

KG规格齿轮

KG STOCK GEARS

CATALOGUE No.

KG2002

摘要版

NEW

研磨齿条 (RKG系列)

NEW

经济型研磨直齿轮 (SGE系列)

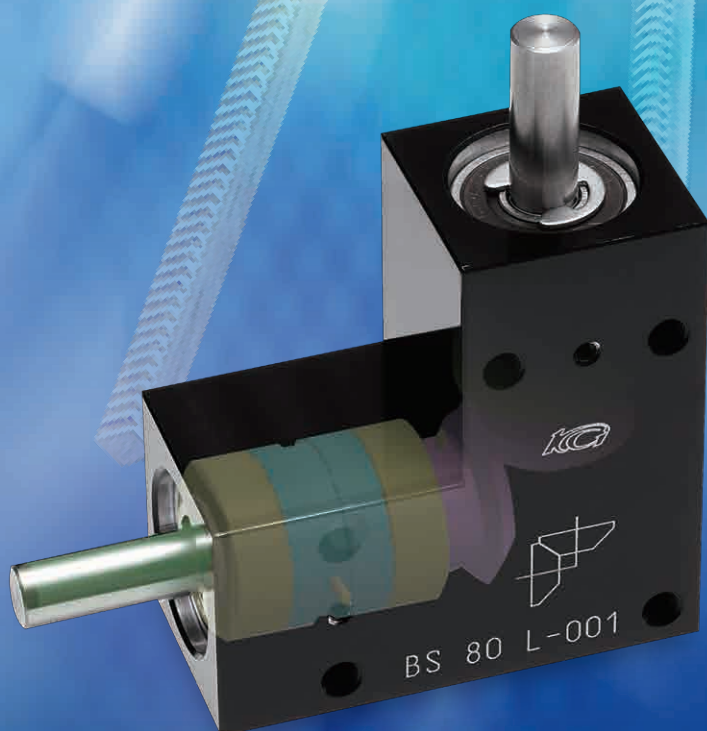
NEW

热处理直齿轮 (F-H系列)

NEW

追加工用直齿轮 (B-F系列)

- 无侧隙齿轮 (NSU, NS, NSG, ASG系列)
- 齿轮箱 (BS, BSB, BSH, BE, HY, WS系列)



協育齒車工業株式会社

RKG 系列 精密研磨齿条

RKG Precision Ground Racks

研磨齿条增加了新产品！



本产品目录中增加了对齿部进行高频感应淬火，并全方面进行研磨的高精度研磨齿条。
New Precision Ground Racks with induction hardening and all surfaces are ground.

用于配对RKG精密研磨齿条的齿轮，请在以下研磨直齿轮中选择。

Please select Mating Gears of RKG Ground Racks from the following ground spur gears.

研磨直齿轮 (SG、SGE)
Ground spur gears



研磨无侧隙齿轮
Antibacklash ground spur gears



研磨控制侧隙齿轮
Control backlash ground spur gears



	新系列产品 NEW PRODUCTS	以往系列产品 CONVENTIONAL PRODUCTS
模数 MODULE	m1.0 m1.5 m2.0 m2.5 m3.0	m0.5 m0.8 m1.0 m1.5
全长 OVERALL LENGTH	500mm 1000mm	200mm (m0.5 m0.8) 300mm (m1.0 m1.5)
热处理 Heat Treatment	齿部高频淬火 Induction Hardening	原料调质处理 Thermal Refining to the raw material

直齿轮系列产品的选择范围增加了！

KG spur gears are available in the wide range of selection.

SGE 系列

SGE Ground Spur Gears



S-H 系列

S-H Spur Gears



BF 系列

BF Spur Gears



	精度等级 System of accuracy	模数 Module	特征 Features
SGE 系列 SGE : Ground spur gears	JIS B 1702-1 N7	m0.5 ~ m3.0	只对齿部磨削的经济型研磨直齿轮。 Competitive-price ground spur gears
S-H 系列 S-H : Spur gears	JIS B 1702-1 N9		对齿部进行高频淬火，省去客户自己进行热处理工序的麻烦。 Spur gears with induction hardening
BF 系列 BF : Spur gears	JIS B 1702-1 N8		使孔径变小，轮毅变大。从而增加了可追加加工范围的最适合追加加工的直齿轮。 Suitable for additional machining with minimum bore diameter

KG 齿轮信息

KG Gear - Information

关于订制齿轮 (由客户设计的齿轮)
Customize making gears.

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-C303P" 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.

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

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

KG Gear - Information

关于追加工

Additional machining to KG standard gears

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.

Memo



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 Kind of Gear	齿轮的周节距 Circular Pitch	模数 Module	材料 Material	全长 Overall Length	齿宽 Face Width	全齿高 Overall Thickness
RKG : 精密研磨齿条 (Ground Rack) RKGP : 精密研磨CP齿条 (周节变位齿条) (Ground Circular Rack)	2 : CP2 5 : CP5 2 : 2 mm 5 : 5 mm 2 : 2 Millimeter 5 : 5 Millimeter	表示模数大小。模数1以下 时所标数据是实际模数乘于 100。 例：模数0.5时所标数据是50。 模数0.8时所标数据是80。 Expressed the unit of module's size. Module 0.5 and 0.8 as multiple of 100. 例 Example m0.5 → 50 m0.8 → 80	S45C (ISO C45) 碳钢 SCM435齿部高频淬火HRC49 ~ 55 Material : Carbon Steel Applied thermal refining of HS40~45 to the raw material. Chromium Molybdenum Steel, complete with high frequency Induction Hardening. (HRC49 to 55)	表示长度。在所标数据上乘于100 为实际长度。单位为mm。例： 所标数据2时，乘于100而得出 200。单位为mm。所以实际长度 为200mm。 例 2 → 200 mm 3 → 300 mm Increase hundred times from these numbers. Example 2 → 200 millimeter 3 → 300 millimeter	单位：mm Dimension : millimeter	单位：mm Dimension : millimeter

SGP 2 S - 20				
齿轮的种类 Kind of Gear	节距 Circular Pitch	材料 Material	齿孔加工 Bore Processed	齿数 Number of Teeth
SGP : 精密研磨CP小齿轮 (周节变位齿轮) (Circular Pitch Ground Spur Gear) Circular pitch pinions	2 : CP2 Pitch : 2mm (0.636 module) 5 : CP5 Pitch : 5mm (1.591 module)	SCM435, 440齿部高频淬火 HRC49 ~ 55 Material : Chromium Molybdenum Steel, complete with high frequency Induction Hardening. (HRC 49 to 55).	[-] : 磨削加工 Ground bore. without threaded hole/ without Set Screw. [*] : 磨削加工, 有两处系 紧螺丝。 with two threaded holes/ 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.

研磨齿条

GROUND RACKS

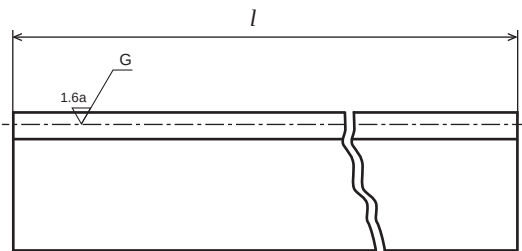
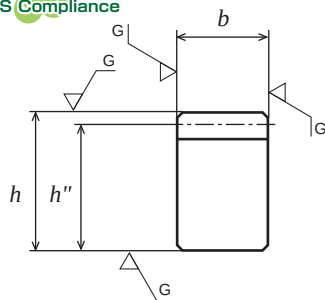
模数
MODULE

0.5/0.8/1/1.5

压力角 20° (普通齿)
20° PRESSURE ANGLE FULL DEPTH TOOTH

材料调质 HS 40 - 45

Applied thermal refining with hardness of HS 40 ~ 45 to the raw material.



材料：碳钢 (ISO C45)

Material : Carbon Steel (ISO C45)

单位 : mm
Dimensions : mm

模数 Module m	产品型号 Catalogue Number	全长 Overall Length l	两端面加工 Both Ends Processed p	有效齿数 Effective Number of Teeth z	啮合高度 Datum Line h''	齿宽 Face Width $b(h\delta)$	齿高 Overall Thickness $h(h\delta)$	重量 Weight $W(kg)$
0.5	RKG50S 2 — 0812	201.06	0.02 ~ 0.08	128	11.5	8	12	0.14
0.8	RKG80S 2 — 0812	201.06	0.03 ~ 0.12	80	11.2	8	12	0.14
1.0	RKG1S 3 — 1015	301.59	0.03 ~ 0.12	96	14.0	10	15	0.32
1.5	RKG1.5S 3 — 1520	301.59	0.06 ~ 0.18	64	18.5	15	20	0.64

ISO C45精密研磨齿条的主要特征

- 精度
 - 直线度：进行研磨加工后精度为0.04mm。
 - 平行度：四面研磨加工后精度为0.01mm。
 - 齿距累积误差：研磨加工后为0.025mm。(长度200mm)
- 作为消除侧隙齿轮来使用

近年，无侧隙机械装置的需求正在增加。如果使用研磨齿条和研磨直齿轮，啮合可以接近[0]侧隙。注意：但是装配一定要非常精确。
- 材料的老化

研磨齿条的材质都经过热处理调制。但是因为存在内应力，材料仍会发生老化。

KG齿面研磨控制侧隙齿轮可与其他齿轮制造商的齿轮相配对。但是为了得到最佳的效果，建议相配对齿轮也使用KG研磨齿轮系列。

KG-Ground Rack is able to match with other gear makers however it is advisable to use KG-Ground Spur gear series for best result.

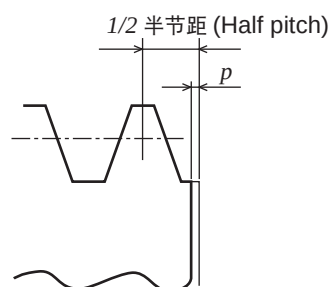
Feature of ISO C45 Ground Racks

- Precision
 - Straightness: 0.04mm and below after processed.
 - Parallelism: 0.01mm and below after grinding process on all four faces.
 - Total cumulative pitch deviation: 0.025mm (for 200 length) and below after processed.
- To use with Anti Backlash gear.

Due to the recent increase demand of anti backlash mechanism, zero backlash can be obtained by matching the Ground Spur Gear with Anti Backlash gear. However using this method will require the assembler to be very precise with this assembly.
- The secular change of the material.

Ground Rack's material has been thermal refined but secular change may occur due to the inner stress and characteristic.

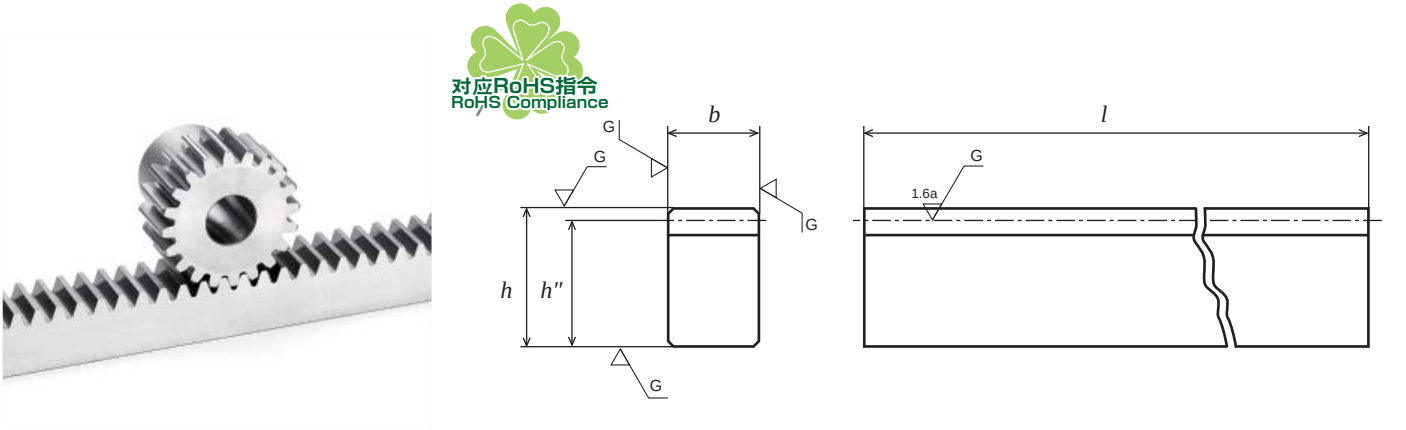
两端面的加工详细 (节距调整) Detail of both ends processed



研磨齿条
GROUND RACKS

模数
MODULE 1/1.5/2/2.5/3 压力角 20° (普通齿)
20° PRESSURE ANGLE FULL DEPTH TOOTH

齿面高频淬火 HRC 49 - 55
Gear tooth surface completed with induction hardening, Hardness HRC49 to 55.



铬钼合金钢 (SCM435 或 ISO34CrMo4)
Material : Chromium Molybdenum Steel (ISO 34CrMo4) 单位 : mm
Dimensions : mm

模数 Module <i>m</i>	产品型号 Catalogue Number	全长 Overall Length <i>l</i>	两端面加工 Both Ends Processed <i>p</i>	有效齿数 Effective Number of Teeth <i>z</i>	啮合高度 Datum Line <i>h''</i>	齿宽 Face Width <i>b(hδ)</i>	高度 Overall Thickness <i>h(hδ)</i>	重量 Weight <i>W(kg)</i>
1	RKG1S 5 – 1015H	505.80	0.03 ~ 0.12	161	14	10	15	0.55
1	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
1.5	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
2	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
2.5	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
3	RKG3S 10 – 3030H	1008.45	0.10 ~ 0.25	107	27	30	30	6.37

标有●的产品为新产品
Products with ● marks are new item.

由于淬火的影响齿部以外的部分也可能硬化了。
所以要对齿根以下2 ~ 3mm处进行追加工时，要充分注意。
Take note that areas of the gear teeth and near gear teeth may occur the condition of low machinability by the influence of induction hardening processed.

KG齿面研磨控制侧隙齿轮可与其他齿轮制造商的齿轮相配对。但是为了得到最佳的效果，建议相配对齿轮也使用KG研磨齿轮系列。
KG-Ground Rack is able to match with other gear makers however it is advisable to use KG-Ground Spur gear series for best result.

研磨 CP 齿条 (周节变位)
GROUND CP RACK

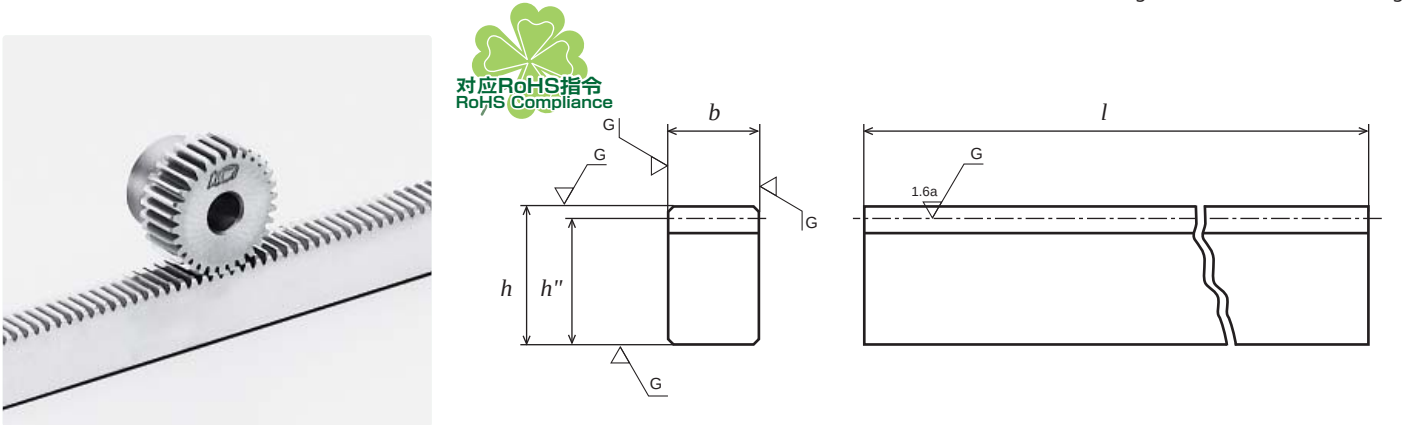
节距
PITCH

2/5

压力角 20° (普通齿)
20° PRESSURE ANGLE FULL DEPTH TOOTH

材料经过热处理调质, 硬度 HS 40 - 45
Applied thermal refining with hardness of HS 40 ~ 45 to the raw material.

订购时请写入明确完整的产品型号。
Please refer to the catalogue reference while ordering.



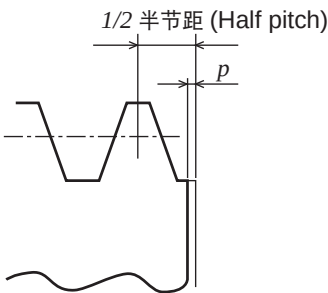
材料 : 碳钢 (ISO C45) 因为周节是正数, 所以无论选择几个周节, 其长度合计也会变为正数。
Material : Carbon Steel (ISO C45) Able to obtain integer number of length, if selected from any number of teeth due to integer pitch.

单位 : mm
Dimensions : mm

节 距 Circular Pitch <i>cp</i>	产 品 型 号 Catalogue Number	全 长 Overall Length <i>l</i>	两端面 加 工 Both Ends Processed <i>p</i>	有效齿数 Effective Number of Teeth <i>z</i>	啮合高度 Datum Line <i>h''</i>	齿 宽 Face Width <i>b(hδ)</i>	高 度 Overall Thickness <i>h(hδ)</i>	重 量 Weight <i>W(kg)</i>
2	RKGP2S 2— 0812	200	0.02 ~ 0.08	100	11.364	8	12	0.14
5	RKGP5S 3— 1520	300	0.04 ~ 0.16	60	18.409	15	20	0.65

材料经过热处理调质, 硬度 HS 40 - 45
Applied thermal refining with hardness of HS 40 ~ 45 to the material.

两端面的加工详细 (节距调整)
Details of both ends processed



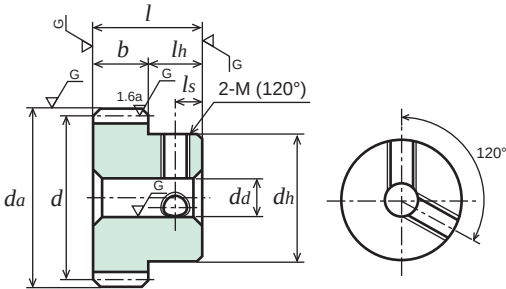
研磨CP小齿轮(周节变位)
GROUND CP RACK PNION

节距 PITCH 2/5 压力角 20° (普通齿)
20° PRESSURE ANGLE FULL DEPTH TOOTH

齿部高频淬火 硬度 HRC 49 - 55.
JIS B 1702-1(ISO) 5 级
System of accuracy: JIS B1702-1(ISO) class 5



New 新产品带有两个螺纹孔 (120°)
New item with two thread holes (120°)



B1 形状
TYPE B1

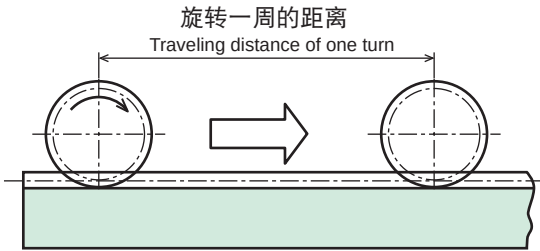
材料: 铬钼合金钢(SCM435, 440 或 ISO34CrMo4, 42CrMo4)
Material: Chromium Molybdenum Steel (ISO 34CrMo4, 42CrMo4)

单位: mm
Dimensions: mm

节距 Circular Pitch <i>cp</i>	产品型号 Catalogue Number	齿数 Number of Teeth <i>z</i>	分度圆直径 Reference Diameter <i>d</i>	齿顶圆直径 Tip Diameter <i>da</i>	形状 Type	齿宽 Face Width <i>b</i>	孔径 Bore Diameter <i>dd</i> (H7)	轮毂外径 Hub Diameter <i>dh</i>	轮毂长度 Hub Projection <i>lh</i>	全长 Overall Length <i>l</i>	螺纹孔 Set Screw		旋转一周的距离 Distance of one turn (注)	重量 Weight <i>W</i> (g)
											2-M	<i>ls</i>		
2	SGP2S - 20	20	φ12.73	φ14.01	B1	8	φ 5	φ10	7	15	-	-	40	10.0
2	SGP2S * 20	20	φ12.73	φ14.01	B1	8	φ 5	φ10	7	15	2-M3	3.5	40	9.6
2	SGP2S - 25	25	φ15.92	φ17.19	B1	8	φ 6	φ12	7	15	-	-	50	15.4
2	SGP2S * 25	25	φ15.92	φ17.19	B1	8	φ 6	φ12	7	15	2-M3	3.5	50	14.9
2	SGP2S - 30	30	φ19.10	φ20.37	B1	8	φ 6	φ15	7	15	-	-	60	24.4
2	SGP2S * 30	30	φ19.10	φ20.37	B1	8	φ 6	φ15	7	15	2-M4	3.5	60	23.7
5	SGP5S - 20	20	φ31.83	φ35.01	B1	15	φ10	φ25	10	25	-	-	100	117.1
5	SGP5S - 25	25	φ39.79	φ42.97	B1	15	φ10	φ30	10	25	-	-	125	187.0
5	SGP5S - 30	30	φ47.75	φ50.93	B1	15	φ10	φ40	10	25	-	-	150	294.8

注: 所谓旋转一周的距离: 小齿轮在齿条上旋转一周时所移动的距离。
Traveling distance of one turn.
Obtain traveling amount of integer number, revolved one turn of the CP Pinion on the CP Rack.

齿部高频淬火 硬度 HRC 49 - 55.
Gear tooth surface completed with induction hardening, Hardness HRC49 to 55.



容许传达动力表 弯曲强度(kW)
Allowable transfer capability table (kW) Bending Strength

产品型号 Catalogue Numbers	转速/min 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

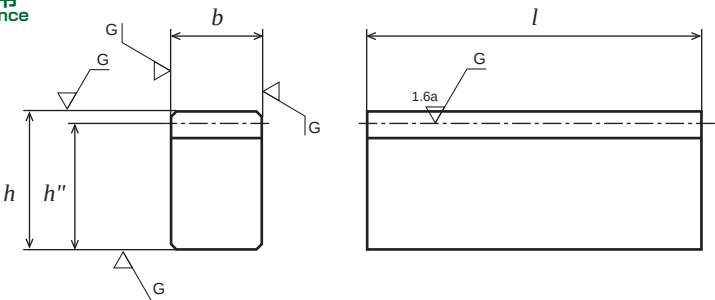
转速/min ⁻¹ revolution/min						
100	250	500	800	1,000	1,500	2,000
0.007	0.019	0.038	0.063	0.079	0.121	0.163
0.011	0.030	0.061	0.100	0.126	0.193	0.260
0.017	0.043	0.090	0.146	0.185	0.282	0.381
0.091	0.238	0.490	0.800	1.010	1.542	2.066
0.146	0.379	0.782	1.277	1.612	2.454	3.230
0.214	0.556	1.146	1.871	2.362	3.541	4.638

上述数值相当于JIGMA公式, 仅供参考。The above numerical values are equivalent to JGMA formulas as reference only.

齿条连接规
GAUGE RACKS

模数
MODULE 0.5/0.8/1/1.5 节距
PITCH 2/5^{CP} 压力角 20° (普通齿)
20° PRESSURE ANGLE FULL DEPTH TOOTH

材料 : ISO 45C Material : ISO 45C
材料调质 HS40 ~ 45
Applied thermal refining with hardness of HS 40 ~ 45 to the raw material.
材料 : ISO 34CrMo45 Material : ISO 34CrMo45
齿部高频淬火 HRC49 ~ 55
Gear tooth surface completed with induction hardening.
Hardness HRC 49 to 55.



齿条连接规 (齿面研磨品用)
Material : Carbon Steel (ISO C45)

单位 : mm
Dimensions : mm

模数 Module <i>m</i>	产品型号 Catalogue Number	材料 Material <i>M</i>	全长 Overall Length <i>l</i>	齿数 Number of Teeth <i>z</i>	啮合高度 Datum Line <i>h''</i>	齿宽 Face Width <i>b(h8)</i>	齿高 Overall Thickness <i>h(h8)</i>	重量 Weight <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

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Products with ● marks are new item.

CP齿条连接规 (齿面研磨品用)
Material : Carbon Steel (ISO C45)

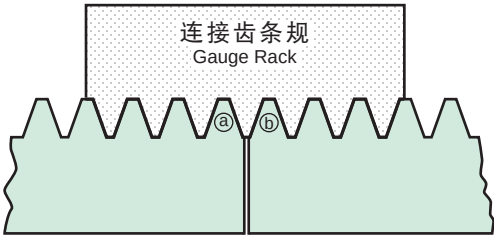
单位 : mm
Dimensions : mm

节距 Circular Pitch <i>cp</i>	产品型号 Catalogue Number	材料 Material <i>M</i>	全长 Overall Length <i>l</i>	齿数 Number of Teeth <i>z</i>	啮合高度 Datum Line <i>h''</i>	齿宽 Face Width <i>b(h8)</i>	齿高 Overall Thickness <i>h(h8)</i>	重量 Weight <i>W(g)</i>
2	RKGP2S — G	S45C	45.7	23	11.364	8	12	32.6
5	RKGP5S — G	S45C	39.4	8	18.409	15	20	85.4

齿条连接规的使用方法

当要对多个齿条进行连接(如图连接齿条a和b), 并打算设定最适合的节距时
请使用齿条连接规。其具体使用方法如右图, 通过用连接齿条规与齿条a, b
的连接部相互啮合来调整连接部分的节距。

Numerous Rack Gears between ㉑ and ㉒ to be joint, please apply the
Gauge Rack for the best fit of the pitch.
Refer to the picture on the right.





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

研磨直齿轮 (SGE 系列)
GROUND SPUR GEARS

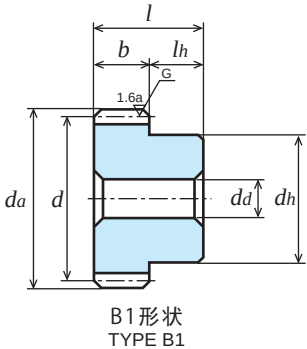
模数
MODULE

0.5 压力角20° (普通齿)
20° PRESSURE ANGLE FULL DEPTH TOOTH

齿部高频淬火HRC47 ~ 53
JIS B 1702-1 (ISO) 7级
System of accuracy : JIS B 1702-1 (ISO) class 7



订购时请写入明确完整的产品型号。
Please refer to the catalogue reference while ordering.



ISO C45 机械构造用碳素钢 (JIS G 4051)
Material : Carbon Steel (ISO C45)

单位 : mm
Dimensions : mm

产品型号 Catalogue Number	齿数 Number of Teeth z	分度圆直径 Reference Diameter d	齿顶圆直径 Tip Diameter da	形状 Type	齿宽 Face Width b	孔径 Bore Diameter dd(H7)	轮毂外径 Hub Diameter dh	轮毂长度 Hub Projection lh	全长 Overall Length l	重量 Weight W(g)
SGE50S 30B - 0504	30	φ15	φ16	B1	5	φ4	φ12	8	13	12.7
SGE50S 40B - 0504	40	φ20	φ21	B1	5	φ4	φ15	8	13	22.1
SGE50S 50B - 0504	50	φ25	φ26	B1	5	φ4	φ18	8	13	33.9
SGE50S 60B - 0505	60	φ30	φ31	B1	5	φ5	φ22	8	13	49.5
SGE50S 70B - 0505	70	φ35	φ36	B1	5	φ5	φ25	8	13	66.5
SGE50S 80B - 0506	80	φ40	φ41	B1	5	φ6	φ28	8	13	85.0
SGE50S 90B - 0506	90	φ45	φ46	B1	5	φ6	φ32	8	13	109.9
SGE50S 100B - 0506	100	φ50	φ51	B1	5	φ6	φ35	8	13	134.4
SGE50S 120B - 0506	120	φ60	φ61	B1	5	φ6	φ42	8	13	194.9

标有●的产品为新产品。
Products with ● marks are new item.

Gear tooth surface completed with induction hardening, Hardness HRC47 to 53.

容许传达能力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

齿数 z	齿宽 b	旋转速度 (min ⁻¹) revolution/min						
		400	800	1,200	1,500	1,800	2,500	3,000
30	5	80.54	161.08	241.63	296.60	347.96	459.16	531.69
40	5	117.09	234.19	342.60	415.43	484.22	630.05	727.71
50	5	154.49	307.53	438.50	528.52	612.15	795.67	929.77
60	5	192.53	375.41	530.54	635.73	732.48	965.31	1,123.08
70	5	230.93	441.27	618.60	737.06	855.34	1,128.41	1,315.49
80	5	269.57	505.05	702.44	837.49	979.47	1,288.25	1,505.79
90	5	308.09	566.09	781.45	941.83	1,098.54	1,448.09	1,687.94
100	5	345.37	625.52	862.40	1,044.07	1,214.70	1,604.66	1,865.27
120	5	414.57	738.59	1,029.96	1,240.25	1,447.40	1,904.73	2,221.44

The above references are JGMA standard.

齿面强度 (W)

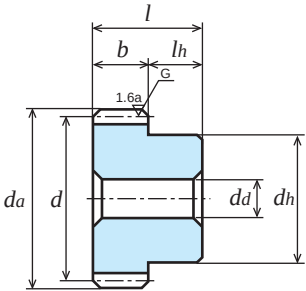
Allowable transfer capability table (W) Surface Durability

旋转速度 (min ⁻¹) revolution/min						
400	800	1,200	1,500	1,800	2,500	3,000
23.40	48.25	73.71	91.38	108.03	144.51	168.88
42.74	88.14	131.25	160.74	188.91	249.31	290.12
68.24	140.01	203.27	247.30	288.79	380.74	448.75
100.00	200.97	289.16	349.83	406.41	543.35	637.24
138.12	272.07	388.19	467.15	546.46	731.33	859.50
182.72	352.81	499.54	601.50	709.14	945.96	1,114.64
233.83	442.88	622.34	757.42	890.63	1,190.99	1,399.33
290.20	541.88	760.46	929.62	1,090.21	1,461.16	1,712.07
416.54	765.05	1,085.93	1,320.47	1,553.44	2,073.87	2,437.97

研磨直齿轮 (SGE 系列)
GROUND SPUR GEARS

模数
MODULE 0.8 压力角20° (普通齿)
20° PRESSURE ANGLE FULL DEPTH TOOTH

齿部高频淬火HRC47 ~ 53
JIS B 1702-1 (ISO) 7 级
System of accuracy : JIS B 1702-1 (ISO) class 7



B1 形状
TYPE B1

ISO C45 机械构造用碳素钢 (JIS G 4051)
Material : Carbon Steel (ISO C45)

单位 : mm
Dimensions : mm

产品型号 Catalogue Number	齿数 Number of Teeth z	分度圆直径 Reference Diameter d	齿顶圆直径 Tip Diameter da	形状 Type	齿宽 Face Width b	孔径 Bore Diameter dd(H7)	轮毂外径 Hub Diameter dh	轮毂长度 Hub Projection lh	全长 Overall Length l	重量 Weight W(g)
SGE80S 25B - 0805	25	φ20	φ21.6	B1	8	φ 5	φ16	10	18	32.5
SGE80S 30B - 0805	30	φ24	φ25.6	B1	8	φ 5	φ20	10	18	50.1
SGE80S 40B - 0806	40	φ32	φ33.6	B1	8	φ 6	φ25	10	18	84.7
SGE80S 50B - 0806	50	φ40	φ41.6	B1	8	φ 6	φ28	10	18	122.9
SGE80S 60B - 0806	60	φ48	φ49.6	B1	8	φ 6	φ34	10	18	180.5
SGE80S 70B - 0808	70	φ56	φ57.6	B1	8	φ 8	φ40	10	18	245.7
SGE80S 80B - 0808	80	φ64	φ65.6	B1	8	φ 8	φ45	10	18	319.2
SGE80S 90B - 0808	90	φ72	φ73.6	B1	8	φ 8	φ50	10	18	402.1
SGE80S 100B - 0810	100	φ80	φ81.6	B1	8	φ10	φ60	10	18	525.8
SGE80S 120B - 0810	120	φ96	φ97.6	B1	8	φ10	φ70	10	18	744.7

标有 ● 的产品为新产品。
Products with ● marks are new item.

Gear tooth surface completed with induction hardening, Hardness HRC47 to 53.

容许传达能力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

齿数 z	齿宽 b	旋转速度 (min ⁻¹) revolution/min						
		400	800	1,200	1,500	1,800	2,500	3,000
25	8	257.23	514.46	752.38	912.43	1,063.43	1,383.75	1,598.07
30	8	329.81	659.29	941.65	1,136.20	1,317.84	1,707.70	1,997.37
40	8	479.71	927.82	1,307.05	1,562.49	1,797.72	2,380.47	2,765.49
50	8	632.84	1,185.57	1,648.92	1,966.00	2,299.31	3,024.09	3,534.52
60	8	788.13	1,432.30	1,970.04	2,387.61	2,780.45	3,670.23	4,270.98
70	8	929.75	1,667.30	2,314.57	2,792.93	3,250.73	4,290.73	4,995.68
80	8	1,067.88	1,890.71	2,647.87	3,183.03	3,723.73	4,896.66	5,706.20
90	8	1,200.89	2,101.81	2,966.46	3,579.91	4,176.82	5,493.79	6,382.94
100	8	1,331.42	2,334.79	3,277.69	3,969.25	4,619.06	6,077.09	7,106.74
120	8	1,581.73	2,784.19	3,915.35	4,716.56	5,495.21	7,256.77	8,708.13

The above references are JGMA standard.

齿面强度 (W)

Allowable transfer capability table (W) Surface Durability

旋转速度 (min ⁻¹) revolution/min						
400	800	1,200	1,500	1,800	2,500	3,000
68.40	141.06	210.02	257.25	302.18	398.84	464.43
100.25	206.60	300.37	365.97	427.76	562.45	663.17
183.16	365.19	523.66	632.11	733.20	984.91	1,153.54
292.33	564.56	799.31	962.34	1,134.54	1,513.68	1,783.55
428.08	801.96	1,122.84	1,374.15	1,613.15	2,160.32	2,533.88
581.53	1,074.99	1,519.00	1,851.10	2,171.74	2,907.99	3,413.28
756.77	1,381.16	1,969.08	2,390.32	2,818.63	3,760.20	4,417.24
953.11	1,719.57	2,470.54	3,010.83	3,540.97	4,725.01	5,533.69
1,169.89	2,114.84	3,022.20	3,695.86	4,335.34	5,786.57	6,821.14
1,661.95	3,015.64	4,316.82	5,251.26	6,167.25	8,262.29	9,994.37

研磨直齿轮 (SGE 系列)
GROUND SPUR GEARS

模数
MODULE

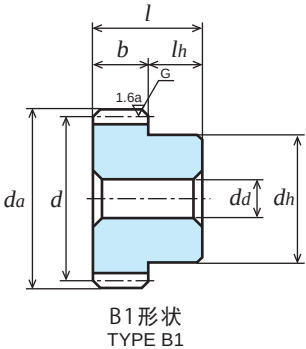
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压力角20° (普通齿)
20° PRESSURE ANGLE FULL DEPTH TOOTH

齿部高频淬火HRC47 ~ 53
JIS B 1702-1 (ISO) 7 级
System of accuracy : JIS B 1702-1 (ISO) class 7



订购时请写入明确完整的产品型号。
Please refer to the catalogue reference while ordering.



ISO C45 机械构造用碳素钢 (JIS G 4051)
Material : Carbon Steel (ISO C45)

单位 : mm
Dimensions : mm

产品型号 Catalogue Number	齿数 Number of Teeth z	分度圆直径 Reference Diameter d	齿顶圆直径 Tip Diameter da	形状 Type	齿宽 Face Width b	孔径 Bore Diameter dd(H7)	轮毂外径 Hub Diameter dh	轮毂长度 Hub Projection lh	全长 Overall Length l	重量 Weight W(g)
SGE1S 20B — 1005	20	φ 20	φ 22	B1	10	φ 5	φ16	10	20	37.0
SGE1S 25B — 1005	25	φ 25	φ 27	B1	10	φ 5	φ20	10	20	59.7
SGE1S 30B — 1006	30	φ 30	φ 32	B1	10	φ 6	φ25	10	20	89.1
SGE1S 40B — 1006	40	φ 40	φ 42	B1	10	φ 6	φ30	10	20	149.1
SGE1S 50B — 1008	50	φ 50	φ 52	B1	10	φ 8	φ35	10	20	221.0
SGE1S 60B — 1008	60	φ 60	φ 62	B1	10	φ 8	φ42	10	20	321.9
SGE1S 70B — 1010	70	φ 70	φ 72	B1	10	φ10	φ55	10	20	442.9
SGE1S 80B — 1010	80	φ 80	φ 82	B1	10	φ10	φ60	10	20	603.1
SGE1S 90B — 1010	90	φ 90	φ 92	B1	10	φ10	φ65	10	20	746.3
SGE1S 100B — 1010	100	φ100	φ102	B1	10	φ10	φ70	10	20	904.9
SGE1S 120B — 1010	120	φ120	φ122	B1	10	φ10	φ90	10	20	1373.2

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Products with ● marks are new item.

Gear tooth surface completed with induction hardening, Hardness HRC47 to 53.

容许传达能力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

齿数 z	齿宽 b	旋转速度 (min ⁻¹) revolution/min						
		400	800	1,200	1,500	1,800	2,500	3,000
20	10	0.37	0.73	1.07	1.30	1.51	1.96	2.27
25	10	0.50	1.00	1.43	1.72	1.99	2.59	3.02
30	10	0.64	1.26	1.78	2.13	2.45	3.23	3.76
40	10	0.94	1.76	2.44	2.91	3.40	4.48	5.23
50	10	1.23	2.23	3.07	3.72	4.33	5.72	6.64
60	10	1.50	2.68	3.73	4.49	5.24	6.90	8.05
70	10	1.77	3.10	4.36	5.26	6.14	8.08	9.39
80	10	2.02	3.54	4.97	6.02	7.01	9.22	10.78
90	10	2.26	3.98	5.59	6.75	7.85	10.31	12.32
100	10	2.50	4.41	6.20	7.46	8.70	11.57	13.88
120	10	2.95	5.23	7.37	8.89	10.32	14.17	17.01

The above references are JGMA standard.

齿面强度 (kW)

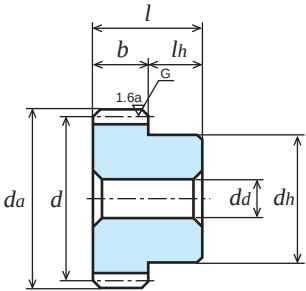
Allowable transfer capability table (kW) Surface Durability

旋转速度 (min ⁻¹) revolution/min						
400	800	1,200	1,500	1,800	2,500	3,000
0.09	0.18	0.26	0.32	0.38	0.50	0.58
0.14	0.28	0.41	0.49	0.58	0.76	0.90
0.20	0.40	0.58	0.70	0.81	1.09	1.27
0.37	0.71	1.00	1.20	1.42	1.89	2.23
0.58	1.08	1.52	1.86	2.18	2.92	3.42
0.83	1.53	2.17	2.64	3.11	4.15	4.88
1.13	2.04	2.93	3.56	4.19	5.59	6.56
1.46	2.64	3.78	4.62	5.42	7.23	8.53
1.84	3.33	4.76	5.80	6.80	9.05	10.91
2.25	4.08	5.84	7.10	8.34	11.25	13.61
3.17	5.79	8.30	10.10	11.83	16.48	19.94

研磨直齿轮 (SGE 系列)
GROUND SPUR GEARS

模数
MODULE 1.5 压力角20° (普通齿)
20° PRESSURE ANGLE FULL DEPTH TOOTH

齿部高频淬火HRC47 ~ 53
JIS B 1702-1 (ISO) 7 级
System of accuracy : JIS B 1702-1 (ISO) class 7



B1 形状
TYPE B1

ISO C45 机械构造用碳素钢 (JIS G 4051)
Material : Carbon Steel (ISO C45) 单位 : mm
Dimensions : mm

产品型号 Catalogue Number	齿数 Number of Teeth <i>z</i>	分度圆直径 Reference Diameter <i>d</i>	齿顶圆直径 Tip Diameter <i>da</i>	形状 Type	齿宽 Face Width <i>b</i>	孔径 Bore Diameter <i>da</i> (H7)	轮毂外径 Hub Diameter <i>dh</i>	轮毂长度 Hub Projection <i>lh</i>	全长 Overall Length <i>l</i>	重量 Weight <i>W</i> (kg)
SGE1.5S 20B – 1506	20	φ 30	φ 33	B1	15	φ 6	φ 25	15	30	0.1
SGE1.5S 25B – 1508	25	φ 37.5	φ 40.5	B1	15	φ 8	φ 30	15	30	0.2
SGE1.5S 30B – 1508	30	φ 45	φ 48	B1	15	φ 8	φ 38	15	30	0.3
SGE1.5S 40B – 1508	40	φ 60	φ 63	B1	15	φ 8	φ 50	15	30	0.6
SGE1.5S 50B – 1510	50	φ 75	φ 78	B1	15	φ10	φ 60	15	30	0.8
SGE1.5S 60B – 1510	60	φ 90	φ 93	B1	15	φ10	φ 65	15	30	1.1
SGE1.5S 70B – 1510	70	φ105	φ108	B1	15	φ10	φ 75	15	30	1.5
SGE1.5S 80B – 1510	80	φ120	φ123	B1	15	φ10	φ 85	15	30	2.0
SGE1.5S 90B – 1512	90	φ135	φ138	B1	15	φ12	φ 95	15	30	2.5
SGE1.5S 100B – 1515	100	φ150	φ153	B1	15	φ15	φ105	15	30	3.1

标有 ● 的产品为新产品。
Products with ● marks are new item.

Gear tooth surface completed with induction hardening, Hardness HRC47 to 53.

容许传达能力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

齿数 <i>z</i>	齿宽 <i>b</i>	旋转速度 (min ⁻¹) revolution/min						
		400	800	1,200	1,500	1,800	2,500	3,000
20	15	1.23	2.40	3.40	4.07	4.69	6.18	7.19
25	15	1.70	3.21	4.48	5.32	6.22	8.18	9.56
30	15	2.17	3.99	5.51	6.65	7.75	10.22	11.91
40	15	3.08	5.49	7.66	9.22	10.76	14.16	16.52
50	15	3.95	6.91	9.73	11.76	13.71	18.04	20.93
60	15	4.78	8.39	11.80	14.24	16.56	21.74	25.99
70	15	5.57	9.82	13.82	16.63	19.38	25.98	31.17
80	15	6.32	11.19	15.77	19.01	22.09	30.33	36.39
90	15	7.03	12.59	17.67	21.29	24.95	34.66	41.59
100	15	7.76	13.95	19.58	23.51	28.11	39.04	46.85

The above references are JGMA standard.

齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

旋转速度 (min ⁻¹) revolution/min						
400	800	1,200	1,500	1,800	2,500	3,000
0.30	0.60	0.87	1.05	1.22	1.63	1.91
0.48	0.93	1.33	1.59	1.88	2.50	2.95
0.70	1.33	1.87	2.27	2.67	3.57	4.20
1.25	2.30	3.26	3.96	4.66	6.22	7.62
1.94	3.49	5.01	6.11	7.18	9.58	11.21
2.75	4.99	7.14	8.70	10.20	13.58	16.37
3.70	6.72	9.63	11.70	13.75	18.69	22.61
4.76	8.68	12.45	15.16	17.75	24.73	29.91
5.93	10.93	15.62	19.01	22.46	31.65	38.28
7.24	13.42	19.16	23.24	28.01	39.46	47.73

研磨直齿轮 (SGE 系列)

GROUND SPUR GEARS

模数
MODULE

2

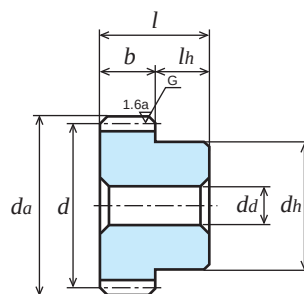
压力角20° (普通齿)
20° PRESSURE ANGLE FULL DEPTH TOOTH

齿部高频淬火HRC47 ~ 53
JIS B 1702-1 (ISO) 7 级
System of accuracy : JIS B 1702-1 (ISO) class 7



订购时请写入明确完整的产品型号。

Please refer to the catalogue reference while ordering.



B1 形状
TYPE B1

ISO C45 机械构造用碳素钢 (JIS G 4051)

Material : Carbon Steel (ISO C45)

单位 : mm
Dimensions : mm

产品型号 Catalogue Number	齿数 Number of Teeth z	分度圆直径 Reference Diameter d	齿顶圆直径 Tip Diameter d_a	形状 Type	齿宽 Face Width b	孔径 Bore Diameter $d_d(H7)$	轮毂外径 Hub Diameter d_h	轮毂长度 Hub Projection l_h	全长 Overall Length l	重量 Weight $W(kg)$
SGE2S 20B — 2008	20	ϕ 40	ϕ 44	B1	20	ϕ 8	ϕ 34	20	40	0.3
SGE2S 25B — 2008	25	ϕ 50	ϕ 54	B1	20	ϕ 8	ϕ 40	20	40	0.5
SGE2S 30B — 2010	30	ϕ 60	ϕ 64	B1	20	ϕ 10	ϕ 50	20	40	0.7
SGE2S 40B — 2010	40	ϕ 80	ϕ 84	B1	20	ϕ 10	ϕ 60	20	40	1.2
SGE2S 50B — 2012	50	ϕ 100	ϕ 104	B1	20	ϕ 12	ϕ 70	20	40	1.8
SGE2S 60B — 2012	60	ϕ 120	ϕ 124	B1	20	ϕ 12	ϕ 85	20	40	2.6
SGE2S 70B — 2015	70	ϕ 140	ϕ 144	B1	20	ϕ 15	ϕ 100	20	40	3.6
SGE2S 80B — 2015	80	ϕ 160	ϕ 164	B1	20	ϕ 15	ϕ 115	20	40	4.7
SGE2S 90B — 2015	90	ϕ 180	ϕ 184	B1	20	ϕ 15	ϕ 130	20	40	6.0
SGE2S 100B — 2015	100	ϕ 200	ϕ 204	B1	20	ϕ 15	ϕ 140	20	40	7.3

标有 ● 的产品为新产品。

Products with ● marks are new item.

Gear tooth surface completed with induction hardening, Hardness HRC47 to 53.

容许传达能力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

齿数 z	齿宽 b	旋转速度 (min ⁻¹) revolution/min						
		400	800	1,200	1,500	1,800	2,500	3,000
20	20	2.92	5.47	7.61	9.07	10.61	13.96	16.31
25	20	4.00	7.25	9.99	12.09	14.07	18.59	21.61
30	20	5.02	8.95	12.48	15.03	17.54	23.09	26.92
40	20	7.02	12.31	17.28	20.93	24.36	32.05	37.48
50	20	8.91	15.70	22.09	26.58	30.99	41.20	49.44
60	20	10.70	18.94	26.69	32.18	37.39	51.34	61.60
70	20	12.39	22.24	31.22	37.57	44.34	61.58	73.89
80	20	14.17	25.43	35.66	43.13	51.76	71.89	86.27
90	20	15.92	28.48	39.89	49.29	59.15	82.16	98.59
100	20	17.63	31.51	44.42	55.52	66.63	92.54	111.04

The above references are JGMA standard.

齿面强度 (kW)

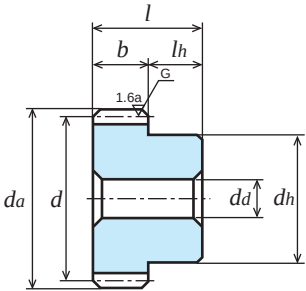
Allowable transfer capability table (kW) Surface Durability

旋转速度 (min ⁻¹) revolution/min						
400	800	1,200	1,500	1,800	2,500	3,000
0.73	1.41	2.00	2.41	2.84	3.78	4.46
1.16	2.17	3.04	3.72	4.36	5.84	6.85
1.67	3.06	4.34	5.28	6.21	8.30	9.75
2.92	5.29	7.56	9.24	10.84	14.47	17.05
4.49	8.16	11.68	14.19	16.68	22.50	27.22
6.34	11.57	16.60	20.21	23.67	32.97	39.88
8.45	15.65	22.36	27.17	32.32	45.53	55.08
10.96	20.27	28.94	35.34	42.75	60.23	72.86
13.79	25.42	36.25	45.23	54.71	77.09	93.25
16.91	31.14	44.68	56.40	68.23	96.13	116.29

研磨直齿轮 (SGE 系列)
GROUND SPUR GEARS

模数
MODULE 2.5 压力角20° (普通齿)
20° PRESSURE ANGLE FULL DEPTH TOOTH

齿部高频淬火HRC47 ~ 53
JIS B 1702-1 (ISO) 7 级
System of accuracy : JIS B 1702-1 (ISO) class 7



B1 形状
TYPE B1

ISO C45 机械构造用碳素钢 (JIS G 4051)
Material : Carbon Steel (ISO C45)

单位 : mm
Dimensions : mm

产品型号 Catalogue Number	齿数 Number of Teeth z	分度圆直径 Reference Diameter d	齿顶圆直径 Tip Diameter da	形状 Type	齿宽 Face Width b	孔径 Bore Diameter da(H7)	轮毂外径 Hub Diameter dh	轮毂长度 Hub Projection lh	全长 Overall Length l	重量 Weight W(kg)
SGE2.5S 20B - 2510	20	φ 50	φ 55	B1	25	φ10	φ 42	20	45	0.6
SGE2.5S 25B - 2510	25	φ 62.5	φ 67.5	B1	25	φ10	φ 52	20	45	0.9
SGE2.5S 30B - 2512	30	φ 75	φ 80	B1	25	φ12	φ 65	20	45	1.3
SGE2.5S 40B - 2512	40	φ100	φ105	B1	25	φ12	φ 70	20	45	2.1
SGE2.5S 50B - 2515	50	φ125	φ130	B1	25	φ15	φ 90	20	45	3.3
SGE2.5S 60B - 2515	60	φ150	φ155	B1	25	φ15	φ105	20	45	4.8
SGE2.5S 70B - 2520	70	φ175	φ180	B1	25	φ20	φ125	20	45	6.5
SGE2.5S 80B - 2520	80	φ200	φ205	B1	25	φ20	φ140	20	45	8.5

标有●的产品为新产品。
Products with ● marks are new item.

Gear tooth surface completed with induction hardening, Hardness HRC47 to 53.

容许传达能力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

齿数 z	齿宽 b	旋转速度 (min ⁻¹) revolution/min						
		400	800	1,200	1,500	1,800	2,500	3,000
20	25	5.68	10.28	14.18	17.16	19.97	26.38	30.67
25	25	7.61	13.51	18.89	22.72	26.56	34.93	40.73
30	25	9.52	16.68	23.49	28.39	33.09	43.52	50.51
40	25	13.20	23.25	32.71	39.35	45.89	61.00	73.20
50	25	16.62	29.53	41.53	50.10	58.15	80.47	96.56
60	25	19.94	35.84	50.29	60.38	72.19	100.27	120.32
70	25	23.40	41.90	58.71	72.16	86.59	120.27	144.32
80	25	26.76	47.82	67.40	84.25	101.10	140.41	168.49

The above references are JGMA standard.

齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

旋转速度 (min ⁻¹) revolution/min						
400	800	1,200	1,500	1,800	2,500	3,000
1.45	2.71	3.80	4.65	5.45	7.31	8.56
2.26	4.13	5.88	7.14	8.41	11.22	13.19
3.23	5.82	8.35	10.19	11.97	15.97	18.69
5.61	10.20	14.60	17.74	20.86	28.13	34.02
8.56	15.67	22.43	27.33	31.97	44.89	54.30
12.07	22.36	31.94	38.73	46.68	65.77	79.56
16.31	30.11	42.94	53.30	64.47	90.84	109.88
21.13	38.93	55.85	70.50	85.28	120.17	145.36

研磨直齿轮 (SGE 系列)
GROUND SPUR GEARS

模数
MODULE

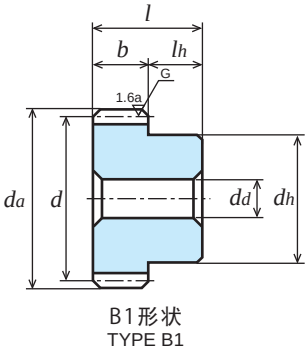
3

压力角20° (普通齿)
20° PRESSURE ANGLE FULL DEPTH TOOTH

齿部高频淬火HRC47 ~ 53
JIS B 1702-1 (ISO) 7 级
System of accuracy : JIS B 1702-1 (ISO) class 7



订购时请写入明确完整的产品型号。
Please refer to the catalogue reference while ordering.



ISO C45 机械构造用碳素钢 (JIS G 4051)
Material : Carbon Steel (ISO C45)

单位 : mm
Dimensions : mm

产品型号 Catalogue Number	齿数 Number of Teeth z	分度圆直径 Reference Diameter d	齿顶圆直径 Tip Diameter da	形状 Type	齿宽 Face Width b	孔径 Bore Diameter dd(H7)	轮毂外径 Hub Diameter dh	轮毂长度 Hub Projection lh	全长 Overall Length l	重量 Weight W(kg)
● SGE3S 20B — 3012	20	φ 60	φ 66	B1	30	φ12	φ 52	20	50	0.9
● SGE3S 25B — 3012	25	φ 75	φ 81	B1	30	φ12	φ 60	20	50	1.4
● SGE3S 30B — 3012	30	φ 90	φ 96	B1	30	φ12	φ 75	20	50	2.1
● SGE3S 40B — 3015	40	φ120	φ126	B1	30	φ15	φ 85	20	50	3.5
● SGE3S 50B — 3015	50	φ150	φ156	B1	30	φ15	φ105	20	50	5.4
● SGE3S 60B — 3015	60	φ180	φ186	B1	30	φ15	φ130	20	50	8.0
● SGE3S 70B — 3020	70	φ210	φ216	B1	30	φ20	φ150	20	50	10.8
● SGE3S 80B — 3020	80	φ240	φ246	B1	30	φ20	φ170	20	50	14.1

标有 ● 的产品为新产品。
Products with ● marks are new item.

Gear tooth surface completed with induction hardening, Hardness HRC47 to 53.

容许传达能力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

齿数 z	齿宽 b	旋转速度 (min ⁻¹) revolution/min						
		400	800	1,200	1,500	1,800	2,500	3,000
20	30	9.61	17.12	23.88	28.75	33.56	44.16	51.50
25	30	12.83	22.47	31.65	38.25	44.59	58.65	68.07
30	30	15.98	28.09	39.47	47.64	55.43	72.74	86.96
40	30	21.97	38.89	54.81	66.08	76.77	105.40	126.48
50	30	27.65	49.70	69.74	83.74	100.12	139.05	166.86
60	30	33.58	60.06	84.13	103.96	124.75	173.26	207.92
70	30	39.28	70.25	99.75	124.69	149.63	207.82	249.39
80	30	44.76	80.24	116.46	145.58	174.69	242.63	291.15

The above references are JGMA standard.

齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

旋转速度 (min ⁻¹) revolution/min						
400	800	1,200	1,500	1,800	2,500	3,000
2.50	4.59	6.52	7.92	9.32	12.44	14.63
3.87	6.99	10.02	12.23	14.36	19.17	22.43
5.51	9.98	14.28	17.40	20.40	27.16	32.74
9.51	17.36	24.90	30.31	35.50	49.45	59.82
14.48	26.84	38.33	46.48	56.01	78.92	95.47
20.68	38.13	54.37	67.85	82.07	115.64	139.88
27.86	51.36	74.24	93.71	113.35	159.72	193.20
35.97	66.47	98.20	123.96	149.95	211.28	255.57



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

直齿轮 SPUR GEARS

模数
MODULE

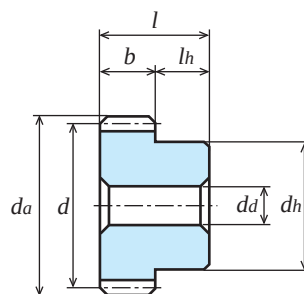
0.5 压力角20° (普通齿)
20° PRESSURE ANGLE FULL DEPTH TOOTH

齿部高频淬火HRC47~53
JIS B 1702-1 (ISO) 9级
System of accuracy : JIS B 1702-1 (ISO) class 9



订购时请写入明确完整的产品型号。

Please refer to the catalogue reference while ordering.



B1形状
TYPE B1

ISO C45 机械构造用碳素钢 (JIS G 4051)

Material : Carbon Steel (ISO C45)

单位 : mm
Dimensions : mm

产品型号 Catalogue Number	齿数 Number of Teeth z	分度圆直径 Reference Diameter d	齿顶圆直径 Tip Diameter d_a	形状 Type	齿宽 Face Width b	孔径 Bore Diameter $d_a(H\%)$	轮毂外径 Hub Diameter d_h	轮毂长度 Hub Projection l_h	全长 Overall Length l	重量 Weight $W(g)$
● S50S 30B — 0504H	30	φ15	φ16	B1	5	φ4	φ12	8	13	12.7
● S50S 40B — 0504H	40	φ20	φ21	B1	5	φ4	φ15	8	13	22.1
● S50S 50B — 0504H	50	φ25	φ26	B1	5	φ4	φ18	8	13	33.9
● S50S 60B — 0505H	60	φ30	φ31	B1	5	φ5	φ22	8	13	49.5
● S50S 70B — 0505H	70	φ35	φ36	B1	5	φ5	φ25	8	13	66.5
● S50S 80B — 0506H	80	φ40	φ41	B1	5	φ6	φ28	8	13	85.0
● S50S 90B — 0506H	90	φ45	φ46	B1	5	φ6	φ32	8	13	109.9
● S50S 100B — 0506H	100	φ50	φ51	B1	5	φ6	φ35	8	13	134.4
● S50S 120B — 0506H	120	φ60	φ61	B1	5	φ6	φ42	8	13	194.9

标有●的产品为新产品。

Products with ● marks are new item.

Gear tooth surface completed with induction hardening, Hardness HRC47 to 53.

※关于齿部高频淬火产品的孔径公差
· 齿部高频淬火后没有进行孔径修正。
· 欲追加加工时, 请确认[追加加工的注意点]

※ Regarding tolerance of bore diameter of induction hardened products
Bore correcting after induction hardening is not completed.
Please refer to Precaution for additional process when additional process.

容许传达能力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

齿数 z	齿宽 b	旋转速度 (min ⁻¹) revolution/min						
		10	100	200	400	800	1,200	1,500
30	5	1.83	18.30	36.59	73.18	146.37	219.55	267.95
40	5	2.66	26.62	53.24	106.48	212.96	308.58	370.49
50	5	3.51	35.11	70.23	140.46	279.14	390.97	465.49
60	5	4.37	43.75	87.50	175.00	338.17	468.53	553.85
70	5	5.25	52.48	104.97	209.94	394.79	541.28	635.58
80	5	6.13	61.27	122.54	245.08	448.83	609.43	718.51
90	5	7.00	70.02	140.03	280.07	499.82	672.64	809.74
100	5	7.89	78.86	157.73	313.44	548.96	739.84	899.76
120	5	9.66	96.64	193.27	373.48	640.88	886.77	1073.32

The above references are JGMA standard.

齿面强度 (W)

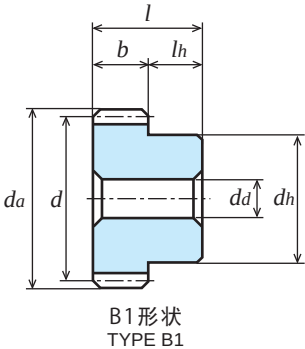
Allowable transfer capability table (W) Surface Durability

旋转速度 (min ⁻¹) revolution/min						
10	100	200	400	800	1,200	1,500
0.40	4.39	9.07	18.66	38.52	58.75	72.53
0.73	8.03	16.55	34.14	70.37	103.74	125.76
1.16	12.82	26.42	54.45	111.54	159.11	191.35
1.70	18.78	38.70	79.82	158.99	224.13	267.65
2.34	25.93	53.46	110.22	213.68	298.20	353.60
3.10	34.30	70.71	145.80	275.28	380.47	452.97
3.97	43.90	90.51	186.62	343.32	470.22	571.65
4.95	54.75	112.87	231.21	417.47	572.64	703.28
7.25	80.21	165.37	329.41	582.65	820.78	1003.21

直齿轮
SPUR GEARS

模数
MODULE 0.8 压力角20° (普通齿)
20° PRESSURE ANGLE FULL DEPTH TOOTH

齿部高频淬火HRC47~53
JIS B 1702-1 (ISO) 9级
System of accuracy : JIS B 1702-1 (ISO) class 9



ISO C45 机械构造用碳素钢 (JIS G 4051)
Material : Carbon Steel (ISO C45) 单位 : mm
Dimensions : mm

产品型号 Catalogue Number	齿数 Number of Teeth z	分度圆直径 Reference Diameter d	齿顶圆直径 Tip Diameter da	形状 Type	齿宽 Face Width b	孔径 Bore Diameter da(H※)	轮毂外径 Hub Diameter dh	轮毂长度 Hub Projection lh	全长 Overall Length l	重量 Weight W(g)
● S80S 25B — 0805H	25	φ20	φ21.6	B1	8	φ 5	φ16	10	18	32.5
● S80S 30B — 0805H	30	φ24	φ25.6	B1	8	φ 5	φ20	10	18	50.1
● S80S 40B — 0806H	40	φ32	φ33.6	B1	8	φ 6	φ25	10	18	84.7
● S80S 50B — 0806H	50	φ40	φ41.6	B1	8	φ 6	φ28	10	18	122.9
● S80S 60B — 0806H	60	φ48	φ49.6	B1	8	φ 6	φ34	10	18	180.5
● S80S 70B — 0808H	70	φ56	φ57.6	B1	8	φ 8	φ40	10	18	245.7
● S80S 80B — 0808H	80	φ64	φ65.6	B1	8	φ 8	φ45	10	18	319.2
● S80S 90B — 0808H	90	φ72	φ73.6	B1	8	φ 8	φ50	10	18	402.1
● S80S 100B — 0810H	100	φ80	φ81.6	B1	8	φ10	φ60	10	18	525.8
● S80S 120B — 0810H	120	φ96	φ97.6	B1	8	φ10	φ70	10	18	744.7

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Products with●marks are new item.

Gear tooth surface completed with induction hardening, Hardness HRC47 to 53.

※关于齿部高频淬火产品的孔径公差 · 齿部高频淬火后没有进行孔径修正。 · 欲追加加工时，请确认[追加加工的注意点]	※ Regarding tolerance of bore diameter of induction hardened products Bore correcting after induction hardening is not completed. Please refer to Precaution for additional process when additional process.
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容许传达能力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

齿数 z	齿宽 b	旋转速度 (min ⁻¹) revolution/min						
		10	100	200	400	800	1,200	1,500
25	8	5.85	58.46	116.91	233.83	467.65	677.83	813.51
30	8	7.50	74.96	149.93	299.85	599.22	841.29	1,003.36
40	8	10.90	109.02	218.04	436.08	833.49	1,149.74	1,355.60
50	8	14.38	143.82	287.65	575.29	1,053.52	1,430.70	1,686.59
60	8	17.92	179.21	358.42	716.35	1,260.04	1,688.73	2,055.57
70	8	21.50	214.96	429.91	840.04	1,453.05	1,989.95	2,412.94
80	8	25.10	250.96	501.93	959.31	1,633.36	2,282.96	2,760.51
90	8	28.68	286.79	573.59	1,072.86	1,801.68	2,564.52	3,154.83
100	8	32.30	323.03	646.07	1,183.16	2,005.39	2,842.69	3,553.37
120	8	39.58	395.81	791.06	1,391.49	2,400.42	3,483.25	4,354.06

The above references are JGMA standard.

齿面强度 (W)

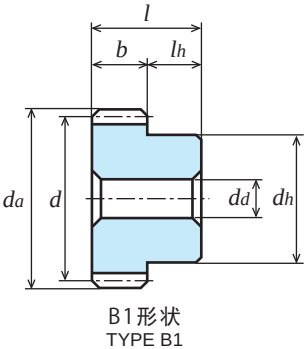
Allowable transfer capability table (W) Surface Durability

旋转速度 (min ⁻¹) revolution/min							
10	100	200	400	800	1,200	1,500	
1.16	12.85	26.48	54.61	112.59	166.11	201.30	
1.70	18.82	38.80	80.02	164.78	235.47	283.64	
3.11	34.39	70.89	146.17	287.99	404.36	481.47	
4.96	54.88	113.15	233.26	440.39	608.71	724.70	
7.27	80.41	165.79	341.55	619.33	844.91	1,038.64	
10.04	111.06	228.98	461.22	822.39	1,146.49	1,403.86	
13.28	146.92	302.91	596.81	1,047.41	1,490.29	1,819.73	
17.00	188.04	387.67	747.52	1,294.06	1,874.86	2,329.10	
21.20	234.49	483.43	912.62	1,594.60	2,300.94	2,904.37	
31.06	343.56	707.81	1,283.48	2,282.36	3,371.30	4,255.45	

直齿轮
SPUR GEARS

模数
MODULE 1 压力角20° (普通齿)
20° PRESSURE ANGLE FULL DEPTH TOOTH

齿部高频淬火HRC47~53
JIS B 1702-1 (ISO) 9级
System of accuracy : JIS B 1702-1 (ISO) class 9



S45C 机械构造用炭素钢 (JIS G 4051)
Material : Carbon Steel (ISO C45) 单位 : mm
Dimensions : mm

Table with 13 columns: Product Model, Number of Teeth, Reference Diameter, Tip Diameter, Type, Face Width, Bore Diameter, Hub Outer Diameter, Hub Projection, Overall Length, Set Screw (M, ls), Weight. Rows include models S1S 14B-1005H to S1S 28B-1008H.

标有●的产品为新产品。
Products with ● marks are new item.

※关于齿部高频淬火产品的孔径公差
※ Regarding tolerance of bore diameter of induction hardened products
· 齿部高频淬火后没有进行孔径修正。
Bore correcting after induction hardening is not completed.
· 欲追加加工时，请确认[追加加工的注意点]
Please refer to Precaution for additional process when additional process.

容许传达能力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

Table with 7 columns: Product Model, and 6 columns for rotation speed (10, 100, 200, 400, 800, 1,200, 1,500 rpm). Rows include models S1S 14B-1005H to S1S 28B-1008H.

The above numerical values are equivalent to JGMA formulas as reference only.

齿面强度 (W)

Allowable transfer capability table (W) Surface Durability

Table with 7 columns: Product Model, and 6 columns for rotation speed (10, 100, 200, 400, 800, 1,200, 1,500 rpm). Rows include models S1S 14B-1005H to S1S 28B-1008H.

The above numerical values are equivalent to JGMA formulas as reference only.

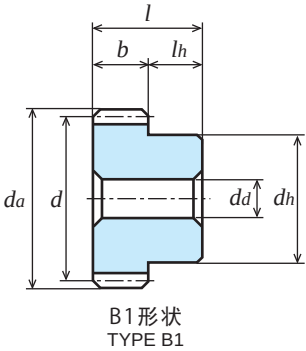
直齿轮
SPUR GEARS

模数
MODULE 1
压力角20° (普通齿)
20° PRESSURE ANGLE FULL DEPTH TOOTH

齿部高频淬火HRC47~53
JIS B 1702-1 (ISO) 9级
System of accuracy : JIS B 1702-1 (ISO) class 9



订购时请写入明确完整的产品型号。
Please refer to the catalogue reference while ordering.



ISO C45 机械构造用碳素钢 (JIS G 4051)
Material : Carbon Steel (ISO C45)
单位: mm
Dimensions : mm

Table with 11 columns: 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, 重量. Rows include S1S 20B-1005H to S1S 120B-1010H.

标有●的产品为新产品。
Products with ● marks are new item.
表有■的产品是规格变更产品。选定时要注意尺寸。
Products with ■ marks are the changed specification. Beware of each dimension when choosing this product.

Gear tooth surface completed with induction hardening, Hardness HRC47 to 53.

※关于齿部高频淬火产品的孔径公差
· 齿部高频淬火后没有进行孔径修正。
· 欲追加加工时，请确认[追加加工的注意点]
※ Regarding tolerance of bore diameter of induction hardened products
Bore correcting after induction hardening is not completed.
Please refer to Precaution for additional process when additional process.

容许传达能力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

Table with 8 columns: 齿数, 齿宽, 10, 100, 200, 400, 800, 1,200, 1,500. Rows for 20 to 120 teeth.

The above references are JGMA standard.

齿面强度 (W)

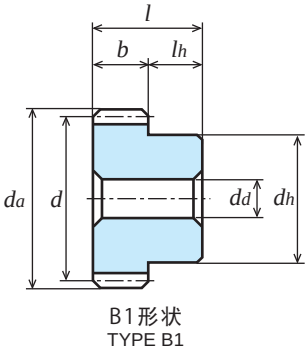
Allowable transfer capability table (W) Surface Durability

Table with 8 columns: 10, 100, 200, 400, 800, 1,200, 1,500. Rows for 20 to 120 teeth.

直齿轮
SPUR GEARS

模数
MODULE 1.5 压力角20° (普通齿)
20° PRESSURE ANGLE FULL DEPTH TOOTH

齿部高频淬火HRC47~53
JIS B 1702-1 (ISO) 9级
System of accuracy : JIS B 1702-1 (ISO) class 9



ISO C45 机械构造用碳素钢 (JIS G 4051)
Material : Carbon Steel (ISO C45) 单位 : mm
Dimensions : mm

产品型号 Catalogue Number	齿数 Number of Teeth z	分度圆直径 Reference Diameter d	齿顶圆直径 Tip Diameter da	形状 Type	齿宽 Face Width b	孔径 Bore Diameter da(H※)	轮毂 外径 Hub Diameter dh	轮毂 长度 Hub Projection lh	全长 Overall Length l	重量 Weight 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	1118.4
● S1.5S 70B — 1510H	70	φ 105	φ 108	B1	15	φ 10	φ 75	15	30	1.52 (kg)
● S1.5S 80B — 1510H	80	φ 120	φ 123	B1	15	φ 10	φ 85	15	30	2.0 (kg)
● S1.5S 90B — 1512H	90	φ 135	φ 138	B1	15	φ 12	φ 95	15	30	2.49 (kg)
● S1.5S 100B — 1515H	100	φ 150	φ 153	B1	15	φ 15	φ 105	15	30	3.05 (kg)

标有 ● 的产品为新产品。
Products with ● marks are new item.

Gear tooth surface completed with induction hardening, Hardness HRC47 to 53.

※关于齿部高频淬火产品的孔径公差 · 齿部高频淬火后没有进行孔径修正。 · 欲追加加工时，请确认[追加加工的注意点]	※ Regarding tolerance of bore diameter of induction hardened products Bore correcting after induction hardening is not completed. Please refer to Precaution for additional process when additional process.
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容许传达能力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

齿数 z	齿宽 b	旋转速度 (min ⁻¹) revolution/min						
		10	100	200	400	800	1,200	1,500
20	15	0.028	0.280	0.560	1.120	2.165	2.999	3.545
25	15	0.039	0.385	0.771	1.541	2.860	3.903	4.568
30	15	0.049	0.494	0.988	1.976	3.527	4.747	5.714
40	15	0.072	0.719	1.437	2.777	4.766	6.594	7.982
50	15	0.095	0.948	1.896	3.518	5.929	8.424	10.429
60	15	0.118	1.181	2.363	4.217	7.227	10.396	12.995
70	15	0.142	1.417	2.796	4.871	8.483	12.469	15.587
80	15	0.165	1.65	3.20	5.49	9.71	14.56	18.20
90	15	0.189	1.891	3.579	6.054	11.091	16.636	-
100	15	0.213	2.129	3.951	6.659	12.492	18.738	-

The above references are JGMA standard.

齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

旋转速度 (min ⁻¹) revolution/min							
10	100	200	400	800	1,200	1,500	
0.005	0.056	0.116	0.239	0.477	0.673	0.803	
0.008	0.090	0.185	0.382	0.731	1.015	1.200	
0.012	0.132	0.272	0.560	1.030	1.411	1.715	
0.022	0.241	0.496	0.988	1.748	2.462	3.009	
0.035	0.384	0.792	1.515	2.631	3.805	4.757	
0.051	0.563	1.160	2.134	3.771	5.522	6.970	
0.070	0.777	1.581	2.839	5.097	7.627	9.627	
0.093	1.028	2.048	3.623	6.607	10.089	12.735	
0.119	1.316	2.568	4.477	8.456	12.912	-	
0.148	1.641	3.139	5.453	10.545	16.101	-	

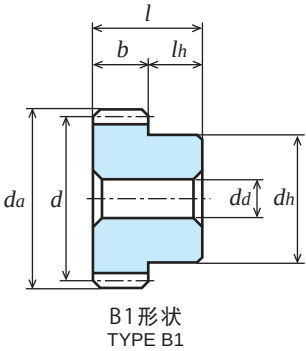
直齿轮
SPUR GEARS

模数
MODULE 2 压力角20° (普通齿)
20° PRESSURE ANGLE FULL DEPTH TOOTH

齿部高频淬火HRC47~53
JIS B 1702-1 (ISO) 9级
System of accuracy : JIS B 1702-1 (ISO) class 9



订购时请写入明确完整的产品型号。
Please refer to the catalogue reference while ordering.



ISO C45 机械构造用碳素钢 (JIS G 4051)
Material : Carbon Steel (ISO C45) 单位 : mm
Dimensions : mm

Table with 11 columns: Product Number, Number of Teeth, Reference Diameter, Tip Diameter, Type, Face Width, Bore Diameter, Hub Outer Diameter, Hub Length, Overall Length, Weight. Rows include models like S2S 20B-2008H, S2S 25B-2008H, etc.

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Products with ● marks are new item.

Gear tooth surface completed with induction hardening, Hardness HRC47 to 53.

Table with 2 columns of text regarding bore diameter tolerance and induction hardening processes.

容许传达能力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

Table with 9 columns: Number of teeth, Face width, and 7 columns of rotational speed (10 to 1500 rev/min) for bending strength.

The above references are JGMA standard.

齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

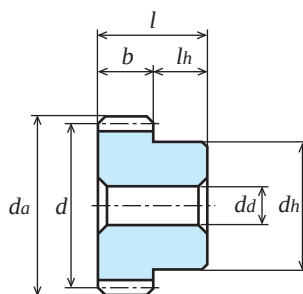
Table with 8 columns: 7 columns of rotational speed (10 to 1500 rev/min) for surface durability.

直齿轮 SPUR GEARS

模数
MODULE

2.5 压力角20° (普通齿)
20° PRESSURE ANGLE FULL DEPTH TOOTH

齿部高频淬火HRC47~53
JIS B 1702-1 (ISO) 9级
System of accuracy : JIS B 1702-1 (ISO) class 9



B1形状
TYPE B1

ISO C45 机械构造用碳素钢 (JIS G 4051)

Material : Carbon Steel (ISO C45)

单位 : mm
Dimensions : mm

产品型号 Catalogue Number	齿数 Number of Teeth z	分度圆直径 Reference Diameter d	齿顶圆直径 Tip Diameter d_a	形状 Type	齿宽 Face Width b	孔径 Bore Diameter $d_a(H\%)$	轮毂外径 Hub Diameter d_h	轮毂长度 Hub Projection l_h	全长 Overall Length l	重量 Weight $W(kg)$
● S2.5S 20B — 2510H	20	φ 50	φ 55	B1	25	φ10	φ 42	20	45	569.3 (g)
● S2.5S 25B — 2510H	25	φ 62.5	φ 67.5	B1	25	φ10	φ 52	20	45	900.9 (g)
● S2.5S 30B — 2512H	30	φ 75	φ 80	B1	25	φ12	φ 65	20	45	1.34
● S2.5S 40B — 2512H	40	φ100	φ105	B1	25	φ12	φ 70	20	45	2.1
● S2.5S 50B — 2515H	50	φ125	φ130	B1	25	φ15	φ 90	20	45	3.33
● S2.5S 60B — 2515H	60	φ150	φ155	B1	25	φ15	φ105	20	45	4.75
● S2.5S 70B — 2520H	70	φ175	φ180	B1	25	φ20	φ125	20	45	6.52
● S2.5S 80B — 2520H	80	φ200	φ205	B1	25	φ20	φ140	20	45	8.45

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Products with ● marks are new item.

Gear tooth surface completed with induction hardening, Hardness HRC47 to 53.

※关于齿部高频淬火产品的孔径公差
· 齿部高频淬火后没有进行孔径修正。
· 欲追加加工时，请确认[追加加工的注意点]

※ Regarding tolerance of bore diameter of induction hardened products
Bore correcting after induction hardening is not completed.
Please refer to Precaution for additional process when additional process.

容许传达能力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

齿数 z	齿宽 b	旋转速度 (min ⁻¹) revolution/min						
		10	100	200	400	800	1,200	1,500
20	25	0.130	1.297	2.593	5.153	9.025	12.163	14.791
25	25	0.178	1.784	3.568	6.848	11.693	16.282	19.684
30	25	0.229	2.288	4.575	8.490	14.307	20.326	25.163
40	25	0.333	3.327	6.612	11.580	20.061	29.278	36.598
50	25	0.439	4.389	8.423	14.383	25.750	38.625	48.281
60	25	0.547	5.469	10.148	17.102	32.086	48.129	-
70	25	0.656	6.560	11.782	20.139	38.485	-	-
80	25	0.766	7.610	13.328	23.090	44.931	-	-

The above references are JGMA standard.

齿面强度 (kW)

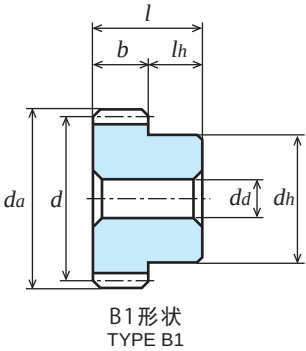
Allowable transfer capability table (kW) Surface Durability

旋转速度 (min ⁻¹) revolution/min						
10	100	200	400	800	1,200	1,500
0.025	0.274	0.564	1.156	2.087	2.863	3.516
0.039	0.437	0.901	1.782	3.136	4.446	5.428
0.058	0.640	1.320	2.524	4.385	6.342	7.928
0.106	1.169	2.396	4.326	7.725	11.476	14.486
0.169	1.867	3.693	6.500	11.995	18.316	23.120
0.247	2.735	5.231	9.088	17.575	26.836	-
0.341	3.777	6.994	12.323	24.275	-	-
0.452	4.965	8.964	16.008	32.111	-	-

齿部高频淬火HRC47~53
JIS B 1702-1 (ISO) 9级
System of accuracy : JIS B 1702-1 (ISO) class 9



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Please refer to the catalogue reference while ordering.



ISO C45 机械构造用碳素钢 (JIS G 4051)
Material : Carbon Steel (ISO C45)

单位 : mm
Dimensions : mm

产品型号 Catalogue Number	齿数 Number of Teeth z	分度圆直径 Reference Diameter d	齿顶圆直径 Tip Diameter da	形状 Type	齿宽 Face Width b	孔径 Bore Diameter da(H※)	轮毂外径 Hub Diameter dh	轮毂长度 Hub Projection lh	全长 Overall Length l	重量 Weight W(kg)
● S3S 20B - 3012H	20	φ 60	φ 66	B1	30	φ12	φ 52	20	50	0.92
● S3S 25B - 3012H	25	φ 75	φ 81	B1	30	φ12	φ 60	20	50	1.43
● S3S 30B - 3012H	30	φ 90	φ 96	B1	30	φ12	φ 75	20	50	2.13
● S3S 40B - 3015H	40	φ120	φ126	B1	30	φ15	φ 85	20	50	3.47
● S3S 50B - 3015H	50	φ150	φ156	B1	30	φ15	φ105	20	50	5.43
● S3S 60B - 3015H	60	φ180	φ186	B1	30	φ15	φ130	20	50	7.98
● S3S 70B - 3020H	70	φ210	φ216	B1	30	φ20	φ150	20	50	10.78
● S3S 80B - 3020H	80	φ240	φ246	B1	30	φ20	φ170	20	50	14.06

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Products with ● marks are new item.

Gear tooth surface completed with induction hardening, Hardness HRC47 to 53.

※关于齿部高频淬火产品的孔径公差 ・齿部高频淬火后没有进行孔径修正。 ・欲追加加工时，请确认[追加加工的注意点]	※ Regarding tolerance of bore diameter of induction hardened products Bore correcting after induction hardening is not completed. Please refer to Precaution for additional process when additional process.
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容许传达能力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

齿数 z	齿宽 b	旋转速度 (min ⁻¹) revolution/min						
		10	100	200	400	800	1,200	1,500
20	30	0.224	2.240	4.481	8.659	14.857	20.558	24.882
25	30	0.308	3.083	6.166	11.441	19.280	27.391	33.911
30	30	0.395	3.953	7.906	14.109	24.182	34.786	43.482
40	30	0.575	5.749	11.110	19.063	33.729	50.593	63.241
50	30	0.7585	7.5845	14.074	23.717	44.496	66.74	-
60	30	0.9451	9.4507	16.866	28.907	55.44	-	-
70	30	1.134	11.184	19.485	33.932	66.503	-	-
80	30	1.323	12.787	21.941	38.821	77.641	-	-

The above references are JGMA standard.

齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

旋转速度 (min ⁻¹) revolution/min						
10	100	200	400	800	1,200	1,500
0.044	0.481	0.992	1.977	3.496	4.924	6.019
0.069	0.768	1.584	3.029	5.262	7.610	9.514
0.102	1.125	2.320	4.269	7.542	11.043	13.940
0.186	2.056	4.096	7.245	13.214	20.177	25.469
0.2967	3.2818	6.2774	10.905	21.09	32.203	-
0.4347	4.8084	8.8459	15.63	30.901	-	-
0.600	6.552	11.768	21.126	42.681	-	-
0.794	8.488	15.014	27.385	56.459	-	-

直齿轮
SPUR GEARS

模数
MODULE

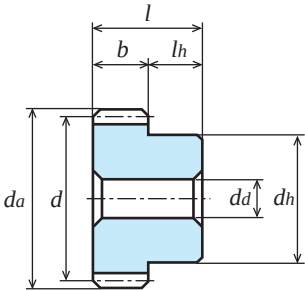
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压力角20° (普通齿)
20° PRESSURE ANGLE FULL DEPTH TOOTH

JIS B 1702-1 (ISO) 8级
System of accuracy : JIS B 1702-1(ISO) class 8



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Please refer to the catalogue reference while ordering.



B1 形状
TYPE B1

ISO C45 机械构造用碳素钢 (JIS G 4051)
Material : Carbon Steel (ISO C45)

单位 : mm
Dimensions : mm

产品型号 Catalogue Number	齿数 Number of Teeth z	分度圆直径 Reference Diameter d	齿顶圆直径 Tip Diameter da	形状 Type	齿宽 Face Width b	孔径 Bore Diameter dd(H7)	轮毂外径 Hub Diameter dh	轮毂长度 Hub Projection lh	全长 Overall Length l	重量 Weight W(g)
● S50S 30BF – 0504	30	φ15	φ16	B1	5	φ4(H8)	φ12	8	13	12.7
● S50S 40BF – 0504	40	φ20	φ21	B1	5	φ4(H8)	φ15	8	13	22.1
● S50S 50BF – 0504	50	φ25	φ26	B1	5	φ4(H8)	φ18	8	13	33.9
● S50S 60BF – 0505	60	φ30	φ31	B1	5	φ5	φ22	8	13	49.5
● S50S 70BF – 0505	70	φ35	φ36	B1	5	φ5	φ25	8	13	66.5
● S50S 80BF – 0506	80	φ40	φ41	B1	5	φ6	φ28	8	13	85.0
● S50S 90BF – 0506	90	φ45	φ46	B1	5	φ6	φ32	8	13	109.9
● S50S 100BF – 0506	100	φ50	φ51	B1	5	φ6	φ35	8	13	134.4
● S50S 120BF – 0506	120	φ60	φ61	B1	5	φ6	φ42	8	13	194.9

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Products with ● marks are new item.

容许传达能力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

齿数 z	齿宽 b	旋转速度 (min ⁻¹) revolution/min						
		10	100	200	400	800	1,200	1,500
30	5	1.73	17.28	34.56	69.11	138.22	207.34	252.89
40	5	2.51	25.13	50.26	100.53	201.05	290.27	347.13
50	5	3.31	33.09	66.18	132.36	263.04	365.67	433.52
60	5	4.13	41.26	82.52	165.03	318.33	437.29	515.20
70	5	4.94	49.53	99.06	198.12	370.27	503.89	587.45
80	5	5.78	57.80	115.61	231.21	419.70	565.46	662.85
90	5	6.61	66.08	132.15	264.30	466.61	622.01	746.10
100	5	7.43	74.35	148.70	295.30	511.01	683.58	829.35
120	5	9.11	91.10	182.20	351.01	593.95	816.78	986.42

The above references are JGMA standard.

齿面强度 (W)

Allowable transfer capability table (W) Surface Durability

旋转速度 (min ⁻¹) 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

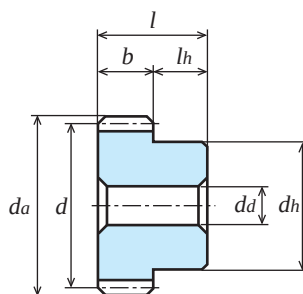
直齿轮

SPUR GEARS

模数
MODULE

0.8 压力角20° (普通齿)
20° PRESSURE ANGLE FULL DEPTH TOOTH

JIS B 1702-1 (ISO) 8级
System of accuracy : JIS B 1702-1 (ISO) class 8



B1形状
TYPE B1

ISO C45 机械构造用碳素钢 (JIS G 4051)

Material : Carbon Steel (ISO C45)

单位 : mm
Dimensions : mm

产品型号 Catalogue Number	齿数 Number of Teeth z	分度圆直径 Reference Diameter d	齿顶圆直径 Tip Diameter d_a	形状 Type	齿宽 Face Width b	孔径 Bore Diameter $d_d(H7)$	轮毂外径 Hub Diameter d_h	轮毂长度 Hub Projection l_h	全长 Overall Length l	重量 Weight $W(g)$
● S80S 25BF — 0805	25	φ20	φ21.6	B1	8	φ 5(H8)	φ16	10	18	32.5
● S80S 30BF — 0805	30	φ24	φ25.6	B1	8	φ 5(H8)	φ20	10	18	50.1
● S80S 40BF — 0806	40	φ32	φ33.6	B1	8	φ 6(H8)	φ25	10	18	84.7
● S80S 50BF — 0806	50	φ40	φ41.6	B1	8	φ 6(H8)	φ28	10	18	122.9
● S80S 60BF — 0806	60	φ48	φ49.6	B1	8	φ 6(H8)	φ34	10	18	180.5
● S80S 70BF — 0808	70	φ56	φ57.6	B1	8	φ 8	φ40	10	18	245.7
● 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

标有 ● 的产品为新产品。

Products with ● marks are new item.

容许传达能力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

齿数 z	齿宽 b	旋转速度 (min ⁻¹) revolution/min						
		10	100	200	400	800	1,200	1,500
25	8	5.52	55.18	110.37	220.74	441.48	637.09	761.80
30	8	7.07	70.68	141.37	282.73	565.46	848.19	936.16
40	8	10.28	102.83	205.66	411.32	782.43	1,071.87	1,256.58
50	8	13.57	135.71	271.42	542.84	985.16	1,326.95	1,556.59
60	8	16.90	169.01	338.02	675.62	1,174.49	1,559.42	1,894.30
70	8	20.27	202.73	405.46	790.39	1,349.57	1,834.61	2,219.44
80	8	23.68	236.76	473.52	900.97	1,512.09	2,102.26	2,535.16
90	8	27.05	270.48	540.96	1,005.69	1,663.72	2,358.61	2,854.02
100	8	30.47	304.72	609.44	1,106.63	1,850.53	2,609.92	3,168.16
120	8	37.33	373.31	746.20	1,296.79	2,210.75	3,123.87	3,771.32

The above references are JGMA standard.

齿面强度 (W)

Allowable transfer capability table (W) Surface Durability

旋转速度 (min ⁻¹) 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

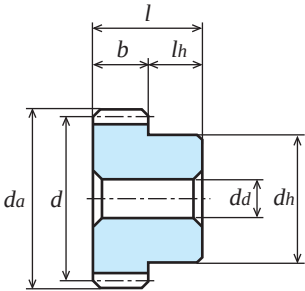
直齿轮
SPUR GEARS

模数
MODULE 1 压力角20° (普通齿)
20° PRESSURE ANGLE FULL DEPTH TOOTH

JIS B 1702-1 (ISO) 8 级
System of accuracy : JIS B 1702-1(ISO) class



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Please refer to the catalogue reference while ordering.



B1 形状
TYPE B1

S45C 機械構造用炭素鋼
Material : Carbon Steel (ISO C45) 单位 : mm
Dimensions : mm

产品型号 Catalogue Number	齿数 Number of Teeth z	分度圆直径 Reference Diameter d	齿顶圆直径 Tip Diameter da	形状 Type	齿宽 Face Width b	孔径 Bore Diameter da(H8)	轮毂外径 Hub Diameter dh	轮毂长度 Hub Projection lh	全长 Overall Length l	螺纹孔 Set Screw		重量 Weight W(g)
										M	ls	
● S1S 14B - 1005	14	φ14	φ16	B1	10	φ5	φ11	10	20	-	-	16.47
● S1S 15B - 1005	15	φ15	φ17	B1	10	φ5	φ12	10	20	-	-	19.68
● S1S 16B - 1005	16	φ16	φ18	B1	10	φ5	φ13	10	20	-	-	23.13
● S1S 17B - 1005	17	φ17	φ19	B1	10	φ5	φ14	10	20	-	-	26.84
● S1S 18B - 1006	18	φ18	φ20	B1	10	φ6	φ15	10	20	-	-	29.43
● S1S 20B - 1006	20	φ20	φ22	B1	10	φ6	φ16	10	20	-	-	36.03
● S1S 24B - 1006	24	φ24	φ26	B1	10	φ6	φ20	10	20	-	-	55.77
● S1S 25B - 1006	25	φ25	φ27	B1	10	φ6	φ20	10	20	-	-	58.79
● S1S 28B - 1008	28	φ28	φ30	B1	10	φ8 (H7)	φ24	10	20	-	-	76.01
● S1S 30B - 1008	30	φ30	φ32	B1	10	φ8 (H7)	φ25	10	20	-	-	86.19

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Products with ● marks are new item.

容许传达能力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

产品型号 Catalogue Numbers	旋转速度 (min ⁻¹) revolution/min						
	10	100	200	400	800	1,200	1,500
S1S 14B - 1005	3.98	39.79	79.58	159.17	318.34	477.50	596.88
S1S 15B - 1005	4.50	45.03	90.06	180.11	360.22	540.33	675.41
S1S 16B - 1005	5.03	50.26	100.53	201.05	402.11	603.16	753.95
S1S 17B - 1005	5.48	54.77	109.53	219.06	438.13	657.19	821.49
S1S 18B - 1006	6.62	66.18	132.35	264.7	529.41	778.81	934.63
S1S 20B - 1006	7.77	77.7	155.4	310.8	621.6	897.84	1073.59
S1S 24B - 1006	10.13	101.29	202.59	405.18	809.71	1129.47	1341.36
S1S 25B - 1006	10.73	107.32	214.65	429.29	852.55	1186.3	1406.56
S1S 28B - 1008	12.56	125.65	251.29	502.58	979.76	1353.58	1597.36
S1S 30B - 1008	13.8	137.96	275.92	551.85	1062.78	1461.53	1719.6

The above numerical values are equivalent to JGMA formulas as reference only.

齿面强度 (W)

Allowable transfer capability table (W) Surface Durability

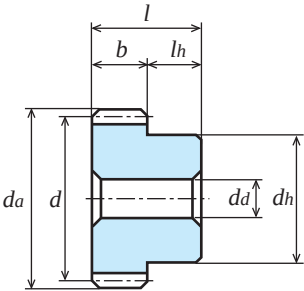
旋转速度 (min ⁻¹) revolution/min						
10	100	200	400	800	1,200	1,500
0.14	1.36	2.72	5.45	10.89	16.34	20.42
0.16	1.57	3.14	6.28	12.57	20.11	23.56
0.19	1.88	3.77	7.54	15.08	22.62	28.27
0.20	1.99	4.19	8.38	16.75	25.13	29.84
0.26	2.62	5.24	10.47	20.94	31.41	39.27
0.32	3.25	6.49	12.98	25.97	37.70	45.55
0.47	4.71	9.63	19.27	38.54	54.03	65.97
0.51	5.24	10.47	20.94	41.89	59.06	70.68
0.66	6.60	13.19	26.81	52.78	74.14	87.96
0.76	7.64	15.29	31.00	60.32	84.19	100.53

The above numerical values are equivalent to JGMA formulas as reference only.

直齿轮
SPUR GEARS

模数
MODULE 1
压力角20° (普通齿)
20° PRESSURE ANGLE FULL DEPTH TOOTH

JIS B 1702-1 (ISO) 8级
System of accuracy : JIS B 1702-1(ISO) class 8



B1形状
TYPE B1

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Please refer to the catalogue reference while ordering.

ISO C45 机械构造用碳素钢 (JIS G 4051)
Material : Carbon Steel (ISO C45)
单位 : mm
Dimensions : mm

Table with 11 columns: 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, 重量. It lists various gear specifications and their corresponding dimensions and weights.

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容许传达能力表 弯曲强度 (W)

Allowable transfer capability table (W) Bending Strength

Table with 8 columns: 齿数, 齿宽, and 7 columns for 旋转速度 (10, 100, 200, 400, 800, 1,200, 1,500). It provides bending strength values for different gear sizes and speeds.

The above references are JGMA standard.

齿面强度 (W)

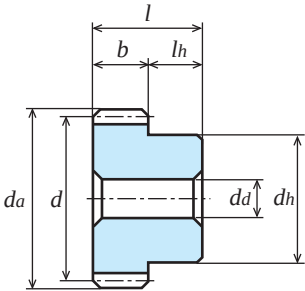
Allowable transfer capability table (W) Surface Durability

Table with 8 columns: 旋转速度 (10, 100, 200, 400, 800, 1,200, 1,500). It provides surface durability values for different gear speeds.

直齿轮
SPUR GEARS

模数
MODULE 1.5 压力角20° (普通齿)
20° PRESSURE ANGLE FULL DEPTH TOOTH

JIS B 1702-1 (ISO) 8级
System of accuracy : JIS B 1702-1(ISO) class 8



B1形状
TYPE B1

ISO C45 机械构造用碳素钢 (JIS G 4051)
Material : Carbon Steel (ISO C45) 单位 : mm
Dimensions : mm

产品型号 Catalogue Number	齿数 Number of Teeth z	分度圆直径 Reference Diameter d	齿顶圆直径 Tip Diameter da	形状 Type	齿宽 Face Width b	孔径 Bore Diameter da(H8)	轮毂 外径 Hub Diameter dh	轮毂 长度 Hub Projection lh	全长 Overall Length l	重量 Weight W(g)
● S1.5S 20BF — 1506	20	φ 30	φ 33	B1	15	φ 6	φ 25	15	30	113.1
● S1.5S 25BF — 1508	25	φ 37.5	φ 40.5	B1	15	φ 8	φ 30	15	30	200.0
● S1.5S 30BF — 1508	30	φ 45	φ 48	B1	15	φ 8	φ 38	15	30	307.3
● S1.5S 40BF — 1508	40	φ 60	φ 63	B1	15	φ 8	φ 50	15	30	550.2
● S1.5S 50BF — 1510	50	φ 75	φ 78	B1	15	φ10	φ 60	15	30	832.2
● S1.5S 60BF — 1510	60	φ 90	φ 93	B1	15	φ10	φ 65	15	30	1118.4
● S1.5S 70BF — 1510	70	φ105	φ108	B1	15	φ10	φ 75	15	30	1.52 (kg)
● S1.5S 80BF — 1510	80	φ120	φ123	B1	15	φ10	φ 85	15	30	2.0 (kg)
● S1.5S 90BF — 1512	90	φ135	φ138	B1	15	φ12(H7)	φ 95	15	30	2.49 (kg)
● S1.5S 100BF — 1515	100	φ150	φ153	B1	15	φ15(H7)	φ105	15	30	3.05 (kg)

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Products with ● marks are new item.

容许传达能力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

齿数 z	齿宽 b	旋转速度 (min ⁻¹) revolution/min						
		10	100	200	400	800	1,200	1,500
20	15	0.026	0.260	0.530	1.060	2.030	2.800	3.290
25	15	0.036	0.360	0.730	1.450	2.680	3.620	4.220
30	15	0.047	0.470	0.930	1.860	3.290	4.390	5.270
40	15	0.068	0.680	1.360	2.610	4.420	6.080	7.340
50	15	0.090	0.890	1.790	3.290	5.470	7.740	9.380
60	15	0.110	1.110	2.230	3.930	6.660	9.400	11.380
70	15	0.130	0.140	2.630	4.530	7.810	11.040	13.370
80	15	0.16	1.56	3.01	5.09	8.91	12.61	15.60
90	15	0.180	1.780	3.360	5.600	10.030	14.270	-
100	15	0.200	2.010	3.700	6.150	11.140	16.070	-

The above references are JGMA standard.

齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

旋转速度 (min ⁻¹) 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
0.002	0.020	0.040	0.070	0.140	0.190	0.230
0.003	0.030	0.050	0.110	0.200	0.270	0.330
0.005	0.050	0.100	0.190	0.340	0.480	0.590
0.008	0.080	0.160	0.300	0.520	0.760	0.950
0.011	0.120	0.230	0.420	0.750	1.120	1.400
0.016	0.160	0.320	0.570	1.030	1.550	1.930
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	-

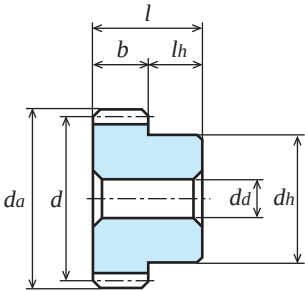
直齿轮
SPUR GEARS

模数
MODULE 2 压力角20° (普通齿)
20° PRESSURE ANGLE FULL DEPTH TOOTH

JIS B 1702-1 (ISO) 8级
System of accuracy : JIS B 1702-1(ISO) class 8



订购时请写入明确完整的产品型号。
Please refer to the catalogue reference while ordering.



B1 形状
TYPE B1

ISO C45 机械构造用碳素钢 (JIS G 4051)
Material : Carbon Steel (ISO C45) 单位 : mm
Dimensions : mm

产品型号 Catalogue Number	齿数 Number of Teeth z	分度圆直径 Reference Diameter d	齿顶圆直径 Tip Diameter da	形状 Type	齿宽 Face Width b	孔径 Bore Diameter dd(H8)	轮毂 外径 Hub Diameter dh	轮毂 长度 Hub Projection lh	全长 Overall Length l	重量 Weight W(kg)
● S2S 20BF – 2008	20	φ 40	φ 44	B1	20	φ 8	φ 34	20	40	321.1 (g)
● S2S 25BF – 2008	25	φ 50	φ 54	B1	20	φ 8	φ 40	20	40	486.2 (g)
● S2S 30BF – 2010	30	φ 60	φ 64	B1	20	φ10	φ 50	20	40	723.5 (g)
● S2S 40BF – 2010	40	φ 80	φ 84	B1	20	φ10	φ 60	20	40	1.2
● S2S 50BF – 2012	50	φ100	φ104	B1	20	φ12	φ 70	20	40	1.8
● S2S 60BF – 2012	60	φ120	φ124	B1	20	φ12	φ 85	20	40	2.62
● S2S 70BF – 2015	70	φ140	φ144	B1	20	φ15(H7)	φ100	20	40	3.59
● S2S 80BF – 2015	80	φ160	φ164	B1	20	φ15(H7)	φ115	20	40	4.72
● S2S 90BF – 2015	90	φ180	φ184	B1	20	φ15(H7)	φ130	20	40	6.01
● S2S 100BF – 2015	100	φ200	φ204	B1	20	φ15(H7)	φ140	20	40	7.28

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Products with ● marks are new item.

容许传达能力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

齿数 z	齿宽 b	旋转速度 (min ⁻¹) revolution/min						
		10	100	200	400	800	1,200	1,500
20	20	0.063	0.630	1.250	2.500	4.550	6.120	7.190
25	20	0.086	0.860	1.720	3.420	5.920	7.910	9.600
30	20	0.110	1.100	2.210	4.260	7.200	9.900	11.960
40	20	0.160	1.610	3.210	5.840	9.760	13.760	16.700
50	20	0.210	2.120	4.210	7.280	12.470	17.630	21.270
60	20	0.260	2.640	5.090	8.610	15.080	21.350	26.410
70	20	0.320	3.170	5.920	9.820	17.740	25.350	-
80	20	0.370	3.700	6.720	11.230	20.310	-	-
90	20	0.420	4.230	7.460	12.630	22.780	-	-
100	20	0.480	4.730	8.180	14.010	25.390	-	-

The above references are JGMA standard.

齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

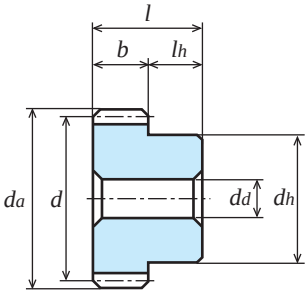
旋转速度 (min ⁻¹) revolution/min						
10	100	200	400	800	1,200	1,500
0.003	0.030	0.060	0.110	0.210	0.290	0.340
0.004	0.040	0.090	0.180	0.320	0.440	0.550
0.007	0.070	0.130	0.260	0.450	0.640	0.790
0.012	0.120	0.240	0.450	0.790	1.160	1.450
0.019	0.190	0.390	0.690	1.240	1.860	2.320
0.028	0.280	0.550	0.970	1.810	2.720	3.480
0.039	0.390	0.750	1.290	2.510	3.810	-
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 压力角20° (普通齿)
20° PRESSURE ANGLE FULL DEPTH TOOTH

JIS B 1702-1 (ISO) 8级
System of accuracy : JIS B 1702-1(ISO) class 8



B1 形状
TYPE B1

ISO C45 机械构造用碳素钢 (JIS G 4051)
Material : Carbon Steel (ISO C45)

单位 : mm
Dimensions : mm

产品型号 Catalogue Number	齿数 Number of Teeth z	分度圆直径 Reference Diameter d	齿顶圆直径 Tip Diameter da	形状 Type	齿宽 Face Width b	孔径 Bore Diameter da(H8)	轮毂外径 Hub Diameter dh	轮毂长度 Hub Projection lh	全长 Overall Length l	重量 Weight W(kg)
● S2.5S 20BF — 2510	20	φ 50	φ 55	B1	25	φ10	φ 42	20	45	569.3 (g)
● S2.5S 25BF — 2510	25	φ 62.5	φ 67.5	B1	25	φ10	φ 52	20	45	900.9 (g)
● S2.5S 30BF — 2512	30	φ 75	φ 80	B1	25	φ12	φ 65	20	45	1.34
● S2.5S 40BF — 2512	40	φ100	φ105	B1	25	φ12	φ 70	20	45	2.1
● S2.5S 50BF — 2515	50	φ125	φ130	B1	25	φ15	φ 90	20	45	3.33
● S2.5S 60BF — 2515	60	φ150	φ155	B1	25	φ15	φ105	20	45	4.75
● S2.5S 70BF — 2520	70	φ175	φ180	B1	25	φ20(H7)	φ125	20	45	6.52
● S2.5S 80BF — 2520	80	φ200	φ205	B1	25	φ20(H7)	φ140	20	45	8.45

标有●的产品为新产品。
Products with ● marks are new item.

容许传达能力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

齿数 z	齿宽 b	旋转速度 (min ⁻¹) revolution/min						
		10	100	200	400	800	1,200	1,500
20	25	0.122	1.220	2.450	4.860	8.400	11.230	13.620
25	25	0.168	1.680	3.370	6.430	10.830	15.000	18.090
30	25	0.220	2.160	4.320	7.950	13.210	18.690	22.640
40	25	0.310	3.140	6.230	10.780	18.470	26.100	31.480
50	25	0.410	4.140	7.910	13.330	23.530	33.230	41.400
60	25	0.520	5.160	9.500	15.790	28.600	41.270	-
70	25	0.620	6.190	11.000	18.560	33.500	-	-
80	25	0.720	7.170	12.410	21.260	38.530	-	-

The above references are JGMA standard.

齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

旋转速度 (min ⁻¹) 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
0.009	0.090	0.180	0.350	0.610	0.870	1.080
0.013	0.130	0.270	0.500	0.860	1.270	1.590
0.024	0.240	0.480	0.860	1.550	2.320	2.900
0.038	0.390	0.750	1.310	2.470	3.710	4.770
0.056	0.570	1.070	1.850	3.640	5.570	-
0.078	0.790	1.430	2.540	5.020	-	-
0.103	1.040	1.850	3.330	6.680	-	-

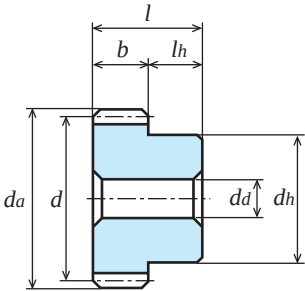
直齿轮
SPUR GEARS

模数
MODULE 3 压力角20° (普通齿)
20° PRESSURE ANGLE FULL DEPTH TOOTH

JIS B 1702-1 (ISO) 8级
System of accuracy : JIS B 1702-1(ISO) class 8



订购时请写入明确完整的产品型号。
Please refer to the catalogue reference while ordering.



B1形状
TYPE B1

ISO C45 机械构造用碳素钢 (JIS G 4051)
Material : Carbon Steel (ISO C45) 单位 : mm
Dimensions : mm

Table with 11 columns: Product Model, Number of Teeth, Reference Diameter, Tip Diameter, Type, Face Width, Bore Diameter, Hub Diameter, Hub Projection, Overall Length, Weight. Rows include models S3S 20BF-3012 to S3S 80BF-3020.

标有●的产品为新产品。
Products with ● marks are new item.

容许传达能力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

Table with 9 columns: Number of teeth (z), Face width (b), and 8 columns of rotational speed (10 to 1500 rev/min) for bending strength.

齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

Table with 8 columns: 7 columns of rotational speed (10 to 1500 rev/min) for surface durability.

The above references are JGMA standard.

Memo



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

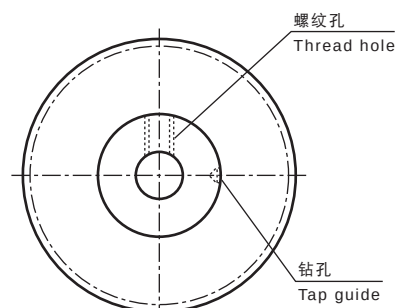
齿轮的种类和齿面加工种类 Kind of Gear	模数 Module	材料 Material	齿数 Number of Teeth	形状 Type	内径处理 Bores Processed	齿宽 Face Width	孔径 Bore Diameter
NS : 无侧隙齿轮 Anti Backlash Gears NSG : 无侧隙研磨齿轮 Anti Backlash Ground Gears ASG : 控制侧隙研磨齿轮 Control Backlash Ground Gears	表示模数大小。模数1以下时所标数据是实际模数乘以100。 例：模数0.5时所标数据是50。模数0.8时所标数据是80。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

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

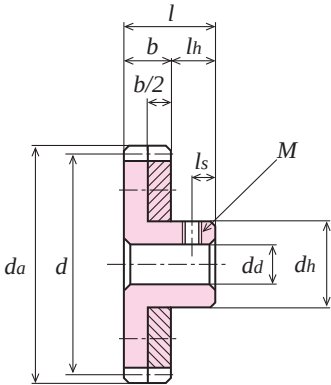
- 1) 模数范围从M0.5到M2.0。
- 2) 材质：铝，碳钢，合金钢，不锈钢。(可控侧隙齿轮是合金钢)。
- 3) 配对齿轮建议使用本公司的齿部研磨齿轮和直齿轮。主要目的是为了达到最佳效果。
- 1) The variations are from module 0.5 to 2.0.
- 2) Materials : Aluminium, Carbon Steel, Chromium Molybdenum Steel, Stainless Steel.
- 3) KG-Anti Backlash Spur Gear is able to match with other makers, 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)



订购时请写入明确完整的产品型号。
Please refer to the catalogue reference while ordering.



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

NSU系列产品 NSU Series 齿面切削精加工
Material : Stainless Steel SUS304 (JIS G 4303)
单位 : mm
Dimensions : mm

产品型号 Catalogue Number	材料 Material	模数 Module	齿数 Number of Teeth	分度圆直径 Reference Diameter	齿顶圆直径 Tip Diameter	形状 Type	弹簧的数量 Number of Springs	齿宽 Face Width	孔径 Bore Diameter	轮毂外径 Hub Diameter	轮毂长度 Hub Projection	全长 Overall Length	螺纹孔 Set Screw		重量 Weight
	M	m	z	d	da			b	da(H8)	dh	lh	l	M	ls	W(g)
NS50SU 60B + 0505	SUS304	0.5	60	φ30	φ31	BW	2	5	φ 5	φ12	8	13	M3	4	32.3
NS50SU 70B + 0508	SUS304	0.5	70	φ35	φ36	BW	2	5	φ 8	φ16	8	13	M3	4	45.7
NS50SU 80B + 0508	SUS304	0.5	80	φ40	φ41	BW	3	5	φ 8	φ16	8	13	M3	4	57.4
NS50SU 90B + 0510	SUS304	0.5	90	φ45	φ46	BW	3	5	φ10	φ20	8	13	M4	4	74.9
NS50SU 100B + 0510	SUS304	0.5	100	φ50	φ51	BW	3	5	φ10	φ20	8	13	M4	4	89.7
NS50SU 120B + 0510	SUS304	0.5	120	φ60	φ61	BW	4	5	φ10	φ20	8	13	M4	4	123.9

标号[+]表示齿轮带有螺纹孔/带有固定螺钉。[+]: Gear with Thread hole / with Set Screw. (not SUS)

使用时的注意点

NSU系列与NS, NSG系列不同, 当与对方齿轮啮合时的移动齿距n固定为2。也就是从n0点移动齿距到n2后使用。并在容许传达扭矩标的范围内使用。因为NSU系列产品在材质上使用SU304不锈钢材料, 所以为了防止出现相互间的磨损, 使其顺利滑动, 进行了聚四氟乙烯表面处理。

调整移动齿距 (齿距参差调谐量) 零点的方法。

调整此无侧隙齿轮, 使各个弹簧张力刚好达到零 (刚好松懈)并两个并排的齿刚好完全一致。

Precaution of Usage

- 1. For NSU series, there is a limitation to the shifting of the pitch as according to the Allowable Transfer Capability Torque Table (Chart). The required shifting allowed is two pitch only.
- 2. NSU series for all stainless steel are completed with Teflon coating that will prevent scuffing and provide smooth motion.

Method of adjustment of zero point.

Rotate the gear with arrow mark indicator to zero point until both gear teeth are fully match with no tension of spring.

容许传达能力扭矩列表 (N · cm)

Allowable transfer capability torque table

产品型号 Catalogue Numbers	容许传达扭矩 (N · cm) Limitation of anti backlash to Funticon (N · cm)
	n2
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

n 齿距的移动数值 Amount of shifting pitch.

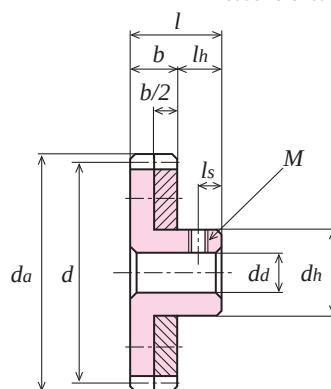
无侧隙齿轮 ANTI BACKLASH SPUR GEARS

模数
MODULE

0.5/0.8/1

压力角 20° (普通齿)

20° PRESSURE ANGLE FULL DEPTH TOOTH



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

订购时请写入明确完整的产品型号。

Please refer to the catalogue reference while ordering.

NG系列 NS Series 齿面切削精加工

Material : Aluminium (JIS A5056) Carbon Steel (ISO C45)

单位 : mm
Dimensions : mm

产品型号 Catalogue Number	材料 Material	模数 Module	齿数 Number of Teeth	分度圆直径 Reference Diameter	齿顶圆直径 Tip Diameter	形状 Type	弹簧的数量 Number of Springs	齿宽 Face Width	孔径 Bore Diameter	轮毂外径 Hub Diameter	轮毂长度 Hub Projection	全长 Overall Length	螺纹孔 Set Screw		重量 Weight
	M	m	z	d	da	Type	Number of Springs	b	da(H8)	dh	lh	l	M	ls	W(g)
NS50AL 60B + 0808	AL	0.5	60	φ 30	φ 31	BS	1	8	φ 8	φ 16	8	16	M4	4	16
NS50AL 70B + 0808	AL	0.5	70	φ 35	φ 36	BS	1	8	φ 8	φ 16	8	16	M4	4	21
NS50AL 80B + 0808	AL	0.5	80	φ 40	φ 41	BS	1	8	φ 8	φ 20	8	16	M4	4	30
NS50AL 90B + 0810	AL	0.5	90	φ 45	φ 46	BS	1	8	φ 10	φ 20	8	16	M4	4	36
NS50AL 100B + 0810	AL	0.5	100	φ 50	φ 51	BS	1	8	φ 10	φ 20	8	16	M4	4	44
NS50AL 120B + 0810	AL	0.5	120	φ 60	φ 61	BS	1	8	φ 10	φ 20	8	16	M4	4	62
NS80AL 50B + 0810	AL	0.8	50	φ 40	φ 41.6	BS	1	8	φ 10	φ 20	10	18	M5	5	30
NS80AL 60B + 0810	AL	0.8	60	φ 48	φ 49.6	BS	1	8	φ 10	φ 20	10	18	M5	5	42
NS80AL 70B + 0810	AL	0.8	70	φ 56	φ 57.6	BS	1	8	φ 10	φ 20	10	18	M5	5	52
NS80S 80B + 0810	S	0.8	80	φ 64	φ 65.6	BW	2	8	φ 10(H7)	φ 20	10	18	M5	5	200
NS80S 90B + 0810	S	0.8	90	φ 72	φ 73.6	BW	2	8	φ 10(H7)	φ 20	10	18	M5	5	253
NS80S 100B + 0810	S	0.8	100	φ 80	φ 81.6	BW	2	8	φ 10(H7)	φ 24	10	18	M5	5	324
NS80S 120B + 0810	S	0.8	120	φ 96	φ 97.6	BW	2	8	φ 10(H7)	φ 24	10	18	M5	5	463
NS1AL 50B + 1010	AL	1.0	50	φ 50	φ 52	BS	1	10	φ 10	φ 20	10	20	M6	5	49
NS1AL 60B + 1010	AL	1.0	60	φ 60	φ 62	BS	1	10	φ 10	φ 20	10	20	M6	5	72
NS1S 70B + 1012	S	1.0	70	φ 70	φ 72	BW	2	10	φ 12(H7)	φ 24	10	20	M6	5	298
NS1S 80B + 1012	S	1.0	80	φ 80	φ 82	BW	2	10	φ 12(H7)	φ 24	10	20	M6	5	390
NS1S 90B + 1012	S	1.0	90	φ 90	φ 92	BW	3	10	φ 12(H7)	φ 24	10	20	M6	5	495
NS1S 100B + 1012	S	1.0	100	φ 100	φ 102	BW	3	10	φ 12(H7)	φ 30	10	20	M6	5	632
NS1S 120B + 1012	S	1.0	120	φ 120	φ 122	BW	3	10	φ 12(H7)	φ 30	10	20	M6	5	903

材料 AL : 铝A5056(进行了白色阳极氧化处理) Gear with Anodize treated.

Materials S : S45C (ISO C45) 钢 (进行了盐浴软氮化处理) Carbon steel with Isonite treated.

类型 BS : 使用弧形弹簧 Circular Arc Spring type

Type BW : 使用螺旋弹簧 Coiled Spring type

标号[+]表示齿轮带有螺纹孔/带有固定螺钉。

[+] : Gear with Thread hole / with Set Screw.

容许传达能力扭矩列表 (N · cm)

Allowable transfer capability torque table

产品型号 Catalogue Numbers	容许传达扭矩 (N · cm) Limitation of anti backlash to Funticon (N · cm)			
	n2	n3	n4	n5
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

产品型号 Catalogue Numbers	容许传达扭矩 (N · cm) Limitation of anti backlash to Funticon (N · cm)			
	n2	n3	n4	n5
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
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
NS1AL 50B + 1010	18.14	27.29	35.13	47.85
NS1AL 60B + 1010	16.86	23.92	31.77	40.99
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

n : 齿距的移动数值 Amount of shifting pitch.

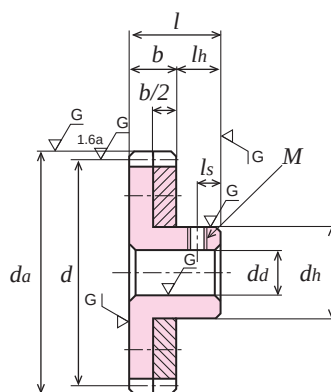
无侧隙齿轮

ANTIBACKLASH GROUND SPUR GEARS

模数
MODULE

0.5/0.8/1

压力角 20° (普通齿)
20° PRESSURE ANGLE FULL DEPTH TOOTH



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

NSG系列 NSG Series 齿面磨削加工 SCM435, 440 铬钼合金钢

Material : Chromium Molybdenum Steel (ISO 34CrMo4, 42CrMo4)

单位 : mm
Dimensions : mm

产品型号 Catalogue Number	材料 Material	模数 Module	齿数 Number of Teeth	分度圆直径 Reference Diameter	齿顶圆直径 Tip Diameter	形状 Type	弹簧的数量 Number of Springs	齿宽 Face Width	孔径 Bore Diameter	轮毂外径 Hub Diameter	轮毂长度 Hub Projection	全长 Overall Length	螺纹孔 Set Screw		重量 Weight
	M	m	z	d	da	Type		b	da(H7)	dh	lh	l	M	ls	W(g)
NSG50S 60B + 0808	SCM	0.5	60	φ 30	φ 31	BS	1	8	φ 8	φ 16	8	16	M4	4	45
NSG50S 70B + 0808	SCM	0.5	70	φ 35	φ 36	BS	1	8	φ 8	φ 16	8	16	M4	4	61
NSG50S 80B + 0808	SCM	0.5	80	φ 40	φ 41	BS	1	8	φ 8	φ 20	8	16	M4	4	87
NSG50S 90B + 0810	SCM	0.5	90	φ 45	φ 46	BS	1	8	φ 10	φ 20	8	16	M4	4	105
NSG50S 100B + 0810	SCM	0.5	100	φ 50	φ 51	BS	1	8	φ 10	φ 20	8	16	M4	4	128
NSG50S 120B + 0810	SCM	0.5	120	φ 60	φ 61	BS	1	8	φ 10	φ 20	8	16	M4	4	182
NSG80S 50B + 0810	SCM	0.8	50	φ 40	φ 41.6	BS	1	8	φ 10	φ 20	10	18	M5	5	87
NSG80S 60B + 0810	SCM	0.8	60	φ 48	φ 49.6	BS	1	8	φ 10	φ 20	10	18	M5	5	122
NSG80S 70B + 0810	SCM	0.8	70	φ 56	φ 57.6	BS	1	8	φ 10	φ 20	10	18	M5	5	152
NSG80S 80B + 0810	SCM	0.8	80	φ 64	φ 65.6	BW	2	8	φ 10	φ 20	10	18	M5	5	200
NSG80S 90B + 0810	SCM	0.8	90	φ 72	φ 73.6	BW	2	8	φ 10	φ 20	10	18	M5	5	253
NSG80S 100B + 0810	SCM	0.8	100	φ 80	φ 81.6	BW	2	8	φ 10	φ 24	10	18	M5	5	324
NSG80S 120B + 0810	SCM	0.8	120	φ 96	φ 97.6	BW	2	8	φ 10	φ 24	10	18	M5	5	463
NSG1S 50B + 1010	SCM	1.0	50	φ 50	φ 52	BS	1	10	φ 10	φ 20	10	20	M6	5	144
NSG1S 60B + 1010	SCM	1.0	60	φ 60	φ 62	BS	1	10	φ 10	φ 20	10	20	M6	5	212
NSG1S 70B + 1012	SCM	1.0	70	φ 70	φ 72	BW	2	10	φ 12	φ 24	10	20	M6	5	298
NSG1S 80B + 1012	SCM	1.0	80	φ 80	φ 82	BW	2	10	φ 12	φ 24	10	20	M6	5	390
NSG1S 90B + 1012	SCM	1.0	90	φ 90	φ 92	BW	3	10	φ 12	φ 24	10	20	M6	5	495
NSG1S 100B + 1012	SCM	1.0	100	φ 100	φ 102	BW	3	10	φ 12	φ 30	10	20	M6	5	632
NSG1S 120B + 1012	SCM	1.0	120	φ 120	φ 122	BW	3	10	φ 12	φ 30	10	20	M6	5	903

类型 BS : 使用弧形弹簧 Circular Arc Spring type
Type BW : 使用螺旋弹簧 Coiled Spring type

标号[+]表示齿轮带有螺纹孔/带有固定螺钉。
[+] : Gear with Thread hole / with Set Screw.

容许传达能力扭矩列表 (N · cm)

Allowable transfer capability torque table

产品型号 Catalogue Numbers	容许传达扭矩 (N · cm) Limitation of anti backlash to Function (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

产品型号 Catalogue Numbers	容许传达扭矩 (N · cm) Limitation of anti backlash to Function (N · cm)			
	n2	n3	n4	n5
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

n : 齿距的移动数值 Amount of shifting pitch.

控制侧隙研磨齿轮

CONTROL BACKLASH GROUND SPUR GEAR

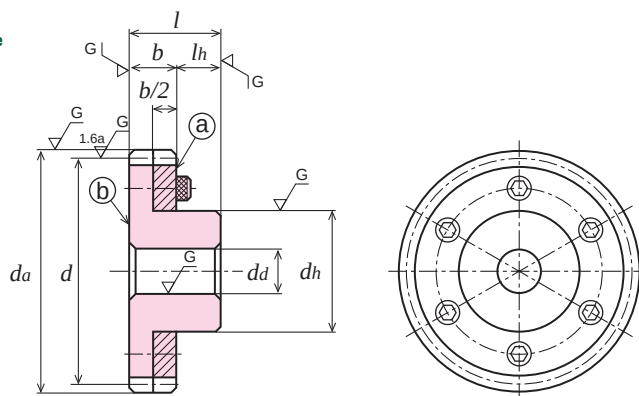
模数
MODULE

1/1.5/2

压力角 20° (普通齿)

20° PRESSURE ANGLE FULL DEPTH TOOTH

齿部高周波淬火 硬度 HRC 49-55.



本图纸仅供参考
The above sketch is for reference only.

ASG系列 ASG Series 齿面磨削加工SCM435, 440 铬钼合金钢

Material : Chromium Molybdenum Steel (ISO 34CrMo4, 42CrMo4)

单位 : mm
Dimensions : mm

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

齿部高周波淬火 硬度 HRC 49-55.

Gear tooth surface completed with induction hardening, Hardness HRC49 to 55.

注：使用时的注意事项

1. 在装配之前，请确认齿轮a与b的缝隙间有无异物。
2. 当对控制侧隙齿轮的a齿轮与b齿轮用固定用螺栓进行固定时。先对a齿轮和b齿轮的位置进行调整，使其刚好可以在侧隙最小的情况下与对方齿轮相啮合。并在此位置用适当的扭矩夹紧6个螺栓，固定控制侧隙齿轮。然后将两个齿轮啮合，旋转一周。如果出现因为侧隙不足而旋转吃力的情况，请再次进行调整。
3. 追加加工时，请用软爪三爪卡盘进行定心。如果加工精度不好，会出现无法缩小侧隙量的现象。同时注意避免对齿轮表面的损伤。
4. 当要进一步缩小啮合侧隙量时，控制侧隙齿轮可换另一个齿与对方齿轮啮合，就有可能得到更小的侧隙。
5. 请尽量避免进行齿孔内径的加工。
6. KG的控制侧隙研磨齿轮的内径是不可以追加加工的。

容许传达动力表 弯曲强度 (kW)

Allowable transfer capability table (kW) Bending Strength

产品型号 Catalogue Numbers	转速/min 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

上述数值相当于JGMA公式,仅供参考。The above numerical values are equivalent to JGMA formulas as reference only.

KG控制侧隙研磨齿轮可与其他齿轮制造商的齿轮相配对。

但是为了得到最佳的效果，建议相配对齿轮也使用KG研磨齿轮系列。

KG-Ground Control Backlash Spur gear is able to match with other gear makers however it is advisable to use KG-Ground Spur gear series for best result.

Precaution of Usage.

1. Before assembly ensure dust free between gear ㉓ and ㉔ .
2. Firstly fix gear ㉓ and ㉔ to form Ground Control Backlash Gear and put back all the fixed bolts (6 pieces) without tightening.
3. Secondly assemble match gear to form Ground Control Backlash Gear, and tighten the fixed bolts (6 pieces) equally space between them. If possible use a dial gauge.
4. Ensure to provide minimum backlash between Ground Control Backlash Spur Gear and match gear.
5. If unable to obtain your requisite backlash, shift to another position of each gear tooth between Ground Control Backlash Gear and match gear to adjust a less backlash.
6. Additional machining for bore is not advisable for our KG-Control Backlash Spur Gears.

容许传达动力表 齿面强度 (kW)

Allowable transfer capability table (kW) Surface Durability

转速/min revolution/min							
400	800	1,200	1,500	1,800	2,500	3,000	
0.86	1.77	2.62	3.25	3.87	5.23	6.10	
1.14	2.33	3.43	4.25	5.06	6.74	7.85	
1.82	3.64	5.37	6.64	7.79	10.28	12.04	
2.66	5.24	7.73	9.42	10.98	14.57	16.82	
0.95	1.93	2.90	3.58	4.26	5.84	6.84	
1.50	3.07	4.52	5.60	6.67	8.95	10.41	
2.19	4.43	6.52	8.08	9.55	12.60	14.77	
3.99	7.86	11.60	14.14	16.47	21.85	23.23	
1.26	2.58	3.86	4.77	5.69	7.78	9.12	
2.29	4.66	6.85	8.51	10.12	13.48	15.70	
3.64	7.29	10.74	13.28	15.57	20.56	24.07	
5.32	10.48	15.47	18.85	21.95	29.13	33.64	

Memo



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



齿轮箱外壳材料 : (ISO AlMg2.5, AlMg5) 铝表面阳极氧化处理。轴材料 : P小齿轮 : SCM435 ; G大齿轮 : S45C
Material : Body-Aluminium (ISO AlMg2.5, AlMg5) with Anodize treated Shaft (P=Pinion, G=Gear) 单位 : mm
Dimensions : mm

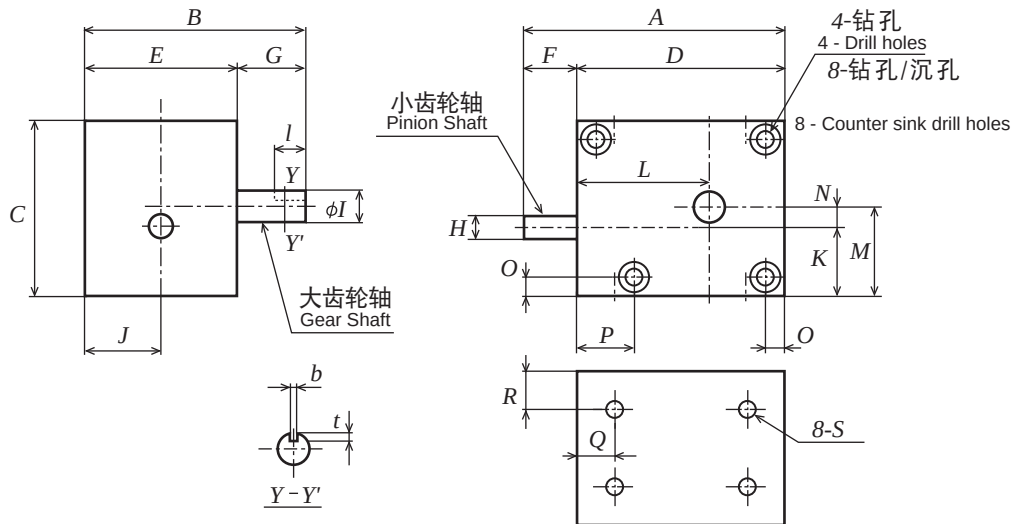
产 品 型 号 Catalogue Number	齿数比 Gear Ratio	A	B	C	D	E	F	G	轴直径 Shaft		J	K	L	M
									$\phi H(h7)$	$\phi I(h7)$				
HY 70R — 005	5	70	58	45	55	40	15	18	$\phi 6$	$\phi 8$	20	17.5	36	22.5
HY 90R — 010	10	90	68	60	75	50	15	18	$\phi 6$	$\phi 8$	25	20	47	30
HY 95R — 005	5	95	75	60	75	50	20	25	$\phi 8$	$\phi 12$	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

容许传达能力扭矩表

Allowable transfer capability torque table

输入转动速度min ⁻¹ (rpm) Input Revolution/min 齿轮 Gear 产 品 型 号 Catalogue Numbers		输入扭矩 (N · cm) Input Torque (N · cm)							
		100	250	500	800	1,000	1,500	2,000	2,500
HY 70R — 005	m 0.75 × 8/40	76.0	71.8	66.0	59.0	53.9	44.2	36.6	28.4
HY 90R — 010	m 0.71 × 7/70	75.8	70.8	63.8	56.0	50.7	41.3	34.3	27.3
HY 95R — 005	m 1.1 × 8/40	247.4	232.1	211.8	187.7	170.3	137.7	112.6	86.0
HY 120R — 010	m 1.0 × 7/70	186.3	172.7	155.7	136.6	123.5	100.0	82.7	65.0
HY 125R — 005	m 1.5 × 8/40	414.8	400.6	377.6	345.4	319.8	266.9	223.0	173.9
HY 150R — 010	m 1.45 × 6/60	357.2	336.1	307.3	272.1	246.5	197.5	159.2	118.1

上述列表中所标的的数据是对小齿轮轴的输入转速和扭矩。Table shown input revolution and torque on the pinion shaft.
容许传达能力扭矩表中的实验数据是本公司自行进行耐力测试的结果值。
An experimental value in Allowable transfer capabilities table are our endurance test.

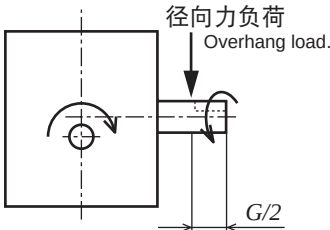


齿轮箱外壳材料：铝 (ISO AIMg2.5, AIMg5) 铝表面阳极氧化处理。轴材料：P小齿轮：SCM435；G大齿轮：S45C
Material : Body-Aluminium (ISO AIMg2.5, AIMg5) with Anodize treated Shaft (P=Pinion, G=Gear)

单位：mm
Dimensions：mm

偏 移 offset N	O	P	Q	R	螺纹孔 Set Screw		Counter Sinks & Drill Holes			键 槽 Key Way			侧 隙 Backlash (')	径向力负荷容许量 Maximum overhang load (N)	重 量 Weight W(kg)	产 品 型 号 Catalogue Number
					8-S	深度 Depth	钻孔径 Drill Hole Diameter	沉孔径 Counter Sink Diameter	沉孔深度 Counter Sink Depth	b	t	l				
5	5	14	10	10	8-M3	5	φ3.2	φ6.5	3.2	-	-	-	20	19	0.3	HY 70R — 005
10	7	26	12	12	8-M4	6	φ4.2	φ8.0	4.3	-	-	-	20	19	0.6	HY 90R — 010
10	7	28	12	12	8-M4	6	φ4.2	φ8.0	4.3	-	-	-	20	39	0.7	HY 95R — 005
15	10	27	15	12	8-M5	8	φ5.2	φ9.5	5.3	-	-	-	20	39	1.3	HY 120R — 010
10	10	27	18	12	8-M5	8	φ5.2	φ9.5	5.3	5	3	20	20	54	1.4	HY 125R — 005
15	10	27	20	12	8-M5	8	φ5.2	φ9.5	5.3	5	3	20	20	54	2.2	HY 150R — 010

这里所指的侧隙为大齿轮轴的侧隙。
Backlash : Measured at gear shaft



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

锥齿轮箱®(锥齿轮型)

B-BOXES (BS)



齿轮箱外壳材料：铝 (ISO AlMg5, ISO AlMg0.7Si, AlMg1SiCu) 铝表面阳极氧化处理。轴材料：不锈钢SUS303
Material : Body-Aluminium (ISO AlMg5, ISO AlMg0.7Si, AlMg1SiCu) with Anodize treated Shaft-Stainless steel

单位：mm
Dimensions：mm

产品型号 Catalogue Number	形状 Type	齿数比 Gear Ratio	Z	Y	□ C	A	B	轴直径 Shaft φD(h7)	E
BS 35 L - 001	L	1	-	-	14	35	27	φ 3	8
BS 45 L - 001	L	1	-	-	18	45	33	φ 4	12
BS 65 L - 001	L	1	-	-	25	65	50	φ 6	15
BS 80 L - 001	L	1	-	-	30	80	60	φ 8	20
BS 90 L - 001	L	1	-	-	35	90	70	φ10	20
BS 105 L - 001	L	1	-	-	40	105	80	φ12	25
BS 65 L - 002	L	2	-	-	25	65	50	φ 6	15
BS 80 L - 002	L	2	-	-	30	80	60	φ 8	20
BS 90 L - 002	L	2	-	-	35	90	70	φ10	20
BS 105 L - 002	L	2	-	-	40	105	80	φ12	25
BS 45 T - 001	T	1	72	48	18	45	33	φ 4	12
BS 65 T - 001	T	1	105	75	25	65	50	φ 6	15
BS 80 T - 001	T	1	130	90	30	80	60	φ 8	20
BS 90 T - 001	T	1	145	105	35	90	70	φ10	20
BS 105 T - 001	T	1	170	120	40	105	80	φ12	25
BS 65 T - 002	T	2	105	75	25	65	50	φ 6	15
BS 80 T - 002	T	2	130	90	30	80	60	φ 8	20
BS 90 T - 002	T	2	145	105	35	90	70	φ10	20
BS 105 T - 002	T	2	170	120	40	105	80	φ12	25

半圆形切割加工的相位是不固定的。

Directions of the D-cut shaft face are not fixed.

关于特殊规格订制或追加工(特殊的使用环境, 漏油问题, 轴径追加工, 安装方法等)的问题请与我们联系磋商。

Please do not hesitate to contact us for special method of installation, checking on the usage environment and work out of oil leaks.

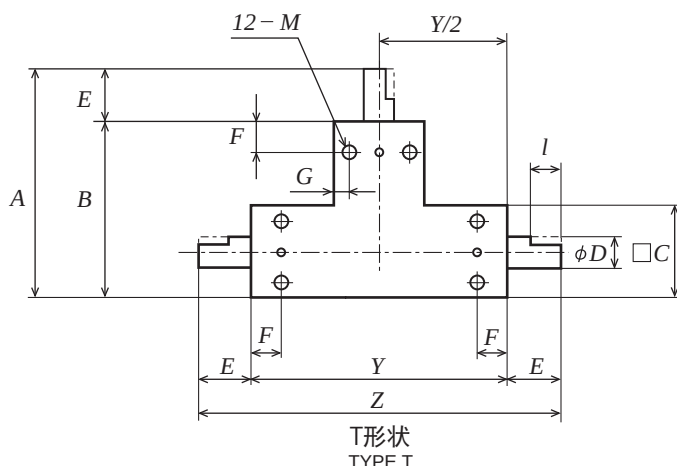
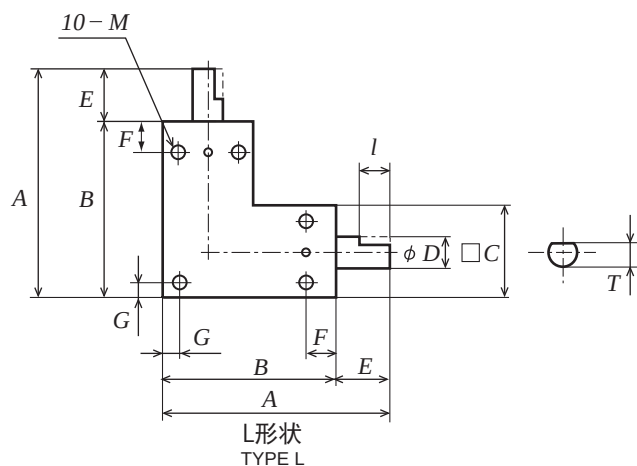


GOOD DESIGN AWARD 2010

**LONG LIFE
DESIGN AWARD**

锥齿轮箱®(锥齿轮型)

B-BOXES (BS)



齿轮箱外壳材料: 铝 (ISO AlMg5, ISO AlMg0.7Si, AlMg1SiCu) 铝表面阳极氧化处理。轴材料: 不锈钢SUS303
Material : Body-Aluminium (ISO AlMg5, ISO AlMg0.7Si, AlMg1SiCu) with Anodize treated Shaft-Stainless steel

单位: mm
Dimensions: mm

F	G	轴端的形状 Shape of Shaft end			螺纹孔 Set Screw		侧 隙 Backlash (')	重 量 Weight W(g)	产 品 型 号 Catalogue Number
		ϕD	T	l	M	深度 Depth			
4	2	D	2.7	5	10-M2	4	20	27	BS 35 L - 001
5	3	D	3.3	8	10-M3	4	15	55	BS 45 L - 001
12	3.5	ϕ	-	-	10-M4	6	15	175	BS 65 L - 001
15	5	ϕ	-	-	10-M5	6	15	290	BS 80 L - 001
15	5	ϕ	-	-	10-M5	7	15	496	BS 90 L - 001
20	5	ϕ	-	-	10-M6	7	15	725	BS 105 L - 001
12	3.5	ϕ	-	-	10-M4	6	15	175	BS 65 L - 002
15	5	ϕ	-	-	10-M5	6	15	290	BS 80 L - 002
15	5	ϕ	-	-	10-M5	7	15	496	BS 90 L - 002
20	5	ϕ	-	-	10-M6	7	15	725	BS 105 L - 002
5	3	D	3.3	8	12-M3	4	15	75	BS 45 T - 001
12	3.5	ϕ	-	-	12-M4	6	15	246	BS 65 T - 001
15	5	ϕ	-	-	12-M5	6	15	410	BS 80 T - 001
15	5	ϕ	-	-	12-M5	7	15	679	BS 90 T - 001
20	5	ϕ	-	-	12-M6	7	15	991	BS 105 T - 001
12	3.5	ϕ	-	-	12-M4	6	15	246	BS 65 T - 002
15	5	ϕ	-	-	12-M5	6	15	410	BS 80 T - 002
15	5	ϕ	-	-	12-M5	7	15	679	BS 90 T - 002
20	5	ϕ	-	-	12-M6	7	15	991	BS 105 T - 002

容许传达能力扭矩表 Allowable transfer capability torque table

输入转动速度 min^{-1} (rpm) Input Revolution/min		输入扭矩 (N · cm) Input Torque (N · cm)								
齿轮 Gear										
产 品 型 号 Catalogue Numbers			50	100	250	500	800	1,000	1,500	2,000
BS 35 L - 001		m0.4 × 20	7.1	7.0	6.8	6.5	6.2	6.0	5.5	5.3
BS 45 L - 001	BS 45 T - 001	m0.5 × 20	18.7	18.6	18.1	17.3	16.5	16.0	15.0	14.0
BS 65 L - 001	BS 65 T - 001	m0.8 × 20	73.7	72.6	69.8	65.6	61.0	58.4	52.6	47.9
BS 80 L - 001	BS 80 T - 001	m1.0 × 20	137.9	135.6	129.1	119.5	109.7	104.0	92.0	82.6
BS 90 L - 001	BS 90 T - 001	m1.25 × 20	271.8	266.1	250.4	228.0	205.8	193.3	167.8	148.2
BS 105 L - 001	BS 105 T - 001	m1.5 × 20	442.6	431.6	401.6	360.0	320.1	298.1	254.3	221.9
BS 65 L - 002	BS 65 T - 002	m0.6 × 14/28	20.2	20.1	19.7	19.0	18.3	17.8	16.7	15.7
BS 80 L - 002	BS 80 T - 002	m0.8 × 13/26	39.8	39.5	38.4	36.8	35.1	34.0	31.5	29.5
BS 90 L - 002	BS 90 T - 002	m1.0 × 13/26	77.6	76.7	74.3	70.5	66.4	64.0	58.6	54.0
BS 105 L - 002	BS 105 T - 002	m1.25 × 13/26	141.5	139.6	134.0	125.7	116.9	111.7	100.7	91.5

上述列表中齿数比1:2时, 所标的的数据是对小齿轮轴的输入转速和扭矩。The gear ratio 1:2, table shown input revolution and torque on the pinion shaft.

容许传达能力扭矩表中的数据, 出自我司的耐力测试实验。

An experimental value in Allowable transfer capabilities table are our endurance test.

锥齿轮箱® (BSB中空轴型)
B-BOXES (BSB)



齿轮箱外壳材料 : 铝 (ISO AlMg0.7Si, AlMg1SiCu) 铝表面阳极氧化处理。轴材料 : 不锈钢SUS303
Material : Body-Aluminium (ISO AlMg0.7Si, AlMg1SiCu) with Anodize treated Shaft-Stainless steel

单位 : mm
Dimensions : mm

产 品 型 号 Catalogue Number	形 状 Type	齿数比 Gear Ratio	□ C	A	B	轴直径 Shaft $\phi D(h7)$	孔 径 Bore		E	I
							$\phi H(H7)$	深度 Depth		
BSB 65L — 001A	LB	1	25	65	50	$\phi 6$	$\phi 5$	15	15	5
BSB 65L — 001B	LB	1	25	65	50	$\phi 6$	$\phi 6$	15	15	5
BSB 80L — 001A	LB	1	30	80	60	$\phi 8$	$\phi 6$	19	20	5
BSB 80L — 001B	LB	1	30	80	60	$\phi 8$	$\phi 8$	19	20	5
BSB 90L — 001A	LB	1	35	90	70	$\phi 10$	$\phi 8$	19	20	6
BSB 90L — 001B	LB	1	35	90	70	$\phi 10$	$\phi 10$	19	20	6
BSB 105L — 001A	LB	1	40	105	80	$\phi 12$	$\phi 10$	23	25	6
BSB 105L — 001B	LB	1	40	105	80	$\phi 12$	$\phi 12$	23	25	6

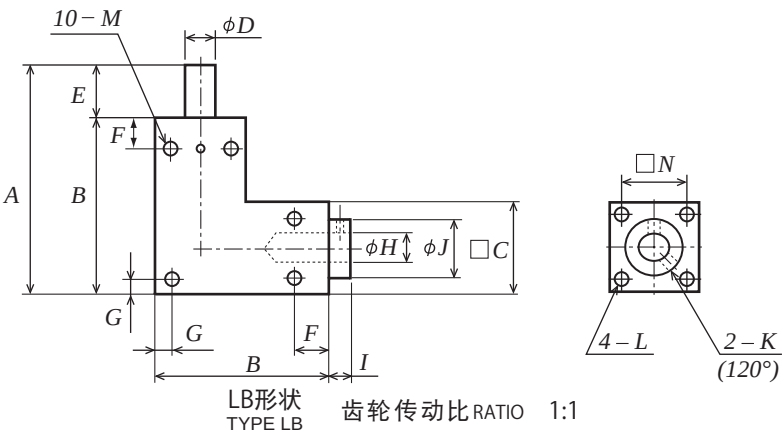
如果与LB型齿轮箱的中空部分相连接的轴是圆形轴时，请在两处定位并加工平表面(把轴表面的一部分削平，以增加轴与螺丝顶的接触面的加工工艺)。相配120度角。
When mating round axis connects with LB type, please fabricate mating round axis with 2 flat surfaces at 120° apart.
When use axis with step, make large R to corner of axis to avoid stress concentration.

关于特殊规格订制或追加工(特殊的使用环境，漏油问题，轴径追加工，安装方法等)的问题请与我们联系磋商。
Please do not hesitate to contact us for special method of installation, checking on the usage environment and work out of oil leaks.



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

锥齿轮箱® (BSB中空轴型)
B-BOXES (BSB)



齿轮箱外壳材料：铝 (ISO AlMg0.7Si, AlMg1SiCu) 铝表面阳极氧化处理。轴材料：不锈钢SUS303
Material : Body-Aluminium (ISO AlMg0.7Si, AlMg1SiCu) with Anodize treated Shaft-Stainless steel

单位：mm
Dimensions：mm

ϕJ	$2-K(120^\circ)$	F	G	螺纹孔 Set Screw		螺纹孔 Set Screw			侧 隙 Backlash (')	重 量 Weight $W(g)$	产 品 型 号 Catalogue Number
				$10-M$	深度 Depth	$4-L$	$\square N$	深度 Depth			
16	2-M3	12	3.5	10-M4	6	4-M3	19	6	15	169	BSB 65L — 001A
16	2-M3	12	3.5	10-M4	6	4-M3	19	6	15	167	BSB 65L — 001B
19	2-M3	15	5	10-M5	6	4-M3	23	8	15	293	BSB 80L — 001A
19	2-M3	15	5	10-M5	6	4-M3	23	8	15	289	BSB 80L — 001B
21	2-M4	15	5	10-M5	7	4-M4	25	8	15	465	BSB 90L — 001A
21	2-M4	15	5	10-M5	7	4-M4	25	8	15	460	BSB 90L — 001B
26	2-M4	20	5	10-M6	7	4-M4	30	10	15	722	BSB 105L — 001A
26	2-M4	20	5	10-M6	7	4-M4	30	10	15	713	BSB 105L — 001B

容许传达能力扭矩表 Allowable transfer capability torque table

输入转动速度min ⁻¹ (rpm) Input Revolution/min		输入扭矩 (N · cm) Input Torque (N · cm)								
		齿 轮 Gear								
产 品 型 号 Catalogue Numbers		50	100	250	500	800	1,000	1,500	2,000	
BSB 65L — 001A/B	m0.8 × 20	73.7	72.6	69.8	65.6	61.0	58.4	52.6	47.9	
BSB 80L — 001A/B	m1.0 × 20	137.9	135.6	129.1	119.5	109.7	104.0	92.0	82.6	
BSB 90L — 001A/B	m1.25 × 20	271.8	266.1	250.4	228.0	205.8	193.3	167.8	148.2	
BSB 105L — 001A/B	m1.5 × 20	442.6	431.6	401.6	360.0	320.1	298.1	254.3	221.9	

上述列表中齿数比1：2时，所标的的数据是对小齿轮轴的输入转速和扭矩。The gear ratio 1：2, table shown input revolution and torque on the pinion shaft.

容许传达能力扭矩表中的数据出自我司的耐力测试实验。

An experimental value in Allowable transfer capabilities table are our endurance test.

锥齿轮箱® (BSH 强化型)
B-BOXES (BSH)



齿轮箱外壳材料: 铝 (ISO AlMg0.7Si, AlMg1SiCu) 和灰铁 (G5501, FC200, FC250); 轴材料: 不锈钢 (SUS303) 和碳钢 (C45)
Material : Body-Aluminium (ISO AlMg0.7Si, AlMg1SiCu) and Grey Iron Castings (JIS G5501 FC200, FC250) Shaft-Stainless and Carbon steels

单位 : mm
Dimensions : mm

产 品 型 号 Catalogue Number	材 料 Material			形 状 Type	齿 数 比 Gear Ratio	Z	Y	□ C	A	B	轴直径 Shaft φD(h7)	E
	箱 Body	箱的表面处理 Surface treatment of body	轴 Shaft									
BSH 70L — 001	AL	铝阳极化处理	SUS303	L	1	-	-	27	70	54	φ 6	16
BSH 85L — 001	AL	铝阳极化处理	SUS303	L	1	-	-	32	85	64	φ 8	21
BSH 95L — 001	AL	铝阳极化处理	SUS303	L	1	-	-	36	95	72	φ10	23
BSH 115L — 001	FC	发黑处理	S45C	L	1	-	-	45	115	90	φ12	25
BSH 120L — 001	FC	发黑处理	S45C	L	1	-	-	45	120	90	φ15	30
BSH 140L — 001	FC	发黑处理	S45C	L	1	-	-	55	140	110	φ15	30
BSH 145L — 001	FC	发黑处理	S45C	L	1	-	-	55	145	110	φ20	35
BSH 165L — 001	FC	发黑处理	S45C	L	1	-	-	65	165	130	φ20	35
BSH 170L — 001	FC	发黑处理	S45C	L	1	-	-	65	170	130	φ25	40
BSH 70T — 001	AL	铝阳极化处理	SUS303	T	1	113	81	27	70	54	φ 6	16
BSH 85T — 001	AL	铝阳极化处理	SUS303	T	1	138	96	32	85	64	φ 8	21
BSH 95T — 001	AL	铝阳极化处理	SUS303	T	1	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	FC	发黑处理	S45C	T	1	153	93	45	120	90	φ15	30
BSH 140T — 001	FC	发黑处理	S45C	T	1	175	115	55	140	110	φ15	30
BSH 145T — 001	FC	发黑处理	S45C	T	1	185	115	55	145	110	φ20	35

键槽的相位是不固定的。
Directions of the Key Way position are not fix.

外壳材料与表面处理 AL : A6063, A6061 : 铝阳极化处理 AL : A6063 , A6061 with Anodize treated
Surface treatments FC : FC200, FC250 : 发黑处理 FC : FC200 , FC250 with Black oxide coating
and material of body

容许传达能力扭矩表

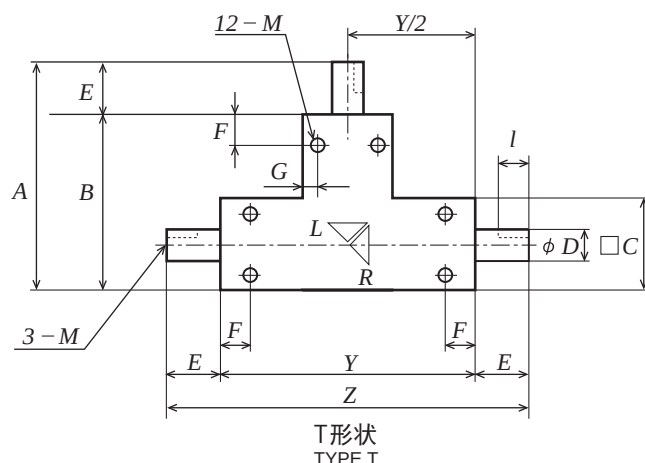
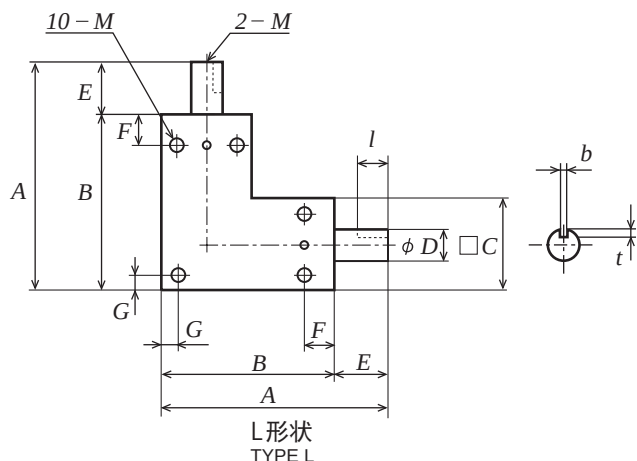
Allowable transfer capability torque table

输入转动速度min ⁻¹ (rpm) Input Revolution/min 齿轮 Gear 产 品 型 号 Catalogue Numbers			输入扭矩 (N · m) Input Torque (N · m)							
			250	500	800	1000	1500	2000	2500	3000
BSH 70L — 001	BSH 70T — 001	m 0.8 × 19	0.89	0.89	0.89	0.89	0.86	0.81	0.77	0.73
BSH 85L — 001	BSH 85T — 001	m 1.0 × 19	1.95	1.95	1.95	1.95	1.81	1.69	1.59	1.50
BSH 95L — 001	BSH 95T — 001	m 1.25 × 18	3.68	3.68	3.68	3.58	3.30	3.04	2.85	2.77
BSH 115L — 001	BSH 115T — 001	m 1.5 × 19	5.23	5.23	5.15	5.01	4.69	4.40	4.25	4.13
BSH 120L — 001	BSH 120T — 001	m 1.5 × 19	5.23	5.23	5.15	5.01	4.69	4.40	4.25	4.13
BSH 140L — 001	BSH 140T — 001	m 2.0 × 19	13.30	13.30	12.62	12.17	11.18	10.70	10.30	-
BSH 145L — 001	BSH 145T — 001	m 2.0 × 19	13.30	13.30	12.62	12.17	11.18	10.70	10.30	-
BSH 165L — 001		m 2.5 × 19	26.15	25.63	23.93	22.86	21.25	20.26	-	-
BSH 170L — 001		m 2.5 × 19	26.15	25.63	23.93	22.86	21.25	20.26	-	-

容许传达能力扭矩表中的数据出自我司的耐力测试实验。
An experimental value in Allowable transfer capabilities table are our endurance test.

锥齿轮箱® (BSH 强化型)

B-BOXES (BSH)



齿轮箱外壳材料: 铝 (ISO AlMg0.7Si, AlMg1SiCu) (铝表面阳极氧化处理) 和灰铁 (G5501, FC200, FC250); 轴材料: 铝不锈钢 (SUS303) 和碳钢 (C45)

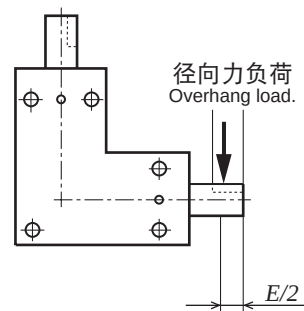
Material : Body-Aluminium (ISO AlMg0.7Si, AlMg1SiCu) and Grey Iron Castings (JIS G5501 FC200, FC250)

Shaft-Stainless and Carbon steels

单位: mm
Dimensions: mm

F	G	键 槽 Key Way			螺纹孔 Set Screw		轴端内的螺纹 Set Screw of shaft end		侧 隙 Backlash (')	径向力负 荷容许量 Maximum overhang load (N)	重 量 Weight W(kg)	产 品 型 号 Catalogue Number
		b	t	l	M	深度 Depth	2-M	深度 Depth				
9	4	-	-	-	10-M4	6	-	-	15	25	0.2	BSH 70L — 001
10	5	3	1.8	14	10-M5	7	-	-	15	36	0.4	BSH 85L — 001
13	5	3	1.8	15	10-M5	8	-	-	15	58	0.5	BSH 95L — 001
20	5	4	2.5	20	10-M5	12	2-M4	8	10	83	1.8	BSH 115L — 001
20	5	5	3.0	25	10-M5	12	2-M4	8	10	83	1.8	BSH 120L — 001
25	6	5	3.0	25	10-M6	13	2-M5	10	10	166	3.1	BSH 140L — 001
25	6	6	3.5	30	10-M6	13	2-M5	10	10	166	3.2	BSH 145L — 001
25	7	6	3.5	30	10-M6	14	2-M5	12	10	245	5.4	BSH 165L — 001
25	7	8	4.0	35	10-M6	14	2-M5	12	10	245	5.5	BSH 170L — 001
9	4	-	-	-	12-M4	6	-	-	15	25	0.3	BSH 70T — 001
10	5	3	1.8	14	12-M5	7	-	-	15	36	0.5	BSH 85T — 001
13	5	3	1.8	15	12-M5	8	-	-	15	58	0.7	BSH 95T — 001
20	5	4	2.5	20	12-M5	12	2-M4	8	10	83	2.0	BSH 115T — 001
20	5	5	3.0	25	12-M5	12	2-M4	8	10	83	2.0	BSH 120T — 001
25	6	5	3.0	25	12-M6	13	2-M5	10	10	166	3.4	BSH 140T — 001
25	6	6	3.5	30	12-M6	13	2-M5	10	10	166	3.5	BSH 145T — 001

关于特殊规格订制或追加工(特殊的使用环境, 漏油问题, 轴径追加工, 安装方法等)的问题请与我们联系磋商。
Please do not hesitate to contact us for special method of installation, checking on the usage environment and work out of oil leaks.



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

锥齿轮组
B-SETS



齿轮组机身材料：铝 (ISO AlMg5, AlMg0.7Si) (铝表面阳极氧化处理)；轴材料：不锈钢 (SUS303)
Material：Body-Aluminium (ISO AlMg5, AlMg0.7Si) with Anodize treated Shaft-Stainless steel
单位：mm
Dimensions：mm

Table with 11 columns: Product Model, Gear Ratio, A, B, C, Shaft Diameter, E, F, G, H, I. It lists various gear models like BE40 L-001, BE55 L-001, etc., with their corresponding dimensions.

固定用螺栓孔也可以作为六角头螺栓的螺纹加工孔来使用。固定用螺栓孔可参考表1来修改成所适合的螺纹孔的尺寸。请参阅右表1。

Drilled holes provided on B-SET can be used with hexagon bolt.
Drilled holes can modify according to table 1 for suitable size of screw thread.
Refer to table 1 for drill holes and counter sinks.

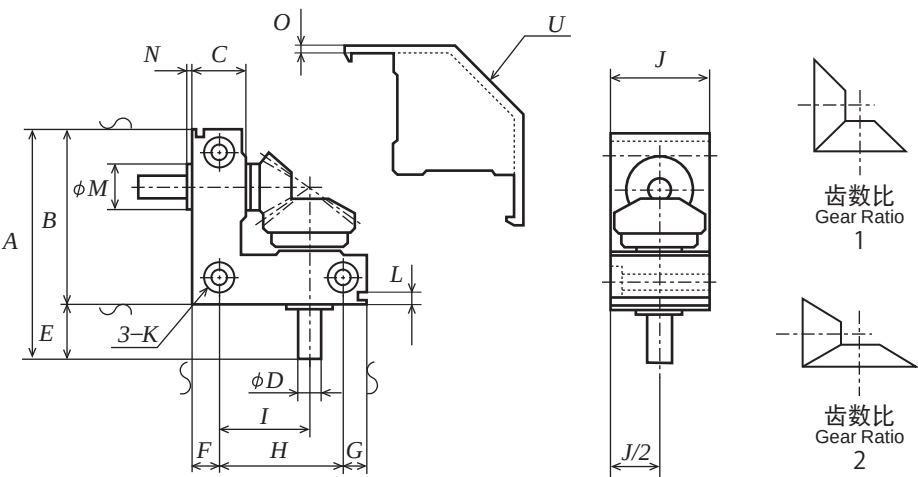
容许传达能力扭矩表

Allowable transfer capability torque table

Table with 6 columns: Input Revolution/min, Input Torque (N·cm), and four torque levels (50, 100, 250, 500). It lists gear models and their input revolution and torque values.

上述列表中齿数比1：2时，所标的的数据是对小齿轮轴的输入转速和扭矩。
The gear ratio 1：2, table shown input revolution and torque on the pinion shaft
容许传达能力扭矩表中的实验值是公司自行进行耐力测试的结果值。
An experimental value in Allowable transfer capabilities table are our endurance test.

锥齿轮组
B-SETS



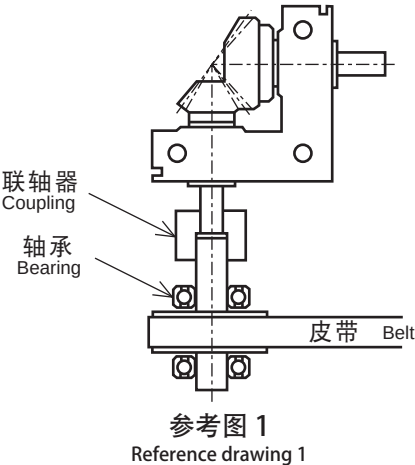
齿轮组机身材料：铝 (ISO AlMg5, AlMg0.7Si) (铝表面阳极氧化处理)；轴材料：不锈钢 (SUS303)
Material : Body-Aluminium (ISO AlMg5, AlMg0.7Si) with Anodize treated Shaft-Stainless steel
单位：mm
Dimensions：mm

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

附有塑料壳。
There is a B-SET with plastic cover.

表1
Table 1

产品型号 Catalogue Numbers	钻孔径 Drill hole diameter	适配六角螺栓 Acceptable hexagon head bolt	进行螺纹孔追加加工时 Modification of screw thread	钻孔的最大容许加工径 Limitation of drill holes
BE 40 L	φ3.4	M3	M4	不可追加加工 Not advisable
BE 55 L	φ3.4	M3	M4	φ5
BE 70 L	φ4.3	M4	M5	φ6
BE 88 L	φ5.2	M5	M6	φ8





齿轮箱外壳材料：铝 (ISO AIMg2.5, AIMg5) 铝表面阳极氧化处理。轴材料：碳钢C45
Material : Body-Aluminium (ISO AIMg2.5, AIMg5) with Anodize treated Shaft Carbon steel

单位：mm
Dimensions：mm

产 品 型 号 Catalogue Number	齿数比 Gear Ratio	A	B	箱 Body Size			轴长 Shaft Length		轴直径 Shaft		中心距 Center Distance J
				C	D	E	F	G	$\phi H(h7)$	$\phi I(h7)$	
WS 55R — 020	20	55	45	45	45	35	10	10	$\phi 5$	$\phi 8$	9.5
WS 55R — 030	30	55	45	45	45	35	10	10	$\phi 5$	$\phi 8$	12
WS 60R — 040	40	60	50	55	50	40	10	10	$\phi 5$	$\phi 8$	14.5
WS 60R — 050	50	60	50	55	50	40	10	10	$\phi 5$	$\phi 8$	17
WS 65R — 020	20	65	55	55	50	40	15	15	$\phi 6$	$\phi 8$	13.2
WS 65R — 030	30	65	55	55	50	40	15	15	$\phi 6$	$\phi 8$	17.2
WS 75R — 040	40	75	60	70	60	45	15	15	$\phi 6$	$\phi 10$	21.2
WS 75R — 050	50	75	60	70	60	45	15	15	$\phi 6$	$\phi 10$	25.2
WS 80R — 010	10	80	65	70	60	45	20	20	$\phi 8$	$\phi 10$	18
WS 80R — 020	20	80	65	70	60	45	20	20	$\phi 8$	$\phi 10$	18
WS 80R — 030	30	80	65	70	60	45	20	20	$\phi 8$	$\phi 12$	23
WS 90R — 040	40	90	75	85	70	50	20	25	$\phi 8$	$\phi 15$	28
WS 90R — 050	50	90	75	85	70	50	20	25	$\phi 8$	$\phi 15$	33

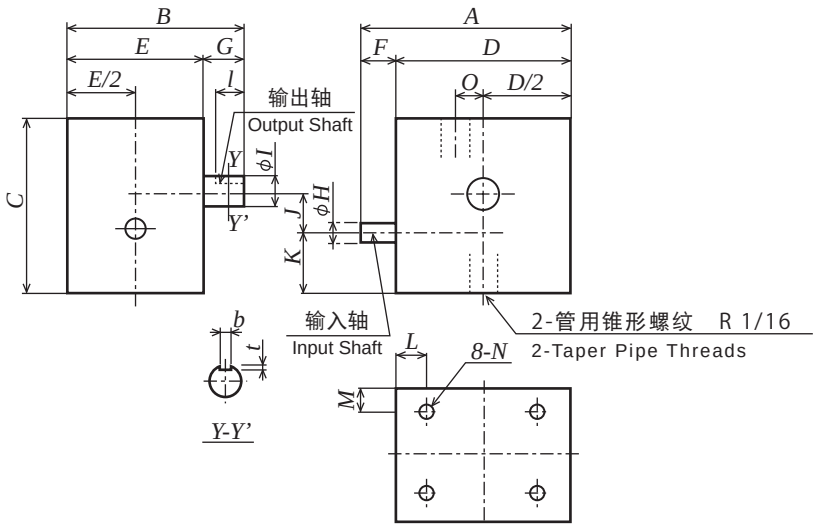
容许传达能力输入扭矩表

Allowable transfer capability input torque table

输入转动速度min ⁻¹ (rpm) Input Revolution/min 齿轮 Gear 产 品 型 号 Catalogue Numbers		输入扭矩 (N · cm) Input Torque (N · cm)							
		50	100	500	1,000	1,500	2,000	2,500	3,000
WS 55R — 020	m 0.5 × 1/20	4.0	3.5	2.0	1.5	1.2	1.0	0.9	0.9
WS 55R — 030	m 0.5 × 1/30	5.7	4.9	3.0	2.2	1.8	1.6	1.4	1.3
WS 60R — 040	m 0.5 × 1/40	7.3	6.3	4.0	3.0	2.5	2.1	1.9	1.8
WS 60R — 050	m 0.5 × 1/50	8.9	7.7	4.9	3.7	3.0	2.7	2.2	2.2
WS 65R — 020	m 0.8 × 1/20	9.9	8.5	5.1	3.9	3.1	2.7	2.5	2.3
WS 65R — 030	m 0.8 × 1/30	14.1	12.3	7.6	5.7	4.8	4.2	3.7	3.5
WS 75R — 040	m 0.8 × 1/40	18.0	15.8	9.9	7.5	6.3	5.5	5.0	4.6
WS 75R — 050	m 0.8 × 1/50	21.9	18.9	12.3	9.3	7.9	6.9	6.3	5.8
WS 80R — 010	m 1.0 × 2/20	34.5	29.7	16.9	12.7	10.4	9.1	8.1	7.3
WS 80R — 020	m 1.0 × 1/20	24.9	21.4	12.0	8.9	7.2	6.3	5.6	5.1
WS 80R — 030	m 1.0 × 1/30	35.2	30.6	17.8	13.1	10.8	9.5	8.5	7.8
WS 90R — 040	m 1.0 × 1/40	45.1	39.0	23.3	17.2	14.3	12.6	11.3	10.4
WS 90R — 050	m 1.0 × 1/50	54.7	47.4	28.6	21.4	17.7	15.6	14.1	12.9

注意：尽量设置为输入轴 ϕH 在输出轴 ϕI 之下。如果采取其他设置方法，请务必在[容许传达能力输入扭矩表]和[容许传达能力输出扭矩表]值的75%以下的扭矩来运行。
An experimental value in Allowable transfer capabilities table are our endurance test.
Precaution (Method of assembly of W BOX) It is not advisable to design the input shaft ϕH (axis of worm gear) on top of output shaft ϕI .
Always make sure the location of output shaft ϕI (axis of Worm wheel) is higher than input shaft ϕH .
容许传达能力扭矩表中的实验值是本公司自行进行耐力测试的结果值。
An experimental value in Allowable transfer capabilities table are our endurance test.

W-BOX 蜗轮蜗杆齿轮箱
WORM-BOXES

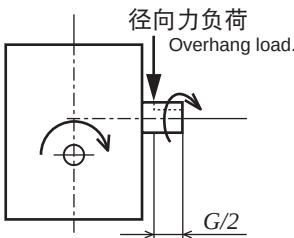


齿轮箱外壳材料：铝 (ISO AlMg2.5, AlMg5) 铝表面阳极氧化处理。轴材料：碳钢C45
Material : Body-Aluminium (ISO AlMg2.5, AlMg5) with Anodize treated Shaft Carbon Steel
单位：mm
Dimensions : mm

K	L	M	螺纹孔 Set Screw		键 槽 Key Way			管 用 锥 形 螺 纹 Taper Pipe Thread	侧 隙 Backlash (')	径向力负荷容量 Maximum overhang load (N)	重 量 Weight W(kg)	产 品 型 号 Catalogue Number
			8-N	深度 Depth	b	t	l					
16.5	8	7	8-M3	6	3	1.8	8	0	25	24	0.23	WS 55R - 020
16.5	8	7	8-M3	6	3	1.8	8	0	25	24	0.23	WS 55R - 030
20	8	8	8-M3	6	3	1.8	8	0	25	24	0.34	WS 60R - 040
19	8	8	8-M3	6	3	1.8	8	8	25	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	25	20	0.38	WS 65R - 030
24	10	8	8-M4	8	3	1.8	12	0	25	33	0.60	WS 75R - 040
20	10	8	8-M4	8	3	1.8	12	15	25	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	25	24	0.61	WS 80R - 020
23.5	10	5	8-M5	10	4	2.5	15	8	25	44	0.65	WS 80R - 030
28.5	10	5	8-M5	10	5	3	20	10	25	58	0.98	WS 90R - 040
21	10	5	8-M5	10	5	3	20	17	25	58	1.02	WS 90R - 050

容许传达能力输出扭矩表
Allowable transfer capability output torque table
这里所指的侧隙为大齿轮轴的侧隙。
Backlash : Measured at output shaft

输入转动速度 min ⁻¹ (rpm) Input Revolution/min	输出扭矩 (N · cm) Output Torque (N · cm)							
	50	100	500	1,000	1,500	2,000	2,500	3,000
产品 型 号 Catalogue Numbers								
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.

注意：照片与平面图是输入轴φH在输出轴φI之下时的设计使用例。
Refer to picture and drawing. This is an example of usage for input shaft φ H (axis of worm gear) is lower than output shaft φ I (axis of Worm wheel).
容许传达能力扭矩表中的实验数据是本公司自行进行耐力测试的结果值。An experimental value in Allowable transfer capabilities table are our endurance test.

Memo



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