | 10.78 | 21.54  | 43.03  | 85.83  | 128.41 | 160.19 |
| S1D 23B - 0805            | 1.13  | 11.27 | 22.52  | 44.98  | 89.71  | 134.20 | 167.40 |
| S1D 24B - 0805            | 1.18  | 11.76 | 23.50  | 46.93  | 93.59  | 139.98 | 174.60 |
| S1D 25B - 0805            | 1.23  | 12.25 | 24.48  | 48.88  | 97.47  | 145.76 | 181.79 |
| S1D 26B - 0805            | 1.27  | 12.74 | 25.45  | 50.83  | 101.34 | 151.54 | 188.98 |
| S1D 28B - 0805            | 1.37  | 13.72 | 27.41  | 54.73  | 109.09 | 163.08 | 203.33 |
| S1D 30B - 0805            | 1.47  | 14.70 | 29.36  | 58.62  | 116.82 | 174.60 | 217.65 |
| S1D 32B - 0605            | 2.10  | 20.97 | 41.90  | 83.65  | 166.65 | 249.01 | 310.33 |
| S1D 34B - 0605            | 2.23  | 22.28 | 44.52  | 88.85  | 176.98 | 264.39 | 328.97 |
| S1D 35B - 0605            | 2.30  | 22.94 | 45.82  | 91.46  | 182.14 | 272.06 | 338.26 |
| S1D 36B - 0605            | 2.36  | 23.59 | 47.13  | 94.06  | 187.30 | 279.73 | 347.53 |
| S1D 38B - 0605            | 2.49  | 24.90 | 49.74  | 99.26  | 197.61 | 295.06 | 366.00 |
| S1D 40B - 0605            | 2.62  | 26.21 | 52.36  | 104.46 | 207.91 | 310.33 | 384.38 |
| S1D 42B - 0605            | 2.75  | 27.52 | 54.97  | 109.66 | 218.20 | 325.25 | 402.67 |
| S1D 44B - 0605            | 2.89  | 28.83 | 57.58  | 114.85 | 228.48 | 340.12 | 420.87 |
| S1D 48B - 0605            | 3.15  | 31.44 | 62.80  | 125.23 | 249.01 | 369.68 | 457.01 |
| S1D 50B - 0605            | 3.28  | 32.75 | 65.40  | 130.42 | 259.26 | 384.38 | 474.95 |
| S1D 52B - 0605            | 3.41  | 34.06 | 68.01  | 135.60 | 269.50 | 399.02 | 492.80 |
| S1D 55B - 0605            | 3.61  | 36.02 | 71.92  | 143.37 | 284.84 | 420.87 | 519.41 |
| S1D 56B - 0605            | 3.67  | 36.68 | 73.23  | 145.96 | 289.95 | 428.13 | 528.23 |
| S1D 60B - 0605            | 3.94  | 39.29 | 78.44  | 156.31 | 310.33 | 457.01 | 563.31 |
| S1D 64B - 0605            | 4.20  | 41.92 | 83.65  | 166.65 | 330.21 | 485.67 | 597.95 |
| S1D 70B - 0605            | 4.59  | 45.82 | 91.46  | 182.14 | 359.85 | 528.23 | 647.51 |
| S1D 72B - 0605            | 4.72  | 47.13 | 94.06  | 187.30 | 369.68 | 542.31 | 663.79 |
| S1D 80B - 0605            | 5.25  | 52.36 | 104.46 | 207.91 | 408.74 | 597.95 | 727.65 |
| S1D 90B - 0605            | 5.90  | 58.88 | 117.45 | 233.62 | 457.01 | 663.79 | 804.69 |
| S1D 100B - 0605           | 6.56  | 65.40 | 130.42 | 259.26 | 504.65 | 727.65 | 875.66 |
| S1D 120B - 0605           | 7.87  | 78.44 | 156.31 | 310.33 | 597.95 | 849.11 | 997.80 |

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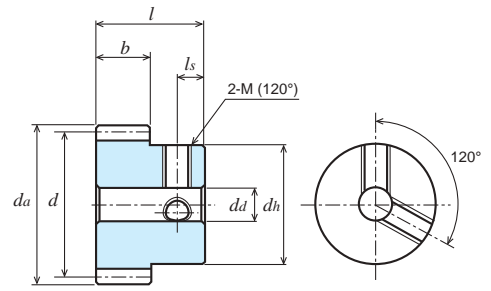
# 白色 POM 直齿轮

## SPUR GEARS

模数  
MODULE

0.5 (齿数 14 ~ 120)

(普通齿)  
FULL DEPTH TOOTH



B1形状  
TYPE B1

单位: mm

| 精度②                   | 材料     | 压力角  | 加工方法 | 齿面硬度 | 侧隙①         |
|-----------------------|--------|------|------|------|-------------|
| JIS B 1702-1 9 ~ 10 级 | 白色 POM | 20 度 | 切削加工 | —    | 0.02 ~ 0.06 |

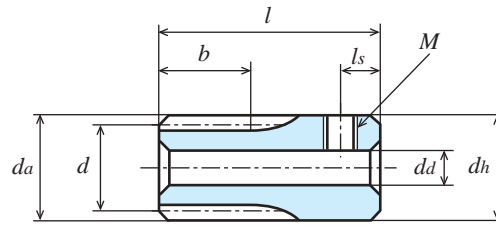
★【\*】带有两个螺纹孔，有两个固定用螺钉。

★本产品的容许传达动力表使用 LOUIS 公式。请在 P28 确认单位换算方法。

①同一种材料，一样的齿轮相互啮合时的理想值。②制作时的控制精度。

★由于材料之特性，易产生由经年老化·热胀冷缩而引起的尺寸和精度的变化。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>dd | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 螺纹孔<br>Set Screw |    | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|---------------------------|----------------------------|------------------------------|---------------------------|------------------|----|----------------------|
|                          |                            |                                  |                             |            |                       |                           |                            |                              |                           | 2-M(120°)        | ls |                      |
| S50D 14K * 0803          | 14                         | φ 7                              | φ 8                         | K2         | 8                     | φ3                        | φ 9                        | 10                           | 18                        | 2-M3             | 3  | 1.10                 |
| S50D 15K * 0803          | 15                         | φ 7.5                            | φ 8.5                       | K2         | 8                     | φ3                        | φ 9                        | 10                           | 18                        | 2-M3             | 3  | 1.17                 |
| S50D 16K * 0803          | 16                         | φ 8                              | φ 9                         | K2         | 8                     | φ3                        | φ 9                        | 10                           | 18                        | 2-M3             | 3  | 1.24                 |
| S50D 18K * 0803          | 18                         | φ 9                              | φ 10                        | K2         | 8                     | φ3                        | φ 10                       | 10                           | 18                        | 2-M3             | 3  | 1.59                 |
| S50D 20B * 0303          | 20                         | φ 10                             | φ 11                        | B1         | 3                     | φ3                        | φ 8                        | 5                            | 8                         | 2-M3             | 3  | 0.57                 |
| S50D 24B * 0303          | 24                         | φ 12                             | φ 13                        | B1         | 3                     | φ3                        | φ 10                       | 5                            | 8                         | 2-M3             | 3  | 0.90                 |
| S50D 25B * 0303          | 25                         | φ 12.5                           | φ 13.5                      | B1         | 3                     | φ3                        | φ 10                       | 5                            | 8                         | 2-M3             | 3  | 0.94                 |
| S50D 28B * 0303          | 28                         | φ 14                             | φ 15                        | B1         | 3                     | φ3                        | φ 12                       | 5                            | 8                         | 2-M3             | 3  | 1.30                 |
| S50D 30B * 0303          | 30                         | φ 15                             | φ 16                        | B1         | 3                     | φ3                        | φ 12                       | 5                            | 8                         | 2-M3             | 3  | 1.39                 |
| S50D 32B * 0303          | 32                         | φ 16                             | φ 17                        | B1         | 3                     | φ3                        | φ 14                       | 5                            | 8                         | 2-M3             | 3  | 1.77                 |
| S50D 36B * 0303          | 36                         | φ 18                             | φ 19                        | B1         | 3                     | φ3                        | φ 15                       | 5                            | 8                         | 2-M3             | 3  | 2.15                 |
| S50D 40B * 0303          | 40                         | φ 20                             | φ 21                        | B1         | 3                     | φ3                        | φ 15                       | 5                            | 8                         | 2-M3             | 3  | 2.40                 |
| S50D 45B * 0303          | 45                         | φ 22.5                           | φ 23.5                      | B1         | 3                     | φ3                        | φ 15                       | 5                            | 8                         | 2-M3             | 3  | 2.75                 |
| S50D 50B * 0303          | 50                         | φ 25                             | φ 26                        | B1         | 3                     | φ3                        | φ 15                       | 5                            | 8                         | 2-M3             | 3  | 3.15                 |
| S50D 56B * 0303          | 56                         | φ 28                             | φ 29                        | B1         | 3                     | φ3                        | φ 15                       | 5                            | 8                         | 2-M3             | 3  | 3.67                 |
| S50D 60B * 0303          | 60                         | φ 30                             | φ 31                        | B1         | 3                     | φ3                        | φ 15                       | 5                            | 8                         | 2-M3             | 3  | 4.06                 |
| S50D 64B * 0303          | 64                         | φ 32                             | φ 33                        | B1         | 3                     | φ3                        | φ 15                       | 5                            | 8                         | 2-M3             | 3  | 4.47                 |
| S50D 70B * 0304          | 70                         | φ 35                             | φ 36                        | B1         | 3                     | φ4                        | φ 16                       | 5                            | 8                         | 2-M3             | 3  | 5.25                 |
| S50D 72B * 0304          | 72                         | φ 36                             | φ 37                        | B1         | 3                     | φ4                        | φ 16                       | 5                            | 8                         | 2-M3             | 3  | 5.48                 |
| S50D 80B * 0304          | 80                         | φ 40                             | φ 41                        | B1         | 3                     | φ4                        | φ 16                       | 5                            | 8                         | 2-M3             | 3  | 6.49                 |
| S50D 90B * 0305          | 90                         | φ 45                             | φ 46                        | B1         | 3                     | φ5                        | φ 18                       | 5                            | 8                         | 2-M3             | 3  | 8.20                 |
| S50D 100B * 0305         | 100                        | φ 50                             | φ 51                        | B1         | 3                     | φ5                        | φ 18                       | 5                            | 8                         | 2-M3             | 3  | 9.77                 |
| S50D 120B * 0305         | 120                        | φ 60                             | φ 61                        | B1         | 3                     | φ5                        | φ 18                       | 5                            | 8                         | 2-M3             | 3  | 13.43                |



K2形状  
TYPE K2

## 容许传达动力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |       |       |       |        |        |
|---------------------------|---|------|-------|-------|-------|--------|--------|
|                           | 10  | 100  | 200   | 400   | 800   | 1,200  | 1,500  |
| S50D 14K * 0803           | 0.22  | 2.24 | 4.48  | 8.95  | 17.89 | 26.82  | 33.50  |
| S50D 15K * 0803           | 0.24  | 2.40 | 4.80  | 9.59  | 19.17 | 28.73  | 35.88  |
| S50D 16K * 0803           | 0.26  | 2.56 | 5.12  | 10.23 | 20.44 | 30.64  | 38.27  |
| S50D 18K * 0803           | 0.29  | 2.88 | 5.76  | 11.51 | 22.99 | 34.45  | 43.03  |
| S50D 20B * 0303           | 0.12  | 1.20 | 2.40  | 4.79  | 9.58  | 14.35  | 17.92  |
| S50D 24B * 0303           | 0.17  | 1.74 | 3.48  | 6.96  | 13.90 | 20.82  | 25.99  |
| S50D 25B * 0303           | 0.18  | 1.81 | 3.63  | 7.25  | 14.47 | 21.68  | 27.07  |
| S50D 28B * 0303           | 0.20  | 2.03 | 4.06  | 8.12  | 16.21 | 24.27  | 30.30  |
| S50D 30B * 0303           | 0.22  | 2.18 | 4.35  | 8.70  | 17.36 | 25.99  | 32.45  |
| S50D 32B * 0303           | 0.23  | 2.32 | 4.64  | 9.27  | 18.51 | 27.71  | 34.59  |
| S50D 36B * 0303           | 0.26  | 2.61 | 5.22  | 10.43 | 20.82 | 31.16  | 38.88  |
| S50D 40B * 0303           | 0.29  | 2.90 | 5.80  | 11.59 | 23.12 | 34.59  | 43.16  |
| S50D 45B * 0303           | 0.33  | 3.26 | 6.52  | 13.03 | 25.99 | 38.88  | 48.50  |
| S50D 50B * 0303           | 0.36  | 3.63 | 7.25  | 14.47 | 28.86 | 43.16  | 53.83  |
| S50D 56B * 0303           | 0.41  | 4.06 | 8.12  | 16.21 | 32.30 | 48.29  | 60.21  |
| S50D 60B * 0303           | 0.44  | 4.35 | 8.70  | 17.36 | 34.59 | 51.70  | 64.45  |
| S50D 64B * 0303           | 0.46  | 4.64 | 9.27  | 18.51 | 36.88 | 55.11  | 68.68  |
| S50D 70B * 0304           | 0.51  | 5.08 | 10.14 | 20.24 | 40.31 | 60.21  | 74.86  |
| S50D 72B * 0304           | 0.52  | 5.22 | 10.43 | 20.82 | 41.45 | 61.91  | 76.91  |
| S50D 80B * 0304           | 0.58  | 5.80 | 11.59 | 23.12 | 46.01 | 68.68  | 85.07  |
| S50D 90B * 0305           | 0.65  | 6.52 | 13.03 | 25.99 | 51.70 | 76.91  | 95.15  |
| S50D 100B * 0305          | 0.73  | 7.25 | 14.47 | 28.86 | 57.38 | 85.07  | 105.11 |
| S50D 120B * 0305          | 0.87  | 8.70 | 17.36 | 34.59 | 68.68 | 101.14 | 124.67 |

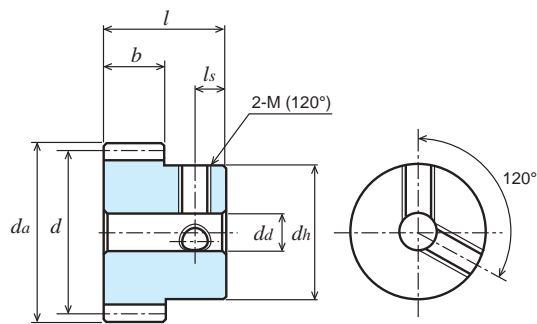
# 白色 POM 直齿轮

## SPUR GEARS

模数  
MODULE

**0.8** (齿数 14 ~ 120)

(普通齿)  
FULL DEPTH TOOTH



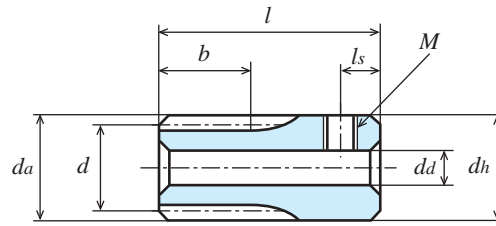
单位: mm

| 精度②                   | 材料     | 压力角  | 加工方法 | 齿面硬度 | 侧隙①         |
|-----------------------|--------|------|------|------|-------------|
| JIS B 1702-1 9 ~ 10 级 | 白色 POM | 20 度 | 切削加工 | —    | 0.06 ~ 0.12 |

B1形状  
TYPE B1

- ★【\*】带有两个螺纹孔，有两个固定用螺钉。
- ★本产品的容许传达动力表使用 LOUIS 公式。请在 P28 确认单位换算方法。
- ①同一种材料，一样的齿轮相互啮合时的理想值。②制作时的控制精度。
- ★由于材料之特性，易产生由经年老化·热胀冷缩而引起的尺寸和精度的变化。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>dd | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 螺纹孔<br>Set Screw |    | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|---------------------------|----------------------------|------------------------------|---------------------------|------------------|----|----------------------|
|                          |                            |                                  |                             |            |                       |                           |                            |                              |                           | 2-M(120°)        | ls |                      |
| S80D 14K * 0703          | 14                         | φ11.2                            | φ12.8                       | K2         | 7                     | φ3                        | φ12.8                      | 13                           | 20                        | 2-M3             | 3  | 3.1                  |
| S80D 15K * 0703          | 15                         | φ12                              | φ13.6                       | K2         | 7                     | φ3                        | φ13.6                      | 13                           | 20                        | 2-M3             | 3  | 3.5                  |
| S80D 16B * 0503          | 16                         | φ12.8                            | φ14.4                       | B1         | 5                     | φ3                        | φ10                        | 7                            | 12                        | 2-M3             | 4  | 1.5                  |
| S80D 18B * 0503          | 18                         | φ14.4                            | φ16                         | B1         | 5                     | φ3                        | φ12                        | 7                            | 12                        | 2-M3             | 4  | 2.1                  |
| S80D 20B * 0503          | 20                         | φ16                              | φ17.6                       | B1         | 5                     | φ3                        | φ12                        | 7                            | 12                        | 2-M3             | 4  | 2.4                  |
| S80D 22B * 0503          | 22                         | φ17.6                            | φ19.2                       | B1         | 5                     | φ3                        | φ15                        | 7                            | 12                        | 2-M3             | 4  | 3.3                  |
| S80D 24B * 0503          | 24                         | φ19.2                            | φ20.8                       | B1         | 5                     | φ3                        | φ16                        | 7                            | 12                        | 2-M3             | 4  | 3.9                  |
| S80D 25B * 0503          | 25                         | φ20                              | φ21.6                       | B1         | 5                     | φ3                        | φ16                        | 7                            | 12                        | 2-M3             | 4  | 4.0                  |
| S80D 28B * 0503          | 28                         | φ22.4                            | φ24                         | B1         | 5                     | φ3                        | φ20                        | 7                            | 12                        | 2-M3             | 4  | 5.7                  |
| S80D 30B * 0503          | 30                         | φ24                              | φ25.6                       | B1         | 5                     | φ3                        | φ20                        | 7                            | 12                        | 2-M3             | 4  | 6.1                  |
| S80D 32B * 0503          | 32                         | φ25.6                            | φ27.2                       | B1         | 5                     | φ3                        | φ20                        | 7                            | 12                        | 2-M3             | 4  | 6.6                  |
| S80D 36B * 0504          | 36                         | φ28.8                            | φ30.4                       | B1         | 5                     | φ4                        | φ22                        | 7                            | 12                        | 2-M4             | 4  | 8.1                  |
| S80D 40B * 0504          | 40                         | φ32                              | φ33.6                       | B1         | 5                     | φ4                        | φ22                        | 7                            | 12                        | 2-M4             | 4  | 9.2                  |
| S80D 45B * 0504          | 45                         | φ36                              | φ37.6                       | B1         | 5                     | φ4                        | φ22                        | 7                            | 12                        | 2-M4             | 4  | 10.7                 |
| S80D 48B * 0504          | 48                         | φ38.4                            | φ40                         | B1         | 5                     | φ4                        | φ22                        | 7                            | 12                        | 2-M4             | 4  | 11.7                 |
| S80D 50B * 0504          | 50                         | φ40                              | φ41.6                       | B1         | 5                     | φ4                        | φ22                        | 7                            | 12                        | 2-M4             | 4  | 12.4                 |
| S80D 56B * 0504          | 56                         | φ44.8                            | φ46.4                       | B1         | 5                     | φ4                        | φ22                        | 7                            | 12                        | 2-M4             | 4  | 14.6                 |
| S80D 60B * 0504          | 60                         | φ48                              | φ49.6                       | B1         | 5                     | φ4                        | φ22                        | 7                            | 12                        | 2-M4             | 4  | 16.3                 |
| S80D 64B * 0504          | 64                         | φ51.2                            | φ52.8                       | B1         | 5                     | φ4                        | φ22                        | 7                            | 12                        | 2-M4             | 4  | 18.0                 |
| S80D 70B * 0505          | 70                         | φ56                              | φ57.6                       | B1         | 5                     | φ5                        | φ24                        | 7                            | 12                        | 2-M4             | 4  | 21.5                 |
| S80D 72B * 0505          | 72                         | φ57.6                            | φ59.2                       | B1         | 5                     | φ5                        | φ24                        | 7                            | 12                        | 2-M4             | 4  | 22.5                 |
| S80D 80B * 0505          | 80                         | φ64                              | φ65.6                       | B1         | 5                     | φ5                        | φ24                        | 7                            | 12                        | 2-M4             | 4  | 26.8                 |
| S80D 90B * 0505          | 90                         | φ72                              | φ73.6                       | B1         | 5                     | φ5                        | φ24                        | 7                            | 12                        | 2-M4             | 4  | 32.8                 |
| S80D 100B * 0505         | 100                        | φ80                              | φ81.6                       | B1         | 5                     | φ5                        | φ24                        | 7                            | 12                        | 2-M4             | 4  | 39.5                 |
| S80D 120B * 0505         | 120                        | φ96                              | φ97.6                       | B1         | 5                     | φ5                        | φ24                        | 7                            | 12                        | 2-M4             | 4  | 55.1                 |



K2形状  
TYPE K2

## 容许传达动力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |        |        |        |        |
|---------------------------|---|-------|-------|--------|--------|--------|--------|
|                           | 10  | 100   | 200   | 400    | 800    | 1,200  | 1,500  |
| S80D 14K * 0703           | 0.50  | 5.02  | 10.03 | 20.05  | 40.04  | 59.98  | 74.90  |
| S80D 15K * 0703           | 0.54  | 5.37  | 10.75 | 21.48  | 42.89  | 64.24  | 80.22  |
| S80D 16B * 0503           | 0.41  | 4.10  | 8.19  | 16.36  | 32.67  | 48.93  | 61.10  |
| S80D 18B * 0503           | 0.46  | 4.61  | 9.21  | 18.40  | 36.74  | 55.02  | 68.68  |
| S80D 20B * 0503           | 0.51  | 5.12  | 10.23 | 20.44  | 40.81  | 61.10  | 76.26  |
| S80D 22B * 0503           | 0.56  | 5.63  | 11.25 | 22.48  | 44.87  | 67.17  | 83.83  |
| S80D 24B * 0503           | 0.61  | 6.14  | 12.28 | 24.52  | 48.93  | 73.23  | 91.38  |
| S80D 25B * 0503           | 0.64  | 6.40  | 12.79 | 25.54  | 50.96  | 76.26  | 95.15  |
| S80D 28B * 0503           | 0.72  | 7.16  | 14.32 | 28.60  | 57.05  | 85.34  | 106.46 |
| S80D 30B * 0503           | 0.77  | 7.68  | 15.34 | 30.64  | 61.10  | 91.38  | 113.98 |
| S80D 32B * 0503           | 0.82  | 8.19  | 16.36 | 32.67  | 65.14  | 97.41  | 121.49 |
| S80D 36B * 0504           | 0.92  | 9.21  | 18.40 | 36.74  | 73.23  | 109.47 | 136.47 |
| S80D 40B * 0504           | 1.02  | 10.23 | 20.44 | 40.81  | 81.30  | 121.49 | 151.40 |
| S80D 45B * 0504           | 1.15  | 11.51 | 22.99 | 45.89  | 91.38  | 136.47 | 169.55 |
| S80D 48B * 0504           | 1.23  | 12.28 | 24.52 | 48.93  | 97.41  | 145.44 | 180.36 |
| S80D 50B * 0504           | 1.28  | 12.79 | 25.54 | 50.96  | 101.44 | 151.40 | 187.53 |
| S80D 56B * 0504           | 1.43  | 14.32 | 28.60 | 57.05  | 113.48 | 168.83 | 208.87 |
| S80D 60B * 0504           | 1.54  | 15.34 | 30.64 | 61.10  | 121.49 | 180.36 | 222.96 |
| S80D 64B * 0504           | 1.64  | 16.36 | 32.67 | 65.14  | 129.49 | 191.81 | 236.94 |
| S80D 70B * 0505           | 1.79  | 17.89 | 35.73 | 71.21  | 141.46 | 208.87 | 257.71 |
| S80D 72B * 0505           | 1.84  | 18.40 | 36.74 | 73.23  | 145.44 | 214.52 | 264.58 |
| S80D 80B * 0505           | 2.05  | 20.44 | 40.81 | 81.30  | 161.10 | 236.94 | 291.72 |
| S80D 90B * 0505           | 2.30  | 22.99 | 45.89 | 91.38  | 180.36 | 264.58 | 323.84 |
| S80D 100B * 0505          | 2.56  | 25.54 | 50.96 | 101.44 | 199.41 | 291.72 | 355.00 |
| S80D 120B * 0505          | 3.07  | 30.64 | 61.10 | 121.49 | 236.94 | 342.65 | 414.26 |

# 白色 POM 直齿轮

## SPUR GEARS

模数  
MODULE **1** (齿数 17 ~ 120)

(普通齿)  
FULL DEPTH TOOTH



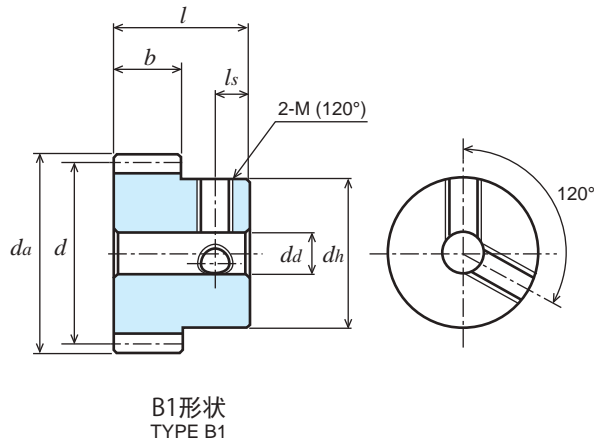
单位: mm

| 精度②                   | 材料     | 压力角  | 加工方法 | 齿面硬度 | 侧隙①         |
|-----------------------|--------|------|------|------|-------------|
| JIS B 1702-1 9 ~ 10 级 | 白色 POM | 20 度 | 切削加工 | —    | 0.06 ~ 0.12 |

- ★【\*】带有两个螺纹孔，有两个固定用螺钉。
- ★本产品的容许传达动力表使用 LOUIS 公式。请在 P28 确认单位换算方法。
- ①同一种材料，一样的齿轮相互啮合时的理想值。②制作时的控制精度。
- ★由于材料之特性，易产生由经年老化·热胀冷缩而引起的尺寸和精度的变化。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 齿顶圆直径<br>Tip Diameter<br><i>d<sub>a</sub></i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>dd</i> | 轮毂外径<br>Hub Diameter<br><i>d<sub>h</sub></i> | 轮毂长度<br>Hub Projection<br><i>l<sub>h</sub></i> | 全长<br>Overall Length<br><i>l</i> | 螺纹孔<br>Set Screw |                      | 重量<br>Weight<br><i>W(g)</i> |
|--------------------------|-----------------------------------|---|---|------------|------------------------------|----------------------------------|--|--|----------------------------------|------------------|----------------------|-----------------------------|
|                          |                                   |   |   |            |                              |                                  |  |  |                                  | 2-M(120°)        | <i>l<sub>s</sub></i> |                             |
| S1D 17B * 0804           | 17                                | φ 17                                    | φ 19  | B1         | 8                            | φ4                               | φ14  | 8  | 16                               | 2-M4             | 4                    | 4.0                         |
| S1D 18B * 0804           | 18                                | φ 18                                    | φ 20  | B1         | 8                            | φ4                               | φ15  | 8  | 16                               | 2-M4             | 4                    | 4.5                         |
| S1D 20B * 0805           | 20                                | φ 20                                    | φ 22  | B1         | 8                            | φ5                               | φ16  | 8  | 16                               | 2-M4             | 4                    | 5.3                         |
| S1D 22B * 0805           | 22                                | φ 22                                    | φ 24  | B1         | 8                            | φ5                               | φ18  | 8  | 16                               | 2-M4             | 4                    | 6.7                         |
| S1D 23B * 0805           | 23                                | φ 23                                    | φ 25  | B1         | 8                            | φ5                               | φ20  | 8  | 16                               | 2-M4             | 4                    | 7.7                         |
| S1D 24B * 0805           | 24                                | φ 24                                    | φ 26  | B1         | 8                            | φ5                               | φ20  | 8  | 16                               | 2-M4             | 4                    | 8.2                         |
| S1D 25B * 0805           | 25                                | φ 25                                    | φ 27  | B1         | 8                            | φ5                               | φ22  | 8  | 16                               | 2-M4             | 4                    | 9.3                         |
| S1D 26B * 0805           | 26                                | φ 26                                    | φ 28  | B1         | 8                            | φ5                               | φ22  | 8  | 16                               | 2-M4             | 4                    | 9.8                         |
| S1D 28B * 0805           | 28                                | φ 28                                    | φ 30  | B1         | 8                            | φ5                               | φ24  | 8  | 16                               | 2-M4             | 4                    | 11.6                        |
| S1D 30B * 0805           | 30                                | φ 30                                    | φ 32  | B1         | 8                            | φ5                               | φ24  | 8  | 16                               | 2-M4             | 4                    | 12.6                        |
| S1D 32B * 0605           | 32                                | φ 32                                    | φ 34  | B1         | 6                            | φ5                               | φ24  | 8  | 14                               | 2-M4             | 4                    | 11.5                        |
| S1D 34B * 0605           | 34                                | φ 34                                    | φ 36  | B1         | 6                            | φ5                               | φ24  | 8  | 14                               | 2-M4             | 4                    | 12.4                        |
| S1D 35B * 0605           | 35                                | φ 35                                    | φ 37  | B1         | 6                            | φ5                               | φ24  | 8  | 14                               | 2-M4             | 4                    | 12.8                        |
| S1D 36B * 0605           | 36                                | φ 36                                    | φ 38  | B1         | 6                            | φ5                               | φ24  | 8  | 14                               | 2-M4             | 4                    | 13.3                        |
| S1D 38B * 0605           | 38                                | φ 38                                    | φ 40  | B1         | 6                            | φ5                               | φ24  | 8  | 14                               | 2-M4             | 4                    | 14.3                        |
| S1D 40B * 0605           | 40                                | φ 40                                    | φ 42  | B1         | 6                            | φ5                               | φ24  | 8  | 14                               | 2-M4             | 4                    | 15.3                        |
| S1D 42B * 0605           | 42                                | φ 42                                    | φ 44  | B1         | 6                            | φ5                               | φ24  | 8  | 14                               | 2-M4             | 4                    | 16.4                        |
| S1D 44B * 0605           | 44                                | φ 44                                    | φ 46  | B1         | 6                            | φ5                               | φ24  | 8  | 14                               | 2-M4             | 4                    | 17.5                        |
| S1D 45B * 0605           | 45                                | φ 45                                    | φ 47  | B1         | 6                            | φ5                               | φ24  | 8  | 14                               | 2-M4             | 4                    | 18.1                        |
| S1D 48B * 0605           | 48                                | φ 48                                    | φ 50  | B1         | 6                            | φ5                               | φ24  | 8  | 14                               | 2-M4             | 4                    | 20.0                        |
| S1D 50B * 0605           | 50                                | φ 50                                    | φ 52  | B1         | 6                            | φ5                               | φ24  | 8  | 14                               | 2-M4             | 4                    | 21.3                        |
| S1D 52B * 0605           | 52                                | φ 52                                    | φ 54  | B1         | 6                            | φ5                               | φ24  | 8  | 14                               | 2-M4             | 4                    | 22.6                        |
| S1D 55B * 0605           | 55                                | φ 55                                    | φ 57  | B1         | 6                            | φ5                               | φ24  | 8  | 14                               | 2-M4             | 4                    | 24.8                        |
| S1D 56B * 0605           | 56                                | φ 56                                    | φ 58  | B1         | 6                            | φ5                               | φ24  | 8  | 14                               | 2-M4             | 4                    | 25.5                        |
| S1D 60B * 0605           | 60                                | φ 60                                    | φ 62  | B1         | 6                            | φ5                               | φ24  | 8  | 14                               | 2-M4             | 4                    | 28.6                        |
| S1D 64B * 0605           | 64                                | φ 64                                    | φ 66  | B1         | 6                            | φ5                               | φ24  | 8  | 14                               | 2-M4             | 4                    | 31.9                        |
| S1D 70B * 0605           | 70                                | φ 70                                    | φ 72  | B1         | 6                            | φ5                               | φ24  | 8  | 14                               | 2-M4             | 4                    | 37.2                        |
| S1D 72B * 0605           | 72                                | φ 72                                    | φ 74  | B1         | 6                            | φ5                               | φ24  | 8  | 14                               | 2-M4             | 4                    | 39.1                        |
| S1D 80B * 0605           | 80                                | φ 80                                    | φ 82  | B1         | 6                            | φ5                               | φ24  | 8  | 14                               | 2-M4             | 4                    | 47.2                        |
| S1D 90B * 0605           | 90                                | φ 90                                    | φ 92  | B1         | 6                            | φ5                               | φ24  | 8  | 14                               | 2-M4             | 4                    | 58.5                        |
| S1D 100B * 0605          | 100                               | φ100                                    | φ102  | B1         | 6                            | φ5                               | φ24  | 8  | 14                               | 2-M4             | 4                    | 71.1                        |
| S1D 120B * 0605          | 120                               | φ120                                    | φ122  | B1         | 6                            | φ5                               | φ24  | 8  | 14                               | 2-M4             | 4                    | 100.4                       |





## 容许传达动力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

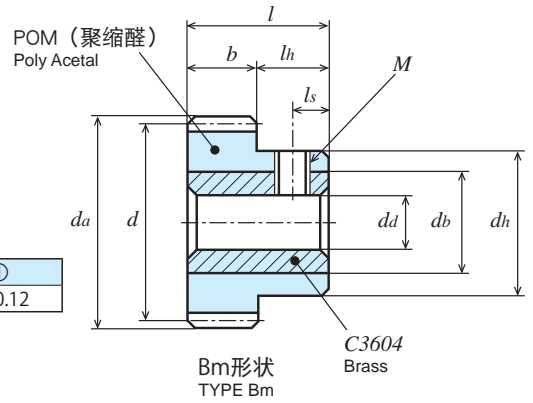
| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |        |        |        |        |        |
|---------------------------|---|-------|--------|--------|--------|--------|--------|
|                           | 10  | 100   | 200    | 400    | 800    | 1,200  | 1,500  |
| S1D 17B * 0804            | 0.83  | 8.33  | 16.65  | 33.27  | 66.41  | 99.41  | 124.07 |
| S1D 18B * 0804            | 0.88  | 8.82  | 17.63  | 35.22  | 70.30  | 105.22 | 131.31 |
| S1D 20B * 0805            | 0.98  | 9.80  | 19.59  | 39.13  | 78.07  | 116.82 | 145.76 |
| S1D 22B * 0805            | 1.08  | 10.78 | 21.54  | 43.03  | 85.83  | 128.41 | 160.19 |
| S1D 23B * 0805            | 1.13  | 11.27 | 22.52  | 44.98  | 89.71  | 134.20 | 167.40 |
| S1D 24B * 0805            | 1.18  | 11.76 | 23.50  | 46.93  | 93.59  | 139.98 | 174.60 |
| S1D 25B * 0805            | 1.23  | 12.25 | 24.48  | 48.88  | 97.47  | 145.76 | 181.79 |
| S1D 26B * 0805            | 1.27  | 12.74 | 25.45  | 50.83  | 101.34 | 151.54 | 188.98 |
| S1D 28B * 0805            | 1.37  | 13.72 | 27.41  | 54.73  | 109.09 | 163.08 | 203.33 |
| S1D 30B * 0805            | 1.47  | 14.70 | 29.36  | 58.62  | 116.82 | 174.60 | 217.65 |
| S1D 32B * 0605            | 2.10  | 20.97 | 41.90  | 83.65  | 166.65 | 249.01 | 310.33 |
| S1D 34B * 0605            | 2.23  | 22.28 | 44.52  | 88.85  | 176.98 | 264.39 | 328.97 |
| S1D 35B * 0605            | 2.30  | 22.94 | 45.82  | 91.46  | 182.14 | 272.06 | 338.26 |
| S1D 36B * 0605            | 2.36  | 23.59 | 47.13  | 94.06  | 187.30 | 279.73 | 347.53 |
| S1D 38B * 0605            | 2.49  | 24.90 | 49.74  | 99.26  | 197.61 | 295.06 | 366.00 |
| S1D 40B * 0605            | 2.62  | 26.21 | 52.36  | 104.46 | 207.91 | 310.33 | 384.38 |
| S1D 42B * 0605            | 2.75  | 27.52 | 54.97  | 109.66 | 218.20 | 325.25 | 402.67 |
| S1D 44B * 0605            | 2.89  | 28.83 | 57.58  | 114.85 | 228.48 | 340.12 | 420.87 |
| S1D 48B * 0605            | 3.15  | 31.44 | 62.80  | 125.23 | 249.01 | 369.68 | 457.01 |
| S1D 50B * 0605            | 3.28  | 32.75 | 65.40  | 130.42 | 259.26 | 384.38 | 474.95 |
| S1D 52B * 0605            | 3.41  | 34.06 | 68.01  | 135.60 | 269.50 | 399.02 | 492.80 |
| S1D 55B * 0605            | 3.61  | 36.02 | 71.92  | 143.37 | 284.84 | 420.87 | 519.41 |
| S1D 56B * 0605            | 3.67  | 36.68 | 73.23  | 145.96 | 289.95 | 428.13 | 528.23 |
| S1D 60B * 0605            | 3.94  | 39.29 | 78.44  | 156.31 | 310.33 | 457.01 | 563.31 |
| S1D 64B * 0605            | 4.20  | 41.92 | 83.65  | 166.65 | 330.21 | 485.67 | 597.95 |
| S1D 70B * 0605            | 4.59  | 45.82 | 91.46  | 182.14 | 359.85 | 528.23 | 647.51 |
| S1D 72B * 0605            | 4.72  | 47.13 | 94.06  | 187.30 | 369.68 | 542.31 | 663.79 |
| S1D 80B * 0605            | 5.25  | 52.36 | 104.46 | 207.91 | 408.74 | 597.95 | 727.65 |
| S1D 90B * 0605            | 5.90  | 58.88 | 117.45 | 233.62 | 457.01 | 663.79 | 804.69 |
| S1D 100B * 0605           | 6.56  | 65.40 | 130.42 | 259.26 | 504.65 | 727.65 | 875.66 |
| S1D 120B * 0605           | 7.87  | 78.44 | 156.31 | 310.33 | 597.95 | 849.11 | 997.80 |

# 白色 POM 直齿轮

## SPUR GEARS

模数  
MODULE **1** (齿数 20 ~ 120)

(普通齿)  
FULL DEPTH TOOTH



单位: mm

| 精度②                | 材料             | 压力角 | 加工方法 | 齿面硬度 | 侧隙①       |
|--------------------|----------------|-----|------|------|-----------|
| JIS B 1702-1 9~10级 | 白色 POM · C3604 | 20度 | 切削加工 | —    | 0.06~0.12 |

- ★齿孔部带有黄铜衬套。【+】带有螺纹孔，有固定用螺钉。
- ★本产品的容许传达动力表使用 LOUIS 公式。请在 P28 确认单位换算方法。
- ①同一种材料，一样的齿轮相互啮合时的理想值。
- ②制作时的控制精度。
- ★由于材料之特性，易产生由经年老化·热胀冷缩而引起的尺寸和精度的变化。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H8) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 螺纹孔<br>Set Screw |    | 衬套外径<br>db | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|------------------|----|------------|----------------------|
|                          |                            |                                  |                             |            |                       |                               |                            |                              |                           | M                | ls |            |                      |
| S1DB 20B + 1008          | 20                         | φ 20                             | φ 22                        | Bm         | 10                    | φ 8                           | φ 16                       | 10                           | 20                        | M4               | 4  | φ 12       | 16.8                 |
| S1DB 24B + 1008          | 24                         | φ 24                             | φ 26                        | Bm         | 10                    | φ 8                           | φ 20                       | 10                           | 20                        | M4               | 4  | φ 12       | 17.5                 |
| S1DB 25B + 1008          | 25                         | φ 25                             | φ 27                        | Bm         | 10                    | φ 8                           | φ 20                       | 10                           | 20                        | M4               | 4  | φ 12       | 18.0                 |
| S1DB 28B + 1010          | 28                         | φ 28                             | φ 30                        | Bm         | 10                    | φ 10                          | φ 24                       | 10                           | 20                        | M4               | 4  | φ 16       | 35.0                 |
| S1DB 30B + 1010          | 30                         | φ 30                             | φ 32                        | Bm         | 10                    | φ 10                          | φ 24                       | 10                           | 20                        | M4               | 4  | φ 16       | 36.4                 |
| S1DB 32B + 1010          | 32                         | φ 32                             | φ 34                        | Bm         | 10                    | φ 10                          | φ 24                       | 10                           | 20                        | M4               | 4  | φ 16       | 37.8                 |
| S1DB 36B + 1010          | 36                         | φ 36                             | φ 38                        | Bm         | 10                    | φ 10                          | φ 30                       | 10                           | 20                        | M4               | 4  | φ 16       | 38.0                 |
| S1DB 40B + 1010          | 40                         | φ 40                             | φ 42                        | Bm         | 10                    | φ 10                          | φ 30                       | 10                           | 20                        | M4               | 4  | φ 16       | 41.4                 |
| S1DB 45B + 1010          | 45                         | φ 45                             | φ 47                        | Bm         | 10                    | φ 10                          | φ 30                       | 10                           | 20                        | M4               | 4  | φ 16       | 46.1                 |
| S1DB 48B + 1010          | 48                         | φ 48                             | φ 50                        | Bm         | 10                    | φ 10                          | φ 30                       | 10                           | 20                        | M4               | 4  | φ 16       | 49.2                 |
| S1DB 50B + 1010          | 50                         | φ 50                             | φ 52                        | Bm         | 10                    | φ 10                          | φ 30                       | 10                           | 20                        | M4               | 4  | φ 16       | 51.4                 |
| S1DB 56B + 1010          | 56                         | φ 56                             | φ 58                        | Bm         | 10                    | φ 10                          | φ 30                       | 10                           | 20                        | M4               | 4  | φ 16       | 58.5                 |
| S1DB 60B + 1010          | 60                         | φ 60                             | φ 62                        | Bm         | 10                    | φ 10                          | φ 30                       | 10                           | 20                        | M4               | 4  | φ 16       | 63.7                 |
| S1DB 64B + 1010          | 64                         | φ 64                             | φ 66                        | Bm         | 10                    | φ 10                          | φ 30                       | 10                           | 20                        | M4               | 4  | φ 16       | 69.2                 |
| S1DB 70B + 1010          | 70                         | φ 70                             | φ 72                        | Bm         | 10                    | φ 10                          | φ 30                       | 10                           | 20                        | M4               | 4  | φ 16       | 78.2                 |
| S1DB 72B + 1010          | 72                         | φ 72                             | φ 74                        | Bm         | 10                    | φ 10                          | φ 30                       | 10                           | 20                        | M4               | 4  | φ 16       | 81.4                 |
| S1DB 80B + 1010          | 80                         | φ 80                             | φ 82                        | Bm         | 10                    | φ 10                          | φ 30                       | 10                           | 20                        | M4               | 4  | φ 16       | 94.9                 |
| S1DB 90B + 1010          | 90                         | φ 90                             | φ 92                        | Bm         | 10                    | φ 10                          | φ 30                       | 10                           | 20                        | M4               | 4  | φ 16       | 113.9                |
| S1DB 100B + 1010         | 100                        | φ 100                            | φ 102                       | Bm         | 10                    | φ 10                          | φ 30                       | 10                           | 20                        | M4               | 4  | φ 16       | 135.1                |
| S1DB 120B + 1010         | 120                        | φ 120                            | φ 122                       | Bm         | 10                    | φ 10                          | φ 30                       | 10                           | 20                        | M4               | 4  | φ 16       | 184.1                |

### 容许传达动力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |        |        |        |          |          |
|---------------------------|---|-------|--------|--------|--------|----------|----------|
|                           | 10  | 100   | 200    | 400    | 800    | 1,200    | 1,500    |
| S1DB 20B + 1008           | 1.61  | 16.08 | 32.14  | 64.20  | 128.08 | 191.66   | 239.15   |
| S1DB 24B + 1008           | 1.93  | 19.29 | 38.55  | 77.00  | 153.55 | 229.66   | 286.46   |
| S1DB 25B + 1008           | 2.01  | 20.09 | 40.16  | 80.20  | 159.91 | 239.15   | 298.26   |
| S1DB 28B + 1010           | 2.25  | 22.50 | 44.97  | 89.79  | 178.97 | 267.55   | 333.59   |
| S1DB 30B + 1010           | 2.41  | 24.11 | 48.18  | 96.18  | 191.66 | 286.46   | 357.10   |
| S1DB 32B + 1010           | 2.57  | 25.72 | 51.38  | 102.57 | 204.34 | 305.33   | 380.51   |
| S1DB 36B + 1010           | 2.90  | 28.93 | 57.79  | 115.33 | 229.66 | 343.00   | 426.13   |
| S1DB 40B + 1010           | 3.22  | 32.14 | 64.20  | 128.08 | 254.94 | 380.51   | 471.31   |
| S1DB 45B + 1010           | 3.62  | 36.15 | 72.20  | 144.01 | 286.46 | 426.13   | 527.17   |
| S1DB 48B + 1010           | 3.86  | 38.55 | 77.00  | 153.55 | 305.33 | 453.29   | 560.37   |
| S1DB 50B + 1010           | 4.02  | 40.16 | 80.20  | 159.91 | 317.90 | 471.31   | 582.37   |
| S1DB 56B + 1010           | 4.50  | 44.97 | 89.79  | 178.97 | 355.53 | 524.95   | 647.70   |
| S1DB 60B + 1010           | 4.83  | 48.18 | 96.18  | 191.66 | 380.51 | 560.37   | 690.72   |
| S1DB 64B + 1010           | 5.15  | 51.38 | 102.57 | 204.34 | 404.89 | 595.51   | 733.18   |
| S1DB 70B + 1010           | 5.63  | 56.19 | 112.14 | 223.34 | 441.23 | 647.70   | 793.96   |
| S1DB 72B + 1010           | 5.79  | 57.79 | 115.33 | 229.66 | 453.29 | 664.96   | 813.91   |
| S1DB 80B + 1010           | 6.43  | 64.20 | 128.08 | 254.94 | 501.19 | 733.18   | 892.22   |
| S1DB 90B + 1010           | 7.24  | 72.20 | 144.01 | 286.46 | 560.37 | 813.91   | 986.69   |
| S1DB 100B + 1010          | 8.04  | 80.20 | 159.91 | 317.90 | 618.78 | 892.22   | 1,073.70 |
| S1DB 108B + 1010          | 8.68  | 86.59 | 172.62 | 343.00 | 664.96 | 953.11   | 1,136.21 |
| S1DB 112B + 1010          | 9.01  | 89.79 | 178.97 | 355.53 | 687.86 | 982.98   | 1,166.16 |
| S1DB 120B + 1010          | 9.65  | 96.18 | 191.66 | 380.51 | 733.18 | 1,041.15 | 1,223.46 |

# Memo

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技术数据  
REFERENCE DATA

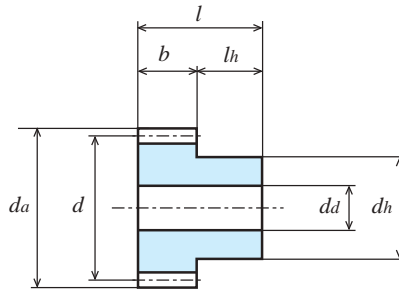
# 黑色 POM 直齿轮

## SPUR GEARS

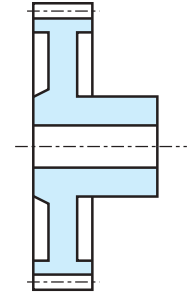
模数  
MODULE

0.5 (齿数 20 ~ 100)

(普通齿)  
FULL DEPTH TOOTH



B1形状  
TYPE B1



B4形状  
TYPE B4

单位: mm

| 精度                | 材料     | 压力角  | 加工方法 | 齿面硬度 | 侧隙①         |
|-------------------|--------|------|------|------|-------------|
| JIS B 1702-1 11 级 | 黑色 POM | 20 度 | 注塑成形 | —    | 0.02 ~ 0.06 |

★本产品的容许传达动力表使用 LOUIS 公式。请在 P28 确认单位换算方法。

①同一种材料，一样的齿轮相互啮合时的理想值。

★由于材料之特性，易产生由经年老化·热胀冷缩而引起的尺寸和精度的变化。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 齿顶圆直径<br>Tip Diameter<br><i>da</i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>dd</i> | 轮毂外径<br>Hub Diameter<br><i>dh</i> | 轮毂长度<br>Hub Projection<br><i>lh</i> | 全长<br>Overall Length<br><i>l</i> | 重量<br>Weight<br><i>W(g)</i> |
|--------------------------|-----------------------------------|---|------------------------------------|------------|------------------------------|----------------------------------|-----------------------------------|-------------------------------------|----------------------------------|-----------------------------|
| S50DM 20B - 0403         | 20                                | φ10                                     | φ11                                | B1         | 4                            | φ3                               | φ8                                | 4                                   | 8                                | 0.9                         |
| S50DM 24B - 0303         | 24                                | φ12                                     | φ13                                | B1         | 3                            | φ3                               | φ10                               | 5                                   | 8                                | 1.0                         |
| S50DM 30B - 0303         | 30                                | φ15                                     | φ16                                | B1         | 3                            | φ3                               | φ10                               | 5                                   | 8                                | 1.2                         |
| S50DM 40B - 0303         | 40                                | φ20                                     | φ21                                | B4         | 3                            | φ3                               | φ10                               | 5                                   | 8                                | 1.5                         |
| S50DM 50B - 0303         | 50                                | φ25                                     | φ26                                | B4         | 3                            | φ3                               | φ10                               | 5                                   | 8                                | 2.0                         |
| S50DM 60B - 0303         | 60                                | φ30                                     | φ31                                | B4         | 3                            | φ3                               | φ10                               | 5                                   | 8                                | 2.7                         |
| S50DM 80B - 0303         | 80                                | φ40                                     | φ41                                | B4         | 3                            | φ3                               | φ10                               | 5                                   | 8                                | 4.4                         |
| S50DM 100B - 0303        | 100                               | φ50                                     | φ51                                | B4         | 3                            | φ3                               | φ10                               | 5                                   | 8                                | 6.6                         |

### 容许传达动力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |      |       |       |       |       |       |
|---------------------------|---|------|-------|-------|-------|-------|-------|
|                           | 10  | 100  | 200   | 400   | 800   | 1,200 | 1,500 |
| S50DM 20B - 0403          | 0.18  | 1.84 | 3.67  | 7.34  | 14.67 | 21.97 | 27.44 |
| S50DM 24B - 0303          | 0.17  | 1.65 | 3.31  | 6.61  | 13.19 | 19.76 | 24.67 |
| S50DM 30B - 0303          | 0.21  | 2.07 | 4.13  | 8.25  | 16.48 | 24.67 | 30.80 |
| S50DM 40B - 0303          | 0.28  | 2.75 | 5.51  | 11.00 | 21.94 | 32.84 | 40.97 |
| S50DM 50B - 0303          | 0.34  | 3.44 | 6.88  | 13.74 | 27.40 | 40.97 | 51.10 |
| S50DM 60B - 0303          | 0.41  | 4.13 | 8.25  | 16.48 | 32.84 | 49.08 | 61.18 |
| S50DM 80B - 0303          | 0.55  | 5.51 | 11.00 | 21.94 | 43.68 | 65.19 | 80.75 |
| S50DM 100B - 0303         | 0.69  | 6.88 | 13.74 | 27.40 | 54.47 | 80.75 | 99.78 |



# 精密研磨齿条

## 精密研磨 CP 齿条

## 精密研磨 CP 小齿轮

Ground Racks, Circular Pitch Ground Racks and Pinion Gears.

### 产品型号的解读方法

### Reference of Catalogue Number

RKG 1 S 3 - 10 15  
RKGP 2 S 2 - 08 12

| 齿轮的种类<br>Kind of Gear  | 齿轮的周节距<br>Circular Pitch   | 模数<br>Module  | 材料<br>Material   | 全长<br>Overall Length  | 齿宽<br>Face Width                | 全齿高<br>Overall Thickness        |
|--|--|---|--|---|---------------------------------|---------------------------------|
| RKG : 精密研磨齿条 (Ground Rack)<br>RKGP : 精密研磨CP齿条 (周节变位齿条)<br>(Ground Circular Rack) | 2 : CP2<br>5 : CP5<br>2 : 2 mm<br>5 : 5 mm<br>2 : 2 Millimeter<br>5 : 5 Millimeter | 表示模数大小。模数1以下<br>时所标数据是实际模数乘以<br>100。<br>例：模数0.5时所标数据是50。<br>模数0.8时所标数据是80。<br>Expressed the unit of module's size.<br>Module 0.5 and 0.8 as multiple of 100.<br>例<br>Example<br>m0.5 → 50 m0.8 → 80 | S45C (ISO C45) 碳钢<br>SCM435齿部高频淬火HRC49<br>~ 55<br>Material : Carbon Steel<br>Applied thermal refining of HS40~45<br>to the raw material.<br>Chromium Molybdenum Steel,<br>complete with high frequency<br>Induction Hardening. (HRC49 to 55) | 表示长度。在所标数据上乘以100<br>为实际长度。单位为mm。例：<br>所标数据2时，乘以100而得出<br>200。单位为mm。所以实际长度<br>为200mm。<br>例<br>2 → 200 mm<br>3 → 300 mm<br>Increase hundred times from these<br>numbers.<br>Example<br>2 → 200 millimeter<br>3 → 300 millimeter | 单位：mm<br>Dimension : millimeter | 单位：mm<br>Dimension : millimeter |

SGP 2 S - 20

| 齿轮的种类<br>Kind of Gear   | 节距<br>Circular Pitch   | 材料<br>Material   | 齿孔加工<br>Bore Processed   | 齿数<br>Number of Teeth |
|---|--|--|--|-----------------------|
| SGP : 精密研磨CP小齿轮<br>(周节变位齿轮)<br>(Circular Pitch<br>Ground Spur Gear)<br>Circular pitch pinions | 2 : CP2<br>Pitch : 2mm (0.636 module)<br>5 : CP5<br>Pitch : 5mm (1.591 module) | SCM435, 440齿部高频淬火<br>HRC49 ~ 55<br>Material : Chromium<br>Molybdenum Steel,<br>complete with high<br>frequency Induction<br>Hardening. (HRC 49 to 55). | [-] : 磨削加工<br>Ground bore.<br>without threaded hole/<br>without Set Screw.<br>[*] : 磨削加工, 有两处系<br>紧螺丝。<br>with two threaded holes/<br>without Set Screw. | Z : 20, 25, 30        |

KG 研磨齿条齿轮是对机电一体化，机床机械和半导体制造，精密工业用机械，测定仪器等广大领域的机械产品非常适合十分匹配的齿轮。

The precision gears are applied and demanded in the Mechatronics, Machine Tools, and Measured Instruments.

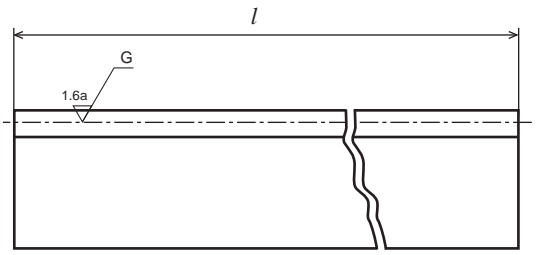
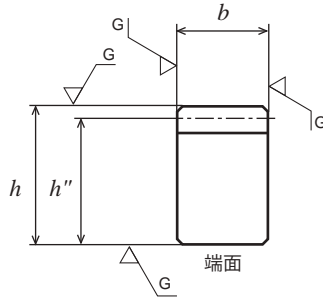
# SCM 研磨齿条

## GROUND RACKS

模数  
MODULE

1/1.5/2/2.5/3

(普通齿)  
FULL DEPTH TOOTH



单位: mm

| 精度         | 材料     | 压力角  | 热处理    | 齿面硬度       |
|------------|--------|------|--------|------------|
| 无相应 JIS 规格 | SCM435 | 20 度 | 齿面高频淬火 | HRC49 ~ 55 |

★未做表面处理。进行过两端面加工的齿条，可以连接使用。

★追加加工注意点：离齿根部太近的部分（离齿根部2~3mm）的追加加工请注意。

受到齿面高频热处理的影响，有局部材料硬化的可能性。★材料会出现由于老化的弯曲。

配对齿轮

|  |            |
|--|------------|
|  | SG 系列直齿轮   |
|  | ASG 控制侧隙齿轮 |

| 模数<br>Module<br><i>m</i> | 产品型号<br>Catalogue Number | 全长<br>Overall Length<br><i>l</i> | 两端面加工<br>Both Ends Processed<br><i>p</i> | 有效齿数<br>Effective Number of Teeth<br><i>z</i> | 啮合高度<br>Datum Line<br><i>h''</i> | 齿宽<br>Face Width<br><i>b(h8)</i> | 全齿高<br>Overall Thickness<br><i>h(h8)</i> | 重量<br>Weight<br><i>W(kg)</i> |
|--------------------------|--------------------------|----------------------------------|--|---|----------------------------------|----------------------------------|--|------------------------------|
| 1                        | RKG1S 5 - 1015H          | 505.80                           | 0.03 ~ 0.12                              | 161   | 14                               | 10                               | 15                                       | 0.55                         |
|                          | RKG1S 10 - 1015H         | 1021.02                          | 0.03 ~ 0.12                              | 325   | 14                               | 10                               | 15                                       | 1.12                         |
| 1.5                      | RKG1.5S 5 - 1515H        | 504.23                           | 0.06 ~ 0.18                              | 107   | 13.5                             | 15                               | 15                                       | 0.80                         |
|                          | RKG1.5S 10 - 1515H       | 1008.45                          | 0.06 ~ 0.18                              | 214   | 13.5                             | 15                               | 15                                       | 1.59                         |
| 2                        | RKG2S 5 - 2020H          | 502.66                           | 0.06 ~ 0.18                              | 80  | 18                               | 20                               | 20                                       | 1.41                         |
|                          | RKG2S 10 - 2020H         | 1005.31                          | 0.06 ~ 0.18                              | 160   | 18                               | 20                               | 20                                       | 2.82                         |
| 2.5                      | RKG2.5S 5 - 2525H        | 502.66                           | 0.06 ~ 0.18                              | 64  | 22.5                             | 25                               | 25                                       | 2.21                         |
|                          | RKG2.5S 10 - 2525H       | 1005.31                          | 0.06 ~ 0.18                              | 128   | 22.5                             | 25                               | 25                                       | 4.41                         |
| 3                        | RKG3S 5 - 3030H          | 499.51                           | 0.10 ~ 0.25                              | 53  | 27                               | 30                               | 30                                       | 3.16                         |
|                          | RKG3S 10 - 3030H         | 1008.45                          | 0.10 ~ 0.25                              | 107   | 27                               | 30                               | 30                                       | 6.37                         |

# 连接用齿条

## GAUGE RACKS

模数 MODULE 0.5 (齿数 29) 0.8 (齿数 18) / 1 (齿数 14) / 1.5 (齿数 9) / 2 (齿数 15) / 2.5 (齿数 12) / 3 (齿数 9) (普通齿) FULL DEPTH TOOTH



单位: mm 用于模数 0.5, 0.8, 1, 1.5 的 RKG 系列研磨齿条连接时的连接用治具。

| 精度         | 材料            | 压力角  | 热处理  | 齿面硬度      |
|------------|---------------|------|------|-----------|
| 无相应 JIS 规格 | S45C · SCM435 | 20 度 | 材料调质 | HS40 ~ 45 |

★未做表面处理。

用于模数 2, 2.5, 3 的 RKG 系列研磨齿条连接时的连接用治具。

| 精度         | 材料     | 压力角  | 热处理    | 齿面硬度       |
|------------|--------|------|--------|------------|
| 无相应 JIS 规格 | SCM435 | 20 度 | 齿面高频淬火 | HRC49 ~ 55 |

★未做表面处理。

| 模数<br>Module<br><i>m</i> | 产品型号<br>Catalogue Number | 材料<br>Material<br><i>M</i> | 全长<br>Overall Length<br><i>l</i> | 齿数<br>Number of Teeth<br><i>z</i> | 啮合高度<br>Datum Line<br><i>h''</i> | 齿宽<br>Face Width<br><i>b(h8)</i> | 全齿高<br>Overall Thickness<br><i>h(h8)</i> | 重量<br>Weight<br><i>W(g)</i> |
|--------------------------|--------------------------|----------------------------|----------------------------------|-----------------------------------|----------------------------------|----------------------------------|--|-----------------------------|
| 0.5                      | RKG50S - G               | S45C                       | 45.3                             | 29                                | 11.5                             | 8                                | 12                                       | 32.7                        |
| 0.8                      | RKG80S - G               | S45C                       | 44.9                             | 18                                | 11.2                             | 8                                | 12                                       | 31.5                        |
| 1.0                      | RKG1S - G                | S45C                       | 43.6                             | 14                                | 14.0                             | 10                               | 15                                       | 47.9                        |
| 1.5                      | RKG1.5S - G              | S45C                       | 41.9                             | 9                                 | 18.5                             | 15                               | 20                                       | 91.2                        |
| 2.0                      | RKG2S - GH               | SCM435                     | 94                               | 15                                | 18                               | 20                               | 20                                       | 264.6                       |
| 2.5                      | RKG2.5S - GH             | SCM435                     | 94                               | 12                                | 22.5                             | 25                               | 25                                       | 413.4                       |
| 3.0                      | RKG3S - GH               | SCM435                     | 94                               | 9                                 | 27                               | 30                               | 30                                       | 595.3                       |

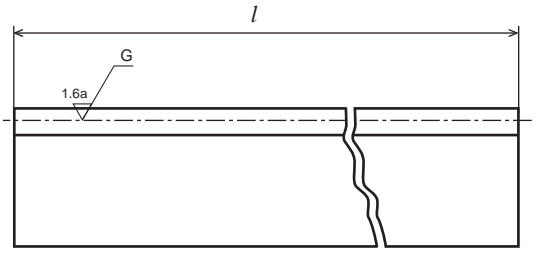
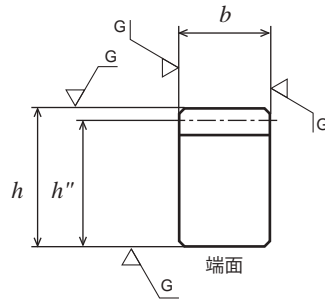
# S45C 研磨齿条

## GROUND RACKS

模数  
MODULE

# 0.5/0.8/1/1.5

(普通齿)  
FULL DEPTH TOOTH



单位：mm

| 精度         | 材料   | 压力角  | 热处理  | 齿面硬度       |
|------------|------|------|------|------------|
| 无相应 JIS 规格 | S45C | 20 度 | 材料调质 | HRC40 ~ 45 |

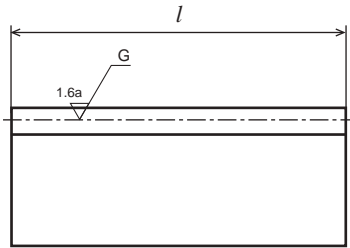
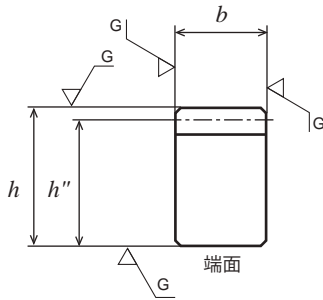
- ★未做表面处理。进行过两端面加工的齿条，可以连接使用。
- ★进行了材料调质(Hs40 ~ 45)。但由于内部应力，会出现由于老化的弯曲。
- ★使用研磨齿条时可以将侧隙调整到「0」。条件是必须是高精度的安装。

配对齿轮

|  |            |
|--|------------|
|  | SG 系列直齿轮   |
|  | ASG 控制侧隙齿轮 |

| 材料直线度      | 材料平行度      | 齿距累积误差              |
|------------|------------|---------------------|
| 0.04 mm 以下 | 0.01 mm 以下 | 0.025mm(全长 200mm 时) |

| 模数<br>Module<br><i>m</i> | 产品型号<br>Catalogue Number | 全长<br>Overall Length<br><i>l</i> | 两端面加工<br>Both Ends Processed<br><i>p</i> | 有效齿数<br>Effective Number of Teeth<br><i>z</i> | 啮合高度<br>Datum Line<br><i>h''</i> | 齿宽<br>Face Width<br><i>b(h8)</i> | 全齿高<br>Overall Thickness<br><i>h(h8)</i> | 重量<br>Weight<br><i>W(kg)</i> |
|--------------------------|--------------------------|----------------------------------|--|---|----------------------------------|----------------------------------|--|------------------------------|
| 0.5                      | <b>RKG50S 2 - 0812</b>   | 201.06                           | 0.02 ~ 0.08                              | 128   | 11.5                             | 8                                | 12                                       | 0.14                         |
| 0.8                      | <b>RKG80S 2 - 0812</b>   | 201.06                           | 0.03 ~ 0.12                              | 80  | 11.2                             | 8                                | 12                                       | 0.14                         |
| 1.0                      | <b>RKG1S 3 - 1015</b>    | 301.59                           | 0.03 ~ 0.12                              | 96  | 14.0                             | 10                               | 15                                       | 0.32                         |
| 1.5                      | <b>RKG1.5S 3 - 1520</b>  | 301.59                           | 0.06 ~ 0.18                              | 64  | 18.5                             | 15                               | 20                                       | 0.64                         |



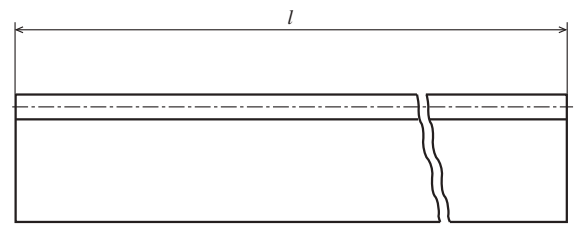
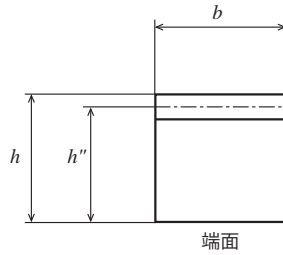
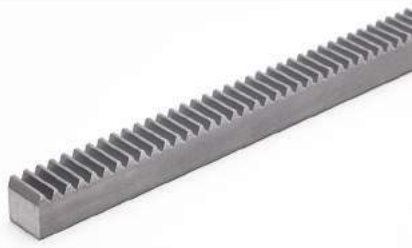
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- 齿条箱 GEAR BOXES
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- 研磨直齿条 GROUND SPUR GEARS
- 直齿条 SPUR GEARS
- 齿条 RACKS
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- 蜗轮、蜗杆 WORMS AND WORM WHEELS
- 技术齿条 REFERENCE DATA

# S45C 齿条

## RACKS

模数  
MODULE

1/1.25/1.5/2/2.5/3/4/5 (普通齿)  
FULL DEPTH TOOTH



端面

单位：mm

| 精度         | 材料   | 压力角  | 热处理 | 齿面硬度 |
|------------|------|------|-----|------|
| 无相应 JIS 规格 | S45C | 20 度 | —   | —    |

- ★未做表面处理。进行过两端面加工的齿条，可以连接使用。
- ★由于是拉拔材料，所以齿宽，全齿高公差都在  $h11 \sim h12$  左右。
- ★齿条在滚齿加工后做过矫正。但由于材料特性和内部应力还是有可能出现由于老化的弯曲。
- ★进行高频淬火时由于本产品是S45C材料的拉拔材料做成。材料表面有层脱碳层。所以会出现表面硬度上不去，弯曲等现象，这些会成为节距发生变化的原因。

配对齿轮



| 模数<br>Module<br><i>m</i> | 产品型号<br>Catalogue Number | 全长<br>Overall Length<br><i>l</i> | 两端面加工<br>Both Ends Processed<br><i>p</i> | 有效齿数<br>Effective Number of Teeth<br><i>z</i> | 啮合高度<br>Datum Line<br><i>h''</i> | 齿宽<br>Face Width<br><i>b(h12)</i> | 全齿高<br>Overall Thickness<br><i>h(h12)</i> | 重量<br>Weight<br><i>W(kg)</i> |
|--------------------------|--------------------------|----------------------------------|--|---|----------------------------------|-----------------------------------|---|------------------------------|
| 1                        | RK1SD 3 — 1010           | 303 ~ 306                        | -  | 94  | 9                                | 10                                | 10  | 0.20                         |
|                          | RK1SD 5 — 1010           | 505 ~ 508                        | -  | 158   | 9                                | 10                                | 10  | 0.34                         |
|                          | RK1SD 10 — 1015          | 1021.0                           | 0.03 ~ 0.12                              | 325   | 14                               | 10                                | 15  | 1.12                         |
| 1.25                     | RK1.25SD 5 — 1010        | 505 ~ 508                        | -  | 126   | 8.75                             | 10                                | 10  | 0.34                         |
|                          | RK1.25SD 5 — 1313        | 505 ~ 508                        | -  | 126   | 11.75                            | 13                                | 13  | 0.60                         |
| 1.5                      | RK1.5SD 3 — 1616         | 303 ~ 306                        | -  | 62  | 14.5                             | 16                                | 16  | 0.53                         |
|                          | RK1.5SD 5 — 1216         | 505 ~ 508                        | -  | 105   | 14.5                             | 12                                | 16  | 0.66                         |
|                          | RK1.5SD 5 — 1616         | 503 ~ 506                        | -  | 105   | 14.5                             | 16                                | 16  | 0.90                         |
|                          | RK1.5SD 10 — 1616        | 1008.5                           | 0.06 ~ 0.18                              | 214   | 14.5                             | 16                                | 16  | 1.84                         |
|                          | RK1.5SD 5 — 1620         | 503 ~ 506                        | -  | 105   | 18.5                             | 16                                | 20  | 1.16                         |
|                          | RK1.5SD 10 — 1620        | 1008.5                           | 0.06 ~ 0.18                              | 214   | 18.5                             | 16                                | 20  | 2.34                         |
| RK1.5SD 16 — 1620        | 1602.2                   | 0.06 ~ 0.18                      | 340                                      | 18.5  | 16                               | 20                                | 3.72                                      |                              |
| 2                        | RK2SD 3 — 2020           | 303 ~ 306                        | -  | 46  | 18                               | 20                                | 20  | 0.90                         |
|                          | RK2SD 5 — 2020           | 503 ~ 506                        | -  | 78  | 18                               | 20                                | 20  | 1.40                         |
|                          | RK2SD 10 — 1420          | 1005.3                           | 0.06 ~ 0.18                              | 160   | 18                               | 14                                | 20  | 1.95                         |
|                          | RK2SD 10 — 2020          | 1005.3                           | 0.06 ~ 0.18                              | 160   | 18                               | 20                                | 20  | 2.80                         |
|                          | RK2SD 5 — 2025           | 501 ~ 506                        | -  | 78  | 23                               | 20                                | 25  | 1.80                         |
|                          | RK2SD 10 — 2025          | 1005.3                           | 0.06 ~ 0.18                              | 160   | 23                               | 20                                | 25  | 3.63                         |
| RK2SD 16 — 2025          | 1602.2                   | 0.06 ~ 0.18                      | 255                                      | 23  | 20                               | 25                                | 5.80                                      |                              |
| 2.5                      | RK2.5SD 3 — 2525         | 303 ~ 306                        | -  | 36  | 22.5                             | 25                                | 25  | 1.32                         |
|                          | RK2.5SD 5 — 2525         | 503 ~ 506                        | -  | 62  | 22.5                             | 25                                | 25  | 2.20                         |
|                          | RK2.5SD 10 — 1825        | 1005.3                           | 0.06 ~ 0.18                              | 128   | 22.5                             | 18                                | 25  | 3.13                         |
|                          | RK2.5SD 10 — 2525        | 1005.3                           | 0.06 ~ 0.18                              | 128   | 22.5                             | 25                                | 25  | 4.40                         |
|                          | RK2.5SD 5 — 2530         | 501 ~ 506                        | -  | 62  | 27.5                             | 25                                | 30  | 2.69                         |
|                          | RK2.5SD 10 — 2530        | 1005.3                           | 0.06 ~ 0.18                              | 128   | 27.5                             | 25                                | 30  | 5.42                         |
|                          | RK2.5SD 16 — 2530        | 1602.2                           | 0.06 ~ 0.18                              | 204   | 27.5                             | 25                                | 30  | 8.60                         |
| 3                        | RK3SD 3 — 3030           | 300 ~ 306                        | -  | 30  | 27                               | 30                                | 30  | 1.90                         |
|                          | RK3SD 5 — 3030           | 503 ~ 506                        | -  | 52  | 27                               | 30                                | 30  | 3.20                         |
|                          | RK3SD 10 — 2230          | 1008.5                           | 0.10 ~ 0.25                              | 107   | 27                               | 22                                | 30  | 4.80                         |
|                          | RK3SD 10 — 3030          | 1008.5                           | 0.10 ~ 0.25                              | 107   | 27                               | 30                                | 30  | 6.40                         |
|                          | RK3SD 5 — 3035           | 501 ~ 506                        | -  | 52  | 32                               | 30                                | 35  | 3.76                         |
|                          | RK3SD 10 — 3035          | 1008.5                           | 0.10 ~ 0.25                              | 107   | 32                               | 30                                | 35  | 7.60                         |
|                          | RK3SD 16 — 3035          | 1602.2                           | 0.10 ~ 0.25                              | 170   | 32                               | 30                                | 35  | 12.10                        |
| 4                        | RK4SD 10 — 4040          | 1005.3                           | 0.10 ~ 0.25                              | 80  | 36                               | 40                                | 40  | 12.00                        |
| 5                        | RK5SD 10 — 5050          | 1005.3                           | 0.10 ~ 0.25                              | 64  | 45                               | 50                                | 50  | 18.50                        |



# S45C 齿条 -- 带安装孔

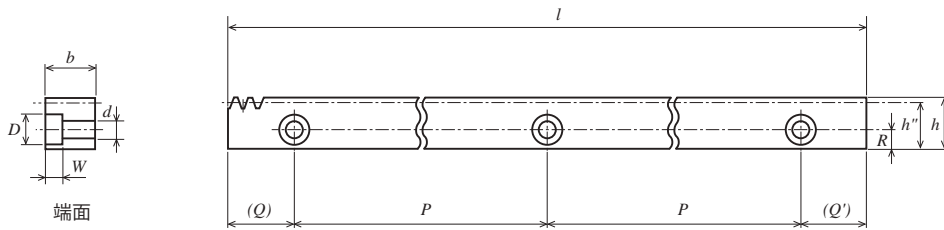
RACKS(S45C)with fixed holes and both ends processed

模数  
MODULE

# 1/1.5/2/2.5/3

(普通齿)

FULL DEPTH TOOTH



带安装孔的齿条  
KG-Rack with fixed holes

单位：mm

| 精度         | 材料   | 压力角  | 热处理 | 齿面硬度 |
|------------|------|------|-----|------|
| 无相应 JIS 规格 | S45C | 20 度 | —   | —    |

- ★未做表面处理。带安装孔的S45C齿条都做了两端面加工，都可以连接使用。
- ★关于全长：因为进行了两端面加工，所以其实际长度比理论值短0.06 ~ 0.5mm。
- ★由于是拉拔材料，所以齿宽，全齿高公差都在h11 ~ h12左右。
- ★齿条在滚齿加工后做过矫正。但由于材料特性和内部应力还是有可能出现由于老化的弯曲。
- ★进行高频淬火时由于本产品是S45C材料的拉拔材料做成。材料表面有层脱碳层。所以会出现表面硬度上不去，弯曲等现象，这些会成为节距发生变化的原因。

配对齿轮



S45C 直齿齿轮

| 模数<br>Module<br>m  | 产品型号<br>Catalogue Number | 全长<br>Overall Length<br>l | 啮合高度<br>Datum Line<br>h" | 齿宽<br>Face Width<br>b(h12) | 全齿高<br>Overall Thickness<br>h(h12) | 安装孔  |                                 |                                   |                                 |             |        |      | 重量<br>Weight<br>W(kg) |          |
|--------------------|--------------------------|---------------------------|--------------------------|----------------------------|------------------------------------|------|---------------------------------|-----------------------------------|---------------------------------|-------------|--------|------|-----------------------|----------|
|                    |                          |                           |                          |                            |                                    | 孔的数目 | 钻孔径<br>Drill Hole Diameter<br>d | 沉孔径<br>Counter Sink Diameter<br>D | 沉孔深度<br>Counter Sink Depth<br>W | 从底面的距离<br>R | 从端面的距离 |      |                       | 周节距<br>P |
|                    |                          |                           |                          |                            |                                    |      |                                 |                                   |                                 |             | (Q)    | (Q') |                       |          |
| 1                  | RK1SD 3 - 1015M          | 298.45                    | 14                       | 10                         | 15                                 | 3    | 4.5                             | —                                 | —                               | 6           | 19.2   | 19.2 | 130                   | 0.32     |
|                    | RK1SD 5 - 1015M          | 505.79                    | 14                       | 10                         | 15                                 | 4    | 4.5                             | —                                 | —                               | 6           | 27.9   | 27.9 | 150                   | 0.55     |
|                    | RK1SD 10 - 1015M         | 1021.01                   | 14                       | 10                         | 15                                 | 6    | 4.5                             | —                                 | —                               | 6           | 60.5   | 60.5 | 180                   | 1.11     |
| 1.5                | RK1.5SD 3 - 1616M        | 301.59                    | 14.5                     | 16                         | 16                                 | 3    | 5.5                             | 9.5                               | 5.4                             | 6           | 20.8   | 20.8 | 130                   | 0.53     |
|                    | RK1.5SD 5 - 1616M        | 499.51                    | 14.5                     | 16                         | 16                                 | 4    | 5.5                             | 9.5                               | 5.4                             | 6           | 24.7   | 24.7 | 150                   | 0.88     |
|                    | RK1.5SD 10 - 1616M       | 1008.45                   | 14.5                     | 16                         | 16                                 | 6    | 5.5                             | 9.5                               | 5.4                             | 6           | 49.5   | 58.9 | 180                   | 1.80     |
|                    | RK1.5SD 3 - 1620M        | 301.59                    | 18.5                     | 16                         | 20                                 | 3    | 5.5                             | 9.5                               | 5.4                             | 8           | 20.8   | 20.8 | 130                   | 0.68     |
|                    | RK1.5SD 5 - 1620M        | 499.51                    | 18.5                     | 16                         | 20                                 | 4    | 5.5                             | 9.5                               | 5.4                             | 8           | 24.7   | 24.7 | 150                   | 1.13     |
|                    | RK1.5SD 10 - 1620M       | 1008.45                   | 18.5                     | 16                         | 20                                 | 6    | 5.5                             | 9.5                               | 5.4                             | 8           | 49.5   | 58.9 | 180                   | 2.30     |
| 2                  | RK2SD 3 - 1420M          | 301.59                    | 18                       | 14                         | 20                                 | 3    | 6.6                             | 11                                | 6.5                             | 7           | 20.8   | 20.8 | 130                   | 0.57     |
|                    | RK2SD 5 - 1420M          | 496.37                    | 18                       | 14                         | 20                                 | 4    | 6.6                             | 11                                | 6.5                             | 7           | 23.1   | 23.1 | 150                   | 0.95     |
|                    | RK2SD 10 - 1420M         | 1005.31                   | 18                       | 14                         | 20                                 | 6    | 6.6                             | 11                                | 6.5                             | 7           | 52.6   | 52.6 | 180                   | 1.94     |
|                    | RK2SD 3 - 2020M          | 301.59                    | 18                       | 20                         | 20                                 | 3    | 6.6                             | 11                                | 6.5                             | 7           | 20.8   | 20.8 | 130                   | 0.82     |
|                    | RK2SD 5 - 2020M          | 496.37                    | 18                       | 20                         | 20                                 | 4    | 6.6                             | 11                                | 6.5                             | 7           | 23.1   | 23.1 | 150                   | 1.36     |
|                    | RK2SD 10 - 2020M         | 1005.31                   | 18                       | 20                         | 20                                 | 6    | 6.6                             | 11                                | 6.5                             | 7           | 52.6   | 52.6 | 180                   | 2.77     |
|                    | RK2SD 3 - 2025M          | 301.59                    | 23                       | 20                         | 25                                 | 3    | 6.6                             | 11                                | 6.5                             | 10          | 20.8   | 20.8 | 130                   | 1.05     |
|                    | RK2SD 5 - 2025M          | 496.37                    | 23                       | 20                         | 25                                 | 4    | 6.6                             | 11                                | 6.5                             | 10          | 23.1   | 23.1 | 150                   | 1.75     |
| RK2SD 10 - 2025M   | 1005.31                  | 23                        | 20                       | 25                         | 6                                  | 6.6  | 11                              | 6.5                               | 10                              | 52.6        | 52.6   | 180  | 3.56                  |          |
| 2.5                | RK2.5SD 3 - 1825M        | 298.45                    | 22.5                     | 18                         | 25                                 | 3    | 9                               | 14                                | 8.6                             | 9           | 19.2   | 19.2 | 130                   | 0.90     |
|                    | RK2.5SD 5 - 1825M        | 494.80                    | 22.5                     | 18                         | 25                                 | 4    | 9                               | 14                                | 8.6                             | 9           | 22.4   | 22.4 | 150                   | 1.51     |
|                    | RK2.5SD 10 - 1825M       | 1005.31                   | 22.5                     | 18                         | 25                                 | 6    | 9                               | 14                                | 8.6                             | 9           | 52.6   | 52.6 | 180                   | 3.10     |
|                    | RK2.5SD 3 - 2525M        | 298.45                    | 22.5                     | 25                         | 25                                 | 3    | 9                               | 14                                | 8.6                             | 9           | 19.2   | 19.2 | 130                   | 1.24     |
|                    | RK2.5SD 5 - 2525M        | 494.80                    | 22.5                     | 25                         | 25                                 | 4    | 9                               | 14                                | 8.6                             | 9           | 22.4   | 22.4 | 150                   | 2.09     |
|                    | RK2.5SD 10 - 2525M       | 1005.31                   | 22.5                     | 25                         | 25                                 | 6    | 9                               | 14                                | 8.6                             | 9           | 52.6   | 52.6 | 180                   | 4.29     |
|                    | RK2.5SD 3 - 2530M        | 298.45                    | 27.5                     | 25                         | 30                                 | 3    | 9                               | 14                                | 8.6                             | 12          | 19.2   | 19.2 | 130                   | 1.54     |
|                    | RK2.5SD 5 - 2530M        | 494.80                    | 27.5                     | 25                         | 30                                 | 4    | 9                               | 14                                | 8.6                             | 12          | 22.4   | 22.4 | 150                   | 2.57     |
| RK2.5SD 10 - 2530M | 1005.31                  | 27.5                      | 25                       | 30                         | 6                                  | 9    | 14                              | 8.6                               | 12                              | 52.6        | 52.6   | 180  | 5.28                  |          |
| 3                  | RK3SD 3 - 2230M          | 301.59                    | 27                       | 22                         | 30                                 | 3    | 11                              | 17.5                              | 10.8                            | 11          | 20.8   | 20.8 | 130                   | 1.32     |
|                    | RK3SD 5 - 2230M          | 499.51                    | 27                       | 22                         | 30                                 | 4    | 11                              | 17.5                              | 10.8                            | 11          | 24.7   | 24.7 | 150                   | 2.21     |
|                    | RK3SD 10 - 2230M         | 1008.45                   | 27                       | 22                         | 30                                 | 6    | 11                              | 17.5                              | 10.8                            | 11          | 49.5   | 58.9 | 180                   | 4.53     |
|                    | RK3SD 3 - 3030M          | 301.59                    | 27                       | 30                         | 30                                 | 3    | 11                              | 17.5                              | 10.8                            | 11          | 20.8   | 20.8 | 130                   | 1.78     |
|                    | RK3SD 5 - 3030M          | 499.51                    | 27                       | 30                         | 30                                 | 4    | 11                              | 17.5                              | 10.8                            | 11          | 24.7   | 24.7 | 150                   | 3.00     |
|                    | RK3SD 10 - 3030M         | 1008.45                   | 27                       | 30                         | 30                                 | 6    | 11                              | 17.5                              | 10.8                            | 11          | 49.5   | 58.9 | 180                   | 6.15     |
|                    | RK3SD 3 - 3035M          | 301.59                    | 32                       | 30                         | 35                                 | 3    | 11                              | 17.5                              | 10.8                            | 14          | 20.8   | 20.8 | 130                   | 2.14     |
|                    | RK3SD 5 - 3035M          | 499.51                    | 32                       | 30                         | 35                                 | 4    | 11                              | 17.5                              | 10.8                            | 14          | 24.7   | 24.7 | 150                   | 3.59     |
| RK3SD 10 - 3035M   | 1008.45                  | 32                        | 30                       | 35                         | 6                                  | 11   | 17.5                            | 10.8                              | 14                              | 49.5        | 58.9   | 180  | 7.33                  |          |

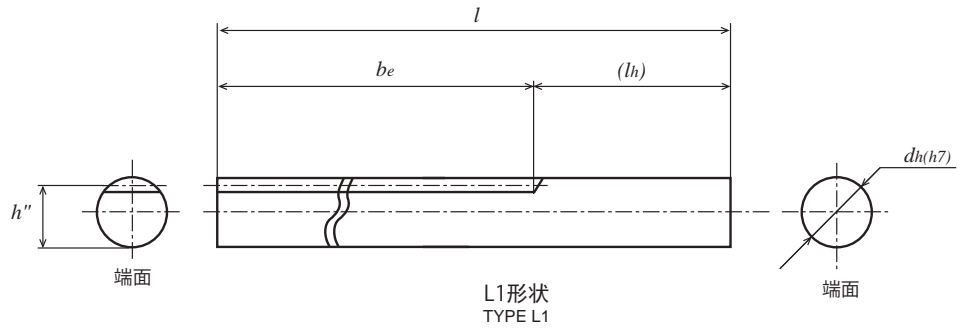
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# SUS 不锈钢齿条

## ROUND RACKS

模数  
MODULE

0.5/0.75/0.8/1/1.5/2 (普通齿) FULL DEPTH TOOTH



单位：mm

| 精度         | 材料     | 压力角  | 热处理 | 齿面硬度 |
|------------|--------|------|-----|------|
| 无相应 JIS 规格 | SUS304 | 20 度 | -   | -    |

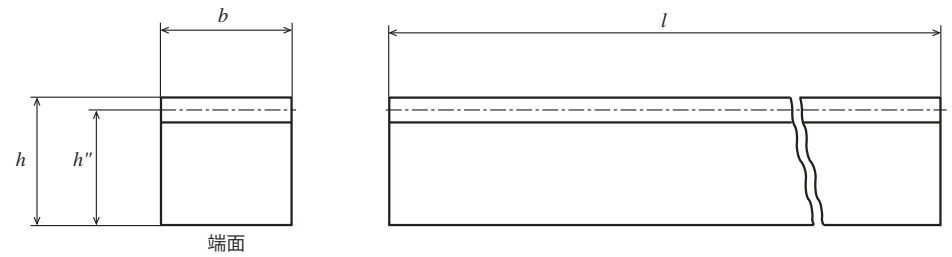
★未做表面处理。未做两端面加工，不可连接使用。

★材料的全长公差：在全长标称200mm时，202±1mm。300mm时，305±1mm。

配对齿轮



| 模数<br>Module<br><i>m</i> | 产品型号<br>Catalogue Number | 全长<br>Overall Length<br><i>l</i> | 有效齿数<br>Effective Number of Teeth<br><i>z</i> | 有效啮合长度<br>Effective Datum Length<br><i>be</i> | 啮合高度<br>Datum Line<br><i>h''</i> | 轴径<br>Shaft Diameter<br><i>dh(h7)</i> | 柄长度<br>Length of Stem<br><i>lh</i> | 重量<br>Weight<br><i>W(g)</i> |
|--------------------------|--------------------------|----------------------------------|---|---|----------------------------------|---------------------------------------|------------------------------------|-----------------------------|
| 0.5                      | ORK50SU 2 - 0815         | 200                              | 95  | 149   | 7.5                              | φ 8                                   | 50                                 | 78                          |
| 0.75                     | ORK75SU 2 - 0815         | 200                              | 63  | 148   | 7.25                             | φ 8                                   | 50                                 | 76                          |
| 0.8                      | ORK80SU 2 - 0815         | 200                              | 59  | 148   | 7.2                              | φ 8                                   | 50                                 | 76                          |
| 1                        | ORK1SU 3 - 1024          | 300                              | 76  | 238   | 9                                | φ10                                   | 60                                 | 177                         |



单位：mm

| 精度         | 材料     | 压力角  | 热处理 | 齿面硬度 |
|------------|--------|------|-----|------|
| 无相应 JIS 规格 | SUS304 | 20 度 | -   | -    |

★未做表面处理。进行过两端面加工的齿条，可以连接使用。

★关于全长：因为进行了两端面加工，所以其实际长度比理论值短0.06~0.5mm。

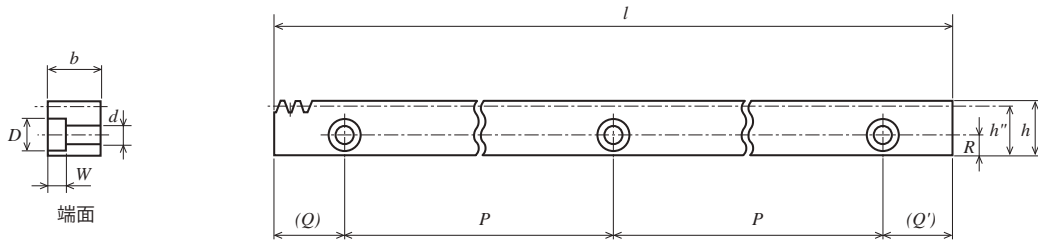
★由于是拉拔材料，所以齿宽，全齿高公差都在 h11~h12 左右。

★齿条在滚齿加工后做过矫正。但由于材料特性和内部应力还是有可能出现由于老化的弯曲。

配对齿轮



| 模数<br>Module<br><i>m</i> | 产品型号<br>Catalogue Number | 全长<br>Overall Length<br><i>l</i> | 两端面加工<br>Both Ends Processed<br><i>p</i> | 有效齿数<br>Effective Number of Teeth<br><i>z</i> | 啮合高度<br>Datum Line<br><i>h''</i> | 齿宽<br>Face Width<br><i>b(h12)</i> | 全齿高<br>Overall Thickness<br><i>h(h12)</i> | 重量<br>Weight<br><i>W(g)</i> |
|--------------------------|--------------------------|----------------------------------|--|---|----------------------------------|-----------------------------------|---|-----------------------------|
| 0.5                      | RK50SU 2 - 0310          | 202 ~ 205                        | -  | 126   | 9.5                              | 3                                 | 10  | 45                          |
|                          | RK50SU 2 - 0808          | 202 ~ 205                        | -  | 126   | 7.5                              | 8                                 | 8   | 95                          |
|                          | RK50SU 5 - 0810          | 505 ~ 508                        | -  | 319   | 9.5                              | 8                                 | 10  | 300                         |
| 0.75                     | RK75SU 2 - 0310          | 202 ~ 205                        | -  | 83  | 9.25                             | 3                                 | 10  | 44                          |
|                          | RK75SU 2 - 0808          | 202 ~ 205                        | -  | 83  | 7.25                             | 8                                 | 8   | 91                          |
|                          | RK75SU 5 - 0810          | 505 ~ 508                        | -  | 212   | 9.25                             | 8                                 | 10  | 295                         |
| 0.8                      | RK80SU 2 - 0707          | 202 ~ 205                        | -  | 78  | 6.2                              | 7                                 | 7   | 70                          |
|                          | RK80SU 5 - 0510          | 505 ~ 508                        | -  | 198   | 9.2                              | 5                                 | 10  | 183                         |
|                          | RK80SU 5 - 0710          | 505 ~ 508                        | -  | 198   | 9.2                              | 7                                 | 10  | 256                         |
| 1                        | RK1SU 3 - 1010           | 303 ~ 306                        | -  | 94  | 9                                | 10                                | 10  | 210                         |
|                          | RK1SU 5 - 0810           | 505 ~ 508                        | -  | 158   | 9                                | 8                                 | 10  | 280                         |
|                          | RK1SU 5 - 1010           | 505 ~ 508                        | -  | 158   | 9                                | 10                                | 10  | 360                         |
| 1.5                      | RK1.5SU 3 - 1616         | 303 ~ 306                        | -  | 62  | 14.5                             | 16                                | 16  | 0.55(kg)                    |
|                          | RK1.5SU 5 - 1616         | 503 ~ 506                        | -  | 105   | 14.5                             | 16                                | 16  | 0.92(kg)                    |
|                          | RK1.5SU 10 - 1219        | 1008.5                           | 0.06 ~ 0.18                              | 214   | 17.5                             | 12                                | 19  | 1.67(kg)                    |
|                          | RK1.5SU 10 - 1616        | 1008.5                           | 0.06 ~ 0.18                              | 214   | 14.5                             | 16                                | 16  | 1.83(kg)                    |
| 2                        | RK2SU 10 - 1420          | 1005.3                           | 0.06 ~ 0.18                              | 160   | 18                               | 14                                | 20  | 1.99(kg)                    |



带安装孔的齿条  
KG-Rack with fixed holes

单位：mm

| 精度         | 材料     | 压力角  | 热处理 | 齿面硬度 |
|------------|--------|------|-----|------|
| 无相应 JIS 规格 | SUS304 | 20 度 | —   | —    |

★未做表面处理。带安装孔的SUS304齿条都做了两端面加工，都可以连接使用。

★关于全长：因为进行了两端面加工，所以其实际长度比理论值短0.06 ~ 0.5mm。

★由于是拉拔材料，所以齿宽，全齿高公差都在 h 11 ~ h 12 左右。

★齿条在滚齿加工后做过矫正。但由于材料特性和内部应力还是有可能出现由于老化的弯曲。

配对齿轮



SUS304 直齿轮

| 模数<br>Module<br>m | 产品型号<br>Catalogue Number | 全长<br>Overall Length<br>l | 啮合高度<br>Datum Line<br>h'' | 齿宽<br>Face Width<br>b(h12) | 全齿高<br>Overall Thickness<br>h(h12) | 安装孔  |                                 |                                   |                                 |             |        |      |          | 重量<br>Weight<br>W(kg) |
|-------------------|--------------------------|---------------------------|---------------------------|----------------------------|------------------------------------|------|---------------------------------|-----------------------------------|---------------------------------|-------------|--------|------|----------|-----------------------|
|                   |                          |                           |                           |                            |                                    | 孔的数目 | 钻孔径<br>Drill Hole Diameter<br>d | 沉孔径<br>Counter Sink Diameter<br>D | 沉孔深度<br>Counter Sink Depth<br>W | 从底面的距离<br>R | 从端面的距离 |      | 周节距<br>P |                       |
|                   |                          |                           |                           |                            |                                    |      |                                 |                                   |                                 |             | (Q)    | (Q') |          |                       |
| 1.5               | RK1.5SU 3 — 1219M        | 301.59                    | 17.5                      | 12                         | 19                                 | 3    | 5.5                             | 9.5                               | 5.4                             | 7           | 20.8   | 20.8 | 130      | 0.48                  |
|                   | RK1.5SU 5 — 1219M        | 499.51                    | 17.5                      | 12                         | 19                                 | 4    | 5.5                             | 9.5                               | 5.4                             | 7           | 24.7   | 24.7 | 150      | 0.80                  |
|                   | RK1.5SU 10 — 1219M       | 1008.45                   | 17.5                      | 12                         | 19                                 | 6    | 5.5                             | 9.5                               | 5.4                             | 7           | 49.5   | 58.9 | 180      | 1.63                  |
|                   | RK1.5SU 3 — 1616M        | 301.59                    | 14.5                      | 16                         | 16                                 | 3    | 5.5                             | 9.5                               | 5.4                             | 6           | 20.8   | 20.8 | 130      | 0.53                  |
|                   | RK1.5SU 5 — 1616M        | 499.51                    | 14.5                      | 16                         | 16                                 | 4    | 5.5                             | 9.5                               | 5.4                             | 6           | 24.7   | 24.7 | 150      | 0.88                  |
|                   | RK1.5SU 10 — 1616M       | 1008.45                   | 14.5                      | 16                         | 16                                 | 6    | 5.5                             | 9.5                               | 5.4                             | 6           | 49.5   | 58.9 | 180      | 1.79                  |
| 2                 | RK2SU 3 — 1420M          | 301.59                    | 18                        | 14                         | 20                                 | 3    | 6.6                             | 11                                | 6.5                             | 7           | 20.8   | 20.8 | 130      | 0.57                  |
|                   | RK2SU 5 — 1420M          | 496.37                    | 18                        | 14                         | 20                                 | 4    | 6.6                             | 11                                | 6.5                             | 7           | 23.1   | 23.1 | 150      | 0.95                  |
|                   | RK2SU 10 — 1420M         | 1005.31                   | 18                        | 14                         | 20                                 | 6    | 6.6                             | 11                                | 6.5                             | 7           | 52.6   | 52.6 | 180      | 1.94                  |

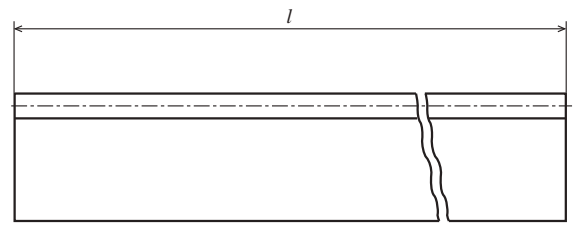
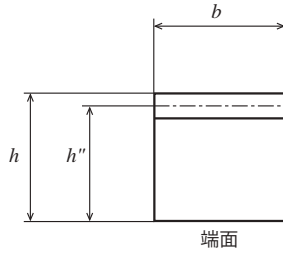
# 黄铜齿条

## BRASS RACKS

模数  
MODULE

# 0.3/0.5/0.75/0.8

(普通齿)  
FULL DEPTH TOOTH



单位：mm

| 精度         | 材料     | 压力角  | 热处理 | 齿面硬度 |
|------------|--------|------|-----|------|
| 无相应 JIS 规格 | C3604B | 20 度 | —   | —    |

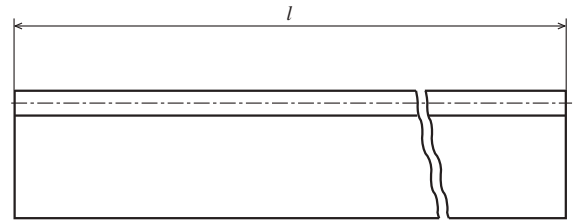
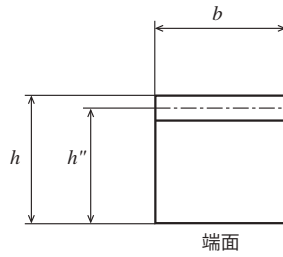
- ★未做表面处理。未做两端面加工，不可连接使用。
- ★材料的全长公差：在全长标称200mm和505mm时，+0.5 ~ 0mm。

配对齿轮



普通的金属齿轮

| 模数<br>Module<br><i>m</i> | 产品型号<br>Catalogue Number | 全长<br>Overall Length<br><i>l</i> | 两端面加工<br>Both Ends Processed<br><i>p</i> | 有效齿数<br>Effective Number of Teeth<br><i>z</i> | 啮合高度<br>Datum Line<br><i>h''</i> | 齿宽<br>Face Width<br><i>b(h11)</i> | 全齿高<br>Overall Thickness<br><i>h(h11)</i> | 重量<br>Weight<br><i>W(g)</i> |
|--------------------------|--------------------------|----------------------------------|--|---|----------------------------------|-----------------------------------|---|-----------------------------|
| 0.3                      | <b>RK30B 2 - 0308</b>    | 200                              | -  | 210   | 7.7                              | 3                                 | 8   | 38                          |
|                          | <b>RK50B 2 - 0308</b>    | 200                              | -  | 125   | 7.5                              | 3                                 | 8   | 37                          |
| 0.5                      | <b>RK50B 2 - 0808</b>    | 200                              | -  | 125   | 7.5                              | 8                                 | 8   | 98                          |
|                          | <b>RK50B 5 - 0810</b>    | 505                              | -  | 319   | 9.5                              | 8                                 | 10  | 313                         |
| 0.75                     | <b>RK75B 2 - 0308</b>    | 200                              | -  | 82  | 7.25                             | 3                                 | 8   | 35                          |
|                          | <b>RK75B 2 - 0808</b>    | 200                              | -  | 82  | 7.25                             | 8                                 | 8   | 95                          |
|                          | <b>RK75B 5 - 0310</b>    | 505                              | -  | 212   | 9.25                             | 3                                 | 10  | 115                         |
|                          | <b>RK75B 5 - 0810</b>    | 505                              | -  | 212   | 9.25                             | 8                                 | 10  | 307                         |
| 0.8                      | <b>RK80B 2 - 0707</b>    | 200                              | -  | 77  | 6.2                              | 7                                 | 7   | 70                          |
|                          | <b>RK80B 5 - 0510</b>    | 505                              | -  | 198   | 9.2                              | 5                                 | 10  | 191                         |
|                          | <b>RK80B 5 - 0710</b>    | 505                              | -  | 198   | 9.2                              | 7                                 | 10  | 268                         |



单位：mm

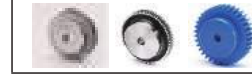
| 精度         | 材料     | 压力角  | 热处理 | 齿面硬度 |
|------------|--------|------|-----|------|
| 无相应 JIS 规格 | 青色 POM | 20 度 | —   | —    |

★未做表面处理。进行过两端面加工的齿条，可以连接使用。

★麻烦您对弯曲矫正后使用：我们KG对齿条滚齿加工后做过矫正。

但还是有可能出现由于老化和温度变化而产生弯曲。安装时请矫正弯曲后使用。

配对齿轮



SG,SGE 直齿轮、  
青色 POM 材料直齿轮

POM齿轮之间相互啮合时的强度是，POM齿轮和金属齿轮啮合时的75%左右。

与POM齿轮相啮合的金属齿轮，推荐使用齿面研磨品。

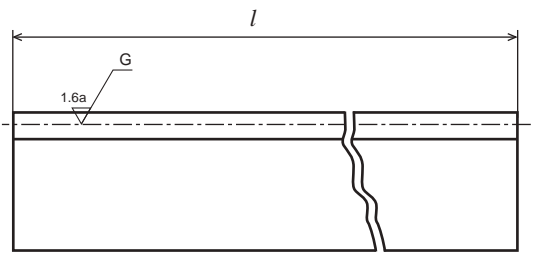
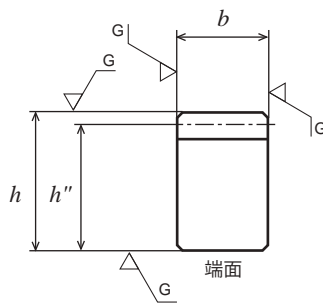
| 模数<br>Module<br><i>m</i> | 产品型号<br>Catalogue Number | 全长<br>Overall Length<br><i>l</i> | 两端面加工<br>Both Ends Processed<br><i>p</i> | 有效齿数<br>Effective Number of Teeth<br><i>z</i> | 啮合高度<br>Datum Line<br><i>h''</i> | 齿宽<br>Face Width<br><i>b</i> | 全齿高<br>Overall Thickness<br><i>h</i> | 重量<br>Weight<br><i>W(g)</i> |
|--------------------------|--------------------------|----------------------------------|--|---|----------------------------------|------------------------------|--------------------------------------|-----------------------------|
| 0.5                      | <b>RK50BP 2 - 0510</b>   | 202 ~ 205                        | -  | 126   | 9.5                              | 5                            | 10                                   | 13.4                        |
| 0.8                      | <b>RK80BP 2 - 0510</b>   | 202 ~ 205                        | -  | 78  | 9.2                              | 5                            | 10                                   | 13.0                        |
|                          | <b>RK80BP 5 - 0510</b>   | 505 ~ 508                        | -  | 198   | 9.2                              | 5                            | 10                                   | 32.6                        |
| 1                        | <b>RK1BP 3 - 1010</b>    | 303 ~ 306                        | -  | 94  | 9                                | 10                           | 10                                   | 38.2                        |
|                          | <b>RK1BP 5 - 1010</b>    | 502 ~ 506                        | -  | 158   | 9                                | 10                           | 10                                   | 63.7                        |
|                          | <b>RK1BP 10 - 1010</b>   | 1005.3                           | 0.05 ~ 0.20                              | 320   | 9                                | 10                           | 10                                   | 126.7                       |
|                          | <b>RK1BP 5 - 1012</b>    | 502 ~ 506                        | -  | 158   | 11                               | 10                           | 12                                   | 77.9                        |
|                          | <b>RK1BP 10 - 1012</b>   | 1005.3                           | 0.05 ~ 0.20                              | 320   | 11                               | 10                           | 12                                   | 155.1                       |
| 1.5                      | <b>RK1.5BP 3 - 1515</b>  | 303 ~ 306                        | -  | 62  | 13.5                             | 15                           | 15                                   | 85.9                        |
|                          | <b>RK1.5BP 5 - 1515</b>  | 502 ~ 506                        | -  | 105   | 13.5                             | 15                           | 15                                   | 142.7                       |
|                          | <b>RK1.5BP 10 - 1515</b> | 1008.5                           | 0.08 ~ 0.30                              | 214   | 13.5                             | 15                           | 15                                   | 286.0                       |
|                          | <b>RK1.5BP 5 - 1520</b>  | 502 ~ 506                        | -  | 105   | 18.5                             | 15                           | 20                                   | 195.9                       |
|                          | <b>RK1.5BP 10 - 1520</b> | 1008.5                           | 0.08 ~ 0.30                              | 214   | 18.5                             | 15                           | 20                                   | 392.7                       |
| 2                        | <b>RK2BP 3 - 2020</b>    | 303 ~ 305                        | -  | 46  | 18                               | 20                           | 20                                   | 152.7                       |
|                          | <b>RK2BP 5 - 2020</b>    | 502 ~ 506                        | -  | 78  | 18                               | 20                           | 20                                   | 253.6                       |
|                          | <b>RK2BP 10 - 2020</b>   | 1005.3                           | 0.15 ~ 0.45                              | 160   | 18                               | 20                           | 20                                   | 506.9                       |
|                          | <b>RK2BP 5 - 2025</b>    | 502 ~ 506                        | -  | 78  | 23                               | 20                           | 25                                   | 317.0                       |
|                          | <b>RK2BP 10 - 2025</b>   | 1005.3                           | 0.15 ~ 0.45                              | 160   | 23                               | 20                           | 25                                   | 648.7                       |
| 2.5                      | <b>RK2.5BP 5 - 2525</b>  | 502 ~ 506                        | -  | 62  | 22.5                             | 25                           | 25                                   | 396.3                       |
|                          | <b>RK2.5BP 10 - 2525</b> | 1005.3                           | 0.20 ~ 0.50                              | 128   | 22.5                             | 25                           | 25                                   | 792.0                       |
|                          | <b>RK2.5BP 5 - 2530</b>  | 502 ~ 506                        | -  | 62  | 27.5                             | 25                           | 30                                   | 484.9                       |
|                          | <b>RK2.5BP 10 - 2530</b> | 1005.3                           | 0.20 ~ 0.50                              | 128   | 27.5                             | 25                           | 30                                   | 969.2                       |
| 3                        | <b>RK3BP 5 - 3030</b>    | 502 ~ 506                        | -  | 52  | 27                               | 30                           | 30                                   | 570.5                       |
|                          | <b>RK3BP 10 - 3030</b>   | 1008.5                           | 0.20 ~ 0.50                              | 107   | 27                               | 30                           | 30                                   | 1144.1                      |
|                          | <b>RK3BP 5 - 3035</b>    | 502 ~ 506                        | -  | 52  | 32                               | 30                           | 35                                   | 676.9                       |
|                          | <b>RK3BP 10 - 3035</b>   | 1008.5                           | 0.20 ~ 0.50                              | 107   | 32                               | 30                           | 35                                   | 1357.4                      |

# 研磨 CP 齿条 (周节变位)

GROUND CP RACK

周节距  
PITCH **2/5**

(普通齿)  
FULL DEPTH TOOTH



单位: mm

| 精度         | 材料   | 压力角  | 热处理  | 齿面硬度       |
|------------|------|------|------|------------|
| 无相应 JIS 规格 | S45C | 20 度 | 材料调质 | HS 40 ~ 45 |

- ★未做表面处理。
- ★由于齿的大小规格为CP, 所以与模数规格的的齿轮无法啮合。
- ★所有的研磨CP齿条进行过两端面加工的齿条, 可以连接使用。
- ★相啮合的小齿轮, 请在KG的SGP系列的CP小齿轮中选用。

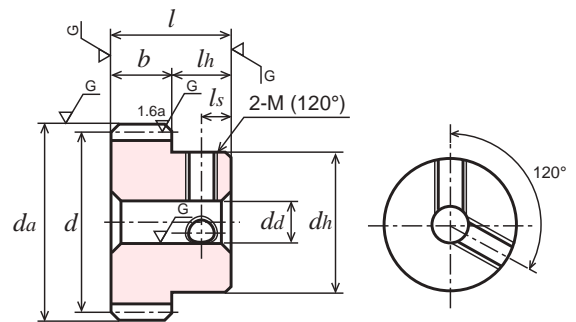
| 周节距            | 产品型号                 | 全长             | 两端面加工               | 有效齿数                      | 啮合高度       | 齿宽           | 全齿高               | 重量           |
|----------------|----------------------|----------------|---------------------|---------------------------|------------|--------------|-------------------|--------------|
| Circular Pitch | Catalogue Number     | Overall Length | Both Ends Processed | Effective Number of Teeth | Datum Line | Face Width   | Overall Thickness | Weight       |
| <i>cp</i>      |                      | <i>l</i>       | <i>p</i>            | <i>z</i>                  | <i>h''</i> | <i>b(h8)</i> | <i>h(h8)</i>      | <i>W(kg)</i> |
| 2              | <b>RKGP2S 2-0812</b> | 200            | 0.02 ~ 0.08         | 100                       | 11.364     | 8            | 12                | 0.14         |
| 5              | <b>RKGP5S 3-1520</b> | 300            | 0.04 ~ 0.16         | 60                        | 18.409     | 15           | 20                | 0.65         |

# 研磨 CP 齿轮 (周节变位)

GROUND CP PINION

周节距  
PITCH **2 (齿数 20 ~ 30) / 5 (齿数 20 ~ 30)**

(普通齿)  
FULL DEPTH TOOTH



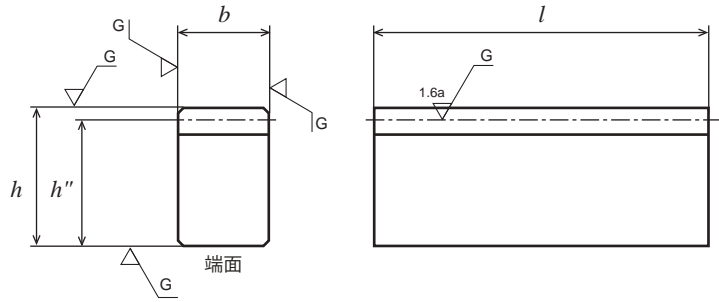
B1形状  
TYPE B1

单位: mm

| 精度               | 材料           | 压力角  | 热处理    | 齿面硬度       |
|------------------|--------------|------|--------|------------|
| JIS B 1702-1 5 级 | SCM435 · 440 | 20 度 | 齿面高频淬火 | HRC49 ~ 55 |

- ★未做表面处理。
- ★由于齿的大小规格为CP, 所以与模数规格的的齿条无法啮合。
- ★本产品的容许传达动力表使用JGMA公式。请在P28确认单位换算方法。
- ★相啮合的齿条, 请在KG的RKGP系列的CP齿条中选用。

| 周节距       | 产品型号              | 齿数       | 分度圆直径    | 齿顶圆直径     | 形状   | 齿宽         | 孔径            | 轮毂外径         | 轮毂长度           | 全长             | 螺纹孔       |           | 旋转一周的长度 | 重量          |
|-----------|-------------------|----------|----------|-----------|------|------------|---------------|--------------|----------------|----------------|-----------|-----------|---------|-------------|
|           |                   |          |          |           |      |            |               |              |                |                | Set Screw |           |         |             |
| <i>cp</i> | Catalogue Number  | <i>z</i> | <i>d</i> | <i>da</i> | Type | Face Width | Bore Diameter | Hub Diameter | Hub Projection | Overall Length | 2-M       | <i>ls</i> | 注)      | <i>W(g)</i> |
| 2         | <b>SGP2S-20</b>   | 20       | φ12.73   | φ14.01    | B1   | 8          | φ 5           | φ10          | 7              | 15             | -         | -         | 40      | 10.0        |
|           | <b>SGP2S * 20</b> | 20       | φ12.73   | φ14.01    | B1   | 8          | φ 5           | φ10          | 7              | 15             | 2-M3      | 3.5       | 40      | 9.6         |
|           | <b>SGP2S-25</b>   | 25       | φ15.92   | φ17.19    | B1   | 8          | φ 6           | φ12          | 7              | 15             | -         | -         | 50      | 15.4        |
|           | <b>SGP2S * 25</b> | 25       | φ15.92   | φ17.19    | B1   | 8          | φ 6           | φ12          | 7              | 15             | 2-M3      | 3.5       | 50      | 14.9        |
|           | <b>SGP2S-30</b>   | 30       | φ19.10   | φ20.37    | B1   | 8          | φ 6           | φ15          | 7              | 15             | -         | -         | 60      | 24.4        |
|           | <b>SGP2S * 30</b> | 30       | φ19.10   | φ20.37    | B1   | 8          | φ 6           | φ15          | 7              | 15             | 2-M4      | 3.5       | 60      | 23.7        |
| 5         | <b>SGP5S-20</b>   | 20       | φ31.83   | φ35.01    | B1   | 15         | φ10           | φ25          | 10             | 25             | -         | -         | 100     | 117.1       |
|           | <b>SGP5S-25</b>   | 25       | φ39.79   | φ42.97    | B1   | 15         | φ10           | φ30          | 10             | 25             | -         | -         | 125     | 187.0       |
|           | <b>SGP5S-30</b>   | 30       | φ47.75   | φ50.93    | B1   | 15         | φ10           | φ40          | 10             | 25             | -         | -         | 150     | 294.8       |



单位：mm

| 精度         | 材料   | 压力角  | 热处理  | 齿面硬度      |
|------------|------|------|------|-----------|
| 无相应 JIS 规格 | S45C | 20 度 | 材料调质 | HS40 ~ 45 |

★未做表面处理。

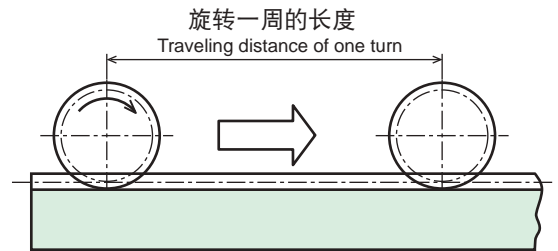
★用于CP2和, CP5的RKGP研磨齿条连接时的连接用治具。

| 周节距<br>Circular Pitch<br><i>cp</i> | 产品型号<br>Catalogue Number | 全长<br>Overall Length<br><i>l</i> | 齿数<br>Number of Teeth<br><i>z</i> | 啮合高度<br>Datum Line<br><i>h''</i> | 齿宽<br>Face Width<br><i>b(h8)</i> | 全齿高<br>Overall Thickness<br><i>h(h8)</i> | 重量<br>Weight<br><i>W(g)</i> |
|------------------------------------|--------------------------|----------------------------------|-----------------------------------|----------------------------------|----------------------------------|--|-----------------------------|
| 2                                  | <b>RKGP2S - G</b>        | 45.7                             | 23                                | 11.364                           | 8                                | 12                                       | 32.6                        |
| 5                                  | <b>RKGP5S - G</b>        | 39.4                             | 8                                 | 18.409                           | 15                               | 20                                       | 85.4                        |

注) 旋转一周的长度……小齿轮在齿条上旋转一整周时, 中心点的移动距离。  
Traveling distance of one turn.

Obtain traveling amount of integer number, revolved one turn of the CP Pinion on the CP Rack.

Gear tooth surface completed with induction hardening, Hardness HRC49 to 55.

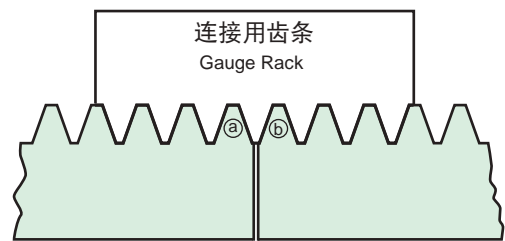


## 连接用齿条的使用方法

当要对多个齿条进行连接 (如图齿条), 调整最适合节距时, 请使用这个连接用齿条。具体使用方法如参考图。先排列齿条, 然后从连接部分的上方, 用连接用齿条啮合, 来调整连接部位的节距。

Numerous Rack Gears between ① and ② to be joint, please apply the Gauge Rack for the best fit of the pitch.

Refer to the picture on the right.



## 容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|---------------------------|---|-------|-------|-------|-------|-------|-------|
|                           | 100   | 250   | 500   | 800   | 1,000 | 1,500 | 2,000 |
| SGP2S - 20                | 0.038                                       | 0.096 | 0.191 | 0.306 | 0.383 | 0.574 | 0.765 |
| SGP2S - 25                | 0.053                                       | 0.132 | 0.263 | 0.421 | 0.526 | 0.790 | 1.053 |
| SGP2S - 30                | 0.068                                       | 0.169 | 0.338 | 0.540 | 0.675 | 1.013 | 1.350 |
| SGP5S - 20                | 0.448                                       | 1.121 | 2.242 | 3.587 | 4.483 | 6.725 | 8.892 |
| SGP5S - 25                | 0.617                                       | 1.542 | 3.084 | 4.935 | 6.169 | 9.225 | 11.99 |
| SGP5S - 30                | 0.791                                       | 1.978 | 3.955 | 6.328 | 7.910 | 11.65 | 15.07 |

## 容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |       |       |       |       |
|---------------------------|---|-------|-------|-------|-------|-------|-------|
|                           | 100   | 250   | 500   | 800   | 1,000 | 1,500 | 2,000 |
| SGP2S - 20                | 0.007                                       | 0.019 | 0.038 | 0.063 | 0.079 | 0.121 | 0.163 |
| SGP2S - 25                | 0.011                                       | 0.030 | 0.061 | 0.100 | 0.126 | 0.193 | 0.260 |
| SGP2S - 30                | 0.017                                       | 0.043 | 0.090 | 0.146 | 0.185 | 0.282 | 0.381 |
| SGP5S - 20                | 0.091                                       | 0.238 | 0.490 | 0.800 | 1.010 | 1.542 | 2.066 |
| SGP5S - 25                | 0.146                                       | 0.379 | 0.782 | 1.277 | 1.612 | 2.454 | 3.230 |
| SGP5S - 30                | 0.214                                       | 0.556 | 1.146 | 1.871 | 2.362 | 3.541 | 4.638 |

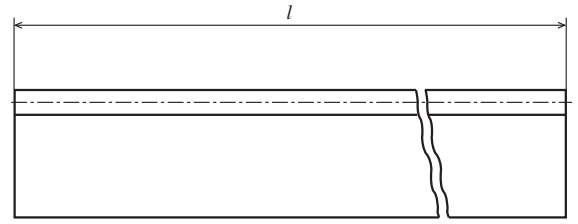
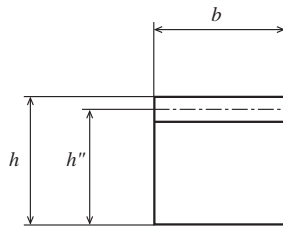
# CP 齿条 (周节变位)

CIRCULAR PITCH RACKS

周节距  
PITCH **2**

(普通齿)

FULL DEPTH TOOTH



单位: mm

| 精度         | 材料     | 压力角  | 热处理 | 齿面硬度 |
|------------|--------|------|-----|------|
| 无相应 JIS 规格 | C3604B | 20 度 | —   | —    |

- ★未做表面处理。未做两端面加工，不可连接使用。
- ★由于齿的大小规格为CP，所以与模数规格的的齿轮无法啮合。
- ★相啮合的小齿轮，请在KG的SP系列的CP小齿轮中选用。

| 周节距            | 产品型号                  | 全长             | 两端面加工               | 有效齿数                      | 啮合高度       | 齿宽            | 全齿高               | 重量          |
|----------------|-----------------------|----------------|---------------------|---------------------------|------------|---------------|-------------------|-------------|
| Circular Pitch | Catalogue Number      | Overall Length | Both Ends Processed | Effective Number of Teeth | Datum Line | Face Width    | Overall Thickness | Weight      |
| <i>cp</i>      |                       | <i>l</i>       | <i>p</i>            | <i>z</i>                  | <i>h''</i> | <i>b(h1l)</i> | <i>h(h1l)</i>     | <i>W(g)</i> |
| 2              | <b>RKP2B 2 - 0308</b> | 200            | -                   | 98                        | 7.36       | 3             | 8                 | 35.8        |
|                | <b>RKP2B 5 - 0310</b> | 500            | -                   | 248                       | 9.36       | 3             | 10                | 113.7       |

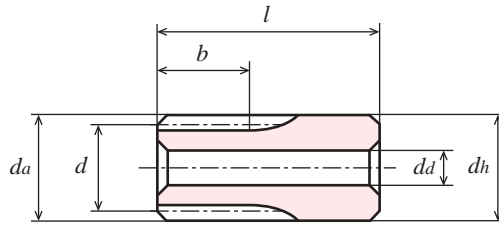
# CP 齿轮

CIRCULAR PITCH PINIONS

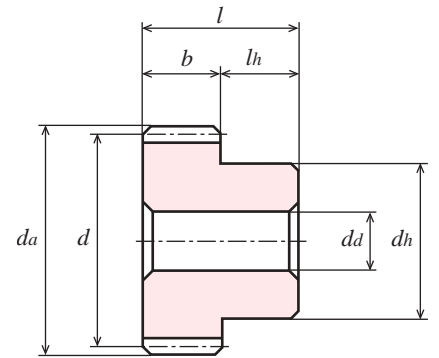
周节距  
PITCH **2** (齿数 15 ~ 30)

(普通齿)

FULL DEPTH TOOTH



K2形状  
TYPE K2



B1形状  
TYPE B1

单位: mm

| 精度               | 材料   | 压力角  | 热处理 | 齿面硬度 |
|------------------|------|------|-----|------|
| JIS B 1702-1 8 级 | S45C | 20 度 | —   | —    |

- ★未做表面处理。
- ★由于齿的大小规格为CP，所以与模数规格的的齿条无法啮合。
- ★本产品的容许传达动力表使用JGMA公式。请在P28确认单位换算方法。
- ★相啮合的齿条，请在KG的RKP系列的CP齿条中选用。

| 周节距            | 产品型号             | 齿数              | 分度圆直径              | 齿顶圆直径        | 形状   | 齿宽         | 孔径            | 轮毂外径         | 轮毂长度           | 全长             | 螺纹孔       |           | 旋转一周的长               | 重量          |
|----------------|------------------|-----------------|--------------------|--------------|------|------------|---------------|--------------|----------------|----------------|-----------|-----------|----------------------|-------------|
| Circular Pitch | Catalogue Number | Number of Teeth | Reference Diameter | Tip Diameter | Type | Face Width | Bore Diameter | Hub Diameter | Hub Projection | Overall Length | Set Screw |           | Distance of one turn | Weight      |
| <i>cp</i>      |                  | <i>z</i>        | <i>d</i>           | <i>da</i>    |      | <i>b</i>   | <i>da(H7)</i> | <i>dh</i>    | <i>lh</i>      | <i>l</i>       | 2-M(120°) | <i>ls</i> | 注)                   | <i>W(g)</i> |
| 2              | <b>SP2S - 15</b> | 15              | φ 9.55             | φ 10.82      | K2   | 5          | φ4(H8)        | φ10.82       | 10             | 15             | -         | -         | 30                   | 8.54        |
|                | <b>SP2S * 15</b> | 15              | φ 9.55             | φ 10.82      | K2   | 5          | φ4(H8)        | φ10.82       | 10             | 15             | 2-M3      | 3         | 30                   | 8.25        |
|                | <b>SP2S - 20</b> | 20              | φ12.73             | φ 14.01      | B1   | 3          | φ 5           | φ10          | 7              | 10             | -         | -         | 40                   | 5.78        |
|                | <b>SP2S * 20</b> | 20              | φ12.73             | φ 14.01      | B1   | 3          | φ 5           | φ10          | 7              | 10             | 2-M3      | 3.5       | 40                   | 5.55        |
|                | <b>SP2S - 25</b> | 25              | φ15.92             | φ 17.19      | B1   | 3          | φ 6           | φ12          | 7              | 10             | -         | -         | 50                   | 8.67        |
|                | <b>SP2S * 25</b> | 25              | φ15.92             | φ 17.19      | B1   | 3          | φ 6           | φ12          | 7              | 10             | 2-M3      | 3.5       | 50                   | 8.42        |
|                | <b>SP2S - 30</b> | 30              | φ19.10             | φ 20.37      | B1   | 3          | φ 6           | φ15          | 7              | 10             | -         | -         | 60                   | 14.2        |
|                | <b>SP2S * 30</b> | 30              | φ19.10             | φ 20.37      | B1   | 3          | φ 6           | φ15          | 7              | 10             | 2-M4      | 3.5       | 60                   | 13.5        |

## 容许传达动力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

| 产品型号              | 旋转速度 (min <sup>-1</sup> ) |       |       |       |        |        |        |
|-------------------|---------------------------|-------|-------|-------|--------|--------|--------|
|                   | revolution/min            |       |       |       |        |        |        |
| Catalogue Numbers | 10                        | 100   | 200   | 400   | 800    | 1,200  | 1,500  |
| SP2S - 15         | 0.88                      | 8.78  | 17.55 | 35.10 | 70.21  | 105.31 | 131.64 |
| SP2S - 20         | 0.83                      | 8.25  | 16.50 | 33.00 | 66.01  | 99.01  | 117.89 |
| SP2S - 25         | 1.14                      | 11.36 | 22.71 | 45.43 | 90.86  | 131.38 | 154.87 |
| SP2S - 30         | 1.46                      | 14.56 | 29.12 | 58.25 | 116.49 | 162.56 | 189.99 |

## 容许传达动力表 齿面强度 (W)

Allowable transfer capability table (W) Surface Durability

| 产品型号              | 旋转速度 (min <sup>-1</sup> ) |      |      |      |      |       |       |
|-------------------|---------------------------|------|------|------|------|-------|-------|
|                   | revolution/min            |      |      |      |      |       |       |
| Catalogue Numbers | 10                        | 100  | 200  | 400  | 800  | 1,200 | 1,500 |
| SP2S - 15         | 0.03                      | 0.29 | 0.59 | 1.21 | 2.42 | 3.63  | 4.54  |
| SP2S - 20         | 0.03                      | 0.33 | 0.66 | 1.32 | 2.63 | 3.95  | 4.81  |
| SP2S - 25         | 0.05                      | 0.53 | 1.05 | 2.10 | 4.27 | 6.19  | 7.34  |
| SP2S - 30         | 0.08                      | 0.77 | 1.55 | 3.10 | 6.27 | 8.76  | 10.41 |



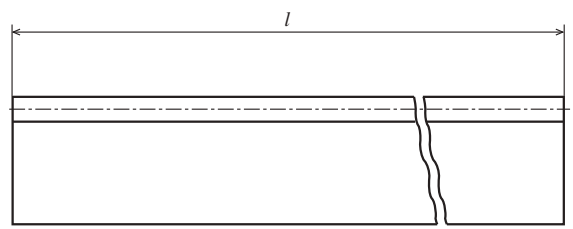
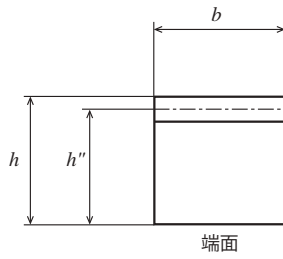
# CP 齿条 (周节变位)

CIRCULAR PITCH RACKS

周节距 PITCH **5/10**

(普通齿)

FULL DEPTH TOOTH



单位: mm

| 精度         | 材料   | 压力角  | 热处理 | 齿面硬度 |
|------------|------|------|-----|------|
| 无相应 JIS 规格 | S45C | 20 度 | -   | -    |

★未做表面处理。进行过两端面加工的齿条 (如1000mm型号), 可以连接使用。

★由于齿的大小规格为CP, 所以与模数规格的的齿轮无法啮合。

★相啮合的小齿轮, 请在KG的SP系列的CP小齿轮中选用。

| 周节距<br>Circular Pitch<br><i>cp</i> | 产品型号<br>Catalogue Number | 全长<br>Overall Length<br><i>l</i> | 两端面<br>加工<br>Both Ends<br>Processed<br><i>p</i> | 有效齿数<br>Effective Number<br>of Teeth<br><i>z</i> | 啮合<br>高度<br>Datum<br>Line<br><i>h''</i> | 齿宽<br>Face<br>Width<br><i>b(h11)</i> | 全齿高<br>Overall<br>Thickness<br><i>h(h11)</i> | 重量<br>Weight<br><i>W(kg)</i> |
|------------------------------------|--------------------------|----------------------------------|---|--|---|--------------------------------------|--|------------------------------|
| 5                                  | <b>RKP5SD 5 - 1616</b>   | 503 ~ 506                        | -   | 98   | 14.41                                   | 16                                   | 16   | 0.92                         |
|                                    | <b>RKP5SD 10 - 1616</b>  | 1,000                            | 0.06 ~ 0.18                                     | 200  | 14.41                                   | 16                                   | 16   | 1.80                         |
| 10                                 | <b>RKP10SD 5 - 3030</b>  | 503 ~ 506                        | -   | 48   | 26.82                                   | 30                                   | 30   | 3.16                         |
|                                    | <b>RKP10SD 10 - 3030</b> | 1,000                            | 0.10 ~ 0.25                                     | 100  | 26.82                                   | 30                                   | 30   | 6.32                         |

# CP 齿轮

CIRCULAR PITCH PINIONS

周节距 PITCH **5** (齿数 15 ~ 30) / **10** (齿数 20 ~ 30)

(普通齿)

FULL DEPTH TOOTH



单位: mm

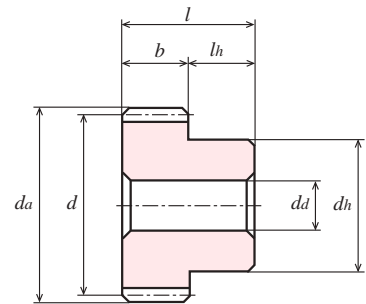
| 精度               | 材料   | 压力角  | 热处理 | 齿面硬度 |
|------------------|------|------|-----|------|
| JIS B 1702-1 8 级 | S45C | 20 度 | -   | -    |

★未做表面处理。

★由于齿的大小规格为CP, 所以与模数规格的的齿条无法啮合。

★本产品的容许传达动力表使用JGMA公式。请在P28确认单位换算方法。

★相啮合的齿条, 请在KG的RKP系列的CP齿条中选用。



B1形状  
TYPE B1

| 周节距<br>Circular Pitch<br><i>cp</i> | 产品型号<br>Catalogue Number | 齿数<br>Number<br>of Teeth<br><i>z</i> | 分度圆<br>直径<br>Reference<br>Diameter<br><i>d</i> | 齿顶圆<br>直径<br>Tip<br>Diameter<br><i>da</i> | 形状<br>Type | 齿宽<br>Face<br>Width<br><i>b</i> | 孔径<br>Bore<br>Diameter<br><i>da(H7)</i> | 轮毂<br>外径<br>Hub<br>Diameter<br><i>dh</i> | 轮毂<br>长度<br>Hub<br>Projection<br><i>lh</i> | 全长<br>Overall<br>Length<br><i>l</i> | 旋转一周的<br>长<br>Distance<br>of one turn<br>(注) | 重量<br>Weight<br><i>W(g)</i> |
|------------------------------------|--------------------------|--------------------------------------|--|---|------------|---------------------------------|---|--|--|-------------------------------------|--|-----------------------------|
| 5                                  | <b>SP5S - 15</b>         | 15                                   | φ23.87   | φ 27.06                                   | B1         | 16                              | φ 8                                     | φ18                                      | 10   | 26                                  | 75   | 65.9                        |
|                                    | <b>SP5S - 16</b>         | 16                                   | φ25.46   | φ 28.65                                   | B1         | 16                              | φ 8                                     | φ20                                      | 10   | 26                                  | 80   | 78.3                        |
|                                    | <b>SP5S - 20</b>         | 20                                   | φ31.83   | φ 35.01                                   | B1         | 16                              | φ10                                     | φ25                                      | 10   | 26                                  | 100  | 122.4                       |
|                                    | <b>SP5S - 24</b>         | 24                                   | φ38.20   | φ 41.38                                   | B1         | 16                              | φ10                                     | φ25                                      | 10   | 26                                  | 120  | 166.3                       |
|                                    | <b>SP5S - 25</b>         | 25                                   | φ39.79   | φ 42.97                                   | B1         | 16                              | φ10                                     | φ25                                      | 10   | 26                                  | 125  | 178.6                       |
|                                    | <b>SP5S - 30</b>         | 30                                   | φ47.75   | φ 50.93                                   | B1         | 16                              | φ10                                     | φ40                                      | 10   | 26                                  | 150  | 307.4                       |
| 10                                 | <b>SP10S - 20</b>        | 20                                   | φ63.66   | φ 70.03                                   | B1         | 30                              | φ18                                     | φ50                                      | 15   | 45                                  | 200  | 0.89(kg)                    |
|                                    | <b>SP10S - 25</b>        | 25                                   | φ79.58   | φ 85.94                                   | B1         | 30                              | φ18                                     | φ50                                      | 15   | 45                                  | 250  | 1.31(kg)                    |
|                                    | <b>SP10S - 30</b>        | 30                                   | φ95.49   | φ101.86                                   | B1         | 30                              | φ18                                     | φ60                                      | 15   | 45                                  | 300  | 1.93(kg)                    |

## 容许传达动力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

| 产品型号<br>Catalogue Numbers | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |        |        |         |         |         |         |
|---------------------------|---|--------|--------|---------|---------|---------|---------|
|                           | 10  | 100    | 200    | 400     | 800     | 1,200   | 1,500   |
| <b>SP5S - 15</b>          | 17.55                                       | 175.51 | 351.03 | 702.06  | 1353.35 | 1861.80 | 2149.14 |
| <b>SP5S - 16</b>          | 19.58                                       | 195.83 | 391.65 | 775.54  | 1491.99 | 2043.38 | 2349.95 |
| <b>SP5S - 20</b>          | 27.51                                       | 275.13 | 550.27 | 1048.12 | 2000.97 | 2695.23 | 3134.46 |
| <b>SP5S - 24</b>          | 35.75                                       | 357.55 | 715.09 | 1312.09 | 2487.24 | 3300.42 | 3972.78 |
| <b>SP5S - 25</b>          | 37.86                                       | 378.59 | 752.47 | 1376.67 | 2605.30 | 3477.94 | 4180.66 |
| <b>SP5S - 30</b>          | 48.54                                       | 485.44 | 935.79 | 1688.48 | 3170.25 | 4355.38 | 5201.23 |
| <b>SP10S - 20</b>         | 206.4                                       | 2063.5 | 3751.8 | 6603.2  | 12537.7 | 17687.1 | 21265.0 |
| <b>SP10S - 25</b>         | 283.9                                       | 2821.8 | 4885.0 | 8626.0  | 16722.8 | 23634.2 | 28394.0 |
| <b>SP10S - 30</b>         | 364.1                                       | 3509.2 | 5944.2 | 10787.6 | 20804.7 | 29453.5 | 36408.2 |

## 容许传达动力表 齿面强度 (W)

Allowable transfer capability table (W) Surface Durability

|  | 旋转速度 (min <sup>-1</sup> )<br>revolution/min |       |       |        |        |        |        |
|--|---|-------|-------|--------|--------|--------|--------|
|  | 10  | 100   | 200   | 400    | 800    | 1,200  | 1,500  |
|  | 0.65  | 6.55  | 13.21 | 26.63  | 51.62  | 71.99  | 84.51  |
|  | 0.75  | 7.51  | 15.13 | 30.23  | 58.53  | 81.28  | 95.19  |
|  | 1.20  | 12.03 | 24.28 | 46.78  | 89.93  | 123.79 | 147.26 |
|  | 1.76  | 17.69 | 35.76 | 66.51  | 127.17 | 173.46 | 213.09 |
|  | 1.91  | 19.28 | 38.77 | 71.92  | 137.43 | 188.73 | 232.18 |
|  | 2.81  | 28.36 | 55.43 | 101.68 | 193.54 | 275.03 | 339.52 |
|  | 9.67  | 97.83 | 181.2 | 327.2  | 632.5  | 932.7  | 1169.8 |
|  | 15.5  | 156.2 | 276.8 | 505.6  | 997.5  | 1496.5 | 1875.6 |
|  | 22.78                                       | 223.3 | 389.8 | 732.0  | 1458.7 | 2192.2 | 2850.5 |

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# 内齿轮

## Internal Gears

### 产品型号的解读方法 Reference of Catalogue Number

IS 50 B 60 A - 03 50  
IS 80 B 100 A - 07 05  
IS 1 S 120 A - 10 50

| 齿轮的种类<br>Kind of Gear     | 模数<br>Module  | 材料<br>Material   | 齿数<br>Number of Teeth   | 形状<br>Type        | —   | 齿宽<br>Face Width                | 外径<br>Outside Diameter of ring  |
|---------------------------|---|--|---|-------------------|---|---------------------------------|---|
| IS: 内齿轮<br>Internal Gears | 表示模数大小。当模数1以下时，所标数据是实际模数乘以100。<br>例：<br>模数0.5时所标数据是50。<br>模数0.8时所标数据是80。<br>Expressed the unit of module's size.<br>Module 0.5 and 0.8 as multiple of 100.<br>Example<br>m0.5 → 50<br>m0.8 → 80 | B: 黄铜<br>C3713P<br>C3604B<br>Brass<br>S: 碳素钢<br>Carbon Steel | 齿数从60T到120T。拥有以12的倍数为主的齿数。<br>As for the number of teeth, we have the varieties from 60z to 120 z as 12 of common multiple. | A: 无轮毂<br>hubless | 内齿轮无键槽/<br>无螺纹孔<br>Gear without Key Way /<br>without Thread hole. | 单位: mm<br>Dimension: millimeter | 单位: mm<br>例<br>φ100→00<br>φ105→05<br>φ150→50<br>Dimension: millimeter |

※模数m0.8以上，外径D在100以上时的产品后两位数。例：外径150，所标数据为50。

## 内齿轮信息

### ○KG内齿轮的特点

- 1) 模数是以m0.5, m0.8, m1的3种小模数为主，并充实了各种规格。
- 2) 外围的配合公差为H8。可以在机架孔里直接配对。
- 3) 相配对的小齿轮(行星齿轮)，请在KG直齿轮中选择。

### The Feature of Internal Gears

- 1) Range: Module 0.5, 0.8 and 1.0
- 2) Fit tolerance of the Outer Rim has tolerance of H8, this can be installed at hole of housing without modification.
- 3) Please refer to the KG-catalogue of Spur gear for the sun and planet gears.

### ○使用中的注意事项

- 1) 要进入内齿轮中运行的外齿轮齿数，是要受条件制约的。(请确认下一页的内齿轮的干涉)
- 2) 设计行星齿轮机构时，行星轮和太阳轮的齿数有制约，组装也有条件限制。请注意。

### Usage of Precaution

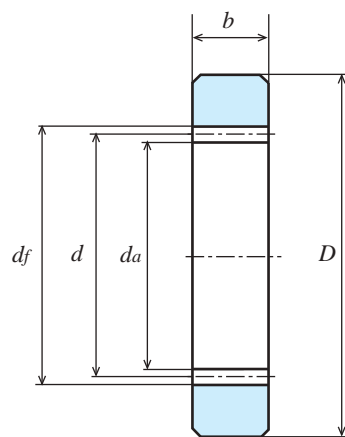
- 1) Note that planet gear has limited number of teeth, refer to the range of number of teeth (see table 1)
- 2) Refer to the interference for planet and sun gears assembly, it has a limited number of teeth for your design.

# 内齿轮

## INTERNAL GEARS

模数  
MODULE

0.5 (齿数 60 ~ 120) / 0.8 (齿数 60 ~ 120) / 1 (齿数 60 ~ 120) (普通齿) FULL DEPTH TOOTH



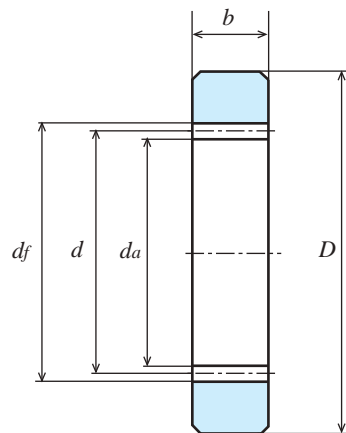
单位：mm

| 精度①                  | 材料            | 压力角  | 热处理 | 齿面硬度 |
|----------------------|---------------|------|-----|------|
| 相当于 JIS B 1702-1 8 级 | C3713P、C3604B | 20 度 | —   | —    |

★未做表面处理。

①以相同齿数，相同齿宽的直齿轮为参考时相当于 JIS B 1702-1 8 级。

| 模数<br>Module | 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 齿顶圆直径<br>Tip Diameter<br><i>d<sub>a</sub></i> | 齿根圆直径<br>Root Diameter<br><i>d<sub>f</sub></i> | 齿宽<br>Face Width<br><i>b</i> | 外径<br>Outside Diameter of Ring<br><i>D(H8)</i> | 重量<br>Weight<br><i>W(g)</i> |
|--------------|--------------------------|-----------------------------------|---|---|--|------------------------------|--|-----------------------------|
| 0.5          | IS50B 60A — 0350         | 60                                | φ30.0                                   | φ29.0   | φ31.25   | 3                            | φ 50   | 32.0                        |
|              | IS50B 80A — 0360         | 80                                | φ40.0                                   | φ39.0   | φ41.25   |                              | φ 60   | 40.1                        |
|              | IS50B 90A — 0370         | 90                                | φ45.0                                   | φ44.0   | φ46.25   |                              | φ 70   | 57.6                        |
|              | IS50B 100A — 0375        | 100                               | φ50.0                                   | φ49.0   | φ51.25   |                              | φ 75   | 62.6                        |
|              | IS50B 120A — 0380        | 120                               | φ60.0                                   | φ59.0   | φ61.25   |                              | φ 80   | 56.1                        |
| 0.8          | IS80B 60A — 0780         | 60                                | φ48.0                                   | φ46.4   | φ50.0  | 7                            | φ 80   | 191.4                       |
|              | IS80B 80A — 0790         | 80                                | φ64.0                                   | φ62.4   | φ66.0  |                              | φ 90   | 187.1                       |
|              | IS80B 90A — 0700         | 90                                | φ72.0                                   | φ70.4   | φ74.0  |                              | φ100   | 225.1                       |
|              | IS80B 100A — 0705        | 100                               | φ80.0                                   | φ78.4   | φ82.0  |                              | φ105   | 216.1                       |
|              | IS80B 120A — 0720        | 120                               | φ96.0                                   | φ94.4   | φ98.0  |                              | φ120   | 242.3                       |



单位：mm

| 精度①                  | 材料   | 压力角  | 热处理 | 齿面硬度 |
|----------------------|------|------|-----|------|
| 相当于 JIS B 1702-1 8 级 | S45C | 20 度 | —   | —    |

★未做表面处理。

①以相同齿数，相同齿宽的直齿轮为参考时相当于 JIS B 1702-1 8 级。

| 模数<br>Module | 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 齿顶圆直径<br>Tip Diameter<br><i>d<sub>a</sub></i> | 齿根圆直径<br>Root Diameter<br><i>d<sub>f</sub></i> | 齿宽<br>Face Width<br><i>b</i> | 外径<br>Outside Diameter of Ring<br><i>D(H8)</i> | 重量<br>Weight<br><i>W(g)</i> |
|--------------|--------------------------|-----------------------------------|---|---|--|------------------------------|--|-----------------------------|
| 1            | IS1S 60A — 1090          | 60                                | φ 60.0                                  | φ 58.0  | φ 62.5   | 10                           | φ 90   | 277.4                       |
|              | IS1S 80A — 1010          | 80                                | φ 80.0                                  | φ 78.0  | φ 82.5   |                              | φ110   | 351.4                       |
|              | IS1S 90A — 1020          | 90                                | φ 90.0                                  | φ 88.0  | φ 92.5   |                              | φ120   | 388.4                       |
|              | IS1S 100A — 1030         | 100                               | φ100.0                                  | φ 98.0  | φ102.5   |                              | φ130   | 425.4                       |
|              | IS1S 120A — 1050         | 120                               | φ120.0                                  | φ118.0  | φ122.5   |                              | φ150   | 499.4                       |

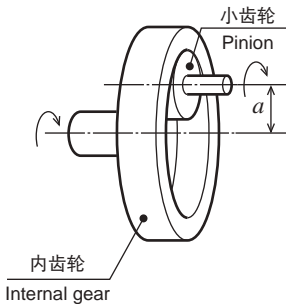
### 内齿轮的干涉 Interference of Internal gear

内齿轮和行星轮(小齿轮)啮合时, 如果内齿轮的齿数太少或内齿轮和太阳轮之间的齿数差太少, 就有可能出现不能装配的情况。这种问题叫内齿轮的干涉。以下表里列举了干涉的种类和原因。

Interference will occur when design provides insufficient Number of teeth between Internal and Planet gears (External gear) during assembly.

#### 注: 主要的使用例 For example

1. 内齿与小齿轮之间的啮合  
Engagement between Internal and Pinion.



相对于外齿轮之间的啮合, 中心距离a变短, 并可以获得互相之间相同方向的运转。  
Center distance for the Internal gear train is shorter than the external gear train, but can be obtained in the same direction.

传动比:  $u$

- a) 以小齿轮(行星齿轮)为驱动轮时  
Pinion is driver gear.

$$u = \frac{\text{小齿轮齿数}}{\text{内齿轮齿数}} \text{ (减速)}$$

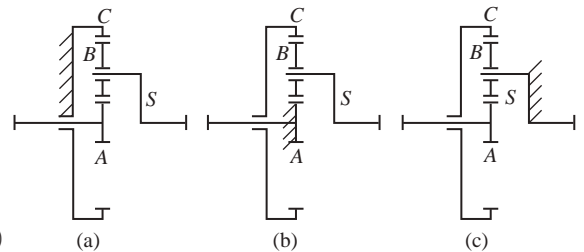
$$u = \frac{\text{No. of teeth of pinion}}{\text{No. of teeth of Internal gear}} \text{ (Speed Reducer)}$$

- b) 以内齿轮为驱动轮时  
Internal gear is driver gear.

$$u = \frac{\text{内齿轮齿数}}{\text{小齿轮齿数}} \text{ (增速)}$$

$$u = \frac{\text{No. of teeth of Internal gear}}{\text{No. of teeth of pinion}} \text{ (Speed increaser)}$$

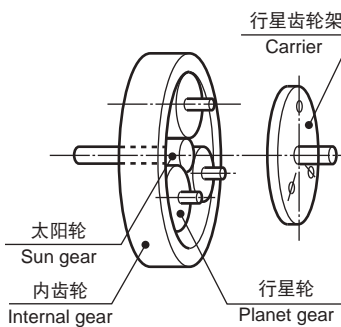
行星齿轮机构的基本齿轮轴(2K-H)  
Basic gear axis for Planetary gear train mechanism (2K-H).



2. 行星齿轮机构  
Planetary gear mechanism

大多数行星齿轮机构是由太阳轮, 行星轮, 内齿轮, 行星齿轮架来组成。结构小巧且会得到大的减速比。

Most mechanism of Planetary gear comes with compact design and high reductive gear ratio consisting of Sun, Planet, Internal gears and Planet carrier.



| 机构种类<br>Type of mechanism    | 固定因素<br>Fixed factor | 输入<br>Input          | 输出<br>Output         | 齿轮减速比的公式(A)<br>Formula of gear ratio                                      | 减速比<br>Ratio  |
|------------------------------|----------------------|----------------------|----------------------|---|---------------|
| (a) 行星型<br>Type of planetary | 内齿轮<br>Internal gear | 太阳齿轮<br>Sun gear     | 行星齿轮架<br>Carrier     | $\frac{1}{\frac{z_C}{z_A} + 1}$ ( $z$ : Number of teeth)                  | 1/3 ~ 1/12    |
| (b) 太阳型<br>Type of solar     | 太阳齿轮<br>Sun gear     | 内齿轮<br>Internal gear | 行星齿轮架<br>Carrier     | $\frac{1}{\frac{z_A}{z_C} + 1}$   | 1/1.2 ~ 1/1.7 |
| (c) 星型<br>Type of star       | 行星齿轮架<br>Carrier     | 太阳齿轮<br>Sun gear     | 内齿轮<br>Internal gear | $-\frac{1}{\frac{z_C}{z_A}}$ Input and output axis have opposite rotation | 1/2 ~ 1/11    |

上表中, [Z]表示齿数, [A和C]表示太阳轮和内齿轮。

负[-]标号表示与输入旋转方向相反的输出旋转方向。

$z$ : Number of teeth, A&C: Sun and internal Gears.

[-]: Expressed output rotated direction against input rotation.

Please refer to the causes and types of interference as follows.

#### Interference of Internal Gear (Table 1)

There are restriction of the number of teeth for the planet gear and the sun gear when the planetary gear mechanism is designed.

| 干涉<br>Interference             | 现象<br>Phenomenon   | 原因<br>Cause   | 干涉<br>Interference              | 现象<br>Phenomenon   | 原因<br>Cause   |
|--------------------------------|--|---|---------------------------------|--|---|
| 渐开线干涉<br>Involute interference | 内齿轮的齿顶切入小齿轮的齿根, 无法旋转。<br>Unworkable conditions when a Tooth tip of Internal gear cuts into Dedendum of pinion during operations.                 | 小齿轮的齿数不够。<br>Insufficient of Number of Teeth for Pinion gear.                               | 径向退刀干涉<br>Trimming interference | 装配时, 小齿轮可从轴方向进入, 但不能从半径方向进出。<br>During assembling, pinion can be assembled to axial direction but not to radius direction. | 次摆线干涉相同<br>Same as Trochoid interference.   |
| 次摆线干涉<br>Trochoid interference | 啮合后的小齿轮齿顶再次碰到内齿轮的齿顶, 无法旋转。<br>Tip of pinion after engaging with Sun gear interferes to Tooth tip of Internal gear causing unworkable conditions. | 内齿轮小齿轮之间的齿数差距太小。<br>Difference in No. of teeth between Internal and Planet is insufficient. | 齿根干涉<br>Fillet interference     | 小齿轮的齿顶接触到内齿轮的齿根圆角, 无法旋转。<br>Tooth tip of pinion touched Dedendum fillet of Internal gear causing unworkable condition.     | 小齿轮齿数不足。(小齿轮的齿高不足)<br>Insufficient No. of teeth for pinion. (insufficient Tooth depth of pinion.) |

# 内齿轮

## INTERNAL GEARS

### 行星齿轮的组装条件 Relationship among the gears in a planetary gear mechanism

当设计行星齿轮的时候，要满足以下的齿数构成条件。(please meet the following conditions.)

When designing Planet gear, please achieve following conditions.

- ① 内齿轮齿数 = (太阳轮齿数 + 2) × 行星轮齿数  
No of teeth of Internal gear = (No. of teeth of Sun gear + 2) × No. of teeth of Planet gear.
- ②  $\frac{\text{内齿轮齿数} + \text{太阳轮齿数}}{\text{行星轮的数目 (A)}} = \text{应为整数}$   
 $\frac{\text{No. of teeth of (Internal gear + Sun gear)}}{\text{The number of Planet gear}} = \text{Should be Integer number}$
- ③ 要防止发生行星轮之间的齿顶干涉。(n: 行星轮数  $\pi$  [rad])  
Prevent the Tip interference among Planet gears.  
 $m(ZB+2) < m(ZA+ZB) \sin(\pi/n)$  (n: 行星轮数 The number of Planet gear  $\pi$ [rad])

### 能和 KG 内齿轮相互啮合的，小齿轮的齿数范围 Range of number of teeth for pinion and KG-Internal gears

| 内齿轮的齿数<br>Number of teeth of Internal gear | 小齿轮的齿数范围<br>Range of number of teeth for pinion | 内齿轮的齿数<br>Number of teeth of Internal gear | 小齿轮的齿数范围<br>Range of number of teeth for pinion |
|--|---|--|---|
| 60   | 21 ~ 44   | 100  | 19 ~ 84   |
| 80   | 20 ~ 64   | 120  | 19 ~ 104  |
| 90   | 19 ~ 74   |  |   |

### KG规格齿轮的组装例 The combination of KG STOCK GEARS

| 内齿轮的齿数<br>No. of teeth of Internal gear | 行星轮的齿数<br>The number of Planet gears. | 太阳轮的齿数<br>No. of teeth of Sun gears | 行星轮的齿数<br>No. of teeth of Planet gear | 行星减速比<br>Gear ratio of planetary type | 星型减速比<br>Gear ratio of star type | 太阳型减速比<br>Gear ratio of solar. |
|---|---------------------------------------|-------------------------------------|---------------------------------------|---------------------------------------|----------------------------------|--------------------------------|
| 60                                      | 3                                     | 12                                  | 24                                    | 1/6.00                                | 1/5.00                           | 1/1.20                         |
| 60                                      | 4                                     | 16                                  | 22                                    | 1/4.75                                | 1/3.75                           | 1/1.26                         |
| 80                                      | 3                                     | 16                                  | 32                                    | 1/6.00                                | 1/5.00                           | 1/1.20                         |
| 80                                      | 3                                     | 40                                  | 20                                    | 1/3.00                                | 1/2.00                           | 1/1.50                         |
| 80                                      | 4                                     | 20                                  | 30                                    | 1/5.00                                | 1/4.00                           | 1/1.25                         |
| 80                                      | 4                                     | 32                                  | 24                                    | 1/3.50                                | 1/2.50                           | 1/1.40                         |
| 80                                      | 4                                     | 40                                  | 20                                    | 1/3.00                                | 1/2.00                           | 1/1.50                         |
| 80                                      | 5                                     | 40                                  | 20                                    | 1/3.00                                | 1/2.00                           | 1/1.50                         |
| 90                                      | 3                                     | 18                                  | 36                                    | 1/6.00                                | 1/5.00                           | 1/1.20                         |
| 90                                      | 3                                     | 30                                  | 30                                    | 1/4.00                                | 1/3.00                           | 1/1.33                         |
| 90                                      | 4                                     | 18                                  | 36                                    | 1/6.00                                | 1/5.00                           | 1/1.20                         |
| 90                                      | 4                                     | 30                                  | 30                                    | 1/4.00                                | 1/3.00                           | 1/1.33                         |
| 90                                      | 4                                     | 50                                  | 20                                    | 1/2.80                                | 1/1.80                           | 1/1.55                         |
| 90                                      | 5                                     | 30                                  | 30                                    | 1/4.00                                | 1/3.00                           | 1/1.33                         |
| 90                                      | 5                                     | 50                                  | 20                                    | 1/2.80                                | 1/1.80                           | 1/1.55                         |

| 内齿轮的齿数<br>No. of teeth of Internal gear | 行星轮的齿数<br>The number of Planet gears. | 太阳轮的齿数<br>No. of teeth of Sun gears | 行星轮的齿数<br>No. of teeth of Planet gear | 行星减速比<br>Gear ratio of planetary type | 星型减速比<br>Gear ratio of star type | 太阳型减速比<br>Gear ratio of solar. |
|---|---------------------------------------|-------------------------------------|---------------------------------------|---------------------------------------|----------------------------------|--------------------------------|
| 100                                     | 3                                     | 20                                  | 40                                    | 1/ 6.00                               | 1/ 5.00                          | 1/1.20                         |
| 100                                     | 3                                     | 50                                  | 25                                    | 1/ 3.00                               | 1/ 2.00                          | 1/1.50                         |
| 100                                     | 4                                     | 20                                  | 40                                    | 1/ 6.00                               | 1/ 5.00                          | 1/1.20                         |
| 100                                     | 4                                     | 40                                  | 30                                    | 1/ 3.50                               | 1/ 2.50                          | 1/1.40                         |
| 100                                     | 5                                     | 40                                  | 30                                    | 1/ 3.50                               | 1/ 2.50                          | 1/1.40                         |
| 100                                     | 5                                     | 50                                  | 25                                    | 1/ 3.00                               | 1/ 2.00                          | 1/1.50                         |
| 120                                     | 3                                     | 12                                  | 54                                    | 1/11.00                               | 1/10.00                          | 1/1.10                         |
| 120                                     | 3                                     | 24                                  | 48                                    | 1/ 6.00                               | 1/ 5.00                          | 1/1.20                         |
| 120                                     | 3                                     | 30                                  | 45                                    | 1/ 5.00                               | 1/ 4.00                          | 1/1.25                         |
| 120                                     | 3                                     | 48                                  | 36                                    | 1/ 3.50                               | 1/ 2.50                          | 1/1.40                         |
| 120                                     | 3                                     | 60                                  | 30                                    | 1/ 3.00                               | 1/ 2.00                          | 1/1.50                         |
| 120                                     | 4                                     | 24                                  | 48                                    | 1/ 6.00                               | 1/ 5.00                          | 1/1.20                         |
| 120                                     | 4                                     | 40                                  | 40                                    | 1/ 4.00                               | 1/ 3.00                          | 1/1.33                         |
| 120                                     | 4                                     | 80                                  | 20                                    | 1/ 2.50                               | 1/ 1.50                          | 1/1.66                         |

上述各种齿轮：包括太阳轮，行星轮，内齿轮均为KG的库存规格齿轮。  
The above variety of Sun, Planet and Internal gear are KG-STOCK GEARS series.

### 为了获得更高的减速比请使用双重连接的行星齿轮机构。

将一个齿轮机构的太阳轮与另一个齿轮机构的行星轮相连，可以获得各种齿轮减速比。具体请参考减速比的计算式。  
如果将两个行星机构组成一个组合，那么减速比为第一个减速比乘以第二个减速比。将实现高比例的减速。

### High ratio can be obtained by doubly jointing the planetary gear boxes.

To obtain the variety of gear ratio when combining with another Sun and Planet gears, please refer to the calculation of gear ratio.  
To obtain high gear ratio when assembling the double and triple combinations.



# 斜齿轮

## Helical Gears and Screw Gears

### 产品型号的解读方法 Reference of Catalogue Number

#### 斜齿轮

H 1 S 13 R - B  
H 1 SU 13 R - B  
H 1 D 13 L \* B

| 齿轮的种类<br>Kind of Gear                   | 模数<br>Module                  | 材料<br>Material  | 齿数<br>Number of Teeth | 螺旋方向<br>Direction of Helix                    | 内径处理<br>Bores Processed  | 形状<br>Type                         |
|---|-------------------------------|---|-----------------------|---|--|------------------------------------|
| 斜齿轮<br>Helical gears and<br>Screw gears | m : 1.0 1.5<br>2.0 2.5<br>3.0 | S : 碳素钢<br>Carbon Steel<br>SU: 不锈钢<br>Stainless Steel<br>D: 聚缩醛树脂<br>(机械加工)<br>Poly Acetal (Machined) | z : 13<br>26          | R: 右螺旋齿<br>Right Hand<br>L: 左螺旋齿<br>Left Hand | [-]: 齿轮无键槽/无<br>螺纹孔<br>Gear without Key Way /<br>without Thread hole.<br>[*]: 齿轮带有两个螺<br>丝孔/带有两个<br>固定螺钉<br>Gear with two threaded<br>holes / with two set screws. | B: 带有单侧轮毂<br>with Hub on one side. |

### 斜齿轮使用中的注意事项

#### Usage precaution of Helical Gear

- 1) 为了实现理想的啮合，每个斜齿轮的90度的轴角要尽量准确安装。
- 2) 在使用时会出现对轴方向的轴向力，所以设计时一定要充分考虑并装配可承受轴向力的轴承。
- 3) 关于斜齿轮的轴向力：

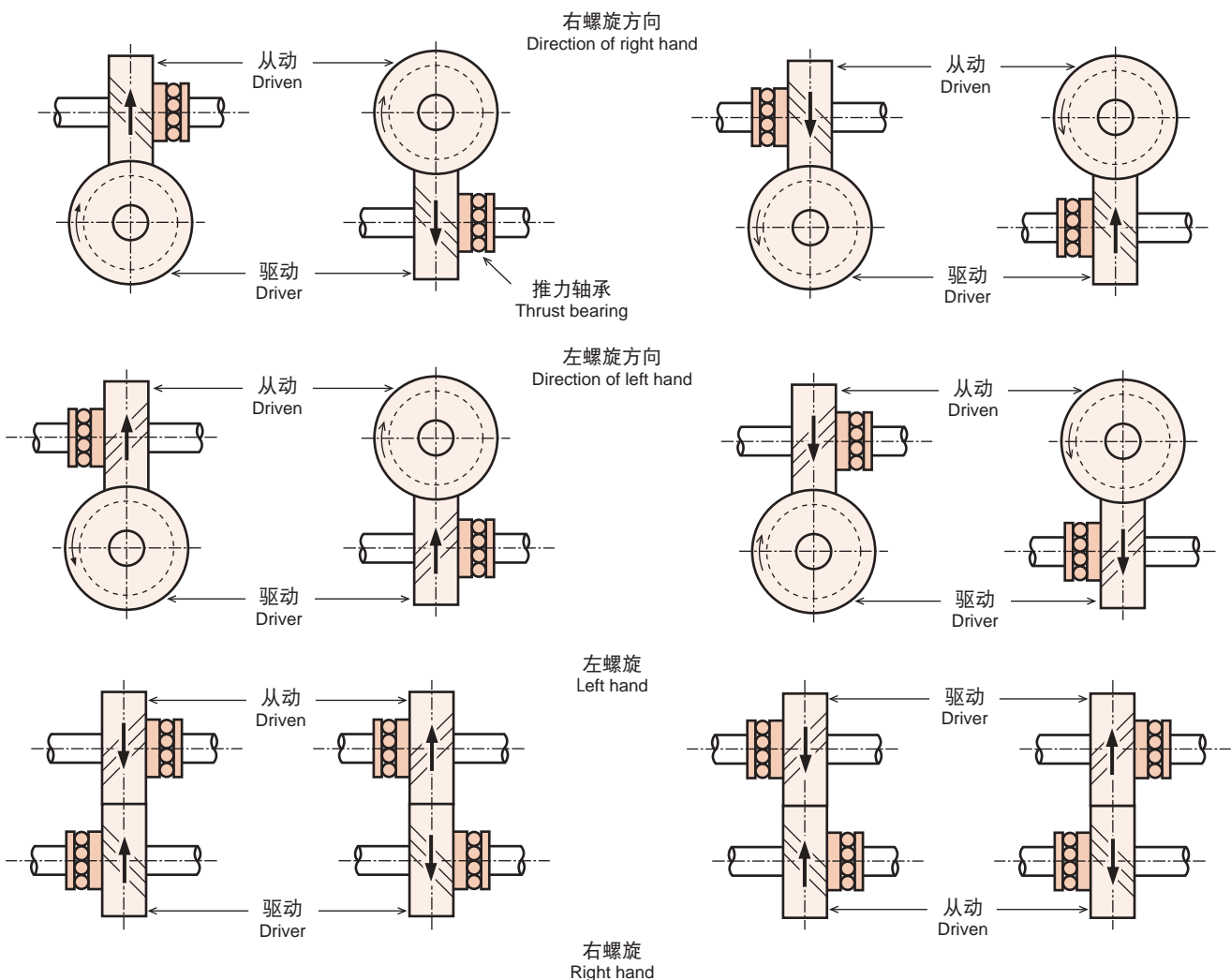
斜齿轮有比直齿轮啮合更流畅的特点。但是因为齿是斜着的，所以有着产生轴方向的轴向力的缺点。因此，要设计安装能够充分承受轴向力的轴承。

- 1) To obtain ideal engagement of the shafts of Helical gears, provide right angle (90°) correctly.
- 2) Provide the bearing that will completely support the thrust load when Helical gear is operated as the axial thrust direction.
- 3) As for the thrust load of Helical gear.

Helical gear is able to obtain a smooth engagement compare to Spur gear, However Helical gear produces thrust load by helix angle on the tooth trace. Therefore the design of the shafts between drive gear (Pinion) and driven gear (Gear) should be in firm condition, and provide bearing that completely support pinion and gear against the axial thrust load.

### 斜齿轮轴向力的方向

#### Axial thrust load of helical gear and location of bearing



使用时，如果把其他厂家生产的产品和本公司产品一起混合使用，容易产生问题。如果以KG常规规格以外的规格设计齿轮时，欢迎与本公司洽谈。

KG-Helical gear is able to match with other gear makers however it is advisable to use KG-Gear for best result. We are able to fabricate made to order according to your specifications. Please do not hesitate to contact us.



# Memo

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# 斜齿轮

## HELICAL GEARS

齿直角模数 1 (齿数 13, 26) 1.5 (齿数 13, 26) /2 (齿数 13, 26) /2.5 (齿数 13, 26) /3 (齿数 13, 26) (普通齿) FULL DEPTH TOOTH



单位: mm

| 精度              | 材料   | 压力角 | 螺旋角 | 热处理    | 齿面硬度     | 侧隙 ① |
|-----------------|------|-----|-----|--------|----------|------|
| JIS B 1702-1 9级 | S45C | 20度 | 45度 | 齿面高频淬火 | HRC47~53 | 确认表格 |

★未做表面处理。★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★安装方法和容许传达动力：用于平行轴形式安装时，请确认容许传达动力表。此时齿面的接触为面接触。

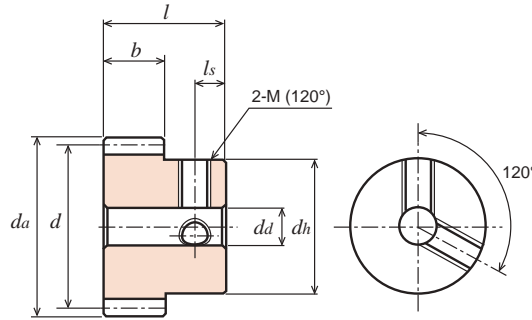
如果以交叉轴形式安装时，相对于平行轴，容许传达动力会大幅降低。因为此时齿面的接触为点接触。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 螺旋方向<br>Direction of Helix | 模数<br>Module<br><i>m</i> | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 齿顶圆直径<br>Tip Diameter<br><i>d<sub>a</sub></i> | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>d<sub>d</sub>(H8)</i> | 轮毂外径<br>Hub Diameter<br><i>d<sub>h</sub></i> | 轮毂长度<br>Hub Projection<br><i>l<sub>h</sub></i> | 全长<br>Overall Length<br><i>l</i> | 重量<br>Weight<br><i>W(kg)</i> |
|--------------------------|----------------------------|--------------------------|-----------------------------------|---|---|------------------------------|---|--|--|----------------------------------|------------------------------|
| H1S 13R - B              | R                          | 1                        | 13                                | φ 18.38                                 | φ 20.4  | 12                           | φ 8   | φ15  | 10   | 22                               | 0.03                         |
| H1S 13L - B              | L                          | 1                        | 13                                | φ 18.38                                 | φ 20.4  | 12                           | φ 8   | φ15  | 10   | 22                               | 0.03                         |
| H1S 26R - B              | R                          | 1                        | 26                                | φ 36.77                                 | φ 38.8  | 12                           | φ10   | φ32  | 10   | 22                               | 0.15                         |
| H1S 26L - B              | L                          | 1                        | 26                                | φ 36.77                                 | φ 38.8  | 12                           | φ10   | φ32  | 10   | 22                               | 0.15                         |
| H1.5S 13R - B            | R                          | 1.5                      | 13                                | φ 27.58                                 | φ 30.6  | 15                           | φ10   | φ23  | 10   | 25                               | 0.09                         |
| H1.5S 13L - B            | L                          | 1.5                      | 13                                | φ 27.58                                 | φ 30.6  | 15                           | φ10   | φ23  | 10   | 25                               | 0.09                         |
| H1.5S 26R - B            | R                          | 1.5                      | 26                                | φ 55.15                                 | φ 58.2  | 15                           | φ12   | φ40  | 10   | 25                               | 0.36                         |
| H1.5S 26L - B            | L                          | 1.5                      | 26                                | φ 55.15                                 | φ 58.2  | 15                           | φ12   | φ40  | 10   | 25                               | 0.36                         |
| H2S 13R - B              | R                          | 2                        | 13                                | φ 36.77                                 | φ 40.8  | 20                           | φ12   | φ30  | 13   | 33                               | 0.21                         |
| H2S 13L - B              | L                          | 2                        | 13                                | φ 36.77                                 | φ 40.8  | 20                           | φ12   | φ30  | 13   | 33                               | 0.21                         |
| H2S 26R - B              | R                          | 2                        | 26                                | φ 73.54                                 | φ 77.5  | 20                           | φ16   | φ55  | 13   | 33                               | 0.86                         |
| H2S 26L - B              | L                          | 2                        | 26                                | φ 73.54                                 | φ 77.5  | 20                           | φ16   | φ55  | 13   | 33                               | 0.86                         |
| H2.5S 13R - B            | R                          | 2.5                      | 13                                | φ 45.96                                 | φ 50.9  | 22                           | φ14   | φ38  | 14   | 36                               | 0.37                         |
| H2.5S 13L - B            | L                          | 2.5                      | 13                                | φ 45.96                                 | φ 50.9  | 22                           | φ14   | φ38  | 14   | 36                               | 0.37                         |
| H2.5S 26R - B            | R                          | 2.5                      | 26                                | φ 91.92                                 | φ 96.9  | 22                           | φ18   | φ63  | 14   | 36                               | 1.41                         |
| H2.5S 26L - B            | L                          | 2.5                      | 26                                | φ 91.92                                 | φ 96.9  | 22                           | φ18   | φ63  | 14   | 36                               | 1.41                         |
| H3S 13R - B              | R                          | 3                        | 13                                | φ 55.15                                 | φ 61.2  | 25                           | φ16   | φ44  | 15   | 40                               | 0.58                         |
| H3S 13L - B              | L                          | 3                        | 13                                | φ 55.15                                 | φ 61.2  | 25                           | φ16   | φ44  | 15   | 40                               | 0.58                         |
| H3S 26R - B              | R                          | 3                        | 26                                | φ110.31                                 | φ116.3  | 25                           | φ22   | φ70  | 15   | 40                               | 2.21                         |
| H3S 26L - B              | L                          | 3                        | 26                                | φ110.31                                 | φ116.3  | 25                           | φ22   | φ70  | 15   | 40                               | 2.21                         |

以下【\*】是已经加工两处螺纹孔的产品，带有两个固定用螺钉。

| 产品型号<br>Catalogue Number | 螺旋方向<br>Direction of Helix | 模数<br>Module<br><i>m</i> | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 齿顶圆直径<br>Tip Diameter<br><i>d<sub>a</sub></i> | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>d<sub>d</sub>(H8)</i> | 轮毂外径<br>Hub Diameter<br><i>d<sub>h</sub></i> | 轮毂长度<br>Hub Projection<br><i>l<sub>h</sub></i> | 全长<br>Overall Length<br><i>l</i> | 螺纹孔<br>Set Screw |                      | 重量<br>Weight<br><i>W(kg)</i> |
|--------------------------|----------------------------|--------------------------|-----------------------------------|---|---|------------------------------|---|--|--|----------------------------------|------------------|----------------------|------------------------------|
|                          |                            |                          |                                   |   |   |                              |   |  |  |                                  | 2-M(120°)        | <i>l<sub>s</sub></i> |                              |
| H1S 13R * B              | R                          | 1                        | 13                                | φ18.38                                  | φ20.4   | 12                           | φ 8   | φ15  | 10   | 22                               | 2-M3             | 5                    | 0.03                         |
| H1S 13L * B              | L                          | 1                        | 13                                | φ18.38                                  | φ20.4   | 12                           | φ 8   | φ15  | 10   | 22                               | 2-M3             | 5                    | 0.03                         |
| H1S 26R * B              | R                          | 1                        | 26                                | φ36.77                                  | φ38.8   | 12                           | φ10   | φ32  | 10   | 22                               | 2-M4             | 5                    | 0.15                         |
| H1S 26L * B              | L                          | 1                        | 26                                | φ36.77                                  | φ38.8   | 12                           | φ10   | φ32  | 10   | 22                               | 2-M4             | 5                    | 0.15                         |
| H1.5S 13R * B            | R                          | 1.5                      | 13                                | φ27.58                                  | φ30.6   | 15                           | φ10   | φ23  | 10   | 25                               | 2-M4             | 5                    | 0.09                         |
| H1.5S 13L * B            | L                          | 1.5                      | 13                                | φ27.58                                  | φ30.6   | 15                           | φ10   | φ23  | 10   | 25                               | 2-M4             | 5                    | 0.09                         |
| H1.5S 26R * B            | R                          | 1.5                      | 26                                | φ55.15                                  | φ58.2   | 15                           | φ12   | φ40  | 10   | 25                               | 2-M5             | 5                    | 0.36                         |
| H1.5S 26L * B            | L                          | 1.5                      | 26                                | φ55.15                                  | φ58.2   | 15                           | φ12   | φ40  | 10   | 25                               | 2-M5             | 5                    | 0.36                         |



B1形状  
TYPE B1

| 各类转速下的弯曲强度 (KW) 容许传达能力表 (平行轴) |      |      |       |       |       |       | 各类转速下的齿面强度 (KW) 容许传达能力表 (平行轴) |      |      |       |       |       |       | 侧 隙         | 产 品 型 号<br>Catalogue Numbers   |
|-------------------------------|------|------|-------|-------|-------|-------|-------------------------------|------|------|-------|-------|-------|-------|-------------|--------------------------------|
| 10                            | 100  | 200  | 400   | 800   | 1,200 | 1,500 | 10                            | 100  | 200  | 400   | 800   | 1,200 | 1,500 |             |                                |
| 0.009                         | 0.09 | 0.19 | 0.38  | 0.77  | 1.13  | 1.36  | 0.003                         | 0.03 | 0.07 | 0.14  | 0.28  | 0.42  | 0.51  | 0.04 ~ 0.10 | H1S 13R - B<br>H1S 13L - B     |
| 0.022                         | 0.22 | 0.45 | 0.90  | 1.67  | 2.26  | 2.64  | 0.015                         | 0.15 | 0.31 | 0.64  | 1.20  | 1.65  | 1.95  | 0.04 ~ 0.10 | H1S 26R - B<br>H1S 26L - B     |
| 0.027                         | 0.27 | 0.54 | 1.08  | 2.12  | 2.94  | 3.47  | 0.010                         | 0.10 | 0.20 | 0.41  | 0.81  | 1.14  | 1.36  | 0.06 ~ 0.15 | H1.5S 13R - B<br>H1.5S 13L - B |
| 0.063                         | 0.63 | 1.27 | 2.48  | 4.25  | 5.76  | 6.98  | 0.045                         | 0.45 | 0.91 | 1.81  | 3.16  | 4.37  | 5.35  | 0.06 ~ 0.15 | H1.5S 26R - B<br>H1.5S 26L - B |
| 0.06                          | 0.64 | 1.29 | 2.58  | 4.77  | 6.47  | 7.54  | 0.02                          | 0.24 | 0.49 | 0.99  | 1.87  | 2.57  | 3.03  | 0.08 ~ 0.20 | H2S 13R - B<br>H2S 13L - B     |
| 0.15                          | 1.50 | 2.99 | 5.53  | 9.17  | 12.99 | 15.73 | 0.11                          | 1.07 | 2.16 | 4.06  | 6.91  | 9.98  | 12.23 | 0.08 ~ 0.20 | H2S 26R - B<br>H2S 26L - B     |
| 0.11                          | 1.10 | 2.21 | 4.41  | 7.75  | 10.31 | 12.43 | 0.04                          | 0.52 | 0.85 | 1.71  | 3.06  | 4.14  | 5.04  | 0.10 ~ 0.25 | H2.5S 13R - B<br>H2.5S 13L - B |
| 0.26                          | 2.57 | 5.15 | 9.04  | 15.34 | 21.67 | 26.20 | 0.19                          | 1.87 | 3.79 | 6.78  | 11.83 | 17.08 | 20.92 | 0.10 ~ 0.25 | H2.5S 26R - B<br>H2.5S 26L - B |
| 0.18                          | 1.82 | 3.63 | 7.10  | 12.14 | 16.47 | 19.93 | 0.07                          | 0.71 | 1.42 | 2.82  | 4.92  | 6.79  | 8.31  | 0.12 ~ 0.30 | H3S 13R - B<br>H3S 13L - B     |
| 0.42                          | 4.22 | 8.24 | 14.10 | 24.43 | 34.56 | 42.17 | 0.31                          | 3.11 | 6.15 | 10.75 | 19.22 | 27.82 | 34.40 | 0.12 ~ 0.30 | H3S 26R - B<br>H3S 26L - B     |

| 各类转速下的弯曲强度 (KW) 容许传达能力表 (平行轴) |      |      |      |      |       |       | 各类转速下的齿面强度 (KW) 容许传达能力表 (平行轴) |      |      |      |      |       |       | 侧 隙         | 产 品 型 号<br>Catalogue Numbers   |
|-------------------------------|------|------|------|------|-------|-------|-------------------------------|------|------|------|------|-------|-------|-------------|--------------------------------|
| 10                            | 100  | 200  | 400  | 800  | 1,200 | 1,500 | 10                            | 100  | 200  | 400  | 800  | 1,200 | 1,500 |             |                                |
| 0.009                         | 0.09 | 0.19 | 0.38 | 0.77 | 1.13  | 1.36  | 0.003                         | 0.03 | 0.07 | 0.14 | 0.28 | 0.42  | 0.51  | 0.04 ~ 0.10 | H1S 13R * B<br>H1S 13L * B     |
| 0.022                         | 0.22 | 0.45 | 0.90 | 1.67 | 2.26  | 2.64  | 0.015                         | 0.15 | 0.31 | 0.64 | 1.20 | 1.65  | 1.95  | 0.04 ~ 0.10 | H1S 26R * B<br>H1S 26L * B     |
| 0.027                         | 0.27 | 0.54 | 1.08 | 2.12 | 2.94  | 3.47  | 0.010                         | 0.10 | 0.20 | 0.41 | 0.81 | 1.14  | 1.36  | 0.06 ~ 0.15 | H1.5S 13R * B<br>H1.5S 13L * B |
| 0.063                         | 0.63 | 1.27 | 2.48 | 4.25 | 5.76  | 6.98  | 0.045                         | 0.45 | 0.91 | 1.81 | 3.16 | 4.37  | 5.35  | 0.06 ~ 0.15 | H1.5S 26R * B<br>H1.5S 26L * B |



单位：mm

| 精度              | 材料     | 压力角 | 螺旋角 | 热处理 | 齿面硬度 | 侧隙 ① |
|-----------------|--------|-----|-----|-----|------|------|
| JIS B 1702-1 9级 | SUS304 | 20度 | 45度 | —   | —    | 确认表格 |

★未做表面处理。★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★安装方法和容许传达动力：用于平行轴形式安装时，请确认容许传达动力表。此时齿面的接触为面接触。

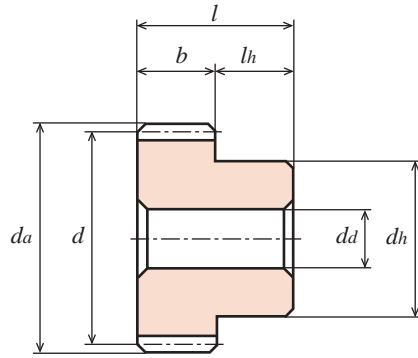
如果以交叉轴形式安装时，相对于平行轴，容许传达动力会大幅降低。因为此时齿面的接触为点接触。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 螺旋方向<br>Direction of Helix | 模数<br>Module<br><i>m</i> | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 齿顶圆直径<br>Tip Diameter<br><i>d<sub>a</sub></i> | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>d</i> (H8) | 轮毂外径<br>Hub Diameter<br><i>d<sub>h</sub></i> | 轮毂长度<br>Hub Projection<br><i>l<sub>h</sub></i> | 全长<br>Overall Length<br><i>l</i> | 重量<br>Weight<br><i>W</i> (g) |
|--------------------------|----------------------------|--------------------------|-----------------------------------|---|---|------------------------------|--------------------------------------|--|--|----------------------------------|------------------------------|
| <b>H1SU 13R — B</b>      | R                          | 1                        | 13                                | φ18.38                                  | φ20.4   | 12                           | φ 8                                  | φ15  | 10   | 22                               | 30.5                         |
| <b>H1SU 13L — B</b>      | L                          | 1                        | 13                                | φ18.38                                  | φ20.4   | 12                           | φ 8                                  | φ15  | 10   | 22                               | 30.5                         |
| <b>H1SU 26R — B</b>      | R                          | 1                        | 26                                | φ36.77                                  | φ38.8   | 12                           | φ10                                  | φ32  | 10   | 22                               | 151.1                        |
| <b>H1SU 26L — B</b>      | L                          | 1                        | 26                                | φ36.77                                  | φ38.8   | 12                           | φ10                                  | φ32  | 10   | 22                               | 151.1                        |
| <b>H1.5SU 13R — B</b>    | R                          | 1.5                      | 13                                | φ27.58                                  | φ30.6   | 15                           | φ10                                  | φ23  | 10   | 25                               | 88.4                         |
| <b>H1.5SU 13L — B</b>    | L                          | 1.5                      | 13                                | φ27.58                                  | φ30.6   | 15                           | φ10                                  | φ23  | 10   | 25                               | 88.4                         |
| <b>H1.5SU 26R — B</b>    | R                          | 1.5                      | 26                                | φ55.15                                  | φ58.2   | 15                           | φ12                                  | φ40  | 10   | 25                               | 361.4                        |
| <b>H1.5SU 26L — B</b>    | L                          | 1.5                      | 26                                | φ55.15                                  | φ58.2   | 15                           | φ12                                  | φ40  | 10   | 25                               | 361.4                        |

以下【\*】是已经加工两处螺纹孔的产品，没有固定用螺钉。

| 产品型号<br>Catalogue Number | 螺旋方向<br>Direction of Helix | 模数<br>Module<br><i>m</i> | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 齿顶圆直径<br>Tip Diameter<br><i>d<sub>a</sub></i> | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>d</i> (H8) | 轮毂外径<br>Hub Diameter<br><i>d<sub>h</sub></i> | 轮毂长度<br>Hub Projection<br><i>l<sub>h</sub></i> | 全长<br>Overall Length<br><i>l</i> | 螺纹孔<br>Set Screw |                | 重量<br>Weight<br><i>W</i> (g) |
|--------------------------|----------------------------|--------------------------|-----------------------------------|---|---|------------------------------|--------------------------------------|--|--|----------------------------------|------------------|----------------|------------------------------|
|                          |                            |                          |                                   |   |   |                              |                                      |  |  |                                  | 2-M(120°)        | l <sub>s</sub> |                              |
| <b>H1SU 13R * B</b>      | R                          | 1                        | 13                                | φ18.38                                  | φ20.4   | 12                           | φ 8                                  | φ15  | 10   | 22                               | 2-M3             | 5              | 30.2                         |
| <b>H1SU 13L * B</b>      | L                          | 1                        | 13                                | φ18.38                                  | φ20.4   | 12                           | φ 8                                  | φ15  | 10   | 22                               | 2-M3             | 5              | 30.2                         |
| <b>H1SU 26R * B</b>      | R                          | 1                        | 26                                | φ36.77                                  | φ38.8   | 12                           | φ10                                  | φ32  | 10   | 22                               | 2-M4             | 5              | 149.3                        |
| <b>H1SU 26L * B</b>      | L                          | 1                        | 26                                | φ36.77                                  | φ38.8   | 12                           | φ10                                  | φ32  | 10   | 22                               | 2-M4             | 5              | 149.3                        |
| <b>H1.5SU 13R * B</b>    | R                          | 1.5                      | 13                                | φ27.58                                  | φ30.6   | 15                           | φ10                                  | φ23  | 10   | 25                               | 2-M4             | 5              | 87.4                         |
| <b>H1.5SU 13L * B</b>    | L                          | 1.5                      | 13                                | φ27.58                                  | φ30.6   | 15                           | φ10                                  | φ23  | 10   | 25                               | 2-M4             | 5              | 87.4                         |
| <b>H1.5SU 26R * B</b>    | R                          | 1.5                      | 26                                | φ55.15                                  | φ58.2   | 15                           | φ12                                  | φ40  | 10   | 25                               | 2-M5             | 5              | 357.9                        |
| <b>H1.5SU 26L * B</b>    | L                          | 1.5                      | 26                                | φ55.15                                  | φ58.2   | 15                           | φ12                                  | φ40  | 10   | 25                               | 2-M5             | 5              | 357.9                        |



B1形状  
TYPE B1

| 各类转速下的弯曲强度 (W) 容许传达能力表 (平行轴) |        |        |          |          |          |          | 侧 隙         | 产 品 型 号<br>Catalogue Numbers     |
|------------------------------|--------|--------|----------|----------|----------|----------|-------------|----------------------------------|
| 10                           | 100    | 200    | 400      | 800      | 1,200    | 1,500    |             |                                  |
| 4.07                         | 40.68  | 81.36  | 162.73   | 325.46   | 477.08   | 572.13   | 0.06 ~ 0.12 | H1SU 13R - B<br>H1SU 13L - B     |
| 9.50                         | 95.02  | 190.03 | 380.06   | 703.15   | 952.90   | 1,110.70 | 0.06 ~ 0.12 | H1SU 26R - B<br>H1SU 26L - B     |
| 11.44                        | 114.42 | 228.83 | 457.67   | 894.52   | 1,237.04 | 1,460.79 | 0.09 ~ 0.18 | H1.5SU 13R - B<br>H1.5SU 13L - B |
| 26.72                        | 267.23 | 534.46 | 1,044.61 | 1,786.69 | 2,423.37 | 2,933.19 | 0.09 ~ 0.18 | H1.5SU 26R - B<br>H1.5SU 26L - B |

| 各类转速下的弯曲强度 (W) 容许传达能力表 (平行轴) |        |        |          |          |          |          | 侧 隙         | 产 品 型 号<br>Catalogue Numbers     |
|------------------------------|--------|--------|----------|----------|----------|----------|-------------|----------------------------------|
| 10                           | 100    | 200    | 400      | 800      | 1,200    | 1,500    |             |                                  |
| 4.07                         | 40.68  | 81.36  | 162.73   | 325.46   | 477.08   | 572.13   | 0.06 ~ 0.12 | H1SU 13R * B<br>H1SU 13L * B     |
| 9.50                         | 95.02  | 190.03 | 380.06   | 703.15   | 952.90   | 1,110.70 | 0.06 ~ 0.12 | H1SU 26R * B<br>H1SU 26L * B     |
| 11.44                        | 114.42 | 228.83 | 457.67   | 894.52   | 1,237.04 | 1,460.79 | 0.09 ~ 0.18 | H1.5SU 13R * B<br>H1.5SU 13L * B |
| 26.72                        | 267.23 | 534.46 | 1,044.61 | 1,786.69 | 2,423.37 | 2,933.19 | 0.09 ~ 0.18 | H1.5SU 26R * B<br>H1.5SU 26L * B |



单位：mm

| 精度②                 | 材料     | 压力角  | 螺旋角  | 热处理 | 齿面硬度 | 侧隙①  |
|---------------------|--------|------|------|-----|------|------|
| JIS B 1702-1 9~10 级 | 白色 POM | 20 度 | 45 度 | —   | —    | 确认表格 |

★本产品的容许传达动力表使用 LOUIS 公式。请在 P26 确认单位换算方法。

★安装方法和容许传达动力：用于平行轴形式安装时，请确认容许传达动力表。此时齿面的接触为面接触。

如果以交叉轴形式安装时，相对于平行轴，容许传达动力会大幅降低。因为此时齿面的接触为点接触。

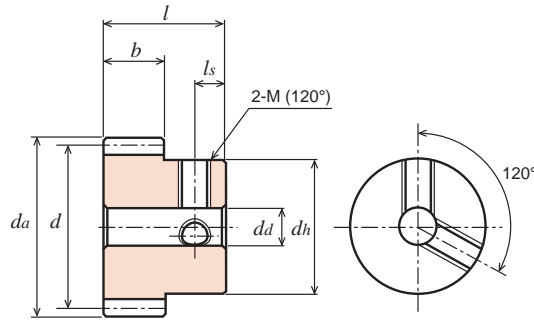
①同一种材料，一样的齿轮相互啮合时的理想值。②制作时的控制精度。

★由于材料之特性，易产生由经年老化·热胀冷缩而引起的尺寸和精度的变化。

| 产品型号<br>Catalogue Number | 螺旋方向<br>Direction of Helix | 模数       | 齿数              | 分度圆直径              | 齿顶圆直径                | 齿宽         | 孔径                   | 轮毂外径                 | 轮毂长度                 | 全长             | 重量          |
|--------------------------|----------------------------|----------|-----------------|--------------------|----------------------|------------|----------------------|----------------------|----------------------|----------------|-------------|
|                          |                            | Module   | Number of Teeth | Reference Diameter | Tip Diameter         | Face Width | Bore Diameter        | Hub Diameter         | Hub Projection       | Overall Length | Weight      |
|                          |                            | <i>m</i> | <i>z</i>        | <i>d</i>           | <i>d<sub>a</sub></i> | <i>b</i>   | <i>d<sub>d</sub></i> | <i>d<sub>h</sub></i> | <i>l<sub>h</sub></i> | <i>l</i>       | <i>W(g)</i> |
| H1D 13R - B              | R                          | 1        | 13              | φ18.38             | φ20.4                | 12         | φ 8                  | φ15                  | 10                   | 22             | 5.4         |
| H1D 13L - B              | L                          | 1        | 13              | φ18.38             | φ20.4                | 12         | φ 8                  | φ15                  | 10                   | 22             | 5.4         |
| H1D 26R - B              | R                          | 1        | 26              | φ36.77             | φ38.8                | 12         | φ10                  | φ32                  | 10                   | 22             | 26.9        |
| H1D 26L - B              | L                          | 1        | 26              | φ36.77             | φ38.8                | 12         | φ10                  | φ32                  | 10                   | 22             | 26.9        |
| H1.5D 13R - B            | R                          | 1.5      | 13              | φ27.58             | φ30.6                | 15         | φ10                  | φ23                  | 10                   | 25             | 15.7        |
| H1.5D 13L - B            | L                          | 1.5      | 13              | φ27.58             | φ30.6                | 15         | φ10                  | φ23                  | 10                   | 25             | 15.7        |
| H1.5D 26R - B            | R                          | 1.5      | 26              | φ55.15             | φ58.2                | 15         | φ12                  | φ40                  | 10                   | 25             | 64.2        |
| H1.5D 26L - B            | L                          | 1.5      | 26              | φ55.15             | φ58.2                | 15         | φ12                  | φ40                  | 10                   | 25             | 64.2        |

以下【\*】是已经加工两处螺纹孔的产品，带有两个固定用螺钉。

| 产品型号<br>Catalogue Number | 螺旋方向<br>Direction of Helix | 模数  | 齿数 | 分度圆直径  | 齿顶圆直径 | 齿宽 | 孔径  | 轮毂外径 | 轮毂长度 | 全长 | 螺纹孔              |                      | 重量   |
|--------------------------|----------------------------|-----|----|--------|-------|----|-----|------|------|----|------------------|----------------------|------|
|                          |                            |     |    |        |       |    |     |      |      |    | Set Screw        |                      |      |
|                          |                            |     |    |        |       |    |     |      |      |    | <i>2-M(120°)</i> | <i>l<sub>s</sub></i> |      |
| H1D 13R * B              | R                          | 1   | 13 | φ18.38 | φ20.4 | 12 | φ 8 | φ15  | 10   | 22 | 2-M3             | 5                    | 5.3  |
| H1D 13L * B              | L                          | 1   | 13 | φ18.38 | φ20.4 | 12 | φ 8 | φ15  | 10   | 22 | 2-M3             | 5                    | 5.3  |
| H1D 26R * B              | R                          | 1   | 26 | φ36.77 | φ38.8 | 12 | φ10 | φ32  | 10   | 22 | 2-M4             | 5                    | 26.6 |
| H1D 26L * B              | L                          | 1   | 26 | φ36.77 | φ38.8 | 12 | φ10 | φ32  | 10   | 22 | 2-M4             | 5                    | 26.6 |
| H1.5D 13R * B            | R                          | 1.5 | 13 | φ27.58 | φ30.6 | 15 | φ10 | φ23  | 10   | 25 | 2-M4             | 5                    | 15.5 |
| H1.5D 13L * B            | L                          | 1.5 | 13 | φ27.58 | φ30.6 | 15 | φ10 | φ23  | 10   | 25 | 2-M4             | 5                    | 15.5 |
| H1.5D 26R * B            | R                          | 1.5 | 26 | φ55.15 | φ58.2 | 15 | φ12 | φ40  | 10   | 25 | 2-M5             | 5                    | 63.6 |
| H1.5D 26L * B            | L                          | 1.5 | 26 | φ55.15 | φ58.2 | 15 | φ12 | φ40  | 10   | 25 | 2-M5             | 5                    | 63.6 |



B1形状  
TYPE B1

| 各类转速下的弯曲强度 (W) 容许传达能力表 (平行轴) |       |        |        |        |          |          | 侧 隙         | 产 品 型 号<br>Catalogue Numbers   |
|------------------------------|-------|--------|--------|--------|----------|----------|-------------|--------------------------------|
| 10                           | 100   | 200    | 400    | 800    | 1,200    | 1,500    |             |                                |
| 2.98                         | 29.75 | 59.46  | 118.79 | 237.06 | 354.80   | 442.76   | 0.06 ~ 0.12 | H1D 13R - B<br>H1D 13L - B     |
| 5.95                         | 59.46 | 118.79 | 237.06 | 472.02 | 704.88   | 875.19   | 0.06 ~ 0.12 | H1D 26R - B<br>H1D 26L - B     |
| 4.71                         | 47.10 | 94.12  | 187.93 | 374.61 | 560.04   | 698.30   | 0.09 ~ 0.18 | H1.5D 13R - B<br>H1.5D 13L - B |
| 9.43                         | 94.12 | 187.93 | 374.61 | 744.23 | 1,099.52 | 1,356.90 | 0.09 ~ 0.18 | H1.5D 26R - B<br>H1.5D 26L - B |

| 各类转速下的弯曲强度 (W) 容许传达能力表 (平行轴) |       |        |        |        |          |          | 侧 隙         | 产 品 型 号<br>Catalogue Numbers   |
|------------------------------|-------|--------|--------|--------|----------|----------|-------------|--------------------------------|
| 10                           | 100   | 200    | 400    | 800    | 1,200    | 1,500    |             |                                |
| 2.98                         | 29.75 | 59.46  | 118.79 | 237.06 | 354.80   | 442.76   | 0.06 ~ 0.12 | H1D 13R * B<br>H1D 13L * B     |
| 5.95                         | 59.46 | 118.79 | 237.06 | 472.02 | 704.88   | 875.19   | 0.06 ~ 0.12 | H1D 26R * B<br>H1D 26L * B     |
| 4.71                         | 47.10 | 94.12  | 187.93 | 374.61 | 560.04   | 698.30   | 0.09 ~ 0.18 | H1.5D 13R * B<br>H1.5D 13L * B |
| 9.43                         | 94.12 | 187.93 | 374.61 | 744.23 | 1,099.52 | 1,356.90 | 0.09 ~ 0.18 | H1.5D 26R * B<br>H1.5D 26L * B |



单位：mm

| 精度②                   | 材料     | 压力角  | 螺旋角  | 热处理 | 齿面硬度 | 侧隙①  |
|-----------------------|--------|------|------|-----|------|------|
| JIS B 1702-1 9 ~ 10 级 | 青色 POM | 20 度 | 45 度 | —   | —    | 确认表格 |

★本产品的容许传达动力表使用 LOUIS 公式。请在 P26 确认单位换算方法。

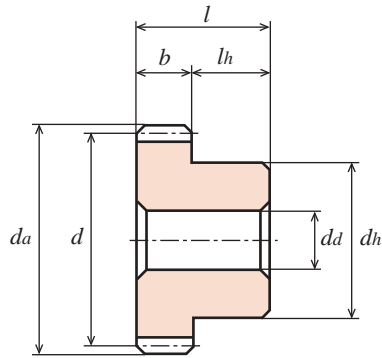
★安装方法和容许传达动力：用于交叉轴形式安装时，请确认容许传达动力表。此时齿面的接触为点接触。

①同一种材料，一样的齿轮相互啮合时的理想值。②制作时的控制精度。

★由于材料之特性，易产生由经年老化·热胀冷缩而引起的尺寸和精度的变化。

| 产品型号<br>Catalogue Number | 螺旋方向<br>Direction of Helix | 模数       | 齿数              | 分度圆直径              | 齿顶圆直径                | 齿宽         | 孔径                   | 轮毂外径                 | 轮毂长度                 | 全长             | 重量          |
|--------------------------|----------------------------|----------|-----------------|--------------------|----------------------|------------|----------------------|----------------------|----------------------|----------------|-------------|
|                          |                            | Module   | Number of Teeth | Reference Diameter | Tip Diameter         | Face Width | Bore Diameter        | Hub Diameter         | Hub Projection       | Overall Length | Weight      |
|                          |                            | <i>m</i> | <i>z</i>        | <i>d</i>           | <i>d<sub>a</sub></i> | <i>b</i>   | <i>d<sub>d</sub></i> | <i>d<sub>h</sub></i> | <i>l<sub>h</sub></i> | <i>l</i>       | <i>W(g)</i> |
| H1BP 10R - B             | R                          | 1        | 10              | φ14.14             | φ16.1                | 12         | φ 4                  | φ10                  | 10                   | 22             | 3.4         |
| H1BP 10L - B             | L                          | 1        | 10              | φ14.14             | φ16.1                | 12         | φ 4                  | φ10                  | 10                   | 22             | 3.4         |
| H1BP 13R - B             | R                          | 1        | 13              | φ18.38             | φ20.4                | 12         | φ 5                  | φ14                  | 10                   | 22             | 6.0         |
| H1BP 13L - B             | L                          | 1        | 13              | φ18.38             | φ20.4                | 12         | φ 5                  | φ14                  | 10                   | 22             | 6.0         |
| H1BP 15R - B             | R                          | 1        | 15              | φ21.21             | φ23.2                | 12         | φ 6                  | φ15                  | 10                   | 22             | 7.6         |
| H1BP 15L - B             | L                          | 1        | 15              | φ21.21             | φ23.2                | 12         | φ 6                  | φ15                  | 10                   | 22             | 7.6         |
| H1BP 20R - B             | R                          | 1        | 20              | φ28.28             | φ30.3                | 12         | φ 6                  | φ22                  | 10                   | 22             | 15.1        |
| H1BP 20L - B             | L                          | 1        | 20              | φ28.28             | φ30.3                | 12         | φ 6                  | φ22                  | 10                   | 22             | 15.1        |
| H1BP 26R - B             | R                          | 1        | 26              | φ36.77             | φ38.8                | 12         | φ 8                  | φ32                  | 10                   | 22             | 27.7        |
| H1BP 26L - B             | L                          | 1        | 26              | φ36.77             | φ38.8                | 12         | φ 8                  | φ32                  | 10                   | 22             | 27.7        |
| H1.5BP 10R - B           | R                          | 1.5      | 10              | φ21.21             | φ24.2                | 15         | φ 6                  | φ16                  | 10                   | 25             | 9.3         |
| H1.5BP 10L - B           | L                          | 1.5      | 10              | φ21.21             | φ24.2                | 15         | φ 6                  | φ16                  | 10                   | 25             | 9.3         |
| H1.5BP 13R - B           | R                          | 1.5      | 13              | φ27.58             | φ30.6                | 15         | φ 8                  | φ23                  | 10                   | 25             | 16.6        |
| H1.5BP 13L - B           | L                          | 1.5      | 13              | φ27.58             | φ30.6                | 15         | φ 8                  | φ23                  | 10                   | 25             | 16.6        |
| H1.5BP 15R - B           | R                          | 1.5      | 15              | φ31.82             | φ34.8                | 15         | φ 8                  | φ25                  | 10                   | 25             | 22.0        |
| H1.5BP 15L - B           | L                          | 1.5      | 15              | φ31.82             | φ34.8                | 15         | φ 8                  | φ25                  | 10                   | 25             | 22.0        |
| H1.5BP 20R - B           | R                          | 1.5      | 20              | φ42.43             | φ45.4                | 15         | φ10                  | φ30                  | 10                   | 25             | 37.1        |
| H1.5BP 20L - B           | L                          | 1.5      | 20              | φ42.43             | φ45.4                | 15         | φ10                  | φ30                  | 10                   | 25             | 37.1        |
| H1.5BP 26R - B           | R                          | 1.5      | 26              | φ55.15             | φ58.2                | 15         | φ10                  | φ40                  | 10                   | 25             | 65.5        |
| H1.5BP 26L - B           | L                          | 1.5      | 26              | φ55.15             | φ58.2                | 15         | φ10                  | φ40                  | 10                   | 25             | 65.5        |
| H2BP 10R - B             | R                          | 2        | 10              | φ28.28             | φ32.3                | 20         | φ10                  | φ22                  | 15                   | 35             | 21.9        |
| H2BP 10L - B             | L                          | 2        | 10              | φ28.28             | φ32.3                | 20         | φ10                  | φ22                  | 15                   | 35             | 21.9        |
| H2BP 13R - B             | R                          | 2        | 13              | φ36.77             | φ40.8                | 20         | φ10                  | φ30                  | 15                   | 35             | 41.0        |
| H2BP 13L - B             | L                          | 2        | 13              | φ36.77             | φ40.8                | 20         | φ10                  | φ30                  | 15                   | 35             | 41.0        |
| H2BP 15R - B             | R                          | 2        | 15              | φ42.43             | φ46.4                | 20         | φ10                  | φ35                  | 15                   | 35             | 56.3        |
| H2BP 15L - B             | L                          | 2        | 15              | φ42.43             | φ46.4                | 20         | φ10                  | φ35                  | 15                   | 35             | 56.3        |
| H2BP 20R - B             | R                          | 2        | 20              | φ56.57             | φ60.6                | 20         | φ12                  | φ45                  | 15                   | 35             | 98.9        |
| H2BP 20L - B             | L                          | 2        | 20              | φ56.57             | φ60.6                | 20         | φ12                  | φ45                  | 15                   | 35             | 98.9        |
| H2BP 26R - B             | R                          | 2        | 26              | φ73.54             | φ77.5                | 20         | φ12                  | φ55                  | 15                   | 35             | 164.4       |
| H2BP 26L - B             | L                          | 2        | 26              | φ73.54             | φ77.5                | 20         | φ12                  | φ55                  | 15                   | 35             | 164.4       |





B1形状  
TYPE B1

| 各类转速下的齿面强度 (W) 容许传达能力表 (交叉轴) |       |        |        |        |        |        | 侧 隙         | 产 品 型 号<br>Catalogue Numbers     |
|------------------------------|-------|--------|--------|--------|--------|--------|-------------|----------------------------------|
| 10                           | 100   | 200    | 400    | 800    | 1,200  | 1,500  |             |                                  |
| 0.06                         | 0.51  | 1.03   | 2.05   | 3.29   | 3.70   | 4.62   | 0.06 ~ 0.12 | H1BP 10R - B<br>H1BP 10L - B     |
| 0.13                         | 1.23  | 2.47   | 4.11   | 6.57   | 8.63   | 9.24   | 0.06 ~ 0.12 | H1BP 13R - B<br>H1BP 13L - B     |
| 0.21                         | 1.95  | 3.70   | 6.16   | 9.86   | 12.32  | 13.86  | 0.06 ~ 0.12 | H1BP 15R - B<br>H1BP 15L - B     |
| 0.50                         | 4.62  | 8.42   | 14.38  | 22.18  | 27.11  | 29.27  | 0.06 ~ 0.12 | H1BP 20R - B<br>H1BP 20L - B     |
| 1.10                         | 9.86  | 17.46  | 28.75  | 42.72  | 50.52  | 53.91  | 0.06 ~ 0.12 | H1BP 26R - B<br>H1BP 26L - B     |
| 0.21                         | 1.95  | 3.70   | 6.16   | 9.86   | 12.32  | 13.86  | 0.09 ~ 0.18 | H1.5BP 10R - B<br>H1.5BP 10L - B |
| 0.46                         | 4.11  | 7.80   | 13.14  | 20.54  | 24.65  | 27.73  | 0.09 ~ 0.18 | H1.5BP 13R - B<br>H1.5BP 13L - B |
| 0.72                         | 6.47  | 11.71  | 19.72  | 29.58  | 35.74  | 38.51  | 0.09 ~ 0.18 | H1.5BP 15R - B<br>H1.5BP 15L - B |
| 1.69                         | 14.89 | 26.08  | 42.31  | 60.79  | 71.47  | 77.02  | 0.09 ~ 0.18 | H1.5BP 20R - B<br>H1.5BP 20L - B |
| 3.71                         | 31.42 | 53.81  | 83.39  | 115.01 | 130.62 | 138.63 | 0.09 ~ 0.18 | H1.5BP 26R - B<br>H1.5BP 26L - B |
| 0.50                         | 4.62  | 8.42   | 14.38  | 22.18  | 27.11  | 29.27  | 0.12 ~ 0.24 | H2BP 10R - B<br>H2BP 10L - B     |
| 1.10                         | 9.86  | 17.46  | 28.75  | 42.72  | 50.52  | 53.91  | 0.12 ~ 0.24 | H2BP 13R - B<br>H2BP 13L - B     |
| 1.69                         | 14.89 | 26.08  | 42.31  | 60.79  | 71.47  | 77.02  | 0.12 ~ 0.24 | H2BP 15R - B<br>H2BP 15L - B     |
| 4.00                         | 33.79 | 57.51  | 88.73  | 121.59 | 139.25 | 147.87 | 0.12 ~ 0.24 | H2BP 20R - B<br>H2BP 20L - B     |
| 8.74                         | 70.55 | 116.25 | 171.70 | 225.92 | 251.39 | 264.94 | 0.12 ~ 0.24 | H2BP 26R - B<br>H2BP 26L - B     |



单位：mm

| 精度②                   | 材料     | 压力角  | 螺旋角  | 热处理 | 齿面硬度 | 侧隙①  |
|-----------------------|--------|------|------|-----|------|------|
| JIS B 1702-1 9 ~ 10 级 | 青色 POM | 20 度 | 45 度 | —   | —    | 确认表格 |

本产品的容许传达动力表使用 LOUIS 公式。请在 P26 确认单位换算方法。

★安装方法和容许传达动力：用于交叉轴形式安装时，请确认容许传达动力表。此时齿面的接触为点接触。

①同一种材料，一样的齿轮相互啮合时的理想值。②制作时的控制精度。

★由于材料之特性，易产生由经年老化·热胀冷缩而引起的尺寸和精度的变化。

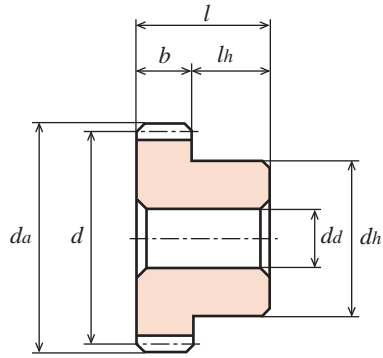
| 产品型号<br>Catalogue Number | 螺旋方向<br>Direction of Helix | 模数       | 齿数              | 分度圆直径              | 齿顶圆直径                | 齿宽         | 孔径                   | 轮毂外径                 | 轮毂长度                 | 全长             | 重量          |
|--------------------------|----------------------------|----------|-----------------|--------------------|----------------------|------------|----------------------|----------------------|----------------------|----------------|-------------|
|                          |                            | Module   | Number of Teeth | Reference Diameter | Tip Diameter         | Face Width | Bore Diameter        | Hub Diameter         | Hub Projection       | Overall Length | Weight      |
|                          |                            | <i>m</i> | <i>z</i>        | <i>d</i>           | <i>d<sub>a</sub></i> | <i>b</i>   | <i>d<sub>d</sub></i> | <i>d<sub>h</sub></i> | <i>l<sub>h</sub></i> | <i>l</i>       | <i>W(g)</i> |
| H2.5BP 10R — B           | R                          | 2.5      | 10              | φ 35.36            | φ 40.4               | 22         | φ10                  | φ26                  | 16                   | 38             | 38.2        |
| H2.5BP 10L — B           | L                          | 2.5      | 10              | φ 35.36            | φ 40.4               | 22         | φ10                  | φ26                  | 16                   | 38             | 38.2        |
| H2.5BP 13R — B           | R                          | 2.5      | 13              | φ 45.96            | φ 50.9               | 22         | φ12                  | φ38                  | 16                   | 38             | 71.0        |
| H2.5BP 13L — B           | L                          | 2.5      | 13              | φ 45.96            | φ 50.9               | 22         | φ12                  | φ38                  | 16                   | 38             | 71.0        |
| H2.5BP 15R — B           | R                          | 2.5      | 15              | φ 53.03            | φ 58.0               | 22         | φ12                  | φ40                  | 16                   | 38             | 90.8        |
| H2.5BP 15L — B           | L                          | 2.5      | 15              | φ 53.03            | φ 58.0               | 22         | φ12                  | φ40                  | 16                   | 38             | 90.8        |
| H2.5BP 20R — B           | R                          | 2.5      | 20              | φ 70.71            | φ 75.7               | 22         | φ12                  | φ60                  | 16                   | 38             | 179.5       |
| H2.5BP 20L — B           | L                          | 2.5      | 20              | φ 70.71            | φ 75.7               | 22         | φ12                  | φ60                  | 16                   | 38             | 179.5       |
| H2.5BP 26R — B           | R                          | 2.5      | 26              | φ 91.92            | φ 96.9               | 22         | φ16                  | φ70                  | 16                   | 38             | 281.9       |
| H2.5BP 26L — B           | L                          | 2.5      | 26              | φ 91.92            | φ 96.9               | 22         | φ16                  | φ70                  | 16                   | 38             | 281.9       |
| H3BP 10R — B             | R                          | 3        | 10              | φ 42.43            | φ 48.4               | 25         | φ12                  | φ34                  | 18                   | 43             | 66.0        |
| H3BP 10L — B             | L                          | 3        | 10              | φ 42.43            | φ 48.4               | 25         | φ12                  | φ34                  | 18                   | 43             | 66.0        |
| H3BP 13R — B             | R                          | 3        | 13              | φ 55.15            | φ 61.2               | 25         | φ15                  | φ45                  | 18                   | 43             | 113.8       |
| H3BP 13L — B             | L                          | 3        | 13              | φ 55.15            | φ 61.2               | 25         | φ15                  | φ45                  | 18                   | 43             | 113.8       |
| H3BP 15R — B             | R                          | 3        | 15              | φ 63.64            | φ 69.6               | 25         | φ15                  | φ50                  | 18                   | 43             | 151.2       |
| H3BP 15L — B             | L                          | 3        | 15              | φ 63.64            | φ 69.6               | 25         | φ15                  | φ50                  | 18                   | 43             | 151.2       |
| H3BP 20R — B             | R                          | 3        | 20              | φ 84.85            | φ 90.9               | 25         | φ15                  | φ60                  | 18                   | 43             | 260.3       |
| H3BP 20L — B             | L                          | 3        | 20              | φ 84.85            | φ 90.9               | 25         | φ15                  | φ60                  | 18                   | 43             | 260.3       |
| H3BP 26R — B             | R                          | 3        | 26              | φ110.31            | φ116.3               | 25         | φ18                  | φ80                  | 18                   | 43             | 449.0       |
| H3BP 26L — B             | L                          | 3        | 26              | φ110.31            | φ116.3               | 25         | φ18                  | φ80                  | 18                   | 43             | 449.0       |

青色 POM 系列材料，符合以下管理规定，或由材料厂家发表了自我宣言。

| 用途<br>Uses              | 各国的管理规定<br>Regulations   |
|-------------------------|--|
| 食品接触用途<br>Food contact  | NO.10/2011(EU),FDA(美国), NSF 51 (美国), 3A-DAIRY (美国;乳制品), Health Canada (加拿大), JHOSPA Positive List, 日本厚生省告示第 370 号<br>NO.10/2011 (EU), FDA (USA), NSF 51 (USA), 3A-DAIRY (USA; Dairy product), Health Canada (CANADA), JHOSPA Positive List, MHLW Notification No.370 (JAPAN) |
| 饮用水用途<br>Drinking water | NSF61 (美国), KTW W270 (德国), WRAS (英国), ACS (法国)<br>NSF 61 (USA), KTW W270 (GERMANY), WRAS (UK), ACS (FRANCE)  |

请注意

- 不得用于酒精浓度超过 15% 的食品。
- 关于使用本产品时的安全性，请用本产品组装最终机构后，要在此机构的实际运作环境下确认安全后，再继续使用。
- 青色 POM 齿轮系列，是在有可能受到切削液影响的环境下制作的。



B1形状  
TYPE B1

| 各类转速下的齿面强度 (W) 容许传达能力表 (交叉轴) |        |        |        |        |        |        | 侧 隙         | 产 品 型 号<br>Catalogue Numbers     |
|------------------------------|--------|--------|--------|--------|--------|--------|-------------|----------------------------------|
| 10                           | 100    | 200    | 400    | 800    | 1,200  | 1,500  |             |                                  |
| 0.98                         | 8.73   | 15.81  | 25.88  | 38.61  | 45.60  | 49.29  | 0.15 ~ 0.3  | H2.5BP 10R - B<br>H2.5BP 10L - B |
| 2.15                         | 18.69  | 32.66  | 52.17  | 73.94  | 86.26  | 92.42  | 0.15 ~ 0.3  | H2.5BP 13R - B<br>H2.5BP 13L - B |
| 3.30                         | 28.14  | 48.27  | 75.17  | 104.33 | 119.53 | 127.85 | 0.15 ~ 0.3  | H2.5BP 15R - B<br>H2.5BP 15L - B |
| 7.77                         | 63.26  | 104.74 | 155.68 | 206.20 | 230.44 | 241.84 | 0.15 ~ 0.3  | H2.5BP 20R - B<br>H2.5BP 20L - B |
| 16.96                        | 130.83 | 208.67 | 296.98 | 376.26 | 414.05 | 429.76 | 0.15 ~ 0.3  | H2.5BP 26R - B<br>H2.5BP 26L - B |
| 1.69                         | 14.89  | 26.08  | 42.31  | 60.79  | 71.47  | 77.02  | 0.18 ~ 0.36 | H3BP 10R - B<br>H3BP 10L - B     |
| 3.71                         | 31.42  | 53.81  | 83.39  | 115.01 | 130.62 | 138.63 | 0.18 ~ 0.36 | H3BP 13R - B<br>H3BP 13L - B     |
| 5.68                         | 47.03  | 79.07  | 119.53 | 161.02 | 182.38 | 192.55 | 0.18 ~ 0.36 | H3BP 15R - B<br>H3BP 15L - B     |
| 13.37                        | 104.95 | 169.44 | 244.40 | 313.82 | 346.27 | 361.98 | 0.18 ~ 0.36 | H3BP 20R - B<br>H3BP 20L - B     |
| 29.12                        | 215.24 | 333.54 | 460.05 | 567.67 | 616.14 | 637.71 | 0.18 ~ 0.36 | H3BP 26R - B<br>H3BP 26L - B     |

# Memo

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# 等径锥齿轮 / 锥齿轮

## Miter Gears and Bevel Gears

### 产品型号的解读方法 Reference of Catalogue Number

#### 等径锥齿轮 / 锥齿轮

**M 1 D 25 \* 23 06**  
**M 1 S 20 = 14 08**  
**M 1.5 S 20 # 28 10 H**  
**M 1 S 20 R + 21 08**  
**B 2 S 18 L - 10**

| 齿轮的种类<br>Kind of Gear                        | 模数<br>Module  | 材料<br>Materials   | 齿数<br>Number of Teeth  | 齿向形状<br>Shape of Teeth   | 内径处理<br>Bores Processed  | 中心距<br>Locating Distance           | 孔径<br>Bore Diameter                | 齿部热处理<br>Heat Treatment                                      |
|--|---|---|--|--|--|------------------------------------|------------------------------------|--|
| 等径锥齿轮<br>(Miter Gear)<br>锥齿轮<br>(Bevel Gear) | m : 0.5 0.8 1.0<br>1.25 1.5 2.0<br>2.5 3.0 4.0<br>5.0 2.25<br>2.75 3.5<br>3.75 4.5 6.0<br>7.0<br>表示模数大小。当模数1以下时，所标数据是实际模数乘以100。<br>例：模数0.5时为50。<br>模数0.8时为80。<br>Expressed the unit of module's size.<br>Module 0.5 and 0.8 as multiple of 100.<br>Example.<br>module 0.5 → 50<br>module 0.8 → 80 | DM : 聚缩醛树脂<br>(注射模塑成形产品)<br>Injection molded gear with Poly Acetal<br>D : 聚缩醛树脂<br>(加工成形产品)<br>Machined gear with Poly Acetal<br>SU : 不锈钢<br>Stainless Steel<br>B : 黄铜<br>Brass<br>S : 碳素钢<br>Carbon Steel<br>DB : 聚缩醛树脂<br>(镶有黄铜衬套)<br>Poly Acetal with Brass Bush | z : 19 20 23<br>25 30<br>u Ratio 2<br>(z : 20 40)<br>(z : 18 36)<br>u Ratio 3<br>(z : 15 45) | 无 : 直齿<br>Blank : Straight.<br>R : 右螺旋齿<br>Right hand spiral.<br>L : 左螺旋齿<br>Left hand spiral. | 标号[-]表示齿轮<br>无螺纹孔/无固定螺钉<br>Gear without key way / without threaded hole.<br>标号[+]表示齿轮<br>带有螺纹孔/带有固定螺钉/无固定螺钉<br>Gear with threaded hole / with set screw. with out set screw.<br>(Please refer the detail)<br>标号[*]表示齿轮<br>带有两个螺纹孔/带有固定螺钉<br>Gear with two threaded holes / with two set screws.<br>标号[=]表示齿轮<br>带有键槽/带有键<br>Gear with key way / with key.<br>标号[#]表示齿轮<br>带有键槽/带有键，带有螺纹孔/带有固定螺钉<br>Gear with key way and threaded hole / with key and screw. | 单位 : mm<br>Dimensions : Millimeter | 单位 : mm<br>Dimensions : Millimeter | 齿部高频淬火<br>Gear tooth surface completed with induction harden |

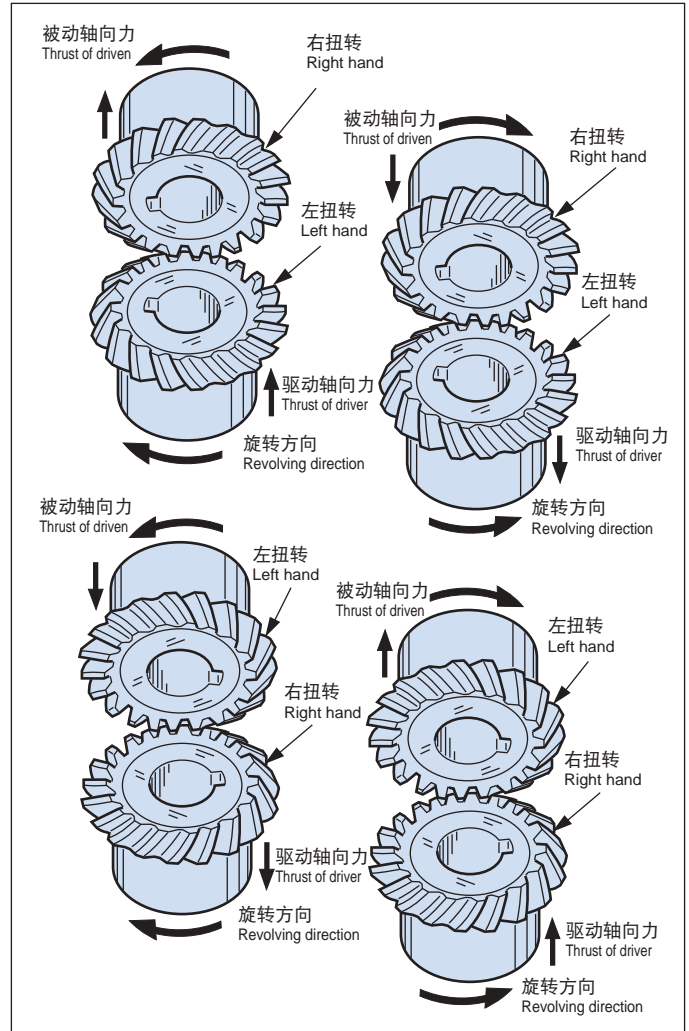
|                     | 齿数比<br>Ratio | 导程角<br>Pitch Angle    | 轴角<br>Shaft Angle  |
|---------------------|--------------|-----------------------|--------------------|
| 等径锥齿轮<br>Miter gear | 1 : 1        | 45°                   | 90°                |
| 锥齿轮<br>Bevel gear   | 1 : 2        | 小齿轮<br>Pinion<br>Gear | 26° 34'<br>63° 26' |
|                     | 1 : 3        | 小齿轮<br>Pinion<br>Gear | 18° 26'<br>71° 34' |

### 锥齿轮的使用上的注意事项

#### Usage precaution of bevel Gears.

- 1) 为了得到理想的啮合，组装锥齿轮时，齿轮轴的装配角度要准确，齿隙也必须恰当。
- 2) 锥齿轮要特别注意其装配方法。通常，锥齿轮的轴承是悬臂式布置。轴受到负荷后会容易出现挠曲的现象。所以齿面接触会出现一端接触的不良反应。所以齿轮轴和轴承要做的足够坚固，并尽量接近齿轮。组装的时候要使锥齿轮可进行轴向调整，然后在齿轮的轮毂端面放入齿轮垫片，这样就可以比较容易的调整轮齿接触。
- 3) 用机器切割的普通直齿锥齿轮的分度圆的旋转速度是328m/分钟的程度以内。如果超过这个旋转速度时，推崇使用螺旋锥齿轮。格里森 (Gleason) 公司推崇的是，分度圆旋转速度在5.5m/秒以上或旋转数为1000回/分的时候用螺旋锥齿轮，旋转速度在40m/秒以上的时候使用齿面研磨的螺旋锥齿轮。
- 4) 螺旋锥齿轮相比普通的直齿锥齿轮在啮合时同时啮合的齿数较多。并始终有复数个齿在分度线上接触。所以旋转的传达会比较流畅。另外，齿和齿的啮合线，相对于节锥母线有较多的齿数在啮合，所以负荷不会在一个齿上集中，非常的结实，所以可以设计的更小，并有可适用于高速旋转的优点。作为缺点，因为齿线弯曲，所以容易发生轴向力。所以要设计足够能够承担轴向力的轴承。

作用于螺旋锥齿轮的轴向力  
Generate a thrust load on Spiral gear.



- 1) To obtain ideal engagement of the bevel gears, the correct shaft angle and proper backlash should be obtained to assemble in an assembly.
- 2) Important note that when designing of Bevel Gears, the gear shaft and gearbox must be strong enough to support the Bevel Gear in order to prevent any deflection. Bearing should be

designed as close as possible to the Bevel Gear in order to prevent the overhang load.

- 3) We recommend that Straight Bevel Gears are suitable for peripheral (pitch circle) of velocities less than 328m/min and Spiral Bevel Gears are suitable for peripheral (pitch circle) of velocities more than 328m/min. The above mention statement does not apply to Injection Molded type of Bevel Gears. Gleason Company in USA recommend that Machined Spiral Bevel Gears are suitable for peripheral (pitch circle) of velocities more than 5.5m/s or above 1,000 revolution per minute, and Ground Spiral Bevel Gears are suitable for peripheral (pitch circle) of velocities more than 40m/s.
- 4) Spiral Bevel Gears are able to run smoothly in high speed environment and providing a quiet operation, due to fewer number of teeth contacting the matched gear and wide working number of teeth on the pitch cone comparing to Straight Bevel Gear. Spiral Bevel Gear has overlapping engagement in pitch cone generatrix and the load does not concentrate on one (1) tooth. The only disadvantage of a Spiral Bevel Gear is the axial thrust load that was generated due to the Helix design of the teeth trace. Therefore proper design of the bearing location and firm support are needed to be as close to the Spiral Bevel Gear as possible in order to minimize this axial thrust load.

如果所使用的相配套齿轮非我司生产产品时，容易成为发生故障的原因。

如果把配套齿轮设计成为KG公司的齿轮以外的规格时，请与我司联系洽谈。

To prevent the trouble of gear's engagement, please do not match the gears with other gear makers. Purchase of KG-STOCK GEARS in a set will result in better and smoother engagement.

Please do not hesitate to contact us for advice even though if your design and dimensions does not belong to KG-STOCK GEARS.

# KG SCM 精铣等径螺旋锥齿轮的特点

## KG Gear - Information

### SCM 精铣等径螺旋锥齿轮的特点

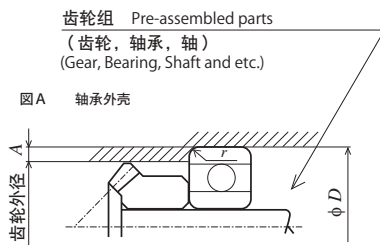
#### Features of Fine Cut Spiral Miter Gears

非常适合于小空间设计和降低成本的理想高精度等径锥齿轮。  
Fine Cut Spiral Spiral Miter Gears are suitable for compact design and cost reductions

- 加工到 JIS B 1704 2 级精度以上。  
齿部没有进行研磨，而通过热处理后的精铣提高了精度。相对于同等精度的研磨品有望实现更好的性价比。
- Precision spiral miter gears with system of accuracy JIS B 1704 class 2 and above. This spiral miter gears offer competitive price compared with ground-finished JIS class2 spiral miter gears.
- 为了实现适合于小空间的设计，采用 19 齿和 23 齿的齿数。  
设计时同时考虑到了轴承和油封的规格。所以比起一般的 20 齿或 25 齿的螺旋锥齿轮，可以在轴承尺寸等方面实现小型化。详细请确认以下内容。
- Number of teeth is 19 and 23 which is suitable for compact design  
We designed this spiral miter gears in consideration for standard sizes of bearings and oil seals. Therefore, you can make your design around gears like bearings smaller compared with general spiral miter gears of number of teeth 20 and 25.  
For more details, please refer to the followings.

#### 【详细说明】

齿轮箱的装配中，经常看到将预选安装好的齿轮组（齿轮，轴承，轴等）通过齿轮箱的外壳的孔来组装。所以，如图 A，齿轮的外径一定要小于轴承和油封。  
In the assembly of gearboxes, usually for the pre-assembled parts (gears, bearing and shafts, etc) are mounted through the hole in the housing of the gearbox then the gear meshed with mating. Therefore, as shown on figure A, Tip diameter of gears must be smaller than outside diameter of bearings and oil seals.



各部分尺寸的条件。 Requirement of gear dimensions  
(齿轮外径) ≧ (基准圆直径) (Tip diameter of gears) ≧ (Reference diameter of gears)  
 $A = (1 + r) \text{ mm}$  以上  $A = (1 + r) \text{ mm}$  and above  
(轴承直径  $\phi D$ ) ≧ 齿轮外径 + (2 × A) (Diameter of bearings  $\phi D$ ) ≧ (Tip diameter of gears) + (2 × A)

根据以上条件在下面的表格中提示了齿数 19 齿和 20 齿时的轴承和油封的规格之有无。  
The following table presents comparison of standard sizes of bearings and oil seals for number of teeth 19 and 20 for spiral miter gears.  
Note: The content of this table is for reference only.

表格 齿轮外径和轴承径，油封径  
Table: Tip diameter of gears and outside diameters of bearings and oil seals

| m   | 齿数 | 齿轮外径        | 轴径        | 轴承直径      |     | 油封直径      | m   | 齿数 | 齿轮外径        | 轴径        | 轴承直径      |     | 油封直径      |
|-----|----|-------------|-----------|-----------|-----|-----------|-----|----|-------------|-----------|-----------|-----|-----------|
|     |    |             |           | $\phi D$  | r   |           |     |    |             |           | $\phi D$  | r   |           |
| 1.5 | 19 | $\phi 28.5$ | $\phi 12$ | $\phi 32$ | 0.6 | $\phi 32$ | 2.5 | 19 | $\phi 47.5$ | $\phi 20$ | $\phi 52$ | 1.1 | —         |
|     |    |             | $\phi 15$ | $\phi 32$ | 0.3 | $\phi 32$ |     |    |             | $\phi 25$ | $\phi 52$ | 1.0 | $\phi 52$ |
|     | 20 | $\phi 30.0$ | $\phi 12$ | $\phi 37$ | 1.0 | —         |     | 20 | $\phi 50.0$ | $\phi 20$ | —         | —   | —         |
|     |    |             | $\phi 15$ | $\phi 35$ | 0.6 | $\phi 35$ |     |    |             | $\phi 25$ | $\phi 62$ | 1.1 | —         |
| 2.0 | 19 | $\phi 38.0$ | $\phi 15$ | $\phi 42$ | 1.0 | —         | 3.0 | 19 | $\phi 57.0$ | $\phi 25$ | $\phi 62$ | 1.1 | —         |
|     |    |             | $\phi 20$ | $\phi 42$ | 0.6 | $\phi 42$ |     |    |             | $\phi 28$ | $\phi 68$ | 1.1 | —         |
|     | 20 | $\phi 40.0$ | $\phi 15$ | —         | —   | —         |     | 20 | $\phi 60.0$ | $\phi 25$ | —         | —   | —         |
|     |    |             | $\phi 20$ | $\phi 47$ | 1.0 | $\phi 47$ |     |    |             | $\phi 28$ | $\phi 68$ | 1.1 | —         |

齿轮外径采用了以 P.C.D 相近的尺寸进行倒角后的数据。  
Tip diameter of gear has been machined flat at nearby P.C.D.

尺寸请确认 SCM 精铣等径螺旋锥齿轮的目录。  
Please refer to dimensional table from next page.

# KG 研磨螺旋锥齿轮的特点

## KG Gear - Information

### KG 研磨螺旋锥齿轮的特点

#### Feature of GROUND SPIRAL BEVEL GEARS

加工精度为 JIS B 1704 1 级以上的高精度螺旋锥齿轮。  
High precision spiral bevel gears with system of accuracy JIS B 1704 class 1 and above.

- 高精度的齿轮规格  
齿精度为，齿面研磨加工的 JIS B 1704 1 级。  
可选模数型号为  $m = 1.5, 2.0, 2.5, 3.0$ 。  
可选齿数比为： $u = 1 : 1, 1 : 1.5, 1 : 2, 1 : 3$  ( $m = 3.0$  只有  $u = 1 : 1$ )  
侧隙量可设定在  $30 \mu m$  以内。
- High precision Spiral Miter and Bevel Gears  
Size of module is available from 1.5 to 3.0.  
Available ratio are  $u = 1:1, 1.5:1, 2:1$  and  $3:1$  (Gears of module 3.0 is  $u = 1:1$  only).  
Amount of backlash can be set  $30 \mu m$  and below
- 适合于高速运转  
· 与只进行滚齿加工的产品相比可用于高速旋转，同时静音性能卓越。  
· Suitable for high speed operation  
Suitable for high revolution, less oscillation and low noise usage compared with cutting finished products.
- 高强度规格  
· 齿部高频淬火后，进行了齿部的研磨加工，实现的高精度。因此，与滚齿产品相比弯曲强度和齿面强度提高了 20% 以上。  
· High strength gears  
After hardening of the tooth part, the tooth part is ground and finished with high precision. Therefore, the bending strength and the tooth surface durability are improved by 20% or more compared with cutting-finished products.
- 高精度的追加工  
· 我们重视客户进行追加工精度的可维持性和可加工性，对轮毂的外圈和齿顶圆进行了研磨加工。（对齿顶圆的倒角，是对轴心是平行的，所以可以实现精度良好的卡盘卡紧。）  
追加工时的注意事项，请确认参考图以及，KG 综合目录的「追加工的注意事项」  
· For precise modification  
· We place importance on maintaining accuracy at the time of additional work by the customer and process-ability, and the Hub diameter and the Tip diameter are ground. Please refer to page-16 for notes on additional processing

(注意事项)

请避免与滚齿品或其它产品相互啮合，配对齿轮请使用 KG 公司的研磨齿轮系列。  
运转时的润滑，请根据实际的旋转速度和负荷选择适合的润滑油或润滑脂。

Note:

Please avoid meshing with other product' s series, or use with other company' s products.

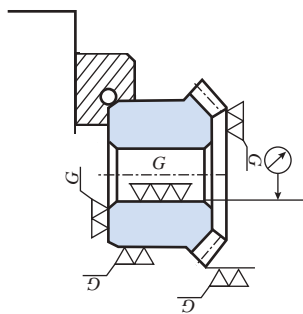
For lubrication of the gears, please use appropriate oil or grease base on the rpm and torque.

参考图 高精度的追加工

※ 请使用软爪三爪卡盘卡紧，然后将商品的齿面的跳动尽量接近于 0。（目标为 0.003 以内）

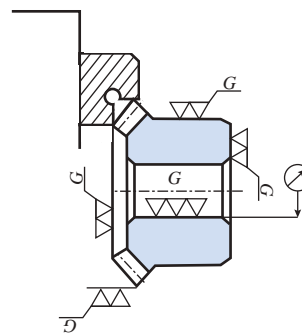
Figure B

We recommend the use of three-jaw chuck (scroll chuck) that is not surface hardened for centering of the gear. In order to maintain the quality of performance after the additional machining, the run-out tolerance of the gear to the chuck should be 0-0.003mm.



为了进行高精度的追加工，对轮毂外圈以及轮毂侧面进行了研磨。

The drawing above is highly recommended to follow, in order to obtain the centering easier because the gear has been ground



为了进行高精度的追加工，对齿顶圆以及齿的侧面进行了研磨。

The drawing above is highly recommended to follow, in order to obtain the centering easier because the gear has been ground



# Memo

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锥齿  
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蜗轮蜗杆  
WORMS AND WORM WHEELS

技术数据  
REFERENCE DATA



单位：mm

| 精度            | 材料     | 压力角 | 螺旋角 | 热处理    | 齿面硬度       | 侧隙①  |
|---------------|--------|-----|-----|--------|------------|------|
| JIS B 1704 1级 | SCM440 | 20度 | 35度 | 齿面高频淬火 | HRC52 ~ 60 | 确认表格 |

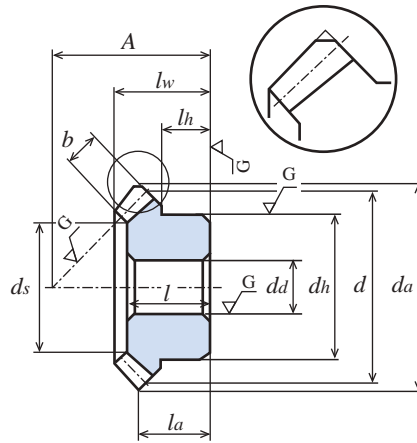
★未做表面处理。容许传达动力表的数据是以 L 方向螺旋的齿轮做输入齿轮，为条件。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★齿顶圆直径 da( ) 内的数据为理论值。实际尺寸为在这个数据基础上，对轴心的平行方向进行倒角后的数据。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数比<br>Ratio<br><i>u</i> | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 齿顶圆直径<br>Tip Diameter<br><i>da</i> | 装配距离<br>Locating Distance<br><i>A</i> | 孔径<br>Bore Diameter<br><i>da(H7)</i> | 轮毂外径<br>Hub Diameter<br><i>dh</i> | 轮毂长度<br>Hub Projection<br><i>lh</i> | 穴长度<br>Bore Length<br><i>l</i> | 全长<br>Overall Length<br><i>lw</i> | Tip Distance<br><i>la</i> | 齿宽<br>Face Width<br><i>b</i> | 顶锥角<br>Face Angle<br><i>δa</i> | 沉头部直径<br>(参考值)<br>Counter bore<br><i>ds</i> | 重量<br>Weight<br><i>W(g)</i> |
|--------------------------|--------------------------|-----------------------------------|---|------------------------------------|---------------------------------------|--------------------------------------|-----------------------------------|-------------------------------------|--------------------------------|-----------------------------------|---------------------------|------------------------------|--------------------------------|---|-----------------------------|
| MG1.5S 20R-3008H         | 1                        | 20                                | φ30                                     | <sup>(φ31.92)</sup><br>φ30.5       | 30                                    | φ8                                   | φ26                               | 13                                  | 19                             | 21.11                             | 15.96                     | 8                            | 50°08'                         | φ15.37                                      | 74.4                        |
| MG1.5S 20L-3008H         |                          | 20                                | φ30                                     | <sup>(φ31.92)</sup><br>φ30.5       | 30                                    | φ8                                   | φ26                               | 13                                  | 19                             | 21.11                             | 15.96                     | 8                            | 50°08'                         | φ15.37                                      | 74.4                        |
| MG1.5S 25R-3410H         |                          | 25                                | φ37.5                                   | <sup>(φ39.43)</sup><br>φ38         | 34                                    | φ10                                  | φ32                               | 12.5                                | 19                             | 22.1                              | 16.21                     | 9                            | 49°18'                         | φ19.54                                      | 118.2                       |
| MG1.5S 25L-3410H         |                          | 25                                | φ37.5                                   | <sup>(φ39.43)</sup><br>φ38         | 34                                    | φ10                                  | φ32                               | 12.5                                | 19                             | 22.1                              | 16.21                     | 9                            | 49°18'                         | φ19.54                                      | 118.2                       |
| MG1.5S 30R-4310H         |                          | 30                                | φ45                                     | <sup>(φ46.81)</sup><br>φ45.2       | 43                                    | φ10                                  | φ40                               | 18                                  | 25                             | 28.13                             | 21.41                     | 10                           | 47°48'                         | φ25.72                                      | 240.6                       |
| MG1.5S 30L-4310H         |                          | 30                                | φ45                                     | <sup>(φ46.81)</sup><br>φ45.2       | 43                                    | φ10                                  | φ40                               | 18                                  | 25                             | 28.13                             | 21.41                     | 10                           | 47°48'                         | φ25.72                                      | 240.6                       |
| MG2S 20R-3712H           |                          | 20                                | φ40                                     | <sup>(φ42.53)</sup><br>φ41         | 37                                    | φ12                                  | φ35                               | 14.5                                | 22                             | 24.71                             | 18.27                     | 10                           | 50°04'                         | φ21.72                                      | 152.3                       |
| MG2S 20L-3712H           |                          | 20                                | φ40                                     | <sup>(φ42.53)</sup><br>φ41         | 37                                    | φ12                                  | φ35                               | 14.5                                | 22                             | 24.71                             | 18.27                     | 10                           | 50°04'                         | φ21.72                                      | 152.3                       |
| MG2S 25R-4012H           |                          | 25                                | φ50                                     | <sup>(φ52.58)</sup><br>φ51         | 40                                    | φ12                                  | φ44                               | 12                                  | 20                             | 24.12                             | 16.29                     | 12                           | 49°25'                         | φ26.06                                      | 238.4                       |
| MG2S 25L-4012H           |                          | 25                                | φ50                                     | <sup>(φ52.58)</sup><br>φ51         | 40                                    | φ12                                  | φ44                               | 12                                  | 20                             | 24.12                             | 16.29                     | 12                           | 49°25'                         | φ26.06                                      | 238.4                       |
| MG2S 30R-5012H           |                          | 30                                | φ60                                     | <sup>(φ62.41)</sup><br>φ60.8       | 50                                    | φ12                                  | φ52                               | 16                                  | 25                             | 29.12                             | 21.21                     | 12                           | 47°52'                         | φ36.06                                      | 427.8                       |
| MG2S 30L-5012H           |                          | 30                                | φ60                                     | <sup>(φ62.41)</sup><br>φ60.8       | 50                                    | φ12                                  | φ52                               | 16                                  | 25                             | 29.12                             | 21.21                     | 12                           | 47°52'                         | φ36.06                                      | 427.8                       |
| MG2.5S 20R-4814H         |                          | 20                                | φ50                                     | <sup>(φ53.22)</sup><br>φ51.5       | 48                                    | φ14                                  | φ44                               | 20                                  | 29                             | 32.28                             | 24.61                     | 12                           | 50°32'                         | φ28.06                                      | 321.2                       |
| MG2.5S 20L-4814H         |                          | 20                                | φ50                                     | <sup>(φ53.22)</sup><br>φ51.5       | 48                                    | φ14                                  | φ44                               | 20                                  | 29                             | 32.28                             | 24.61                     | 12                           | 50°32'                         | φ28.06                                      | 321.2                       |
| MG2.5S 25R-5016H         |                          | 25                                | φ62.5                                   | <sup>(φ65.61)</sup><br>φ64         | 50                                    | φ16                                  | φ54                               | 14.5                                | 26                             | 30.21                             | 20.31                     | 15                           | 48°49'                         | φ34.57                                      | 456.8                       |
| MG2.5S 25L-5016H         |                          | 25                                | φ62.5                                   | <sup>(φ65.61)</sup><br>φ64         | 50                                    | φ16                                  | φ54                               | 14.5                                | 26                             | 30.21                             | 20.31                     | 15                           | 48°49'                         | φ34.57                                      | 456.8                       |
| MG2.5S 30R-6216H         |                          | 30                                | φ75                                     | <sup>(φ78.03)</sup><br>φ76.5       | 62                                    | φ16                                  | φ66                               | 20                                  | 32                             | 36.08                             | 26.01                     | 15                           | 47°56'                         | φ47.57                                      | 848.3                       |
| MG2.5S 30L-6216H         |                          | 30                                | φ75                                     | <sup>(φ78.03)</sup><br>φ76.5       | 62                                    | φ16                                  | φ66                               | 20                                  | 32                             | 36.08                             | 26.01                     | 15                           | 47°56'                         | φ47.57                                      | 848.3                       |
| MG3S 20R-5816H           | 20                       | φ60                               | <sup>(φ63.8)</sup><br>φ62               | 58                                 | φ16                                   | φ52                                  | 24                                | 35                                  | 39.57                          | 29.9                              | 15                        | 50°04'                       | φ31.57                         | 556.1                                       |                             |
| MG3S 20L-5816H           | 20                       | φ60                               | <sup>(φ63.8)</sup><br>φ62               | 58                                 | φ16                                   | φ52                                  | 24                                | 35                                  | 39.57                          | 29.9                              | 15                        | 50°04'                       | φ31.57                         | 556.1                                       |                             |



| 各旋转速度下的容许传达动力表 (kW) 弯曲强度 |      |      |       |       |       |       |       |       |      | 各旋转速度下的容许传达动力表 (kW) 齿面强度 |      |       |       |       |       |       |       | 侧隙          | 产品型号<br>Catalogue Number             |
|--------------------------|------|------|-------|-------|-------|-------|-------|-------|------|--------------------------|------|-------|-------|-------|-------|-------|-------|-------------|--------------------------------------|
| 250                      | 500  | 800  | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 4,000 | 250  | 500                      | 800  | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 4,000 |             |                                      |
| 0.15                     | 0.31 | 0.48 | 0.59  | 0.86  | 1.11  | 1.36  | 1.61  | 2.09  | 0.08 | 0.17                     | 0.27 | 0.33  | 0.49  | 0.64  | 0.79  | 0.94  | 1.24  | 0.03 ~ 0.06 | MG1.5S 20R-3008H<br>MG1.5S 20L-3008H |
| 0.23                     | 0.47 | 0.72 | 0.89  | 1.27  | 1.66  | 2.03  | 2.40  | 3.11  | 0.15 | 0.32                     | 0.50 | 0.62  | 0.91  | 1.20  | 1.48  | 1.76  | 2.32  | 0.03 ~ 0.06 | MG1.5S 25R-3410H<br>MG1.5S 25L-3410H |
| 0.33                     | 0.65 | 1.01 | 1.23  | 1.77  | 2.30  | 2.83  | 3.33  | 4.26  | 0.26 | 0.53                     | 0.84 | 1.04  | 1.52  | 2.00  | 2.48  | 2.95  | 3.82  | 0.03 ~ 0.06 | MG1.5S 30R-4310H<br>MG1.5S 30L-4310H |
| 0.35                     | 0.69 | 1.07 | 1.31  | 1.88  | 2.45  | 3.00  | 3.55  | 4.58  | 0.19 | 0.39                     | 0.61 | 0.76  | 1.11  | 1.46  | 1.80  | 2.15  | 2.81  | 0.04 ~ 0.08 | MG2S 20R-3712H<br>MG2S 20L-3712H     |
| 0.55                     | 1.08 | 1.66 | 2.03  | 2.93  | 3.80  | 4.66  | 5.49  | 6.95  | 0.37 | 0.76                     | 1.19 | 1.47  | 2.16  | 2.84  | 3.51  | 4.17  | 5.35  | 0.04 ~ 0.08 | MG2S 25R-4012H<br>MG2S 25L-4012H     |
| 0.72                     | 1.41 | 2.16 | 2.63  | 3.80  | 4.95  | 6.05  | 7.04  | 8.79  | 0.59 | 1.19                     | 1.86 | 2.29  | 3.37  | 4.44  | 5.49  | 6.43  | 8.13  | 0.04 ~ 0.08 | MG2S 30R-5012H<br>MG2S 30L-5012H     |
| 0.66                     | 1.29 | 1.99 | 2.43  | 3.50  | 4.55  | 5.58  | 6.57  | 8.32  | 0.37 | 0.74                     | 1.17 | 1.44  | 2.12  | 2.78  | 3.44  | 4.09  | 5.24  | 0.05 ~ 0.1  | MG2.5S 20R-4814H<br>MG2.5S 20L-4814H |
| 1.07                     | 2.07 | 3.16 | 3.86  | 5.58  | 7.26  | 8.86  | 10.28 | -     | 0.74 | 1.49                     | 2.32 | 2.86  | 4.21  | 5.55  | 6.83  | 7.99  | -     | 0.05 ~ 0.1  | MG2.5S 25R-5016H<br>MG2.5S 25L-5016H |
| 1.41                     | 2.69 | 4.09 | 5.02  | 7.27  | 9.43  | 11.33 | 13.08 | -     | 1.18 | 2.33                     | 3.61 | 4.48  | 6.59  | 8.66  | 10.51 | 12.23 | -     | 0.05 ~ 0.1  | MG2.5S 30R-6216H<br>MG2.5S 30L-6216H |
| 1.16                     | 2.25 | 3.44 | 4.19  | 6.07  | 7.90  | 9.66  | 11.23 | 14.03 | 0.66 | 1.32                     | 2.06 | 2.53  | 3.74  | 4.92  | 6.08  | 7.13  | 9.01  | 0.06 ~ 0.12 | MG3S 20R-5816H<br>MG3S 20L-5816H     |



- 对齿面进行滚齿→热处理→再滚齿（目的是提高齿面精度）处理的经济型产品。
- 容许传达动力的扭矩是相同规格的研磨螺旋锥齿轮的 60%。
- 本系列齿轮，不是研磨螺旋锥齿轮。

单位：mm

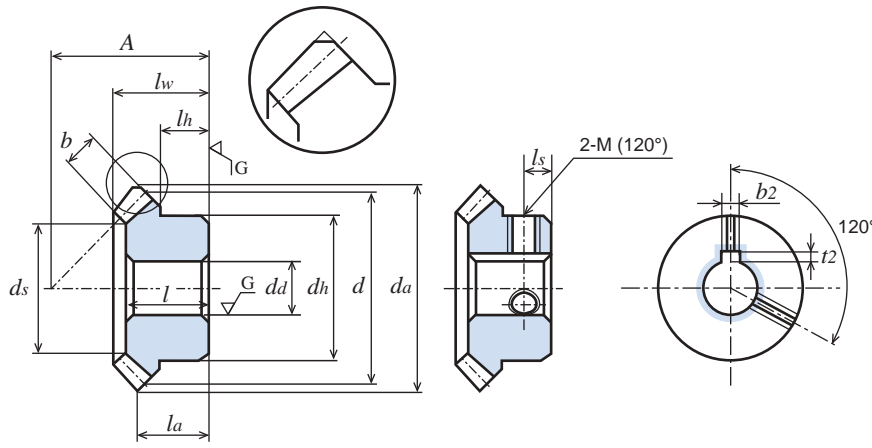
| 精度             | 材料           | 压力角  | 螺旋角  | 热处理    | 齿面硬度       | 侧隙①  |
|----------------|--------------|------|------|--------|------------|------|
| JIS B 1704 2 级 | SCM435 · 440 | 20 度 | 35 度 | 齿面高频淬火 | HRC47 ~ 51 | 确认表格 |

★未做表面处理。容许传达动力表的数据是以 L 方向螺旋的齿轮做输入齿轮，为条件。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★【#】表示带有键槽和键，带有螺纹孔和固定螺钉。①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数比<br>Ratio<br>u | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da  | 装 配 孔 径<br>Locating Distance<br>A | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 穴长度<br>Bore Length<br>l | 全长<br>Overall Length<br>lw | Tip Distance<br>la | 齿 宽<br>Face Width<br>b | 键 槽<br>Key Way<br>b2 × t2 | 螺 纹 孔<br>Set Screw |        | 顶锥角<br>Face Angle<br>δa | 沉头部直径<br>(参考值)<br>Counter bore<br>ds | 重 量<br>Weight<br>W(g) |
|--------------------------|-------------------|----------------------------|----------------------------------|------------------------------|-----------------------------------|-------------------------------|----------------------------|------------------------------|-------------------------|----------------------------|--------------------|------------------------|---------------------------|--------------------|--------|-------------------------|--------------------------------------|-----------------------|
|                          |                   |                            |                                  |                              |                                   |                               |                            |                              |                         |                            |                    |                        |                           | M                  | ls     |                         |                                      |                       |
| MF1.5S 19R - 2810H       | 1                 | 19                         | φ28.5                            | <sup>(φ30.34)</sup><br>φ28.5 | 28                                | φ10                           | φ25                        | 12                           | 16                      | 18.19                      | 14.67              | 5.5                    | -                         | -                  | -      | 50°23'                  | φ17.4                                | 54.7                  |
| MF1.5S 19L - 2810H       |                   | 19                         | φ28.5                            | <sup>(φ30.34)</sup><br>φ28.5 | 28                                | φ10                           | φ25                        | 12                           | 16                      | 18.19                      | 14.67              | 5.5                    | -                         | -                  | -      | 50°23'                  | φ17.4                                | 54.7                  |
| MF1.5S 19R # 2812H       |                   | 19                         | φ28.5                            | <sup>(φ30.34)</sup><br>φ28.5 | 28                                | φ12                           | φ25                        | 12                           | 16                      | 18.19                      | 14.67              | 5.5                    | 4 × 1.8                   | 2-M4               | 6      | 50°23'                  | φ17.4                                | 49.1                  |
| MF1.5S 19L # 2812H       |                   | 19                         | φ28.5                            | <sup>(φ30.34)</sup><br>φ28.5 | 28                                | φ12                           | φ25                        | 12                           | 16                      | 18.19                      | 14.67              | 5.5                    | 4 × 1.8                   | 2-M4               | 6      | 50°23'                  | φ17.4                                | 49.1                  |
| MF1.5S 23R - 3212H       |                   | 23                         | φ34.5                            | <sup>(φ36.33)</sup><br>φ34.5 | 32                                | φ12                           | φ30                        | 12.5                         | 18                      | 19.91                      | 15.67              | 6.5                    | -                         | -                  | -      | 49°22'                  | φ22.6                                | 88.1                  |
| MF1.5S 23L - 3212H       |                   | 23                         | φ34.5                            | <sup>(φ36.33)</sup><br>φ34.5 | 32                                | φ12                           | φ30                        | 12.5                         | 18                      | 19.91                      | 15.67              | 6.5                    | -                         | -                  | -      | 49°22'                  | φ22.6                                | 88.1                  |
| MF1.5S 23R # 3215H       |                   | 23                         | φ34.5                            | <sup>(φ36.33)</sup><br>φ34.5 | 32                                | φ15                           | φ30                        | 12.5                         | 18                      | 19.91                      | 15.67              | 6.5                    | 5 × 2.3                   | 2-M5               | 8      | 49°22'                  | φ22.6                                | 77.1                  |
| MF1.5S 23L # 3215H       |                   | 23                         | φ34.5                            | <sup>(φ36.33)</sup><br>φ34.5 | 32                                | φ15                           | φ30                        | 12.5                         | 18                      | 19.91                      | 15.67              | 6.5                    | 5 × 2.3                   | 2-M5               | 8      | 49°22'                  | φ22.6                                | 77.1                  |
| MF2S 19R - 3512H         |                   | 19                         | φ38                              | <sup>(φ40.43)</sup><br>φ38.0 | 35                                | φ12                           | φ32                        | 13                           | 19                      | 22.09                      | 17.21              | 7.5                    | -                         | -                  | -      | 49°39'                  | φ22.8                                | 113.4                 |
| MF2S 19L - 3512H         |                   | 19                         | φ38                              | <sup>(φ40.43)</sup><br>φ38.0 | 35                                | φ12                           | φ32                        | 13                           | 19                      | 22.09                      | 17.21              | 7.5                    | -                         | -                  | -      | 49°39'                  | φ22.8                                | 113.4                 |
| MF2S 19R # 3515H         |                   | 19                         | φ38                              | <sup>(φ40.43)</sup><br>φ38.0 | 35                                | φ15                           | φ32                        | 13                           | 19                      | 22.09                      | 17.21              | 7.5                    | 5 × 2.3                   | 2-M5               | 8      | 49°39'                  | φ22.8                                | 101.9                 |
| MF2S 19L # 3515H         |                   | 19                         | φ38                              | <sup>(φ40.43)</sup><br>φ38.0 | 35                                | φ15                           | φ32                        | 13                           | 19                      | 22.09                      | 17.21              | 7.5                    | 5 × 2.3                   | 2-M5               | 8      | 49°39'                  | φ22.8                                | 101.9                 |
| MF2S 23R - 4015H         |                   | 23                         | φ46                              | <sup>(φ48.52)</sup><br>φ46.0 | 40                                | φ15                           | φ40                        | 14                           | 21                      | 24.43                      | 18.26              | 9.5                    | -                         | -                  | -      | 49°39'                  | φ27.1                                | 191.9                 |
| MF2S 23L - 4015H         |                   | 23                         | φ46                              | <sup>(φ48.52)</sup><br>φ46.0 | 40                                | φ15                           | φ40                        | 14                           | 21                      | 24.43                      | 18.26              | 9.5                    | -                         | -                  | -      | 49°39'                  | φ27.1                                | 191.9                 |
| MF2S 23R # 4020H         |                   | 23                         | φ46                              | <sup>(φ48.52)</sup><br>φ46.0 | 40                                | φ20                           | φ40                        | 14                           | 21                      | 24.43                      | 18.26              | 9.5                    | 6 × 2.8                   | 2-M5               | 9      | 49°39'                  | φ27.1                                | 166.5                 |
| MF2S 23L # 4020H         |                   | 23                         | φ46                              | <sup>(φ48.52)</sup><br>φ46.0 | 40                                | φ20                           | φ40                        | 14                           | 21                      | 24.43                      | 18.26              | 9.5                    | 6 × 2.8                   | 2-M5               | 9      | 49°39'                  | φ27.1                                | 166.5                 |
| MF2.5S 19R - 4215H       |                   | 19                         | φ47.5                            | <sup>(φ50.55)</sup><br>φ47.5 | 42                                | φ15                           | φ40                        | 14.5                         | 23                      | 25.93                      | 19.78              | 9.5                    | -                         | -                  | -      | 49°48'                  | φ30.1                                | 210.8                 |
| MF2.5S 19L - 4215H       |                   | 19                         | φ47.5                            | <sup>(φ50.55)</sup><br>φ47.5 | 42                                | φ15                           | φ40                        | 14.5                         | 23                      | 25.93                      | 19.78              | 9.5                    | -                         | -                  | -      | 49°48'                  | φ30.1                                | 210.8                 |
| MF2.5S 19R # 4220H       |                   | 19                         | φ47.5                            | <sup>(φ50.55)</sup><br>φ47.5 | 42                                | φ20                           | φ40                        | 14.5                         | 23                      | 25.93                      | 19.78              | 9.5                    | 6 × 2.8                   | 2-M6               | 10     | 49°48'                  | φ30.1                                | 182.5                 |
| MF2.5S 19L # 4220H       |                   | 19                         | φ47.5                            | <sup>(φ50.55)</sup><br>φ47.5 | 42                                | φ20                           | φ40                        | 14.5                         | 23                      | 25.93                      | 19.78              | 9.5                    | 6 × 2.8                   | 2-M6               | 10     | 49°48'                  | φ30.1                                | 182.5                 |
| MF2.5S 23R - 4815H       |                   | 23                         | φ57.5                            | <sup>(φ60.63)</sup><br>φ57.5 | 48                                | φ15                           | φ50                        | 15.5                         | 24                      | 28.30                      | 20.81              | 11.5                   | -                         | -                  | -      | 49°30'                  | φ34.5                                | 363.9                 |
| MF2.5S 23L - 4815H       |                   | 23                         | φ57.5                            | <sup>(φ60.63)</sup><br>φ57.5 | 48                                | φ15                           | φ50                        | 15.5                         | 24                      | 28.30                      | 20.81              | 11.5                   | -                         | -                  | -      | 49°30'                  | φ34.5                                | 363.9                 |
| MF2.5S 23R # 4825H       |                   | 23                         | φ57.5                            | <sup>(φ60.63)</sup><br>φ57.5 | 48                                | φ25                           | φ50                        | 15.5                         | 24                      | 28.30                      | 20.81              | 11.5                   | 8 × 3.3                   | 2-M6               | 10     | 49°30'                  | φ34.5                                | 300.5                 |
| MF2.5S 23L # 4825H       |                   | 23                         | φ57.5                            | <sup>(φ60.63)</sup><br>φ57.5 | 48                                | φ25                           | φ50                        | 15.5                         | 24                      | 28.30                      | 20.81              | 11.5                   | 8 × 3.3                   | 2-M6               | 10     | 49°30'                  | φ34.5                                | 300.5                 |
| MF3S 19R - 5020H         | 19                | φ57                        | <sup>(φ60.68)</sup><br>φ57.0     | 50                           | φ20                               | φ48                           | 17                         | 27                           | 31.09                   | 23.34                      | 12.0               | -                      | -                         | -                  | 49°56' | φ34.1                   | 347.8                                |                       |
| MF3S 19L - 5020H         | 19                | φ57                        | <sup>(φ60.68)</sup><br>φ57.0     | 50                           | φ20                               | φ48                           | 17                         | 27                           | 31.09                   | 23.34                      | 12.0               | -                      | -                         | -                  | 49°56' | φ34.1                   | 347.8                                |                       |
| MF3S 19R # 5025H         | 19                | φ57                        | <sup>(φ60.68)</sup><br>φ57.0     | 50                           | φ25                               | φ48                           | 17                         | 27                           | 31.09                   | 23.34                      | 12.0               | 8 × 3.3                | 2-M6                      | 10                 | 49°56' | φ34.1                   | 306.4                                |                       |
| MF3S 19L # 5025H         | 19                | φ57                        | <sup>(φ60.68)</sup><br>φ57.0     | 50                           | φ25                               | φ48                           | 17                         | 27                           | 31.09                   | 23.34                      | 12.0               | 8 × 3.3                | 2-M6                      | 10                 | 49°56' | φ34.1                   | 306.4                                |                       |
| MF3S 23R - 5520H         | 23                | φ69                        | <sup>(φ72.73)</sup><br>φ68.0     | 55                           | φ20                               | φ60                           | 16                         | 27                           | 31.51                   | 22.36                      | 14.0               | -                      | -                         | -                  | 49°22' | φ42.4                   | 571.3                                |                       |
| MF3S 23L - 5520H         | 23                | φ69                        | <sup>(φ72.73)</sup><br>φ68.0     | 55                           | φ20                               | φ60                           | 16                         | 27                           | 31.51                   | 22.36                      | 14.0               | -                      | -                         | -                  | 49°22' | φ42.4                   | 571.3                                |                       |
| MF3S 23R # 5530H         | 23                | φ69                        | <sup>(φ72.73)</sup><br>φ68.0     | 55                           | φ30                               | φ60                           | 16                         | 27                           | 31.51                   | 22.36                      | 14.0               | 8 × 3.3                | 2-M8                      | 9                  | 49°22' | φ42.4                   | 478.7                                |                       |
| MF3S 23L # 5530H         | 23                | φ69                        | <sup>(φ72.73)</sup><br>φ68.0     | 55                           | φ30                               | φ60                           | 16                         | 27                           | 31.51                   | 22.36                      | 14.0               | 8 × 3.3                | 2-M8                      | 9                  | 49°22' | φ42.4                   | 478.7                                |                       |



| 各旋转速度下的容许传动力表 (kW) 弯曲强度 |       |       |       |       |       |        | 各旋转速度下的容许传动力表 (kW) 齿面强度 |       |       |       |       |       |       | 侧隙          | 产品型号<br>Catalogue Numbers  |
|-------------------------|-------|-------|-------|-------|-------|--------|-------------------------|-------|-------|-------|-------|-------|-------|-------------|--|
| 100                     | 250   | 500   | 800   | 1,000 | 1,500 | 2,000  | 100                     | 250   | 500   | 800   | 1,000 | 1,500 | 2,000 |             |  |
| 0.054                   | 0.137 | 0.274 | 0.432 | 0.525 | 0.736 | 0.922  | 0.025                   | 0.067 | 0.138 | 0.223 | 0.273 | 0.391 | 0.495 | 0.05 ~ 0.12 | MF1.5S 19R - 2810H<br>MF1.5S 19L - 2810H<br>MF1.5S 19R # 2812H<br>MF1.5S 19L # 2812H |
| 0.084                   | 0.212 | 0.424 | 0.652 | 0.789 | 1.094 | 1.385  | 0.047                   | 0.123 | 0.255 | 0.401 | 0.489 | 0.691 | 0.886 | 0.05 ~ 0.12 | MF1.5S 23R - 3212H<br>MF1.5S 23L - 3212H<br>MF1.5S 23R # 3215H<br>MF1.5S 23L # 3215H |
| 0.133                   | 0.334 | 0.668 | 1.014 | 1.223 | 1.685 | 2.150  | 0.064                   | 0.167 | 0.344 | 0.533 | 0.649 | 0.911 | 1.178 | 0.05 ~ 0.12 | MF2S 19R - 3512H<br>MF2S 19L - 3512H<br>MF2S 19R # 3515H<br>MF2S 19L # 3515H         |
| 0.215                   | 0.539 | 1.060 | 1.587 | 1.901 | 2.640 | 3.359  | 0.123                   | 0.320 | 0.648 | 0.991 | 1.199 | 1.694 | 2.183 | 0.05 ~ 0.12 | MF2S 23R - 4015H<br>MF2S 23L - 4015H<br>MF2S 23R # 4020H<br>MF2S 23L # 4020H         |
| 0.264                   | 0.662 | 1.298 | 1.939 | 2.321 | 3.228 | 4.103  | 0.128                   | 0.335 | 0.678 | 1.034 | 1.250 | 1.769 | 2.278 | 0.06 ~ 0.15 | MF2.5S 19R - 4215H<br>MF2.5S 19L - 4215H<br>MF2.5S 19R # 4220H<br>MF2.5S 19L # 4220H |
| 0.414                   | 1.036 | 1.980 | 2.923 | 3.474 | 4.897 | 6.240  | 0.240                   | 0.624 | 1.230 | 1.853 | 2.224 | 3.192 | 4.119 | 0.06 ~ 0.15 | MF2.5S 23R - 4815H<br>MF2.5S 23L - 4815H<br>MF2.5S 23R # 4825H<br>MF2.5S 23L # 4825H |
| 0.472                   | 1.188 | 2.274 | 3.360 | 3.995 | 5.626 | 7.166  | 0.233                   | 0.608 | 1.201 | 1.812 | 2.176 | 3.119 | 4.023 | 0.06 ~ 0.15 | MF3S 19R - 5020H<br>MF3S 19L - 5020H<br>MF3S 19R # 5025H<br>MF3S 19L # 5025H         |
| 0.726                   | 1.815 | 3.374 | 4.916 | 5.923 | 8.319 | 10.061 | 0.425                   | 1.108 | 2.123 | 3.157 | 3.841 | 5.493 | 7.098 | 0.06 ~ 0.15 | MF3S 23R - 5520H<br>MF3S 23L - 5520H<br>MF3S 23R # 5530H<br>MF3S 23L # 5530H         |

# S45C螺旋等径锥齿轮

## SPIRAL MITER GEARS

模数  
MODULE

1 (齿数 20~30) / 1.5 (齿数 20~30) / 2 (齿数 20~30) / 2.5 (齿数 20~30) / 3 (齿数 20~30) 齿数比 1:1  
1:1 Ratio



单位: mm

| 精度             | 材料   | 压力角  | 螺旋角  | 热处理 | 齿面硬度 | 侧隙①  |
|----------------|------|------|------|-----|------|------|
| JIS B 1704 3 级 | S45C | 20 度 | 35 度 | —   | —    | 确认表格 |

★未做表面处理。容许传达动力表的数据是以 L 方向螺旋的齿轮做输入齿轮，为条件。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★【\*】表示带有两个螺纹孔，两个固定螺钉。①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数比<br>Ratio<br><i>u</i> | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 齿顶圆直径<br>Tip Diameter<br><i>d<sub>a</sub></i> | 装配距离<br>Locating Distance<br><i>A</i> | 孔径<br>Bore Diameter<br><i>d<sub>d</sub>(H7)</i> | 轮毂外径<br>Hub Diameter<br><i>d<sub>h</sub></i> | 轮毂长度<br>Hub Projection<br><i>l<sub>h</sub></i> | 穴长度<br>Bore Length<br><i>l</i> | 全长<br>Overall Length<br><i>l<sub>w</sub></i> | Tip Distance<br><i>l<sub>a</sub></i> | 齿宽<br>Face Width<br><i>b</i> | 螺纹孔<br>Set Screw |                      | 顶锥角<br>Face Angle<br><i>δ<sub>a</sub></i> | 沉头部直径<br>(参考值)<br>Counter bore<br><i>d<sub>s</sub></i> | 重量<br>Weight<br><i>W(g)</i> |
|--------------------------|--------------------------|-----------------------------------|---|---|---------------------------------------|---|--|--|--------------------------------|--|--------------------------------------|------------------------------|------------------|----------------------|---|--|-----------------------------|
|                          |                          |                                   |   |   |                                       |   |  |  |                                |  |                                      |                              | <i>M</i>         | <i>l<sub>s</sub></i> |   |  |                             |
| M1S 20R — 2106           | 1                        | 20                                | φ20                                     | φ21.12  | 21                                    | φ6  | φ16  | 9  | 13                             | 14.43  | 11.56                                | 4.5                          | -                | -                    | 50°31'                                    | φ11.3  | 19.7                        |
| M1S 20L — 2106           |                          | 20                                | φ20                                     | φ21.12  | 21                                    | φ6  | φ16  | 9  | 13                             | 14.43  | 11.56                                | 4.5                          | -                | -                    | 50°31'                                    | φ11.3  | 19.7                        |
| M1S 20R * 2108           |                          | 20                                | φ20                                     | φ21.12  | 21                                    | φ8  | φ16  | 9  | 13                             | 14.43  | 11.56                                | 4.5                          | 2-M4             | 4.5                  | 50°31'                                    | φ11.3  | 16.9                        |
| M1S 20L * 2108           |                          | 20                                | φ20                                     | φ21.12  | 21                                    | φ8  | φ16  | 9  | 13                             | 14.43  | 11.56                                | 4.5                          | 2-M4             | 4.5                  | 50°31'                                    | φ11.3  | 16.9                        |
| M1S 30R — 2610           |                          | 30                                | φ30                                     | φ31.09  | 26                                    | φ10   | φ22  | 9  | 14.5                           | 15.67  | 11.54                                | 6.2                          | -                | -                    | 48°21'                                    | φ19.4  | 43.0                        |
| M1S 30L — 2610           |                          | 30                                | φ30                                     | φ31.09  | 26                                    | φ10   | φ22  | 9  | 14.5                           | 15.67  | 11.54                                | 6.2                          | -                | -                    | 48°21'                                    | φ19.4  | 43.0                        |
| M1S 30R * 2610           |                          | 30                                | φ30                                     | φ31.09  | 26                                    | φ10   | φ22  | 9  | 14.5                           | 15.67  | 11.54                                | 6.2                          | 2-M5             | 4.5                  | 48°21'                                    | φ19.4  | 41.5                        |
| M1S 30L * 2610           |                          | 30                                | φ30                                     | φ31.09  | 26                                    | φ10   | φ22  | 9  | 14.5                           | 15.67  | 11.54                                | 6.2                          | 2-M5             | 4.5                  | 48°21'                                    | φ19.4  | 41.5                        |
| M1.5S 20R — 2810         |                          | 20                                | φ30                                     | φ31.85  | 28                                    | φ10   | φ24  | 10   | 16.5                           | 18.44  | 13.93                                | 7                            | -                | -                    | 50°5'                                     | φ17.2  | 54.7                        |
| M1.5S 20L — 2810         |                          | 20                                | φ30                                     | φ31.85  | 28                                    | φ10   | φ24  | 10   | 16.5                           | 18.44  | 13.93                                | 7                            | -                | -                    | 50°5'                                     | φ17.2  | 54.7                        |
| M1.5S 30R — 3812         |                          | 30                                | φ45                                     | φ46.79  | 38                                    | φ12   | φ33  | 12   | 21                             | 22.64  | 16.4                                 | 9.3                          | -                | -                    | 47°54'                                    | φ29.7  | 152.0                       |
| M1.5S 30L — 3812         |                          | 30                                | φ45                                     | φ46.79  | 38                                    | φ12   | φ33  | 12   | 21                             | 22.64  | 16.4                                 | 9.3                          | -                | -                    | 47°54'                                    | φ29.7  | 152.0                       |
| M2S 20R — 3712           |                          | 20                                | φ40                                     | φ42.28  | 37                                    | φ12   | φ34  | 14   | 21                             | 24.16  | 18.14                                | 9                            | -                | -                    | 48°3'                                     | φ22.5  | 141.0                       |
| M2S 20L — 3712           |                          | 20                                | φ40                                     | φ42.28  | 37                                    | φ12   | φ34  | 14   | 21                             | 24.16  | 18.14                                | 9                            | -                | -                    | 48°3'                                     | φ22.5  | 141.0                       |
| M2S 20R — 2812           |                          | 20                                | φ40                                     | φ42.28  | 28                                    | φ12   | φ34  | 5  | 12                             | 15.16  | 9.14                                 | 9                            | -                | -                    | 48°3'                                     | φ22.5  | 84.9                        |
| M2S 20L — 2812           |                          | 20                                | φ40                                     | φ42.28  | 28                                    | φ12   | φ34  | 5  | 12                             | 15.16  | 9.14                                 | 9                            | -                | -                    | 48°3'                                     | φ22.5  | 84.9                        |
| M2S 30R — 5116           |                          | 30                                | φ60                                     | φ62.42  | 51                                    | φ16   | φ44  | 17   | 28                             | 30.53  | 22.21                                | 12.4                         | -                | -                    | 47°54'                                    | φ38.9  | 358.4                       |
| M2S 30L — 5116           |                          | 30                                | φ60                                     | φ62.42  | 51                                    | φ16   | φ44  | 17   | 28                             | 30.53  | 22.21                                | 12.4                         | -                | -                    | 47°54'                                    | φ38.9  | 358.4                       |
| M2.5S 20R — 4814         |                          | 20                                | φ50                                     | φ53.02  | 48                                    | φ14   | φ42  | 19   | 28                             | 31.77  | 24.51                                | 11.1                         | -                | -                    | 49°20'                                    | φ28.6  | 292.4                       |
| M2.5S 20L — 4814         |                          | 20                                | φ50                                     | φ53.02  | 48                                    | φ14   | φ42  | 19   | 28                             | 31.77  | 24.51                                | 11.1                         | -                | -                    | 49°20'                                    | φ28.6  | 292.4                       |
| M2.5S 30R — 6318         |                          | 30                                | φ75                                     | φ78.05  | 63                                    | φ18   | φ55  | 20   | 34.5                           | 37.07  | 27.03                                | 15                           | -                | -                    | 48°3'                                     | φ50.6  | 708.7                       |
| M2.5S 30L — 6318         |                          | 30                                | φ75                                     | φ78.05  | 63                                    | φ18   | φ55  | 20   | 34.5                           | 37.07  | 27.03                                | 15                           | -                | -                    | 48°3'                                     | φ50.6  | 708.7                       |
| M3S 20R — 5816           |                          | 20                                | φ60                                     | φ63.66  | 58                                    | φ16   | φ50  | 23   | 35                             | 38.95  | 29.83                                | 14                           | -                | -                    | 49°30'                                    | φ34.4  | 0.52(kg)                    |
| M3S 20L — 5816           |                          | 20                                | φ60                                     | φ63.66  | 58                                    | φ16   | φ50  | 23   | 35                             | 38.95  | 29.83                                | 14                           | -                | -                    | 49°30'                                    | φ34.4  | 0.52(kg)                    |
| M3S 30R — 7522           | 30                       | φ90                               | φ93.46                                  | 75  | φ22                                   | φ66   | 24   | 40   | 44.38                          | 31.73  | 18.6                                 | -                            | -                | 47°11'               | φ57.4                                     | 1.19(kg)   |                             |
| M3S 30L — 7522           | 30                       | φ90                               | φ93.46                                  | 75  | φ22                                   | φ66   | 24   | 40   | 44.38                          | 31.73  | 18.6                                 | -                            | -                | 47°11'               | φ57.4                                     | 1.19(kg)   |                             |

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模数  
MODULE

1 (齿数 20~30) / 1.5 (齿数 20~30) / 2 (齿数 20~30) / 2.5 (齿数 20~30) / 3 (齿数 20~30) 齿数比 1:1 1:1 Ratio

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GROUND SPIUR GEARS

SPIUR GEARS

RACKS

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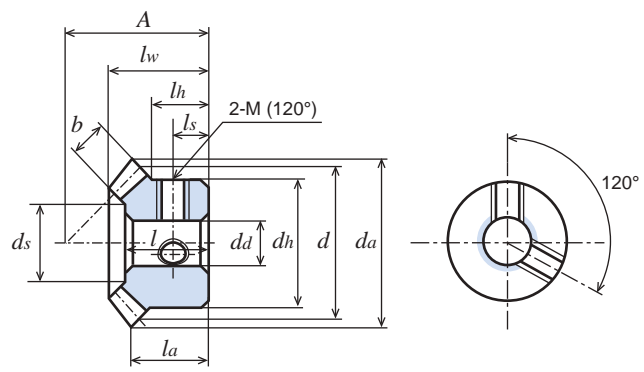
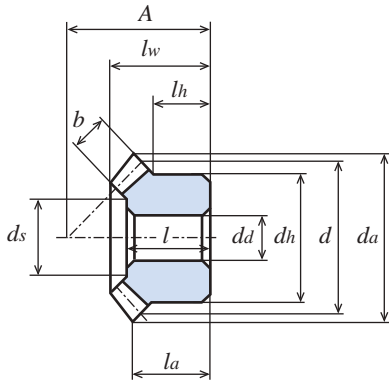
HELICAL GEARS AND SCREW GEARS

MITER GEARS

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WORMS AND WORM WHEELS

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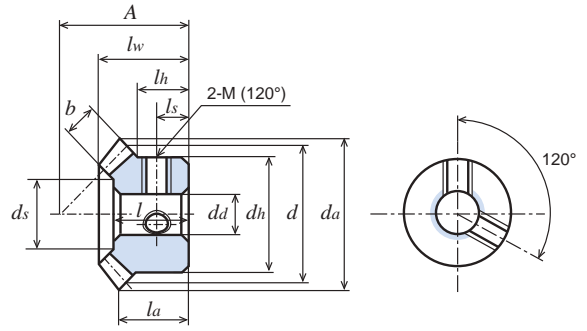
| 各旋转速度下的容许传达动力表 (W) 弯曲强度 |            |            |            |            |            |            | 各旋转速度下的容许传达动力表 (W) 齿面强度 |            |            |            |            |            |            | 侧 隙         | 产 品 型 号<br>Catalogue Numbers   |
|-------------------------|------------|------------|------------|------------|------------|------------|-------------------------|------------|------------|------------|------------|------------|------------|-------------|--|
| 300                     | 600        | 900        | 1,200      | 1,500      | 1,800      | 2,000      | 300                     | 600        | 900        | 1,200      | 1,500      | 1,800      | 2,000      |             |  |
| 34.9                    | 69.9       | 104.9      | 134.6      | 161.0      | 185.2      | 200.2      | 4.6                     | 9.35       | 14.1       | 18.2       | 21.9       | 25.4       | 27.6       | 0.05 ~ 0.12 | M1S 20R - 2106<br>M1S 20L - 2106<br>M1S 20R * 2108<br>M1S 20L * 2108 |
| 84.0                    | 168.0      | 222.5      | 279.2      | 329.7      | 395.6      | 428.5      | 16.1                    | 32.5       | 49.1       | 58.7       | 69.9       | 80.3       | 87.7       | 0.05 ~ 0.12 | M1S 30R - 2610<br>M1S 30L - 2610<br>M1S 30R * 2610<br>M1S 30L * 2610 |
| 123.2                   | 246.4      | 348.1      | 435.2      | 512.0      | 580.3      | 628.6      | 16.7                    | 33.9       | 48.4       | 61.1       | 72.8       | 83.6       | 91.3       | 0.05 ~ 0.12 | M1.5S 20R - 2810<br>M1.5S 20L - 2810                                 |
| 286.5                   | 539.5      | 735.8      | 899.5      | 1079.8     | 1262.1     | 1378.5     | 57.1                    | 109.2      | 151.4      | 188.7      | 231.0      | 274.0      | 303.9      | 0.05 ~ 0.12 | M1.5S 30R - 3812<br>M1.5S 30L - 3812                                 |
| 0.296 (kW)              | 0.555 (kW) | 0.764 (kW) | 0.941 (kW) | 1.104 (kW) | 1.293 (kW) | 1.415 (kW) | 0.040 (kW)              | 0.078 (kW) | 0.109 (kW) | 0.137 (kW) | 0.163 (kW) | 0.195 (kW) | 0.215 (kW) | 0.05 ~ 0.12 | M2S 20R - 3712<br>M2S 20L - 3712                                     |
| 0.296 (kW)              | 0.555 (kW) | 0.764 (kW) | 0.941 (kW) | 1.104 (kW) | 1.293 (kW) | 1.415 (kW) | 0.040 (kW)              | 0.078 (kW) | 0.109 (kW) | 0.137 (kW) | 0.163 (kW) | 0.195 (kW) | 0.215 (kW) | 0.05 ~ 0.12 | M2S 20R - 2812<br>M2S 20L - 2812                                     |
| 0.682 (kW)              | 1.205 (kW) | 1.607 (kW) | 2.040 (kW) | 2.463 (kW) | 2.880 (kW) | 3.154 (kW) | 0.140 (kW)              | 0.253 (kW) | 0.346 (kW) | 0.450 (kW) | 0.557 (kW) | 0.669 (kW) | 0.744 (kW) | 0.05 ~ 0.12 | M2S 30R - 5116<br>M2S 30L - 5116                                     |
| 0.562 (kW)              | 1.036 (kW) | 1.402 (kW) | 1.721 (kW) | 2.089 (kW) | 2.435 (kW) | 2.663 (kW) | 0.080 (kW)              | 0.150 (kW) | 0.207 (kW) | 0.260 (kW) | 0.322 (kW) | 0.383 (kW) | 0.425 (kW) | 0.06 ~ 0.15 | M2.5S 20R - 4814<br>M2.5S 20L - 4814                                 |
| 1.274 (kW)              | 2.174 (kW) | 2.959 (kW) | 3.777 (kW) | 4.576 (kW) | 5.345 (kW) | 5.835 (kW) | 0.269 (kW)              | 0.472 (kW) | 0.663 (kW) | 0.873 (kW) | 1.093 (kW) | 1.311 (kW) | 1.454 (kW) | 0.06 ~ 0.15 | M2.5S 30R - 6318<br>M2.5S 30L - 6318                                 |
| 1.006 (kW)              | 1.777 (kW) | 2.370 (kW) | 3.008 (kW) | 3.632 (kW) | 4.247 (kW) | 4.651 (kW) | 0.146 (kW)              | 0.263 (kW) | 0.360 (kW) | 0.469 (kW) | 0.580 (kW) | 0.696 (kW) | 0.774 (kW) | 0.06 ~ 0.15 | M3S 20R - 5816<br>M3S 20L - 5816                                     |
| 2.180 (kW)              | 3.635 (kW) | 5.101 (kW) | 6.515 (kW) | 7.883 (kW) | -          | -          | 0.470 (kW)              | 0.813 (kW) | 1.180 (kW) | 1.573 (kW) | 1.937 (kW) | -          | -          | 0.06 ~ 0.15 | M3S 30R - 7522<br>M3S 30L - 7522                                     |

# S45C 淬火螺旋等径锥齿轮

## SPIRAL MITER GEARS

模数  
MODULE

1 (齿数 30) / 1.5 (齿数 20~30) / 2 (齿数 20~30) / 2.5 (齿数 20~30) 1:1 Ratio 齿数比 1:1



单位: mm

| 精度             | 材料   | 压力角  | 螺旋角  | 热处理    | 齿面硬度       | 侧隙①  |
|----------------|------|------|------|--------|------------|------|
| JIS B 1704 4 级 | S45C | 20 度 | 35 度 | 齿面高频淬火 | HRC47 ~ 53 | 确认表格 |

★未做表面处理。容许传达动力表的数据是以 L 方向螺旋的齿轮做输入齿轮，为条件。

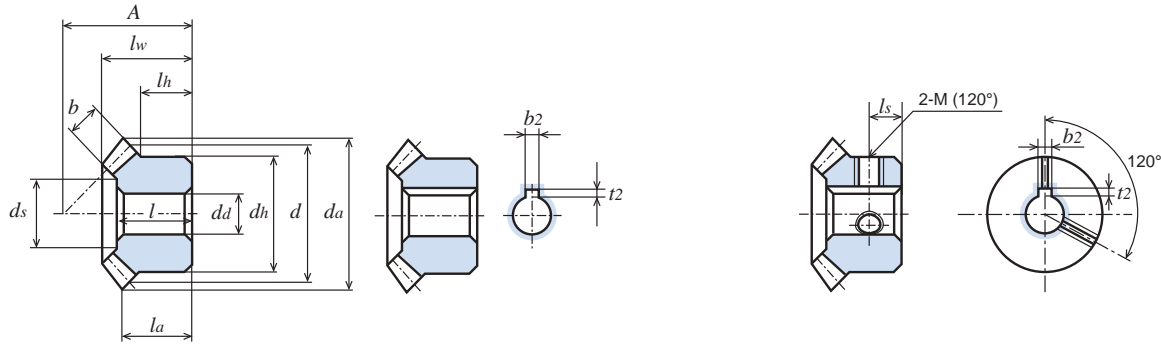
★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★【\*】表示带有两个螺纹孔，两个固定螺钉。【#】表示带有键槽和键，带有螺纹孔和固定螺钉。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数比<br>Ratio<br>u | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 装配距离<br>Locating Distance<br>A | 孔径<br>Bore Diameter<br>dd(H8) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 穴长度<br>Bore Length<br>l | 全长<br>Overall Length<br>lw | 齿顶圆距离<br>Tip Distance<br>la | 齿宽<br>Face Width<br>b | 键槽<br>Key Way<br>b2 x t2 | 螺纹孔<br>Set Screw |     | 顶锥角<br>Face Angle<br>δa | 沉头部直径<br>(参考值)<br>Counter bore<br>ds | 重量<br>Weight<br>W(g) |
|--------------------------|-------------------|----------------------------|----------------------------------|-----------------------------|--------------------------------|-------------------------------|----------------------------|------------------------------|-------------------------|----------------------------|-----------------------------|-----------------------|--------------------------|------------------|-----|-------------------------|--------------------------------------|----------------------|
|                          |                   |                            |                                  |                             |                                |                               |                            |                              |                         |                            |                             |                       |                          | M                | ls  |                         |                                      |                      |
| M1S 30R * 2610H          |                   | 30                         | φ30                              | φ31.09                      | 26                             | φ10                           | φ22                        | 9                            | 14.5                    | 15.67                      | 11.54                       | 6.2                   | -                        | 2-M5             | 4.5 | 48°21'                  | φ19.4                                | 41.5                 |
| M1S 30L * 2610H          |                   | 30                         | φ30                              | φ31.09                      | 26                             | φ10                           | φ22                        | 9                            | 14.5                    | 15.67                      | 11.54                       | 6.2                   | -                        | 2-M5             | 4.5 | 48°21'                  | φ19.4                                | 41.5                 |
| M1.5S 20R - 2810H        |                   | 20                         | φ30                              | φ31.85                      | 28                             | φ10                           | φ24                        | 10                           | 16.5                    | 18.44                      | 13.93                       | 7                     | -                        | -                | -   | 50° 5'                  | φ17.2                                | 54.7                 |
| M1.5S 20L - 2810H        |                   | 20                         | φ30                              | φ31.85                      | 28                             | φ10                           | φ24                        | 10                           | 16.5                    | 18.44                      | 13.93                       | 7                     | -                        | -                | -   | 50° 5'                  | φ17.2                                | 54.7                 |
| M1.5S 20R # 2810H        |                   | 20                         | φ30                              | φ31.85                      | 28                             | φ10                           | φ24                        | 10                           | 16.5                    | 18.44                      | 13.93                       | 7                     | 3 × 1.4                  | 2-M4             | 5   | 50° 5'                  | φ17.2                                | 54.1                 |
| M1.5S 20L # 2810H        |                   | 20                         | φ30                              | φ31.85                      | 28                             | φ10                           | φ24                        | 10                           | 16.5                    | 18.44                      | 13.93                       | 7                     | 3 × 1.4                  | 2-M4             | 5   | 50° 5'                  | φ17.2                                | 54.1                 |
| M1.5S 20R # 2812H        |                   | 20                         | φ30                              | φ31.85                      | 28                             | φ12                           | φ24                        | 10                           | 16.5                    | 18.44                      | 13.93                       | 7                     | 4 × 1.8                  | 2-M4             | 5   | 50° 5'                  | φ17.2                                | 49.1                 |
| M1.5S 20L # 2812H        |                   | 20                         | φ30                              | φ31.85                      | 28                             | φ12                           | φ24                        | 10                           | 16.5                    | 18.44                      | 13.93                       | 7                     | 4 × 1.8                  | 2-M4             | 5   | 50° 5'                  | φ17.2                                | 49.1                 |
| M1.5S 30R - 3812H        |                   | 30                         | φ45                              | φ46.79                      | 38                             | φ12                           | φ33                        | 12                           | 21                      | 22.64                      | 16.4                        | 9.3                   | -                        | -                | -   | 47°54'                  | φ29.7                                | 152.0                |
| M1.5S 30L - 3812H        |                   | 30                         | φ45                              | φ46.79                      | 38                             | φ12                           | φ33                        | 12                           | 21                      | 22.64                      | 16.4                        | 9.3                   | -                        | -                | -   | 47°54'                  | φ29.7                                | 152.0                |
| M1.5S 30R # 3815H        |                   | 30                         | φ45                              | φ46.79                      | 38                             | φ15                           | φ33                        | 12                           | 21                      | 22.64                      | 16.4                        | 9.3                   | 5 × 2.3                  | 2-M4             | 6   | 47°54'                  | φ29.7                                | 140.8                |
| M1.5S 30L # 3815H        |                   | 30                         | φ45                              | φ46.79                      | 38                             | φ15                           | φ33                        | 12                           | 21                      | 22.64                      | 16.4                        | 9.3                   | 5 × 2.3                  | 2-M4             | 6   | 47°54'                  | φ29.7                                | 140.8                |
| M2S 20R - 3712H          |                   | 20                         | φ40                              | φ40.8 <sup>(φ42.28)</sup>   | 37                             | φ12                           | φ34                        | 14                           | 21                      | 24.16                      | 18.14                       | 9                     | -                        | -                | -   | 48° 3'                  | φ22.5                                | 141.0                |
| M2S 20L - 3712H          |                   | 20                         | φ40                              | φ40.8 <sup>(φ42.28)</sup>   | 37                             | φ12                           | φ34                        | 14                           | 21                      | 24.16                      | 18.14                       | 9                     | -                        | -                | -   | 48° 3'                  | φ22.5                                | 141.0                |
| M2S 20R # 3715H          |                   | 20                         | φ40                              | φ40.8 <sup>(φ42.28)</sup>   | 37                             | φ15                           | φ34                        | 14                           | 21                      | 24.16                      | 18.14                       | 9                     | 5 × 2.3                  | 2-M5             | 7   | 48° 3'                  | φ22.5                                | 127.5                |
| M2S 20L # 3715H          |                   | 20                         | φ40                              | φ40.8 <sup>(φ42.28)</sup>   | 37                             | φ15                           | φ34                        | 14                           | 21                      | 24.16                      | 18.14                       | 9                     | 5 × 2.3                  | 2-M5             | 7   | 48° 3'                  | φ22.5                                | 127.5                |
| M2S 20R # 3716H          |                   | 20                         | φ40                              | φ40.8 <sup>(φ42.28)</sup>   | 37                             | φ16                           | φ34                        | 14                           | 21                      | 24.16                      | 18.14                       | 9                     | 5 × 2.3                  | 2-M5             | 7   | 48° 3'                  | φ22.5                                | 123.5                |
| M2S 20L # 3716H          |                   | 20                         | φ40                              | φ40.8 <sup>(φ42.28)</sup>   | 37                             | φ16                           | φ34                        | 14                           | 21                      | 24.16                      | 18.14                       | 9                     | 5 × 2.3                  | 2-M5             | 7   | 48° 3'                  | φ22.5                                | 123.5                |
| M2S 20R - 2812H          |                   | 20                         | φ40                              | φ40.8 <sup>(φ42.28)</sup>   | 28                             | φ12                           | φ34                        | 5                            | 12                      | 15.16                      | 9.14                        | 9                     | -                        | -                | -   | 48° 3'                  | φ22.5                                | 84.9                 |
| M2S 20L - 2812H          |                   | 20                         | φ40                              | φ40.8 <sup>(φ42.28)</sup>   | 28                             | φ12                           | φ34                        | 5                            | 12                      | 15.16                      | 9.14                        | 9                     | -                        | -                | -   | 48° 3'                  | φ22.5                                | 84.9                 |
| M2S 20R = 2815H          |                   | 20                         | φ40                              | φ40.8 <sup>(φ42.28)</sup>   | 28                             | φ15                           | φ34                        | 5                            | 12                      | 15.16                      | 9.14                        | 9                     | 5 × 2.3                  | -                | -   | 48° 3'                  | φ22.5                                | 77.8                 |
| M2S 20L = 2815H          |                   | 20                         | φ40                              | φ40.8 <sup>(φ42.28)</sup>   | 28                             | φ15                           | φ34                        | 5                            | 12                      | 15.16                      | 9.14                        | 9                     | 5 × 2.3                  | -                | -   | 48° 3'                  | φ22.5                                | 77.8                 |
| M2S 30R - 5116H          |                   | 30                         | φ60                              | φ60.94 <sup>(φ62.42)</sup>  | 51                             | φ16                           | φ44                        | 17                           | 28                      | 30.53                      | 22.21                       | 12.4                  | -                        | -                | -   | 47°54'                  | φ38.9                                | 358.4                |
| M2S 30L - 5116H          |                   | 30                         | φ60                              | φ60.94 <sup>(φ62.42)</sup>  | 51                             | φ16                           | φ44                        | 17                           | 28                      | 30.53                      | 22.21                       | 12.4                  | -                        | -                | -   | 47°54'                  | φ38.9                                | 358.4                |
| M2S 30R # 5120H          |                   | 30                         | φ60                              | φ60.94 <sup>(φ62.42)</sup>  | 51                             | φ20                           | φ44                        | 17                           | 28                      | 30.53                      | 22.21                       | 12.4                  | 6 × 2.8                  | 2-M5             | 8.5 | 47°54'                  | φ38.9                                | 331.9                |
| M2S 30L # 5120H          |                   | 30                         | φ60                              | φ60.94 <sup>(φ62.42)</sup>  | 51                             | φ20                           | φ44                        | 17                           | 28                      | 30.53                      | 22.21                       | 12.4                  | 6 × 2.8                  | 2-M5             | 8.5 | 47°54'                  | φ38.9                                | 331.9                |
| M2.5S 20R - 4814H        |                   | 20                         | φ50                              | φ51.14 <sup>(φ53.02)</sup>  | 48                             | φ14                           | φ42                        | 19                           | 28                      | 31.77                      | 24.51                       | 11.1                  | -                        | -                | -   | 49°20'                  | φ28.6                                | 292.4                |
| M2.5S 20L - 4814H        |                   | 20                         | φ50                              | φ51.14 <sup>(φ53.02)</sup>  | 48                             | φ14                           | φ42                        | 19                           | 28                      | 31.77                      | 24.51                       | 11.1                  | -                        | -                | -   | 49°20'                  | φ28.6                                | 292.4                |
| M2.5S 20R # 4820H        |                   | 20                         | φ50                              | φ51.14 <sup>(φ53.02)</sup>  | 48                             | φ20                           | φ42                        | 19                           | 28                      | 31.77                      | 24.51                       | 11.1                  | 6 × 2.8                  | 2-M5             | 9.5 | 49°20'                  | φ28.6                                | 255.8                |
| M2.5S 20L # 4820H        |                   | 20                         | φ50                              | φ51.14 <sup>(φ53.02)</sup>  | 48                             | φ20                           | φ42                        | 19                           | 28                      | 31.77                      | 24.51                       | 11.1                  | 6 × 2.8                  | 2-M5             | 9.5 | 49°20'                  | φ28.6                                | 255.8                |
| M2.5S 30R - 6318H        |                   | 30                         | φ75                              | φ76.2 <sup>(φ78.05)</sup>   | 63                             | φ18                           | φ55                        | 20                           | 34.5                    | 37.07                      | 27.03                       | 15                    | -                        | -                | -   | 48° 3'                  | φ50.6                                | 708.7                |
| M2.5S 30L - 6318H        |                   | 30                         | φ75                              | φ76.2 <sup>(φ78.05)</sup>   | 63                             | φ18                           | φ55                        | 20                           | 34.5                    | 37.07                      | 27.03                       | 15                    | -                        | -                | -   | 48° 3'                  | φ50.6                                | 708.7                |
| M2.5S 30R # 6325H        |                   | 30                         | φ75                              | φ76.2 <sup>(φ78.05)</sup>   | 63                             | φ25                           | φ55                        | 20                           | 34.5                    | 37.07                      | 27.03                       | 15                    | 8 × 3.3                  | 2-M6             | 10  | 48° 3'                  | φ50.6                                | 641.9                |
| M2.5S 30L # 6325H        |                   | 30                         | φ75                              | φ76.2 <sup>(φ78.05)</sup>   | 63                             | φ25                           | φ55                        | 20                           | 34.5                    | 37.07                      | 27.03                       | 15                    | 8 × 3.3                  | 2-M6             | 10  | 48° 3'                  | φ50.6                                | 641.9                |





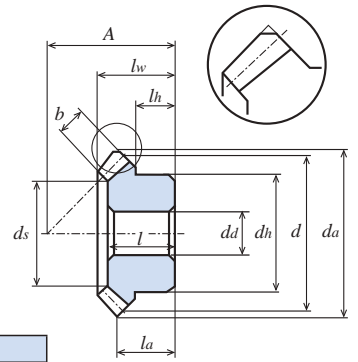
| 各旋转速度下的容许传达动力表 (W) 弯曲强度 |            |            |            |            |            |            | 各旋转速度下的容许传达动力表 (W) 齿面强度 |            |            |            |            |            |            | 侧隙          | 产品型号<br>Catalogue Numbers  |
|-------------------------|------------|------------|------------|------------|------------|------------|-------------------------|------------|------------|------------|------------|------------|------------|-------------|--|
| 300                     | 600        | 900        | 1,200      | 1,500      | 1,800      | 2,000      | 300                     | 600        | 900        | 1,200      | 1,500      | 1,800      | 2,000      |             |  |
| 73.3                    | 146.6      | 198.1      | 254.5      | 298.5      | 348.7      | 387.5      | 43.6                    | 90.0       | 130.7      | 167.2      | 200.4      | 230.8      | 250.8      | 0.05 ~ 0.12 | M1S 30R * 2610H<br>M1S 30L * 2610H   |
| 107.5                   | 215.1      | 306.9      | 387.5      | 460.0      | 525.5      | 568.4      | 45.5                    | 93.8       | 136.2      | 174.2      | 208.8      | 240.5      | 261.4      | 0.05 ~ 0.12 | M1.5S 20R - 2810H<br>M1.5S 20L - 2810H<br>M1.5S 20R # 2810H<br>M1.5S 20L # 2810H<br>M1.5S 20R # 2812H<br>M1.5S 20L # 2812H |
| 250.1                   | 475.6      | 658.2      | 814.5      | 966.1      | 1108.9     | 1197.3     | 152.8                   | 299.7      | 422.1      | 529.0      | 633.7      | 733.1      | 795.3      | 0.05 ~ 0.12 | M1.5S 30R - 3812H<br>M1.5S 30L - 3812H<br>M1.5S 30R # 3815H<br>M1.5S 30L # 3815H   |
| 0.251 (kW)              | 0.488 (kW) | 0.680 (kW) | 0.847 (kW) | 0.998 (kW) | 1.150 (kW) | 1.245 (kW) | 0.108 (kW)              | 0.216 (kW) | 0.307 (kW) | 0.387 (kW) | 0.460 (kW) | 0.535 (kW) | 0.581 (kW) | 0.05 ~ 0.12 | M2S 20R - 3712H<br>M2S 20L - 3712H<br>M2S 20R # 3715H<br>M2S 20L # 3715H<br>M2S 20R # 3716H<br>M2S 20L # 3716H             |
| 0.251 (kW)              | 0.488 (kW) | 0.680 (kW) | 0.847 (kW) | 0.998 (kW) | 1.150 (kW) | 1.245 (kW) | 0.108 (kW)              | 0.216 (kW) | 0.307 (kW) | 0.387 (kW) | 0.460 (kW) | 0.535 (kW) | 0.581 (kW) | 0.05 ~ 0.12 | M2S 20R - 2812H<br>M2S 20L - 2812H<br>M2S 20R = 2815H<br>M2S 20L = 2815H   |
| 0.596 (kW)              | 1.073 (kW) | 1.455 (kW) | 1.814 (kW) | 2.139 (kW) | -          | -          | 0.371 (kW)              | 0.690 (kW) | 0.952 (kW) | 1.202 (kW) | 1.432 (kW) | -          | -          | 0.05 ~ 0.12 | M2S 30R - 5116H<br>M2S 30L - 5116H<br>M2S 30R # 5120H<br>M2S 30L # 5120H   |
| 0.491 (kW)              | 0.916 (kW) | 1.259 (kW) | 1.556 (kW) | 1.850 (kW) | 2.115 (kW) | -          | 0.214 (kW)              | 0.411 (kW) | 0.576 (kW) | 0.721 (kW) | 0.865 (kW) | 0.997 (kW) | -          | 0.06 ~ 0.15 | M2.5S 20R - 4814H<br>M2.5S 20L - 4814H<br>M2.5S 20R # 4820H<br>M2.5S 20L # 4820H   |
| 1.117 (kW)              | 1.953 (kW) | 2.647 (kW) | 3.281 (kW) | -          | -          | -          | 0.709 (kW)              | 1.278 (kW) | 1.763 (kW) | 2.213 (kW) | -          | -          | -          | 0.06 ~ 0.15 | M2.5S 30R - 6318H<br>M2.5S 30L - 6318H<br>M2.5S 30R # 6325H<br>M2.5S 30L # 6325H   |

# S45C 淬火螺旋等径锥齿轮

## SPIRAL MITER GEARS

模数  
MODULE **3** (齿数 20~30)

齿数比 1:1  
1:1 Ratio



单位: mm

| 精度            | 材料   | 压力角 | 螺旋角 | 热处理    | 齿面硬度     | 侧隙①  |
|---------------|------|-----|-----|--------|----------|------|
| JIS B 1704 4级 | S45C | 20度 | 35度 | 齿面高频淬火 | HRC47~53 | 确认表格 |

★未做表面处理。容许传达动力表的数据是以 L 方向螺旋的齿轮做输入齿轮，为条件。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★【#】表示带有键槽和键，带有螺纹孔和固定螺钉。①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数比<br>Ratio<br>u | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da   | 装配距离<br>Locating Distance<br>A | 孔径<br>Bore Diameter<br>da(H8) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 穴长度<br>Bore Length<br>l | 全长<br>Overall Length<br>lw | 齿宽<br>Face Width<br>b | 键槽<br>Key Way<br>b2 x t2 | 螺纹孔<br>Set Screw |      | 顶锥角<br>Face Angle<br>δa | 沉头部直径<br>(参考值)<br>Counter bore<br>ds | 重量<br>Weight<br>W(g) |      |
|--------------------------|-------------------|----------------------------|----------------------------------|-------------------------------|--------------------------------|-------------------------------|----------------------------|------------------------------|-------------------------|----------------------------|-----------------------|--------------------------|------------------|------|-------------------------|--------------------------------------|----------------------|------|
|                          |                   |                            |                                  |                               |                                |                               |                            |                              |                         |                            |                       |                          | M                | ls   |                         |                                      |                      |      |
| M3S 20R - 5816H          | 1                 | 20                         | φ60                              | <sup>(φ63.66)</sup><br>φ61.39 | 58                             | φ16                           | φ50                        | 23                           | 35                      | 38.95                      | 29.83                 | 14                       | -                | -    | -                       | 49°30'                               | φ34.4                | 0.52 |
| M3S 20L - 5816H          |                   | 20                         | φ60                              | <sup>(φ63.66)</sup><br>φ61.39 | 58                             | φ16                           | φ50                        | 23                           | 35                      | 38.95                      | 29.83                 | 14                       | -                | -    | -                       | 49°30'                               | φ34.4                | 0.52 |
| M3S 20R # 5825H          |                   | 20                         | φ60                              | <sup>(φ63.66)</sup><br>φ61.39 | 58                             | φ25                           | φ50                        | 23                           | 35                      | 38.95                      | 29.83                 | 14                       | 8 x 3.3          | 2-M6 | 11.5                    | 49°30'                               | φ34.4                | 0.44 |
| M3S 20L # 5825H          |                   | 20                         | φ60                              | <sup>(φ63.66)</sup><br>φ61.39 | 58                             | φ25                           | φ50                        | 23                           | 35                      | 38.95                      | 29.83                 | 14                       | 8 x 3.3          | 2-M6 | 11.5                    | 49°30'                               | φ34.4                | 0.44 |
| M3S 30R - 7522H          |                   | 30                         | φ90                              | <sup>(φ93.46)</sup><br>φ91.28 | 75                             | φ22                           | φ66                        | 24                           | 40                      | 44.38                      | 31.73                 | 18.6                     | -                | -    | -                       | 47°11'                               | φ57.4                | 1.19 |
| M3S 30L - 7522H          |                   | 30                         | φ90                              | <sup>(φ93.46)</sup><br>φ91.28 | 75                             | φ22                           | φ66                        | 24                           | 40                      | 44.38                      | 31.73                 | 18.6                     | -                | -    | -                       | 47°11'                               | φ57.4                | 1.19 |
| M3S 30R # 7530H          |                   | 30                         | φ90                              | <sup>(φ93.46)</sup><br>φ91.28 | 75                             | φ30                           | φ66                        | 24                           | 40                      | 44.38                      | 31.73                 | 18.6                     | 8 x 3.3          | 2-M6 | 12                      | 47°11'                               | φ57.4                | 1.08 |
| M3S 30L # 7530H          |                   | 30                         | φ90                              | <sup>(φ93.46)</sup><br>φ91.28 | 75                             | φ30                           | φ66                        | 24                           | 40                      | 44.38                      | 31.73                 | 18.6                     | 8 x 3.3          | 2-M6 | 12                      | 47°11'                               | φ57.4                | 1.08 |

# MGH 螺旋等径锥齿轮

## SPIRAL MITER GEARS

模数  
MODULE **1 / 1.25 / 1.5 / 2 / 2.5** (齿数 20) 1:1 Ratio



单位: mm

| 精度            | 材料   | 压力角 | 螺旋角 | 热处理    | 齿面硬度     | 侧隙①  | 所有齿轮齿数 |
|---------------|------|-----|-----|--------|----------|------|--------|
| JIS B 1704 4级 | S45C | 20度 | 35度 | 齿面高频淬火 | HRC47~53 | 确认表格 | 20     |

★未做表面处理。容许传达动力表的数据是以 L 方向螺旋的齿轮做输入齿轮，为条件。

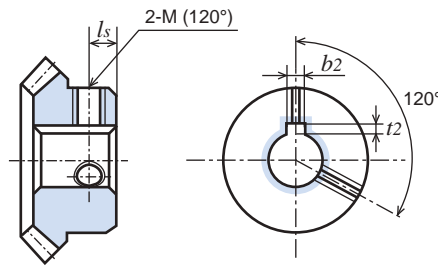
★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★齿顶圆直径 da( ) 内的数据为理论值。实际尺寸为在这个数据基础上，对轴心的平行方向进行倒角后的数据。

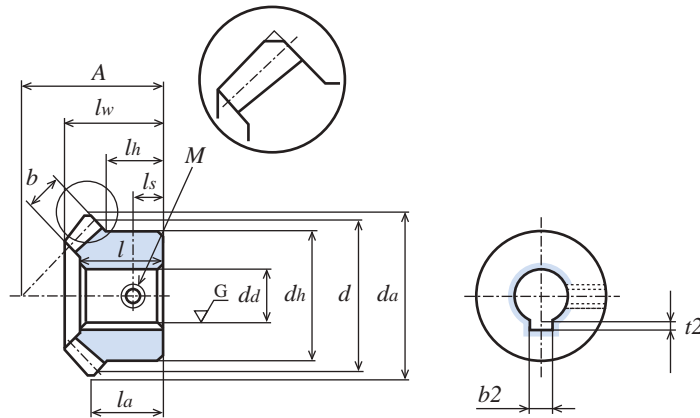
★MGH 系列是：齿面高频淬火，齿孔研磨加工，附有键和固定用螺钉的，无须加工可以直接使用的完成品。

★【+】表示带有螺纹孔，有固定螺钉。【=】表示带有键槽和键。①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 孔径<br>Bore Diameter<br>da(H7) | 模数<br>Module<br>m | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da   | 装配距离<br>Locating Distance<br>A | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 穴长度<br>Bore Length<br>l | 全长<br>Overall Length<br>lw | 齿宽<br>Face Width<br>b | 键槽<br>Key Way<br>b2 x t2 | 螺纹孔<br>Set Screw |    | 顶锥角<br>Face Angle<br>δa | 重量<br>Weight<br>W(g) |       |
|--------------------------|-------------------------------|-------------------|----------------------------------|-------------------------------|--------------------------------|----------------------------|------------------------------|-------------------------|----------------------------|-----------------------|--------------------------|------------------|----|-------------------------|----------------------|-------|
|                          |                               |                   |                                  |                               |                                |                            |                              |                         |                            |                       |                          | M                | ls |                         |                      |       |
| MGH R+ 8                 | φ 8                           | 1                 | φ20                              | φ21.12                        | 20                             | φ16                        | 8                            | 12                      | 13.43                      | 10.56                 | 4.5                      | -                | M4 | 4                       | 50°31'               | 16.0  |
| MGH L+ 8                 | φ 8                           | 1                 | φ20                              | φ21.12                        | 20                             | φ16                        | 8                            | 12                      | 13.43                      | 10.56                 | 4.5                      | -                | M4 | 4                       | 50°31'               | 16.0  |
| MGH R+ 10                | φ10                           | 1.25              | φ25                              | φ26.42                        | 25                             | φ20                        | 10                           | 15.5                    | 17.13                      | 13.21                 | 6                        | -                | M4 | 5                       | 49°22'               | 32.0  |
| MGH L+ 10                | φ10                           | 1.25              | φ25                              | φ26.42                        | 25                             | φ20                        | 10                           | 15.5                    | 17.13                      | 13.21                 | 6                        | -                | M4 | 5                       | 49°22'               | 32.0  |
| MGH R= 12                | φ12                           | 1.5               | φ30                              | φ31.85                        | 30                             | φ24                        | 12                           | 18.5                    | 20.44                      | 15.93                 | 7                        | 4 x 1.8          | M5 | 6                       | 50° 5'               | 54.9  |
| MGH L= 12                | φ12                           | 1.5               | φ30                              | φ31.85                        | 30                             | φ24                        | 12                           | 18.5                    | 20.44                      | 15.93                 | 7                        | 4 x 1.8          | M5 | 6                       | 50° 5'               | 54.9  |
| MGH R= 14                | φ14                           | 2                 | φ40                              | <sup>(φ42.28)</sup><br>φ40.88 | 40                             | φ32                        | 16                           | 24                      | 27.16                      | 21.14                 | 9                        | 5 x 2.3          | M5 | 8                       | 48° 3'               | 137.6 |
| MGH L= 14                | φ14                           | 2                 | φ40                              | <sup>(φ42.28)</sup><br>φ40.88 | 40                             | φ32                        | 16                           | 24                      | 27.16                      | 21.14                 | 9                        | 5 x 2.3          | M5 | 8                       | 48° 3'               | 137.6 |
| MGH R= 16                | φ16                           | 2.25              | φ45                              | <sup>(φ47.73)</sup><br>φ46.03 | 45                             | φ36                        | 18                           | 27.5                    | 30.39                      | 23.86                 | 10                       | 5 x 2.3          | M6 | 9                       | 49°22'               | 195.6 |
| MGH L= 16                | φ16                           | 2.25              | φ45                              | <sup>(φ47.73)</sup><br>φ46.03 | 45                             | φ36                        | 18                           | 27.5                    | 30.39                      | 23.86                 | 10                       | 5 x 2.3          | M6 | 9                       | 49°22'               | 195.6 |



| 各旋转速度下的容许传达动力表 (kW) 弯曲强度 |       |       |       |       |       |       | 各旋转速度下的容许传达动力表 (kW) 齿面强度 |       |       |       |       |       |       | 侧 隙         | 产 品 型 号<br>Catalogue Numbers   |
|--------------------------|-------|-------|-------|-------|-------|-------|--------------------------|-------|-------|-------|-------|-------|-------|-------------|--|
| 300                      | 600   | 900   | 1,200 | 1,500 | 1,800 | 2,000 | 300                      | 600   | 900   | 1,200 | 1,500 | 1,800 | 2,000 |             |  |
| 0.878                    | 1.582 | 2.146 | 2.674 | 3.155 | -     | -     | 0.387                    | 0.719 | 0.993 | 1.253 | 1.493 | -     | -     | 0.06 ~ 0.15 | M3S 20R - 5816H<br>M3S 20L - 5816H<br>M3S 20R # 5825H<br>M3S 20L # 5825H |
| 1.922                    | 3.291 | 4.481 | -     | -     | -     | -     | 1.237                    | 2.184 | 3.026 | -     | -     | -     | -     | 0.06 ~ 0.15 | M3S 30R - 7522H<br>M3S 30L - 7522H<br>M3S 30R # 7530H<br>M3S 30L # 7530H |



| 各旋转速度下的容许传达动力表 (kW) 弯曲强度 |       |       |       |       |       |       | 各旋转速度下的容许传达动力表 (kW) 齿面强度 |       |       |       |       |       |       | 侧 隙         | 产 品 型 号<br>Catalogue Numbers |
|--------------------------|-------|-------|-------|-------|-------|-------|--------------------------|-------|-------|-------|-------|-------|-------|-------------|------------------------------|
| 300                      | 600   | 900   | 1,200 | 1,500 | 1,800 | 2,000 | 300                      | 600   | 900   | 1,200 | 1,500 | 1,800 | 2,000 |             |                              |
| 0.030                    | 0.061 | 0.091 | 0.118 | 0.142 | 0.164 | 0.179 | 0.012                    | 0.026 | 0.040 | 0.052 | 0.063 | 0.074 | 0.081 | 0.05 ~ 0.12 | MGH R + 8<br>MGH L + 8       |
| 0.062                    | 0.125 | 0.184 | 0.234 | 0.280 | 0.322 | 0.348 | 0.026                    | 0.054 | 0.081 | 0.104 | 0.126 | 0.146 | 0.158 | 0.05 ~ 0.12 | MGH R + 10<br>MGH L + 10     |
| 0.107                    | 0.215 | 0.297 | 0.387 | 0.460 | 0.525 | 0.568 | 0.045                    | 0.093 | 0.136 | 0.174 | 0.208 | 0.240 | 0.261 | 0.05 ~ 0.12 | MGH R = 12<br>MGH L = 12     |
| 0.251                    | 0.488 | 0.680 | 0.847 | 0.998 | 1.150 | 1.245 | 0.108                    | 0.216 | 0.307 | 0.387 | 0.460 | 0.535 | 0.581 | 0.05 ~ 0.12 | MGH R = 14<br>MGH L = 14     |
| 0.357                    | 0.679 | 0.940 | 1.163 | 1.379 | 1.583 | 1.710 | 0.154                    | 0.303 | 0.427 | 0.535 | 0.641 | 0.741 | 0.804 | 0.06 ~ 0.15 | MGH R = 16<br>MGH L = 16     |

### 特征

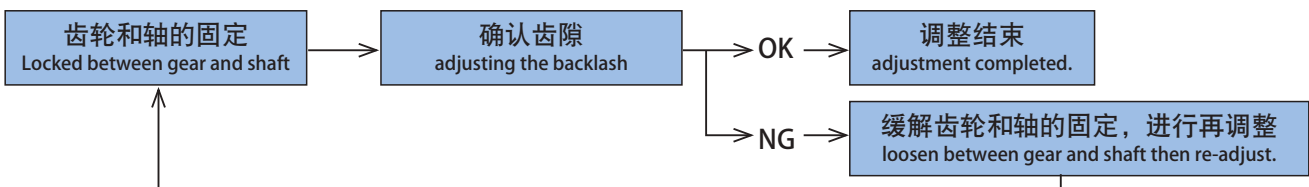
#### Feature of B-LOCKS.

1) B-LOCK(简易锁锥齿轮)的优秀特点。

- (1) B-LOCK (简易锁锥齿轮) 是用齿轮轮毂部的连结机构使齿轮固定于轴。所以很少产生用螺丝固定时的对轴的划痕凹痕。
- (2) B-LOCK (简易锁锥齿轮) 适合于有必要对齿轮啮合进行调整的场合。
- (3) 不需要为了使齿轮固定于轴，对轴进行键槽加工和半圆切割加工。
- (4) 如果使用B-LOCK (简易锁锥齿轮) 直齿锥齿轮，在对机械进行维护时比较容易对侧隙进行调整，因此维护更加方便。
- (5) 可以将其他直齿锥齿轮作为配对齿轮来使用。因为B-LOCK (简易锁锥齿轮) 与其它直齿锥齿轮有互换性。

为了调整锥齿轮的齿隙一般用以下工艺。

Generally, the process of adjustment for gear backlash is as follows;-



- 1) B-LOCK is a straight miter gear design with a locking mechanism that enable the gear and gear shaft to be tightened. The locking mechanism of B-LOCK tightens the gear shaft from the hub thus causing lesser damage to the gear shaft surface.
- 2) B-LOCK of Straight Miter gear has suitable mechanism for adjustment of the gear engagement.
- 3) Key way and D-cut are not necessary for tightening of the gear to the shaft.
- 4) B-LOCK of Straight Miter gear is easy for maintenance and adjustment.
- 5) KG-Straight Miter gears can match with KG- B-LOCKS because of the gear's tooth specification.

### 使用上的注意点

#### Usage of precaution.

- 1) 选择商品时，要使实际最大扭矩小于容许传达能力扭矩表的扭矩。还要考虑马达的启动扭矩。以防止出现由于马达的启动扭矩而发生事故。
  - 2) 组装后，不要立即用实际负荷运行。请先在轻负荷下进行试运转并确认情况后，再进行实际负荷的运行。
  - 3) 在进行轻负荷下的试运转后，请把紧固螺丝再度用扭力扳手重新拧紧到所指定的扭矩值。并进行确认。
  - 4) 请在对其紧固能力不发生影响的前提下进行追加工。特别是对内径的长度(深度)，内径直径，轮毂径等不要进行追加工和热处理。
  - 5) 如果在启动次数较多的情况下使用，推荐使用本系列之外有键槽的产品。
- 1) For best selection, do not exceed the number (W) indicated in the Allowable Transfer Capability Table for the maximum torque of usage. Starting torque is an important factor to consider for prevention of any accident.
  - 1) For best selection, do not exceed the number (W) indicated in the Allowable Transfer Capability Table for the maximum torque of usage. Starting torque is an important factor to consider for prevention of any accident.
  - 2) After assembly, warm up and test run with light load is highly recommended. Please do not apply actual load to the B-LOCK before warm up test run.
  - 3) Re-Locking after the warm up test run is necessarily important by using a torque wrench to tighten at the recommended torque.
  - 4) Additional machining to the B-LOCK and heat treatment are not allowed.
  - 5) If the usage of frequently revolution, gear with keyway is recommended.

### 安装用轴的精度 Precision of the gear shaft.

- 1) 请使用直径公差精度高于h7的轴。
- 2) 请使用轴面表面粗糙度精度高于1.6a (6.3S) 的轴
- 1) Recommended tolerance of shaft is h7 or above.
- 2) Recommended surface roughness of shaft is 1.6a (6.3s) or above.

### 齿轮的安装 Installation of KG B-LOCK.

- 1) 请用扭力扳手拧紧螺钉。并使用所指定的拧紧扭矩进行2,3次左右的再拧紧。(为了对拧紧扭矩进行确认,并防止螺钉的松懈。)
- 2) 为了防止螺钉的松懈,推荐在螺丝部分使用防松弛剂。
- 3) 在拧紧时使用的螺钉,请使用JIS的强度区中10.9级以上的螺钉。
- 1) In order to confirm the locked torque and prevent lose nut condition, torque wrench is recommended to tighten the screw few times for re-adjustment.
- 2) Anti-looseness products are recommended to apply.
- 3) Recommended screw for the tightening is JIS classification of strength class 10.9 or above.

### 万一发生齿轮空转的现象时,有可能在两个齿轮的啮合脱离时断裂出齿的断片 Other

这些断片会对机器的其他零部件产生影响。所以如果出现以上情况,请务必对于机器的其他零部件也进行检查和清扫。本产品会在不预告的情况下,在功能上不发生障碍的范围内对其尺寸进行变更。敬请谅解。

Under unforeseen circumstances, when mis-engagement between two gears happened, this causes the B-LOCK to slip during operation. This fault needs to be rectified immediately and all foreign objects (e.g. chips or burrs) are to be removed or cleaned before installation again.  
All dimensions and descriptions are subject to changes without prior notice.

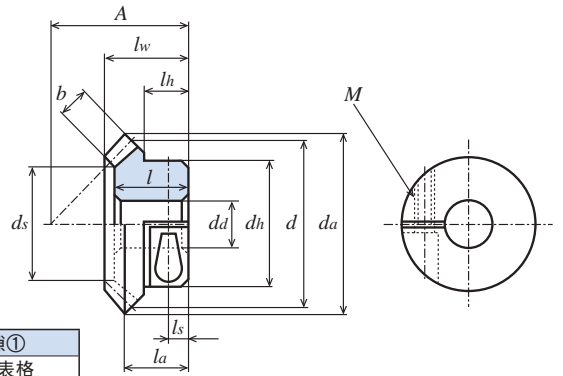
本产品会在不预告的情况下,在功能上不发生障碍的范围内对其尺寸进行变更。敬请谅解。  
All dimensions and descriptions are subject to changes without prior notice.

# S45C简易锁直齿锥齿轮

## B-LOCK SERIES

模数  
MODULE

1 (齿数 20) / 1.5 (齿数 20~25) / 2 (齿数 20) / 2.5 (齿数 20) 1:1 Ratio 齿数比 1:1



单位: mm

| 精度            | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①  |
|---------------|------|-----|-----|------|------|
| JIS B 1704 3级 | S45C | 20度 | —   | —    | 确认表格 |

- ★未做表面处理。带有螺纹孔，带有用于把齿轮紧固于轴的螺钉。①同一种材料，一样的齿轮相互啮合时的理想值。
- ★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。
- ★本产品是根据螺丝拧紧时产生的摩擦力连接轴和齿轮。所以可以避免对轴产生伤痕。

| 产品型号<br>Catalogue Number | 齿数比<br>Gear Ratio<br>u | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 装配距离<br>Locating Distance<br>A | 孔径<br>Bore Diameter<br>da(H8) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 穴长度<br>Bore Length<br>l | 全长<br>Overall Length<br>lw | 齿宽<br>Face Width<br>b | 螺纹孔<br>Set Screw |    | 顶锥角<br>Face Angle<br>δa | 沉头部直径<br>(参考值)<br>Counter bore<br>ds | 重量<br>Weight<br>W(g) |       |
|--------------------------|------------------------|----------------------------|----------------------------------|-----------------------------|--------------------------------|-------------------------------|----------------------------|------------------------------|-------------------------|----------------------------|-----------------------|------------------|----|-------------------------|--------------------------------------|----------------------|-------|
|                          |                        |                            |                                  |                             |                                |                               |                            |                              |                         |                            |                       | M                | ls |                         |                                      |                      |       |
| ML1S 20 - 2108           | 1                      | 20                         | φ20                              | φ21.41                      | 21                             | φ 8                           | φ18                        | 10                           | 13                      | 14.48                      | 11.71                 | 4.3              | M3 | 4                       | 49° 3'                               | φ11.8                | 19.5  |
| ML1.5S 20 - 3010         |                        | 20                         | φ30                              | φ32.12                      | 30                             | φ10                           | φ24                        | 12                           | 18.5                    | 20.38                      | 16.06                 | 6.8              | M4 | 5                       | 49° 3'                               | φ17.7                | 54.6  |
| ML1.5S 25 - 3412         |                        | 25                         | φ37.5                            | φ39.62                      | 34                             | φ12                           | φ30                        | 12.5                         | 19                      | 21.11                      | 16.31                 | 7.5              | M5 | 5.5                     | 48°51'                               | φ23.8                | 93.4  |
| ML2S 20 - 3715           |                        | 20                         | φ40                              | φ41.32                      | 37                             | φ15                           | φ34                        | 14                           | 21                      | 23.85                      | 18.41                 | 8.5              | M5 | 5.5                     | 49° 3'                               | φ23.9                | 119.2 |
| ML2.5S 20 - 4820         |                        | 20                         | φ50                              | φ51.66                      | 48                             | φ20                           | φ42                        | 19                           | 28                      | 31.86                      | 24.77                 | 11.1             | M6 | 7.5                     | 49° 3'                               | φ28.5                | 236.6 |

# SUS简易锁直齿锥齿轮

## B-LOCK SERIES

模数  
MODULE

0.8 (齿数 20) / 1 (齿数 20~30) / 1.5 (齿数 20~25) / 2 (齿数 20) 1:1 Ratio 齿数比 1:1



单位: mm

| 精度            | 材料     | 压力角 | 热处理 | 齿面硬度 | 侧隙①  |
|---------------|--------|-----|-----|------|------|
| JIS B 1704 4级 | SUS304 | 20度 | —   | —    | 确认表格 |

- ★未做表面处理。带有螺纹孔，带有用于把齿轮紧固于轴的螺钉。①同一种材料，一样的齿轮相互啮合时的理想值。
- ★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。
- ★本产品是根据螺丝拧紧时产生的摩擦力连接轴和齿轮。所以可以避免对轴产生伤痕。

| 产品型号<br>Catalogue Number | 齿数比<br>Gear Ratio<br>u | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 装配距离<br>Locating Distance<br>A | 孔径<br>Bore Diameter<br>da(H8) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 穴长度<br>Bore Length<br>l | 全长<br>Overall Length<br>lw | 齿宽<br>Face Width<br>b | 螺纹孔<br>Set Screw |      | 顶锥角<br>Face Angle<br>δa | 沉头部直径<br>(参考值)<br>Counter bore<br>ds | 重量<br>Weight<br>W(g) |       |
|--------------------------|------------------------|----------------------------|----------------------------------|-----------------------------|--------------------------------|-------------------------------|----------------------------|------------------------------|-------------------------|----------------------------|-----------------------|------------------|------|-------------------------|--------------------------------------|----------------------|-------|
|                          |                        |                            |                                  |                             |                                |                               |                            |                              |                         |                            |                       | M                | ls   |                         |                                      |                      |       |
| ML80SU 20 - 1605         | 1                      | 20                         | φ16                              | φ17.13                      | 16                             | φ 5                           | φ14.5                      | 7.25                         | 10                      | 10.95                      | 8.57                  | 3.7              | M2.5 | 3                       | 49° 3'                               | φ 9.5                | 10.2  |
| ML1SU 20 - 2106          |                        | 20                         | φ20                              | φ21.41                      | 21                             | φ 6                           | φ16                        | 9                            | 13                      | 14.48                      | 11.71                 | 4.3              | M3   | 4                       | 49° 3'                               | φ11.8                | 18.6  |
| ML1SU 30 - 2808          |                        | 30                         | φ30                              | φ31.41                      | 28                             | φ 8                           | φ24                        | 11                           | 16.5                    | 17.84                      | 13.71                 | 6.2              | M4   | 5                       | 47°42'                               | φ19.4                | 54.3  |
| ML1.5SU 20 - 3010        |                        | 20                         | φ30                              | φ32.12                      | 30                             | φ10                           | φ24                        | 12                           | 18.5                    | 20.38                      | 16.06                 | 6.8              | M4   | 5                       | 49° 3'                               | φ17.7                | 57.3  |
| ML1.5SU 25 - 3412        |                        | 25                         | φ37.5                            | φ39.62                      | 34                             | φ12                           | φ30                        | 12.5                         | 19                      | 21.11                      | 16.31                 | 7.5              | M5   | 5.5                     | 48°51'                               | φ23.8                | 94.0  |
| ML2SU 20 - 3715          |                        | 20                         | φ40                              | φ41.32                      | 37                             | φ15                           | φ34                        | 14                           | 21                      | 23.85                      | 19.07                 | 8.5              | M5   | 6                       | 49° 3'                               | φ23.9                | 121.5 |

# S45C简易锁直齿锥齿轮

B-LOCK SERIES

模数  
MODULE

1 (齿数 20) / 1.5 (齿数 20~25) / 2 (齿数 20) / 2.5 (齿数 20) 齿数比 1:1

1:1 Ratio

| 各旋转速度下的容许传达动力表 (W) 弯曲强度 |      |       |       |       |        |        | 所推荐的拧紧螺钉用扭矩<br>(N·m)<br>Recommendable power of<br>screw tightening Torque<br>(N·m) | 所推荐的配对齿轮 (KG产品)<br>Example of some matching<br>KG Miter gears. | 侧 隙         | 产 品 型 号<br>Catalogue Numbers |
|-------------------------|------|-------|-------|-------|--------|--------|--|--|-------------|------------------------------|
| 10                      | 50   | 100   | 250   | 500   | 800    | 1,000  |  |  |             |                              |
| 1.0                     | 5.1  | 10.2  | 25.6  | 51.3  | 82.2   | 102.0  | 1.17   | M1S 20 - 2106  | 0.05 ~ 0.12 | ML1S 20 - 2108               |
| 3.5                     | 17.9 | 35.8  | 89.7  | 179.4 | 277.3  | 332.8  | 2.54   | M1.5S 20 - 2810  | 0.05 ~ 0.12 | ML1.5S 20 - 3010             |
| 5.5                     | 27.9 | 55.8  | 139.5 | 279.1 | 414.4  | 493.4  | 5.09   | M1.5S 25 - 3410  | 0.05 ~ 0.12 | ML1.5S 25 - 3412             |
| 8.1                     | 40.8 | 81.6  | 204.0 | 405.4 | 597.9  | 710.2  | 5.09   | M2S 20 - 3712  | 0.05 ~ 0.12 | ML2S 20 - 3715               |
| 16.3                    | 81.9 | 163.9 | 409.8 | 786.6 | 1141.2 | 1343.2 | 7.84   | M2.5S 20 - 4814  | 0.06 ~ 0.15 | ML2.5S 20 - 4820             |

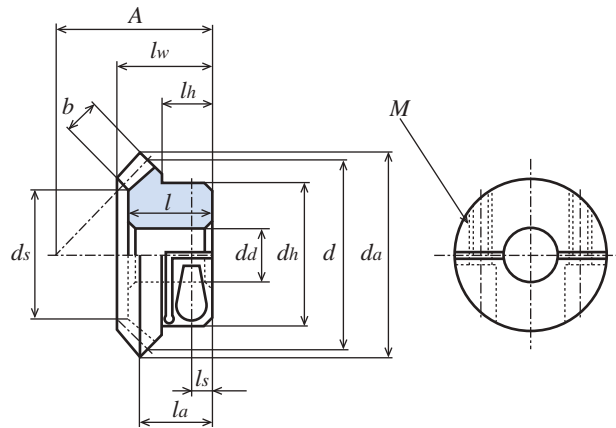
# SUS简易锁直齿锥齿轮

B-LOCK SERIES

模数  
MODULE

0.8 (齿数 20) / 1 (齿数 20~30) / 1.5 (齿数 20~25) / 2 (齿数 20) 齿数比 1:1

1:1 Ratio



| 各旋转速度下的容许传达动力表 (W) 弯曲强度 |      |      |      |       |       |       | 所推荐的拧紧螺钉用扭矩<br>(N·m)<br>Recommendable power of<br>screw tightening Torque<br>(N·m) | 所推荐的配对齿轮 (KG产品)<br>Example of some matching<br>KG Miter gears. | 侧 隙         | 产 品 型 号<br>Catalogue Numbers |
|-------------------------|------|------|------|-------|-------|-------|--|--|-------------|------------------------------|
| 10                      | 50   | 100  | 250  | 500   | 800   | 1,000 |  |  |             |                              |
| 0.2                     | 1.3  | 2.6  | 6.5  | 13.1  | 20.9  | 26.2  | 0.68   | M80SU 20 + 1605  | 0.02 ~ 0.08 | ML80SU 20 - 1605             |
| 0.4                     | 2.4  | 4.8  | 12.1 | 24.4  | 39.1  | 48.5  | 0.98   | M1SU 20 + 2106   | 0.05 ~ 0.12 | ML1SU 20 - 2106              |
| 1.2                     | 6.1  | 12.2 | 30.5 | 61.1  | 94.5  | 113.5 | 2.45   | M1SU 30 + 2608   | 0.05 ~ 0.12 | ML1SU 30 - 2808              |
| 1.6                     | 8.5  | 17.0 | 42.7 | 85.4  | 132.0 | 158.4 | 2.45   | M1.5SU 20 - 2810   | 0.05 ~ 0.12 | ML1.5SU 20 - 3010            |
| 2.6                     | 13.2 | 26.5 | 66.4 | 132.9 | 197.3 | 234.9 | 3.92   | M1.5SU 25 - 3410   | 0.05 ~ 0.12 | ML1.5SU 25 - 3412            |
| 3.8                     | 19.4 | 38.8 | 97.1 | 193.0 | 284.7 | 338.1 | 3.92   | M2SU 20 - 3712   | 0.05 ~ 0.12 | ML2SU 20 - 3715              |

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# S45C直齿等径锥齿轮

## MITER GEARS

模数 **0.5** (齿数 20~30) / **0.8** (齿数 20~30) / **1** (齿数 20~30) / **1.25** (齿数 20~30) / **1.5** (齿数 20~30) 齿数比 1:1  
 MODULE 0.5 (齿数 20~30) / 0.8 (齿数 20~30) / 1 (齿数 20~30) / 1.25 (齿数 20~30) / 1.5 (齿数 20~30) 1:1 Ratio



单位: mm

| 精度            | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①  |
|---------------|------|-----|-----|------|------|
| JIS B 1704 3级 | S45C | 20度 | —   | —    | 确认表格 |

- ★未做表面处理。①同一种材料，一样的齿轮相互啮合时的理想值。
- ★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。
- ★【\*】表示带有两个螺纹孔，两个固定螺钉。【=】表示带有键槽和键。

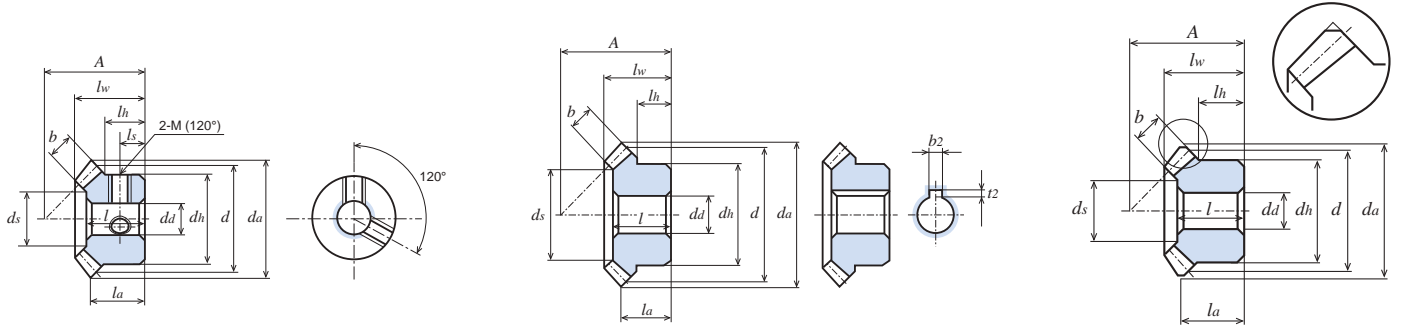
| 产品型号<br>Catalogue Number | 齿数比<br>Ratio<br>u | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 装配距离<br>Locating Distance<br>A | 孔径<br>Bore Diameter<br>dd(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 穴长度<br>Bore Length<br>l | 全长<br>Overall Length<br>lw | Tip Distance<br>la | 齿宽<br>Face Width<br>b | 键槽<br>Key Way<br>b2 x t2 | 螺纹孔<br>Set Screw |        | 顶锥角<br>Face Angle<br>δa | 沉头直径<br>(参考值)<br>Counter bore<br>ds | 重量<br>Weight<br>W(g) |
|--------------------------|-------------------|----------------------------|----------------------------------|-----------------------------|--------------------------------|-------------------------------|----------------------------|------------------------------|-------------------------|----------------------------|--------------------|-----------------------|--------------------------|------------------|--------|-------------------------|-------------------------------------|----------------------|
|                          |                   |                            |                                  |                             |                                |                               |                            |                              |                         |                            |                    |                       |                          | 2-M              | ls     |                         |                                     |                      |
| M50S 20 - 1103           | 1                 | 20                         | φ10                              | φ10.71                      | 11                             | φ 3                           | φ 8                        | 5                            | 7                       | 8                          | 6.35               | 2.5                   | -                        | -                | 49° 3' | φ 4.9                   | 2.7                                 |                      |
| M50S 20 * 1103           |                   | 20                         | φ10                              | φ10.71                      | 11                             | φ 3                           | φ 8                        | 5                            | 7                       | 8                          | 6.35               | 2.5                   | 2-M2.5                   | 2.5              | 49° 3' | φ 4.9                   | 2.5                                 |                      |
| M50S 25 - 1204           |                   | 25                         | φ12.5                            | φ13.21                      | 12                             | φ 4                           | φ11                        | 5                            | 7                       | 8.11                       | 6.10               | 3.0                   | -                        | -                | 48°14' | φ 6.5                   | 5.2                                 |                      |
| M50S 25 * 1204           |                   | 25                         | φ12.5                            | φ13.21                      | 12                             | φ 4                           | φ11                        | 5                            | 7                       | 8.11                       | 6.10               | 3.0                   | 2-M3                     | 3                | 48°14' | φ 6.5                   | 4.6                                 |                      |
| M50S 30 - 1404           |                   | 30                         | φ15                              | φ15.71                      | 14                             | φ 4                           | φ12                        | 5                            | 8                       | 9.21                       | 6.85               | 3.5                   | -                        | -                | 47°42' | φ 9.1                   | 7.4                                 |                      |
| M50S 30 * 1404           |                   | 30                         | φ15                              | φ15.71                      | 14                             | φ 4                           | φ12                        | 5                            | 8                       | 9.21                       | 6.85               | 3.5                   | 2-M3                     | 3                | 47°42' | φ 9.1                   | 7.0                                 |                      |
| M80S 20 - 1605           |                   | 20                         | φ16                              | φ17.13                      | 16                             | φ 5                           | φ12                        | 6                            | 10                      | 11                         | 8.57               | 3.7                   | -                        | -                | 49° 3' | φ 9.5                   | 8.7                                 |                      |
| M80S 20 * 1605           |                   | 20                         | φ16                              | φ17.13                      | 16                             | φ 5                           | φ12                        | 6                            | 10                      | 11                         | 8.57               | 3.7                   | 2-M3                     | 3                | 49° 3' | φ 9.5                   | 8.4                                 |                      |
| M80S 25 - 1805           |                   | 25                         | φ20                              | φ21.13                      | 18                             | φ 5                           | φ16                        | 6                            | 10.5                    | 11.67                      | 8.57               | 4.7                   | -                        | -                | 48°51' | φ11.7                   | 16.8                                |                      |
| M80S 25 * 1805           |                   | 25                         | φ20                              | φ21.13                      | 18                             | φ 5                           | φ16                        | 6                            | 10.5                    | 11.67                      | 8.57               | 4.7                   | 2-M3                     | 3                | 48°51' | φ11.7                   | 16.3                                |                      |
| M80S 30 - 2006           |                   | 30                         | φ24                              | φ25.13                      | 20                             | φ 6                           | φ18                        | 6                            | 11                      | 12.34                      | 8.57               | 5.6                   | -                        | -                | 47°42' | φ14.1                   | 24.1                                |                      |
| M80S 30 * 2006           |                   | 30                         | φ24                              | φ25.13                      | 20                             | φ 6                           | φ18                        | 6                            | 11                      | 12.34                      | 8.57               | 5.6                   | 2-M4                     | 3                | 47°42' | φ14.1                   | 23.1                                |                      |
| M1S 20 - 2106            |                   | 20                         | φ20                              | φ21.41                      | 21                             | φ 6                           | φ16                        | 9                            | 13                      | 14.53                      | 11.71              | 4.3                   | -                        | -                | 49° 3' | φ11.8                   | 19.7                                |                      |
| M1S 20 * 2106            |                   | 20                         | φ20                              | φ21.41                      | 21                             | φ 6                           | φ16                        | 9                            | 13                      | 14.53                      | 11.71              | 4.3                   | -                        | 2-M4             | 4.5    | 49° 3'                  | φ11.8                               | 18.9                 |
| M1S 20 * 2108            |                   | 20                         | φ20                              | φ21.41                      | 21                             | φ 8                           | φ16                        | 9                            | 13                      | 14.53                      | 11.71              | 4.3                   | -                        | 2-M4             | 4.5    | 49° 3'                  | φ11.8                               | 16.9                 |
| M1S 20 - 1406            |                   | 20                         | φ20                              | φ21.41                      | 14                             | φ 6                           | φ16                        | 2                            | 6                       | 7.53                       | 4.71               | 4.3                   | -                        | -                | 49° 3' | φ11.8                   | 10.2                                |                      |
| M1S 20 = 1408            |                   | 20                         | φ20                              | φ21.41                      | 14                             | φ 8                           | φ16                        | 2                            | 6                       | 7.53                       | 4.71               | 4.3                   | 3 x 1.4                  | -                | 49° 3' | φ11.8                   | 9.0                                 |                      |
| M1S 25 - 2306            |                   | 25                         | φ25                              | φ26.41                      | 23                             | φ 6                           | φ20                        | 8                            | 13                      | 14.7                       | 11.21              | 5.3                   | -                        | -                | 48°51' | φ15.0                   | 33.2                                |                      |
| M1S 25 * 2308            |                   | 25                         | φ25                              | φ26.41                      | 23                             | φ 8                           | φ20                        | 8                            | 13                      | 14.7                       | 11.21              | 5.3                   | -                        | 2-M4             | 4      | 48°51'                  | φ15.0                               | 30.0                 |
| M1S 25 * 2310            |                   | 25                         | φ25                              | φ26.41                      | 23                             | φ10                           | φ20                        | 8                            | 13                      | 14.7                       | 11.21              | 5.3                   | -                        | 2-M4             | 4      | 48°51'                  | φ15.0                               | 27.3                 |
| M1S 30 - 2608            | 30                | φ30                        | φ31.41                           | 26                          | φ 8                            | φ22                           | 8.9                        | 14.5                         | 15.89                   | 11.71                      | 6.2                | -                     | -                        | 47°42'           | φ19.4  | 46.4                    |                                     |                      |
| M1S 30 * 2608            | 30                | φ30                        | φ31.41                           | 26                          | φ 8                            | φ22                           | 8.9                        | 14.5                         | 15.89                   | 11.71                      | 6.2                | -                     | 2-M5                     | 4.5              | 47°42' | φ19.4                   | 44.7                                |                      |
| M1S 30 * 2610            | 30                | φ30                        | φ31.41                           | 26                          | φ10                            | φ22                           | 8.9                        | 14.5                         | 15.89                   | 11.71                      | 6.2                | -                     | 2-M5                     | 4.5              | 47°42' | φ19.4                   | 41.8                                |                      |
| M1S 30 * 2612            | 30                | φ30                        | φ31.41                           | 26                          | φ12                            | φ22                           | 8.9                        | 14.5                         | 15.89                   | 11.71                      | 6.2                | -                     | 2-M5                     | 4.5              | 47°42' | φ19.4                   | 38.3                                |                      |
| M1S 30 - 2008            | 30                | φ30                        | φ31.41                           | 20                          | φ 8                            | φ22                           | 2.9                        | 8.5                          | 9.89                    | 5.71                       | 6.2                | -                     | -                        | 47°42'           | φ19.4  | 30.9                    |                                     |                      |
| M1S 30 = 2010            | 30                | φ30                        | φ31.41                           | 20                          | φ10                            | φ22                           | 2.9                        | 8.5                          | 9.89                    | 5.71                       | 6.2                | 3 x 1.4               | -                        | 47°42'           | φ19.4  | 28.7                    |                                     |                      |
| M1S 30 = 2012            | 30                | φ30                        | φ31.41                           | 20                          | φ12                            | φ22                           | 2.9                        | 8.5                          | 9.89                    | 5.71                       | 6.2                | 4 x 1.8               | -                        | 47°42'           | φ19.4  | 26.2                    |                                     |                      |
| M1.25S 20 - 2408         | 20                | φ25                        | φ26.77                           | 24                          | φ 8                            | φ20                           | 8.99                       | 14                           | 16                      | 12.38                      | 5.5                | -                     | -                        | 49° 3'           | φ14.4  | 33.1                    |                                     |                      |
| M1.25S 25 - 2808         | 25                | φ31.25                     | φ33.02                           | 28                          | φ 8                            | φ26                           | 9.75                       | 15.5                         | 17.35                   | 13.26                      | 6.2                | -                     | -                        | 48°51'           | φ19.9  | 64.0                    |                                     |                      |
| M1.25S 30 - 3210         | 30                | φ37.5                      | φ39.27                           | 32                          | φ10                            | φ28                           | 10                         | 17                           | 18.85                   | 14.13                      | 7                  | -                     | -                        | 47°42'           | φ25.2  | 88.6                    |                                     |                      |
| M1.5S 20 - 2810          | 20                | φ30                        | φ32.12                           | 28                          | φ10                            | φ24                           | 10                         | 16.5                         | 18.53                   | 14.06                      | 6.8                | -                     | -                        | 49° 3'           | φ17.7  | 54.9                    |                                     |                      |
| M1.5S 20 - 2110          | 20                | φ30                        | φ32.12                           | 21                          | φ10                            | φ24                           | 3                          | 9                            | 11                      | 7.06                       | 6                  | -                     | -                        | 49° 3'           | φ19.0  | 32.8                    |                                     |                      |
| M1.5S 25 - 3410          | 25                | φ37.5                      | φ39.62                           | 34                          | φ10                            | φ30                           | 11.5                       | 19                           | 21.26                   | 16.31                      | 7.5                | -                     | -                        | 48°51'           | φ23.7  | 106.5                   |                                     |                      |
| M1.5S 30 - 3812          | 30                | φ45                        | φ47.12                           | 38                          | φ12                            | φ33                           | 12.34                      | 21                           | 22.83                   | 16.56                      | 9.3                | -                     | -                        | 47°42'           | φ29.6  | 152.0                   |                                     |                      |



# S45C直齿等径锥齿轮

## MITER GEARS

模数 MODULE 0.5 (齿数 20~30) / 0.8 (齿数 20~30) / 1 (齿数 20~30) / 1.25 (齿数 20~30) / 1.5 (齿数 20~30) 齿数比 1:1 1:1 Ratio



| 各旋转速度下的容许传达动力表 (W) 弯曲强度 |      |       |       |       |       |       | 各旋转速度下的容许传达动力表 (W) 齿面强度 |     |      |      |      |      |       | 侧 隙         | 产 品 型 号<br>Catalogue Numbers |  |
|-------------------------|------|-------|-------|-------|-------|-------|-------------------------|-----|------|------|------|------|-------|-------------|------------------------------|--|
| 10                      | 100  | 200   | 400   | 600   | 800   | 1,000 | 10                      | 100 | 200  | 400  | 600  | 800  | 1,000 |             |                              |  |
| 0.1                     | 1.5  | 3.1   | 6.2   | 9.3   | 12.4  | 15.5  |                         |     |      |      |      |      |       |             | 0.02 ~ 0.08                  | <b>M50S 20 - 1103</b><br><b>M50S 20 * 1103</b>   |
| 0.2                     | 2.5  | 5.0   | 10.0  | 15.0  | 20.1  | 25.1  |                         |     |      |      |      |      |       |             | 0.02 ~ 0.08                  | <b>M50S 25 - 1204</b><br><b>M50S 25 * 1204</b>   |
| 0.3                     | 3.8  | 7.6   | 15.2  | 22.9  | 30.5  | 38.1  |                         |     |      |      |      |      |       |             | 0.02 ~ 0.08                  | <b>M50S 30 - 1404</b><br><b>M50S 30 * 1404</b>   |
| 0.6                     | 6.0  | 12.1  | 24.2  | 36.3  | 48.4  | 60.6  |                         |     |      |      |      |      |       |             | 0.02 ~ 0.08                  | <b>M80S 20 - 1605</b><br><b>M80S 20 * 1605</b>   |
| 1.0                     | 10.3 | 20.6  | 41.3  | 61.9  | 82.6  | 103.3 |                         |     |      |      |      |      |       |             | 0.02 ~ 0.08                  | <b>M80S 25 - 1805</b><br><b>M80S 25 * 1805</b>   |
| 1.5                     | 15.6 | 31.2  | 62.5  | 93.8  | 124.9 | 156.2 |                         |     |      |      |      |      |       |             | 0.02 ~ 0.08                  | <b>M80S 30 - 2006</b><br><b>M80S 30 * 2006</b>   |
| 1.0                     | 10.5 | 21.2  | 42.3  | 63.5  | 84.7  | 104.7 |                         |     |      |      |      |      |       |             | 0.05 ~ 0.12                  | <b>M1S 20 - 2106</b><br><b>M1S 20 * 2106</b><br><b>M1S 20 * 2108</b>                         |
| 1.0                     | 10.5 | 21.2  | 42.3  | 63.5  | 84.7  | 104.7 |                         |     |      |      |      |      |       |             | 0.05 ~ 0.12                  | <b>M1S 20 - 1406</b><br><b>M1S 20 = 1408</b>   |
| 1.7                     | 17.5 | 35.0  | 70.0  | 105.0 | 139.9 | 169.1 |                         |     |      |      |      |      |       |             | 0.05 ~ 0.12                  | <b>M1S 25 - 2306</b><br><b>M1S 25 * 2308</b><br><b>M1S 25 * 2310</b>                         |
| 2.6                     | 26.2 | 52.4  | 104.7 | 157.2 | 202.7 | 241.9 |                         |     |      |      |      |      |       |             | 0.05 ~ 0.12                  | <b>M1S 30 - 2608</b><br><b>M1S 30 * 2608</b><br><b>M1S 30 * 2610</b><br><b>M1S 30 * 2612</b> |
| 2.6                     | 26.2 | 52.4  | 104.7 | 157.2 | 202.7 | 241.9 |                         |     |      |      |      |      |       |             | 0.05 ~ 0.12                  | <b>M1S 30 - 2008</b><br><b>M1S 30 = 2010</b><br><b>M1S 30 = 2012</b>                         |
| 2.0                     | 20.9 | 41.9  | 83.9  | 125.9 | 167.1 | 206.7 |                         |     |      |      |      |      |       |             | 0.05 ~ 0.12                  | <b>M1.25S 20 - 2408</b>  |
| 3.2                     | 32.5 | 65.0  | 130.2 | 195.0 | 249.6 | 298.2 |                         |     |      |      |      |      |       |             | 0.05 ~ 0.12                  | <b>M1.25S 25 - 2808</b>  |
| 4.6                     | 46.9 | 93.9  | 187.7 | 274.3 | 347.8 | 414.3 |                         |     |      |      |      |      |       |             | 0.05 ~ 0.12                  | <b>M1.25S 30 - 3210</b>  |
| 3.7                     | 37.1 | 74.4  | 148.9 | 223.3 | 287.6 | 344.7 | 0.2                     | 2.8 | 5.7  | 11.7 | 18.1 | 23.4 | 27.6  | 0.05 ~ 0.12 | <b>M1.5S 20 - 2810</b>       |  |
| 3.3                     | 33.5 | 67.0  | 134.1 | 201.1 | 259.2 | 310.8 | 0.2                     | 2.6 | 5.3  | 10.6 | 15.5 | 20.8 | 25.1  | 0.05 ~ 0.12 | <b>M1.5S 20 - 2110</b>       |  |
| 5.6                     | 56.5 | 113.1 | 226.3 | 331.5 | 419.3 | 499.1 | 0.5                     | 5.1 | 10.5 | 21.3 | 31.4 | 40.2 | 48.4  | 0.05 ~ 0.12 | <b>M1.5S 25 - 3410</b>       |  |
| 8.8                     | 88.3 | 176.7 | 353.5 | 501.8 | 630.0 | 744.7 | 0.9                     | 9.5 | 19.1 | 38.7 | 55.6 | 70.7 | 84.4  | 0.05 ~ 0.12 | <b>M1.5S 30 - 3812</b>       |  |

齿 轮 回 转 内 容

齿 轮 信 息

齿 轮 箱

开 背 隙 齿 轮

研 磨 直 齿 齿 轮

直 齿 齿 轮

齿 条

内 齿 轮

斜 齿 轮 和 螺 纹 齿 轮

斜 齿 锥 齿 轮

锥 齿 轮

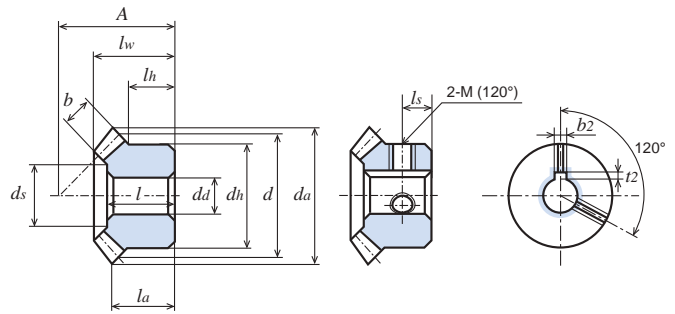
蜗 轮 和 蜗 轮 轴

技 术 参 数

# S45C直齿等径锥齿轮

## MITER GEARS

模数 **2** (齿数 20~30) / **2.5** (齿数 20~30) / **3** (齿数 20~30) / **4** (齿数 20) / **5** (齿数 20) 齿数比 1:1  
 MODULE 2 (齿数 20~30) / 2.5 (齿数 20~30) / 3 (齿数 20~30) / 4 (齿数 20) / 5 (齿数 20) 1:1 Ratio



单位: mm

| 精度            | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①  |
|---------------|------|-----|-----|------|------|
| JIS B 1704 3级 | S45C | 20度 | —   | —    | 确认表格 |

★未做表面处理。①同一种材料，一样的齿轮相互啮合时的理想值。  
 ★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

| 产品型号<br>Catalogue Number | 齿数比<br>Ratio<br><i>u</i> | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 齿顶圆直径<br>Tip Diameter<br><i>da</i> | 装配圆直径<br>Locating Distance<br><i>A</i> | 孔径<br>Bore Diameter<br><i>dd(H7)</i> | 轮毂外径<br>Hub Diameter<br><i>dh</i> | 轮毂长度<br>Hub Projection<br><i>lh</i> | 穴长度<br>Bore Length<br><i>l</i> | 全长<br>Overall Length<br><i>lw</i> | Tip Distance<br><i>la</i> | 齿宽<br>Face Width<br><i>b</i> | 顶锥角<br>Face Angle<br><i>δa</i> | 沉头部直径<br>(参考值)<br>Counter bore<br><i>ds</i> | 重量<br>Weight<br><i>W(g)</i> |
|--------------------------|--------------------------|-----------------------------------|---|------------------------------------|--|--------------------------------------|-----------------------------------|-------------------------------------|--------------------------------|-----------------------------------|---------------------------|------------------------------|--------------------------------|---|-----------------------------|
| M2S 20 - 3712            | 1                        | 20                                | φ 40                                    | <sup>(φ42.83)</sup><br>φ41.32      | 37                                     | φ12                                  | φ34                               | 14                                  | 21                             | 24                                | 18.41                     | 8.5                          | 49° 3'                         | φ23.9                                       | 141.0                       |
| M2S 20 - 2812            |                          | 20                                | φ 40                                    | <sup>(φ42.83)</sup><br>φ41.32      | 28                                     | φ12                                  | φ34                               | 5                                   | 12                             | 15                                | 9.41                      | 8.5                          | 49° 3'                         | φ23.9                                       | 84.9                        |
| M2S 25 - 4012            |                          | 25                                | φ 50                                    | <sup>(φ52.83)</sup><br>φ51.33      | 40                                     | φ12                                  | φ42                               | 10.99                               | 21                             | 23.34                             | 16.41                     | 10.5                         | 48°51'                         | φ32.3                                       | 227.0                       |
| M2S 30 - 5116            |                          | 30                                | φ 60                                    | <sup>(φ62.83)</sup><br>φ61.36      | 51                                     | φ16                                  | φ44                               | 16.79                               | 28                             | 30.77                             | 22.41                     | 12.4                         | 47°42'                         | φ38.9                                       | 361.4                       |
| M2.5S 20 - 4814          |                          | 20                                | φ 50                                    | <sup>(φ53.54)</sup><br>φ51.66      | 48                                     | φ14                                  | φ42                               | 19                                  | 28                             | 32.06                             | 24.77                     | 11.1                         | 49° 3'                         | φ28.5                                       | 294.0                       |
| M2.5S 20 - 3514          |                          | 20                                | φ 50                                    | <sup>(φ53.54)</sup><br>φ51.66      | 35                                     | φ14                                  | φ42                               | 6                                   | 15                             | 19.06                             | 11.77                     | 11.1                         | 49° 3'                         | φ28.5                                       | 168.3                       |
| M2.5S 25 - 5016          |                          | 25                                | φ 62.5                                  | <sup>(φ66.04)</sup><br>φ64.16      | 50                                     | φ16                                  | φ52                               | 13.5                                | 27                             | 29.42                             | 20.52                     | 13.5                         | 48°51'                         | φ40.8                                       | 441.2                       |
| M2.5S 30 - 6318          |                          | 30                                | φ 75                                    | <sup>(φ76.83)</sup><br>φ76.7       | 63                                     | φ18                                  | φ55                               | 20.5                                | 34.5                           | 37.71                             | 27.27                     | 15.5                         | 47°42'                         | φ49.1                                       | 711.1                       |
| M2.5S 30 - 5016          |                          | 30                                | φ 75                                    | <sup>(φ76.83)</sup><br>φ76.7       | 50                                     | φ16                                  | φ55                               | 7.5                                 | 21.5                           | 24.71                             | 14.27                     | 15.5                         | 47°42'                         | φ49.1                                       | 503.6                       |
| M3S 20 - 5816            |                          | 20                                | φ 60                                    | <sup>(φ64.24)</sup><br>φ61.99      | 58                                     | φ16                                  | φ50                               | 23                                  | 35                             | 39.06                             | 30.12                     | 13.6                         | 49° 3'                         | φ35.5                                       | 520.3                       |
| M3S 20 - 4216            |                          | 20                                | φ 60                                    | <sup>(φ64.24)</sup><br>φ61.99      | 42                                     | φ16                                  | φ50                               | 7                                   | 19                             | 23.06                             | 14.12                     | 13.6                         | 49° 3'                         | φ35.5                                       | 298.9                       |
| M3S 25 - 6020            |                          | 25                                | φ 75                                    | <sup>(φ79.24)</sup><br>φ77         | 60                                     | φ20                                  | φ65                               | 17.5                                | 32                             | 35.31                             | 24.62                     | 16.2                         | 48°51'                         | φ48.1                                       | 785.6                       |
| M3S 30 - 7522            |                          | 30                                | φ 90                                    | <sup>(φ94.24)</sup><br>φ92.04      | 75                                     | φ22                                  | φ66                               | 23.64                               | 40                             | 44.65                             | 32.12                     | 18.6                         | 47°42'                         | φ57.3                                       | 1.20(kg)                    |
| M3S 30 - 6020            |                          | 30                                | φ 90                                    | <sup>(φ94.24)</sup><br>φ92.04      | 60                                     | φ20                                  | φ66                               | 8.64                                | 25                             | 29.65                             | 17.12                     | 18.6                         | 47°42'                         | φ57.3                                       | 0.85(kg)                    |
| M4S 20 - 7520            |                          | 20                                | φ 80                                    | <sup>(φ85.66)</sup><br>φ82.65      | 75                                     | φ20                                  | φ64                               | 27                                  | 45                             | 50.05                             | 37.83                     | 18.6                         | 49° 3'                         | φ47.3                                       | 1.14(kg)                    |
| M5S 20 - 9025            |                          | 20                                | φ 100                                   | <sup>(φ107.07)</sup><br>φ103.3     | 90                                     | φ25                                  | φ80                               | 30                                  | 53                             | 59.04                             | 43.54                     | 23.6                         | 49° 3'                         | φ59.2                                       | 2.11(kg)                    |

| 各旋转速度下的容许传达动力表 (kW) 弯曲强度 |       |       |       |       |       |        | 各旋转速度下的容许传达动力表 (kW) 齿面强度 |       |       |       |       |       |       | 侧 隙         | 产 品 型 号<br>Catalogue Numbers |
|--------------------------|-------|-------|-------|-------|-------|--------|--------------------------|-------|-------|-------|-------|-------|-------|-------------|------------------------------|
| 10                       | 100   | 200   | 400   | 600   | 800   | 1,000  | 10                       | 100   | 200   | 400   | 600   | 800   | 1,000 |             |                              |
| 0.008                    | 0.083 | 0.167 | 0.334 | 0.484 | 0.611 | 0.726  |                          | 0.006 | 0.013 | 0.027 | 0.040 | 0.051 | 0.061 | 0.05 ~ 0.12 | <b>M2S 20 – 3712</b>         |
| 0.008                    | 0.083 | 0.167 | 0.334 | 0.484 | 0.611 | 0.726  |                          | 0.006 | 0.013 | 0.027 | 0.040 | 0.051 | 0.061 | 0.05 ~ 0.12 | <b>M2S 20 – 2812</b>         |
| 0.013                    | 0.139 | 0.279 | 0.554 | 0.777 | 0.971 | 1.143  | 0.001                    | 0.013 | 0.026 | 0.054 | 0.076 | 0.097 | 0.115 | 0.05 ~ 0.12 | <b>M2S 25 – 4012</b>         |
| 0.020                    | 0.209 | 0.418 | 0.809 | 1.121 | 1.388 | 1.637  | 0.002                    | 0.023 | 0.047 | 0.092 | 0.129 | 0.163 | 0.195 | 0.05 ~ 0.12 | <b>M2S 30 – 5116</b>         |
| 0.016                    | 0.169 | 0.338 | 0.672 | 0.941 | 1.177 | 1.385  | 0.001                    | 0.013 | 0.028 | 0.056 | 0.080 | 0.101 | 0.121 | 0.06 ~ 0.15 | <b>M2.5S 20 – 4814</b>       |
| 0.016                    | 0.169 | 0.338 | 0.672 | 0.941 | 1.177 | 1.385  | 0.001                    | 0.013 | 0.028 | 0.056 | 0.080 | 0.101 | 0.121 | 0.06 ~ 0.15 | <b>M2.5S 20 – 3514</b>       |
| 0.027                    | 0.279 | 0.558 | 1.069 | 1.480 | 1.829 | 2.171  | 0.002                    | 0.027 | 0.055 | 0.107 | 0.150 | 0.189 | 0.229 | 0.06 ~ 0.15 | <b>M2.5S 25 – 5016</b>       |
| 0.040                    | 0.408 | 0.817 | 1.517 | 2.070 | 2.557 | 3.109  | 0.004                    | 0.046 | 0.094 | 0.177 | 0.247 | 0.312 | 0.387 | 0.06 ~ 0.15 | <b>M2.5S 30 – 6318</b>       |
| 0.040                    | 0.408 | 0.817 | 1.517 | 2.070 | 2.557 | 3.109  | 0.004                    | 0.046 | 0.094 | 0.177 | 0.247 | 0.312 | 0.387 | 0.06 ~ 0.15 | <b>M2.5S 30 – 5016</b>       |
| 0.029                    | 0.297 | 0.594 | 1.148 | 1.591 | 1.971 | 2.323  | 0.002                    | 0.025 | 0.050 | 0.098 | 0.139 | 0.175 | 0.209 | 0.06 ~ 0.15 | <b>M3S 20 – 5816</b>         |
| 0.029                    | 0.297 | 0.594 | 1.148 | 1.591 | 1.971 | 2.323  | 0.002                    | 0.025 | 0.050 | 0.098 | 0.139 | 0.175 | 0.209 | 0.06 ~ 0.15 | <b>M3S 20 – 4216</b>         |
| 0.048                    | 0.482 | 0.964 | 1.789 | 2.442 | 3.016 | 3.667  | 0.004                    | 0.048 | 0.097 | 0.184 | 0.256 | 0.323 | 0.401 | 0.06 ~ 0.15 | <b>M3S 25 – 6020</b>         |
| 0.070                    | 0.706 | 1.413 | 2.522 | 3.394 | 4.322 | 5.232  | 0.008                    | 0.082 | 0.166 | 0.303 | 0.418 | 0.547 | 0.678 | 0.06 ~ 0.15 | <b>M3S 30 – 7522</b>         |
| 0.070                    | 0.706 | 1.413 | 2.522 | 3.394 | 4.322 | 5.232  | 0.008                    | 0.082 | 0.166 | 0.303 | 0.418 | 0.547 | 0.678 | 0.06 ~ 0.15 | <b>M3S 30 – 6020</b>         |
| 0.071                    | 0.719 | 1.438 | 2.634 | 3.577 | 4.465 | 5.421  | 0.006                    | 0.062 | 0.126 | 0.236 | 0.327 | 0.418 | 0.516 | 0.06 ~ 0.15 | <b>M4S 20 – 7520</b>         |
| 0.142                    | 1.421 | 2.825 | 4.949 | 6.669 | 8.574 | 10.318 | 0.012                    | 0.127 | 0.255 | 0.458 | 0.635 | 0.836 | 1.040 | 0.08 ~ 0.2  | <b>M5S 20 – 9025</b>         |

# S45C淬火直齿等径锥齿轮

## MITER GEARS

模数  
MODULE

1.5 (齿数 20~30) / 2 (齿数 20~30)

齿数比 1:1  
1:1 Ratio



单位: mm

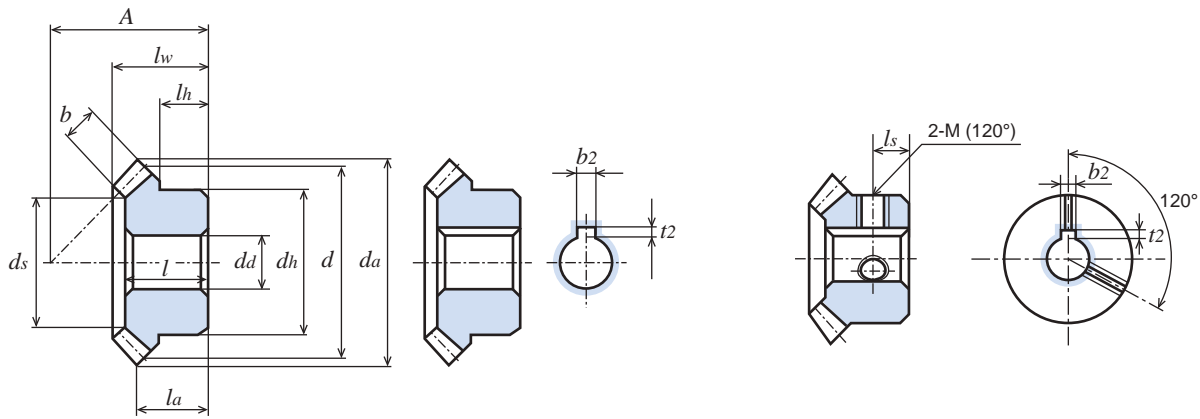
| 精度            | 材料   | 压力角 | 热处理    | 齿面硬度     | 侧隙①  |
|---------------|------|-----|--------|----------|------|
| JIS B 1704 4级 | S45C | 20度 | 齿面高频淬火 | HRC47~53 | 确认表格 |

★未做表面处理。①同一种材料，一样的齿轮相互啮合时的理想值。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★【#】表示带有键槽和键，带有螺纹孔和固定螺钉。【=】表示带有键槽和键。

| 产品型号<br>Catalogue Number | 齿数比<br>Ratio<br>u | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 装配距离<br>Locating Distance<br>A | 孔径<br>Bore Diameter<br>da(H8) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 穴长度<br>Bore Length<br>l | 全长<br>Overall Length<br>lw | Tip Distance<br>la | 齿宽<br>Face Width<br>b | 键槽<br>Key Way<br>b2 x t2 | 螺纹孔<br>Set Screw |         | 顶锥角<br>Face Angle<br>δa | 沉头部直径<br>(参考值)<br>Counter bore<br>ds | 重量<br>Weight<br>W(g) |
|--------------------------|-------------------|----------------------------|----------------------------------|-----------------------------|--------------------------------|-------------------------------|----------------------------|------------------------------|-------------------------|----------------------------|--------------------|-----------------------|--------------------------|------------------|---------|-------------------------|--------------------------------------|----------------------|
|                          |                   |                            |                                  |                             |                                |                               |                            |                              |                         |                            |                    |                       |                          | 2-M              | ls      |                         |                                      |                      |
| M1.5S 20 - 2810H         | 1                 | 20                         | φ 30                             | φ32.12                      | 28                             | φ10                           | φ24                        | 10                           | 16.5                    | 18.53                      | 14.06              | 6.8                   | -                        | -                | -       | 49° 3'                  | φ17.7                                | 54.9                 |
| M1.5S 20 # 2810H         |                   | 20                         | φ 30                             | φ32.12                      | 28                             | φ10                           | φ24                        | 10                           | 16.5                    | 18.53                      | 14.06              | 6.8                   | 3 × 1.4                  | 2-M4             | 5       | 49° 3'                  | φ17.7                                | 53.7                 |
| M1.5S 20 # 2812H         |                   | 20                         | φ 30                             | φ32.12                      | 28                             | φ12                           | φ24                        | 10                           | 16.5                    | 18.53                      | 14.06              | 6.8                   | 4 × 1.8                  | 2-M4             | 5       | 49° 3'                  | φ17.7                                | 49.0                 |
| M1.5S 20 - 2110H         |                   | 20                         | φ 30                             | φ32.12                      | 21                             | φ10                           | φ24                        | 3                            | 9                       | 11                         | 7.06               | 6                     | -                        | -                | -       | 49° 3'                  | φ19.0                                | 32.8                 |
| M1.5S 20 = 2110H         |                   | 20                         | φ 30                             | φ32.12                      | 21                             | φ10                           | φ24                        | 3                            | 9                       | 11                         | 7.06               | 6                     | 3 × 1.4                  | -                | -       | 49° 3'                  | φ19.0                                | 32.5                 |
| M1.5S 25 - 3410H         |                   | 25                         | φ 37.5                           | φ39.62                      | 34                             | φ10                           | φ30                        | 11.5                         | 19                      | 21.26                      | 16.31              | 7.5                   | -                        | -                | -       | 48° 51'                 | φ23.7                                | 106.5                |
| M1.5S 30 - 3812H         |                   | 30                         | φ 45                             | φ47.12                      | 38                             | φ12                           | φ33                        | 12.34                        | 21                      | 22.83                      | 16.56              | 9.3                   | -                        | -                | -       | 47° 42'                 | φ29.6                                | 152.0                |
| M1.5S 30 # 3812H         |                   | 30                         | φ 45                             | φ47.12                      | 38                             | φ12                           | φ33                        | 12.34                        | 21                      | 22.83                      | 16.56              | 9.3                   | 4 × 1.8                  | 2-M4             | 6.5     | 47° 42'                 | φ29.6                                | 150.1                |
| M1.5S 30 # 3815H         |                   | 30                         | φ 45                             | φ47.12                      | 38                             | φ15                           | φ33                        | 12.34                        | 21                      | 22.83                      | 16.56              | 9.3                   | 5 × 2.3                  | 2-M4             | 6.5     | 47° 42'                 | φ29.6                                | 139.0                |
| M1.5S 30 # 3816H         |                   | 30                         | φ 45                             | φ47.12                      | 38                             | φ16                           | φ33                        | 12.34                        | 21                      | 22.83                      | 16.56              | 9.3                   | 5 × 2.3                  | 2-M4             | 6.5     | 47° 42'                 | φ29.6                                | 135.0                |
| M2S 20 - 3712H           | 1                 | 20                         | φ 40                             | φ41.32 <sup>(φ42.83)</sup>  | 37                             | φ12                           | φ34                        | 14                           | 21                      | 24                         | 18.41              | 8.5                   | -                        | -                | -       | 49° 3'                  | φ23.9                                | 141.0                |
| M2S 20 # 3712H           |                   | 20                         | φ 40                             | φ41.32 <sup>(φ42.83)</sup>  | 37                             | φ12                           | φ34                        | 14                           | 21                      | 24                         | 18.41              | 8.5                   | 4 × 1.8                  | 2-M5             | 7       | 49° 3'                  | φ23.9                                | 138.4                |
| M2S 20 # 3715H           |                   | 20                         | φ 40                             | φ41.32 <sup>(φ42.83)</sup>  | 37                             | φ15                           | φ34                        | 14                           | 21                      | 24                         | 18.41              | 8.5                   | 5 × 2.3                  | 2-M5             | 7       | 49° 3'                  | φ23.9                                | 127.4                |
| M2S 20 # 3716H           |                   | 20                         | φ 40                             | φ41.32 <sup>(φ42.83)</sup>  | 37                             | φ16                           | φ34                        | 14                           | 21                      | 24                         | 18.41              | 8.5                   | 5 × 2.3                  | 2-M5             | 7       | 49° 3'                  | φ23.9                                | 123.5                |
| M2S 20 - 2812H           |                   | 20                         | φ 40                             | φ41.32 <sup>(φ42.83)</sup>  | 28                             | φ12                           | φ34                        | 5                            | 12                      | 15                         | 9.41               | 8.5                   | -                        | -                | -       | 49° 3'                  | φ23.9                                | 84.9                 |
| M2S 20 = 2812H           |                   | 20                         | φ 40                             | φ41.32 <sup>(φ42.83)</sup>  | 28                             | φ12                           | φ34                        | 5                            | 12                      | 15                         | 9.41               | 8.5                   | 4 × 1.8                  | -                | -       | 49° 3'                  | φ23.9                                | 84.2                 |
| M2S 20 = 2815H           |                   | 20                         | φ 40                             | φ41.32 <sup>(φ42.83)</sup>  | 28                             | φ15                           | φ34                        | 5                            | 12                      | 15                         | 9.41               | 8.5                   | 5 × 2.3                  | -                | -       | 49° 3'                  | φ23.9                                | 77.8                 |
| M2S 20 = 2816H           |                   | 20                         | φ 40                             | φ41.32 <sup>(φ42.83)</sup>  | 28                             | φ16                           | φ34                        | 5                            | 12                      | 15                         | 9.41               | 8.5                   | 5 × 2.3                  | -                | -       | 49° 3'                  | φ23.9                                | 75.5                 |
| M2S 25 - 4012H           |                   | 25                         | φ 50                             | φ51.33 <sup>(φ52.83)</sup>  | 40                             | φ12                           | φ42                        | 10.99                        | 21                      | 23.34                      | 16.41              | 10.5                  | -                        | -                | -       | 48° 51'                 | φ32.3                                | 227.0                |
| M2S 30 - 5116H           |                   | 30                         | φ 60                             | φ61.36 <sup>(φ62.83)</sup>  | 51                             | φ16                           | φ44                        | 16.79                        | 28                      | 30.77                      | 22.41              | 12.4                  | -                        | -                | -       | 47° 42'                 | φ38.9                                | 361.4                |
| M2S 30 # 5118H           | 30                | φ 60                       | φ61.36 <sup>(φ62.83)</sup>       | 51                          | φ18                            | φ44                           | 16.79                      | 28                           | 30.77                   | 22.41                      | 12.4               | 6 × 2.8               | 2-M5                     | 8.5              | 47° 42' | φ38.9                   | 344.4                                |                      |
| M2S 30 # 5120H           | 30                | φ 60                       | φ61.36 <sup>(φ62.83)</sup>       | 51                          | φ20                            | φ44                           | 16.79                      | 28                           | 30.77                   | 22.41                      | 12.4               | 6 × 2.8               | 2-M5                     | 8.5              | 47° 42' | φ38.9                   | 333.3                                |                      |



| 各旋转速度下的容许传达动力表 (W) 弯曲强度 |      |       |       |       |       |       | 各旋转速度下的容许传达动力表 (W) 齿面强度 |      |      |       |       |       |       | 侧 隙         | 产 品 型 号<br>Catalogue Numbers   |
|-------------------------|------|-------|-------|-------|-------|-------|-------------------------|------|------|-------|-------|-------|-------|-------------|--|
| 10                      | 100  | 200   | 400   | 600   | 800   | 1,000 | 10                      | 100  | 200  | 400   | 600   | 800   | 1,000 |             |  |
| 3.4                     | 34.4 | 68.9  | 137.8 | 206.7 | 267.0 | 321.6 | 0.7                     | 8.0  | 16.5 | 34.0  | 52.0  | 68.0  | 82.8  | 0.05 ~ 0.12 | M1.5S 20 - 2810H<br>M1.5S 20 # 2810H<br>M1.5S 20 # 2812H                     |
| 3.1                     | 31.7 | 63.5  | 127.0 | 190.5 | 246.2 | 296.4 | 0.6                     | 7.4  | 15.2 | 31.4  | 48.0  | 62.8  | 76.4  | 0.05 ~ 0.12 | M1.5S 20 - 2110H<br>M1.5S 20 = 2110H   |
| 5.3                     | 53.6 | 107.2 | 214.4 | 314.6 | 400.3 | 478.5 | 1.3                     | 14.7 | 30.4 | 62.7  | 93.6  | 120.6 | 145.6 | 0.05 ~ 0.12 | M1.5S 25 - 3410H   |
| 8.3                     | 83.2 | 166.5 | 333.1 | 475.1 | 599.9 | 712.1 | 2.3                     | 26.4 | 54.5 | 112.5 | 163.3 | 208.9 | 250.4 | 0.05 ~ 0.12 | M1.5S 30 - 3812H<br>M1.5S 30 # 3812H<br>M1.5S 30 # 3815H<br>M1.5S 30 # 3816H |

以下数据的单位为 kW

|       |       |       |       |       |       |       |       |       |       |       |       |       |       |             |  |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|--|
| 0.007 | 0.078 | 0.156 | 0.313 | 0.455 | 0.578 | 0.689 | 0.001 | 0.018 | 0.038 | 0.079 | 0.117 | 0.151 | 0.182 | 0.05 ~ 0.12 | M2S 20 - 3712H<br>M2S 20 # 3712H<br>M2S 20 # 3715H<br>M2S 20 # 3716H |
| 0.007 | 0.078 | 0.156 | 0.313 | 0.455 | 0.578 | 0.689 | 0.001 | 0.018 | 0.038 | 0.079 | 0.117 | 0.151 | 0.182 | 0.05 ~ 0.12 | M2S 20 - 2812H<br>M2S 20 = 2812H<br>M2S 20 = 2815H<br>M2S 20 = 2816H |
| 0.013 | 0.131 | 0.262 | 0.522 | 0.735 | 0.923 | 1.091 | 0.003 | 0.037 | 0.076 | 0.156 | 0.224 | 0.285 | 0.340 | 0.05 ~ 0.12 | M2S 25 - 4012H   |
| 0.019 | 0.197 | 0.394 | 0.765 | 1.066 | 1.328 | 1.564 | 0.005 | 0.064 | 0.132 | 0.265 | 0.376 | 0.474 | 0.564 | 0.05 ~ 0.12 | M2S 30 - 5116H<br>M2S 30 # 5118H<br>M2S 30 # 5120H                   |

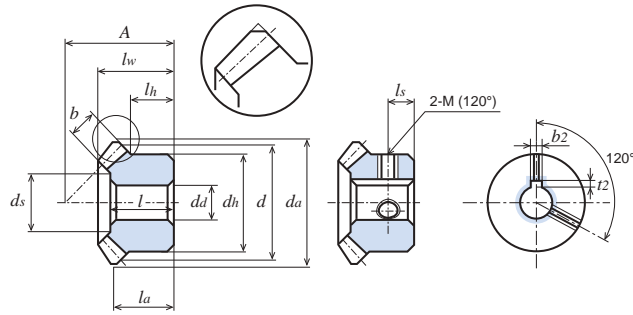
# S45C 淬火直齿等径锥齿轮

## MITER GEARS

模数  
MODULE

2.5 (齿数 20~30) / 3 (齿数 20~30) / 4 (齿数 20) / 5 (齿数 20)

齿数比 1:1  
1:1 Ratio

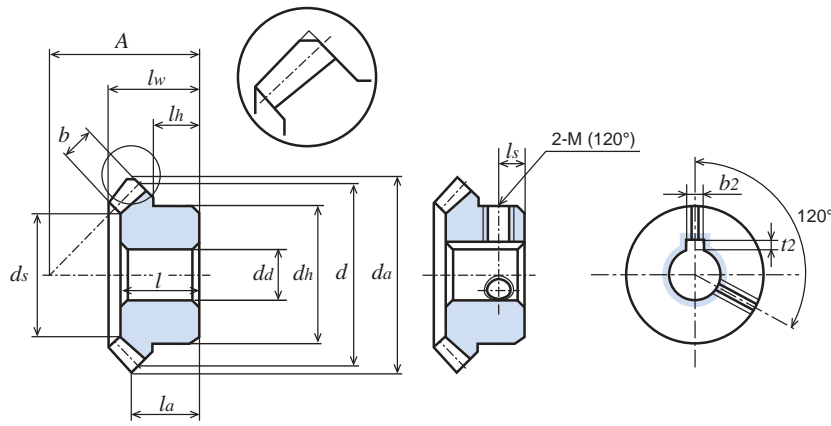


单位: mm

| 精度             | 材料   | 压力角  | 热处理    | 齿面硬度       | 侧隙①  |
|----------------|------|------|--------|------------|------|
| JIS B 1704 4 级 | S45C | 20 度 | 齿面高频淬火 | HRC47 ~ 53 | 确认表格 |

- ★未做表面处理。①同一种材料，一样的齿轮相互啮合时的理想值。
- ★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。
- ★【#】表示带有键槽和键，带有螺纹孔和固定螺钉。【=】表示带有键槽和键。

| 产品型号<br>Catalogue Number | 齿数比<br>Ratio<br>u | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 装配距离<br>Locating Distance<br>A | 孔径<br>Bore Diameter<br>dd(H8) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 穴长度<br>Bore Length<br>l | 全长<br>Overall Length<br>lw | Tip Distance<br>la | 齿宽<br>Face Width<br>b | 键槽<br>Key Way |       | 螺纹孔<br>Set Screw |         | 顶锥角<br>Face Angle<br>δa | 沉头部直径<br>(参考值)<br>Counter bore<br>ds | 重量<br>Weight<br>W(g) |
|--------------------------|-------------------|----------------------------|----------------------------------|-----------------------------|--------------------------------|-------------------------------|----------------------------|------------------------------|-------------------------|----------------------------|--------------------|-----------------------|---------------|-------|------------------|---------|-------------------------|--------------------------------------|----------------------|
|                          |                   |                            |                                  |                             |                                |                               |                            |                              |                         |                            |                    |                       | b2 × t2       | 2-M   | ls               | 9.5     |                         |                                      |                      |
| M2.5S 20 - 4814H         |                   | 20                         | φ 50                             | φ51.66 <sup>(φ53.54)</sup>  | 48                             | φ14                           | φ42                        | 19                           | 28                      | 32.06                      | 24.77              | 11.1                  | -             | -     | -                | 49° 3'  | φ28.5                   | 294.0                                |                      |
| M2.5S 20 # 4815H         |                   | 20                         | φ 50                             | φ51.66 <sup>(φ53.54)</sup>  | 48                             | φ15                           | φ42                        | 19                           | 28                      | 32.06                      | 24.77              | 11.1                  | 5 × 2.3       | 2-M5  | 9.5              | 49° 3'  | φ28.5                   | 284.7                                |                      |
| M2.5S 20 # 4816H         |                   | 20                         | φ 50                             | φ51.66 <sup>(φ53.54)</sup>  | 48                             | φ16                           | φ42                        | 19                           | 28                      | 32.06                      | 24.77              | 11.1                  | 5 × 2.3       | 2-M5  | 9.5              | 49° 3'  | φ28.5                   | 279.5                                |                      |
| M2.5S 20 # 4818H         |                   | 20                         | φ 50                             | φ51.66 <sup>(φ53.54)</sup>  | 48                             | φ18                           | φ42                        | 19                           | 28                      | 32.06                      | 24.77              | 11.1                  | 6 × 2.8       | 2-M5  | 9.5              | 49° 3'  | φ28.5                   | 266.7                                |                      |
| M2.5S 20 # 4820H         |                   | 20                         | φ 50                             | φ51.66 <sup>(φ53.54)</sup>  | 48                             | φ20                           | φ42                        | 19                           | 28                      | 32.06                      | 24.77              | 11.1                  | 6 × 2.8       | 2-M5  | 9.5              | 49° 3'  | φ28.5                   | 253.7                                |                      |
| M2.5S 20 - 3514H         |                   | 20                         | φ 50                             | φ51.66 <sup>(φ53.54)</sup>  | 35                             | φ14                           | φ42                        | 6                            | 15                      | 19.06                      | 11.77              | 11.1                  | -             | -     | -                | 49° 3'  | φ28.5                   | 168.3                                |                      |
| M2.5S 20 = 3515H         |                   | 20                         | φ 50                             | φ51.66 <sup>(φ53.54)</sup>  | 35                             | φ15                           | φ42                        | 6                            | 15                      | 19.06                      | 11.77              | 11.1                  | 5 × 2.3       | -     | -                | 49° 3'  | φ28.5                   | 164.3                                |                      |
| M2.5S 20 = 3518H         |                   | 20                         | φ 50                             | φ51.66 <sup>(φ53.54)</sup>  | 35                             | φ18                           | φ42                        | 6                            | 15                      | 19.06                      | 11.77              | 11.1                  | 6 × 2.8       | -     | -                | 49° 3'  | φ28.5                   | 154.5                                |                      |
| M2.5S 20 = 3520H         |                   | 20                         | φ 50                             | φ51.66 <sup>(φ53.54)</sup>  | 35                             | φ20                           | φ42                        | 6                            | 15                      | 19.06                      | 11.77              | 11.1                  | 6 × 2.8       | -     | -                | 49° 3'  | φ28.5                   | 147.5                                |                      |
| M2.5S 25 - 5016H         |                   | 25                         | φ 62.5                           | φ64.16 <sup>(φ66.04)</sup>  | 50                             | φ16                           | φ52                        | 13.5                         | 27                      | 29.42                      | 20.52              | 13.5                  | -             | -     | -                | 48° 51' | φ40.8                   | 441.2                                |                      |
| M2.5S 30 - 6318H         |                   | 30                         | φ 75                             | φ76.7 <sup>(φ78.54)</sup>   | 63                             | φ18                           | φ55                        | 20.5                         | 34.5                    | 37.71                      | 27.27              | 15.5                  | -             | -     | -                | 47° 42' | φ49.1                   | 711.1                                |                      |
| M2.5S 30 # 6320H         |                   | 30                         | φ 75                             | φ76.7 <sup>(φ78.54)</sup>   | 63                             | φ20                           | φ55                        | 20.5                         | 34.5                    | 37.71                      | 27.27              | 15.5                  | 6 × 2.8       | 2-M5  | 10.5             | 47° 42' | φ49.1                   | 688.1                                |                      |
| M2.5S 30 # 6325H         |                   | 30                         | φ 75                             | φ76.7 <sup>(φ78.54)</sup>   | 63                             | φ25                           | φ55                        | 20.5                         | 34.5                    | 37.71                      | 27.27              | 15.5                  | 8 × 3.3       | 2-M6  | 10.5             | 47° 42' | φ49.1                   | 637.2                                |                      |
| M2.5S 30 - 5016H         |                   | 30                         | φ 75                             | φ76.7 <sup>(φ78.54)</sup>   | 50                             | φ16                           | φ55                        | 7.5                          | 21.5                    | 24.71                      | 14.27              | 15.5                  | -             | -     | -                | 47° 42' | φ49.1                   | 503.6                                |                      |
| M2.5S 30 = 5020H         |                   | 30                         | φ 75                             | φ76.7 <sup>(φ78.54)</sup>   | 50                             | φ20                           | φ55                        | 7.5                          | 21.5                    | 24.71                      | 14.27              | 15.5                  | 6 × 2.8       | -     | -                | 47° 42' | φ49.1                   | 481.7                                |                      |
| M2.5S 30 = 5025H         |                   | 30                         | φ 75                             | φ76.7 <sup>(φ78.54)</sup>   | 50                             | φ25                           | φ55                        | 7.5                          | 21.5                    | 24.71                      | 14.27              | 15.5                  | 8 × 3.3       | -     | -                | 47° 42' | φ49.1                   | 450.9                                |                      |
| M3S 20 - 5816H           |                   | 20                         | φ 60                             | φ61.99 <sup>(φ64.24)</sup>  | 58                             | φ16                           | φ50                        | 23                           | 35                      | 39.06                      | 30.12              | 13.6                  | -             | -     | -                | 49° 3'  | φ35.5                   | 520.3                                |                      |
| M3S 20 # 5818H           |                   | 20                         | φ 60                             | φ61.99 <sup>(φ64.24)</sup>  | 58                             | φ18                           | φ50                        | 23                           | 35                      | 39.06                      | 30.12              | 13.6                  | 6 × 2.8       | 2-M6  | 11.5             | 49° 3'  | φ35.5                   | 498.1                                |                      |
| M3S 20 # 5820H           |                   | 20                         | φ 60                             | φ61.99 <sup>(φ64.24)</sup>  | 58                             | φ20                           | φ50                        | 23                           | 35                      | 39.06                      | 30.12              | 13.6                  | 6 × 2.8       | 2-M6  | 11.5             | 49° 3'  | φ35.5                   | 481.9                                |                      |
| M3S 20 # 5825H           |                   | 20                         | φ 60                             | φ61.99 <sup>(φ64.24)</sup>  | 58                             | φ25                           | φ50                        | 23                           | 35                      | 39.06                      | 30.12              | 13.6                  | 8 × 3.3       | 2-M6  | 11.5             | 49° 3'  | φ35.5                   | 431.2                                |                      |
| M3S 20 - 4216H           |                   | 20                         | φ 60                             | φ61.99 <sup>(φ64.24)</sup>  | 42                             | φ16                           | φ50                        | 7                            | 19                      | 23.06                      | 14.12              | 13.6                  | -             | -     | -                | 49° 3'  | φ35.5                   | 298.9                                |                      |
| M3S 20 = 4218H           |                   | 20                         | φ 60                             | φ61.99 <sup>(φ64.24)</sup>  | 42                             | φ18                           | φ50                        | 7                            | 19                      | 23.06                      | 14.12              | 13.6                  | 6 × 2.8       | -     | -                | 49° 3'  | φ35.5                   | 288.4                                |                      |
| M3S 20 = 4220H           |                   | 20                         | φ 60                             | φ61.99 <sup>(φ64.24)</sup>  | 42                             | φ20                           | φ50                        | 7                            | 19                      | 23.06                      | 14.12              | 13.6                  | 6 × 2.8       | -     | -                | 49° 3'  | φ35.5                   | 279.5                                |                      |
| M3S 20 = 4225H           |                   | 20                         | φ 60                             | φ61.99 <sup>(φ64.24)</sup>  | 42                             | φ25                           | φ50                        | 7                            | 19                      | 23.06                      | 14.12              | 13.6                  | 8 × 3.3       | -     | -                | 49° 3'  | φ35.5                   | 251.7                                |                      |
| M3S 25 - 6020H           |                   | 25                         | φ 75                             | φ77 <sup>(φ79.24)</sup>     | 60                             | φ20                           | φ65                        | 17.5                         | 32                      | 35.31                      | 24.62              | 16.2                  | -             | -     | -                | 48° 51' | φ48.1                   | 785.6                                |                      |
| M3S 30 - 7522H           |                   | 30                         | φ 90                             | φ92.04 <sup>(φ94.24)</sup>  | 75                             | φ22                           | φ66                        | 23.64                        | 40                      | 44.65                      | 32.12              | 18.6                  | -             | -     | -                | 47° 42' | φ57.3                   | 1.20(kg)                             |                      |
| M3S 30 # 7525H           |                   | 30                         | φ 90                             | φ92.04 <sup>(φ94.24)</sup>  | 75                             | φ25                           | φ66                        | 23.64                        | 40                      | 44.65                      | 32.12              | 18.6                  | 8 × 3.3       | 2-M6  | 12               | 47° 42' | φ57.3                   | 1.16(kg)                             |                      |
| M3S 30 # 7530H           |                   | 30                         | φ 90                             | φ92.04 <sup>(φ94.24)</sup>  | 75                             | φ30                           | φ66                        | 23.64                        | 40                      | 44.65                      | 32.12              | 18.6                  | 8 × 3.3       | 2-M6  | 12               | 47° 42' | φ57.3                   | 1.09(kg)                             |                      |
| M3S 30 - 6020H           |                   | 30                         | φ 90                             | φ92.04 <sup>(φ94.24)</sup>  | 60                             | φ20                           | φ66                        | 8.64                         | 25                      | 29.65                      | 17.12              | 18.6                  | -             | -     | -                | 47° 42' | φ57.3                   | 0.85(kg)                             |                      |
| M3S 30 = 6025H           |                   | 30                         | φ 90                             | φ92.04 <sup>(φ94.24)</sup>  | 60                             | φ25                           | φ66                        | 8.64                         | 25                      | 29.65                      | 17.12              | 18.6                  | 8 × 3.3       | -     | -                | 47° 42' | φ57.3                   | 0.81(kg)                             |                      |
| M3S 30 = 6030H           |                   | 30                         | φ 90                             | φ92.04 <sup>(φ94.24)</sup>  | 60                             | φ30                           | φ66                        | 8.64                         | 25                      | 29.65                      | 17.12              | 18.6                  | 8 × 3.3       | -     | -                | 47° 42' | φ57.3                   | 0.74(kg)                             |                      |
| M4S 20 - 7520H           |                   | 20                         | φ 80                             | φ82.65 <sup>(φ85.66)</sup>  | 75                             | φ20                           | φ64                        | 27                           | 45                      | 50.05                      | 37.83              | 18.6                  | -             | -     | -                | 49° 3'  | φ47.3                   | 1.14(kg)                             |                      |
| M4S 20 # 7525H           |                   | 20                         | φ 80                             | φ82.65 <sup>(φ85.66)</sup>  | 75                             | φ25                           | φ64                        | 27                           | 45                      | 50.05                      | 37.83              | 18.6                  | 8 × 3.3       | 2-M8  | 13.5             | 49° 3'  | φ47.3                   | 1.06(kg)                             |                      |
| M4S 20 # 7530H           |                   | 20                         | φ 80                             | φ82.65 <sup>(φ85.66)</sup>  | 75                             | φ30                           | φ64                        | 27                           | 45                      | 50.05                      | 37.83              | 18.6                  | 8 × 3.3       | 2-M8  | 13.5             | 49° 3'  | φ47.3                   | 0.98(kg)                             |                      |
| M5S 20 - 9025H           |                   | 20                         | φ 100                            | φ103.3 <sup>(φ107.07)</sup> | 90                             | φ25                           | φ80                        | 30                           | 53                      | 59.04                      | 43.54              | 23.6                  | -             | -     | -                | 49° 3'  | φ59.2                   | 2.11(kg)                             |                      |
| M5S 20 # 9030H           |                   | 20                         | φ 100                            | φ103.3 <sup>(φ107.07)</sup> | 90                             | φ30                           | φ80                        | 30                           | 53                      | 59.04                      | 43.54              | 23.6                  | 8 × 3.3       | 2-M10 | 15               | 49° 3'  | φ59.2                   | 2.00(kg)                             |                      |
| M5S 20 # 9040H           |                   | 20                         | φ 100                            | φ103.3 <sup>(φ107.07)</sup> | 90                             | φ40                           | φ80                        | 30                           | 53                      | 59.04                      | 43.54              | 23.6                  | 12 × 3.3      | 2-M10 | 15               | 49° 3'  | φ59.2                   | 1.76(kg)                             |                      |



| 各旋转速度下的容许传达动力表 (kW) 弯曲强度 |       |       |       |       |       |       | 各旋转速度下的容许传达动力表 (kW) 齿面强度 |       |       |       |       |       |       | 侧 隙         | 产 品 型 号<br>Catalogue Numbers   |
|--------------------------|-------|-------|-------|-------|-------|-------|--------------------------|-------|-------|-------|-------|-------|-------|-------------|--|
| 10                       | 100   | 200   | 400   | 600   | 800   | 1,000 | 10                       | 100   | 200   | 400   | 600   | 800   | 1,000 |             |  |
| 0.015                    | 0.157 | 0.314 | 0.626 | 0.881 | 1.108 | 1.309 | 0.003                    | 0.038 | 0.079 | 0.162 | 0.232 | 0.295 | 0.353 | 0.06 ~ 0.15 | M2.5S 20 - 4814H<br>M2.5S 20 # 4815H<br>M2.5S 20 # 4816H<br>M2.5S 20 # 4818H<br>M2.5S 20 # 4820H |
| 0.015                    | 0.157 | 0.314 | 0.626 | 0.881 | 1.108 | 1.309 | 0.003                    | 0.038 | 0.079 | 0.162 | 0.232 | 0.295 | 0.353 | 0.06 ~ 0.15 | M2.5S 20 - 3514H<br>M2.5S 20 = 3515H<br>M2.5S 20 = 3518H<br>M2.5S 20 = 3520H                     |
| 0.026                    | 0.261 | 0.522 | 1.005 | 1.398 | 1.737 | 2.051 | 0.006                    | 0.075 | 0.154 | 0.307 | 0.435 | 0.547 | 0.653 | 0.06 ~ 0.15 | M2.5S 25 - 5016H   |
| 0.038                    | 0.385 | 0.771 | 1.439 | 1.978 | 2.444 | 2.905 | 0.011                    | 0.128 | 0.264 | 0.509 | 0.712 | 0.891 | 1.069 | 0.06 ~ 0.15 | M2.5S 30 - 6318H<br>M2.5S 30 # 6320H<br>M2.5S 30 # 6325H   |
| 0.038                    | 0.385 | 0.771 | 1.439 | 1.978 | 2.444 | 2.905 | 0.011                    | 0.128 | 0.264 | 0.509 | 0.712 | 0.891 | 1.069 | 0.06 ~ 0.15 | M2.5S 30 - 5016H<br>M2.5S 30 = 5020H<br>M2.5S 30 = 5025H   |
| 0.027                    | 0.275 | 0.551 | 1.068 | 1.489 | 1.854 | 2.184 | 0.006                    | 0.068 | 0.140 | 0.281 | 0.398 | 0.503 | 0.598 | 0.06 ~ 0.15 | M3S 20 - 5816H<br>M3S 20 # 5818H<br>M3S 20 # 5820H<br>M3S 20 # 5825H                             |
| 0.027                    | 0.275 | 0.551 | 1.068 | 1.489 | 1.854 | 2.184 | 0.006                    | 0.068 | 0.140 | 0.281 | 0.398 | 0.503 | 0.598 | 0.06 ~ 0.15 | M3S 20 - 4216H<br>M3S 20 = 4218H<br>M3S 20 = 4220H<br>M3S 20 = 4225H                             |
| 0.045                    | 0.451 | 0.902 | 1.684 | 2.315 | 2.861 | 3.400 | 0.011                    | 0.131 | 0.272 | 0.523 | 0.732 | 0.916 | 1.100 | 0.06 ~ 0.15 | M3S 25 - 6020H   |
| 0.066                    | 0.666 | 1.332 | 2.399 | 3.254 | 4.056 | 4.784 | 0.020                    | 0.225 | 0.464 | 0.862 | 1.190 | 1.502 | 1.790 | 0.06 ~ 0.15 | M3S 30 - 7522H<br>M3S 30 # 7525H<br>M3S 30 # 7530H   |
| 0.066                    | 0.666 | 1.332 | 2.399 | 3.254 | 4.056 | 4.784 | 0.020                    | 0.225 | 0.464 | 0.862 | 1.190 | 1.502 | 1.790 | 0.06 ~ 0.15 | M3S 30 - 6020H<br>M3S 30 = 6025H<br>M3S 30 = 6030H   |
| 0.066                    | 0.663 | 1.327 | 2.448 | 3.349 | 4.150 | 4.920 | 0.015                    | 0.168 | 0.347 | 0.660 | 0.920 | 1.154 | 1.382 | 0.06 ~ 0.15 | M4S 20 - 7520H<br>M4S 20 # 7525H<br>M4S 20 # 7530H   |
| 0.130                    | 1.308 | 2.601 | 4.603 | 6.220 | 7.758 | -     | 0.030                    | 0.338 | 0.694 | 1.267 | 1.743 | 2.201 | -     | 0.08 ~ 0.2  | M5S 20 - 9025H<br>M5S 20 # 9030H<br>M5S 20 # 9040H   |

# MGH直齿锥齿轮

## STRAIGHT MITER GEARS

模数  
MODULE

2.5/2.75/3/3.5/3.75/4/4.5/5 齿数20 齿数比 1:1  
1:1 Ratio ANGLE



单位: mm

| 精度            | 材料   | 压力角 | 热处理    | 齿面硬度     | 侧隙①  | 所有齿轮齿数 |
|---------------|------|-----|--------|----------|------|--------|
| JIS B 1704 4级 | S45C | 20度 | 齿面高频淬火 | HRC47~53 | 确认表格 | 20     |

★未做表面处理。【=】表示带有键槽和键。①同一种材料，一样的齿轮相互啮合时的理想值。

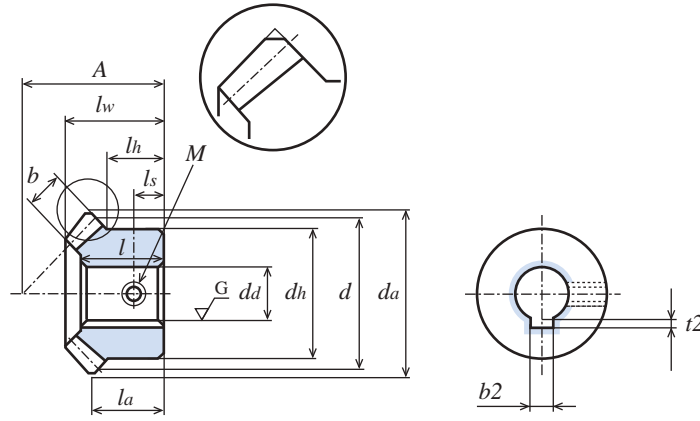
★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★齿顶圆直径  $d_a$  ( ) 内的数据为理论值。实际尺寸为在这个数据基础上，对轴心的平行方向进行倒角后的数据。

★MGH 系列是：齿面高频淬火，齿孔研磨加工，附有键和固定用螺钉的，无须加工可以直接使用的完成品。

| 产品型号<br>Catalogue Number | 孔径<br>Bore Diameter<br>$d_d(H7)$ | 模数<br>Module<br>$m$ | 分度圆直径<br>Reference Diameter<br>$d$ | 齿顶圆直径<br>Tip Diameter<br>$d_a$                             | 装配距离<br>Locating Distance<br>$A$ | 轮毂外径<br>Hub Diameter<br>$d_h$ | 轮毂长度<br>Hub Projection<br>$l_h$ | 穴长度<br>Bore Length<br>$l$ | 全长<br>Overall Length<br>$l_w$ | Tip Distance<br>$l_a$ | 齿宽<br>Face Width<br>$b$ | 键槽<br>Key Way<br>$b_2 \times t_2$ | 螺纹孔<br>Set Screw |       | 顶锥角<br>Face Angle<br>$\delta_a$ | 重量<br>Weight<br>$W(kg)$ |
|--------------------------|----------------------------------|---------------------|------------------------------------|--|----------------------------------|-------------------------------|---------------------------------|---------------------------|-------------------------------|-----------------------|-------------------------|-----------------------------------|------------------|-------|---------------------------------|-------------------------|
|                          |                                  |                     |                                    |  |                                  |                               |                                 |                           |                               |                       |                         |                                   | $M$              | $l_s$ |                                 |                         |
| MGH = 18                 | $\phi 18$                        | 2.5                 | $\phi 50$                          | $\phi 51.66$<br><small>(<math>\phi 53.54</math>)</small>   | 50                               | $\phi 40$                     | 20                              | 30                        | 33.54                         | 26.77                 | 10.3                    | 6 × 2.8                           | M6               | 10    | 49° 3'                          | 0.26                    |
| MGH = 20                 | $\phi 20$                        | 2.75                | $\phi 55$                          | $\phi 56.82$<br><small>(<math>\phi 58.89</math>)</small>   | 54                               | $\phi 44$                     | 21                              | 32                        | 35.54                         | 28.45                 | 10.8                    | 6 × 2.8                           | M6               | 10.5  | 49° 3'                          | 0.34                    |
| MGH = 22                 | $\phi 22$                        | 3                   | $\phi 60$                          | $\phi 61.99$<br><small>(<math>\phi 64.24</math>)</small>   | 58                               | $\phi 48$                     | 22                              | 34                        | 38.01                         | 30.12                 | 12                      | 6 × 2.8                           | M6               | 11    | 49° 3'                          | 0.43                    |
| MGH = 25A                | $\phi 25$                        | 3                   | $\phi 60$                          | $\phi 61.99$<br><small>(<math>\phi 64.24</math>)</small>   | 58                               | $\phi 48$                     | 22                              | 34                        | 38.01                         | 30.12                 | 12                      | 8 × 3.3                           | M8               | 11    | 49° 3'                          | 0.40                    |
| MGH = 25B                | $\phi 25$                        | 3.5                 | $\phi 70$                          | $\phi 72.32$<br><small>(<math>\phi 74.95</math>)</small>   | 66                               | $\phi 56$                     | 24                              | 39.5                      | 44.05                         | 33.48                 | 16.1                    | 8 × 3.3                           | M8               | 12    | 49° 3'                          | 0.68                    |
| MGH = 30                 | $\phi 30$                        | 3.75                | $\phi 75$                          | $\phi 77.49$<br><small>(<math>\phi 80.30</math>)</small>   | 70                               | $\phi 60$                     | 25                              | 41.5                      | 46.52                         | 35.15                 | 17.3                    | 8 × 3.3                           | M8               | 12.5  | 49° 3'                          | 0.78                    |
| MGH = 32                 | $\phi 32$                        | 4                   | $\phi 80$                          | $\phi 82.65$<br><small>(<math>\phi 85.66</math>)</small>   | 74                               | $\phi 64$                     | 26                              | 44                        | 49.05                         | 36.83                 | 18.6                    | 10 × 3.3                          | M8               | 13    | 49° 3'                          | 0.94                    |
| MGH = 35                 | $\phi 35$                        | 4.5                 | $\phi 90$                          | $\phi 93.00$<br><small>(<math>\phi 96.36</math>)</small>   | 82                               | $\phi 72$                     | 28                              | 48.5                      | 54.05                         | 40.18                 | 21.1                    | 10 × 3.3                          | M8               | 14    | 49° 3'                          | 1.34                    |
| MGH = 40                 | $\phi 40$                        | 5                   | $\phi 100$                         | $\phi 103.32$<br><small>(<math>\phi 107.07</math>)</small> | 90                               | $\phi 80$                     | 30                              | 53                        | 59.04                         | 43.54                 | 23.6                    | 12 × 3.3                          | M8               | 15    | 49° 3'                          | 1.77                    |



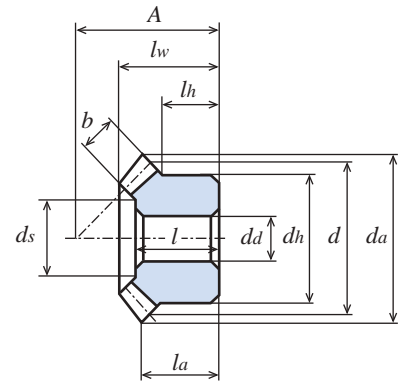


| 各旋转速度下的容许传达动力表 (kW) 弯曲强度 |       |       |       |       |       |       | 各旋转速度下的容许传达动力表 (kW) 齿面强度 |       |       |       |       |       |       | 侧 隙         | 产 品 型 号<br>Catalogue Numbers |
|--------------------------|-------|-------|-------|-------|-------|-------|--------------------------|-------|-------|-------|-------|-------|-------|-------------|------------------------------|
| 10                       | 100   | 200   | 400   | 600   | 800   | 1,000 | 10                       | 100   | 200   | 400   | 600   | 800   | 1,000 |             |                              |
| 0.014                    | 0.143 | 0.287 | 0.575 | 0.825 | 0.985 | 1.180 | 0.003                    | 0.036 | 0.075 | 0.154 | 0.221 | 0.281 | 0.335 | 0.06 ~ 0.15 | <b>MGH = 18</b>              |
| 0.018                    | 0.186 | 0.373 | 0.743 | 1.016 | 1.273 | 1.509 | 0.004                    | 0.047 | 0.097 | 0.198 | 0.282 | 0.358 | 0.426 | 0.06 ~ 0.15 | <b>MGH = 20</b>              |
| 0.024                    | 0.246 | 0.492 | 0.952 | 1.324 | 1.655 | 1.951 | 0.005                    | 0.061 | 0.125 | 0.251 | 0.356 | 0.450 | 0.533 | 0.06 ~ 0.15 | <b>MGH = 22</b>              |
| 0.024                    | 0.246 | 0.492 | 0.952 | 1.324 | 1.655 | 1.951 | 0.005                    | 0.061 | 0.125 | 0.251 | 0.356 | 0.450 | 0.533 | 0.06 ~ 0.15 | <b>MGH = 25A</b>             |
| 0.044                    | 0.441 | 0.883 | 1.669 | 2.298 | 2.837 | 3.373 | 0.009                    | 0.109 | 0.226 | 0.441 | 0.619 | 0.774 | 0.929 | 0.06 ~ 0.15 | <b>MGH = 25B</b>             |
| 0.054                    | 0.542 | 1.084 | 2.168 | 2.784 | 3.438 | 4.087 | 0.012                    | 0.137 | 0.280 | 0.540 | 0.760 | 0.946 | 1.144 | 0.06 ~ 0.15 | <b>MGH = 30</b>              |
| 0.066                    | 0.661 | 1.323 | 2.448 | 3.345 | 4.148 | 4.918 | 0.015                    | 0.167 | 0.345 | 0.655 | 0.912 | 1.144 | 1.368 | 0.06 ~ 0.15 | <b>MGH = 32</b>              |
| 0.094                    | 0.949 | 1.899 | 3.420 | 4.636 | 5.781 | 6.818 | 0.022                    | 0.243 | 0.502 | 0.932 | 1.287 | 1.624 | 1.935 | 0.08 ~ 0.2  | <b>MGH = 35</b>              |
| 0.130                    | 1.307 | 2.600 | 4.602 | 6.219 | 7.757 | -     | 0.030                    | 0.338 | 0.694 | 1.266 | 1.737 | 2.197 | -     | 0.08 ~ 0.2  | <b>MGH = 40</b>              |

# SUS直齿等径锥齿轮

## SUS MITER GEARS

模数 MODULE **0.8** (齿数 20~30) / **1** (齿数 20~30) / **1.5** (齿数 20~30) / **2** (齿数 20~30) / **2.5** (齿数 20) / **3** (齿数 20) 1:1 Ratio 齿数比 1:1



单位: mm

| 精度            | 材料     | 压力角 | 热处理 | 齿面硬度 | 侧隙①  |
|---------------|--------|-----|-----|------|------|
| JIS B 1704 4级 | SUS304 | 20度 | —   | —    | 确认表格 |

- ★未做表面处理。①同一种材料，一样的齿轮相互啮合时的理想值。
- ★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。
- ★【\*】表示带有两个螺纹孔，两个固定螺钉。

| 产品型号<br>Catalogue Number | 齿数比<br>Ratio<br>u | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 装配距离<br>Locating Distance<br>A | 孔径<br>Bore Diameter<br>da(H8) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 穴长度<br>Bore Length<br>l | 全长<br>Overall Length<br>lw | 尖距<br>Tip Distance<br>la | 齿宽<br>Face Width<br>b | 螺纹孔<br>Set Screw |        | 顶锥角<br>Face Angle<br>δa | 沉头部直径<br>(参考值)<br>Counter bore<br>ds | 重量<br>Weight<br>W(g) |
|--------------------------|-------------------|----------------------------|----------------------------------|-----------------------------|--------------------------------|-------------------------------|----------------------------|------------------------------|-------------------------|----------------------------|--------------------------|-----------------------|------------------|--------|-------------------------|--------------------------------------|----------------------|
|                          |                   |                            |                                  |                             |                                |                               |                            |                              |                         |                            |                          |                       | 2-M(120°)        | ls     |                         |                                      |                      |
| M80SU 20 - 1605          | 1                 | 20                         | φ16                              | φ17.13                      | 16                             | φ 5                           | φ12                        | 6                            | 10                      | 11                         | 8.57                     | 3.7                   | -                | -      | 49° 3'                  | φ 9.5                                | 8.9                  |
| M80SU 20 * 1605          |                   | 20                         | φ16                              | φ17.13                      | 16                             | φ 5                           | φ12                        | 6                            | 10                      | 11                         | 8.57                     | 3.7                   | 2-M3             | 3      | 49° 3'                  | φ 9.5                                | 8.5                  |
| M80SU 25 - 1805          |                   | 25                         | φ20                              | φ21.13                      | 18                             | φ 5                           | φ16                        | 6                            | 10.5                    | 11.67                      | 8.57                     | 4.7                   | -                | -      | 48°51'                  | φ11.7                                | 17.3                 |
| M80SU 25 * 1805          |                   | 25                         | φ20                              | φ21.13                      | 18                             | φ 5                           | φ16                        | 6                            | 10.5                    | 11.67                      | 8.57                     | 4.7                   | 2-M3             | 3      | 48°51'                  | φ11.7                                | 16.8                 |
| M80SU 30 - 2006          |                   | 30                         | φ24                              | φ25.13                      | 20                             | φ 6                           | φ18                        | 6                            | 11                      | 12.34                      | 8.57                     | 5.6                   | -                | -      | 47°42'                  | φ14.1                                | 24.8                 |
| M80SU 30 * 2006          |                   | 30                         | φ24                              | φ25.13                      | 20                             | φ 6                           | φ18                        | 6                            | 11                      | 12.34                      | 8.57                     | 5.6                   | 2-M4             | 3.5    | 47°42'                  | φ14.1                                | 23.8                 |
| M1SU 20 - 2106           |                   | 20                         | φ20                              | φ21.41                      | 21                             | φ 6                           | φ16                        | 9                            | 13                      | 14.53                      | 11.71                    | 4.3                   | -                | -      | 49° 3'                  | φ11.8                                | 19.9                 |
| M1SU 20 * 2106           |                   | 20                         | φ20                              | φ21.41                      | 21                             | φ 6                           | φ16                        | 9                            | 13                      | 14.53                      | 11.71                    | 4.3                   | 2-M4             | 4.5    | 49° 3'                  | φ11.8                                | 19.1                 |
| M1SU 25 - 2306           |                   | 25                         | φ25                              | φ26.41                      | 23                             | φ 6                           | φ20                        | 8                            | 13                      | 14.70                      | 11.21                    | 5.3                   | -                | -      | 48°51'                  | φ15.0                                | 34.1                 |
| M1SU 25 * 2306           |                   | 25                         | φ25                              | φ26.41                      | 23                             | φ 6                           | φ20                        | 8                            | 13                      | 14.70                      | 11.21                    | 5.3                   | 2-M4             | 4      | 48°51'                  | φ15.0                                | 32.9                 |
| M1SU 30 - 2608           |                   | 30                         | φ30                              | φ31.41                      | 26                             | φ 8                           | φ22                        | 8.9                          | 14.5                    | 15.89                      | 11.71                    | 6.2                   | -                | -      | 47°42'                  | φ19.4                                | 47                   |
| M1SU 30 * 2608           |                   | 30                         | φ30                              | φ31.41                      | 26                             | φ 8                           | φ22                        | 8.9                          | 14.5                    | 15.89                      | 11.71                    | 6.2                   | 2-M5             | 4.5    | 47°42'                  | φ19.4                                | 45.2                 |
| M1.5SU 20 - 2810         |                   | 20                         | φ30                              | φ32.12                      | 28                             | φ10                           | φ24                        | 10                           | 16.5                    | 18.53                      | 14.06                    | 6.8                   | -                | -      | 49° 3'                  | φ17.7                                | 55.4                 |
| M1.5SU 25 - 3410         |                   | 25                         | φ37.5                            | φ39.62                      | 34                             | φ10                           | φ30                        | 11.5                         | 19                      | 21.26                      | 16.31                    | 7.5                   | -                | -      | 48°51'                  | φ23.7                                | 107.6                |
| M1.5SU 30 - 3812         |                   | 30                         | φ45                              | φ47.12                      | 38                             | φ12                           | φ33                        | 12.34                        | 21                      | 22.83                      | 16.56                    | 9.3                   | -                | -      | 47°42'                  | φ29.6                                | 153.6                |
| M2SU 20 - 3712           |                   | 20                         | φ40                              | φ41.32 <sup>(φ42.83)</sup>  | 37                             | φ12                           | φ34                        | 14                           | 21                      | 24                         | 18.41                    | 8.5                   | -                | -      | 49° 3'                  | φ23.9                                | 142.5                |
| M2SU 25 - 4012           | 25                | φ50                        | φ51.33 <sup>(φ52.83)</sup>       | 40                          | φ12                            | φ42                           | 11                         | 21                           | 23.34                   | 17.07                      | 10.5                     | -                     | -                | 48°51' | φ32.3                   | 229.6                                |                      |
| M2SU 30 - 5116           | 30                | φ60                        | φ61.36 <sup>(φ62.83)</sup>       | 51                          | φ16                            | φ44                           | 16.79                      | 28                           | 30.77                   | 22.41                      | 12.4                     | -                     | -                | 47°42' | φ38.9                   | 364.9                                |                      |
| M2.5SU 20 - 4814         | 20                | φ50                        | φ51.66 <sup>(φ53.54)</sup>       | 48                          | φ14                            | φ42                           | 19                         | 28                           | 32.06                   | 24.77                      | 11.1                     | -                     | -                | 49° 3' | φ28.5                   | 297.0                                |                      |
| M3SU 20 - 5816           | 20                | φ60                        | φ61.99 <sup>(φ64.24)</sup>       | 58                          | φ16                            | φ50                           | 23                         | 35                           | 39.06                   | 30.12                      | 13.6                     | -                     | -                | 49° 3' | φ35.5                   | 525.6                                |                      |

# SUS注塑成形MIM直齿等径锥齿轮

## MIM MITER GEARS

模数 MODULE **0.5** (齿数 20) / **0.8** (齿数 20) / **1** (齿数 20) 1:1 Ratio 齿数比 1:1



单位: mm

| 精度 | 材料     | 压力角 | 热处理 | 齿面硬度 | 侧隙①  |
|----|--------|-----|-----|------|------|
| —  | SUS304 | 20度 | —   | —    | 确认表格 |

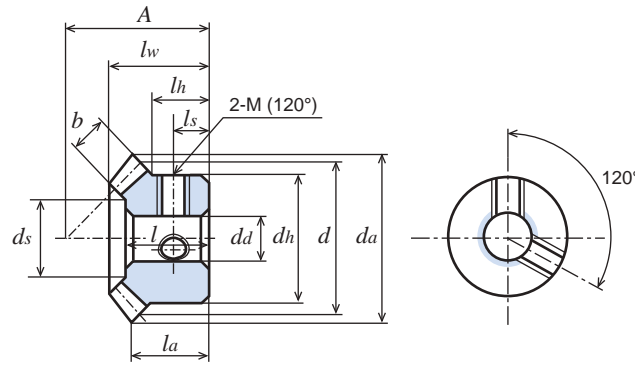
- ★未做表面处理。本产品的容许传达动力表使用 JGMA 公式。请在 P26 确认单位换算方法。
- ★【\*】SUS304 产品带有两个螺纹孔，但没有两个固定螺钉。①同一种材料，一样的齿轮相互啮合时的理想值。
- ★模数尺寸为标称值。由于是金属粉末注塑成型，根据一定的收缩率进行一定尺寸的收缩。所以只能与相同的 MIM 工艺生产的等径直齿锥齿轮相互配套。勿与其它类别工艺所生产齿轮混用。
- ★追加加工的注意点：先固定好齿顶圆部分，然后进行追加加工。有可能出现由材料冷却时的气泡形成的气孔。

| 产品型号<br>Catalogue Number | 模数<br>Module<br>m | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Pitch Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 装配距离<br>Locating Distance<br>A | 孔径<br>Bore Diameter<br>da(H8) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>lw | 尖距<br>Tip Distance<br>la | 齿宽<br>Face Width<br>b | 螺纹孔<br>Set Screw |     | 顶锥角<br>Face Angle<br>δa | 重量<br>Weight<br>W(g) |
|--------------------------|-------------------|----------------------------|------------------------------|-----------------------------|--------------------------------|-------------------------------|----------------------------|------------------------------|----------------------------|--------------------------|-----------------------|------------------|-----|-------------------------|----------------------|
|                          |                   |                            |                              |                             |                                |                               |                            |                              |                            |                          |                       | 2-M(120°)        | ls  |                         |                      |
| M50SUM 20 * 1103         | 0.5               | 20                         | φ10                          | φ10.70                      | 11                             | φ3                            | φ 8                        | 4.25                         | 8                          | 6.35                     | 2.5                   | 2-M2.5           | 2.5 | 49°48'                  | 2.6                  |
| M80SUM 20 * 1605         | 0.8               | 20                         | φ16                          | φ17.13                      | 16                             | φ5                            | φ12                        | 4.5                          | 10.96                      | 8.57                     | 3.7                   | 2-M3             | 2.5 | 49°48'                  | 10.2                 |
| M1SUM 20 * 2106          | 1.0               | 20                         | φ20                          | φ21.41                      | 21                             | φ6                            | φ16                        | 7.5                          | 14.49                      | 11.71                    | 4.3                   | 2-M4             | 4.5 | 49°48'                  | 22.0                 |

# SUS直齿等径锥齿轮

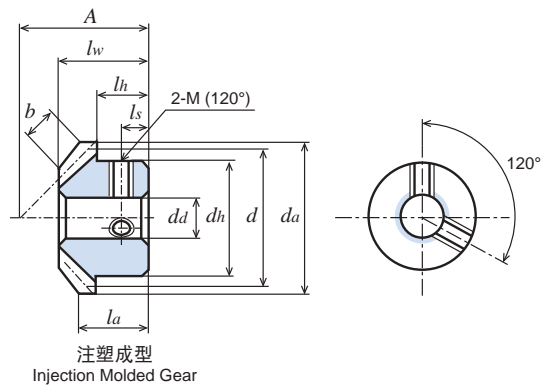
## SUS MITER GEARS

模数 0.8 (齿数 20~30) / 1 (齿数 20~30) / 1.5 (齿数 20~30) / 2 (齿数 20~30) / 2.5 (齿数 20) / 3 (齿数 20) 1:1 Ratio 齿数比 1:1



| 各旋转速度下的容许传达动力表 (W) 弯曲强度 |       |       |       |       |       |        | 侧隙          | 产品型号<br>Catalogue Numbers          |
|-------------------------|-------|-------|-------|-------|-------|--------|-------------|------------------------------------|
| 10                      | 100   | 200   | 400   | 600   | 800   | 1,000  |             |                                    |
| 0.2                     | 2.7   | 5.5   | 11.0  | 16.5  | 22.0  | 27.5   | 0.02 ~ 0.08 | M80SU 20 - 1605<br>M80SU 20 * 1605 |
| 0.4                     | 4.6   | 9.3   | 18.7  | 28.1  | 37.5  | 46.6   | 0.02 ~ 0.08 | M80SU 25 - 1805<br>M80SU 25 * 1805 |
| 0.7                     | 7.1   | 14.2  | 28.4  | 42.6  | 56.8  | 68.6   | 0.02 ~ 0.08 | M80SU 30 - 2006<br>M80SU 30 * 2006 |
| 0.5                     | 5.1   | 10.2  | 20.5  | 30.8  | 41.1  | 51.0   | 0.05 ~ 0.12 | M1SU 20 - 2106<br>M1SU 20 * 2106   |
| 0.8                     | 8.5   | 17.1  | 34.3  | 51.5  | 68.3  | 82.4   | 0.05 ~ 0.12 | M1SU 25 - 2306<br>M1SU 25 * 2306   |
| 1.2                     | 12.8  | 25.6  | 51.3  | 77.0  | 99.3  | 119.2  | 0.05 ~ 0.12 | M1SU 30 - 2608<br>M1SU 30 * 2608   |
| 1.7                     | 17.9  | 35.8  | 71.7  | 107.6 | 138.6 | 166.4  | 0.05 ~ 0.12 | M1.5SU 20 - 2810                   |
| 2.7                     | 27.9  | 55.8  | 111.6 | 163.5 | 207.2 | 246.7  | 0.05 ~ 0.12 | M1.5SU 25 - 3410                   |
| 4.3                     | 43.3  | 86.7  | 173.4 | 246.3 | 309.5 | 365.9  | 0.05 ~ 0.12 | M1.5SU 30 - 3812                   |
| 4.0                     | 40.8  | 81.6  | 163.2 | 236.5 | 298.9 | 355.1  | 0.05 ~ 0.12 | M2SU 20 - 3712                     |
| 6.7                     | 67.0  | 134.0 | 268.0 | 402.1 | 536.1 | 670.1  | 0.05 ~ 0.12 | M2SU 25 - 4012                     |
| 10.2                    | 102.7 | 205.5 | 397.2 | 550.3 | 681.6 | 803.6  | 0.05 ~ 0.12 | M2SU 30 - 5116                     |
| 8.1                     | 81.9  | 163.9 | 325.8 | 456.3 | 570.6 | 671.6  | 0.06 ~ 0.15 | M2.5SU 20 - 4814                   |
| 14.3                    | 143.5 | 287.0 | 554.6 | 768.4 | 951.7 | 1122.0 | 0.06 ~ 0.15 | M3SU 20 - 5816                     |

| 各种材料的强度比较    |     |      |
|--------------|-----|------|
| 材料           | 强度比 |      |
| S45C         | 1   | 1.67 |
| SUS304       | 0.6 | 1    |
| MIM (SUS304) | 0.4 | 0.67 |



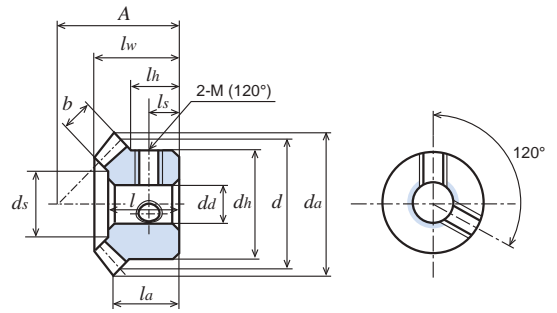
| 各旋转速度下的容许传达动力表 (W) 弯曲强度 |     |      |      |      |       | 侧隙          | 产品型号<br>Catalogue Numbers |
|-------------------------|-----|------|------|------|-------|-------------|---------------------------|
| 100                     | 200 | 400  | 600  | 800  | 1,000 |             |                           |
| 0.5                     | 1.1 | 2.2  | 3.3  | 4.4  | 5.6   | 0.02 ~ 0.08 | M50SUM 20 * 1103          |
| 2.1                     | 4.3 | 8.7  | 13.1 | 17.5 | 21.9  | 0.02 ~ 0.08 | M80SUM 20 * 1605          |
| 3.7                     | 7.6 | 15.3 | 22.9 | 30.6 | 37.8  | 0.05 ~ 0.12 | M1SUM 20 * 2106           |

# 黄铜直齿等径锥齿轮

## MITER GEARS

模数  
MODULE

0.5 (齿数 20~30) / 0.8 (齿数 20~30) / 1 (齿数 20~30) 齿数比 1:1  
1:1 Ratio



单位: mm

| 精度            | 材料     | 压力角 | 热处理 | 齿面硬度 | 侧隙①  |
|---------------|--------|-----|-----|------|------|
| JIS B 1704 4级 | C3604B | 20度 | —   | —    | 请确认② |

★未做表面处理。★【\*】表示带有两个螺纹孔，两个固定螺钉。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①同一种材料，一样的齿轮相互啮合时的理想值。②m 0.5 和 m 0.8 : 0.02 ~ 0.08 ; m 1 : 0.05 ~ 0.12。

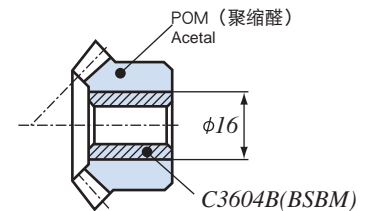
| 产品型号<br>Catalogue Number | 齿数比<br>Ratio<br>u | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 装配距离<br>Locating Distance<br>A | 孔径<br>Bore Diameter<br>da(H8) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 穴长度<br>Bore Length<br>l | 全长<br>Overall Length<br>lw | Tip Distance<br>la | 齿宽<br>Face Width<br>b | 螺纹孔<br>Set Screw |     | 顶锥角<br>Face Angle<br>δa | 沉头部直径<br>(参考值)<br>Counter bore<br>ds | 重量<br>Weight<br>W(g) |
|--------------------------|-------------------|----------------------------|----------------------------------|-----------------------------|--------------------------------|-------------------------------|----------------------------|------------------------------|-------------------------|----------------------------|--------------------|-----------------------|------------------|-----|-------------------------|--------------------------------------|----------------------|
|                          |                   |                            |                                  |                             |                                |                               |                            |                              |                         |                            |                    |                       | 2-M(120°)        | ls  |                         |                                      |                      |
| M50B 20 — 1103           | 1                 | 20                         | φ10                              | φ10.71                      | 11                             | φ3                            | φ8                         | 5                            | 7                       | 8                          | 6.35               | 2.5                   | -                | -   | 49° 3'                  | φ4.9                                 | 2.9                  |
| M50B 20 * 1103           |                   | 20                         | φ10                              | φ10.71                      | 11                             | φ3                            | φ8                         | 5                            | 7                       | 8                          | 6.35               | 2.5                   | 2-M2.5           | 2.5 | 49° 3'                  | φ4.9                                 | 2.7                  |
| M50B 25 * 1204           |                   | 25                         | φ12.5                            | φ13.21                      | 12                             | φ4                            | φ11                        | 5                            | 7                       | 8.11                       | 6.10               | 3.0                   | 2-M3             | 3   | 48°14'                  | φ6.5                                 | 4.9                  |
| M50B 30 * 1404           |                   | 30                         | φ15                              | φ15.71                      | 14                             | φ4                            | φ12                        | 5                            | 8                       | 9.21                       | 6.85               | 3.5                   | 2-M3             | 3   | 47°42'                  | φ9.1                                 | 7.6                  |
| M80B 20 — 1605           |                   | 20                         | φ16                              | φ17.13                      | 16                             | φ5                            | φ12                        | 6                            | 10                      | 11                         | 8.57               | 3.7                   | -                | -   | 49° 3'                  | φ9.5                                 | 9.4                  |
| M80B 20 * 1605           |                   | 20                         | φ16                              | φ17.13                      | 16                             | φ5                            | φ12                        | 6                            | 10                      | 11                         | 8.57               | 3.7                   | 2-M3             | 3   | 49° 3'                  | φ9.5                                 | 9.1                  |
| M80B 25 * 1805           |                   | 25                         | φ20                              | φ21.13                      | 18                             | φ5                            | φ16                        | 6                            | 10.5                    | 11.67                      | 8.57               | 4.7                   | 2-M3             | 3   | 48°51'                  | φ11.7                                | 16.3                 |
| M80B 30 * 2006           |                   | 30                         | φ24                              | φ25.13                      | 20                             | φ6                            | φ18                        | 6                            | 11                      | 12.34                      | 8.57               | 5.6                   | 2-M4             | 3.5 | 47°42'                  | φ14.1                                | 22.2                 |
| M1B 20 * 2106            |                   | 20                         | φ20                              | φ21.41                      | 21                             | φ6                            | φ16                        | 9                            | 13                      | 14.53                      | 11.71              | 4.3                   | 2-M4             | 4.5 | 49° 3'                  | φ11.8                                | 18.1                 |
| M1B 25 * 2306            |                   | 25                         | φ25                              | φ26.41                      | 23                             | φ6                            | φ20                        | 8                            | 13                      | 14.70                      | 11.21              | 5.3                   | 2-M4             | 4   | 48°51'                  | φ15.0                                | 31.5                 |
| M1B 30 * 2608            |                   | 30                         | φ30                              | φ31.41                      | 26                             | φ8                            | φ22                        | 8.9                          | 14.5                    | 15.89                      | 11.71              | 6.2                   | 2-M5             | 4.5 | 47°42'                  | φ19.4                                | 43.0                 |

# 白色POM直齿等径锥齿轮 (有黄铜衬套)

模数  
MODULE

1.5 (齿数 20~30)

齿数比 1:1  
1:1 Ratio



M1.5DB

机械加工品  
(黄铜衬套)  
Brass Bush

单位: mm

| 精度 | 材料              | 压力角 | 热处理 | 齿面硬度 | 侧隙①  |
|----|-----------------|-----|-----|------|------|
| —  | 白色 POM · C3604B | 20度 | —   | —    | 请确认② |

★【\*】表示带有两个螺纹孔，两个固定螺钉。

★本产品的容许传达动力表使用 LOUIS 公式。请在 P28 确认单位换算方法。

★由于材料之特性，易产生由经年老化·热胀冷缩而引起的尺寸和精度的变化。

①同一种材料，一样的齿轮相互啮合时的理想值。②m 0.5 和 m 0.8 : 0.02 ~ 0.08 ; m 1 : 0.05 ~ 0.12。

| 产品型号<br>Catalogue Number | 齿数比<br>Ratio<br>u | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 装配距离<br>Locating Distance<br>A | 孔径<br>Bore Diameter<br>da(H8) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 穴长度<br>Bore Length<br>l | 全长<br>Overall Length<br>lw | Tip Distance<br>la | 齿宽<br>Face Width<br>b | 螺纹孔<br>Set Screw |    | 顶锥角<br>Face Angle<br>δa | 沉头部直径<br>(参考值)<br>Counter bore<br>ds | 重量<br>Weight<br>W(g) |
|--------------------------|-------------------|----------------------------|----------------------------------|-----------------------------|--------------------------------|-------------------------------|----------------------------|------------------------------|-------------------------|----------------------------|--------------------|-----------------------|------------------|----|-------------------------|--------------------------------------|----------------------|
|                          |                   |                            |                                  |                             |                                |                               |                            |                              |                         |                            |                    |                       | 2-M(120°)        | ls |                         |                                      |                      |
| M1.5DB 20— 3295          | 1                 | 20                         | φ30                              | φ32.12                      | 32                             | φ9.5(H8)                      | φ24                        | 14                           | 20                      | 22                         | 18.06              | 6                     | -                | -  | 49° 3'                  | φ19.0                                | 29.6                 |

# Memo

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# 青色POM直齿等径锥齿轮 MITER GEARS

模数 MODULE 0.8 (齿数 20~30) / 1 (齿数 20~30) / 1.25 (齿数 20~30) / 1.5 (齿数 20~30) / 2 (齿数 20~30) / 2.5 (齿数 20~30) / 3 (齿数 20~30) 1:1 Ratio 齿数比 1:1



青色 POM 系列材料，符合以下管理规定，或由材料厂家发表了自我宣言。

| 用途<br>Uses              | 各国的管理规定<br>Regulations  |
|-------------------------|---|
| 食品接触用途<br>Food contact  | NO.10/2011(EU),FDA(美国), NSF 51 (美国), 3A-DAIRY (美国; 乳制品), Health Canada (加拿大), JHOSPA Positive List, 日本厚生省告示第 370 号<br>NO.10/2011 (EU), FDA (USA), NSF 51 (USA), 3A-DAIRY (USA; Dairy product), Health Canada (CANADA), JHOSPA Positive List, MHLW Notification No.370 (JAPAN) |
| 饮用水用途<br>Drinking water | NSF61 (美国), KTW W270 (德国), WRAS (英国), ACS (法国)<br>NSF 61(USA), KTW W270 (GERMANY), WRAS (UK), ACS (FRANCE)  |

请注意

- 不得用于酒精浓度超过 15% 的食品。
- 关于使用本产品时的安全性，请用本产品组装最终机构后，要在此机构的实际运作环境下确认安全后，再继续使用。
- 青色 POM 齿轮系列，是在有可能受到切削液影响的环境下制作的。

单位：mm

| 精度 | 材料     | 压力角  | 热处理 | 齿面硬度 | 侧隙①  |
|----|--------|------|-----|------|------|
| —  | 青色 POM | 20 度 | —   | —    | 确认表格 |

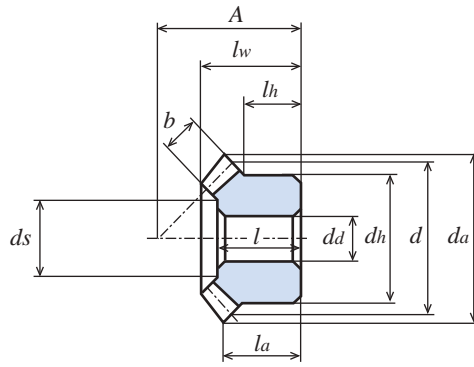
①同一种材料，一样的齿轮相互啮合时的理想值。

★本产品的容许传达动力表使用 LOUIS 公式。请在 P28 确认单位换算方法。

★本产品为机械加工品

★由于材料之特性，易产生由经年老化·热胀冷缩而引起的尺寸和精度的变化。

| 产品型号<br>Catalogue Number | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 装配距离<br>Locating Distance<br>A | 孔径<br>Bore Diameter<br>dd | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 穴长度<br>Bore Length<br>l | 全长<br>Overall Length<br>lw | Tip Distance<br>la | 齿宽<br>Face Width<br>b | 顶锥角<br>Face Angle<br>δa | 沉头部直径<br>(参考值)<br>ds | 重量<br>Weight<br>W(g) |
|--------------------------|----------------------------|----------------------------------|-----------------------------|--------------------------------|---------------------------|----------------------------|------------------------------|-------------------------|----------------------------|--------------------|-----------------------|-------------------------|----------------------|----------------------|
| M80BP 20 - 1604          | 20                         | φ16                              | φ17.13                      | 16                             | φ 4                       | φ12                        | 6                            | 10                      | 11                         | 8.57               | 3.7                   | 49° 3'                  | φ 9.53               | 1.7                  |
| M80BP 25 - 1805          | 25                         | φ20                              | φ21.13                      | 18                             | φ 5                       | φ16                        | 6                            | 10.5                    | 11.67                      | 8.57               | 4.7                   | 48°51'                  | φ11.70               | 3.0                  |
| M80BP 30 - 2005          | 30                         | φ24                              | φ25.13                      | 20                             | φ 5                       | φ18                        | 6                            | 11                      | 12.34                      | 8.57               | 5.6                   | 47°42'                  | φ14.16               | 4.5                  |
| M1BP 20 - 2105           | 20                         | φ20                              | φ21.41                      | 21                             | φ 5                       | φ16                        | 9                            | 13                      | 14.53                      | 11.71              | 4.3                   | 49° 3'                  | φ11.83               | 3.7                  |
| M1BP 25 - 2306           | 25                         | φ25                              | φ26.41                      | 23                             | φ 6                       | φ20                        | 8                            | 13                      | 14.7                       | 11.21              | 5.3                   | 48°51'                  | φ15.01               | 6.0                  |
| M1BP 30 - 2606           | 30                         | φ30                              | φ31.41                      | 26                             | φ 6                       | φ22                        | 8.9                          | 14.5                    | 15.89                      | 11.71              | 6.2                   | 47°42'                  | φ19.46               | 8.8                  |
| M1.25BP 20 - 2406        | 20                         | φ25                              | φ26.77                      | 24                             | φ 6                       | φ20                        | 8.99                         | 14                      | 16                         | 12.38              | 5.5                   | 49° 3'                  | φ14.43               | 6.4                  |
| M1.25BP 25 - 2808        | 25                         | φ31.25                           | φ33.02                      | 28                             | φ 8                       | φ26                        | 9.75                         | 15.5                    | 17.35                      | 13.26              | 6.2                   | 48°51'                  | φ19.96               | 11.5                 |
| M1.25BP 30 - 3208        | 30                         | φ37.5                            | φ39.27                      | 32                             | φ 8                       | φ28                        | 10                           | 17                      | 18.85                      | 14.13              | 7                     | 47°42'                  | φ25.20               | 16.6                 |
| M1.5BP 20 - 2808         | 20                         | φ30                              | φ32.12                      | 28                             | φ 8                       | φ24                        | 10                           | 16.5                    | 18.53                      | 14.06              | 6.8                   | 49° 3'                  | φ17.75               | 10.5                 |
| M1.5BP 25 - 3410         | 25                         | φ37.5                            | φ39.62                      | 34                             | φ10                       | φ30                        | 11.5                         | 19                      | 21.26                      | 16.31              | 7.5                   | 48°51'                  | φ23.8                | 19.9                 |
| M1.5BP 30 - 3810         | 30                         | φ45                              | φ47.12                      | 38                             | φ10                       | φ33                        | 12.34                        | 21                      | 22.83                      | 16.56              | 9.3                   | 47°42'                  | φ29.69               | 28.4                 |
| M2BP 20 - 3710           | 20                         | φ40                              | φ42.83                      | 37                             | φ10                       | φ34                        | 14                           | 21                      | 24                         | 18.41              | 8.5                   | 49° 3'                  | φ23.94               | 26.4                 |
| M2BP 25 - 4012           | 25                         | φ50                              | φ51.33                      | 40                             | φ12                       | φ42                        | 10.99                        | 21                      | 23.34                      | 16.41              | 10.5                  | 48°51'                  | φ32.30               | 41.7                 |
| M2BP 30 - 5112           | 30                         | φ60                              | φ61.36                      | 51                             | φ12                       | φ44                        | 16.79                        | 28                      | 30.77                      | 22.41              | 12.4                  | 47°42'                  | φ38.92               | 68.4                 |
| M2.5BP 20 - 4812         | 20                         | φ50                              | φ51.66                      | 48                             | φ12                       | φ42                        | 19                           | 28                      | 32.06                      | 24.77              | 11.1                  | 49° 3'                  | φ28.58               | 54.4                 |
| M2.5BP 25 - 5014         | 25                         | φ62.5                            | φ64.16                      | 50                             | φ14                       | φ52                        | 13.5                         | 27                      | 29.42                      | 20.52              | 13.5                  | 48°51'                  | φ40.82               | 81.0                 |
| M2.5BP 30 - 6316         | 30                         | φ75                              | φ76.7                       | 63                             | φ16                       | φ55                        | 20.5                         | 34.5                    | 37.71                      | 27.27              | 15.5                  | 47°42'                  | φ49.15               | 130.5                |
| M3BP 20 - 5814           | 20                         | φ60                              | φ61.99                      | 58                             | φ14                       | φ50                        | 23                           | 35                      | 39.06                      | 30.12              | 13.6                  | 49° 3'                  | φ35.51               | 95.9                 |
| M3BP 25 - 6016           | 25                         | φ75                              | φ77                         | 60                             | φ16                       | φ65                        | 17.5                         | 32                      | 35.31                      | 24.62              | 16.2                  | 48°51'                  | φ48.18               | 146.2                |
| M3BP 30 - 7518           | 30                         | φ90                              | φ92.04                      | 75                             | φ18                       | φ66                        | 23.64                        | 40                      | 44.65                      | 32.12              | 18.6                  | 47°42'                  | φ57.37               | 222.9                |



机械加工品  
Machined Gears

| 各旋转速度下的容许传动力表 (W) 弯曲强度 |        |        |        |        |        |        | 侧 隙         | 产 品 型 号<br>Catalogue Numbers |
|------------------------|--------|--------|--------|--------|--------|--------|-------------|------------------------------|
| 10                     | 100    | 200    | 400    | 600    | 800    | 1,000  |             |                              |
| 0.12                   | 1.20   | 2.42   | 4.84   | 7.26   | 9.68   | 12.12  | 0.02 ~ 0.08 | <b>M80BP 20 - 1604</b>       |
| 0.20                   | 2.06   | 4.12   | 8.26   | 12.38  | 16.52  | 20.66  | 0.02 ~ 0.08 | <b>M80BP 25 - 1805</b>       |
| 0.30                   | 3.12   | 6.24   | 12.50  | 18.76  | 24.98  | 31.24  | 0.02 ~ 0.08 | <b>M80BP 30 - 2005</b>       |
| 0.20                   | 2.10   | 4.24   | 8.46   | 12.70  | 16.94  | 20.94  | 0.05 ~ 0.12 | <b>M1BP 20 - 2105</b>        |
| 0.34                   | 3.50   | 7.00   | 14.00  | 21.00  | 27.98  | 33.82  | 0.05 ~ 0.12 | <b>M1BP 25 - 2306</b>        |
| 0.52                   | 5.24   | 10.48  | 20.94  | 31.44  | 40.54  | 48.38  | 0.05 ~ 0.12 | <b>M1BP 30 - 2606</b>        |
| 0.40                   | 4.18   | 8.38   | 16.78  | 25.18  | 33.42  | 41.34  | 0.05 ~ 0.12 | <b>M1.25BP 20 - 2406</b>     |
| 0.64                   | 6.50   | 13.00  | 26.04  | 39.00  | 49.92  | 59.64  | 0.05 ~ 0.12 | <b>M1.25BP 25 - 2808</b>     |
| 0.92                   | 9.38   | 18.78  | 37.54  | 54.86  | 69.56  | 82.86  | 0.05 ~ 0.12 | <b>M1.25BP 30 - 3208</b>     |
| 0.68                   | 6.86   | 13.76  | 27.55  | 41.31  | 53.21  | 63.77  | 0.05 ~ 0.12 | <b>M1.5BP 20 - 2808</b>      |
| 1.04                   | 10.45  | 20.92  | 41.87  | 61.33  | 77.57  | 92.33  | 0.05 ~ 0.12 | <b>M1.5BP 25 - 3410</b>      |
| 1.63                   | 16.34  | 32.69  | 65.40  | 92.83  | 116.55 | 137.77 | 0.05 ~ 0.12 | <b>M1.5BP 30 - 3810</b>      |
| 1.48                   | 15.36  | 30.90  | 61.79  | 89.54  | 113.04 | 134.31 | 0.05 ~ 0.12 | <b>M2BP 20 - 3710</b>        |
| 2.41                   | 25.72  | 51.62  | 102.49 | 143.75 | 179.64 | 211.46 | 0.05 ~ 0.12 | <b>M2BP 25 - 4012</b>        |
| 3.70                   | 38.67  | 77.33  | 149.67 | 207.39 | 256.78 | 302.85 | 0.05 ~ 0.12 | <b>M2BP 30 - 5112</b>        |
| 2.96                   | 31.27  | 62.53  | 124.32 | 174.09 | 217.75 | 256.23 | 0.06 ~ 0.15 | <b>M2.5BP 20 - 4812</b>      |
| 5.00                   | 51.62  | 103.23 | 197.77 | 273.80 | 338.37 | 401.64 | 0.06 ~ 0.15 | <b>M2.5BP 25 - 5014</b>      |
| 7.40                   | 75.48  | 151.15 | 280.65 | 382.95 | 473.05 | 575.17 | 0.06 ~ 0.15 | <b>M2.5BP 30 - 6316</b>      |
| 5.37                   | 54.95  | 109.89 | 212.38 | 294.34 | 364.64 | 429.76 | 0.06 ~ 0.15 | <b>M3BP 20 - 5814</b>        |
| 8.88                   | 89.17  | 178.34 | 330.97 | 451.77 | 557.96 | 678.40 | 0.06 ~ 0.15 | <b>M3BP 25 - 6016</b>        |
| 12.95                  | 130.61 | 261.41 | 466.57 | 627.89 | 799.57 | 967.92 | 0.06 ~ 0.15 | <b>M3BP 30 - 7518</b>        |

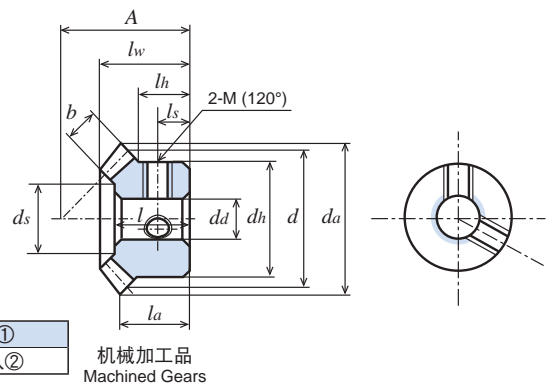
# 白色POM等径直齿锥齿轮

## MITER GEARS

模数  
MODULE

1 (齿数 25~30) / 1.5 (齿数 20~30)

齿数比 1:1  
1:1 Ratio



单位: mm

| 精度 | 材料     | 压力角  | 热处理 | 齿面硬度 | 侧隙①  |
|----|--------|------|-----|------|------|
| —  | 白色 POM | 20 度 | —   | —    | 请确认② |

★本产品为机械加工品

★本产品的容许传达动力表使用 LOUIS 公式。请在 P28 确认单位换算方法。

★由于材料之特性，易产生由经年老化·热胀冷缩而引起的尺寸和精度的变化。

①同一种材料，一样的齿轮相互啮合时的理想值。②m 1 和 m 1.5 : 0.05 ~ 0.12。

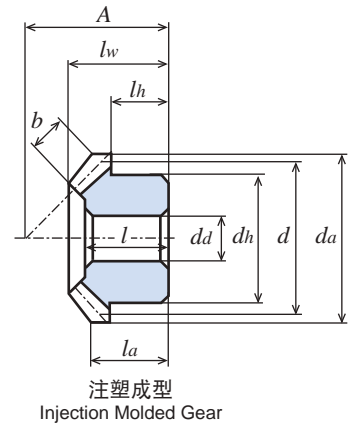
| 产品型号<br>Catalogue Number | 齿数比<br>Ratio<br>u | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 装配距离<br>Locating Distance<br>A | 孔径<br>Bore Diameter<br>dd | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 穴长度<br>Bore Length<br>l | 全长<br>Overall Length<br>lw | 齿宽<br>Face Width<br>b | 螺纹孔<br>Set Screw |      | 顶锥角<br>Face Angle<br>δa | 沉头部直径<br>(参考值)<br>ds | 重量<br>Weight<br>W(g) |      |
|--------------------------|-------------------|----------------------------|----------------------------------|-----------------------------|--------------------------------|---------------------------|----------------------------|------------------------------|-------------------------|----------------------------|-----------------------|------------------|------|-------------------------|----------------------|----------------------|------|
|                          |                   |                            |                                  |                             |                                |                           |                            |                              |                         |                            |                       | 2-M(120°)        | ls   |                         |                      |                      |      |
| M1D 25 * 2306            | 1                 | 25                         | φ25                              | φ26.41                      | 23                             | φ 6                       | φ20                        | 8                            | 13                      | 14.70                      | 11.21                 | 5.3              | 2-M4 | 4                       | 48°51'               | φ15.0                | 5.2  |
| M1D 30 - 2608            |                   | 30                         | φ30                              | φ31.41                      | 26                             | φ 8                       | φ22                        | 8.9                          | 14.5                    | 15.89                      | 11.71                 | 6.2              | -    | -                       | 47°42'               | φ19.4                | 8.3  |
| M1D 30 * 2608            |                   | 30                         | φ30                              | φ31.41                      | 26                             | φ 8                       | φ22                        | 8.9                          | 14.5                    | 15.89                      | 11.71                 | 6.2              | 2-M4 | 4.5                     | 47°42'               | φ19.4                | 8.1  |
| M1.5D 20 - 2810          |                   | 20                         | φ30                              | φ32.12                      | 28                             | φ10                       | φ24                        | 10                           | 16.5                    | 18.53                      | 14.06                 | 6.8              | -    | -                       | 49° 3'               | φ17.7                | 9.9  |
| M1.5D 20 * 2810          |                   | 20                         | φ30                              | φ32.12                      | 28                             | φ10                       | φ24                        | 10                           | 16.5                    | 18.53                      | 14.06                 | 6.8              | 2-M5 | 5                       | 49° 3'               | φ17.7                | 9.6  |
| M1.5D 25 * 3410          |                   | 25                         | φ37.5                            | φ39.62                      | 34                             | φ10                       | φ30                        | 11.5                         | 19                      | 21.26                      | 16.31                 | 7.5              | 2-M5 | 5.5                     | 48°51'               | φ23.8                | 17.5 |
| M1.5D 30 - 3812          |                   | 30                         | φ45                              | φ47.12                      | 38                             | φ12                       | φ33                        | 12.34                        | 21                      | 22.83                      | 16.56                 | 9.3              | -    | -                       | 47°42'               | φ29.6                | 27.3 |
| M1.5D 30 * 3812          |                   | 30                         | φ45                              | φ47.12                      | 38                             | φ12                       | φ33                        | 12.34                        | 21                      | 22.83                      | 16.56                 | 9.3              | 2-M5 | 6.5                     | 47°42'               | φ29.6                | 26.8 |

# 黑色POM等径直齿锥齿轮

模数  
MODULE

0.5 (齿数 20) / 0.8 (齿数 20) / 1 (齿数 20)

齿数比 1:1  
1:1 Ratio



单位: mm

| 精度 | 材料     | 压力角  | 热处理 | 齿面硬度 | 侧隙①  |
|----|--------|------|-----|------|------|
| —  | 黑色 POM | 20 度 | —   | —    | 请确认② |

★本产品的容许传达动力表使用 LOUIS 公式。请在 P28 确认单位换算方法。

★由于材料之特性，易产生由经年老化·热胀冷缩而引起的尺寸和精度的变化。

★本产品为注塑成型品。请尽量避免孔径 ( d d ) 等部位的追加加工。加工面有可能出现由材料冷却时的气泡形成的气孔。

①同一种材料，一样的齿轮相互啮合时的理想值。②m 0.5 和 m 0.8 : 0.02 ~ 0.08 ; m 1 : 0.05 ~ 0.12。

| 产品型号<br>Catalogue Number | 齿数比<br>Ratio<br>u | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 装配距离<br>Locating Distance<br>A | 孔径<br>Bore Diameter<br>dd | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 穴长度<br>Bore Length<br>l | 全长<br>Overall Length<br>lw | 齿宽<br>Face Width<br>b | 螺纹孔<br>Set Screw |    | 顶锥角<br>Face Angle<br>δa | 沉头部直径<br>(参考值)<br>ds | 重量<br>Weight<br>W(g) |     |
|--------------------------|-------------------|----------------------------|----------------------------------|-----------------------------|--------------------------------|---------------------------|----------------------------|------------------------------|-------------------------|----------------------------|-----------------------|------------------|----|-------------------------|----------------------|----------------------|-----|
|                          |                   |                            |                                  |                             |                                |                           |                            |                              |                         |                            |                       | 2-M(120°)        | ls |                         |                      |                      |     |
| M50DM 20 - 1103          | 1                 | 20                         | φ10                              | φ10.70                      | 11                             | φ3                        | φ 8                        | 4                            | 7                       | 8                          | 6.35                  | 2.5              | -  | -                       | 49° 3'               | φ 4.9                | 0.5 |
| M80DM 20 - 1605          |                   | 20                         | φ16                              | φ17.10                      | 16                             | φ5                        | φ12                        | 5                            | 10                      | 11                         | 8.56                  | 3.7              | -  | -                       | 49° 3'               | φ 9.5                | 1.7 |
| M1DM 20 - 2106           |                   | 20                         | φ20                              | φ21.40                      | 21                             | φ6                        | φ16                        | 7                            | 13                      | 14.5                       | 11.70                 | 4.3              | -  | -                       | 49° 3'               | φ11.8                | 3.5 |



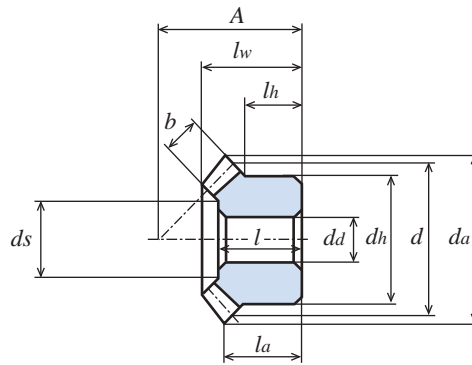
# POM等径锥齿轮

MITER GEARS

模数  
MODULE

**1** (齿数 25~30) / **1.5** (齿数 20~30)

齿数比 1:1  
1:1 Ratio



机械加工品  
Machined Gears

# 黑色POM等径直齿锥齿轮

模数  
MODULE

**0.5** (齿数 20) / **0.8** (齿数 20) / **1** (齿数 20)

齿数比 1:1  
1:1 Ratio

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锥齿  
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蜗轮·蜗杆  
WORMS AND WORM WHEELS

技术数据  
REFERENCE DATA



单位: mm

| 精度            | 材料     | 压力角 | 螺旋角 | 热处理    | 齿面硬度       | 侧隙①  |
|---------------|--------|-----|-----|--------|------------|------|
| JIS B 1704 1级 | SCM440 | 20度 | 35度 | 齿面高频淬火 | HRC52 ~ 60 | 确认表格 |

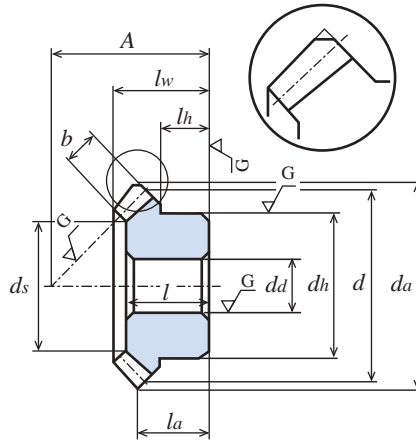
★未做表面处理。容许传达动力表的数据是以小齿轮(L方向螺旋)做输入齿轮,为条件。

★本产品的容许传达动力表使用JGMA公式。请在P28确认单位换算方法。

★齿顶圆直径da( )内的数据为理论值。实际尺寸为在这个数据基础上,对轴心的平行方向进行倒角后的数据。

①同一种材料,一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number                             | 齿数比<br>Ratio<br>u | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da                                    | 装配距离<br>Locating Distance<br>A | 孔径<br>Bore Diameter<br>da(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 穴长度<br>Bore Length<br>l | 全长<br>Overall Length<br>lw | Tip Distance<br>la | 齿宽<br>Face Width<br>b | 顶锥角<br>Face Angle<br>δa | 沉头部直径<br>(参考值)<br>ds | 重量<br>Weight<br>W(g) |
|--|-------------------|----------------------------|----------------------------------|--|--------------------------------|-------------------------------|----------------------------|------------------------------|-------------------------|----------------------------|--------------------|-----------------------|-------------------------|----------------------|----------------------|
| <b>BG1.5S 20L30R-8H</b><br><b>BG1.5S 30R20L-8H</b>   | 1.5               | 20                         | φ30                              | <sup>(φ32.96)</sup><br>φ31.5<br><sup>(φ46.02)</sup><br>φ44.6   | 37                             | φ8                            | φ26                        | 13.16                        | 20                      | 22.49                      | 15.48              | 9                     | 39°08'                  | φ14.07               | 79.0                 |
| 30   |                   | φ45                        | 26                               | φ8   | φ32                            | 8                             | 14                         | 16.39                        | 11.77                   | 9                          | 59°11'             | φ27.45                | 112.8                   |                      |                      |
| <b>BG1.5S 20L40R-8H</b><br><b>BG1.5S 40R20L-10H</b>  | 2                 | 20                         | φ30                              | <sup>(φ33.45)</sup><br>φ32<br><sup>(φ60.69)</sup><br>φ59.5     | 45                             | φ8                            | φ26                        | 14                           | 24                      | 25.29                      | 15.87              | 11                    | 31°21'                  | φ16.80               | 90.5                 |
| 40   |                   | φ60                        | 30                               | φ10  | φ40                            | 10                            | 18                         | 20.27                        | 15.69                   | 11                         | 65°24'             | φ38.40                | 247.9                   |                      |                      |
| <b>BG1.5S 15L45R-8H</b><br><b>BG1.5S 45R15L-12H</b>  | 3                 | 15                         | φ22.5                            | <sup>(φ26.37)</sup><br>φ25.2<br><sup>(φ67.92)</sup><br>φ67     | 45                             | φ8                            | φ20                        | 10.83                        | 21                      | 22.03                      | 11.89              | 11                    | 23°19'                  | φ11.45               | 42.3                 |
| 45   |                   | φ67.5                      | 30                               | φ12  | φ45                            | 12                            | 20                         | 22.56                        | 19.38                   | 11                         | 73°13'             | φ45.14                | 350.3                   |                      |                      |
| <b>BG2S 20L30R-10H</b><br><b>BG2S 30R20L-12H</b>     | 1.5               | 20                         | φ40                              | <sup>(φ43.94)</sup><br>φ42.2<br><sup>(φ61.35)</sup><br>φ60     | 45                             | φ10                           | φ34                        | 12.99                        | 22                      | 24.87                      | 16.31              | 11                    | 39°12'                  | φ21.36               | 153.4                |
| 30   |                   | φ60                        | 40                               | φ12  | φ40                            | 15                            | 23                         | 26.66                        | 21.02                   | 11                         | 59°12'             | φ37.55                | 294.8                   |                      |                      |
| <b>BG2S 20L40R-12H</b><br><b>BG2S 40R20L-12H</b>     | 2                 | 20                         | φ40                              | <sup>(φ44.68)</sup><br>φ43.2<br><sup>(φ80.93)</sup><br>φ79.5   | 60                             | φ12                           | φ35                        | 18.75                        | 32                      | 34                         | 21.17              | 15                    | 31°36'                  | φ20.91               | 175.8                |
| 40   |                   | φ80                        | 45                               | φ12  | φ50                            | 18                            | 27                         | 32.16                        | 25.93                   | 15                         | 65°29'             | φ48.46                | 616.2                   |                      |                      |
| <b>BG2S 15L45R-10H</b><br><b>BG2S 45R15L-12H</b>     | 3                 | 15                         | φ30                              | <sup>(φ35.13)</sup><br>φ33.8<br><sup>(φ90.55)</sup><br>φ89.5   | 60                             | φ10                           | φ24.5                      | 14.08                        | 29                      | 29.69                      | 15.85              | 15                    | 23°07'                  | φ19.16               | 94.4                 |
| 45   |                   | φ90                        | 40                               | φ12  | φ60                            | 17                            | 26                         | 30.18                        | 25.83                   | 15                         | 73°07'             | φ59.04                | 815.4                   |                      |                      |
| <b>BG2.5S 20L30R-12H</b><br><b>BG2.5S 30R20L-15H</b> | 1.5               | 20                         | φ50                              | <sup>(φ55)</sup><br>φ53.5<br><sup>(φ76.72)</sup><br>φ75        | 55                             | φ12                           | φ44                        | 15.49                        | 28                      | 30.81                      | 19.16              | 15                    | 39°24'                  | φ27.44               | 311.0                |
| 30   |                   | φ75                        | 50                               | φ15  | φ50                            | 18                            | 30                         | 33.97                        | 26.3                    | 15                         | 59°17'             | φ45.6                 | 605.3                   |                      |                      |
| <b>BG2.5S 20L40R-12H</b><br><b>BG2.5S 40R20L-15H</b> | 2                 | 20                         | φ50                              | <sup>(φ55.55)</sup><br>φ54.2<br><sup>(φ101.1)</sup><br>φ100    | 75                             | φ12                           | φ44                        | 23.5                         | 40                      | 43.66                      | 26.39              | 20                    | 30°31'                  | φ20.54               | 441.2                |
| 40   |                   | φ100                       | 55                               | φ15  | φ65                            | 20                            | 34                         | 39.55                        | 31.1                    | 20                         | 65°01'             | φ59.28                | 1294.1                  |                      |                      |
| <b>BG2.5S 15L45R-12H</b><br><b>BG2.5S 45R15L-15H</b> | 3                 | 15                         | φ37.5                            | <sup>(φ43.55)</sup><br>φ42.5<br><sup>(φ113.15)</sup><br>φ112.2 | 75                             | φ12                           | φ33                        | 18                           | 37                      | 38.34                      | 19.75              | 20                    | 21°57'                  | φ20.54               | 206.6                |
| 45   |                   | φ112.5                     | 50                               | φ15  | φ75                            | 22                            | 35                         | 38.16                        | 32.22                   | 20                         | 72°43'             | φ72.84                | 1655.6                  |                      |                      |



| 各旋转速度下的容许传达动力表 (kW) 弯曲强度 |      |      |       |       |       |       |       |       | 各旋转速度下的容许传达动力表 (kW) 齿面强度 |      |      |       |       |       |       |       |       | 侧 隙       | 产 品 型 号<br>Catalogue Numbers |
|--------------------------|------|------|-------|-------|-------|-------|-------|-------|--------------------------|------|------|-------|-------|-------|-------|-------|-------|-----------|------------------------------|
| 250                      | 500  | 800  | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 4,000 | 250                      | 500  | 800  | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 4,000 |           |                              |
| 0.19                     | 0.37 | 0.59 | 0.72  | 1.04  | 1.34  | 1.65  | 1.95  | 2.53  | 0.11                     | 0.23 | 0.37 | 0.46  | 0.68  | 0.89  | 1.10  | 1.31  | 1.73  | 0.03~0.06 | <b>BG1.5S 20L30R-8H</b>      |
| -                        | -    | -    | -     | -     | -     | -     | -     | -     | -                        | -    | -    | -     | -     | -     | -     | -     | -     | -         | -                            |
| 0.24                     | 0.47 | 0.75 | 0.92  | 1.33  | 1.72  | 2.11  | 2.49  | 3.24  | 0.15                     | 0.30 | 0.49 | 0.61  | 0.89  | 1.17  | 1.45  | 1.72  | 2.26  | 0.03~0.06 | <b>BG1.5S 20L40R-8H</b>      |
| -                        | -    | -    | -     | -     | -     | -     | -     | -     | -                        | -    | -    | -     | -     | -     | -     | -     | -     | -         | -                            |
| 0.18                     | 0.36 | 0.58 | 0.71  | 1.04  | 1.35  | 1.64  | 1.94  | 2.52  | 0.08                     | 0.17 | 0.28 | 0.35  | 0.53  | 0.69  | 0.85  | 1.01  | 1.33  | 0.03~0.06 | <b>BG1.5S 15L45R-8H</b>      |
| -                        | -    | -    | -     | -     | -     | -     | -     | -     | -                        | -    | -    | -     | -     | -     | -     | -     | -     | -         | -                            |
| 0.41                     | 0.83 | 1.28 | 1.57  | 2.25  | 2.94  | 3.59  | 4.25  | 5.48  | 0.26                     | 0.53 | 0.84 | 1.04  | 1.52  | 2.00  | 2.48  | 2.95  | 3.86  | 0.04~0.08 | <b>BG2S 20L30R-10H</b>       |
| -                        | -    | -    | -     | -     | -     | -     | -     | -     | -                        | -    | -    | -     | -     | -     | -     | -     | -     | -         | -                            |
| 0.56                     | 1.13 | 1.75 | 2.14  | 3.07  | 4.00  | 4.89  | 5.78  | 7.47  | 0.36                     | 0.74 | 1.18 | 1.46  | 2.13  | 2.81  | 3.47  | 4.13  | 5.41  | 0.04~0.08 | <b>BG2S 20L40R-12H</b>       |
| -                        | -    | -    | -     | -     | -     | -     | -     | -     | -                        | -    | -    | -     | -     | -     | -     | -     | -     | -         | -                            |
| 0.42                     | 0.85 | 1.34 | 1.65  | 2.39  | 3.08  | 3.78  | 4.46  | 5.80  | 0.21                     | 0.43 | 0.69 | 0.86  | 1.26  | 1.65  | 2.04  | 2.43  | 3.20  | 0.04~0.08 | <b>BG2S 15L45R-10H</b>       |
| -                        | -    | -    | -     | -     | -     | -     | -     | -     | -                        | -    | -    | -     | -     | -     | -     | -     | -     | -         | -                            |
| 0.85                     | 1.68 | 2.59 | 3.16  | 4.56  | 5.91  | 7.26  | 8.55  | 10.82 | 0.54                     | 1.10 | 1.73 | 2.13  | 3.14  | 4.12  | 5.11  | 6.06  | 7.77  | 0.05~0.1  | <b>BG2.5S 20L30R-12H</b>     |
| -                        | -    | -    | -     | -     | -     | -     | -     | -     | -                        | -    | -    | -     | -     | -     | -     | -     | -     | -         | -                            |
| 1.14                     | 2.24 | 3.45 | 4.21  | 6.08  | 7.89  | 9.68  | 11.40 | 14.43 | 0.75                     | 1.52 | 2.39 | 2.94  | 4.32  | 5.68  | 7.04  | 8.36  | 10.71 | 0.05~0.1  | <b>BG2.5S 20L40R-12H</b>     |
| -                        | -    | -    | -     | -     | -     | -     | -     | -     | -                        | -    | -    | -     | -     | -     | -     | -     | -     | -         | -                            |
| 0.85                     | 1.71 | 2.66 | 3.26  | 4.67  | 6.08  | 7.44  | 8.80  | 11.41 | 0.43                     | 0.89 | 1.41 | 1.74  | 2.54  | 3.35  | 4.14  | 4.93  | 6.48  | 0.05~0.1  | <b>BG2.5S 15L45R-12H</b>     |
| -                        | -    | -    | -     | -     | -     | -     | -     | -     | -                        | -    | -    | -     | -     | -     | -     | -     | -     | -         | -                            |

# S45C螺旋锥齿轮

## SPIRAL BEVEL GEARS

模数  
MODULE

1 (齿数 15~45)

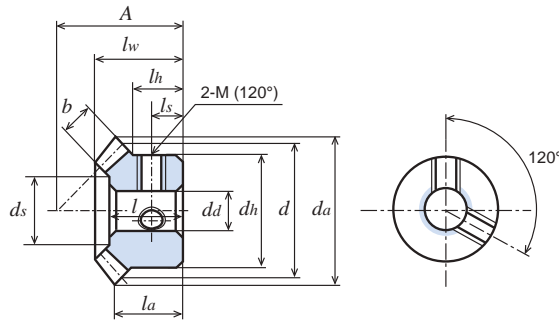
1.5 (齿数 15~45)

2 (齿数 15~45)

2.5 (齿数 15~45)

3 (齿数 15~45)

齿数比 1:2、1:3  
1:1 and 1:2 Ratio



单位: mm

| 精度            | 材料   | 压力角 | 螺旋角 | 热处理 | 齿面硬度 | 侧隙①  |
|---------------|------|-----|-----|-----|------|------|
| JIS B 1704 3级 | S45C | 20度 | 35度 | —   | —    | 确认表格 |

★未做表面处理。容许传达动力表的数据是以小齿轮(L方向螺旋)做输入齿轮,为条件。

★本产品的容许传达动力表使用JGMA公式。请在P28确认单位换算方法。

★【\*】表示带有两个螺纹孔,两个固定螺钉。①同一种材料,一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数比<br>Ratio<br>u | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 装配距离<br>Locating Distance<br>A | 孔径<br>Bore Diameter<br>dd(H7) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 穴长度<br>Bore Length<br>l | 全长<br>Overall Length<br>lw | Tip Distance<br>la | 齿宽<br>Face Width<br>b | 螺纹孔<br>Set Screw |    | 顶锥角<br>Face Angle<br>δa | 沉头部直径<br>(参考值)<br>ds | 重量<br>Weight<br>W(g) |
|--------------------------|-------------------|----------------------------|----------------------------------|-----------------------------|--------------------------------|-------------------------------|----------------------------|------------------------------|-------------------------|----------------------------|--------------------|-----------------------|------------------|----|-------------------------|----------------------|----------------------|
|                          |                   |                            |                                  |                             |                                |                               |                            |                              |                         |                            |                    |                       | 2-M              | ls |                         |                      |                      |
| B1S 20L - 8              | 2                 | 20                         | φ20                              | φ 21.87                     | 29.6                           | φ 8                           | φ16                        | 8.6                          | 14                      | 15                         | 10.07              | 5.7                   | -                | -  | 30°13'                  | φ12.1                | 18.8                 |
| B1S 20L * 8              |                   | 20                         | φ20                              | φ 21.87                     | 29.6                           | φ 8                           | φ16                        | 8.6                          | 14                      | 15                         | 10.07              | 5.7                   | 2-M4             | 4  | 30°13'                  | φ12.1                | 18.2                 |
| B1S 40R - 10             |                   | 40                         | φ40                              | φ 40.41                     | 21.8                           | φ10                           | φ25                        | 8                            | 13                      | 14.57                      | 12.21              | 5.7                   | -                | -  | 65°36'                  | φ28.4                | 66.9                 |
| B1S 40R * 10             |                   | 40                         | φ40                              | φ 40.41                     | 21.8                           | φ10                           | φ25                        | 8                            | 13                      | 14.57                      | 12.21              | 5.7                   | 2-M5             | 4  | 65°36'                  | φ28.4                | 65.1                 |
| B1S 15L - 6              | 3                 | 15                         | φ15                              | φ 17.07                     | 31                             | φ 6                           | φ13                        | 8.17                         | 14.4                    | 15.07                      | 8.85               | 6.7                   | -                | -  | 21°53'                  | φ 8.0                | 12.1                 |
| B1S 15L * 6              |                   | 15                         | φ15                              | φ 17.07                     | 31                             | φ 6                           | φ13                        | 8.17                         | 14.4                    | 15.07                      | 8.85               | 6.7                   | 2-M4             | 4  | 21°53'                  | φ 8.0                | 11.5                 |
| B1S 45R - 10             |                   | 45                         | φ45                              | φ 45.25                     | 20                             | φ10                           | φ25                        | 8                            | 12.9                    | 14.8                       | 12.88              | 6.7                   | -                | -  | 73°21'                  | φ31.1                | 80.6                 |
| B1S 45R * 10             |                   | 45                         | φ45                              | φ 45.25                     | 20                             | φ10                           | φ25                        | 8                            | 12.9                    | 14.8                       | 12.88              | 6.7                   | 2-M5             | 4  | 73°21'                  | φ31.1                | 78.8                 |
| B1.5S 18L - 8            | 2                 | 18                         | φ27                              | φ 30.09                     | 40.74                          | φ 8                           | φ22                        | 12.49                        | 21                      | 22.96                      | 14.51              | 9.8                   | -                | -  | 30°44'                  | φ12.2                | 59.6                 |
| B1.5S 36R - 10           |                   | 36                         | φ54                              | φ 54.76                     | 26.75                          | φ10                           | φ30                        | 9                            | 15.5                    | 18.01                      | 14.01              | 9.8                   | -                | -  | 65°57'                  | φ34.3                | 143.0                |
| B1.5S 15L - 8            | 3                 | 15                         | φ22.5                            | φ 25.99                     | 46                             | φ 8                           | φ19.5                      | 11.75                        | 21.1                    | 22.19                      | 12.83              | 10.1                  | -                | -  | 22°28'                  | φ11.7                | 41.9                 |
| B1.5S 45R - 12           |                   | 45                         | φ67.5                            | φ 68.01                     | 30                             | φ12                           | φ37.5                      | 12                           | 19.4                    | 22.31                      | 19.51              | 10.1                  | -                | -  | 73°56'                  | φ46.6                | 283.0                |
| B2S 18L - 10             | 2                 | 18                         | φ36                              | φ 38.35                     | 53.12                          | φ10                           | φ28                        | 15.12                        | 27                      | 29.36                      | 18.17              | 13                    | -                | -  | 30°53'                  | φ17.4                | 130.3                |
| B2S 36R - 12             |                   | 36                         | φ72                              | φ 71.41                     | 35.21                          | φ12                           | φ36                        | 12                           | 21                      | 23.54                      | 18.26              | 13                    | -                | -  | 66° 6'                  | φ46.7                | 318.4                |
| B2S 15L - 10             | 3                 | 15                         | φ30                              | φ 33.35                     | 62                             | φ10                           | φ26                        | 16.33                        | 28.9                    | 30.2                       | 17.78              | 13.4                  | -                | -  | 22°19'                  | φ16.6                | 104.0                |
| B2S 45R - 14             |                   | 45                         | φ90                              | φ 89.16                     | 40                             | φ14                           | φ50                        | 16                           | 25.9                    | 29.76                      | 26.02              | 13.4                  | -                | -  | 73°47'                  | φ62.3                | 680.6                |
| B2.5S 18L - 12           | 2                 | 18                         | φ45                              | φ 48.63                     | 64.29                          | φ12                           | φ36                        | 17.04                        | 32                      | 34.98                      | 20.6               | 16.7                  | -                | -  | 30°53'                  | φ21.2                | 0.25(kg)             |
| B2.5S 36R - 14           |                   | 36                         | φ90                              | φ 89.88                     | 42.55                          | φ14                           | φ50                        | 14                           | 25                      | 28.14                      | 21.37              | 16.7                  | -                | -  | 66° 6'                  | φ57.6                | 0.64(kg)             |
| B2.5S 15L - 10           | 3                 | 15                         | φ37.5                            | φ 41.90                     | 77.93                          | φ10(H8)                       | φ32                        | 20.76                        | 36.5                    | 38.45                      | 22.62              | 17                    | -                | -  | 21°36'                  | φ18.9                | 0.21(kg)             |
| B2.5S 45R - 16           |                   | 45                         | φ112.5                           | φ 112.2                     | 40.67                          | φ16                           | φ60                        | 14                           | 24.5                    | 28.05                      | 23.09              | 17                    | -                | -  | 73° 3'                  | φ78.3                | 1.01(kg)             |
| B3S 18L - 15             | 2                 | 18                         | φ 54                             | φ 57.37                     | 75.27                          | φ15                           | φ41                        | 18.02                        | 37                      | 40.12                      | 22.79              | 20                    | -                | -  | 30° 9'                  | φ27.5                | 0.39(kg)             |
| B3S 36R - 16             |                   | 36                         | φ108                             | φ 107.0                     | 52.32                          | φ16                           | φ60                        | 18                           | 31                      | 35.13                      | 26.79              | 20                    | -                | -  | 65°22'                  | φ68.9                | 1.13(kg)             |
| B3S 15L - 12             | 3                 | 15                         | φ 45                             | φ 50.39                     | 89.36                          | φ12(H8)                       | φ36                        | 20.36                        | 42                      | 43.40                      | 23.05              | 22                    | -                | -  | 22°44'                  | φ26.7                | 0.33(kg)             |
| B3S 45R - 18             |                   | 45                         | φ135                             | φ 133.9                     | 50.95                          | φ18                           | φ70                        | 18                           | 31                      | 36.06                      | 30.06              | 22                    | -                | -  | 74°12'                  | φ90.3                | 1.85(kg)             |

# S45C螺旋锥齿轮

## SPIRAL BEVEL GEARS

模数  
MODULE

1 (齿数 15~45)

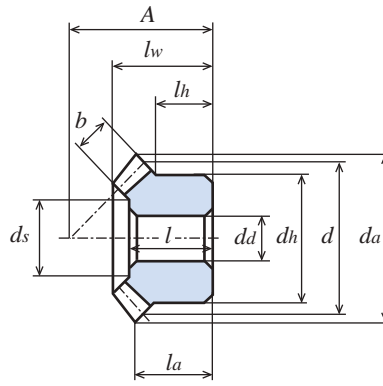
1.5 (齿数 15~45)

2 (齿数 15~45)

2.5 (齿数 15~45)

3 (齿数 15~45)

齿数比 1:2、1:3  
1:1 and 1:2 Ratio



| 各旋转速度下的容许传达动力表 (W) 弯曲强度 |            |            |            |            |            |            | 各旋转速度下的容许传达动力表 (W) 齿面强度 |            |            |            |            |            |            | 侧隙          | 产品型号<br>Catalogue Numbers                                  |
|-------------------------|------------|------------|------------|------------|------------|------------|-------------------------|------------|------------|------------|------------|------------|------------|-------------|--|
| 300                     | 600        | 900        | 1,200      | 1,500      | 1,800      | 2,000      | 300                     | 600        | 900        | 1,200      | 1,500      | 1,800      | 2,000      |             |  |
| 46.5                    | 93.0       | 139.5      | 179.1      | 214.1      | 246.3      | 266.3      | 7.9                     | 16.0       | 24.2       | 31.3       | 36.4       | 42.7       | 47.5       | 0.05 ~ 0.12 | B1S 20L - 8<br>B1S 20L * 8<br>B1S 40R - 10<br>B1S 40R * 10 |
| 35.7                    | 71.5       | 107.3      | 143.1      | 174.2      | 202.1      | 219.7      | 5.0                     | 10.1       | 15.2       | 20.4       | 25.0       | 29.2       | 31.8       | 0.05 ~ 0.12 | B1S 15L - 6<br>B1S 15L * 6<br>B1S 45R - 10<br>B1S 45R * 10 |
| 149.1                   | 298.3      | 430.0      | 540.3      | 638.6      | 726.7      | 780.6      | 23.5                    | 47.4       | 69.0       | 87.5       | 104.5      | 120.3      | 130.2      | 0.05 ~ 0.12 | B1.5S 18L - 8<br>B1.5S 36R - 10                            |
| 126.2                   | 252.5      | 375.3      | 475.5      | 566.1      | 648.5      | 699.4      | 17.8                    | 36.0       | 53.9       | 68.9       | 82.6       | 95.5       | 103.6      | 0.05 ~ 0.12 | B1.5S 15L - 8<br>B1.5S 45R - 12                            |
| 0.355 (kW)              | 0.697 (kW) | 0.966 (kW) | 1.196 (kW) | 1.396 (kW) | 1.617 (kW) | 1.771 (kW) | 0.057 (kW)              | 0.114 (kW) | 0.160 (kW) | 0.200 (kW) | 0.238 (kW) | 0.280 (kW) | 0.309 (kW) | 0.05 ~ 0.12 | B2S 18L - 10<br>B2S 36R - 12                               |
| 0.304 (kW)              | 0.608 (kW) | 0.859 (kW) | 1.074 (kW) | 1.264 (kW) | 1.433 (kW) | 1.552 (kW) | 0.043 (kW)              | 0.088 (kW) | 0.125 (kW) | 0.159 (kW) | 0.189 (kW) | 0.217 (kW) | 0.237 (kW) | 0.05 ~ 0.12 | B2S 15L - 10<br>B2S 45R - 14                               |
| 0.710 (kW)              | 1.337 (kW) | 1.824 (kW) | 2.230 (kW) | 2.677 (kW) | 3.129 (kW) | 3.417 (kW) | 0.117 (kW)              | 0.224 (kW) | 0.310 (kW) | 0.387 (kW) | 0.473 (kW) | 0.561 (kW) | 0.623 (kW) | 0.06 ~ 0.15 | B2.5S 18L - 12<br>B2.5S 36R - 14                           |
| 0.607 (kW)              | 1.183 (kW) | 1.634 (kW) | 2.019 (kW) | 2.351 (kW) | 2.748 (kW) | 3.008 (kW) | 0.088 (kW)              | 0.174 (kW) | 0.244 (kW) | 0.306 (kW) | 0.362 (kW) | 0.430 (kW) | 0.475 (kW) | 0.06 ~ 0.15 | B2.5S 15L - 10<br>B2.5S 45R - 16                           |
| 1.230 (kW)              | 2.228 (kW) | 2.997 (kW) | 3.729 (kW) | 4.517 (kW) | 5.262 (kW) | 5.769 (kW) | 0.206 (kW)              | 0.381 (kW) | 0.524 (kW) | 0.668 (kW) | 0.808 (kW) | 0.986 (kW) | 1.098 (kW) | 0.06 ~ 0.15 | B3S 18L - 15<br>B3S 36R - 16                               |
| 1.111 (kW)              | 2.093 (kW) | 2.855 (kW) | 3.490 (kW) | 4.190 (kW) | 4.897 (kW) | 5.349 (kW) | 0.163 (kW)              | 0.313 (kW) | 0.434 (kW) | 0.541 (kW) | 0.662 (kW) | 0.785 (kW) | 0.871 (kW) | 0.06 ~ 0.15 | B3S 15L - 12<br>B3S 45R - 18                               |

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# S45C高频淬火螺旋锥齿轮

## SPIRAL BEVEL GEARS

模数  
MODULE

1 (齿数 15~45)

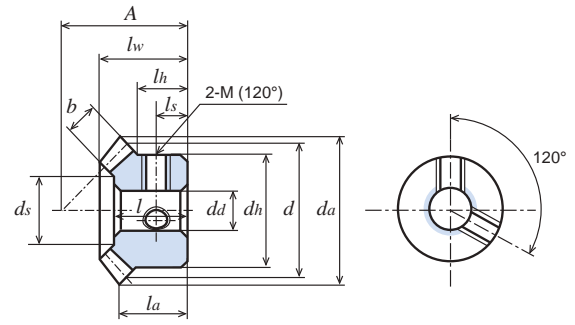
1.5 (齿数 15~45)

2 (齿数 15~45)

2.5 (齿数 15~45)

3 (齿数 15~45)

齿数比 1:2、1:3  
1:2 and 1:3 Ratio



单位: mm

| 精度            | 材料   | 压力角 | 螺旋角 | 热处理    | 齿面硬度  | 侧隙①  |
|---------------|------|-----|-----|--------|-------|------|
| JIS B 1704 4级 | S45C | 20度 | 35度 | 齿面高频淬火 | 47~53 | 确认表格 |

★未做表面处理。容许传达动力表的数据是以小齿轮(L方向螺旋)做输入齿轮,为条件。

★本产品的容许传达动力表使用JGMA公式。请在P28确认单位换算方法。

★【\*】表示带有两个螺纹孔,两个固定螺钉。【#】表示带有键槽和键,带有螺纹孔和固定螺钉。

①同一种材料,一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number                         | 齿数比<br>Ratio<br>u | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da  | 装配距离<br>Locating Distance<br>A | 孔径<br>Bore Diameter<br>da(H8) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 穴长度<br>Bore Length<br>l | 全长<br>Overall Length<br>lw | Tip Distance<br>la | 齿宽<br>Face Width<br>b | 键槽<br>Key Way<br>b2 × t2 |      | 螺纹孔<br>Set Screw<br>2-M ls |        | 顶锥角<br>Face Angle<br>da | 沉头部直径<br>(参考值)<br>ds | 重量<br>Weight<br>W(g) |
|--|-------------------|----------------------------|----------------------------------|------------------------------|--------------------------------|-------------------------------|----------------------------|------------------------------|-------------------------|----------------------------|--------------------|-----------------------|--------------------------|------|----------------------------|--------|-------------------------|----------------------|----------------------|
|  |                   |                            |                                  |                              |                                |                               |                            |                              |                         |                            |                    |                       | 2-M                      | ls   | 2-M                        | ls     |                         |                      |                      |
| <b>B1S 20L * 8H</b><br><b>B1S 40R * 10H</b>      | 2                 | 20                         | φ 20                             | φ 21.87                      | 29.6                           | φ 8                           | φ 16                       | 8.6                          | 14                      | 15                         | 10.07              | 5.7                   | -                        | -    | 2-M4                       | 4      | 30°13'                  | φ12.1                | 182                  |
| 40   |                   | φ 40                       | φ 40.41                          | 21.8                         | φ 10                           | φ 25                          | 8                          | 13                           | 14.57                   | 12.21                      | 5.7                | -                     | -                        | 2-M5 | 4                          | 65°36' | φ28.4                   | 65.1                 |                      |
| <b>B1S 15L * 6H</b><br><b>B1S 45R * 10H</b>      | 3                 | 15                         | φ 15                             | φ 17.07                      | 31                             | φ 6                           | φ 13                       | 8.17                         | 14.4                    | 15.07                      | 8.85               | 6.7                   | -                        | -    | 2-M4                       | 4      | 21°53'                  | φ 8.0                | 11.5                 |
| 45   |                   | φ 45                       | φ 45.25                          | 20                           | φ 10                           | φ 25                          | 8                          | 12.9                         | 14.8                    | 12.88                      | 6.7                | -                     | -                        | 2-M5 | 4                          | 73°21' | φ31.1                   | 78.8                 |                      |
| <b>B1.5S 18L - 8H</b><br><b>B1.5S 18L # 10H</b>  | 2                 | 18                         | φ 27                             | φ 30.09                      | 40.74                          | φ 8                           | φ 22                       | 12.49                        | 21                      | 22.96                      | 14.51              | 9.8                   | -                        | -    | -                          | -      | 30°44'                  | φ12.2                | 59.6                 |
| 18   |                   | φ 27                       | φ 30.09                          | 40.74                        | φ 10                           | φ 22                          | 12.49                      | 21                           | 22.96                   | 14.51                      | 9.8                | 3 × 1.4               | 2-M4                     | 6.5  | -                          | -      | 30°44'                  | φ12.2                | 54.2                 |
| <b>B1.5S 36R - 10H</b><br><b>B1.5S 36R # 15H</b> | 2                 | 36                         | φ 54                             | φ 54.76                      | 26.75                          | φ 10                          | φ 30                       | 9                            | 15.5                    | 18.01                      | 14.01              | 9.8                   | -                        | -    | -                          | -      | 65°57'                  | φ34.3                | 143.0                |
| 36   |                   | φ 54                       | φ 54.76                          | 26.75                        | φ 15                           | φ 30                          | 9                          | 15.5                         | 18.01                   | 14.01                      | 9.8                | 5 × 2.3               | 2-M4                     | 4.5  | -                          | -      | 65°57'                  | φ34.3                | 130.6                |
| <b>B1.5S 15L - 8H</b><br><b>B1.5S 45R - 12H</b>  | 3                 | 15                         | φ 22.5                           | φ 25.99                      | 46                             | φ 8                           | φ 19.5                     | 11.75                        | 21.1                    | 22.19                      | 12.83              | 10.1                  | -                        | -    | -                          | -      | 22°28'                  | φ11.7                | 41.9                 |
| 45   |                   | φ 67.5                     | φ 68.01                          | 30                           | φ 12                           | φ 37.5                        | 12                         | 19.4                         | 22.31                   | 19.51                      | 10.1               | -                     | -                        | -    | -                          | -      | 73°56'                  | φ46.6                | 283.0                |
| <b>B2S 18L - 10H</b><br><b>B2S 18L # 12H</b>     | 2                 | 18                         | φ 36                             | φ 38.35 <sup>(φ40.20)</sup>  | 53.12                          | φ 10                          | φ 28                       | 15.12                        | 27                      | 29.36                      | 18.17              | 13                    | -                        | -    | -                          | -      | 30°53'                  | φ17.4                | 130.3                |
| 18   |                   | φ 36                       | φ 38.35 <sup>(φ40.20)</sup>      | 53.12                        | φ 12                           | φ 28                          | 15.12                      | 27                           | 29.36                   | 18.17                      | 13                 | 4 × 1.8               | 2-M5                     | 7.5  | -                          | -      | 30°53'                  | φ17.4                | 122.0                |
| <b>B2S 36R - 12H</b><br><b>B2S 36R # 20H</b>     | 2                 | 36                         | φ 72                             | φ 71.41 <sup>(φ73.05)</sup>  | 35.21                          | φ 12                          | φ 36                       | 12                           | 21                      | 23.54                      | 18.26              | 13                    | -                        | -    | -                          | -      | 66° 6'                  | φ46.7                | 318.4                |
| 36   |                   | φ 72                       | φ 71.41 <sup>(φ73.05)</sup>      | 35.21                        | φ 20                           | φ 36                          | 12                         | 21                           | 23.54                   | 18.26                      | 13                 | 6 × 2.8               | 2-M5                     | 6    | -                          | -      | 66° 6'                  | φ46.7                | 284.0                |
| <b>B2S 15L - 10H</b><br><b>B2S 45 R - 14H</b>    | 3                 | 15                         | φ 30                             | φ 33.35 <sup>(φ34.66)</sup>  | 62                             | φ 10                          | φ 26                       | 16.33                        | 28.9                    | 30.2                       | 17.78              | 13.4                  | -                        | -    | -                          | -      | 22°19'                  | φ16.6                | 104.0                |
| 45   |                   | φ 90                       | φ 89.16 <sup>(φ90.68)</sup>      | 40                           | φ 14                           | φ 50                          | 16                         | 25.9                         | 29.76                   | 26.02                      | 13.4               | -                     | -                        | -    | -                          | -      | 73°47'                  | φ62.3                | 680.6                |
| <b>B2.5S 18L - 12H</b><br><b>B2.5S 18L # 15H</b> | 2                 | 18                         | φ 45                             | φ 48.63 <sup>(φ50.25)</sup>  | 64.29                          | φ 12                          | φ 36                       | 17.04                        | 32                      | 34.98                      | 20.6               | 16.7                  | -                        | -    | -                          | -      | 30°53'                  | φ21.2                | 0.25(kg)             |
| 18   |                   | φ 45                       | φ 48.63 <sup>(φ50.25)</sup>      | 64.29                        | φ 15                           | φ 36                          | 17.04                      | 32                           | 34.98                   | 20.6                       | 16.7               | 5 × 2.3               | 2-M5                     | 8.5  | -                          | -      | 30°53'                  | φ21.2                | 0.24(kg)             |
| <b>B2.5S 36R - 14H</b><br><b>B2.5S 36R # 25H</b> | 2                 | 36                         | φ 90                             | φ 89.88 <sup>(φ91.32)</sup>  | 42.55                          | φ 14                          | φ 50                       | 14                           | 25                      | 28.14                      | 21.37              | 16.7                  | -                        | -    | -                          | -      | 66° 6'                  | φ57.6                | 0.64(kg)             |
| 36   |                   | φ 90                       | φ 89.88 <sup>(φ91.32)</sup>      | 42.55                        | φ 25                           | φ 50                          | 14                         | 25                           | 28.14                   | 21.37                      | 16.7               | 8 × 3.3               | 2-M6                     | 7    | -                          | -      | 66° 6'                  | φ57.6                | 0.58(kg)             |
| <b>B2.5S 15L - 10H</b><br><b>B2.5S 45R - 16H</b> | 3                 | 15                         | φ 37.5                           | φ 41.90 <sup>(φ43.13)</sup>  | 77.93                          | φ 10                          | φ 32                       | 20.76                        | 36.5                    | 38.45                      | 22.62              | 17                    | -                        | -    | -                          | -      | 21°36'                  | φ18.9                | 0.21(kg)             |
| 45   |                   | φ 112.5                    | φ 112.2 <sup>(φ113.28)</sup>     | 40.67                        | φ 16                           | φ 60                          | 14                         | 24.5                         | 28.05                   | 23.09                      | 17                 | -                     | -                        | -    | -                          | -      | 73° 3'                  | φ78.3                | 1.01(kg)             |
| <b>B3S 18L - 15H</b><br><b>B3S 18L # 20H</b>     | 2                 | 18                         | φ 54                             | φ 57.37 <sup>(φ60.07)</sup>  | 75.27                          | φ 15                          | φ 41                       | 18.02                        | 37                      | 40.12                      | 22.79              | 20                    | -                        | -    | -                          | -      | 30° 9'                  | φ27.5                | 0.39(kg)             |
| 18   |                   | φ 54                       | φ 57.37 <sup>(φ60.07)</sup>      | 75.27                        | φ 20                           | φ 41                          | 18.02                      | 37                           | 40.12                   | 22.79                      | 20                 | 6 × 2.8               | 2-M6                     | 9    | -                          | -      | 30° 9'                  | φ27.5                | 0.35(kg)             |
| <b>B3S 36R - 16H</b><br><b>B3S 36R # 30H</b>     | 2                 | 36                         | φ 108                            | φ 107.0 <sup>(φ109.47)</sup> | 52.32                          | φ 16                          | φ 60                       | 18                           | 31                      | 35.13                      | 26.79              | 20                    | -                        | -    | -                          | -      | 65°22'                  | φ68.9                | 1.13(kg)             |
| 36   |                   | φ 108                      | φ 107.0 <sup>(φ109.47)</sup>     | 52.32                        | φ 30                           | φ 60                          | 18                         | 31                           | 35.13                   | 26.79                      | 20                 | 8 × 3.3               | 2-M6                     | 9    | -                          | -      | 65°22'                  | φ68.9                | 1.01(kg)             |
| <b>B3S 15L - 12H</b><br><b>B3S 45R - 18H</b>     | 3                 | 15                         | φ 45                             | φ 50.39 <sup>(φ52.16)</sup>  | 89.36                          | φ 12                          | φ 36                       | 20.36                        | 42                      | 43.40                      | 23.05              | 22                    | -                        | -    | -                          | -      | 22°44'                  | φ26.7                | 0.33(kg)             |
| 45   |                   | φ 135                      | φ 133.9 <sup>(φ136.07)</sup>     | 50.95                        | φ 18                           | φ 70                          | 18                         | 31                           | 36.06                   | 30.06                      | 22                 | -                     | -                        | -    | -                          | -      | 74°12'                  | φ90.3                | 1.85(kg)             |

# S45C高频淬火螺旋锥齿轮

## SPIRAL BEVEL GEARS

模数  
MODULE

1 (齿数 15~45)

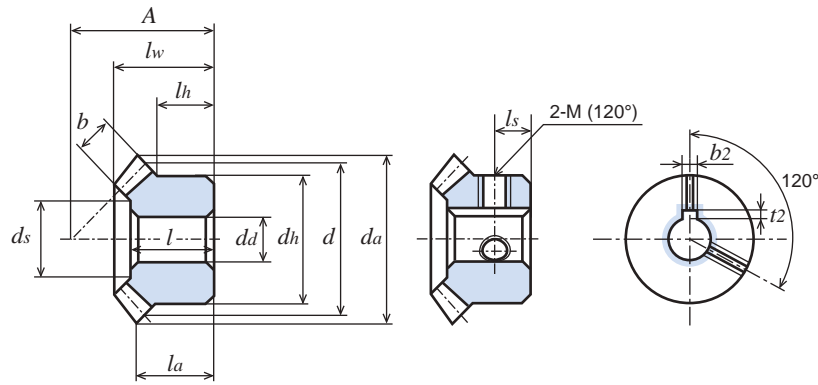
/1.5 (齿数 15~45)

/2 (齿数 15~45)

/2.5 (齿数 15~45)

/3 (齿数 15~45)

齿数比 1:2、1:3  
1:1 and 1:2 Ratio



| 各旋转速度下的容许传达动力表 (W) 弯曲强度 |            |            |            |            |            |            | 各旋转速度下的容许传达动力表 (W) 齿面强度 |            |            |            |            |            |            | 侧隙          | 产品型号<br>Catalogue Numbers  |
|-------------------------|------------|------------|------------|------------|------------|------------|-------------------------|------------|------------|------------|------------|------------|------------|-------------|--|
| 300                     | 600        | 900        | 1,200      | 1,500      | 1,800      | 2,000      | 300                     | 600        | 900        | 1,200      | 1,500      | 1,800      | 2,000      |             |  |
| 40.6                    | 81.2       | 121.8      | 157.3      | 189.4      | 219.3      | 238.0      | 21.8                    | 44.9       | 68.6       | 89.8       | 109.2      | 127.4      | 139.0      | 0.05 ~ 0.12 | B1S 20L * 8H<br>B1S 40R * 10H  |
| 31.2                    | 62.4       | 93.7       | 124.9      | 152.8      | 178.2      | 194.4      | 13.8                    | 28.6       | 43.7       | 59.0       | 72.9       | 85.7       | 93.9       | 0.05 ~ 0.12 | B1S 15L * 6H<br>B1S 45R * 10H  |
| 130.2                   | 260.4      | 377.8      | 479.2      | 571.2      | 654.9      | 706.8      | 63.9                    | 131.8      | 194.6      | 232.5      | 300.9      | 347.8      | 377.1      | 0.05 ~ 0.12 | B1.5S 18L - 8H<br>B1.5S 18L # 10H<br>B1.5S 36R - 10H<br>B1.5S 36R # 15H  |
| 110.2                   | 220.4      | 328.2      | 419.2      | 502.9      | 580.1      | 628.3      | 48.7                    | 100.5      | 152.4      | 197.1      | 238.5      | 277.7      | 302.2      | 0.05 ~ 0.12 | B1.5S 15L - 8H<br>B1.5S 45R - 12H  |
| 0.310 (kW)              | 0.611 (kW) | 0.857 (kW) | 1.073 (kW) | 1.264 (kW) | 1.452 (kW) | 1.575 (kW) | 0.155 (kW)              | 0.314 (kW) | 0.448 (kW) | 0.569 (kW) | 0.677 (kW) | 0.784 (kW) | 0.854 (kW) | 0.05 ~ 0.12 | B2S 18L - 10H<br>B2S 18L # 12H<br>B2S 36R - 12H<br>B2S 36R # 20H         |
| 0.265 (kW)              | 0.531 (kW) | 0.757 (kW) | 0.956 (kW) | 1.135 (kW) | 1.297 (kW) | 1.403 (kW) | 0.118 (kW)              | 0.243 (kW) | 0.353 (kW) | 0.452 (kW) | 0.542 (kW) | 0.624 (kW) | 0.679 (kW) | 0.05 ~ 0.12 | B2S 15L - 10H<br>B2S 45R - 14H   |
| 0.620 (kW)              | 1.179 (kW) | 1.631 (kW) | 2.019 (kW) | 2.395 (kW) | 2.749 (kW) | 2.968 (kW) | 0.314 (kW)              | 0.615 (kW) | 0.867 (kW) | 1.086 (kW) | 1.301 (kW) | 1.505 (kW) | 1.633 (kW) | 0.06 ~ 0.15 | B2.5S 18L - 12H<br>B2.5S 18L # 15H<br>B2.5S 36R - 14H<br>B2.5S 36R # 25H |
| 0.530 (kW)              | 1.037 (kW) | 1.452 (kW) | 1.814 (kW) | 2.133 (kW) | 2.458 (kW) | 2.664 (kW) | 0.237 (kW)              | 0.479 (kW) | 0.683 (kW) | 0.864 (kW) | 1.027 (kW) | 1.193 (kW) | 1.298 (kW) | 0.06 ~ 0.15 | B2.5S 15L - 10H<br>B2.5S 45R - 16H                                       |
| 1.074 (kW)              | 1.976 (kW) | 2.701 (kW) | 3.349 (kW) | 3.968 (kW) | 4.549 (kW) | -          | 0.550 (kW)              | 1.044 (kW) | 1.453 (kW) | 1.825 (kW) | 2.183 (kW) | 2.523 (kW) | -          | 0.06 ~ 0.15 | B3S 18L - 15H<br>B3S 18L # 20H<br>B3S 36R - 16H<br>B3S 36R # 30H         |
| 0.970 (kW)              | 1.845 (kW) | 2.554 (kW) | 3.160 (kW) | 3.748 (kW) | 4.302 (kW) | 4.646 (kW) | 0.438 (kW)              | 0.860 (kW) | 1.211 (kW) | 1.518 (kW) | 1.818 (kW) | 2.103 (kW) | 2.282 (kW) | 0.06 ~ 0.15 | B3S 15L - 12H<br>B3S 45R - 18H   |

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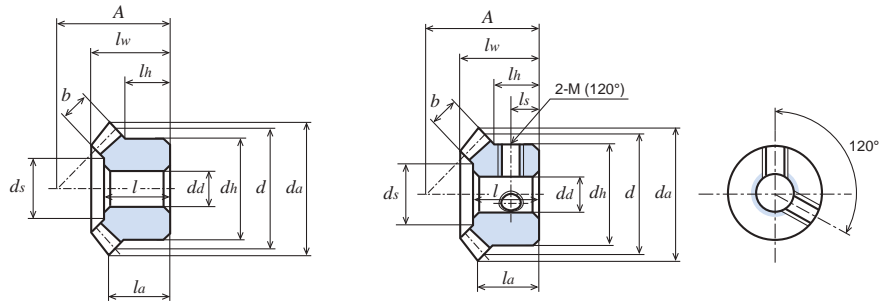
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# S45C直齿锥齿轮

## BEVEL GEARS

模数 MODULE 0.5 (齿数 20~40) / 0.8 (齿数 20~40) / 1 (齿数 15~45) / 1.5 (齿数 15~45) / 2 (齿数 15~45) / 2.5 (齿数 15~45) / 3 (齿数 15~45) 齿数比 1:2、1:3 1:2 and 1:3 Ratio



单位: mm

| 精度            | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①  |
|---------------|------|-----|-----|------|------|
| JIS B 1704 3级 | S45C | 20度 | —   | —    | 确认表格 |

- ★未做表面处理。容许传达动力表的数据是以小齿轮做输入齿轮，为条件。
- ★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。
- ★【\*】表示带有两个螺纹孔，两个固定螺钉。①同一种材料，一样的齿轮相互啮合时的理想值。

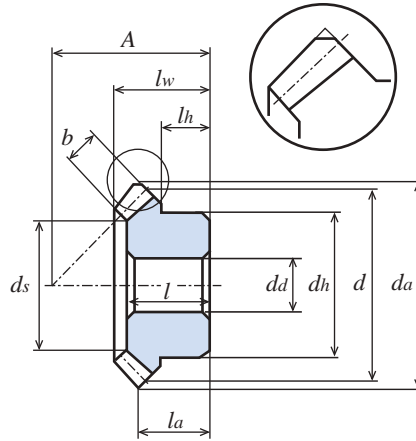
| 产品型号<br>Catalogue Number | 齿数比<br>Ratio<br><i>u</i> | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 齿顶圆直径<br>Tip Diameter<br><i>d<sub>a</sub></i> | 装配距离<br>Locating Distance<br><i>A</i> | 孔径<br>Bore Diameter<br><i>d<sub>d</sub>(H7)</i> | 轮毂外径<br>Hub Diameter<br><i>d<sub>h</sub></i> | 轮毂长度<br>Hub Projection<br><i>l<sub>h</sub></i> | 穴长度<br>Bore Length<br><i>l</i> | 全长<br>Overall Length<br><i>l<sub>w</sub></i> | Tip Distance<br><i>l<sub>a</sub></i> | 齿宽<br>Face Width<br><i>b</i> | 螺纹孔<br>Set Screw |                      | 顶锥角<br>Face Angle<br><i>δ<sub>a</sub></i> | 沉头部直径<br>(参考值)<br><i>d<sub>s</sub></i> | 重量<br>Weight<br><i>W(g)</i> |
|--------------------------|--------------------------|-----------------------------------|---|---|---------------------------------------|---|--|--|--------------------------------|--|--------------------------------------|------------------------------|------------------|----------------------|---|--|-----------------------------|
|                          |                          |                                   |   |   |                                       |   |  |  |                                |  |                                      |                              | 2-M              | <i>l<sub>s</sub></i> |   |  |                             |
| B50S 20                  | 2                        | 20                                | φ 10                                    | φ 10.89                                       | 15.52                                 | φ 3   | φ 8  | 5  | 8                              | 8.54   | 5.74                                 | 3.2                          | -                | -                    | 29° 8'                                    | φ 5.6                                  | 3.0                         |
| B50S 20 * 3              |                          | 20                                | φ 10                                    | φ 10.89                                       | 15.52                                 | φ 3   | φ 8  | 5  | 8                              | 8.54   | 5.74                                 | 3.2                          | 2-M2.5           | 2.5                  | 29° 8'                                    | φ 5.6                                  | 2.8                         |
| B50S 40                  |                          | 40                                | φ 20                                    | φ 20.45                                       | 10.56                                 | φ 4   | φ 12   | 4  | 6.3                            | 7.31   | 6.01                                 | 3.2                          | -                | -                    | 66° 0'                                    | φ 13.5                                 | 8.2                         |
| B50S 40 * 4              |                          | 40                                | φ 20                                    | φ 20.45                                       | 10.56                                 | φ 4   | φ 12   | 4  | 6.3                            | 7.31   | 6.01                                 | 3.2                          | 2-M3             | 2                    | 66° 0'                                    | φ 13.5                                 | 7.8                         |
| B80S 20                  | 2                        | 20                                | φ 16                                    | φ 17.43                                       | 22.5                                  | φ 5   | φ 12   | 5.5  | 10                             | 10.79  | 6.86                                 | 4.5                          | -                | -                    | 29° 8'                                    | φ 9.8                                  | 9.0                         |
| B80S 20 * 5              |                          | 20                                | φ 16                                    | φ 17.43                                       | 22.5                                  | φ 5   | φ 12   | 5.5  | 10                             | 10.79  | 6.86                                 | 4.5                          | 2-M3             | 2.75                 | 29° 8'                                    | φ 9.8                                  | 8.7                         |
| B80S 40                  |                          | 40                                | φ 32                                    | φ 32.72                                       | 16.46                                 | φ 6   | φ 20   | 6  | 9.5                            | 11.01  | 9.18                                 | 4.5                          | -                | -                    | 66° 0'                                    | φ 22.9                                 | 33.4                        |
| B80S 40 * 6              |                          | 40                                | φ 32                                    | φ 32.72                                       | 16.46                                 | φ 6   | φ 20   | 6  | 9.5                            | 11.01  | 9.18                                 | 4.5                          | 2-M4             | 3                    | 66° 0'                                    | φ 22.9                                 | 32.3                        |
| B1S 20 - 6               | 2                        | 20                                | φ 20                                    | φ 21.79                                       | 29.6                                  | φ 6   | φ 16   | 8.6  | 14                             | 15.03  | 10.05                                | 5.7                          | -                | -                    | 29° 8'                                    | φ 12.1                                 | 21.3                        |
| B1S 20 * 6               |                          | 20                                | φ 20                                    | φ 21.79                                       | 29.6                                  | φ 6   | φ 16   | 8.6  | 14                             | 15.03  | 10.05                                | 5.7                          | 2-M4             | 4                    | 29° 8'                                    | φ 12.1                                 | 20.5                        |
| B1S 20 * 8               |                          | 20                                | φ 20                                    | φ 21.79                                       | 29.6                                  | φ 8   | φ 16   | 8.6  | 14                             | 15.03  | 10.05                                | 5.7                          | 2-M4             | 4                    | 29° 8'                                    | φ 12.1                                 | 18.3                        |
| B1S 40 - 8               |                          | 40                                | φ 40                                    | φ 40.89                                       | 21.8                                  | φ 8   | φ 25   | 8  | 13                             | 15.02  | 12.69                                | 5.7                          | -                | -                    | 66° 0'                                    | φ 28.4                                 | 71.7                        |
| B1S 40 * 8               |                          | 40                                | φ 40                                    | φ 40.89                                       | 21.8                                  | φ 8   | φ 25   | 8  | 13                             | 15.02  | 12.69                                | 5.7                          | 2-M5             | 4                    | 66° 0'                                    | φ 28.4                                 | 69.6                        |
| B1S 40 * 10              |                          | 40                                | φ 40                                    | φ 40.89                                       | 21.8                                  | φ 10  | φ 25   | 8  | 13                             | 15.02  | 12.69                                | 5.7                          | 2-M5             | 4                    | 66° 0'                                    | φ 28.4                                 | 67.0                        |
| B1S 15 - 6               | 3                        | 15                                | φ 15                                    | φ 17.67                                       | 31                                    | φ 6   | φ 13   | 8.17   | 14.4                           | 15.16  | 8.95                                 | 6.7                          | -                | -                    | 22° 17'                                   | φ 8.0                                  | 12.0                        |
| B1S 15 * 6               |                          | 15                                | φ 15                                    | φ 17.67                                       | 31                                    | φ 6   | φ 13   | 8.17   | 14.4                           | 15.16  | 8.95                                 | 6.7                          | 2-M4             | 4                    | 22° 17'                                   | φ 8.0                                  | 11.4                        |
| B1S 45 - 10              |                          | 45                                | φ 45                                    | φ 45.37                                       | 20                                    | φ 10  | φ 25   | 8  | 12.9                           | 14.97  | 13.06                                | 6.7                          | -                | -                    | 73° 27'                                   | φ 31.1                                 | 86.0                        |
| B1S 45 * 10              |                          | 45                                | φ 45                                    | φ 45.37                                       | 20                                    | φ 10  | φ 25   | 8  | 12.9                           | 14.97  | 13.06                                | 6.7                          | 2-M5             | 4                    | 73° 27'                                   | φ 31.1                                 | 84.2                        |
| B1.5S 18 - 8             | 2                        | 18                                | φ 27                                    | φ 29.68                                       | 40.74                                 | φ 8   | φ 22   | 12.5   | 21                             | 22.96  | 14.41                                | 9.8                          | -                | -                    | 29° 25'                                   | φ 12.2                                 | 59.4                        |
| B1.5S 36 - 10            |                          | 36                                | φ 54                                    | φ 55.34                                       | 26.75                                 | φ 10  | φ 30   | 10   | 15.5                           | 18.54  | 14.59                                | 9.8                          | -                | -                    | 66° 17'                                   | φ 34.3                                 | 139.9                       |
| B1.5S 15 - 8             | 3                        | 15                                | φ 22.5                                  | φ 26.51                                       | 46                                    | φ 8   | φ 19.5                                       | 11.78  | 21.1                           | 22.29  | 12.92                                | 10.1                         | -                | -                    | 22° 17'                                   | φ 11.7                                 | 41.8                        |
| B1.5S 45 - 12            |                          | 45                                | φ 67.5                                  | φ 68.06                                       | 30                                    | φ 12  | φ 37.5                                       | 12   | 19.4                           | 22.47  | 19.59                                | 10.1                         | -                | -                    | 73° 27'                                   | φ 46.6                                 | 300.8                       |
| B2S 18 - 10              | 2                        | 18                                | φ 36                                    | φ 37.81 <sup>(φ39.58)</sup>                   | 53.12                                 | φ 10  | φ 28   | 15.12  | 27                             | 29   | 18.01                                | 12.6                         | -                | -                    | 29° 25'                                   | φ 19.1                                 | 129.6                       |
| B2S 36 - 12              |                          | 36                                | φ 72                                    | φ 72.15 <sup>(φ73.79)</sup>                   | 35.21                                 | φ 12  | φ 36   | 13   | 21                             | 24.07  | 19                                   | 12.6                         | -                | -                    | 66° 17'                                   | φ 47.6                                 | 313.0                       |
| B2S 15 - 10              | 3                        | 15                                | φ 30                                    | φ 34.19 <sup>(φ35.35)</sup>                   | 62                                    | φ 10  | φ 26   | 16.33  | 28.9                           | 30.32  | 17.89                                | 13.4                         | -                | -                    | 22° 17'                                   | φ 16.6                                 | 103.8                       |
| B2S 45 - 14              |                          | 45                                | φ 90                                    | φ 89.29 <sup>(φ90.75)</sup>                   | 40                                    | φ 14  | φ 50   | 16   | 25.9                           | 29.94  | 26.12                                | 13.4                         | -                | -                    | 73° 27'                                   | φ 62.3                                 | 722.7                       |
| B2.5S 18 - 12            | 2                        | 18                                | φ 45                                    | φ 47.27 <sup>(φ49.47)</sup>                   | 64.29                                 | φ 12  | φ 36   | 17   | 32                             | 34.97  | 20.41                                | 16.7                         | -                | -                    | 29° 25'                                   | φ 21.1                                 | 0.25(kg)                    |
| B2.5S 36 - 14            |                          | 36                                | φ 90                                    | φ 90.18 <sup>(φ92.24)</sup>                   | 42.55                                 | φ 14  | φ 50   | 15   | 25                             | 29.01  | 22.29                                | 16.7                         | -                | -                    | 66° 17'                                   | φ 57.5                                 | 0.64(kg)                    |
| B2.5S 15 - 10            | 3                        | 15                                | φ 37.5                                  | φ 42.74 <sup>(φ44.18)</sup>                   | 77.93                                 | φ 10(H8)  | φ 32   | 20.8   | 38.5                           | 40.41  | 22.79                                | 19                           | -                | -                    | 22° 17'                                   | φ 18.2                                 | 0.22(kg)                    |
| B2.5S 45 - 16            |                          | 45                                | φ 112.5                                 | φ 111.6 <sup>(φ113.44)</sup>                  | 40.67                                 | φ 16  | φ 60   | 14   | 24.5                           | 28.74  | 23.32                                | 19                           | -                | -                    | 73° 27'                                   | φ 74.1                                 | 1.10(kg)                    |
| B3S 18 - 15              | 2                        | 18                                | φ 54                                    | φ 56.72 <sup>(φ59.37)</sup>                   | 75.27                                 | φ 15  | φ 41   | 18   | 37                             | 40.06  | 22.61                                | 20                           | -                | -                    | 29° 25'                                   | φ 27.4                                 | 0.39(kg)                    |
| B3S 36 - 16              |                          | 36                                | φ 108                                   | φ 108.2 <sup>(φ110.68)</sup>                  | 52.32                                 | φ 16  | φ 60   | 19   | 31                             | 36.06  | 28                                   | 20                           | -                | -                    | 66° 17'                                   | φ 68.9                                 | 1.15(kg)                    |
| B3S 15 - 12              | 3                        | 15                                | φ 45                                    | φ 51.29 <sup>(φ53.02)</sup>                   | 89.36                                 | φ 12(H8)  | φ 36   | 20.3   | 42                             | 44.53  | 23.2                                 | 23                           | -                | -                    | 22° 17'                                   | φ 20.3                                 | 0.34(kg)                    |
| B3S 45 - 18              |                          | 45                                | φ 135                                   | φ 133.9 <sup>(φ136.12)</sup>                  | 50.95                                 | φ 18  | φ 70   | 19   | 32                             | 36.69  | 30.13                                | 23                           | -                | -                    | 73° 27'                                   | φ 88.8                                 | 1.95(kg)                    |



# S45C直齿锥齿轮

## BEVEL GEARS

模数 MODULE 0.5 (齿数 20~40) / 0.8 (齿数 20~40) / 1 (齿数 15~45) / 1.5 (齿数 15~45) / 2 (齿数 15~45) / 2.5 (齿数 15~45) / 3 (齿数 15~45) 齿数比 1:2、1:3 1:2 and 1:3 Ratio



| 各旋转速度下的容许传达动力表 (W) 弯曲强度 |            |            |            |            |            |            | 各旋转速度下的容许传达动力表 (W) 齿面强度 |            |            |            |            |            |            | 侧 隙         | 产 品 型 号<br>Catalogue Numbers  |
|-------------------------|------------|------------|------------|------------|------------|------------|-------------------------|------------|------------|------------|------------|------------|------------|-------------|---|
| 10                      | 100        | 200        | 400        | 600        | 800        | 1,000      | 10                      | 100        | 200        | 400        | 600        | 800        | 1,000      |             |   |
| 0.2                     | 2.0        | 4.1        | 8.2        | 12.4       | 16.5       | 20.7       |                         |            |            |            |            |            |            | 0.02 ~ 0.08 | B50S 20<br>B50S 20 * 3<br>B50S 40<br>B50S 40 * 4                                  |
| 0.7                     | 7.7        | 15.5       | 31.0       | 46.5       | 62.0       | 77.6       |                         |            |            |            |            |            |            | 0.02 ~ 0.08 | B80S 20<br>B80S 20 * 5<br>B80S 40<br>B80S 40 * 6                                  |
| 1.3                     | 13.8       | 27.7       | 55.5       | 83.3       | 111.1      | 138.0      |                         |            |            |            |            |            |            | 0.05 ~ 0.12 | B1S 20 - 6<br>B1S 20 * 6<br>B1S 20 * 8<br>B1S 40 - 8<br>B1S 40 * 8<br>B1S 40 * 10 |
| 1.1                     | 11.3       | 22.6       | 45.6       | 68.5       | 91.2       | 113.4      |                         |            |            |            |            |            |            | 0.05 ~ 0.12 | B1S 15 - 6<br>B1S 15 * 6<br>B1S 45 - 10<br>B1S 45 * 10                            |
| 4.4                     | 44.4       | 88.8       | 170.3      | 255.4      | 334.6      | 403.0      | 0.3                     | 3.9        | 7.6        | 15.8       | 23.9       | 31.4       | 38.1       | 0.05 ~ 0.12 | B1.5S 18 - 8<br>B1.5S 36 - 10   |
| 3.8                     | 38.4       | 76.9       | 153.9      | 230.9      | 307.8      | 375.9      | 0.3                     | 3.2        | 6.4        | 13.0       | 19.6       | 26.3       | 32.2       | 0.05 ~ 0.12 | B1.5S 15 - 8<br>B1.5S 45 - 12   |
| 0.010 (kW)              | 0.102 (kW) | 0.204 (kW) | 0.408 (kW) | 0.602 (kW) | 0.764 (kW) | 0.912 (kW) |                         | 0.010 (kW) | 0.020 (kW) | 0.040 (kW) | 0.060 (kW) | 0.077 (kW) | 0.093 (kW) | 0.05 ~ 0.12 | B2S 18 - 10<br>B2S 36 - 12  |
| 0.009 (kW)              | 0.091 (kW) | 0.182 (kW) | 0.364 (kW) | 0.546 (kW) | 0.703 (kW) | 0.844 (kW) |                         | 0.007 (kW) | 0.015 (kW) | 0.031 (kW) | 0.047 (kW) | 0.062 (kW) | 0.075 (kW) | 0.05 ~ 0.12 | B2S 15 - 10<br>B2S 45 - 14  |
| 0.020 (kW)              | 0.209 (kW) | 0.418 (kW) | 0.837 (kW) | 1.189 (kW) | 1.494 (kW) | 1.767 (kW) | 0.002 (kW)              | 0.021 (kW) | 0.042 (kW) | 0.085 (kW) | 0.122 (kW) | 0.155 (kW) | 0.186 (kW) | 0.06 ~ 0.15 | B2.5S 18 - 12<br>B2.5S 36 - 14  |
| 0.019 (kW)              | 0.197 (kW) | 0.394 (kW) | 0.789 (kW) | 1.155 (kW) | 1.464 (kW) | 1.744 (kW) | 0.001 (kW)              | 0.017 (kW) | 0.034 (kW) | 0.070 (kW) | 0.104 (kW) | 0.133 (kW) | 0.160 (kW) | 0.06 ~ 0.15 | B2.5S 15 - 10<br>B2.5S 45 - 16  |
| 0.036 (kW)              | 0.361 (kW) | 0.722 (kW) | 1.419 (kW) | 1.979 (kW) | 2.465 (kW) | 2.892 (kW) | 0.003 (kW)              | 0.037 (kW) | 0.074 (kW) | 0.148 (kW) | 0.209 (kW) | 0.264 (kW) | 0.315 (kW) | 0.06 ~ 0.15 | B3S 18 - 15<br>B3S 36 - 16  |
| 0.034 (kW)              | 0.343 (kW) | 0.686 (kW) | 1.373 (kW) | 1.950 (kW) | 2.451 (kW) | 2.898 (kW) | 0.003 (kW)              | 0.030 (kW) | 0.062 (kW) | 0.125 (kW) | 0.180 (kW) | 0.228 (kW) | 0.274 (kW) | 0.06 ~ 0.15 | B3S 15 - 12<br>B3S 45 - 18  |

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# S45C直齿锥齿轮

## BEVEL GEARS

模数  
MODULE

**4** (齿数 15~45) / **5** (齿数 18~36)

齿数比 1:2、1:3  
1:2 and 1:3 Ratio



单位: mm

| 精度            | 材料   | 压力角 | 热处理 | 齿面硬度 | 侧隙①  |
|---------------|------|-----|-----|------|------|
| JIS B 1704 3级 | S45C | 20度 | —   | —    | 确认表格 |

★未做表面处理。容许传达动力表的数据是以小齿轮做输入齿轮，为条件。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数比               | 齿数                          | 分度圆直径                          | 齿顶圆直径                                | 装配距离                          | 孔径  | 轮毂外径                                 | 轮毂长度                                   | 穴长度                     | 全长                                     | 齿宽                                   | 顶锥角                    | 沉头部直径<br>(参考值)                     | 重量                   |                       |
|--------------------------|-------------------|-----------------------------|--------------------------------|--------------------------------------|-------------------------------|---|--------------------------------------|--|-------------------------|--|--------------------------------------|------------------------|------------------------------------|----------------------|-----------------------|
|                          | Ratio<br><i>u</i> | Number of Teeth<br><i>z</i> | Reference Diameter<br><i>d</i> | Tip Diameter<br><i>d<sub>a</sub></i> | Locating Distance<br><i>A</i> | Bore Diameter<br><i>d<sub>d</sub>(H7)</i> | Hub Diameter<br><i>d<sub>h</sub></i> | Hub Projection<br><i>l<sub>h</sub></i> | Bore Length<br><i>l</i> | Overall Length<br><i>l<sub>w</sub></i> | Tip Distance<br><i>l<sub>a</sub></i> | Face Width<br><i>b</i> | Face Angle<br><i>δ<sub>a</sub></i> | <i>d<sub>s</sub></i> | Weight<br><i>W(g)</i> |
| <b>B4S 18 - 20</b>       | 2                 | 18                          | φ 72                           | <sup>(φ79.16)</sup><br>φ 75.63       | 99.73                         | φ20                                       | φ55                                  | 23.5                                   | 48                      | 52.02                                  | 29.52                                | 25.8                   | 29°25'                             | φ 37.6               | 0.94(kg)              |
| <b>B4S 36 - 22</b>       |                   | 36                          | φ 144                          | <sup>(φ147.5B)</sup><br>φ 144.3      | 71.56                         | φ22                                       | φ75                                  | 23                                     | 42                      | 49.53                                  | 39.14                                | 25.8                   | 66°17'                             | φ 92.7               | 2.89(kg)              |
| <b>B4S 15 - 16</b>       | 3                 | 15                          | φ 60                           | <sup>(φ70.69)</sup><br>φ 68.38       | 119.14                        | φ16(H8)                                   | φ52                                  | 27.8                                   | 57                      | 59.67                                  | 30.92                                | 31                     | 22°17'                             | φ 31.1               | 0.85(kg)              |
| <b>B4S 45 - 25</b>       |                   | 45                          | φ 180                          | <sup>(φ181.5)</sup><br>φ 178.6       | 65.47                         | φ25                                       | φ80                                  | 22                                     | 40                      | 46.55                                  | 37.71                                | 31                     | 73°27'                             | φ 117.6              | 4.28(kg)              |
| <b>B5S 18 - 22</b>       | 2                 | 18                          | φ 90                           | <sup>(φ98.94)</sup><br>φ 94.54       | 122                           | φ22                                       | φ66                                  | 26                                     | 58                      | 61.89                                  | 34.24                                | 31.7                   | 29°25'                             | φ 52.2               | 1.72(kg)              |
| <b>B5S 36 - 28</b>       |                   | 36                          | φ 180                          | <sup>(φ184.47)</sup><br>φ 180.4      | 86.23                         | φ28                                       | φ100                                 | 28                                     | 49                      | 58.47                                  | 45.70                                | 31.7                   | 66°17'                             | φ 116.8              | 5.38(kg)              |

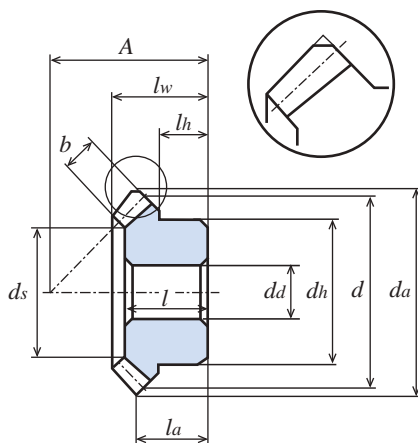
# S45C直齿锥齿轮

## BEVEL GEARS

模数  
MODULE

**4** (齿数 15~45) / **5** (齿数 18~36)

齿数比 1:2、1:3  
1:2 and 1:3 Ratio



| 各旋转速度下的容许传达动力表 (kW) 弯曲强度 |       |       |       |       |       |        | 各旋转速度下的容许传达动力表 (kW) 齿面强度 |       |       |       |       |       |       | 侧 隙         | 产 品 型 号<br>Catalogue Numbers             |
|--------------------------|-------|-------|-------|-------|-------|--------|--------------------------|-------|-------|-------|-------|-------|-------|-------------|--|
| 10                       | 100   | 200   | 400   | 600   | 800   | 1,000  | 10                       | 100   | 200   | 400   | 600   | 800   | 1,000 |             |  |
| 0.083                    | 0.833 | 1.667 | 3.118 | 4.268 | 5.237 | 6.375  | 0.008                    | 0.088 | 0.178 | 0.339 | 0.473 | 0.592 | 0.736 | 0.06 ~ 0.15 | <b>B4S 18 - 20</b><br><b>B4S 36 - 22</b> |
| 0.082                    | 0.821 | 1.642 | 3.173 | 4.396 | 5.445 | 6.420  | 0.007                    | 0.076 | 0.153 | 0.301 | 0.423 | 0.533 | 0.639 | 0.06 ~ 0.15 | <b>B4S 15 - 16</b><br><b>B4S 45 - 25</b> |
| 0.160                    | 1.605 | 3.211 | 5.731 | 7.712 | 9.822 | 11.888 | 0.017                    | 0.175 | 0.353 | 0.644 | 0.889 | 1.162 | 1.440 | 0.08 ~ 0.20 | <b>B5S 18 - 22</b><br><b>B5S 36 - 28</b> |

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# S45C高频淬火直齿锥齿轮

## BEVEL GEARS

模数  
MODULE

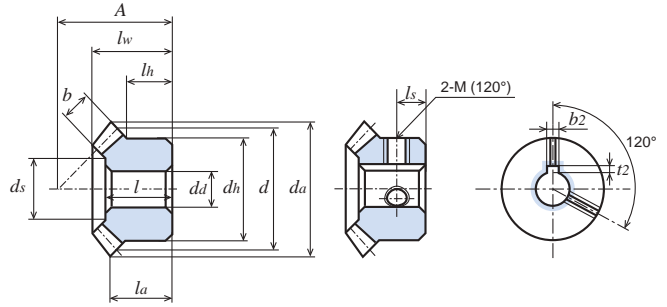
1.5 (齿数 15~45)

/2 (齿数 15~45)

/2.5 (齿数 15~45)

/3 (齿数 15~45)

齿数比 1:2、1:3  
1:2 and 1:3 Ratio

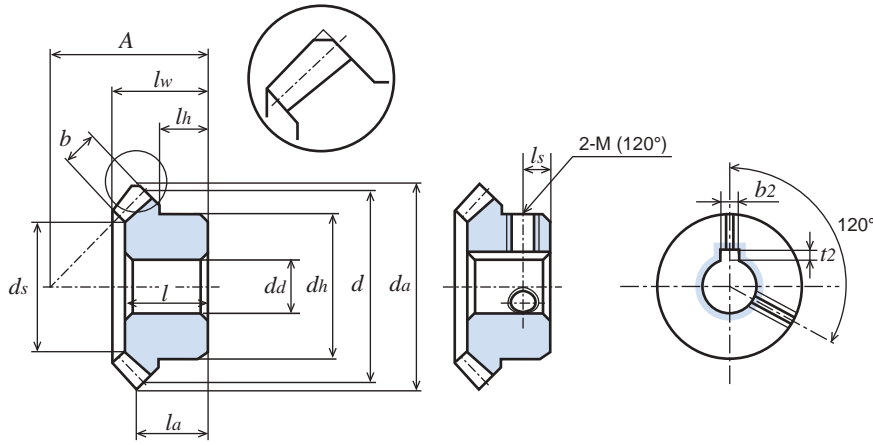


单位: mm

| 精度            | 材料   | 压力角 | 热处理    | 齿面硬度  | 侧隙①  |
|---------------|------|-----|--------|-------|------|
| JIS B 1704 4级 | S45C | 20度 | 齿面高频淬火 | 47~53 | 确认表格 |

- ★未做表面处理。容许传达动力表的数据是以小齿轮做输入齿轮，为条件。
- ★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。
- ★【#】表示带有键槽和键，带有螺纹孔和固定螺钉。①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数比<br>Ratio<br>u | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da  | 装配距离<br>Locating Distance<br>A | 孔径<br>Bore Diameter<br>dd(H8) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 穴长度<br>Bore Length<br>l | 全长<br>Overall Length<br>lw | Tip Distance<br>la | 齿宽<br>Face Width<br>b | 键槽<br>Key Way<br>b2 x t2 |      | 螺纹孔<br>Set Screw<br>2-M ls |        | 顶锥角<br>Face Angle<br>δa | 沉头部直径<br>(参考值)<br>ds | 重量<br>Weight<br>W(g) |
|--------------------------|-------------------|----------------------------|----------------------------------|------------------------------|--------------------------------|-------------------------------|----------------------------|------------------------------|-------------------------|----------------------------|--------------------|-----------------------|--------------------------|------|----------------------------|--------|-------------------------|----------------------|----------------------|
|                          |                   |                            |                                  |                              |                                |                               |                            |                              |                         |                            |                    |                       | 2-M                      | ls   |                            |        |                         |                      |                      |
| B1.5S 18 - 8H            | 2                 | 18                         | φ 27                             | φ 29.68                      | 40.74                          | φ 8                           | φ 22                       | 12.5                         | 21                      | 22.96                      | 14.41              | 9.8                   | -                        | -    | -                          | 29°25' | φ 12.2                  | 59.4                 |                      |
| B1.5S 18 # 10H           |                   | 18                         | φ 27                             | φ 29.68                      | 40.74                          | φ 10                          | φ 22                       | 12.5                         | 21                      | 22.96                      | 14.41              | 9.8                   | 3 × 1.4                  | 2-M4 | 6.5                        | 29°25' | φ 12.2                  | 54.5                 |                      |
| B1.5S 36 - 10H           |                   | 36                         | φ 54                             | φ 55.34                      | 26.75                          | φ 10                          | φ 30                       | 10                           | 15.5                    | 18.54                      | 14.59              | 9.8                   | -                        | -    | -                          | 66°17' | φ 34.3                  | 139.9                |                      |
| B1.5S 36 # 10H           |                   | 36                         | φ 54                             | φ 55.34                      | 26.75                          | φ 10                          | φ 30                       | 10                           | 15.5                    | 18.54                      | 14.59              | 9.8                   | 3 × 1.4                  | 2-M4 | 5                          | 66°17' | φ 34.3                  | 138.6                |                      |
| B1.5S 36 # 15H           |                   | 36                         | φ 54                             | φ 55.34                      | 26.75                          | φ 15                          | φ 30                       | 10                           | 15.5                    | 18.54                      | 14.59              | 9.8                   | 5 × 2.3                  | 2-M4 | 5                          | 66°17' | φ 34.3                  | 126.0                |                      |
| B1.5S 15 - 8H            | 3                 | 15                         | φ 22.5                           | φ 26.51                      | 46                             | φ 8                           | φ 19.5                     | 11.78                        | 21.1                    | 22.29                      | 12.92              | 10.1                  | -                        | -    | -                          | 22°17' | φ 11.7                  | 41.8                 |                      |
| B1.5S 15 # 8H            |                   | 15                         | φ 22.5                           | φ 26.51                      | 46                             | φ 8                           | φ 19.5                     | 11.78                        | 21.1                    | 22.29                      | 12.92              | 10.1                  | 3 × 1.4                  | 2-M4 | 6                          | 22°17' | φ 11.7                  | 40.6                 |                      |
| B1.5S 45 - 12H           |                   | 45                         | φ 67.5                           | φ 68.06                      | 30                             | φ 12                          | φ 37.5                     | 12                           | 19.4                    | 22.47                      | 19.59              | 10.1                  | -                        | -    | -                          | 73°27' | φ 46.6                  | 300.8                |                      |
| B1.5S 45 # 15H           |                   | 45                         | φ 67.5                           | φ 68.06                      | 30                             | φ 15                          | φ 37.5                     | 12                           | 19.4                    | 22.47                      | 19.59              | 10.1                  | 5 × 2.3                  | 2-M4 | 6                          | 73°27' | φ 46.6                  | 288.4                |                      |
| B1.5S 45 # 16H           |                   | 45                         | φ 67.5                           | φ 68.06                      | 30                             | φ 16                          | φ 37.5                     | 12                           | 19.4                    | 22.47                      | 19.59              | 10.1                  | 5 × 2.3                  | 2-M4 | 6                          | 73°27' | φ 46.6                  | 284.7                |                      |
| B2S 18 - 10H             | 2                 | 18                         | φ 36                             | φ 37.81 <sup>(φ39.58)</sup>  | 53.12                          | φ 10                          | φ 28                       | 15.12                        | 27                      | 29                         | 18.01              | 12.6                  | -                        | -    | -                          | 29°25' | φ 19.1                  | 129.6                |                      |
| B2S 18 # 12H             |                   | 18                         | φ 36                             | φ 37.81 <sup>(φ39.58)</sup>  | 53.12                          | φ 12                          | φ 28                       | 15.12                        | 27                      | 29                         | 18.01              | 12.6                  | 4 × 1.8                  | 2-M5 | 8                          | 29°25' | φ 19.1                  | 119.8                |                      |
| B2S 36 - 12H             |                   | 36                         | φ 72                             | φ 72.15 <sup>(φ73.79)</sup>  | 35.21                          | φ 12                          | φ 36                       | 13                           | 21                      | 24.07                      | 19                 | 12.6                  | -                        | -    | -                          | 66°17' | φ 47.6                  | 313.0                |                      |
| B2S 36 # 18H             |                   | 36                         | φ 72                             | φ 72.15 <sup>(φ73.79)</sup>  | 35.21                          | φ 18                          | φ 36                       | 13                           | 21                      | 24.07                      | 19                 | 12.6                  | 6 × 2.8                  | 2-M5 | 6.5                        | 66°17' | φ 47.6                  | 285.8                |                      |
| B2S 36 # 20H             |                   | 36                         | φ 72                             | φ 72.15 <sup>(φ73.79)</sup>  | 35.21                          | φ 20                          | φ 36                       | 13                           | 21                      | 24.07                      | 19                 | 12.6                  | 6 × 2.8                  | 2-M5 | 6.5                        | 66°17' | φ 47.6                  | 276.1                |                      |
| B2S 15 - 10H             | 3                 | 15                         | φ 30                             | φ 34.19 <sup>(φ35.35)</sup>  | 62                             | φ 10                          | φ 26                       | 16.33                        | 28.9                    | 30.32                      | 17.89              | 13.4                  | -                        | -    | -                          | 22°17' | φ 16.6                  | 103.8                |                      |
| B2S 15 # 12H             |                   | 15                         | φ 30                             | φ 34.19 <sup>(φ35.35)</sup>  | 62                             | φ 12                          | φ 26                       | 16.33                        | 28.9                    | 30.32                      | 17.89              | 13.4                  | 4 × 1.8                  | 2-M5 | 8.5                        | 22°17' | φ 16.6                  | 93.4                 |                      |
| B2S 45 - 14H             |                   | 45                         | φ 90                             | φ 89.29 <sup>(φ90.75)</sup>  | 40                             | φ 14                          | φ 50                       | 16                           | 25.9                    | 29.94                      | 26.12              | 13.4                  | -                        | -    | -                          | 73°27' | φ 62.3                  | 722.7                |                      |
| B2S 45 # 18H             |                   | 45                         | φ 90                             | φ 89.29 <sup>(φ90.75)</sup>  | 40                             | φ 18                          | φ 50                       | 16                           | 25.9                    | 29.94                      | 26.12              | 13.4                  | 6 × 2.8                  | 2-M5 | 8                          | 73°27' | φ 62.3                  | 696.9                |                      |
| B2S 45 # 20H             |                   | 45                         | φ 90                             | φ 89.29 <sup>(φ90.75)</sup>  | 40                             | φ 20                          | φ 50                       | 16                           | 25.9                    | 29.94                      | 26.12              | 13.4                  | 6 × 2.8                  | 2-M5 | 8                          | 73°27' | φ 62.3                  | 684.8                |                      |
| B2.5S 18 - 12H           | 2                 | 18                         | φ 45                             | φ 47.27 <sup>(φ49.47)</sup>  | 64.29                          | φ 12                          | φ 36                       | 17                           | 32                      | 34.97                      | 20.41              | 16.7                  | -                        | -    | -                          | 29°25' | φ 21.1                  | 0.25(kg)             |                      |
| B2.5S 18 # 15H           |                   | 18                         | φ 45                             | φ 47.27 <sup>(φ49.47)</sup>  | 64.29                          | φ 15                          | φ 36                       | 17                           | 32                      | 34.97                      | 20.41              | 16.7                  | 5 × 2.3                  | 2-M5 | 8.5                        | 29°25' | φ 21.1                  | 0.23(kg)             |                      |
| B2.5S 36 - 14H           |                   | 36                         | φ 90                             | φ 90.18 <sup>(φ92.24)</sup>  | 42.55                          | φ 14                          | φ 50                       | 15                           | 25                      | 29.01                      | 22.29              | 16.7                  | -                        | -    | -                          | 66°17' | φ 57.5                  | 0.64(kg)             |                      |
| B2.5S 36 # 20H           |                   | 36                         | φ 90                             | φ 90.18 <sup>(φ92.24)</sup>  | 42.55                          | φ 20                          | φ 50                       | 15                           | 25                      | 29.01                      | 22.29              | 16.7                  | 6 × 2.8                  | 2-M5 | 7.5                        | 66°17' | φ 57.5                  | 0.61(kg)             |                      |
| B2.5S 36 # 25H           |                   | 36                         | φ 90                             | φ 90.18 <sup>(φ92.24)</sup>  | 42.55                          | φ 25                          | φ 50                       | 15                           | 25                      | 29.01                      | 22.29              | 16.7                  | 8 × 3.3                  | 2-M6 | 7.5                        | 66°17' | φ 57.5                  | 0.57(kg)             |                      |
| B2.5S 15 - 10H           | 3                 | 15                         | φ 37.5                           | φ 42.74 <sup>(φ44.18)</sup>  | 77.93                          | φ 10                          | φ 32                       | 20.8                         | 38.5                    | 40.41                      | 22.79              | 19                    | -                        | -    | -                          | 22°17' | φ 18.2                  | 0.22(kg)             |                      |
| B2.5S 15 # 15H           |                   | 15                         | φ 37.5                           | φ 42.74 <sup>(φ44.18)</sup>  | 77.93                          | φ 15                          | φ 32                       | 20.8                         | 38.5                    | 40.41                      | 22.79              | 19                    | 5 × 2.3                  | 2-M5 | 10.5                       | 22°17' | φ 18.2                  | 0.19(kg)             |                      |
| B2.5S 45 - 16H           |                   | 45                         | φ 112.5                          | φ 111.6 <sup>(φ113.44)</sup> | 40.67                          | φ 16                          | φ 60                       | 14                           | 24.5                    | 28.74                      | 23.32              | 19                    | -                        | -    | -                          | 73°27' | φ 74.1                  | 1.10(kg)             |                      |
| B2.5S 45 # 20H           |                   | 45                         | φ 112.5                          | φ 111.6 <sup>(φ113.44)</sup> | 40.67                          | φ 20                          | φ 60                       | 14                           | 24.5                    | 28.74                      | 23.32              | 19                    | 6 × 2.8                  | 2-M5 | 7                          | 73°27' | φ 74.1                  | 1.07(kg)             |                      |
| B2.5S 45 # 25H           |                   | 45                         | φ 112.5                          | φ 111.6 <sup>(φ113.44)</sup> | 40.67                          | φ 25                          | φ 60                       | 14                           | 24.5                    | 28.74                      | 23.32              | 19                    | 8 × 3.3                  | 2-M6 | 7                          | 73°27' | φ 74.1                  | 1.04(kg)             |                      |
| B3S 18 - 15H             | 2                 | 18                         | φ 54                             | φ 56.72 <sup>(φ59.37)</sup>  | 75.27                          | φ 15                          | φ 41                       | 18                           | 37                      | 40.06                      | 22.61              | 20                    | -                        | -    | -                          | 29°25' | φ 27.4                  | 0.39(kg)             |                      |
| B3S 18 # 16H             |                   | 18                         | φ 54                             | φ 56.72 <sup>(φ59.37)</sup>  | 75.27                          | φ 16                          | φ 41                       | 18                           | 37                      | 40.06                      | 22.61              | 20                    | 5 × 2.3                  | 2-M6 | 9                          | 29°25' | φ 27.4                  | 0.38(kg)             |                      |
| B3S 18 # 20H             |                   | 18                         | φ 54                             | φ 56.72 <sup>(φ59.37)</sup>  | 75.27                          | φ 20                          | φ 41                       | 18                           | 37                      | 40.06                      | 22.61              | 20                    | 6 × 2.8                  | 2-M6 | 9                          | 29°25' | φ 27.4                  | 0.35(kg)             |                      |
| B3S 36 - 16H             |                   | 36                         | φ 108                            | φ 108.2 <sup>(φ110.68)</sup> | 52.32                          | φ 16                          | φ 60                       | 19                           | 31                      | 36.06                      | 28                 | 20                    | -                        | -    | -                          | 66°17' | φ 68.9                  | 1.15(kg)             |                      |
| B3S 36 # 25H             |                   | 36                         | φ 108                            | φ 108.2 <sup>(φ110.68)</sup> | 52.32                          | φ 25                          | φ 60                       | 19                           | 31                      | 36.06                      | 28                 | 20                    | 8 × 3.3                  | 2-M6 | 9.5                        | 66°17' | φ 68.9                  | 1.07(kg)             |                      |
| B3S 36 # 30H             | 36                | φ 108                      | φ 108.2 <sup>(φ110.68)</sup>     | 52.32                        | φ 30                           | φ 60                          | 19                         | 31                           | 36.06                   | 28                         | 20                 | 8 × 3.3               | 2-M6                     | 9.5  | 66°17'                     | φ 68.9 | 1.02(kg)                |                      |                      |
| B3S 15 - 12H             | 3                 | 15                         | φ 45                             | φ 51.29 <sup>(φ53.02)</sup>  | 89.36                          | φ 12                          | φ 36                       | 20.3                         | 42                      | 44.53                      | 23.2               | 23                    | -                        | -    | -                          | 22°17' | φ 20.3                  | 0.34(kg)             |                      |
| B3S 15 # 16H             |                   | 15                         | φ 45                             | φ 51.29 <sup>(φ53.02)</sup>  | 89.36                          | φ 16                          | φ 36                       | 20.3                         | 42                      | 44.53                      | 23.2               | 23                    | 5 × 2.3                  | 2-M6 | 10.5                       | 22°17' | φ 20.3                  | 0.31(kg)             |                      |
| B3S 45 - 18H             |                   | 45                         | φ 135                            | φ 133.9 <sup>(φ136.12)</sup> | 50.95                          | φ 18                          | φ 70                       | 19                           | 32                      | 36.69                      | 30.13              | 23                    | -                        | -    | -                          | 73°27' | φ 88.8                  | 1.95(kg)             |                      |
| B3S 45 # 25H             |                   | 45                         | φ 135                            | φ 133.9 <sup>(φ136.12)</sup> | 50.95                          | φ 25                          | φ 70                       | 19                           | 32                      | 36.69                      | 30.13              | 23                    | 8 × 3.3                  | 2-M6 | 9.5                        | 73°27' | φ 88.8                  | 1.89(kg)             |                      |
| B3S 45 # 30H             |                   | 45                         | φ 135                            | φ 133.9 <sup>(φ136.12)</sup> | 50.95                          | φ 30                          | φ 70                       | 19                           | 32                      | 36.69                      | 30.13              | 23                    | 8 × 3.3                  | 2-M6 | 9.5                        | 73°27' | φ 88.8                  | 1.83(kg)             |                      |



| 各旋转速度下的容许传达动力表 (W) 弯曲强度 |            |            |            |            |            |            | 各旋转速度下的容许传达动力表 (W) 齿面强度 |            |            |            |            |            |            | 侧 隙         | 产 品 型 号<br>Catalogue Numbers   |
|-------------------------|------------|------------|------------|------------|------------|------------|-------------------------|------------|------------|------------|------------|------------|------------|-------------|--|
| 10                      | 100        | 200        | 400        | 600        | 800        | 1,000      | 10                      | 100        | 200        | 400        | 600        | 800        | 1,000      |             |  |
| 4.1                     | 41.1       | 82.2       | 164.4      | 246.6      | 323.5      | 390.8      | 1.0                     | 11.6       | 24.0       | 49.6       | 75.7       | 100.6      | 122.7      | 0.05 ~ 0.12 | B1.5S 18 - 8H<br>B1.5S 18 # 10H<br>B1.5S 36 - 10H<br>B1.5S 36 # 10H<br>B1.5S 36 # 15H        |
| 3.6                     | 36.5       | 73.0       | 146.1      | 219.2      | 292.3      | 357.5      | 0.8                     | 9.1        | 18.8       | 38.9       | 59.4       | 80.2       | 99.0       | 0.05 ~ 0.12 | B1.5S 15 - 8H<br>B1.5S 15 # 8H<br>B1.5S 45 - 12H<br>B1.5S 45 # 15H<br>B1.5S 45 # 16H         |
| 0.009 (kW)              | 0.095 (kW) | 0.190 (kW) | 0.380 (kW) | 0.562 (kW) | 0.716 (kW) | 0.857 (kW) | 0.002 (kW)              | 0.027 (kW) | 0.057 (kW) | 0.118 (kW) | 0.177 (kW) | 0.228 (kW) | 0.276 (kW) | 0.05 ~ 0.12 | B2S 18 - 10H<br>B2S 18 # 12H<br>B2S 36 - 12H<br>B2S 36 # 18H<br>B2S 36 # 20H                 |
| 0.008 (kW)              | 0.086 (kW) | 0.172 (kW) | 0.345 (kW) | 0.518 (kW) | 0.669 (kW) | 0.805 (kW) | 0.002 (kW)              | 0.022 (kW) | 0.045 (kW) | 0.094 (kW) | 0.144 (kW) | 0.188 (kW) | 0.229 (kW) | 0.05 ~ 0.12 | B2S 15 - 10H<br>B2S 15 # 12H<br>B2S 45 - 14H<br>B2S 45 # 18H<br>B2S 45 # 20H                 |
| 0.019 (kW)              | 0.192 (kW) | 0.385 (kW) | 0.771 (kW) | 1.100 (kW) | 1.389 (kW) | 1.649 (kW) | 0.005 (kW)              | 0.057 (kW) | 0.118 (kW) | 0.243 (kW) | 0.353 (kW) | 0.452 (kW) | 0.542 (kW) | 0.06 ~ 0.15 | B2.5S 18 - 12H<br>B2.5S 18 # 15H<br>B2.5S 36 - 14H<br>B2.5S 36 # 20H<br>B2.5S 36 # 25H       |
| 0.018 (kW)              | 0.183 (kW) | 0.366 (kW) | 0.732 (kW) | 1.074 (kW) | 1.366 (kW) | 1.633 (kW) | 0.004 (kW)              | 0.047 (kW) | 0.098 (kW) | 0.203 (kW) | 0.304 (kW) | 0.392 (kW) | 0.473 (kW) | 0.06 ~ 0.15 | B2.5S 15 - 10H<br>B2.5S 15 # 15H<br>B2.5S 45 - 16H<br>B2.5S 45 # 20H<br>B2.5S 45 # 25H       |
| 0.033 (kW)              | 0.332 (kW) | 0.665 (kW) | 1.310 (kW) | 1.837 (kW) | 2.300 (kW) | 2.710 (kW) | 0.009 (kW)              | 0.100 (kW) | 0.207 (kW) | 0.420 (kW) | 0.600 (kW) | 0.761 (kW) | 0.905 (kW) | 0.06 ~ 0.15 | B3S 18 - 15H<br>B3S 18 # 16H<br>B3S 18 # 20H<br>B3S 36 - 16H<br>B3S 36 # 25H<br>B3S 36 # 30H |
| 0.031 (kW)              | 0.317 (kW) | 0.635 (kW) | 1.271 (kW) | 1.814 (kW) | 2.290 (kW) | 2.718 (kW) | 0.007 (kW)              | 0.084 (kW) | 0.174 (kW) | 0.359 (kW) | 0.522 (kW) | 0.667 (kW) | 0.800 (kW) | 0.06 ~ 0.15 | B3S 15 - 12H<br>B3S 15 # 16H<br>B3S 45 - 18H<br>B3S 45 # 25H<br>B3S 45 # 30H                 |

# S45C高频淬火直齿锥齿轮

## BEVEL GEARS

模数  
MODULE

4 (齿数 15~45) / 5 (齿数 18~36)

齿数比 1:2、1:3  
1:2 and 1:3 Ratio



单位: mm

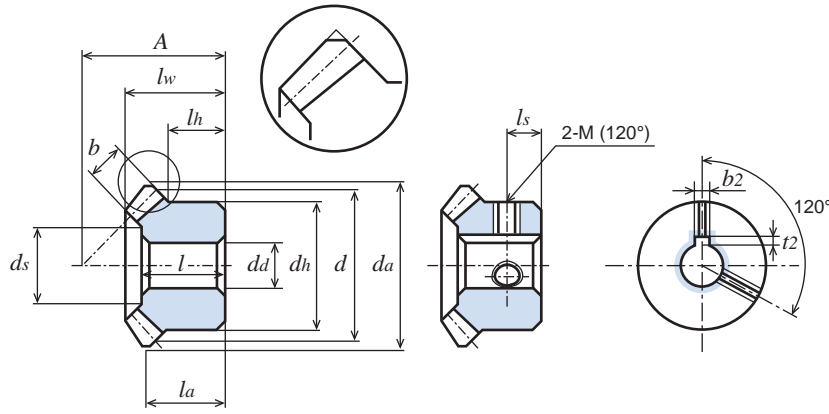
| 精度            | 材料   | 压力角 | 热处理    | 齿面硬度  | 侧隙①  |
|---------------|------|-----|--------|-------|------|
| JIS B 1704 4级 | S45C | 20度 | 齿面高频淬火 | 47~53 | 确认表格 |

★未做表面处理。容许传达动力表的数据是以小齿轮做输入齿轮，为条件。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★【#】表示带有键槽和键，带有螺孔和固定螺钉。①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数比<br>Ratio<br><i>u</i> | 齿数<br>Number of Teeth<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 齿顶圆直径<br>Tip Diameter<br><i>d<sub>a</sub></i> | 装配距离<br>Locating Distance<br><i>A</i> | 孔径<br>Bore Diameter<br><i>d<sub>d</sub>(H8)</i> | 轮毂外径<br>Hub Diameter<br><i>d<sub>h</sub></i> | 轮毂长度<br>Hub Projection<br><i>l<sub>h</sub></i> | 穴长度<br>Bore Length<br><i>l</i> | 全长<br>Overall Length<br><i>l<sub>w</sub></i> | Tip Distance<br><i>l<sub>a</sub></i> | 齿宽<br>Face Width<br><i>b</i> | 键槽<br>Key Way<br><i>b<sub>2</sub> × t<sub>2</sub></i> |                          | 螺孔<br>Set Screw<br><i>2-M l<sub>s</sub></i> |        | 顶锥角<br>Face Angle<br><i>δ<sub>a</sub></i> | 沉头部直径<br>(参考值)<br><i>d<sub>s</sub></i> | 重量<br>Weight<br><i>W(g)</i> |
|--------------------------|--------------------------|-----------------------------------|---|---|---------------------------------------|---|--|--|--------------------------------|--|--------------------------------------|------------------------------|---|--------------------------|---|--------|---|--|-----------------------------|
|                          |                          |                                   |   |   |                                       |   |  |  |                                |  |                                      |                              | <i>b<sub>2</sub> × t<sub>2</sub></i>                  | <i>2-M l<sub>s</sub></i> |   |        |   |  |                             |
| B4S 18 - 20H             | 2                        | 18                                | φ 72                                    | φ <sup>(79.16)</sup> <sub>75.63</sub>         | 99.73                                 | φ20   | φ 55   | 23.5   | 48                             | 52.02  | 29.52                                | 25.8                         | -   | -                        | -   | 29°25' | φ 37.6                                    | 0.94(kg)                               |                             |
| B4S 18 # 20H             |                          | 18                                | φ 72                                    | φ <sup>(79.16)</sup> <sub>75.63</sub>         | 99.73                                 | φ20   | φ 55   | 23.5   | 48                             | 52.02  | 29.52                                | 25.8                         | 6 × 2.8   | 2-M8                     | 12  | 29°25' | φ 37.6                                    | 0.92(kg)                               |                             |
| B4S 18 # 25H             |                          | 18                                | φ 72                                    | φ <sup>(79.16)</sup> <sub>75.63</sub>         | 99.73                                 | φ25   | φ 55   | 23.5   | 48                             | 52.02  | 29.52                                | 25.8                         | 8 × 3.3   | 2-M8                     | 12  | 29°25' | φ 37.6                                    | 0.86(kg)                               |                             |
| B4S 36 - 22H             |                          | 36                                | φ 144                                   | φ <sup>(147.58)</sup> <sub>144.3</sub>        | 71.56                                 | φ22   | φ 75   | 23   | 42                             | 49.53  | 39.14                                | 25.8                         | -   | -                        | -   | 66°17' | φ 92.7                                    | 2.89(kg)                               |                             |
| B4S 36 # 30H             |                          | 36                                | φ 144                                   | φ <sup>(147.58)</sup> <sub>144.3</sub>        | 71.56                                 | φ30   | φ 75   | 23   | 42                             | 49.53  | 39.14                                | 25.8                         | 8 × 3.3   | 2-M8                     | 11.5  | 66°17' | φ 92.7                                    | 2.77(kg)                               |                             |
| B4S 36 # 40H             |                          | 36                                | φ 144                                   | φ <sup>(147.58)</sup> <sub>144.3</sub>        | 71.56                                 | φ40   | φ 75   | 23   | 42                             | 49.53  | 39.14                                | 25.8                         | 12 × 3.3  | 2-M10                    | 11.5  | 66°17' | φ 92.7                                    | 2.58(kg)                               |                             |
| B4S 15 - 16H             | 3                        | 15                                | φ 60                                    | φ <sup>(70.69)</sup> <sub>68.38</sub>         | 119.14                                | φ16   | φ 52   | 27.8   | 57                             | 59.67  | 30.92                                | 31                           | -   | -                        | -   | 22°17' | φ 31.1                                    | 0.85(kg)                               |                             |
| B4S 15 # 20H             |                          | 15                                | φ 60                                    | φ <sup>(70.69)</sup> <sub>68.38</sub>         | 119.14                                | φ20   | φ 52   | 27.8   | 57                             | 59.67  | 30.92                                | 31                           | 6 × 2.8   | 2-M8                     | 14  | 22°17' | φ 31.1                                    | 0.78(kg)                               |                             |
| B4S 45 - 25H             |                          | 45                                | φ 180                                   | φ <sup>(181.5)</sup> <sub>178.6</sub>         | 65.47                                 | φ25   | φ 80   | 22   | 40                             | 46.55  | 37.71                                | 31                           | -   | -                        | -   | 73°27' | φ 117.6                                   | 4.28(kg)                               |                             |
| B4S 45 # 30H             |                          | 45                                | φ 180                                   | φ <sup>(181.5)</sup> <sub>178.6</sub>         | 65.47                                 | φ30   | φ 80   | 22   | 40                             | 46.55  | 37.71                                | 31                           | 8 × 3.3   | 2-M8                     | 11  | 73°27' | φ 117.6                                   | 4.19(kg)                               |                             |
| B4S 45 # 40H             |                          | 45                                | φ 180                                   | φ <sup>(181.5)</sup> <sub>178.6</sub>         | 65.47                                 | φ40   | φ 80   | 22   | 40                             | 46.55  | 37.71                                | 31                           | 12 × 3.3  | 2-M10                    | 11  | 73°27' | φ 117.6                                   | 4.02(kg)                               |                             |
| B5S 18 - 22H             | 2                        | 18                                | φ 90                                    | φ <sup>(98.94)</sup> <sub>94.54</sub>         | 122                                   | φ22   | φ 66   | 26   | 58                             | 61.89  | 34.24                                | 31.7                         | -   | -                        | -   | 29°25' | φ 52.2                                    | 1.72(kg)                               |                             |
| B5S 18 # 25H             |                          | 18                                | φ 90                                    | φ <sup>(98.94)</sup> <sub>94.54</sub>         | 122                                   | φ25   | φ 66   | 26   | 58                             | 61.89  | 34.24                                | 31.7                         | 8 × 3.3   | 2-M10                    | 13  | 29°25' | φ 52.2                                    | 1.65(kg)                               |                             |
| B5S 18 # 30H             |                          | 18                                | φ 90                                    | φ <sup>(98.94)</sup> <sub>94.54</sub>         | 122                                   | φ30   | φ 66   | 26   | 58                             | 61.89  | 34.24                                | 31.7                         | 8 × 3.3   | 2-M10                    | 13  | 29°25' | φ 52.2                                    | 1.55(kg)                               |                             |
| B5S 36 - 28H             |                          | 36                                | φ 180                                   | φ <sup>(184.7)</sup> <sub>180.4</sub>         | 86.23                                 | φ28   | φ 100  | 28   | 49                             | 58.47  | 45.70                                | 31.7                         | -   | -                        | -   | 66°17' | φ 116.8                                   | 5.38(kg)                               |                             |
| B5S 36 # 40H             |                          | 36                                | φ 180                                   | φ <sup>(184.7)</sup> <sub>180.4</sub>         | 86.23                                 | φ40   | φ 100  | 28   | 49                             | 58.47  | 45.70                                | 31.7                         | 12 × 3.3  | 2-M10                    | 14  | 66°17' | φ 116.8                                   | 5.11(kg)                               |                             |
| B5S 36 # 50H             |                          | 36                                | φ 180                                   | φ <sup>(184.7)</sup> <sub>180.4</sub>         | 86.23                                 | φ50   | φ 100  | 28   | 49                             | 58.47  | 45.70                                | 31.7                         | 14 × 3.8  | 2-M10                    | 14  | 66°17' | φ 116.8                                   | 4.83(kg)                               |                             |



| 各旋转速度下的容许传达动力表 (kW) 弯曲强度 |       |       |       |       |       |        | 各旋转速度下的容许传达动力表 (kW) 齿面强度 |       |       |       |       |       |       | 侧 隙         | 产 品 型 号<br>Catalogue Numbers   |
|--------------------------|-------|-------|-------|-------|-------|--------|--------------------------|-------|-------|-------|-------|-------|-------|-------------|--|
| 10                       | 100   | 200   | 400   | 600   | 800   | 1,000  | 10                       | 100   | 200   | 400   | 600   | 800   | 1,000 |             |  |
| 0.077                    | 0.773 | 1.546 | 2.908 | 4.007 | 4.943 | 5.883  | 0.021                    | 0.239 | 0.494 | 0.958 | 1.344 | 1.679 | 2.018 | 0.06 ~ 0.15 | <b>B4S 18 - 20H</b><br><b>B4S 18 # 20H</b><br><b>B4S 18 # 25H</b><br><b>B4S 36 - 22H</b><br><b>B4S 36 # 30H</b><br><b>B4S 36 # 40H</b> |
| 0.075                    | 0.758 | 1.517 | 2.940 | 4.099 | 5.104 | 6.013  | 0.018                    | 0.207 | 0.427 | 0.853 | 1.210 | 1.526 | 1.816 | 0.06 ~ 0.15 | <b>B4S 15 - 16H</b><br><b>B4S 15 # 20H</b><br><b>B4S 45 - 25H</b><br><b>B4S 45 # 30H</b><br><b>B4S 45 # 40H</b>                        |
| 0.149                    | 1.493 | 2.987 | 5.380 | 7.297 | 9.094 | 10.727 | 0.042                    | 0.472 | 0.974 | 1.809 | 2.497 | 3.152 | 3.754 | 0.08 ~ 0.20 | <b>B5S 18 - 22H</b><br><b>B5S 18 # 25H</b><br><b>B5S 18 # 30H</b><br><b>B5S 36 - 28H</b><br><b>B5S 36 # 40H</b><br><b>B5S 36 # 50H</b> |

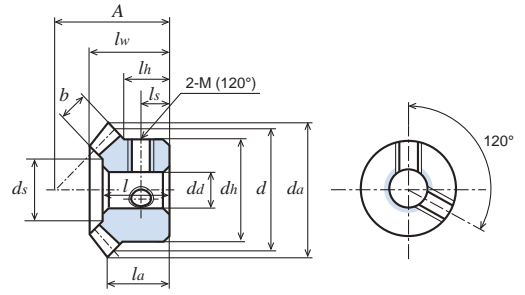
# SUS不锈钢直齿锥齿轮

## SUS BEVEL GEARS

模数  
MODULE

0.8 (齿数 20~40) / 1 (齿数 20~40) / 1.5 (齿数 18~36) / 2 (齿数 18~36) 1:2

齿数比 1:2



单位: mm

| 精度            | 材料     | 压力角 | 热处理 | 齿面硬度 | 侧隙①  |
|---------------|--------|-----|-----|------|------|
| JIS B 1704 4级 | SUS304 | 20度 | —   | —    | 确认表格 |

★未做表面处理。容许传达动力表的数据是以小齿轮做输入齿轮，为条件。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★【\*】SUS304 产品带有两个螺纹孔，但没有两个固定螺钉。①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数比<br>Ratio<br>u | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 装配距离<br>Locating Distance<br>A | 孔径<br>Bore Diameter<br>da(H8) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 穴长度<br>Bore Length<br>l | 全长<br>Overall Length<br>lw | 尖距<br>Tip Distance<br>la | 齿宽<br>Face Width<br>b | 螺纹孔<br>Set Screw |     | 顶锥角<br>Face Angle<br>δa | 沉头部直径<br>(参考值)<br>ds | 重量<br>Weight<br>W(g) |
|--------------------------|-------------------|----------------------------|----------------------------------|-----------------------------|--------------------------------|-------------------------------|----------------------------|------------------------------|-------------------------|----------------------------|--------------------------|-----------------------|------------------|-----|-------------------------|----------------------|----------------------|
|                          |                   |                            |                                  |                             |                                |                               |                            |                              |                         |                            |                          |                       | 2-M(120°)        | ls  |                         |                      |                      |
| B80SU 20-5               | 2                 | 20                         | φ16                              | φ17.43                      | 22.5                           | φ5                            | φ12                        | 5.5                          | 10                      | 10.79                      | 6.86                     | 4.5                   | -                | -   | 29° 8'                  | φ9.8                 | 9.2                  |
| B80SU 40-6               |                   | 40                         | φ32                              | φ32.72                      | 16.46                          | φ6                            | φ20                        | 6                            | 9.5                     | 11.01                      | 9.18                     | 4.5                   | -                | -   | 66° 0'                  | φ22.9                | 34.4                 |
| B80SU 20*5               |                   | 20                         | φ16                              | φ17.43                      | 22.5                           | φ5                            | φ12                        | 5.5                          | 10                      | 10.79                      | 6.86                     | 4.5                   | 2-M3             | 2.5 | 29° 8'                  | φ9.8                 | 8.8                  |
| B80SU 40*6               |                   | 40                         | φ32                              | φ32.72                      | 16.46                          | φ6                            | φ20                        | 6                            | 9.5                     | 11.01                      | 9.18                     | 4.5                   | 2-M4             | 3.5 | 66° 0'                  | φ22.9                | 33.2                 |
| B1SU 20-6                |                   | 20                         | φ20                              | φ21.79                      | 29.6                           | φ6                            | φ16                        | 8.6                          | 14                      | 15.03                      | 10.05                    | 5.7                   | -                | -   | 29° 8'                  | φ12.1                | 21.6                 |
| B1SU 40-8                |                   | 40                         | φ40                              | φ40.89                      | 21.8                           | φ8                            | φ25                        | 8                            | 13                      | 15.02                      | 12.69                    | 5.7                   | -                | -   | 66° 0'                  | φ28.4                | 72.6                 |
| B1SU 20*6                |                   | 20                         | φ20                              | φ21.79                      | 29.6                           | φ6                            | φ16                        | 8.6                          | 14                      | 15.03                      | 10.05                    | 5.7                   | 2-M4             | 4   | 29° 8'                  | φ12.1                | 20.8                 |
| B1SU 40*8                |                   | 40                         | φ40                              | φ40.89                      | 21.8                           | φ8                            | φ25                        | 8                            | 13                      | 15.02                      | 12.69                    | 5.7                   | 2-M5             | 4   | 66° 0'                  | φ28.4                | 70.4                 |
| B1.5SU 18-8              |                   | 18                         | φ27                              | φ29.68                      | 40.74                          | φ8                            | φ22                        | 12.5                         | 21                      | 22.96                      | 14.41                    | 9.8                   | -                | -   | 29°25'                  | φ12.1                | 60.0                 |
| B1.5SU 36-10             |                   | 36                         | φ54                              | φ55.34                      | 26.75                          | φ10                           | φ30                        | 10                           | 15.5                    | 18.54                      | 14.59                    | 9.8                   | -                | -   | 66°17'                  | φ34.3                | 141.3                |
| B2SU 18-10               |                   | 18                         | φ36                              | φ37.81                      | 53.12                          | φ10                           | φ28                        | 15.12                        | 27                      | 29                         | 18.01                    | 12.6                  | -                | -   | 29°25'                  | φ19.1                | 131.0                |
| B2SU 36-12               |                   | 36                         | φ72                              | φ72.15                      | 35.21                          | φ12                           | φ36                        | 13                           | 21                      | 24.07                      | 19                       | 12.6                  | -                | -   | 66°17'                  | φ47.6                | 316.2                |

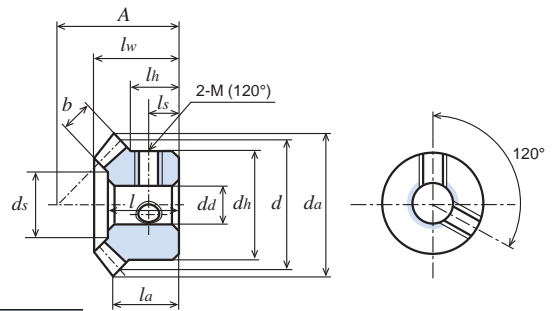
# 黄铜直齿锥齿轮

## BEVEL GEARS

模数  
MODULE

0.5 (齿数 20~40) / 0.8 (齿数 20~40) 1:2

齿数比 1:2



单位: mm

| 精度            | 材料     | 压力角 | 热处理 | 齿面硬度 | 侧隙①         |
|---------------|--------|-----|-----|------|-------------|
| JIS B 1704 4级 | C3604B | 20度 | —   | —    | 0.02 ~ 0.08 |

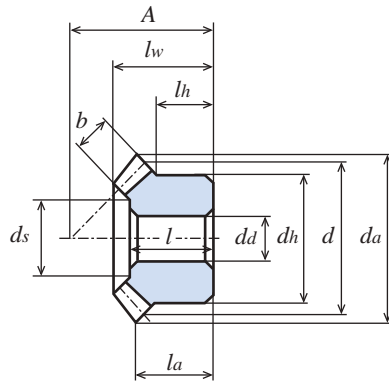
★未做表面处理。容许传达动力表的数据是以小齿轮做输入齿轮，为条件。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

★【\*】表示带有两个螺纹孔，两个固定螺钉。①同一种材料，一样的齿轮相互啮合时的理想值。

| 产品型号<br>Catalogue Number | 齿数比<br>Ratio<br>u | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 装配距离<br>Locating Distance<br>A | 孔径<br>Bore Diameter<br>da(H8) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 穴长度<br>Bore Length<br>l | 全长<br>Overall Length<br>lw | 尖距<br>Tip Distance<br>la | 齿宽<br>Face Width<br>b | 螺纹孔<br>Set Screw |     | 顶锥角<br>Face Angle<br>δa | 沉头部直径<br>(参考值)<br>ds | 重量<br>Weight<br>W(g) |
|--------------------------|-------------------|----------------------------|----------------------------------|-----------------------------|--------------------------------|-------------------------------|----------------------------|------------------------------|-------------------------|----------------------------|--------------------------|-----------------------|------------------|-----|-------------------------|----------------------|----------------------|
|                          |                   |                            |                                  |                             |                                |                               |                            |                              |                         |                            |                          |                       | 2-M(120°)        | ls  |                         |                      |                      |
| B50B 20                  | 2                 | 20                         | φ10                              | φ10.89                      | 15.52                          | φ3                            | φ8                         | 5                            | 8                       | 8.54                       | 5.74                     | 3.2                   | -                | -   | 29° 8'                  | φ5.6                 | 3.2                  |
| B50B 40                  |                   | 40                         | φ20                              | φ20.45                      | 10.56                          | φ4                            | φ12                        | 4                            | 6.3                     | 7.31                       | 6.01                     | 3.2                   | -                | -   | 66° 0'                  | φ13.5                | 8.9                  |
| B50B 20*3                |                   | 20                         | φ10                              | φ10.89                      | 15.52                          | φ3                            | φ8                         | 5                            | 8                       | 8.54                       | 5.74                     | 3.2                   | 2-M2.5           | 2.5 | 29° 8'                  | φ5.6                 | 3.0                  |
| B50B 40*4                |                   | 40                         | φ20                              | φ20.45                      | 10.56                          | φ4                            | φ12                        | 4                            | 6.3                     | 7.31                       | 6.01                     | 3.2                   | 2-M3             | 2   | 66° 0'                  | φ13.5                | 8.5                  |
| B80B 20                  |                   | 20                         | φ16                              | φ17.43                      | 22.5                           | φ5                            | φ12                        | 5.5                          | 10                      | 10.79                      | 6.86                     | 4.5                   | -                | -   | 29° 8'                  | φ9.8                 | 9.8                  |
| B80B 40                  |                   | 40                         | φ32                              | φ32.72                      | 16.46                          | φ6                            | φ20                        | 6                            | 9.5                     | 11.01                      | 9.18                     | 4.5                   | -                | -   | 66° 0'                  | φ22.9                | 36.1                 |
| B80B 20*5                |                   | 20                         | φ16                              | φ17.43                      | 22.5                           | φ5                            | φ12                        | 5.5                          | 10                      | 10.79                      | 6.86                     | 4.5                   | 2-M3             | 3   | 29° 8'                  | φ9.8                 | 9.5                  |
| B80B 40*6                |                   | 40                         | φ32                              | φ32.72                      | 16.46                          | φ6                            | φ20                        | 6                            | 9.5                     | 11.01                      | 9.18                     | 4.5                   | 2-M4             | 3   | 66° 0'                  | φ22.9                | 34.9                 |





| 各旋转速度下的容许传递动力表 (W) 弯曲强度 |      |      |       |       |       |       | 侧隙          | 产品型号<br>Catalogue Numbers                                    |
|-------------------------|------|------|-------|-------|-------|-------|-------------|--|
| 10                      | 100  | 200  | 400   | 600   | 800   | 1,000 |             |  |
| 0.3                     | 3.5  | 7.0  | 14.1  | 21.1  | 28.2  | 35.2  | 0.02 ~ 0.08 | B80SU 20 - 5<br>B80SU 40 - 6<br>B80SU 20 * 5<br>B80SU 40 * 6 |
| 0.6                     | 6.9  | 13.9 | 27.8  | 41.7  | 55.6  | 69.1  | 0.05 ~ 0.12 | B1SU 20 - 6<br>B1SU 40 - 8<br>B1SU 20 * 6<br>B1SU 40 * 8     |
| 2.1                     | 21.3 | 42.7 | 85.5  | 128.3 | 168.1 | 202.5 | 0.05 ~ 0.12 | B1.5SU 18 - 8<br>B1.5SU 36 - 10                              |
| 4.9                     | 49.5 | 99.1 | 198.3 | 292.2 | 370.9 | 442.4 | 0.05 ~ 0.12 | B2SU 18 - 10<br>B2SU 36 - 12                                 |

# 黑色POM直齿锥齿轮

BEVEL GEARS



单位: mm

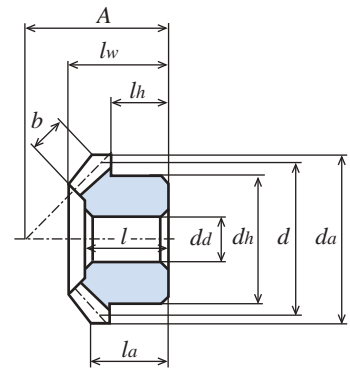
| 精度 | 材料     | 压力角 | 热处理 | 齿面硬度 | 侧隙①        |
|----|--------|-----|-----|------|------------|
| —  | 黑色 POM | 20度 | —   | —    | 0.03 ~ 0.1 |

容许传递动力表的数据是以小齿轮做输入齿轮，为条件。

★本产品的容许传递动力表使用 LOUIS 公式。请在 P28 确认单位换算方法。

★由于材料之特性，易产生由经年老化·热胀冷缩而引起的尺寸和精度的变化。

①同一种材料，一样的齿轮相互啮合时的理想值。



注塑成型  
Injection Molded Gear

| 产品型号<br>Catalogue Number | 齿数比<br>Ratio<br>u | 齿数<br>Number of Teeth<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 装配距离<br>Locating Distance<br>A | 孔径<br>Bore Diameter<br>da | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 穴长度<br>Bore Length<br>l | 全长<br>Overall Length<br>lw | 齿宽<br>Face Width<br>b | 顶锥角<br>Face Angle<br>da | 沉头部直径<br>(参考值)<br>ds | 重量<br>Weight<br>W(g) |
|--------------------------|-------------------|----------------------------|----------------------------------|-----------------------------|--------------------------------|---------------------------|----------------------------|------------------------------|-------------------------|----------------------------|-----------------------|-------------------------|----------------------|----------------------|
| B80DM 20                 | 2                 | 20                         | φ16                              | φ17.43                      | 22.5                           | φ5                        | φ11                        | 5                            | 10                      | 10.79                      | 4.5                   | 29° 8'                  | φ 9.8                | 1.7                  |
| B80DM 40                 |                   | 40                         | φ32                              | φ32.71                      | 16.46                          | φ6                        | φ20                        | 5                            | 9.5                     | 11.01                      | 4.5                   | 66° 0'                  | φ22.9                | 6.5                  |

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蜗轮 · 蜗杆  
WORMS AND WORM WHEELS

技术数据  
REFERENCE DATA



# 蜗杆和蜗轮

## Worms and Worm Wheels

### 产品型号的解读方法 Reference of Catalogue Number

#### 蜗杆 Worm

W 1 S R 1 = A  
W 1 S L 1 - L  
W 1 SU R 1 + B

| 齿轮的种类<br>Kind of Gear | 模数<br>Module  | 材料<br>Material  | 螺旋方向<br>Direction of Thread                   | 蜗杆头数<br>Number of Thread                               | 内径处理<br>Bores Processed  | 形状<br>Type  |
|-----------------------|---|---|---|--|--|---|
| 蜗杆 (Worm)             | 表示模数大小。当模数1以下时，所标数据是实际模数乘于100。<br>例：模数0.5时为50。<br>模数0.8时为80。<br>Expressed the unit of module's size.<br>Module 0.5 and 0.8 as multiple of 100.<br>Example<br>m0.5 → 50<br>m0.8 → 80 | S : 碳素钢S45C (ISO C45)<br>Carbon Steel<br>SU : 不锈钢 SUS304<br>Stainless Steel | R : 右蜗杆<br>Right Hand<br>L : 左蜗杆<br>Left Hand | 1 : 1头螺纹<br>Single thread<br>2 : 2头螺纹<br>Double thread | 标号[-]表示齿轮无键槽/无螺纹孔。<br>Gear without key way / without threaded hole.<br>标号[+]表示齿轮带有螺纹孔/有固定螺钉或无固定螺钉。<br>Gear with threaded hole / with set screw / without set screw<br>(Please refer the detail)<br>标号[=]表示齿轮带有键槽/带有键。<br>Gear with key way / with key. | A : 无轮毂<br>Hubless<br>B : 带有单侧轮毂<br>with hub on one side.<br>C : 带有双侧轮毂<br>With hub on both sides.<br>L : 带有两侧实心轴<br>With Solid shaft on both sides |

#### 蜗轮 Worm Wheel

#### Worm Wheel

G 1 A 20 R 2 + 6  
G 1 A 30 R 1 = 10  
G 2 A 25 L 1 - 12

| 齿轮的种类<br>Kind of Gear | 模数<br>Module   | 材料<br>Material   | 齿数<br>Number of teeth                 | 螺旋方向<br>Direction of Thread                   | 蜗杆头数<br>Number of Thread                               | 内径处理<br>Bores Processed   | 孔径<br>Bore                       |
|-----------------------|--|--|---------------------------------------|---|--|---|----------------------------------|
| 蜗轮 (Worm Wheel)       | m : 0.5 0.8<br>1.0 1.25<br>1.5 2.0<br>2.5 3.0<br>4.0 5.0 | B : 黄铜<br>Brass<br>D : 聚缩醛树脂<br>Poly Acetal<br>C : 灰铸铁<br>Cast iron<br>A : 铝青铜<br>Aluminium Bronze<br>DB : 聚缩醛树脂与黄铜衬套<br>Poly Acetal with brass bush | z : 20 25<br>30 40<br>50 60<br>80 100 | R : 右蜗杆<br>Right Hand<br>L : 左蜗杆<br>Left Hand | 1 : 1头螺纹<br>Single thread<br>2 : 2头螺纹<br>Double thread | 标号[-]表示齿轮无键槽/无螺纹孔<br>Gear without key way / without threaded hole.<br>标号[+]表示齿轮带有螺纹孔/有固定螺钉或无固定螺钉<br>Gear with threaded hole / with set screw / without set screw<br>(Please refer the detail)<br>标号[=]表示齿轮带有键槽/带有键<br>Gear with key way / with key. | 单位: mm<br>Dimension : Millimeter |

CAC702铝青铜蜗轮，其齿部材料和轮毂材料会有所不同。  
For CAC702 worm wheel, the material and hub may vary.  
Please refer to catalogue information.

### 关于本公司用冷滚轧法制作的蜗杆 Regarding rolling worm of KG

本公司的模数0.5 ~ 2.0的蜗杆是用冷滚轧法制作的

#### 冷滚轧精密蜗杆的特点 Feature of Cold Rolled precision Worm.

- 1) 因为是冷滚轧法工艺加工而成，所以螺丝表面因为加工硬化效应而出现硬度上升的现象，因为金属的纤维组织没有被切断，所以相对于机械切削的蜗杆有更好的力学性能。
- 2) 轧制后的表面硬度为原材料硬度的1.2倍或1.3倍。[螺纹面的硬度为HB240-260]。
- 3) 轧制蜗杆，由于螺纹面的表面精度为镜面，所以当与蜗轮啮合使用时，蜗轮的寿命会相对与切削工艺加工而成的蜗杆啮合使用时更长。
- 4) 当把用聚缩醛树脂等软材料制作的蜗轮与蜗杆结合使用时，如果蜗杆是切削加工生产的蜗杆，那么有可能出现蜗杆的齿顶刮掉蜗轮齿的情况。  
因为冷滚轧法蜗杆螺纹面的表面粗糙度为镜面，并且表面硬度也被加强，特别是螺纹牙型是在轧制中隆起出来的，所以成为完整的曲面，不会出现上述的刮掉蜗轮齿的现象。所以耐久性也极为优秀。
- 5) 轧制蜗杆的原料因为在冷滚轧法工艺中无法进行均匀的塑性变形，所以会出现冷滚轧法特有的螺纹导程周期误差(Drunkenness)。当制蜗杆进行一个完整的旋转(1个主动旋转)的时候会在特定的位置出现前进迟缓，这个现象叫螺纹导程周期误差。
- 6) 单一齿距误差和压力角误差是由冷滚轧时使用的螺纹辊的精度所左右。冷滚轧法加工后的蜗杆的单一齿距误差最大为 $18\mu\text{m}$ 。压力角误差为， $\pm 20'$ 。

The Module 0.5 to 2.0 of KG-Worms are manufactured by using the cold rolled forming method.

- 1) The hardness of the helicoid surface has been increased by work hardening because cold rolling was performed, and the worms has more excellent mechanical properties than machined worms because the metallic fibrous structure has not been cut.
- 2) The surface hardness after cold rolling process was increased by 1.2 to 1.3 times compare with the hardness of original material, and the hardness of the helicoid surface was increased to HB240 to 260.
- 3) Cold rolling worm is suitable for the miniature module, and can be rotated smoothly without damaging the worm wheel of the Acetal or other soft materials.
- 4) Due to this cold rolling method, the helicoid surface of KG-Worm (M0.5 to 2.0) has a mirror finishing that looks like a mirror. The KG-Precision Cold Rolling Worm is able to provide a smooth engagement and high durability.

冷轧蜗杆的齿部高频淬火，有可能引起烧裂。所以本公司并不推崇对冷轧蜗杆进行高频淬火。

**It is not advisable to apply heat treatments to KG-Cold Rolling Worm that may cause the possibility of 'quenching crack'.**

本产品除常规产品外，也接受其他规格的订制生产。

**If you have any enquiry for Customize make Worm and Worm Wheels, please do not hesitate to contact us.**

本公司也接受研磨切削蜗杆的订单。

本公司将对其另行报价，为了进行准确的报价，烦请送给我们图纸。

We are able to manufacture the Customize make Ground Worm according to your specifications. Please provide your drawings to us and all will be make to order.

如果和其他工厂生产的齿轮和本公司的齿轮混合使用，容易出现问題。

所以如果以KG STOCK GEARS以外的规格进行设计时，请与本公司联系。

Due to the different manufacturing process of the normal module Worm and Worm Wheels in the industries, it is not advisable to match KG Worm or Worm Wheels with other gear manufacturers.

We are able to fabricate made to order specifications, please do not hesitate to contact us.

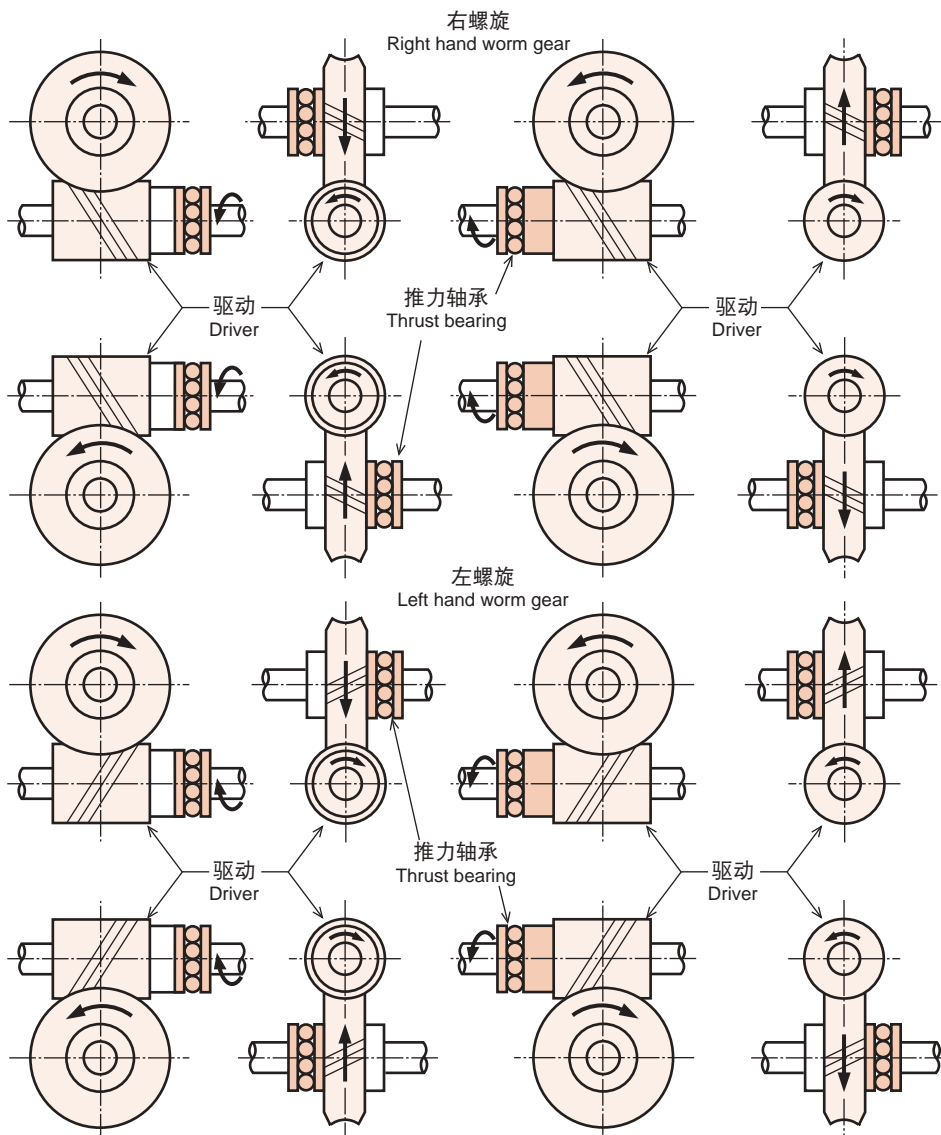
### 蜗杆齿轮使用时的注意事项

#### Usage precaution

- 1) 为了实现理想的啮合，组装蜗杆和蜗轮的时候请安装出准确的直角。
  - 2) 蜗杆和蜗轮进行啮合时齿面的摩擦比较大，所以请尽可能在有润滑油的环境中进行运转使用。
  - 3) 请使用同一个螺旋方向的蜗杆和蜗轮，并用同等的头数进行组合使用。(1头的蜗杆，要和对应1头蜗轮的蜗轮相配对)
  - 4) 为了不让蜗杆轴和蜗轮轴发生变形等变化。请在尽可能离齿轮近的地方设计结实的轴承。
  - 5) 向蜗杆产生的轴向力非常大。所以要注意。轴向力的方向请确认以下图。
- 1) To obtain ideal engagement of Worm and Worm Wheel's shafts, provide right angle ( 90° ) correctly.
  - 2) Lubrication oil is indispensable to Worm and Worm Wheel during operation due to high rate of friction between tooth surface of Worm and Worm Wheel.
  - 3) Engagement of the same number of thread (starts) and hand of thread are important to Worm and Worm Wheel.
  - 4) The design of the shafts between Worm and Worm Wheel should be in firm condition, and provide bearing which completely support Worm and Worm Wheel as close as possible.
  - 5) Provide the bearing that will completely support the Worm gear from the axial thrust when in operation. Refer to Figure below for its axial thrust directions.

### 对蜗轮起作用的轴向力

#### Axial thrust load to Worm gear and location of bearings



### 相互啮合的蜗轮和蜗杆的选择方法

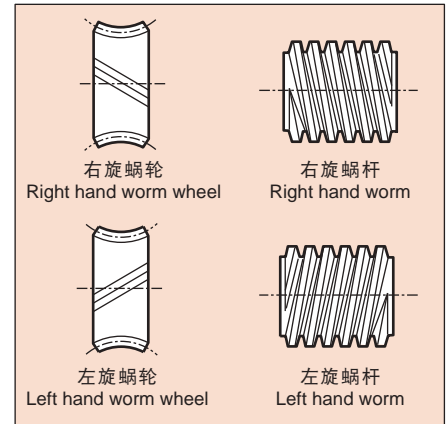
使用蜗杆和蜗轮时，一定要将旋转方向和头数相同的蜗杆和蜗轮进行组合来使用。  
(例：如果蜗杆是右旋1头。那么要给它装配右旋，对应1头蜗杆的蜗轮。)

Engagement of the same number of thread (starts) and hand of thread are important to Worm and Worm Wheel.

Worm: Right hand with single thread  
Worm Wheel: Right hand with single thread.

| 可以啮合  | 蜗杆 R1 | 蜗杆 R2 | 蜗杆 L1 | 蜗杆 L2 |
|-------|-------|-------|-------|-------|
| 蜗轮 R1 | ●     | ×     | ×     | ×     |
| 蜗轮 R2 | ×     | ●     | ×     | ×     |
| 蜗轮 L1 | ×     | ×     | ●     | ×     |
| 蜗轮 L2 | ×     | ×     | ×     | ●     |

如何辨认蜗轮和蜗杆的（左，右）旋转方向  
How to identify the left and right hand threads for worm and worm wheel.



### 关于冷滚轧法加工

- 1)利用材料的塑性变形原理，把材料放入一对轧制用的螺纹辊之间。并在两边用强大的油压施压，并同时旋转。
- 2)只要硬度为HB220以下，任何材料都可。但是不能加工非金属。S45以下，S20C程度刚好。
- 3)螺距为0.8mm-8mm。
- 4)可制作的单一蜗杆的大小限度为外径100mm，长度150mm。
- 5)螺纹牙型可以自行设定，如螺丝，蜗杆，锯齿型等。

### Regarding the Precision Cold Rolling processed.

With regard to the precision Cold Rolling process of the worm, in respect of theory of plasticity material, the fabrication of the material of Cold Rolled-worm is produced by rotating with hydraulic pressing between both sides of the rolling tooth machine.

For the material of worm without nonferrous metal that can use HB220 or below, S20C to S45C are the most suitable process of the Cold Rolling.

Thread pitch 0.8 to 8.0mm

Our capacity of maximum dimension and length:  $\phi 100 \times 150$  mm

It may be possible that this process can make to design of the screw, worm and serration to the free type of thread

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蜗轮蜗杆  
WORMS AND WORM WHEELS

技术数据  
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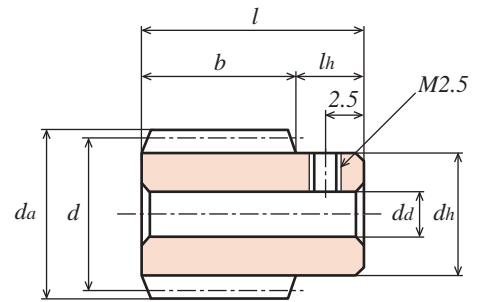
# 蜗杆和蜗轮

## WORMS AND WORM WHEELS

模数  
MODULE

0.5 (蜗轮的齿数 20 ~ 60)

(普通齿)  
FULL DEPTH TOOTH



B形状  
TYPE B

单位: mm

| 精度         | 材料     | 压力角  | 齿部加工方法 |
|------------|--------|------|--------|
| 无相应 JIS 规格 | SUS304 | 20 度 | 精密冷轧   |

★未做表面处理。

★【+】表示带有螺纹孔，有固定螺钉。螺钉材料不是不锈钢。

| 产品型号<br>Catalogue Number | 螺旋方向<br>Direction of Thread | 蜗杆头数<br>Number of Thread | 分度圆直径<br>Reference Diameter | 齿顶圆直径<br>Tip Diameter | 形状<br>Type | 齿宽<br>Face Width | 孔径<br>Bore Diameter | 轮毂外径<br>Hub Diameter | 轮毂长度<br>Hub Projection | 全长<br>Overall Length | 导程角<br>Lead Angle | 重量<br>Weight |
|--------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------|------------|------------------|---------------------|----------------------|------------------------|----------------------|-------------------|--------------|
|                          |                             | $z$                      | $d$                         | $d_a$                 |            | $b$              | $d_d(H8)$           | $d_h$                | $l_h$                  | $l$                  | $\gamma$          | $W(g)$       |
| W50SU R1 + B             | R                           | 1                        | $\phi 9$                    | $\phi 10$             | B          | 13               | $\phi 3$            | $\phi 7.6$           | 5                      | 18                   | $3^{\circ}11'$    | 7.3          |



单位: mm

| 精度         | 材料    | 压力角  | 齿部加工方法 | 侧隙①  |
|------------|-------|------|--------|------|
| 无相应 JIS 规格 | C3604 | 20 度 | 切削     | 确认表格 |

★未做表面处理。【+】表示带有螺纹孔，有固定螺钉。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①一对相应蜗轮蜗杆相啮合时的侧隙。

②对蜗杆旋转速度的相应蜗轮的容许传达扭矩值。

| 产品型号<br>Catalogue Number | 齿数比<br>Gear Ratio | 齿数<br>Number of Teeth | 节圆直径<br>Pitch Diameter | 变位系数<br>Addendum Coefficient | 蜗轮喉圆直径<br>Throat Diameter | 齿顶圆直径<br>Tip Diameter | 形状<br>Type | 齿宽<br>Face Width | 孔径<br>Bore Diameter | 轮毂外径<br>Hub Diameter | 轮毂长度<br>Hub Projection | 全长<br>Overall Length | 螺纹孔<br>Set Screw |       | 中心距<br>Center Distance | 蜗轮的螺旋方向和蜗杆头数<br>Hand and Thread for Worm | 重量<br>Weight |
|--------------------------|-------------------|-----------------------|------------------------|------------------------------|---------------------------|-----------------------|------------|------------------|---------------------|----------------------|------------------------|----------------------|------------------|-------|------------------------|--|--------------|
|                          |                   |                       |                        |                              |                           |                       |            |                  |                     |                      |                        |                      | $M$              | $l_s$ |                        |  |              |
| G50B 20 + R1             | 20                | 20                    | $\phi 10$              | -0.015                       | $\phi 11$                 | $\phi 11.3$           | 1B         | 5                | $\phi 3$            | $\phi 9$             | 6                      | 11                   | M3               | 3     | 9.5                    | R1                                       | 5.9          |
| G50B 30 + R1             | 30                | 30                    | $\phi 15$              | -0.023                       | $\phi 16$                 | $\phi 16.3$           | 1B         | 5                | $\phi 4$            | $\phi 12$            | 6                      | 11                   | M3               | 3     | 12.0                   | R1                                       | 11.2         |
| G50B 40 + R1             | 40                | 40                    | $\phi 20$              | -0.031                       | $\phi 21$                 | $\phi 21.3$           | 1B         | 5                | $\phi 5$            | $\phi 15$            | 8                      | 13                   | M4               | 4     | 14.5                   | R1                                       | 22.7         |
| G50B 50 + R1             | 50                | 50                    | $\phi 25$              | -0.038                       | $\phi 26$                 | $\phi 26.3$           | 1B         | 5                | $\phi 5$            | $\phi 16$            | 8                      | 13                   | M4               | 4     | 17.0                   | R1                                       | 29.8         |



单位: mm

| 精度         | 材料     | 压力角  | 齿部加工方法 | 侧隙①  |
|------------|--------|------|--------|------|
| 无相应 JIS 规格 | 青色 POM | 20 度 | 切削     | 确认表格 |

★本产品的容许传达动力表使用 LOUIS 公式。请在 P28 确认单位换算方法。

★由于材料之特性，易产生由经老化·热胀冷缩而引起的尺寸和精度的变化。

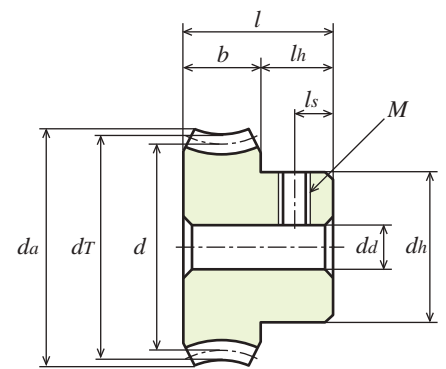
①一对相应蜗轮蜗杆相啮合时的侧隙。②对蜗杆旋转速度的相应蜗轮的容许传达扭矩值。

| 产品型号<br>Catalogue Number | 齿数比<br>Gear Ratio | 齿数<br>Number of Teeth | 节圆直径<br>Pitch Diameter | 变位系数<br>Addendum Coefficient | 蜗轮喉圆直径<br>Throat Diameter | 齿顶圆直径<br>Tip Diameter | 形状<br>Type | 齿宽<br>Face Width | 孔径<br>Bore Diameter | 轮毂外径<br>Hub Diameter | 轮毂长度<br>Hub Projection | 全长<br>Overall Length | 中心距<br>Center Distance | 蜗轮的螺旋方向和蜗杆头数<br>Hand and Thread for Worm | 重量<br>Weight |
|--------------------------|-------------------|-----------------------|------------------------|------------------------------|---------------------------|-----------------------|------------|------------------|---------------------|----------------------|------------------------|----------------------|------------------------|--|--------------|
|                          |                   |                       |                        |                              |                           |                       |            |                  |                     |                      |                        |                      |                        |  |              |
| G50BP 20 - R1            | 20                | 20                    | $\phi 10$              | -0.015                       | $\phi 11$                 | $\phi 11.3$           | 1B         | 5                | $\phi 3$            | $\phi 9$             | 6                      | 11                   | 9.5                    | R1                                       | 1.0          |
| G50BP 30 - R1            | 30                | 30                    | $\phi 15$              | -0.023                       | $\phi 16$                 | $\phi 16.3$           | 1B         | 5                | $\phi 4$            | $\phi 12$            | 6                      | 11                   | 12.0                   | R1                                       | 2.0          |
| G50BP 40 - R1            | 40                | 40                    | $\phi 20$              | -0.031                       | $\phi 21$                 | $\phi 21.3$           | 1B         | 5                | $\phi 5$            | $\phi 15$            | 8                      | 13                   | 14.5                   | R1                                       | 3.8          |
| G50BP 50 - R1            | 50                | 50                    | $\phi 25$              | -0.038                       | $\phi 26$                 | $\phi 26.3$           | 1B         | 5                | $\phi 5$            | $\phi 20$            | 8                      | 13                   | 17.0                   | R1                                       | 6.6          |
| G50BP 60 - R1            | 60                | 60                    | $\phi 30$              | -0.046                       | $\phi 31$                 | $\phi 31.4$           | 1B         | 5                | $\phi 5$            | $\phi 25$            | 8                      | 13                   | 19.5                   | R1                                       | 10.2         |



## 蜗轮的容许传达扭矩 (N · cm) 齿面强度②

| 产品型号<br>Catalogue Numbers | 蜗杆的旋转速度 (min <sup>-1</sup> )<br>revolution/min (Rotating speed of worm) |         |        |          |          |          |          | 侧隙<br>(mm)  |
|---------------------------|---|---------|--------|----------|----------|----------|----------|-------------|
|                           | 100rpm  | 250rpm  | 500rpm | 1,000rpm | 1,200rpm | 1,500rpm | 1,800rpm |             |
| G50B 20 + R1              | 21.687  | 18.482  | 15.435 | 12.661   | 11.975   | 11.162   | 10.515   | 0.06 ~ 0.15 |
| G50B 30 + R1              | 46.452  | 40.111  | 34.015 | 28.096   | 26.636   | 24.892   | 23.520   | 0.06 ~ 0.15 |
| G50B 40 + R1              | 79.380  | 69.188  | 59.466 | 49.343   | 46.834   | 43.855   | 41.493   | 0.06 ~ 0.15 |
| G50B 50 + R1              | 120.226   | 105.546 | 91.365 | 76.263   | 72.451   | 67.923   | 64.337   | 0.06 ~ 0.15 |



1B形状  
TYPE 1B

## 青色 POM 系列材料, 符合以下管理规定, 或由材料厂家发表了自我宣言。

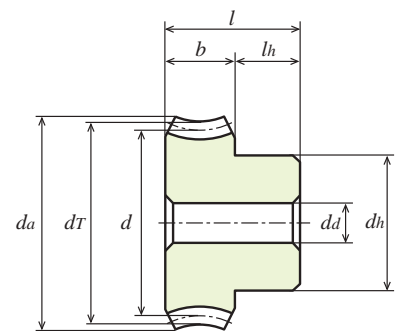
| 用途<br>Uses              | 各国的管理规定<br>Regulations   |
|-------------------------|--|
| 食品接触用途<br>Food contact  | NO.10/2011(EU), FDA(美国), NSF 51 (美国), 3A-DAIRY (美国; 乳制品), Health Canada (加拿大), JHOSPA Positive List, 日本厚生省告示第 370 号<br>NO.10/2011 (EU), FDA (USA), NSF 51 (USA), 3A-DAIRY (USA; Dairy product), Health Canada (CANADA), JHOSPA Positive List ,MHLW Notification No.370 (JAPAN) |
| 饮用水用途<br>Drinking water | NSF61 (美国), KTW W270 (德国), WRAS (英国), ACS (法国)<br>NSF 61(USA), KTW W270 (GERMANY), WRAS (UK), ACS (FRANCE)   |

### 请注意

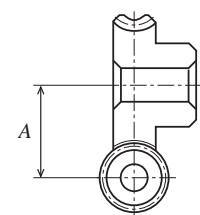
- 不得用于酒精浓度超过 15% 的食品。
- 关于使用本产品时的安全性, 请用本产品组装最终机构后, 要在此机构的实际运作环境下确认安全后, 再继续使用。
- 青色 POM 齿轮系列, 是在有可能受到切削液影响的环境下制作的。

## 蜗轮的容许传达扭矩 (N · cm) 齿面强度②

| 产品型号<br>Catalogue Numbers | 蜗杆的旋转速度 (min <sup>-1</sup> )<br>revolution/min |        |        |          |          |          |          | 侧隙<br>(mm)  |
|---------------------------|--|--------|--------|----------|----------|----------|----------|-------------|
|                           | 100rpm   | 250rpm | 500rpm | 1,000rpm | 1,200rpm | 1,500rpm | 1,800rpm |             |
| G50BP 20 - R1             | 9.00   | 9.00   | 9.00   | 9.00     | 8.94     | 8.94     | 8.87     | 0.06 ~ 0.15 |
| G50BP 30 - R1             | 13.50  | 13.50  | 13.50  | 13.41    | 13.41    | 13.41    | 13.31    | 0.06 ~ 0.15 |
| G50BP 40 - R1             | 18.01  | 18.01  | 18.01  | 18.01    | 17.88    | 17.88    | 17.75    | 0.06 ~ 0.15 |
| G50BP 50 - R1             | 22.50  | 22.50  | 22.50  | 22.50    | 22.34    | 22.34    | 22.19    | 0.06 ~ 0.15 |
| G50BP 60 - R1             | 27.00  | 27.00  | 27.00  | 27.00    | 26.82    | 26.82    | 26.63    | 0.06 ~ 0.15 |



1B形状  
TYPE 1B



# 蜗杆和蜗轮

## WORMS AND WORM WHEELS

模数  
MODULE **0.8** (蜗轮的齿数 20 ~ 60)

(普通齿)  
FULL DEPTH TOOTH

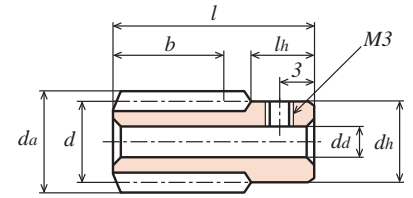


单位: mm

| 精度         | 材料     | 压力角  | 齿部加工方法 |
|------------|--------|------|--------|
| 无相应 JIS 规格 | SUS304 | 20 度 | 精密冷轧   |

★未做表面处理。

★【+】表示带有螺纹孔，没有固定螺钉。



B 形状  
TYPE B

| 产品型号<br>Catalogue Number | 螺旋方向<br>Direction of Thread | 蜗杆头数<br>Number of Thread<br>$z$ | 分度圆直径<br>Reference Diameter<br>$d$ | 齿顶圆直径<br>Tip Diameter<br>$da$ | 形状<br>Type | 齿宽<br>Face Width<br>$b$ | 孔径<br>Bore Diameter<br>$da(H8)$ | 轮毂外径<br>Hub Diameter<br>$dh$ | 轮毂长度<br>Hub Projection |       | 全长<br>Overall Length<br>$l$ | 导程角<br>Lead Angle<br>$\gamma$ | 重量<br>Weight<br>$W(g)$ |
|--------------------------|-----------------------------|---------------------------------|------------------------------------|-------------------------------|------------|-------------------------|---------------------------------|------------------------------|------------------------|-------|-----------------------------|-------------------------------|------------------------|
|                          |                             |                                 |                                    |                               |            |                         |                                 |                              | $lhL$                  | $lhR$ |                             |                               |                        |
| <b>W80SU R1 + B</b>      | R                           | 1                               | $\phi 10.4$                        | $\phi 12$                     | B          | 14                      | $\phi 5$                        | $\phi 10.3$                  | -                      | 6     | 26                          | $4^{\circ}24'$                | 18.0                   |
| <b>W80SU R1 - L</b>      | R                           | 1                               | $\phi 10.4$                        | $\phi 12$                     | L          | 20                      | -                               | $\phi 8 (h9)$                | 20                     | 40    | 80                          | $4^{\circ}24'$                | 40.0                   |



单位: mm

| 精度         | 材料              | 压力角  | 齿部加工方法 | 侧隙①  |
|------------|-----------------|------|--------|------|
| 无相应 JIS 规格 | CAC702( 铅青铜铸件 ) | 20 度 | 切削     | 确认表格 |

★未做表面处理。【+】表示带有螺纹孔，有固定螺钉。

★本产品的容许传动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①一对相应蜗轮蜗杆相啮合时的侧隙。

②对蜗杆转速度的相应蜗轮的容许传达扭矩值。

| 产品型号<br>Catalogue Number | 齿数比<br>Gear Ratio<br>$u$ | 齿数<br>Number of Teeth<br>$z$ | 节圆直径<br>Pitch Diameter<br>$d$ | 变位系数<br>$x$ | 蜗轮喉圆直径<br>Throat Diameter<br>$dT$ | 齿顶圆直径<br>Tip Diameter<br>$da$ | 形状<br>Type | 齿宽<br>Face Width<br>$b$ | 孔径<br>Bore Diameter<br>$da(H8)$ | 轮毂外径<br>Hub Diameter<br>$dh$ | 轮毂长度<br>Hub Projection<br>$lh$ | 全长<br>Overall Length<br>$l$ | 螺纹孔<br>Set Screw |      | 中心距<br>Center Distance<br>$A$ | 蜗杆的螺旋方向和蜗杆头数<br>Hand and Thread for Worm | 重量<br>Weight<br>$W(g)$ |
|--------------------------|--------------------------|------------------------------|-------------------------------|-------------|-----------------------------------|-------------------------------|------------|-------------------------|---------------------------------|------------------------------|--------------------------------|-----------------------------|------------------|------|-------------------------------|--|------------------------|
|                          |                          |                              |                               |             |                                   |                               |            |                         |                                 |                              |                                |                             | $M$              | $ls$ |                               |  |                        |
| <b>G80A 20 + R1</b>      | 20                       | 20                           | $\phi 16$                     | -0.029      | $\phi 17.6$                       | $\phi 18.1$                   | 1B         | 6                       | $\phi 5$                        | $\phi 12$                    | 6                              | 12                          | M3               | 3    | 13.2                          | R1                                       | 12.9                   |
| <b>G80A 30 + R1</b>      | 30                       | 30                           | $\phi 24$                     | -0.044      | $\phi 25.6$                       | $\phi 26.1$                   | 1B         | 6                       | $\phi 5$                        | $\phi 16$                    | 6                              | 12                          | M3               | 3    | 17.2                          | R1                                       | 26.5                   |
| <b>G80A 40 + R1</b>      | 40                       | 40                           | $\phi 32$                     | -0.059      | $\phi 33.6$                       | $\phi 34.1$                   | 1B         | 6                       | $\phi 6$                        | $\phi 18$                    | 8                              | 14                          | M4               | 4    | 21.2                          | R1                                       | 50.7                   |
| <b>G80A 50 + R1</b>      | 50                       | 50                           | $\phi 40$                     | -0.074      | $\phi 41.6$                       | $\phi 42.1$                   | 1B         | 6                       | $\phi 6$                        | $\phi 20$                    | 8                              | 14                          | M4               | 4    | 25.2                          | R1                                       | 75.7                   |



单位: mm

| 精度         | 材料     | 压力角  | 齿部加工方法 | 侧隙①  |
|------------|--------|------|--------|------|
| 无相应 JIS 规格 | 青色 POM | 20 度 | 切削     | 确认表格 |

★本产品的容许传动力表使用 LOUIS 公式。请在 P28 确认单位换算方法。

★由于材料之特性，易产生由经年老化·热胀冷缩而引起的尺寸和精度的变化。

①一对相应蜗轮蜗杆相啮合时的侧隙。

②对蜗杆转速度的相应蜗轮的容许传达扭矩值。

| 产品型号<br>Catalogue Number | 齿数比<br>Gear Ratio<br>$u$ | 齿数<br>Number of Teeth<br>$z$ | 节圆直径<br>Pitch Diameter<br>$d$ | 变位系数<br>$x$ | 蜗轮喉圆直径<br>Throat Diameter<br>$dT$ | 齿顶圆直径<br>Tip Diameter<br>$da$ | 形状<br>Type | 齿宽<br>Face Width<br>$b$ | 孔径<br>Bore Diameter<br>$da$ | 轮毂外径<br>Hub Diameter<br>$dh$ | 轮毂长度<br>Hub Projection<br>$lh$ | 全长<br>Overall Length<br>$l$ | 螺纹孔<br>Set Screw |      | 中心距<br>Center Distance<br>$A$ | 蜗杆的螺旋方向和蜗杆头数<br>Hand and Thread for Worm | 重量<br>Weight<br>$W(g)$ |
|--------------------------|--------------------------|------------------------------|-------------------------------|-------------|-----------------------------------|-------------------------------|------------|-------------------------|-----------------------------|------------------------------|--------------------------------|-----------------------------|------------------|------|-------------------------------|--|------------------------|
|                          |                          |                              |                               |             |                                   |                               |            |                         |                             |                              |                                |                             | $M$              | $ls$ |                               |  |                        |
| <b>G80BP 20 - R1</b>     | 20                       | 20                           | $\phi 16$                     | -0.029      | $\phi 17.6$                       | $\phi 18.1$                   | 1B         | 6                       | $\phi 4$                    | $\phi 12$                    | 6                              | 12                          | -                | -    | 13.2                          | R1                                       | 2.4                    |
| <b>G80BP 30 - R1</b>     | 30                       | 30                           | $\phi 24$                     | -0.044      | $\phi 25.6$                       | $\phi 26.1$                   | 1B         | 6                       | $\phi 5$                    | $\phi 18$                    | 6                              | 12                          | -                | -    | 17.2                          | R1                                       | 5.6                    |
| <b>G80BP 40 - R1</b>     | 40                       | 40                           | $\phi 32$                     | -0.059      | $\phi 33.6$                       | $\phi 34.1$                   | 1B         | 6                       | $\phi 6$                    | $\phi 20$                    | 8                              | 14                          | -                | -    | 21.2                          | R1                                       | 9.8                    |
| <b>G80BP 50 - R1</b>     | 50                       | 50                           | $\phi 40$                     | -0.074      | $\phi 41.6$                       | $\phi 42.1$                   | 1B         | 6                       | $\phi 6$                    | $\phi 25$                    | 8                              | 14                          | -                | -    | 25.2                          | R1                                       | 15.5                   |
| <b>G80BP 60 - R1</b>     | 60                       | 60                           | $\phi 48$                     | -0.089      | $\phi 49.6$                       | $\phi 50.1$                   | 1B         | 6                       | $\phi 8$                    | $\phi 30$                    | 8                              | 14                          | -                | -    | 29.2                          | R1                                       | 22.2                   |



单位: mm

| 精度         | 材料     | 压力角  | 齿部加工方法 | 侧隙①  |
|------------|--------|------|--------|------|
| 无相应 JIS 规格 | 白色 POM | 20 度 | 切削     | 确认表格 |

★【+】表示带有螺纹孔，有固定螺钉。

★本产品的容许传动力表使用 LOUIS 公式。请在 P28 确认单位换算方法。

★关于本产品的容许传达扭矩值以及侧隙，请确认青色 POM 产品的相应数据。

★由于材料之特性，易产生由经年老化·热胀冷缩而引起的尺寸和精度的变化。

①一对相应蜗轮蜗杆相啮合时的侧隙。②对蜗杆转速度的相应蜗轮的容许传达扭矩值。

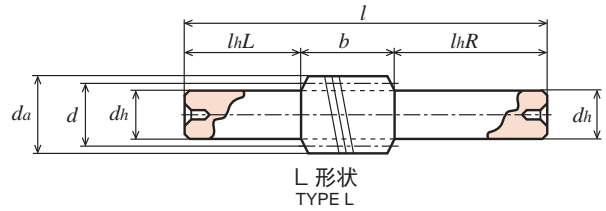
| 产品型号<br>Catalogue Number | 齿数比<br>Gear Ratio<br>$u$ | 齿数<br>Number of Teeth<br>$z$ | 节圆直径<br>Pitch Diameter<br>$d$ | 变位系数<br>$x$ | 蜗轮喉圆直径<br>Throat Diameter<br>$dT$ | 齿顶圆直径<br>Tip Diameter<br>$da$ | 形状<br>Type | 齿宽<br>Face Width<br>$b$ | 孔径<br>Bore Diameter<br>$da$ | 轮毂外径<br>Hub Diameter<br>$dh$ | 轮毂长度<br>Hub Projection<br>$lh$ | 全长<br>Overall Length<br>$l$ | 螺纹孔<br>Set Screw |      | 中心距<br>Center Distance<br>$A$ | 蜗杆的螺旋方向和蜗杆头数<br>Hand and Thread for Worm | 重量<br>Weight<br>$W(g)$ |
|--------------------------|--------------------------|------------------------------|-------------------------------|-------------|-----------------------------------|-------------------------------|------------|-------------------------|-----------------------------|------------------------------|--------------------------------|-----------------------------|------------------|------|-------------------------------|--|------------------------|
|                          |                          |                              |                               |             |                                   |                               |            |                         |                             |                              |                                |                             | $M$              | $ls$ |                               |  |                        |
| <b>G80D 20 + R1</b>      | 20                       | 20                           | $\phi 16$                     | -0.029      | $\phi 17.6$                       | $\phi 18.1$                   | 1B         | 6                       | $\phi 5$                    | $\phi 12$                    | 6                              | 12                          | M3               | 3    | 13.2                          | R1                                       | 2.5                    |
| <b>G80D 30 + R1</b>      | 30                       | 30                           | $\phi 24$                     | -0.044      | $\phi 25.6$                       | $\phi 26.1$                   | 1B         | 6                       | $\phi 5$                    | $\phi 16$                    | 6                              | 12                          | M3               | 3    | 17.2                          | R1                                       | 5.2                    |
| <b>G80D 40 + R1</b>      | 40                       | 40                           | $\phi 32$                     | -0.059      | $\phi 33.6$                       | $\phi 34.1$                   | 1B         | 6                       | $\phi 6$                    | $\phi 18$                    | 8                              | 14                          | M4               | 4    | 21.2                          | R1                                       | 10.0                   |
| <b>G80D 50 + R1</b>      | 50                       | 50                           | $\phi 40$                     | -0.074      | $\phi 41.6$                       | $\phi 42.1$                   | 1B         | 6                       | $\phi 6$                    | $\phi 20$                    | 8                              | 14                          | M4               | 4    | 25.2                          | R1                                       | 14.0                   |

单位: mm

| 精度         | 材料   | 压力角  | 齿部加工方法 |
|------------|------|------|--------|
| 无相应 JIS 规格 | S45C | 20 度 | 精密冷轧   |

★未做表面处理。

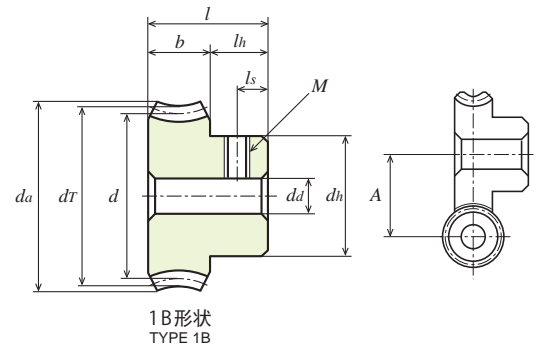
★【+】表示带有螺纹孔，有固定螺钉。螺钉材料不是不锈钢。



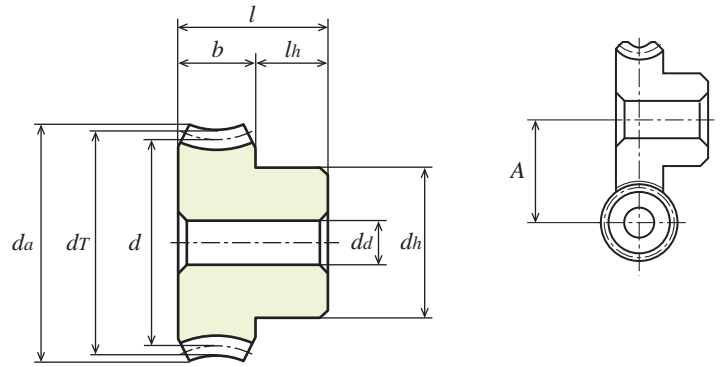
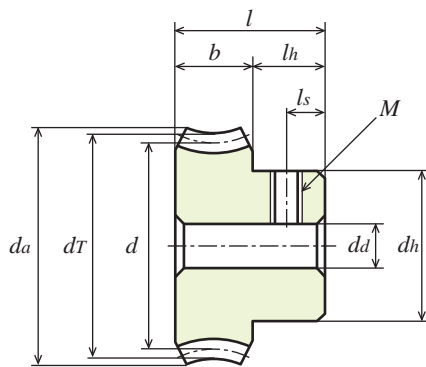
| 产品型号<br>Catalogue Number | 螺旋方向<br>Direction of Thread | 蜗杆头数<br>Number of Thread | 分度圆直径<br>Reference Diameter | 齿顶圆直径<br>Tip Diameter | 形状<br>Type | 齿宽<br>Face Width | 孔径<br>Bore Diameter | 轮毂外径<br>Hub Diameter | 轮毂长度<br>Hub Projection |     | 全长<br>Overall Length | 导程角<br>Lead Angle | 重量<br>Weight |
|--------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------|------------|------------------|---------------------|----------------------|------------------------|-----|----------------------|-------------------|--------------|
|                          |                             |                          |                             |                       |            |                  |                     |                      | lhL                    | lhR |                      |                   |              |
| <b>W80S R1 + B</b>       | R                           | 1                        | φ10.4                       | φ12                   | B          | 14               | φ5                  | φ10.3                | -                      | 6   | 26                   | 4°24'             | 18.0         |
| <b>W80S R1 - L</b>       | R                           | 1                        | φ10.4                       | φ12                   | L          | 20               | -                   | φ 8 (h9)             | 20                     | 40  | 80                   | 4°24'             | 40.0         |

### 蜗轮的容许传达扭矩 (N · m) 齿面强度②

| 产品型号<br>Catalogue Numbers | 蜗杆的旋转速度 (min <sup>-1</sup> )<br>revolution/min (Rotating speed of worm) |        |        |          |          |          |          | 侧隙<br>(mm)  |
|---------------------------|---|--------|--------|----------|----------|----------|----------|-------------|
|                           | 100rpm  | 250rpm | 500rpm | 1,000rpm | 1,200rpm | 1,500rpm | 1,800rpm |             |
| G80A 20 + R1              | 0.872   | 0.735  | 0.607  | 0.499    | 0.470    | 0.441    | 0.411    | 0.06 ~ 0.15 |
| G80A 30 + R1              | 1.871   | 1.597  | 1.352  | 1.117    | 1.058    | 0.989    | 0.931    | 0.06 ~ 0.15 |
| G80A 40 + R1              | 3.194   | 2.763  | 2.371  | 1.960    | 1.862    | 1.744    | 1.646    | 0.06 ~ 0.15 |
| G80A 50 + R1              | 4.841   | 4.223  | 3.645  | 3.038    | 2.891    | 2.704    | 2.557    | 0.06 ~ 0.15 |



| 侧隙<br>(mm)  |
|-------------|
| 0.06 ~ 0.15 |
| 0.06 ~ 0.15 |
| 0.06 ~ 0.15 |
| 0.06 ~ 0.15 |
| 0.06 ~ 0.15 |



### 蜗轮的容许传达扭矩 (N · m) 齿面强度②

| 产品型号<br>Catalogue Numbers | 蜗杆的旋转速度 (min <sup>-1</sup> )<br>revolution/min |        |        |          |          |          |          | 侧隙<br>(mm)  |
|---------------------------|--|--------|--------|----------|----------|----------|----------|-------------|
|                           | 100rpm   | 250rpm | 500rpm | 1,000rpm | 1,200rpm | 1,500rpm | 1,800rpm |             |
| G80BP 20 - R1             | 0.28   | 0.28   | 0.28   | 0.27     | 0.27     | 0.27     | 0.27     | 0.06 ~ 0.15 |
| G80BP 30 - R1             | 0.41   | 0.41   | 0.41   | 0.41     | 0.41     | 0.41     | 0.41     | 0.06 ~ 0.15 |
| G80BP 40 - R1             | 0.55   | 0.55   | 0.55   | 0.55     | 0.55     | 0.55     | 0.55     | 0.06 ~ 0.15 |
| G80BP 50 - R1             | 0.69   | 0.69   | 0.69   | 0.69     | 0.69     | 0.68     | 0.68     | 0.06 ~ 0.15 |
| G80BP 60 - R1             | 0.83   | 0.83   | 0.83   | 0.82     | 0.82     | 0.82     | 0.82     | 0.06 ~ 0.15 |

# 蜗杆和蜗轮

## WORMS AND WORM WHEELS



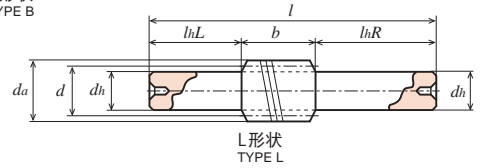
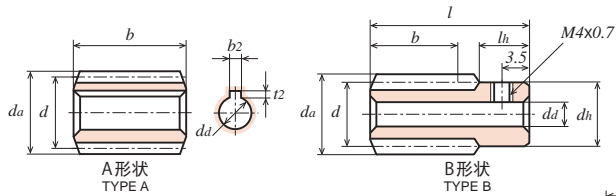
模数  
MODULE

1

(蜗轮的齿数 20 ~ 100)

(普通齿)

FULL DEPTH TOOTH



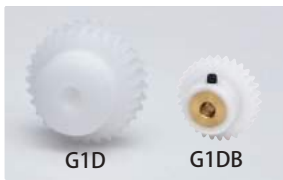
单位: mm

| 精度         | 材料     | 压力角  | 齿部加工方法 |
|------------|--------|------|--------|
| 无相应 JIS 规格 | SUS304 | 20 度 | 精密冷轧   |

★未做表面处理。

★【+】表示带有螺纹孔，没有固定螺钉。

| 产品型号<br>Catalogue Number | 螺旋方向<br>Direction of Thread | 蜗杆头数<br>Number of Thread | 分度圆直径<br>Reference Diameter | 齿顶圆直径<br>Tip Diameter | 形状<br>Type | 齿宽<br>Face Width | 孔径<br>Bore Diameter | 轮毂外径<br>Hub Diameter | 轮毂长度<br>Hub Projection | 全长<br>Overall Length | 导程角<br>Lead Angle | 重量<br>Weight |
|--------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------|------------|------------------|---------------------|----------------------|------------------------|----------------------|-------------------|--------------|
|                          |                             | $z$                      | $d$                         | $d_a$                 |            | $b$              | $d_d(H8)$           | $d_h$                | $l_h$                  | $l$                  | $\gamma$          | $W(g)$       |
| W1SU R1 + B              | R                           | 1                        | $\phi 16$                   | $\phi 18$             | B          | 15.5             | $\phi 6$            | $\phi 15.85$         | 7                      | 32                   | $3^\circ 35'$     | 42.0         |
| W1SU R2 + B              | R                           | 2                        | $\phi 16$                   | $\phi 18$             | B          | 15               | $\phi 6$            | $\phi 15.85$         | 7                      | 32                   | $7^\circ 11'$     | 42.0         |



单位: mm

| 精度         | 材料       | 压力角  | 齿部加工方法 | 侧隙①  |
|------------|----------|------|--------|------|
| 无相应 JIS 规格 | 白色 POM ③ | 20 度 | 切削     | 确认表格 |

★【+】表示带有螺纹孔，有固定螺钉。★由于材料之特性，易产生由经年老化·热胀冷缩而引起的尺寸和精度的变化。

★本产品的容许传达动力表使用 LOUIS 公式。请在 P28 确认单位换算方法。

★关于本产品的容许传达扭矩值以及侧隙，请确认青色 POM 产品的相应数据。

①一对相应蜗轮蜗杆相啮合时的侧隙。②对蜗杆旋转速度的相应蜗轮的容许传达扭矩值。

③ G1D 产品只用白色 POM 构成。G1DB 产品在白色 POM 构成的蜗轮齿孔部镶有黄铜 (C3604) 衬套。

| 产品型号<br>Catalogue Number | 齿数比<br>Gear Ratio | 齿数<br>Number of Teeth | 节圆直径<br>Pitch Diameter | 变位系数<br>Addendum Coefficient | 蜗轮喉圆直径<br>Throat Diameter | 齿顶圆直径<br>Tip Diameter | 形状<br>Type | 齿宽<br>Face Width | 孔径<br>Bore Diameter | 轮毂外径<br>Hub Diameter | 轮毂长度<br>Hub Projection | 全长<br>Overall Length | 中心距<br>Center Distance | 蜗轮的螺旋方向和蜗杆头数<br>Hand and Thread for Worm | 重量<br>Weight |
|--------------------------|-------------------|-----------------------|------------------------|------------------------------|---------------------------|-----------------------|------------|------------------|---------------------|----------------------|------------------------|----------------------|------------------------|--|--------------|
|                          | $u$               | $z$                   | $d$                    | $x$                          | $d_r$                     | $d_a$                 |            | $b$              | $d_d(H8)$           | $d_h$                | $l_h$                  | $l$                  | $A$                    |  | $W(g)$       |
| G1DB 20 + R2             | 10                | 20                    | $\phi 20$              | -0.079                       | $\phi 22$                 | $\phi 23$             | 0B         | 8                | $\phi 6$            | $\phi 16$            | 9                      | 17                   | 18                     | R2                                       | 15.0         |
| G1DB 20 + R1             | 20                | 20                    | $\phi 20$              | -0.019                       | $\phi 22$                 | $\phi 23$             | 0B         | 8                | $\phi 6$            | $\phi 16$            | 9                      | 17                   | 18                     | R1                                       | 15.0         |
| G1DB 30 + R1             | 30                | 30                    | $\phi 30$              | -0.029                       | $\phi 32$                 | $\phi 33$             | 0B         | 8                | $\phi 6$            | $\phi 20$            | 9                      | 17                   | 23                     | R1                                       | 25.7         |
| G1D 20 - R2              | 10                | 20                    | $\phi 20$              | -0.079                       | $\phi 22$                 | $\phi 23.5$           | 1B         | 10               | $\phi 6$            | $\phi 17$            | 8                      | 18                   | 18                     | R2                                       | 6.0          |
| G1D 20 - R1              | 20                | 20                    | $\phi 20$              | -0.019                       | $\phi 22$                 | $\phi 23.5$           | 1B         | 10               | $\phi 6$            | $\phi 17$            | 8                      | 18                   | 18                     | R1                                       | 6.0          |
| G1D 30 - R2              | 15                | 30                    | $\phi 30$              | -0.118                       | $\phi 32$                 | $\phi 33.5$           | 1B         | 10               | $\phi 6$            | $\phi 22$            | 8                      | 18                   | 23                     | R2                                       | 14.0         |
| G1D 30 - R1              | 30                | 30                    | $\phi 30$              | -0.029                       | $\phi 32$                 | $\phi 33.5$           | 1B         | 10               | $\phi 6$            | $\phi 22$            | 8                      | 18                   | 23                     | R1                                       | 14.0         |
| G1D 40 - R1              | 40                | 40                    | $\phi 40$              | -0.039                       | $\phi 42$                 | $\phi 43.5$           | 1B         | 10               | $\phi 8$            | $\phi 25$            | 8                      | 18                   | 28                     | R1                                       | 22.2         |
| G1D 50 - R1              | 50                | 50                    | $\phi 50$              | -0.048                       | $\phi 52$                 | $\phi 53.5$           | 1B         | 10               | $\phi 8$            | $\phi 30$            | 8                      | 18                   | 33                     | R1                                       | 34.7         |
| G1D 60 - R1              | 60                | 60                    | $\phi 60$              | -0.058                       | $\phi 62$                 | $\phi 63.5$           | 1B         | 10               | $\phi 10$           | $\phi 30$            | 8                      | 18                   | 38                     | R1                                       | 46.0         |
| G1D 80 - R1              | 80                | 80                    | $\phi 80$              | -0.078                       | $\phi 82$                 | $\phi 83.5$           | 1B         | 10               | $\phi 10$           | $\phi 40$            | 8                      | 18                   | 48                     | R1                                       | 84.0         |
| G1D 100 - R1             | 100               | 100                   | $\phi 100$             | -0.098                       | $\phi 102$                | $\phi 103.5$          | 1B         | 10               | $\phi 10$           | $\phi 40$            | 8                      | 18                   | 58                     | R1                                       | 125.0        |

单位: mm

| 精度         | 材料     | 压力角  | 齿部加工方法 | 侧隙①  |
|------------|--------|------|--------|------|
| 无相应 JIS 规格 | 青色 POM | 20 度 | 切削     | 确认表格 |

★本产品的容许传达动力表使用 LOUIS 公式。请在 P28 确认单位换算方法。

★由于材料之特性，易产生由经年老化·热胀冷缩而引起的尺寸和精度的变化。

①一对相应蜗轮蜗杆相啮合时的侧隙。

②对蜗杆旋转速度的相应蜗轮的容许传达扭矩值。

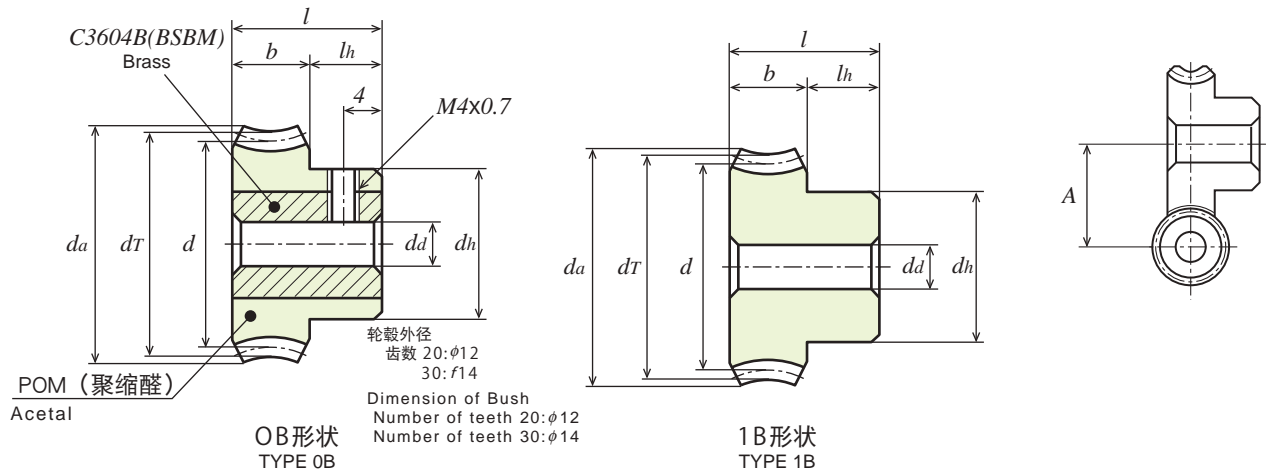
| 产品型号<br>Catalogue Number | 齿数比<br>Gear Ratio | 齿数<br>Number of Teeth | 节圆直径<br>Pitch Diameter | 变位系数<br>Addendum Coefficient | 蜗轮喉圆直径<br>Throat Diameter | 齿顶圆直径<br>Tip Diameter | 形状<br>Type | 齿宽<br>Face Width | 孔径<br>Bore Diameter | 轮毂外径<br>Hub Diameter | 轮毂长度<br>Hub Projection | 全长<br>Overall Length | 中心距<br>Center Distance | 蜗轮的螺旋方向和蜗杆头数<br>Hand and Thread for Worm | 重量<br>Weight |
|--------------------------|-------------------|-----------------------|------------------------|------------------------------|---------------------------|-----------------------|------------|------------------|---------------------|----------------------|------------------------|----------------------|------------------------|--|--------------|
|                          | $u$               | $z$                   | $d$                    | $x$                          | $d_r$                     | $d_a$                 |            | $b$              | $d_d$               | $d_h$                | $l_h$                  | $l$                  | $A$                    |  | $W(g)$       |
| G1BP 20 - R2             | 10                | 20                    | $\phi 20$              | -0.079                       | $\phi 22$                 | $\phi 23.5$           | 1B         | 10               | $\phi 5$            | $\phi 17$            | 8                      | 18                   | 18                     | R2                                       | 6.8          |
| G1BP 20 - R1             | 20                | 20                    | $\phi 20$              | -0.019                       | $\phi 22$                 | $\phi 23.5$           | 1B         | 10               | $\phi 5$            | $\phi 17$            | 8                      | 18                   | 18                     | R1                                       | 6.8          |
| G1BP 30 - R2             | 15                | 30                    | $\phi 30$              | -0.118                       | $\phi 32$                 | $\phi 33.5$           | 1B         | 10               | $\phi 6$            | $\phi 22$            | 8                      | 18                   | 23                     | R2                                       | 13.9         |
| G1BP 30 - R1             | 30                | 30                    | $\phi 30$              | -0.029                       | $\phi 32$                 | $\phi 33.5$           | 1B         | 10               | $\phi 6$            | $\phi 22$            | 8                      | 18                   | 23                     | R1                                       | 13.9         |
| G1BP 40 - R1             | 40                | 40                    | $\phi 40$              | -0.039                       | $\phi 42$                 | $\phi 43.5$           | 1B         | 10               | $\phi 8$            | $\phi 30$            | 8                      | 18                   | 28                     | R1                                       | 24.9         |
| G1BP 50 - R1             | 50                | 50                    | $\phi 50$              | -0.048                       | $\phi 52$                 | $\phi 53.5$           | 1B         | 10               | $\phi 8$            | $\phi 35$            | 8                      | 18                   | 33                     | R1                                       | 37.8         |
| G1BP 60 - R1             | 60                | 60                    | $\phi 60$              | -0.058                       | $\phi 62$                 | $\phi 63.5$           | 1B         | 10               | $\phi 8$            | $\phi 40$            | 8                      | 18                   | 38                     | R1                                       | 53.4         |
| G1BP 80 - R1             | 80                | 80                    | $\phi 80$              | -0.078                       | $\phi 82$                 | $\phi 83.5$           | 1B         | 10               | $\phi 10$           | $\phi 50$            | 8                      | 18                   | 48                     | R1                                       | 91.7         |
| G1BP 100 - R1            | 100               | 100                   | $\phi 100$             | -0.098                       | $\phi 102$                | $\phi 103.5$          | 1B         | 10               | $\phi 10$           | $\phi 60$            | 8                      | 18                   | 58                     | R1                                       | 141.3        |

单位: mm

| 精度         | 材料   | 压力角  | 齿部加工方法 |
|------------|------|------|--------|
| 无相应 JIS 规格 | S45C | 20 度 | 精密冷轧   |

★未做表面处理。★【+】表示带有螺纹孔, 有固定螺钉。

| 产品型号<br>Catalogue Number | 螺旋方向<br>Direction of Thread | 蜗杆头数<br>Number of Thread | 分度圆直径<br>Reference Diameter | 齿顶圆直径<br>Tip Diameter | 形状<br>Type | 齿宽<br>Face Width | 孔径<br>Bore Diameter | 轮毂外径<br>Hub Diameter | 轮毂长度<br>Hub Projection |                 | 全长<br>Overall Length | 键槽<br>Key Way | 导程角<br>Lead Angle | 重量<br>Weight |
|--------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------|------------|------------------|---------------------|----------------------|------------------------|-----------------|----------------------|---------------|-------------------|--------------|
|                          |                             |                          |                             |                       |            |                  |                     |                      | l <sub>HL</sub>        | l <sub>HR</sub> |                      |               |                   |              |
| W1S R1 = A               | R                           | 1                        | φ16                         | φ18                   | A          | 25               | φ8                  | -                    | -                      | -               | 25                   | 3 × 1.4       | 3°35'             | 28.0         |
| W1S R1 + B               | R                           | 1                        | φ16                         | φ18                   | B          | 17               | φ6                  | φ15.85               | -                      | 7               | 32                   | -             | 3°35'             | 42.0         |
| W1S R1 + B - 8           | R                           | 1                        | φ16                         | φ18                   | B          | 17               | φ8                  | φ15.85               | -                      | 7               | 32                   | -             | 3°35'             | 42.0         |
| W1S R1 - L               | R                           | 1                        | φ16                         | φ18                   | L          | 25               | -                   | φ13(h8)              | 25                     | 50              | 100                  | -             | 3°35'             | 120.0        |
| W1S R2 = A               | R                           | 2                        | φ16                         | φ18                   | A          | 25               | φ8                  | -                    | -                      | -               | 25                   | 3 × 1.4       | 7°11'             | 28.0         |
| W1S R2 + B               | R                           | 2                        | φ16                         | φ18                   | B          | 16.5             | φ6                  | φ15.85               | -                      | 7               | 32                   | -             | 7°11'             | 42.0         |
| W1S R2 + B - 8           | R                           | 2                        | φ16                         | φ18                   | B          | 16.5             | φ8                  | φ15.85               | -                      | 7               | 32                   | -             | 7°11'             | 42.0         |
| W1S R2 - L               | R                           | 2                        | φ16                         | φ18                   | L          | 25               | -                   | φ13(h8)              | 25                     | 50              | 100                  | -             | 7°11'             | 120.0        |
| W1S L1 = A               | L                           | 1                        | φ16                         | φ18                   | A          | 25               | φ8                  | -                    | -                      | -               | 25                   | 3 × 1.4       | 3°35'             | 28.0         |
| W1S L1 + B               | L                           | 1                        | φ16                         | φ18                   | B          | 17               | φ6                  | φ15.85               | -                      | 7               | 32                   | -             | 3°35'             | 42.0         |
| W1S L1 - L               | L                           | 1                        | φ16                         | φ18                   | L          | 25               | -                   | φ13(h8)              | 25                     | 50              | 100                  | -             | 3°35'             | 120.0        |
| W1S L2 = A               | L                           | 2                        | φ16                         | φ18                   | A          | 25               | φ8                  | -                    | -                      | -               | 25                   | 3 × 1.4       | 7°11'             | 28.0         |
| W1S L2 + B               | L                           | 2                        | φ16                         | φ18                   | B          | 16.5             | φ6                  | φ15.85               | -                      | 7               | 32                   | -             | 7°11'             | 42.0         |
| W1S L2 - L               | L                           | 2                        | φ16                         | φ18                   | L          | 25               | -                   | φ13(h8)              | 25                     | 50              | 100                  | -             | 7°11'             | 120.0        |



### 蜗轮的容许传达扭矩 (N · m) 齿面强度②

| 产品型号<br>Catalogue Numbers | 蜗杆的旋转速度 (min <sup>-1</sup> )<br>revolution/min |        |        |          |          |          |          | 侧隙<br>(mm)  |
|---------------------------|--|--------|--------|----------|----------|----------|----------|-------------|
|                           | 100rpm   | 250rpm | 500rpm | 1,000rpm | 1,200rpm | 1,500rpm | 1,800rpm |             |
| G1BP 20 - R2              | 0.63   | 0.63   | 0.63   | 0.63     | 0.62     | 0.62     | 0.62     | 0.08 ~ 0.20 |
| G1BP 20 - R1              | 0.63   | 0.63   | 0.63   | 0.62     | 0.62     | 0.62     | 0.62     | 0.08 ~ 0.20 |
| G1BP 30 - R2              | 0.95   | 0.95   | 0.95   | 0.94     | 0.93     | 0.93     | 0.93     | 0.08 ~ 0.20 |
| G1BP 30 - R1              | 0.95   | 0.95   | 0.95   | 0.93     | 0.93     | 0.92     | 0.92     | 0.08 ~ 0.20 |
| G1BP 40 - R1              | 1.26   | 1.26   | 1.26   | 1.24     | 1.24     | 1.23     | 1.23     | 0.08 ~ 0.20 |
| G1BP 50 - R1              | 1.58   | 1.58   | 1.58   | 1.55     | 1.55     | 1.54     | 1.54     | 0.08 ~ 0.20 |
| G1BP 60 - R1              | 1.89   | 1.89   | 1.89   | 1.86     | 1.86     | 1.85     | 1.85     | 0.08 ~ 0.20 |
| G1BP 80 - R1              | 2.52   | 2.52   | 2.52   | 2.49     | 2.48     | 2.47     | 2.47     | 0.08 ~ 0.20 |
| G1BP 100 - R1             | 3.15   | 3.15   | 3.15   | 3.11     | 3.10     | 3.08     | 3.08     | 0.15 ~ 0.30 |



单位：mm

| 精度         | 材料                             | 压力角  | 齿部加工方法 | 侧隙①  |
|------------|--------------------------------|------|--------|------|
| 无相应 JIS 规格 | CAC702 (铝青铜铸件) · C6191BE (铝青铜) | 20 度 | 切削     | 确认表格 |

★未做表面处理。【+】表示带有螺纹孔，有固定螺钉。【-】表示带有键槽和键。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①一对相应蜗轮蜗杆相啮合时的侧隙。

②对蜗杆旋转速度的相应蜗轮的容许传达扭矩值。

| 产品型号<br>Catalogue Number | 齿数比<br>Gear Ratio<br><i>u</i> | 齿数<br>Number of Teeth<br><i>z</i> | 节圆直径<br>Pitch Diameter<br><i>d</i> | 变系<br><i>x</i> | 位直<br>Throat Diameter<br><i>d<sub>t</sub></i> | 齿顶圆直径<br>Tip Diameter<br><i>d<sub>a</sub></i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>d<sub>d</sub>(H8)</i> | 轮毂外径<br>Hub Diameter<br><i>d<sub>h</sub></i> | 轮毂长度<br>Hub Projection<br><i>l<sub>h</sub></i> | 全长<br>Overall Length<br><i>l</i> | 键槽<br>Key Way<br><i>b<sub>2</sub> × l<sub>2</sub></i> | 中心距<br>Center Distance<br><i>A</i> | 蜗杆的螺旋方向和蜗杆头数<br>Hand and Thread for Worm | 重量<br>Weight<br><i>W(g)</i> |
|--------------------------|-------------------------------|-----------------------------------|------------------------------------|----------------|---|---|------------|------------------------------|---|--|--|----------------------------------|---|------------------------------------|--|-----------------------------|
| G1A 20R2 + 6             | 10                            | 20                                | φ20                                | -0.079         | φ22   | φ23.5   | 1B         | 10                           | φ6  | φ17  | 8  | 18                               | -   | 18                                 | R2                                       | 35.0                        |
| G1A 20R2 + 8             | 10                            | 20                                | φ20                                | -0.079         | φ22   | φ23.5   | 1B         | 10                           | φ8  | φ17  | 8  | 18                               | -   | 18                                 | R2                                       | 32.0                        |
| G1A 20R2 = 8             | 10                            | 20                                | φ20                                | -0.079         | φ22   | φ23.5   | 1B         | 10                           | φ8  | φ17  | 8  | 18                               | 3 × 1.4   | 18                                 | R2                                       | 31.7                        |
| G1A 20R1 + 6             | 20                            | 20                                | φ20                                | -0.019         | φ22   | φ23.5   | 1B         | 10                           | φ6  | φ17  | 8  | 18                               | -   | 18                                 | R1                                       | 35.0                        |
| G1A 20R1 + 8             | 20                            | 20                                | φ20                                | -0.019         | φ22   | φ23.5   | 1B         | 10                           | φ8  | φ17  | 8  | 18                               | -   | 18                                 | R1                                       | 32.0                        |
| G1A 20R1 = 8             | 20                            | 20                                | φ20                                | -0.019         | φ22   | φ23.5   | 1B         | 10                           | φ8  | φ17  | 8  | 18                               | 3 × 1.4   | 18                                 | R1                                       | 31.7                        |
| G1A 20L2 + 6             | 10                            | 20                                | φ20                                | -0.079         | φ22   | φ23.5   | 1B         | 10                           | φ6  | φ17  | 8  | 18                               | -   | 18                                 | L2                                       | 35.0                        |
| G1A 20L1 + 6             | 20                            | 20                                | φ20                                | -0.019         | φ22   | φ23.5   | 1B         | 10                           | φ6  | φ17  | 8  | 18                               | -   | 18                                 | L1                                       | 35.0                        |
| G1A 30R2 + 6             | 15                            | 30                                | φ30                                | -0.118         | φ32   | φ33.5   | 1B         | 10                           | φ6  | φ22  | 8  | 18                               | -   | 23                                 | R2                                       | 73.0                        |
| G1A 30R2 + 8             | 15                            | 30                                | φ30                                | -0.118         | φ32   | φ33.5   | 1B         | 10                           | φ8  | φ22  | 8  | 18                               | -   | 23                                 | R2                                       | 69.5                        |
| G1A 30R2 = 10            | 15                            | 30                                | φ30                                | -0.118         | φ32   | φ33.5   | 1B         | 10                           | φ10   | φ22  | 8  | 18                               | 3 × 1.4   | 23                                 | R2                                       | 66.0                        |
| G1A 30R1 + 6             | 30                            | 30                                | φ30                                | -0.029         | φ32   | φ33.5   | 1B         | 10                           | φ6  | φ22  | 8  | 18                               | -   | 23                                 | R1                                       | 73.0                        |
| G1A 30R1 + 8             | 30                            | 30                                | φ30                                | -0.029         | φ32   | φ33.5   | 1B         | 10                           | φ8  | φ22  | 8  | 18                               | -   | 23                                 | R1                                       | 69.5                        |
| G1A 30R1 = 10            | 30                            | 30                                | φ30                                | -0.029         | φ32   | φ33.5   | 1B         | 10                           | φ10   | φ22  | 8  | 18                               | 3 × 1.4   | 23                                 | R1                                       | 66.0                        |
| G1A 30L2 + 6             | 15                            | 30                                | φ30                                | -0.118         | φ32   | φ33.5   | 1B         | 10                           | φ6  | φ22  | 8  | 18                               | -   | 23                                 | L2                                       | 73.0                        |
| G1A 30L1 + 6             | 30                            | 30                                | φ30                                | -0.029         | φ32   | φ33.5   | 1B         | 10                           | φ6  | φ22  | 8  | 18                               | -   | 23                                 | L1                                       | 73.0                        |
| G1A 40R2 + 8             | 20                            | 40                                | φ40                                | -0.158         | φ42   | φ43.5   | 1B         | 10                           | φ8  | φ25  | 8  | 18                               | -   | 28                                 | R2                                       | 121.0                       |
| G1A 40R1 + 8             | 40                            | 40                                | φ40                                | -0.039         | φ42   | φ43.5   | 1B         | 10                           | φ8  | φ25  | 8  | 18                               | -   | 28                                 | R1                                       | 121.0                       |
| G1A 40R1 + 10            | 40                            | 40                                | φ40                                | -0.039         | φ42   | φ43.5   | 1B         | 10                           | φ10   | φ25  | 8  | 18                               | -   | 28                                 | R1                                       | 119.5                       |
| G1A 40R1 = 10            | 40                            | 40                                | φ40                                | -0.039         | φ42   | φ43.5   | 1B         | 10                           | φ10   | φ25  | 8  | 18                               | 3 × 1.4   | 28                                 | R1                                       | 118.0                       |
| G1A 40L2 + 8             | 20                            | 40                                | φ40                                | -0.158         | φ42   | φ43.5   | 1B         | 10                           | φ8  | φ25  | 8  | 18                               | -   | 28                                 | L2                                       | 121.0                       |
| G1A 40L1 + 8             | 40                            | 40                                | φ40                                | -0.039         | φ42   | φ43.5   | 1B         | 10                           | φ8  | φ25  | 8  | 18                               | -   | 28                                 | L1                                       | 120.0                       |
| G1A 50R2 + 8             | 25                            | 50                                | φ50                                | -0.197         | φ52   | φ53.5   | 1B         | 10                           | φ8  | φ30  | 8  | 18                               | -   | 33                                 | R2                                       | 190.0                       |
| G1A 50R1 + 8             | 50                            | 50                                | φ50                                | -0.048         | φ52   | φ53.5   | 1B         | 10                           | φ8  | φ30  | 8  | 18                               | -   | 33                                 | R1                                       | 190.0                       |
| G1A 50R1 + 10            | 50                            | 50                                | φ50                                | -0.048         | φ52   | φ53.5   | 1B         | 10                           | φ10   | φ30  | 8  | 18                               | -   | 33                                 | R1                                       | 187.5                       |
| G1A 50R1 = 12            | 50                            | 50                                | φ50                                | -0.048         | φ52   | φ53.5   | 1B         | 10                           | φ12   | φ30  | 8  | 18                               | 4 × 1.8   | 33                                 | R1                                       | 185.0                       |
| G1A 50L2 + 8             | 25                            | 50                                | φ50                                | -0.197         | φ52   | φ53.5   | 1B         | 10                           | φ8  | φ30  | 8  | 18                               | -   | 33                                 | L2                                       | 190.0                       |
| G1A 50L1 + 8             | 50                            | 50                                | φ50                                | -0.048         | φ52   | φ53.5   | 1B         | 10                           | φ8  | φ30  | 8  | 18                               | -   | 33                                 | L1                                       | 190.0                       |



请避免与 SUS304 材料的蜗杆相啮合。

单位：mm

| 精度         | 材料          | 压力角  | 齿部加工方法 | 侧隙①  |
|------------|-------------|------|--------|------|
| 无相应 JIS 规格 | FC200 (灰铸铁) | 20 度 | 切削     | 确认表格 |

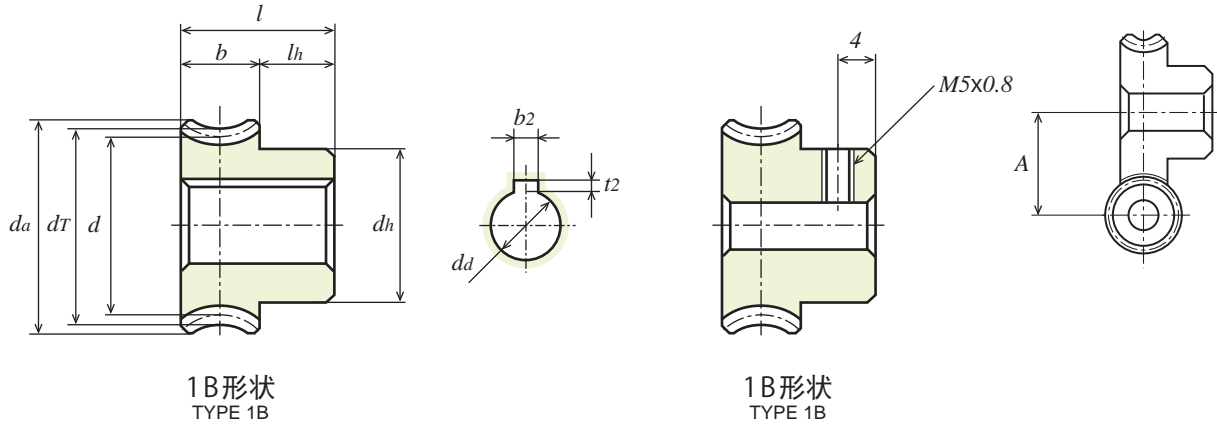
★未做表面处理。【+】表示带有螺纹孔，有固定螺钉。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①一对相应蜗轮蜗杆相啮合时的侧隙。

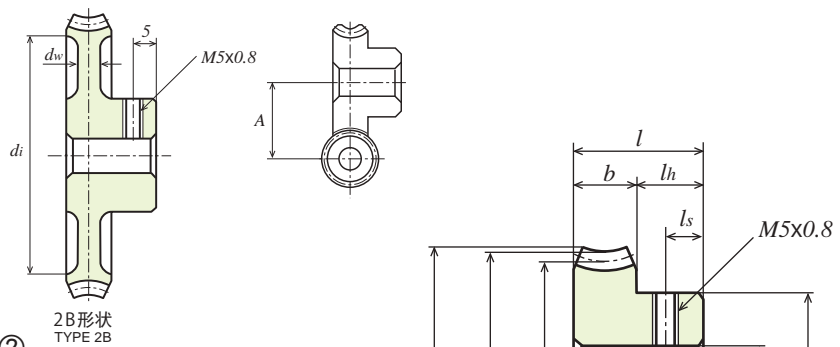
②对蜗杆旋转速度的相应蜗轮的容许传达扭矩值。

| 产品型号<br>Catalogue Number | 齿数比<br>Gear Ratio<br><i>u</i> | 齿数<br>Number of Teeth<br><i>z</i> | 节圆直径<br>Pitch Diameter<br><i>d</i> | 变系<br><i>x</i> | 位直<br>Throat Diameter<br><i>d<sub>t</sub></i> | 齿顶圆直径<br>Tip Diameter<br><i>d<sub>a</sub></i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>d<sub>d</sub>(H8)</i> | 轮毂外径<br>Hub Diameter<br><i>d<sub>h</sub></i> | 轮毂长度<br>Hub Projection<br><i>l<sub>h</sub></i> | 全长<br>Overall Length<br><i>l</i> | 轮圈内径<br>Dimension of Rim<br><i>d<sub>i</sub></i> | 腹板厚度<br>Thickness of Web<br><i>d<sub>w</sub></i> | 中心距<br>Center Distance<br><i>A</i> | 蜗杆的螺旋方向和蜗杆头数<br>Hand and Thread for Worm | 重量<br>Weight<br><i>W(g)</i> |
|--------------------------|-------------------------------|-----------------------------------|------------------------------------|----------------|---|---|------------|------------------------------|---|--|--|----------------------------------|--|--|------------------------------------|--|-----------------------------|
| G1C 30 + R1              | 30                            | 30                                | φ30                                | -0.029         | φ32   | φ33   | 1B         | 8                            | φ6  | φ20  | 9  | 17                               | -  | -  | 23                                 | R1                                       | 57.0                        |
| G1C 40 + R1              | 40                            | 40                                | φ40                                | -0.039         | φ42   | φ43   | 1B         | 8                            | φ8  | φ25  | 10   | 18                               | -  | -  | 28                                 | R1                                       | 100.0                       |
| G1C 50 + R1              | 50                            | 50                                | φ50                                | -0.048         | φ52   | φ53   | 1B         | 8                            | φ8  | φ30  | 10   | 18                               | -  | -  | 33                                 | R1                                       | 155.0                       |
| G1C 60 + R1              | 60                            | 60                                | φ60                                | -0.058         | φ62   | φ63   | 2B         | 8                            | φ10   | φ30  | 10   | 18                               | φ54  | 4  | 38                                 | R1                                       | 160.0                       |
| G1C 80 + R1              | 80                            | 80                                | φ80                                | -0.078         | φ82   | φ83   | 2B         | 8                            | φ10   | φ30  | 10   | 18                               | φ74  | 4  | 48                                 | R1                                       | 235.0                       |
| G1C 100 + R1             | 100                           | 100                               | φ100                               | -0.098         | φ102  | φ103  | 2B         | 8                            | φ10   | φ35  | 10   | 18                               | φ94  | 4  | 58                                 | R1                                       | 340.0                       |



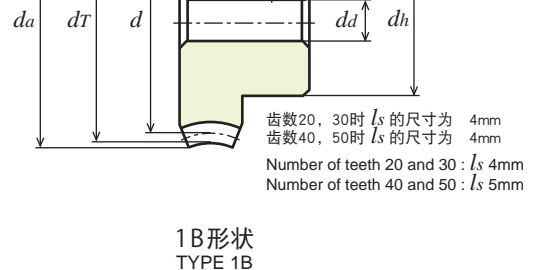
### 蜗轮的容许传达扭矩 (N · m) 齿面强度②

| 产品型号<br>Catalogue Numbers | 蜗轮的旋转速度 (min <sup>-1</sup> )<br>revolution/min (Rotating speed of worm) |        |        |          |          |          |          | 侧隙<br>(mm)  |
|---------------------------|---|--------|--------|----------|----------|----------|----------|-------------|
|                           | 100rpm  | 250rpm | 500rpm | 1,000rpm | 1,200rpm | 1,500rpm | 1,800rpm |             |
| G1A 20R2 + 6              | 2.185   | 1.793  | 1.479  | 1.185    | 1.107    | 1.009    | 0.980    | 0.08 ~ 0.20 |
| G1A 20R1 + 6              | 2.322   | 1.930  | 1.597  | 1.303    | 1.225    | 1.146    | 1.078    | 0.08 ~ 0.20 |
| G1A 20L2 + 6              | 2.185   | 1.793  | 1.479  | 1.185    | 1.107    | 1.009    | 0.980    | 0.08 ~ 0.20 |
| G1A 20L1 + 6              | 2.322   | 1.930  | 1.597  | 1.303    | 1.225    | 1.146    | 1.078    | 0.08 ~ 0.20 |
| G1A 30R2 + 6              | 4.488   | 3.547  | 2.900  | 2.312    | 2.175    | 1.989    | 1.852    | 0.08 ~ 0.20 |
| G1A 30R1 + 6              | 4.978   | 4.184  | 3.528  | 2.891    | 2.724    | 2.548    | 2.401    | 0.08 ~ 0.20 |
| G1A 30L2 + 6              | 4.488   | 3.547  | 2.900  | 2.312    | 2.175    | 1.989    | 1.852    | 0.08 ~ 0.20 |
| G1A 30L1 + 6              | 4.978   | 4.184  | 3.528  | 2.891    | 2.724    | 2.548    | 2.401    | 0.08 ~ 0.20 |
| G1A 40R2 + 8              | 8.339   | 6.918  | 5.742  | 4.684    | 4.390    | 4.096    | 3.861    | 0.08 ~ 0.20 |
| G1A 40R1 + 8              | 8.496   | 7.212  | 6.164  | 5.086    | 4.792    | 4.488    | 4.243    | 0.08 ~ 0.20 |
| G1A 40L2 + 8              | 8.339   | 6.918  | 5.742  | 4.684    | 4.390    | 4.096    | 3.861    | 0.08 ~ 0.20 |
| G1A 40L1 + 8              | 8.496   | 7.212  | 6.164  | 5.086    | 4.792    | 4.488    | 4.243    | 0.08 ~ 0.20 |
| G1A 50R2 + 8              | 12.965  | 10.838 | 8.878  | 7.271    | 6.830    | 6.379    | 6.017    | 0.08 ~ 0.20 |
| G1A 50R1 + 8              | 12.926  | 11.054 | 9.476  | 7.859    | 7.408    | 6.948    | 6.585    | 0.08 ~ 0.20 |
| G1A 50L2 + 8              | 12.965  | 10.838 | 8.878  | 7.271    | 6.830    | 6.379    | 6.017    | 0.08 ~ 0.20 |
| G1A 50L1 + 8              | 12.926  | 11.054 | 9.476  | 7.859    | 7.408    | 6.948    | 6.585    | 0.08 ~ 0.20 |



### 蜗轮的容许传达扭矩 (N · m) 齿面强度②

| 产品型号<br>Catalogue Numbers | 蜗轮的旋转速度 (min <sup>-1</sup> )<br>revolution/min (Rotating speed of worm) |        |        |        |        |        |        | 侧隙<br>(mm)  |
|---------------------------|---|--------|--------|--------|--------|--------|--------|-------------|
|                           | 10rpm   | 20rpm  | 50rpm  | 100rpm | 150rpm | 200rpm | 300rpm |             |
| G1C 30 + R1               | 4.909   | 4.606  | 4.125  | 3.773  | 3.528  | 3.332  | 3.057  | 0.08 ~ 0.20 |
| G1C 40 + R1               | 8.232   | 7.859  | 7.036  | 6.448  | 6.076  | 5.733  | 5.272  | 0.08 ~ 0.20 |
| G1C 50 + R1               | 12.348  | 11.858 | 10.682 | 9.770  | 9.202  | 8.761  | 8.045  | 0.08 ~ 0.20 |
| G1C 60 + R1               | 17.052  | 16.464 | 14.994 | 13.720 | 12.936 | 12.250 | 11.368 | 0.08 ~ 0.20 |
| G1C 80 + R1               | 28.714  | 27.636 | 25.480 | 23.422 | 22.050 | 20.972 | 19.502 | 0.08 ~ 0.20 |
| G1C 100 + R1              | 42.826  | 41.258 | 38.612 | 35.378 | 33.418 | 31.850 | 29.596 | 0.05 ~ 0.30 |

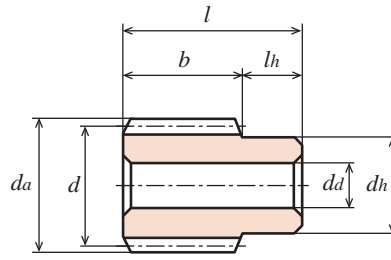


# 蜗杆和蜗轮

## WORMS AND WORM WHEELS

模数  
MODULE

1.25 (蜗轮的齿数 20 ~ 50) (普通齿) FULL DEPTH TOOTH



B形状  
TYPE B

单位：mm

| 精度         | 材料   | 压力角  | 齿部加工方法 |
|------------|------|------|--------|
| 无相应 JIS 规格 | S45C | 20 度 | 精密冷轧   |

★未做表面处理。

| 产品型号<br>Catalogue Number | 螺旋方向<br>Direction of Thread | 蜗杆头数<br>Number of Thread | 分度圆直径<br>Reference Diameter | 齿顶圆直径<br>Tip Diameter | 形状<br>Type | 齿宽<br>Face Width | 孔径<br>Bore Diameter | 轮毂外径<br>Hub Diameter | 轮毂长度<br>Hub Projection | 全长<br>Overall Length | 导程角<br>Lead Angle | 重量<br>Weight |
|--------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------|------------|------------------|---------------------|----------------------|------------------------|----------------------|-------------------|--------------|
|                          |                             | $z$                      | $d$                         | $d_a$                 |            | $b$              | $dd(H8)$            | $d_h$                | $l_h$                  | $l$                  | $\gamma$          | $W(g)$       |
| <b>W1.25S R1 - B</b>     | R                           | 1                        | $\phi 20$                   | $\phi 22.5$           | B          | 25               | $\phi 8$            | $\phi 16.8$          | 12                     | 37                   | 3°35'             | 65.2         |



单位：mm

| 精度         | 材料     | 压力角  | 齿部加工方法 | 侧隙①  |
|------------|--------|------|--------|------|
| 无相应 JIS 规格 | 白色 POM | 20 度 | 切削     | 确认表格 |

★本产品的容许传达动力表使用 LOUIS 公式。请在 P28 确认单位换算方法。

★由于材料之特性，易产生由经年老化·热胀冷缩而引起的尺寸和精度的变化。

①一对相应蜗轮蜗杆相啮合时的侧隙。

| 产品型号<br>Catalogue Number | 齿数比<br>Gear Ratio | 齿数<br>Number of Teeth | 节圆直径<br>Pitch Diameter | 变位系数<br>Addendum Coefficient | 蜗轮喉圆直径<br>Throat Diameter | 齿顶圆直径<br>Tip Diameter | 形状<br>Type | 齿宽<br>Face Width | 孔径<br>Bore Diameter | 轮毂外径<br>Hub Diameter | 轮毂长度<br>Hub Projection | 全长<br>Overall Length | 中心距<br>Center Distance | 蜗轮的螺旋方向和蜗杆头数<br>Hand and Thread for Worm | 重量<br>Weight |
|--------------------------|-------------------|-----------------------|------------------------|------------------------------|---------------------------|-----------------------|------------|------------------|---------------------|----------------------|------------------------|----------------------|------------------------|--|--------------|
|                          | $u$               | $z$                   | $d$                    | $x$                          | $dr$                      | $d_a$                 |            | $b$              | $dd$                | $d_h$                | $l_h$                  | $l$                  | $A$                    |  | $W(g)$       |
| <b>G1.25D 20 - R1</b>    | 20                | 20                    | $\phi 25$              | -0.020                       | $\phi 27.5$               | $\phi 29.55$          | 1B         | 12               | $\phi 6$            | $\phi 18$            | 10                     | 22                   | 22.5                   | R1                                       | 11.1         |
| <b>G1.25D 30 - R1</b>    | 30                | 30                    | $\phi 37$              | -0.229                       | $\phi 39.5$               | $\phi 41.55$          | 1B         | 12               | $\phi 8$            | $\phi 25$            | 10                     | 22                   | 28.5                   | R1                                       | 24.0         |
| <b>G1.25D 40 - R1</b>    | 40                | 40                    | $\phi 50$              | -0.039                       | $\phi 52.5$               | $\phi 54.55$          | 1B         | 12               | $\phi 10$           | $\phi 35$            | 10                     | 22                   | 35.0                   | R1                                       | 45.0         |
| <b>G1.25D 50 - R1</b>    | 50                | 50                    | $\phi 63$              | 0.151                        | $\phi 65.5$               | $\phi 67.55$          | 1B         | 12               | $\phi 10$           | $\phi 35$            | 10                     | 22                   | 41.5                   | R1                                       | 65.0         |



| 侧隙<br>(mm)  |
|-------------|
| 0.08 ~ 0.20 |
| 0.08 ~ 0.20 |
| 0.08 ~ 0.20 |
| 0.08 ~ 0.20 |

# 蜗杆和蜗轮

## WORMS AND WORM WHEELS

模数  
MODULE

1.5 (蜗轮的齿数 20 ~ 50)

(普通齿)  
FULL DEPTH TOOTH

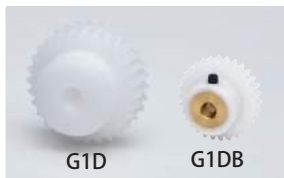


单位: mm

| 精度         | 材料     | 压力角  | 齿部加工方法 |
|------------|--------|------|--------|
| 无相应 JIS 规格 | SUS304 | 20 度 | 精密冷轧   |

★未做表面处理。

| 产品型号<br>Catalogue Number | 螺旋方向<br>Direction of Thread | 蜗杆头数<br>Number of Thread<br>$z$ | 分度圆直径<br>Reference Diameter<br>$d$ | 齿顶圆直径<br>Tip Diameter<br>$d_a$ | 形状<br>Type | 齿宽<br>Face Width<br>$b$ | 孔径<br>Bore Diameter<br>$d_d(H8)$ | 轮毂外径<br>Hub Diameter<br>$d_h$ | 轮毂长度<br>Hub Projection<br>$l_h$ | 全长<br>Overall Length<br>$l$ | 导程角<br>Lead Angle<br>$\gamma$ | 重量<br>Weight<br>$W(g)$ |
|--------------------------|-----------------------------|---------------------------------|------------------------------------|--------------------------------|------------|-------------------------|----------------------------------|-------------------------------|---------------------------------|-----------------------------|-------------------------------|------------------------|
| <b>W1.5SU R1 - B</b>     | R                           | 1                               | $\phi 25$                          | $\phi 28$                      | B          | 30                      | $\phi 10$                        | $\phi 20$                     | 13                              | 43                          | 3°26'                         | 120.0                  |
| <b>W1.5SU R2 - B</b>     | R                           | 2                               | $\phi 25$                          | $\phi 28$                      | B          | 30                      | $\phi 10$                        | $\phi 20$                     | 13                              | 43                          | 6°54'                         | 120.0                  |



单位: mm

| 精度         | 材料       | 压力角  | 齿部加工方法 | 侧隙①  |
|------------|----------|------|--------|------|
| 无相应 JIS 规格 | 白色 POM ③ | 20 度 | 切削     | 确认表格 |

★【+】表示带有螺纹孔，有固定螺钉。

★本产品的容许传达动力表使用 LOUIS 公式。请在 P28 确认单位换算方法。

★关于本产品的容许传达扭矩值以及侧隙，请确认青色 POM 产品的相应数据。

★由于材料之特性，易产生由经年老化·热胀冷缩而引起的尺寸和精度的变化。

①一对相应蜗轮蜗杆相啮合时的侧隙。

②对蜗轮旋转速度的相应蜗轮的容许传达扭矩值。

③ G1D 产品只用白色 POM 构成。G1DB 产品在白色 POM 构成的蜗轮齿孔部镶有黄铜 (C3604) 衬套。

| 产品型号<br>Catalogue Number | 齿数比<br>Gear Ratio<br>$u$ | 齿数<br>Number of Teeth<br>$z$ | 节圆直径<br>Pitch Diameter<br>$d$ | 变位系数<br>Addendum Coefficient<br>$x$ | 蜗轮喉圆直径<br>Throat Diameter<br>$d_T$ | 齿顶圆直径<br>Tip Diameter<br>$d_a$ | 形状<br>Type | 齿宽<br>Face Width<br>$b$ | 孔径<br>Bore Diameter<br>$d_d$ | 轮毂外径<br>Hub Diameter<br>$d_h$ | 轮毂长度<br>Hub Projection<br>$l_h$ | 全长<br>Overall Length<br>$l$ | 中心距<br>Center Distance<br>$A$ | 蜗杆的螺旋方向和蜗杆头数<br>Hand and Thread for Worm | 重量<br>Weight<br>$W(g)$ |
|--------------------------|--------------------------|------------------------------|-------------------------------|-------------------------------------|------------------------------------|--------------------------------|------------|-------------------------|------------------------------|-------------------------------|---------------------------------|-----------------------------|-------------------------------|--|------------------------|
| <b>G1.5DB 20 - R2</b>    | 10                       | 20                           | $\phi 30$                     | -0.072                              | $\phi 33$                          | $\phi 34.3$                    | 0B         | 10                      | $\phi 8$                     | $\phi 22$                     | 10                              | 20                          | 27.5                          | R2                                       | 35.0                   |
| <b>G1.5DB 20 - R1</b>    | 20                       | 20                           | $\phi 30$                     | -0.018                              | $\phi 33$                          | $\phi 34.3$                    | 0B         | 10                      | $\phi 8$                     | $\phi 22$                     | 10                              | 20                          | 27.5                          | R1                                       | 35.0                   |
| <b>G1.5D 20 - R2</b>     | 10                       | 20                           | $\phi 30$                     | -0.072                              | $\phi 33$                          | $\phi 35.3$                    | 1B         | 15                      | $\phi 8$                     | $\phi 25$                     | 10                              | 25                          | 27.5                          | R2                                       | 21.0                   |
| <b>G1.5D 20 - R1</b>     | 20                       | 20                           | $\phi 30$                     | -0.018                              | $\phi 33$                          | $\phi 35.3$                    | 1B         | 15                      | $\phi 8$                     | $\phi 25$                     | 10                              | 25                          | 27.5                          | R1                                       | 21.0                   |
| <b>G1.5D 30 - R2</b>     | 15                       | 30                           | $\phi 45$                     | -0.109                              | $\phi 48$                          | $\phi 50.3$                    | 1B         | 15                      | $\phi 10$                    | $\phi 30$                     | 10                              | 25                          | 35                            | R2                                       | 42.0                   |
| <b>G1.5D 30 - R1</b>     | 30                       | 30                           | $\phi 45$                     | -0.027                              | $\phi 48$                          | $\phi 50.3$                    | 1B         | 15                      | $\phi 10$                    | $\phi 30$                     | 10                              | 25                          | 35                            | R1                                       | 42.0                   |
| <b>G1.5D 40 - R1</b>     | 40                       | 40                           | $\phi 60$                     | -0.036                              | $\phi 63$                          | $\phi 65.3$                    | 1B         | 15                      | $\phi 12$                    | $\phi 36$                     | 13                              | 28                          | 42.5                          | R1                                       | 75.0                   |
| <b>G1.5D 50 - R1</b>     | 50                       | 50                           | $\phi 75$                     | -0.045                              | $\phi 78$                          | $\phi 80.3$                    | 1B         | 15                      | $\phi 12$                    | $\phi 40$                     | 13                              | 28                          | 50                            | R1                                       | 114.0                  |



单位: mm

| 精度         | 材料     | 压力角  | 齿部加工方法 | 侧隙①  |
|------------|--------|------|--------|------|
| 无相应 JIS 规格 | 青色 POM | 20 度 | 切削     | 确认表格 |

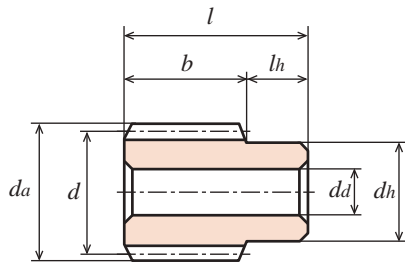
★本产品的容许传达动力表使用 LOUIS 公式。请在 P28 确认单位换算方法。

★由于材料之特性，易产生由经年老化·热胀冷缩而引起的尺寸和精度的变化。

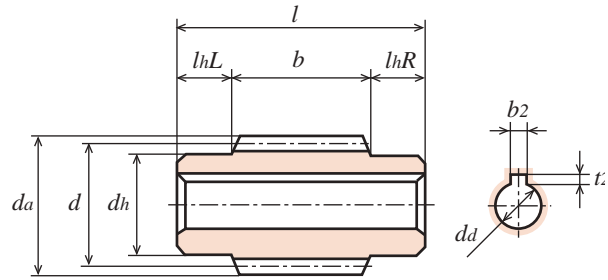
①一对相应蜗轮蜗杆相啮合时的侧隙。

②对蜗轮旋转速度的相应蜗轮的容许传达扭矩值。

| 产品型号<br>Catalogue Number | 齿数比<br>Gear Ratio<br>$u$ | 齿数<br>Number of Teeth<br>$z$ | 节圆直径<br>Pitch Diameter<br>$d$ | 变位系数<br>Addendum Coefficient<br>$x$ | 蜗轮喉圆直径<br>Throat Diameter<br>$d_T$ | 齿顶圆直径<br>Tip Diameter<br>$d_a$ | 形状<br>Type | 齿宽<br>Face Width<br>$b$ | 孔径<br>Bore Diameter<br>$d_d$ | 轮毂外径<br>Hub Diameter<br>$d_h$ | 轮毂长度<br>Hub Projection<br>$l_h$ | 全长<br>Overall Length<br>$l$ | 螺纹孔<br>Set Screw |       | 中心距<br>Center Distance<br>$A$ | 蜗杆的螺旋方向和蜗杆头数<br>Hand and Thread for Worm | 重量<br>Weight<br>$W(g)$ |
|--------------------------|--------------------------|------------------------------|-------------------------------|-------------------------------------|------------------------------------|--------------------------------|------------|-------------------------|------------------------------|-------------------------------|---------------------------------|-----------------------------|------------------|-------|-------------------------------|--|------------------------|
|                          |                          |                              |                               |                                     |                                    |                                |            |                         |                              |                               |                                 |                             | $M$              | $l_s$ |                               |  |                        |
| <b>G1.5BP 20 - R2</b>    | 10                       | 20                           | $\phi 30$                     | -0.072                              | $\phi 33$                          | $\phi 35.3$                    | 1B         | 15                      | $\phi 6$                     | $\phi 25$                     | 10                              | 25                          | -                | -     | 27.5                          | R2                                       | 22.0                   |
| <b>G1.5BP 20 - R1</b>    | 20                       | 20                           | $\phi 30$                     | -0.018                              | $\phi 33$                          | $\phi 35.3$                    | 1B         | 15                      | $\phi 6$                     | $\phi 25$                     | 10                              | 25                          | -                | -     | 27.5                          | R1                                       | 22.0                   |
| <b>G1.5BP 30 - R2</b>    | 15                       | 30                           | $\phi 45$                     | -0.109                              | $\phi 48$                          | $\phi 50.3$                    | 1B         | 15                      | $\phi 8$                     | $\phi 30$                     | 10                              | 25                          | -                | -     | 35                            | R2                                       | 43.4                   |
| <b>G1.5BP 30 - R1</b>    | 30                       | 30                           | $\phi 45$                     | -0.027                              | $\phi 48$                          | $\phi 50.3$                    | 1B         | 15                      | $\phi 8$                     | $\phi 30$                     | 10                              | 25                          | -                | -     | 35                            | R1                                       | 43.4                   |
| <b>G1.5BP 40 - R1</b>    | 40                       | 40                           | $\phi 60$                     | -0.036                              | $\phi 63$                          | $\phi 65.3$                    | 1B         | 15                      | $\phi 10$                    | $\phi 40$                     | 13                              | 28                          | -                | -     | 42.5                          | R1                                       | 81.6                   |
| <b>G1.5BP 50 - R1</b>    | 50                       | 50                           | $\phi 75$                     | -0.045                              | $\phi 78$                          | $\phi 80.3$                    | 1B         | 15                      | $\phi 10$                    | $\phi 50$                     | 13                              | 28                          | -                | -     | 50                            | R1                                       | 128.5                  |



B形状  
TYPE B

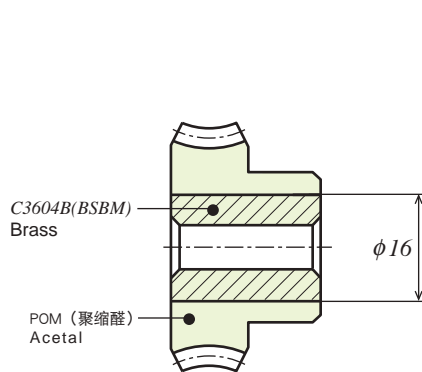


C形状  
TYPE C

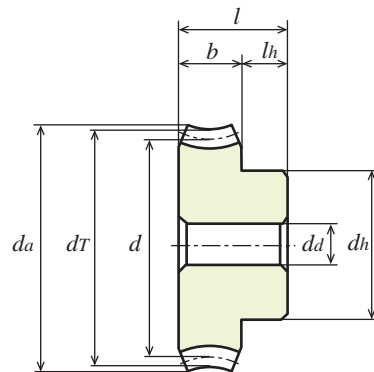
| 精度         | 材料   | 压力角  | 齿部加工方法 |
|------------|------|------|--------|
| 无相应 JIS 规格 | S45C | 20 度 | 精密冷轧   |

★未做表面处理。

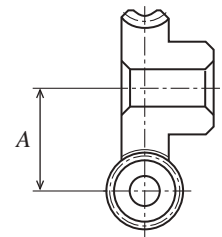
| 产品型号<br>Catalogue Number | 螺旋方向<br>Direction of Thread | 蜗杆头数<br>Number of Thread | 分度圆直径<br>Reference Diameter | 齿顶圆直径<br>Tip Diameter | 形状<br>Type | 齿宽<br>Face Width | 孔径<br>Bore Diameter | 轮毂外径<br>Hub Diameter | 轮毂长度<br>Hub Projection |     | 全长<br>Overall Length | 键槽<br>Key Way | 导程角<br>Lead Angle | 重量<br>Weight |
|--------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------|------------|------------------|---------------------|----------------------|------------------------|-----|----------------------|---------------|-------------------|--------------|
|                          |                             |                          |                             |                       |            |                  |                     |                      | lhL                    | lhR |                      |               |                   |              |
| <b>W1.5S R1 - B</b>      | R                           | 1                        | φ25                         | φ28                   | B          | 30               | φ10                 | φ20                  | -                      | 13  | 43                   | -             | 3°26'             | 0.12         |
| <b>W1.5S R1 - CF</b>     | R                           | 1                        | φ25                         | φ28                   | C          | 35               | φ12                 | φ20                  | 10                     | 10  | 55                   | -             | 3°26'             | 0.14         |
| <b>W1.5S R1 = C</b>      | R                           | 1                        | φ25                         | φ28                   | C          | 35               | φ12                 | φ20                  | 10                     | 10  | 55                   | 4 × 1.8       | 3°26'             | 0.13         |
| <b>W1.5S R2 - B</b>      | R                           | 2                        | φ25                         | φ28                   | B          | 30               | φ10                 | φ20                  | -                      | 13  | 43                   | -             | 6°54'             | 0.12         |
| <b>W1.5S R2 - CF</b>     | R                           | 2                        | φ25                         | φ28                   | C          | 35               | φ12                 | φ20                  | 10                     | 10  | 55                   | -             | 6°54'             | 0.14         |
| <b>W1.5S R2 = C</b>      | R                           | 2                        | φ25                         | φ28                   | C          | 35               | φ12                 | φ20                  | 10                     | 10  | 55                   | 4 × 1.8       | 6°54'             | 0.13         |
| <b>W1.5S L1 - B</b>      | L                           | 1                        | φ25                         | φ28                   | B          | 30               | φ10                 | φ20                  | -                      | 13  | 43                   | -             | 3°26'             | 0.12         |
| <b>W1.5S L1 = C</b>      | L                           | 1                        | φ25                         | φ28                   | C          | 35               | φ12                 | φ20                  | 10                     | 10  | 55                   | 4 × 1.8       | 3°26'             | 0.13         |
| <b>W1.5S L2 - B</b>      | L                           | 2                        | φ25                         | φ28                   | B          | 30               | φ10                 | φ20                  | -                      | 13  | 43                   | -             | 6°54'             | 0.12         |
| <b>W1.5S L2 = C</b>      | L                           | 2                        | φ25                         | φ28                   | C          | 35               | φ12                 | φ20                  | 10                     | 10  | 55                   | 4 × 1.8       | 6°54'             | 0.13         |



OB形状  
TYPE 0B



1B形状  
TYPE 1B



## 蜗轮的容许传达扭矩 (N · m) 齿面强度②

| 产品型号<br>Catalogue Numbers | 蜗杆的旋转速度 (min <sup>-1</sup> )<br>revolution/min |        |        |          |          |          |          | 侧隙<br>(mm)  |
|---------------------------|--|--------|--------|----------|----------|----------|----------|-------------|
|                           | 100rpm   | 250rpm | 500rpm | 1,000rpm | 1,200rpm | 1,500rpm | 1,800rpm |             |
| <b>G1.5BP 20 - R2</b>     | 1.22   | 1.22   | 1.21   | 1.20     | 1.20     | 1.19     | 1.19     | 0.08 ~ 0.20 |
| <b>G1.5BP 20 - R1</b>     | 1.21   | 1.21   | 1.21   | 1.19     | 1.19     | 1.18     | 1.18     | 0.08 ~ 0.20 |
| <b>G1.5BP 30 - R2</b>     | 1.83   | 1.83   | 1.82   | 1.79     | 1.79     | 1.79     | 1.78     | 0.08 ~ 0.20 |
| <b>G1.5BP 30 - R1</b>     | 1.82   | 1.82   | 1.81   | 1.78     | 1.78     | 1.78     | 1.77     | 0.08 ~ 0.20 |
| <b>G1.5BP 40 - R1</b>     | 2.43   | 2.43   | 2.41   | 2.38     | 2.38     | 2.37     | 2.36     | 0.08 ~ 0.20 |
| <b>G1.5BP 50 - R1</b>     | 3.04   | 3.04   | 3.02   | 2.97     | 2.97     | 2.96     | 2.95     | 0.08 ~ 0.20 |



单位: mm

| 精度         | 材料                             | 压力角  | 齿部加工方法 | 侧隙①  |
|------------|--------------------------------|------|--------|------|
| 无相应 JIS 规格 | CAC702 (铝青铜铸件) · C6191BE (铝青铜) | 20 度 | 切削     | 确认表格 |

★未做表面处理。【=】表示带有键槽和键。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①一对相应蜗轮蜗杆相啮合时的侧隙。

②对蜗杆旋转速度的相应蜗轮的容许传达扭矩值。

| 产品型号<br>Catalogue Number | 齿数比<br>Gear Ratio<br><i>u</i> | 齿数<br>Number of Teeth<br><i>z</i> | 节圆直径<br>Pitch Diameter<br><i>d</i> | 变位系数<br><i>x</i> | 蜗轮喉圆直径<br>Throat Diameter<br><i>d<sub>T</sub></i> | 齿顶圆直径<br>Tip Diameter<br><i>d<sub>a</sub></i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>d<sub>d</sub>(H8)</i> | 轮毂外径<br>Hub Diameter<br><i>d<sub>h</sub></i> | 轮毂长度<br>Hub Projection<br><i>l<sub>h</sub></i> | 全长<br>Overall Length<br><i>l</i> | 键槽<br>Key Way<br><i>b<sub>2</sub> × l<sub>2</sub></i> | 中心距<br>Center Distance<br><i>A</i> | 蜗杆的螺旋方向和蜗杆头数<br>Hand and Thread for Worm | 重量<br>Weight<br><i>W(kg)</i> |
|--------------------------|-------------------------------|-----------------------------------|------------------------------------|------------------|---|---|------------|------------------------------|---|--|--|----------------------------------|---|------------------------------------|--|------------------------------|
| G1.5A 20R2 - 8           | 10                            | 20                                | φ30                                | -0.072           | φ33   | φ35.3   | 1B         | 15                           | φ8  | φ25  | 10   | 25                               | -   | 27.5                               | R2                                       | 0.11                         |
| G1.5A 20R2 = 12          | 10                            | 20                                | φ30                                | -0.072           | φ33   | φ35.3   | 1B         | 15                           | φ12   | φ25  | 10   | 25                               | 4 × 1.8   | 27.5                               | R2                                       | 0.10                         |
| G1.5A 20R1 - 8           | 20                            | 20                                | φ30                                | -0.018           | φ33   | φ35.3   | 1B         | 15                           | φ8  | φ25  | 10   | 25                               | -   | 27.5                               | R1                                       | 0.11                         |
| G1.5A 20R1 = 12          | 20                            | 20                                | φ30                                | -0.018           | φ33   | φ35.3   | 1B         | 15                           | φ12   | φ25  | 10   | 25                               | 4 × 1.8   | 27.5                               | R1                                       | 0.11                         |
| G1.5A 20L2 - 8           | 10                            | 20                                | φ30                                | -0.072           | φ33   | φ35.3   | 1B         | 15                           | φ8  | φ25  | 10   | 25                               | -   | 27.5                               | L2                                       | 0.11                         |
| G1.5A 20L1 - 8           | 20                            | 20                                | φ30                                | -0.018           | φ33   | φ35.3   | 1B         | 15                           | φ8  | φ25  | 10   | 25                               | -   | 27.5                               | L1                                       | 0.11                         |
| G1.5A 30R2 - 10          | 15                            | 30                                | φ45                                | -0.109           | φ48   | φ50.3   | 1B         | 15                           | φ10   | φ30  | 10   | 25                               | -   | 35                                 | R2                                       | 0.23                         |
| G1.5A 30R2 = 15          | 15                            | 30                                | φ45                                | -0.109           | φ48   | φ50.3   | 1B         | 15                           | φ15   | φ30  | 10   | 25                               | 5 × 2.3   | 35                                 | R2                                       | 0.18                         |
| G1.5A 30R1 - 10          | 30                            | 30                                | φ45                                | -0.027           | φ48   | φ50.3   | 1B         | 15                           | φ10   | φ30  | 10   | 25                               | -   | 35                                 | R1                                       | 0.23                         |
| G1.5A 30R1 = 15          | 30                            | 30                                | φ45                                | -0.027           | φ48   | φ50.3   | 1B         | 15                           | φ15   | φ30  | 10   | 25                               | 5 × 2.3   | 35                                 | R1                                       | 0.18                         |
| G1.5A 30L2 - 10          | 15                            | 30                                | φ45                                | -0.109           | φ48   | φ50.3   | 1B         | 15                           | φ10   | φ30  | 10   | 25                               | -   | 35                                 | L2                                       | 0.23                         |
| G1.5A 30L1 - 10          | 30                            | 30                                | φ45                                | -0.027           | φ48   | φ50.3   | 1B         | 15                           | φ10   | φ30  | 10   | 25                               | -   | 35                                 | L1                                       | 0.23                         |
| G1.5A 40R2 - 12          | 20                            | 40                                | φ60                                | -0.145           | φ63   | φ65.3   | 1BT        | 15                           | φ12   | φ36  | 13   | 28                               | -   | 42.5                               | R2                                       | 0.36                         |
| G1.5A 40R1 - 12          | 40                            | 40                                | φ60                                | -0.036           | φ63   | φ65.3   | 1BT        | 15                           | φ12   | φ36  | 13   | 28                               | -   | 42.5                               | R1                                       | 0.36                         |
| G1.5A 40R1 = 16          | 40                            | 40                                | φ60                                | -0.036           | φ63   | φ65.3   | 1BT        | 15                           | φ16   | φ36  | 13   | 28                               | 5 × 2.3   | 42.5                               | R1                                       | 0.33                         |
| G1.5A 40L2 - 12          | 20                            | 40                                | φ60                                | -0.145           | φ63   | φ65.3   | 1BT        | 15                           | φ12   | φ36  | 13   | 28                               | -   | 42.5                               | L2                                       | 0.36                         |
| G1.5A 40L1 - 12          | 40                            | 40                                | φ60                                | -0.036           | φ63   | φ65.3   | 1BT        | 15                           | φ12   | φ36  | 13   | 28                               | -   | 42.5                               | L1                                       | 0.36                         |
| G1.5A 50R2 - 12          | 25                            | 50                                | φ75                                | -0.181           | φ78   | φ80.3   | 1BT        | 15                           | φ12   | φ40  | 13   | 28                               | -   | 50                                 | R2                                       | 0.53                         |
| G1.5A 50R1 - 12          | 50                            | 50                                | φ75                                | -0.045           | φ78   | φ80.3   | 1BT        | 15                           | φ12   | φ40  | 13   | 28                               | -   | 50                                 | R1                                       | 0.53                         |
| G1.5A 50R1 = 20          | 50                            | 50                                | φ75                                | -0.045           | φ78   | φ80.3   | 1BT        | 15                           | φ20   | φ40  | 13   | 28                               | 6 × 2.8   | 50                                 | R1                                       | 0.48                         |
| G1.5A 50L2 - 12          | 25                            | 50                                | φ75                                | -0.181           | φ78   | φ80.3   | 1BT        | 15                           | φ12   | φ40  | 13   | 28                               | -   | 50                                 | L2                                       | 0.53                         |
| G1.5A 50L1 - 12          | 50                            | 50                                | φ75                                | -0.045           | φ78   | φ80.3   | 1BT        | 15                           | φ12   | φ40  | 13   | 28                               | -   | 50                                 | L1                                       | 0.53                         |



请避免与 SUS304 材料的蜗杆相啮合。

单位: mm

| 精度         | 材料          | 压力角  | 齿部加工方法 | 侧隙①  |
|------------|-------------|------|--------|------|
| 无相应 JIS 规格 | FC200 (灰铸铁) | 20 度 | 切削     | 确认表格 |

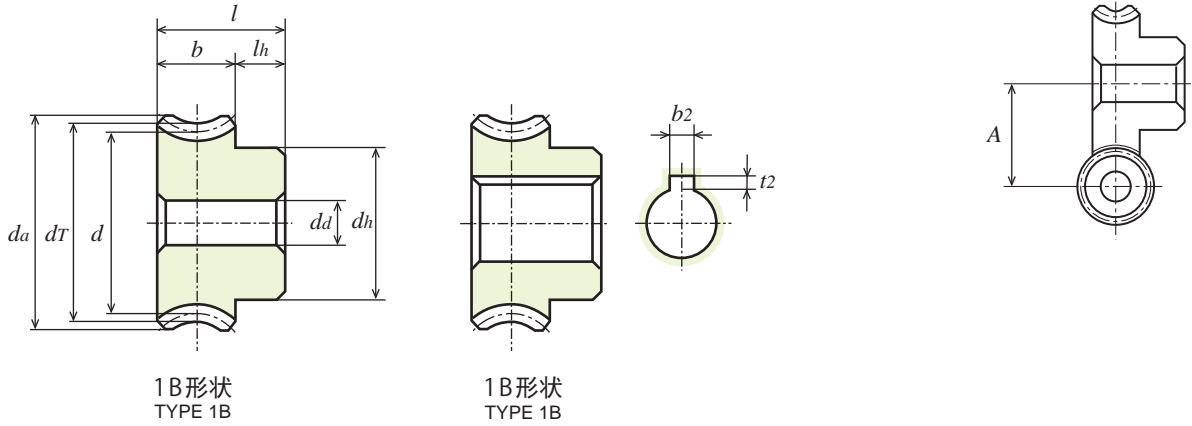
★未做表面处理。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①一对相应蜗轮蜗杆相啮合时的侧隙。

②对蜗杆旋转速度的相应蜗轮的容许传达扭矩值。

| 产品型号<br>Catalogue Number | 齿数比<br>Gear Ratio<br><i>u</i> | 齿数<br>Number of Teeth<br><i>z</i> | 节圆直径<br>Pitch Diameter<br><i>d</i> | 变位系数<br><i>x</i> | 蜗轮喉圆直径<br>Throat Diameter<br><i>d<sub>T</sub></i> | 齿顶圆直径<br>Tip Diameter<br><i>d<sub>a</sub></i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>d<sub>d</sub>(H8)</i> | 轮毂外径<br>Hub Diameter<br><i>d<sub>h</sub></i> | 轮毂长度<br>Hub Projection<br><i>l<sub>h</sub></i> | 全长<br>Overall Length<br><i>l</i> | 轮圈厚度<br>Dimension of Rim<br><i>d<sub>i</sub></i> | 腹板厚度<br>Thickness of Web<br><i>d<sub>w</sub></i> | 中心距<br>Center Distance<br><i>A</i> | 蜗杆的螺旋方向和蜗杆头数<br>Hand and Thread for Worm | 重量<br>Weight<br><i>W(kg)</i> |
|--------------------------|-------------------------------|-----------------------------------|------------------------------------|------------------|---|---|------------|------------------------------|---|--|--|----------------------------------|--|--|------------------------------------|--|------------------------------|
| G1.5C 20 - R2            | 10                            | 20                                | φ30                                | -0.072           | φ33   | φ34.3   | 1B         | 10                           | φ8  | φ22  | 10   | 20                               | -  | -  | 27.5                               | R2                                       | 0.07                         |
| G1.5C 20 - R1            | 20                            | 20                                | φ30                                | -0.018           | φ33   | φ34.3   | 1B         | 10                           | φ8  | φ22  | 10   | 20                               | -  | -  | 27.5                               | R1                                       | 0.07                         |
| G1.5C 30 - R2            | 15                            | 30                                | φ45                                | -0.109           | φ48   | φ50   | 1B         | 12                           | φ10   | φ30  | 10   | 22                               | -  | -  | 35                                 | R2                                       | 0.18                         |
| G1.5C 30 - R1            | 30                            | 30                                | φ45                                | -0.027           | φ48   | φ50   | 1B         | 12                           | φ10   | φ30  | 10   | 22                               | -  | -  | 35                                 | R1                                       | 0.18                         |
| G1.5C 40 - R1            | 40                            | 40                                | φ60                                | -0.036           | φ63   | φ65   | 1B         | 12                           | φ12   | φ36  | 13   | 25                               | -  | -  | 42.5                               | R1                                       | 0.32                         |
| G1.5C 50 - R1            | 50                            | 50                                | φ75                                | -0.045           | φ78   | φ80   | 1B         | 14                           | φ12   | φ40  | 13   | 27                               | -  | -  | 50                                 | R1                                       | 0.54                         |
| G1.5C 60 - R1            | 60                            | 60                                | φ90                                | -0.054           | φ93   | φ96   | 2B         | 14                           | φ12   | φ40  | 13   | 27                               | φ81  | 6  | 57.5                               | R1                                       | 0.54                         |
| G1.5C 80 - R1            | 80                            | 80                                | φ120                               | -0.072           | φ123  | φ126  | 2B         | 14                           | φ15   | φ50  | 15   | 29                               | φ111   | 6  | 72.5                               | R1                                       | 0.83                         |
| G1.5C 100 - R1           | 100                           | 100                               | φ150                               | -0.090           | φ153  | φ156  | 3B         | 14                           | φ15   | φ50  | 15   | 29                               | φ137   | 8  | 87.5                               | R1                                       | 1.19                         |

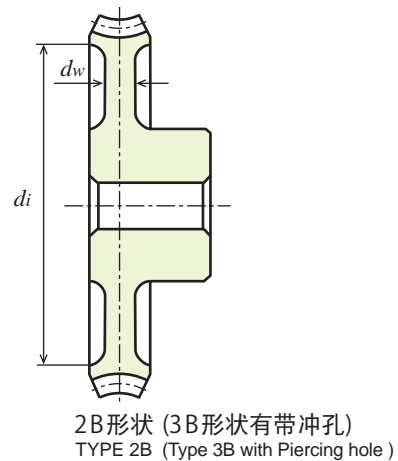


## 蜗轮的容许传达扭矩 (N · m) 齿面强度②

| 产品型号<br>Catalogue Numbers | 蜗杆的旋转速度 (min <sup>-1</sup> )<br>revolution/min (Rotating speed of worm) |        |        |          |          |          |          | 侧隙<br>(mm)  |
|---------------------------|---|--------|--------|----------|----------|----------|----------|-------------|
|                           | 100rpm  | 250rpm | 500rpm | 1,000rpm | 1,200rpm | 1,500rpm | 1,800rpm |             |
| G1.5A 20R2-8              | 6.801   | 5.370  | 4.390  | 3.498    | 3.273    | 3.008    | 2.802    | 0.08 ~ 0.20 |
| G1.5A 20R1-8              | 7.036   | 5.762  | 4.762  | 3.851    | 3.635    | 3.381    | 3.185    | 0.08 ~ 0.20 |
| G1.5A 20L2-8              | 6.801   | 5.370  | 4.390  | 3.498    | 3.273    | 3.008    | 2.802    | 0.08 ~ 0.20 |
| G1.5A 20L1-8              | 7.036   | 5.762  | 4.762  | 3.851    | 3.635    | 3.381    | 3.185    | 0.08 ~ 0.20 |
| G1.5A 30R2-10             | 14.700  | 11.858 | 9.741  | 7.830    | 7.389    | 6.840    | 6.409    | 0.08 ~ 0.20 |
| G1.5A 30R1-10             | 15.092  | 12.544 | 10.486 | 8.545    | 8.085    | 7.546    | 7.114    | 0.08 ~ 0.20 |
| G1.5A 30L2-10             | 14.700  | 11.858 | 9.741  | 7.830    | 7.389    | 6.840    | 6.409    | 0.08 ~ 0.20 |
| G1.5A 30L1-10             | 15.092  | 12.544 | 10.486 | 8.545    | 8.085    | 7.546    | 7.114    | 0.08 ~ 0.20 |
| G1.5A 40R2-12             | 25.284  | 20.678 | 17.150 | 13.818   | 13.034   | 12.152   | 11.466   | 0.08 ~ 0.20 |
| G1.5A 40R1-12             | 25.774  | 21.560 | 18.326 | 14.994   | 14.210   | 13.328   | 12.544   | 0.08 ~ 0.20 |
| G1.5A 40L2-12             | 25.284  | 20.678 | 17.150 | 13.818   | 13.034   | 12.152   | 11.466   | 0.08 ~ 0.20 |
| G1.5A 40L1-12             | 25.774  | 21.560 | 18.326 | 14.994   | 14.210   | 13.328   | 12.544   | 0.08 ~ 0.20 |
| G1.5A 50R2-12             | 38.612  | 31.752 | 26.460 | 21.462   | 20.286   | 18.914   | 17.836   | 0.08 ~ 0.20 |
| G1.5A 50R1-12             | 39.004  | 32.928 | 28.224 | 23.226   | 22.050   | 20.580   | 19.502   | 0.08 ~ 0.20 |
| G1.5A 50L2-12             | 38.612  | 31.752 | 26.460 | 21.462   | 20.286   | 18.914   | 17.836   | 0.08 ~ 0.20 |
| G1.5A 50L1-12             | 39.004  | 32.928 | 28.224 | 23.226   | 22.050   | 20.580   | 19.502   | 0.08 ~ 0.20 |

## 蜗轮的容许传达扭矩 (N · m) 齿面强度②

| 产品型号<br>Catalogue Numbers | 蜗杆的旋转速度 (min <sup>-1</sup> )<br>revolution/min (Rotating speed of worm) |         |         |         |         |         |         | 侧隙<br>(mm)  |
|---------------------------|---|---------|---------|---------|---------|---------|---------|-------------|
|                           | 10rpm   | 20rpm   | 50rpm   | 100rpm  | 150rpm  | 200rpm  | 300rpm  |             |
| G1.5C 20-R2               | 6.762   | 6.174   | 5.448   | 4.802   | 4.312   | 4.018   | 3.626   | 0.08 ~ 0.20 |
| G1.5C 20-R1               | 6.604   | 6.174   | 5.448   | 4.900   | 4.508   | 4.214   | 3.822   | 0.08 ~ 0.20 |
| G1.5C 30-R2               | 18.032  | 16.660  | 14.798  | 13.230  | 12.152  | 11.270  | 10.094  | 0.08 ~ 0.20 |
| G1.5C 30-R1               | 17.934  | 16.758  | 14.994  | 13.524  | 12.544  | 11.858  | 10.780  | 0.08 ~ 0.20 |
| G1.5C 40-R1               | 30.086  | 28.616  | 25.578  | 23.226  | 21.560  | 20.384  | 18.620  | 0.08 ~ 0.20 |
| G1.5C 50-R1               | 44.982  | 43.120  | 38.710  | 35.084  | 32.732  | 31.066  | 28.420  | 0.08 ~ 0.20 |
| G1.5C 60-R1               | 75.362  | 72.226  | 65.464  | 59.486  | 55.468  | 52.626  | 48.510  | 0.15 ~ 0.3  |
| G1.5C 80-R1               | 126.518   | 121.128 | 111.720 | 101.528 | 94.668  | 89.964  | 83.496  | 0.15 ~ 0.3  |
| G1.5C 100-R1              | 189.042   | 181.006 | 169.050 | 153.664 | 143.374 | 136.220 | 126.518 | 0.15 ~ 0.3  |



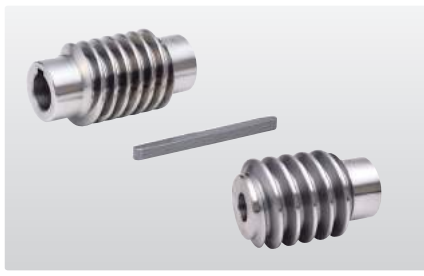
# 蜗杆和蜗轮

## WORMS AND WORM WHEELS

模数  
MODULE

2 (蜗轮的齿数 20 ~ 50)

(普通齿)  
FULL DEPTH TOOTH



单位：mm

| 精度         | 材料   | 压力角  | 齿部加工方法 |
|------------|------|------|--------|
| 无相应 JIS 规格 | S45C | 20 度 | 精密冷轧   |

★未做表面处理。【=】表示带有键槽和键。

| 产品型号<br>Catalogue Number | 螺旋方向<br>Direction of Thread | 蜗杆头数<br>Number of Thread<br>$z$ | 分度圆直径<br>Reference Diameter<br>$d$ | 齿顶圆直径<br>Tip Diameter<br>$d_a$ | 形状<br>Type | 齿宽<br>Face Width<br>$b$ | 孔径<br>Bore Diameter<br>$d_a(H8)$ | 轮毂外径<br>Hub Diameter<br>$d_h$ | 轮毂长度<br>Hub Projection |          | 全长<br>Overall Length<br>$l$ | 键槽<br>Key Way<br>$b_2 \times t_2$ | 导程角<br>Lead Angle<br>$\gamma$ | 重量<br>Weight<br>$W(kg)$ |
|--------------------------|-----------------------------|---------------------------------|------------------------------------|--------------------------------|------------|-------------------------|----------------------------------|-------------------------------|------------------------|----------|-----------------------------|-----------------------------------|-------------------------------|-------------------------|
|                          |                             |                                 |                                    |                                |            |                         |                                  |                               | $l_{hL}$               | $l_{hR}$ |                             |                                   |                               |                         |
| W2S R1 - B               | R                           | 1                               | $\phi 31$                          | $\phi 35$                      | B          | 35                      | $\phi 12$                        | $\phi 25$                     | -                      | 15       | 50                          | -                                 | $3^\circ 42'$                 | 0.22                    |
| W2S R1 - CF              | R                           | 1                               | $\phi 31$                          | $\phi 35$                      | C          | 41                      | $\phi 14$                        | $\phi 25$                     | 12                     | 12       | 65                          | -                                 | $3^\circ 42'$                 | 0.25                    |
| W2S R1 = C               | R                           | 1                               | $\phi 31$                          | $\phi 35$                      | C          | 41                      | $\phi 14$                        | $\phi 25$                     | 12                     | 12       | 65                          | $5 \times 2.3$                    | $3^\circ 42'$                 | 0.24                    |
| W2S R2 - B               | R                           | 2                               | $\phi 31$                          | $\phi 35$                      | B          | 35                      | $\phi 12$                        | $\phi 25$                     | -                      | 15       | 50                          | -                                 | $7^\circ 25'$                 | 0.22                    |
| W2S R2 - CF              | R                           | 2                               | $\phi 31$                          | $\phi 35$                      | C          | 41                      | $\phi 14$                        | $\phi 25$                     | 12                     | 12       | 65                          | -                                 | $7^\circ 25'$                 | 0.25                    |
| W2S R2 = C               | R                           | 2                               | $\phi 31$                          | $\phi 35$                      | C          | 41                      | $\phi 14$                        | $\phi 25$                     | 12                     | 12       | 65                          | $5 \times 2.3$                    | $7^\circ 25'$                 | 0.24                    |



单位：mm

| 精度         | 材料                | 压力角  | 齿部加工方法 | 侧隙①  |
|------------|-------------------|------|--------|------|
| 无相应 JIS 规格 | CAC702<br>(铝青铜铸件) | 20 度 | 切削     | 确认表格 |

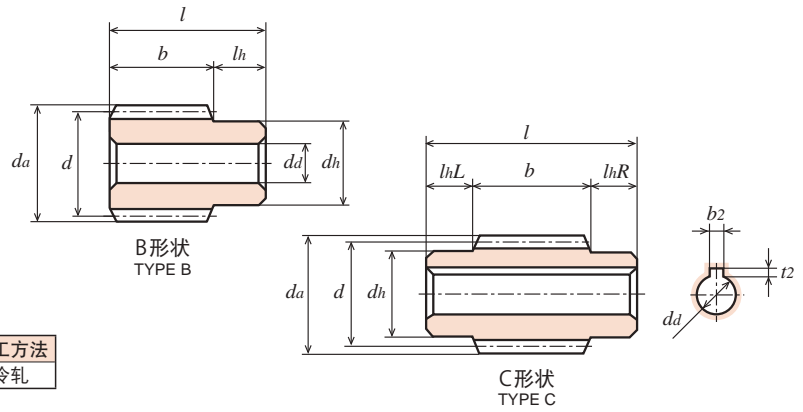
★未做表面处理。【=】表示带有键槽和键。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①一对相应蜗轮蜗杆相啮合时的侧隙。

②对蜗杆旋转速度的相应蜗轮的容许传达扭矩值。

| 产品型号<br>Catalogue Number | 齿数比  | 齿数  | 节圆直径       | 变位系数   | 蜗轮喉圆直径                   | 齿顶圆直径                 | 形状   | 齿宽                | 孔径                         | 轮毂外径                  | 轮毂长度                    | 全长 | 键槽                    | 轮圈内经                        | 腹板厚度                      | 中心距                       | 蜗轮的螺旋方向和蜗杆头数           | 重量   |
|--------------------------|------|-----|------------|--------|--------------------------|-----------------------|------|-------------------|----------------------------|-----------------------|-------------------------|----|-----------------------|-----------------------------|---------------------------|---------------------------|------------------------|------|
|                          | $u$  | $z$ | $d$        | $x$    | Throat Diameter<br>$d_T$ | Tip Diameter<br>$d_a$ |      | Face Width<br>$b$ | Bore Diameter<br>$d_a(H8)$ | Hub Diameter<br>$d_h$ | Hub Projection<br>$l_h$ |    | Overall Length<br>$l$ | Key Way<br>$b_2 \times t_2$ | Dimension of Rim<br>$d_i$ | Thickness of Web<br>$d_w$ | Center Distance<br>$A$ |      |
| G2A 20R2 - 10            | 10   | 20  | $\phi 40$  | -0.084 | $\phi 44$                | $\phi 47$             | 1B   | 20                | $\phi 10$                  | $\phi 32$             | 15                      | 35 | -                     |                             |                           | 35.5                      | R2                     | 0.26 |
| G2A 20R2 = 15            | 10   | 20  | $\phi 40$  | -0.084 | $\phi 44$                | $\phi 47$             | 1B   | 20                | $\phi 15$                  | $\phi 32$             | 15                      | 35 | $5 \times 2.3$        |                             |                           | 35.5                      | R2                     | 0.23 |
| G2A 20R1 - 10            | 20   | 20  | $\phi 40$  | -0.020 | $\phi 44$                | $\phi 47$             | 1B   | 20                | $\phi 10$                  | $\phi 32$             | 15                      | 35 | -                     |                             |                           | 35.5                      | R1                     | 0.26 |
| G2A 20R1 = 15            | 20   | 20  | $\phi 40$  | -0.020 | $\phi 44$                | $\phi 47$             | 1B   | 20                | $\phi 15$                  | $\phi 32$             | 15                      | 35 | $5 \times 2.3$        |                             |                           | 35.5                      | R1                     | 0.23 |
| G2A 20L2 - 10            | 10   | 20  | $\phi 40$  | -0.084 | $\phi 44$                | $\phi 47$             | 1B   | 20                | $\phi 10$                  | $\phi 32$             | 15                      | 35 | -                     |                             |                           | 35.5                      | L2                     | 0.26 |
| G2A 20L1 - 10            | 20   | 20  | $\phi 40$  | -0.020 | $\phi 44$                | $\phi 47$             | 1B   | 20                | $\phi 10$                  | $\phi 32$             | 15                      | 35 | -                     |                             |                           | 35.5                      | L1                     | 0.26 |
| G2A 25R2 - 12            | 12.5 | 25  | $\phi 50$  | -0.105 | $\phi 54$                | $\phi 57$             | 1B   | 20                | $\phi 12$                  | $\phi 38$             | 15                      | 35 | -                     |                             |                           | 40.5                      | R2                     | 0.41 |
| G2A 25R1 - 12            | 25   | 25  | $\phi 50$  | -0.026 | $\phi 54$                | $\phi 57$             | 1B   | 20                | $\phi 12$                  | $\phi 38$             | 15                      | 35 | -                     |                             |                           | 40.5                      | R1                     | 0.41 |
| G2A 25L2 - 12            | 12.5 | 25  | $\phi 50$  | -0.105 | $\phi 54$                | $\phi 57$             | 1B   | 20                | $\phi 12$                  | $\phi 38$             | 15                      | 35 | -                     |                             |                           | 40.5                      | L2                     | 0.41 |
| G2A 25L1 - 12            | 25   | 25  | $\phi 50$  | -0.026 | $\phi 54$                | $\phi 57$             | 1B   | 20                | $\phi 12$                  | $\phi 38$             | 15                      | 35 | -                     |                             |                           | 40.5                      | L1                     | 0.41 |
| G2A 30R2 - 12            | 15   | 30  | $\phi 60$  | -0.126 | $\phi 64$                | $\phi 67$             | 1B   | 20                | $\phi 12$                  | $\phi 40$             | 15                      | 35 | -                     |                             |                           | 45.5                      | R2                     | 0.56 |
| G2A 30R2 = 18            | 15   | 30  | $\phi 60$  | -0.126 | $\phi 64$                | $\phi 67$             | 1B   | 20                | $\phi 18$                  | $\phi 40$             | 15                      | 35 | $6 \times 2.8$        |                             |                           | 45.5                      | R2                     | 0.53 |
| G2A 30R1 - 12            | 30   | 30  | $\phi 60$  | -0.031 | $\phi 64$                | $\phi 67$             | 1B   | 20                | $\phi 12$                  | $\phi 40$             | 15                      | 35 | -                     |                             |                           | 45.5                      | R1                     | 0.56 |
| G2A 30R1 = 18            | 30   | 30  | $\phi 60$  | -0.031 | $\phi 64$                | $\phi 67$             | 1B   | 20                | $\phi 18$                  | $\phi 40$             | 15                      | 35 | $6 \times 2.8$        |                             |                           | 45.5                      | R1                     | 0.53 |
| G2A 30L2 - 12            | 15   | 30  | $\phi 60$  | -0.126 | $\phi 64$                | $\phi 67$             | 1B   | 20                | $\phi 12$                  | $\phi 40$             | 15                      | 35 | -                     |                             |                           | 45.5                      | L2                     | 0.56 |
| G2A 30L1 - 12            | 30   | 30  | $\phi 60$  | -0.031 | $\phi 64$                | $\phi 67$             | 1B   | 20                | $\phi 12$                  | $\phi 40$             | 15                      | 35 | -                     |                             |                           | 45.5                      | L1                     | 0.56 |
| G2A 40R2 - 14            | 20   | 40  | $\phi 80$  | -0.168 | $\phi 84$                | $\phi 87$             | 1BT  | 20                | $\phi 14$                  | $\phi 45$             | 18                      | 38 | -                     | -                           | -                         | 55.5                      | R2                     | 0.92 |
| G2A 40R1 - 14            | 40   | 40  | $\phi 80$  | -0.041 | $\phi 84$                | $\phi 87$             | 1BT  | 20                | $\phi 14$                  | $\phi 45$             | 18                      | 38 | -                     | -                           | -                         | 55.5                      | R1                     | 0.92 |
| G2A 40R1 = 20            | 40   | 40  | $\phi 80$  | -0.041 | $\phi 84$                | $\phi 87$             | 1BT  | 20                | $\phi 20$                  | $\phi 45$             | 18                      | 38 | $6 \times 2.8$        | -                           | -                         | 55.5                      | R1                     | 0.88 |
| G2A 40L2 - 14            | 20   | 40  | $\phi 80$  | -0.168 | $\phi 84$                | $\phi 87$             | 1BT  | 20                | $\phi 14$                  | $\phi 45$             | 18                      | 38 | -                     | -                           | -                         | 55.5                      | L2                     | 0.92 |
| G2A 40L1 - 14            | 40   | 40  | $\phi 80$  | -0.041 | $\phi 84$                | $\phi 87$             | 1BT  | 20                | $\phi 14$                  | $\phi 45$             | 18                      | 38 | -                     | -                           | -                         | 55.5                      | L1                     | 0.92 |
| G2A 50R2 - 14            | 25   | 50  | $\phi 100$ | -0.210 | $\phi 104$               | $\phi 107$            | 2B1T | 20                | $\phi 14$                  | $\phi 50$             | 18                      | 38 | -                     | $\phi 70$                   | 15                        | 65.5                      | R2                     | 1.32 |
| G2A 50R1 - 14            | 50   | 50  | $\phi 100$ | -0.052 | $\phi 104$               | $\phi 107$            | 2B1T | 20                | $\phi 14$                  | $\phi 50$             | 18                      | 38 | -                     | $\phi 70$                   | 15                        | 65.5                      | R1                     | 1.32 |
| G2A 50R1 = 25            | 50   | 50  | $\phi 100$ | -0.052 | $\phi 104$               | $\phi 107$            | 2B1T | 20                | $\phi 25$                  | $\phi 50$             | 18                      | 38 | $8 \times 3.3$        | $\phi 70$                   | 15                        | 65.5                      | R1                     | 1.23 |
| G2A 50L2 - 14            | 25   | 50  | $\phi 100$ | -0.210 | $\phi 104$               | $\phi 107$            | 2B1T | 20                | $\phi 14$                  | $\phi 50$             | 18                      | 38 | -                     | $\phi 70$                   | 15                        | 65.5                      | L2                     | 1.32 |
| G2A 50L1 - 14            | 50   | 50  | $\phi 100$ | -0.052 | $\phi 104$               | $\phi 107$            | 2B1T | 20                | $\phi 14$                  | $\phi 50$             | 18                      | 38 | -                     | $\phi 70$                   | 15                        | 65.5                      | L1                     | 1.32 |

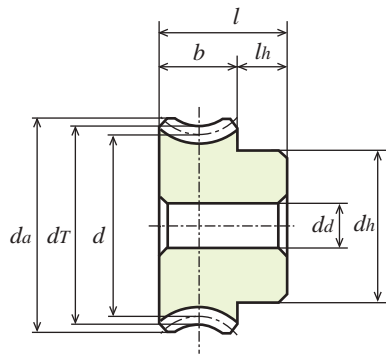


单位: mm

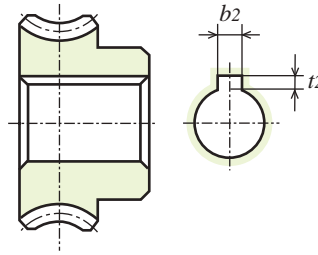
| 精度         | 材料   | 压力角  | 齿部加工方法 |
|------------|------|------|--------|
| 无相应 JIS 规格 | S45C | 20 度 | 精密冷轧   |

★未做表面处理。【=】表示带有键槽和键。

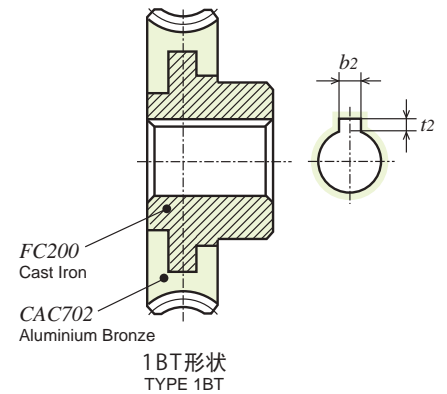
| 产品型号<br>Catalogue Number | 螺旋方向<br>Direction of Thread | 蜗杆头数<br>Number of Thread<br>$z$ | 分度圆直径<br>Reference Diameter<br>$d$ | 齿顶圆直径<br>Tip Diameter<br>$da$ | 形状<br>Type | 齿宽<br>Face Width<br>$b$ | 孔径<br>Bore Diameter<br>$da(H8)$ | 轮毂外径<br>Hub Diameter<br>$dh$ | 轮毂长度<br>Hub Projection |       | 全长<br>Overall Length<br>$l$ | 键槽<br>Key Way<br>$b_2 \times t_2$ | 导程角<br>Lead Angle<br>$\gamma$ | 重量<br>Weight<br>$W(kg)$ |
|--------------------------|-----------------------------|---------------------------------|------------------------------------|-------------------------------|------------|-------------------------|---------------------------------|------------------------------|------------------------|-------|-----------------------------|-----------------------------------|-------------------------------|-------------------------|
|                          |                             |                                 |                                    |                               |            |                         |                                 |                              | $lhL$                  | $lhR$ |                             |                                   |                               |                         |
| W2S L1 - B               | L                           | 1                               | $\phi 31$                          | $\phi 35$                     | B          | 35                      | $\phi 12$                       | $\phi 25$                    | -                      | 15    | 50                          | -                                 | $3^\circ 42'$                 | 0.22                    |
| W2S L1 = C               | L                           | 1                               | $\phi 31$                          | $\phi 35$                     | C          | 41                      | $\phi 14$                       | $\phi 25$                    | 12                     | 12    | 65                          | $5 \times 2.3$                    | $3^\circ 42'$                 | 0.24                    |
| W2S L2 - B               | L                           | 2                               | $\phi 31$                          | $\phi 35$                     | B          | 35                      | $\phi 12$                       | $\phi 25$                    | -                      | 15    | 50                          | -                                 | $7^\circ 25'$                 | 0.22                    |
| W2S L2 = C               | L                           | 2                               | $\phi 31$                          | $\phi 35$                     | C          | 41                      | $\phi 14$                       | $\phi 25$                    | 12                     | 12    | 65                          | $5 \times 2.3$                    | $7^\circ 25'$                 | 0.24                    |



1B 形状  
TYPE 1B



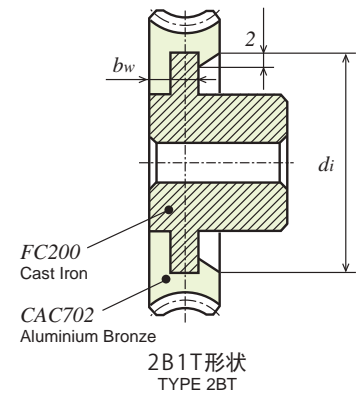
1B 形状  
TYPE 1B



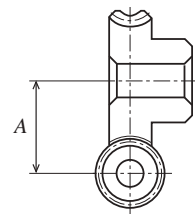
1BT 形状  
TYPE 1BT

## 蜗轮的容许传达扭矩 (N · m) 齿面强度②

| 产品型号<br>Catalogue Numbers | 蜗杆的旋转速度 (min <sup>-1</sup> )<br>revolution/min (Rotating speed of worm) |        |        |          |          |          |          | 侧隙<br>(mm)  |
|---------------------------|---|--------|--------|----------|----------|----------|----------|-------------|
|                           | 100rpm  | 250rpm | 500rpm | 1,000rpm | 1,200rpm | 1,500rpm | 1,800rpm |             |
| G2A 20R2 - 10             | 14.504  | 11.466 | 9.310  | 7.350    | 6.860    | 6.370    | 5.880    | 0.08 ~ 0.20 |
| G2A 20R1 - 10             | 12.936  | 12.250 | 10.094 | 8.134    | 7.644    | 7.154    | 6.664    | 0.08 ~ 0.20 |
| G2A 20L2 - 10             | 14.504  | 11.466 | 9.310  | 7.350    | 6.860    | 6.370    | 5.880    | 0.08 ~ 0.20 |
| G2A 20L1 - 10             | 12.936  | 12.250 | 10.094 | 8.134    | 7.644    | 7.154    | 6.664    | 0.08 ~ 0.20 |
| G2A 25R2 - 12             | 22.148  | 17.640 | 14.406 | 11.564   | 10.878   | 9.996    | 9.114    | 0.08 ~ 0.20 |
| G2A 25R1 - 12             | 22.932  | 18.816 | 15.582 | 12.642   | 11.956   | 11.172   | 10.486   | 0.08 ~ 0.20 |
| G2A 25L2 - 12             | 22.148  | 17.640 | 14.406 | 11.564   | 10.878   | 9.996    | 9.114    | 0.08 ~ 0.20 |
| G2A 25L1 - 12             | 22.932  | 18.816 | 15.582 | 12.642   | 11.956   | 11.172   | 10.486   | 0.08 ~ 0.20 |
| G2A 30R2 - 12             | 31.262  | 25.186 | 20.678 | 16.562   | 15.680   | 14.504   | 13.524   | 0.08 ~ 0.20 |
| G2A 30R1 - 12             | 32.144  | 26.656 | 22.246 | 18.130   | 17.150   | 15.974   | 14.994   | 0.08 ~ 0.20 |
| G2A 30L2 - 12             | 31.262  | 25.186 | 20.678 | 16.562   | 15.680   | 14.504   | 13.524   | 0.08 ~ 0.20 |
| G2A 30L1 - 12             | 32.144  | 26.656 | 22.246 | 18.130   | 17.150   | 15.974   | 14.994   | 0.08 ~ 0.20 |
| G2A 40R2 - 14             | 53.900  | 44.002 | 36.260 | 29.302   | 27.636   | 25.676   | 24.108   | 0.15 ~ 0.3  |
| G2A 40R1 - 14             | 54.978  | 45.864 | 38.906 | 31.850   | 30.184   | 28.126   | 26.558   | 0.15 ~ 0.3  |
| G2A 40L2 - 14             | 53.900  | 44.002 | 36.260 | 29.302   | 27.636   | 25.676   | 24.108   | 0.15 ~ 0.3  |
| G2A 40L1 - 14             | 54.978  | 45.864 | 38.906 | 31.850   | 30.184   | 28.126   | 26.558   | 0.15 ~ 0.3  |
| G2A 50R2 - 14             | 82.222  | 67.620 | 56.056 | 45.472   | 43.022   | 39.984   | 37.632   | 0.15 ~ 0.3  |
| G2A 50R1 - 14             | 83.202  | 69.972 | 59.780 | 49.196   | 46.648   | 43.610   | 41.160   | 0.15 ~ 0.3  |
| G2A 50L2 - 14             | 82.222  | 67.620 | 56.056 | 45.472   | 43.022   | 39.984   | 37.632   | 0.15 ~ 0.3  |
| G2A 50L1 - 14             | 83.202  | 69.972 | 59.780 | 49.196   | 46.648   | 43.610   | 41.160   | 0.15 ~ 0.3  |



2B1T 形状  
TYPE 2BT



# 蜗杆和蜗轮

## WORMS AND WORM WHEELS

模数  
MODULE

2

(蜗轮的齿数 20 ~ 100)

(普通齿)

FULL DEPTH TOOTH



单位：mm

| 精度         | 材料   | 压力角  | 齿部加工方法 |
|------------|------|------|--------|
| 无相应 JIS 规格 | S45C | 20 度 | 精密冷轧   |

★未做表面处理。【=】表示带有键槽和键。

| 产品型号<br>Catalogue Number | 螺旋方向<br>Direction of Thread | 蜗杆头数<br>Number of Thread<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 齿顶圆直径<br>Tip Diameter<br><i>d<sub>a</sub></i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>d<sub>a</sub>(H8)</i> | 轮毂外径<br>Hub Diameter<br><i>d<sub>h</sub></i> | 轮毂长度<br>Hub Projection |                       | 全长<br>Overall Length<br><i>l</i> | 键槽<br>Key Way<br><i>b<sub>2</sub> × t<sub>2</sub></i> | 导程角<br>Lead Angle<br><i>γ</i> | 重量<br>Weight<br><i>W(kg)</i> |
|--------------------------|-----------------------------|--------------------------------------|---|---|------------|------------------------------|---|--|------------------------|-----------------------|----------------------------------|---|-------------------------------|------------------------------|
|                          |                             |                                      |   |   |            |                              |   |  | <i>l<sub>hL</sub></i>  | <i>l<sub>hR</sub></i> |                                  |   |                               |                              |
| W2S R1 - B               | R                           | 1                                    | φ31                                     | φ35   | B          | 35                           | φ12   | φ25  | -                      | 15                    | 50                               | -   | 3°42'                         | 0.22                         |
| W2S R1 - CF              | R                           | 1                                    | φ31                                     | φ35   | C          | 41                           | φ14   | φ25  | 12                     | 12                    | 65                               | -   | 3°42'                         | 0.25                         |
| W2S R1 = C               | R                           | 1                                    | φ31                                     | φ35   | C          | 41                           | φ14   | φ25  | 12                     | 12                    | 65                               | 5 × 2.3   | 3°42'                         | 0.24                         |
| W2S R2 - B               | R                           | 2                                    | φ31                                     | φ35   | B          | 35                           | φ12   | φ25  | -                      | 15                    | 50                               | -   | 7°25'                         | 0.22                         |
| W2S R2 - CF              | R                           | 2                                    | φ31                                     | φ35   | C          | 41                           | φ14   | φ25  | 12                     | 12                    | 65                               | -   | 7°25'                         | 0.25                         |
| W2S R2 = C               | R                           | 2                                    | φ31                                     | φ35   | C          | 41                           | φ14   | φ25  | 12                     | 12                    | 65                               | 5 × 2.3   | 7°25'                         | 0.24                         |



单位：mm

| 精度         | 材料             | 压力角  | 齿部加工方法 | 侧隙①  |
|------------|----------------|------|--------|------|
| 无相应 JIS 规格 | FC200<br>(灰铸铁) | 20 度 | 切削     | 确认表格 |

★未做表面处理。

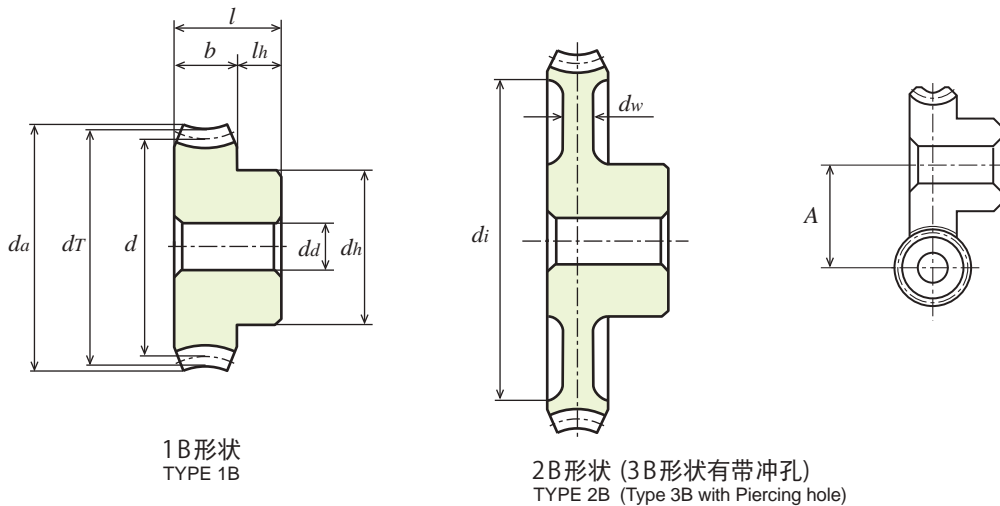
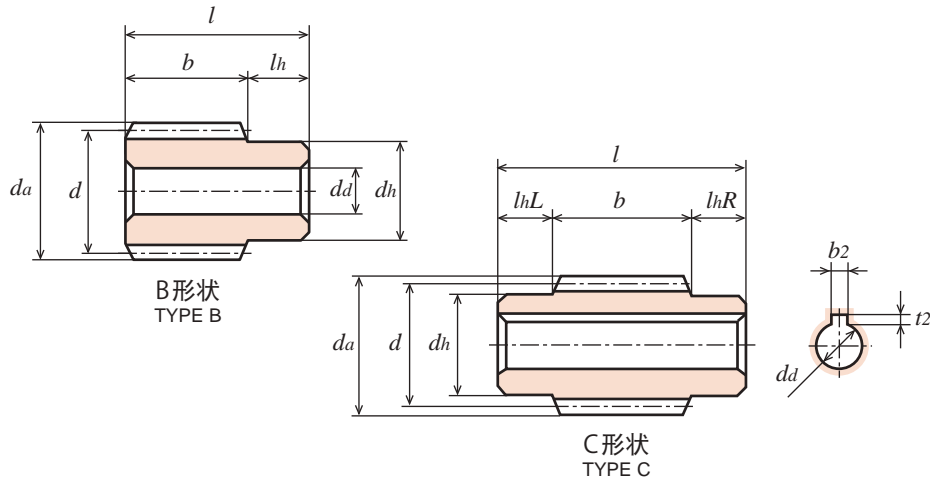
★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①一对相应蜗轮蜗杆相啮合时的侧隙。

②对蜗杆旋转速度的相应蜗轮的容许传达扭矩值。

| 产品型号<br>Catalogue Number | 齿数比<br>Gear Ratio<br><i>u</i> | 齿数<br>Number of Teeth<br><i>z</i> | 节圆直径<br>Pitch Diameter<br><i>d</i> | 变位系数<br><i>x</i> | 蜗轮喉圆直径<br>Throat Diameter<br><i>d<sub>t</sub></i> | 齿顶圆直径<br>Tip Diameter<br><i>d<sub>a</sub></i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>d<sub>a</sub>(H8)</i> | 轮毂外径<br>Hub Diameter<br><i>d<sub>h</sub></i> | 轮毂长度<br>Hub Projection<br><i>l<sub>h</sub></i> | 全长<br>Overall Length<br><i>l</i> | 轮圈内径<br>Dimension of Rim<br><i>d<sub>i</sub></i> | 腹板厚度<br>Thickness of Web<br><i>d<sub>w</sub></i> | 中心距<br>Center Distance<br><i>A</i> | 蜗杆的螺旋方向和蜗杆头数<br>Hand and Thread for Worm | 重量<br>Weight<br><i>W(kg)</i> |
|--------------------------|-------------------------------|-----------------------------------|------------------------------------|------------------|---|---|------------|------------------------------|---|--|--|----------------------------------|--|--|------------------------------------|--|------------------------------|
|                          |                               |                                   |                                    |                  |   |   |            |                              |   |  |  |                                  |  |  |                                    |  | <i>W(kg)</i>                 |
| G2C 20 - R2              | 10                            | 20                                | φ 40                               | -0.084           | φ 44  | φ 46.5  | 1B         | 16                           | φ10   | φ30  | 14   | 30                               | -  | -  | 35.5                               | R2                                       | 0.20                         |
| G2C 20 - R1              | 20                            | 20                                | φ 40                               | -0.020           | φ 44  | φ 46.5  | 1B         | 16                           | φ10   | φ30  | 14   | 30                               | -  | -  | 35.5                               | R1                                       | 0.20                         |
| G2C 25 - R1              | 25                            | 25                                | φ 50                               | -0.026           | φ 54  | φ 57  | 1B         | 18                           | φ12   | φ38  | 15   | 33                               | -  | -  | 40.5                               | R1                                       | 0.33                         |
| G2C 30 - R2              | 15                            | 30                                | φ 60                               | -0.126           | φ 64  | φ 67  | 1B         | 18                           | φ12   | φ40  | 15   | 33                               | -  | -  | 45.5                               | R2                                       | 0.44                         |
| G2C 30 - R1              | 30                            | 30                                | φ 60                               | -0.031           | φ 64  | φ 67  | 1B         | 18                           | φ12   | φ40  | 15   | 33                               | -  | -  | 45.5                               | R1                                       | 0.44                         |
| G2C 40 - R1              | 40                            | 40                                | φ 80                               | -0.041           | φ 84  | φ 88  | 2B         | 20                           | φ14   | φ45  | 18   | 38                               | φ 70   | 8  | 55.5                               | R1                                       | 0.75                         |
| G2C 50 - R1              | 50                            | 50                                | φ100                               | -0.052           | φ104  | φ108  | 2B         | 20                           | φ14   | φ50  | 18   | 38                               | φ 90   | 8  | 65.5                               | R1                                       | 1.04                         |
| G2C 60 - R1              | 60                            | 60                                | φ120                               | -0.062           | φ124  | φ128  | 2B         | 20                           | φ14   | φ50  | 18   | 38                               | φ110   | 8  | 75.5                               | R1                                       | 1.35                         |
| G2C 80 - R1              | 80                            | 80                                | φ160                               | -0.083           | φ164  | φ168  | 3B         | 20                           | φ19   | φ54  | 20   | 40                               | φ146   | 8  | 95.5                               | R1                                       | 1.82                         |
| G2C 100 - R1             | 100                           | 100                               | φ200                               | -0.104           | φ204  | φ208  | 3B         | 20                           | φ19   | φ55  | 20   | 40                               | φ185   | 8  | 115.5                              | R1                                       | 2.38                         |





### 蜗轮的容许传达扭矩 (N · m) 齿面强度②

| 产品型号<br>Catalogue Numbers | 蜗轮的旋转速度 (min <sup>-1</sup> )<br>revolution/min (Rotating speed of worm) |         |         |         |         |         |         | 侧隙<br>(mm)  |
|---------------------------|---|---------|---------|---------|---------|---------|---------|-------------|
|                           | 10rpm   | 20rpm   | 50rpm   | 100rpm  | 150rpm  | 200rpm  | 300rpm  |             |
| G2C 20-R2                 | 19.600  | 18.032  | 15.974  | 14.014  | 12.642  | 11.662  | 10.486  | 0.08 ~ 0.20 |
| G2C 20-R1                 | 19.796  | 18.228  | 16.268  | 14.504  | 13.328  | 12.446  | 11.270  | 0.08 ~ 0.20 |
| G2C 25-R1                 | 29.792  | 27.538  | 24.598  | 22.050  | 20.286  | 19.110  | 17.346  | 0.08 ~ 0.20 |
| G2C 30-R2                 | 41.650  | 38.318  | 34.104  | 30.086  | 27.636  | 25.774  | 23.030  | 0.08 ~ 0.20 |
| G2C 30-R1                 | 41.356  | 38.710  | 34.496  | 30.968  | 28.616  | 26.950  | 24.598  | 0.08 ~ 0.20 |
| G2C 40-R1                 | 80.360  | 76.244  | 68.110  | 61.250  | 56.938  | 53.606  | 49.098  | 0.15 ~ 0.30 |
| G2C 50-R1                 | 120.050   | 114.954 | 103.096 | 92.708  | 86.338  | 81.928  | 74.872  | 0.15 ~ 0.30 |
| G2C 60-R1                 | 166.698   | 159.544 | 144.648 | 130.046 | 121.128 | 114.954 | 105.742 | 0.15 ~ 0.30 |
| G2C 80-R1                 | 279.692   | 267.736 | 246.764 | 222.068 | 206.878 | 196.392 | 181.986 | 0.15 ~ 0.30 |
| G2C 100-R1                | 418.068   | 400.134 | 373.282 | 336.140 | 313.208 | 297.430 | 275.772 | 0.15 ~ 0.30 |

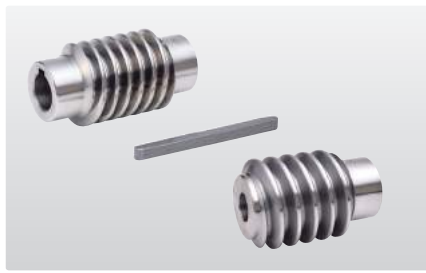
# 蜗杆和蜗轮

## WORMS AND WORM WHEELS

模数  
MODULE

2.5 (蜗轮的齿数 20 ~ 50)

(普通齿)  
FULL DEPTH TOOTH

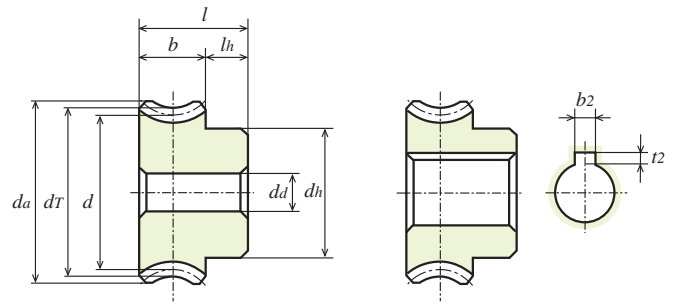


单位: mm

| 精度         | 材料   | 压力角  | 齿部加工方法 |
|------------|------|------|--------|
| 无相应 JIS 规格 | S45C | 20 度 | 切削     |

★未做表面处理。【=】表示带有键槽和键。

| 产品型号<br>Catalogue Number | 螺旋方向<br>Direction of Thread | 蜗杆头数<br>Number of Thread<br>z | 分度圆直径<br>Reference Diameter<br>d | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H8) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection |     | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b2 × t2 | 导程角<br>Lead Angle<br>γ | 重量<br>Weight<br>W(kg) |
|--------------------------|-----------------------------|-------------------------------|----------------------------------|-----------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------|-----|---------------------------|--------------------------|------------------------|-----------------------|
|                          |                             |                               |                                  |                             |            |                       |                               |                            | lhL                    | lhR |                           |                          |                        |                       |
| W2.5S R1 - B             | R                           | 1                             | φ37                              | φ42                         | B          | 42                    | φ14                           | φ30                        | -                      | 18  | 60                        | -                        | 3°52'                  | 0.37                  |
| W2.5S R1 - CF            | R                           | 1                             | φ37                              | φ42                         | C          | 47                    | φ16                           | φ30                        | 14                     | 14  | 75                        | -                        | 3°52'                  | 0.42                  |
| W2.5S R1 = C             | R                           | 1                             | φ37                              | φ42                         | C          | 47                    | φ16                           | φ30                        | 14                     | 14  | 75                        | 5 × 2.3                  | 3°52'                  | 0.41                  |
| W2.5S R2 - B             | R                           | 2                             | φ37                              | φ42                         | B          | 42                    | φ14                           | φ30                        | -                      | 18  | 60                        | -                        | 7°46'                  | 0.37                  |
| W2.5S R2 - CF            | R                           | 2                             | φ37                              | φ42                         | C          | 47                    | φ16                           | φ30                        | 14                     | 14  | 75                        | -                        | 7°46'                  | 0.42                  |
| W2.5S R2 = C             | R                           | 2                             | φ37                              | φ42                         | C          | 47                    | φ16                           | φ30                        | 14                     | 14  | 75                        | 5 × 2.3                  | 7°46'                  | 0.41                  |
| W2.5S L1 - B             | L                           | 1                             | φ37                              | φ42                         | B          | 42                    | φ14                           | φ30                        | -                      | 18  | 60                        | -                        | 3°52'                  | 0.37                  |
| W2.5S L1 = C             | L                           | 1                             | φ37                              | φ42                         | C          | 47                    | φ16                           | φ30                        | 14                     | 14  | 75                        | 5 × 2.3                  | 3°52'                  | 0.41                  |



单位: mm

| 精度         | 材料                | 压力角  | 齿部加工方法 | 侧隙①  |
|------------|-------------------|------|--------|------|
| 无相应 JIS 规格 | CAC702<br>(铝青铜铸件) | 20 度 | 切削     | 确认表格 |

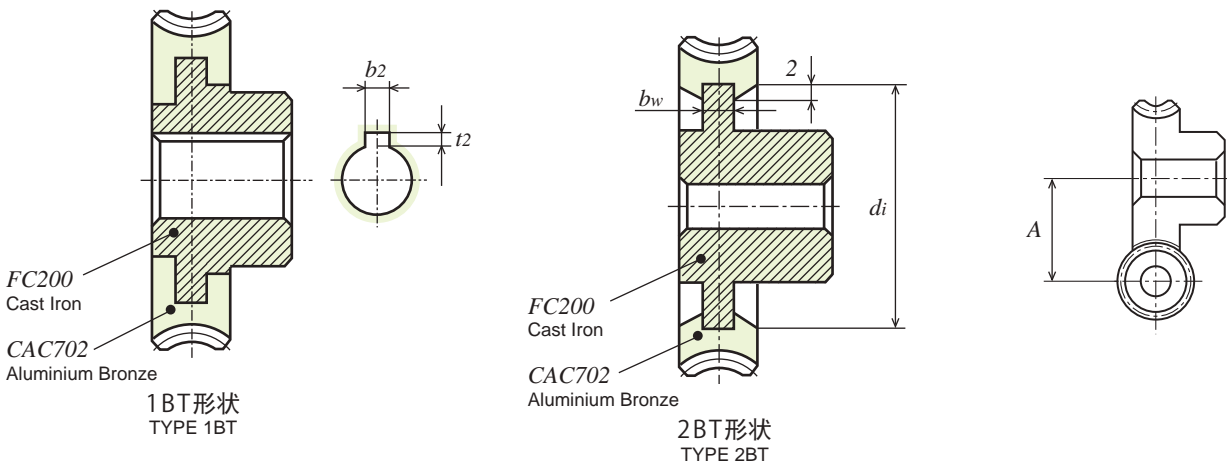
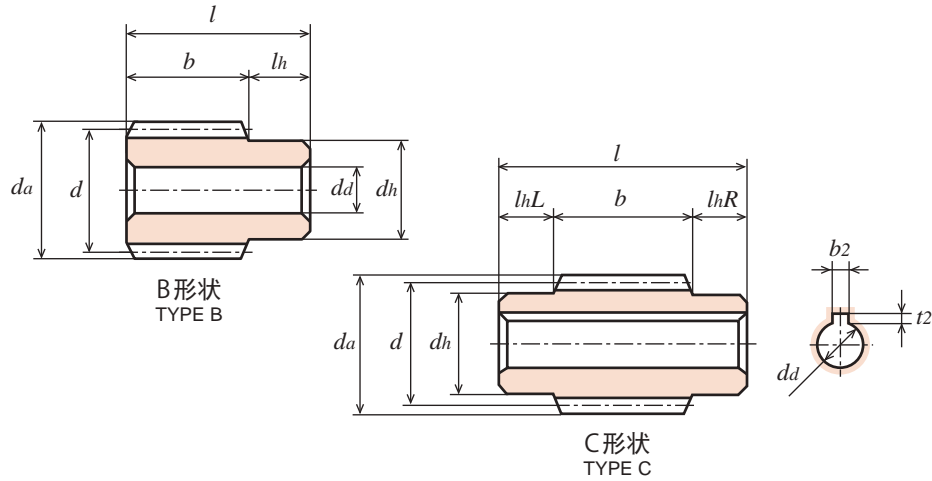
★未做表面处理。【=】表示带有键槽和键。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①一对相应蜗轮蜗杆相啮合时的侧隙。

②对蜗杆旋转速度的相应蜗轮的容许传达扭矩值。

| 产品型号<br>Catalogue Number | 齿数比<br>Gear Ratio<br>u | 齿数<br>Number of Teeth<br>z | 节圆直径<br>Pitch Diameter<br>d | 变系<br>x | 蜗轮喉圆直径<br>Throat Diameter<br>dR | 齿顶圆直径<br>Tip Diameter<br>da | 形状<br>Type | 齿宽<br>Face Width<br>b | 孔径<br>Bore Diameter<br>da(H8) | 轮毂外径<br>Hub Diameter<br>dh | 轮毂长度<br>Hub Projection<br>lh | 全长<br>Overall Length<br>l | 键槽<br>Key Way<br>b2 × t2 | 轮圈内径<br>Dimension of Rim<br>di | 腹板厚度<br>Thickness of Web<br>dw | 中心距<br>Center Distance<br>A | 蜗杆的螺旋方向和蜗杆头数<br>Hand and Thread for Worm | 重量<br>Weight<br>W(kg) |
|--------------------------|------------------------|----------------------------|-----------------------------|---------|---------------------------------|-----------------------------|------------|-----------------------|-------------------------------|----------------------------|------------------------------|---------------------------|--------------------------|--------------------------------|--------------------------------|-----------------------------|--|-----------------------|
| G2.5A 20R2 - 12          | 10                     | 20                         | φ 50                        | -0.092  | φ 55                            | φ 58.8                      | 1B         | 24                    | φ12                           | φ40                        | 16                           | 40                        | -                        |                                |                                | 43.5                        | R2                                       | 0.50                  |
| G2.5A 20R2 = 18          | 10                     | 20                         | φ 50                        | -0.092  | φ 55                            | φ 58.8                      | 1B         | 24                    | φ18                           | φ40                        | 16                           | 40                        | 6 × 2.8                  |                                |                                | 43.5                        | R2                                       | 0.46                  |
| G2.5A 20R1 - 12          | 20                     | 20                         | φ 50                        | -0.022  | φ 55                            | φ 58.8                      | 1B         | 24                    | φ12                           | φ40                        | 16                           | 40                        | -                        |                                |                                | 43.5                        | R1                                       | 0.50                  |
| G2.5A 20R1 = 18          | 20                     | 20                         | φ 50                        | -0.022  | φ 55                            | φ 58.8                      | 1B         | 24                    | φ18                           | φ40                        | 16                           | 40                        | 6 × 2.8                  |                                |                                | 43.5                        | R1                                       | 0.46                  |
| G2.5A 20L1 - 12          | 20                     | 20                         | φ 50                        | -0.022  | φ 55                            | φ 58.8                      | 1B         | 24                    | φ12                           | φ40                        | 16                           | 40                        | -                        |                                |                                | 43.5                        | L1                                       | 0.50                  |
| G2.5A 30R2 - 14          | 15                     | 30                         | φ 75                        | -0.138  | φ 80                            | φ 83.8                      | 1B         | 24                    | φ14                           | φ50                        | 16                           | 40                        | -                        |                                |                                | 56                          | R2                                       | 1.02                  |
| G2.5A 30R2 = 20          | 15                     | 30                         | φ 75                        | -0.138  | φ 80                            | φ 83.8                      | 1B         | 24                    | φ20                           | φ50                        | 16                           | 40                        | 6 × 2.8                  |                                |                                | 56                          | R2                                       | 0.98                  |
| G2.5A 30R1 - 14          | 30                     | 30                         | φ 75                        | -0.034  | φ 80                            | φ 83.8                      | 1B         | 24                    | φ14                           | φ50                        | 16                           | 40                        | -                        |                                |                                | 56                          | R1                                       | 1.02                  |
| G2.5A 30R1 = 20          | 30                     | 30                         | φ 75                        | -0.034  | φ 80                            | φ 83.8                      | 1B         | 24                    | φ20                           | φ50                        | 16                           | 40                        | 6 × 2.8                  |                                |                                | 56                          | R1                                       | 0.98                  |
| G2.5A 30L1 - 14          | 30                     | 30                         | φ 75                        | -0.034  | φ 80                            | φ 83.8                      | 1B         | 24                    | φ14                           | φ50                        | 16                           | 40                        | -                        |                                |                                | 56                          | L1                                       | 1.02                  |
| G2.5A 40R2 - 15          | 20                     | 40                         | φ100                        | -0.185  | φ105                            | φ108.8                      | 1BT        | 24                    | φ15                           | φ52                        | 16                           | 40                        | -                        | -                              | -                              | 68.5                        | R2                                       | 1.61                  |
| G2.5A 40R1 - 15          | 40                     | 40                         | φ100                        | -0.045  | φ105                            | φ108.8                      | 1BT        | 24                    | φ15                           | φ52                        | 16                           | 40                        | -                        | -                              | -                              | 68.5                        | R1                                       | 1.61                  |
| G2.5A 40R1 = 25          | 40                     | 40                         | φ100                        | -0.045  | φ105                            | φ108.8                      | 1BT        | 24                    | φ25                           | φ52                        | 16                           | 40                        | 8 × 3.3                  | -                              | -                              | 68.5                        | R1                                       | 1.51                  |
| G2.5A 40L1 - 15          | 40                     | 40                         | φ100                        | -0.045  | φ105                            | φ108.8                      | 1BT        | 24                    | φ15                           | φ52                        | 16                           | 40                        | -                        | -                              | -                              | 68.5                        | L1                                       | 1.61                  |
| G2.5A 50R2 - 15          | 25                     | 50                         | φ125                        | -0.231  | φ130                            | φ133.8                      | 2BT        | 24                    | φ15                           | φ60                        | 16                           | 40                        | -                        | φ90                            | 12                             | 81                          | R2                                       | 2.10                  |
| G2.5A 50R1 - 15          | 50                     | 50                         | φ125                        | -0.057  | φ130                            | φ133.8                      | 2BT        | 24                    | φ15                           | φ60                        | 16                           | 40                        | -                        | φ90                            | 12                             | 81                          | R1                                       | 2.10                  |
| G2.5A 50R1 = 30          | 50                     | 50                         | φ125                        | -0.057  | φ130                            | φ133.8                      | 2BT        | 24                    | φ30                           | φ60                        | 16                           | 40                        | 8 × 3.3                  | φ90                            | 12                             | 81                          | R1                                       | 1.95                  |
| G2.5A 50L1 - 15          | 50                     | 50                         | φ125                        | -0.057  | φ130                            | φ133.8                      | 2BT        | 24                    | φ15                           | φ60                        | 16                           | 40                        | -                        | φ90                            | 12                             | 81                          | L1                                       | 2.10                  |



## 蜗轮的容许传达扭矩 (N · m) 齿面强度②

| 产品型号<br>Catalogue Numbers | 蜗杆的旋转速度 (min <sup>-1</sup> )<br>revolution/min (Rotating speed of worm) |         |         |          |          |          |          | 侧隙<br>(mm)  |
|---------------------------|---|---------|---------|----------|----------|----------|----------|-------------|
|                           | 100rpm  | 250rpm  | 500rpm  | 1,000rpm | 1,200rpm | 1,500rpm | 1,800rpm |             |
| G2.5A 20R2 - 12           | 26.166  | 20.580  | 16.758  | 13.328   | 12.446   | 11.368   | 10.486   | 0.08 ~ 0.20 |
| G2.5A 20R1 - 12           | 27.048  | 22.050  | 18.130  | 14.700   | 13.818   | 12.838   | 11.956   | 0.08 ~ 0.20 |
| G2.5A 20L1 - 12           | 27.048  | 22.050  | 18.130  | 14.700   | 13.818   | 12.838   | 11.956   | 0.08 ~ 0.20 |
| G2.5A 30R2 - 14           | 56.448  | 45.276  | 37.142  | 29.792   | 28.028   | 25.970   | 24.010   | 0.15 ~ 0.3  |
| G2.5A 30R1 - 14           | 58.016  | 47.922  | 39.984  | 32.536   | 30.772   | 28.616   | 26.656   | 0.15 ~ 0.3  |
| G2.5A 30L1 - 14           | 58.016  | 47.922  | 39.984  | 32.536   | 30.772   | 28.616   | 26.656   | 0.15 ~ 0.3  |
| G2.5A 40R2 - 15           | 97.216  | 79.184  | 65.170  | 52.528   | 49.588   | 46.060   | 42.728   | 0.15 ~ 0.3  |
| G2.5A 40R1 - 15           | 99.176  | 82.614  | 69.874  | 57.134   | 54.096   | 50.372   | 47.040   | 0.15 ~ 0.3  |
| G2.5A 40L1 - 15           | 99.176  | 82.614  | 69.874  | 57.134   | 54.096   | 50.372   | 47.040   | 0.15 ~ 0.3  |
| G2.5A 50R2 - 15           | 148.372   | 121.618 | 100.646 | 81.634   | 77.126   | 71.638   | 66.640   | 0.15 ~ 0.3  |
| G2.5A 50R1 - 15           | 150.136   | 126.028 | 107.408 | 88.298   | 83.594   | 78.008   | 72.192   | 0.15 ~ 0.3  |
| G2.5A 50L1 - 15           | 150.136   | 126.028 | 107.408 | 88.298   | 83.594   | 78.008   | 72.192   | 0.15 ~ 0.3  |

# 蜗杆和蜗轮

## WORMS AND WORM WHEELS

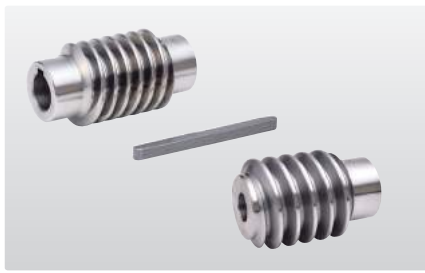
模数  
MODULE

3

(蜗轮的齿数 20 ~ 50)

(普通齿)

FULL DEPTH TOOTH

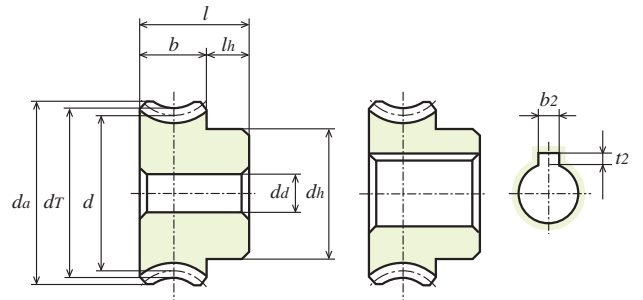


单位：mm

| 精度         | 材料   | 压力角  | 齿部加工方法 |
|------------|------|------|--------|
| 无相应 JIS 规格 | S45C | 20 度 | 切削     |

★未做表面处理。【=】表示带有键槽和键。

| 产品型号<br>Catalogue Number | 螺旋方向<br>Direction of Thread | 蜗杆头数<br>Number of Thread | 分度圆直径<br>Reference Diameter | 齿顶圆直径<br>Tip Diameter | 形状<br>Type | 齿宽<br>Face Width | 孔径<br>Bore Diameter | 轮毂外径<br>Hub Diameter | 轮毂长度<br>Hub Projection |                | 全长<br>Overall Length | 键槽<br>Key Way | 导程角<br>Lead Angle | 重量<br>Weight |
|--------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------|------------|------------------|---------------------|----------------------|------------------------|----------------|----------------------|---------------|-------------------|--------------|
|                          |                             |                          |                             |                       |            |                  |                     |                      | l <sub>L</sub>         | l <sub>R</sub> |                      |               |                   |              |
| W3S R1 - B               | R                           | 1                        | φ44                         | φ50                   | B          | 50               | φ16                 | φ36                  | -                      | 20             | 70                   | -             | 3°55'             | 0.62         |
| W3S R1 - CF              | R                           | 1                        | φ44                         | φ50                   | C          | 55               | φ20                 | φ36                  | 15                     | 15             | 85                   | -             | 3°55'             | 0.67         |
| W3S R1 = C               | R                           | 1                        | φ44                         | φ50                   | C          | 55               | φ20                 | φ36                  | 15                     | 15             | 85                   | 6 × 2.8       | 3°55'             | 0.66         |
| W3S R2 - B               | R                           | 2                        | φ44                         | φ50                   | B          | 50               | φ16                 | φ36                  | -                      | 20             | 70                   | -             | 7°50'             | 0.62         |
| W3S R2 - CF              | R                           | 2                        | φ44                         | φ50                   | C          | 55               | φ20                 | φ36                  | 15                     | 15             | 85                   | -             | 7°50'             | 0.67         |
| W3S R2 = C               | R                           | 2                        | φ44                         | φ50                   | C          | 55               | φ20                 | φ36                  | 15                     | 15             | 85                   | 6 × 2.8       | 7°50'             | 0.66         |
| W3S L1 - B               | L                           | 1                        | φ44                         | φ50                   | B          | 50               | φ16                 | φ36                  | -                      | 20             | 70                   | -             | 3°55'             | 0.62         |
| W3S L1 = C               | L                           | 1                        | φ44                         | φ50                   | C          | 55               | φ20                 | φ36                  | 15                     | 15             | 85                   | 6 × 2.8       | 3°55'             | 0.66         |



单位：mm

| 精度         | 材料                | 压力角  | 齿部加工方法 | 侧隙①  |
|------------|-------------------|------|--------|------|
| 无相应 JIS 规格 | CAC702<br>(铝青铜铸件) | 20 度 | 切削     | 确认表格 |

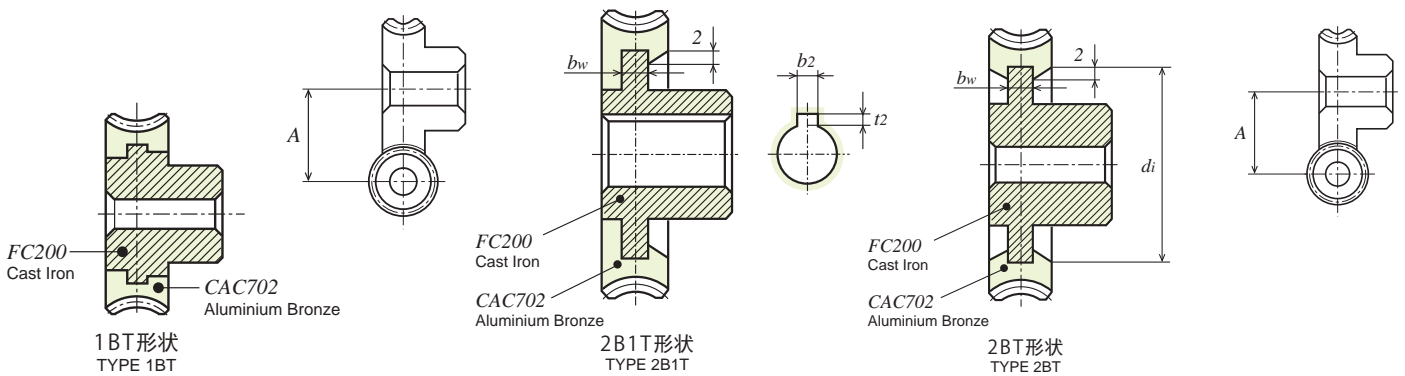
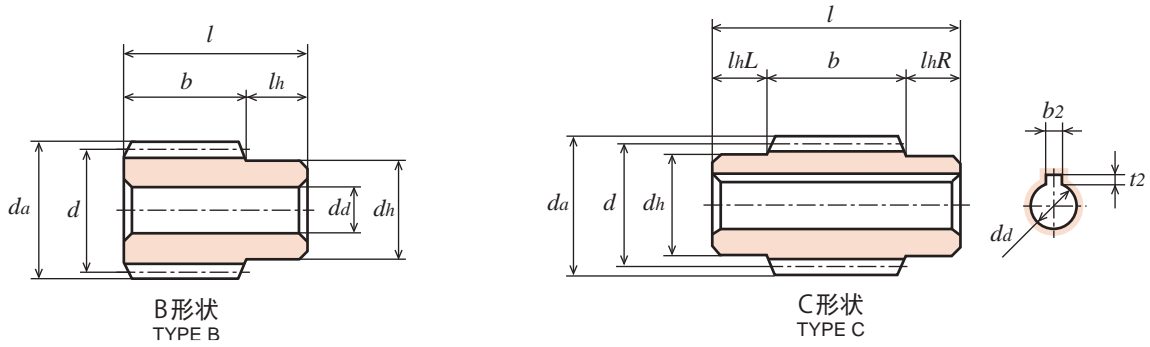
★未做表面处理。【=】表示带有键槽和键。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①一对相应蜗轮蜗杆相啮合时的侧隙。

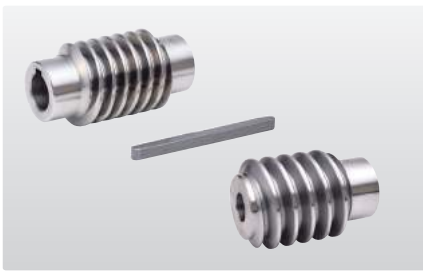
②对蜗杆旋转速度的相应蜗轮的容许传达扭矩值。

| 产品型号<br>Catalogue Number | 齿数比<br>Gear Ratio | 齿数<br>Number of Teeth | 节圆直径<br>Pitch Diameter | 变系<br>数 | 蜗轮喉圆直径<br>Throat Diameter | 齿顶圆直径<br>Tip Diameter | 形状<br>Type | 齿宽<br>Face Width | 孔径<br>Bore Diameter | 轮毂外径<br>Hub Diameter | 轮毂长度<br>Hub Projection | 全长<br>Overall Length | 键槽<br>Key Way | 轮圈内径<br>Dimension of Rim | 腹板厚度<br>Thickness of Web | 中心距<br>Center Distance | 蜗轮的螺旋方向和蜗杆头数<br>Hand and Thread for Worm | 重量<br>Weight |
|--------------------------|-------------------|-----------------------|------------------------|---------|---------------------------|-----------------------|------------|------------------|---------------------|----------------------|------------------------|----------------------|---------------|--------------------------|--------------------------|------------------------|--|--------------|
|                          |                   |                       |                        |         |                           |                       |            |                  |                     |                      |                        |                      |               |                          |                          |                        |  |              |
| G3A 20R2 - 16            | 10                | 20                    | φ 60                   | -0.094  | φ 66                      | φ 70.5                | 1B         | 28               | φ16                 | φ48                  | 17                     | 45                   | -             |                          |                          | 52                     | R2                                       | 0.80         |
| G3A 20R2 = 20            | 10                | 20                    | φ 60                   | -0.094  | φ 66                      | φ 70.5                | 1B         | 28               | φ20                 | φ48                  | 17                     | 45                   | 6 × 2.8       |                          |                          | 52                     | R2                                       | 0.77         |
| G3A 20R1 - 16            | 20                | 20                    | φ 60                   | -0.023  | φ 66                      | φ 70.5                | 1B         | 28               | φ16                 | φ48                  | 17                     | 45                   | -             |                          |                          | 52                     | R1                                       | 0.80         |
| G3A 20R1 = 20            | 20                | 20                    | φ 60                   | -0.023  | φ 66                      | φ 70.5                | 1B         | 28               | φ20                 | φ48                  | 17                     | 45                   | 6 × 2.8       |                          |                          | 52                     | R1                                       | 0.77         |
| G3A 20L1 - 16            | 20                | 20                    | φ 60                   | -0.023  | φ 66                      | φ 70.5                | 1B         | 28               | φ16                 | φ48                  | 17                     | 45                   | -             |                          |                          | 52                     | L1                                       | 0.80         |
| G3A 25R2 - 16            | 12.5              | 25                    | φ 75                   | -0.117  | φ 81                      | φ 85.5                | 1B         | 28               | φ16                 | φ55                  | 17                     | 45                   | -             |                          |                          | 59.5                   | R2                                       | 1.22         |
| G3A 25R1 - 16            | 25                | 25                    | φ 75                   | -0.029  | φ 81                      | φ 85.5                | 1B         | 28               | φ16                 | φ55                  | 17                     | 45                   | -             |                          |                          | 59.5                   | R1                                       | 1.22         |
| G3A 25L1 - 16            | 25                | 25                    | φ 75                   | -0.029  | φ 81                      | φ 85.5                | 1B         | 28               | φ16                 | φ55                  | 17                     | 45                   | -             |                          |                          | 59.5                   | L1                                       | 1.22         |
| G3A 30R2 - 16            | 15                | 30                    | φ 90                   | -0.141  | φ 96                      | φ100.5                | 1BT        | 28               | φ16                 | φ55                  | 17                     | 45                   | -             |                          |                          | 67                     | R2                                       | 1.59         |
| G3A 30R2 = 25            | 15                | 30                    | φ 90                   | -0.141  | φ 96                      | φ100.5                | 1BT        | 28               | φ25                 | φ55                  | 17                     | 45                   | 8 × 3.3       |                          |                          | 67                     | R2                                       | 1.51         |
| G3A 30R1 - 16            | 30                | 30                    | φ 90                   | -0.034  | φ 96                      | φ100.5                | 1BT        | 28               | φ16                 | φ55                  | 17                     | 45                   | -             |                          |                          | 67                     | R1                                       | 1.59         |
| G3A 30R1 = 25            | 30                | 30                    | φ 90                   | -0.034  | φ 96                      | φ100.5                | 1BT        | 28               | φ25                 | φ55                  | 17                     | 45                   | 8 × 3.3       |                          |                          | 67                     | R1                                       | 1.51         |
| G3A 30L1 - 16            | 30                | 30                    | φ 90                   | -0.034  | φ 96                      | φ100.5                | 1BT        | 28               | φ16                 | φ55                  | 17                     | 45                   | -             |                          |                          | 67                     | L1                                       | 1.59         |
| G3A 40R2 - 16            | 20                | 40                    | φ120                   | -0.188  | φ126                      | φ130.5                | 2B1T       | 28               | φ16                 | φ60                  | 20                     | 48                   | -             | φ 86                     | 20                       | 82                     | R2                                       | 2.50         |
| G3A 40R1 - 16            | 40                | 40                    | φ120                   | -0.046  | φ126                      | φ130.5                | 2B1T       | 28               | φ16                 | φ60                  | 20                     | 48                   | -             | φ 86                     | 20                       | 82                     | R1                                       | 2.50         |
| G3A 40R1 = 30            | 40                | 40                    | φ120                   | -0.046  | φ126                      | φ130.5                | 2B1T       | 28               | φ30                 | φ60                  | 20                     | 48                   | 8 × 3.3       | φ 86                     | 20                       | 82                     | R1                                       | 2.32         |
| G3A 40L1 - 16            | 40                | 40                    | φ120                   | -0.046  | φ126                      | φ130.5                | 2B1T       | 28               | φ16                 | φ60                  | 20                     | 48                   | -             | φ 86                     | 20                       | 82                     | L1                                       | 2.50         |
| G3A 50R2 - 16            | 25                | 50                    | φ150                   | -0.235  | φ156                      | φ160.5                | 2BT        | 28               | φ16                 | φ70                  | 20                     | 48                   | -             | φ108                     | 12                       | 97                     | R2                                       | 3.60         |
| G3A 50R1 - 16            | 50                | 50                    | φ150                   | -0.058  | φ156                      | φ160.5                | 2BT        | 28               | φ16                 | φ70                  | 20                     | 48                   | -             | φ108                     | 12                       | 97                     | R1                                       | 3.60         |
| G3A 50R1 = 40            | 50                | 50                    | φ150                   | -0.058  | φ156                      | φ160.5                | 2BT        | 28               | φ40                 | φ70                  | 20                     | 48                   | 12 × 3.3      | φ108                     | 12                       | 97                     | R1                                       | 3.17         |
| G3A 50L1 - 16            | 50                | 50                    | φ150                   | -0.058  | φ156                      | φ160.5                | 2BT        | 28               | φ16                 | φ70                  | 20                     | 48                   | -             | φ108                     | 12                       | 97                     | L1                                       | 3.60         |



## 蜗轮的容许传达扭矩 (N · m) 齿面强度②

| 产品型号<br>Catalogue Numbers | 蜗轮的旋转速度 (min <sup>-1</sup> )<br>revolution/min (Rotating speed of worm) |         |         |          |          |          |          | 侧隙<br>(mm)  |
|---------------------------|---|---------|---------|----------|----------|----------|----------|-------------|
|                           | 100rpm  | 250rpm  | 500rpm  | 1,000rpm | 1,200rpm | 1,500rpm | 1,800rpm |             |
| G3A 20R2 - 16             | 42.532  | 33.418  | 26.950  | 21.560   | 20.188   | 18.228   | 16.758   | 0.15 ~ 0.30 |
| G3A 20R1 - 16             | 44.100  | 35.868  | 29.302  | 23.716   | 22.344   | 20.580   | 19.012   | 0.15 ~ 0.30 |
| G3A 20L1 - 16             | 44.100  | 35.868  | 29.302  | 23.716   | 22.344   | 20.580   | 19.012   | 0.15 ~ 0.30 |
| G3A 25R2 - 16             | 64.974  | 51.548  | 41.846  | 33.614   | 31.556   | 28.714   | 26.460   | 0.15 ~ 0.30 |
| G3A 25R1 - 16             | 67.326  | 55.076  | 45.276  | 36.848   | 34.790   | 31.948   | 29.694   | 0.15 ~ 0.30 |
| G3A 25L1 - 16             | 67.326  | 55.076  | 45.276  | 36.848   | 34.790   | 31.948   | 29.694   | 0.15 ~ 0.30 |
| G3A 30R2 - 16             | 91.826  | 73.598  | 59.878  | 48.314   | 45.374   | 41.552   | 38.318   | 0.15 ~ 0.30 |
| G3A 30R1 - 16             | 94.472  | 77.812  | 64.582  | 52.724   | 49.784   | 45.766   | 42.532   | 0.15 ~ 0.30 |
| G3A 30L1 - 16             | 94.472  | 77.812  | 64.582  | 52.724   | 49.784   | 45.766   | 42.532   | 0.15 ~ 0.30 |
| G3A 40R2 - 16             | 158.270   | 128.576 | 105.154 | 85.260   | 80.262   | 73.696   | 68.306   | 0.15 ~ 0.30 |
| G3A 40R1 - 16             | 161.406   | 134.162 | 112.896 | 92.512   | 87.416   | 80.654   | 75.068   | 0.15 ~ 0.30 |
| G3A 40L1 - 16             | 161.406   | 134.162 | 112.896 | 92.512   | 87.416   | 80.654   | 75.068   | 0.15 ~ 0.30 |
| G3A 50R2 - 16             | 241.570   | 197.568 | 162.582 | 132.202  | 124.754  | 114.660  | 106.428  | 0.15 ~ 0.30 |
| G3A 50R1 - 16             | 244.412   | 204.624 | 173.460 | 142.982  | 135.338  | 124.950  | 116.424  | 0.15 ~ 0.30 |
| G3A 50L1 - 16             | 244.412   | 204.624 | 173.460 | 142.982  | 135.338  | 124.950  | 116.424  | 0.15 ~ 0.30 |



单位：mm

| 精度         | 材料   | 压力角  | 齿部加工方法 |
|------------|------|------|--------|
| 无相应 JIS 规格 | S45C | 20 度 | 切削     |

★未做表面处理。【=】表示带有键槽和键。

| 产品型号<br>Catalogue Number | 螺旋方向<br>Direction of Thread | 蜗杆头数<br>Number of Thread<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 齿顶圆直径<br>Tip Diameter<br><i>d<sub>a</sub></i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>d<sub>a</sub>(H8)</i> | 轮毂外径<br>Hub Diameter<br><i>d<sub>h</sub></i> | 轮毂长度<br>Hub Projection |                       | 全长<br>Overall Length<br><i>l</i> | 键槽<br>Key Way<br><i>b<sub>2</sub> × t<sub>2</sub></i> | 导程角<br>Lead Angle<br><i>γ</i> | 重量<br>Weight<br><i>W(kg)</i> |
|--------------------------|-----------------------------|--------------------------------------|---|---|------------|------------------------------|---|--|------------------------|-----------------------|----------------------------------|---|-------------------------------|------------------------------|
|                          |                             |                                      |   |   |            |                              |   |  | <i>l<sub>hL</sub></i>  | <i>l<sub>hR</sub></i> |                                  |   |                               |                              |
| W3S R1 - B               | R                           | 1                                    | φ44                                     | φ50   | B          | 50                           | φ16   | φ36  | -                      | 20                    | 70                               | -   | 3°55'                         | 0.62                         |
| W3S R1 - CF              | R                           | 1                                    | φ44                                     | φ50   | C          | 55                           | φ20   | φ36  | 15                     | 15                    | 85                               | -   | 3°55'                         | 0.67                         |
| W3S R1 = C               | R                           | 1                                    | φ44                                     | φ50   | C          | 55                           | φ20   | φ36  | 15                     | 15                    | 85                               | 6 × 2.8   | 3°55'                         | 0.66                         |
| W3S R2 - B               | R                           | 2                                    | φ44                                     | φ50   | B          | 50                           | φ16   | φ36  | -                      | 20                    | 70                               | -   | 7°50'                         | 0.62                         |
| W3S R2 - CF              | R                           | 2                                    | φ44                                     | φ50   | C          | 55                           | φ20   | φ36  | 15                     | 15                    | 85                               | -   | 7°50'                         | 0.67                         |
| W3S R2 = C               | R                           | 2                                    | φ44                                     | φ50   | C          | 55                           | φ20   | φ36  | 15                     | 15                    | 85                               | 6 × 2.8   | 7°50'                         | 0.66                         |



单位：mm

| 精度         | 材料             | 压力角  | 齿部加工方法 | 侧隙①  |
|------------|----------------|------|--------|------|
| 无相应 JIS 规格 | FC200<br>(灰铸铁) | 20 度 | 切削     | 确认表格 |

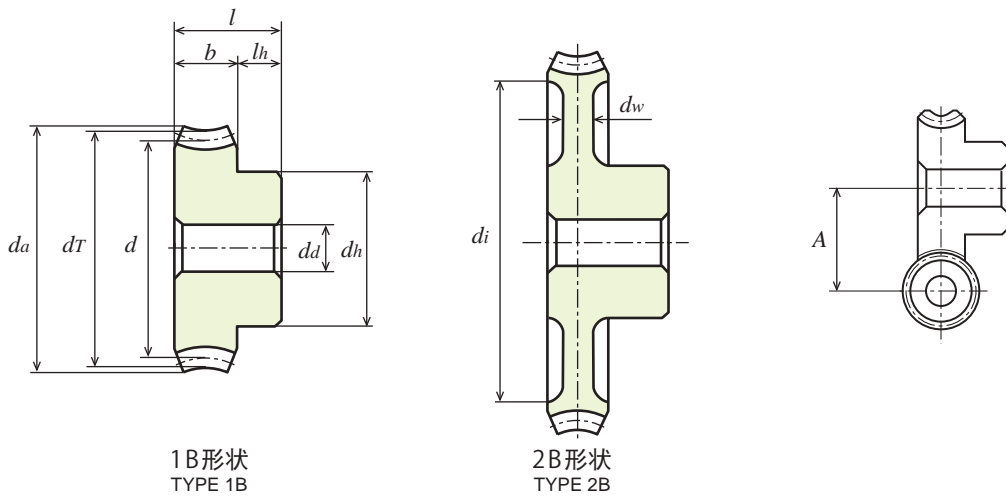
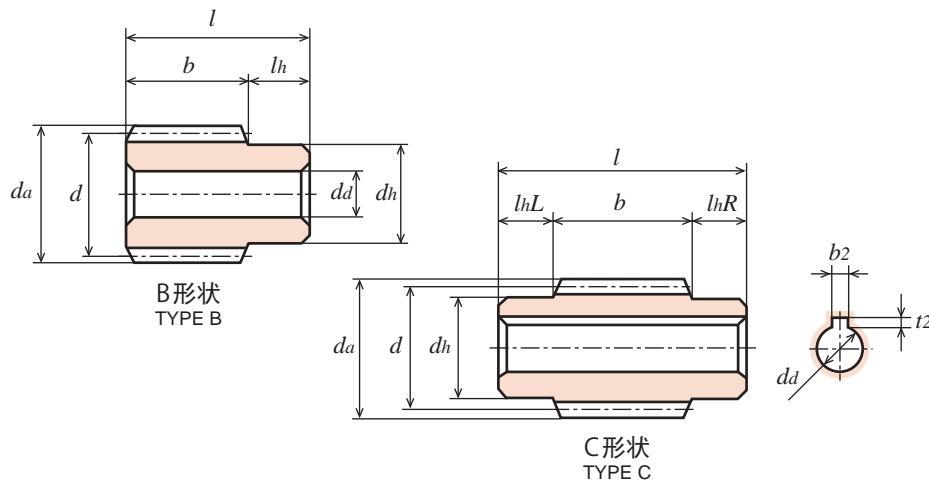
★未做表面处理。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①一对相应蜗轮蜗杆相啮合时的侧隙。

②对蜗杆旋转速度的相应蜗轮的容许传达扭矩值。

| 产品型号<br>Catalogue Number | 齿数比<br>Gear Ratio<br><i>u</i> | 齿数<br>Number of Teeth<br><i>z</i> | 节圆直径<br>Pitch Diameter<br><i>d</i> | 变位系数<br><i>x</i> | 蜗轮喉圆直径<br>Throat Diameter<br><i>d<sub>t</sub></i> | 齿顶圆直径<br>Tip Diameter<br><i>d<sub>a</sub></i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>d<sub>a</sub>(H8)</i> | 轮毂外径<br>Hub Diameter<br><i>d<sub>h</sub></i> | 轮毂长度<br>Hub Projection<br><i>l<sub>h</sub></i> | 全长<br>Overall Length<br><i>l</i> | 轮圈内经<br>Dimension of Rim<br><i>d<sub>i</sub></i> | 腹板厚度<br>Thickness of Web<br><i>d<sub>w</sub></i> | 中心距<br>Center Distance<br><i>A</i> | 蜗杆的螺旋方向和蜗杆头数<br>Hand and Thread for Worm | 重量           |
|--------------------------|-------------------------------|-----------------------------------|------------------------------------|------------------|---|---|------------|------------------------------|---|--|--|----------------------------------|--|--|------------------------------------|--|--------------|
|                          |                               |                                   |                                    |                  |   |   |            |                              |   |  |  |                                  |  |  |                                    |  | <i>W(kg)</i> |
| G3C 20 - R2              | 10                            | 20                                | φ 60                               | -0.094           | φ 66  | φ 70  | 1B         | 24                           | φ16   | φ48  | 18   | 42                               | -  | -  | 52                                 | R2                                       | 0.65         |
| G3C 20 - R1              | 20                            | 20                                | φ 60                               | -0.023           | φ 66  | φ 70  | 1B         | 24                           | φ16   | φ48  | 18   | 42                               | -  | -  | 52                                 | R1                                       | 0.65         |
| G3C 25 - R1              | 25                            | 25                                | φ 75                               | -0.029           | φ 81  | φ 85  | 1B         | 24                           | φ16   | φ55  | 18   | 42                               | -  | -  | 59.5                               | R1                                       | 1.02         |
| G3C 30 - R2              | 15                            | 30                                | φ 90                               | -0.141           | φ 96  | φ100  | 1B         | 24                           | φ16   | φ55  | 18   | 42                               | -  | -  | 67                                 | R2                                       | 1.36         |
| G3C 30 - R1              | 30                            | 30                                | φ 90                               | -0.034           | φ 96  | φ100  | 1B         | 24                           | φ16   | φ55  | 18   | 42                               | -  | -  | 67                                 | R1                                       | 1.36         |
| G3C 40 - R1              | 40                            | 40                                | φ120                               | -0.046           | φ126  | φ131  | 2B         | 28                           | φ16   | φ60  | 20   | 48                               | φ106   | 8  | 82                                 | R1                                       | 1.88         |



## 蜗轮的容许传达扭矩 (N · m) 齿面强度②

| 产品型号<br>Catalogue Numbers | 蜗轮的旋转速度 (min <sup>-1</sup> )<br>revolution/min (Rotating speed of worm) |        |        |        |        |        |        | 侧隙<br>(mm)  |
|---------------------------|---|--------|--------|--------|--------|--------|--------|-------------|
|                           | 10rpm   | 20rpm  | 50rpm  | 100rpm | 150rpm | 200rpm | 300rpm |             |
| G3C 20-R2                 | 53.99   | 49.58  | 43.51  | 37.73  | 34.00  | 31.45  | 28.02  | 0.15 ~ 0.30 |
| G3C 20-R1                 | 54.39   | 50.07  | 44.39  | 39.00  | 35.77  | 33.61  | 30.18  | 0.15 ~ 0.30 |
| G3C 25-R1                 | 82.02   | 75.75  | 67.22  | 59.58  | 54.58  | 51.25  | 46.55  | 0.15 ~ 0.30 |
| G3C 30-R2                 | 114.66  | 105.35 | 93.29  | 81.34  | 74.48  | 69.28  | 61.93  | 0.15 ~ 0.30 |
| G3C 30-R1                 | 113.87  | 106.23 | 94.37  | 83.69  | 77.12  | 72.42  | 66.05  | 0.15 ~ 0.30 |
| G3C 40-R1                 | 226.67  | 214.91 | 191.10 | 169.54 | 157.48 | 148.07 | 135.14 | 0.15 ~ 0.30 |

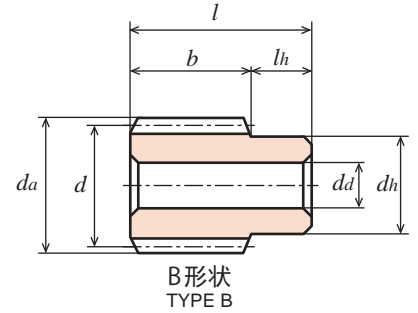
# 蜗杆和蜗轮

## WORMS AND WORM WHEELS

模数  
MODULE

4 (蜗轮的齿数 20 ~ 40)

(普通齿)  
FULL DEPTH TOOTH



单位：mm

| 精度         | 材料   | 压力角  | 齿部加工方法 |
|------------|------|------|--------|
| 无相应 JIS 规格 | S45C | 20 度 | 切削     |

★未做表面处理。【=】表示带有键槽和键。

| 产品型号<br>Catalogue Number | 螺旋方向<br>Direction of Thread | 蜗杆头数<br>Number of Thread | 分度圆直径<br>Reference Diameter | 齿顶圆直径<br>Tip Diameter | 形状<br>Type | 齿宽<br>Face Width | 孔径<br>Bore Diameter | 轮毂外径<br>Hub Diameter | 轮毂长度<br>Hub Projection | 全长<br>Overall Length | 导程角<br>Lead Angle | 重量<br>Weight |
|--------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------|------------|------------------|---------------------|----------------------|------------------------|----------------------|-------------------|--------------|
|                          |                             | $z$                      | $d$                         | $d_a$                 |            | $b$              | $d_d(H8)$           | $d_h$                | $l_h$                  | $l$                  | $\gamma$          | $W(kg)$      |
| W4S R1 - B               | R                           | 1                        | φ62                         | φ70                   | B          | 70               | φ22                 | φ50                  | 25                     | 95                   | 3°42'             | 1.69         |
| W4S R2 - B               | R                           | 2                        | φ62                         | φ70                   | B          | 70               | φ22                 | φ50                  | 25                     | 95                   | 7°25'             | 1.69         |



单位：mm

| 精度         | 材料                | 压力角  | 齿部加工方法 | 侧隙①  |
|------------|-------------------|------|--------|------|
| 无相应 JIS 规格 | CAC702<br>(铝青铜铸件) | 20 度 | 切削     | 确认表格 |

★未做表面处理。

★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①一对相应蜗轮蜗杆相啮合时的侧隙。

②对蜗杆旋转速度的相应蜗轮的容许传达扭矩值。

| 产品型号<br>Catalogue Number | 齿数比<br>Gear Ratio | 齿数<br>Number of Teeth | 节圆直径<br>Pitch Diameter | 变位系数<br>Addendum Coefficient | 蜗轮喉圆直径<br>Throat Diameter | 齿顶圆直径<br>Tip Diameter | 形状<br>Type | 齿宽<br>Face Width | 孔径<br>Bore Diameter | 轮毂外径<br>Hub Diameter | 轮毂长度<br>Hub Projection | 全长<br>Overall Length | 中心距<br>Center Distance | 蜗轮的螺旋方向和蜗杆头数<br>Hand and Thread for Worm | 重量<br>Weight |
|--------------------------|-------------------|-----------------------|------------------------|------------------------------|---------------------------|-----------------------|------------|------------------|---------------------|----------------------|------------------------|----------------------|------------------------|--|--------------|
|                          | $u$               | $z$                   | $d$                    | $x$                          | $d_T$                     | $d_a$                 |            | $b$              | $d_d(H8)$           | $d_h$                | $l_h$                  | $l$                  | $A$                    |  | $W(kg)$      |
| G4A 20 - R2              | 10                | 20                    | φ80                    | -0.084                       | φ88                       | φ93                   | 1B         | 36               | φ22                 | φ64                  | 25                     | 61                   | 71                     | R2                                       | 1.81         |
| G4A 20 - R1              | 20                | 20                    | φ80                    | -0.020                       | φ88                       | φ93                   | 1B         | 36               | φ22                 | φ64                  | 25                     | 61                   | 71                     | R1                                       | 1.81         |



单位：mm

| 精度         | 材料             | 压力角  | 齿部加工方法 | 侧隙①  |
|------------|----------------|------|--------|------|
| 无相应 JIS 规格 | FC200<br>(灰铸铁) | 20 度 | 切削     | 确认表格 |

★未做表面处理。

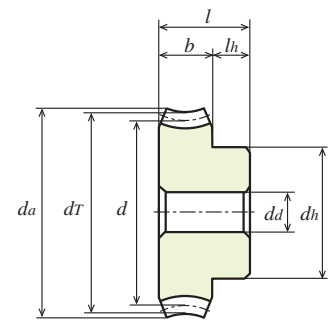
★本产品的容许传达动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

①一对相应蜗轮蜗杆相啮合时的侧隙。

②对蜗杆旋转速度的相应蜗轮的容许传达扭矩值。

| 产品型号<br>Catalogue Number | 齿数比<br>Gear Ratio | 齿数<br>Number of Teeth | 节圆直径<br>Pitch Diameter | 变位系数<br>Addendum Coefficient | 蜗轮喉圆直径<br>Throat Diameter | 齿顶圆直径<br>Tip Diameter | 形状<br>Type | 齿宽<br>Face Width | 孔径<br>Bore Diameter | 轮毂外径<br>Hub Diameter | 轮毂长度<br>Hub Projection | 全长<br>Overall Length | 轮圈厚度<br>Dimension of Rim | 腹板厚度<br>Thickness of Web | 中心距<br>Center Distance | 蜗轮的螺旋方向和蜗杆头数<br>Hand and Thread for Worm | 重量<br>Weight |
|--------------------------|-------------------|-----------------------|------------------------|------------------------------|---------------------------|-----------------------|------------|------------------|---------------------|----------------------|------------------------|----------------------|--------------------------|--------------------------|------------------------|--|--------------|
|                          | $u$               | $z$                   | $d$                    | $x$                          | $d_T$                     | $d_a$                 |            | $b$              | $d_d(H8)$           | $d_h$                | $l_h$                  | $l$                  | $d_i$                    | $d_w$                    | $A$                    |  | $W(kg)$      |
| G4C 20 - R2              | 10                | 20                    | φ 80                   | -0.084                       | φ 88                      | φ 93                  | 1B         | 36               | φ 22                | φ 64                 | 25                     | 61                   | -                        | -                        | 71                     | R2                                       | 1.68         |
| G4C 20 - R1              | 20                | 20                    | φ 80                   | -0.020                       | φ 88                      | φ 93                  | 1B         | 36               | φ 22                | φ 64                 | 25                     | 61                   | -                        | -                        | 71                     | R1                                       | 1.68         |
| G4C 30 - R1              | 30                | 30                    | φ 120                  | -0.031                       | φ 128                     | φ 135                 | 1B         | 36               | φ 22                | φ 70                 | 25                     | 61                   | -                        | -                        | 91                     | R1                                       | 3.20         |
| G4C 40 - R1              | 40                | 40                    | φ 160                  | -0.041                       | φ 168                     | φ 175                 | 2B         | 40               | φ 22                | φ 80                 | 25                     | 65                   | φ 140                    | 10                       | 111                    | R1                                       | 4.80         |

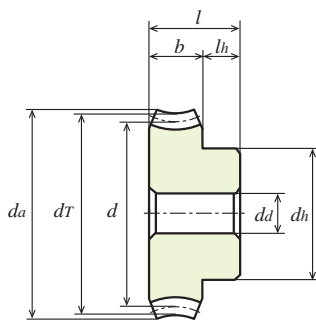




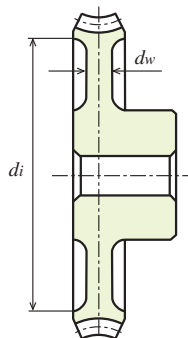
1B形状  
TYPE 1B

### 蜗轮的容许传达扭矩 (N · m) 齿面强度②

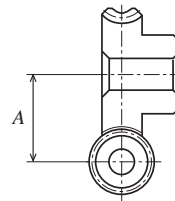
| 产品型号<br>Catalogue Numbers | 蜗杆的旋转速度 (min <sup>-1</sup> )<br>revolution/min (Rotating speed of worm) |        |        |          |          |          |          | 侧隙<br>(mm)  |
|---------------------------|---|--------|--------|----------|----------|----------|----------|-------------|
|                           | 100rpm  | 250rpm | 500rpm | 1,000rpm | 1,200rpm | 1,500rpm | 1,800rpm |             |
| G4A 20 - R2               | 72.226  | 56.350 | 45.472 | 35.966   | 33.124   | 29.988   | 27.244   | 0.15 ~ 0.30 |
| G4A 20 - R1               | 74.774  | 60.466 | 49.392 | 39.592   | 36.750   | 33.712   | 31.066   | 0.15 ~ 0.30 |



1B形状  
TYPE 1B



2B形状  
TYPE 2B



### 蜗轮的容许传达扭矩 (N · m) 齿面强度②

| 产品型号<br>Catalogue Numbers | 蜗杆的旋转速度 (min <sup>-1</sup> )<br>revolution/min (Rotating speed of worm) |        |        |        |        |        |        | 侧隙<br>(mm)  |
|---------------------------|---|--------|--------|--------|--------|--------|--------|-------------|
|                           | 10rpm   | 20rpm  | 50rpm  | 100rpm | 150rpm | 200rpm | 300rpm |             |
| G4C 20 - R2               | 118.58  | 108.78 | 94.08  | 81.24  | 73.20  | 67.52  | 59.97  | 0.15 ~ 0.30 |
| G4C 20 - R1               | 119.46  | 109.76 | 95.94  | 84.08  | 76.93  | 72.03  | 64.58  | 0.15 ~ 0.30 |
| G4C 30 - R1               | 301.84  | 281.35 | 246.07 | 217.56 | 200.11 | 187.57 | 170.61 | 0.15 ~ 0.30 |
| G4C 40 - R1               | 506.56  | 479.80 | 420.12 | 371.51 | 344.37 | 323.30 | 294.39 | 0.15 ~ 0.30 |



单位：mm

| 精度         | 材料   | 压力角  | 齿部加工方法 |
|------------|------|------|--------|
| 无相应 JIS 规格 | S45C | 20 度 | 切削     |

★未做表面处理。

| 产品型号<br>Catalogue Number | 螺旋方向<br>Direction of Thread | 蜗杆头数<br>Number of Thread<br><i>z</i> | 分度圆直径<br>Reference Diameter<br><i>d</i> | 齿顶圆直径<br>Tip Diameter<br><i>d<sub>a</sub></i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>d<sub>d</sub>(H8)</i> | 轮毂外径<br>Hub Diameter<br><i>d<sub>h</sub></i> | 轮毂长度<br>Hub Projection |                       | 全长<br>Overall Length<br><i>l</i> | 导程角<br>Lead Angle<br><i>γ</i> | 重量<br>Weight<br><i>W(kg)</i> |
|--------------------------|-----------------------------|--------------------------------------|---|---|------------|------------------------------|---|--|------------------------|-----------------------|----------------------------------|-------------------------------|------------------------------|
|                          |                             |                                      |   |   |            |                              |   |  | <i>l<sub>hL</sub></i>  | <i>l<sub>hR</sub></i> |                                  |                               |                              |
| <b>W5S R1 - B</b>        | R                           | 1                                    | φ72                                     | φ82   | B          | 90                           | φ25   | φ58  | 5                      | 30                    | 125                              | 3°58'                         | 3.00                         |
| <b>W5S R2 - B</b>        | R                           | 2                                    | φ72                                     | φ82   | B          | 90                           | φ25   | φ58  | 5                      | 30                    | 125                              | 7°59'                         | 3.00                         |



单位：mm

| 精度         | 材料             | 压力角  | 齿部加工方法 | 侧隙①  |
|------------|----------------|------|--------|------|
| 无相应 JIS 规格 | FC200<br>(灰铸铁) | 20 度 | 切削     | 确认表格 |

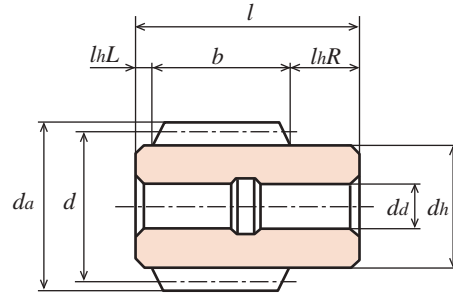
★未做表面处理。

★本产品的容许传动动力表使用 JGMA 公式。请在 P28 确认单位换算方法。

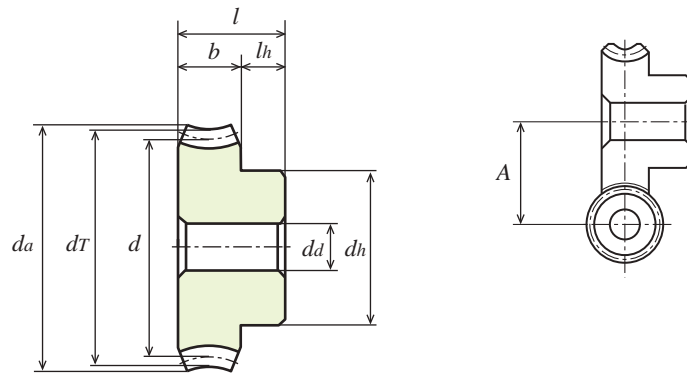
①一对相应蜗轮蜗杆相啮合时的侧隙。

②对蜗杆旋转速度的相应蜗轮的容许传达扭矩值。

| 产品型号<br>Catalogue Number | 齿数比<br>Gear Ratio<br><i>u</i> | 齿数<br>Number of Teeth<br><i>z</i> | 节圆直径<br>Pitch Diameter<br><i>d</i> | 变位系数<br><i>x</i> | 蜗轮喉圆直径<br>Throat Diameter<br><i>d<sub>t</sub></i> | 齿顶圆直径<br>Tip Diameter<br><i>d<sub>a</sub></i> | 形状<br>Type | 齿宽<br>Face Width<br><i>b</i> | 孔径<br>Bore Diameter<br><i>d<sub>d</sub>(H8)</i> | 轮毂外径<br>Hub Diameter<br><i>d<sub>h</sub></i> | 轮毂长度<br>Hub Projection<br><i>l<sub>h</sub></i> | 全长<br>Overall Length<br><i>l</i> | 轮圈内径<br>Dimension of Rim<br><i>d<sub>i</sub></i> | 腹板厚度<br>Thickness of Web<br><i>d<sub>w</sub></i> | 中心距<br>Center Distance<br><i>A</i> | 蜗杆的螺旋方向和蜗杆头数<br>Hand and Thread for Worm | 重量<br>Weight<br><i>W(kg)</i> |
|--------------------------|-------------------------------|-----------------------------------|------------------------------------|------------------|---|---|------------|------------------------------|---|--|--|----------------------------------|--|--|------------------------------------|--|------------------------------|
| <b>G5C 20 - R2</b>       | 10                            | 20                                | φ100                               | -0.097           | φ110  | φ118  | 1B         | 46                           | φ25   | φ80  | 26   | 72                               | -  | -  | 86                                 | R2                                       | 3.20                         |
| <b>G5C 20 - R1</b>       | 20                            | 20                                | φ100                               | -0.024           | φ110  | φ118  | 1B         | 46                           | φ25   | φ80  | 26   | 72                               | -  | -  | 86                                 | R1                                       | 3.20                         |



B形状  
TYPE B



1B形状  
TYPE 1B

### 蜗轮的容许传达扭矩 (N · m) 齿面强度②

| 产品型号<br>Catalogue Numbers | 蜗轮的旋转速度 (min <sup>-1</sup> )<br>revolution/min (Rotating speed of worm) |        |        |        |        |        |        | 侧隙<br>(mm)  |
|---------------------------|---|--------|--------|--------|--------|--------|--------|-------------|
|                           | 10rpm   | 20rpm  | 50rpm  | 100rpm | 150rpm | 200rpm | 300rpm |             |
| G5C 20-R2                 | 247.84  | 227.26 | 195.31 | 168.26 | 151.41 | 139.74 | 123.48 | 0.15 ~ 0.30 |
| G5C 20-R1                 | 249.90  | 229.51 | 199.13 | 174.24 | 159.25 | 149.05 | 132.88 | 0.15 ~ 0.30 |

# 参考资料

## 硬度换算表

钢铁维氏硬度的各类近似值换算表

| 维氏硬度 | 布氏硬度<br>10mm球·负荷3000kgf |                |       | 洛氏硬度 <sup>(2)</sup>      |                            |                           |                           | 洛氏表面硬度钻石圆锥压头          |                       |                       | 肖氏硬度 | 抗拉强度<br>(近似值)<br>MPa<br>(kgf/mm <sup>2</sup> ) <sup>(1)</sup> | 维氏硬度<br>负荷 |
|------|-------------------------|----------------|-------|--------------------------|----------------------------|---------------------------|---------------------------|-----------------------|-----------------------|-----------------------|------|---|------------|
|      | 标准球                     | Hult-gren<br>球 | 碳化钨球  | A标度负荷<br>60kgf钻石<br>圆锥压头 | B标度负荷<br>100kgf<br>1/16in球 | C标度负荷<br>150kgf钻石<br>圆锥压头 | D标度负荷<br>100kgf钻石<br>圆锥压头 | 15-N<br>标度负荷<br>15kgf | 30-N<br>标度负荷<br>30kgf | 45-N<br>标度负荷<br>45kgf |      |   |            |
| 940  | -                       | -              | -     | 85·6                     | -                          | 68·0                      | 76·9                      | 93·2                  | 84·4                  | 75·4                  | 97   | -   | 940        |
| 920  | -                       | -              | -     | 85·3                     | -                          | 67·5                      | 76·5                      | 93·0                  | 84·0                  | 74·8                  | 96   | -   | 920        |
| 900  | -                       | -              | -     | 85·0                     | -                          | 67·0                      | 76·1                      | 92·9                  | 83·6                  | 74·2                  | 95   | -   | 900        |
| 880  | -                       | -              | (767) | 84·7                     | -                          | 66·4                      | 75·7                      | 92·7                  | 83·1                  | 73·6                  | 93   | -   | 880        |
| 860  | -                       | -              | (757) | 84·4                     | -                          | 65·9                      | 75·3                      | 92·5                  | 82·7                  | 73·1                  | 92   | -   | 860        |
| 840  | -                       | -              | (745) | 84·1                     | -                          | 65·3                      | 74·8                      | 92·3                  | 82·2                  | 72·2                  | 91   | -   | 840        |
| 820  | -                       | -              | (733) | 83·8                     | -                          | 64·7                      | 74·3                      | 92·1                  | 81·7                  | 71·8                  | 90   | -   | 820        |
| 800  | -                       | -              | (722) | 83·4                     | -                          | 64·0                      | 73·8                      | 91·8                  | 81·1                  | 71·0                  | 88   | -   | 800        |
| 780  | -                       | -              | (710) | 83·0                     | -                          | 63·3                      | 73·3                      | 91·5                  | 80·4                  | 70·2                  | 87   | -   | 780        |
| 760  | -                       | -              | (698) | 82·6                     | -                          | 62·5                      | 72·6                      | 91·2                  | 79·7                  | 69·4                  | 86   | -   | 760        |
| 740  | -                       | -              | (684) | 82·2                     | -                          | 61·8                      | 72·1                      | 91·0                  | 79·1                  | 68·6                  | 84   | -   | 740        |
| 720  | -                       | -              | (670) | 81·8                     | -                          | 61·0                      | 71·5                      | 90·7                  | 78·4                  | 67·7                  | 83   | -   | 720        |
| 700  | -                       | 615            | (656) | 81·3                     | -                          | 60·1                      | 70·8                      | 90·3                  | 77·6                  | 66·7                  | 81   | -   | 700        |
| 690  | -                       | 610            | (647) | 81·1                     | -                          | 59·7                      | 70·5                      | 90·1                  | 77·2                  | 66·2                  | -    | -   | 690        |
| 680  | -                       | 603            | (638) | 80·8                     | -                          | 59·2                      | 70·1                      | 89·8                  | 76·8                  | 65·7                  | 80   | -   | 680        |
| 670  | -                       | 597            | 630   | 80·6                     | -                          | 58·8                      | 69·8                      | 89·7                  | 76·4                  | 65·3                  | -    | -   | 670        |
| 660  | -                       | 590            | 620   | 80·3                     | -                          | 58·3                      | 69·4                      | 89·5                  | 75·9                  | 64·7                  | 79   | -   | 660        |
| 650  | -                       | 585            | 611   | 80·0                     | -                          | 57·8                      | 69·0                      | 89·2                  | 75·5                  | 64·1                  | -    | -   | 650        |
| 640  | -                       | 578            | 601   | 79·8                     | -                          | 57·3                      | 68·7                      | 89·0                  | 75·1                  | 63·5                  | 77   | -   | 640        |
| 630  | -                       | 571            | 591   | 79·5                     | -                          | 56·8                      | 68·3                      | 88·8                  | 74·6                  | 63·0                  | -    | -   | 630        |
| 620  | -                       | 564            | 582   | 79·2                     | -                          | 56·3                      | 67·9                      | 88·5                  | 74·2                  | 62·4                  | 75   | -   | 620        |
| 610  | -                       | 557            | 573   | 78·9                     | -                          | 55·7                      | 67·5                      | 88·2                  | 73·6                  | 61·7                  | -    | -   | 610        |
| 600  | -                       | 550            | 564   | 78·6                     | -                          | 55·2                      | 67·0                      | 88·0                  | 73·2                  | 61·2                  | 74   | -   | 600        |
| 590  | -                       | 542            | 554   | 78·4                     | -                          | 54·7                      | 66·7                      | 87·8                  | 72·7                  | 60·5                  | -    | 2055 (210)  | 590        |
| 580  | -                       | 535            | 545   | 78·0                     | -                          | 54·1                      | 66·2                      | 87·5                  | 72·1                  | 59·9                  | 72   | 2020 (206)  | 580        |
| 570  | -                       | 527            | 535   | 77·8                     | -                          | 53·6                      | 65·8                      | 87·2                  | 71·7                  | 59·3                  | -    | 1985 (202)  | 570        |
| 560  | -                       | 519            | 525   | 77·4                     | -                          | 53·0                      | 65·4                      | 86·9                  | 71·2                  | 58·6                  | 71   | 1950 (199)  | 560        |
| 550  | (505)                   | 512            | 517   | 77·0                     | -                          | 52·3                      | 64·8                      | 86·6                  | 70·5                  | 57·8                  | -    | 1905 (194)  | 550        |
| 540  | (496)                   | 503            | 507   | 76·7                     | -                          | 51·7                      | 64·4                      | 86·3                  | 70·0                  | 57·0                  | 69   | 1860 (190)  | 540        |
| 530  | (488)                   | 495            | 497   | 76·4                     | -                          | 51·1                      | 63·9                      | 86·0                  | 69·5                  | 56·2                  | -    | 1825 (186)  | 530        |
| 520  | (480)                   | 487            | 488   | 76·1                     | -                          | 50·5                      | 63·5                      | 85·7                  | 69·0                  | 55·6                  | 67   | 1795 (183)  | 520        |
| 510  | (473)                   | 479            | 479   | 75·7                     | -                          | 49·8                      | 62·9                      | 85·4                  | 68·3                  | 54·7                  | -    | 1750 (179)  | 510        |
| 500  | (465)                   | 471            | 471   | 75·3                     | -                          | 49·1                      | 62·2                      | 85·0                  | 67·7                  | 53·9                  | 66   | 1705 (174)  | 500        |
| 490  | (456)                   | 460            | 460   | 74·9                     | -                          | 48·4                      | 61·6                      | 84·7                  | 67·1                  | 53·1                  | -    | 1660 (169)  | 490        |
| 480  | 448                     | 452            | 452   | 74·5                     | -                          | 47·7                      | 61·3                      | 84·3                  | 66·4                  | 52·2                  | 64   | 1620 (165)  | 480        |
| 470  | 441                     | 442            | 442   | 74·1                     | -                          | 46·9                      | 60·7                      | 83·9                  | 65·7                  | 51·3                  | -    | 1570 (160)  | 470        |
| 460  | 433                     | 433            | 433   | 73·6                     | -                          | 46·1                      | 60·1                      | 83·6                  | 64·9                  | 50·4                  | 62   | 1530 (156)  | 460        |
| 450  | 425                     | 425            | 425   | 73·3                     | -                          | 45·3                      | 59·4                      | 83·2                  | 64·3                  | 49·4                  | -    | 1495 (153)  | 450        |
| 440  | 415                     | 415            | 415   | 72·8                     | -                          | 44·5                      | 58·8                      | 82·8                  | 63·5                  | 48·4                  | 59   | 1460 (149)  | 440        |
| 430  | 405                     | 405            | 405   | 72·3                     | -                          | 43·6                      | 58·2                      | 82·3                  | 62·7                  | 47·4                  | -    | 1410 (144)  | 430        |
| 420  | 397                     | 397            | 397   | 71·8                     | -                          | 42·7                      | 57·5                      | 81·8                  | 61·9                  | 46·4                  | 57   | 1370 (140)  | 420        |
| 410  | 388                     | 388            | 388   | 71·4                     | -                          | 41·8                      | 56·8                      | 81·4                  | 61·1                  | 45·3                  | -    | 1330 (136)  | 410        |
| 400  | 379                     | 379            | 379   | 70·8                     | -                          | 40·8                      | 56·0                      | 81·0                  | 60·2                  | 44·1                  | 55   | 1290 (131)  | 400        |
| 390  | 369                     | 369            | 369   | 70·3                     | -                          | 39·8                      | 55·2                      | 80·3                  | 59·3                  | 42·9                  | -    | 1240 (127)  | 390        |
| 380  | 360                     | 360            | 380   | 69·8                     | (110·0)                    | 38·8                      | 54·4                      | 79·8                  | 58·4                  | 41·7                  | 52   | 1205 (123)  | 380        |
| 370  | 350                     | 350            | 350   | 69·2                     | -                          | 37·7                      | 53·6                      | 79·2                  | 57·4                  | 40·4                  | -    | 1170 (120)  | 370        |
| 360  | 341                     | 341            | 341   | 68·7                     | (109·0)                    | 36·6                      | 52·8                      | 78·6                  | 56·4                  | 39·1                  | 50   | 1130 (115)  | 360        |
| 350  | 331                     | 331            | 331   | 68·1                     | -                          | 35·5                      | 51·9                      | 78·0                  | 55·4                  | 37·8                  | -    | 1095 (112)  | 350        |
| 340  | 322                     | 322            | 322   | 67·6                     | (108·0)                    | 34·4                      | 51·1                      | 77·4                  | 54·4                  | 36·5                  | 47   | 1070 (109)  | 340        |
| 330  | 313                     | 313            | 313   | 67·0                     | -                          | 33·3                      | 50·2                      | 76·8                  | 53·6                  | 35·2                  | -    | 1035 (105)  | 330        |

钢铁维氏硬度的各类近似值换算表

| 维氏硬度 | 布氏硬度<br>10mm球·负荷3000kgf |                |      | 洛氏硬度 <sup>(2)</sup>      |                            |                           |                           | 洛氏表面硬度钻石圆锥压头          |                       |                       | 肖氏硬度 | 抗拉强度<br>(近似值)<br>MPa<br>(kgf/mm <sup>2</sup> ) <sup>(1)</sup> | 维氏硬度<br>负荷 |
|------|-------------------------|----------------|------|--------------------------|----------------------------|---------------------------|---------------------------|-----------------------|-----------------------|-----------------------|------|---|------------|
|      | 标准球                     | Hult-gren<br>球 | 碳化钨球 | A标度负荷<br>60kgf钻石<br>圆锥压头 | B标度负荷<br>100kgf<br>1/16in球 | C标度负荷<br>150kgf钻石<br>圆锥压头 | D标度负荷<br>100kgf钻石<br>圆锥压头 | 15-N<br>标度负荷<br>15kgf | 30-N<br>标度负荷<br>30kgf | 45-N<br>标度负荷<br>45kgf |      |   |            |
| 320  | 303                     | 303            | 303  | 66·4                     | (107·0)                    | 33·2                      | 49·4                      | 76·2                  | 52·3                  | 33·9                  | 45   | 1005 (103)  | 320        |
| 310  | 294                     | 294            | 294  | 65·8                     | -                          | 31·0                      | 48·4                      | 75·6                  | 51·3                  | 32·5                  | -    | 980 (100)   | 310        |
| 300  | 284                     | 284            | 284  | 65·2                     | (105·5)                    | 29·8                      | 47·5                      | 74·9                  | 50·2                  | 31·1                  | 42   | 950 (97)  | 300        |
| 295  | 280                     | 280            | 280  | 64·8                     | -                          | 29·2                      | 47·1                      | 74·6                  | 49·7                  | 30·4                  | -    | 935 (96)  | 295        |
| 290  | 275                     | 275            | 275  | 64·5                     | (104·5)                    | 28·5                      | 46·5                      | 74·2                  | 49·0                  | 29·5                  | 41   | 915 (94)  | 290        |
| 285  | 270                     | 270            | 270  | 64·2                     | -                          | 27·8                      | 46·0                      | 73·8                  | 48·4                  | 28·7                  | -    | 905 (92)  | 285        |
| 280  | 265                     | 265            | 265  | 63·8                     | (103·5)                    | 27·1                      | 45·3                      | 73·4                  | 47·8                  | 27·9                  | 40   | 890 (91)  | 280        |
| 275  | 261                     | 261            | 261  | 63·5                     | -                          | 26·4                      | 44·9                      | 73·0                  | 47·2                  | 27·1                  | -    | 875 (89)  | 275        |
| 270  | 256                     | 256            | 256  | 63·1                     | (102·0)                    | 25·6                      | 44·3                      | 72·6                  | 46·4                  | 26·2                  | 38   | 855 (87)  | 270        |
| 265  | 252                     | 252            | 252  | 62·7                     | -                          | 24·8                      | 43·7                      | 72·1                  | 45·7                  | 25·2                  | -    | 840 (86)  | 265        |
| 260  | 247                     | 247            | 247  | 62·4                     | (101·0)                    | 24·0                      | 43·1                      | 71·6                  | 45·0                  | 24·3                  | 37   | 825 (84)  | 260        |
| 255  | 243                     | 243            | 243  | 62·0                     | -                          | 23·1                      | 42·2                      | 71·1                  | 44·2                  | 23·2                  | -    | 805 (82)  | 255        |
| 250  | 238                     | 238            | 238  | 61·6                     | 99·5                       | 22·2                      | 41·7                      | 70·6                  | 43·4                  | 22·2                  | 36   | 795 (81)  | 250        |
| 245  | 233                     | 233            | 233  | 61·2                     | -                          | 21·3                      | 41·1                      | 70·1                  | 42·5                  | 21·1                  | -    | 780 (79)  | 245        |
| 240  | 228                     | 228            | 228  | 60·7                     | 98·1                       | 20·3                      | 40·3                      | 69·6                  | 41·7                  | 19·9                  | 34   | 765 (78)  | 240        |
| 230  | 219                     | 219            | 219  | -                        | 96·7                       | (18·0)                    | -                         | -                     | -                     | -                     | 33   | 730 (75)  | 230        |
| 220  | 209                     | 209            | 209  | -                        | 95·0                       | (15·7)                    | -                         | -                     | -                     | -                     | 32   | 695 (71)  | 220        |
| 210  | 200                     | 200            | 200  | -                        | 93·4                       | (13·4)                    | -                         | -                     | -                     | -                     | 30   | 670 (68)  | 210        |
| 200  | 190                     | 190            | 190  | -                        | 91·5                       | (11·0)                    | -                         | -                     | -                     | -                     | 29   | 635 (65)  | 200        |
| 190  | 181                     | 181            | 181  | -                        | 89·5                       | (8·5)                     | -                         | -                     | -                     | -                     | 28   | 605 (62)  | 190        |
| 180  | 171                     | 171            | 171  | -                        | 87·1                       | (6·0)                     | -                         | -                     | -                     | -                     | 26   | 580 (59)  | 180        |
| 170  | 162                     | 162            | 162  | -                        | 85·0                       | (3·0)                     | -                         | -                     | -                     | -                     | 25   | 545 (56)  | 170        |
| 160  | 152                     | 152            | 152  | -                        | 81·7                       | (0·0)                     | -                         | -                     | -                     | -                     | 24   | 515 (53)  | 160        |
| 150  | 143                     | 143            | 143  | -                        | 78·7                       | -                         | -                         | -                     | -                     | -                     | 22   | 490 (50)  | 150        |
| 140  | 133                     | 133            | 133  | -                        | 75·0                       | -                         | -                         | -                     | -                     | -                     | 21   | 455 (46)  | 140        |
| 130  | 124                     | 124            | 124  | -                        | 71·2                       | -                         | -                         | -                     | -                     | -                     | 20   | 425 (44)  | 130        |
| 120  | 114                     | 114            | 114  | -                        | 66·7                       | -                         | -                         | -                     | -                     | -                     | -    | 390 (40)  | 120        |
| 110  | 105                     | 105            | 105  | -                        | 62·3                       | -                         | -                         | -                     | -                     | -                     | -    | -   | 110        |
| 100  | 95                      | 95             | 95   | -                        | 56·2                       | -                         | -                         | -                     | -                     | -                     | -    | -   | 100        |
| 95   | 90                      | 90             | 90   | -                        | 52·0                       | -                         | -                         | -                     | -                     | -                     | -    | -   | 95         |
| 90   | 86                      | 86             | 86   | -                        | 48·0                       | -                         | -                         | -                     | -                     | -                     | -    | -   | 90         |
| 85   | 81                      | 81             | 81   | -                        | 41·0                       | -                         | -                         | -                     | -                     | -                     | -    | -   | 85         |

备考：粗体字的数字来自ASTME140表1(SAE-ASM-ASTM一起进行调整的)

注：(1)用括号()表示的单位及数字是，根据JIS Z 8438的换算表，从psi换算过来的。其中1MPa=1N/mm<sup>2</sup>。

(2)表中括号()内的数据是很少使用的领域的的数据。所以作为参考值来表示。

(3)引用于JIS钢铁手册

钢铁维氏C硬度的各类近似值换算表

| 洛氏C规格硬度 | 维氏硬度 | 布氏硬度<br>10mm球·负荷3000kgf |            |       | 洛氏硬度 <sup>(2)</sup>      |                             |                           | 洛氏表面硬度钻石圆锥压头          |                       |                       | 肖氏硬度 | 抗拉强度<br>(近似值)<br>MPa<br>(kgf/mm <sup>2</sup> ) <sup>(1)</sup> | 洛氏C规格硬度 |
|---------|------|-------------------------|------------|-------|--------------------------|-----------------------------|---------------------------|-----------------------|-----------------------|-----------------------|------|---|---------|
|         |      | 标准球                     | Hult-gren球 | 碳化钨球  | A标度负荷<br>60kgf钻石<br>圆锥压头 | B标度负荷<br>100kgf径<br>1/16in球 | D标度负荷<br>100kgf钻石<br>圆锥压头 | 15-N<br>标度负荷<br>15kgf | 30-N<br>标度负荷<br>30kgf | 45-N<br>标度负荷<br>45kgf |      |   |         |
| 68      | 940  | -                       | -          | -     | 85·6                     | -                           | 76·9                      | 93·2                  | 84·4                  | 75·4                  | 97   | -   | 68      |
| 67      | 900  | -                       | -          | -     | 85·0                     | -                           | 76·1                      | 92·9                  | 83·6                  | 74·2                  | 95   | -   | 67      |
| 66      | 865  | -                       | -          | -     | 84·5                     | -                           | 75·4                      | 92·5                  | 82·8                  | 73·3                  | 92   | -   | 66      |
| 65      | 832  | -                       | -          | (739) | 83·9                     | -                           | 74·5                      | 92·2                  | 81·9                  | 72·0                  | 91   | -   | 65      |
| 64      | 800  | -                       | -          | (722) | 83·4                     | -                           | 73·8                      | 91·8                  | 81·1                  | 71·0                  | 88   | -   | 64      |
| 63      | 772  | -                       | -          | (705) | 82·8                     | -                           | 73·0                      | 91·4                  | 80·1                  | 69·9                  | 87   | -   | 63      |
| 62      | 746  | -                       | -          | (688) | 82·3                     | -                           | 72·2                      | 91·1                  | 79·3                  | 68·8                  | 85   | -   | 62      |
| 61      | 720  | -                       | -          | (670) | 81·8                     | -                           | 71·5                      | 90·7                  | 78·4                  | 67·7                  | 83   | -   | 61      |
| 60      | 697  | -                       | 613        | (654) | 81·2                     | -                           | 70·7                      | 90·2                  | 77·5                  | 66·6                  | 81   | -   | 60      |
| 59      | 674  | -                       | 599        | (634) | 80·7                     | -                           | 69·9                      | 89·8                  | 76·6                  | 65·5                  | 80   | -   | 59      |
| 58      | 653  | -                       | 587        | 615   | 80·1                     | -                           | 69·2                      | 89·3                  | 75·7                  | 64·3                  | 78   | -   | 58      |
| 57      | 633  | -                       | 575        | 595   | 79·6                     | -                           | 68·5                      | 88·9                  | 74·8                  | 63·2                  | 76   | -   | 57      |
| 56      | 613  | -                       | 561        | 577   | 79·0                     | -                           | 67·7                      | 88·3                  | 73·9                  | 62·0                  | 75   | -   | 56      |
| 55      | 595  | -                       | 546        | 560   | 78·5                     | -                           | 66·9                      | 87·9                  | 73·0                  | 60·9                  | 74   | 2075 (212)  | 55      |
| 54      | 577  | -                       | 534        | 543   | 78·0                     | -                           | 66·1                      | 87·4                  | 72·0                  | 59·8                  | 72   | 2015 (205)  | 54      |
| 53      | 560  | -                       | 519        | 525   | 77·4                     | -                           | 65·4                      | 86·9                  | 71·2                  | 58·6                  | 71   | 1950 (199)  | 53      |
| 52      | 544  | (500)                   | 508        | 512   | 76·8                     | -                           | 64·6                      | 86·4                  | 70·2                  | 57·4                  | 69   | 1880 (192)  | 52      |
| 51      | 528  | (487)                   | 494        | 496   | 76·3                     | -                           | 63·8                      | 85·9                  | 69·4                  | 56·1                  | 68   | 1820 (186)  | 51      |
| 50      | 513  | (475)                   | 481        | 481   | 75·9                     | -                           | 63·1                      | 85·5                  | 68·5                  | 55·0                  | 67   | 1760 (179)  | 50      |
| 49      | 498  | (464)                   | 469        | 469   | 75·2                     | -                           | 62·1                      | 85·0                  | 67·6                  | 53·8                  | 66   | 1695 (173)  | 49      |
| 48      | 484  | 451                     | 455        | 455   | 74·7                     | -                           | 61·4                      | 84·5                  | 66·7                  | 52·5                  | 64   | 1635 (167)  | 48      |
| 47      | 471  | 442                     | 443        | 443   | 74·1                     | -                           | 60·8                      | 83·9                  | 65·8                  | 51·4                  | 63   | 1580 (161)  | 47      |
| 46      | 458  | 432                     | 432        | 432   | 73·6                     | -                           | 60·0                      | 83·5                  | 64·8                  | 50·3                  | 62   | 1530 (156)  | 46      |
| 45      | 446  | 421                     | 421        | 421   | 73·1                     | -                           | 59·2                      | 83·0                  | 64·0                  | 49·0                  | 60   | 1480 (151)  | 45      |
| 44      | 434  | 409                     | 409        | 409   | 72·5                     | -                           | 58·5                      | 82·5                  | 63·1                  | 47·8                  | 58   | 1435 (146)  | 44      |
| 43      | 423  | 400                     | 400        | 400   | 72·0                     | -                           | 57·7                      | 82·0                  | 62·2                  | 46·7                  | 57   | 1385 (141)  | 43      |
| 42      | 412  | 390                     | 390        | 390   | 71·5                     | -                           | 56·9                      | 81·5                  | 61·3                  | 45·5                  | 56   | 1340 (136)  | 42      |
| 41      | 402  | 381                     | 381        | 381   | 70·9                     | -                           | 56·2                      | 80·9                  | 60·4                  | 44·3                  | 55   | 1295 (132)  | 41      |
| 40      | 392  | 371                     | 371        | 371   | 70·4                     | -                           | 55·4                      | 80·4                  | 59·5                  | 43·1                  | 54   | 1250 (127)  | 40      |
| 39      | 382  | 362                     | 362        | 362   | 69·9                     | -                           | 54·6                      | 79·9                  | 58·6                  | 41·9                  | 52   | 1215 (124)  | 39      |
| 38      | 372  | 353                     | 353        | 353   | 69·4                     | -                           | 53·8                      | 79·4                  | 57·7                  | 40·8                  | 51   | 1180 (120)  | 38      |
| 37      | 363  | 344                     | 344        | 344   | 68·9                     | -                           | 53·1                      | 78·8                  | 56·8                  | 39·6                  | 50   | 1160 (118)  | 37      |
| 36      | 354  | 336                     | 336        | 336   | 68·4                     | (109·0)                     | 52·3                      | 78·3                  | 55·9                  | 38·4                  | 49   | 1115 (114)  | 36      |
| 35      | 345  | 327                     | 327        | 327   | 67·9                     | (108·5)                     | 51·5                      | 77·7                  | 55·0                  | 37·2                  | 48   | 1080 (110)  | 35      |
| 34      | 336  | 319                     | 319        | 319   | 67·4                     | (108·0)                     | 50·8                      | 77·2                  | 54·2                  | 36·1                  | 47   | 1055 (108)  | 34      |
| 33      | 327  | 311                     | 311        | 311   | 66·8                     | (107·5)                     | 50·0                      | 76·6                  | 53·3                  | 34·9                  | 46   | 1025 (105)  | 33      |
| 32      | 318  | 301                     | 301        | 301   | 66·3                     | (107·0)                     | 49·2                      | 76·1                  | 52·1                  | 33·7                  | 44   | 1000 (102)  | 32      |
| 31      | 310  | 294                     | 294        | 294   | 65·8                     | (106·0)                     | 48·4                      | 75·6                  | 51·3                  | 32·5                  | 43   | 980 (100)   | 31      |
| 30      | 302  | 286                     | 286        | 286   | 65·3                     | (105·5)                     | 47·7                      | 75·0                  | 50·4                  | 31·3                  | 42   | 950 (97)  | 30      |
| 29      | 294  | 279                     | 279        | 279   | 64·7                     | (104·5)                     | 47·0                      | 74·5                  | 49·5                  | 30·1                  | 41   | 930 (95)  | 29      |

钢铁对洛氏C硬度相近的换算值

| 洛氏C规格硬度 | 维氏硬度 | 布氏硬度<br>10mm球·负荷3000kgf |            |      | 洛氏硬度 <sup>(2)</sup>      |                             |                           | 洛氏表面硬度钻石圆锥压头          |                       |                       | 肖氏硬度 | 抗拉强度<br>(近似值)<br>MPa<br>(kgf/mm <sup>2</sup> ) <sup>(1)</sup> | 洛氏C规格硬度 |
|---------|------|-------------------------|------------|------|--------------------------|-----------------------------|---------------------------|-----------------------|-----------------------|-----------------------|------|---|---------|
|         |      | 标准球                     | Hult-gren球 | 碳化钨球 | A标度负荷<br>60kgf钻石<br>圆锥压头 | B标度负荷<br>100kgf径<br>1/16in球 | D标度负荷<br>100kgf钻石<br>圆锥压头 | 15-N<br>标度负荷<br>15kgf | 30-N<br>标度负荷<br>30kgf | 45-N<br>标度负荷<br>45kgf |      |   |         |
| 28      | 286  | 271                     | 271        | 271  | 64·3                     | (104·0)                     | 46·1                      | 73·9                  | 48·6                  | 28·9                  | 41   | 910 (93)  | 28      |
| 27      | 279  | 264                     | 264        | 264  | 63·8                     | (103·0)                     | 45·2                      | 73·3                  | 47·7                  | 27·8                  | 40   | 880 (90)  | 27      |
| 26      | 272  | 258                     | 258        | 258  | 63·3                     | (102·5)                     | 44·6                      | 72·8                  | 46·8                  | 26·7                  | 38   | 860 (88)  | 26      |
| 25      | 266  | 253                     | 253        | 253  | 62·8                     | (101·5)                     | 43·8                      | 72·2                  | 45·9                  | 25·5                  | 38   | 840 (86)  | 25      |
| 24      | 260  | 247                     | 247        | 247  | 62·4                     | (101·0)                     | 43·1                      | 71·6                  | 45·0                  | 24·3                  | 37   | 825 (84)  | 24      |
| 23      | 254  | 243                     | 243        | 243  | 62·0                     | 100·0                       | 42·1                      | 71·0                  | 44·0                  | 23·1                  | 36   | 805 (82)  | 23      |
| 22      | 248  | 237                     | 237        | 237  | 61·5                     | 99·0                        | 41·6                      | 70·5                  | 43·2                  | 22·0                  | 35   | 785 (80)  | 22      |
| 21      | 243  | 231                     | 231        | 231  | 61·0                     | 98·5                        | 40·9                      | 69·9                  | 42·3                  | 20·7                  | 35   | 770 (79)  | 21      |
| 20      | 238  | 226                     | 226        | 226  | 60·5                     | 97·8                        | 40·1                      | 69·4                  | 41·5                  | 19·6                  | 34   | 760 (77)  | 20      |
| (18)    | 230  | 219                     | 219        | 219  | -                        | 96·7                        | -                         | -                     | -                     | -                     | 33   | 730 (75)  | (18)    |
| (16)    | 222  | 212                     | 212        | 212  | -                        | 95·5                        | -                         | -                     | -                     | -                     | 32   | 705 (72)  | (16)    |
| (14)    | 213  | 203                     | 203        | 203  | -                        | 93·9                        | -                         | -                     | -                     | -                     | 31   | 675 (69)  | (14)    |
| (12)    | 204  | 194                     | 194        | 194  | -                        | 92·3                        | -                         | -                     | -                     | -                     | 29   | 650 (66)  | (12)    |
| (10)    | 196  | 187                     | 187        | 187  | -                        | 90·7                        | -                         | -                     | -                     | -                     | 28   | 620 (63)  | (10)    |
| ( 8)    | 188  | 179                     | 179        | 179  | -                        | 89·5                        | -                         | -                     | -                     | -                     | 27   | 600 (61)  | ( 8)    |
| ( 6)    | 180  | 171                     | 171        | 161  | -                        | 87·1                        | -                         | -                     | -                     | -                     | 26   | 580 (59)  | ( 6)    |
| ( 4)    | 173  | 165                     | 165        | 165  | -                        | 85·5                        | -                         | -                     | -                     | -                     | 25   | 550 (56)  | ( 4)    |
| ( 2)    | 166  | 158                     | 158        | 158  | -                        | 83·5                        | -                         | -                     | -                     | -                     | 24   | 530 (54)  | ( 2)    |
| ( 0)    | 160  | 152                     | 152        | 152  | -                        | 81·7                        | -                         | -                     | -                     | -                     | 24   | 515 (53)  | ( 0)    |

注：(1)粗体字的数字来自ASTME140表1(SAE-ASM-ASTM一起进行调整的)  
 (2)用括号()表示的单位及数字是，根据JIS Z 8438的换算表，从psi换算过来的。其中1MPa=1N/mm<sup>2</sup>。  
 (3)引用于JIS钢铁手册

# 常用配合孔的尺寸公差

单位:  $\mu\text{m}$

| 尺寸的区分 (mm) |     | B             |              |      | C          |            |      | D    |            |      | E    |            |      | F         |     |     | G   |     | H    |      |      |  |  |  |
|------------|-----|---------------|--------------|------|------------|------------|------|------|------------|------|------|------------|------|-----------|-----|-----|-----|-----|------|------|------|--|--|--|
| 超过         | 以下  | B10           | C9           | C10  | D8         | D9         | D10  | E7   | E8         | E9   | F6   | F7         | F8   | G6        | G7  | H6  | H7  | H8  | H9   | H10  | H11  |  |  |  |
| -          | 3   | +180<br>+140  | +85<br>+60   | +100 | +34<br>+20 | +45        | +60  | +24  | +28<br>+14 | +39  | +12  | +16<br>+6  | +20  | +8<br>+2  | +12 | +6  | +10 | +14 | +25  | +40  | +60  |  |  |  |
| 3          | 6   | +188<br>+140  | +100<br>+70  | +118 | +48        | +60<br>+30 | +78  | +32  | +38<br>+20 | +50  | +18  | +22<br>+10 | +28  | +12<br>+4 | +16 | +8  | +12 | +18 | +30  | +48  | +75  |  |  |  |
| 6          | 10  | +208<br>+150  | +116<br>+80  | +138 | +62        | +76<br>+40 | +98  | +40  | +47<br>+25 | +61  | +22  | +28<br>+13 | +35  | +14<br>+5 | +20 | +9  | +15 | +22 | +36  | +58  | +90  |  |  |  |
| 10         | 14  | +220          | +138         | +165 | +77        | +93        | +120 | +50  | +59        | +75  | +27  | +34        | +43  | +17       | +24 | +11 | +18 | +27 | +43  | +70  | +110 |  |  |  |
| 14         | 18  | +150          | +95          |      |            | +50        |      |      | +32        |      |      | +16        |      | +6        |     |     |     |     |      |      | 0    |  |  |  |
| 18         | 24  | +244          | +162         | +194 | +98        | +117       | +149 | +61  | +73        | +92  | +33  | +41        | +53  | +20       | +28 | +13 | +21 | +33 | +52  | +84  | +130 |  |  |  |
| 24         | 30  | +160          | +110         |      |            | +65        |      |      | +40        |      |      | +20        |      | +7        |     |     |     |     |      |      | 0    |  |  |  |
| 30         | 40  | +270<br>+170  | +182<br>+120 | +220 | +119       | +142       | +180 | +75  | +89        | +112 | +41  | +50        | +64  | +25       | +34 | +16 | +25 | +39 | +62  | +100 | +160 |  |  |  |
| 40         | 50  | +280<br>+180  | +192<br>+130 | +230 |            | +80        |      |      | +50        |      |      | +25        |      | +9        |     |     |     |     |      |      | 0    |  |  |  |
| 50         | 65  | +310<br>+190  | +214<br>+140 | +260 | +146       | +174       | +220 | +90  | +106       | +134 | +49  | +60        | +76  | +29       | +40 | +19 | +30 | +46 | +74  | +120 | +190 |  |  |  |
| 65         | 80  | +320<br>+200  | +224<br>+150 | +270 |            | +100       |      |      | +60        |      |      | +30        |      | +10       |     |     |     |     |      |      | 0    |  |  |  |
| 80         | 100 | +360<br>+220  | +257<br>+170 | +310 | +174       | +207       | +260 | +107 | +126       | +159 | +58  | +71        | +90  | +34       | +47 | +22 | +35 | +54 | +87  | +140 | +220 |  |  |  |
| 100        | 120 | +380<br>+240  | +267<br>+180 | +320 |            | +120       |      |      | +72        |      |      | +36        |      | +12       |     |     |     |     |      |      | 0    |  |  |  |
| 120        | 140 | +420<br>+260  | +300<br>+200 | +360 |            |            |      |      |            |      |      |            |      |           |     |     |     |     |      |      |      |  |  |  |
| 140        | 160 | +440<br>+280  | +310<br>+210 | +370 | +208       | +245       | +305 | +125 | +148       | +185 | +68  | +83        | +106 | +39       | +54 | +25 | +40 | +63 | +100 | +160 | +250 |  |  |  |
| 160        | 180 | +470<br>+310  | +330<br>+230 | +390 |            |            |      |      | +85        |      |      | +43        |      | +14       |     |     |     |     |      |      | 0    |  |  |  |
| 180        | 200 | +525<br>+340  | +355<br>+240 | +425 |            |            |      |      |            |      |      |            |      |           |     |     |     |     |      |      |      |  |  |  |
| 200        | 225 | +565<br>+380  | +375<br>+260 | +445 | +242       | +285       | +355 | +146 | +172       | +215 | +79  | +96        | +122 | +44       | +61 | +29 | +46 | +72 | +115 | +185 | +290 |  |  |  |
| 225        | 250 | +605<br>+420  | +395<br>+280 | +465 |            | +170       |      |      | +100       |      |      | +50        |      | +15       |     |     |     |     |      |      | 0    |  |  |  |
| 250        | 280 | +690<br>+480  | +430<br>+300 | +510 | +271       | +320       | +400 | +162 | +191       | +240 | +88  | +108       | +137 | +49       | +69 | +32 | +52 | +81 | +130 | +210 | +320 |  |  |  |
| 280        | 315 | +750<br>+540  | +460<br>+330 | +540 |            | +190       |      |      | +110       |      |      | +56        |      | +17       |     |     |     |     |      |      | 0    |  |  |  |
| 315        | 355 | +830<br>+600  | +500<br>+360 | +590 | +299       | +350       | +440 | +182 | +214       | +265 | +98  | +119       | +151 | +54       | +75 | +36 | +57 | +89 | +140 | +230 | +360 |  |  |  |
| 355        | 400 | +910<br>+680  | +540<br>+400 | +630 |            | +210       |      |      | +125       |      |      | +62        |      | +18       |     |     |     |     |      |      | 0    |  |  |  |
| 400        | 450 | +1010<br>+760 | +595<br>+440 | +690 | +327       | +385       | +480 | +198 | +232       | +290 | +108 | +131       | +165 | +60       | +83 | +40 | +63 | +97 | +155 | +250 | +400 |  |  |  |
| 450        | 500 | +1090<br>+840 | +635<br>+480 | +730 |            | +230       |      |      | +135       |      |      | +68        |      | +20       |     |     |     |     |      |      | 0    |  |  |  |

备注: 表中的各段中, 上面的数据是上尺寸公差, 下面的数据是下尺寸公差。



## 常用配合孔的尺寸公差

单位:  $\mu\text{m}$ 

| 尺寸的区分<br>(mm) |     | Js         |            |            |            | K        |           | M         |           | N         |           | P          |           | R          | S          | T    | U          | X          |   |
|---------------|-----|------------|------------|------------|------------|----------|-----------|-----------|-----------|-----------|-----------|------------|-----------|------------|------------|------|------------|------------|---|
| 超过            | 以下  | Js6        | Js7        | Js8        | Js9        | K6       | K7        | M6        | M7        | N6        | N7        | P6         | P7        | R7         | S7         | T7   | U7         | X7         |   |
| -             | 3   | $\pm 3$    | $\pm 5$    | $\pm 7$    | $\pm 12.5$ | 0<br>-6  | 0<br>-10  | -2<br>-8  | -2<br>-12 | -4<br>-10 | -4<br>-14 | -6<br>-12  | -6<br>-16 | -10<br>-20 | -14<br>-24 | -    | -18<br>-28 | -20<br>-30 |   |
| 3             | 6   | $\pm 4$    | $\pm 6$    | $\pm 9$    | $\pm 15$   | +2<br>-6 | +3<br>-9  | -1<br>-9  | 0<br>-12  | -5<br>-13 | -4<br>-16 | -9<br>-17  | -8<br>-20 | -11<br>-23 | -15<br>-27 | -    | -19<br>-31 | -24<br>-36 |   |
| 6             | 10  | $\pm 4.5$  | $\pm 7.5$  | $\pm 11$   | $\pm 18$   | +2<br>-7 | +5<br>-10 | -3<br>-12 | 0<br>-15  | -7<br>-16 | -4<br>-19 | -12<br>-21 | -9<br>-24 | -13<br>-28 | -17<br>-32 | -    | -22<br>-37 | -28<br>-43 |   |
| 10            | 14  | $\pm 5.5$  | $\pm 9$    | $\pm 13.5$ | $\pm 21.5$ | +2       | +6        | -4        | 0         | -9        | -5        | -15        | -11       | -16        | -21        | -    | -26        | -33        |   |
| 14            | 18  |            |            |            |            | -9       | -12       | -15       | -18       | -20       | -23       | -26        | -29       | -34        | -39        | -    | -44        | -51        |   |
| 18            | 24  | $\pm 6.5$  | $\pm 10.5$ | $\pm 16.5$ | $\pm 26$   | +2       | +6        | -4        | 0         | -11       | -7        | -18        | -14       | -20        | -27        | -    | -33        | -46        |   |
| 24            | 30  |            |            |            |            | -11      | -15       | -17       | -21       | -24       | -28       | -31        | -35       | -41        | -48        | -33  | -40        | -56        |   |
| 30            | 40  | $\pm 8$    | $\pm 12.5$ | $\pm 19.5$ | $\pm 31$   | +3       | +7        | -4        | 0         | -12       | -8        | -21        | -17       | -25        | -31        | -39  | -51        | -          |   |
| 40            | 50  |            |            |            |            | -13      | -18       | -20       | -25       | -28       | -33       | -37        | -42       | -50        | -59        | -64  | -76        | -          |   |
| 50            | 65  | $\pm 9.5$  | $\pm 15$   | $\pm 23$   | $\pm 37$   | +4       | +9        | -5        | 0         | -14       | -9        | -26        | -21       | -30        | -42        | -55  | -76        | -          |   |
| 65            | 80  |            |            |            |            | -15      | -21       | -24       | -30       | -33       | -39       | -45        | -51       | -60        | -72        | -85  | -106       | -          |   |
| 80            | 100 | $\pm 11$   | $\pm 17.5$ | $\pm 27$   | $\pm 43.5$ | +4       | +10       | -6        | 0         | -16       | -10       | -30        | -21       | -38        | -58        | -78  | -111       | -          |   |
| 100           | 120 |            |            |            |            | -18      | -25       | -28       | -35       | -38       | -45       | -52        | -59       | -73        | -93        | -113 | -146       | -          |   |
| 120           | 140 | $\pm 12.5$ | $\pm 20$   | $\pm 31.5$ | $\pm 50$   | +4       | +12       | -8        | 0         | -20       | -12       | -36        | -28       | -48        | -77        | -107 | -          | -          |   |
| 140           | 160 |            |            |            |            | -21      | -28       | -33       | -40       | -45       | -52       | -61        | -68       | -88        | -117       | -147 | -          | -          |   |
| 160           | 180 |            |            |            |            | -90      | -125      | -159      | -193      | -233      | -271      | -311       | -351      | -411       | -481       | -561 | -          | -          |   |
| 180           | 200 | $\pm 14.5$ | $\pm 23$   | $\pm 36$   | $\pm 57.5$ | +5       | +13       | -8        | 0         | -22       | -14       | -41        | -33       | -60        | -105       | -    | -          | -          |   |
| 200           | 225 |            |            |            |            | -24      | -33       | -37       | -46       | -51       | -60       | -70        | -79       | -109       | -159       | -    | -          | -          |   |
| 225           | 250 |            |            |            |            | -67      | -123      | -169      | -225      | -281      | -337      | -393       | -449      | -515       | -581       | -    | -          | -          |   |
| 250           | 280 | $\pm 16$   | $\pm 26$   | $\pm 40.5$ | $\pm 65$   | +5       | +16       | -9        | 0         | -25       | -14       | -47        | -36       | -74        | -          | -    | -          | -          |   |
| 280           | 315 |            |            |            |            | -27      | -36       | -41       | -52       | -57       | -66       | -79        | -88       | -126       | -186       | -    | -          | -          | - |
| 315           | 355 | $\pm 18$   | $\pm 28.5$ | $\pm 44.5$ | $\pm 70$   | +7       | +17       | -10       | 0         | -26       | -16       | -51        | -41       | -87        | -          | -    | -          | -          |   |
| 355           | 400 |            |            |            |            | -29      | -40       | -46       | -57       | -62       | -73       | -87        | -93       | -144       | -214       | -    | -          | -          | - |
| 400           | 450 |            |            |            |            | -150     | -210      | -270      | -330      | -390      | -450      | -510       | -570      | -840       | -1260      | -    | -          | -          | - |
| 450           | 500 | $\pm 20$   | $\pm 31.5$ | $\pm 48.5$ | $\pm 77.5$ | +8       | +18       | -10       | 0         | -27       | -17       | -55        | -45       | -103       | -          | -    | -          | -          |   |
| 500           |     |            |            |            |            | -32      | -45       | -50       | -63       | -67       | -80       | -95        | -108      | -166       | -246       | -    | -          | -          | - |

备考: 表中的各段中, 上面的数据是上尺寸公差, 下面的数据是下尺寸公差。

## 常用配合轴的尺寸公差

单位:  $\mu\text{m}$ 

| 尺寸的区分<br>(mm) |     | js         |            |            |            | k         |     | m          |     | n          | p           | r            | s            | t            | u            | x          |
|---------------|-----|------------|------------|------------|------------|-----------|-----|------------|-----|------------|-------------|--------------|--------------|--------------|--------------|------------|
| 超过            | 以下  | js5        | js6        | js7        | js8        | k5        | k6  | m5         | m6  | n6         | p6          | r6           | s6           | t6           | u6           | x6         |
| -             | 3   | $\pm 2$    | $\pm 3$    | $\pm 5$    | $\pm 7$    | +4<br>0   | +6  | +6<br>+2   | +8  | +10<br>+4  | +12<br>+6   | +16<br>+10   | +20<br>+14   | -            | +24<br>+18   | +26<br>+20 |
| 3             | 6   | $\pm 2.5$  | $\pm 4$    | $\pm 6$    | $\pm 9$    | +6<br>+1  | +9  | +9<br>+4   | +12 | +16<br>+8  | +20<br>+12  | +23<br>+15   | +27<br>+19   | -            | +31<br>+23   | +36<br>+28 |
| 6             | 10  | $\pm 3$    | $\pm 4.5$  | $\pm 7.5$  | $\pm 11$   | +7<br>+1  | +10 | +12<br>+6  | +15 | +19<br>+10 | +24<br>+15  | +28<br>+19   | +32<br>+23   | -            | +37<br>+28   | +43<br>+34 |
| 10            | 14  | $\pm 4$    | $\pm 5.5$  | $\pm 9$    | $\pm 13.5$ | +9<br>+1  | +12 | +15<br>+7  | +18 | +23<br>+12 | +29<br>+18  | +34<br>+23   | +39<br>+28   | -            | +44<br>+33   | +51<br>+40 |
| 14            | 18  |            |            |            |            |           |     |            |     |            |             |              |              |              |              | +56<br>+45 |
| 18            | 24  | $\pm 4.5$  | $\pm 6.5$  | $\pm 10.5$ | $\pm 16.5$ | +11<br>+2 | +15 | +17<br>+8  | +21 | +28<br>+15 | +35<br>+22  | +41<br>+28   | +48<br>+35   | -            | +54<br>+41   | +67<br>+54 |
| 24            | 30  |            |            |            |            |           |     |            |     |            |             |              |              | +54<br>+41   | +61<br>+48   | +77<br>+64 |
| 30            | 40  | $\pm 5.5$  | $\pm 8$    | $\pm 12.5$ | $\pm 19.5$ | +13<br>+2 | +18 | +20<br>+9  | +25 | +33<br>+17 | +42<br>+26  | +50<br>+34   | +59<br>+43   | +64<br>+48   | +76<br>+60   | -          |
| 40            | 50  |            |            |            |            |           |     |            |     |            |             |              |              | +70<br>+54   | +86<br>+70   | -          |
| 50            | 65  | $\pm 6.5$  | $\pm 9.5$  | $\pm 15$   | $\pm 23$   | +15<br>+2 | +21 | +24<br>+11 | +30 | +30<br>+20 | +51<br>+32  | +60<br>+41   | +72<br>+53   | +85<br>+66   | +106<br>+87  | -          |
| 65            | 80  |            |            |            |            |           |     |            |     |            |             | +62<br>+43   | +78<br>+59   | +94<br>+75   | +121<br>+102 | -          |
| 80            | 100 | $\pm 7.5$  | $\pm 11$   | $\pm 17.5$ | $\pm 27$   | +18<br>+3 | +25 | +28<br>+13 | +35 | +45<br>+23 | +59<br>+37  | +73<br>+51   | +93<br>+71   | +113<br>+104 | +146<br>+124 | -          |
| 100           | 120 |            |            |            |            |           |     |            |     |            |             | +76<br>+54   | +101<br>+79  | +126<br>+104 | +166<br>+144 | -          |
| 120           | 140 | $\pm 9$    | $\pm 12.5$ | $\pm 20$   | $\pm 31.5$ | +21<br>+3 | +28 | +33<br>+15 | +40 | +52<br>+27 | +68<br>+43  | +88<br>+63   | +117<br>+92  | +147<br>+122 | -            | -          |
| 140           | 160 |            |            |            |            |           |     |            |     |            |             | +90<br>+65   | +125<br>+100 | +159<br>+134 | -            | -          |
| 160           | 180 | $\pm 10$   | $\pm 14.5$ | $\pm 23$   | $\pm 36$   | +24<br>+4 | +33 | +37<br>+17 | +46 | +60<br>+31 | +79<br>+50  | +93<br>+68   | +133<br>+108 | +171<br>+146 | -            | -          |
| 180           | 200 |            |            |            |            |           |     |            |     |            |             | +106<br>+77  | +151<br>+122 | -            | -            | -          |
| 200           | 225 | $\pm 11.5$ | $\pm 16$   | $\pm 26$   | $\pm 40.5$ | +27<br>+4 | +36 | +43<br>+20 | +52 | +66<br>+34 | +88<br>+56  | +109<br>+80  | +159<br>+130 | -            | -            | -          |
| 225           | 250 |            |            |            |            |           |     |            |     |            |             | +113<br>+84  | +169<br>+140 | -            | -            | -          |
| 250           | 280 | $\pm 12.5$ | $\pm 18$   | $\pm 28.5$ | $\pm 44.5$ | +29<br>+4 | +40 | +46<br>+21 | +57 | +73<br>+37 | +98<br>+62  | +126<br>+94  | -            | -            | -            | -          |
| 280           | 315 |            |            |            |            |           |     |            |     |            |             | +130<br>+98  | -            | -            | -            | -          |
| 315           | 355 | $\pm 13.5$ | $\pm 20$   | $\pm 31.5$ | $\pm 48.5$ | +32<br>+5 | +45 | +50<br>+23 | +63 | +80<br>+40 | +108<br>+68 | +144<br>+108 | -            | -            | -            | -          |
| 355           | 400 |            |            |            |            |           |     |            |     |            |             | +150<br>+114 | -            | -            | -            | -          |
| 400           | 450 | $\pm 13.5$ | $\pm 20$   | $\pm 31.5$ | $\pm 48.5$ | +32<br>+5 | +45 | +50<br>+23 | +63 | +80<br>+40 | +108<br>+68 | +166<br>+126 | -            | -            | -            | -          |
| 450           | 500 |            |            |            |            |           |     |            |     |            |             | +172<br>+132 | -            | -            | -            | -          |

备考：表中的各段中，上面的数据是上尺寸公差，下面的数据是下尺寸公差。

# 常用配合轴的尺寸公差

单位:  $\mu\text{m}$

| 尺寸的区分 (mm) |     | b            | c            | d                 |    | e                      |    |    | f                     |    |    | g              |    | h                                   |    |    |    |    |     |     |
|------------|-----|--------------|--------------|-------------------|----|------------------------|----|----|-----------------------|----|----|----------------|----|-------------------------------------|----|----|----|----|-----|-----|
| 超过         | 以下  | b9           | c9           | d8                | d9 | e7                     | e8 | e9 | f6                    | f7 | f8 | g5             | g6 | h5                                  | h6 | h7 | h8 | h9 | h10 | h11 |
| -          | 3   | -140<br>-165 | -60<br>-85   | -20<br>-34 -45    |    | -14<br>-24 -28 -39     |    |    | -6<br>-12 -16 -20     |    |    | -2<br>-6 -8    |    | 0<br>-4 -6 -10 -14 -25 -40 -60      |    |    |    |    |     |     |
| 3          | 6   | -140<br>-170 | -70<br>-100  | -30<br>-48 -60    |    | -20<br>-32 -38 -50     |    |    | -10<br>-18 -22 -28    |    |    | -4<br>-9 -12   |    | 0<br>-5 -8 -12 -18 -30 -48 -75      |    |    |    |    |     |     |
| 6          | 10  | -150<br>-186 | -80<br>-116  | -40<br>-62 -76    |    | -25<br>-40 -47 -61     |    |    | -13<br>-22 -28 -35    |    |    | -5<br>-11 -14  |    | 0<br>-6 -9 -15 -22 -36 -58 -90      |    |    |    |    |     |     |
| 10         | 14  | -150<br>-193 | -95<br>-138  | -50<br>-77 -93    |    | -32<br>-50 -59 -75     |    |    | -16<br>-27 -34 -43    |    |    | -6<br>-14 -17  |    | 0<br>-8 -11 -18 -27 -43 -70 -110    |    |    |    |    |     |     |
| 14         | 18  | -160<br>-212 | -110<br>-162 | -65<br>-98 -117   |    | -40<br>-61 -73 -92     |    |    | -20<br>-33 -41 -53    |    |    | -7<br>-16 -20  |    | 0<br>-9 -13 -21 -33 -52 -84 -130    |    |    |    |    |     |     |
| 18         | 24  | -170<br>-232 | -120<br>-182 | -80<br>-119 -142  |    | -50<br>-75 -89 -112    |    |    | -25<br>-41 -50 -64    |    |    | -9<br>-20 -25  |    | 0<br>-11 -16 -25 -39 -62 -100 -160  |    |    |    |    |     |     |
| 24         | 30  | -180<br>-242 | -130<br>-192 | -100<br>-146 -174 |    | -60<br>-90 -106 -134   |    |    | -30<br>-49 -60 -76    |    |    | -10<br>-23 -29 |    | 0<br>-13 -19 -30 -46 -74 -120 -190  |    |    |    |    |     |     |
| 30         | 40  | -190<br>-264 | -140<br>-214 | -120<br>-174 -207 |    | -72<br>-107 -126 -159  |    |    | -36<br>-58 -71 -90    |    |    | -12<br>-27 -34 |    | 0<br>-15 -22 -35 -54 -87 -140 -220  |    |    |    |    |     |     |
| 40         | 50  | -200<br>-274 | -150<br>-224 | -145<br>-208 -245 |    | -85<br>-125 -148 -185  |    |    | -43<br>-68 -83 -106   |    |    | -14<br>-32 -39 |    | 0<br>-18 -25 -40 -63 -100 -160 -250 |    |    |    |    |     |     |
| 50         | 65  | -220<br>-307 | -170<br>-257 | -240<br>-310 -330 |    | -100<br>-146 -172 -215 |    |    | -50<br>-79 -96 -122   |    |    | -15<br>-35 -44 |    | 0<br>-20 -29 -46 -72 -115 -185 -290 |    |    |    |    |     |     |
| 65         | 80  | -240<br>-327 | -180<br>-267 | -240<br>-310 -330 |    | -110<br>-162 -191 -240 |    |    | -56<br>-88 -108 -137  |    |    | -17<br>-40 -49 |    | 0<br>-23 -32 -52 -81 -130 -210 -320 |    |    |    |    |     |     |
| 80         | 100 | -260<br>-360 | -200<br>-300 | -190<br>-271 -320 |    | -125<br>-182 -214 -265 |    |    | -62<br>-98 -119 -151  |    |    | -18<br>-43 -54 |    | 0<br>-25 -36 -57 -89 -140 -230 -260 |    |    |    |    |     |     |
| 100        | 120 | -280<br>-380 | -210<br>-310 | -210<br>-299 -350 |    | -135<br>-198 -232 -290 |    |    | -68<br>-108 -131 -165 |    |    | -20<br>-47 -60 |    | 0<br>-27 -40 -63 -97 -155 -250 -400 |    |    |    |    |     |     |
| 120        | 140 | -300<br>-400 | -230<br>-330 | -230<br>-327 -385 |    |                        |    |    |                       |    |    |                |    |                                     |    |    |    |    |     |     |
| 140        | 160 | -340<br>-455 | -240<br>-355 |                   |    |                        |    |    |                       |    |    |                |    |                                     |    |    |    |    |     |     |
| 160        | 180 | -380<br>-495 | -260<br>-375 |                   |    |                        |    |    |                       |    |    |                |    |                                     |    |    |    |    |     |     |
| 180        | 200 | -420<br>-535 | -280<br>-395 |                   |    |                        |    |    |                       |    |    |                |    |                                     |    |    |    |    |     |     |
| 200        | 225 | -480<br>-610 | -300<br>-430 |                   |    |                        |    |    |                       |    |    |                |    |                                     |    |    |    |    |     |     |
| 225        | 250 | -540<br>-670 | -330<br>-460 |                   |    |                        |    |    |                       |    |    |                |    |                                     |    |    |    |    |     |     |
| 250        | 280 | -600<br>-710 | -360<br>-500 |                   |    |                        |    |    |                       |    |    |                |    |                                     |    |    |    |    |     |     |
| 280        | 315 | -680<br>-820 | -400<br>-540 |                   |    |                        |    |    |                       |    |    |                |    |                                     |    |    |    |    |     |     |
| 315        | 355 | -760<br>-915 | -440<br>-595 |                   |    |                        |    |    |                       |    |    |                |    |                                     |    |    |    |    |     |     |
| 355        | 400 | -840<br>-995 | -480<br>-635 |                   |    |                        |    |    |                       |    |    |                |    |                                     |    |    |    |    |     |     |

备考: 表中的各段中, 上面的数据是上尺寸公差, 下面的数据是下尺寸公差。

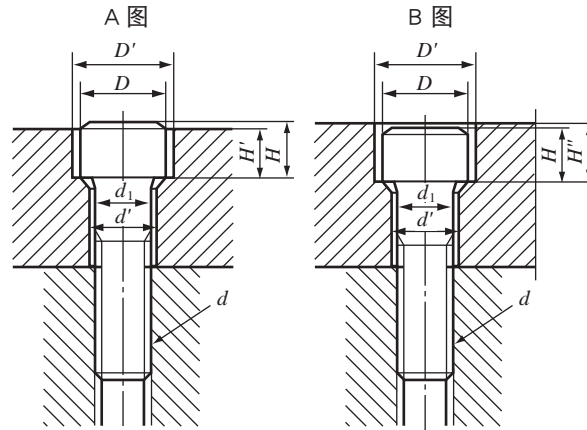
# m 制普通螺纹及 m 制细牙螺纹的螺纹底孔参考尺寸

单位：mm

| 螺纹的标称 | 螺距   |      |      |      | 参考用钻头螺纹底孔 |      |
|-------|------|------|------|------|-----------|------|
|       | 普通螺纹 | 细牙螺纹 |      |      | 普通螺纹      | 螺纹衬套 |
| M1    | 0.25 | 0.2  |      |      | 0.75      |      |
| M1.1  | 0.25 | 0.2  |      |      | 0.85      |      |
| M1.2  | 0.25 | 0.2  |      |      | 0.95      |      |
| M1.4  | 0.3  | 0.2  |      |      | 1.1       |      |
| M1.6  | 0.35 | 0.2  |      |      | 1.25      |      |
| M1.8  | 0.35 | 0.2  |      |      | 1.45      |      |
| M2    | 0.4  | 0.25 |      |      | 1.6       | 2.1  |
| M2.2  | 0.45 | 0.25 |      |      | 1.75      | 2.4  |
| M2.5  | 0.45 | 0.35 |      |      | 2.1       | 2.6  |
| M3    | 0.5  | 0.35 |      |      | 2.5       | 3.1  |
| M3.5  | 0.6  | 0.35 |      |      | 2.9       | 3.7  |
| M4    | 0.7  | 0.5  |      |      | 3.3       | 4.2  |
| M4.5  | 0.75 | 0.5  |      |      | 3.8       | 3.6  |
| M5    | 0.8  | 0.5  |      |      | 4.2       | 5.2  |
| M6    | 1    | 0.75 |      |      | 5         | 6.3  |
| M8    | 1.25 | 0.75 | 1    |      | 6.8       | 8.4  |
| M10   | 1.5  | 0.75 | 1    | 1.25 | 8.5       | 10.5 |
| M12   | 1.75 | 1    | 1.25 | 1.5  | 10.3      | 12.5 |
| M14   | 2    | 1    | 1.25 | 1.5  | 12        | 14.5 |
| M16   | 2    | 1    | 1.5  | 1.5  | 14        | 16.5 |
| M18   | 2.5  | 1    | 1.5  | 2    | 15.5      | 19   |
| M20   | 2.5  | 1    | 1.5  | 2    | 17.5      | 21   |
| M22   | 2.5  | 1    | 1.5  | 2    | 19.5      | 23   |
| M24   | 3    | 1    | 1.5  | 2    | 21        | 25   |
| M27   | 3    | 1    | 1.5  | 2    | 24        | 28   |
| M30   | 3.5  | 1    | 1.5  | 2    | 26.5      | 31   |

JISB0205.0207拔粹

以下内容主要为做参考而记载。并非规格品的一部分。



## 对内六角螺栓的铹孔及螺栓孔的尺寸

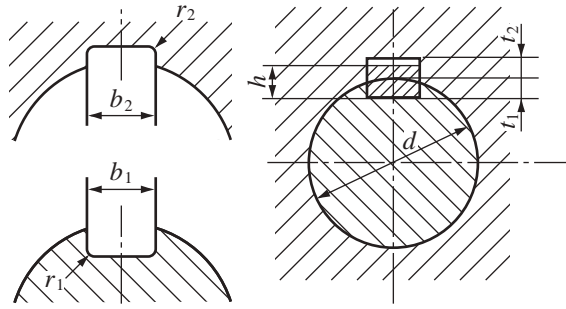
单位: mm

| 螺纹的标称<br>(d) | M3  | M4  | M5  | M6  | M8  | M10  | M12 | M14  | M16  | M18  | M20  | M22  | M24  | M27 | M30 | M33 | M36 | M39 | M42 | M45 | M48 | M52 |
|--------------|-----|-----|-----|-----|-----|------|-----|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| $d_1$        | 3   | 4   | 5   | 6   | 8   | 10   | 12  | 14   | 16   | 18   | 20   | 22   | 24   | 27  | 30  | 33  | 36  | 39  | 42  | 45  | 48  | 52  |
| $d'$         | 3.4 | 4.5 | 5.5 | 6.6 | 9   | 11   | 14  | 16   | 18   | 20   | 22   | 24   | 26   | 30  | 33  | 36  | 39  | 42  | 45  | 48  | 52  | 56  |
| $D$          | 5.5 | 7   | 8.5 | 10  | 13  | 16   | 18  | 21   | 24   | 27   | 30   | 33   | 36   | 40  | 45  | 50  | 54  | 58  | 63  | 68  | 72  | 78  |
| $D'$         | 6.5 | 8   | 9.5 | 11  | 14  | 17.5 | 20  | 23   | 26   | 29   | 32   | 35   | 39   | 43  | 48  | 54  | 58  | 62  | 67  | 72  | 76  | 82  |
| $H$          | 3   | 4   | 5   | 6   | 8   | 10   | 12  | 14   | 16   | 18   | 20   | 22   | 24   | 27  | 30  | 33  | 36  | 39  | 42  | 45  | 48  | 52  |
| $H'$         | 2.7 | 3.6 | 4.6 | 5.5 | 7.4 | 9.2  | 11  | 12.8 | 14.5 | 16.5 | 18.5 | 20.5 | 22.5 | 25  | 28  | 31  | 34  | 37  | 39  | 42  | 45  | 49  |
| $H''$        | 3.3 | 4.4 | 5.4 | 6.5 | 8.6 | 10.8 | 13  | 15.2 | 17.5 | 19.5 | 21.5 | 23.5 | 25.5 | 29  | 32  | 35  | 38  | 41  | 44  | 47  | 50  | 54  |

备考: 上述螺栓的孔径( $d'$ )是JIS B 1001(螺栓孔径及铹孔径)的螺栓孔径2级。

# 平行键及键槽的形状与尺寸

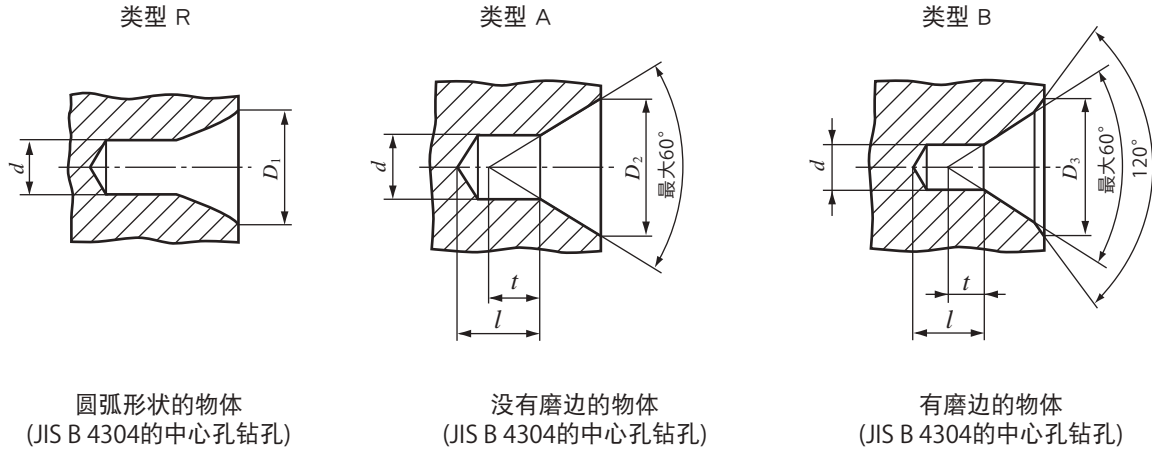
键槽横断面



单位：mm

| 键的<br>标称尺寸<br>$b \times h$ | $b_1$ 和 $b_2$<br>基准尺寸 | 滑动型                 |                      | 普通型                 |                      | 紧型                          | $r_1$ 和 $r_2$ | $t_1$ 的<br>基本尺寸 | $t_2$ 的<br>基本尺寸 | $t_1$ 以及 $t_2$<br>的容差 | 所对应的轴<br>(孔)径 $d$<br>(参考) | 所对应的<br>KG齿轮的<br>孔径 |
|----------------------------|-----------------------|---------------------|----------------------|---------------------|----------------------|-----------------------------|---------------|-----------------|-----------------|-----------------------|---------------------------|---------------------|
|                            |                       | $b_1$<br>容差<br>(H9) | $b_2$<br>容差<br>(D10) | $b_1$<br>容差<br>(N9) | $b_2$<br>容差<br>(Js9) | $b_1$ 和 $b_2$<br>容差<br>(P9) |               |                 |                 |                       |                           |                     |
| 2×2                        | 2                     | +0.025<br>0         | +0.060<br>+0.020     | -0.004<br>-0.029    | ±0.0125              | -0.006<br>-0.031            | 0.08 ~ 0.16   | 1.2             | 1.0             | +0.1<br>0             | 6 ~ 8                     |                     |
| 3×3                        | 3                     |                     |                      |                     |                      |                             |               | 8 ~ 10          | 8,10            |                       |                           |                     |
| 4×4                        | 4                     | +0.030<br>0         | +0.078<br>-0.030     | 0<br>-0.030         | ±0.0150              | -0.012<br>-0.042            | 0.16 ~ 0.25   | 2.5             | 1.8             | +0.1<br>0             | 10 ~ 12                   | 12                  |
| 5×5                        | 5                     |                     |                      |                     |                      |                             |               | 12 ~ 17         | 14,15,16        |                       |                           |                     |
| 6×6                        | 6                     | +0.036<br>0         | +0.098<br>+0.040     | 0<br>-0.036         | ±0.0180              | -0.015<br>-0.051            | 0.16 ~ 0.25   | 3.5             | 2.8             | +0.1<br>0             | 17 ~ 22                   | 18,20,22            |
| (7×7)                      | 7                     |                     |                      |                     |                      |                             |               | 20 ~ 25         |                 |                       |                           |                     |
| 8×7                        | 8                     | +0.043<br>0         | +0.120<br>+0.050     | 0<br>-0.043         | ±0.0215              | -0.018<br>-0.061            | 0.25 ~ 0.40   | 4.0             | 3.3             | +0.2<br>0             | 22 ~ 30                   | 25,28,30            |
| 10×8                       | 10                    |                     |                      |                     |                      |                             |               | 30 ~ 38         | 32,35           |                       |                           |                     |
| 12×8                       | 12                    | +0.052<br>0         | +0.149<br>+0.065     | 0<br>-0.052         | ±0.0260              | -0.022<br>-0.074            | 0.40 ~ 0.60   | 5.0             | 3.3             | +0.2<br>0             | 38 ~ 44                   | 40                  |
| 14×9                       | 14                    |                     |                      |                     |                      |                             |               | 44 ~ 50         | 45,50           |                       |                           |                     |
| (15×10)                    | 15                    | +0.062<br>0         | +0.180<br>+0.080     | 0<br>-0.062         | ±0.0310              | -0.026<br>-0.088            | 0.70 ~ 1.00   | 5.0             | 5.3             | +0.3<br>0             | 50 ~ 55                   |                     |
| 16×10                      | 16                    |                     |                      |                     |                      |                             |               | 50 ~ 58         |                 |                       |                           |                     |
| 18×11                      | 18                    | +0.074<br>0         | +0.220<br>+0.100     | 0<br>-0.072         | ±0.0370              | -0.032<br>-0.106            | 0.40 ~ 0.60   | 7.0             | 4.4             | +0.3<br>0             | 58 ~ 65                   |                     |
| 20×12                      | 20                    |                     |                      |                     |                      |                             |               | 65 ~ 75         |                 |                       |                           |                     |
| 22×14                      | 22                    | +0.074<br>0         | +0.220<br>+0.100     | 0<br>-0.072         | ±0.0370              | -0.032<br>-0.106            | 0.40 ~ 0.60   | 7.5             | 4.9             | +0.3<br>0             | 75 ~ 85                   |                     |
| (24×16)                    | 24                    |                     |                      |                     |                      |                             |               | 80 ~ 90         |                 |                       |                           |                     |
| 25×14                      | 25                    | +0.074<br>0         | +0.220<br>+0.100     | 0<br>-0.072         | ±0.0370              | -0.032<br>-0.106            | 0.40 ~ 0.60   | 8.0             | 8.4             | +0.3<br>0             | 85 ~ 95                   |                     |
| 28×16                      | 28                    |                     |                      |                     |                      |                             |               | 95 ~ 110        |                 |                       |                           |                     |
| 32×18                      | 32                    | +0.074<br>0         | +0.220<br>+0.100     | 0<br>-0.072         | ±0.0370              | -0.032<br>-0.106            | 0.70 ~ 1.00   | 10.0            | 6.4             | +0.3<br>0             | 110 ~ 130                 |                     |
| (35×22)                    | 35                    |                     |                      |                     |                      |                             |               | 125 ~ 140       |                 |                       |                           |                     |
| 36×20                      | 36                    | +0.074<br>0         | +0.220<br>+0.100     | 0<br>-0.072         | ±0.0370              | -0.032<br>-0.106            | 0.70 ~ 1.00   | 11.0            | 11.4            | +0.3<br>0             | 130 ~ 150                 |                     |
| (38×24)                    | 38                    |                     |                      |                     |                      |                             |               | 140 ~ 160       |                 |                       |                           |                     |
| 40×22                      | 40                    | +0.074<br>0         | +0.220<br>+0.100     | 0<br>-0.072         | ±0.0370              | -0.032<br>-0.106            | 0.70 ~ 1.00   | 12.0            | 8.4             | +0.3<br>0             | 150 ~ 170                 |                     |
| (42×26)                    | 42                    |                     |                      |                     |                      |                             |               | 160 ~ 180       |                 |                       |                           |                     |
| 45×25                      | 45                    | +0.074<br>0         | +0.220<br>+0.100     | 0<br>-0.072         | ±0.0370              | -0.032<br>-0.106            | 0.70 ~ 1.00   | 12.0            | 12.4            | +0.3<br>0             | 170 ~ 200                 |                     |
| 50×28                      | 50                    |                     |                      |                     |                      |                             |               | 200 ~ 230       |                 |                       |                           |                     |
| 56×32                      | 56                    | +0.074<br>0         | +0.220<br>+0.100     | 0<br>-0.072         | ±0.0370              | -0.032<br>-0.106            | 1.20 ~ 1.60   | 13.0            | 9.4             | +0.3<br>0             | 230 ~ 260                 |                     |
| 63×32                      | 63                    |                     |                      |                     |                      |                             |               | 260 ~ 290       |                 |                       |                           |                     |
| 70×36                      | 70                    | +0.074<br>0         | +0.220<br>+0.100     | 0<br>-0.072         | ±0.0370              | -0.032<br>-0.106            | 1.20 ~ 1.60   | 13.0            | 13.4            | +0.3<br>0             | 290 ~ 330                 |                     |
| 80×40                      | 80                    |                     |                      |                     |                      |                             |               | 330 ~ 380       |                 |                       |                           |                     |
| 90×45                      | 90                    | +0.087<br>0         | +0.260<br>+0.120     | 0<br>-0.087         | ±0.0435              | -0.037<br>-0.124            | 2.00 ~ 2.50   | 15.0            | 10.4            | +0.3<br>0             | 380 ~ 440                 |                     |
| 100×50                     | 100                   |                     |                      |                     |                      |                             |               | 440 ~ 500       |                 |                       |                           |                     |
|                            |                       |                     |                      |                     |                      |                             |               | 20.0            | 12.4            |                       |                           |                     |
|                            |                       |                     |                      |                     |                      |                             |               | 20.0            | 12.4            |                       |                           |                     |
|                            |                       |                     |                      |                     |                      |                             |               | 22.0            | 14.4            |                       |                           |                     |
|                            |                       |                     |                      |                     |                      |                             |               | 25.0            | 15.4            |                       |                           |                     |
|                            |                       |                     |                      |                     |                      |                             |               | 28.0            | 17.4            |                       |                           |                     |
|                            |                       |                     |                      |                     |                      |                             |               | 31.0            | 19.5            |                       |                           |                     |

JIS B1301準拠



注：尺寸 $l$ 是根据中心孔钻头长度而定，不可小于 $t$ 。

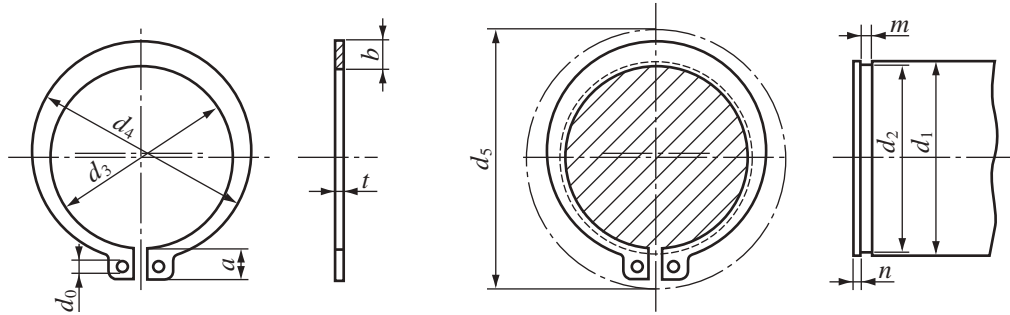
所推荐的中心孔的尺寸

单位：mm

| $d$ 标称 | 根据JIS B 4304 |             |           |             |           |
|--------|--------------|-------------|-----------|-------------|-----------|
|        | 类型 R         | 类型 A        |           | 类型 B        |           |
|        | $D_1$<br>标称  | $D_2$<br>标称 | $t$<br>参考 | $D_3$<br>标称 | $t$<br>参考 |
| (0.5)  |              | 1.06        | 0.5       |             |           |
| (0.63) |              | 1.32        | 0.6       |             |           |
| (0.8)  |              | 1.70        | 0.7       |             |           |
| 1.0    | 2.12         | 2.12        | 0.9       | 3.15        | 0.9       |
| (1.25) | 2.65         | 2.65        | 1.1       | 4           | 1.1       |
| 1.6    | 3.35         | 3.35        | 1.4       | 5           | 1.4       |
| 2.0    | 4.25         | 4.25        | 1.8       | 6.3         | 1.8       |
| 2.5    | 5.3          | 5.30        | 2.2       | 8           | 2.2       |
| 3.15   | 6.7          | 6.70        | 2.8       | 10          | 2.8       |
| 4.0    | 8.5          | 8.50        | 3.5       | 12.5        | 3.5       |
| (5.0)  | 10.6         | 10.60       | 4.4       | 16          | 4.4       |
| 6.3    | 13.2         | 13.20       | 5.5       | 18          | 5.5       |
| (8.0)  | 17.0         | 17.00       | 7.0       | 22.4        | 7.0       |
| 10.0   | 21.2         | 21.20       | 8.7       | 28          | 8.7       |

备考：用括号显示的标称，尽量不用。

## C型轴用扣环(参考)



将扣环套入所使用的轴的时候, 不能使直径为 $d$ 的孔的位置藏到沟里。

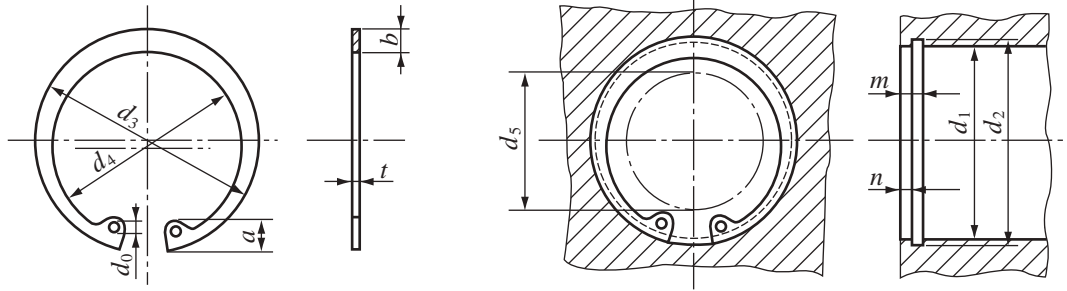
$d_5$ 是套到轴上的时候的外径的最大直径。

单位: mm

| 标称  |    | 扣环    |       |      |       |      |      |               | 所适用的轴(参考) |       |       |            |      |            |             |
|-----|----|-------|-------|------|-------|------|------|---------------|-----------|-------|-------|------------|------|------------|-------------|
| 1   | 2  | $d_3$ |       | $t$  |       | $b$  | $a$  | $d_0$<br>(最小) | $d_5$     | $d_1$ | $d_2$ |            | $m$  |            | $n$<br>(最小) |
|     |    | 基准尺寸  | 容差    | 基准尺寸 | 容差    |      |      |               |           |       | 基准尺寸  | 容差         | 基准尺寸 | 容差         |             |
| 10  | 11 | 9.3   | ±0.15 | 1    | ±0.05 | 1.6  | 3    | 1.2           | 17        | 10    | 9.6   | 0<br>-0.09 | 1.15 | 1.5        |             |
|     |    | 10.2  |       |      |       | 1.8  | 3.1  |               | 18        | 11    | 10.5  |            |      |            |             |
| 12  |    | 11.1  | ±0.18 | 1    | ±0.05 | 1.8  | 3.2  | 1.5           | 19        | 12    | 11.5  | 0<br>-0.11 | 1.15 | 1.5        |             |
| 14  |    | 12.9  |       |      |       | 2    | 3.4  |               | 22        | 14    | 13.4  |            |      |            |             |
| 15  |    | 13.8  | ±0.18 | 1    | ±0.05 | 2.1  | 3.5  | 1.7           | 23        | 15    | 14.3  | 0<br>-0.11 | 1.15 | 1.5        |             |
| 16  |    | 14.7  |       |      |       | 2.2  | 3.6  |               | 24        | 16    | 15.2  |            |      |            |             |
| 17  |    | 15.7  | ±0.18 | 1    | ±0.05 | 2.2  | 3.7  | 1.7           | 25        | 17    | 16.2  | 0<br>-0.11 | 1.15 | 1.5        |             |
| 18  |    | 16.5  |       |      |       | 2.6  | 3.8  |               | 26        | 18    | 17    |            |      |            |             |
| 20  | 24 | 17.5  | ±0.2  | 1.2  | ±0.06 | 2.7  | 3.8  | 2             | 27        | 19    | 18    | 0<br>-0.21 | 1.35 | 1.5        |             |
|     |    | 18.5  |       |      |       | 2.7  | 3.9  |               | CC        | 20    | 19    |            |      |            |             |
| 22  |    | 20.5  | ±0.2  | 1.2  | ±0.06 | 2.7  | 4.1  | 2             | 31        | 22    | 21    | 0<br>-0.21 | 1.35 | 1.5        |             |
| 25  |    | 22.2  |       |      |       | 3.1  | 4.2  |               | 33        | 24    | 22.9  |            |      |            |             |
| 28  | 32 | 23.2  | ±0.2  | 1.2  | ±0.06 | 3.1  | 4.3  | 2             | 34        | 25    | 23.9  | 0<br>-0.21 | 1.35 | 1.5        |             |
|     |    | 24.2  |       |      |       | 3.1  | 4.4  |               | 35        | 26    | 24.9  |            |      |            |             |
| 30  |    | 25.9  | ±0.2  | 1.2  | ±0.06 | 3.1  | 4.6  | 2             | 38        | 28    | 26.6  | 0<br>-0.21 | 1.35 | 1.5        |             |
| 32  |    | 27.9  |       |      |       | 3.5  | 4.8  |               | 40        | 30    | 28.6  |            |      |            |             |
| 35  |    | 29.6  | ±0.25 | 1.6  | ±0.06 | 3.5  | 5    | 2             | 43        | 32    | 30.3  | 0<br>-0.25 | 1.75 | +0.14<br>0 |             |
| 36  |    | 32.2  |       |      |       | 4    | 5.4  |               | 46        | 35    | 33    |            |      |            |             |
| 40  |    | 33.2  | ±0.25 | 1.6  | ±0.06 | 4    | 5.4  | 2             | 47        | 36    | 34    | 0<br>-0.25 | 1.75 | +0.14<br>0 |             |
| 38  |    | 35.2  |       |      |       | 4.5  | 5.6  |               | 50        | 38    | 36    |            |      |            |             |
| 45  | 48 | 37    | ±0.4  | 1.8  | ±0.07 | 4.5  | 5.8  | 2.5           | 53        | 40    | 38    | 0<br>-0.25 | 1.95 | 2          |             |
|     |    | 42    |       |      |       | 4.5  | 6.2  |               | 55        | 42    | 39.5  |            |      |            |             |
| 50  |    | 41.5  | ±0.4  | 1.8  | ±0.07 | 4.8  | 6.3  | 2.5           | 58        | 45    | 42.5  | 0<br>-0.25 | 1.95 | 2          |             |
| 48  |    | 44.5  |       |      |       | 4.8  | 6.5  |               | 62        | 48    | 45.5  |            |      |            |             |
| 55  |    | 45.8  | ±0.45 | 2    | ±0.07 | 5    | 6.7  | 2.5           | 64        | 50    | 47    | 0<br>-0.3  | 2.2  | 2.5        |             |
| 56  |    | 51.8  |       |      |       | 5    | 7    |               | 70        | 55    | 52    |            |      |            |             |
| 60  |    | 55.8  | ±0.45 | 2    | ±0.07 | 5.5  | 7.2  | 2.5           | 71        | 56    | 53    | 0<br>-0.3  | 2.2  | 2.5        |             |
| 65  |    | 60.8  |       |      |       | 6.4  | 7.4  |               | 75        | 60    | 57    |            |      |            |             |
| 70  |    | 65.5  | ±0.45 | 2.5  | ±0.08 | 6.4  | 7.8  | 2.5           | 81        | 65    | 62    | 0<br>-0.3  | 2.7  | 2.5        |             |
| 75  |    | 70.5  |       |      |       | 7    | 7.9  |               | 86        | 70    | 67    |            |      |            |             |
| 80  |    | 74.5  | ±0.55 | 3    | ±0.09 | 7.4  | 8.2  | 3             | 92        | 75    | 72    | 0<br>-0.35 | 3.2  | +0.18<br>0 | 3           |
| 85  |    | 79.5  |       |      |       | 8    | 8.4  |               | 97        | 80    | 76.5  |            |      |            |             |
| 90  |    | 84.5  | ±0.55 | 3    | ±0.09 | 8    | 8.7  | 3             | 103       | 85    | 81.5  | 0<br>-0.35 | 3.2  | +0.18<br>0 | 3           |
| 95  |    | 89.5  |       |      |       | 8.6  | 9.1  |               | 108       | 90    | 86.5  |            |      |            |             |
| 100 |    | 94.5  | ±0.55 | 3    | ±0.09 | 9    | 9.5  | 3             | 114       | 95    | 91.5  | 0<br>-0.35 | 3.2  | +0.18<br>0 | 3           |
| 105 |    | 98    |       |      |       | 9.5  | 9.8  |               | 119       | 100   | 96.5  |            |      |            |             |
| 110 |    | 103   | ±0.55 | 4    | ±0.09 | 9.5  | 10   | 3             | 125       | 105   | 101   | 0<br>-0.54 | 4.2  | 4          |             |
| 120 |    | 113   |       |      |       | 10.3 | 10.9 |               | 131       | 110   | 106   |            |      |            |             |
|     |    |       |       |      |       | 10.3 | 10.9 |               | 143       | 120   | 116   |            | 4.2  |            |             |



# C型孔用扣环(参考)



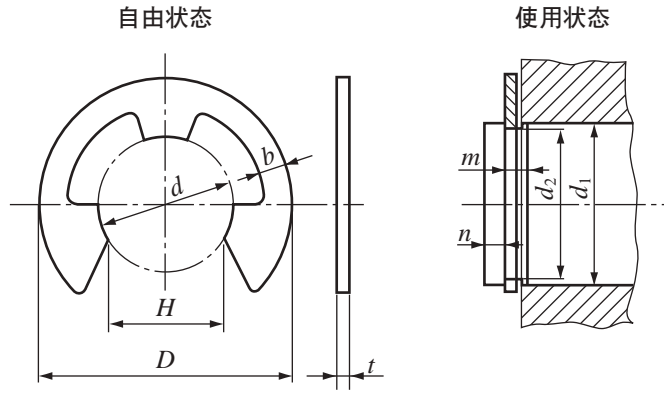
将扣环放入所使用的孔的时候, 不能使直径为 $d_0$ 的孔的位置藏到沟里。

$d_5$ 是放入孔里的内径的最小直径。

单位: mm

| 标称  |       | 扣环    |       |      |       |       |      |       | 所适用的轴(参考) |       |       |            |      |     |             |    |    |      |            |      |            |
|-----|-------|-------|-------|------|-------|-------|------|-------|-----------|-------|-------|------------|------|-----|-------------|----|----|------|------------|------|------------|
| 1   | 2     | $d_3$ |       | $t$  |       | $b$   | $a$  | $d_0$ | $d_5$     | $d_1$ | $d_2$ |            | $m$  |     | $n$<br>(最小) |    |    |      |            |      |            |
|     |       | 基准尺寸  | 容差    | 基准尺寸 | 容差    | 大约    | 大约   | 最小    |           |       | 基准尺寸  | 容差         | 基准尺寸 | 容差  |             |    |    |      |            |      |            |
| 10  |       | 10.7  | ±0.18 | 1    | ±0.05 | 1.8   | 3.1  | 1.2   | 3         | 10    | 10.4  | +0.11<br>0 | 1.15 | 1.5 |             |    |    |      |            |      |            |
| 11  |       | 11.8  |       |      |       | 1.8   | 3.2  |       | 4         | 11    | 11.4  |            |      |     |             |    |    |      |            |      |            |
| 12  |       | 13.0  |       |      |       | 1.8   | 3.3  |       | 5         | 12    | 12.5  |            |      |     |             |    |    |      |            |      |            |
| 13  | 14.1  | 1.8   |       |      |       | 3.5   | 6    |       | 13        | 13.6  |       |            |      |     |             |    |    |      |            |      |            |
| 14  |       | 15.1  |       |      |       | 2.0   | 3.6  |       | 7         | 14    | 14.6  |            |      |     |             |    |    |      |            |      |            |
| 15  | 16.2  | 2.0   |       |      |       | 3.6   | 8    |       | 15        | 15.7  |       |            |      |     |             |    |    |      |            |      |            |
| 16  |       | 17.3  |       |      |       | 2.0   | 3.7  |       | 8         | 16    | 16.8  |            |      |     |             |    |    |      |            |      |            |
| 17  | 18.3  | 2.0   |       |      |       | 3.8   | 9    |       | 17        | 17.8  |       |            |      |     |             |    |    |      |            |      |            |
| 18  |       | 19.5  |       |      |       | 2.5   | 4.0  |       | 10        | 18    | 19.0  |            |      |     |             |    |    |      |            |      |            |
| 19  |       | 20.5  |       |      |       | 2.5   | 4.0  |       | 11        | 19    | 20.0  |            |      |     |             |    |    |      |            |      |            |
| 20  |       | 21.5  | ±0.20 | 1.2  | ±0.06 | 2.5   | 4.0  | 2     | 12        | 20    | 21.0  | +0.21<br>0 | 1.35 | 1.5 |             |    |    |      |            |      |            |
| 22  |       | 23.5  |       |      |       | 2.5   | 4.1  |       | 13        | 22    | 23.0  |            |      |     |             |    |    |      |            |      |            |
| 24  | 25.9  | 2.5   |       |      |       | 4.3   | 15   |       | 24        | 25.2  |       |            |      |     |             |    |    |      |            |      |            |
| 25  |       | 26.9  |       |      |       | 3.0   | 4.4  |       | 16        | 25    | 26.2  |            |      |     |             |    |    |      |            |      |            |
| 26  |       | 27.9  |       |      |       | 3.0   | 4.6  |       | 16        | 26    | 27.2  |            |      |     |             |    |    |      |            |      |            |
| 28  |       | 30.1  |       |      |       | 3.0   | 4.6  |       | 18        | 28    | 29.4  |            |      |     |             |    |    |      |            |      |            |
| 30  |       | 32.1  |       |      |       | 3.0   | 4.7  |       | 20        | 30    | 31.4  |            |      |     |             |    |    |      |            |      |            |
| 32  |       | 34.4  |       |      |       | 3.5   | 5.2  |       | 21        | 32    | 33.7  |            |      |     |             |    |    |      |            |      |            |
| 35  |       | 37.8  |       |      |       | ±0.25 | 1.6  |       | ±0.06     | 3.5   | 5.2   |            |      |     | 2.5         | 24 | 35 | 37.0 | +0.25<br>0 | 1.75 | +0.14<br>0 |
| 36  |       | 38.8  |       |      |       |       |      |       |           | 3.5   | 5.2   |            |      |     |             | 25 | 36 | 38.0 |            |      |            |
| 37  |       | 39.8  | 3.5   | 5.2  | 26    |       |      | 37    |           | 39.0  |       |            |      |     |             |    |    |      |            |      |            |
| 38  | 40.8  | 4.0   | 5.3   | 27   | 38    |       |      | 40.0  |           |       |       |            |      |     |             |    |    |      |            |      |            |
| 40  |       | 43.5  | 4.0   | 5.7  | 28    |       |      | 40    |           | 42.5  |       |            |      |     |             |    |    |      |            |      |            |
| 42  |       | 45.5  | 4.0   | 5.8  | 30    |       |      | 42    |           | 44.5  |       |            |      |     |             |    |    |      |            |      |            |
| 45  |       | 48.5  | 4.5   | 5.9  | 33    |       |      | 45    |           | 47.5  |       |            |      |     |             |    |    |      |            |      |            |
| 47  |       | 50.5  | 4.5   | 6.1  | 34    |       |      | 47    |           | 49.5  |       |            |      |     |             |    |    |      |            |      |            |
| 48  | 51.5  | 4.5   | 6.2   | 35   | 48    |       |      | 50.5  |           |       |       |            |      |     |             |    |    |      |            |      |            |
| 50  |       | 54.2  | 4.5   | 6.5  | 37    |       |      | 50    |           | 53.0  |       |            |      |     |             |    |    |      |            |      |            |
| 52  |       | 56.2  | 5.1   | 6.5  | 39    | 52    | 55.0 |       |           |       |       |            |      |     |             |    |    |      |            |      |            |
| 55  |       | 59.2  | ±0.45 | 2    | ±0.07 | 5.1   | 6.5  | 2.5   | 41        | 55    | 58.0  | +0.30<br>0 | 2.2  | 2   |             |    |    |      |            |      |            |
| 56  |       | 60.2  |       |      |       | 5.1   | 6.6  |       | 42        | 56    | 59.0  |            |      |     |             |    |    |      |            |      |            |
| 60  |       | 64.2  |       |      |       | 5.5   | 6.8  |       | 46        | 60    | 63.0  |            |      |     |             |    |    |      |            |      |            |
| 62  |       | 66.2  |       |      |       | 5.5   | 6.9  |       | 48        | 62    | 65.0  |            |      |     |             |    |    |      |            |      |            |
| 63  | 67.2  | 5.5   |       |      |       | 6.9   | 49   |       | 63        | 66.0  |       |            |      |     |             |    |    |      |            |      |            |
| 65  | 69.2  | 5.5   |       |      |       | 7.0   | 50   |       | 65        | 68.0  |       |            |      |     |             |    |    |      |            |      |            |
| 68  |       | 72.5  |       |      |       | 6.0   | 7.4  |       | 53        | 68    | 71.0  |            |      |     |             |    |    |      |            |      |            |
| 70  |       | 74.5  |       |      |       | 6.0   | 7.4  |       | 55        | 70    | 73.0  |            |      |     |             |    |    |      |            |      |            |
| 72  |       | 76.5  |       |      |       | 6.6   | 7.4  |       | 57        | 72    | 75.0  |            |      |     |             |    |    |      |            |      |            |
| 75  |       | 79.5  |       |      |       | 6.6   | 7.8  |       | 60        | 75    | 78.0  |            |      |     |             |    |    |      |            |      |            |
| 80  |       | 85.5  | 7.0   | 8.0  | 64    | 80    | 83.5 |       |           |       |       |            |      |     |             |    |    |      |            |      |            |
| 85  |       | 90.5  | ±0.55 | 3    | ±0.08 | 7.0   | 8.0  | 3     | 69        | 85    | 88.5  | +0.35<br>0 | 3.2  | 3   |             |    |    |      |            |      |            |
| 90  |       | 95.5  |       |      |       | 7.6   | 8.3  |       | 73        | 90    | 93.5  |            |      |     |             |    |    |      |            |      |            |
| 95  |       | 100.5 |       |      |       | 8.0   | 8.5  |       | 77        | 95    | 98.5  |            |      |     |             |    |    |      |            |      |            |
| 100 |       | 105.5 |       |      |       | 8.3   | 8.8  |       | 82        | 100   | 103.5 |            |      |     |             |    |    |      |            |      |            |
| 105 | 112.0 | 8.9   |       |      |       | 9.1   | 86   |       | 105       | 109.0 |       |            |      |     |             |    |    |      |            |      |            |
| 110 |       | 117.0 |       |      |       | 8.9   | 10.2 |       | 89        | 110   | 114.0 |            |      |     |             |    |    |      |            |      |            |
| 112 | 119.0 | 8.9   |       |      |       | 10.2  | 90   |       | 112       | 116.0 |       |            |      |     |             |    |    |      |            |      |            |
| 115 | 122.0 | 9.5   |       |      |       | 10.2  | 94   |       | 115       | 119.0 |       |            |      |     |             |    |    |      |            |      |            |
| 120 |       | 127.0 |       |      |       | 9.5   | 10.7 |       | 98        | 120   | 124.0 |            |      |     |             |    |    |      |            |      |            |
| 125 |       | 132.0 |       |      |       | 10.0  | 10.7 |       | 103       | 125   | 129.0 |            |      |     |             |    |    |      |            |      |            |

# E 型扣环(参考)



备考：形状表示一例。

单位：mm

| 标称  | 扣环   |            |      |      |      |            |      |        |     |     | 适用的轴               |      |                |      |            |           |           |
|-----|------|------------|------|------|------|------------|------|--------|-----|-----|--------------------|------|----------------|------|------------|-----------|-----------|
|     | d    |            | D    |      | H    |            | t    |        | b   |     | d <sub>1</sub> 的区分 |      | d <sub>2</sub> |      | m          |           | n<br>(最小) |
|     | 基准尺寸 | 容差         | 基准尺寸 | 容差   | 基准尺寸 | 容差         | 基准尺寸 | 容差     | 大约  | 超过  | 以下                 | 基准尺寸 | 容差             | 基准尺寸 | 容差         |           |           |
| 0.8 | 0.8  | 0<br>-0.08 | 2    | ±0.1 | 0.7  | 0<br>-0.25 | 0.2  | ±0.02  | 0.3 | 1   | 1.4                | 0.8  | +0.05<br>0     | 0.3  | +0.05<br>0 | 0.4       |           |
| 1.2 | 1.2  | 0<br>-0.09 | 3    | ±0.2 | 1    |            | 0.3  | ±0.025 | 0.4 | 1.4 | 2                  | 1.2  | +0.06<br>0     | 0.4  |            | +0.1<br>0 | 0.6       |
| 1.5 | 1.5  |            | 4    |      | 1.3  |            | 0.4  | 0.6    | 2   | 2.5 | 1.5                | 0.5  |                | 0.8  |            |           |           |
| 2   | 2    |            | 5    |      | 1.7  | 0.4        | 0.7  | 2.5    | 3.2 | 2   | 1                  |      |                |      |            |           |           |
| 2.5 | 2.5  | 6          | 2.1  | 0.4  | 0.8  | 3.2        | 4    | 2.5    |     |     |                    |      |                |      |            |           |           |
| 3   | 3    | 7          | 2.6  | 0.6  | 0.9  | 4          | 5    | 3      |     |     |                    |      |                |      |            |           |           |
| 4   | 4    | 0<br>-0.12 | 9    | ±0.2 | 3.5  | 0<br>-0.3  | 0.6  | ±0.04  | 1.1 | 5   | 7                  | 4    | +0.075<br>0    | 0.7  | +0.1<br>0  | 1.2       |           |
| 5   | 5    |            | 11   |      | 4.3  |            | 0.6  |        | 1.2 | 6   | 8                  | 5    |                |      |            |           |           |
| 6   | 6    |            | 12   |      | 5.2  |            | 0.8  |        | 1.4 | 7   | 9                  | 6    |                |      |            |           |           |
| 7   | 7    | 0<br>-0.15 | 14   | ±0.2 | 6.1  | 0<br>-0.35 | 0.8  | ±0.05  | 1.6 | 8   | 11                 | 7    | +0.09<br>0     | 0.9  | +0.1<br>0  | 1.5       |           |
| 8   | 8    |            | 16   |      | 6.9  |            | 0.8  |        | 1.8 | 9   | 12                 | 8    |                |      |            |           |           |
| 9   | 9    |            | 18   |      | 7.8  |            | 0.8  |        | 2   | 10  | 14                 | 9    |                |      |            |           |           |
| 10  | 10   | 0<br>-0.18 | 20   | ±0.3 | 8.7  | 0<br>-0.45 | 1    | ±0.06  | 2.2 | 11  | 15                 | 10   | +0.11<br>0     | 1.15 | +0.14<br>0 | 2         |           |
| 12  | 12   |            | 23   |      | 10.4 |            | 1    |        | 2.4 | 13  | 18                 | 12   |                |      |            |           |           |
| 15  | 15   |            | 29   |      | 13   |            | 1.6  |        | 2.8 | 16  | 24                 | 15   |                |      |            |           |           |
| 19  | 19   | 0<br>-0.21 | 37   | ±0.3 | 16.5 | 0<br>-0.5  | 1.6  | ±0.07  | 4   | 20  | 31                 | 19   | +0.13<br>0     | 1.75 | +0.14<br>0 | 3.5       |           |
| 24  | 24   |            | 44   |      | 20.8 |            | 2    |        | 5   | 25  | 38                 | 24   |                |      |            |           | 2.2       |

# 向 SI 单位切换时容易出现问题的单位换算率表

| 力量 | N                  | dyn                   | kgf                      |
|----|--------------------|-----------------------|--------------------------|
|    | 1                  | $1 \times 10^5$       | $1.01972 \times 10^{-1}$ |
|    | $1 \times 10^{-5}$ | 1                     | $1.01972 \times 10^{-6}$ |
|    | 9.80665            | $9.80665 \times 10^5$ | 1                        |

| 压力 | Pa                    | bar                      | kgf/cm <sup>2</sup>      | atm                      | mmH <sub>2</sub> O       | mmHg 又は Torr             |
|----|-----------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|    | 1                     | $1 \times 10^{-5}$       | $1.01972 \times 10^{-5}$ | $9.86923 \times 10^{-6}$ | $1.01972 \times 10^{-1}$ | $7.50062 \times 10^{-3}$ |
|    | $1 \times 10^5$       | 1                        | 1.01972                  | $9.86923 \times 10^{-1}$ | $1.01972 \times 10^4$    | $7.50062 \times 10^2$    |
|    | $9.80665 \times 10^4$ | $9.80665 \times 10^{-1}$ | 1                        | $9.67841 \times 10^{-1}$ | $1 \times 10^4$          | $7.35559 \times 10^2$    |
|    | $1.01325 \times 10^5$ | 1.01325                  | 1.03323                  | 1                        | $1.03323 \times 10^4$    | $7.60000 \times 10^2$    |
|    | 9.80665               | $9.80665 \times 10^{-5}$ | $1 \times 10^{-4}$       | $9.67841 \times 10^{-5}$ | 1                        | $7.35559 \times 10^{-2}$ |
|    | $1.33322 \times 10^2$ | $1.33322 \times 10^{-3}$ | $1.35951 \times 10^{-3}$ | $1.31579 \times 10^{-3}$ | $1.35951 \times 10$      | 1                        |

注 IPa=IN/m<sup>2</sup>

| 应力 | Pa                    | Mpa or N/mm <sup>2</sup> | kfg/mm <sup>2</sup>      | kgf/cm <sup>2</sup>      |
|----|-----------------------|--------------------------|--------------------------|--------------------------|
|    | 1                     | $1 \times 10^{-6}$       | $1.01972 \times 10^{-7}$ | $1.01972 \times 10^{-5}$ |
|    | $1 \times 10^6$       | 1                        | $1.01972 \times 10^{-1}$ | $1.01972 \times 10$      |
|    | $9.80665 \times 10^6$ | 9.80665                  | 1                        | $1 \times 10^2$          |
|    | $9.80665 \times 10^4$ | $9.80665 \times 10^{-2}$ | $1 \times 10^{-2}$       | 1                        |

| 粘度 | Pa·s               | cP              | P                  |
|----|--------------------|-----------------|--------------------|
|    | 1                  | $1 \times 10^3$ | $1 \times 10$      |
|    | $1 \times 10^{-3}$ | 1               | $1 \times 10^{-2}$ |
|    | $1 \times 10^{-1}$ | $1 \times 10^2$ | 1                  |

注 IP = Idyn·s/cm<sup>2</sup> = Ig/cm·S,  
IPa·s = IN·s/m<sup>2</sup>, IcP = ImPa·s