

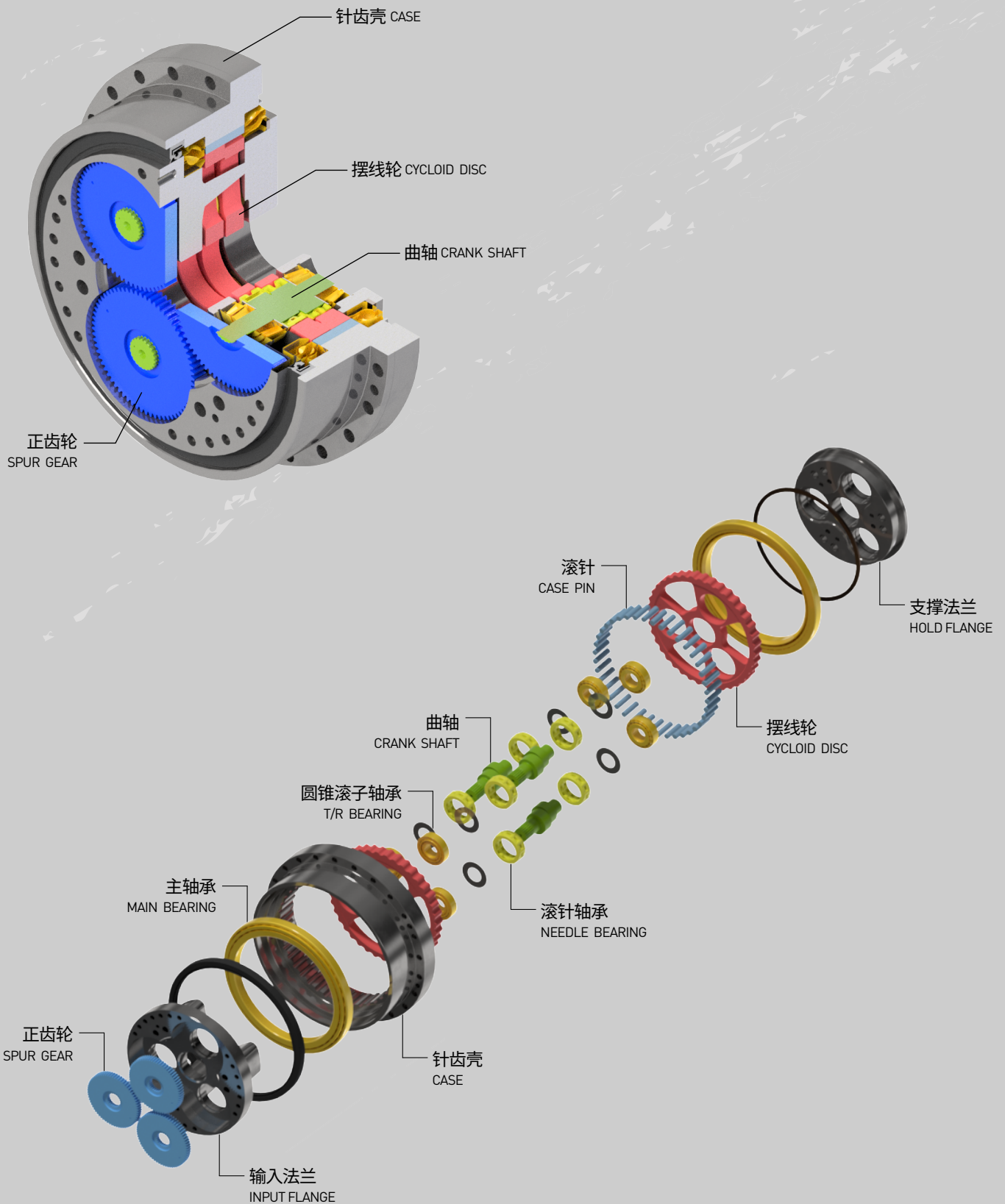


LOW BACKLASH REDUCER

SR精密减速机(RV减速机)



SR系列精密减速机 SR LOW BACKLASH REDUCER



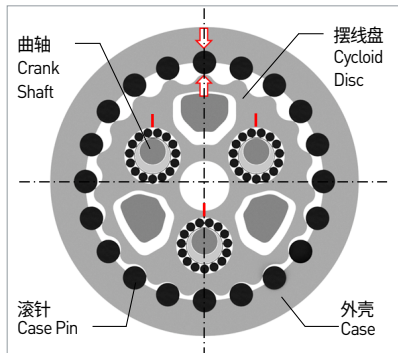
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1. 工作原理

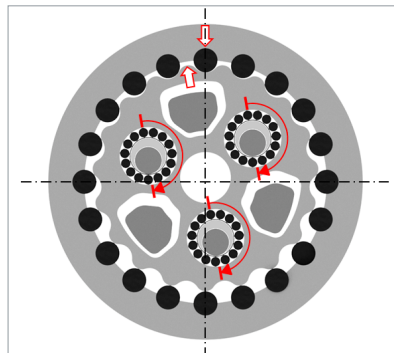
Operating principle

■ 工作原理 Operating principle



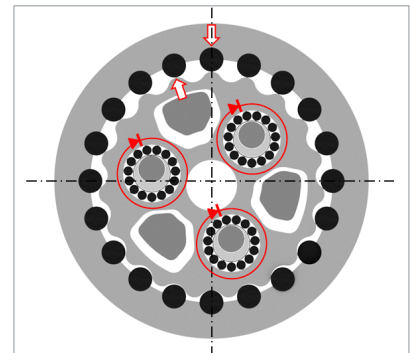
曲轴 Crank shaft 0°

- 滚针比摆线轮多一个齿数，在曲轴0°的位置，摆线轮与滚针在同一位置。
- One more Case Pin than the number of Cycloid Disc teeth, at the position of Crank shaft 0 degrees Disc teeth and Case Pin match



曲轴 Crank shaft 180°

- 如果曲轴向右(CW)旋转180°，摆线轮就向左(CCW)旋转，移到滚针中间。
- Crank shaft to the right (CW) When rotated 180 degrees, the Cycloid Disc moves to the left (CCW). It is rotated and moved between Case Pints to be located.



曲轴 Crank shaft 360°

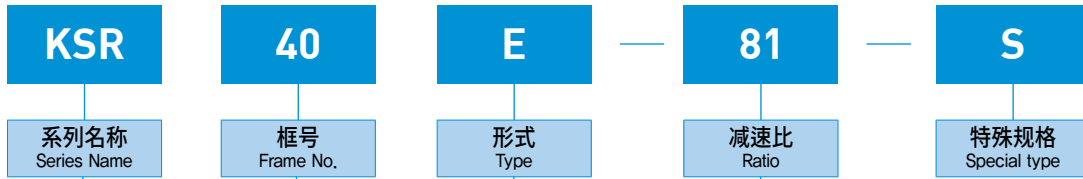
- 如果曲轴向右(CW)旋转360°，摆线轮就向左(CCW)旋转1个齿，通过支撑曲轴的轴输出。
- Crank shaft to the right (CW) When rotated 360 degrees, the Cycloid Disc Rotated left (CCW), supporting the crank shaft The output is made through the existing shaft.

■ 旋转方向及减速比 Rotational direction and reduction ratio

REDUCER 减速装置	① 输出：Shaft Output 输入：Input Gear Input 固定：Case Fixed	② 输出：Case Output 输入：Input Gear Input 固定：Shaft Fixed	③ 输出：Shaft Output 输入：Case Input 固定：Input Gear Fixed
	$i = \frac{1}{R}$	$i = -\frac{1}{R-1}$	$i = \frac{R-1}{R}$
	OVERDRIVE 增速装置	④ 输出：Input Gear Output 输入：Shaft Input 固定：Case Fixed	⑤ 输出：Input Gear Output 输入：Case Input 固定：Shaft Fixed
$i = R$		$i = -(R-1)$	$i = \frac{R}{R-1}$

R : 速度比 Speed ratio i : 减速比 Reduction ratio

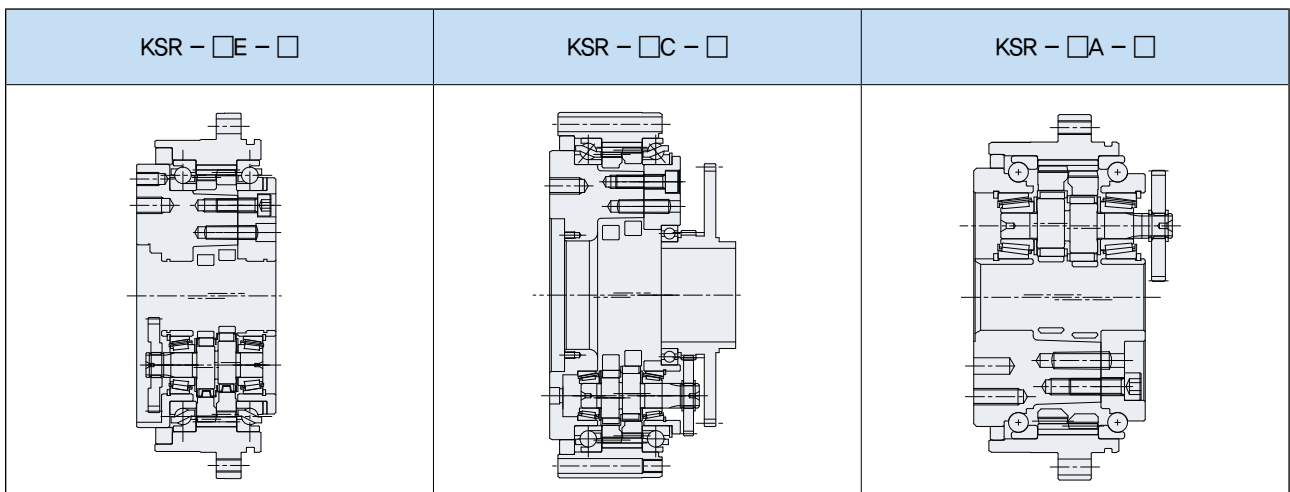
■ 型号 Coding



Model	Frame No.	Type	Ratio
KSR	*6	E	31, 43, 53.5, 59, 79, 103
	20		57, 81, 105, 121, 141, 161
	40		57, 81, 105, 121, 153
	80		57, 81, 101, 121, 153
	110		81, 111, 161, 175
	160		81, 101, 129, 145, 171
	320		81, 101, 185, 201
	450		81, 101, 118.5, 171, 192, 210
	*10	C	27
	27		36.57
	50		32.54
	100		36.75
	200		34.86
	320		35.61, 171, 210
500	37.34		

Model	Frame No.	Type	Ratio
KSR	25	A	41, 81, 107.6, 126, 137, 164
	42		41, 81, 105, 126, 141, 164
	60		41, 81, 102, 121, 145.6, 161
	80		41, 81, 101, 129, 141, 161
	100		41, 81, 102, 121, 141, 161
	125		41, 81, 102, 121, 145.6, 161
	160		41, 81, 102.8, 125.2, 156, 201
	*500		81, 105, 123, 144, 159, 192.7
	*700		105, 118, 142, 159, 183, 203

■ 型号例子 Coding example



注) 打*字的, 需要另外进行咨询。

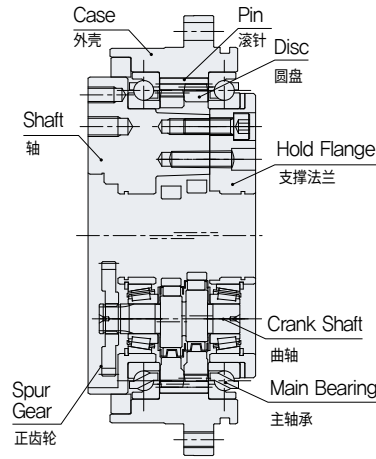
Please consult with * model separately

3. 规格及尺寸

Specifications & Dimensions

■ 标准实轴型 (KSR - □E - □) Standard Solid Shaft Type

结构图 Parts configuration



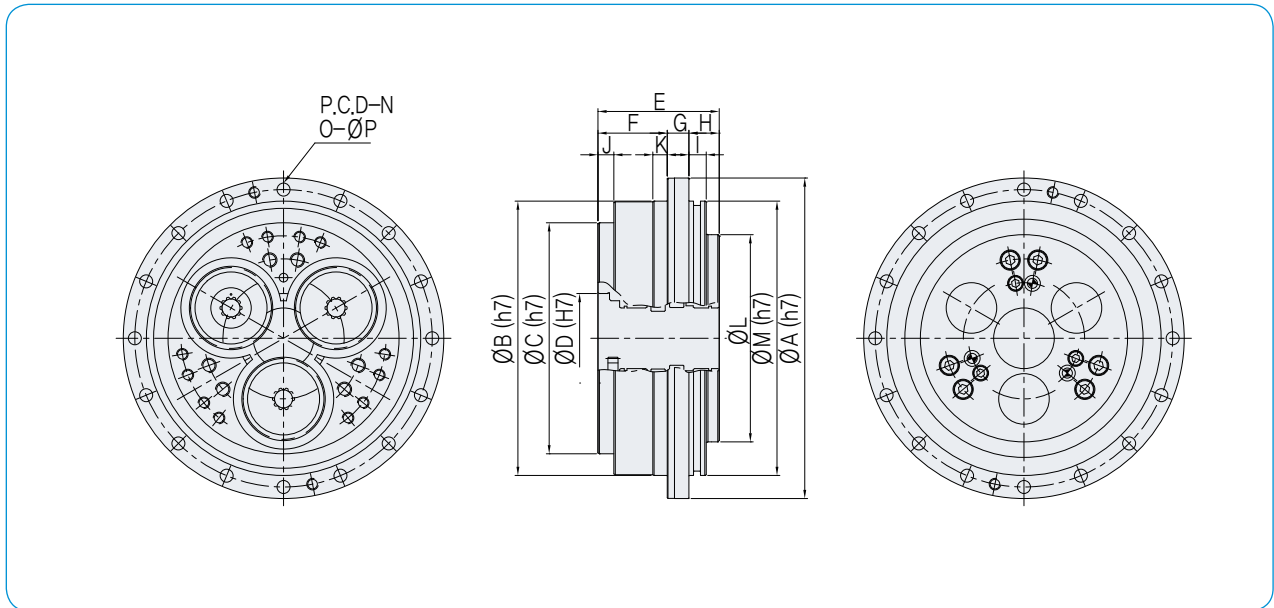
特点 Features

- 中实输入输出驱动轴
Coaxial input and output
- 二段减速结构
2-stage reduction
- 背隙小
Low Backlash
- 高输出转矩
High output torque
- 高刚性
High stiffness

特征表 Specifications

框号 No.		6E	20E	40E	80E	110E	160E	320E	450E
额定输出转矩 Rated output torque	[kgf-m]	6	17	42	80	110	160	320	450
额定输出旋转数 Rated output rotational speed	[rpm]	30	15	15	15	15	15	15	15
力矩刚性 Moment rigidity	[kgf-m/arcmin]	12	38	95	120	150	300	500	760
允许力矩 Allowable moment	[kgf-m]	20	90	170	220	300	400	720	900
瞬时最大允许力矩 Momentary maximum allowable moment	[kgf-m]	40	180	340	440	600	800	1,440	1,800
起动、停止时的允许转矩 starting and stopping allowable torque	[kgf-m]	12	42	105	200	275	400	800	1,125
起动、停止瞬时最大允许转矩 Momentary maximum allowable torque	[kgf-m]	30	85	210	400	550	800	1,600	2,250
背隙 Backlash	[arcmin]	1.5	1	1	1	1	1	1	1
角度传达精度 Angular transmission accuracy	[arcsec]	80	80	60	60	60	60	60	60
增速起动转矩 Output Starting Torque	[kgf-m]	1	4.2	4.8	7	8.2	11.2	21.7	27
最大允许输出旋转数 Allowable max. output speed	[rpm]	100	75	70	70	50	45	35	25
重量 Weight	[kg]	2.5	4.7	9.3	13.1	17.4	26.4	44.3	66.4

外观尺寸 Dimensions



[mm]

框号 No.	ΦA	ΦB	ΦC	ΦD	E	F	G	H
6E	122	103	86	26	53	24	12	17
20E	145	124	105	32	65	30	20	15
40E	190	160	135	50	76	31	24	21
80E	222	190	160	62	84	48	15	21
110E	244	208	182	80	92.5	67	19	6.5
160E	280	240	204	110	104	68.5	25	10.5
320E	325	284	245	130	125	79.5	30	15.5
450E	370	328	275	154	140	84	38	18

框号 No.	I	J	K	ΦL	ΦM	N	O	ΦP
6E	8	4	8	78	103	113	8	5.8
20E	8	5.5	10	92	123	135	16	6.8
40E	13	7	10	123.5	160	175	16	9
80E	12	11	10	140	190	206	16	9
110E	-	14	15	154	-	226	12	11
160E	-	8	15	178	-	260	12	13
320E	-	8	20	214	-	304	16	13
450E	-	8	20	248	-	348	24	13

注) 1. 为改善产品, 可以在无通知下更改尺寸等

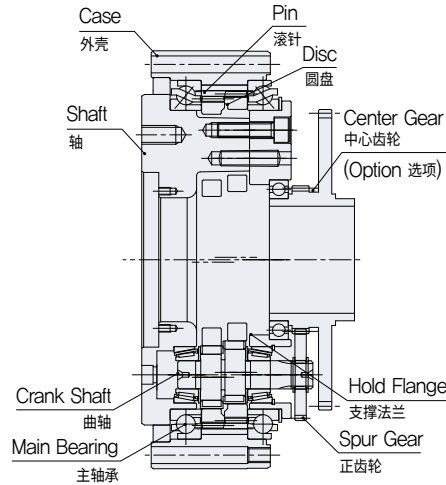
You can change dimensions without advance notice for product improvement

3. 规格及尺寸

Specifications & Dimensions

■ 中空型 (KSR - □C - □) Hollow Shaft Type

结构图 Parts configuration



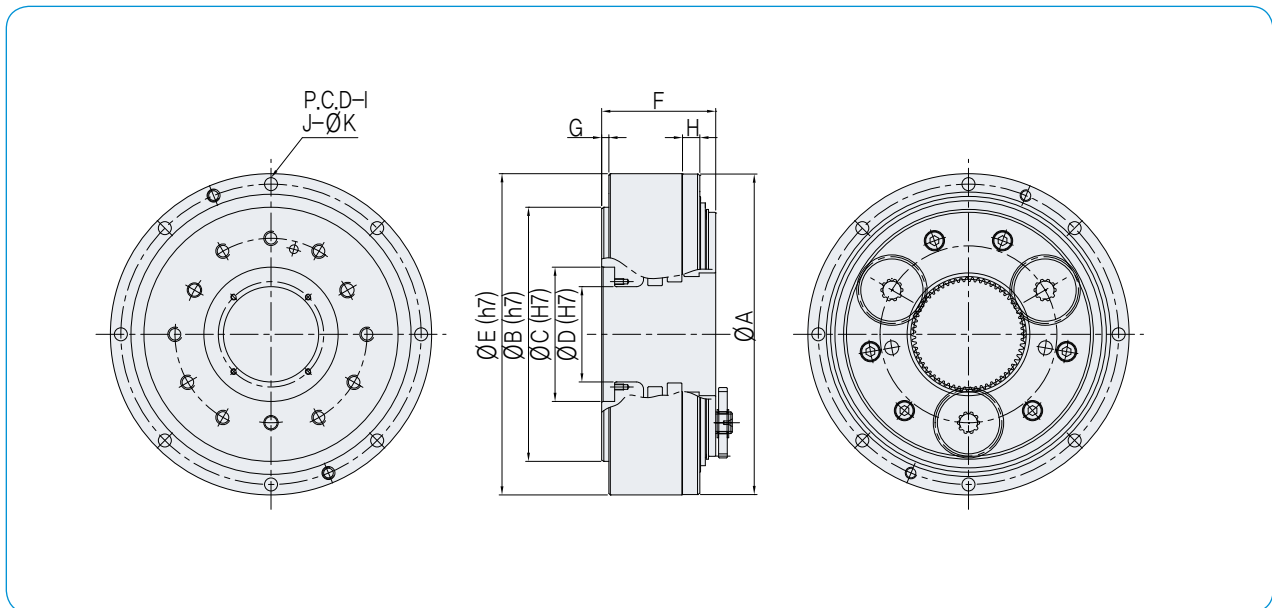
特点 Features

- 通过中空贯穿内部
Hollow through the inside
- 可以进行高效率设计
Efficient design possible
- 二段减速结构
2-stage reduction
- 背隙小
Low Backlash
- 高输出转矩
High output torque
- 高刚性
High stiffness

特征表 Specifications

框号 No.		10C	27C	50C	100C	200C	320C	500C
额定输出转矩 Rated output torque	[kgf-m]	10	27	50	100	200	320	500
额定输出旋转数 Rated output rotational speed	[rpm]	15	15	15	15	15	15	15
力矩刚性 Moment rigidity	[kgf-m/arcmin]	43	109	200	287	1,000	1,300	2,500
允许力矩 Allowable moment	[kgf-m]	70	100	180	250	900	2,100	3,500
瞬时最大允许力矩 Momentary maximum allowable moment	[kgf-m]	140	200	360	500	1,800	4,000	8,000
起动、停止时的允许转矩 starting and stopping allowable torque	[kgf-m]	25	67.5	125	250	500	800	1,250
起动、停止瞬时最大允许转矩 Momentary maximum allowable torque	[kgf-m]	50	135	250	500	1,000	1,600	2,500
背隙 Backlash	[arcmin]	1	1	1	1	1	1	1
角度传达精度 Angular transmission accuracy	[arcsec]	60	60	60	60	60	60	60
增速起动转矩 Output Starting Torque	[kgf-m]	1	5.2	9.5	12	15	22	30
最大允许输出旋转数 Allowable max. output speed	[rpm]	80	60	50	40	30	25	20
重量 Weight	[kg]	4.6	8.5	14.6	19.5	55.6	79.5	154

外观尺寸 Dimensions



[mm]

框号 No.	ΦA	ΦB	ΦC	ΦD	ΦE	F	G
10C	147	110	46	34	146	49.5	4
27C	182	140	66	47	181	57.5	5
50C	222.5	176	93	66	222	68	5
100C	250.5	199	106	73	250	72.6	5
200C	347	260	138	100	346	102	7
320C	440	340	200	140	438	126	5.5
500C	475	390	210	150	520	162.5	7.5

框号 No.	H	I	J	ΦK
10C	10	134	8	6.6
27C	10	169	12	6.6
50C	12	208	8	9
100C	12	233	14	11
200C	10	324	8	13
320C	—	415	16	13
500C	10.9	495	24	13

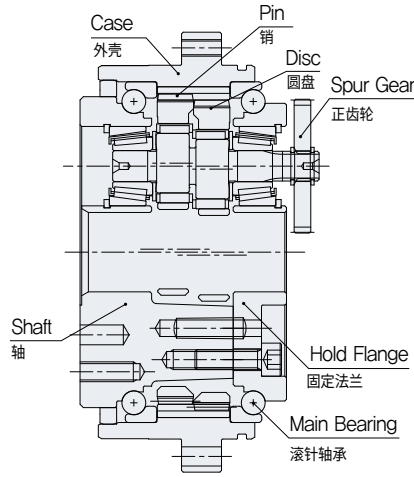
注) 1. 为改善产品, 可以在无通知下更改尺寸等
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3. 规格及尺寸

Specifications & Dimensions

■ 轻巧型 (KSR - □A - □) Compact Type

结构图 Parts configuration



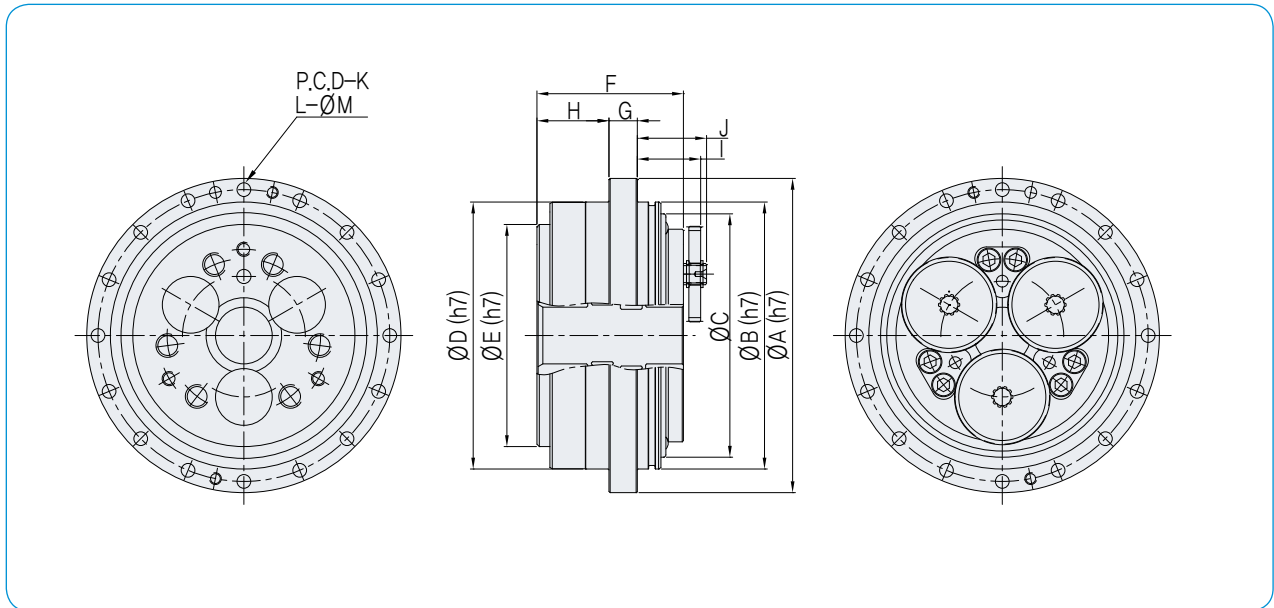
特点 Features

- 输入输出同轴
Coaxial input and output
- 小型化
Compact size
- 轻量化
Lightweight
- 背隙小
Low Backlash
- 高转矩型
High output torque
- 高刚性
High stiffness

特征表 Specifications

框号 No.		25A	42A	60A	80A	100A	125A	160A	500A	700A
额定输出转矩 Rated output torque	[kgf-m]	25	42	60	80	100	125	160	500	700
额定输出旋转数 Rated output rotational speed	[rpm]	15	15	15	15	15	15	15	15	15
力矩刚性 Moment rigidity	[kgf-m/arcmin]	50	80	110	115	140	160	200	680	900
允许力矩 Allowable moment	[kgf-m]	78	160	200	215	270	343	400	1,000	1,500
瞬时最大允许力矩 Momentary maximum allowable moment	[kgf-m]	150	320	400	430	540	680	800	2,200	3,000
起动、停止时的允许转矩 starting and stopping allowable torque	[kgf-m]	61	100	150	190	250	300	400	1,200	1,700
起动、停止瞬时最大允许转矩 Momentary maximum allowable torque	[kgf-m]	120	200	300	390	500	610	800	2,400	3,500
背隙 Backlash	[arcmin]	1	1	1	1	1	1	1	1	1
角度传达精度 Angular transmission accuracy	[arcsec]	70	60	50	50	50	50	50	50	50
最大允许输出旋转数 Allowable max. output speed	[rpm]	110	100	94	88	83	79	48	25	19
重量 Weight	[kg]	3.8	6.3	8.9	9.3	13	13.9	22.1	57.2	102

外观尺寸 Dimensions



[mm]

框号 No.	ΦA	ΦB	ΦC	ΦD	ΦE	F	G
25A	133	113	90	113	94	62	12
42A	159	136	110	136	118	65.5	20
60A	183	160	129	160	140	69.5	25
80A	189	160	131	160	140	74	20
100A	208	179	146	179	160	80	30
125A	221	186	152	186	160	80	25
160A	238	202	166	202	179	104	37
500A	325	284	230	284	253	137.5	53
700A	395	350	275	350	315	170	58

框号 No.	H	I	J	K	L	ΦM
25A	30.5	32.2	30.5	113	8	5.8
42A	27.5	32.5	27.5	135	16	6.8
60A	26	31.9	32.3	175	16	9
80A	33	37.6	36	206	16	9
100A	31	36.9	34.6	226	12	11
125A	32.9	40.7	38.2	260	12	13
160A	43.5	40.1	39.9	304	16	13
500A	53	53.4	51	348	24	13
700A	72	58.9	62.2	374	30	13

注) 1. 为改善产品, 可以在无通知下更改尺寸等

You can change dimensions without advance notice for product improvement

术语说明 Definition

● 额定输出转矩 Rated output torque

输出旋转数15rpm时的输出转矩值

Output torque at output rotation speed of 15 rpm

● 力矩刚性 Moment rigidity

如果承受外部载荷，产生力矩，输出轴就与载荷力矩按比例倾斜。这显示主轴的刚性，是指让它倾斜1arcmin所需的负荷力矩值。

When a load moment is generated by receiving an External load, the output shaft is inclined in proportion to the load moment. The load moment value required to incline 1 arcmin indicating the stiffness of the main bearing.

$$\theta = \frac{W_1 L_1 + W_2 L_3}{M_t \times 10^3}$$

θ : 针对输出轴倾斜的角度(arcmin)
Angle of inclination to the output shaft

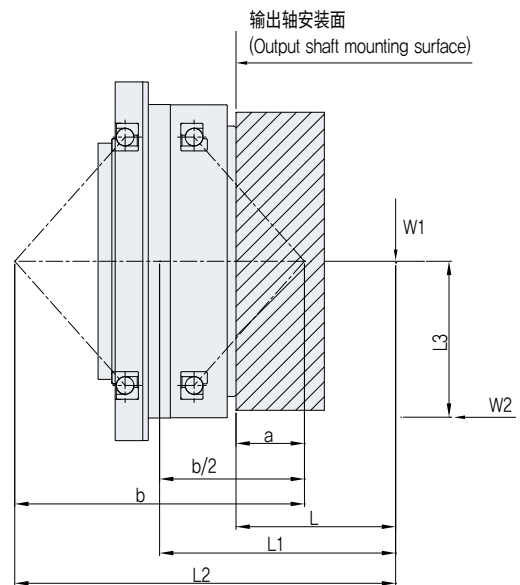
M_t : 力矩刚性(kgf-m/arcmin)
Moment rigidity

W_1, W_2 : 载荷(kgf)
Weight

L_1, L_3 : 到载荷作用点处的距离(mm)
Distance to load point

L_1 : $L+b/2-a$

L : 从输出轴安装面到载荷点的距离(mm)
Distance from the output shaft mounting surface to the load point



● 允许力矩 Allowable moment

可以支撑运行时产生的载荷力矩的允许值

Allowable value of load moment that can be supported during operation

$M_c \leq$ 允许力矩值
Allowable moment

M_c : 外部力矩值(kgf-m)
External moment

$M_c = \{ W_1 L_2 + W_2 L_3(L_2/b) \} / 1,000$

W_1, W_2 : 载荷(kgf)
Weight

L_1, L_3 : 到载荷作用点处的距离(mm)
Distance to load point

L_2 : $L+b-a$

L : 从输出轴安装面到载荷点的距离(mm)
Distance from the output shaft mounting surface to the load point

● 瞬时最大允许力矩 Momentary maximum allowable moment

在减速机上紧急停止或来自外部的冲击导致产生的力矩值

Moment value in case of emergency stop or external impact on the reducer

● **起动、停止时的允许转矩** Allowable torque when starting and stopping

在起动和停止时，被载荷惯性力矩让大于正常转矩的载荷传达到减速机时的允许值

When starting and stopping, a load greater than the normal torque is transmitted to the reducer by the load moment of inertia.

● **起动、停止瞬时最大允许转矩** Momentary maximum allowable torque

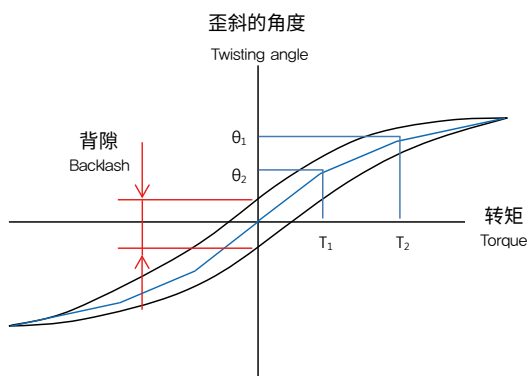
在起动、停止瞬间产生的冲击转矩时的最大允许值

Permissible maximum value when receiving instantaneous shock torque

● **背隙 Backlash**

将输入端固定，对输出端施加转矩时，0转矩时的歪斜角度的差异

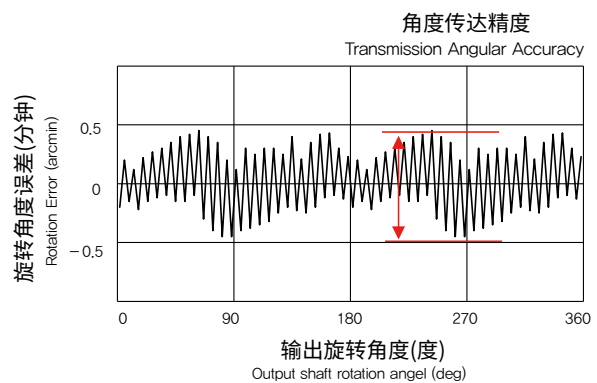
The difference in twisting angle at zero torque when the input side is fixed and torque is applied to the output side



● **角度传达精度** Transmission Angular Accuracy

在无载荷的情况下旋转输入轴时，理论上的输出旋转角度和实际输出旋转角度之差。

The difference between the theoretical input rotation angle and the actual output rotation angle when the input shaft is rotated at no load



● **增速起动转矩** Output Starting Torque

在输出端旋转时，输入端开始旋转的扭矩(无载荷，周边温度: 25°C)

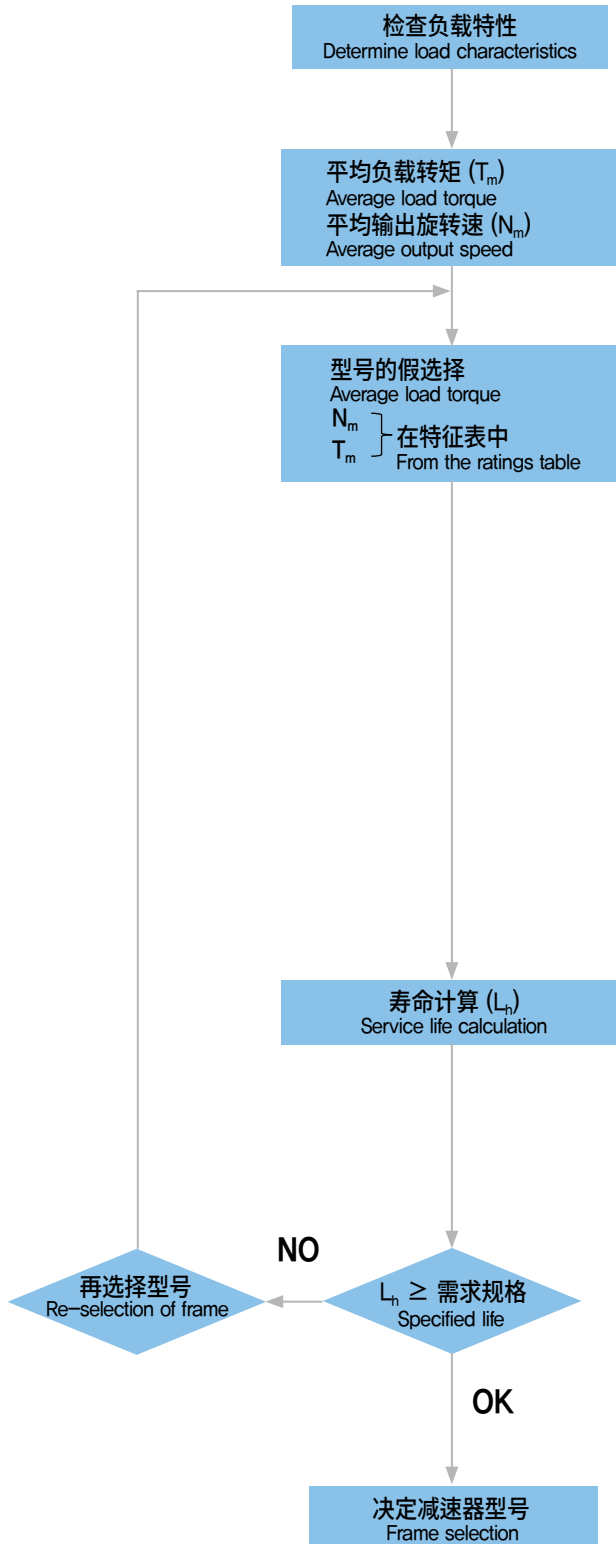
When the output part rotates, the torque at which the input part starts rotating (no load, ambient temperature: 25°C)

● **最大允许输出旋转数** Allowable maximum output rotation speed

这是减速机允许的最大输出旋转数，设置输入旋转数，应该低于最大允许输出旋转X减速比

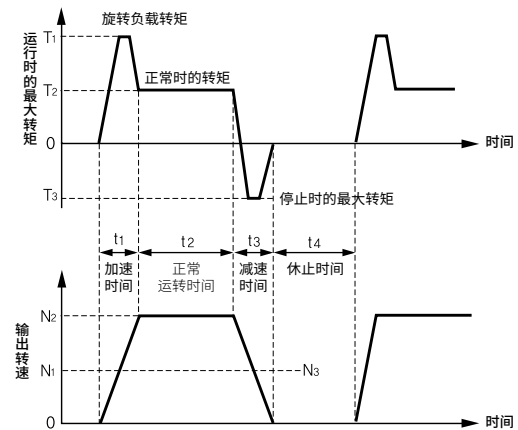
The maximum output rotation speed that the reducer can allow. Input rotation speed setting It should be less than the allowable maximum output rotation speed times the reduction ratio.

■ 选型方法 Model selection



$$T_m = \sqrt[10]{\frac{t_1 \cdot N_1 \cdot T_1^{10} + t_2 \cdot N_2 \cdot T_2^{10} + \dots + t_n \cdot N_n \cdot T_n^{10}}{t_1 \cdot N_1 + t_2 \cdot N_2 + \dots + t_n \cdot N_n}}$$

$$N_m = \frac{t_1 \cdot N_1 + t_2 \cdot N_2 + \dots + t_n \cdot N_n}{t_1 + t_2 + \dots + t_n}$$



[占空比图 Duty cycle diagram]

	起动时 For starting (Max)	正常时 For constant	停止时 For stopping (Max)	紧急停止 冲击时 For impact due to emergency stop
负载转矩(kgf·m) Load torque	T ₁	T ₂	T ₃	T _{em}
旋转数(rpm) Speed	N ₁	N ₂	N ₃	N _{em}
时间(sec) Time	t ₁	t ₂	t ₃	t _{em}

- SR减速器的寿命被用于曲柄轴的滚动轴承寿命决定

The service life of SR Reducer is based on the life of the roller bearings of the crank shaft.

- $$L_n = K \times \frac{N_0}{N_m} \times \left(\frac{T_0}{T_m}\right)^3$$

L_n : 求的寿命时间 (Hr)
 Service life to be obtained
 N_m : 平均输出转速 (rpm)
 Average output speed
 T_m : 平均负载转矩 (kgf-m)
 Average output torque
 N_0 : 额定输出转速 (rpm)
 Rated output speed
 T_0 : 额定转矩 (kgf-m)
 Rated output torque

■ 润滑 Lubricant

润滑脂的种类 Type of lubricant

- 我司自主开发的专用润滑脂，耐久性、效率、润滑特性优秀。
Developed exclusively by our company, it has excellent durability, efficiency and lubrication characteristics.

润滑脂润滑 Grease lubrication

- 润滑脂润滑是标准润滑方式，在产品出货时，以未填充的状态出货。在安装减速器时必须填充后组装。
Grease lubrication is a standard lubrication method, and the product is shipped without filling.

润滑脂更换周期 Interval between grease changes

- 如果适当运行减速器，根据润滑剂劣化，润滑剂的交换周期为20,000小时，确认润滑剂污染程度，需要时提前更换。
If the reducer is operated properly, the cycle due to deterioration of the lubricant is managed at 20,000 hours, and contamination of the lubricant is prevented. Please check it and exchange it early if necessary.

润滑脂注入量 Grease quantity

形式 Type		注入量(g) Quantity								
E	框号 Frame No.	6E	20E	40E	80E	110E	160E	320E	450E	
	水平 Horizontal	38	78	173	337	384	559	923	1,417	
	垂直 Vertical	43	89	182	390	440	616	1,059	1,625	
C	框号 Frame No.	10C	27C	50C	100C	200C	320C	500C	* 在安装减速器时需要填充。	
	水平 Horizontal	131	236	442	671	1,625	2,556	5,266		
	垂直 Vertical	148	270	507	761	1,842	2,832	6,123		
A	框号 Frame No.	25A	42A	60A	80A	100A	125A	160A	500A	700A
	水平 Horizontal	192	288	403	463	618	675	789	2,061	3,470
	垂直 Vertical	219	328	462	529	707	774	904	2,358	3,972

注意事项 Precautions

- 尽量使用我司开发的润滑脂，禁止与其他产品混合使用。
Grease uses the product manufactured by SPG is recommended and prohibits mixing them with other products.
- 在产品出货时，没有注入润滑剂。
The reduction gear is not greased when it is shipped from the plant.
- 如果注入量过多、会导致减速器发热和漏油、效率下降、必须填充内部空间的90%、保留10%左右的剩余空间。
Too much filling may causes heat generation, leakage and decrease of efficiency. Please leave about 10% of the room inside.
- 参考根据减速器型号和安装方向的润滑脂合理用量列表。
Refer to the correct amount table of the grease according to the model number and mounting direction of the reducer.
- 在注入和保管润滑脂时，保持清洁，以防止异物造成减速器损伤。
When injecting grease and storing it, keep it clean to prevent damage to the reducer by foreign substances.

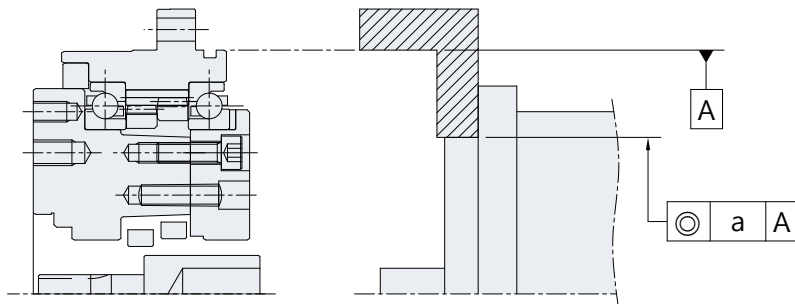
■ 组装技术 Assembly technique

安装精度 Mounting precision

- 为安装减速器，需要下列的相关零部件的组装面精密图纸。

In order to mount the reducer, the precision of the assembly surface of the related products is required as shown below.

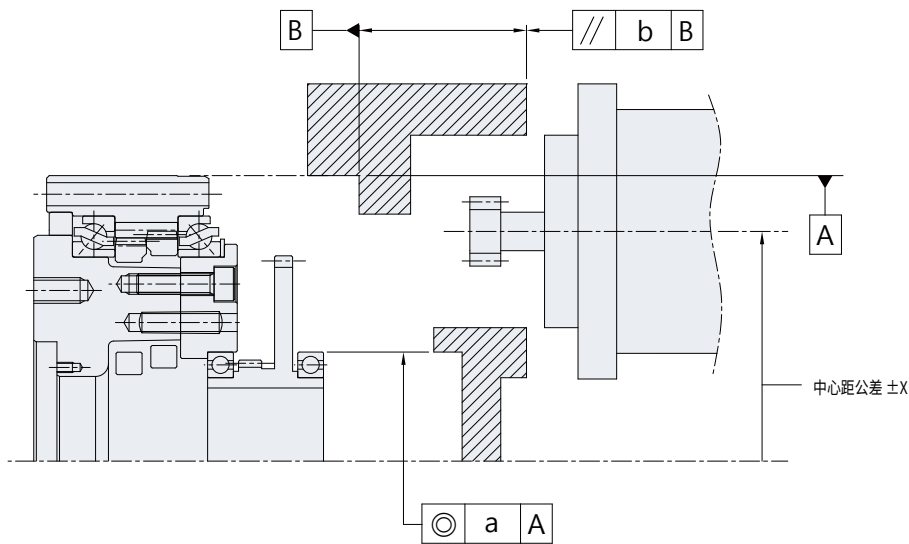
KSR-E



[mm]

框号 No.	6E	20E	40E	80E	110E	160E	320E	450E
同心度 a Concentricity a	0.03	0.03	0.03	0.03	0.03	0.05	0.05	0.05

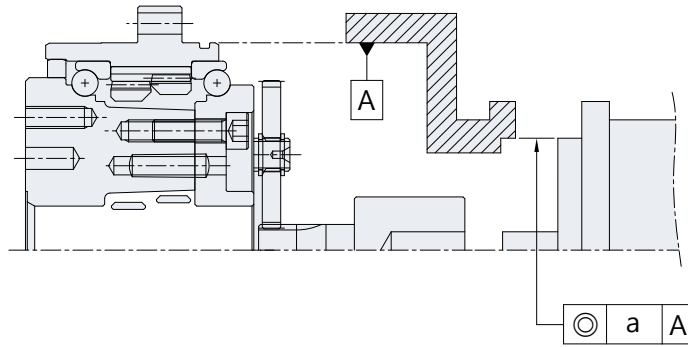
KSR-C



[mm]

框号 No.	10C	27C	50C	100C	200C	320C	500C
同心度 a Concentricity a	0.03	0.03	0.03	0.03	0.03	0.03	0.03
平行度 b Parallelism b	0.03	0.03	0.03	0.03	0.03	0.03	0.03
中心距公差 x Center distance tolerance x	±0.03	±0.03	±0.03	±0.03	±0.03	±0.03	±0.03

KSR-A



[mm]

框号 No.	25A	42A	60A	80A	100A	125A	160A	500A	700A
同心度a Concentricity a	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.05	0.05

螺栓紧固扭矩 Bolt tightening torque

- 在安装减速器时，根据拧紧螺栓的紧固扭矩规定，用六角扳手拧紧。
Use hexagonal socket bolts to assemble the reducer and tighten to the torque as specified below.

六角螺栓 Hexagon wrench bolt (尺寸 x Pitch)	紧固扭矩 Tightening torque (kgf-m)	紧固力 Tightening force (kgf)	规格 Specifications
M5 x 0.8	0.92	950	<ul style="list-style-type: none"> • 六角螺栓 Hexagon wrench bolt KS B 1003:2000 • 强度区分 Classification of strength 12.9
M6 x 1.0	1.6	1,345	
M8 x 1.25	3.8	2,445	
M10 x 1.5	7.85	3,886	
M12 x 1.75	13.1	5,662	
M16 x 2.0	32.5	10,552	

注(Note)

- 在紧固扭矩±5%范围内拧紧。
Tighten the tightening torque within ±5.
- 上述的紧固力是适用钢铁、铸铁时的数据，在铝、铜的情况下，需要充分审查后适用。
The values listed are for steel or cast iron material, if softer material such as aluminum is used, limit the tightening torque.
- 为防止螺栓松开和螺栓座面损伤，需要使用螺栓专用盘形弹簧垫圈。
Use a bolt plate spring washer to prevent loosening of the bolt and to prevent damage to the bolt seat.

组装时的注意事项 Precaution on assembly

- 必须在安装减速器前注入润滑剂。
Be sure to inject lubricant before mounting the reducer.
- 必须保证其他面安装精度后再进行减速器安装。
Assemble after maintaining the accuracy of the mounting surface of the other parts according to the reduction gear installation.
- 必须根据安装面的内容，确认O型圈、油封规格以后进行组装。
Check the O-ring and oil seal standard according to the contents of the mounting surface.
- 用于紧固的螺栓，必须使用标准品，根据紧固扭矩进行拧紧。
Use a standard bolt for tightening bolts and tighten them according to the tightening torque.

■ 防范措施 Precautions

● 在操作产品时，必须注意。

Be careful of product handling.

- 切勿用锤子对产品施加冲击，注意操作，以避免产品落下造成损坏。

Be careful not to give an impact to the product with a hammer and not to cause damage from a drop at handling.

● 在将产品与载荷方直接连接时，需要注意组装。

In case of directly connecting the product to the load side, pay attention to assembling.

- 在将产品与带、链子等载荷方连接时，需要注意同心、平行度、张力等直接连接状态。

Be careful of direct connection such as concentricity, parallel level, tension, etc. whenever connecting the product to the load side such as a belt, a chain, etc.

- 需要注意操作产品的棱角和输出轴键槽部分。这可能会造成人身伤害。

Be careful of handling the edge of the product and the key way of the output shaft. It may cause an injury.

- 在产品运行中，切勿将手或其他异物放入旋转中的轴。这可能会造成人身伤害。

Do not put a hand or other foreign substance in a rotating shaft while the product drives. It may cause an injury.

● 切勿对产品施加冲击。

Do not give an impact to the product.

- 在产品上组装滑轮、联轴接头、Key时，需要注意不要施加过大的冲击。

Be careful not to give an excessive impact whenever assembling a pulley, a coupling, a key, etc. to the product.

● 请注意使用，以避免超出容许转矩。

Do not exceed permissible torque at use.

- 必须注意避免施加超出瞬间容许最大转矩以上的转矩。拧紧部分的螺栓松开、摇动、破损会造成问题。

Do not give more than the instantaneous permissible maximum torque. It may cause troubles by bolts loosened on the tightening part, shaking, damage, etc.

● 切勿拆卸产品。

Do not disassemble the product.

- 切勿随意拆开、再组装产品。这时，无法保证产品的初期性能。

Do neither disassemble nor reassemble the product. Otherwise the original performance may not be guaranteed.

● 如果感到异常现象，必须停止系统。

If any abnormal condition is sensed, stop the system.

- 如果发生异常音、震动、异常发热等，必须迅速停止系统。否则可能会对系统产生不利影响。

If abnormal sound, vibration, abnormal heat, etc. occur, immediately stop the system. Otherwise it may adversely influence the system.

■ 质量保证 Warranty

● 产品的质量保证期间及保证范围如下：

A warranty period and a warranty limit of the product is as follows.

1 质保期间 Warranty Period

适用于在以我司规定的运行、组装、润滑状态使用的条件下，交货以后12个月或2000小时的产品运行时间当中。

Either 2,000hour working time or 12 months after the delivery for the product, which reaches earlier, should be applied on condition of use with operation, assembling, and lubrication specified by SPG.

2 保证范围 Warranty Limit

在上述质保期间内，如果因我司的制造缺陷导致故障，对相关产品的维修和交换，由我司负责进行。但，下列情况除外。

For a fault by a defect in SPG manufacturing during the above warranty period, repair or exchange of the product should be conducted under SPG responsibilities. However, the following cases are excluded from the Warranty Limit.

- ① 在将产品与载荷方直接连接时，不注意组装；
When connecting directly to the load side of the product, be careful of assembly
- ② 由我司以外的其他地方任意改造或维修；
Remodeling or repair not by SPG without permission
- ③ 故障的原因在于产品本身以外的理由；
A fault resulting from other reasons except the product
- ④ 其他自然灾害引起，不能归咎于我司的情况；
Such fault as attributable to natural disaster etc., which is not SPG responsibility

在此，保证意味着对相关产品的保证。

Warranty herein means warranty for the product.

对相关产品故障引起的其他损失(机器丢失造成的机会损失、工时损失，组装拆卸及安装等费用)

不属于我司承担范围。

Other losses (chance loss by loss of the machine & assembly man-hour, assembly & disassembly, and mounting costs) arising out of a failure of the product are beyond the range of SPG burdens.

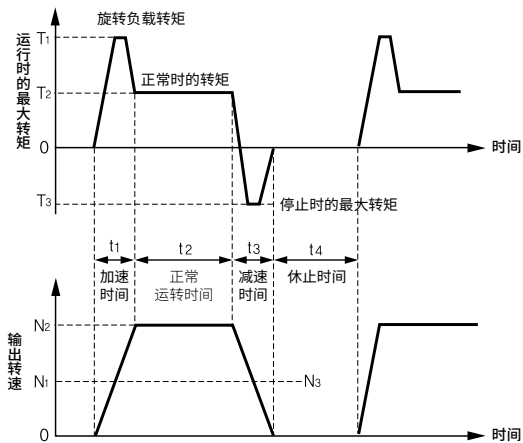
选型表

■ 请在订购减速机时，请确认下列内容。

To submit reducer questions, simply fill out the following form

客户 (Customer)	公司 (Company) :	部门 (Post) :	负责人 (Name) :
	TEL :	FAX :	E-mail :
地址 (Address)			
运行条件 (Operating Conditions)			
设备名称 (Machine Name)			
用途 (Use for)			
用途 (Spec. of the Gearheads)		Reduction Ratio $i =$	Backlash : arcmin

1. 负载条件 / The Conditions of Load



	运行时 Max Starting	正常时 Normal	停止时 Max Stop	休止时间 Pause time
负载转矩(Nm)	T_1	T_2	T_3	—
转速(rpm)	N_1	N_2	N_3	—
时间(sec)	t_1	t_2	t_3	t_4

运转时间 Running Time	Cycle / day	Day / year	year
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3. 安装方向 / The Mounting Direction

水平 Horizontality 向上 Verticality(up) 向下 Verticality(down)

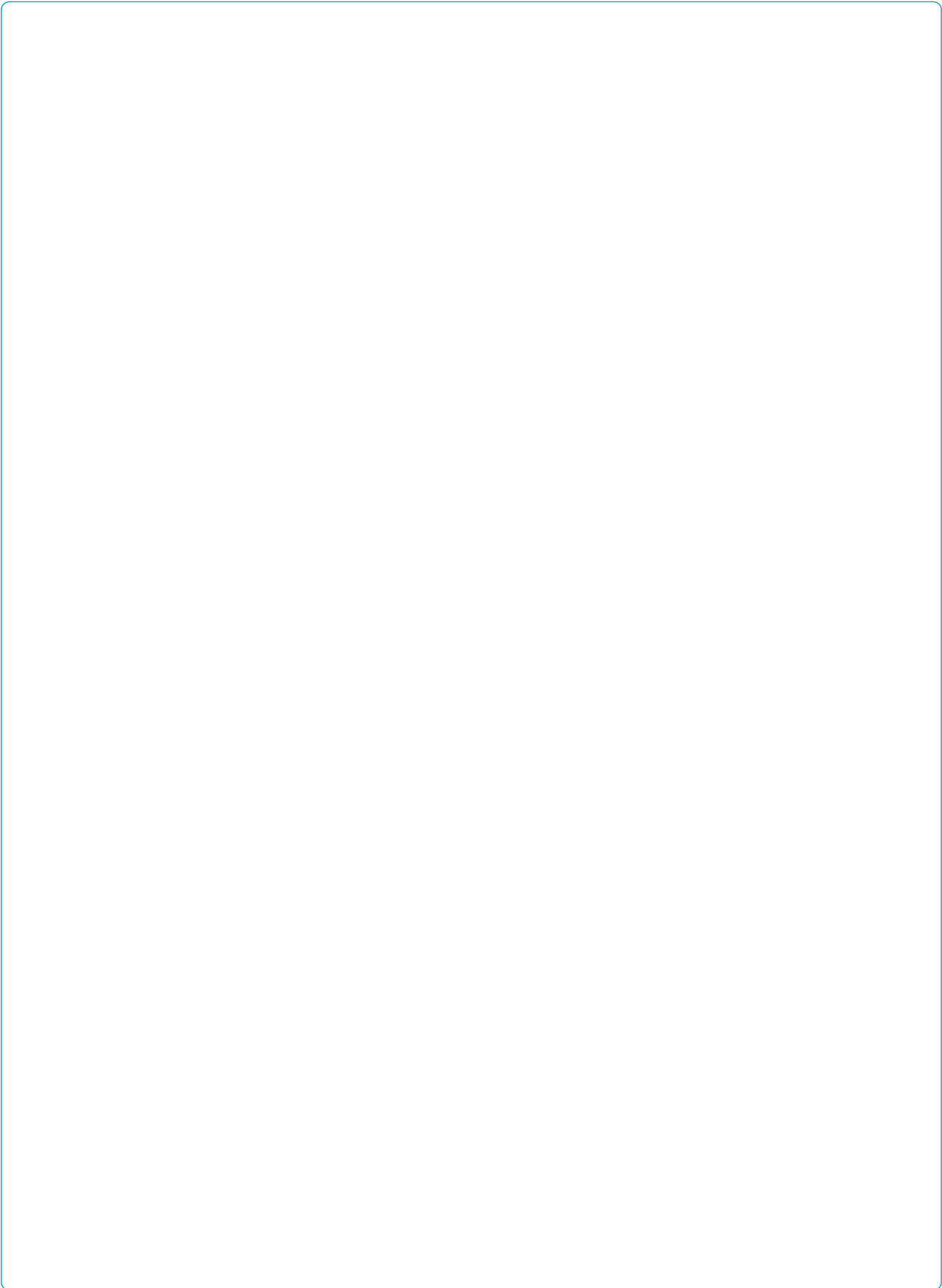
负载条件 (The Outline figure of Mounting)

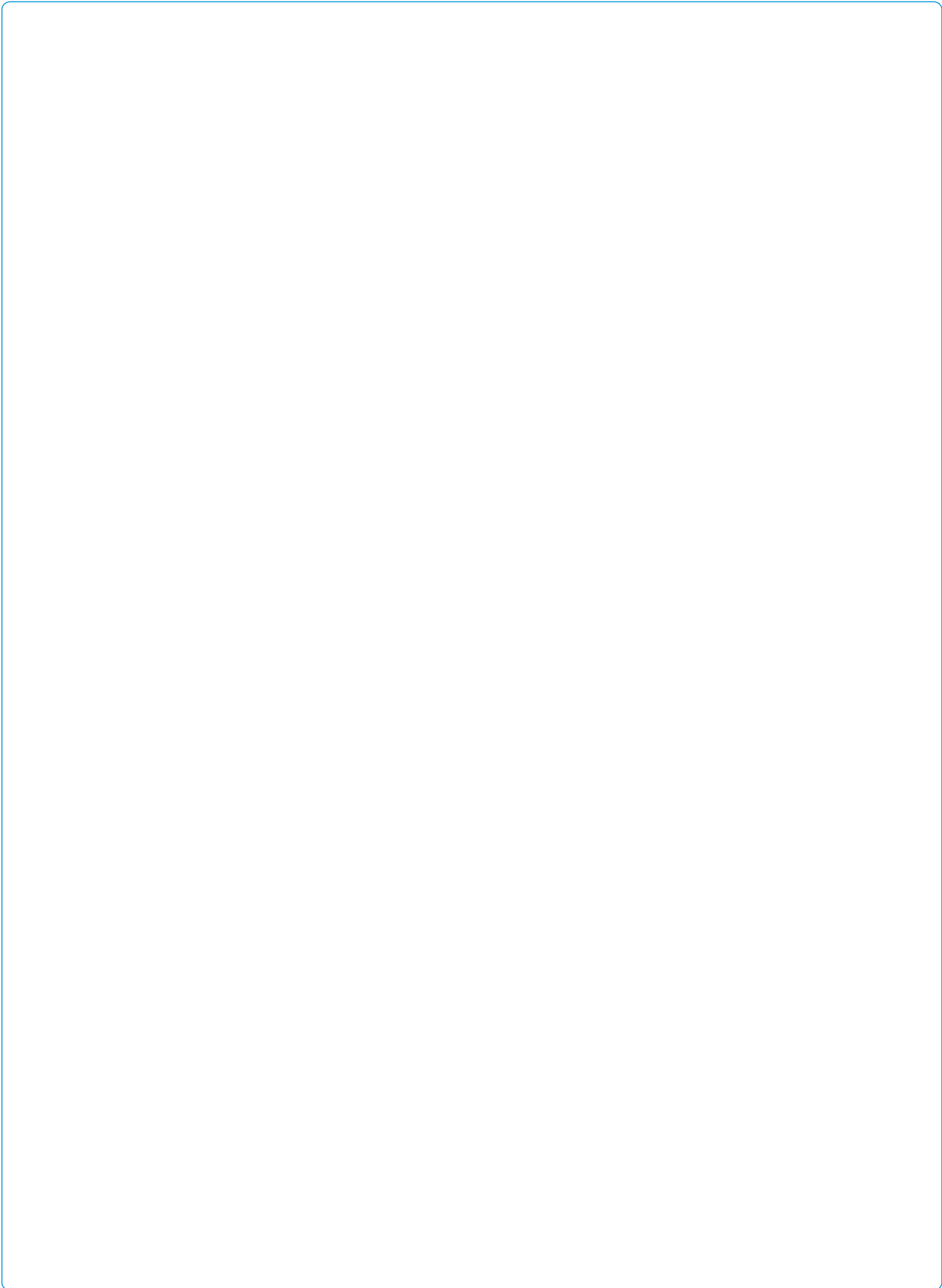
2. 输入方(电机部分)规格 / The Specifications of Input Side

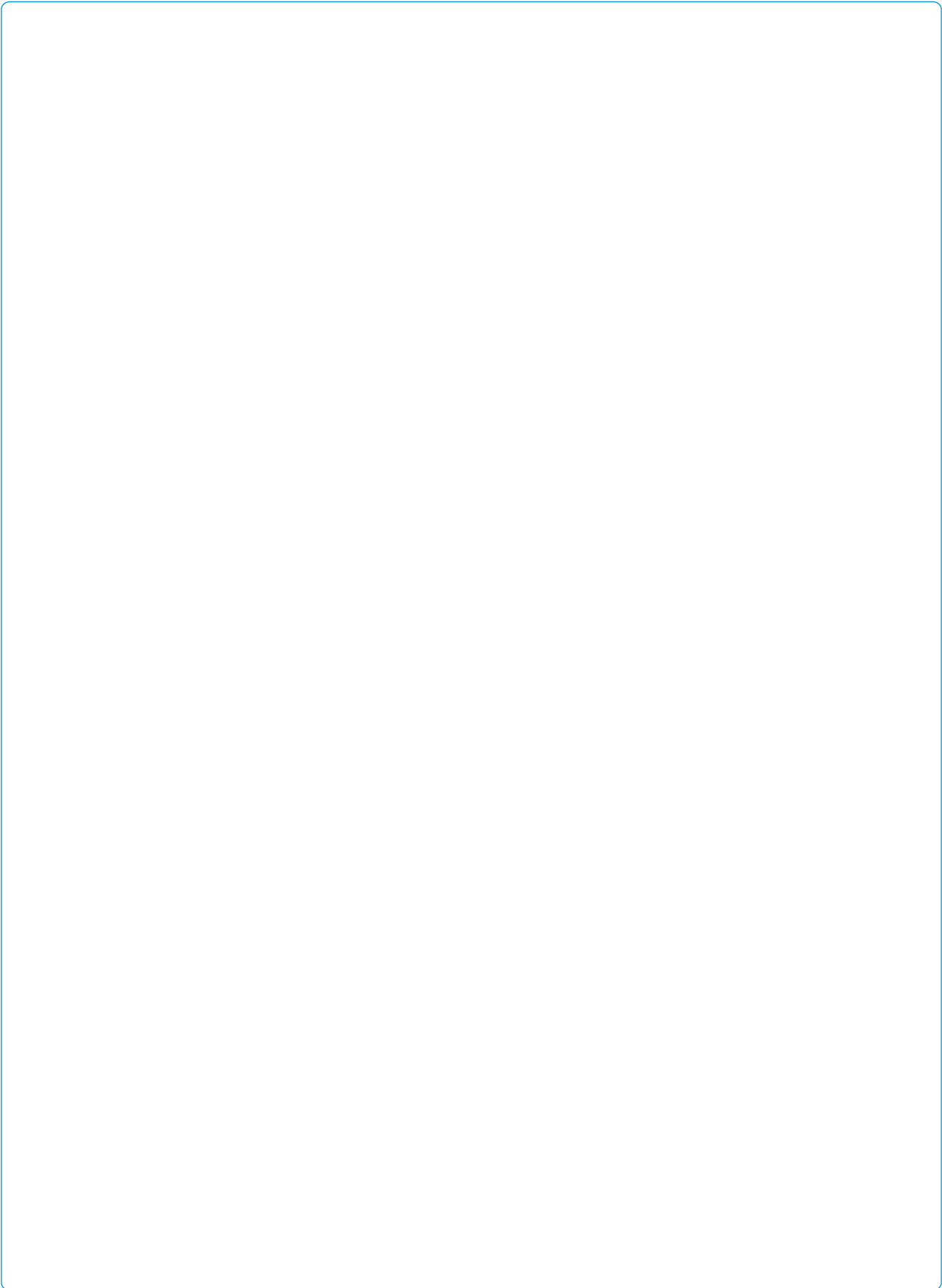
Servo motor other()

容量 (Capacity)	W
额定转矩 (Nominal Torque)	N · m
输入速度 (Input Speed)	rpm

4. 其他 / Others







 **SPG Co., Ltd.**
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