减速机的订货代码/型号标注说明

AB090 – 010 – S2 – P2 / MOTOR

减速机型号：
AB042, AB060, AB060A, AB090, AB090A
AB115, AB115A, AB142, AB142A,
AB180, AB220

输出轴型式选择：
S1: 平滑直轴
S2: 附键直轴

马达型号 ：
马达制造商及型号

减速比：
单节： 3, 4, 5, 6, 7, 8, 9, 10
双节： 12, 15, 16, 20, 25, 28, 30, 32, 35, 40, 45, 50, 60, 70, 80, 90, 100

背隙：
P0: 超精密背隙
P1: 精密背隙
P2: 标准背隙

选型范例： AB090-010-S1-P1 / SIEMENS 1FT6 041-4AF71

上海卓藤动力科技有限公司
Shanghai ZhuoTeng Dynamics Co.,Ltd
上海嘉定外冈工业园区
Tel: 021-6951 3119
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E-mail: shzhuoto@163.com
2779776003@qq.com
Web: www.zt-gearbox.com

ZHUO TENG 卓藤®

伺服行星减速机

SERVO PLANETARY REDUCER

精密传动装置．您可靠的合作伙伴

- 高精度/低背隙
- 持久高精度
- 最佳化惯性力
- 传输效率高
- 低噪音
- 低温升
- 安装灵活

信念

企业宗旨： 用户至上，信誉取胜，质量优良，服务优质。

经营理念： 质量——形象的基础， 科技——腾飞的关键
管理——永恒的主题, 创新——发展的源泉
靠员工管理企业，靠科技提高素质,
靠质量赢得市场，靠创新促进发展。

团队意识： 我靠企业生存，企业靠我发展； 我为企业尽力，企业为我谋利。

企业作风： 实干，高效，文明，拼搏。 求真、务实，勤奋，高效。

质量

企业精神： 爱 厂,敬 业,开 拓,进 取. 敬 业,尽 责,拼 搏,创 新. 敬 业,奋 斗,开 拓,创 新

职业道德： 用户是衣食父母，服务是基本职责。用户至上，服务第一。

企业形象： 依法经营,管理科学,从业文明,作风过硬,服务优质,质量优良,技术精湛,勇于创新。

质量方针： 技术先进，管理科学，工程、产品优质， 诚信重诺，服务到位。

企业信念： 走好今日创业路,办好明天发展事.走创业之路,谋发展大计,谱辉煌篇章。

方针

经营战略： 人才战略，品牌战略，创新战略， 市场开发战略。
实施人才、品牌、创新和市场开发战略，巩固、
提高建筑安装水平，发展、壮大加工制造能力。

企业价值观： 永不满足，争创一流，完善自我，不断发展。

企业环境： 内部关系和谐，全厂上下同心协力； 外部关系顺畅，四面八方助我发展。

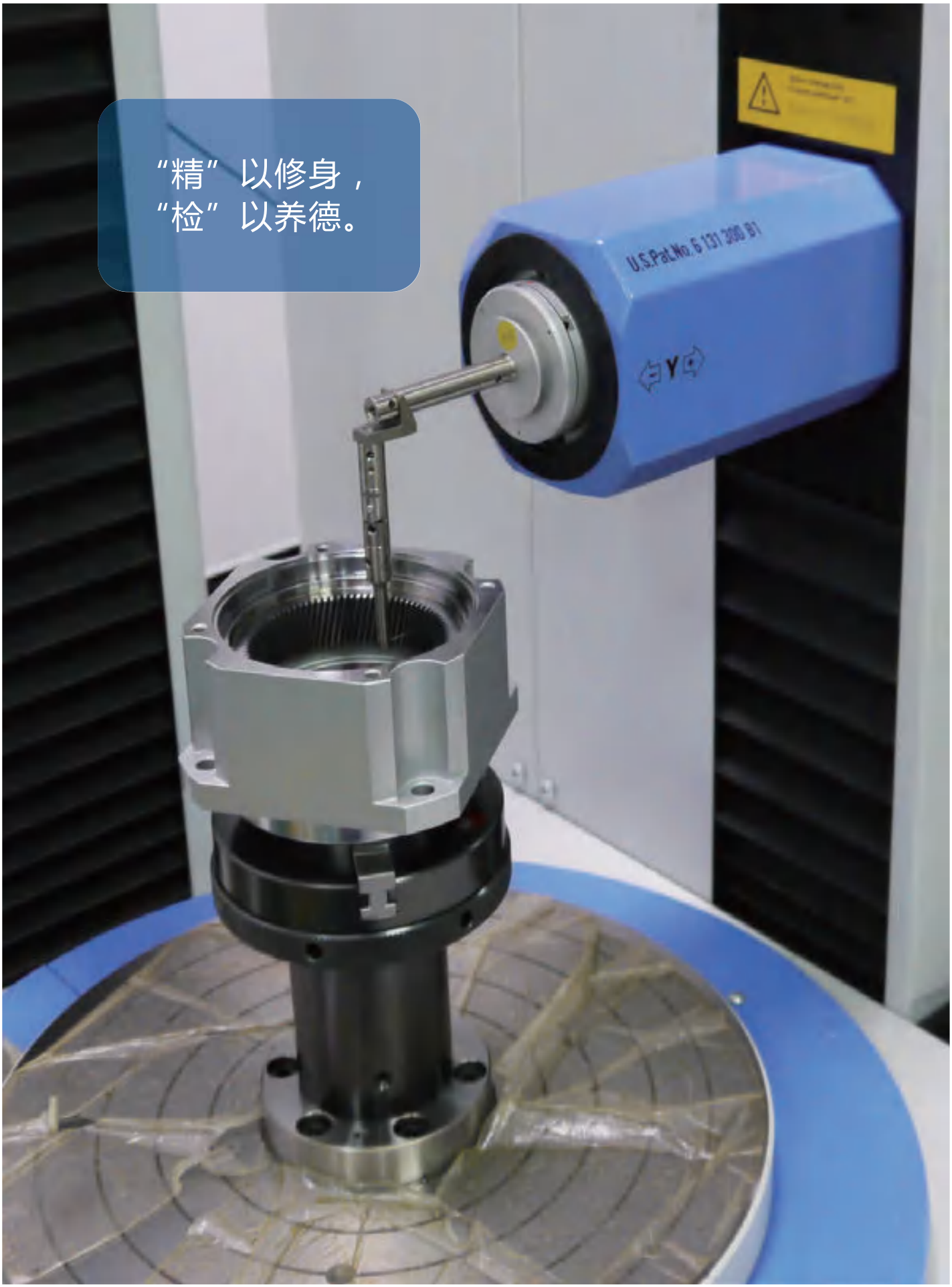
企业哲学： 管理以人为本，服务以质为先， 作风以硬为优，效益以高为佳。

行动口号： 以实干求生存，以创新谋发展。

Production

生 产 设 备

每一件产品,我们都用心制造出来
Each product, We are all made by heart


“精”以修身，
“检”以养德。

APPLICATION INDUSTRY
应用行业

机床
Machine tools

印刷设备
Printing machines

包装机械
Packing machines

医疗设备
Medical equipment

汽车制造
Automotive industry

金属加工
Metal processing

机械手
industrial robots

纺织机械
Textile machines

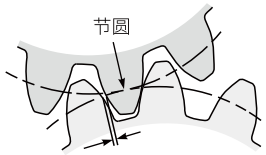
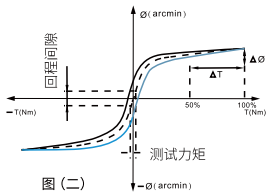
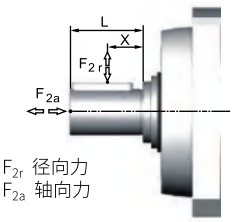
非标自动化
Non-standard automation

检测设备
Measuring equipment

卫星通讯
Satellite Communication

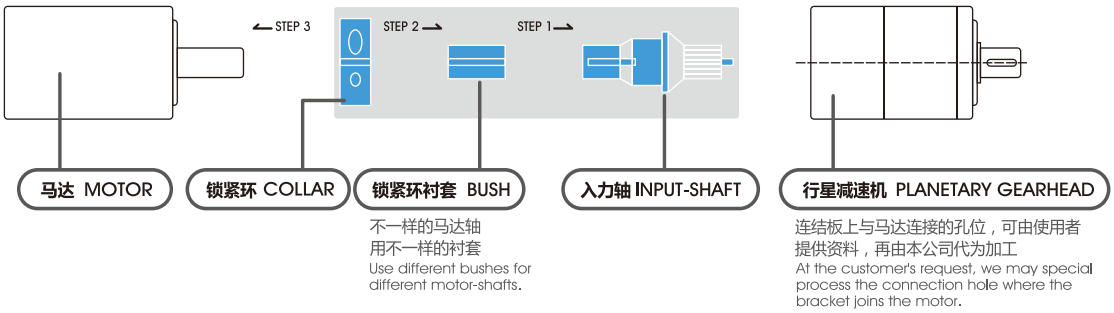
制药行业
Pharmaceutical industry

词汇表

最大急停力矩T_{2NOT}	Nm	减速机输出端可承受的最大力矩。在使用寿命内，此类偶发状况不得超过1000次。
最大加速力矩T_{2B}	Nm	在周期运转（S5）条件下，减速机输出端在短时间内可承受的最大力矩。
空载力矩	Nm	减速机输出端在无负载下，克服减速机内部摩擦力的力矩。(1)
回程间隙	arcmin	回程间隙为减速机运作时，齿轮运转改变方向，两齿之间最大的间隙，如图一所示，弧分是量测回程间隙角度的单位，1弧分等于1/60度，标示为1′  图（一） 回程间隙
扭转刚性	Nm/ arcmin	扭转刚性为力矩与扭转角度的比值(ΔT / Δ Ø)表示输出轴转动1弧分，需要多少的扭力，扭转刚性可由迟滞线计算出来。 **迟滞曲线** 量测迟滞曲线时，先固定减速机输出轴，然后双向增加力矩到最大加速力矩T_{2B}，并逐渐卸载力矩，依照检测中力矩与扭转角度的变化可以得到一条闭合的曲线，如图二：迟滞曲线所示，从图中即可得知减速机的扭转刚性。  图（二）
弧分		**1** 度分为 **60** 弧分（= **60 arcmin = 60'**）。例如说：如回程间隙为 1 arcmin时，齿轮箱转一圈，输出端的角偏差为 1/60°在实际应用中，这个角偏差与轴直径有关：b = 2πr α° / 360°。也就是说：半径为50 mm时，齿轮箱精度为3弧分时，齿轮箱转一圈的偏差为b=0.04mm。
径向力与轴向力	N	减速机输出轴所能承受之最大径向力及轴向力，视内部支撑轴承之设计。 更多的相关资料，请联系本部。  F_{2r} 径向力 F_{2a} 轴向力
额定输入转速n_{1N}	rpm	减速机输入端在连续运转（S1）下，可容许的输入转速，此数值在环境温度25°C下测得，实际运作时，箱体温度不得超过90°C。
最大输入转速n_{1B}	rpm	减速机输入端在周期运转（S5）下，可容许的输入转速，此数值在环境温度25°C下测得，实际运作时，箱体温度不得超过90°C。
使用温度	°C	此温度为减速机箱体温度（非环境温度）。
润滑		HTEX使用合成润滑油。如有食品等级或低温的需求，请于本部联系。
保护等级		国际防护标准（International Protection）以IP编码表示其防护能力，例：IP65，第一个数字表示防尘等级，第二个数字表示防水等级。
噪音值	dB(A)	噪音值会随着减速机的比数与转速而异。
效率μ	%	该值在室温25°C，输入速度3000rpm的介质中测定。如果减速器输入的额定速度高于3000 rpm，则该值由该特定速度测量。
转动惯量J_1	$kg \cdot cm^2$	转动惯量为物体保持本身转动状态的特性参数。
启动力矩	Nm	由输入端驱动减速机至开始转动的最小力矩，小尺寸与减速比比数较高的减速机启动力矩较低。
反驱动力矩	Nm	由输出端驱动减速机至开始转动的最小力矩，大尺寸与减速比比数较高的减速机需要较高的反驱动力矩。

(1) 此数据是在环境温度25°C与减速机输入转速3,000rpm下测得。如果该减速机的额定输入转速n_{1N}超过3,000rmp, 则以该减速机的额定输入转速进行量测。

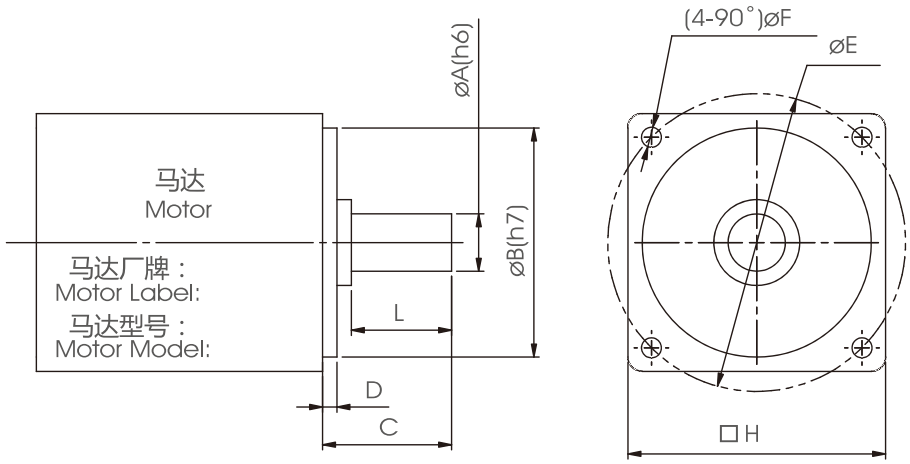
▶ 马达与减速机组合方法 CONNECTION OF MOTOR & GEARHEAD



- 锁紧环、锁紧环衬套、入力轴与马达稳固组合后，请谨慎与行星式减速机结合后，以防止伤及减速机的内部结构。
  After the collar, the bush, and the input-shaft are securely assembled with the motor, please join the parts with the planetary gearhead cautiously with a slight clockwise and /or counter-clockwise motion, until the planetary gearhead engages the input-shaft.

＊在正常的使用状态下，本公司出厂的产品保固一年或20,000小时，以先到期为准。
Under normal usage and loading, our products come with a one-year or 20,000-hour limited warranty, whichever comes first.

● FILL IN DATA OF MOTOR 客户填写资料



▶ 规格 SPECIFICATIONS

Motor Shaft Dia. 马达轴外径	Flange Dia. 马达凸缘外径	Motor Shaft Length 马达轴长度	Flange Height 马达凸缘高度	P.C.D of Bore 螺丝孔中心距	Bore Dia. 螺丝孔直径	Motor Flange Square 马达面尺寸	Actual Length of Motor Shaft 马达轴有效长	Backlash 要求背隙
øA(h6)	øB(h7)	C	D	øE	øF	□H	L	P0/P1/P2

1.2 Installation environment limitation 安装环境的限制

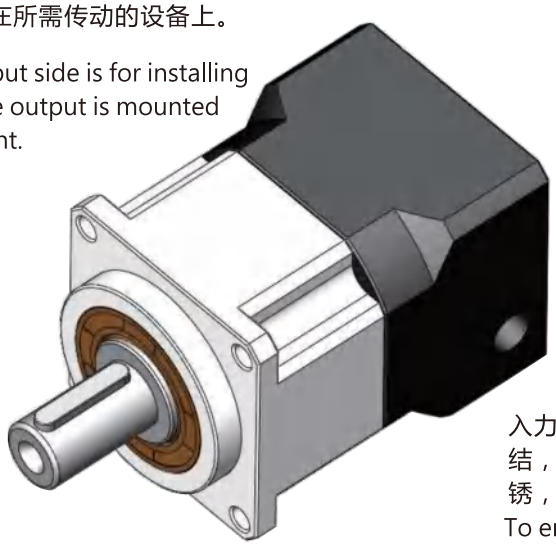
减速机必须依据下列条件安装，不符合下列之安装条件及使用环境将会损害到本产品，不在保固范围内。
Gearbox must be installed under following terms to prevent damages which are not covered by warranty.

- 本产品之设计或制造，为使用装配于其他之机械设备上。
  Gearbox is designed or manufactured, to be used in the other of mechanical equipment assembly.
- 周围使用温度-10℃ ~ +90℃。
  Operate temperature is between -10 ℃ to + 90 ℃.
- 高度：不可超过海平面1000公尺。
  Operate altitude may not be higher than 1000m above sea-level
- 避免连续性震动或撞击。
  Avoid continuity vibration or hit.
- 避免将减速机使用于可燃气体或腐蚀气体之环境。
  Avoid Gearbox used in flammable gas or corrosion gas environment.
- 湿度：不可超过85%，以避免水气凝结。
  Humidity: no more than 85%, in order to avoid condensation.
- 避免阳光直射，灰尘堆积。
  Avoid direct sunlight, dust accumulation.
- 避免水或油的喷溅。
  Avoid water or oil splashed.
- 使用于良好通风之场所。
  Used in good ventilated place.

2.Gearbox Introduction 减速机介绍

减速机分为入力端与出力端，入力端用于安装伺服马达，出力端用于安装在所需传动的设备上。

As shown below, the input side is for installing the servo motor and the output is mounted to application equipment.



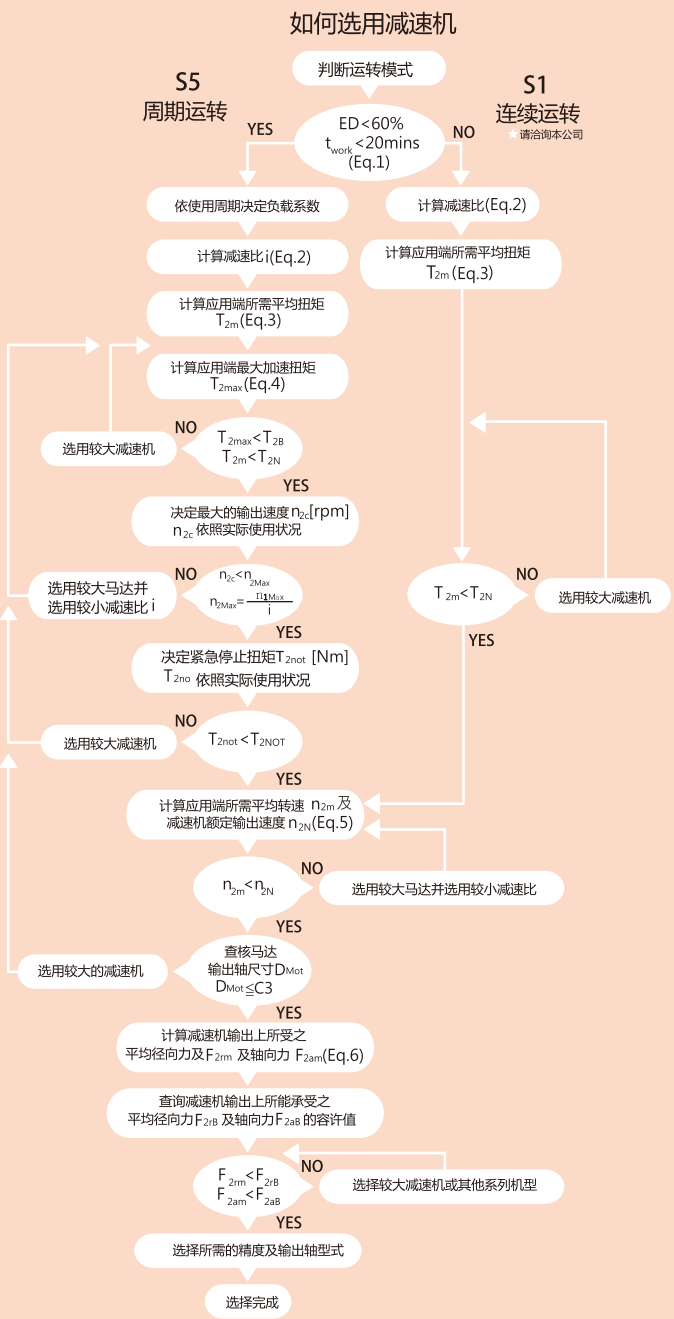
Input
入力端

Output
出力端

入力端与出力端分别与伺服马达以及应用端连结，在使用前必须小心保护，避免刮伤或者生锈，影响安装精度，造成运转不顺畅。
To ensure the product performance, both the input and output ends must be protected carefully to avoid any damage and cause improper operation.

● 减速机的选用

如何选用减速机



S5周期运转之建议事项

一般的应用惯量须符合以下公式

$\frac{J_L}{i^2} \leqq 4 \times J_m$

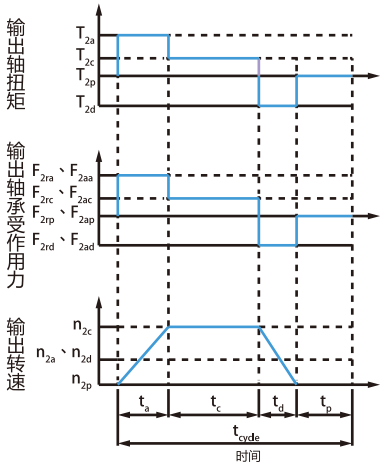
最适当的应用惯量须符合以下公式

$\frac{J_L}{i^2} \backsimeq J_m$

J_L 负载惯量

J_m 马达惯量

应用端运动模式



1. $ED=\frac{t_{work}}{t_{cycle}} \times 100\%, t_{work}=t_a+t_c+t_d$

下标说明：a. 加速， c. 等速
d. 减速， p. 停止 (Eq.1)

2. $i \backsimeq \frac{n_m}{n_{work}}$

n_m 马达输出速度
n_{work} 实际应用速度 (Eq.2)

3. $T_{2m}=\sqrt[3]{\frac{n_{2a}\times t_a\times T_{2a}{}^3\times n_{2c}\times t_c\times T_{2c}{}^3+n_{2d}\times t_d\times T_{2d}{}^3}{n_{2a}\times t_a+n_{2c}\times t_c+n_{2d}\times t_d}}$ (Eq.3)

4. $T_{2max}=T_{mB}\times i\times f_s\times \eta$

f_s 负载系数

f_s	周期次数/小时
1.0	0 ~ 1,000
1.1	1,000 ~ 1,500
1.3	1,500 ~ 2,000
1.6	2,000 ~ 3,000
1.8	3,000 ~ 5,000

T_{mB} 马达最大输出扭矩
η 减速机运转效率 (Eq.4)

5. $n_{2a}=n_{2d}=\frac{1}{2}\times n_{2c}$

$n_{2m}=\frac{n_{2a}\times t_a+n_{2c}\times t_c+n_{2d}\times t_d}{t_a+t_c+t_d}$

$n_{2N}=\frac{n_{1N}}{i}$ (Eq.5)

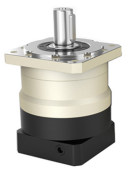
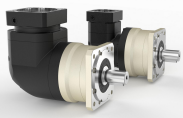
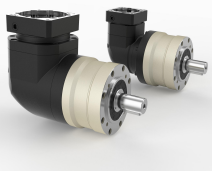
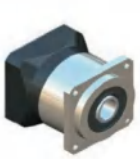
6. $F_{2rm}=\sqrt[3]{\frac{n_{2a}\times t_a\times F_{2ra}{}^3\times n_{2c}\times t_c\times F_{2rc}{}^3+n_{2d}\times t_d\times F_{2rd}{}^3}{n_{2a}\times t_a+n_{2c}\times t_c+n_{2d}\times t_d}}$

$F_{2am}=\sqrt[3]{\frac{n_{2a}\times t_a\times F_{2aa}{}^3\times n_{2c}\times t_c\times F_{2ac}{}^3+n_{2d}\times t_d\times F_{2ad}{}^3}{n_{2a}\times t_a+n_{2c}\times t_c+n_{2d}\times t_d}}$ (Eq.6)

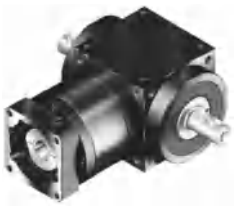
伺服精密行星式减速机斜齿型（高端款）

			
SP	SPR	AB	ABR
			
VB	VBR	AE	AER
			
AD	ADR	VRSF	

伺服精密行星式减速机直齿型/斜齿型（经济款）

			
PF	WPF	PL	WPL
			
PLX	PFK	PLK	PFS

精密伺服换向器 / 伺服蜗轮蜗杆减速机

			
AT-L	AT-H	AT-FL	AT-FH

			
AT-4M	VS		

目录

SP/SPR Series planetary gearbox
系列行星减速机

FEATURES
产品特点

- 行星臂架与输出轴采用一体式结构设计， 确保最大的扭转刚性。
- 行星轮采用满滚针设计，增加接触面积以提高结构刚性与输出扭矩。
- 齿轮采用低碳钢表面渗碳淬火到HRC62，以获得最佳的耐磨及冲击韧性。
- 齿形引用国外进口软件辅助设计，以获得最佳的齿形降低噪音。
- 输入端与马达轴连接采用双边抱紧方式，以获取最大的夹紧力和零背隙的动力传递。
- 采用蜗线伞齿轮设计，容许输出扭矩高、比直伞齿轮高30%以上。
- 高容许输入转速，比直伞齿轮输入高8倍以上。
- 蜗线伞齿轮的啮合齿印，经最佳优化设计，接触齿面负载均一，运转寿命长。
- 蜗线伞齿轮啮合，经最佳运动误差分析与严格的制程控制，以确保高精度的运转背隙。

- Planetary boom and output shaft are intergrated structure designed to ensure maximum torsional rigidity.
- Planetary wheel with full needle design,increase the contact area to improve the rigidity and output torque.
- The gears are carburized and quenched to the HRC62 with low carbon steel surface for optimum wear and impact toughness.
- Gears refer to foreign imported software-assisted design to obtain the best tooth shape to reduce noise.
- The input terminal is connected to the motor shaft in a double-tight manner to obtain the maximum clamping force and zero backlash power transmission.
- Adopt spiral bevel gear design, allow high output torque, more than 30% higher than straight bevel gear.
- High tolerance input speed, more than 8 times higher than straight bevel gear input.
- The meshing tooth imprint of spiral bevel gear has been optimized by optimum design, and the contact tooth surface load is uniform, and long running life.
- Cochlear bevel gears are meshed by optimum motion error analysis and strict process control to ensure high precision running back clearance.

GENERAL NOTICES

● 订货须知

- 机种、型号、扭矩
- 减速比或出力轴转速
- 工况及连接方式
- 数量及安装的机械名称
- 入力方式和入力转速
- 马达厂牌型号或法兰及马达轴尺寸

- Type, model and torque
- Ratio or output speed
- Working conditions and connection methods
- Quantity and installed machine name
- Input mode and input speed
- Motor brand model or flange and motor shaft size

SP 系列

减速机性能资料

型号		节数	减速比[1]	SP060	SP075	SP100	SP140	SP180	SP210	SP240
额定输出力矩T_{2N}	Nm	1	3	90	155	426	636	1560	2368	4295
			4	100	205	368	630	1355	2058	3900
			5	84	173	320	550	1202	1832	3450
			7	63	135	263	457	1030	1570	2650
			10	24	57	168	320	735	1124	1900
		2	16	100	205	378	646	1386	2100	3974
			20	100	207	378	646	1386	2100	3990
			25	84	173	326	562	1223	1860	3497
			28	60	207	378	646	1390	2100	3990
			35	74	180	326	562	1223	1864	3502
			40	40	96	228	646	1276	2100	3995
			50	50	120	285	562	1230	1864	3507
			70	63	135	263	462	1040	1586	2678
			100	24	57	168	310	693	1055	1785
最大急停力矩T_{2NOT}	Nm	1, 2	3~100	3 倍额定输出力矩						
最大加速力矩T_{2B}	Nm	1, 2	3~100	1.5 倍额定输出力矩						
载力矩[2]	Nm	1	3~10	0.3	0.6	1.4	2.5	5	7	11
		2	16~100	0.2	0.3	0.5	1.2	1.7	3	4
回程间隙[3]	arcmin	1	3~10	⩽2	⩽1	⩽1	⩽1	⩽1	⩽1	⩽1
		2	16~100	⩽3	⩽2	⩽2	⩽2	⩽2	⩽2	⩽2
扭转刚性	Nm/arcmin	1, 2	3~100	4.6	10	30	55	175	400	550
额定输入转数n_{1N}	rpm	1	3~10	7000	6000	3600	3000	2700	2400	2100
		2	16~100	5000	3600	4600	4000	3700	3400	3100
最大输入转数N_{1B}	rpm	1	3~10	5000	4600	6000	5000	4500	4000	3500
		2	16~100	7000	7000	7000	6000	5500	5000	4500
容许径向力F_{2r}[4]	N	1, 2	3~100	3000	4500	6700	10000	15000	22000	30000
容许轴向力F_{2a}[4]	Nm	1, 2	3~100	1500	2250	3350	5000	7500	11000	15000
容许侧倾力矩M_{2k}[4]	Nm	1, 2	3~100	160	270	550	1050	1740	3350	5420
使用寿命[5]	hr	1, 2	3~100	20000						
使用温度	°C	1, 2	3~100	-10°C~ 90°C						
防护等级		1, 2	3~100	IP65						
润滑		1, 2	3~100	合成润滑脂						
安装方向		1, 2	3~100	任意方向						
噪音值[5]	dB(A)	1	3~10	⩽ 58	⩽ 59	⩽ 64	⩽ 65	⩽ 66	⩽ 66	⩽ 66
		2	16~100	⩽ 58	⩽ 59	⩽ 60	⩽ 63	⩽ 66	⩽ 66	⩽ 66
效率 η	%	1	3~10	⩾ 97%						
		2	16~100	⩾ 94%						

(1) 减速比 ($i=N_{in}/N_{out}$)

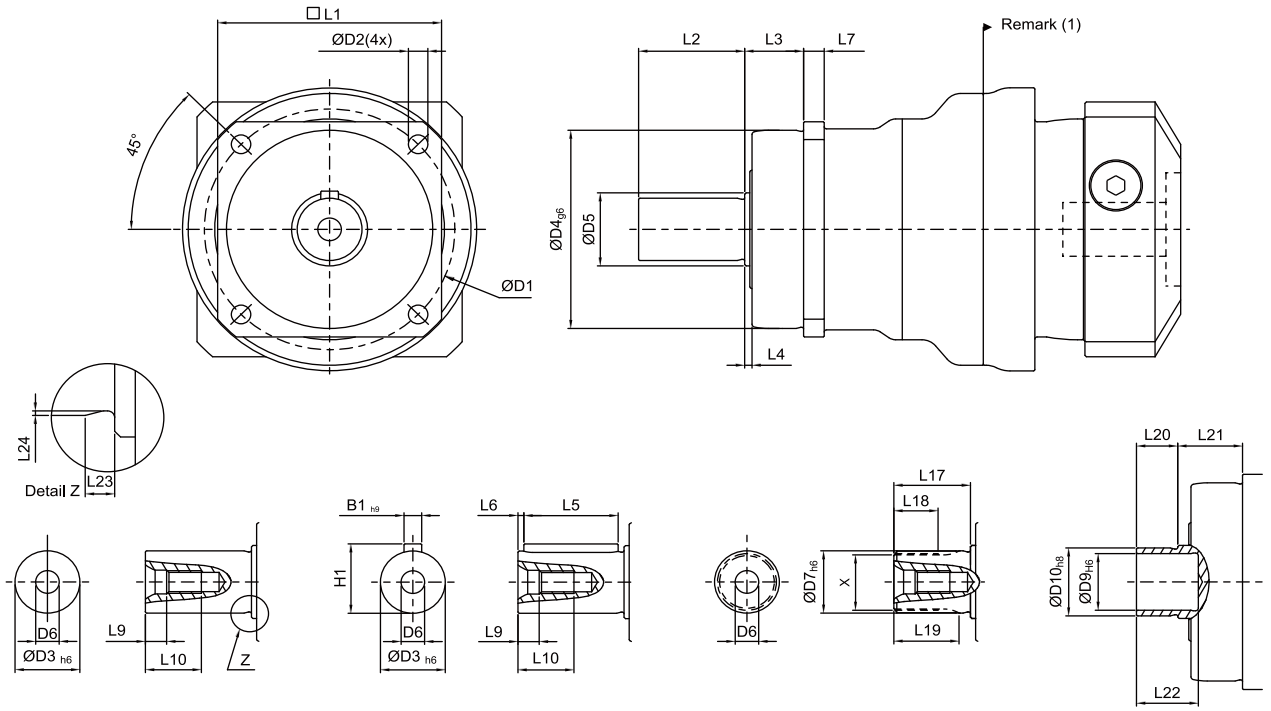
(2) 此值是由10比 (一节) 或100 (二节) 的减速机，在3000RPM速度下无负载的情况下测量而得。

(2) 回程间隙是在2%的额定输出力矩T_{2n}下测得

(4) 输出转速100rpm时，作用于输出轴中心

(5) dB值是由较大型号10比 (一节) 或100 (二节) 的减速机，在3000RPM或相应的标称输入速度下无负载的情况下测量而得。
通过较低的比率和/或较高的RPM，噪声水平可能会高3至5dB。

SP系列-尺寸



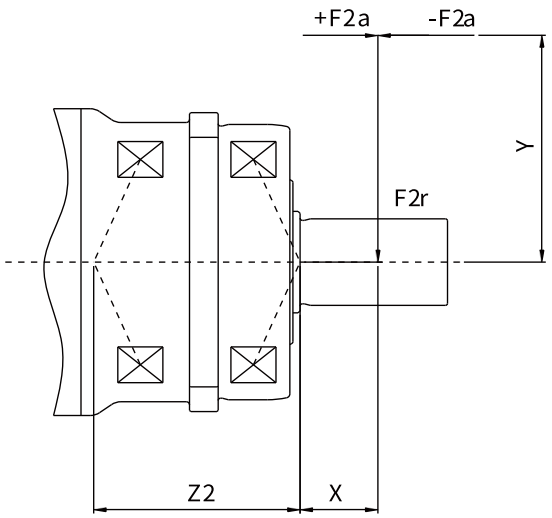
轴型式 S1 **轴型式 S2** **轴型式 S3** **轴型式 S4**

尺寸	SP060	SP075	SP100	SP140	SP180	SP210	SP240
D1	68	85	120	165	215	250	290
D2	5.5	7	9	11	13.5	17	17
D3 H6	16	22	32	40	55	75	85
D4 G6	60	70	90	130	160	180	200
D5	18.5	25.8	36.8	55.2	69.2	82.2	92.2
D6	M5x0.8P	M8x1.25P	M12x1.75P	M16x2P	M20x2.5P	M20x2.5P	M20x2.5P
D10 H8	16	22	32	40	55	75	85
D7 H6	15	20	30	40	55	-	-
D9	18	24	36	50	68	-	-
L1	62	76	101	141	182	215	245
L2	28	36	58	82	82	105	130
L3	20	20	30	30	30	38	40
L4	2	2.5	3	3	3	3	3
L5	25	32	50	63	70	90	125
L6	2	2	4	5	6	7	3
L7	6	7	10	12	15	17	22
L9	4.8	7.2	10	12	15	15	15
L10	12.5	19	28	36	42	42	42
L17	26	26	26	40	41.5	52	60
L18	15	15	15	20	21.5	28	36
L19	21	22.5	23	33.5	33.5	45	53
L20	12	14	18	22	23	-	-
L21	22	22	32	33	32	-	-
L22	19	21	25	30	30	-	-
L23	2	2.5	2.5	2.5	2.5	2.5	4
L24	0.3	0.4	0.4	0.4	0.4	0.4	0.5
B1 H9	5	6	10	12	16	20	22
H1	18	24.5	35	43	59	79.5	90
X DIN5480	W16x0.8x30x18x6m	W22x1.25x30x16x6m	W32x1.25x30x24x6m	W40x2x30x18x6m	W55x2x30x26x6m	W70x2x30x34x6m	W80x2x30x38x6m

SP系列

惯量

型号		SP060		SP075		SP100		SP140		SP180		SP210		SP240	
ø输入轴直径(C3)		单节	双节	单节	双节	单节	双节	单节	双节	单节	双节	单节	双节	单节	双节
8	kg·cm²	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-
11		0.21	0.16	-	0.17	-	-	-	-	-	-	-	-	-	-
14		0.24	0.2	0.54	0.21	-	0.42	-	-	-	-	-	-	-	-
19		0.64	-	0.79	0.6	2.51	0.66	-	1.83	-	-	-	-	-	-
24		-	-	4.06	-	4.78	3.94	6.85	4.11	-	4.61	-	-	-	-
28		-	-	-	-	6.15	-	8.38	5.48	-	6.14	-	-	-	-
32		-	-	-	-	8.03	-	10.41	7.36	19.5	8.17	-	10.55	-	-
35		-	-	-	-	14.72	-	15.56	14.04	26.71	15.54	39.6	17.75	86.48	20.8
38		-	-	-	-	17.38	-	20.43	16.71	29.11	18.19	42.43	20.17	86.48	23.66
42		-	-	-	-	-	-	25.44	-	34.35	23.20	47.65	25.4	92.61	28.88
48		-	-	-	-	-	-	54.66	-	64.13	52.42	77.41	55.18	122.26	58.64
55		-	-	-	-	-	-	-	-	-	-	111.26	-	156.7	92.48
60		-	-	-	-	-	-	-	-	-	-	-	-	180.17	-



$$容许侧倾力矩 M_{2K} = \frac{F_{2a} * Y + F_{2r} * (X+Z2)}{1000}$$

M2K : (Nm)
F2a, F2r: (N)
X, Y, Z2 : (mm)

SP/ SPR	060	075	100	140	180	210	240
Z2 (mm)	41.3	50.1	58.9	72.7	93.7	98.5	112.2

输出转数100rpm时，作用于输出轴中心位置

SPR系列 (双节)

减速机性能资料

型号		节数	减速比(1)	SPR060	SPR075	SPR100	SPR140	SPR180	SPR210	SPR240
额定输出力矩T_{2N}	Nm	2	12	100	205	378	646	1381	1764	3444
			16	100	210	378	646	1386	1764	3444
			20	100	210	378	646	1386	1864	3502
			25	84	180	326	562	1223	1864	3502
			28	97	210	378	646	1390	1638	3150
			35	84	180	326	562	1230	1864	3507
			40	63	168	357	646	1390	1512	2520
			50	53	180	326	562	1230	1864	3150
			70	63	137	263	462	1040	1586	2678
			100	25	58	168	305	688	1055	1770
最大急停力矩T_{2NOT}	Nm	2	12~100	2倍额定输出力矩T_{2N}						
最大加速力矩T_{2B}	Nm	2	12~100	1.5倍额定输出力矩T_{2N}						
空载力矩(2)	Nm	2	12~100	1	1.3	2	3.1	6	13	16
回程间隙(3)	arcmin	2	12~100	⩽ 2						
扭转刚性	Nm/arcmin	2	12~100	4.6	10	30	55	175	300	510
额定输入转数n_{1N}	rpm	2	12~100	3000	3000	2800	2700	2200	2100	2000
最大输入转数N_{1B}	rpm	2	12~100	6000	6000	6000	4500	4500	4000	3000
容许径向力F_{2r}(4)	N	2	12~100	3000	4500	6700	10000	15000	22000	30000
容许轴向力F_{2a}(4)	Nm	2	12~100	1500	2250	3350	5000	7500	11000	15000
容许侧倾力矩M_{2k}(4)	Nm	2	12~100	160	270	550	1050	1740	3350	5420
使用寿命(5)	hr	2	12~100	20000						
使用温度	°C	2	12~100	-10°C~+90°C						
防护等级		2	12~100	IP65						
润滑		2	12~100	合成润滑脂						
安装方向		2	12~100	任意方向						
噪音值(5)	dB(A)	2	12~100	⩽ 64	⩽ 66	⩽ 68	⩽ 68	⩽ 70	⩽ 70	⩽ 72
效率 η	%	2	12~100	⩾ 94%						

(2) 减速比 ($i=N_{in}/N_{out}$)

(2) 此值是由10比 (一节) 或100 (二节) 的减速机，在3000RPM速度下无负载的情况下测量而得。

(3) 回程间隙是在2%的额定输出力矩T_{2n}下测得

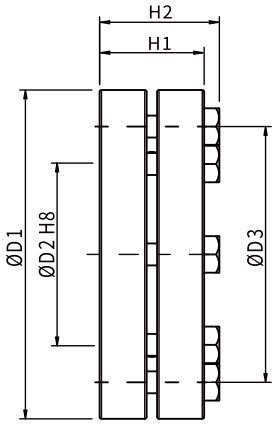
(4) 输出转速100rpm时，作用于输出轴中心

(5) dB值是由较大型号10比 (一节) 或100 (二节) 的减速机，在3000RPM或相应的标称输入速度下无负载的情况下测量而得。
通过较低的比率和/或较高的RPM，噪声水平可能会高3至5dB。

惯量

型号 ø输入轴直径 (C3)		SPR060	SPR075	SPR100	SPR140	SPR180	SPR210	SPR240
8	$kg\cdot cm^2$	0.1	-	-	-	-	-	-
11		0.16	0.17	-	-	-	-	-
14		0.2	0.37	0.41	-	-	-	-
19		-	0.6	1.61	1.61	-	-	-
24		-	-	3.9	4.01	5.62	-	-
28		-	-	-	5.53	5.62	-	-
32		-	-	-	7.57	8.11	8.11	-
35		-	-	-	14.95	15.32	15.32	15.68
38		-	-	-	17.58	17.72	17.72	18.52
42		-	-	-	-	22.95	22.95	23.74
48		-	-	-	-	52.74	52.74	53.49
55		-	-	-	-	-	-	87.34

收缩圆盘



收缩圆盘锁套

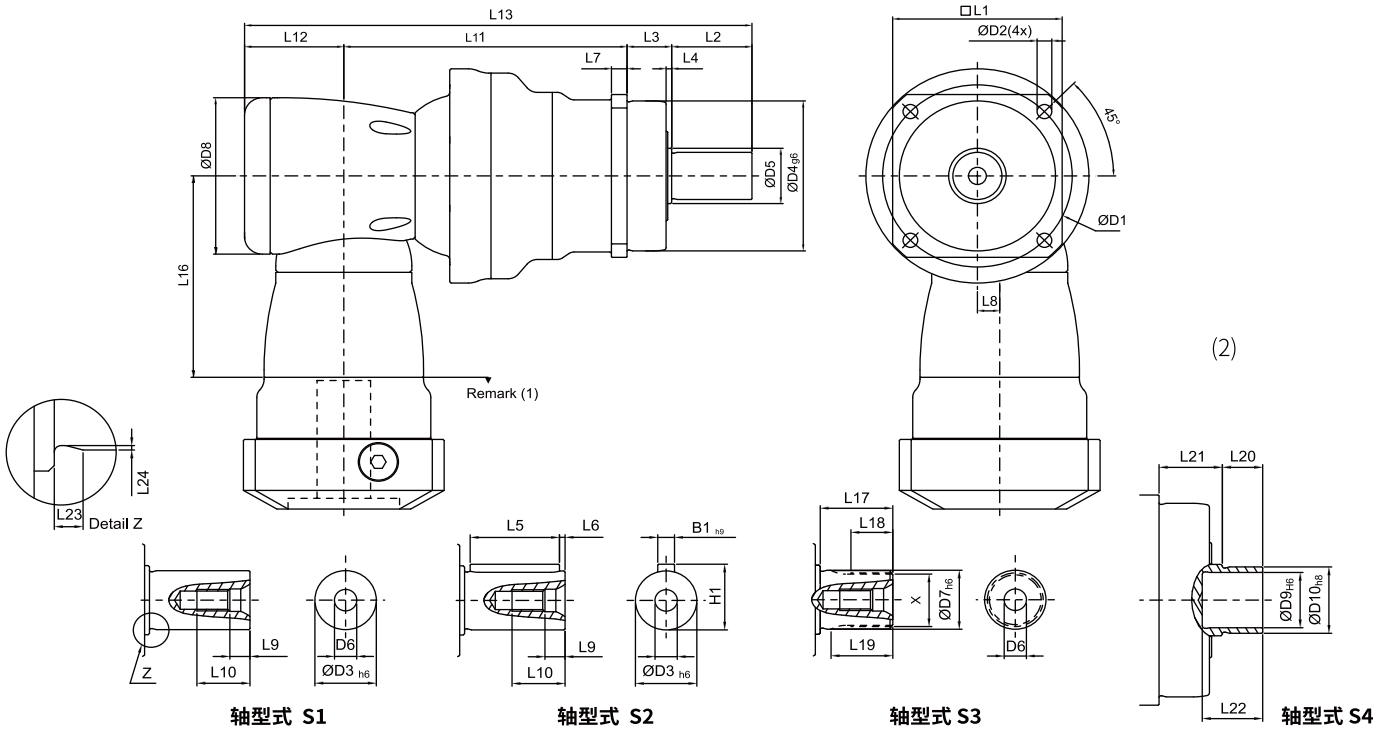
直径	公差
≦ 30	H6 / j6
＞ 30 ~ 50	H6 / h6
＞ 50 ~ 80	H6 / g6

* 表面粗糙度 Ra≦3.2 um

型号 SP/ SPR	D1	D2	D3	H1	H2	螺丝(1) 数量 x 类型	TA(2) (Nm)	J ($Kg.cm^2$)
060	44	18	30	15	18.5	5 x M5	4	0.4
075	50	24	36	19.5	23	6 x M5	4	0.8
100	72	36	52	23.5	27.5	5 x M6	12	3.9
140	90	50	70	27.5	31.5	8 x M6	12	11.2
180	115	68	86	30.5	34.5	10 x M6	12	30.9

(1) 强度10.9级，DIN931　**(2)** 锁紧扭力

SPR系列（双节，减速比12~100）-尺寸



尺寸	SPR060	SPR075	SPR100	SPR140	SPR180	SPR210	SPR240
D1	68	85	120	165	215	250	290
D2	5.5	7	9	11	13.5	17	17
D3 h6	16	22	32	40	55	75	85
D4 g6	60	70	90	130	160	180	200
D5	18.5	25.8	36.8	55.2	69.2	82.2	92.2
D6	M5x0.8P	M8x1.25P	M12x1.75P	M16x2P	M20x2.5P	M20x2.5P	M20x2.5P
D7 h6	16	22	32	40	55	75	85
D8	73	94	116	163	210	210	255
D9 H6	15	20	30	40	55	-	-
D10 h8	18	24	36	50	68	-	-
L1	62	76	101	141	182	215	245
L2	28	36	58	82	82	105	130
L3	20	20	30	30	30	38	40
L4	2	2.5	3	3	3	3	3
L5	25	32	50	63	70	90	125
L6	2	2	4	5	6	7	3
L7	6	7	10	12	15	17	22
L8	10	13	17	25	31	31	36
L9	4.8	7.2	10	12	15	15	15
L10	12.5	19	28	36	42	42	42
L11	118.5	135.5	152.5	191	248	270	336
L12	44.5	53	68.3	89	115	115	131
L13	211	244.5	308.8	392	475	528	637
L16	94	114.5	129	173.5	228	228	265.5
L17	26	26	26	40	41.5	52	60
L18	15	15	15	20	21.5	28	36
L19	21	22.5	23	33.5	33.5	45	53
L20	12	14	18	22	23	-	-
L21	22	22	32	33	32	-	-
L22	19	21	25	30	30	-	-
L23	2	2.5	2.5	2.5	2.5	2.5	4
L24	0.3	0.4	0.4	0.4	0.4	0.4	0.5
B1 h9	5	6	10	12	16	20	22
H1	18	24.5	35	43	59	79.5	90
X DIN5480	W16x0.8x30x18x6m	W22x1.25x30x16x6m	W32x1.25x30x24x6m	W40x2x30x18x6m	W55x2x30x26x6m	W70x2x30x34x6m	W80x2x30x38x6m

AB Series planetary gearbox
系列行星减速机

FEATURES
产品特点

- 行星臂架与输出轴采用一体式结构设计，
  确保最大的扭转刚性。
- 行星轮采用满滚针设计，
  增加接触面积以提高结构刚性与输出扭矩。
- 齿轮采用低碳钢表面渗碳淬火到HRC62，
  以获得最佳的耐磨及冲击韧性。
- 齿形引用国外进口软件辅助设计，
  以获得最佳的齿形降低噪音。
- 输入端与马达轴连接采用双边抱紧方式，
  以获取最大的夹紧力和零背隙的动力传递。

- Planetary boom and output shaft are intergrated structure designed to ensure maximum torsional rigidity.
- Planetary wheel with full needle design,increase the contact area to improve the rigidity and output torque.
- The gears are carburized and quenched to the HRC62 with low carbon steel surface for optimum wear and impact toughness.
- Gears refer to foreign imported software-assisted design to obtain the best tooth shape to reduce noise.
- The input terminal is connected to the motor shaft in a double-tight manner to obtain the maximum clamping force and zero backlash power transmission.

GENERAL NOTICES

订货须知

- 机种、型号、扭矩
- 减速比或出力轴转速
- 工况及连接方式
- 数量及安装的机械名称
- 入力方式和入力转速
- 马达厂牌型号或法兰及马达轴尺寸

- Type, model and torque
- Ratio or output speed
- Working conditions and connection methods
- Quantity and installed machine name
- Input mode and input speed
- Motor brand model or flange and motor shaft size

AB Series

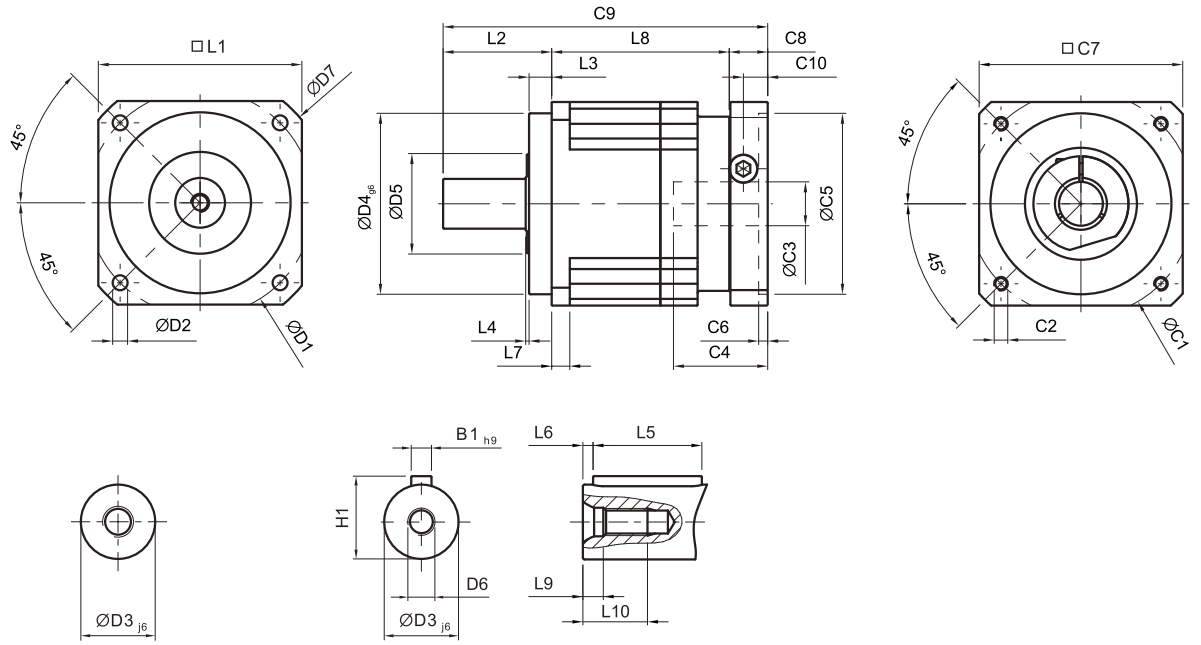
减速机性能资料

规格		节数	减速比	AB042	AB060	AB060A	AB090	AB090A	AB115	AB115A	AB142	AB142A	AB180	AB220
额定输出力矩 T_{2N}	Nm	1	3	20	55	–	130	–	208	–	342	–	588	1,140
			4	19	50	–	140	–	290	–	542	–	1,050	1,700
			5	22	60	–	160	–	330	–	650	–	1,200	2,000
			6	20	55	–	150	–	310	–	600	–	1,100	1,900
			7	19	50	–	140	–	300	–	550	–	1,100	1,800
			8	17	45	–	120	–	260	–	500	–	1,000	1,600
			9	14	40	–	100	–	230	–	450	–	900	1,500
			10	14	40	–	100	–	230	–	450	–	900	1,500
		2	12	19	50	50	140	140	290	290	542	542	1,050	1,700
			15	20	55	55	130	130	208	208	342	342	588	1,140
			16	19	50	50	140	140	290	290	542	542	1,050	1,700
			20	19	50	50	140	140	290	290	542	542	1,050	1,700
			25	22	60	60	160	160	330	330	650	650	1,200	2,000
			28	19	50	50	140	140	300	300	550	550	1,100	1,800
			30	20	55	55	150	150	310	310	600	600	1,100	1,900
			32	17	45	45	120	120	260	260	500	500	1,000	1,600
			35	19	50	50	140	140	300	300	550	550	1,100	1,800
			40	17	45	45	120	120	260	260	500	500	1,000	1,600
			45	14	40	40	100	100	230	230	450	450	900	1,500
			50	22	60	60	160	160	330	330	650	650	1,200	2,000
			60	20	55	55	150	150	310	310	600	600	1,100	1,900
			70	19	50	50	140	140	300	300	550	550	1,100	1,800
			80	17	45	45	120	120	260	260	500	500	1,000	1,600
			90	14	40	40	100	100	230	230	450	450	900	1,500
			100	14	40	40	100	100	230	230	450	450	900	1,500
急停扭矩 T_{2NOT} (3)	Nm	1,2	3~100	3 倍额定输出力矩										
额定输入转速 n_{1N}	rpm	1,2	3~100	5,000	5,000	5,000	4,000	4,000	4,000	4,000	3,000	3,000	3,000	2,000
最大输入转速 n_{1B}	rpm	1,2	3~100	10,000	10,000	10,000	8,000	8,000	8,000	8,000	6,000	6,000	6,000	4,000
超精密背隙 P0	arcmin	1	3~10	–	–	–	≤1	–	≤1	–	≤1	–	≤1	≤1
		2	12~100	–	–	–	–	–	≤3	≤3	≤3	≤3	≤3	≤3
精密背隙 P1	arcmin	1	3~10	≤3	≤3	–	≤3	–	≤3	–	≤3	–	≤3	≤3
		2	12~100	≤5	≤5	≤5	≤5	≤5	≤5	≤5	≤5	≤5	≤5	≤5
标准背隙 P2	arcmin	1	3~10	≤5	≤5	–	≤5	–	≤5	–	≤5	–	≤5	≤5
		2	12~100	≤7	≤7	≤7	≤7	≤7	≤7	≤7	≤7	≤7	≤7	≤7
扭转刚性	Nm/arcmin	1,2	3~100	3	7	7	14	14	25	25	50	50	145	225
容许径向力 F_{2rB} (3)	N	1,2	3~100	780	1,530	1,530	3,250	3,250	6,700	6,700	9,400	9,400	14,500	50,000
容许轴向力 F_{2aB} (3)	N	1,2	3~100	390	765	765	1,625	1,625	3,350	3,350	4,700	4,700	7,250	25,000
使用寿命	hr	1,2	3~100	≥20,000										
效率 η	%	1	3~10	≥97%										
		2	12~100	≥94%										
重量	kg	1	3~10	0.6	1.3	–	3.7	–	7.8	–	13	–	26	45
		2	12~100	0.8	1.5	1.9	4.1	5.3	9	11.4	17.5	20.7	32	57
使用温度	°C	1,2	3~100	-10°C~90°C										
润滑		1,2	3~100	合同润滑油脂										
防护等级		1,2	3~100	IP65										
安装方向		1,2	3~100	任意方向										
噪音值	dB(A)	1,2	3~100	≤56	≤58	≤60	≤60	≤63	≤63	≤65	≤65	≤67	≤67	≤70

减速机转动惯量

规格		节数	减速比	AB042	AB060	AB060A	AB090	AB090A	AB115	AB115A	AB142	AB142A	AB180	AB220
转动惯量 J_1	kg·cm²	1	3	0.03	0.16	–	0.61	–	3.25	–	9.21	–	28.98	69.61
			4	0.03	0.14	–	0.48	–	2.74	–	7.54	–	23.67	54.37
			5	0.03	0.13	–	0.47	–	2.71	–	7.42	–	23.29	53.27
			6	0.03	0.13	–	0.45	–	2.65	–	7.25	–	22.75	51.72
			7	0.03	0.13	–	0.45	–	2.62	–	7.14	–	22.48	50.97
			8	0.03	0.13	–	0.44	–	2.58	–	7.07	–	22.59	50.84
			9	0.03	0.13	–	0.44	–	2.57	–	7.04	–	22.53	50.63
			10	0.03	0.13	–	0.44	–	2.57	–	7.03	–	22.51	50.56
		2	12	0.03	0.03	0.16	0.16	0.61	0.61	3.25	3.25	9.21	9.21	28.98
			15	0.03	0.03	0.13	0.13	0.47	0.47	2.71	2.71	7.42	7.42	23.29
			16	0.03	0.03	0.14	0.14	0.48	0.48	2.74	2.74	7.54	7.54	23.67
			20	0.03	0.03	0.13	0.13	0.47	0.47	2.71	2.71	7.42	7.42	23.29
			25	0.03	0.03	0.13	0.13	0.47	0.47	2.71	2.71	7.42	7.42	23.29
			28	0.03	0.03	0.14	0.14	0.48	0.48	2.74	2.74	7.54	7.54	23.67
			30	0.03	0.03	0.13	0.13	0.47	0.47	2.71	2.71	7.42	7.42	23.29
			32	0.03	0.03	0.14	0.14	0.48	0.48	2.74	2.74	7.54	7.54	23.67
			35	0.03	0.03	0.13	0.13	0.47	0.47	2.71	2.71	7.42	7.42	23.29
			40	0.03	0.03	0.13	0.13	0.47	0.47	2.71	2.71	7.42	7.42	23.29
			45	0.03	0.03	0.13	0.13	0.47	0.47	2.71	2.71	7.42	7.42	23.29
			50	0.03	0.03	0.13	0.13	0.44	0.44	2.57	2.57	7.03	7.03	22.51
			60	0.03	0.03	0.13	0.13	0.44	0.44	2.57	2.57	7.03	7.03	22.51
			70	0.03	0.03	0.13	0.13	0.44	0.44	2.57	2.57	7.03	7.03	22.51
			80	0.03	0.03	0.13	0.13	0.44	0.44	2.57	2.57	7.03	7.03	22.51
			90	0.03	0.03	0.13	0.13	0.44	0.44	2.57	2.57	7.03	7.03	22.51
			100	0.03	0.03	0.13	0.13	0.44	0.44	2.57	2.57	7.03	7.03	22.51

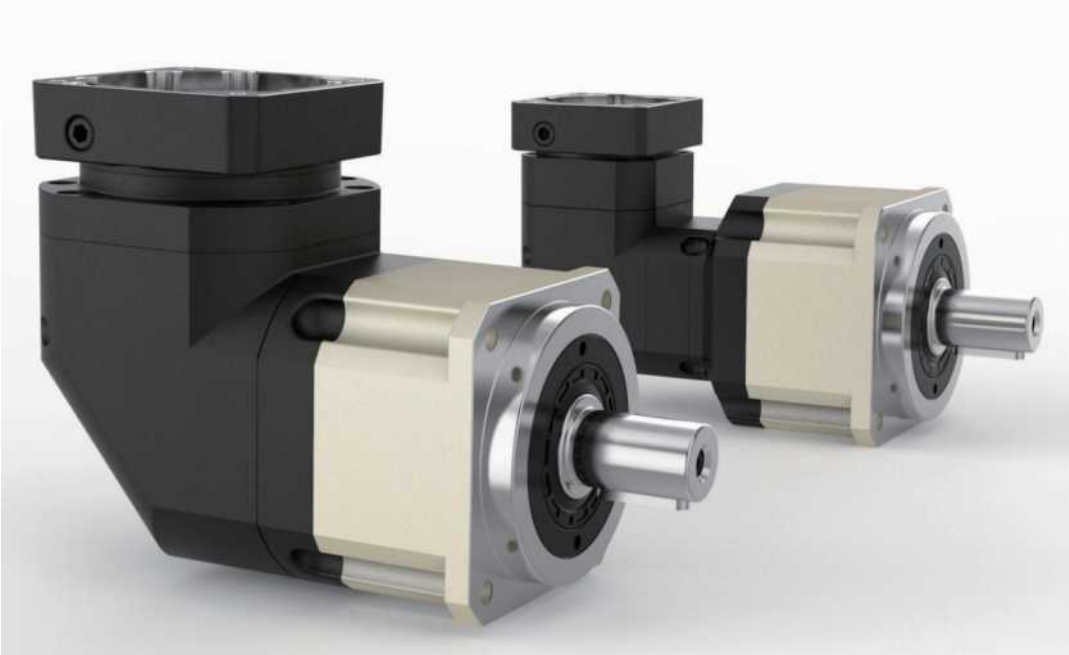
(1-单节 ，Ratio i=3~10) / AB Series



光轴型式 S1　　附键轴型式 S2

[单位: mm]

尺寸	AB042	AB060	AB090	AB115	AB142	AB180	AB220
D1	50	70	100	130	165	215	250
D2	3.4	5.5	6.6	9	11	13	17
D3 j6	13	16	22	32	40	55	75
D4 g6	35	50	80	110	130	160	180
D5	22	45	65	95	75	95	115
D6	M4 x 0.7P	M5 x 0.8P	M8 x 1.25P	M12 x 1.75P	M16 x 2P	M20 x 2.5P	M20 x 2.5P
D7	56	80	116	152	185	240	292
D8 h6	-	16	22	32	40	55	75
L1	42	60	90	115	142	180	220
L2	26	37	48	65	97	105	138
L3	5.5	7	10	12	15	20	30
L4	1	1.5	1.5	2	3	3	3
L5	16	25	32	40	63	70	90
L6	2	2	3	5	5	6	7
L7	4	6	8	10	12	15	20
L8	31	61	78.5	102	119.5	154	163.5
L9	4.5	4.8	7.2	10	12	15	15
L10	10	12.5	19	28	36	42	42
L11	-	26	26	26	40	41.5	52
L12	-	15	15	15	20	21.5	28
L13	-	21	22.5	23	33.5	33.5	45
C1[1]	46	70	100	130	165	215	235
C2[1]	M4 x 0.7P	M5 x 0.8P	M6 x 1P	M8 x 1.25P	M10 x 1.5P	M12 x 1.75P	M12 x 1.75P
C3[1]	≤11 / ≤12[2]	≤14 / ≤16[2]	≤19 / ≤24[2]	≤32	≤38	≤48	≤55
C4[1]	25	34	40	50	60	85	116
C5[1]	30	50	80	110	130	180	200
C6[1]	3.5	8	4	5	6	6	6
C7[1]	42	60	90	115	142	190	220
C8[1]	29.5	19	17	19.5	22.5	29	63
C9[1]	86.5	117	143.5	186.5	239	288	364.5
C10[1]	8.75	13.5	10.75	13	15	20.75	53
B1 h9	5	5	6	10	12	16	20
H1	15	18	24.5	35	43	59	79.5
X DIN5480	-	W16x0.8x 30x18x6m	W22x1.25x 30x16x6m	W32x1.25x 30x24x6m	W40x2x 30x18x6m	W55x2x 30x26x6m	W70x2x 30x34x6m



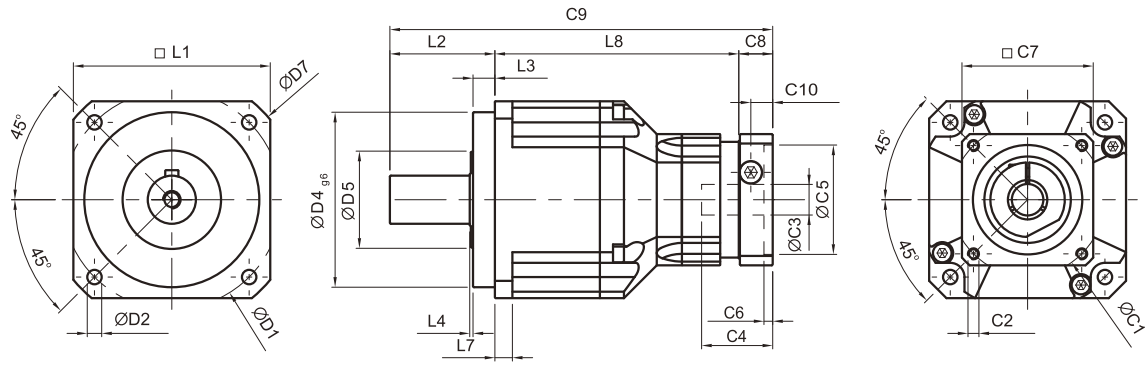
GENERAL NOTICES

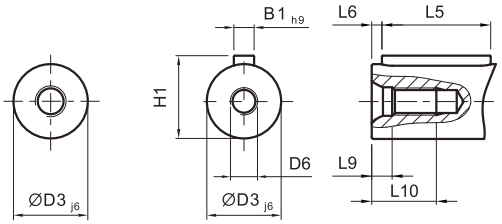
• 订货须知

- 机种、型号、扭矩
- 减速比或出力轴转速
- 工况及连接方式
- 数量及安装的机械名称
- 入力方式和入力转速
- 马达厂牌型号或法兰及马达轴尺寸

- Type, model and torque
- Ratio or output speed
- Working conditions and connection methods
- Quantity and installed machine name
- Input mode and input speed
- Motor brand model or flange and motor shaft size

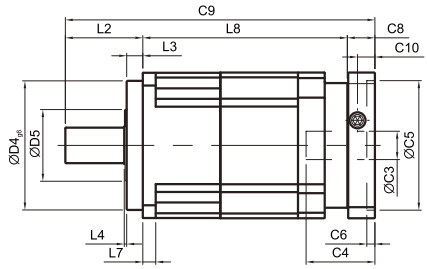
(2-双节 ，Ratio i=12~100) / AB Series





光轴型式 S1　　附键轴型式 S2

AB060A / AB090A / AB115A / AB142A



[单位: mm]

尺寸	AB042	AB060	AB060A	AB090	AB090A	AB115	AB115A	AB142	AB142A	AB180	AB220
D1	50	70		100		130		165		215	250
D2	3.4	5.5		6.6		9		11		13	17
D3 j6	13	16		22		32		40		55	75
D4 g6	35	50		80		110		130		160	180
D5	22	45		65		95		75		95	115
D6	M4x0.7P	M5 x 0.8P		M8 x 1.25P		M12x1.75P		M16 x 2P		M20x2.5P	M20x2.5P
D7	56	80		116		152		185		240	292
D8 h6	-	16		22		32		40		55	75
L1	42	60		90		115		142		180	220
L2	26	37		48		65		97		105	138
L3	5.5	7		10		12		15		20	30
L4	1	1.5		1.5		2		3		3	3
L5	16	25		32		40		63		70	90
L6	2	2		3		5		5		6	7
L7	4	6		8		10		12		15	20
L8	58.5	72	98	111.5	126.5	143.5	163	176	191	209.5	248
L9	4.5	4.8		7.2		10		12		15	15
L10	10	12.5		19		28		36		42	42
L11	-	26		26		26		40		41.5	52
L12	-	15		15		15		20		21.5	28
L13	-	21		22.5		23		33.5		33.5	45
C1[3]	46	46	70	70	100	100	130	130	165	165	215
C2[3]	M4x0.7P	M4x0.7P	M5 x 0.8P	M5 x 0.8P	M6 x 1P	M6 x 1P	M8x1.25P	M8x1.25P	M10x1.5P	M10x1.5P	M12x1.75P
C3[3]	≤11 / ≤12[4]	≤11 / ≤12[4]	≤14 / ≤16[4]	≤14 / ≤15.875 / ≤16[4]	≤19 / ≤24[4]	≤19 / ≤24[4]	≤32	≤32	≤38	≤38	≤48
C4[3]	25	25	34	34	40	40	50	50	60	60	85
C5[3]	30	30	50	50	80	80	110	110	130	130	180
C6[3]	3.5	3.5	8	8	4	4	5	5	6	6	6
C7[3]	42	42	60	60	90	90	115	115	142	142	190
C8[3]	29.5	29.5	19	19	17	17	19.5	19.5	22.5	22.5	29
C9[3]	114	138.5	154	178.5	191.5	225.5	247.5	292.5	310.5	337	415
C10[3]	8.75	8.75	13.5	13.5	10.75	10.75	13	13	15	15	20.75
B1 h9	5	5		6		10		12		16	20
H1	15	18		24.5		35		43		59	79.5
X DIN5480	-	W16x0.8x 30x18x6m		W22x1.25x 30x16x6m		W32x1.25x 30x24x6m		W40x2x 30x18x6m		W55x2x 30x26x6m	W70x2x 30x34x6m

ABR Series planetary gearbox
系列行星减速机

FEATURES
产品特点

- 行星臂架与输出轴采用一体式结构设计， 确保最大的扭转刚性。
- 行星轮采用满滚针设计，增加接触面积以提高结构刚性与输出扭矩。
- 齿轮采用低碳钢表面渗碳淬火到HRC62，以获得最佳的耐磨及冲击韧性。
- 齿形引用国外进口软件辅助设计，以获得最佳的齿形降低噪音。
- 输入端与马达轴连接采用双边抱紧方式，以获取最大的夹紧力和零背隙的动力传递。
- 采用蜗线伞齿轮设计，容许输出扭矩高、比直伞齿轮高30%以上。
- 高容许输入转速，比直伞齿轮输入高8倍以上。
- 蜗线伞齿轮的啮合齿印，经最佳优化设计，接触齿面负载均一，运转寿命长。
- 蜗线伞齿轮啮合，经最佳运动误差分析与严格的制程控制，以确保高精度的运转背隙。

- Planetary boom and output shaft are intergrated structure designed to ensure maximum torsional rigidity.
- Planetary wheel with full needle design,increase the contact area to improve the rigidity and output torque.
- The gears are carburized and quenched to the HRC62 with low carbon steel surface for optimum wear and impact toughness.
- Gears refer to foreign imported software-assisted design to obtain the best tooth shape to reduce noise.
- The input terminal is connected to the motor shaft in a double-tight manner to obtain the maximum clamping force and zero backlash power transmission.
- Adopt spiral bevel gear design, allow high output torque, more than 30% higher than straight bevel gear.
- High tolerance input speed, more than 8 times higher than straight bevel gear input.
- The meshing tooth imprint of spiral bevel gear has been optimized by optimum design, and the contact tooth surface load is uniform, and long running life.
- Cochlear bevel gears are meshed by optimum motion error analysis and strict process control to ensure high precision running back clearance.

ABR Series

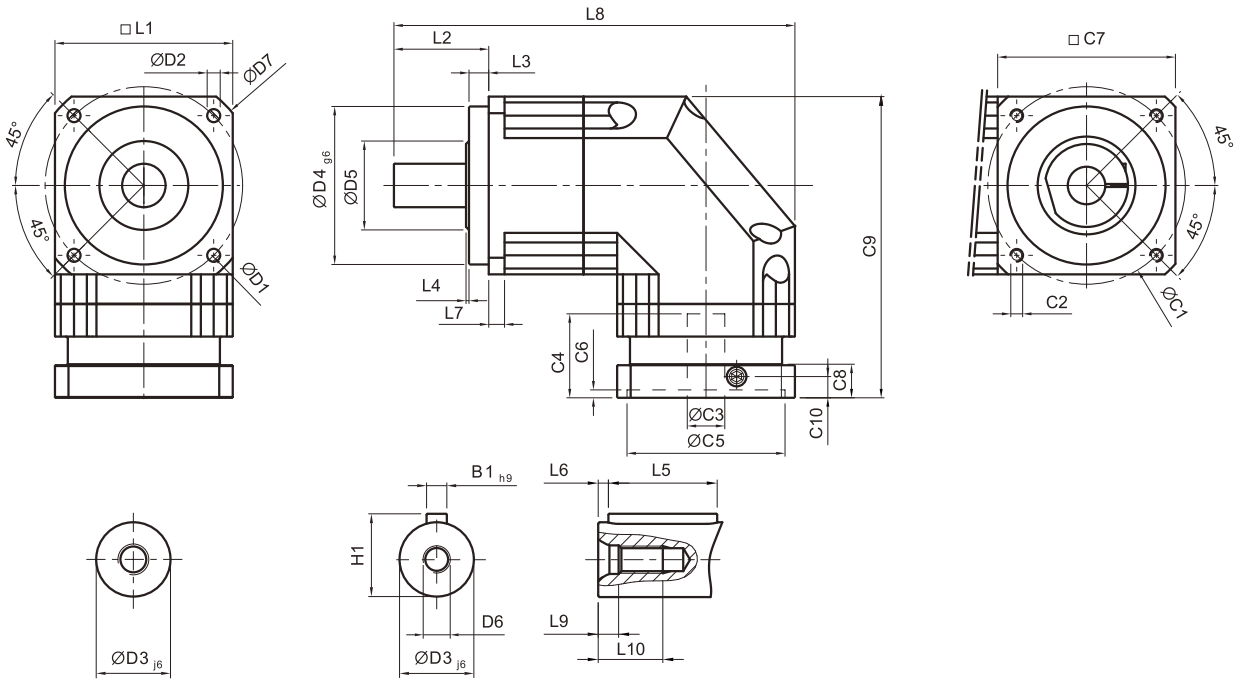
减速机性能资料

规格		节数	减速比	ABR042	ABR060	ABR060A	ABR090	ABR090A	ABR115	ABR115A	ABR142	ABR142A	ABR180	ABR220
额定输出力矩 T_{2N}	Nm	1	3	9	36	–	90	–	195	–	342	–	588	1,140
			4	12	48	–	120	–	260	–	520	–	1,040	1,680
			5	15	60	–	150	–	325	–	650	–	1,200	2,000
			6	18	55	–	150	–	310	–	600	–	1,100	1,900
			7	19	50	–	140	–	300	–	550	–	1,100	1,800
			8	17	45	–	120	–	260	–	500	–	1,000	1,600
			9	14	40	–	100	–	230	–	450	–	900	1,500
			10	14	60	–	150	–	325	–	650	–	1,200	2,000
			12	–	55	–	150	–	310	–	600	–	1,100	1,900
			14	–	42	–	140	–	300	–	550	–	1,100	1,800
			16	–	45	–	120	–	260	–	500	–	1,000	1,600
			20	–	40	–	100	–	230	–	450	–	900	1,500
		2	12	12	–	–	–	–	–	–	–	–	–	–
			15	14	–	–	–	–	–	–	–	–	–	–
			16	15	–	–	–	–	–	–	–	–	–	–
			20	14	–	–	–	–	–	–	–	–	–	–
			25	15	60	60	150	150	325	325	650	650	1,200	2,000
			28	19	50	50	140	140	300	300	550	550	1,100	1,800
			30	20	55	55	150	150	310	310	600	600	1,100	1,900
			32	17	45	45	120	120	260	260	500	500	1,000	1,600
			35	19	50	50	140	140	300	300	550	550	1,100	1,800
			40	17	45	45	120	120	260	260	500	500	1,000	1,600
			45	14	40	40	100	100	230	230	450	450	900	1,500
			48	–	–	55	150	150	310	310	600	600	1,100	1,900
			50	14	60	60	150	150	325	325	650	650	1,200	2,000
			60	20	55	55	150	150	310	310	600	600	1,100	1,900
			64	–	–	45	120	120	260	260	500	500	1,000	1,600
			70	19	50	50	140	140	300	300	550	550	1,100	1,800
			80	17	45	45	120	120	260	260	500	500	1,000	1,600
			90	14	40	40	100	100	230	230	450	450	900	1,500
			100	14	40	60	150	150	325	325	650	650	1,200	2,000
			120	–	–	55	150	150	310	310	600	600	1,100	1,900
			140	–	–	50	140	140	300	300	550	550	1,100	1,800
			160	–	–	45	120	120	260	260	550	550	1,000	1,600
			180	–	–	40	100	100	230	230	450	450	900	1,500
			200	–	–	40	100	100	230	230	450	450	900	1,500
急停扭矩 T_{2NOT} (3)	Nm	1,2	3~200	3 倍额定输出力矩										
额定输入转速 n_{1N}	rpm	1,2	3~200	5,000	5,000	5,000	4,000	4,000	4,000	4,000	3,000	3,000	3,000	2,000
最大输入转速 n_{1B}	rpm	1,2	3~200	10,000	10,000	10,000	8,000	8,000	8,000	8,000	6,000	6,000	6,000	4,000
超精密背隙 P0	arcmin	1	3~20	–	–	–	≤2	–	≤2	–	≤2	–	≤2	≤2
		2	12~200	–	–	–	≤4	≤4	≤4	≤4	≤4	≤4	≤4	≤4
精密背隙 P1	arcmin	1	3~20	≤4	≤4	–	≤4	–	≤4	–	≤4	–	≤4	≤4
		2	12~200	≤7	≤7	≤7	≤7	≤7	≤7	≤7	≤7	≤7	≤7	≤7
标准背隙 P2	arcmin	1	3~20	≤6	≤6	–	≤6	–	≤6	–	≤6	–	≤6	≤6
		2	12~200	≤9	≤9	≤9	≤9	≤9	≤9	≤9	≤9	≤9	≤9	≤9
扭转刚性	Nm/arcmin	1,2	3~200	3	7	7	14	14	25	25	50	50	145	225
容许径向力 F_{2rB} (3)	N	1,2	3~200	780	1,530	1,530	3,250	3,250	6,700	6,700	9,400	9,400	14,500	50,000
容许轴向力 F_{2aB} (3)	N	1,2	3~200	390	765	765	1,625	1,625	3,350	3,350	4,700	4,700	7,250	25,000
使用寿命	hr	1,2	3~200	≥20,000										
效率 η	%	1	3~20	≥95%										
		2	12~200	≥92%										
重量	kg	1	3~20	0.9	2.1	–	6.4	–	12.1	–	23	–	44.5	77
		2	12~200	1.2	1.8	2.7	4.8	7.9	11.5	15.9	21.5	29.6	41.5	75
使用温度	°C	1,2	3~200	-10°C~+90°C										
润滑		1,2	3~200	合同润滑油脂										
防护等级		1,2	3~200	IP65										
安装方向		1,2	3~200	任意方向										
噪音值	dB(A)	1,2	3~200	≤61	≤63	≤65	≤65	≤68	≤68	≤70	≤70	≤72	≤72	≤74

减速机转动惯量

规格		节数	减速比	ABR042	ABR060	ABR060A	ABR090	ABR090A	ABR115	ABR115A	ABR142	ABR142A	ABR180	ABR220
转动惯量 J_1	kg · cm^2	1	3~10	0.09	0.35	–	2.25	–	6.84	–	23.4	–	68.9	135.4
			12~20	–	0.31	–	1.87	–	6.25	–	21.8	–	65.6	119.8
		2	12~20	0.09	–	–	–	–	–	–	–	–	–	–
			25~90	0.09	0.09	0.35	0.35	2.25	2.25	6.84	6.84	23.4	23.4	68.9
			48, 64	–	–	0.31	0.31	1.87	1.87	6.25	6.25	21.8	21.8	65.6
			100~200	–	–	0.31	0.31	1.87	1.87	6.25	6.25	21.8	21.8	65.6

(1-单节 ，Ratio i=3~20) / ABR Series

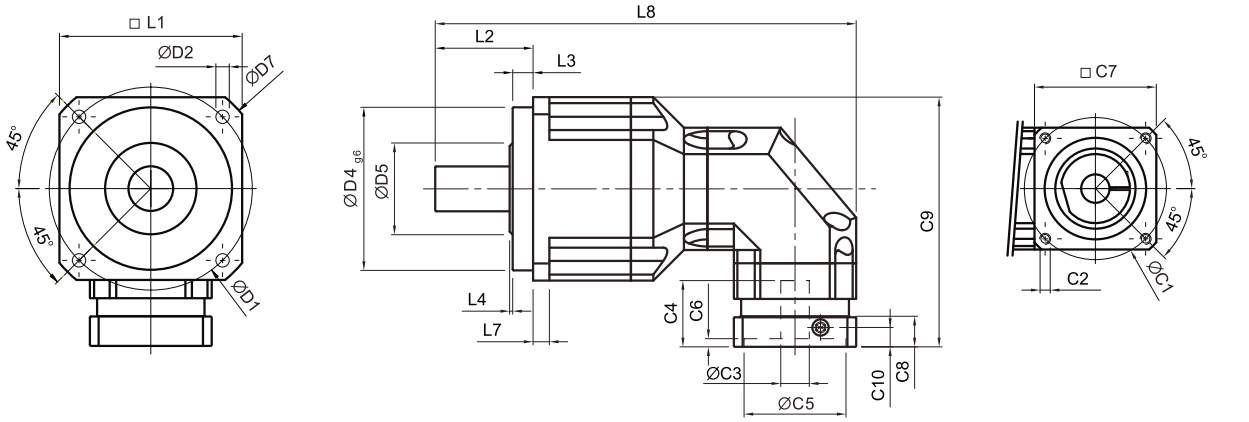


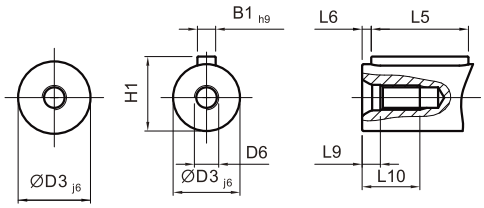
光轴型式 S1　　附键轴型式 S2

[单位: mm]

尺寸	ABR042	ABR060	ABR090	ABR115	ABR142	ABR180	ABR220
D1	50	70	100	130	165	215	250
D2	3.4	5.5	6.6	9	11	13	17
D3 j6	13	16	22	32	40	55	75
D4 g6	35	50	80	110	130	160	180
D5	22	45	65	95	75	95	115
D6	M4 x 0.7P	M5 x 0.8P	M8 x 1.25P	M12 x 1.75P	M16 x 2P	M20 x 2.5P	M20 x 2.5P
D7	56	80	116	152	185	240	292
D8 h6	-	16	22	32	40	55	75
L1	42	60	90	115	142	180	220
L2	26	37	48	65	97	105	138
L3	5.5	7	10	12	15	20	30
L4	1	1.5	1.5	2	3	3	3
L5	16	25	32	40	63	70	90
L6	2	2	3	5	5	6	7
L7	4	6	8	10	12	15	20
L8	111.5	145	203	259	333	394	484
L9	4.5	4.8	7.2	10	12	15	15
L10	10	12.5	19	28	36	42	42
L11	-	26	26	26	40	41.5	52
L12	-	15	15	15	20	21.5	28
L13	-	21	22.5	23	33.5	33.5	45
C1[1]	46	70	100	130	165	215	235
C2[1]	M4 x 0.7P	M5 x 0.8P	M6 x 1P	M8 x 1.25P	M10 x 1.5P	M12 x 1.75P	M12 x 1.75P
C3[1]	≤11 / ≤12	≤14 / ≤16	≤19 / ≤ 24	≤32	≤38	≤48	≤55
C4[1]	25	34	40	50	60	85	116
C5[1]	30	50	80	110	130	180	200
C6[1]	3.5	8	4	5	6	6	6
C7[1]	42	60	90	115	142	190	220
C8[1]	29.5	19	17	19.5	22.5	29	63
C9[1]	90.5	111.5	152.5	191.5	235.5	303.5	378.5
C10[1]	8.75	13.5	10.75	13	15	20.75	53
B1 h9	5	5	6	10	12	16	20
H1	15	18	24.5	35	43	59	79.5
X DIN5480	-	W16x0.8x 30x18x6m	W22x1.25x 30x16x6m	W32x1.25x 30x24x6m	W40x2x 30x18x6m	W55x2x 30x26x6m	W70x2x 30x34x6m

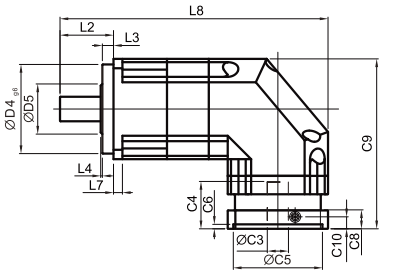
(2-双节 ，Ratio i=12~200) / ABR Series





光轴型式 S1　　附键轴型式 S2

ABR060A / ABR090A / ABR115A / ABR142A



[单位: mm]

尺寸	ABR042	ABR060	ABR060A	ABR090	ABR090A	ABR115	ABR115A	ABR142	ABR142A	ABR180	ABR220
D1	50	70		100		130		165		215	250
D2	3.4	5.5		6.6		9		11		13	17
D3 j6	13	16		22		32		40		55	75
D4 g6	35	50		80		110		130		160	180
D5	22	45		65		95		75		95	115
D6	M4 x 0.7P	M5 x 0.8P		M8 x 1.25P		M12x1.75P		M16x2P		M20x2.5P	M20x2.5P
D7	56	80		116		152		185		240	292
D8 h6	-	16		22		32		40		55	75
L1	42	60		90		115		142		180	220
L2	26	37		48		65		97		105	138
L3	5.5	7		10		12		15		20	30
L4	1	1.5		1.5		2		3		3	3
L5	16	25		32		40		63		70	90
L6	2	2		3		5		5		6	7
L7	4	6		8		10		12		15	20
L8	139	163.5	182	206.5	251	285	320	365	404.5	431	521
L9	4.5	4.8		7.2		10		12		15	15
L10	10	12.5		19		28		36		42	42
L11	-	26		26		26		40		41.5	52
L12	-	15		15		15		20		21.5	28
L13	-	21		22.5		23		33.5		33.5	45
C1 [3]	46	46	70	70	100	100	130	130	165	165	215
C2 [3]	M4 x 0.7P	M4 x 0.7P	M5 x 0.8P	M5x0.8P	M6x1P	M6x1P	M8x1.25P	M8x1.25P	M10x1.5P	M10x1.5P	M12x1.75P
C3 [3]	≤11 / ≤12 [4]	≤11 / ≤12 [4]	≤14 / ≤16 [4]	≤14 / ≤15.875 / ≤16	≤19 / ≤24 [4]	≤19 / ≤24 [4]	≤32	≤32	≤38	≤38	≤48
C4 [3]	25	25	34	34	40	40	50	50	60	60	85
C5 [3]	30	30	50	50	80	80	110	110	130	130	180
C6 [3]	3.5	3.5	8	8	4	4	5	5	6	6	6
C7 [3]	42	42	60	60	90	90	115	115	142	142	190
C8 [3]	29.5	29.5	19	19	17	17	19.5	19.5	22.5	22.5	29
C9 [3]	90.5	99.5	111.5	126.5	152.5	165	191.5	205	235.5	254.5	323.5
C10 [3]	8.75	8.75	13.5	13.5	10.75	10.75	13	13	15	15	20.75
B1 h9	5	5		6		10		12		16	20
H1	15	18		24.5		35		43		59	79.5
X DIN5480	-	W16x0.8x 30x18x6m		W22x1.25x 30x16x6m		W32x1.25x 30x24x6m		W40x2x 30x18x6m		W55x2x 30x26x6m	W70x2x 30x34x6m

VB Series planetary gearbox
系列行星减速机

FEATURES
产品特点

- 行星臂架与输出轴采用一体式结构设计，
  确保最大的扭转刚性。
- 行星轮采用满滚针设计，
  增加接触面积以提高结构刚性与输出扭矩。
- 齿轮采用低碳钢表面渗碳淬火到HRC62，
  以获得最佳的耐磨及冲击韧性。
- 齿形引用国外进口软件辅助设计，
  以获得最佳的齿形降低噪音。
- 输入端与马达轴连接采用双边抱紧方式，
  以获取最大的夹紧力和零背隙的动力传递。

- Planetary boom and output shaft are intergrated structure designed to ensure maximum torsional rigidity.
- Planetary wheel with full needle design,increase the contact area to improve the rigidity and output torque.
- The gears are carburized and quenched to the HRC62 with low carbon steel surface for optimum wear and impact toughness.
- Gears refer to foreign imported software-assisted design to obtain the best tooth shape to reduce noise.
- The input terminal is connected to the motor shaft in a double-tight manner to obtain the maximum clamping force and zero backlash power transmission.

GENERAL NOTICES

● 订货须知

- 机种、型号、扭矩
- 减速比或出力轴转速
- 工况及连接方式
- 数量及安装的机械名称
- 入力方式和入力转速
- 马达厂牌型号或法兰及马达轴尺寸

- Type, model and torque
- Ratio or output speed
- Working conditions and connection methods
- Quantity and installed machine name
- Input mode and input speed
- Motor brand model or flange and motor shaft size

PLANETARY GEARBOX

● 减速机性能资料 /Performance

规格 Specification	单位 Unit	节数 Stage	减速比 Ratio	VB042	VB060	VB090	VB115	VB140	VB180	VB220
额定输出力矩 Rated output torque T_{2N}	Nm	1	3	20	55	130	208	342	588	1140
			4	19	50	140	290	542	1050	1700
			5	22	60	160	330	650	1200	2000
			6	20	55	150	310	600	1100	1900
			7	19	50	140	300	550	1100	1800
			8	17	45	120	260	500	1000	1600
			10	14	40	100	230	450	900	1500
		2	15	20	55	130	208	342	588	1140
			20	19	50	140	290	542	1050	1700
			25	22	60	160	330	650	1200	2000
			30	20	55	150	310	600	1100	1900
			35	19	50	140	300	550	1100	1800
			40	17	45	120	260	500	1000	1600
			50	22	60	160	330	650	1200	2000
			60	20	55	150	310	600	1100	1900
			70	19	50	140	300	550	1100	1800
			80	17	45	120	260	500	1000	1600
			100	14	40	100	230	450	900	1500
急停扭矩 /Emergency stop torque T_{2NOT}	Nm	1,2	3～100	三倍额定输出力矩 /Triple rated output torque						
额定输入转速/Rated input speed n_{1N}	rpm	1,2	3～100	5000	5000	4000	4000	3000	3000	2000
最大输入转速 /Maximum iutput speed n_{1B}		1,2	3～100	10000	10000	8000	8000	6000	6000	4000
标准背隙 /Standard backlash P2	arcmin	1	3～10	≤12	≤5	≤5	≤5	≤5	≤5	≤5
		2	15～100	≤16	≤8	≤8	≤8	≤8	≤8	≤8
扭转刚性 /Torsional rigidity	Nm/arcmin	1,2	3～100	3	7	14	25	50	145	225
容许径向力 /Allowable radial force F_{2aB}	N	1,2	3～100	780	1530	3250	6700	9400	14500	50000
容许轴向力 /Allowable axial force F_{2aB}	N	1,2	3～100	390	765	1625	3350	4700	7250	25000
使用寿命 /Lifespan	hr	1,2	3～100	20000						
效率 /Efficiency	%	1	3～10	≥97%						
		2	15～100	≥94%						
重量 /Weight	kg	1	3～10	0.6	1.5	3.7	7.8	16	36	53
		2	15～100	0.7	1.6	4.2	11	17	37	54
使用温度 /Working temperature	℃	1,2	3～100	−10℃～90℃						
润滑 /Lubricating		1,2	合成润滑油脂 /Synthetic lubricating grease							
防护等级 /IP Grade		1,2	3～100	IP65						
安装方向 /Installation direction		1,2	3～100	任意方向 /In any direction						
噪音值(n1=3000rpm,无负载) Noise level (n1=3000rpm,off load)	dB(A)	1,2	3～100	≤56	≤58	≤60	≤63	≤65	≤67	≤70

ROTATIONAL INERTIA OF REDUCER

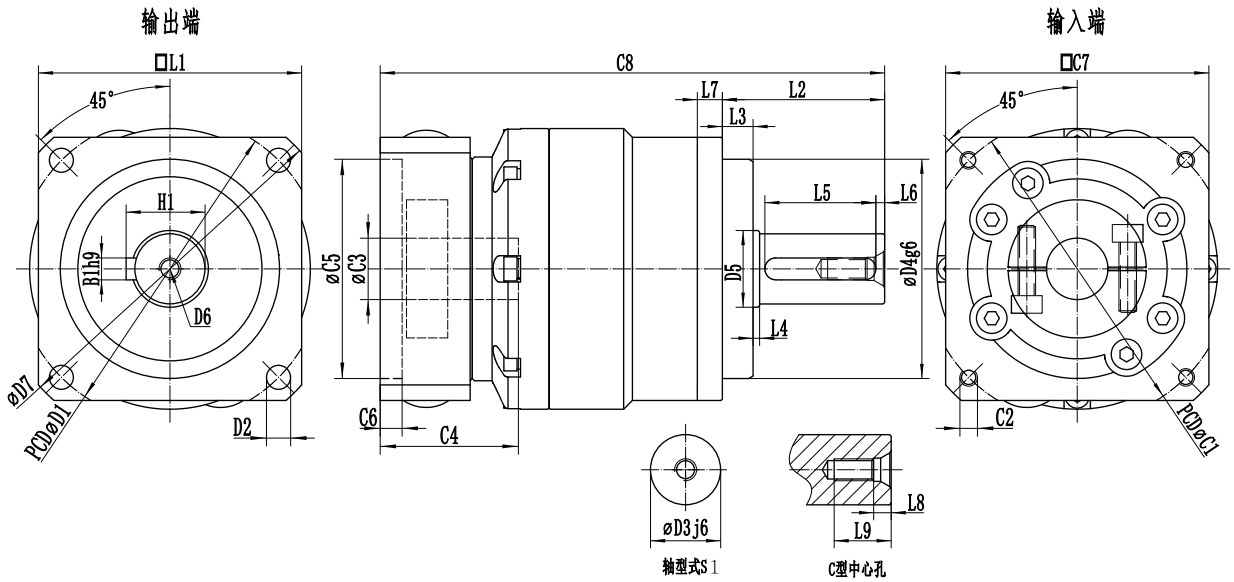
- 减速机转动惯量

规格 Specification	单位 Unit	节数 Stage	减速比 Ratio	VB042	VB060	VB090	VB115	VB140	VB180	VB220
转动惯量J1 Rotational inertia J1	kg·cm²	1	3	0.053	0.22	1.2	5.3	20	44	90
			4	0.041	0.17	0.95	4.1	15	28	62
			5	0.036	0.16	0.86	3.6	14	22	52
			6	0.034	0.15	0.82	3.3	13	18	47
			7	0.032	0.14	0.79	3.2	12	16	42
			8	0.031	0.14	0.77	3.1	12	15	40
			10	0.03	0.14	0.75	3	11	14	38
		2	15	0.035	0.14	0.72	2.8	11	12	36
			20	0.034	0.13	0.72	2.8	11	12	35
			25	0.034	0.13	0.71	2.8	11	12	35
			30	0.03	0.13	0.7	2.7	10	11	34
			35	0.034	0.13	0.71	2.7	11	12	35
			40	0.03	0.13	0.7	2.7	10	11	33
			50	0.03	0.13	0.69	2.7	10	11	33
			60	0.03	0.13	0.69	2.7	10	11	33
			70	0.03	0.13	0.69	2.7	10	11	33
			80	0.03	0.13	0.69	2.7	10	11	33
			100	0.03	0.13	0.69	2.7	10	11	33

1.减速比（$i=N_{in}/N_{out}$）
1. Ratio（$i=N_{in}/N_{out}$）

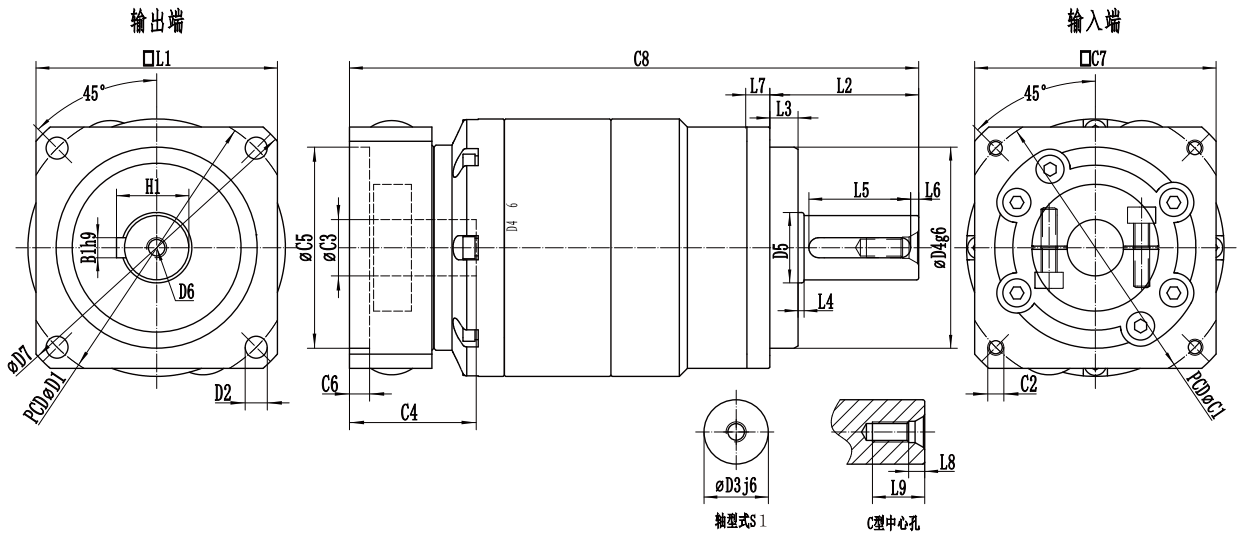
2.最大加速力矩 T_{2B} =60% of T_{2NOT}
2. Maximum acceleration torque T_{2B} =60% of T_{2NOT}

3. 输出转数 100rpm ,作用于输出轴中心位置
3. Output speed100rpm,acting on the center of the output shaft



- 尺寸（单节，减速比 i=3～10）
  Dimension(single stage,Ratio i=3~10)

尺寸/Dimension	VB060		VB090		VB115		VB140	VB180	VB220
D1	70		100		130		165	215	250
D2	5.5		6.6		9		11	13.5	17
D3 j6	16		22		32		40	55	75
D4 g6	50		80		110		130	160	180
D5	18		30		40		50	70	85
D6	M5*0.8P		M8*1.25P		M12*1.75P		M16*2.0P	M20*2.5P	M20*2.5P
D7	80		116		152		185	240	290
L1	60		90		115		140	180	220
L2	37		48		60		95	105	138
L3	7		10		7		13	20	30
L4	1.5		1.5		2		3	3	3
L5	25		32		40		63	70	90
L6	2		3		5		5	6	7
L7	6		8		10		12	15	20
L8	4.8		7.2		10		12	15	15
L9	12.5		19		28		36	42	42
C1	70	90	90	145	145	200	200	200	235
C2	M4	M5	M5	M8	M8	M12	M12*1.75P	M12*1.75P	M12*1.75P
C3	≤14	≤19	≤19	≤24	≤24	≤35	≤35/≤42	≤42	≤42/≤55
C4	31.5	41	41	59	60	81	81	114	117
C5	50	70	70	110	110	114.3	114.3	114.3	200
C6	5	5	6	14	14	19	19	24	20
C7	60	80	80	130	130	180	180	180	220
C8	115	128	145	163	199.5	221.5	279	318	377
B1 h9	5		6		10		12	16	20
H1	18		24.5		35		43	59	79.5



- 尺寸（双节，减速比 i=15～100）
  Dimension(double stage,Ratio i=15~100)

尺寸/Dimension	VB042	VB060		VB090			VB115		VB140	VB180	VB220
D1	-	70		100			130		165	215	250
D2	-	5.5		6.6			9		11	13.5	17
D3 j6	-	16		22			32		40	55	75
D4 g6	-	50		80			110		130	160	180
D5	-	18		30			40		50	70	85
D6	-	M5*0.8P		M8*1.25P			M12*1.75P		M16*2.0P	M20*2.5P	M20*2.5P
D7	-	80		116			152		185	240	290
L1	-	60		90			115		140	180	220
L2	-	37		48			60		95	105	138
L3	-	7		10			7		13	20	30
L4	-	1.5		1.5			2		3	3	3
L5	-	25		32			40		63	70	90
L6	-	2		3			5		5	6	7
L7	-	7		8			10		12	15	20
L8	-	4.8		7.2			10		12	15	15
L9	-	12.5		19			28		36	42	42
C1	-	70	90	70	90	145	90	145	145	200	200
C2	-	M4	M5	M4	M5	M8	M5	M8	M8*1.25P	M12*1.75P	M12*1.75P
C3	-	≤14	≤19	≤14	≤19	≤24	≤19	≤24	≤24/≤28	≤35	≤42
C4	-	31.5	41	31.5	41	59	41	60	66	80	114
C5	-	50	70	50	70	110	70	110	110	114.3	114.3
C6	-	5	5	5	6	14	6	14	10	9	24
C7	-	60	80	60	80	130	80	130	130	180	180
C8	-	141.5	154.5	162.5	179	197	214	244.5	340	352.5	441.5
B1 h9	-	5		6			10		12	16	20
H1	-	18		24.5			35		43	59	79.5

VBR Series planetary gearbox
系列行星减速机

FEATURES
产品特点

- 行星臂架与输出轴采用一体式结构设计， 确保最大的扭转刚性。
- 行星轮采用满滚针设计，增加接触面积以提高结构刚性与输出扭矩。
- 齿轮采用低碳钢表面渗碳淬火到HRC62，以获得最佳的耐磨及冲击韧性。
- 齿形引用国外进口软件辅助设计，以获得最佳的齿形降低噪音。
- 输入端与马达轴连接采用双边抱紧方式，以获取最大的夹紧力和零背隙的动力传递。
- 采用蜗线伞齿轮设计，容许输出扭矩高、比直伞齿轮高30%以上。
- 高容许输入转速，比直伞齿轮输入高8倍以上。
- 蜗线伞齿轮的啮合齿印，经最佳优化设计，接触齿面负载均一，运转寿命长。
- 蜗线伞齿轮啮合，经最佳运动误差分析与严格的制程控制，以确保高精度的运转背隙。

- Planetary boom and output shaft are intergrated structure designed to ensure maximum torsional rigidity.
- Planetary wheel with full needle design,increase the contact area to improve the rigidity and output torque.
- The gears are carburized and quenched to the HRC62 with low carbon steel surface for optimum wear and impact toughness.
- Gears refer to foreign imported software-assisted design to obtain the best tooth shape to reduce noise.
- The input terminal is connected to the motor shaft in a double-tight manner to obtain the maximum clamping force and zero backlash power transmission.
- Adopt spiral bevel gear design, allow high output torque, more than 30% higher than straight bevel gear.
- High tolerance input speed, more than 8 times higher than straight bevel gear input.
- The meshing tooth imprint of spiral bevel gear has been optimized by optimum design, and the contact tooth surface load is uniform, and long running life.
- Cochlear bevel gears are meshed by optimum motion error analysis and strict process control to ensure high precision running back clearance.

GENERAL NOTICES

- 订货须知

- 机种、型号、扭矩
- 减速比或出力轴转速
- 工况及连接方式
- 数量及安装的机械名称
- 入力方式和入力转速
- 马达厂牌型号或法兰及马达轴尺寸

- Type, model and torque
- Ratio or output speed
- Working conditions and connection methods
- Quantity and installed machine name
- Input mode and input speed
- Motor brand model or flange and motor shaft size

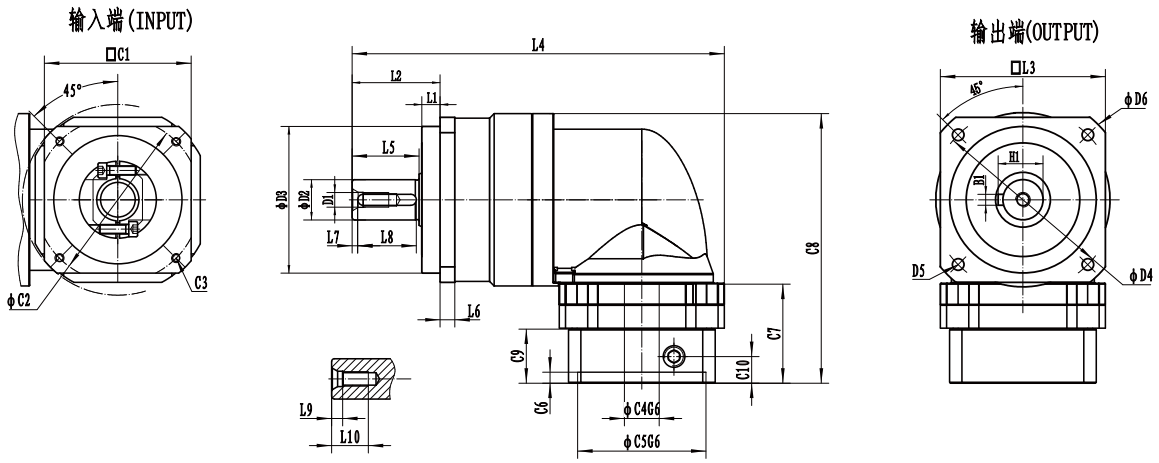
● 减速机性能资料/Performance

规格 Specification	单位 Unit	节数 Stage	减速比 Ratio	VBR042	VBR060	VBR090	VBR115	VBR140	VBR180
额定输出力矩 Rated output torque T_{2N}	Nm	1	3	-	36	90	195	342	588
			4	-	48	120	260	520	1040
			5	-	60	150	325	650	1200
			6	-	55	150	310	600	1100
			7	-	50	140	300	550	1100
			8	-	50	140		542	1050
			10	-	60	160	330	650	1200
			12	-	55	150	310	600	1100
			14	-	50	140	300	550	1100
			20	-	40	100	230	450	900
		2	15	-	55	130	208	342	588
			25	-	60	150	325	650	1200
			30	-	55	150	310	600	1100
			35	-	50	140	300	550	1100
			40	-	50	140	290	542	1050
			50	-	60	160	330	650	1200
			60	-	55	150	310	600	1100
			70	-	50	140	300	550	1100
			80	-	50	140	290	542	1050
			100	-	60	160	330	650	1200
			120	-	55	150	310	600	1100
			140	-	50	140	300	550	1100
			160	-	45	120	260	500	1000
			200	-	40	100	230	450	900
急停扭矩 /Emergency stop torque T_{2NOT}	Nm	1,2	3~200	三倍额定输出力矩 /Triple rated output torque					
额定输入转速/Rated input speed n_{1N}	rpm	1,2	3~200	5000	5000	4000	4000	3000	3000
最大输入转速 /Maximum iutput speed n_{1B}	rpm	1,2	3~200	10000	10000	8000	8000	6000	6000
标准背隙 /Standard backlash P2*	arcmin	1	3~20	-	≤10	≤10	≤10	≤10	≤10
		2	15~200	-	≤13	≤13	≤13	≤13	≤13
扭转刚性 /Torsional rigidity	Nm/arcmin	1,2	3~200	-	7	14	25	50	145
容许径向力/Allowable radial force F_{2aB}	N	1,2	3~200	780	1530	3250	6700	9400	14500
容许轴向力/Allowable axial force F_{2aB}	N	1,2	3~200	390	765	1625	3350	4700	7250
使用寿命 /Lifespan	hr	1,2	3~200	20000 *					
效率 /Efficiency	%	1	3~20	95%					
		2	25~200	92%					
重量 /Weight	kg	1	3~20	-	2.1	6.4	13	24.5	51
		2	25~200	-	1.5	7.8	14.2	27.5	54
使用温度 /Working temperature	℃	1,2	3~200	（-10° C +90° C）					
润滑 /Lubricating				合成润滑脂/Synthetic lubricating grease					
防护等级 /IP Grade		1,2	3~200	IP65					
安装方向 /Installation direction		1,2	3~200	任意方向 /In any direction					
噪音值(n1=3000rpm,无负载) Noise level（n1=3000rpm,off load）	dB(A)	1,2	3~200	-	≤63	≤65	≤68	≤70	≤72

（带 "*" 的精度需与工程师确认/ Need confirm with our engineer for those precision data with *）

● 减速机转动惯量 /Rotational inertia

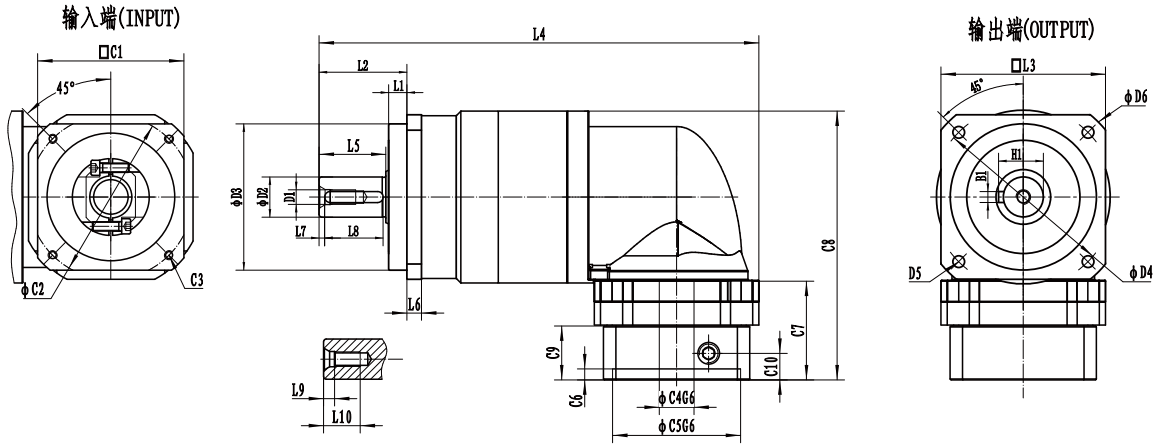
规格 Specification	单位 Unit	节数 Stage	减速比 Ratio	VBR042	VBR060	VBR090	VBR115	VBR142	VBR180
转动惯量J1 Rotational inertia J1	$kg.cm^2$	1	3~10	0.09	0.35	2.25	6.84	23.4	68.9
			12、14	0.035	0.07	1.87	6.25	21.8	65.6
			20	0.03	0.07	1.87	6.25	21.8	65.6
		2	15	0.09	0.35	2.25	6.84	23.4	68.9
			25~100	0.09	0.09	0.35	2.25	6.84	23.4
			120~200	0.007	0.01	0.31	1.87	6.25	21.8



- 尺寸（单节，减速比 i=3～20）

  Dimension(single stage,Ratio i=3~20)

尺寸/Dimension	VBR042	VBR060	VBR090	VBR115	VBR140	VBR180
D1	-	M5	M8	M12	M16	-
$D2_{j6}$	-	16	22	32	40	-
$D3_{g6}$	-	50	80	110	130	-
D4	-	70	100	130	165	-
D5	-	4× φ5.5	4× φ6.6	4× φ9	4× φ11	-
D6	-	80	116	152	185	-
L1	-	7	10	7	13	-
L2	-	37	48	60	95	-
L3	-	60	90	115	140	-
L4	-	149.5	203	266.5	359	-
L5	-	28.5	36.5	51	79	-
L6	-	6	8	10	12	-
L7	-	3	3	5	5	-
L8	-	25.3	32	40	63	-
L9	-	4	6	10	16	-
L10	-	13	20	28	36	-
C1	-	60	80	130	180	-
C2	-	70	90	145	200	-
C3	-	4×M4	4×M5	4×M8	4×M12	-
$C4_{G6}$	-	14	19	24	35	-
$C5_{G6}$	-	50	70	110	114.3	-
C6	-	3.5	6	14	19	-
C7	-	35	54	81	81	-
C8	-	104.5	147	194.5	250.5	-
C9	-	24.2	29.5	45	57	-
C10	-	9.5	14.5	27	32	-
B1	-	5	6	10	12	-
H1	-	18	24.5	35	43	-



- 尺寸（双节，减速比 i=15～200）
  Dimension(double stage,Ratio i=15~200)

尺寸/Dimension	VBR042	VBR060	VBR090	VBR115	VBR140	VBR180
D1	-	M5	M8	M12	M16	-
D2	-	16	22	32	40	-
D3	-	50	80	110	130	-
D4	-	70	100	130	165	-
D5	-	4× φ5.5	4× φ6.6	4× φ9	4× φ11	-
D6	-	80	116	152	185	-
L1	-	7	10	7	13	-
L2	-	37	48	60	95	-
L3	-	60	90	115	140	-
L4	-	181.5	240.5	290	431	-
L5	-	28.5	36.5	51	79	-
L6	-	6	8	10	12	-
L7	-	3	3	5	5	-
L8	-	25.3	32	40	63	-
L9	-	4	6	10	16	-
L10	-	13	20	28	36	-
C1	-	60	80	130	180	-
C2	-	70	90	145	200	-
C3	-	4×M4	4×M5	4×M8	4×M12	-
$C4_{G6}$	-	14	19	24	35	-
$C5_{G6}$	-	50	70	110	114.3	-
C6	-	3.5	6	11.5	19	-
C7	-	35	54	67	81	-
C8	-	104.5	147	175.5	250.5	-
C9	-	24.2	29.5	42.5	57	-
C10	-	9.5	14.5	27	32	-
B1	-	5	6	10	12	-
H1	-	18	24.5	35	43	-

AD Series planetary gearbox
系列行星减速机

FEATURES
产品特点

- 行星臂架与输出轴采用一体式结构设计，
  确保最大的扭转刚性。
- 行星轮采用满滚针设计，
  增加接触面积以提高结构刚性与输出扭矩。
- 齿轮采用低碳钢表面渗碳淬火到HRC62，
  以获得最佳的耐磨及冲击韧性。
- 齿形引用国外进口软件辅助设计，
  以获得最佳的齿形降低噪音。
- 输入端与马达轴连接采用双边抱紧方式，
  以获取最大的夹紧力和零背隙的动力传递。

- Planetary boom and output shaft are intergrated structure designed to ensure maximum torsional rigidity.
- Planetary wheel with full needle design,increase the contact area to improve the rigidity and output torque.
- The gears are carburized and quenched to the HRC62 with low carbon steel surface for optimum wear and impact toughness.
- Gears refer to foreign imported software-assisted design to obtain the best tooth shape to reduce noise.
- The input terminal is connected to the motor shaft in a double-tight manner to obtain the maximum clamping force and zero backlash power transmission.

GENERAL NOTICES

- 订货须知

- 机种、型号、扭矩
- 减速比或出力轴转速
- 工况及连接方式
- 数量及安装的机械名称
- 入力方式和入力转速
- 马达厂牌型号或法兰及马达轴尺寸

- Type, model and torque
- Ratio or output speed
- Working conditions and connection methods
- Quantity and installed machine name
- Input mode and input speed
- Motor brand model or flange and motor shaft size

AD Series

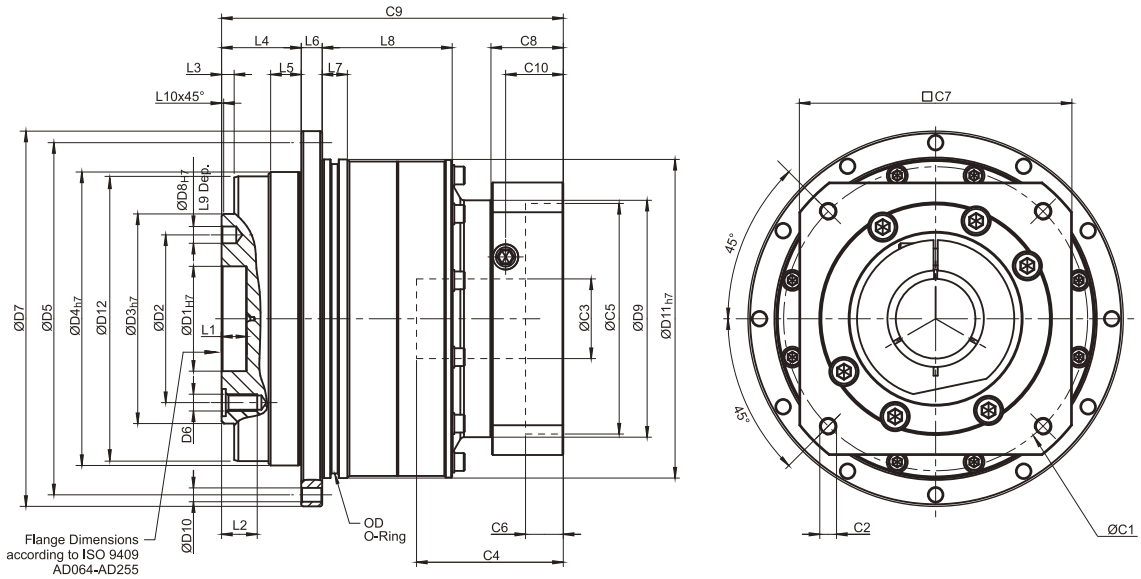
减速机性能资料

规格		节数	减速比	AD047	AD064	AD090	AD110	AD140	AD200	AD255
额定输出力矩 T_{2N}	Nm	1	4	19	48	130	270	560	1,100	1,700
			5	22	60	160	330	650	1,200	2,000
			7	19	50	140	300	550	1,100	1,800
			10	14	40	100	230	450	900	1,500
		2	20	19	48	130	270	560	1,100	1,700
			25	22	60	160	330	650	1,200	2,000
			35	19	50	140	300	550	1,100	1,800
			40	19	48	130	270	560	1,100	1,700
			50	22	60	160	330	650	1,200	2,000
			70	19	50	140	300	550	1,100	1,800
			100	14	40	100	230	450	900	1,500
			16	19	48	130	270	560	1,100	1,700
			21	22	60	160	330	650	1,200	2,000
			31	19	50	140	300	550	1,100	1,800
			61	19	50	140	300	550	1,100	1,800
			91	14	40	100	230	450	900	1,500
急停扭矩 T_{2NOT} (2)	Nm	1,2	4~100	3 倍额定输出力矩						
额定输入转速 n_{1N}	rpm	1,2	4~100	5,000	5,000	4,000	4,000	3,000	3,000	2,000
最大输入转速 n_{1B}	rpm	1,2	4~100	10,000	10,000	8,000	8,000	6,000	6,000	4,000
超精密背隙 P0	arcmin	1	4~10	-	-	≤1	≤1	≤1	≤1	≤1
		2	20~100	-	-	-	≤3	≤3	≤3	≤3
精密背隙 P1	arcmin	1	4~10	≤3	≤3	≤3	≤3	≤3	≤3	≤3
		2	20~100	≤5	≤5	≤5	≤5	≤5	≤5	≤5
标准背隙 P2	arcmin	1	4~10	≤5	≤5	≤5	≤5	≤5	≤5	≤5
		2	20~100	≤7	≤7	≤7	≤7	≤7	≤7	≤7
扭转刚性	Nm/arcmin	1,2	4~100	7	13	31	82	151	440	1,006
最大弯曲力矩 M_{2K}	Nm	1,2	4~100	55	75	190	300	1,300	2,930	5,500
容许轴向力 F_{2aB} (3)	N	1,2	4~100	990	1,050	2,850	2,990	10,590	16,660	29,430
效率 η	%	1	4~10	≥97%						
		2	20~100	≥94%						
重量	kg	1	4~10	0.7	1.2	3.0	5.6	11.9	31.6	56.1
		2	20~100	1.0	1.6	3.7	7.3	15.9	36.9	70.4
			16~91	1.0	1.4	3.5	6.5	15.5	34.2	67.2
使用温度	°C	1,2	4~100	-10°C~90°C						
润滑				合同润滑油脂						
防护等级		1,2	4~100	IP65						
安装方向		1,2	4~100	任意方向						
噪音值	dB(A)	1,2	4~100	≤56	≤58	≤60	≤63	≤65	≤67	≤70

减速机转动惯量

规格		节数	减速比	AD047	AD064	AD090	AD110	AD140	AD200	AD255
转动惯量 J_1	kg·cm²	1	4	0.03	0.14	0.51	2.87	7.54	25.03	58.31
			5	0.03	0.13	0.47	2.71	7.42	23.29	53.27
			7	0.03	0.13	0.45	2.62	7.14	22.48	50.97
			10	0.03	0.13	0.44	2.57	7.03	22.51	50.56
		2	20	0.03	0.03	0.13	0.47	2.71	7.42	23.29
			25	0.03	0.03	0.13	0.47	2.71	7.42	23.29
			35	0.03	0.03	0.13	0.47	2.71	7.42	23.29
			40	0.03	0.03	0.13	0.44	2.57	7.03	22.51
			50	0.03	0.03	0.13	0.44	2.57	7.03	22.51
			70	0.03	0.03	0.13	0.44	2.57	7.03	22.51
			100	0.03	0.03	0.13	0.44	2.57	7.03	22.51
			16	0.03	0.03	0.13	0.47	2.71	7.42	23.29
			21	0.03	0.03	0.13	0.47	2.71	7.42	23.29
			31	0.03	0.03	0.13	0.44	2.57	7.03	22.51
			61	0.03	0.03	0.13	0.44	2.57	7.03	22.51
			91	0.03	0.03	0.13	0.44	2.57	7.03	22.51

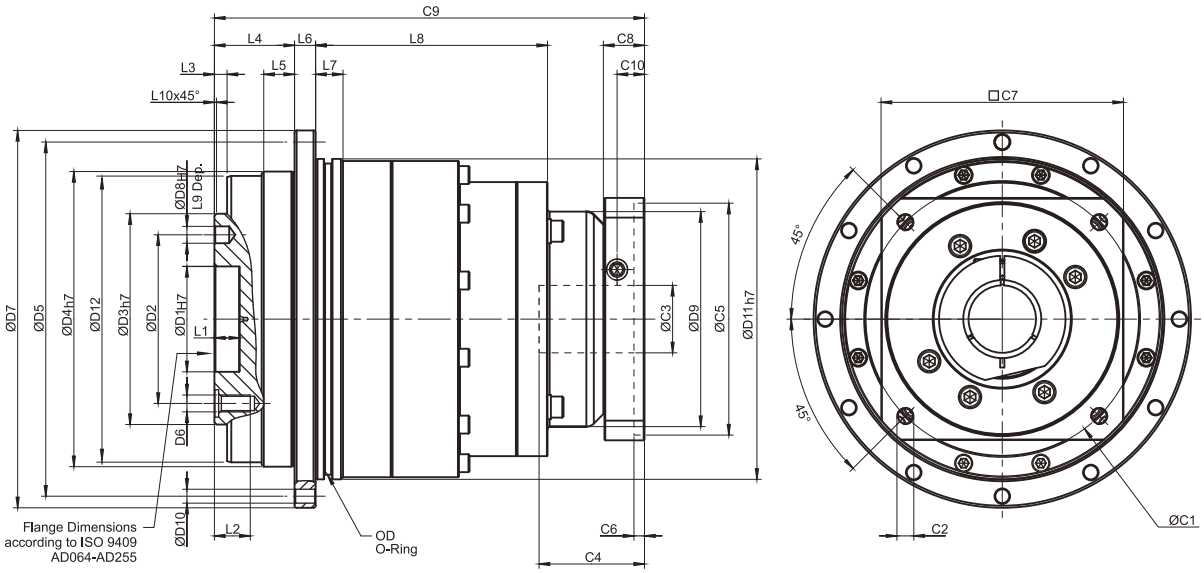
(1-单节 ，Ratio i=4~10) / AD Series



[单位: mm]

尺寸	AD047	AD064	AD090	AD110	AD140	AD200	AD255
D1 H7	12	20	31.5	40	50	80	100
D2	20	31.5	50	63	80	125	140
D3 h7	28	40	63	80	100	160	180
D4 h7	47	64	90	110	140	200	255
D5	67	79	109	135	168	233	280
D6	4 x M3 x 0.5P	7 x M5 x 0.8P	7 x M6 x 1P	11 x M6 x1P	11 x M8 x 1.25P	11 x M10 x 1.5P	12 x M16 x 2P
D7	72	86	118	145	179	247	300
D8 H7	3	5	6	6	8	10	12
D9	45.5	55	77	90	113	138	175
D10	8 x 3.4	8 x 4.5	8 x 5.5	8 x 5.5	12 x 6.6	12 x 9	16 x 13.5
D11 h7	60	70	95	120	152	212	255
D12	46.2	63.2	89.2	109.2	139.2	199.2	254.2
L1	4	8	12	12	12	16	20
L2	6.5	8	13.5	13.5	17	22.5	30.5
L3	3	3	6	6	6	8	12
L4	19.5	19.5	30	29	38	50	66
L5	7	7	10	10	14.6	15	20
L6	4	4	7	8	10	12	18
L7	5	7.7	8	10	12	15	20
L8	18.5	28.5	27	37	62	69.5	82
L9	4	6	7	7	7	10	10
L10	0.5	0.5	1	1	1	1	1
C1[1]	46	70	100	130	165	215	235
C2[1]	M4 x 0.7P	M5 x 0.8P	M6 x 1P	M8 x 1.25P	M10 x 1.5P	M12 x 1.75P	M12 x 1.75P
C3[1]	≤11 / ≤12[2]	≤14 / ≤16[2]	≤19 / ≤24	≤32	≤38	≤48	≤55
C4[1]	30	34	40	50	60	85	116
C5[1]	30	50	80	110	130	180	200
C6[1]	3.5	8	4	5	6	6	6
C7[1]	48	60	90	115	142	190	220
C8[1]	19.5	19	17	19.5	22.5	29	63
C9[1]	70	82.5	99.5	121.5	151	199.5	256.5
C10[1]	13.25	13.5	10.75	13	15	20.75	53.5
OD	56 x 2	66 x 2	90 x 3	110 x 3	145 x 3	200 x 5	238 x 5

(2-双节 ，Ratio i=20~100) / AD Series



[单位: mm]

尺寸	AD047	AD064	AD090	AD110	AD140	AD200	AD255
D1 H7	12	20	31.5	40	50	80	100
D2	20	31.5	50	63	80	125	140
D3 h7	28	40	63	80	100	160	180
D4 h7	47	64	90	110	140	200	255
D5	67	79	109	135	168	233	280
D6	4 x M3 x 0.5P	7 x M5 x 0.8P	7 x M6 x 1P	11 x M6 x1P	11 x M8 x 1.25P	11 x M10 x 1.5P	12 x M16 x 2P
D7	72	86	118	145	179	247	300
D8 H7	3	5	6	6	8	10	12
D9	45.5	45.5	53.4	77	102	125	160
D10	8 x 3.4	8 x 4.5	8 x 5.5	8 x 5.5	12 x 6.6	12 x 9	16 x 13.5
D11 h7	60	70	95	120	152	212	255
D12	46.2	63.2	89.2	109.2	139.2	199.2	254.2
L1	4	8	12	12	12	16	20
L2	6.5	8	13.5	13.5	17	22.5	30.5
L3	3	3	6	6	6	8	12
L4	19.5	19.5	30	29	38	50	66
L5	7	7	10	10	14.6	15	20
L6	4	4	7	8	10	12	18
L7	5	7.7	8	10	12	15	20
L8	54.5	65	60	87.5	110	132.5	148
L9	4	6	7	7	7	10	10
L10	0.5	0.5	1	1	1	1	1
C1[3]	46	46	70	100	130	165	215
C2[3]	M4 x 0.7P	M4 x 0.7P	M5 x 0.8P	M6 x 1P	M8 x 1.25P	M10 x 1.5P	M12 x 1.75P
C3[3]	≤11 / ≤12	≤11 / ≤12	≤14 / ≤15.875 / ≤16	≤19 / ≤24	≤32	≤38	≤48
C4[3]	30	30	34	40	50	60	85
C5[3]	30	30	50	80	110	130	180
C6[3]	3.5	3.5	8	4	5	6	6
C7[3]	48	48	60	90	115	142	190
C8[3]	19.5	19.5	19	17	19.5	22.5	29
C9[3]	97.5	108	134	160	204	248	311.5
C10[3]	13.25	13.25	13.5	10.75	13	15	20.75
OD	56 x 2	66 x 2	90 x 3	110 x 3	145 x 3	200 x 5	238 x 5

ADR Series planetary gearbox
系列行星减速机

FEATURES
产品特点

- 行星臂架与输出轴采用一体式结构设计， 确保最大的扭转刚性。
- 行星轮采用满滚针设计，增加接触面积以提高结构刚性与输出扭矩。
- 齿轮采用低碳钢表面渗碳淬火到HRC62，以获得最佳的耐磨及冲击韧性。
- 齿形引用国外进口软件辅助设计，以获得最佳的齿形降低噪音。
- 输入端与马达轴连接采用双边抱紧方式，以获取最大的夹紧力和零背隙的动力传递。
- 采用蜗线伞齿轮设计，容许输出扭矩高、比直伞齿轮高30%以上。
- 高容许输入转速，比直伞齿轮输入高8倍以上。
- 蜗线伞齿轮的啮合齿印，经最佳优化设计，接触齿面负载均一，运转寿命长。
- 蜗线伞齿轮啮合，经最佳运动误差分析与严格的制程控制，以确保高精度的运转背隙。

- Planetary boom and output shaft are intergrated structure designed to ensure maximum torsional rigidity.
- Planetary wheel with full needle design,increase the contact area to improve the rigidity and output torque.
- The gears are carburized and quenched to the HRC62 with low carbon steel surface for optimum wear and impact toughness.
- Gears refer to foreign imported software-assisted design to obtain the best tooth shape to reduce noise.
- The input terminal is connected to the motor shaft in a double-tight manner to obtain the maximum clamping force and zero backlash power transmission.
- Adopt spiral bevel gear design, allow high output torque, more than 30% higher than straight bevel gear.
- High tolerance input speed, more than 8 times higher than straight bevel gear input.
- The meshing tooth imprint of spiral bevel gear has been optimized by optimum design, and the contact tooth surface load is uniform, and long running life.
- Cochlear bevel gears are meshed by optimum motion error analysis and strict process control to ensure high precision running back clearance.

GENERAL NOTICES

● 订货须知

- 机种、型号、扭矩
- 减速比或出力轴转速
- 工况及连接方式
- 数量及安装的机械名称
- 入力方式和入力转速
- 马达厂牌型号或法兰及马达轴尺寸

- Type, model and torque
- Ratio or output speed
- Working conditions and connection methods
- Quantity and installed machine name
- Input mode and input speed
- Motor brand model or flange and motor shaft size

ADR Series

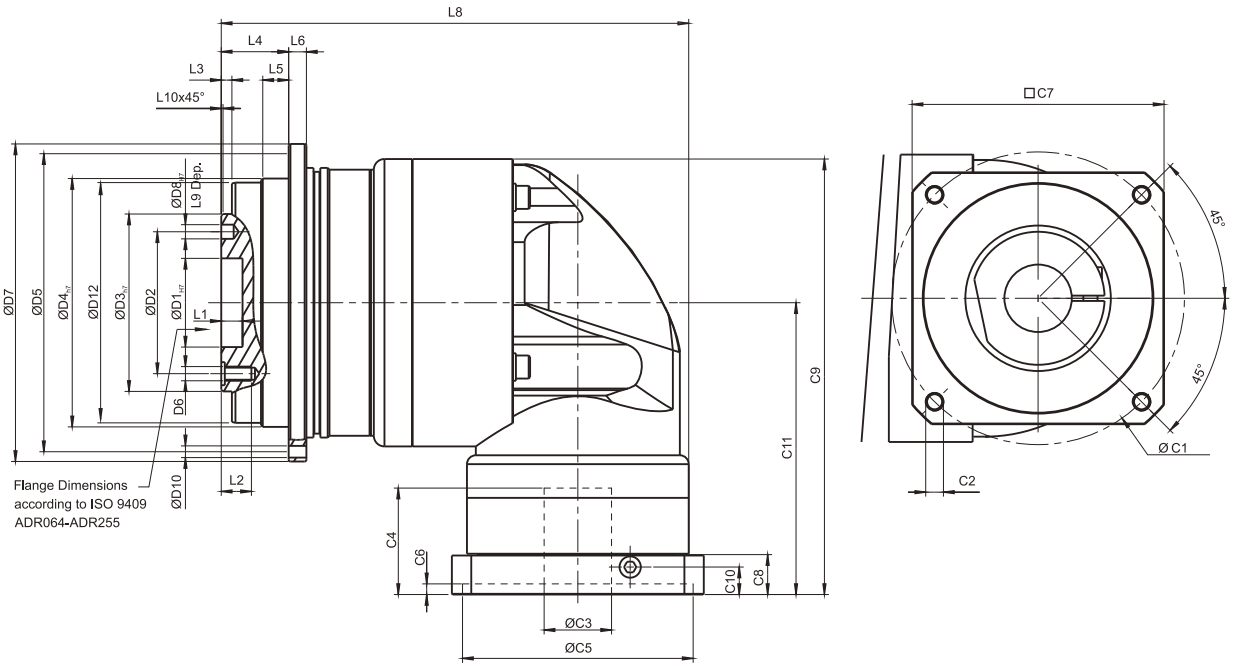
减速机性能资料

规格		节数	减速比	ADR047	ADR064	ADR090	ADR110	ADR140	ADR200	ADR255
额定输出力矩 T_{2N}	Nm	1	4	19	48	130	270	560	1,100	1,700
			5	22	60	160	330	650	1,200	2,000
			7	19	50	140	300	550	1,100	1,800
			10	14	60	160	325	650	1,200	2,000
			14	-	42	140	300	550	1,100	1,800
			20	-	40	100	230	450	900	1,500
		2	20	19	-	-	-	-	-	-
			25	22	60	160	330	650	1,200	2,000
			35	19	50	140	300	550	1,100	1,800
			40	19	48	130	270	560	1,100	1,700
			50	22	60	160	330	650	1,200	2,000
			70	19	50	140	300	550	1,100	1,800
			100	14	40	100	230	450	900	1,500
			140	-	-	140	300	550	1,100	1,800
			200	-	-	100	230	450	900	1,500
急停扭矩 T_{2NOTB} (2)	Nm	1,2	4~200	3 倍额定输出力矩						
额定输入转速 n_{1N}	rpm	1,2	4~200	5,000	5,000	4,000	4,000	3,000	3,000	2,000
最大输入转速 n_{1B}	rpm	1,2	4~200	10,000	10,000	8,000	8,000	6,000	6,000	4,000
超精密背隙 P0	arcmin	1	4~20	-	-	≤2	≤2	≤2	≤2	≤2
		2	25~200	-	-	≤4	≤4	≤4	≤4	≤4
精密背隙 P1	arcmin	1	4~20	≤4	≤4	≤4	≤4	≤4	≤4	≤4
		2	25~200	≤7	≤7	≤7	≤7	≤7	≤7	≤7
标准背隙 P2	arcmin	1	4~20	≤6	≤6	≤6	≤6	≤6	≤6	≤6
		2	25~200	≤9	≤9	≤9	≤9	≤9	≤9	≤9
扭转刚性	Nm/arcmin	1,2	4~200	7	13	31	82	151	440	1,006
最大弯曲力矩 M_{2K}	Nm	1,2	4~200	55	75	190	300	1,300	2,930	5,500
容许轴向力 F_{2aB} (3)	N	1,2	4~200	990	1,050	2,850	2,990	10,590	16,660	29,430
效率 η	%	1	4~20	≥95%						
		2	25~200	≥92%						
重量	kg	1	4~20	1.1	2.1	5.9	10.5	21.9	50.9	85.4
		2	25~200	1.4	1.9	4.5	9.8	20.1	45.4	85.9
使用温度	°C	1,2	4~200	-10°C~90°C						
润滑				合同润滑油脂						
防护等级		1,2	4~200	IP65						
安装方向		1,2	4~200	任意方向						
噪音值	dB(A)	1,2	4~200	≤61	≤63	≤65	≤68	≤70	≤72	≤74

减速机转动惯量

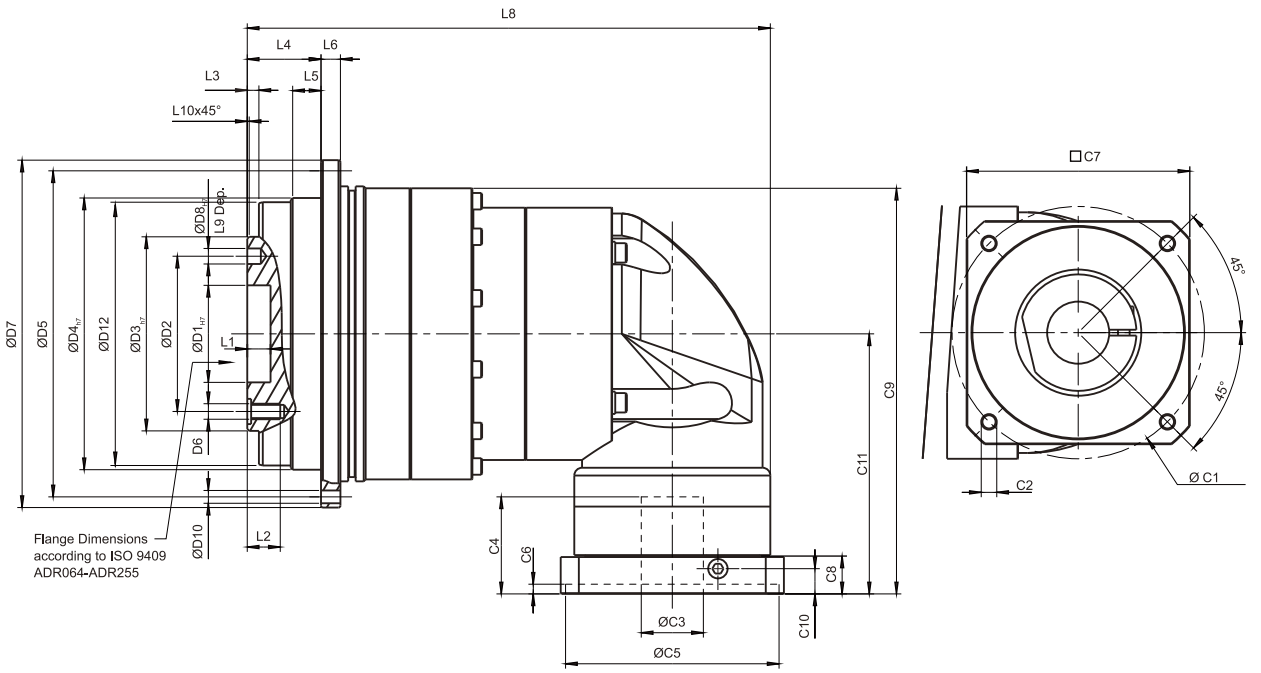
规格		节数	减速比	ADR047	ADR064	ADR090	ADR110	ADR140	ADR200	ADR255
转动惯量 J_1	kg·cm²	1	4~10	0.09	0.35	2.25	6.84	23.4	68.9	135.4
			14	–	0.31	1.87	6.25	21.8	65.6	119.8
			20	–	0.31	1.87	6.25	21.8	65.6	119.8
		2	20	0.09	–	–	–	–	–	–
			25~100	0.09	0.09	0.35	2.25	6.84	23.4	68.9
			140~200	–	–	0.31	1.87	6.25	21.8	65.6

(1-单节 ，Ratio i=4~20) / ADR Series



[单位: mm]

尺寸	ADR047	ADR064	ADR090	ADR110	ADR140	ADR200	ADR255
D1 H7	12	20	31.5	40	50	80	100
D2	20	31.5	50	63	80	125	140
D3 h7	28	40	63	80	100	160	180
D4 h7	47	64	90	110	140	200	255
D5	67	79	109	135	168	233	280
D6	4 x M3 x 0.5P	7 x M5 x 0.8P	7 x M6 x 1P	11 x M6 x1P	11 x M8 x 1.25P	11 x M10 x 1.5P	12 x M16 x 2P
D7	72	86	118	145	179	247	300
D8 H7	3	5	6	6	8	10	12
D10	8 x 3.4	8 x 4.5	8 x 5.5	8 x 5.5	12 x 6.6	12 x 9	16 x 13.5
D12	46.2	63.2	89.2	109.2	139.2	199.2	254.2
L1	4	8	12	12	12	16	20
L2	6.5	8	13.5	13.5	17	22.5	30.5
L3	3	3	6	6	6	8	12
L4	19.5	19.5	30	29	38	50	66
L5	7	7	10	10	14.6	15	20
L6	4	4	7	8	10	12	18
L8	107.5	126	172.5	201	263.5	334.5	392
L9	4	6	7	7	7	10	10
L10	0.5	0.5	1	1	1	1	1
C1[1]	46	70	100	130	165	215	235
C2[1]	M4 x 0.7P	M5 x 0.8P	M6 x 1P	M8 x 1.25P	M10 x 1.5P	M12 x 1.75P	M12 x 1.75P
C3[1]	≤11 / ≤12	≤14 / ≤16	≤19 / ≤24	≤32	≤38	≤48	≤55
C4[1]	30	34	40	50	60	85	116
C5[1]	30	50	80	110	130	180	200
C6[1]	3.5	8	4	5	6	6	6
C7[1]	48	60	90	115	142	190	220
C8[1]	19.5	19	17	19.5	22.5	29	63
C9[1]	104.25	116.5	159.5	199	245.5	316	398.5
C10[1]	13.25	13.5	10.75	13	15	20.75	53.5
C11[1]	74	81.5	107.5	134	164.5	213.5	268.5



[单位: mm]

尺寸	ADR047	ADR064	ADR090	ADR110	ADR140	ADR200	ADR255
D1 H7	12	20	31.5	40	50	80	100
D2	20	31.5	50	63	80	125	140
D3 h7	28	40	63	80	100	160	180
D4 h7	47	64	90	110	140	200	255
D5	67	79	109	135	168	233	280
D6	4 x M3 x 0.5P	7 x M5 x 0.8P	7 x M6 x 1P	11 x M6 x1P	11 x M8 x 1.25P	11 x M10 x 1.5P	12 x M16 x 2P
D7	72	86	118	145	179	247	300
D8 H7	3	5	6	6	8	10	12
D10	8 x 3.4	8 x 4.5	8 x 5.5	8 x 5.5	12 x 6.6	12 x 9	16 x 13.5
D12	46.2	63.2	89.2	109.2	139.2	199.2	254.2
L1	4	8	12	12	12	16	20
L2	6.5	8	13.5	13.5	17	22.5	30.5
L3	3	3	6	6	6	8	12
L4	19.5	19.5	30	29	38	50	66
L5	7	7	10	10	14.6	15	20
L6	4	4	7	8	10	12	18
L8	122	132.5	163	217.5	269.5	333.5	403
L9	4	6	7	7	7	10	10
L10	0.5	0.5	1	1	1	1	1
C1[2]	46	46	70	100	130	165	215
C2[2]	M4 x 0.7P	M4 x 0.7P	M5 x 0.8P	M6 x 1P	M8 x 1.25P	M10 x 1.5P	M12 x 1.75P
C3[2]	≤11 / ≤12	≤11 / ≤12	≤14 / ≤15.875 / ≤16	≤19 / ≤24	≤32	≤38	≤48
C4[2]	30	30	34	40	50	60	85
C5[2]	30	30	50	80	110	130	180
C6[2]	3.5	3.5	8	4	5	6	6
C7[2]	48	48	60	90	115	142	190
C8[2]	19.5	19.5	19	17	19.5	22.5	29
C9[2]	103.25	108.25	128.25	166.5	209	269.5	340
C10[2]	13.25	13.25	13.5	10.75	13	15	20.75
C11[2]	74	74	81.5	107.5	134	164.5	213.5

ADS Series

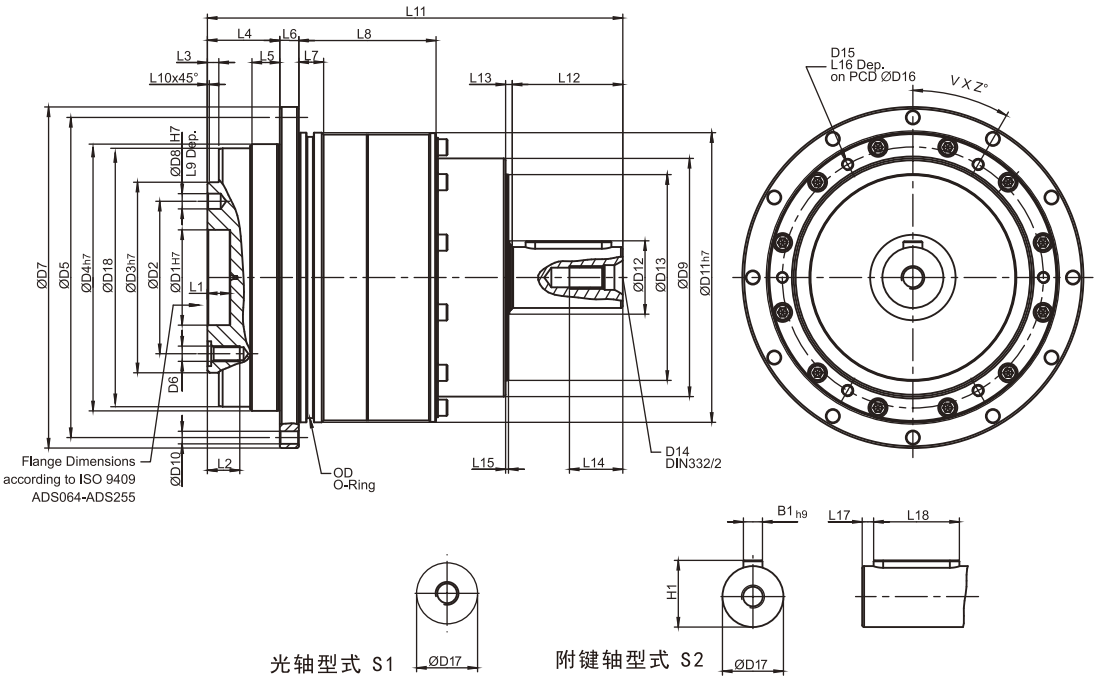
Gearbox Performance

Model No.		Stage	Ratio[A]	ADS047	ADS064	ADS090	ADS110	ADS140	ADS200	ADS255
Nominal Output Torque T_{2N}	Nm	1	4	19	48	130	270	560	1,100	1,700
			5	22	60	160	330	650	1,200	2,000
			7	19	50	140	300	550	1,100	1,800
			10	14	40	100	230	450	900	1,500
		2	16	19	48	130	270	560	1,100	1,700
			21	22	60	160	330	650	1,200	2,000
			31	19	50	140	300	550	1,100	1,800
			61	19	50	140	300	550	1,100	1,800
			91	14	40	100	230	450	900	1,500
Emergency Stop Torque T_{2NOT}[B]	Nm	1,2	4~91	3 times of Nominal Output Torque						
Nominal Input Speed n_{1N}	rpm	1,2	4~91	5,000	5,000	4,000	4,000	3,000	3,000	2,000
Max. Input Speed n_{1B}	rpm	1,2	4~91	10,000	10,000	8,000	7,500	4,500	4,500	3,800
Micro Backlash P0	arcmin	1	4~10	-	-	≤1	≤1	≤1	≤1	≤1
		2	16~91	-	-	-	≤3	≤3	≤3	≤3
Reduced Backlash P1	arcmin	1	4~10	≤3	≤3	≤3	≤3	≤3	≤3	≤3
		2	16~91	≤5	≤5	≤5	≤5	≤5	≤5	≤5
Standard Backlash P2	arcmin	1	4~10	≤5	≤5	≤5	≤5	≤5	≤5	≤5
		2	16~91	≤7	≤7	≤7	≤7	≤7	≤7	≤7
Torsional Rigidity	Nm/arcmin	1,2	4~91	3	7	14	25	50	145	225
Max. Tilting Moment M_{2K}	Nm	1,2	4~91	55	75	190	300	1,300	2,930	5,500
Max. Axial Load	N	1,2	4~91	990	1,050	2,850	2,990	10,590	16,660	29,430
Input Max. Radial Load F_{1rB}[C]	N	1	4~10	165	395	1,300	1,525	2,800	4,500	12,500
		2	16~91	165	165	395	1,300	1,525	2,800	4,500
Input Max. Axdial Load F_{1aB}[C]	N	1	4~10	580	1,000	1,100	980	2,700	4,700	8,000
		2	16~91	580	580	1,000	1,100	980	2,700	4,700
Efficiency η	%	1	4~10	≥97%						
		2	16~91	≥94%						
Weight	kg	1	4~10	0.8	1.4	3.4	6.7	13.5	35.0	63.8
		2	16~91	1.1	1.6	4.0	7.3	16.6	36.4	74.7
Operating Temp	°C	1,2	4~91	-10°C~90°C						
Lubrication				Synthetic lubrication oils						
IP Level		1,2	4~91	IP65						
Mounting Position		1,2	4~91	all directions						
Noise[D]	dB(A)	1,2	4~91	≤56	≤58	≤60	≤63	≤65	≤67	≤70

Gearbox Inertia

Model No.		Stage	Ratio[A]	ADS047	ADS064	ADS090	ADS110	ADS140	ADS200	ADS255
Moments of Inertia J_1	kg · cm^2	1	4	0.06	0.21	0.87	3.65	10.27	43.05	102.68
			5	0.06	0.21	0.83	3.53	10.17	41.76	99.12
			7	0.06	0.21	0.82	3.47	9.99	41.15	97.41
			10	0.06	0.21	0.81	3.45	9.93	40.97	97.03
		2	16	0.06	0.06	0.21	0.83	3.53	10.17	41.76
			21	0.06	0.06	0.21	0.83	3.53	10.17	41.76
			31	0.06	0.06	0.21	0.83	3.53	10.17	41.76
			61	0.06	0.06	0.21	0.81	3.45	9.93	40.97
			91	0.06	0.06	0.21	0.81	3.45	9.93	40.97

(1-单节 ，Ratio i=4~10) / ADS Series



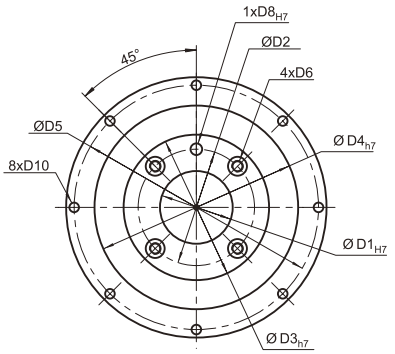
[unit: mm]

Dimension	ADS047	ADS064	ADS090	ADS110	ADS140	ADS200	ADS255
D1 H7	12	20	31.5	40	50	80	100
D2	20	31.5	50	63	80	125	140
D3 h7	28	40	63	80	100	160	180
D4 h7	47	64	90	110	140	200	255
D5	67	79	109	135	168	233	280
D6	4 x M3 x 0.5P	7 x M5 x 0.8P	7 x M6 x 1P	11 x M6 x 1P	11 x M8 x 1.25P	11 x M10 x 1.5P	12 x M16 x 2P
D7	72	86	118	145	179	247	300
D8 H7	3	5	6	6	8	10	12
D9	43	55	78	100	125	175	210
D10	8 x 3.4	8 x 4.5	8 x 5.5	8 x 5.5	12 x 6.6	12 x 9	16 x 13.5
D11 h7	60	70	95	120	152	212	255
D12	31	22	22	30	40	75	95
D13	37	50	62	82	108	145	172
D14	M4 x 0.7P	M4 x 0.7P	M5 x 0.8P	M8 x 1.25P	M12 x 1.75P	M16 x 2P	M20 x 2.5P
D15	M3 x 0.5P	M3 x 0.5P	M4 x 0.7P	M5 x 0.8P	M6 x 1P	M8 x 1.25P	M8 x 1.25P
D16	51.5	61.5	84	107	137	193	235
D17 K6	11	14	16	22	32	40	55
D18	46.2	63.2	89.2	109.2	139.2	199.2	254.2
L1	4	8	12	12	12	16	20
L2	6.5	8	13.5	13.5	17	22.5	30.5
L3	3	3	6	6	6	8	12
L4	19.5	19.5	30	29	38	50	66
L5	7	7	10	10	14.6	15	20
L6	4	4	7	8	10	12	18
L7	5	7.7	8	10	12	15	20
L8	32.5	43.5	47	62	72	89.5	112
L9	4	6	7	7	7	10	10
L10	0.5	0.5	1	1	1	1	1
L11	89.5	110.5	138.5	170	218	296	372.5
L12	18	22	28	36	58	82	115
L13	2.5	2.5	3.5	3.5	3.5	4.5	4.5
L14	10	10	12.5	19	28	36	42
L15	1.5	1.5	1.5	1.5	1.5	1.5	1.5
L16	5.5	5.5	7	9	11	14	14
L17	2	2	3	3	6	6	7
L18	14	18	22	28	45	70	90
B1 h9	4	5	5	6	10	12	16
H1	12.5	16	18	24.5	35	43	59
OD	56 x 2	66 x 2	90 x 3	110 x 3	145 x 3	200 x 5	238 x 5
V	4	4	4	4	6	6	6
Z	45	45	45	45	30	30	30

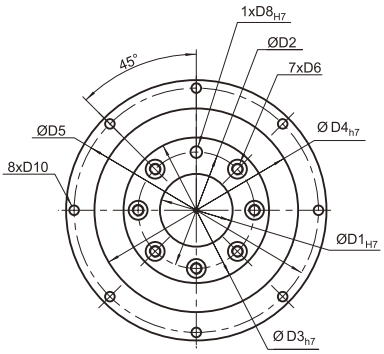
Output Dimensions

AD / ADR / ADS series　出力軸尺寸

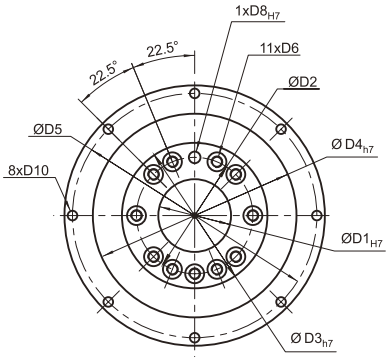
AD 047
ADR 047
ADS 047



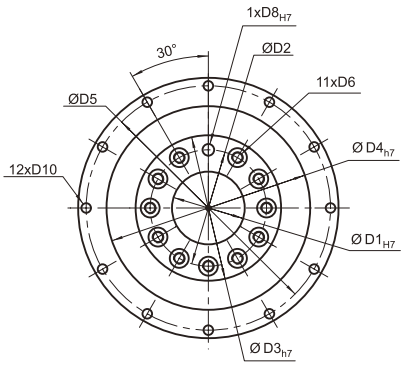
AD 064 / AD 090
ADR 064 / ADR 090
ADS 064 / ADS 090



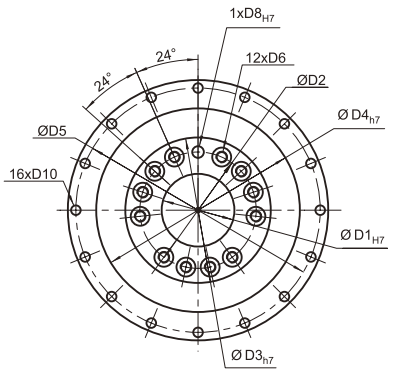
AD 110
ADR 110
ADS 110



AD 140 / AD 200
ADR 140 / ADR 200
ADS 140 / ADS 200



AD 255
ADR 255
ADS 255



[单位: mm]

尺寸	AD047	AD064	AD090	AD110	AD140	AD200	AD255
	ADR047	ADR064	ADR090	ADR110	ADR140	ADR200	ADR255
	ADS047	ADS064	ADS090	ADS110	ADS140	ADS200	ADS255
D1 H7	12	20	31.5	40	50	80	100
D2	20	31.5	50	63	80	125	140
D3 h7	28	40	63	80	100	160	180
D4 h7	47	64	90	110	140	200	255
D5	67	79	109	135	168	233	280
D6	M3 x 0.5P	M5 x 0.8P	M6 x 1P	M6 x 1P	M8 x 1.25P	M10 x 1.5P	M16 x 2P
D8 H7	3	5	6	6	8	10	12
D10	3.4	4.5	5.5	5.5	6.6	9	13.5

AE Series planetary gearbox
系列行星减速机

FEATURES
产品特点

- 行星臂架与输出轴采用一体式结构设计，
  确保最大的扭转刚性。
- 行星轮采用满滚针设计，
  增加接触面积以提高结构刚性与输出扭矩。
- 齿轮采用低碳钢表面渗碳淬火到HRC62，
  以获得最佳的耐磨及冲击韧性。
- 齿形引用国外进口软件辅助设计，
  以获得最佳的齿形降低噪音。
- 输入端与马达轴连接采用双边抱紧方式，
  以获取最大的夹紧力和零背隙的动力传递。

- Planetary boom and output shaft are intergrated structure designed to ensure maximum torsional rigidity.
- Planetary wheel with full needle design,increase the contact area to improve the rigidity and output torque.
- The gears are carburized and quenched to the HRC62 with low carbon steel surface for optimum wear and impact toughness.
- Gears refer to foreign imported software-assisted design to obtain the best tooth shape to reduce noise.
- The input terminal is connected to the motor shaft in a double-tight manner to obtain the maximum clamping force and zero backlash power transmission.

GENERAL NOTICES

• 订货须知

- 机种、型号、扭矩
- 减速比或出力轴转速
- 工况及连接方式
- 数量及安装的机械名称
- 入力方式和入力转速
- 马达厂牌型号或法兰及马达轴尺寸

- Type, model and torque
- Ratio or output speed
- Working conditions and connection methods
- Quantity and installed machine name
- Input mode and input speed
- Motor brand model or flange and motor shaft size

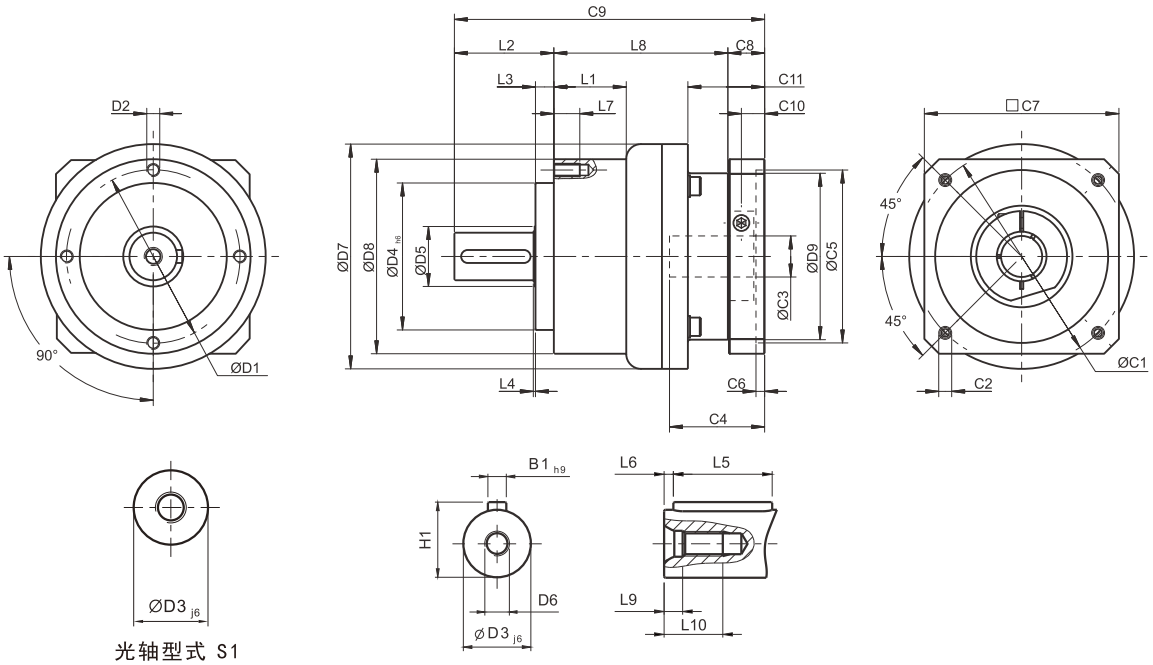
AE Series

减速机性能资料

规格		节数	减速比	AE050	AE070	AE090	AE120	AE155	AE205	AE235
额定输出力矩 T_{2N}	Nm	1	3	20	55	130	208	342	588	1,140
			4	19	50	140	290	542	1,050	1,700
			5	22	60	160	330	650	1,200	2,000
			6	20	55	150	310	600	1,100	1,900
			7	19	50	140	300	550	1,100	1,800
			8	17	45	120	260	500	1,000	1,600
			9	14	40	100	230	450	900	1,500
			10	14	40	100	230	450	900	1,500
		2	15	20	55	130	208	342	588	1,140
			20	19	50	140	290	542	1,050	1,700
			25	22	60	160	330	650	1,200	2,000
			30	20	55	150	310	600	1,100	1,900
			35	19	50	140	300	550	1,100	1,800
			40	17	45	120	260	500	1,000	1,600
			45	14	40	100	230	450	900	1,500
			50	22	60	160	330	650	1,200	2,000
			60	20	55	150	310	600	1,100	1,900
			70	19	50	140	300	550	1,100	1,800
			80	17	45	120	260	500	1,000	1,600
			90	14	40	100	230	450	900	1,500
			100	14	40	100	230	450	900	1,500
急停扭矩 T_{2NOT} (3)	Nm	1,2	3~100	3 倍额定输出力矩						
额定输入转速 n_{1N}	rpm	1,2	3~100	5,000	5,000	4,000	4,000	3,000	3,000	2,000
最大输入转速 n_{1B}	rpm	1,2	3~100	10,000	10,000	8,000	8,000	6,000	6,000	4,000
标准背隙	arcmin	1	3~10	≦8	≦8	≦8	≦8	≦8	≦8	≦8
		2	15~100	≦12	≦12	≦12	≦12	≦12	≦12	≦12
扭转刚性	Nm/arcmin	1,2	3~100	3	7	14	25	50	145	225
容许径向力 F_{2rB} (3)	N	1,2	3~100	702	1,377	2,985	6,100	8,460	13,050	8,700
容许轴向力 F_{2aB} (3)	N	1,2	3~100	390	765	1,625	3,350	4,700	7,250	5, 400
效率 η	%	1	3~10	≧97%						
		2	15~100	≧94%						
重量	kg	1	3~10	0.6	1.4	3.3	6.9	13	31	53
		2	15~100	0.9	1.6	4.7	8.7	17	35	66
使用温度	°C	1,2	3~100	-10°C~90°C						
润滑				合同润滑油脂						
防护等级		1,2	3~100	IP65						
安装方向		1,2	3~100	任意方向						
噪音值	dB(A)	1,2	3~100	≦56	≦58	≦60	≦63	≦65	≦67	≦70

减速机转动惯量

规格		节数	减速比	AE050	AE070	AE090	AE120	AE155	AE205	AE235
转动惯量 J_1	kg・cm^2	1	3	0.03	0.16	0.61	3.25	9.21	28.98	69.61
			4	0.03	0.14	0.48	2.74	7.54	23.67	54.37
			5	0.03	0.13	0.47	2.71	7.42	23.29	53.27
			6	0.03	0.13	0.45	2.65	7.25	22.75	51.72
			7	0.03	0.13	0.45	2.62	7.14	22.48	50.97
			8	0.03	0.13	0.44	2.58	7.07	22.59	50.84
			9	0.03	0.13	0.44	2.57	7.04	22.53	50.63
			10	0.03	0.13	0.44	2.57	7.03	22.51	50.56
		2	15	0.03	0.03	0.13	0.47	2.71	7.42	23.29
			20	0.03	0.03	0.13	0.47	2.71	7.42	23.29
			25	0.03	0.03	0.13	0.47	2.71	7.42	23.29
			30	0.03	0.03	0.13	0.47	2.71	7.42	23.29
			35	0.03	0.03	0.13	0.47	2.71	7.42	23.29
			40	0.03	0.03	0.13	0.47	2.71	7.42	23.29
			45	0.03	0.03	0.13	0.47	2.71	7.42	23.29
			50	0.03	0.03	0.13	0.44	2.57	7.03	22.51
			60	0.03	0.03	0.13	0.44	2.57	7.03	22.51
			70	0.03	0.03	0.13	0.44	2.57	7.03	22.51
			80	0.03	0.03	0.13	0.44	2.57	7.03	22.51
			90	0.03	0.03	0.13	0.44	2.57	7.03	22.51
			100	0.03	0.03	0.13	0.44	2.57	7.03	22.51

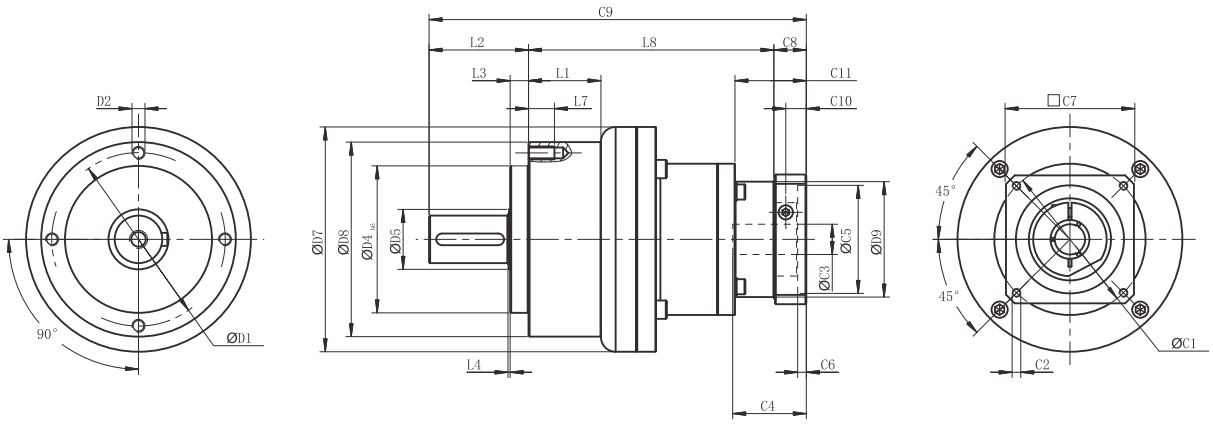


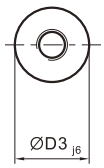
光轴型式 S1

附键轴型式 S2

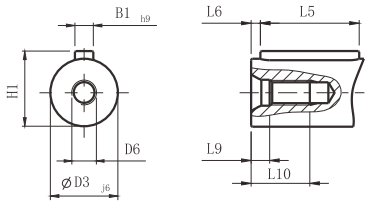
[单位: mm]

尺寸	AE050	AE070	AE090	AE120	AE155	AE205	AE235
D1	44	62	80	108	140	184	210
D2	M4 x 0.7P	M5 x 0.8P	M6 x 1P	M8 x 1.25P	M10 x 1.5P	M12 x 1.75P	M16 x 2P
D3 j6	12	16	22	32	40	55	75
D4 h6	35	52	68	90	120	160	180
D5	22	22	30	40	75	95	115
D6	M4 x 0.7P	M5 x 0.8P	M8 x 1.25P	M12 x 1.75P	M16 x 2P	M20 x 2.5P	M20 x 2.5P
D7	53	70	104	130	162	205	260
D8	50	70	90	120	155	205	235
D9	45.5	53.4	77	102	125	160	205
L1	--	--	33.5	38	50	--	70
L2	24.5	36	46	70	97	100	126
L3	4	6.5	8.5	17.5	15	15	18
L4	1	1	1	1.5	3	3	3
L5	14	25	32	40	63	70	90
L6	2	2	3	5	5	6	7
L7	8	10	12	16	20	22	28
L8	47	62	80.5	97	119.5	159	175.5
L9	4.5	4.8	7.2	10	12	15	15
L10	10	12.5	19	28	36	42	42
C1 [1]	46	70	100	130	165	215	235
C2 [1]	M4 x 0.7P	M5 x 0.8P	M6 x 1P	M8 x 1.25P	M10 x 1.5P	M12 x 1.75P	M12 x 1.75P
C3 [1]	≦11 /≦12 [2]	≦14 /≦16 [2]	≦19 /≦24	≦32	≦38	≦48	≦55
C4 [1]	30	34	40	50	60	85	116
C5 [1]	30	50	80	110	130	180	200
C6 [1]	3.5	8	4	5	6	6	6
C7 [1]	48	60	90	115	142	190	220
C8 [1]	19.5	19	17	19.5	22.5	29	63
C9 [1]	91	117	143.5	186.5	239	288	364.5
C10 [1]	13.25	13.5	10.75	13	15	20.75	53.5
C11 [1]	19.5	37	35.5	46	53.5	79.5	106.5
B1 h9	4	5	6	10	12	16	20
H1	14	18	24.5	35	43	59	79.5





光轴型式 S1



附键轴型式 S2

[单位: mm]

尺寸	AE050	AE070	AE090	AE120	AE155	AE205	AE235
D1	44	62	80	108	140	184	210
D2	M4 x 0.7P	M5 x 0.8P	M6 x 1P	M8 x 1.25P	M10 x 1.5P	M12 x 1.75P	M16 x 2P
D3 j6	12	16	22	32	40	55	75
D4 h6	35	52	68	90	120	160	180
D5	22	22	30	40	75	95	115
D6	M4 x 0.7P	M5 x 0.8P	M8 x 1.25P	M12 x 1.75P	M16 x 2P	M20 x 2.5P	M20 x 2.5P
D7	53	70	104	130	162	205	260
D8	50	70	90	120	155	205	235
D9	45.5	45.5	53.4	77	102	125	160
L1	--	--	33.5	38	50	--	70
L2	24.5	36	46	70	97	100	126
L3	4	6.5	8.5	17.5	15	15	18
L4	1	1	1	1.5	3	3	3
L5	14	25	32	40	63	70	90
L6	2	2	3	5	5	6	7
L7	8	10	12	16	20	22	28
L8	74	87.5	113.5	138.5	176	214.5	260
L9	4.5	4.8	7.2	10	12	15	15
L10	10	12.5	19	28	36	42	42
C1 [3]	46	46	70	100	130	165	215
C2 [3]	M4 x 0.7P	M4 x 0.7P	M5 x 0.8P	M6 x 1P	M8 x 1.25P	M10 x 1.5P	M12 x 1.75P
C3 [3]	≦11 /≦12 [4]	≦11 /≦12 [4]	≦14 /≦15.875 /≦16 [4]	≦19 /≦24 [4]	≦32	≦38	≦48
C4 [3]	30	30	34	40	50	60	85
C5 [3]	30	30	50	80	110	130	180
C6 [3]	3.5	3.5	8	4	5	6	6
C7 [3]	48	48	60	90	115	142	190
C8 [3]	19.5	19.5	19	17	19.5	22.5	29
C9 [3]	118	143	178.5	225.5	292.5	337	415
C10 [3]	13.25	13.25	13.5	10.75	13	15	20.75
C11 [3]	19.5	19.5	37	35.5	46	53.5	79.5
B1 h9	4	5	6	10	12	16	20
H1	14	18	24.5	35	43	59	79.5

AER

Series planetary gearbox
系列行星减速机

FEATURES
产品特点

- 行星臂架与输出轴采用一体式结构设计， 确保最大的扭转刚性。
- 行星轮采用满滚针设计，增加接触面积以提高结构刚性与输出扭矩。
- 齿轮采用低碳钢表面渗碳淬火到HRC62，以获得最佳的耐磨及冲击韧性。
- 齿形引用国外进口软件辅助设计，以获得最佳的齿形降低噪音。
- 输入端与马达轴连接采用双边抱紧方式，以获取最大的夹紧力和零背隙的动力传递。
- 采用蜗线伞齿轮设计，容许输出扭矩高、比直伞齿轮高30%以上。
- 高容许输入转速，比直伞齿轮输入高8倍以上。
- 蜗线伞齿轮的啮合齿印，经最佳优化设计，接触齿面负载均一，运转寿命长。
- 蜗线伞齿轮啮合，经最佳运动误差分析与严格的制程控制，以确保高精度的运转背隙。

- Planetary boom and output shaft are intergrated structure designed to ensure maximum torsional rigidity.
- Planetary wheel with full needle design,increase the contact area to improve the rigidity and output torque.
- The gears are carburized and quenched to the HRC62 with low carbon steel surface for optimum wear and impact toughness.
- Gears refer to foreign imported software-assisted design to obtain the best tooth shape to reduce noise.
- The input terminal is connected to the motor shaft in a double-tight manner to obtain the maximum clamping force and zero backlash power transmission.
- Adopt spiral bevel gear design, allow high output torque, more than 30% higher than straight bevel gear.
- High tolerance input speed, more than 8 times higher than straight bevel gear input.
- The meshing tooth imprint of spiral bevel gear has been optimized by optimum design, and the contact tooth surface load is uniform, and long running life.
- Cochlear bevel gears are meshed by optimum motion error analysis and strict process control to ensure high precision running back clearance.

GENERAL NOTICES

● 订货须知

- 机种、型号、扭矩
- 减速比或出力轴转速
- 工况及连接方式
- 数量及安装的机械名称
- 入力方式和入力转速
- 马达厂牌型号或法兰及马达轴尺寸

- Type, model and torque
- Ratio or output speed
- Working conditions and connection methods
- Quantity and installed machine name
- Input mode and input speed
- Motor brand model or flange and motor shaft size

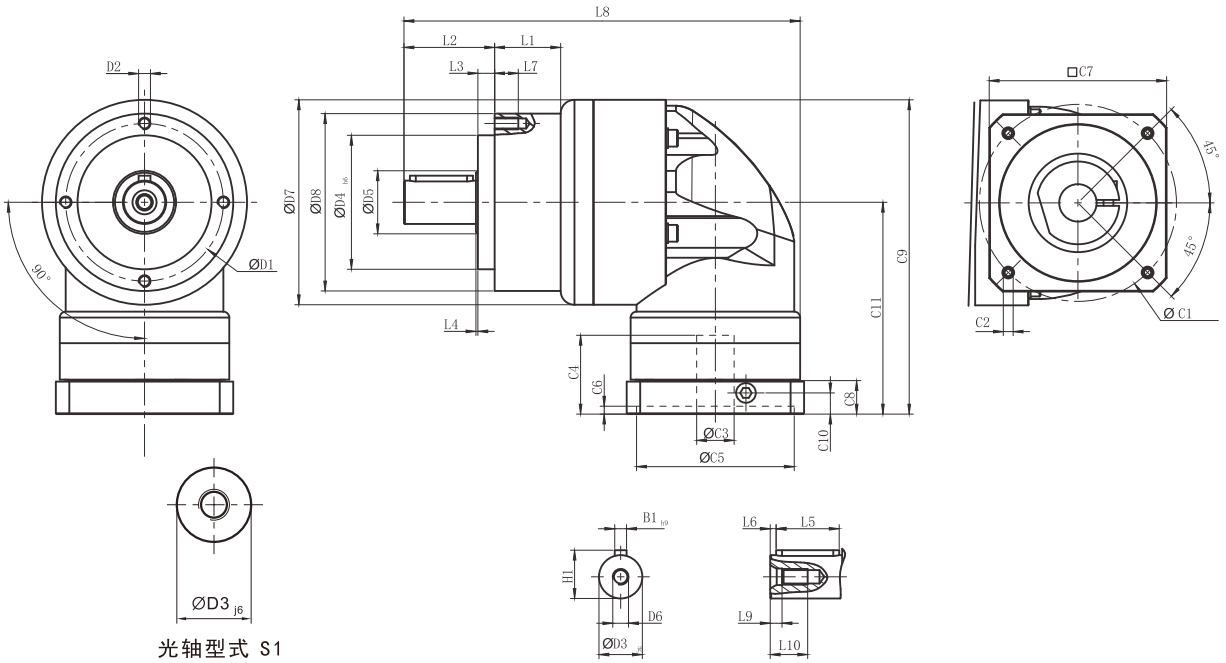
AER Series

减速机性能资料

规格		节数	减速比	AER050	AER070	AER090	AER120	AER155	AER205	AER235
额定输出力矩 T_{2N}	Nm	1	3	9	36	90	195	342	588	1,140
			4	12	48	120	260	520	1,040	1,680
			5	15	60	150	325	650	1,200	2,000
			6	18	55	150	310	600	1,100	1,900
			7	19	50	140	300	550	1,100	1,800
			8	17	45	120	260	500	1,000	1,600
			9	14	40	100	230	450	900	1,500
			10	14	60	150	325	650	1,200	2,000
			14	–	42	140	300	550	1,100	1,800
			20	–	40	100	230	450	900	1,500
		2	15	14	–	–	–	–	–	–
			20	14	–	–	–	–	–	–
			25	15	60	150	325	650	1,200	2,000
			30	20	55	150	310	600	1,100	1,900
			35	19	50	140	300	550	1,100	1,800
			40	17	45	120	260	500	1,000	1,600
			45	14	40	100	230	450	900	1,500
			50	14	60	150	325	650	1,200	2,000
			60	20	55	150	310	600	1,100	1,900
			70	19	50	140	300	550	1,100	1,800
			80	17	45	120	260	500	1,000	1,600
			90	14	40	100	230	450	900	1,500
			100	14	40	100	230	450	900	1,500
			120	–	–	150	310	600	1,100	1,900
			140	–	–	140	300	550	1,100	1,800
			160	–	–	120	260	550	1,000	1,600
			180	–	–	100	230	450	900	1,500
			200	–	–	100	230	450	900	1,500
急停扭矩 T_{2NOT}[3]	Nm	1,2	3~200	3 倍额定输出力矩						
额定输入转速 n_{1N}	rpm	1,2	3~200	5,000	5,000	4,000	4,000	3,000	3,000	2,000
最大输入转速 n_{1B}	rpm	1,2	3~200	10,000	10,000	8,000	8,000	6,000	6,000	4,000
标准背隙	arcmin	1	3~20	≦10	≦10	≦10	≦10	≦10	≦10	≦10
		2	25~200	≦14	≦14	≦14	≦14	≦14	≦14	≦14
扭转刚性	Nm/arcmin	1,2	3~200	3	7	14	25	50	145	225
容许径向力 F_{2rB}[3]	N	1,2	3~200	702	1,377	2,985	6,100	8,460	13,050	8,700
容许轴向力 F_{2aB}[3]	N	1,2	3~200	390	765	1,625	3,350	4,700	7,250	5,400
效率 η	%	1	3~20	≧95%						
		2	25~200	≧92%						
重量	kg	1	3~20	1.0	2.1	5.8	11.2	22.4	46.8	78.0
		2	25~200	1.3	2.0	4.6	11.1	21.8	43.7	81.9
使用温度	°C	1,2	3~200	-10C~90C °						
润滑				合同润滑油脂						
防护等级		1,2	3~200	IP65						
安装方向		1,2	3~200	任意方向						
噪音值	dB(A)	1,2	3~200	≦61	≦63	≦65	≦68	≦70	≦72	≦74

减速机转动惯量

规格		节数	减速比	AER050	AER070	AER090	AER120	AER155	AER205	AER235
转动惯量 J_1	kg·cm²	1	3~10	0.09	0.35	2.25	6.84	23.4	68.9	135.4
			14	–	0.07	1.87	6.25	21.8	65.6	119.8
			20	–	0.07	1.87	6.25	21.8	65.6	119.8
		2	15	0.09	–	–	–	–	–	–
			20	0.09	–	–	–	–	–	–
			25~100	0.09	0.09	0.35	2.25	6.84	23.4	68.9
			120~200	–	–	0.31	1.87	6.25	21.8	65.6

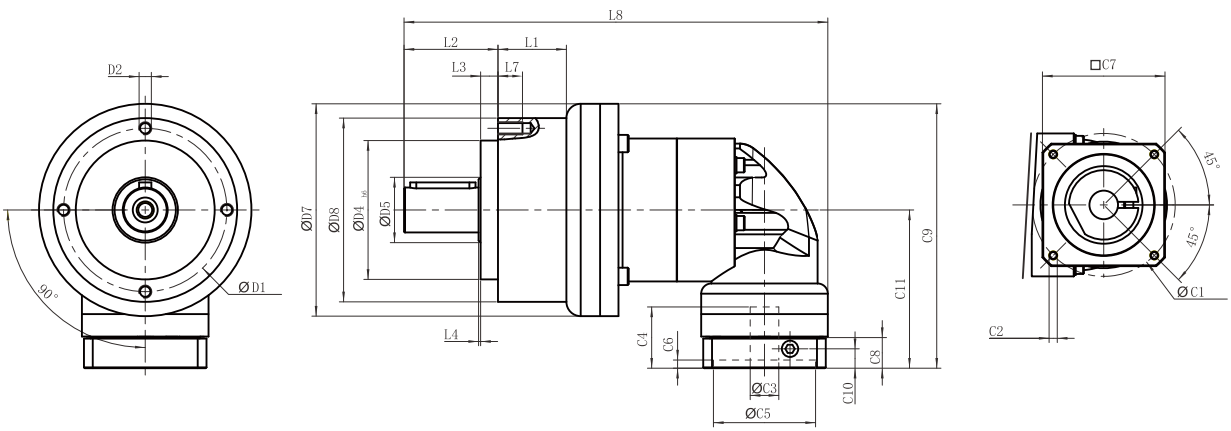


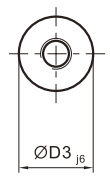
光轴型式 S1

附键轴型式 S2

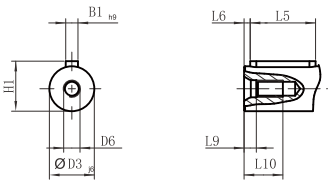
[单位: mm]

尺寸	AER050	AER070	AER090	AER120	AER155	AER205	AER235
D1	44	62	80	108	140	184	210
D2	M4 x 0.7P	M5 x 0.8P	M6 x 1P	M8 x 1.25P	M10 x 1.5P	M12 x 1.75P	M16 x 2P
D3 j6	12	16	22	32	40	55	75
D4 h6	35	52	68	90	120	160	180
D5	22	22	30	40	75	95	115
D6	M4 x 0.7P	M5 x 0.8P	M8 x 1.25P	M12 x 1.75P	M16 x 2P	M20 x 2.5P	M20 x 2.5P
D7	53	70	104	130	162	205	260
D8	50	70	90	120	155	205	235
L1	--	--	33.5	38	50	--	70
L2	24.5	36	46	70	97	100	126
L3	4	6.5	8.5	17.5	15	15	18
L4	1	1	1	1.5	3	3	3
L5	14	25	32	40	63	70	90
L6	2	2	3	5	5	6	7
L7	8	10	12	16	20	22	28
L8	115.5	146	201	252	324.5	379.5	461.5
L9	4.5	4.8	7.2	10	12	15	15
L10	10	12.5	19	28	36	42	42
C1 [1]	46	70	100	130	165	215	235
C2 [1]	M4 x 0.7P	M5 x 0.8P	M6 x 1P	M8 x 1.25P	M10 x 1.5P	M12 x 1.75P	M12 x 1.75P
C3 [1]	≦11 /≦12 [2]	≦14 /≦16 [2]	≦19 /≦24 [2]	≦32	≦38	≦48	≦55
C4 [1]	30	34	40	50	60	85	116
C5 [1]	30	50	80	110	130	180	200
C6 [1]	3.5	8	4	5	6	6	6
C7 [1]	48	60	90	115	142	190	220
C8 [1]	19.5	19	17	19.5	22.5	29	63
C9 [1]	100.5	116.5	159.5	199	245.5	316	398.5
C10 [1]	13.25	13.5	10.75	13	15	20.75	53.5
C11 [1]	74	81.5	107.5	134	164.5	213.5	268.5
B1 h9	4	5	6	10	12	16	20
H1	14	18	24.5	35	43	59	79.5





光轴型式 S1

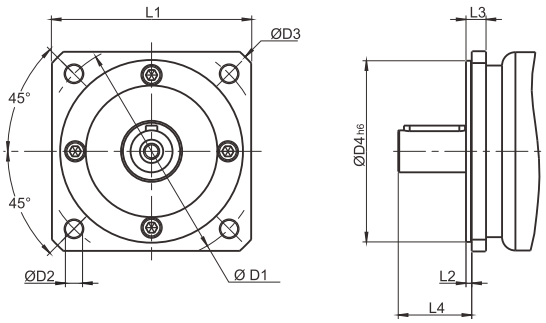


附键轴型式 S2

[单位: mm]

尺寸	AER050	AER070	AER090	AER120	AER155	AER205	AER235
D1	44	62	80	108	140	184	210
D2	M4 x 0.7P	M5 x 0.8P	M6 x 1P	M8 x 1.25P	M10 x 1.5P	M12 x 1.75P	M16 x 2P
D3 j6	12	16	22	32	40	55	75
D4 h6	35	52	68	90	120	160	180
D5	22	22	30	40	75	95	115
D6	M4 x 0.7P	M5 x 0.8P	M8 x 1.25P	M12 x 1.75P	M16 x 2P	M20 x 2.5P	M20 x 2.5P
D7	53	70	104	130	162	205	260
D8	50	70	90	120	155	205	235
L1	--	--	33.5	38	50	--	70
L2	24.5	36	46	70	97	100	126
L3	4	6.5	8.5	17.5	15	15	18
L4	1	1	1	1.5	3	3	3
L5	14	25	32	40	63	70	90
L6	2	2	3	5	5	6	7
L7	8	10	12	16	20	22	28
L8	142.5	167.5	207.5	283	358	422.5	506.5
L9	4.5	4.8	7.2	10	12	15	15
L10	10	12.5	19	28	36	42	42
C1 [2]	46	46	70	100	130	165	215
C2 [2]	M4 x 0.7P	M4 x 0.7P	M5 x 0.8P	M6 x 1P	M8 x 1.25P	M10 x 1.5P	M12 x 1.75P
C3 [2]	≦11 /≦12	≦11 /≦12	≦14 /≦15.875 /≦16	≦19 / ≦24	≦32	≦38	≦48
C4 [2]	30	30	34	40	50	60	85
C5 [2]	30	30	50	80	110	130	180
C6 [2]	3.5	3.5	8	4	5	6	6
C7 [2]	48	48	60	90	115	142	190
C8 [2]	19.5	19.5	19	17	19.5	22.5	29
C9 [2]	100.5	109	133.5	172.5	215	267	343.5
C10 [2]	13.25	13.25	13.5	10.75	13	15	20.75
C11 [2]	74	74	81.5	107.5	134	164.5	213.5
B1 h9	4	5	6	10	12	16	20
H1	14	18	24.5	35	43	59	79.5

选配前板配件



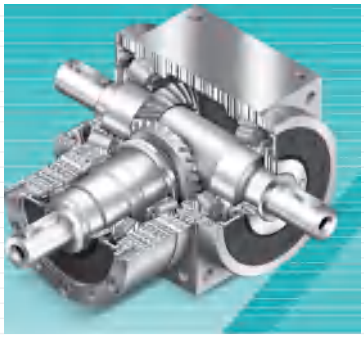
[单位: mm]

尺寸	D1	D2	D3	D4 h6	L1	L2	L3	L4
AE050(AER050)-NEMA 23	66.675	6	77	38.1	57.2	2	8	18.5
AE050(AER050)-PX60	70	5.6	80.5	50	60	2.5	8.5	18.5
AE070(AER070)-Metric	90	6.6	106	50	80	3	11	28
AE070(AER070)-NEMA 34	98.425	5.5	115	73.025	86	2.5	8	30.5
AE070(AER070)-DT90 / PX90	100	6.6	120	80	90	3	8	31
AE090(AER090)-IEC 63D5 B5	115	9	140	95	105	3	10.5	38.5
AE090(AER090)-NEMA 34	98.425	5.5	120	73.025	92	2.5	12.5	36
AE090(AER090)-DT90 / PX90	100	6.5	120	80	92	2.5	12.5	36
AE090(AER090)-NEMA 42	125.73	7	144	55.58	107	4	14.5	35.5
AE120(AER120)-NEMA 42	125.73	7.1	170	55.499	127	1.5	21.5	50
AE120(AER120)-NEMA 56	149.225	6.6	170	114.3	127	3	17.5	55.5
AE155(AER155)-B5	175	11	196	130	160	5	20	82
AE205(AER205)-B5	230	13	277	180	210	5	23	82
AE235(AER235)-B5	275	17	317	235	240	5	23	108

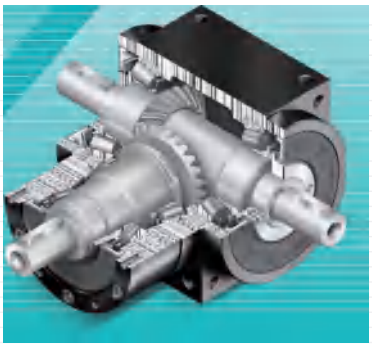
AT / ATB 系列

产品特点

AT-L



ATB-L



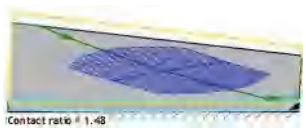
AT-FH

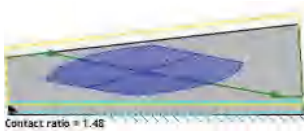
AT-FL

ATB系列的材质，箱体为柒黑铸铁，输入轴为合金钢。

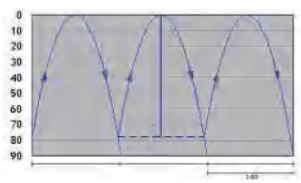
- 一体化不锈钢本体确保最大钢性与耐蚀性，多重精密加工表面易于组装。
- 采用顶级蜗线伞齿的设计软体，经最佳化设计接触齿面负载均容许高扭矩输出，齿轮采用高强力渗碳合金钢，研磨精密等级符合DIN5级标准内。

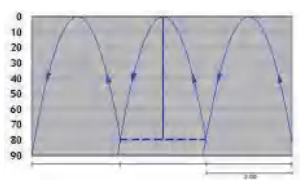
- 多重不锈钢输出力轴的设计可以适用于各种工业上应用的需求。





- 高精密研磨的蜗线伞齿轮组结合最佳化设计的行星式齿轮组可以达到1000：1的减速比。





- 高扭矩低背隙的精简结构设计适用于精密伺服的应用。
- 专利的油封设计，免保养无需更换润滑油运转寿命长。

AT / ATB 轴型系列

产品规格

减速机性能资料

规格		节数	速比 [A]	AT065 L / AT065 L1 / AT065 H / AT065 C / AT065 R1 / AT065 LM / AT065 RM / AT065 4M	AT075 L / AT075 L1 / AT075 H / AT075 C / AT075 R1 / AT075 LM / AT075 RM / AT075 4M	AT090 L / AT090 L1 / AT090 H / AT090 C / AT090 R1 / AT090 LM / AT090 RM / AT090 4M	AT110 L / AT110 L1 / AT110 H / AT110 C / AT110 R1 / AT110 LM / AT110 RM / AT110 4M	AT140 L / AT140 L1 / AT140 H / AT140 C / AT140 R1 / AT140 LM / AT140 RM / AT140 4M	AT170 L / AT170 L1 / AT170 H / AT170 C / AT170 R1 / AT170 LM / AT170 RM / AT170 4M	AT210 L / AT210 L1 / AT210 H / AT210 C / AT210 R1 / AT210 LM / AT210 RM / AT210 4M	AT240 L / AT240 L1 / AT240 H / AT240 C / AT240 R1 / AT240 LM / AT240 RM / AT240 4M	AT280 L / AT280 L1 / AT280 H / AT280 C / AT280 R1 / AT280 LM / AT280 RM / AT280 4M
额定输出力矩 T_{2N}	Nm	1	1	25	45	78	150	360	585	1,300	2,150	3,200
			1.5	25	45	78	150	360	585	1,300	2,150	3,200
			2	24	42	68	150	330	544	1,220	2,010	3,050
			3	18	33	54	120	270	450	1,020	1,650	2,850
			4	13	28	48	100	224	376	860	1,410	2,300
			5	12	25	40	85	196	320	740	1,210	2,000
最大加速力矩 T_{2B}	Nm	1	1~5	2倍额定输出力矩								
最大加速输入转速 n_{1B}	rpm	1	1~5	7,500	6,500	5,500	4,500	3,500	3,000	2,200	2,000	1,700
背隙 [B]	arcmin	1	1~5	≤6	≤6	≤6	≤6	≤6	≤6	≤6	≤6	≤6
容许径向力 F_{1rB} [C] 输入轴 d1	N	1	1~5	700	950	1,450	2,100	2,700	3,800	7,800	9,600	10,500
容许径向力 F_{2rB} [D] 输出轴 d2	N	1	1~5	900	1,100	1,700	2,700	4,800	6,600	11,500	16,000	18,000
容许径向力 F_{1aB} [C] 输入轴 d1	N	1	1~5	350	425	725	1,050	1,350	1,900	3,900	4,800	5,250
容许径向力 F_{2aB} [D] 输出轴 d2	N	1	1~5	450	550	850	1,350	2,400	3,300	5,750	8,500	9,000
使用寿命 [E]	hr	1	1~5	20,000								
效率 η	%	1	1~5	≥98%								
使用温度	°C	1	1~5	-10°C ~ 90°C								
润滑				合成润滑油脂								
噪音值 (n=1500rpm, No Load)	dB (A)	1	1~5	≤68	≤70	≤74	≤76	≤77	≤78	≤80	≤82	≤83

减速机转动惯量

规格		节数	速比 [A]	AT065 L / AT065 L1 / AT065 H / AT065 C / AT065 R1 / AT065 LM / AT065 RM / AT065 4M	AT075 L / AT075 L1 / AT075 H / AT075 C / AT075 R1 / AT075 LM / AT075 RM / AT075 4M	AT090 L / AT090 L1 / AT090 H / AT090 C / AT090 R1 / AT090 LM / AT090 RM / AT090 4M	AT110 L / AT110 L1 / AT110 H / AT110 C / AT110 R1 / AT110 LM / AT110 RM / AT110 4M	AT140 L / AT140 L1 / AT140 H / AT140 C / AT140 R1 / AT140 LM / AT140 RM / AT140 4M	AT170 L / AT170 L1 / AT170 H / AT170 C / AT170 R1 / AT170 LM / AT170 RM / AT170 4M	AT210 L / AT210 L1 / AT210 H / AT210 C / AT210 R1 / AT210 LM / AT210 RM / AT210 4M	AT240 L / AT240 L1 / AT240 H / AT240 C / AT240 R1 / AT240 LM / AT240 RM / AT240 4M	AT280 L / AT280 L1 / AT280 H / AT280 C / AT280 R1 / AT280 LM / AT280 RM / AT280 4M
转动惯量 J_1	kg・cm^2	1	1	0.51	1.30	3.16	7.70	23.57	58.99	195.40	369.34	799.12
			1.5	0.64	1.16	2.82	6.74	19.37	49.28	155.45	283.58	595.78
			2	0.44	1.11	2.70	6.31	17.75	45.35	140.24	249.74	511.76
			3	0.43	1.09	2.66	6.17	17.18	44.01	134.95	237.71	483.06
			4	0.43	1.09	2.65	6.13	17.06	43.70	133.58	234.72	476.26
			5	0.43	1.09	2.65	6.12	17.02	43.60	133.14	233.67	473.58

重量

Model No.		Stage	Ratio [A]	AT065	AT075	AT090	AT110	AT140	AT170	AT210	AT240	AT280
L Series	kg	1	1~5	2.6	4.2	6.8	11.6	19.8	34.8	66.2	98.1	155.7
L1 Series		1	1~5	2.6	4.1	6.7	11.5	19.5	34.2	65.1	96.6	153.4
H Series		1	1~5	2.5	3.9	6.4	11.0	18.1	31.6	60.0	89.4	143.4
C Series		1	1~5	2.8	4.2	6.9	11.4	19.6	33.7	63.3	97.9	149.1
R1 Series		1	1~5	2.6	4.1	6.7	11.5	19.5	34.2	65.1	96.6	153.4
LM Series		1	1	3.5	5.6	9.0	15.2	24.1	42.4	81.4	122.0	190.9
RM Series		1	1	3.5	5.6	9.0	15.2	24.1	42.4	81.4	122.0	190.9
4M Series		1	1	3.5	5.6	9.1	15.4	24.8	42.6	82.5	123.5	193.3

A. 速比 (i= N_{in} / N_{out}). AT-LM / RM / 4M 只提供 1 : 1 速比.

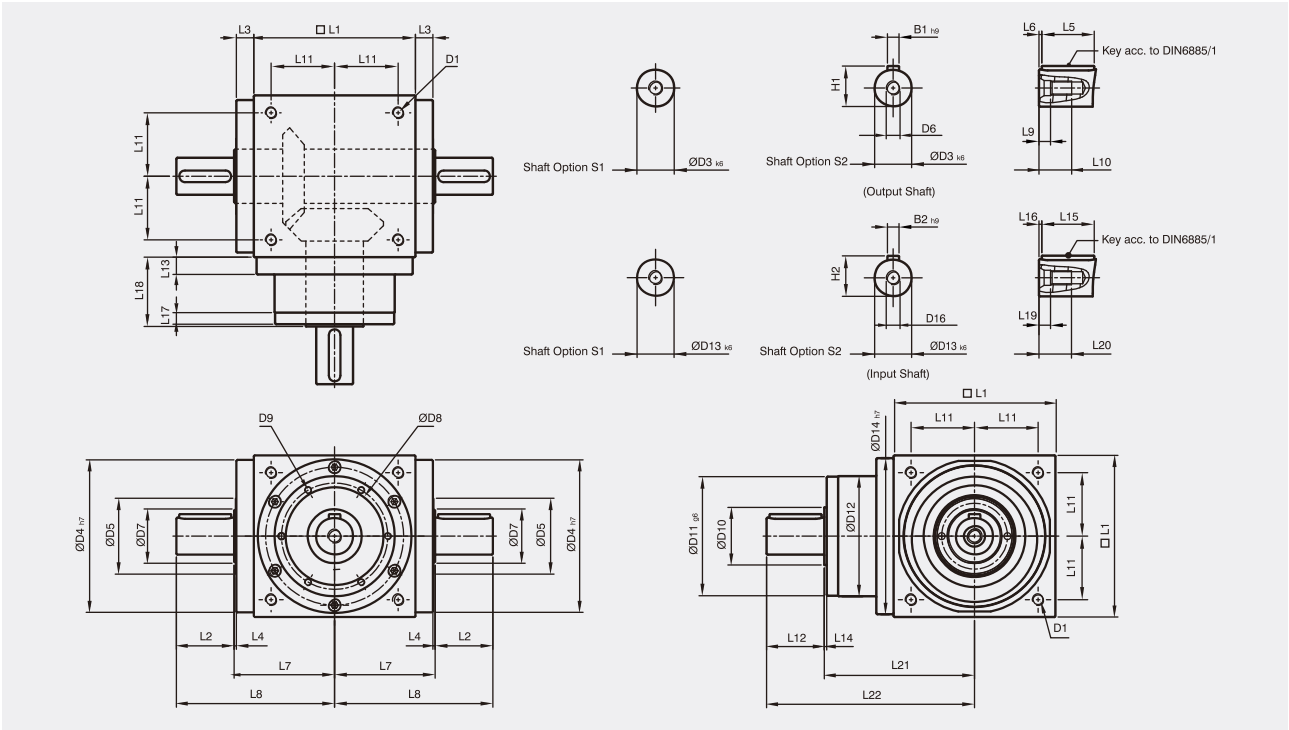
B. 背隙值是在 2% 额定力矩 T_{2N}的扭力下测得 .

C. 最大加速输入转速 n_{1B} 作用于输入轴中心位置 .

D. 连续运转使用寿命为 10,000 小时.

AT-L / ATB-L 系列

尺寸 (单节, 减速比 i=1~5)



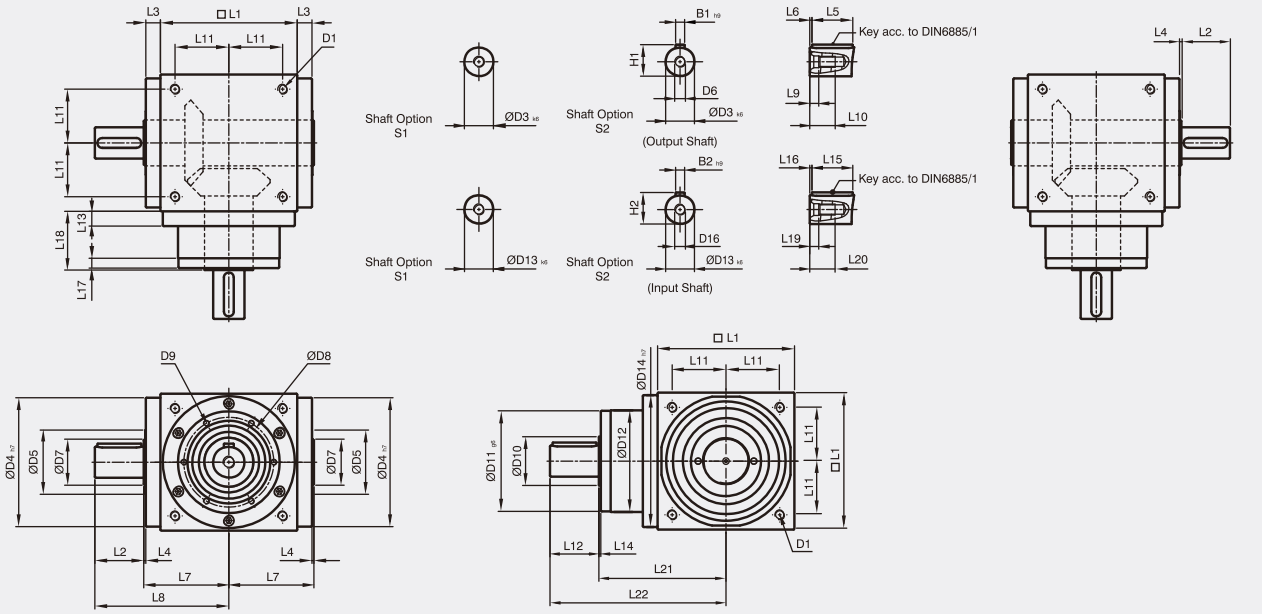
[单位:mm]

尺寸	AT065 L	AT075 L	AT090 L	AT110 L	AT140 L	AT170 L	AT210 L	AT240 L	AT280 L
D1	M4	M6	M6	M8	M10	M12	M16	M16	M16
D3 k6	13	16	18	22	32	40	50	55	60
D4 h7	63	73	88	108	135	165	205	235	275
D5	31	35	43	53	68	83	104	124	144
D6	M4	M5	M5	M8	M12	M16	M16	M16	M20
D7	21	22	28	33	47	55	75	85	110
D8	53	62	76	95	92	114	142	160	176
D9	4xM4xL7	4xM5xL8	4xM5xL8	6xM6xL10	6xM6xL10	6xM8xL12.5	6xM8xL12.5	6xM8xL12.5	6xM10xL15
D10	15.4	20.4	25.8	35.8	49.8	59.3	79.3	92.3	102.3
D11 g6	62.9	72.9	87	107	103	127	158	178	198
D12	62	72	86	106	104	128	160	180	200
D13 k6	13	16	18	22	32	40	50	55	60
D14 h7	63	73	88	108	135	165	205	235	275
D16	M4	M5	M5	M8	M12	M16	M16	M16	M20
L1	65	75	90	110	140	170	210	240	280
L2	19.5	30	35	40	50	60	75	85	110
L3	13	14.5	15	15	15	15	20	25	25
L4	2	2	2	2	2	2	2	2	2
L5	16	25	28	32	45	50	70	80	100
L6	2	2.5	3.5	4	2.5	5	2.5	2.5	5
L7	47.5	54	62	72	87	102	127	147	167
L8	67	84	97	112	137	162	202	232	277
L9	4.5	4.8	4.8	7.2	10	12	12	12	15
L10	10	12.5	12.5	19	28	36	36	36	42
L11	27	30	36	44	55	67	85	95	110
L12	19.5	30	35	40	50	60	75	85	110
L13	13	15	15	15	15	15	20	25	25
L14	2	2	2	2	2	2	2	2	2
L15	16	25	28	32	45	50	70	80	100
L16	2	2.5	3.5	4	2.5	5	2.5	2.5	5
L17	6	8	8	8	10	10	10	10	10
L18	43	52.5	55	60	60	70	90	105	120
L19	4.5	4.8	4.8	7.2	10	12	12	12	15
L20	10	12.5	12.5	19	28	36	36	36	42
L21	75.5	90	100	115	130	155	195	225	260
L22	95	120	135	155	180	215	270	310	370
B1 h9	5	5	6	6	10	12	14	16	18
B2 h9	5	5	6	6	10	12	14	16	18
H1	15	18	20.5	24.5	35	43	53.5	59	64
H2	15	18	20.5	24.5	35	43	53.5	59	64

AT-L1/R1 / ATB-L1/R1 系列

尺寸 (单节, 减速比i=1~5)

AT-L1 **AT-R1**

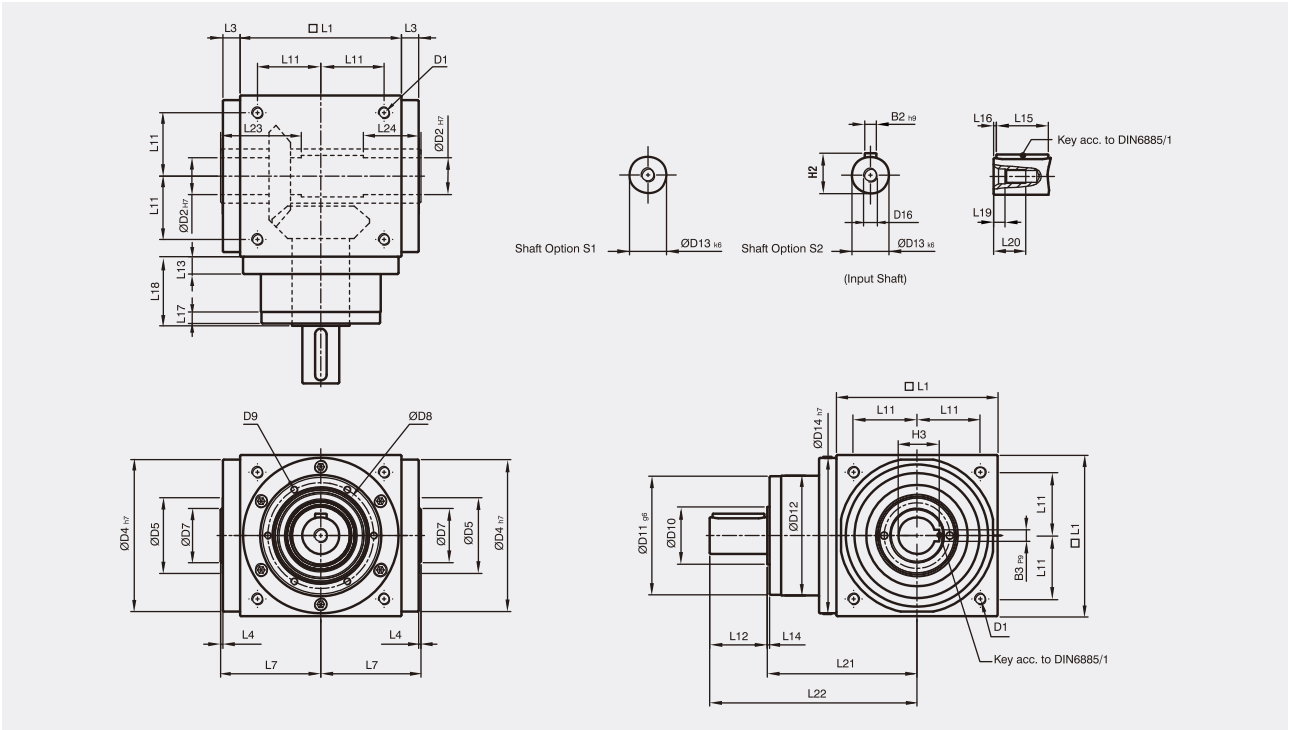


[单位: mm]

尺寸	AT065 L1/R1	AT075 L1/R1	AT090 L1/R1	AT110 L1/R1	AT140 L1/R1	AT170 L1/R1	AT210 L1/R1	AT240 L1/R1	AT280 L1/R1
D1	M4	M6	M6	M8	M10	M12	M16	M16	M16
D3 k6	13	16	18	22	32	40	50	55	60
D4 h7	63	73	88	108	135	165	205	235	275
D5	31	35	43	53	68	83	104	124	144
D6	M4	M5	M5	M8	M12	M16	M16	M16	M20
D7	21	22	28	33	47	55	75	85	110
D8	53	62	76	95	92	114	142	160	176
D9	4xM4xL7	4xM5xL8	4xM5xL8	6xM6xL10	6xM6xL10	6xM8xL12.5	6xM8xL12.5	6xM8xL12.5	6xM10xL15
D10	15.4	20.4	25.8	35.8	49.8	59.3	79.3	92.3	102.3
D11 g6	62.9	72.9	87	107	103	127	158	178	198
D12	62	72	86	106	104	128	160	180	200
D13 k6	13	16	18	22	32	40	50	55	60
D14 h7	63	73	88	108	135	165	205	235	275
D16	M4	M5	M5	M8	M12	M16	M16	M16	M20
L1	65	75	90	110	140	170	210	240	280
L2	19.5	30	35	40	50	60	75	85	110
L3	13	14.5	15	15	15	15	20	25	25
L4	2	2	2	2	2	2	2	2	2
L5	16	25	28	32	45	50	70	80	100
L6	2	2.5	3.5	4	2.5	5	2.5	2.5	5
L7	47.5	54	62	72	87	102	127	147	167
L8	67	84	97	112	137	162	202	232	277
L9	4.5	4.8	4.8	7.2	10	12	12	12	15
L10	10	12.5	12.5	19	28	36	36	36	42
L11	27	30	36	44	55	67	85	95	110
L12	19.5	30	35	40	50	60	75	85	110
L13	13	15	15	15	15	15	20	25	25
L14	2	2	2	2	2	2	2	2	2
L15	16	25	28	32	45	50	70	80	100
L16	2	2.5	3.5	4	2.5	5	2.5	2.5	5
L17	6	8	8	8	10	10	10	10	10
L18	43	52.5	55	60	60	70	90	105	120
L19	4.5	4.8	4.8	7.2	10	12	12	12	15
L20	10	12.5	12.5	19	28	36	36	36	42
L21	75.5	90	100	115	130	155	195	225	260
L22	95	120	135	155	180	215	270	310	370
B1 h9	5	5	6	6	10	12	14	16	18
B2 h9	5	5	6	6	10	12	14	16	18
H1	15	18	20.5	24.5	35	43	53.5	59	64
H2	15	18	20.5	24.5	35	43	53.5	59	64

AT-H / ATB-H 系列

尺寸 (单节, 减速比 i=1~5)

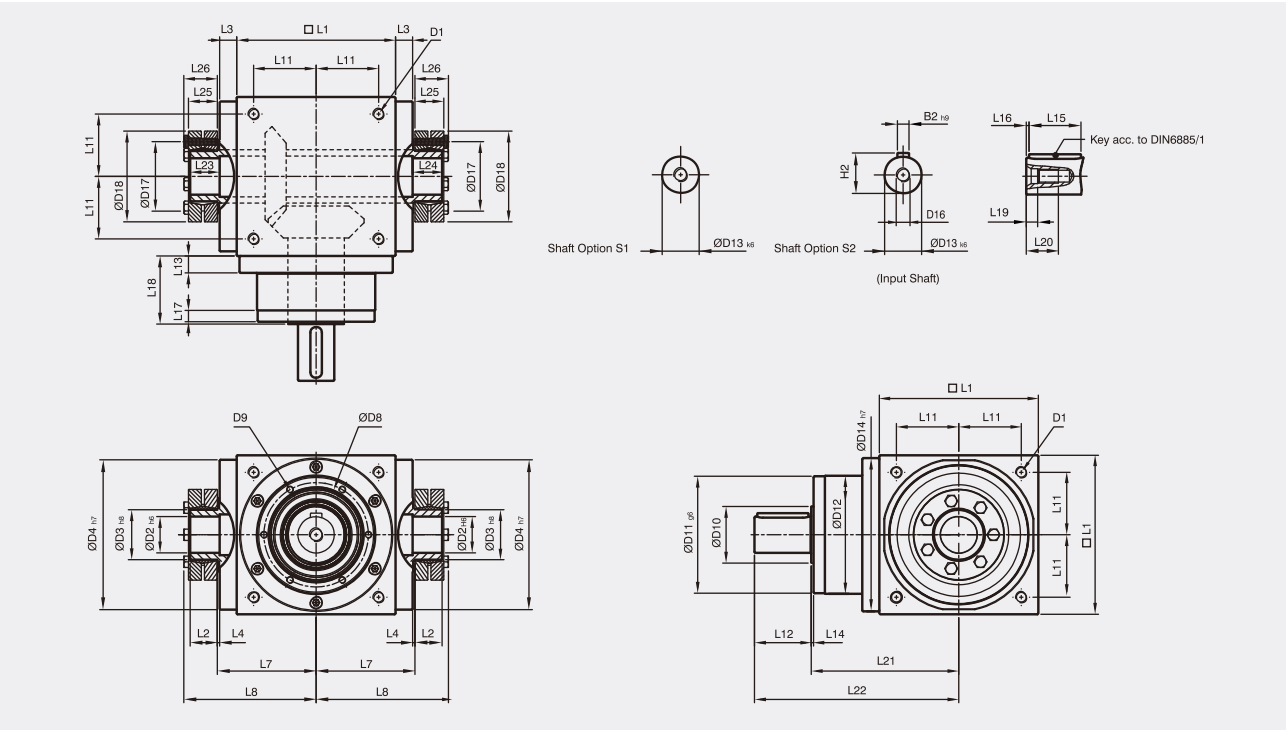


[单位: mm]

尺寸	AT065 H	AT075 H	AT090 H	AT110 H	AT140 H	AT170 H	AT210 H	AT240 H	AT280 H
D1	M4	M6	M6	M8	M10	M12	M16	M16	M16
D2 H7	13	14	18	22	32	40	50	55	60
D4 h7	63	73	88	108	135	165	205	235	275
D5	31	35	43	53	68	83	104	124	144
D7	21	22	28	33	47	55	75	85	110
D8	53	62	76	95	92	114	142	160	176
D9	4xM4xL7	4xM5xL8	4xM5xL8	6xM6xL10	6xM6xL10	6xM8xL12.5	6xM8xL12.5	6xM8xL12.5	6xM10xL15
D10	15.4	20.4	25.8	35.8	49.8	59.3	79.3	92.3	102.3
D11 g6	62.9	72.9	87	107	103	127	158	178	198
D12	62	72	86	106	104	128	160	180	200
D13 k6	13	16	18	22	32	40	50	55	60
D14 h7	63	73	88	108	135	165	205	235	275
D16	M4	M5	M5	M8	M12	M16	M16	M16	M20
L1	65	75	90	110	140	170	210	240	280
L3	13	14.5	15	15	15	15	20	25	25
L4	2	2	2	2	2	2	2	2	2
L7	47.5	54	62	72	87	102	127	147	167
L11	27	30	36	44	55	67	85	95	110
L12	19.5	30	35	40	50	60	75	85	110
L13	13	15	15	15	15	15	20	25	25
L14	2	2	2	2	2	2	2	2	2
L15	16	25	28	32	45	50	70	80	100
L16	2	2.5	3.5	4	2.5	5	2.5	2.5	5
L17	6	8	8	8	10	10	10	10	10
L18	43	52.5	55	60	60	70	90	105	120
L19	4.5	4.8	4.8	7.2	10	12	12	12	15
L20	10	12.5	12.5	19	28	36	36	36	42
L21	75.5	90	100	115	130	155	195	225	260
L22	95	120	135	155	180	215	270	310	370
L23	40	47	52	53	70	80	95	115	115
L24	30	32	35	35	50	55	65	80	80
B2 h9	5	5	6	6	10	12	14	16	18
B3 P9	5	5	6	6	10	12	14	16	18
H2	15	18	20.5	24.5	35	43	53.5	59	64
H3	15.3	16.3	20.8	24.8	35.3	43.3	53.8	59.3	64.4

AT-C / ATB-C 系列

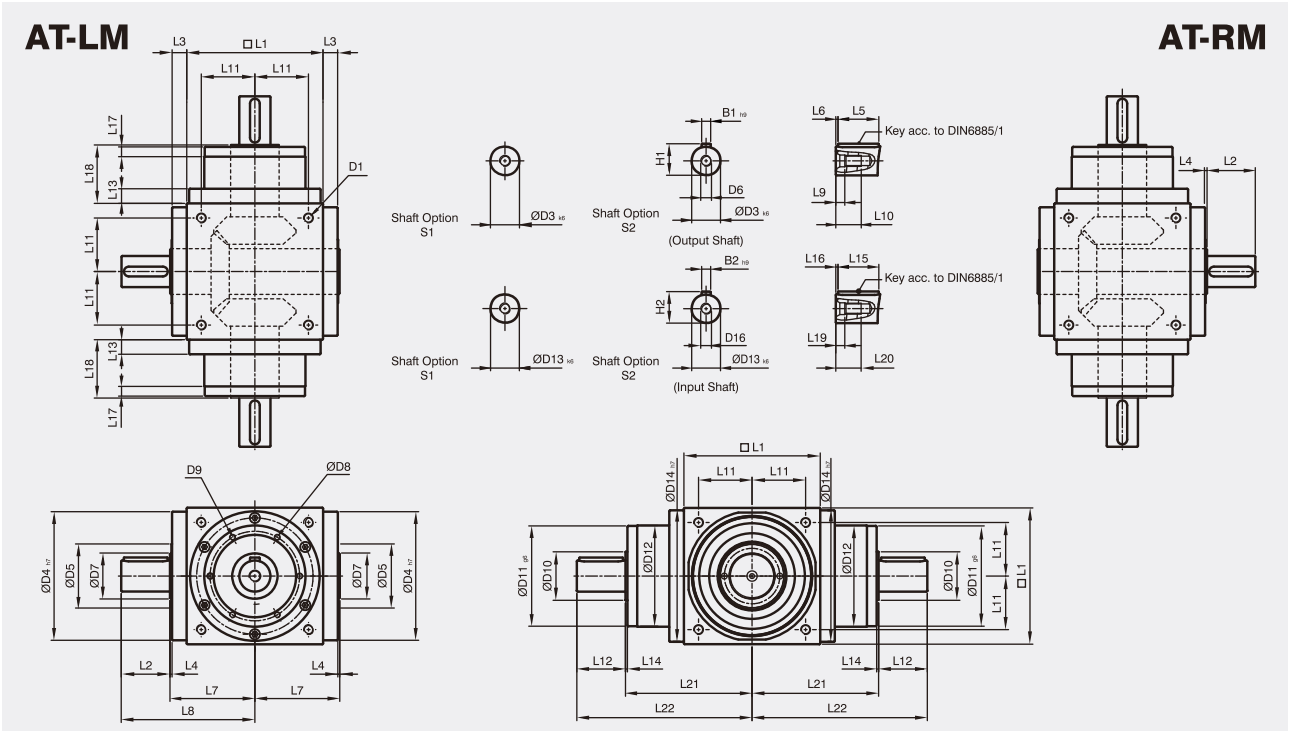
尺寸 (单节, 减速比 i=1~5)



[单位: mm]

尺寸	AT065 C	AT075 C	AT090 C	AT110 C	AT140 C	AT170 C	AT210 C	AT240 C	AT280 C
D1	M4	M6	M6	M8	M10	M12	M16	M16	M16
D2 H6	13	14	18	22	32	40	50	55	60
D3 h8	16	16	22	25	44	50	62	68	75
D4 h7	63	73	88	108	135	165	205	235	275
D8	53	62	76	95	92	114	142	160	176
D9	4xM4xL7	4xM5xL8	4xM5xL8	6xM6xL10	6xM6xL10	6xM8xL12.5	6xM8xL12.5	6xM8xL12.5	6xM10xL15
D10	15.4	20.4	25.8	35.8	49.8	59.3	79.3	92.3	102.3
D11 g6	62.9	72.9	87	107	103	127	158	178	198
D12	62	72	86	106	104	128	160	180	200
D13 k6	13	16	18	22	32	40	50	55	60
D14 h7	63	73	88	108	135	165	205	235	275
D16	M4	M5	M5	M8	M12	M16	M16	M16	M20
D17	26	26	36	38	61	70	86	86	100
D18	41	41	50	50	80	90	110	115	138
L1	65	75	90	110	140	170	210	240	280
L2	14	14	18	18	24	26	29	29	30.5
L3	13	14.5	15	15	15	15	20	25	25
L4	2	2	2	2	2	2	2	2	2
L7	47.5	54	62	72	87	102	127	147	167
L8	66	72.5	85	95	116.5	133.5	161.5	181.5	205
L11	27	30	36	44	55	67	85	95	110
L12	19.5	30	35	40	50	60	75	85	110
L13	13	15	15	15	15	15	20	25	25
L14	2	2	2	2	2	2	2	2	2
L15	16	25	28	32	45	50	70	80	100
L16	2	2.5	3.5	4	2.5	5	2.5	2.5	5
L17	6	8	8	8	10	10	10	10	10
L18	43	52.5	55	60	60	70	90	105	120
L19	4.5	4.8	4.8	7.2	10	12	12	12	15
L20	10	12.5	12.5	19	28	36	36	36	42
L21	75.5	90	100	115	130	155	195	225	260
L22	95	120	135	155	180	215	270	310	370
L23	15	15	20	20	26	28	31	31	32.5
L24	15	15	20	20	26	28	31	31	32.5
L25	15	15	19.5	19.5	25.5	27.5	30.5	30.5	32.5
L26	18.5	18.5	23	23	29.5	31.5	34.5	34.5	38
B2 h9	5	5	6	6	10	12	14	16	18
H2	15	18	20.5	24.5	35	43	53.5	59	64

尺寸(单节, 减速比 i=1)

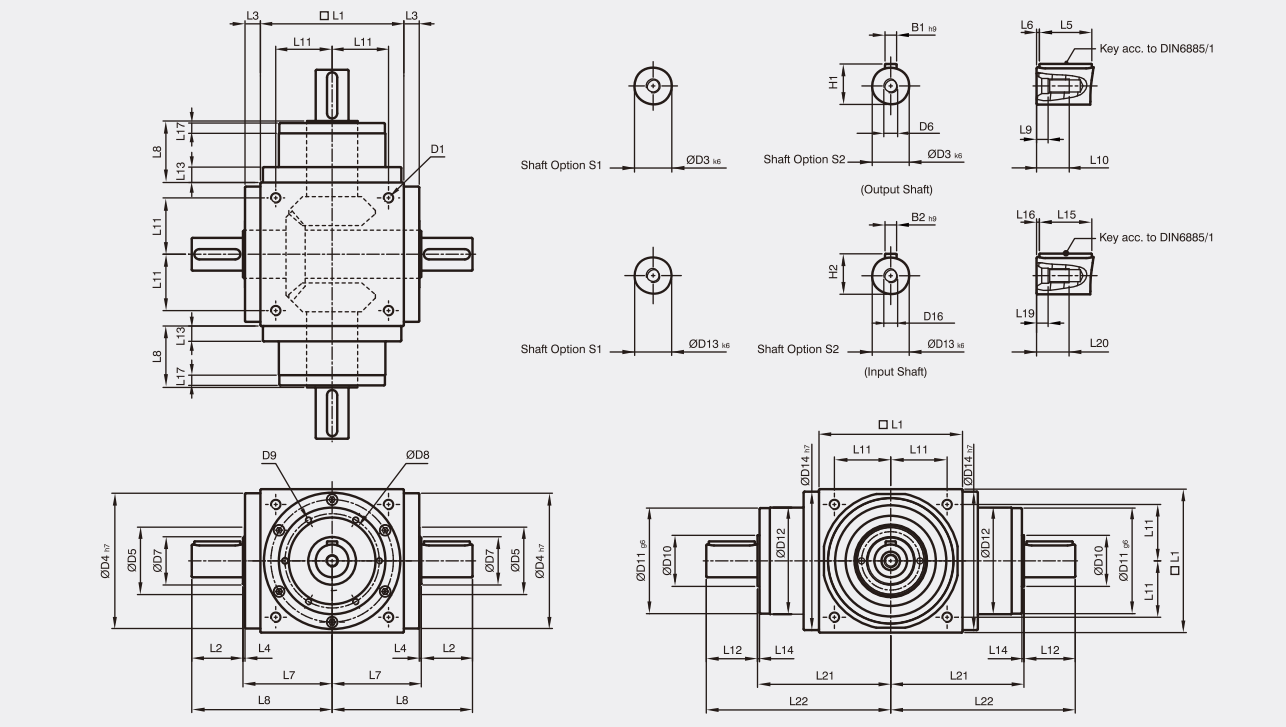


[单位: mm]

尺寸	AT065LM/RM	AT075LM/RM	AT090LM/RM	AT110LM/RM	AT140LM/RM	AT170LM/RM	AT210LM/RM	AT240LM/RM	AT280LM/RM
D1	M4	M6	M6	M8	M10	M12	M16	M16	M16
D3 k6	13	16	18	22	32	40	50	55	60
D4 h7	63	73	88	108	135	165	205	235	275
D5	31	35	43	53	68	83	104	124	144
D6	M4	M5	M5	M8	M12	M16	M16	M16	M20
D7	21	22	28	33	47	55	75	85	110
D8	53	62	76	95	92	114	142	160	176
D9	4xM4xL7	4xM5xL8	4xM5xL8	6xM6xL10	6xM6xL10	6xM8xL12.5	6xM8xL12.5	6xM8xL12.5	6xM10xL15
D10	15.4	20.4	25.8	35.8	49.8	59.3	79.3	92.3	102.3
D11 g6	62.9	72.9	87	107	103	127	158	178	198
D12	62	72	86	106	104	128	160	180	200
D13 k6	13	16	18	22	32	40	50	55	60
D14 h7	63	73	88	108	135	165	205	235	275
D16	M4	M5	M5	M8	M12	M16	M16	M16	M20
L1	65	75	90	110	140	170	210	240	280
L2	19.5	30	35	40	50	60	75	85	110
L3	13	14.5	15	15	15	15	20	25	25
L4	2	2	2	2	2	2	2	2	2
L5	16	25	28	32	45	50	70	80	100
L6	2	2.5	3.5	4	2.5	5	2.5	2.5	5
L7	47.5	54	62	72	87	102	127	147	167
L8	67	84	97	112	137	162	202	232	277
L9	4.5	4.8	4.8	7.2	10	12	12	12	15
L10	10	12.5	12.5	19	28	36	36	36	42
L11	27	30	36	44	55	67	85	95	110
L12	19.5	30	35	40	50	60	75	85	110
L13	13	15	15	15	15	15	20	25	25
L14	2	2	2	2	2	2	2	2	2
L15	16	25	28	32	45	50	70	80	100
L16	2	2.5	3.5	4	2.5	5	2.5	2.5	5
L17	6	8	8	8	10	10	10	10	10
L18	43	52.5	55	60	60	70	90	105	120
L19	4.5	4.8	4.8	7.2	10	12	12	12	15
L20	10	12.5	12.5	19	28	36	36	36	42
L21	75.5	90	100	115	130	155	195	225	260
L22	95	120	135	155	180	215	270	310	370
B1 h9	5	5	6	6	10	12	14	16	18
B2 h9	5	5	6	6	10	12	14	16	18
H1	15	18	20.5	24.5	35	43	53.5	59	64
H2	15	18	20.5	24.5	35	43	53.5	59	64

AT-4M / ATB-4M 系列

尺寸 (单节, 减速比 i=1)



[单位: mm]

尺寸	AT065 4M	AT075 4M	AT090 4M	AT110 4M	AT140 4M	AT170 4M	AT210 4M	AT240 4M	AT280 4M
D1	M4	M6	M6	M8	M10	M12	M16	M16	M16
D3 k6	13	16	18	22	32	40	50	55	60
D4 h7	63	73	88	108	135	165	205	235	275
D5	31	35	43	53	68	83	104	124	144
D6	M4	M5	M5	M8	M12	M16	M16	M16	M20
D7	21	22	28	33	47	55	75	85	110
D8	53	62	76	95	92	114	142	160	176
D9	4xM4xL7	4xM5xL8	4xM5xL8	6xM6xL10	6xM6xL10	6xM8xL12.5	6xM8xL12.5	6xM8xL12.5	6xM10xL15
D10	15.4	20.4	25.8	35.8	49.8	59.3	79.3	92.3	102.3
D11 g6	62.9	72.9	87	107	103	127	158	178	198
D12	62	72	86	106	104	128	160	180	200
D13 k6	13	16	18	22	32	40	50	55	60
D14 h7	63	73	88	108	135	165	205	235	275
D16	M4	M5	M5	M8	M12	M16	M16	M16	M20
L1	65	75	90	110	140	170	210	240	280
L2	19.5	30	35	40	50	60	75	85	110
L3	13	14.5	15	15	15	15	20	25	25
L4	2	2	2	2	2	2	2	2	2
L5	16	25	28	32	45	50	70	80	100
L6	2	2.5	3.5	4	2.5	5	2.5	2.5	5
L7	47.5	54	62	72	87	102	127	147	167
L8	67	84	97	112	137	162	202	232	277
L9	4.5	4.8	4.8	7.2	10	12	12	12	15
L10	10	12.5	12.5	19	28	36	36	36	42
L11	27	30	36	44	55	67	85	95	110
L12	19.5	30	35	40	50	60	75	85	110
L13	13	15	15	15	15	15	20	25	25
L14	2	2	2	2	2	2	2	2	2
L15	16	25	28	32	45	50	70	80	100
L16	2	2.5	3.5	4	2.5	5	2.5	2.5	5
L17	6	8	8	8	10	10	10	10	10
L18	43	52.5	55	60	60	70	90	105	120
L19	4.5	4.8	4.8	7.2	10	12	12	12	15
L20	10	12.5	12.5	19	28	36	36	36	42
L21	75.5	90	100	115	130	155	195	225	260
L22	95	120	135	155	180	215	270	310	370
B1 h9	5	5	6	6	10	12	14	16	18
B2 h9	5	5	6	6	10	12	14	16	18
H1	15	18	20.5	24.5	35	43	53.5	59	64
H2	15	18	20.5	24.5	35	43	53.5	59	64

AT / ATB -F法兰型　系列

产品规格

减速机性能资料

规格		节数	速比 [A]	AT065 FL AT065 FL1 AT065 FH AT065 FC AT065 FR1	AT075 FL AT075 FL1 AT075 FH AT075 FC AT075 FR1	AT090 FL AT090 FL1 AT090 FH AT090 FC AT090 FR1	AT110 FL AT110 FL1 AT110 FH AT110 FC AT110 FR1	AT140 FL AT140 FL1 AT140 FH AT140 FC AT140 FR1	AT170 FL AT170 FL1 AT170 FH AT170 FC AT170 FR1	AT210 FL AT210 FL1 AT210 FH AT210 FC AT210 FR1	AT240 FL AT240 FL1 AT240 FH AT240 FC AT240 FR1	AT280 FL AT280 FL1 AT280 FH AT280 FC AT280 FR1
额定输出力矩　T_{2N}	Nm	1	1	25	45	78	150	360	585	1,300	2,150	3,200
			1.5	25	45	78	150	360	585	1,300	2,150	3,200
			2	24	42	68	150	330	544	1,220	2,010	3,050
			3	18	33	54	120	270	450	1,020	1,650	2,850
			4	13	28	48	100	224	376	860	1,410	2,300
			5	12	25	40	85	196	320	740	1,210	2,000
		2	7	12	12	33	91	91	91	195	358	358
			10	24	28	68	150	208	208	430	846	846
			15	18	33	54	120	270	312	645	1,269	1,269
			20	13	28	48	100	224	376	860	1,410	1,692
			25	12	25	40	85	196	320	740	1,210	2,000
			35	12	25	40	85	196	320	740	1,210	1,790
			50	12	25	40	85	196	320	740	1,210	1,465
		3	75	-	-	-	120	210	312	585	1,269	1,269
			100	-	-	-	100	224	376	780	1,410	1,692
			125	-	-	-	85	196	320	740	1,210	2,000
			150	-	-	-	120	135	312	390	975	975
			200	-	-	-	100	180	376	520	1,300	1,300
			250	-	-	-	85	196	320	650	1,210	1,625
			350	-	-	-	85	196	320	740	1,210	1,790
			500	-	-	-	85	196	320	740	1,210	1,465
最大加速力矩 T_{2B}	Nm	1,2,3	1~500	2 倍额定输出力矩								
最大加速输入转速 n_{1B}	rpm	1	1~5	7,500	6,500	5,500	4,500	3,500	3,000	2,200	2,000	1,700
		2	7~50	8,000	8,000	6,000	6,000	6,000	6,000	4,800	3,600	3,600
		3	75~500	-	-	-	8,000	8,000	6,000	6,000	6,000	6,000
背隙 [B]	arcmin	1	1~5	≤6	≤6	≤6	≤6	≤6	≤6	≤6	≤6	≤6
		2	7~50	≤8	≤8	≤8	≤8	≤8	≤8	≤8	≤8	≤8
		3	75~500	-	-	-	≤10	≤10	≤10	≤10	≤10	≤10
容许径向力 F_{2rB} [C] 输出轴 d2	N	1,2,3	1~500	900	1,100	1,700	2,700	4,800	6,600	11,500	16,000	18,000
容许径向力 F_{2aB} [C] 输出轴 d2	N	1,2,3	1~500	450	550	850	1,350	2,400	3,300	5,750	8,500	9,000
使用寿命 [D]	hr	1,2,3	1~500	20,000								
效率　η	%	1	1~5	≥98%								
		2,3	7~500	≥94%								
使用温度	°C	1,2,3	1~500	-10 °C ~ 90 °C								
润滑				合成润滑油脂								
噪音值(n=1500rpm, No Load)	dB (A)	1,2,3	1~500	≤71	≤72	≤76	≤77	≤78	≤79	≤81	≤83	≤84

AT / ATB F法兰型系列

产品规格

减速机性能资料

规格		节数	速比 [A]	AT065 FL AT065 FL1 AT065 FH AT065 FC AT065 FR1	AT075 FL AT075 FL1 AT075 FH AT075 FC AT075 FR1	AT090 FL AT090 FL1 AT090 FH AT090 FC AT090 FR1	AT110 FL AT110 FL1 AT110 FH AT110 FC AT110 FR1	AT140 FL AT140 FL1 AT140 FH AT140 FC AT140 FR1	AT170 FL AT170 FL1 AT170 FH AT170 FC AT170 FR1	AT210 FL AT210 FL1 AT210 FH AT210 FC AT210 FR1	AT240 FL AT240 FL1 AT240 FH AT240 FC AT240 FR1	AT280 FL AT280 FL1 AT280 FH AT280 FC AT280 FR1
转动惯量 J_1	kg・cm^2	1	1	0.51	1.30	3.14	7.62	23.54	59.09	195.96	365.38	787.63
			1.5	0.46	1.15	2.80	6.65	19.34	49.38	156.02	279.62	584.28
			2	0.44	1.10	2.68	6.23	17.72	45.44	140.80	245.78	500.26
			3	0.43	1.09	2.64	6.08	17.16	44.11	135.51	233.75	471.56
			4	0.43	1.08	2.63	6.05	17.03	43.79	134.14	230.77	464.76
			5	0.43	1.08	2.63	6.04	16.99	43.69	133.71	229.71	462.08
		2	7	0.15	0.15	0.50	2.79	2.79	2.79	9.91	29.26	29.26
			10	0.15	0.15	0.50	2.80	2.80	2.80	9.96	29.43	29.43
			15	0.15	0.15	0.50	2.80	2.80	2.80	9.96	29.43	29.43
			20	0.15	0.15	0.50	2.80	2.80	2.80	9.96	29.43	29.43
			25	0.15	0.15	0.50	2.80	2.80	2.80	9.96	29.43	29.43
			35	0.15	0.15	0.50	2.79	2.79	2.79	9.91	29.26	29.26
			50	0.15	0.15	0.50	2.79	2.79	2.79	9.89	29.20	29.20
		3	75	-	-	-	2.80	2.80	2.80	9.96	29.43	29.43
			100	-	-	-	2.80	2.80	2.80	9.96	29.43	29.43
			125	-	-	-	2.80	2.80	2.80	9.96	29.43	29.43
			150	-	-	-	2.79	2.79	2.79	9.89	29.20	29.20
			200	-	-	-	2.79	2.79	2.79	9.89	29.20	29.20
			250	-	-	-	2.79	2.79	2.79	9.89	29.20	29.20
			350	-	-	-	2.79	2.79	2.79	9.89	29.20	29.20
			500	-	-	-	2.79	2.79	2.79	9.89	29.20	29.20

重量

减速机型号		节数	速比 [A]	AT065	AT075	AT090	AT110	AT140	AT170	AT210	AT240	AT280
FL Series	kg	1	1~5	2.8	4.4	7.1	12.1	20.9	36.1	69.4	101.2	158.3
		2	7~50	3.2	4.8	8.1	14.3	24.2	38.5	74.1	112.4	171.0
		3	75~500	-	-	-	13.9	23.7	38.8	73.4	110.2	168.7
FL1 Series		1	1~5	2.7	4.3	7.1	11.9	20.3	35.5	68.3	99.6	156.0
		2	7~50	3.2	4.8	8.0	14.2	23.9	37.9	73.0	110.8	168.6
		3	75~500	-	-	-	13.8	23.4	38.2	72.3	108.6	166.4
FH Series		1	1~5	2.6	4.1	6.7	11.4	18.9	32.9	63.2	92.5	146.0
		2	7~50	3.1	4.6	7.7	13.6	22.4	35.3	67.9	103.7	158.7
		3	75~500	-	-	-	13.3	21.9	35.6	67.2	101.5	156.5
FC Series		1	1~5	2.9	4.4	7.2	11.8	20.4	35.0	66.5	96.0	151.7
		2	7~50	3.3	4.9	8.2	14.1	24.1	37.4	71.2	107.2	164.4
		3	75~500	-	-	-	13.7	23.5	37.5	70.5	105.0	162.2
FR1 Series		1	1~5	2.7	4.3	7.1	11.9	20.3	35.5	68.3	99.6	156.0
		2	7~50	3.2	4.8	8.0	14.2	23.9	37.9	73.0	110.8	168.6
		3	75~500	-	-	-	13.8	23.4	38.2	72.3	108.6	166.4

A. 速比 ($i = N_{in} / N_{out}$)

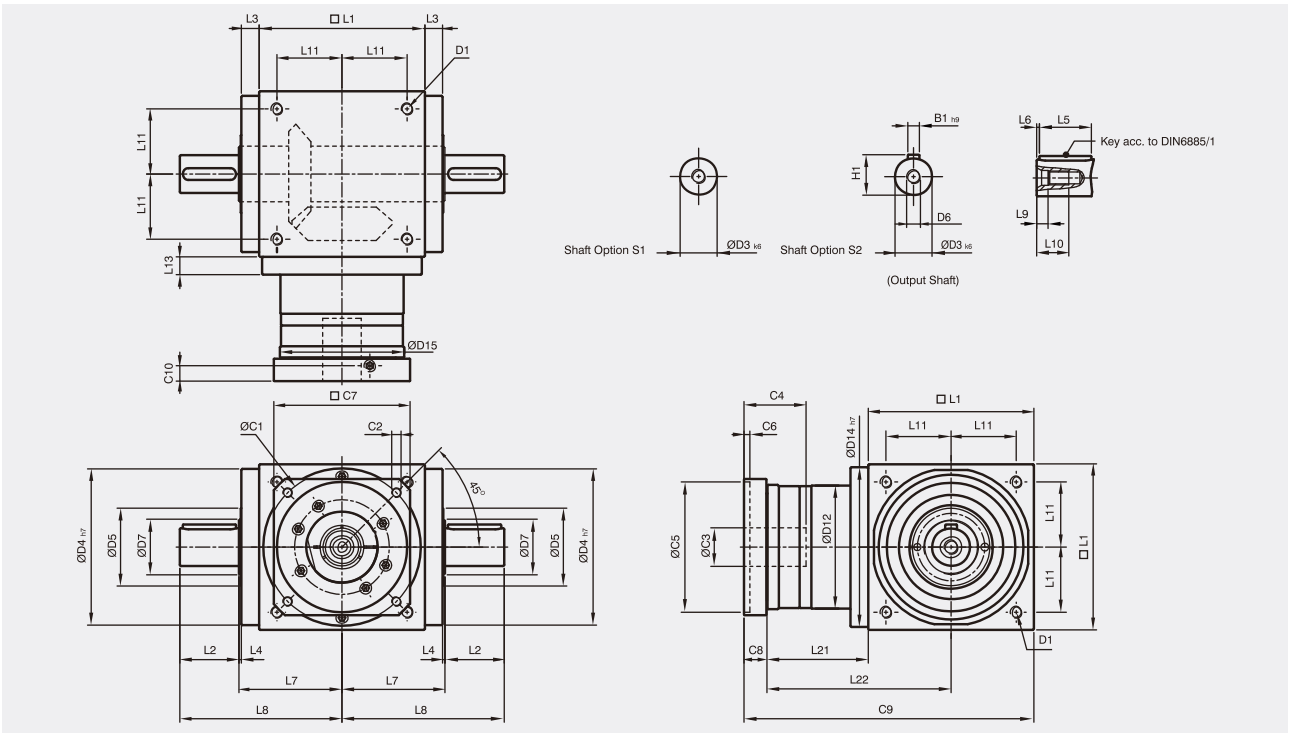
B. 背隙值是在 2% 额定力矩 T_{2N} 的扭力下测得.

C. 最大加速输入转速 n_{1B} 作用于输入轴中心位置

D. 连续运转使用寿命为 10, 000 小时.

AT-FL / ATB-FL 系列

尺寸 (单节, 减速比 i=1~5)

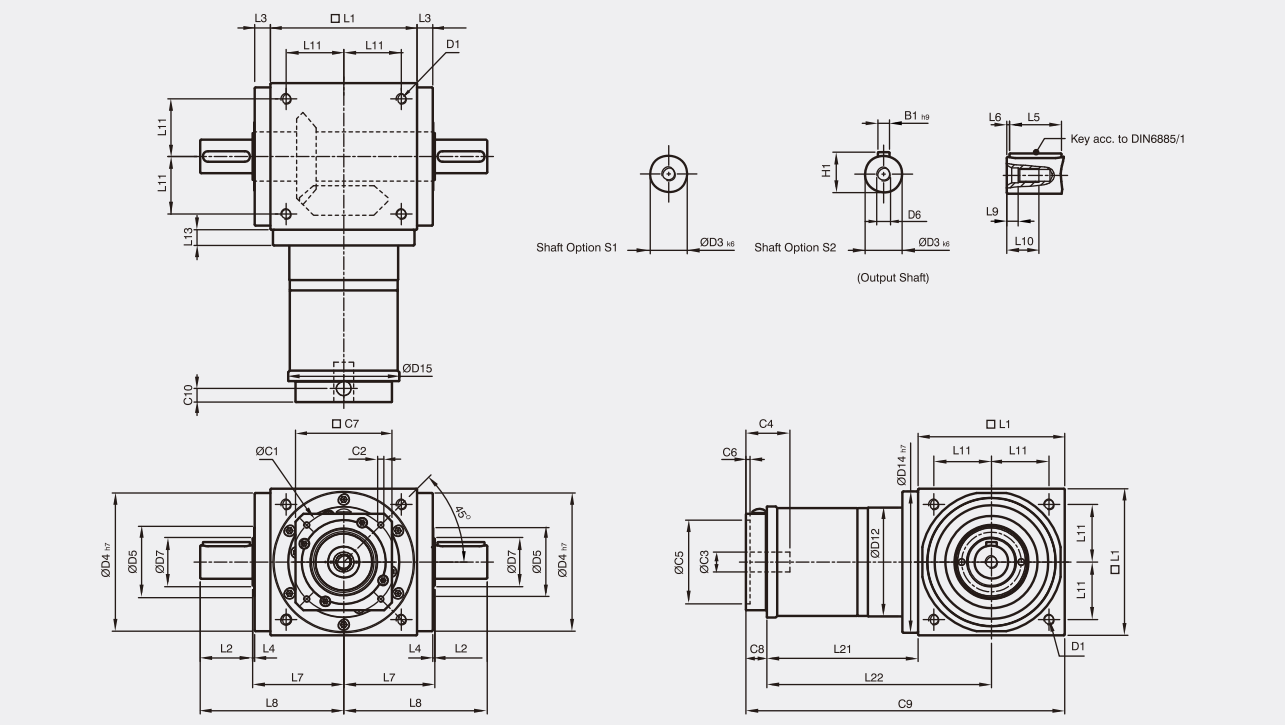


[单位: mm]

尺寸	AT065 FL	AT075 FL	AT090 FL	AT110 FL	AT140 FL	AT170 FL	AT210 FL	AT240 FL	AT280 FL
D1	M4	M6	M6	M8	M10	M12	M16	M16	M16
D3 k6	13	16	18	22	32	40	50	55	60
D4 h7	63	73	88	108	135	165	205	235	275
D5	31	35	43	53	68	83	104	124	144
D6	M4	M5	M5	M8	M12	M16	M16	M16	M20
D7	21	22	28	33	47	55	75	85	110
D12	62	72	86	106	104	128	160	180	200
D14 h7	63	73	88	108	135	165	205	235	275
D15	62.9	72.9	87	107	105	127	158	178	198
L1	65	75	90	110	140	170	210	240	280
L2	19.5	30	35	40	50	60	75	85	110
L3	13	14.5	15	15	15	15	20	25	25
L4	2	2	2	2	2	2	2	2	2
L5	16	25	28	32	45	50	70	80	100
L6	2	2.5	3.5	4	2.5	5	2.5	2.5	5
L7	47.5	54	62	72	87	102	127	147	167
L8	67	84	97	112	137	162	202	232	277
L9	4.5	4.8	4.8	7.2	10	12	12	12	15
L10	10	12.5	12.5	19	28	36	36	36	42
L11	27	30	36	44	55	67	85	95	110
L13	13	15	15	15	15	15	20	25	25
L21	49	60.5	63	69.5	85.5	95	130	144.5	135
L22	81.5	98	108	124.5	155.5	180	235	264.5	275
C1[1]	46	70	100	100	130	165	215	215	235
C2[1]	M4	M5	M6	M6	M8	M10	M12	M12	M12
C3[1]	⩽11 / ⩽12[2]	⩽14 / ⩽15.875 / ⩽16[2]	⩽19	⩽ 24	⩽32	⩽38	⩽42	⩽48	⩽55
C4[1]	30	34	40	40	50	60	85	85	116
C5[1]	30	50	80	80	110	130	180	180	200
C6[1]	3.5	8	4	4	5	6	6	6	6
C7[1]	42	60	90	90	115	142	190	190	220
C8[1]	19.5	19	17	17	19.5	22.5	29	29	63
C9[1]	133.5	154.5	170	196.5	245	287.5	369	413.5	478
C10[1]	13.25	13.5	10.75	10.75	13	15	20.75	20.75	53.5
B1 h9	5	5	6	6	10	12	14	16	18
H1	15	18	20.5	24.5	35	43	53.5	59	64

AT-FL / ATB-FL 系列

尺寸 (双节, 减速比 i=7~50)

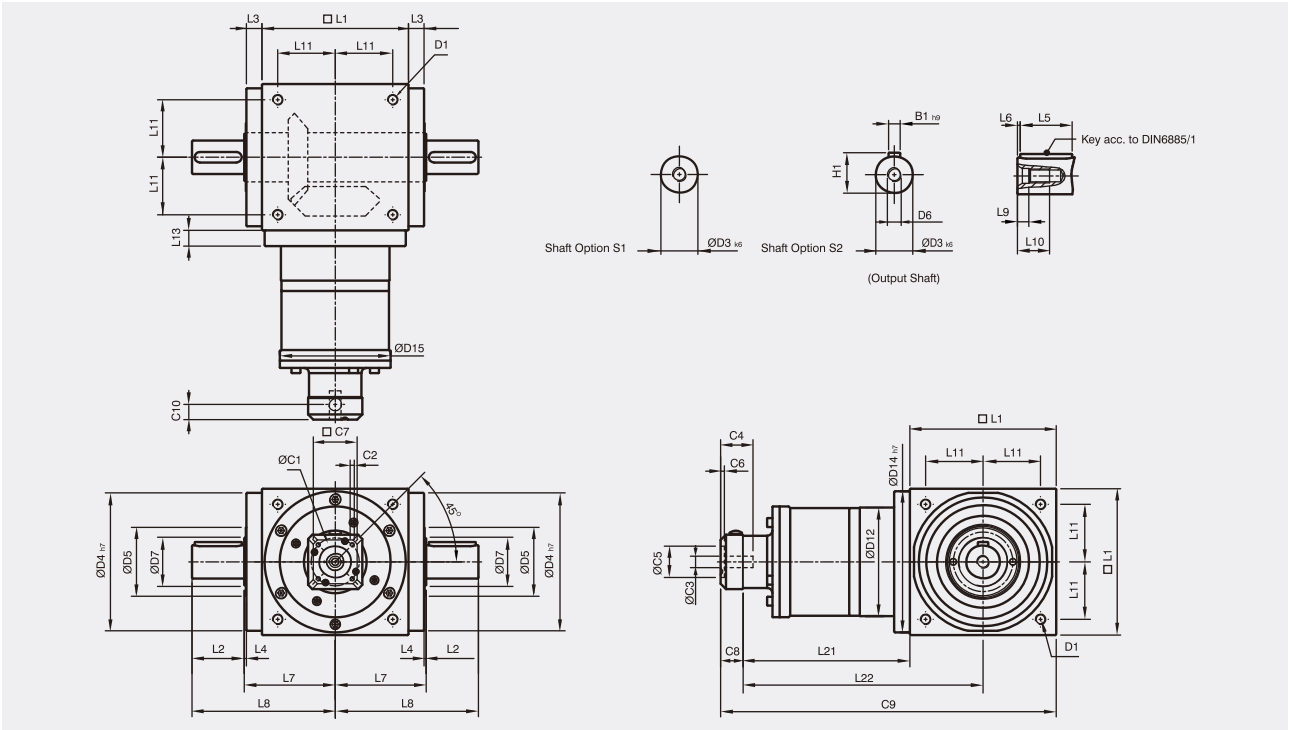


[单位: mm]

尺寸	AT065 FL	AT075 FL	AT090 FL	AT110 FL	AT140 FL	AT170 FL	AT210 FL	AT240 FL	AT280 FL
D1	M4	M6	M6	M8	M10	M12	M16	M16	M16
D3 k6	13	16	18	22	32	40	50	55	60
D4 h7	63	73	88	108	135	165	205	235	275
D5	31	35	43	53	68	83	104	124	144
D6	M4	M5	M5	M8	M12	M16	M16	M16	M20
D7	21	22	28	33	47	55	75	85	110
D12	62	72	86	106	104	128	160	180	200
D14 h7	63	73	88	108	135	165	205	235	275
D15	62.9	72.9	87	107	106	127	158	178	198
L1	65	75	90	110	140	170	210	240	280
L2	19.5	30	35	40	50	60	75	85	110
L3	13	14.5	15	15	15	15	20	25	25
L4	2	2	2	2	2	2	2	2	2
L5	16	25	28	32	45	50	70	80	100
L6	2	2.5	3.5	4	2.5	5	2.5	2.5	5
L7	47.5	54	62	72	87	102	127	147	167
L8	67	84	97	112	137	162	202	232	277
L9	4.5	4.8	4.8	7.2	10	12	12	12	15
L10	10	12.5	12.5	19	28	36	36	36	42
L11	27	30	36	44	55	67	85	95	110
L13	13	15	15	15	15	15	20	25	25
L21	75	84.5	99	122	144.5	157.5	206.5	239	248
L22	107.5	122	144	177	214.5	242.5	311.5	359	388
C1[3]	46	46	70	100	100	100	130	165	165
C2[3]	M4	M4	M5	M6	M6	M6	M8	M10	M10
C3[3]	⩽12	⩽12	⩽16	⩽24	⩽24	⩽24	⩽32	⩽38	⩽38
C4[3]	30	30	34	40	40	40	50	60	60
C5[3]	30	30	50	80	80	80	110	130	130
C6[3]	3.5	3.5	8	4	4	4	5	6	6
C7[3]	42	42	60	92	92	92	115	142	142
C8[3]	21.5	21.5	21.5	20	20	20	24	31	31
C9[3]	161.5	181	210.5	252	304.5	347.5	440.5	510	559
C10[3]	14.5	14.5	15.5	13	13	13	16	21	21
B1 h9	5	5	6	6	10	12	14	16	18
H1	15	18	20.5	24.5	35	43	53.5	59	64

AT-FL / ATB-FL 系列

尺寸 (三节, 减速比 i=75~500)



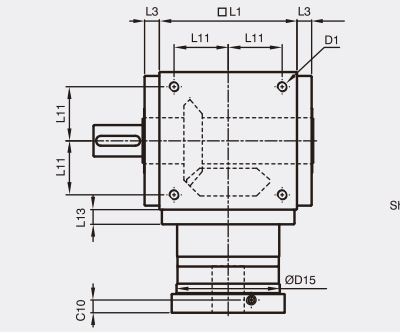
[单位: mm]

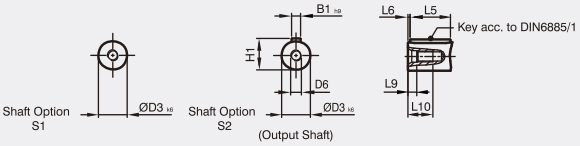
尺寸	AT110 FL	AT140 FL	AT170 FL	AT210 FL	AT240 FL	AT280 FL
D1	M8	M10	M12	M16	M16	M16
D3 k6	22	32	40	50	55	60
D4 h7	108	135	165	205	235	275
D5	53	68	83	104	124	144
D6	M8	M12	M16	M16	M16	M20
D7	33	47	55	75	85	110
D12	106	104	128	160	180	200
D14 h7	108	135	165	205	235	275
D15	107	106	127	158	178	198
L1	110	140	170	210	240	280
L2	40	50	60	75	85	110
L3	15	15	15	20	25	25
L4	2	2	2	2	2	2
L5	32	45	50	70	80	100
L6	4	2.5	5	2.5	2.5	5
L7	72	87	102	127	147	167
L8	112	137	162	202	232	277
L9	7.2	10	12	12	12	15
L10	19	28	36	36	36	42
L11	44	55	67	85	95	110
L13	15	15	15	20	25	25
L21	136.5	159.5	183.5	226	269	278
L22	191.5	229.5	268.5	331	389	418
C1[4]	46	46	70	70	100	100
C2[4]	M4	M4	M5	M5	M6	M6
C3[4]	⩽12	⩽12	⩽16	⩽16	⩽24	⩽24
C4[4]	30	30	34	34	40	40
C5[4]	30	30	50	50	80	80
C6[4]	3.5	3.5	8	8	4	4
C7[4]	42	42	60	60	92	92
C8[4]	21.5	21.5	21.5	21.5	20	20
C9[4]	268	321	375	457.5	529	578
C10[4]	14.5	14.5	15.5	15.5	13	13
B1 h9	6	10	12	14	16	18
H1	24.5	35	43	53.5	59	64

AT-FL1/FR1 / ATB-FL1/FR1 系列

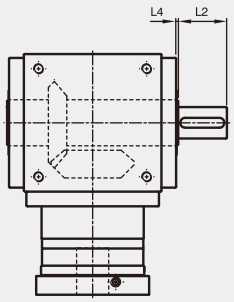
尺寸 (单节, 减速比 i=1~5)

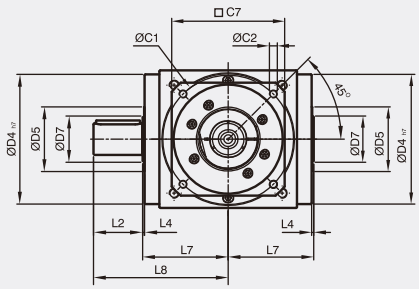
AT-FL1 / ATB-FL1

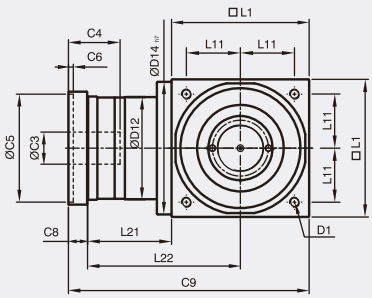




AT-FR1 / ATB-FR1





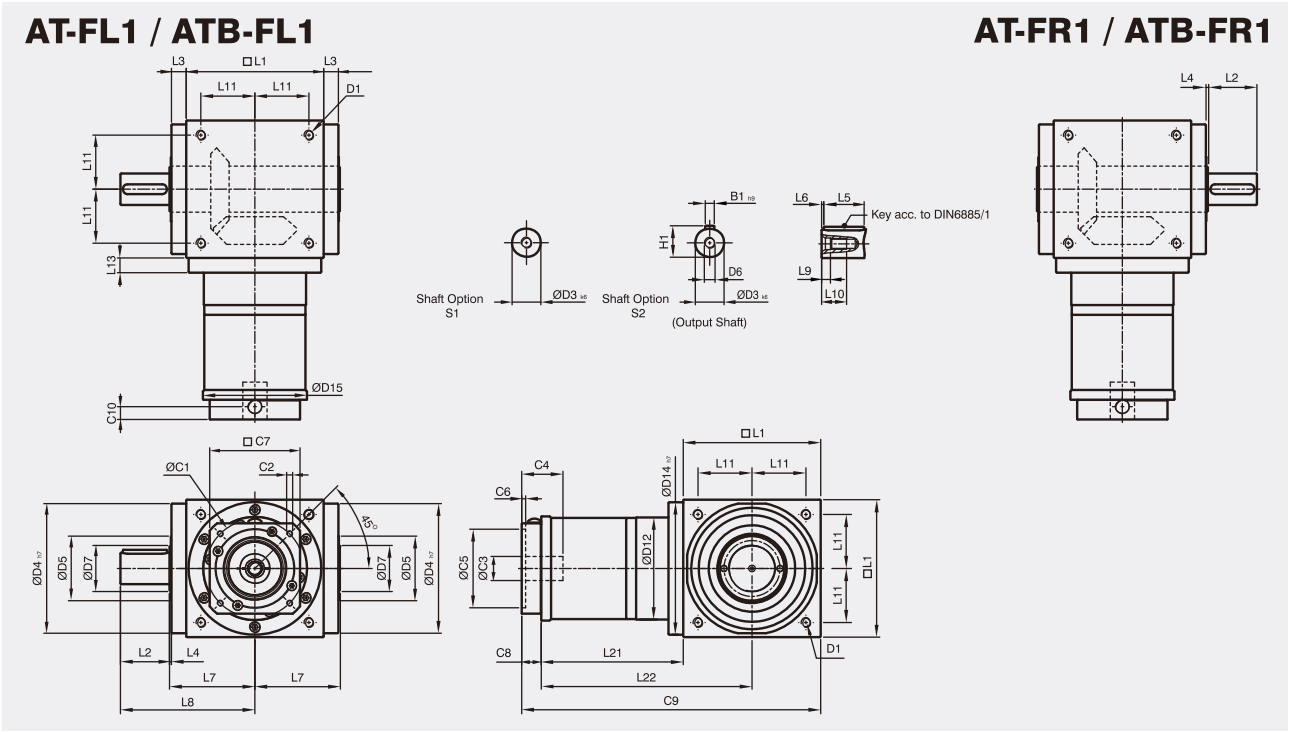


[单位: mm]

尺寸	AT065 FL1/FR1	AT075 FL1/FR1	AT090 FL1/FR1	AT110 FL1/FR1	AT140 FL1/FR1	AT170 FL1/FR1	AT210 FL1/FR1	AT240 FL1/FR1	AT280 FL1/FR1
D1	M4	M6	M6	M8	M10	M12	M16	M16	M16
D3 k6	13	16	18	22	32	40	50	55	60
D4 h7	63	73	88	108	135	165	205	235	275
D5	31	35	43	53	68	83	104	124	144
D6	M4	M5	M5	M8	M12	M16	M16	M16	M20
D7	21	22	28	33	47	55	75	85	110
D12	62	72	86	106	104	128	160	180	200
D14 h7	63	73	88	108	135	165	205	235	275
D15	62.9	72.9	87	107	105	127	158	178	198
L1	65	75	90	110	140	170	210	240	280
L2	19.5	30	35	40	50	60	75	85	110
L3	13	14.5	15	15	15	15	20	25	25
L4	2	2	2	2	2	2	2	2	2
L5	16	25	28	32	45	50	70	80	100
L6	2	2.5	3.5	4	2.5	5	2.5	2.5	5
L7	47.5	54	62	72	87	102	127	147	167
L8	67	84	97	112	137	162	202	232	277
L9	4.5	4.8	4.8	7.2	10	12	12	12	15
L10	10	12.5	12.5	19	28	36	36	36	42
L11	27	30	36	44	55	67	85	95	110
L13	13	15	15	15	15	15	20	25	25
L21	49	60.5	63	69.5	85.5	95	130	144.5	135
L22	81.5	98	108	124.5	155.5	180	235	264.5	275
C1[5]	46	70	100	100	130	165	215	215	235
C2[5]	M4	M5	M6	M6	M8	M10	M12	M12	M12
C3[5]	⩽1 / ⩽2[6]	⩽4 / ⩽5.875 / ⩽6[6]	⩽9	⩽24	⩽32	⩽38	⩽42	⩽48	⩽55
C4[5]	30	34	40	40	50	60	85	85	116
C5[5]	30	50	80	80	110	130	180	180	200
C6[5]	3.5	8	4	4	5	6	6	6	6
C7[5]	42	60	90	90	115	142	190	190	220
C8[5]	19.5	19	17	17	19.5	22.5	29	29	63
C9[5]	133.5	154.5	170	196.5	245	287.5	369	413.5	478
C10[5]	13.25	13.5	10.75	10.75	13	15	20.75	20.75	53.5
B1 h9	5	5	6	6	10	12	14	16	18
H1	15	18	20.5	24.5	35	43	53.5	59	64

AT-FL1/FR1 / ATB-FL1/FR1 系列

尺寸 (双节, 减速比 i=7~50)



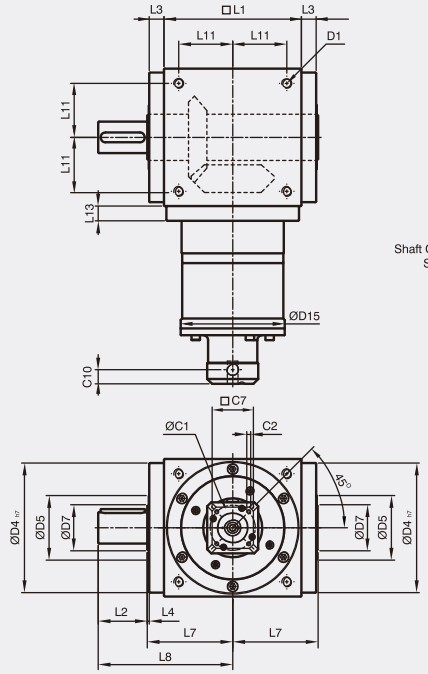
[单位: mm]

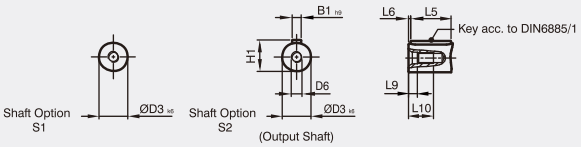
尺寸	AT065 FL1/FR1	AT075 FL1/FR1	AT090 FL1/FR1	AT110 FL1/FR1	AT140 FL1/FR1	AT170 FL1/FR1	AT210 FL1/FR1	AT240 FL1/FR1	AT280 FL1/FR1
D1	M4	M6	M6	M8	M10	M12	M16	M16	M16
D3 k6	13	16	18	22	32	40	50	55	60
D4 h7	63	73	88	108	135	165	205	235	275
D5	31	35	43	53	68	83	104	124	144
D6	M4	M5	M5	M8	M12	M16	M16	M16	M20
D7	21	22	28	33	47	55	75	85	110
D12	62	72	86	106	104	128	160	180	200
D14 h7	63	73	88	108	135	165	205	235	275
D15	62.9	72.9	87	107	106	127	158	178	198
L1	65	75	90	110	140	170	210	240	280
L2	19.5	30	35	40	50	60	75	85	110
L3	13	14.5	15	15	15	15	20	25	25
L4	2	2	2	2	2	2	2	2	2
L5	16	25	28	32	45	50	70	80	100
L6	2	2.5	3.5	4	2.5	5	2.5	2.5	5
L7	47.5	54	62	72	87	102	127	147	167
L8	67	84	97	112	137	162	202	232	277
L9	4.5	4.8	4.8	7.2	10	12	12	12	15
L10	10	12.5	12.5	19	28	36	36	36	42
L11	27	30	36	44	55	67	85	95	110
L13	13	15	15	15	15	15	20	25	25
L21	75	84.5	99	122	144.5	157.5	206.5	239	248
L22	107.5	122	144	177	214.5	242.5	311.5	359	388
C1 7	46	46	70	100	100	100	130	165	165
C2 7	M4	M4	M5	M6	M6	M6	M8	M10	M10
C3 7	≤12	≤12	≤16	≤24	≤24	≤24	≤32	≤38	≤38
C4 7	30	30	34	40	40	40	50	60	60
C5 7	30	30	50	80	80	80	110	130	130
C6 7	3.5	3.5	8	4	4	4	5	6	6
C7 7	42	42	60	92	92	92	115	142	142
C8 7	21.5	21.5	21.5	20	20	20	24	31	31
C9 7	161.5	181	210.5	252	304.5	347.5	440.5	510	559
C10 7	14.55	14.5	15.5	13	13	13	16	21	21
B1 h9	5	5	6	6	10	12	14	16	18
H1	15	18	20.5	24.5	35	43	53.5	59	64

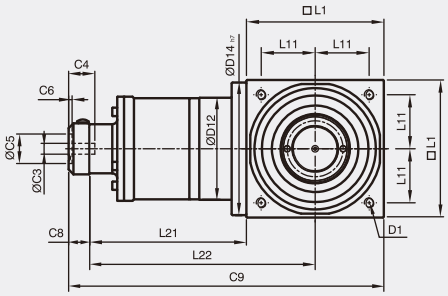
AT-FL1/FR1 / ATB-FL1/FR1 系列

尺寸 (三节, 减速比 i=75~500)

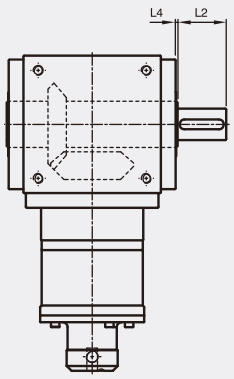
AT-FL1 / ATB-FL1







AT-FR1 / ATB-FR1

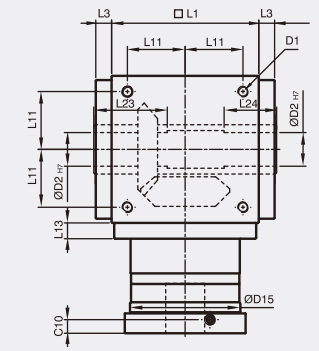


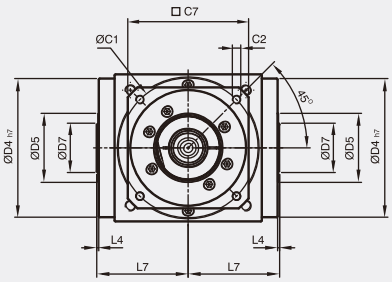
[单位: mm]

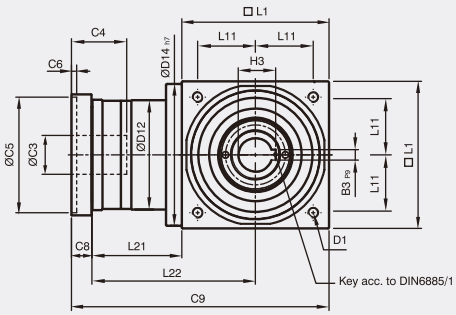
尺寸	AT110 FL1/FR1	AT140 FL1/FR1	AT170 FL1/FR1	AT210 FL1/FR1	AT240 FL1/FR1	AT280 FL1/FR1
D1	M8	M10	M12	M16	M16	M16
D3 k6	22	32	40	50	55	60
D4 h7	108	135	165	205	235	275
D5	53	68	83	104	124	144
D6	M8	M12	M16	M16	M16	M20
D7	33	47	55	75	85	110
D12	106	104	128	160	180	200
D14 h7	108	135	165	205	235	275
D15	107	106	127	158	178	198
L1	110	140	170	210	240	280
L2	40	50	60	75	85	110
L3	15	15	15	20	25	25
L4	2	2	2	2	2	2
L5	32	45	50	70	80	100
L6	4	2.5	5	2.5	2.5	5
L7	72	87	102	127	147	167
L8	112	137	162	202	232	277
L9	7.2	10	12	12	12	15
L10	19	28	36	36	36	42
L11	44	55	67	85	95	110
L13	15	15	15	20	25	25
L21	136.5	159.5	183.5	226	269	278
L22	191.5	229.5	268.5	331	389	418
C1[8]	46	46	70	70	100	100
C2[8]	M4	M4	M5	M5	M6	M6
C3[8]	⩽12	⩽12	⩽16	⩽16	⩽24	⩽24
C4[8]	30	30	34	34	40	40
C5[8]	30	30	50	50	80	80
C6[8]	3.5	3.5	8	8	4	4
C7[8]	42	42	60	60	92	92
C8[8]	21.5	21.5	21.5	21.5	20	20
C9[8]	268	321	375	457.5	529	578
C10[8]	14.5	14.5	15.5	15.5	13	13
B1 h9	6	10	12	14	16	18
H1	24.5	35	43	53.5	59	64

AT-FH /ATB-FH 系列

尺寸(单节, 减速比 i=1~5)





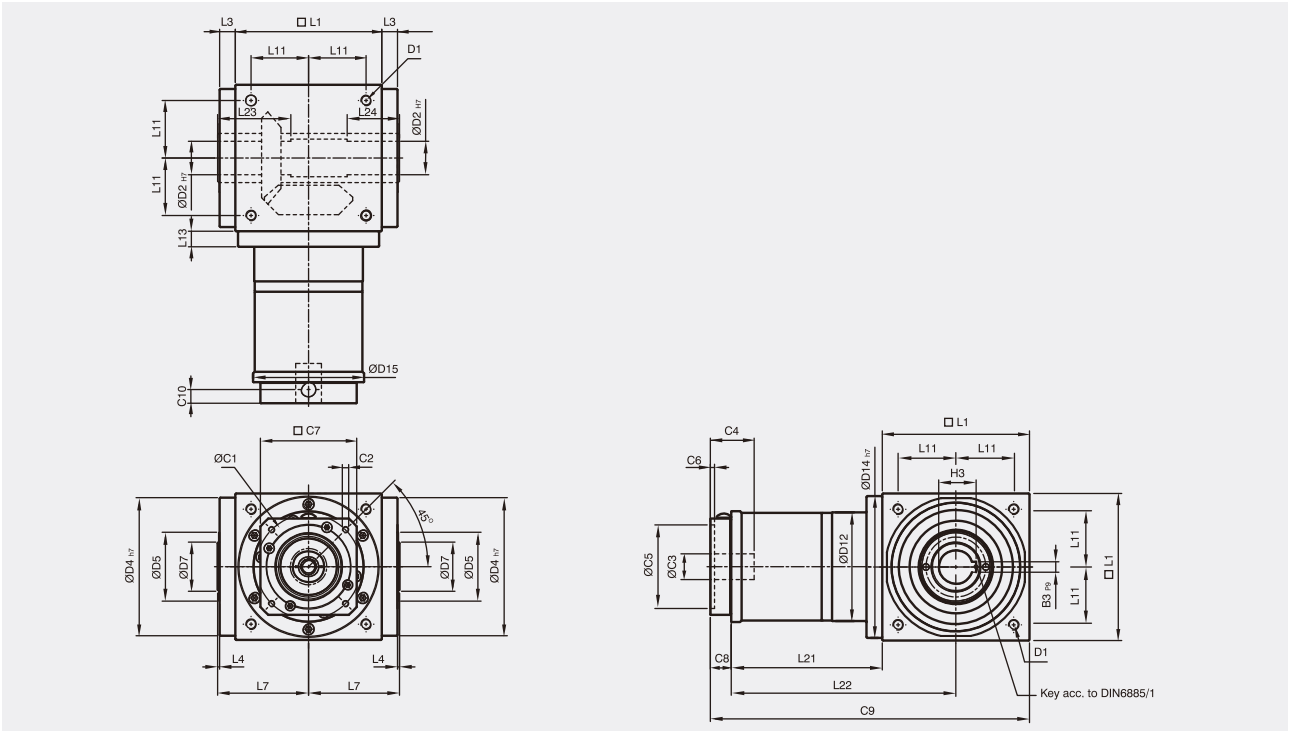


[单位: mm]

尺寸	AT065FH	AT075FH	AT090FH	AT110FH	AT140FH	AT170FH	AT210FH	AT240FH	AT280FH
D1	M4	M6	M6	M8	M10	M12	M16	M16	M16
D2 H7	13	14	18	22	32	40	50	55	60
D4 h7	63	73	88	108	135	165	205	235	275
D5	31	35	43	53	68	83	104	124	144
D7	21	22	28	33	47	55	75	85	110
D12	62	72	86	106	104	128	160	180	200
D14 h7	63	73	88	108	135	165	205	235	275
D15	62.9	72.9	87	107	105	127	158	178	198
L1	65	75	90	110	140	170	210	240	280
L3	13	14.5	15	15	15	15	20	25	25
L4	2	2	2	2	2	2	2	2	2
L7	47.5	54	62	72	87	102	127	147	167
L11	27	30	36	44	55	67	85	95	110
L13	13	15	15	15	15	15	20	25	25
L21	49	60.5	63	69.5	85.5	95	130	144.5	135
L22	81.5	98	108	124.5	155.5	180	235	264.5	275
L23	40	47	52	53	70	80	95	115	115
L24	30	32	35	35	50	55	65	80	80
C1[9]	46	70	100	100	130	165	215	215	235
C2[9]	M4	M5	M6	M6	M8	M10	M12	M12	M12
C3[9]	≤11 / ≤12[10]	≤14 / ≤15.875 / ≤16[10]	≤19	≤24	≤32	≤38	≤42	≤48	≤55
C4[9]	30	34	40	40	50	60	85	85	116
C5[9]	30	50	80	80	110	130	180	180	200
C6[9]	3.5	8	4	4	5	6	6	6	6
C7[9]	42	60	90	90	115	142	190	190	220
C8[9]	19.5	19	17	17	19.5	22.5	29	29	63
C9[9]	133.5	154.5	170	196.5	245	287.5	369	413.5	478
C10[9]	13.25	13.5	10.75	10.75	13	15	20.75	20.75	53.5
B3 P9	5	5	6	6	10	12	14	16	18
H3	15.3	16.3	20.8	24.8	35.3	43.3	53.8	59.3	64.4

AT-FH /ATB-FH 系列

尺寸 (双节, 减速比i=7~50)

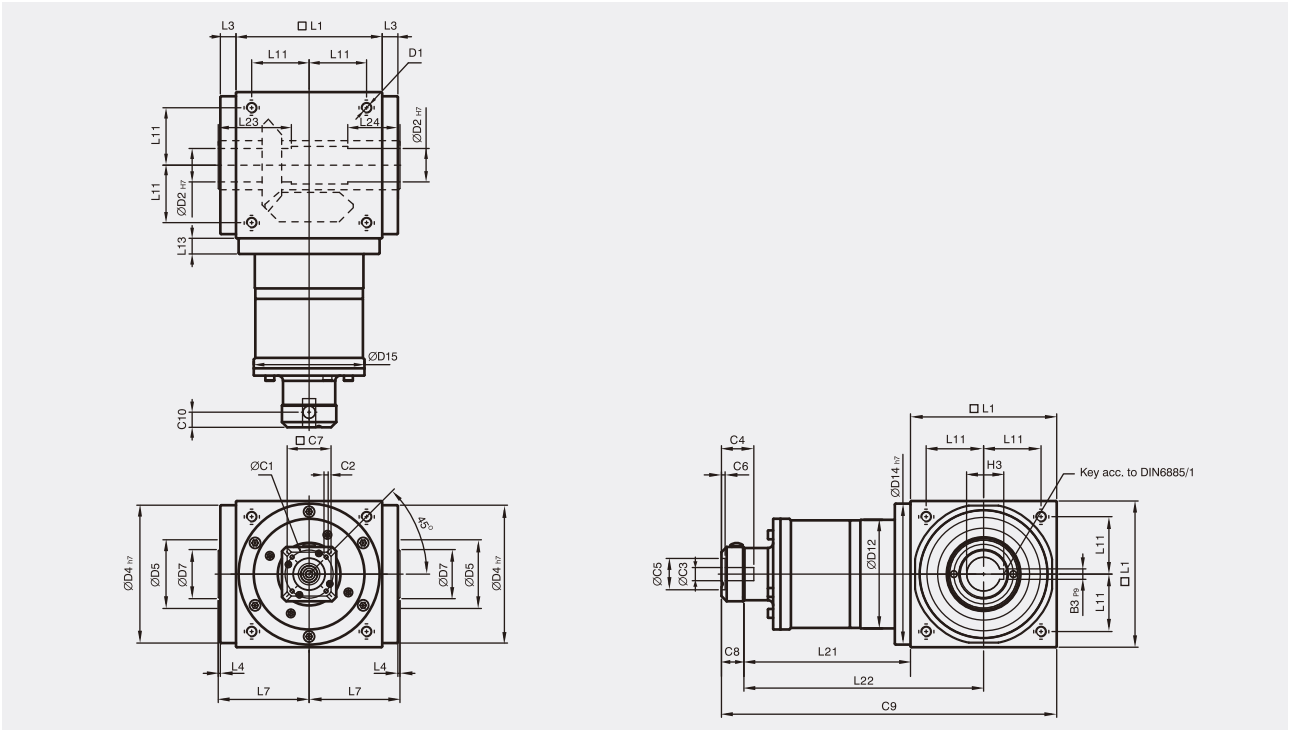


[单位: mm]

尺寸	AT065FH	AT075FH	AT090FH	AT110FH	AT140FH	AT170FH	AT210FH	AT240FH	AT280FH
D1	M4	M6	M6	M8	M10	M12	M16	M16	M16
D2 H7	13	14	18	22	32	40	50	55	60
D4 h7	63	73	88	108	135	165	205	235	275
D5	31	35	43	53	68	83	104	124	144
D7	21	22	28	33	47	55	75	85	110
D12	62	72	86	106	104	128	160	180	200
D14 h7	63	73	88	108	135	165	205	235	275
D15	62.9	72.9	87	107	106	127	158	178	198
L1	65	75	90	110	140	170	210	240	280
L3	13	14.5	15	15	15	15	20	25	25
L4	2	2	2	2	2	2	2	2	2
L7	47.5	54	62	72	87	102	127	147	167
L11	27	30	36	44	55	67	85	95	110
L13	13	15	15	15	15	15	20	25	25
L21	75	84.5	99	122	144.5	157.5	206.5	239	248
L22	107.5	122	144	177	214.5	242.5	311.5	359	388
L23	40	47	52	53	70	80	95	115	115
L24	30	32	35	35	50	55	65	80	80
C1 [11]	46	46	70	100	100	100	130	165	165
C2 [11]	M4	M4	M5	M6	M6	M6	M8	M10	M10
C3 [11]	≤12	≤12	≤16	≤24	≤24	≤24	≤32	≤38	≤38
C4 [11]	30	30	34	40	40	40	50	60	60
C5 [11]	30	30	50	80	80	80	110	130	130
C6 [11]	3.5	3.5	8	4	4	4	5	6	6
C7 [11]	42	42	60	92	92	92	115	142	142
C8 [11]	21.5	21.5	21.5	20	20	20	24	31	31
C9 [11]	161.5	181	210.5	252	304.5	347.5	440.5	510	559
C10 [11]	14.5	14.5	15.5	13	13	13	16	21	21
B3 P9	5	5	6	6	10	12	14	16	18
H3	15.3	16.3	20.8	24.8	35.3	43.3	53.8	59.3	64.4

AT-FH /ATB-FH 系列

尺寸（三节，减速比 i=75~500）

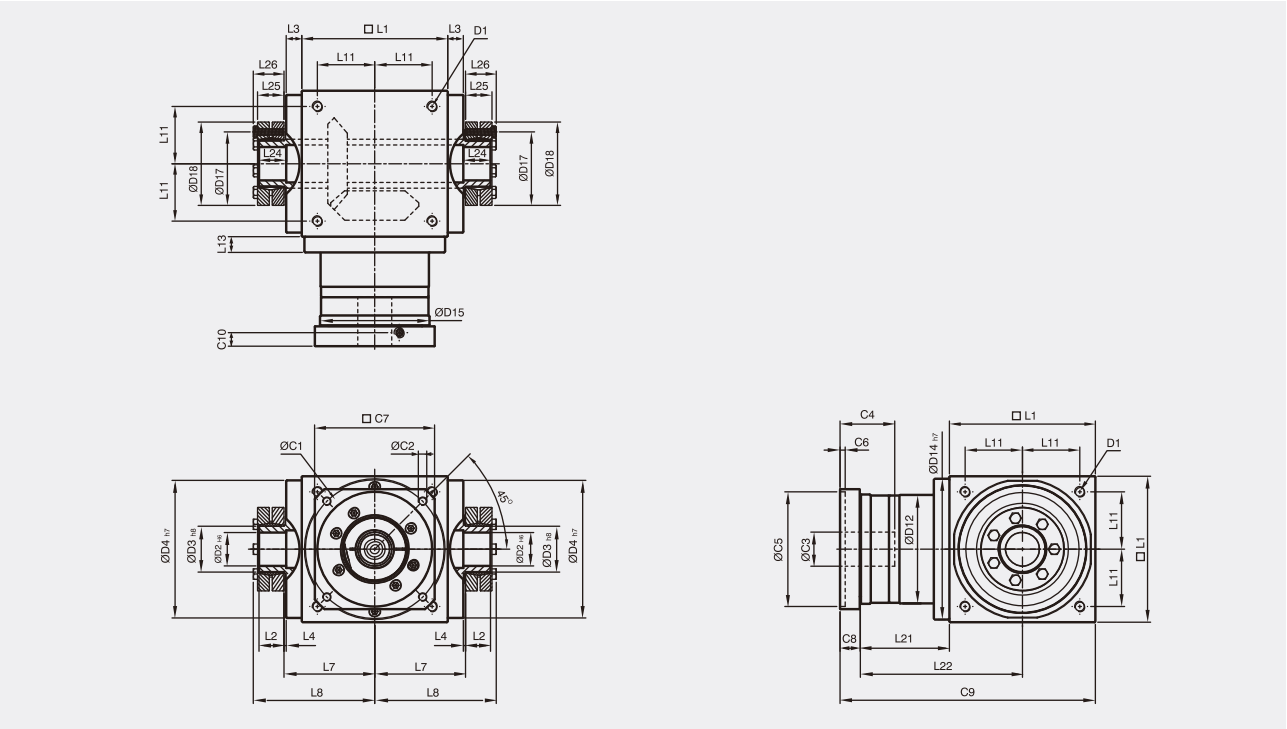


[单位: mm]

尺寸	AT110FH	AT140FH	AT170FH	AT210FH	AT240FH	AT280FH
D1	M8	M10	M12	M16	M16	M16
D2 H7	22	32	40	50	55	60
D4 h7	108	135	165	205	235	275
D5	53	68	83	104	124	144
D7	33	47	55	75	85	110
D12	106	104	128	160	180	200
D14 h7	108	135	165	205	235	275
D15	107	106	127	158	178	198
L1	110	140	170	210	240	280
L3	15	15	15	20	25	25
L4	2	2	2	2	2	2
L7	72	87	102	127	147	167
L11	44	55	67	85	95	110
L13	15	15	15	20	25	25
L21	136.5	159.5	183.5	226	269	278
L22	191.5	229.5	268.5	331	389	418
L23	53	70	80	95	115	115
L24	35	50	55	65	80	80
C1 [12]	46	46	70	70	100	100
C2 [12]	M4	M4	M5	M5	M6	M6
C3 [12]	≤12	≤12	≤16	≤16	≤24	≤24
C4 [12]	30	30	34	34	40	40
C5 [12]	30	30	50	50	80	80
C6 [12]	3.5	3.5	8	8	4	4
C7 [12]	42	42	60	60	92	92
C8 [12]	21.5	21.5	21.5	21.5	20	20
C9 [12]	268	321	375	457.5	529	578
C10 [12]	14.5	14.5	15.5	15.5	13	13
B3 P9	6	10	12	14	16	18
H3	24.8	35.3	43.3	53.8	59.3	64.4

AT-FC / ATB-FC 系列

尺寸 （单节， 减速比 i=1~5）

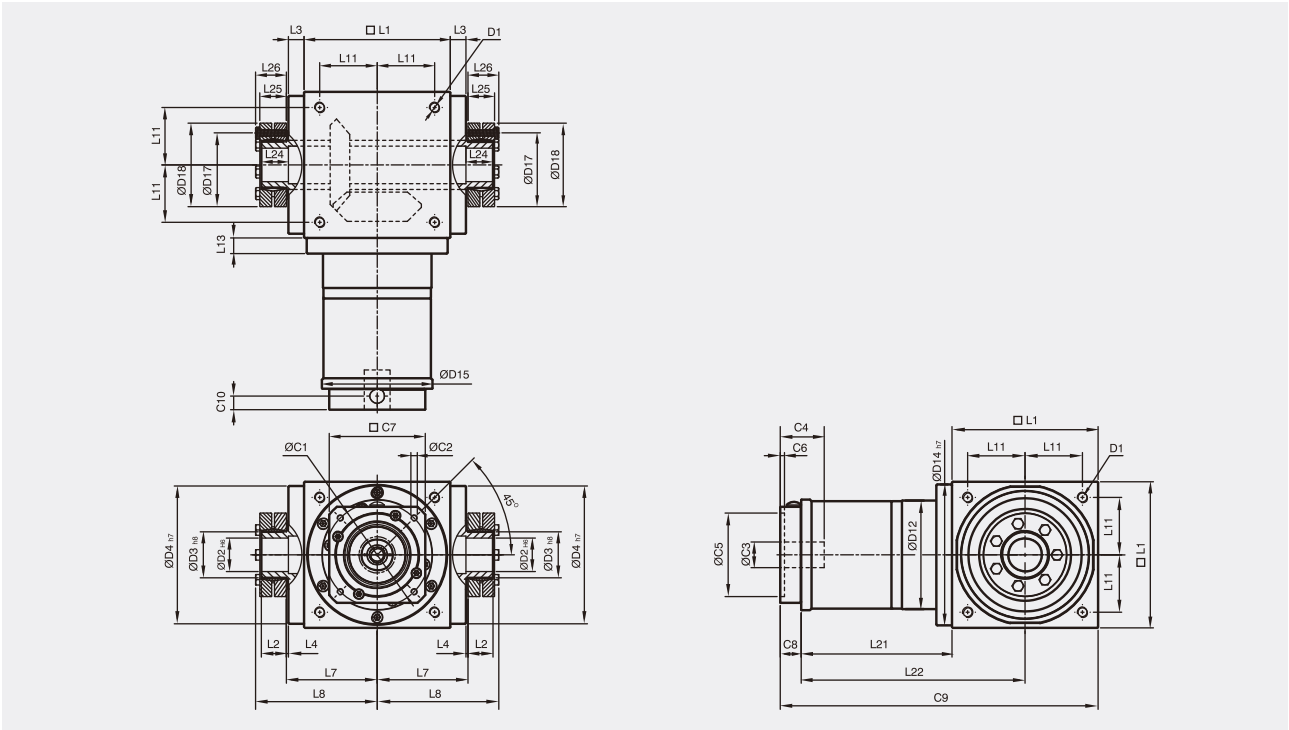


[单位: mm]

尺寸	AT065FC	AT075FC	AT090FC	AT110FC	AT140FC	AT170FC	AT210FC	AT240FC	AT280FC
D1	M4	M6	M6	M8	M10	M12	M16	M16	M16
D2 H6	13	14	18	22	32	40	50	55	60
D3 h8	16	16	22	25	44	50	62	68	75
D4 h7	63	73	88	108	135	165	205	235	275
D12	62	72	86	106	104	128	160	180	200
D14 h7	63	73	88	108	135	165	205	235	275
D15	62.9	72.9	87	107	105	130	158	178	198
D17	26	26	36	38	61	70	86	86	100
D18	41	41	50	50	80	90	110	115	138
L1	65	75	90	110	140	170	210	240	280
L2	14	14	18	18	24	26	29	29	30.5
L3	13	14.5	15	15	15	15	20	25	25
L4	2	2	2	2	2	2	2	2	2
L7	47.5	54	62	72	87	102	127	147	167
L8	66	72.5	85	95	116.5	133.5	161.5	181.5	205
L11	27	30	36	44	55	67	85	95	110
L13	13	15	15	15	15	15	20	25	25
L21	49	60.5	63	69.5	85.5	95	130	144.5	135
L22	81.5	98	108	124.5	155.5	180	235	264.5	275
L23	15	15	20	20	26	28	31	31	32.5
L24	15	15	20	20	26	28	31	31	32.5
L25	15	15	19.5	19.5	25.5	27.5	30.5	30.5	32.5
L26	18.5	18.5	23	23	29.5	31.5	34.5	34.5	38
C1 [13]	46	70	100	100	130	165	215	215	235
C2 [13]	M4	M5	M6	M6	M8	M10	M12	M12	M12
C3 [13]	⩽11 / ⩽12[14]	⩽14 / ⩽15.875 / ⩽16[14]	⩽19	⩽24	⩽32	⩽38	⩽42	⩽48	⩽55
C4 [13]	30	34	40	40	50	60	85	85	116
C5 [13]	30	50	80	80	110	130	180	180	200
C6 [13]	3.5	8	4	4	5	6	6	6	6
C7 [13]	42	60	90	90	115	142	190	190	220
C8 [13]	19.5	19	17	17	19.5	22.5	29	29	63
C9 [13]	133.5	154.5	170	196.5	245	287.5	369	413.5	478
C10 [13]	13.25	13.5	10.75	10.75	13	15	20.75	20.75	53.5

AT-FC / ATB-FC 系列

尺寸 （双节， 减速比 i=7~50）

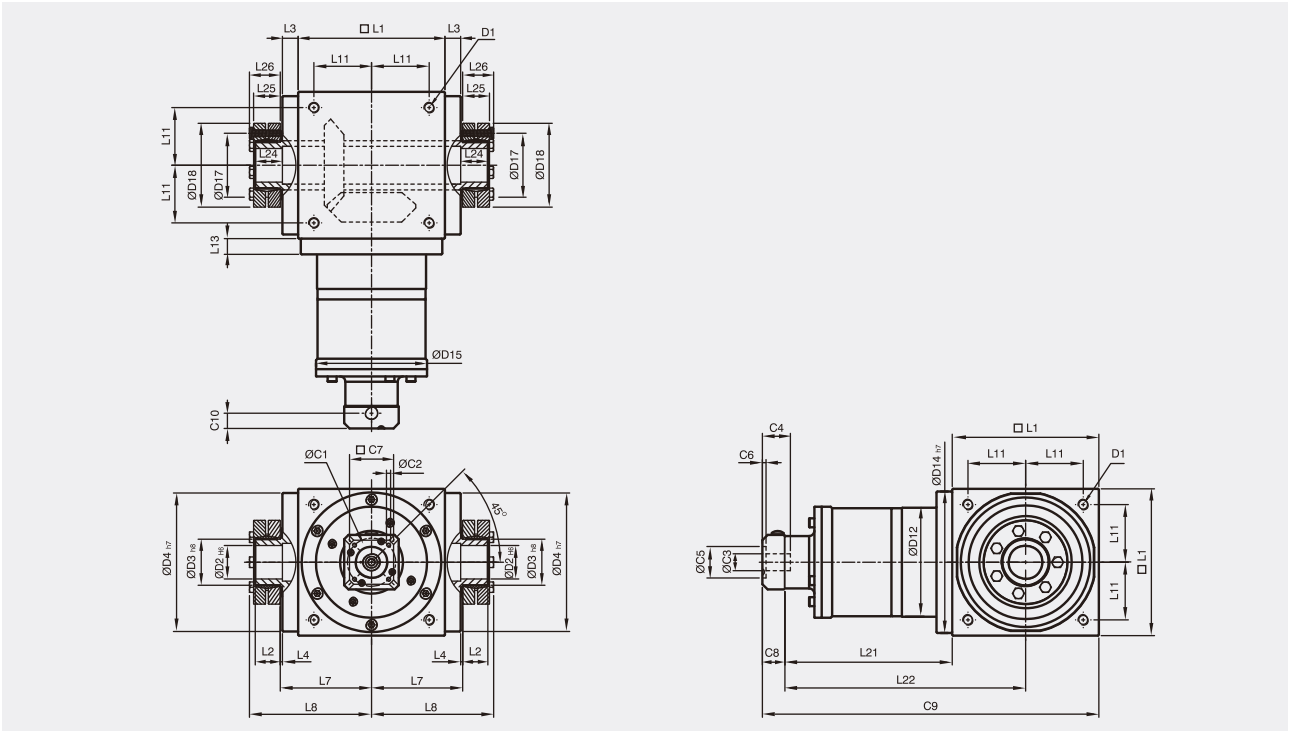


[单位: mm]

尺寸	AT065FC	AT075FC	AT090FC	AT110FC	AT140FC	AT170FC	AT210FC	AT240FC	AT280FC
D1	M4	M6	M6	M8	M10	M12	M16	M16	M16
D2 H6	13	14	18	22	32	40	50	55	60
D3 h8	16	16	22	25	44	50	62	68	75
D4 h7	63	73	88	108	135	165	205	235	275
D12	62	72	86	106	104	128	160	180	200
D14 h7	63	73	88	108	135	165	205	235	275
D15	62.9	72.9	87	107	106	127	158	178	198
D17	26	26	36	38	61	70	86	86	100
D18	41	41	50	50	80	90	110	115	138
L1	65	75	90	110	140	170	210	240	280
L2	14	14	18	18	24	26	29	29	30.5
L3	13	14.5	15	15	15	15	20	25	25
L4	2	2	2	2	2	2	2	2	2
L7	47.5	54	62	72	87	102	127	147	167
L8	66	72.5	85	95	116.5	133.5	161.5	181.5	205
L11	27	30	36	44	55	67	85	95	110
L13	13	15	15	15	15	15	20	25	25
L21	75	84.5	99	122	144.5	157.5	206.5	239	248
L22	107.5	122	144	177	214.5	242.5	311.5	359	388
L23	15	15	20	20	26	28	31	31	32.5
L24	15	15	20	20	26	28	31	31	32.5
L25	15	15	19.5	19.5	25.5	27.5	30.5	30.5	32.5
L26	18.5	18.5	23	23	29.5	31.5	34.5	34.5	38
C1 [15]	46	46	70	100	100	100	130	165	165
C2 [15]	M4	M4	M5	M6	M6	M6	M8	M10	M10
C3 [15]	≤12	≤12	≤16	≤24	≤24	≤24	≤32	≤38	≤38
C4 [15]	30	30	34	40	40	40	50	60	60
C5 [15]	30	30	50	80	80	80	110	130	130
C6 [15]	3.5	3.5	8	4	4	4	5	6	6
C7 [15]	42	42	60	92	92	92	115	142	142
C8 [15]	21.5	21.5	21.5	20	20	20	24	31	31
C9 [15]	161.5	181	210.5	252	304.5	347.5	440.5	510	559
C10 [15]	14.5	14.5	15.5	13	13	13	16	21	21

AT-FC / ATB-FC 系列

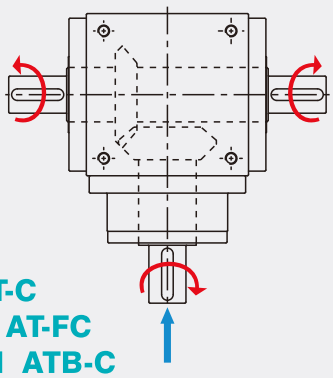
尺寸 （三节， 减速比 i=75~500）



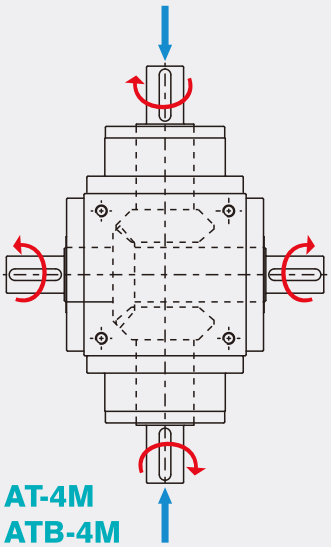
[单位: mm]

尺寸	AT110FC	AT140FC	AT170FC	AT210FC	AT240FC	AT280FC
D1	M8	M10	M12	M16	M16	M16
D2 H6	22	32	40	50	55	60
D3 h8	25	44	50	62	68	75
D4 h7	108	135	165	205	235	275
D12	106	104	128	160	180	200
D14 h7	108	135	165	205	235	275
D15	107	106	127	158	178	198
D17	38	61	70	86	86	100
D18	50	80	90	110	115	138
L1	110	140	170	210	240	280
L2	18	24	26	29	29	30.5
L3	15	15	15	20	25	25
L4	2	2	2	2	2	2
L7	72	87	102	127	147	167
L8	95	116.5	133.5	161.5	181.5	205
L11	44	55	67	85	95	110
L13	15	15	15	20	25	25
L21	136.5	159.5	183.5	226	269	278
L22	191.5	229.5	268.5	331	389	418
L23	20	26	28	31	31	32.5
L24	20	26	28	31	31	32.5
L25	19.5	25.5	27.5	30.5	30.5	32.5
L26	23	29.5	31.5	34.5	34.5	38
C1 [16]	46	46	70	70	100	100
C2 [16]	M4	M4	M5	M5	M6	M6
C3 [16]	⩽12	⩽12	⩽16	⩽16	⩽24	⩽24
C4 [16]	30	30	34	34	40	40
C5 [16]	30	30	50	50	80	80
C6 [16]	3.5	3.5	8	8	4	4
C7 [16]	42	42	60	60	92	92
C8 [16]	21.5	21.5	21.5	21.5	20	20
C9 [16]	268	321	375	457.5	529	578
C10 [16]	14.5	14.5	15.5	15.5	13	13

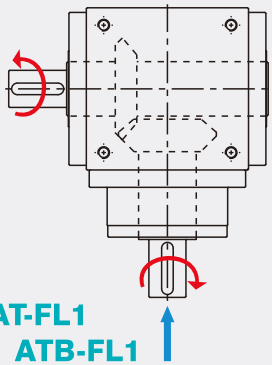
转向图



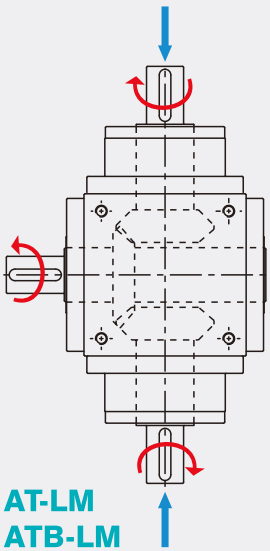
AT-L AT-H AT-C
AT-FL AT-FH AT-FC
ATB-L ATB-H ATB-C
ATB-FL ATB-FH ATB-FC



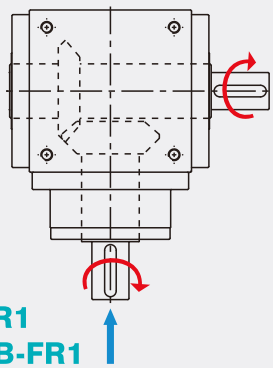
AT-4M
ATB-4M



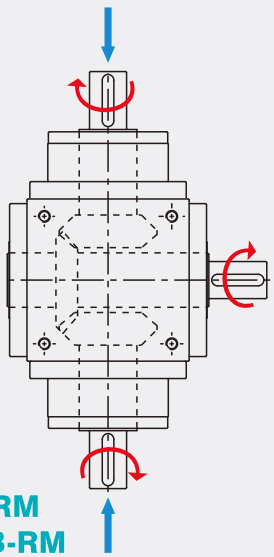
AT-L1 AT-FL1
ATB-L1 ATB-FL1



AT-LM
ATB-LM

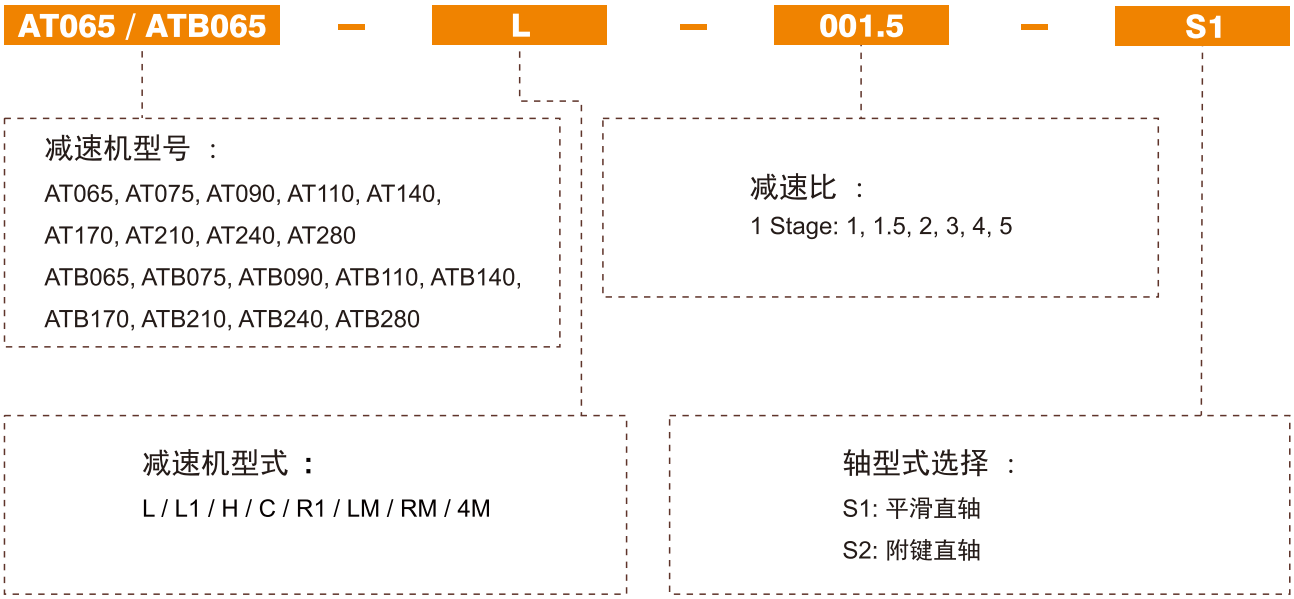


AT-R1 AT-FR1
ATB-R1 ATB-FR1

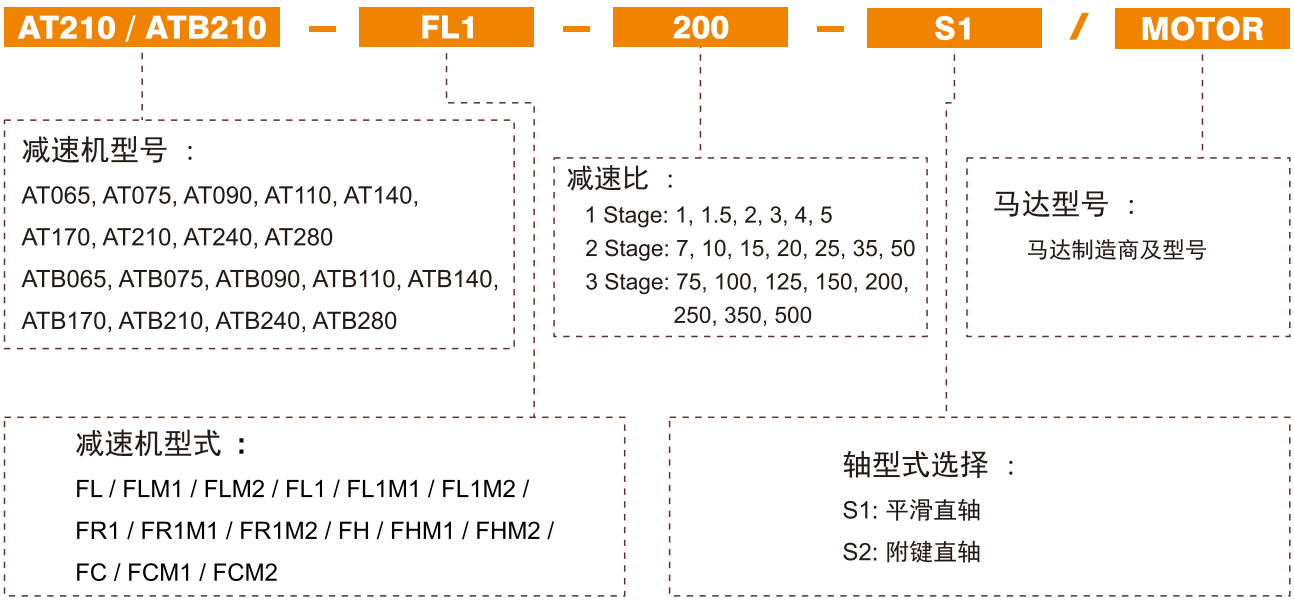


AT-RM
ATB-RM

减速机的订购



选用范例: **AT065-L-001.5-S1**
ATB065-L-001.5-S1



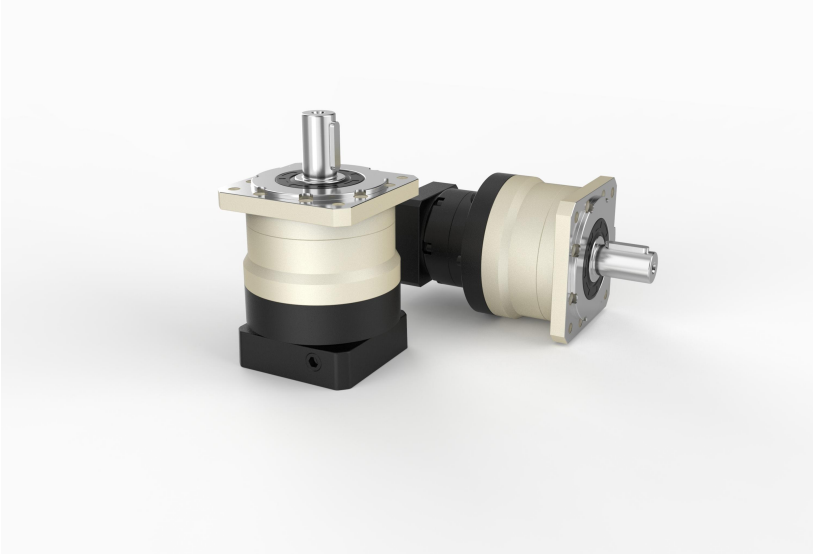
选用范例: **AT210-FL1-200-S1 / SIEMENS 1FK6 032-6AK71**
ATB210-FL1-200-S1 / SIEMENS 1FK6 032-6AK71

PF Series planetary gearbox
系列行星减速机

FEATURES
产品特点

- 行星臂架与输出轴采用一体式结构设计，
  确保最大的扭转刚性。
- 行星轮采用满滚针设计，
  增加接触面积以提高结构刚性与输出扭矩。
- 齿轮采用低碳钢表面渗碳淬火到HRC62，
  以获得最佳的耐磨及冲击韧性。
- 齿形引用国外进口软件辅助设计，
  以获得最佳的齿形降低噪音。
- 输入端与马达轴连接采用双边抱紧方式，
  以获取最大的夹紧力和零背隙的动力传递。

- Planetary boom and output shaft are intergrated structure designed to ensure maximum torsional rigidity.
- Planetary wheel with full needle design,increase the contact area to improve the rigidity and output torque.
- The gears are carburized and quenched to the HRC62 with low carbon steel surface for optimum wear and impact toughness.
- Gears refer to foreign imported software-assisted design to obtain the best tooth shape to reduce noise.
- The input terminal is connected to the motor shaft in a double-tight manner to obtain the maximum clamping force and zero backlash power transmission.



GENERAL NOTICES

订货须知

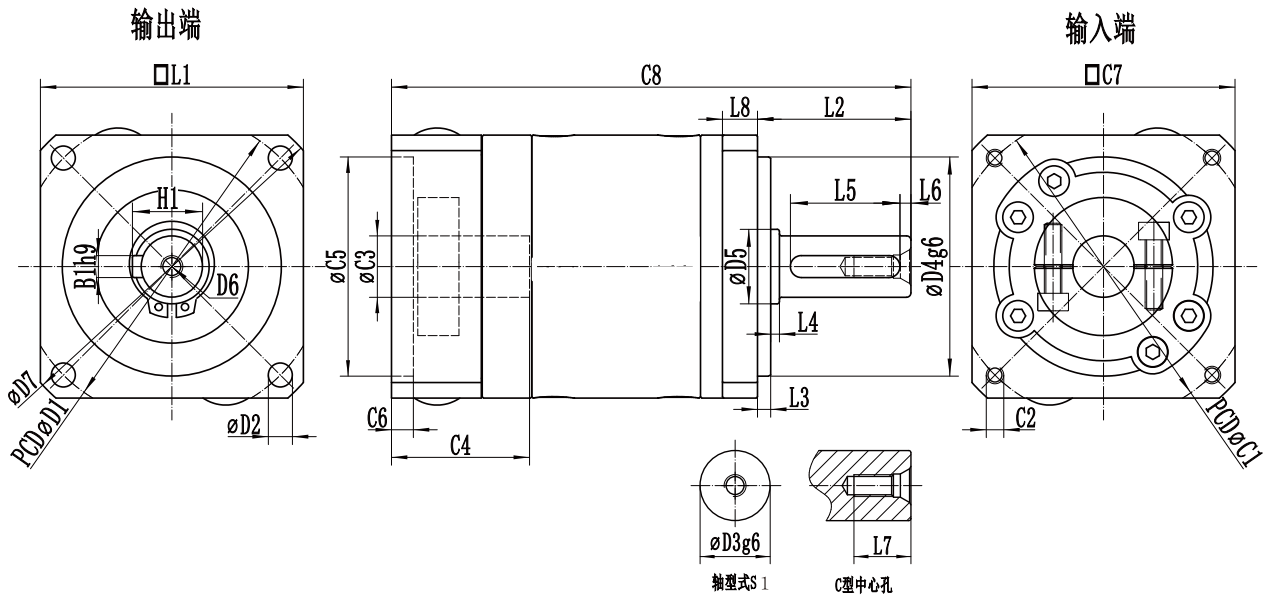
- 机种、型号、扭矩
- 减速比或出力轴转速
- 工况及连接方式
- 数量及安装的机械名称
- 入力方式和入力转速
- 马达厂牌型号或法兰及马达轴尺寸

- Type, model and torque
- Ratio or output speed
- Working conditions and connection methods
- Quantity and installed machine name
- Input mode and input speed
- Motor brand model or flange and motor shaft size

PLANETARY GEARBOX

● 减速机性能资料/Performance

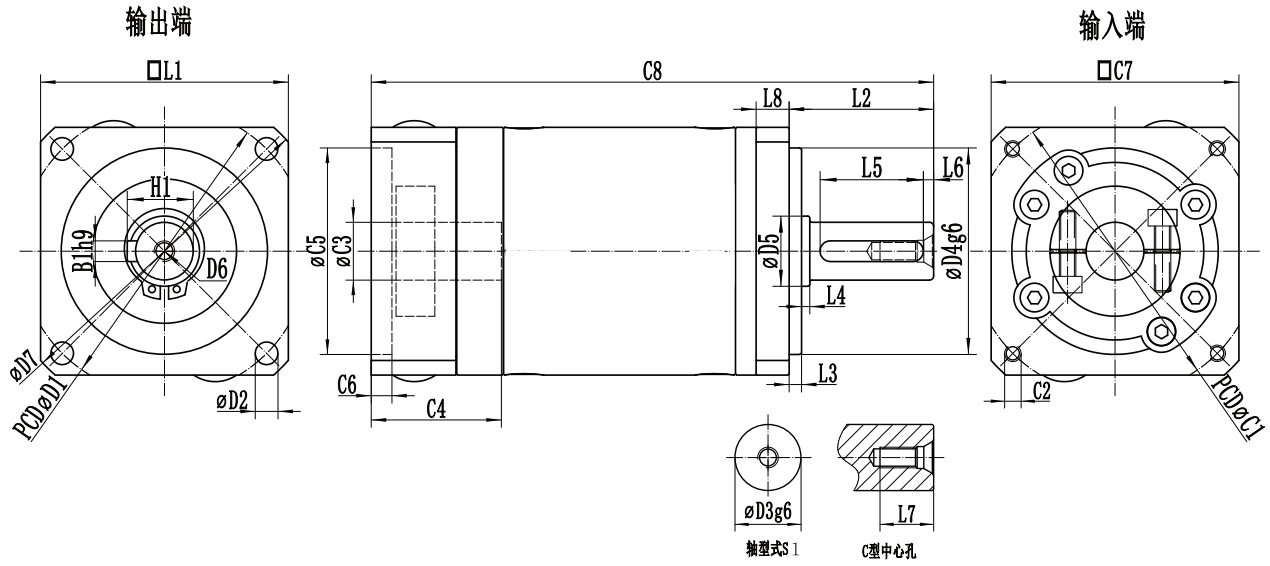
规格 Specification	单位 Unit	节数 Stage	减速比 Ratio	PF060	PF080	PF090	PF115	PF142
额定输出力矩 Rated output torque T_{2N}	Nm	1	3	18	40	50	125	290
			4	36	90	110	230	460
			5	40	110	125	260	550
			6	20	40	50	90	340
			7	20	40	50	90	340
			8	12	22	32	70	210
			10	12	22	32	70	210
		2	12	36	90	110	230	460
			15	40	110	125	260	550
			16	36	90	110	230	460
			20	40	110	125	260	550
			25	40	110	125	260	550
			28	36	90	110	230	460
			30	18	40	50	125	290
			35	40	110	125	260	550
			40	36	90	110	230	460
			50	40	110	125	260	550
			60	20	40	50	90	340
			70	20	40	50	90	340
			80	12	22	32	70	210
			100	12	22	32	70	210
装置马达轴孔径/Motor shaft size	mm	1,2	3–100	6–14	14–19	14–19	16–24	19–35
最大输出扭矩/Maximum output torque	Nm	1,2	3–100	二倍额定输出力矩/Double rated output torque				
额定输入转速/Rated input speed n_{1N}	rpm	1,2	3–100	4000	3500	3500	3500	2500
背隙/Backlash	arcmin	1	3–10	≤10	≤10	≤10	≤10	≤10
		2	12–100	≤12	≤12	≤12	≤12	≤12
扭转刚性/Torsional rigidity	Nm/arcmin	1,2	3–100	1.8	4.7	4.85	11	55
容许径向力/Allowable radial force F_{2aB}	N	1,2	3–100	220	400	430	1000	4500
容许轴向力/Allowable axial force F_{2aB}	N	1,2	3–100	240	420	450	1240	4800
使用寿命/Lifespan	hr	1,2	3–100	10000				
效率/Efficiency	%	1	3–10	≥96				
		2	12–100	≥93				
重量/Weight	kg	1	3–10	1.1	2.1	4.4	6.6	26.5
		2	12–100	1.4	3	5	8.2	29.6
使用温度/Working temperature	℃	1,2	3–100	−10℃~80℃				
防护等级/IP Grade		1,2	3–100	IP54				
润滑/Lubricating				合成润滑油脂/Synthetic lubricating grease				
安装方向/Installation direction		1,2	3–100	任意方向/In any direction				
噪音值(n1=3000rpm, 无负载) Noise level (n1=3000rpm,off load)	dB(A)	1,2	3–100	≤61	≤63	≤63	≤68	≤75



- 尺寸（单节，减速比 i=3～10）

Dimension(single stage,Ratio i=3~10)

尺寸/Dimension	PF060-L1	PF080-L1	PF090-L1	PF115-L1	PF142-L1
※D1	70	100	110	130	185
※D2	5.5	6.5	6.5	8.5	11
※D3	14	20	22	25	40
※D4	50	80	85	110	130
D5	17	25	30	35	55
D6	M5	M6	M6	M10	M12
D7	80	120	125	160	230
L1	60	90	92	120	176
※L2	35	40	46	55	87
※L3	3	3	5	4	5
L4	30	36	36	50	80
※L5	25	25	32	40	70
L6	2.5	5	2	5	5
L7	12.5	18	18	23	25
L8	8	10	10	14	15
*C1	70	90	90	145	200
*C2	M4	M5	M5	M8	M12
*C3	6-14	14-19	14-19	19-24	24-35
*C4	31.5	41	41	60	83
*C5	50	70	70	110	114.3
*C6	5	6	5	14	10
C7	60	80	80	130	180
C8	118.5	146.5	166	204.5	268.5
※B1	5	6	6	8	12
※H1	16	22.5	24.5	28	43



尺寸（双节，减速比 i=15～100）

Dimension(double stage,Ratio i=15~100)

尺寸/Dimension	PF060-L2	PF080-L2	PF090-L2	PF115-L2	PF142-L2
※D1	70	100	110	130	185
※D2	5.5	6.5	6.5	8.5	11
※D3	14	20	22	25	40
※D4	50	80	85	110	130
D5	17	25	30	35	55
D6	M5	M6	M6	M10	M12
D7	80	120	125	160	230
L1	60	90	92	120	176
※L2	35	40	46	55	87
※L3	3	3	5	4	5
L4	30	36	36	50	80
※L5	25	25	32	40	70
L6	2.5	5	2	5	5
L7	12.5	18	18	23	25
L8	8	10	10	14	15
*C1	70	90	90	145	200
*C2	M4	M5	M5	M8	M12
*C3	6-14	14-19	14-19	19-24	24-35
*C4	31.5	41	41	60	83
*C5	50	70	70	110	114.3
*C6	5	6	5	14	10
C7	60	80	80	130	180
C8	136.2	169.6	190.5	237	313.5
※B1	5	6	6	8	12
※H1	16	22.5	24.5	28	43

WPF Series Planetary Gearbox
系列行星减速机

FEATURES
产品特点

- 行星臂架与输出轴采用一体式结构设计， 确保最大的扭转刚性。
- 行星轮采用满滚针设计，增加接触面积以提高结构刚性与输出扭矩。
- 齿轮采用低碳钢表面渗碳淬火到HRC62，以获得最佳的耐磨及冲击韧性。
- 齿形引用国外进口软件辅助设计，以获得最佳的齿形降低噪音。
- 输入端与马达轴连接采用双边抱紧方式，以获取最大的夹紧力和零背隙的动力传递。
- 采用蜗线伞齿轮设计，容许输出扭矩高、比直伞齿轮高30%以上。
- 高容许输入转速，比直伞齿轮输入高8倍以上。
- 蜗线伞齿轮的啮合齿印，经最佳优化设计，接触齿面负载均一，运转寿命长。
- 蜗线伞齿轮啮合，经最佳运动误差分析与严格的制程控制，以确保高精度的运转背隙。

- Planetary boom and output shaft are intergrated structure designed to ensure maximum torsional rigidity.
- Planetary wheel with full needle design,increase the contact area to improve the rigidity and output torque.
- The gears are carburized and quenched to the HRC62 with low carbon steel surface for optimum wear and impact toughness.
- Gears refer to foreign imported software-assisted design to obtain the best tooth shape to reduce noise.
- The input terminal is connected to the motor shaft in a double-tight manner to obtain the maximum clamping force and zero backlash power transmission.
- Adopt spiral bevel gear design, allow high output torque, more than 30% higher than straight bevel gear.
- High tolerance input speed, more than 8 times higher than straight bevel gear input.
- The meshing tooth imprint of spiral bevel gear has been optimized by optimum design, and the contact tooth surface load is uniform, and long running life.
- Cochlear bevel gears are meshed by optimum motion error analysis and strict process control to ensure high precision running back clearance.

GENERAL NOTICES

订货须知

- 机种、型号、扭矩
- 减速比或出力轴转速
- 工况及连接方式
- 数量及安装的机械名称
- 入力方式和入力转速
- 马达厂牌型号或法兰及马达轴尺寸

- Type, model and torque
- Ratio or output speed
- Working conditions and connection methods
- Quantity and installed machine name
- Input mode and input speed
- Motor brand model or flange and motor shaft size

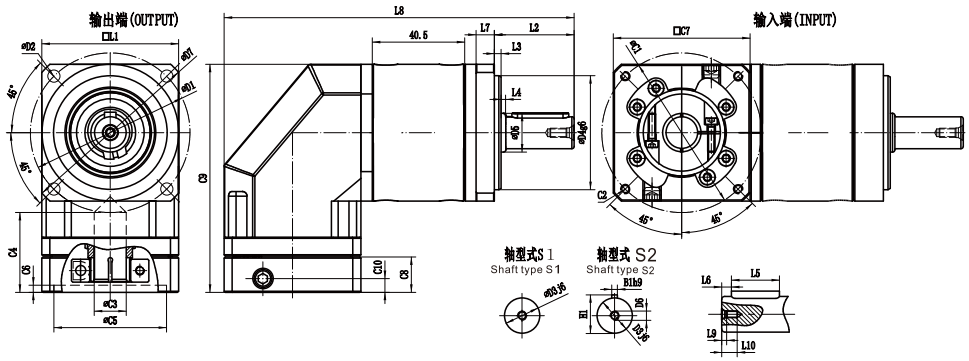
PLANETARY GEARBOX

减速机性能资料/Performance

规格 Specification	单位 Unit	节数 Stage	减速比 Ratio	WPF 042	WPF 060	WPF 080	WPF 115	WPF 142
额定输出力矩 Rated output torque T_{2N}	Nm	1	3	8	18	40	125	290
			4	18	36	90	230	460
			5	16	40	110	260	550
			6	8	20	40	90	340
			7	8	20	40	90	340
			8	5	36	90	230	460
			10	5	40	110	260	550
			12	8	20	40	90	340
			14	–	20	40	90	340
			20	18	12	22	70	210
		2	15	16	40	110	260	550
			25	16	40	110	260	550
			30	16	18	40	125	290
			35	16	40	110	260	550
			40	–	36	90	230	460
			50	–	40	110	260	550
			60	–	20	40	90	340
			70	–	20	40	90	340
			80	–	36	90	230	460
			100	–	40	110	260	550
			140	–	20	40	90	340
			200	–	12	22	70	210
急停扭矩/Emergency stop torque T_{2NOT}	Nm	1,2	3~200	二倍额定输出力矩/Double rated output torque				
额定输入转速/Rated input speed n_{1N}	rpm	1,2	3~200	4500	4000	3500	3500	3000
最大输入转速/Maximum iutput speed n_{1B}	rpm	1,2	3~200	10000	8000	6000	6000	4500
标准背隙/Standard backlash P2	arcmin	1	3~20	≤26	≤16	≤16	≤16	≤16
		2	15~200	≤28	≤18	≤18	≤18	≤18
扭转刚性/Torsional rigidity	Nm/arcmin	1,2	3~200	0.65	1.8	4.7	11	35
容许径向力/Allowable radial force F_{2aB}	N	1,2	3~200	165	240	400	1240	3700
容许轴向力/Allowable axial force F_{2aB}	N	1,2	3~200	135	220	420	1000	3500
使用寿命/Lifespan	hr	1,2	3~200	10000 *				
效率/Efficiency	%	1	3~20	94%				
		2	25~200	91%				
重量/Weight	kg	1	3~20	0.3	0.85	2	6	11
		2	25~200	0.4	0.9	2.3	7.5	13
使用温度/Working temperature	℃	1,2	3~200	（-10° C +90° C）				
润滑/Lubricating				合成润滑脂/Synthetic lubricating grease				
防护等级/IP Grade		1,2	3~200	IP54				
安装方向/Installation direction		1,2	3~200	任意方向/In any direction				
噪音值（n1=3000，无负载） Noise level（n1=3000, off load）	dB(A)	1,2	3~200	≤65	≤65	≤68	≤73	≤75

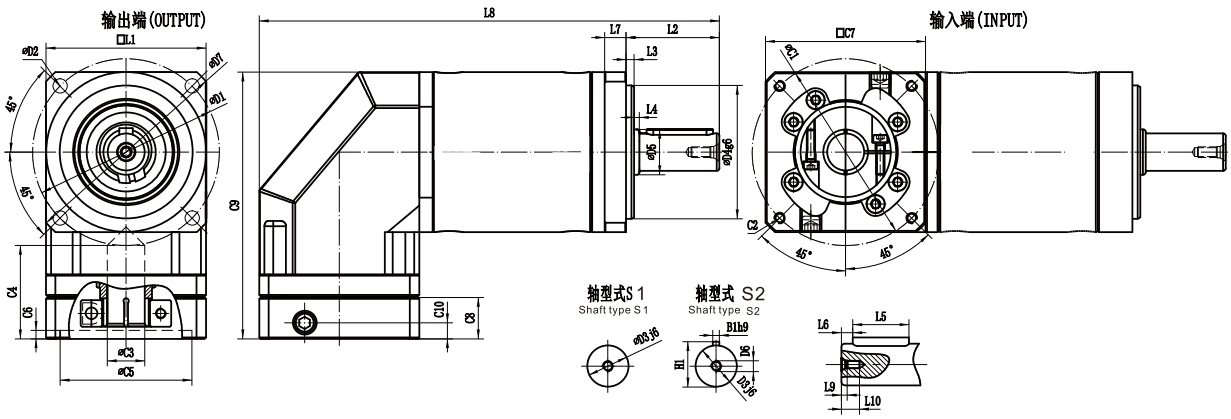
- 减速机转动惯量/Rotational inertia

规格 Specification	单位 Unit	节数 Stage	减速比 Ratio	WPF042	WPF060	WPF080	WPF115	WPF142
转动惯量J1 Rotational inertia J1	kg.cm²	1	3~10	0.03	0.135	0.75	2.5	5.8
			12、14	0.03	0.09	0.45	1.3	1.9
			20	0.03	0.09	0.39	1.2	2.73
		2	15	0.015	0.09	0.45	2.4	3.3
			25~100	0.01	0.035	0.2	1.4	2.3
			120~200	0.005	0.035	0.18	1.3	2.1



- 尺寸（单节，减速比i=3～20）Dimension(single stage,Ratio i=3~20)

尺寸/Dimension	WPF042	WPF060	WPF080	WPF115	WPF142
D1	–	70	100	130	185
D2	–	5.5	6.5	8.8	11
D3	–	14	20	25	40
D4	–	50	80	110	130
D5	–	17	25	35	55
D6	–	M5	M6	M10	M12
D7	–	80	120	160	230
L1	–	60	90	120	176
L2	–	35	40	55	87
L3	–	3	3	4	5
L4	–	2	1	1	2
L5	–	25	25	40	65
L6	–	2.5	5	5	5
L7	–	8	10	14	15
L8	–	153.5	204	288	340.5
L9	–	4.8	5	7.5	9.5
L10	–	12	18	23	25
C1	–	70	90	145	200
C2	–	M4	M5	M8	M12
C3	–	6–14	14–19	16–24	22–35
C4	–	35	54	81	81
C5	–	50	70	110	114.3
C6	–	3.5	6	14	19
C7	–	60	80	130	180
C8	–	16	30	45.5	57.5
C9	–	100	137	192	246.5
C10	–	9.5	14.5	27	32
B1h9	–	5	6	8	12
H1	–	16	22.5	28	43



- 尺寸（双节，减速比 i=15～200）

  Dimension(double stage,Ratio i=15~200)

尺寸/Dimension	WPF042	WPF060	WPF080	WPF115	WPF142
D1	–	70	100	130	185
D2	–	5.5	6.5	8.8	11
D3	–	14	20	25	32
D4	–	50	80	110	130
D5	–	17	25	35	40
D6	–	M5	M6	M10	M12
D7	–	80	120	160	230
L1	–	60	90	120	176
L2	–	35	40	55	87
L3	–	3	3	4	5
L4	–	2	1	1	2
L5	–	25	25	40	65
L6	–	2.5	4	5	5
L7	–	8	10	14	15
L8	–	172.5	228.5	288	388.5
L9	–	4.8	5	7.5	9.5
L10	–	12	18	23	25
C1	–	70	90	145	200
C2	–	M4	M5	M8	M12
C3	–	6–14	14–19	16–24	22–35
C4	–	35	54	81	81
C5	–	50	70	110	114.3
C6	–	3.5	6	14	19
C7	–	60	80	130	180
C8	–	16	30	45.5	57.5
C9	–	100	137	192	246.5
C10	–	9.5	14.5	27	32
B1h9	–	5	6	8	12
H1	–	16	22.5	28	43

PL Series planetary gearbox
系列行星减速机

FEATURES
产品特点

- 行星臂架与输出轴采用一体式结构设计，
  确保最大的扭转刚性。
- 行星轮采用满滚针设计，
  增加接触面积以提高结构刚性与输出扭矩。
- 齿轮采用低碳钢表面渗碳淬火到HRC62，
  以获得最佳的耐磨及冲击韧性。
- 齿形引用国外进口软件辅助设计，
  以获得最佳的齿形降低噪音。
- 输入端与马达轴连接采用双边抱紧方式，
  以获取最大的夹紧力和零背隙的动力传递。

- Planetary boom and output shaft are intergrated structure designed to ensure maximum torsional rigidity.
- Planetary wheel with full needle design,increase the contact area to improve the rigidity and output torque.
- The gears are carburized and quenched to the HRC62 with low carbon steel surface for optimum wear and impact toughness.
- Gears refer to foreign imported software-assisted design to obtain the best tooth shape to reduce noise.
- The input terminal is connected to the motor shaft in a double-tight manner to obtain the maximum clamping force and zero backlash power transmission.

GENERAL NOTICES

● 订货须知

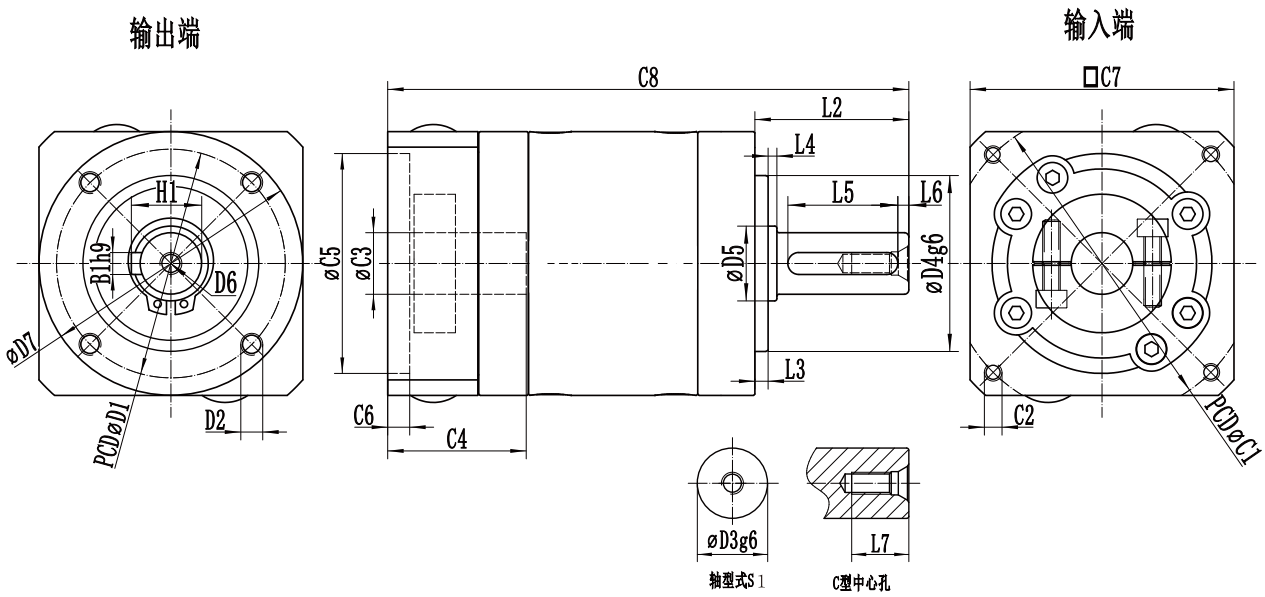
- 机种、型号、扭矩
- 减速比或出力轴转速
- 工况及连接方式
- 数量及安装的机械名称
- 入力方式和入力转速
- 马达厂牌型号或法兰及马达轴尺寸

- Type, model and torque
- Ratio or output speed
- Working conditions and connection methods
- Quantity and installed machine name
- Input mode and input speed
- Motor brand model or flange and motor shaft size

PLANETARY GEARBOX

● 减速机性能资料 /Performance

规格 Specification	单位 Unit	节数 Stage	减速比 Ratio	PL060	PL080	PL090	PL120	PL160
额定输出力矩 Rated output torque T_{2N}	Nm	1	3	18	40	50	125	290
			4	36	90	110	230	460
			5	40	110	125	260	550
			6	20	40	50	90	340
			7	20	40	50	90	340
			8	12	22	32	70	210
			10	12	22	32	70	210
		2	12	36	90	110	230	460
			15	40	110	125	260	550
			16	36	90	110	230	460
			20	40	110	125	260	550
			25	40	110	125	260	550
			28	36	90	110	230	460
			30	18	40	50	125	290
			35	40	110	125	260	550
			40	36	90	110	230	460
			50	40	110	125	260	550
			60	20	40	50	90	340
			70	20	40	50	90	340
			80	12	22	32	70	210
			100	12	22	32	70	210
装置马达轴孔径 /Motor shaft size	mm	1,2	3–100	6–14	14–19	14–19	16–24	19–35
最大输出扭矩 /Maximum output torque	Nm	1,2	3–100	二倍额定输出力矩 /Double rated output torque				
额定输入转速/Rated input speed n_{1N}	rpm	1,2	3–100	4000	3500	3500	3500	2500
背隙 /Backlash	arcmin	1	3–10	≤10	≤10	≤10	≤10	≤10
		2	12–100	≤12	≤12	≤12	≤12	≤12
扭转刚性 /Torsional rigidity	Nm/arcmin	1,2	3–100	1.8	4.7	4.85	11	55
容许径向力/Allowable radial force F_{2aB}	N	1,2	3–100	220	400	430	1000	4500
容许轴向力/Allowable axial force F_{2aB}	N	1,2	3–100	240	420	450	1240	4800
使用寿命 /Lifespan	hr	1,2	3–100	10000				
效率 /Efficiency	%	1	3–10	≥96				
		2	12–100	≥93				
重量 /Weight	kg	1	3–10	1.1	2.3	4.4	6.4	26.5
		2	12–100	1.4	2.9	5	8	29.6
使用温度 /Working temperature	℃	1,2	3–100	−10℃~80℃				
防护等级 /IP Grade		1,2	3–100	IP54				
润滑 /Lubricating				合成润滑油脂 /Synthetic lubricating grease				
安装方向 /Installation direction		1,2	3–100	任意方向 /In any direction				
噪音值(n1=3000rpm,无负载) Noise level (n1=3000rpm,off load)	dB(A)	1,2	3–100	≤61	≤63	≤63	≤68	≤75



- 尺寸（单节，减速比 i=3～10）

  Dimension(single stage,Ratio i=3~10)

尺寸/Dimension	PL060-L1	PL080-L1	PL090-L1	PL120-L1	PL160-L1
※D1	52	70	80	100	145
※D2	M5	M6	M6	M10	M12
※D3	14	20	22	25	40
※D4	40	60	68	80	130
D5	17	25	30	35	55
D6	M5	M6	M6	M10	M12
D7	60	80	90	115	162
L1	-	-	-	-	-
※L2	35	40	46	55	87
※L3	3	3	5	4	5
L4	30	36	36	50	80
※L5	25	25	32	40	70
L6	2.5	5	2	5	5
L7	12.5	18	18	23	25
L8	-	-	-	-	-
*C1	70	90	90	145	200
*C2	M4	M5	M5	M8	M12
*C3	6-14	14-19	14-19	19-24	24-35
*C4	31.5	41	41	60	83
*C5	50	70	70	110	114.3
*C6	5	6	5	14	10
C7	60	80	80	130	180
C8	118.5	146.5	166	204.5	268.5
※B1	5	6	6	8	12
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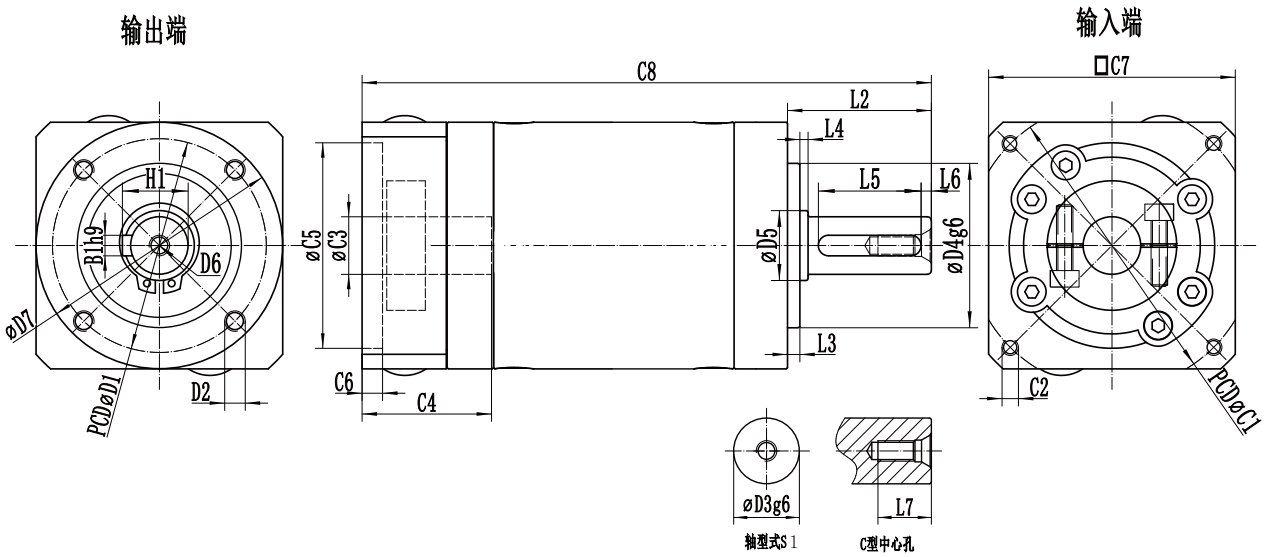

- 尺寸（双节，减速比 i=15～100））

Dimension(double stage,Ratio i=15~100)

尺寸/Dimension	PL060-L2	PL080-L2	PL090-L2	PL120-L2	PL160-L2
※D1	52	70	80	100	145
※D2	M5	M6	M6	M10	M12
※D3	14	20	22	25	40
※D4	40	60	68	80	130
D5	17	25	30	35	55
D6	M5	M6	M6	M10	M12
D7	60	80	90	115	162
L1	-	-	-	-	-
※L2	35	40	46	55	87
※L3	3	3	5	4	5
L4	30	36	36	50	80
※L5	25	25	32	40	70
L6	2.5	5	2	5	5
L7	12.5	18	18	23	25
L8	-	-	-	-	-
*C1	70	90	90	145	200
*C2	M4	M5	M5	M8	M12
*C3	6-14	14-19	14-19	19-24	24-35
*C4	31.5	41	41	60	83
*C5	50	70	70	110	114.3
*C6	5	6	5	14	10
C7	60	80	80	130	180
C8	136.2	169.6	190.5	237	313.5
※B1	5	6	6	8	12
※H1	16	22.5	24.5	28	43

WPL Series Planetary Gearbox
系列行星减速机

FEATURES
产品特点

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- 行星轮采用满滚针设计，增加接触面积以提高结构刚性与输出扭矩。
- 齿轮采用低碳钢表面渗碳淬火到HRC62，以获得最佳的耐磨及冲击韧性。
- 齿形引用国外进口软件辅助设计，以获得最佳的齿形降低噪音。
- 输入端与马达轴连接采用双边抱紧方式，以获取最大的夹紧力和零背隙的动力传递。
- 采用蜗线伞齿轮设计，容许输出扭矩高、比直 伞齿轮高30%以上。
- 高容许输入转速，比直伞齿轮输入高8倍以上。
- 蜗线伞齿轮的啮合齿印，经最佳优化设计，接触齿面负载均一，运转寿命长。
- 蜗线伞齿轮啮合，经最佳运动误差分析与严格的制程控制，以确保高精度的运转背隙。

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- Adopt spiral bevel gear design, allow high output torque, more than 30% higher than straight bevel gear.
- High tolerance input speed, more than 8 times higher than straight bevel gear input.
- The meshing tooth imprint of spiral bevel gear has been optimized by optimum design, and the contact tooth surface load is uniform, and long running life.
- Cochlear bevel gears are meshed by optimum motion error analysis and strict process control to ensure high precision running back clearance.

PLANETARY GEARBOX

● 减速机性能资料/Performance

规格 Specification	单位 Unit	节数 Stage	减速比 Ratio	WPL042	WPL060	WPL080	WPL120	WPL160
额定输出力矩 Rated output torque T_{2N}	Nm	1	3	8	18	40	125	290
			4	18	36	90	230	460
			5	16	40	110	260	550
			6	8	20	40	90	340
			7	8	20	40	90	340
			8	5	36	90	230	460
			10	5	40	110	260	550
			12	8	20	40	90	340
			14	8	20	40	90	340
			20	18	12	22	70	210
		2	15	16	40	110	260	550
			25	16	40	110	260	550
			30	16	18	40	125	290
			35	16	40	110	260	550
			40	–	36	90	230	460
			50	–	40	110	260	550
			60	–	20	40	90	340
			70	–	20	40	90	340
			80	–	36	90	230	460
			100	–	40	110	260	550
			140	–	20	40	90	340
			200	–	12	22	70	210
急停扭矩 /Emergency stop torque T_{2NOT}	Nm	1,2	3~200	二倍额定输出力矩 /Double rated output torque				
额定输入转速/Rated input speed n_{1N}	rpm	1,2	3~200	4500	4000	3500	3500	3000
最大输入转速 /Maximum iutput speed n_{1B}	rpm	1,2	3~200	10000	8000	6000	6000	4500
标准背隙 /Standard backlash P2	arcmin	1	3~20	≤26	≤16	≤16	≤16	≤16
		2	15~200	≤28	≤18	≤18	≤18	≤18
扭转刚性 /Torsional rigidity	Nm/arcmin	1,2	3~200	0.65	1.8	4.7	11	35
容许径向力/Allowable radial force F_{2aB}	N	1,2	3~200	165	240	400	1240	3700
容许轴向力/Allowable axial force F_{2aB}	N	1,2	3~200	135	220	420	1000	3500
使用寿命 /Lifespan	hr	1,2	3~200	10000 *				
效率 /Efficiency	%	1	3~20	94%				
		2	25~200	91%				
重量 /Weight	kg	1	3~20	0.3	0.85	2	6	11
		2	25~200	0.4	0.9	2.3	7.5	13
使用温度 /Working temperature	℃	1,2	3~200	（-10° C +90° C）				
润滑 /Lubricating				合成润滑脂/Synthetic lubricating grease				
防护等级 /IP Grade		1,2	3~200	IP54				
安装方向 /Installation direction		1,2	3~200	任意方向 /In any direction				
噪音值（n1=3000, 无负载） Noise level（n1=3000, off load）	dB(A)	1,2	3~200	≤65	≤65	≤68	≤73	≤75

GENERAL NOTICES

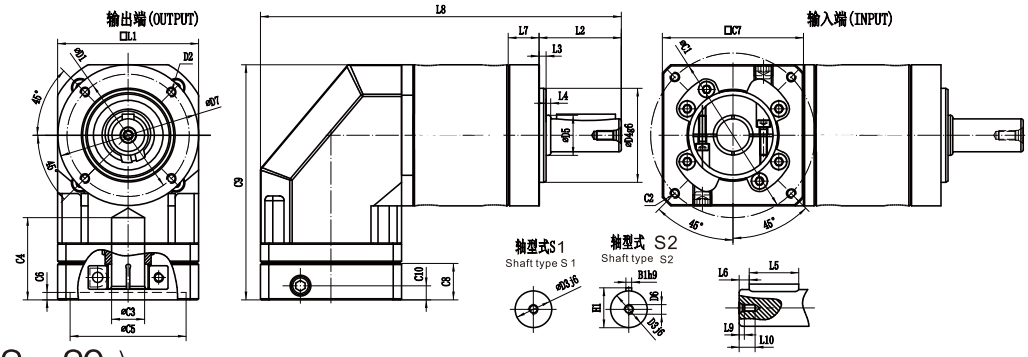
● 订货须知

- 机种、型号、扭矩
- 减速比或出力轴转速
- 工况及连接方式
- 数量及安装的机械名称
- 入力方式和入力转速
- 马达厂牌型号或法兰及马达轴尺寸

- Type, model and torque
- Ratio or output speed
- Working conditions and connection methods
- Quantity and installed machine name
- Input mode and input speed
- Motor brand model or flange and motor shaft size

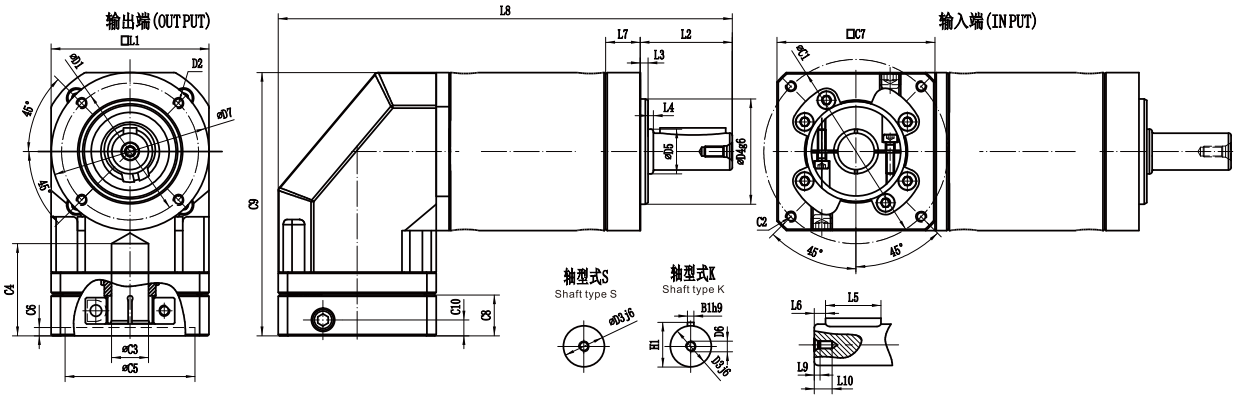
- 减速机转动惯量 /Rotational inertia

规格 Specification	单位 Unit	节数 Stage	减速比 Ratio	WPL042	WPL060	WPL080	WPL120	WPL160
转动惯量J1 Rotational inertia J1	kg.cm²	1	3~10	0.03	0.135	0.75	2.5	5.8
			12、14	0.03	0.09	0.45	1.3	1.9
			20	0.03	0.09	0.39	1.2	2.73
		2	15	0.015	0.09	0.45	2.4	3.3
			25~100	0.01	0.035	0.2	1.4	2.3
			120~200	0.005	0.035	0.18	1.3	2.1



- 尺寸（单节，减速比i=3～20）Dimension(single stage,Ratio i=3~20)

尺寸/Dimension	WPL042	WPL060	WPL080	WPL120	WPL160
D1	–	52	70	100	145
D2	–	M5	M6	M10	M12
D3	–	14	20	25	40
D4	–	40	60	80	130
D5	–	17	25	35	55
D6	–	M5	M6	M10	M12
D7	–	60	80	115	162
L1	–	60	80	115	142
L2	–	35	40	55	87
L3	–	3	3	4	5
L4	–	2	1	1	2
L5	–	25	25	40	65
L6	–	2.5	5	5	5
L7	–	13	21.5	40.5	32.5
L8	–	153.5	204	288	340.5
L9	–	4.8	5	7.5	9.5
L10	–	12	18	23	25
C1	–	70	90	145	200
C2	–	M4	M5	M8	M12
C3	–	6–14	14–19	16–24	22–35
C4	–	35	54	81	81
C5	–	50	70	110	114.3
C6	–	3.5	6	14	19
C7	–	60	80	130	180
C8	–	16	30	45.5	57.5
C9	–	100	137	192	246.5
C10	–	9.5	14.5	27	32
B1h9	–	5	6	8	12
H1	–	16	22.5	28	43



- 尺寸（双节，减速比 i=15～200）Dimension(double stage,Ratio i=15~200)

尺寸/Dimension	WPL042	WPL060	WPL080	WPL120	WPL160
D1	–	52	70	100	145
D2	–	M5	M6	M10	M12
D3	–	14	20	25	40
D4	–	40	60	80	130
D5	–	17	25	35	55
D6	–	M5	M6	M10	M12
D7	–	60	80	115	162
L1	–	60	80	115	142
L2	–	35	40	55	87
L3	–	3	3	4	5
L4	–	2	1	1	2
L5	–	25	25	40	65
L6	–	2.5	5	5	5
L7	–	13	21.5	40.5	32.5
L8	–	172.5	228.5	288	388.5
L9	–	4.8	5	7.5	9.5
L10	–	12	18	23	25
C1	–	70	90	145	200
C2	–	M4	M5	M8	M12
C3	–	6–14	14–19	16–24	22–35
C4	–	35	54	81	81
C5	–	50	70	110	114.3
C6	–	3.5	6	14	19
C7	–	60	80	130	180
C8	–	16	30	45.5	57.5
C9	–	100	137	192	246.5
C10	–	9.5	14.5	27	32
B1h9	–	5	6	8	12
H1	–	16	22.5	28	43

- PFK060
- PFK090
- PFK120
- PFK160

PFK

Series

PFK系列减速机核心特性

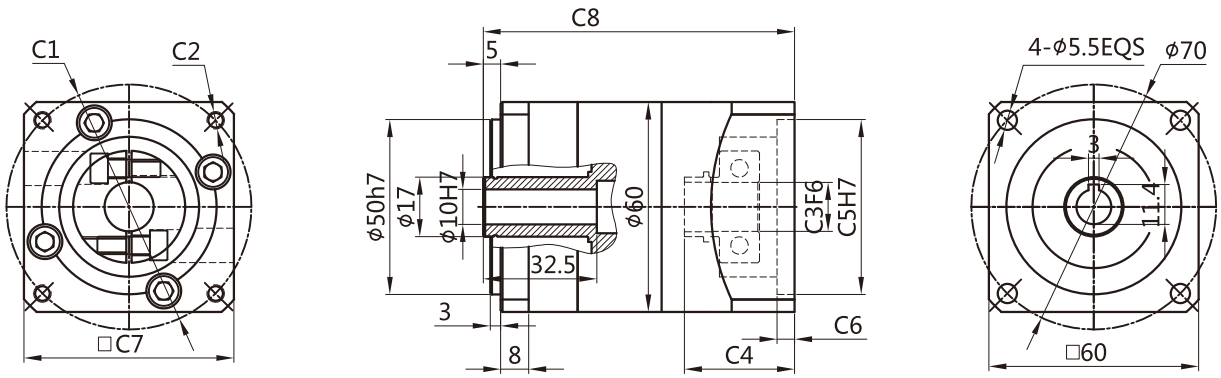
The Core Characteristics of PLFK Series Reducer

1. 采用直齿齿轮传动，经渗碳淬火处理，齿向齿廓修形处理，确保运行平稳，噪音小；
2. 结构简单，可大批量生产，且交货期快性价比高；
3. 减速机种类齐全，可以满足市场上绝大多数减速机的配合。

1. Adopt straight tooth gear transmission, through carburizing and quenching treatment, tooth profile modification treatment, ensure smooth operation, low noise.
2. Simple structure, mass production, and fast delivery time and high cost performance.
3. Reducer has a complete range, which can meet the needs of most reducer in the market.

PFK Series 外形尺寸图表
Outline dimensional

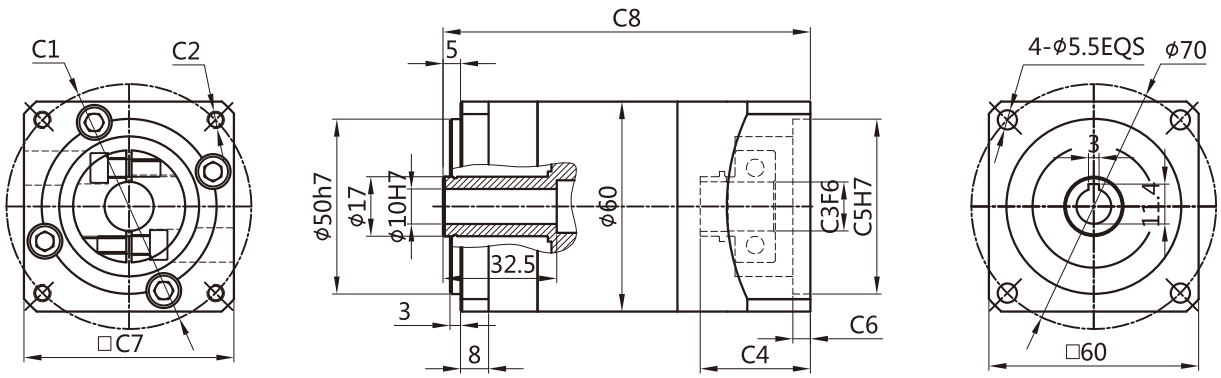
PFK-060-L1



适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PFK-060-L1	□47.14	4-M4	Φ8	31.5	Φ38.1	5.0	60	89
	Φ46	4-M4	Φ8	31.5	Φ30	5.0	60	89
	Φ45	4-M3	Φ8	31.5	Φ30	5.0	60	89
	Φ70	4-M4/4-M5	Φ14	31.5	Φ50	5.0	60	89

PFK-060-L2

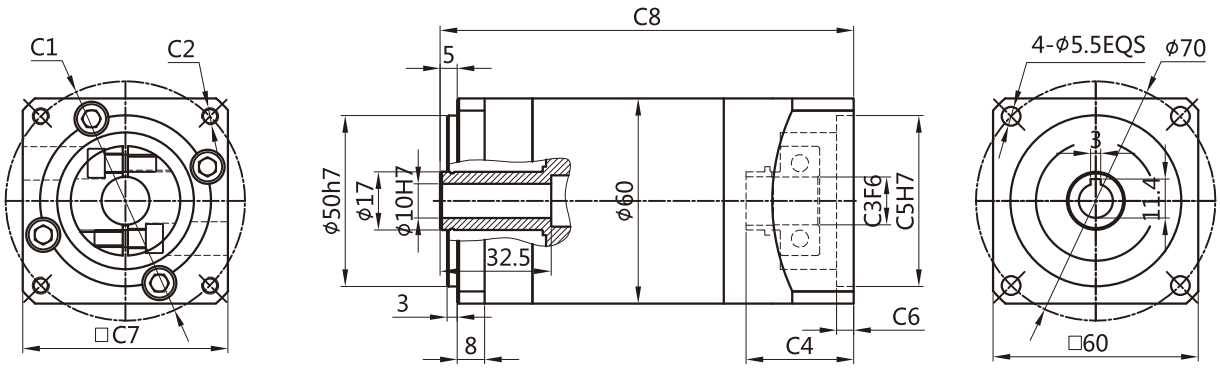


适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PFK-060-L2	□47.14	4-M4	Φ8	31.5	Φ38.1	5.0	60	105
	Φ46	4-M4	Φ8	31.5	Φ30	5.0	60	105
	Φ45	4-M3	Φ8	31.5	Φ30	5.0	60	105
	Φ70	4-M4/4-M5	Φ14	31.5	Φ50	5.0	60	105

PFK 外形尺寸图表
Series Outline dimensional

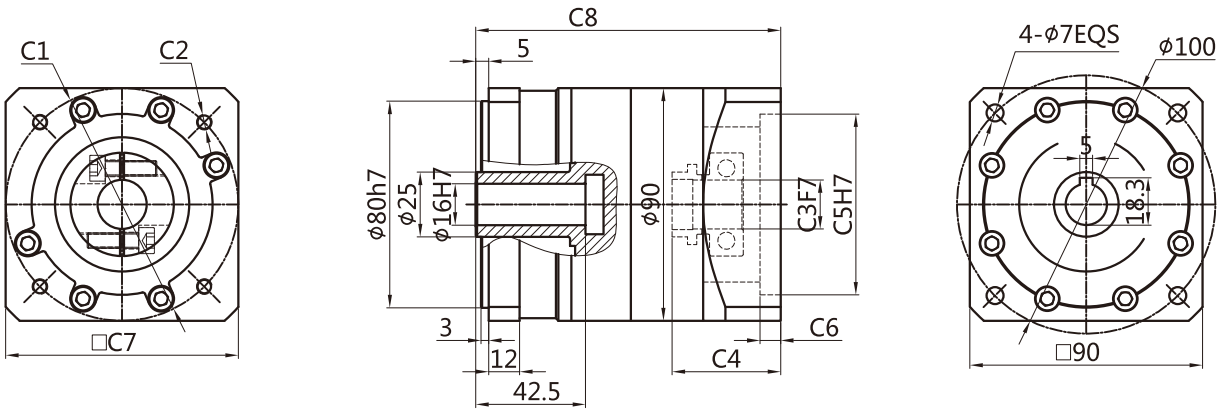
PFK-060-L3



适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PFK-060-L3	□47.14	4-M4	Φ8	31.5	Φ38.1	5.0	60	121
	Φ46	4-M4	Φ8	31.5	Φ30	5.0	60	121
	Φ45	4-M3	Φ8	31.5	Φ30	5.0	60	121
	Φ70	4-M4/4-M5	Φ14	31.5	Φ50	5.0	60	121

PFK-090-L1

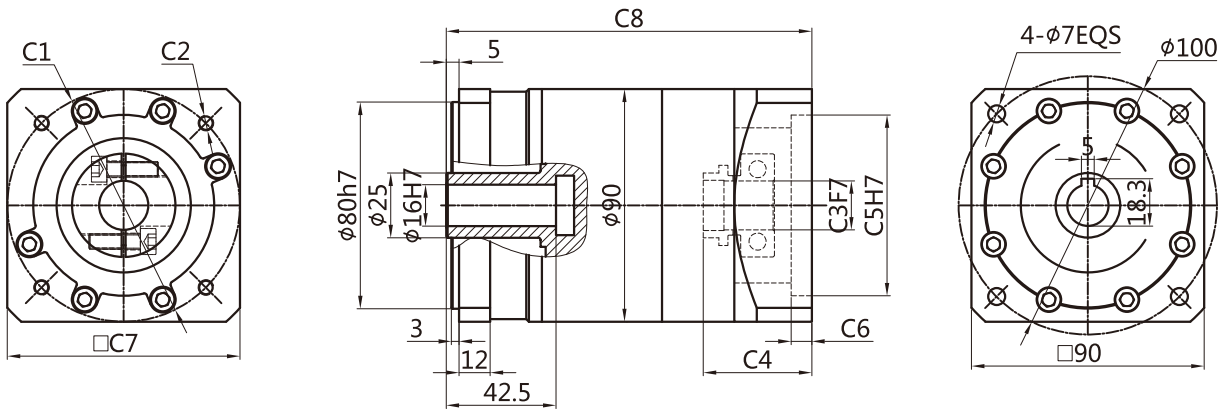


适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PFK-090-L1	Φ70	4-M4/4-M5	Φ14	42	Φ50	8.0	80	118
	□69.6	4-M6	Φ14	42	Φ73	8.0	80	118
	Φ90	4-M5/4-M6	Φ19	42	Φ70	8.0	80	118

PFK Series 外形尺寸图表
Outline dimensional

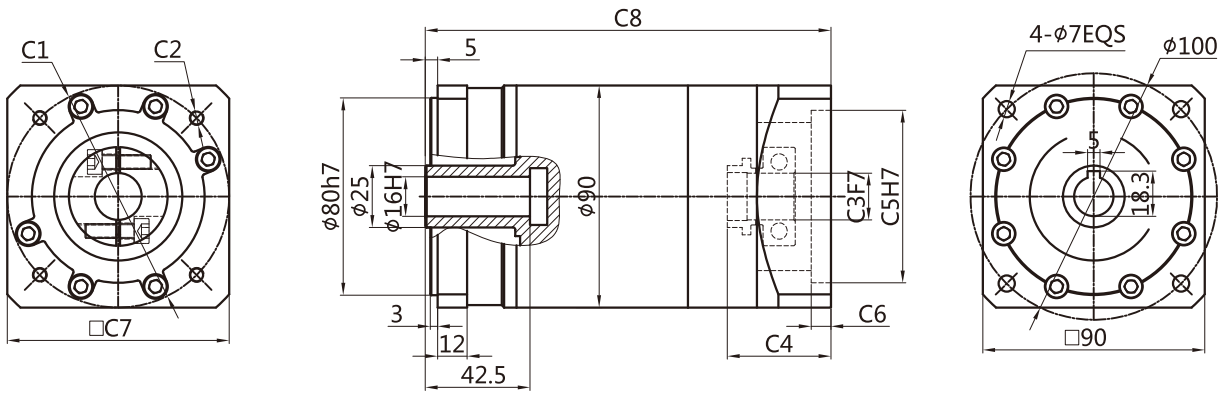
PFK-090-L2



适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PFK-090-L2	Φ70	4-M4/4-M5	Φ14	42	Φ50	8.0	80	141.5
	□69.6	4-M6	Φ14	42	Φ73	8.0	80	141.5
	Φ90	4-M5/4-M6	Φ19	42	Φ70	8.0	80	141.5

PFK-090-L3

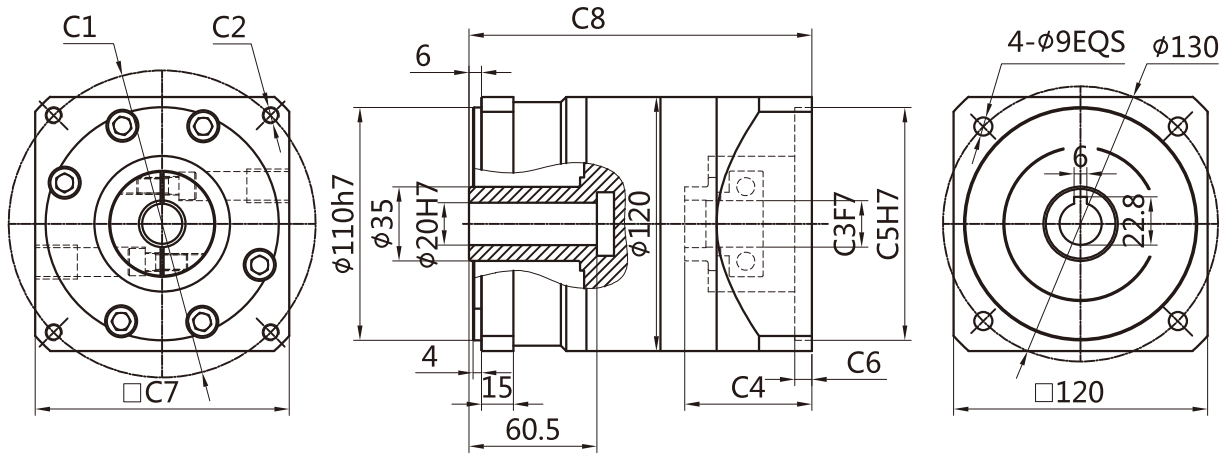


适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PFK-090-L3	Φ70	4-M4/4-M5	Φ14	42	Φ50	8.0	90	164.5
	□69.6	4-M6	Φ14	42	Φ73	8.0	90	164.5
	Φ90	4-M5/4-M6	Φ19	42	Φ70	8.0	90	164.5

PFK Series 外形尺寸图表
Outline dimensional

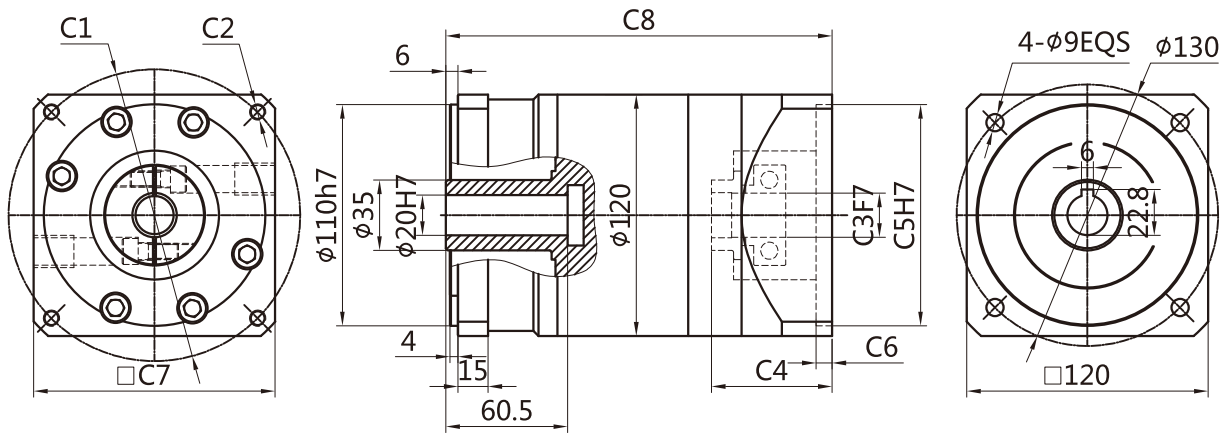
PFK-120-L1



适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PFK-120-L1	Φ90	4-M5/4-M6	Φ19	47	Φ70	8	90	151
	Φ115	4-M8	Φ19/Φ22	60	Φ95	8	130	162
	Φ130	4-M8	Φ19/Φ22	60	Φ95	8	130	162
	Φ145	4-M8	Φ19/Φ22/Φ24	60	Φ110	8	180	162

PFK-120-L2

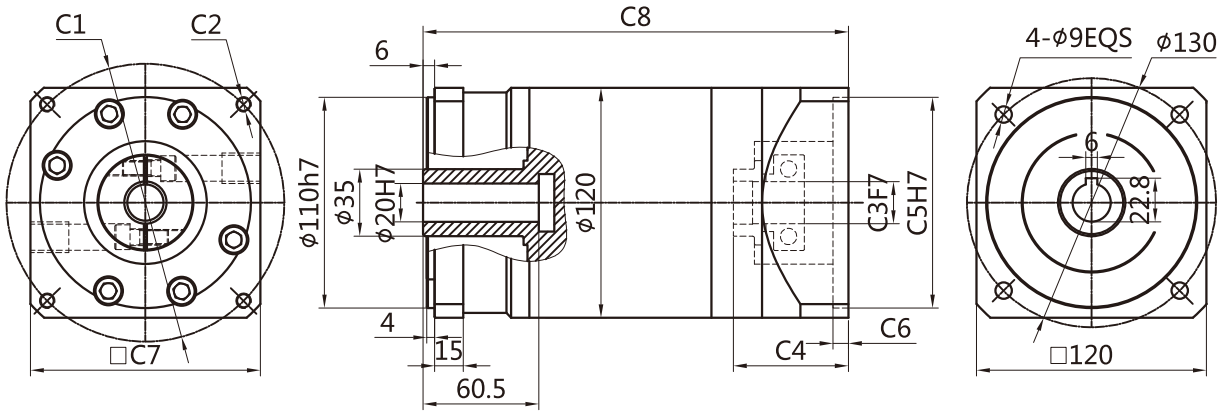


适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PFK-120-L2	Φ90	4-M5/4-M6	Φ19	47	Φ70	8	90	181
	Φ115	4-M8	Φ19/Φ22	60	Φ95	8	130	192
	Φ130	4-M8	Φ19/Φ22	60	Φ95	8	130	192
	Φ145	4-M8	Φ19/Φ22/Φ24	60	Φ110	8	180	192

PFK Series 外形尺寸图表
Outline dimensional

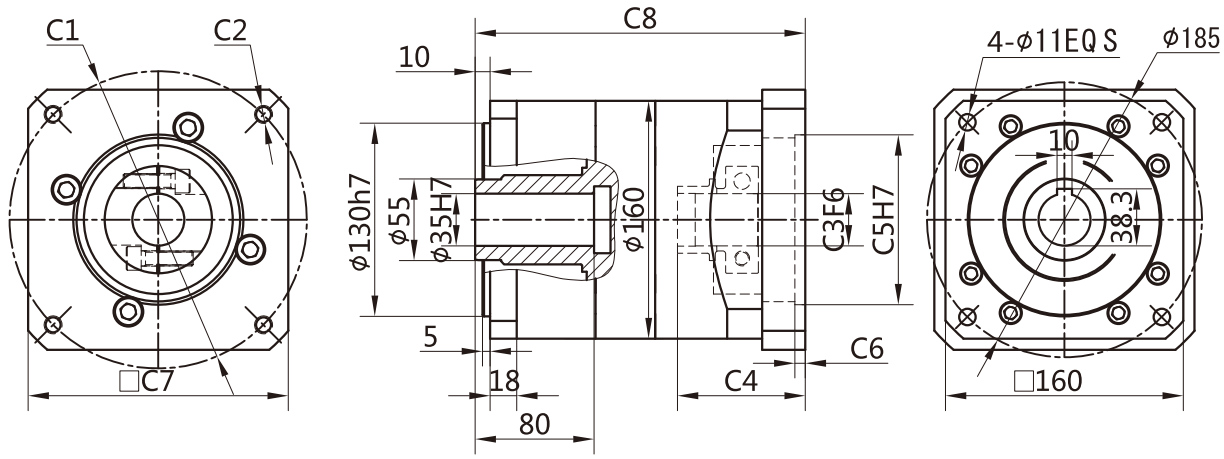
PFK-120-L3



适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PFK-120-L3	Φ90	4-M5/4-M6	Φ19	47	Φ70	8	90	211
	Φ115	4-M8	Φ19/Φ22	60	Φ95	8	130	222
	Φ130	4-M8	Φ19/Φ22	60	Φ95	8	130	222
	Φ145	4-M8	Φ19/Φ22/Φ24	60	Φ110	8	180	222

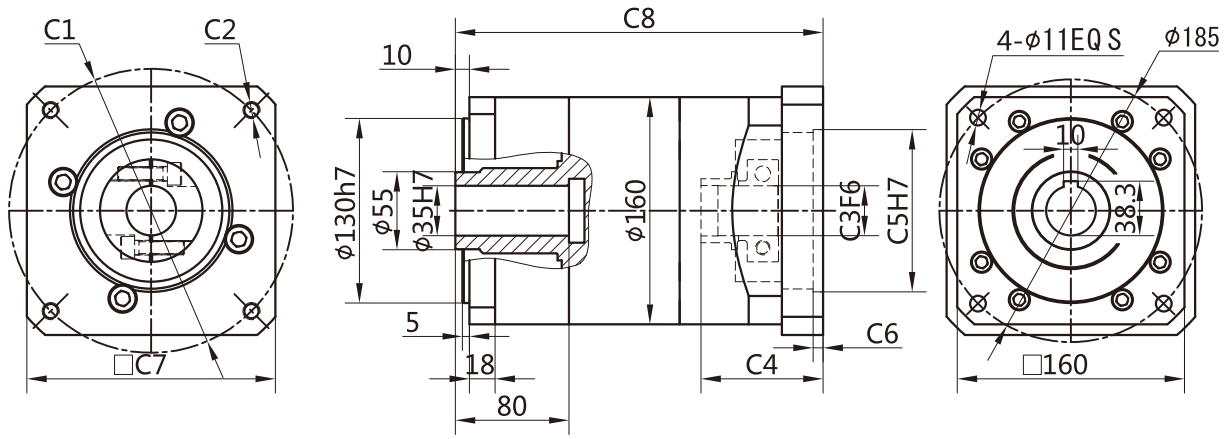
PFK-160-L1



适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PFK-160-L1	Φ130	4-M8	Φ22	62	Φ95	7	142	198
	Φ145	4-M8	Φ22/Φ24	62	Φ110	7	142	198
	Φ165	4-M10	Φ32	62	Φ130	7	142	198
	Φ200	4-M12	Φ35	86	Φ114.3	7	175	222
	Φ200	4-M12	Φ35	117	Φ114.3	7	175	253
	Φ215	4-M12	Φ38/Φ42	86	Φ180	7	190	222

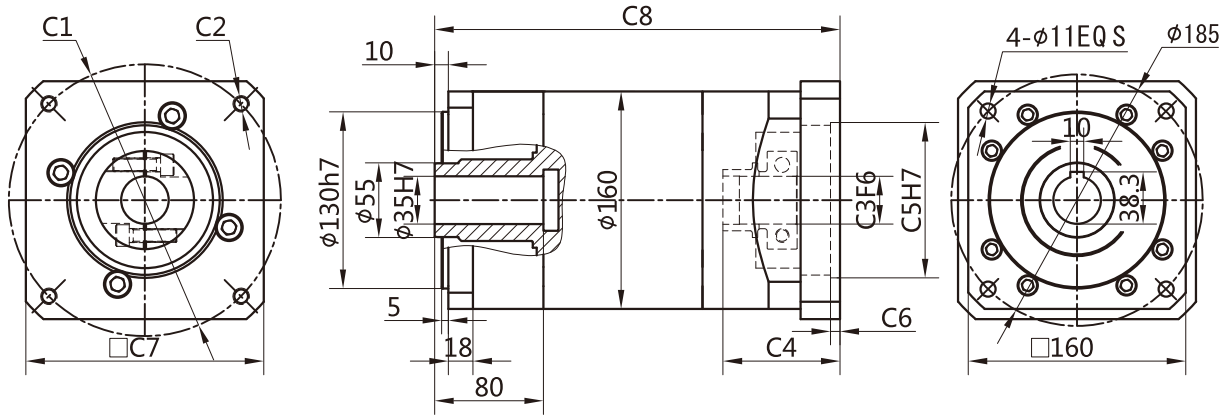
PFK-160-L2



适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PFK-160-L2	Φ130	4-M8	Φ22	62	Φ95	7	142	236
	Φ145	4-M8	Φ22/Φ24	62	Φ110	7	142	236
	Φ165	4-M10	Φ32	62	Φ130	7	142	236
	Φ200	4-M12	Φ35	86	Φ114.3	7	175	260
	Φ200	4-M12	Φ35	117	Φ114.3	7	175	291
	Φ215	4-M12	Φ38/Φ42	86	Φ180	7	190	260

PFK-160-L3



适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PFK-160-L3	Φ130	4-M8	Φ22	62	Φ95	7	142	274
	Φ145	4-M8	Φ22/Φ24	62	Φ110	7	142	274
	Φ165	4-M10	Φ32	62	Φ130	7	142	274
	Φ200	4-M12	Φ35	86	Φ114.3	7	175	298
	Φ200	4-M12	Φ35	117	Φ114.3	7	175	329
	Φ215	4-M12	Φ38/Φ42	86	Φ180	7	190	298

- PLK060
- PLK090
- PLK120

PLK

Series

PLK系列减速机核心特性

The Core Characteristics of PLEK Series Reducer

1. 采用直齿齿轮传动，经渗碳淬火处理，齿向齿廓修形处理，确保运行平稳，噪音小；
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1. Adopt straight tooth gear transmission, through carburizing and quenching treatment, tooth profile modification treatment, ensure smooth operation, low noise.
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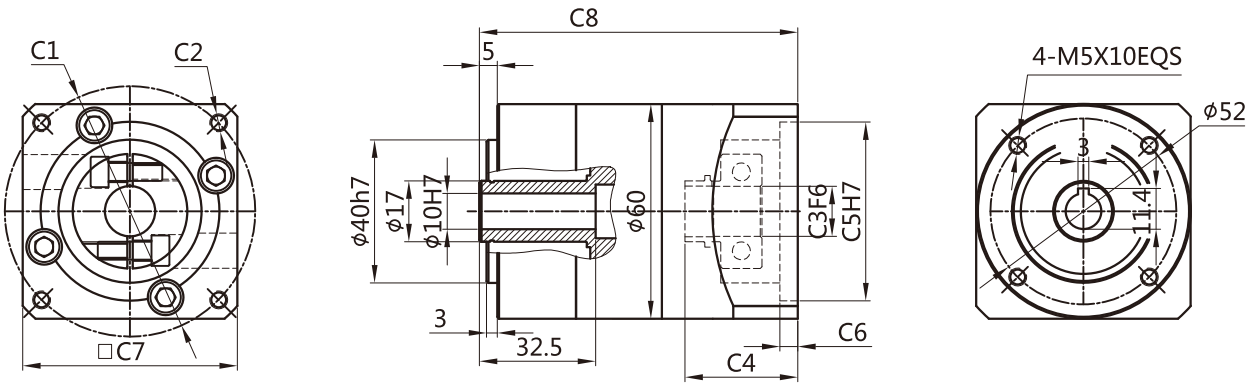
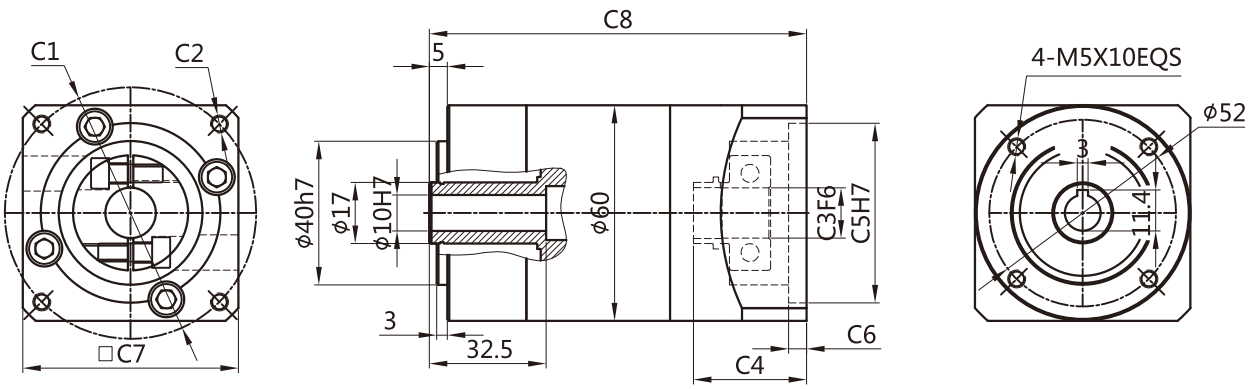
PLK060-L1



适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PLK060-L1	□47.14	4-M4	Φ8	31.5	Φ38.1	5.0	60	89
	Φ46	4-M4	Φ8	31.5	Φ30	5.0	60	89
	Φ45	4-M3	Φ8	31.5	Φ30	5.0	60	89
	Φ70	4-M4/4-M5	Φ14	31.5	Φ50	5.0	60	89

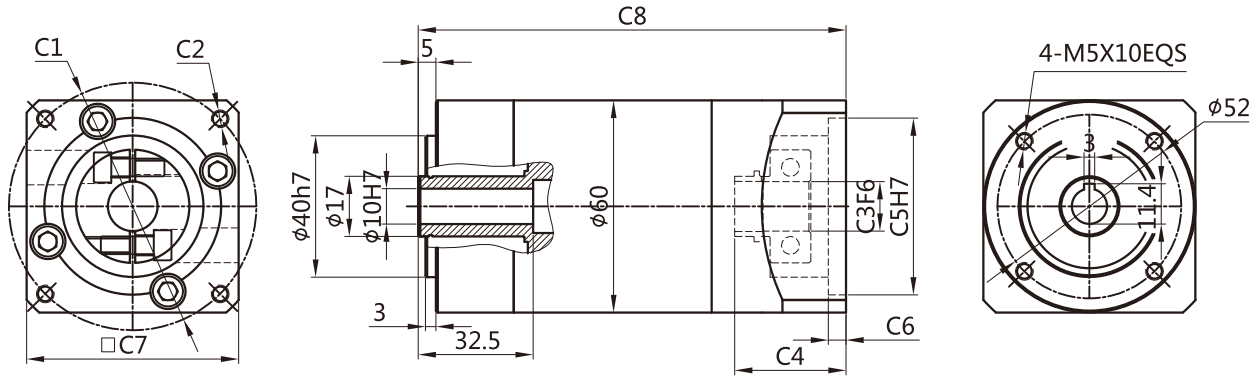
PLK060-L2



适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PLK060-L2	□47.14	4-M4	Φ8	31.5	Φ38.1	5.0	60	105
	Φ46	4-M4	Φ8	31.5	Φ30	5.0	60	105
	Φ45	4-M3	Φ8	31.5	Φ30	5.0	60	105
	Φ70	4-M4/4-M5	Φ14	31.5	Φ50	5.0	60	105

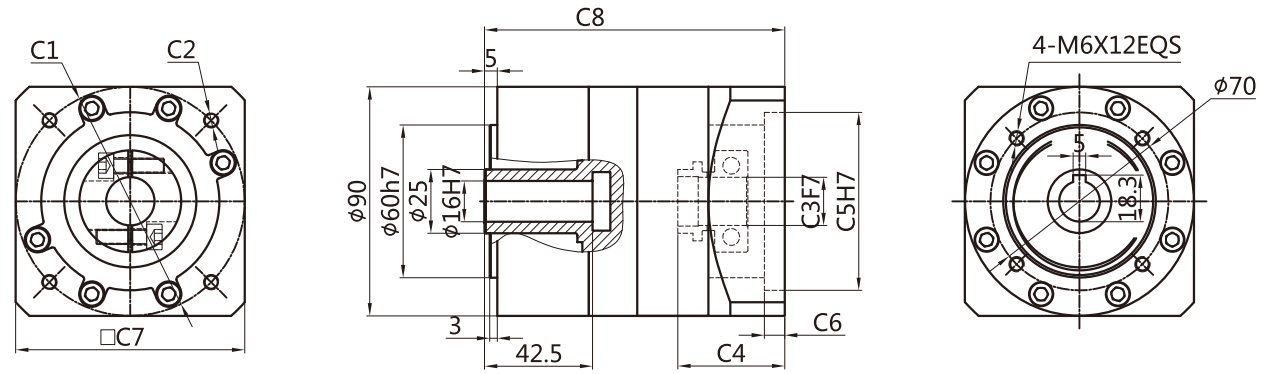
PLK060-L3



适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PLK060-L3	□47.14	4-M4	Φ8	31.5	Φ38.1	5.0	60	121
	Φ46	4-M4	Φ8	31.5	Φ30	5.0	60	121
	Φ45	4-M3	Φ8	31.5	Φ30	5.0	60	121
	Φ70	4-M4/4-M5	Φ14	31.5	Φ50	5.0	60	121

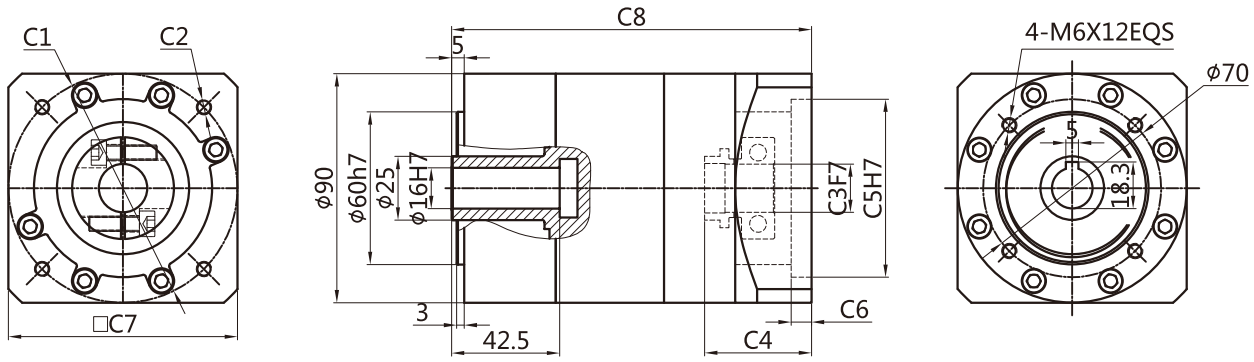
PLK090-L1



适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PLK090-L1	Φ70	4-M4/4-M5	Φ14	42	Φ50	8.0	80	118
	□69.6	4-M6	Φ14	42	Φ73	8.0	80	118
	Φ90	4-M5/4-M6	Φ19	42	Φ70	8.0	80	118

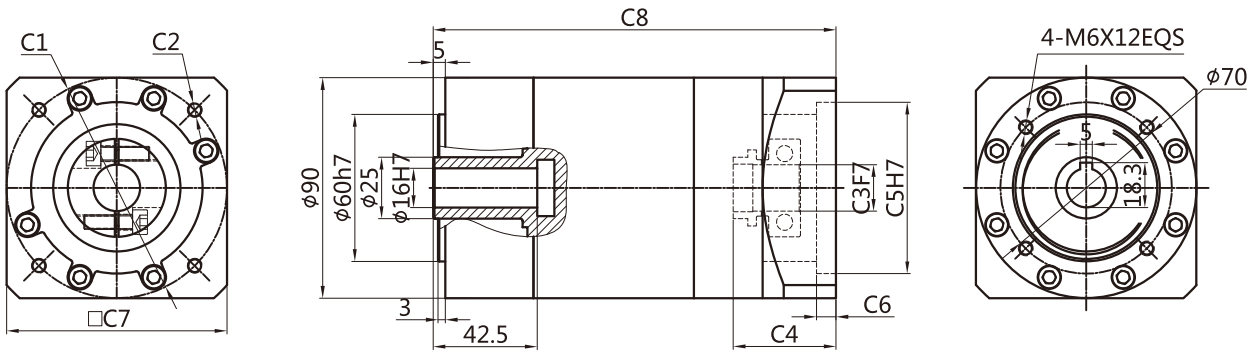
PLK090-L2



适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PLK090-L2	Φ70	4-M4/4-M5	Φ14	42	Φ50	8.0	80	141.5
	□69.6	4-M6	Φ14	42	Φ73	8.0	80	141.5
	Φ90	4-M5/4-M6	Φ19	42	Φ70	8.0	80	141.5

PLK090-L3

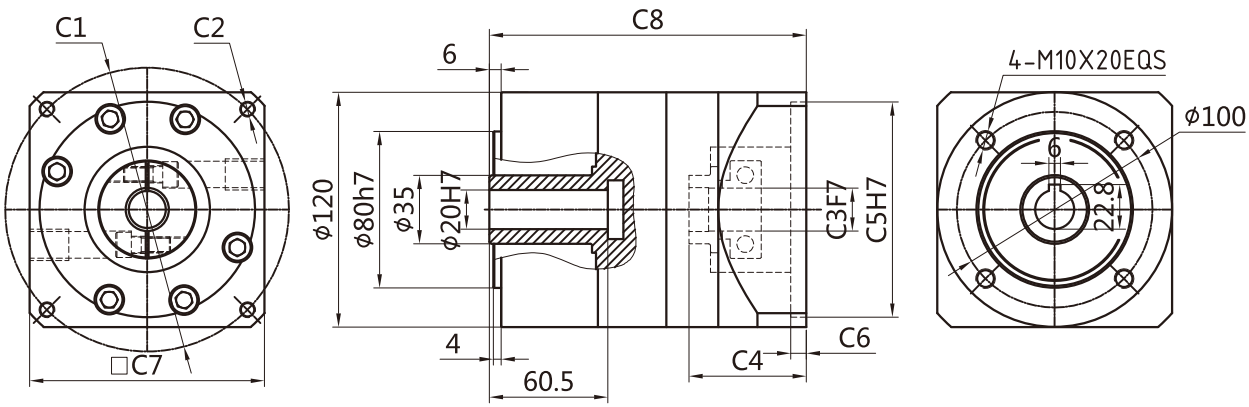


适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PLK090-L3	Φ70	4-M4/4-M5	Φ14	42	Φ50	8.0	90	164.5
	□69.6	4-M6	Φ14	42	Φ73	8.0	90	164.5
	Φ90	4-M5/4-M6	Φ19	42	Φ70	8.0	90	164.5

PLK Series 外形尺寸图表
Outline dimensional

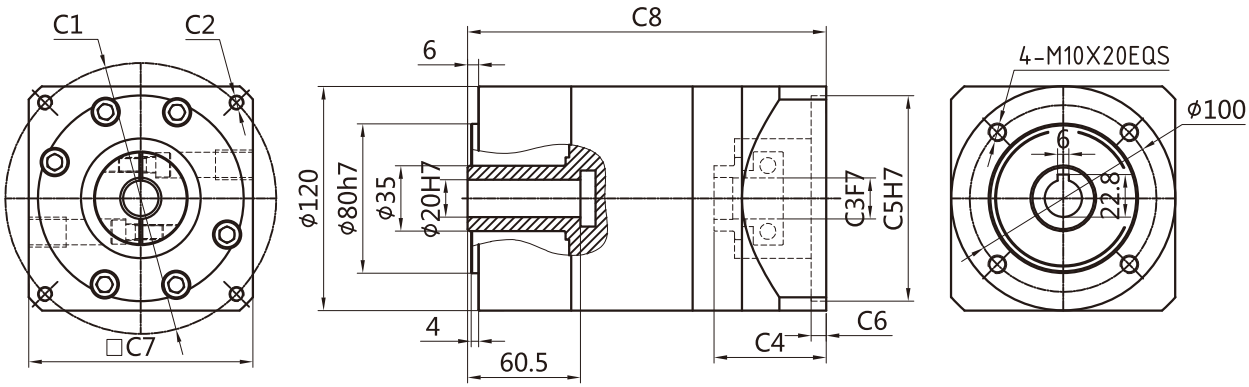
PLK120-L1



适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PLK120-L1	Φ90	4-M5/4-M6	Φ19	47	Φ70	8	90	151
	Φ115	4-M8	Φ19/Φ22	60	Φ95	8	130	162
	Φ130	4-M8	Φ19/Φ22	60	Φ95	8	130	162
	Φ145	4-M8	Φ19/Φ22/Φ24	60	Φ110	8	180	162

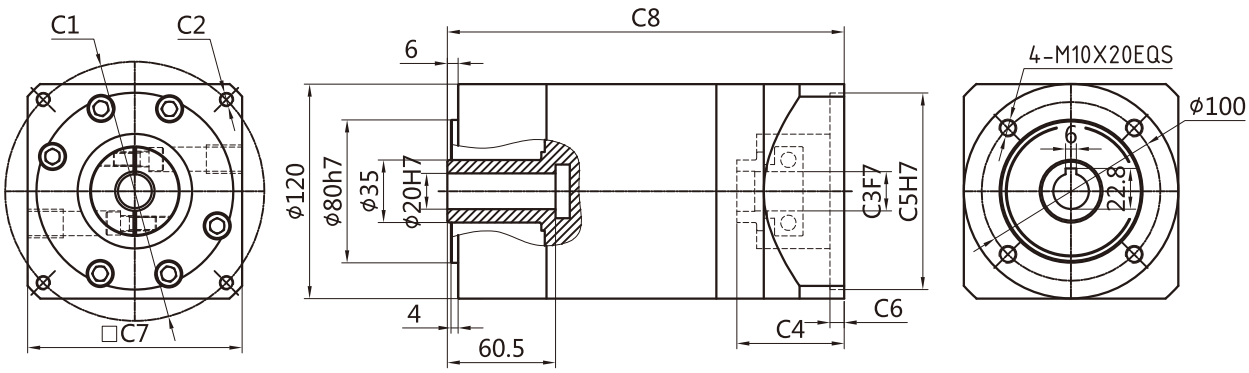
PLK120-L2



适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PLK120-L2	Φ90	4-M5/4-M6	Φ19	47	Φ70	8	90	181
	Φ115	4-M8	Φ19/Φ22	60	Φ95	8	130	192
	Φ130	4-M8	Φ19/Φ22	60	Φ95	8	130	192
	Φ145	4-M8	Φ19/Φ22/Φ24	60	Φ110	8	180	192

PLK120-L3



适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PLK120-L3	Φ90	4-M5/4-M6	Φ19	47	Φ70	8	90	211
	Φ115	4-M8	Φ19/Φ22	60	Φ95	8	130	222
	Φ130	4-M8	Φ19/Φ22	60	Φ95	8	130	222
	Φ145	4-M8	Φ19/Φ22/Φ24	60	Φ110	8	180	222

PFS060
PFS090
PFS120
PFS160

PFS

Series

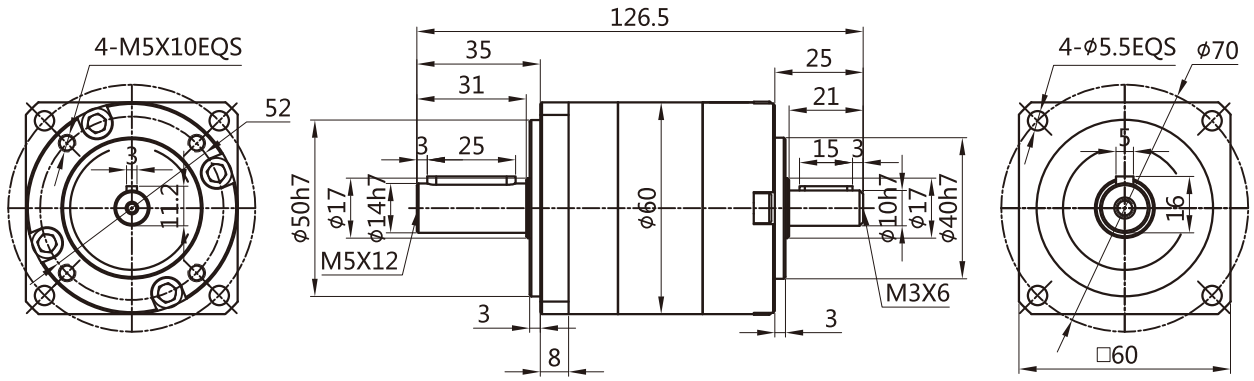
PFS系列减速机核心特性

The Core Characteristics of PLFS Series Reducer

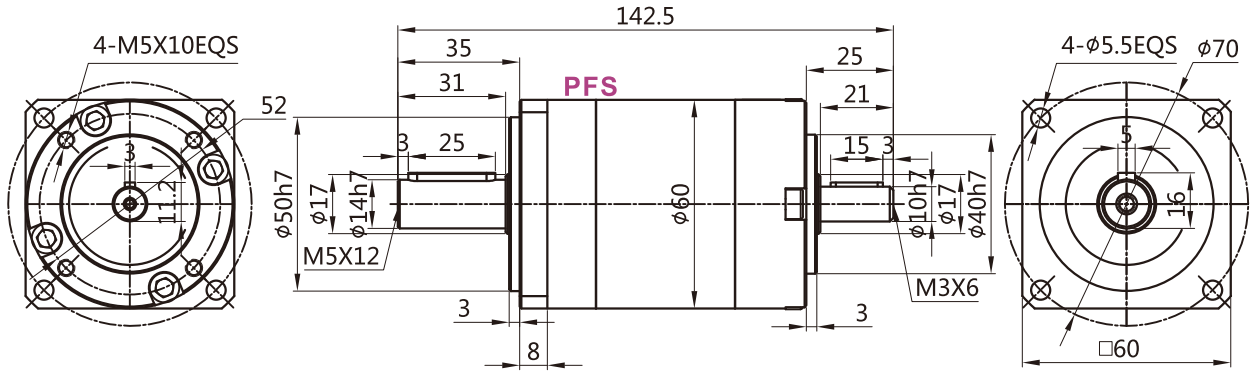
1. 采用直齿齿轮传动，经渗碳淬火处理，齿向齿廓修形处理，确保运行平稳，噪音小；
2. 结构简单，可大批量生产，且交货期快性价比高；
3. 减速机种类齐全，可以满足市场上绝大多数减速机的配合。

1. Adopt straight tooth gear transmission, through carburizing and quenching treatment, tooth profile modification treatment, ensure smooth operation, low noise.
2. Simple structure, mass production, and fast delivery time and high cost performance.
3. Reducer has a complete range, which can meet the needs of most reducer in the market.

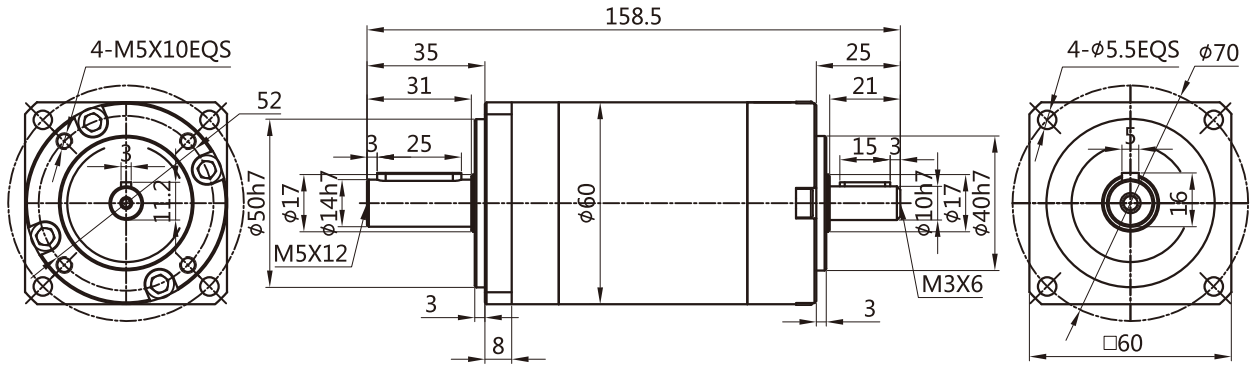
PFS060-L1



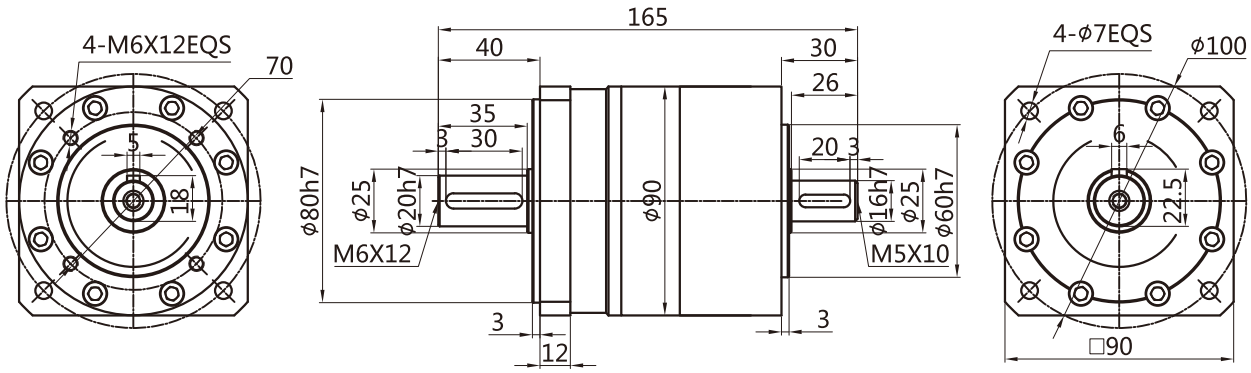
PFS060-L2



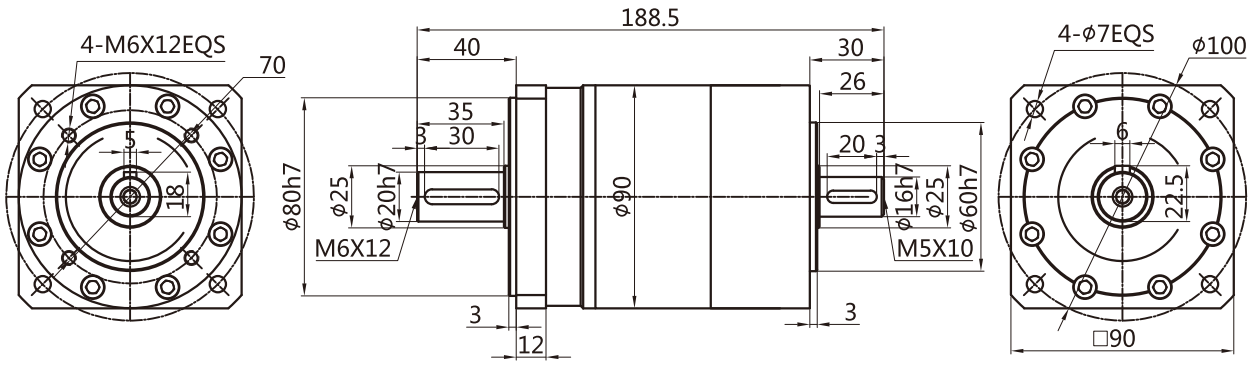
PFS060-L3



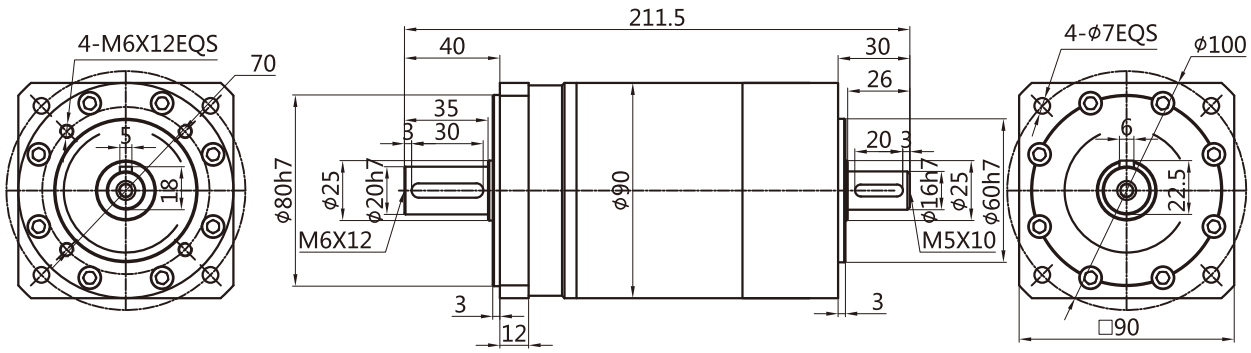
PFS090-L1



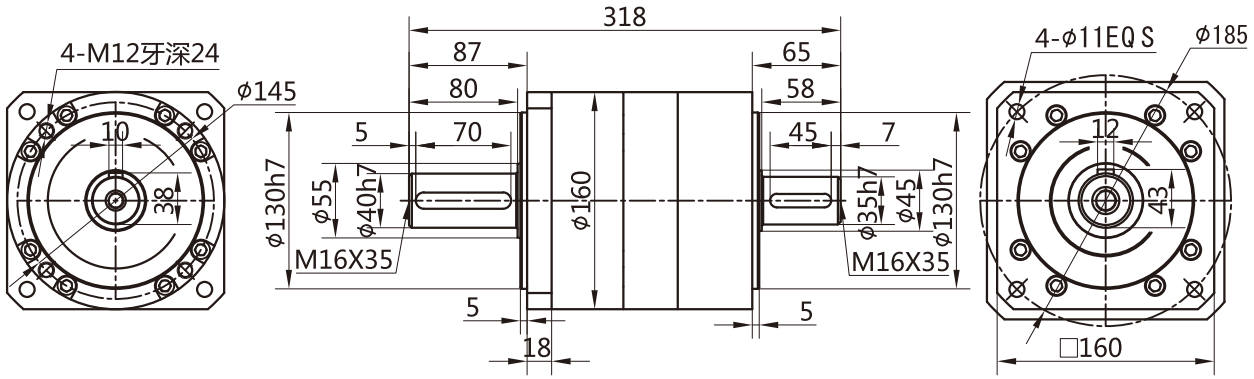
PFS090-L2



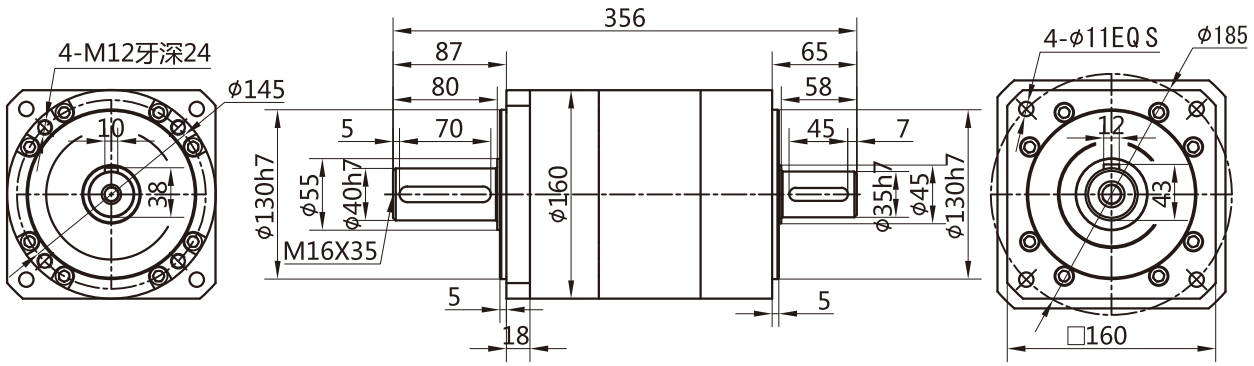
PFS090-L2



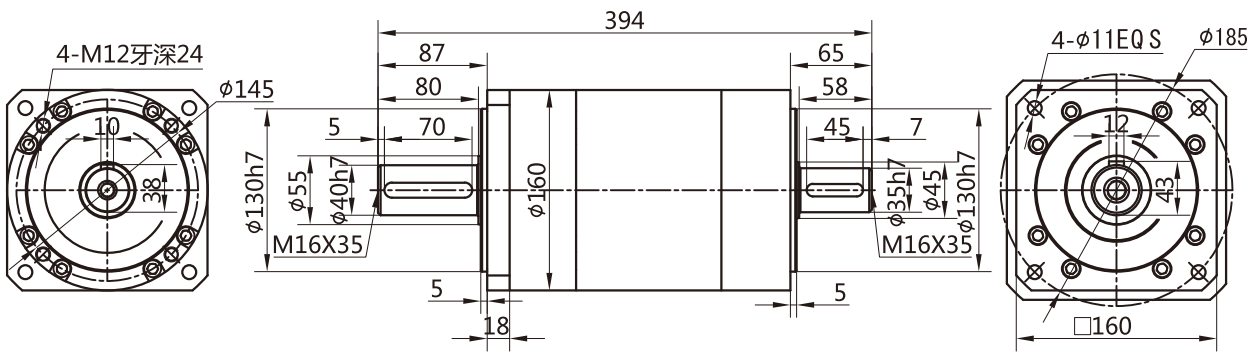
PFS160-L1



PFS160-L2

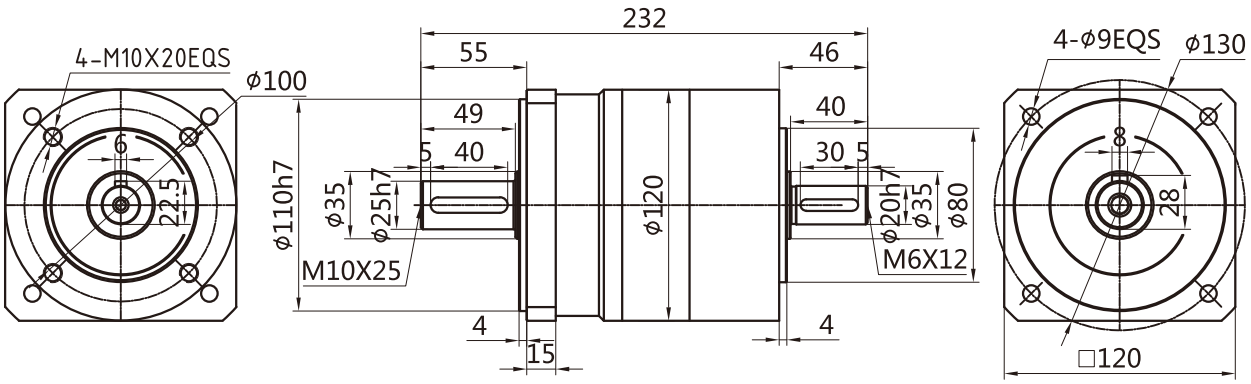


PFS160-L3

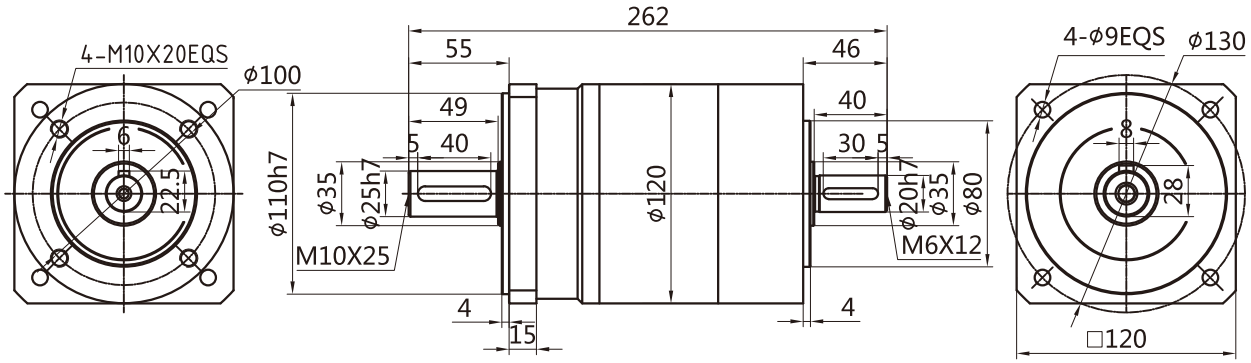


PFS Series 外形尺寸图表
Outline dimensional

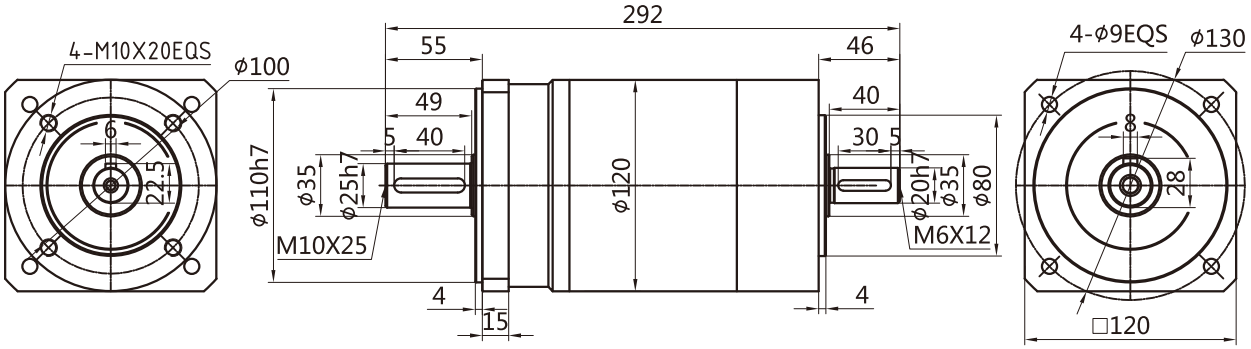
PFS120-L1



PFS120-L2



PFS120-L3



- PLS060
- PLS090
- PLS120
- PLS160

PLS

Series

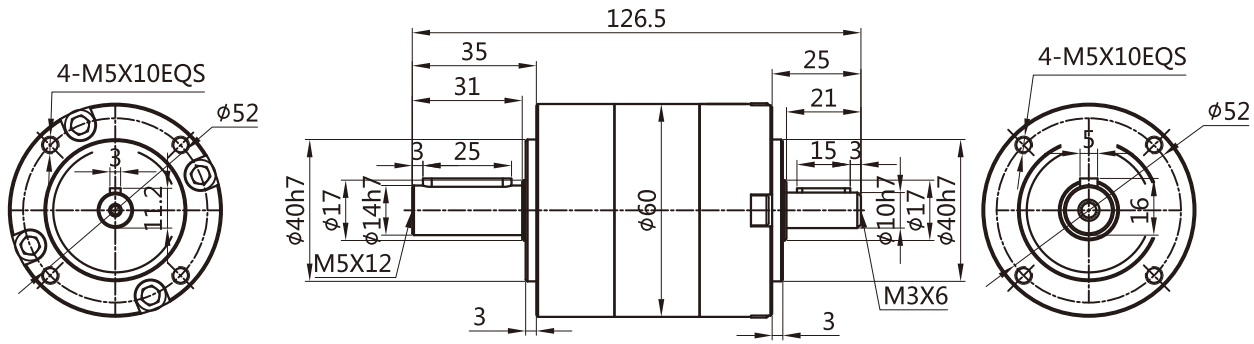
PLS系列减速机核心特性

The Core Characteristics of PLS Series Reducer

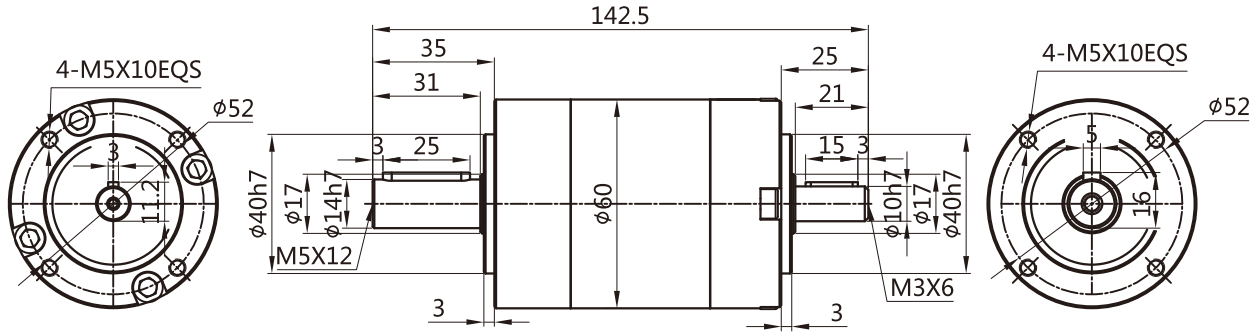
1. 采用直齿齿轮传动，经渗碳淬火处理，齿向齿廓修形处理，确保运行平稳，噪音小；
2. 结构简单，可大批量生产，且交货期快性价比高；
3. 减速机种类齐全，可以满足市场上绝大多数减速机的配合。

1. Adopt straight tooth gear transmission, through carburizing and quenching treatment, tooth profile modification treatment, ensure smooth operation, low noise.
2. Simple structure, mass production, and fast delivery time and high cost performance.
3. Reducer has a complete range, which can meet the needs of most reducer in the market.

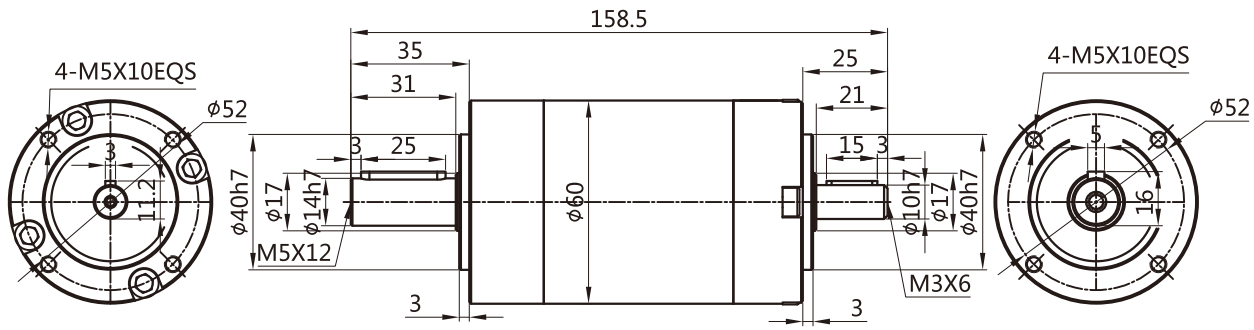
PLS060-L1



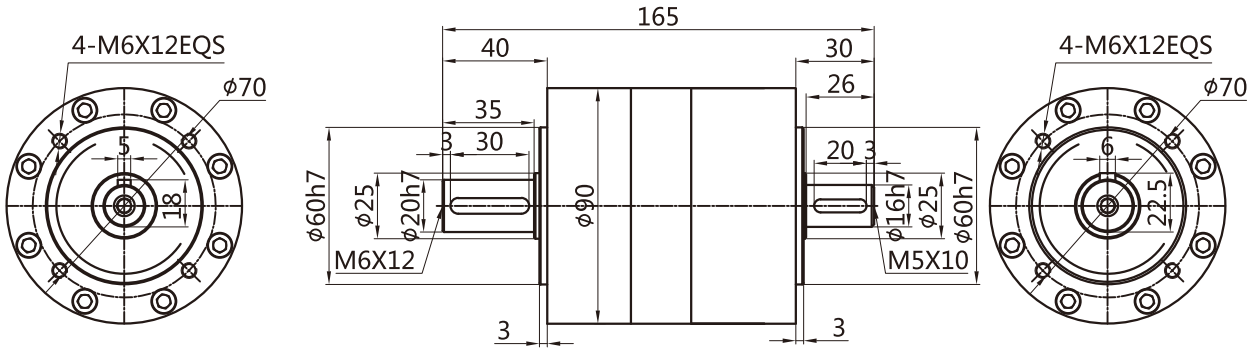
PLS060-L2



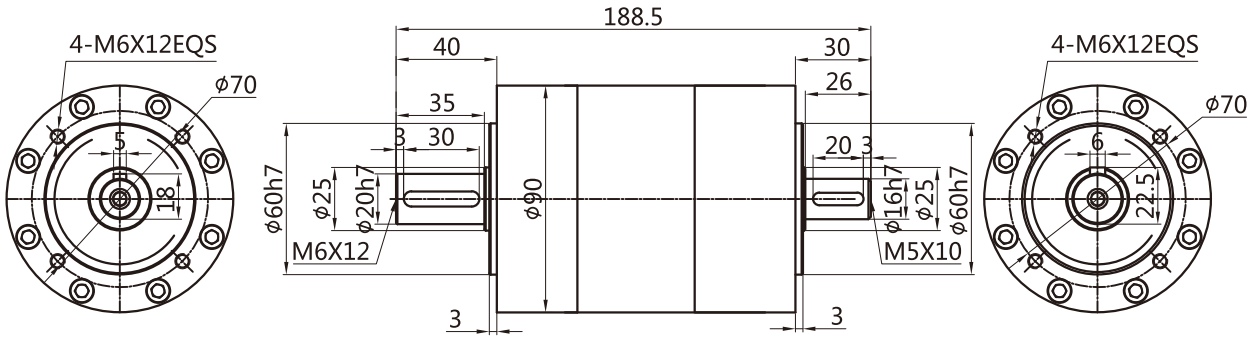
PLS060-L3



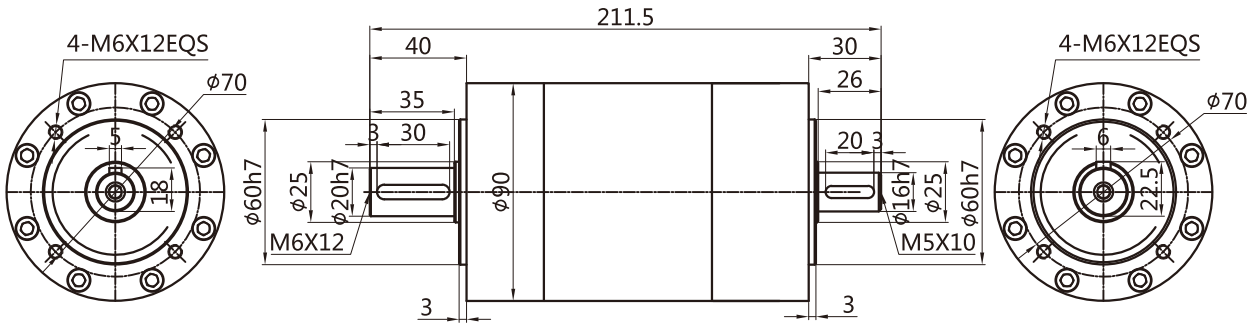
PLS090-L1



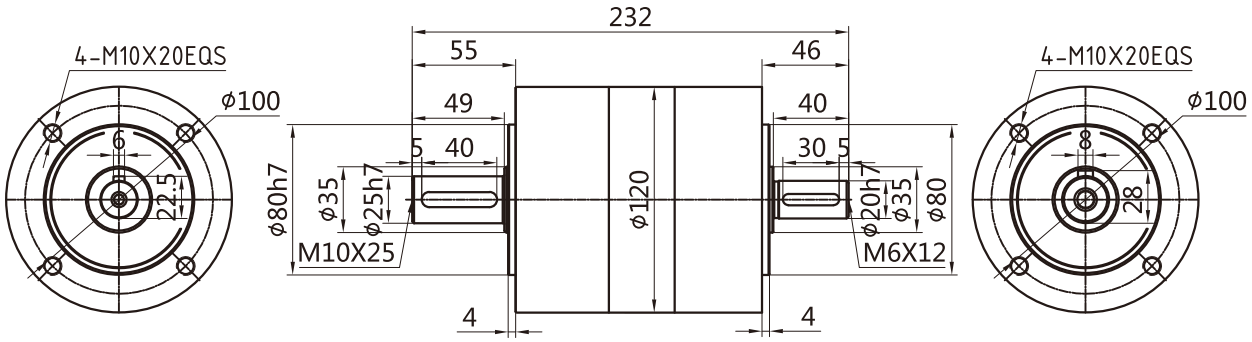
PLS090-L2



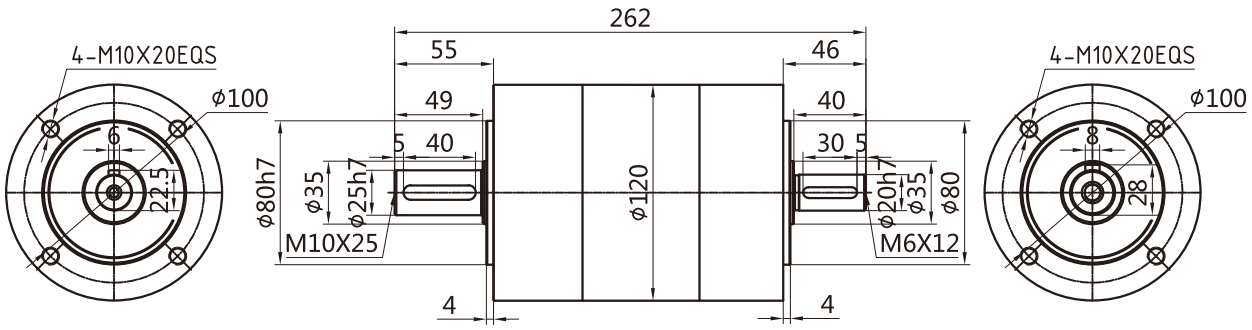
PLS090-L3



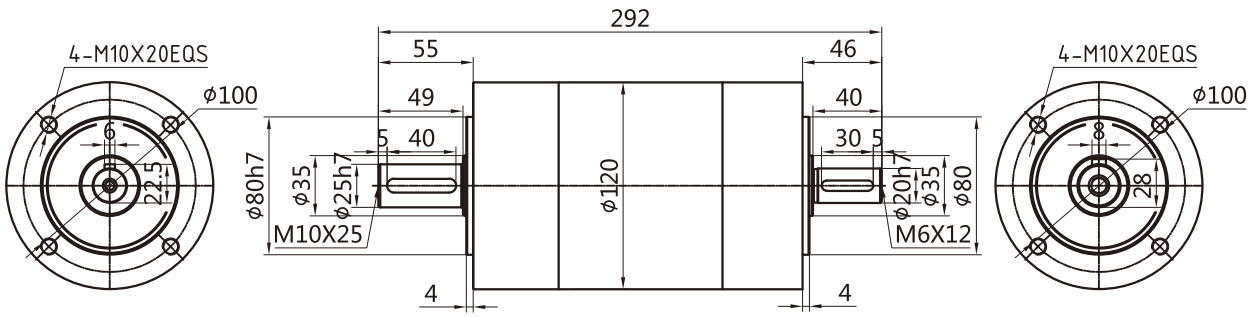
PLS120-L1



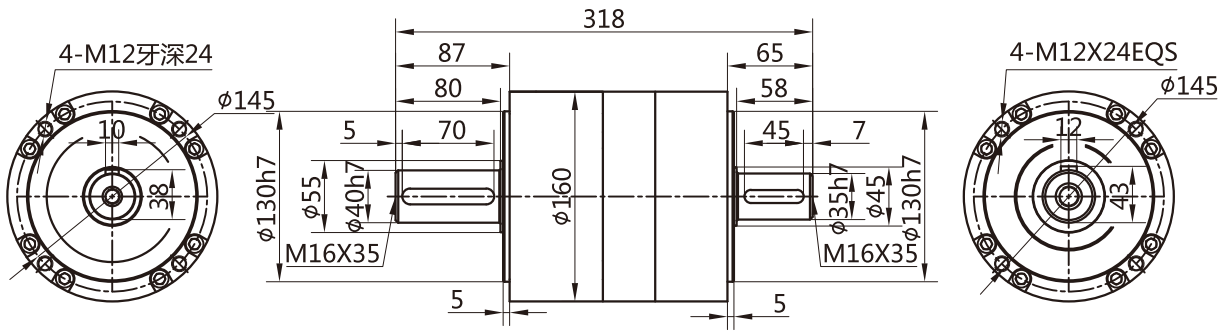
PLS120-L2



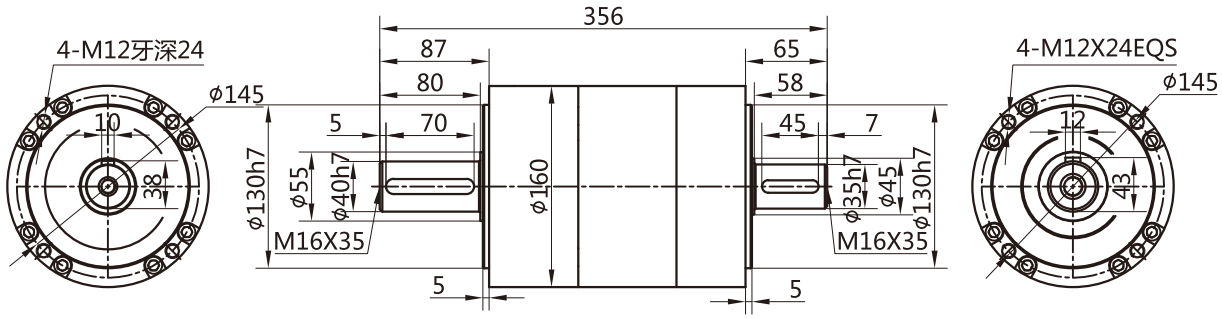
PLS120-L3



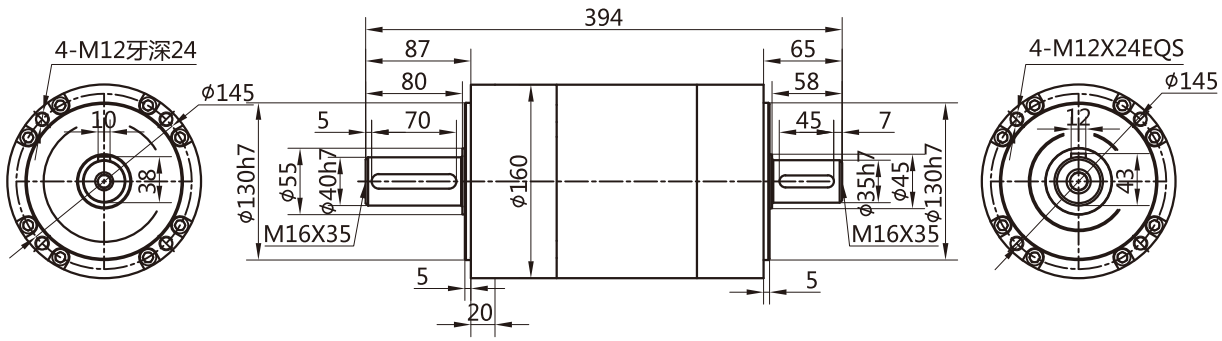
PLS160-L1



PLS160-L2



PLS160-L3



- PLX042
- PLX142
- PLX190
- PLX240
- PLX285
- PLX330

PLX

Series

PLX系列减速机核心特性

The Core Characteristics of PLX Series Reducer

1. 采用直齿齿轮传动，经渗碳淬火处理，齿向齿廓修形处理，确保运行平稳，噪音小；
2. 结构简单，可大批量生产，且交货期快性价比高；
3. 减速机种类齐全，可以满足市场上绝大多数减速机的配合。

1. Adopt straight tooth gear transmission, through carburizing and quenching treatment, tooth profile modification treatment, ensure smooth operation, low noise.
2. Simple structure, mass production, and fast delivery time and high cost performance.
3. Reducer has a complete range, which can meet the needs of most reducer in the market.

减速机性能资料
Gear box performance information

型号 Model	单位 Unit	PLX042	PLX142	PLX190	减速比 Ratio	Stage
额定输出扭矩 Rated output torque	N·m	8	310	–	3	1
		9	605	1780	4	
		9	420	1345	5	
		7	270	745	8	
			680	2035	12	2
		12	680	2035	16	
		12	680	2035	20	
		10.5	460	1485	25	
		12	680	2035	32	
		10.5	460	1485	40	
		8	310	840	64	
		15.5	900	2035	64	3
		15.5	900	2590	80	
		15.5	900	2590	100	
		15.5	580	1855	125	
		15.5	580	2590	160	
		13.5	580	1855	200	
		15.5	900	2590	256	
		13.5	580	1855	320	
		9.5	400	1070	512	
故障停滞扭矩 Emergency stop torque	N·m	2倍额定输出扭矩 2 times Rated output torque				
额定输入转速 Norminal input speed	rmp	3000	2000	1500		
最大输入转速 Maximum input speed	rmp	6000	3500	2500		
最大径向力 Maximum radial force	N	185	3200	13000		
最大轴向力 Maximum axial force	N	150	3000	20000		
效率 Efficiency	%	Single [97%]			Double [95%]	
平均寿命 Average lifetime	h	20000				
重量 Weight	kg	0.5	17	42		1
		0.6	23	50		2
		0.7	29	58		3

减速机性能资料
Gear box performance information

型号 Model	单位 Unit	PLX042	PLX142	PLX190	减速比 Ratio	Stage
转动惯量 Moment of inertia	$kgcm^2$	0.022	4.31	–	3	1
		0.022	5.15	15.6	4	
		0.019	4.93	15.6	5	
		0.017	4.84	15.6	8	
			6.31	6.31	12	2
		0.022	5.15	5.15	16	
		0.019	4.93	4.93	20	
		0.019	4.93	4.93	25	
		0.017	4.84	4.84	32	
		0.016	4.84	4.84	40	
		0.016	4.84	4.84	64	
		0.019	4.93	4.93	64	3
		0.019	4.93	4.93	80	
		0.019	4.93	4.93	100	
		0.029	4.84	4.84	125	
		0.016	4.84	4.84	160	
		0.016	4.84	4.84	200	
		0.016	4.84	4.84	256	
		0.016	4.84	4.84	320	
		0.016	4.84	4.84	512	
噪音 Noise	dB	60	70	70		
润滑 Lubricating		合成油脂润滑 Synthetic grease lubrication				
防护等级 levels of protection		IP65				

减速机性能资料
Gear box performance information

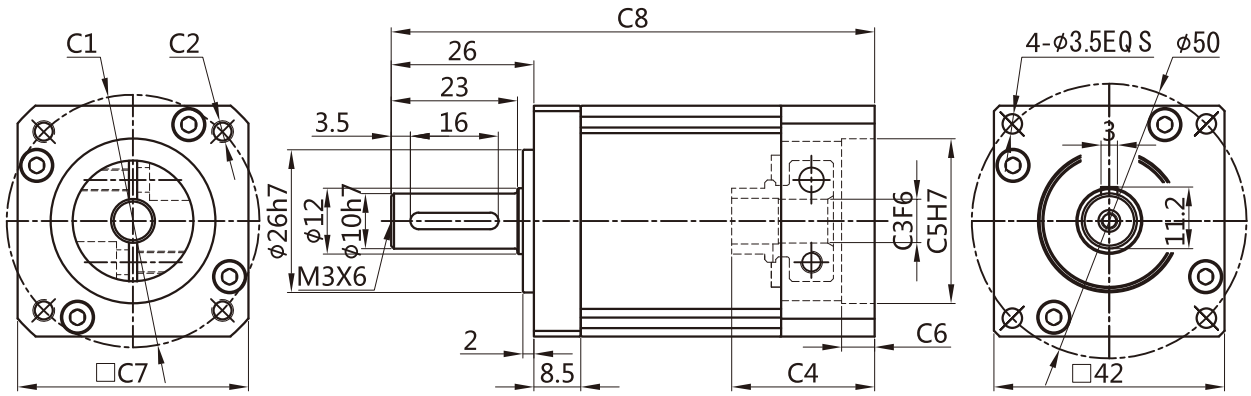
型号 Model	单位 Unit	PLX240	PLX285	PLX330	减速比 Ratio	Stage
额定输出扭矩 Rated output torque	N·m	3200	5800	10190	4	1
		2500	4400	7180	5	
		1360	2595	4080	8	
		3390	6400	10800	16	2
		3390	6400	10800	20	
		2650	4710	7550	25	
		3390	6400	10800	32	
		2650	4710	7550	40	
		1450	4710	4430	64	
		3390	8130	13700	64	3
		4420	8130	13700	80	
		3420	9130	13700	100	
		3420	6030	9800	125	
		4420	8130	13700	160	
		3420	6030	9800	200	
		4420	6030	9800	256	
		3420	6030	9800	320	
		1840	3560	8450	512	
故障停滞扭矩 Emergency stop torque	N·m	2倍额定输出扭矩 2 times Rated output torque				
额定输入转速 Norminal input speed	rmp	1000	1000	1000		
最大输入转速 Maximum input speed	rmp	1500	1500	1500		
最大径向力 Maximum radial force	N	12000	15000	17000		
最大轴向力 Maximum axial force	N	6400	12000	15000		
效率 Efficiency	%	Single [97%]			Double [95%]	
平均寿命 Average lifetime	h	20000				
重量 Weight	kg	71	113	245		1
		75	136	290		2
		92	140	326		3

减速机性能资料
Gear box performance information

型号 Model	单位 Unit	PLX240	PLX285	PLX330	减速比 Ratio	Stage
转动惯量 Moment of inertia	$kgcm^2$	34.6	34.5	65.4	4	1
		34.6	34.5	65.4	5	
		34.6	34.5	65.4	8	
		15.6	38.5	68.5	16	
		15.6	38.5	68.5	20	
		15.6	38.5	68.5	25	
		15.6	38.5	68.5	32	
		15.6	38.5	68.5	40	
		15.6	38.5	68.5	64	
		15.6	38.5	73.4	64	3
		15.6	38.5	73.4	80	
		15.6	38.5	73.4	100	
		15.6	38.5	73.4	125	
		15.6	38.5	73.4	160	
		15.6	38.5	73.4	200	
		15.6	38.5	73.4	256	
		15.6	38.5	73.4	320	
		15.6	38.5	73.4	512	
噪音 Noise	dB	70	70	70		
润滑 Lubricating		合成油脂润滑 Synthetic grease lubrication				
防护等级 levels of protection		IP65				

外形尺寸图表
Outline dimensional

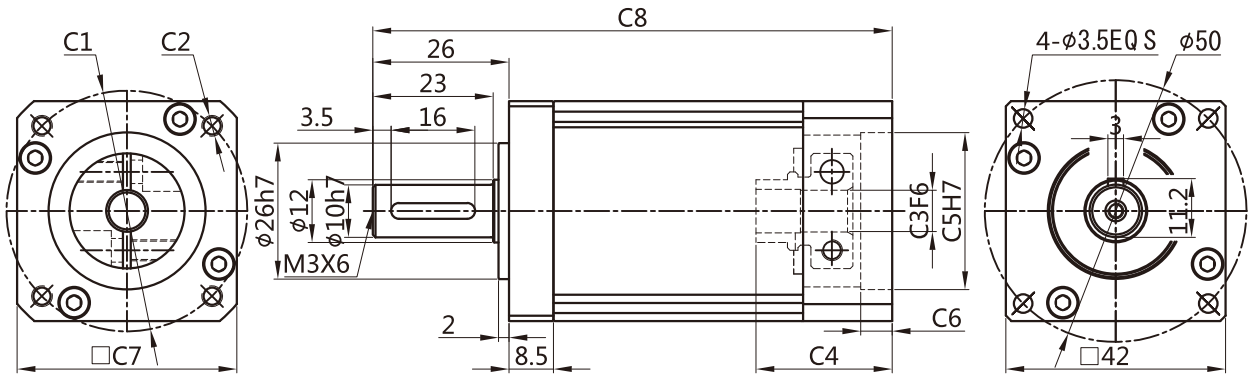
PLX-042-L1



适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PLX-042-L1	Φ46	4-M4	Φ8	26	Φ30	6	42	88
	Φ45	4-M3	Φ8	26	Φ30	6	42	88

PLX-042-L2

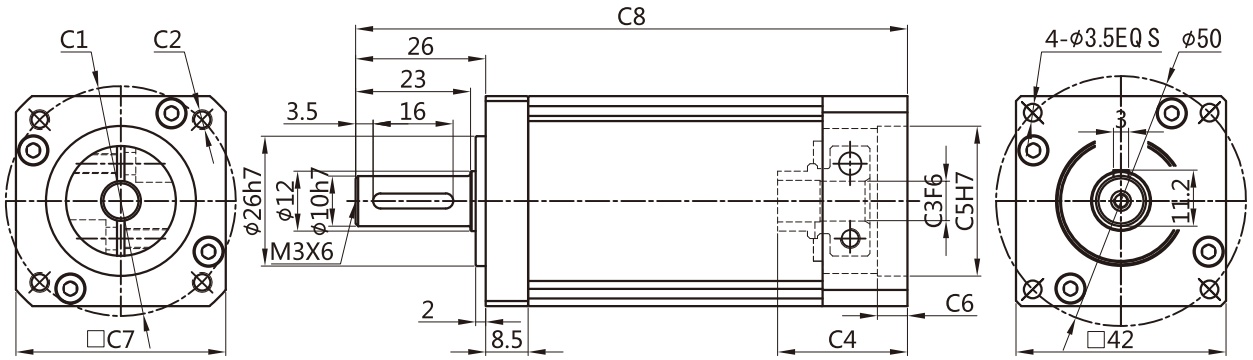


适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PLX-042-L2	Φ46	4-M4	Φ8	26	Φ30	6	42	99.2
	Φ45	4-M3	Φ8	26	Φ30	6	42	99.2

外形尺寸图表
Outline dimensional

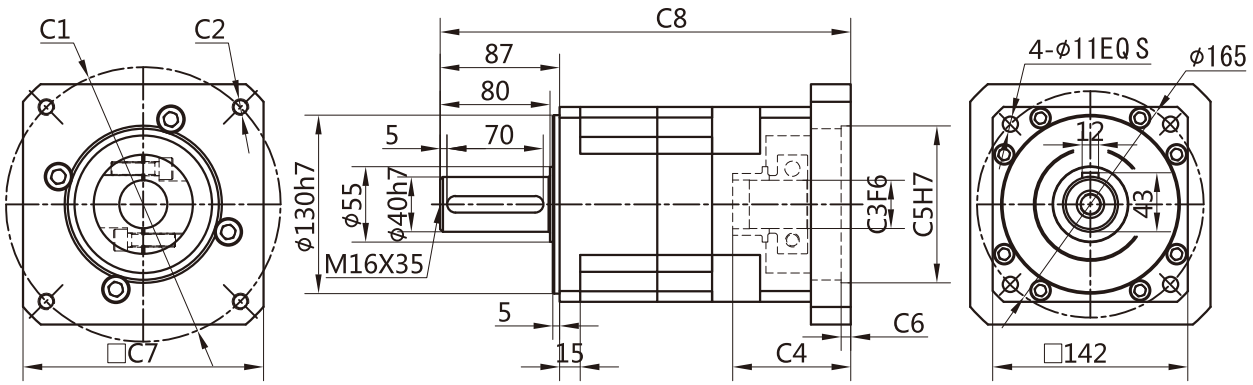
PLX-042-L3



适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PLX-042-L3	Φ46	4-M4	Φ8	26	Φ30	6	42	110.4
	Φ45	4-M3	Φ8	26	Φ30	6	42	110.4

PLX-142-L1

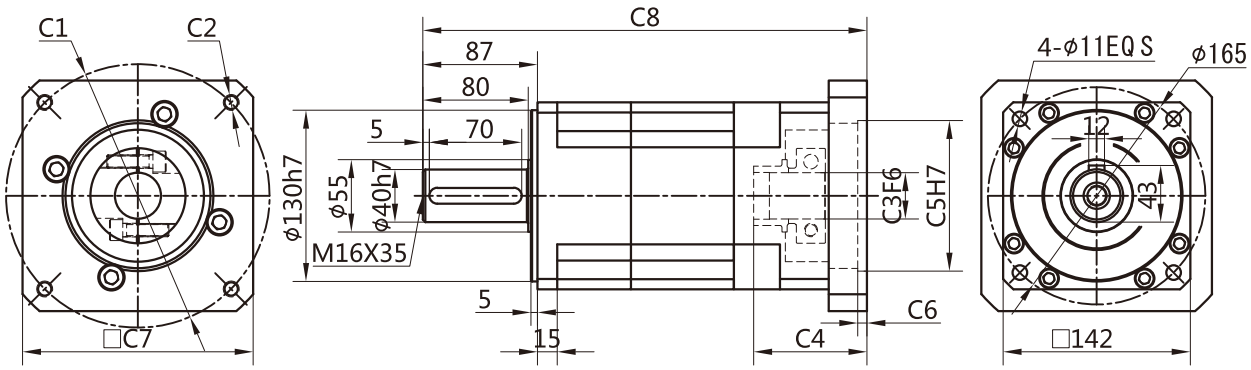


适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PLX-142-L1	Φ130	4-M8	Φ22	62	Φ95	7	142	275
	Φ145	4-M8	Φ22/Φ24	62	Φ110	7	142	275
	Φ165	4-M10	Φ32	62	Φ130	7	142	275
	Φ200	4-M12	Φ35	86	Φ114.3	7	175	299
	Φ200	4-M12	Φ35	117	Φ114.3	7	175	330
	Φ215	4-M12	Φ38/Φ42	86	Φ180	7	190	299

外形尺寸图表
Outline dimensional

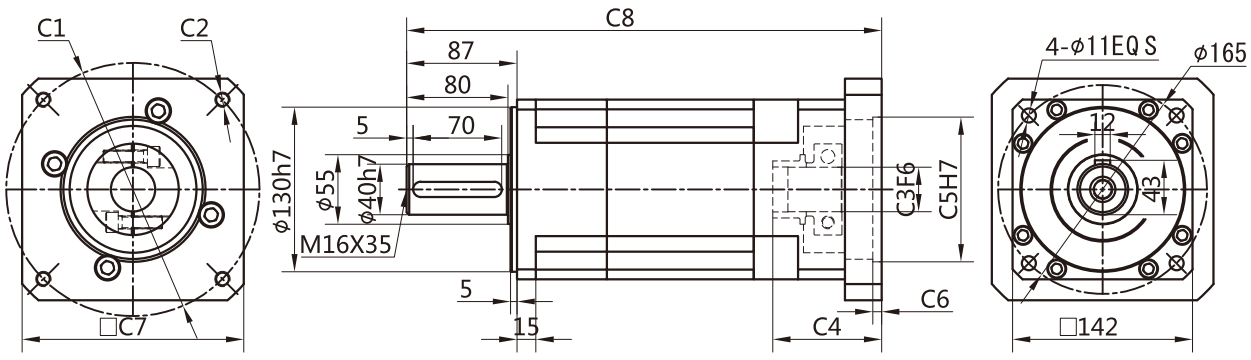
PLX-142-L2



适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PLX-142-L2	Φ130	4-M8	Φ22	62	Φ95	7	142	313
	Φ145	4-M8	Φ22/Φ24	62	Φ110	7	142	313
	Φ165	4-M10	Φ32	62	Φ130	7	142	313
	Φ200	4-M12	Φ35	86	Φ114.3	7	175	337
	Φ200	4-M12	Φ35	117	Φ114.3	7	175	368
	Φ215	4-M12	Φ38/Φ42	86	Φ180	7	190	337

PLX-142-L3

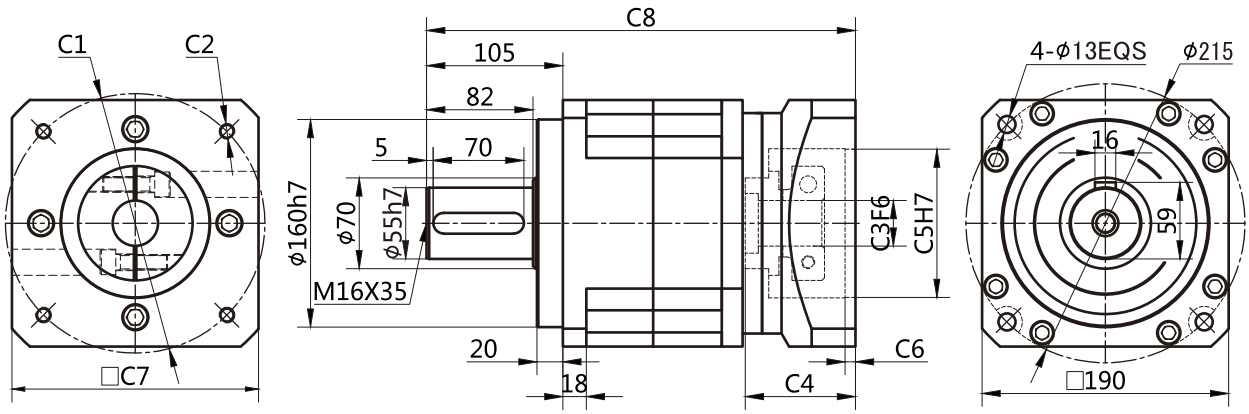


适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PLX-142-L3	Φ130	4-M8	Φ22	62	Φ95	7	142	351
	Φ145	4-M8	Φ22/Φ24	62	Φ110	7	142	351
	Φ165	4-M10	Φ32	62	Φ130	7	142	351
	Φ200	4-M12	Φ35	86	Φ114.3	7	175	375
	Φ200	4-M12	Φ35	117	Φ114.3	7	175	406
	Φ215	4-M12	Φ38/Φ42	86	Φ180	7	190	375

外形尺寸图表
Outline dimensional

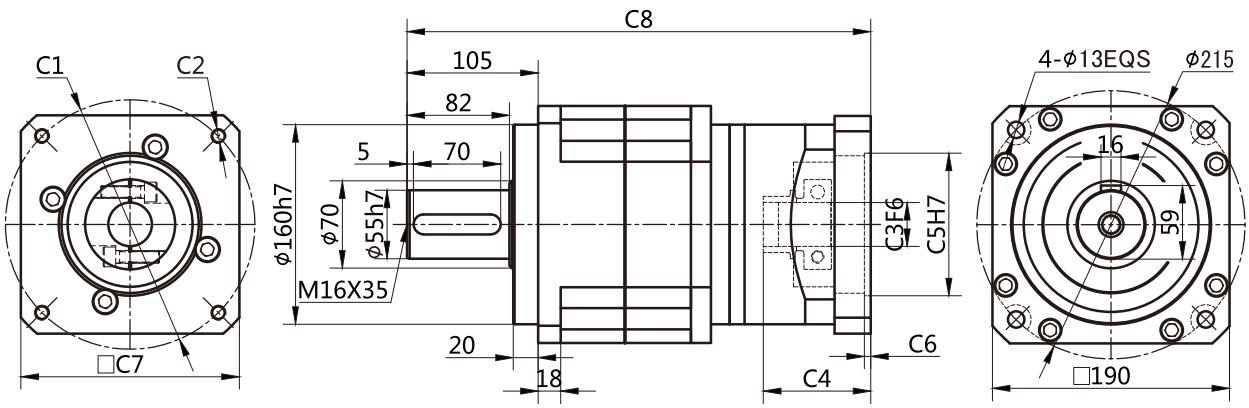
PLX-190-L1



适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PLX-190-L1	Φ215	4-M12	Φ38/Φ42	85	Φ180	7	150	159.5
	Φ200	4-M12	Φ35	115	Φ114.3	7	150	159.5
	Φ235	4-M12	Φ38/Φ42	120	Φ200	7	150	184.5
	Φ200	4-M12	Φ35	85	Φ114.3	7	180	184.5

PLX-190-L2

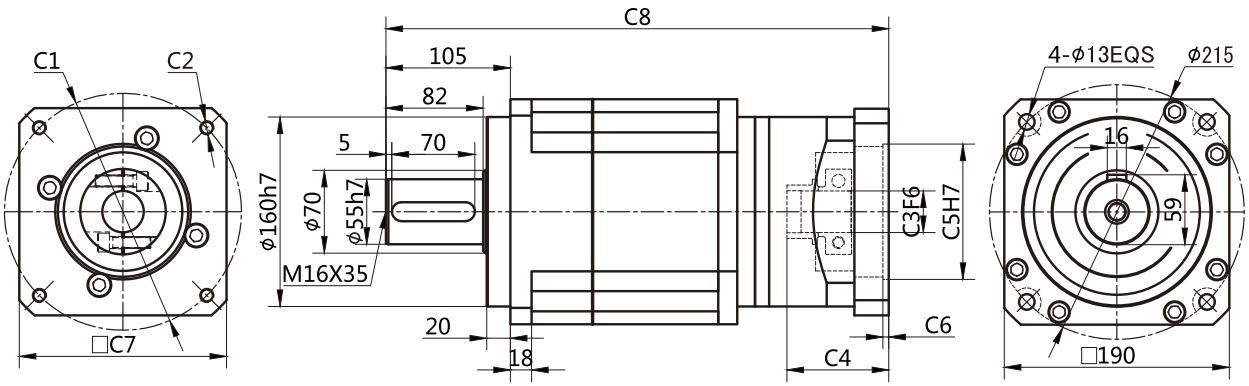


适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PLX-190-L2	Φ130	4-M8	Φ22	62	Φ95	7	142	351
	Φ145	4-M8	Φ22/Φ24	62	Φ110	7	142	351
	Φ165	4-M10	Φ32	62	Φ130	7	142	351
	Φ200	4-M12	Φ35	86	Φ114.3	7	175	375
	Φ200	4-M12	Φ35	117	Φ114.3	7	175	406
	Φ215	4-M12	Φ38/Φ42	86	Φ180	7	190	375

外形尺寸图表
Outline dimensional

PLX-190-L3

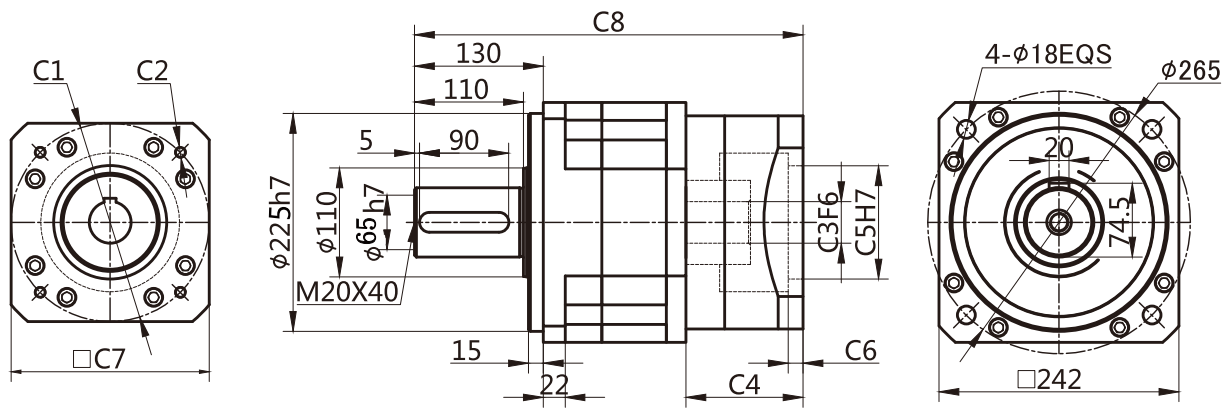


适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PLX-190-L3	Φ130	4-M8	Φ22	62	Φ95	7	142	351
	Φ145	4-M8	Φ22/Φ24	62	Φ110	7	142	351
	Φ165	4-M10	Φ32	62	Φ130	7	142	351
	Φ200	4-M12	Φ35	86	Φ114.3	7	175	375
	Φ200	4-M12	Φ35	117	Φ114.3	7	175	406
	Φ215	4-M12	Φ38/Φ42	86	Φ180	7	190	375

外形尺寸图表
Outline dimensional

PLX-240-L1

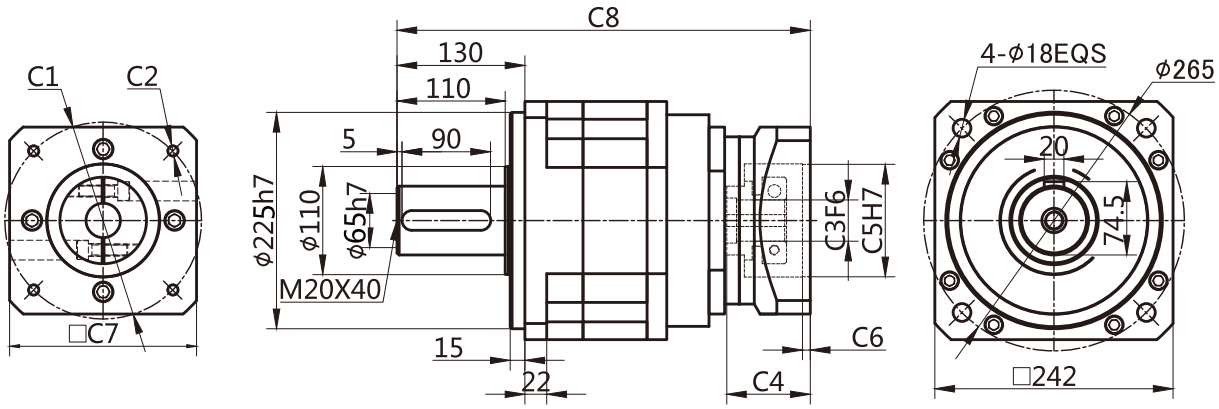


适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PLX-240-L1	Φ200	4-M12	Φ42	118	Φ114.3	15	220	392
	Φ235	4-M12	Φ42	118	Φ200	15	220	392

外形尺寸图表
Outline dimensional

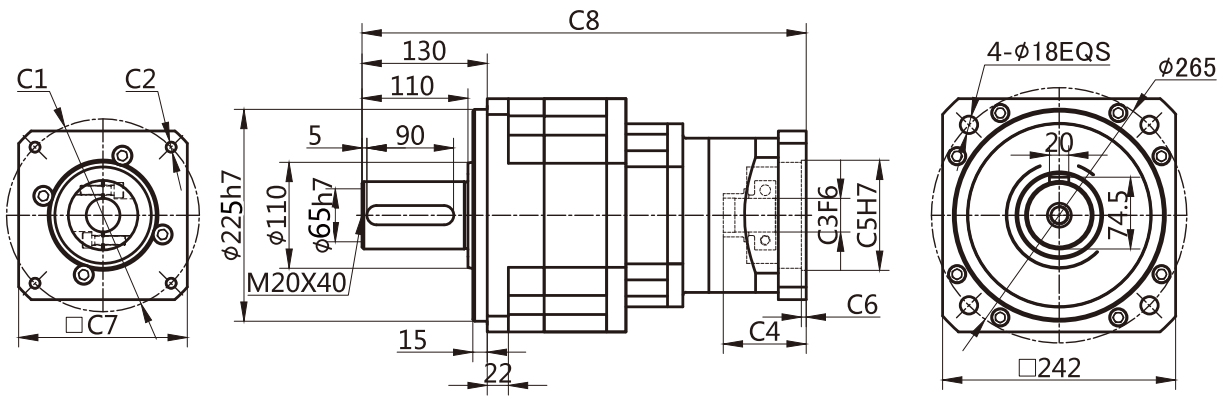
PLX-240-L2



适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PLX-240-L2	Φ215	4-M12	Φ38/Φ42	85	Φ180	7	150	420
	Φ200	4-M12	Φ35	115	Φ114.3	7	150	450
	Φ235	4-M12	Φ38/Φ42	120	Φ200	7	150	455
	Φ200	4-M12	Φ35	85	Φ114.3	7	180	420

PLX-240-L3

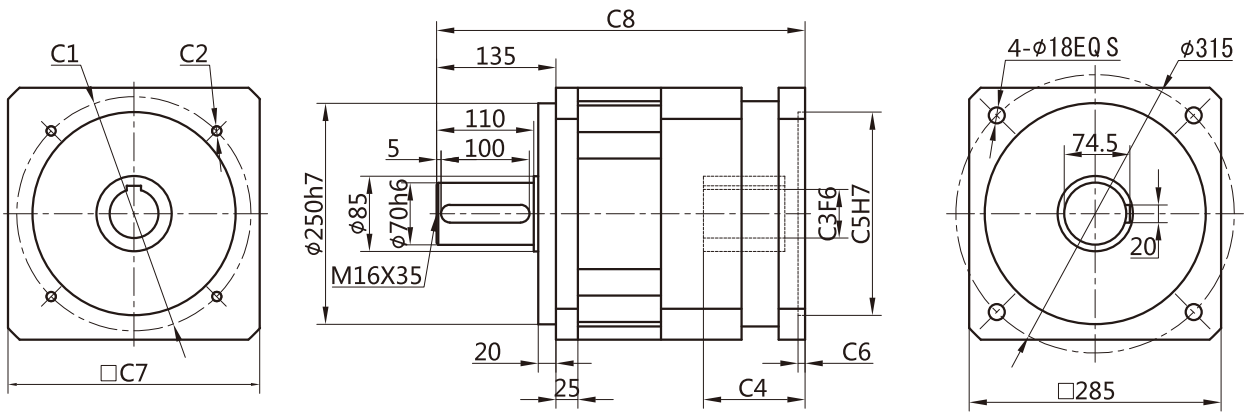


适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PLX-240-L3	Φ130	4-M8	Φ22	62	Φ95	7	142	437
	Φ145	4-M8	Φ22/Φ24	62	Φ110	7	142	437
	Φ165	4-M10	Φ32	62	Φ130	7	142	437
	Φ200	4-M12	Φ35	86	Φ114.3	7	175	461
	Φ200	4-M12	Φ35	117	Φ114.3	7	175	492

外形尺寸图表
Outline dimensional

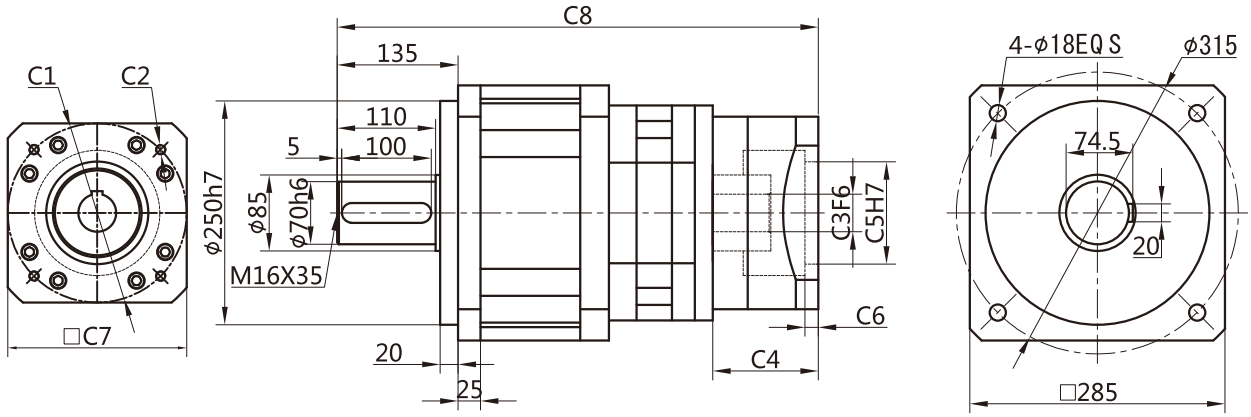
PLX-285-L1



适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PLX-285-L1	Φ235	4-M12	Φ55	115	Φ200	7	285	417

PLX-285-L2

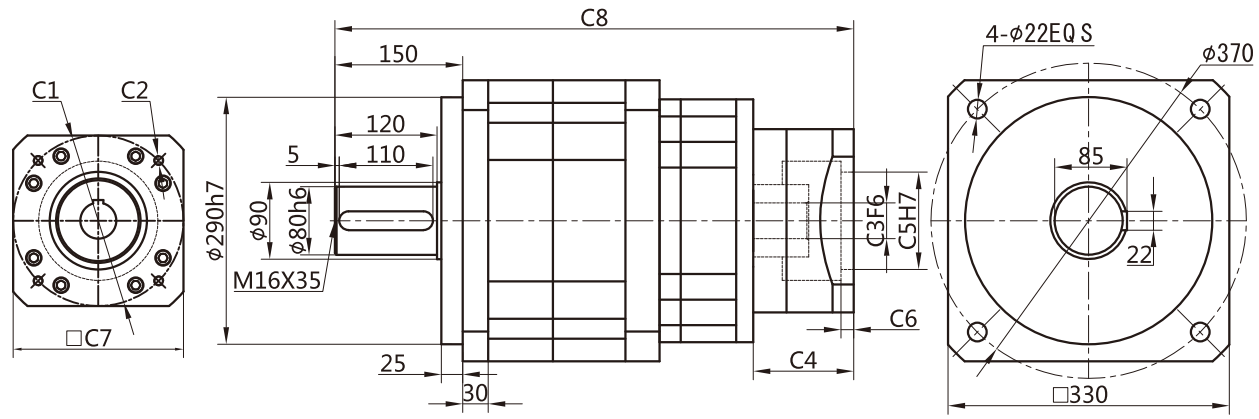


适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PLX-285-L2	Φ200	4-M12	Φ42	118	Φ114.3	15	220	537.5
	Φ235	4-M12	Φ42	118	Φ200	15	220	537.5

外形尺寸图表
Outline dimensional

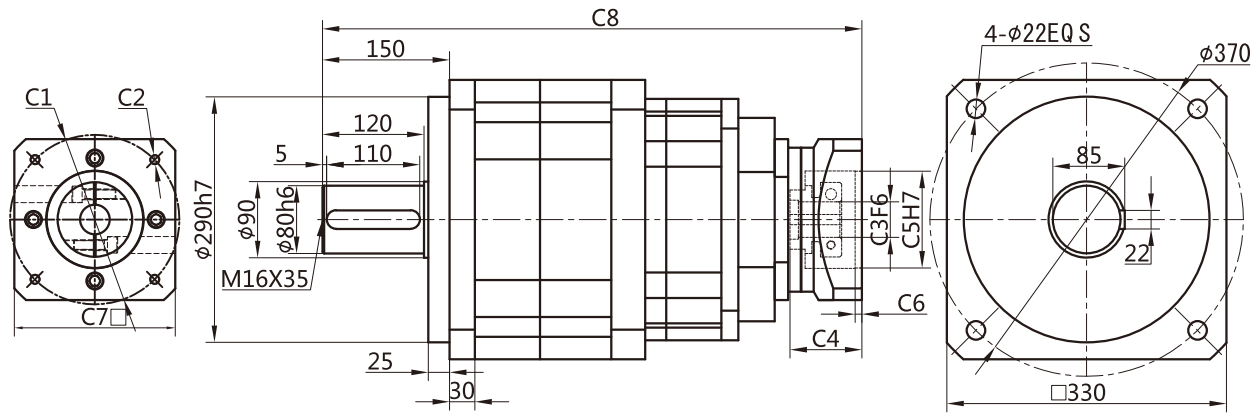
PLX-330-L2



适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PLX-330-L2	Φ200	4-M12	Φ42	118	Φ114.3	15	220	609
	Φ235	4-M12	Φ42	118	Φ200	15	220	609

PLX-330-L3

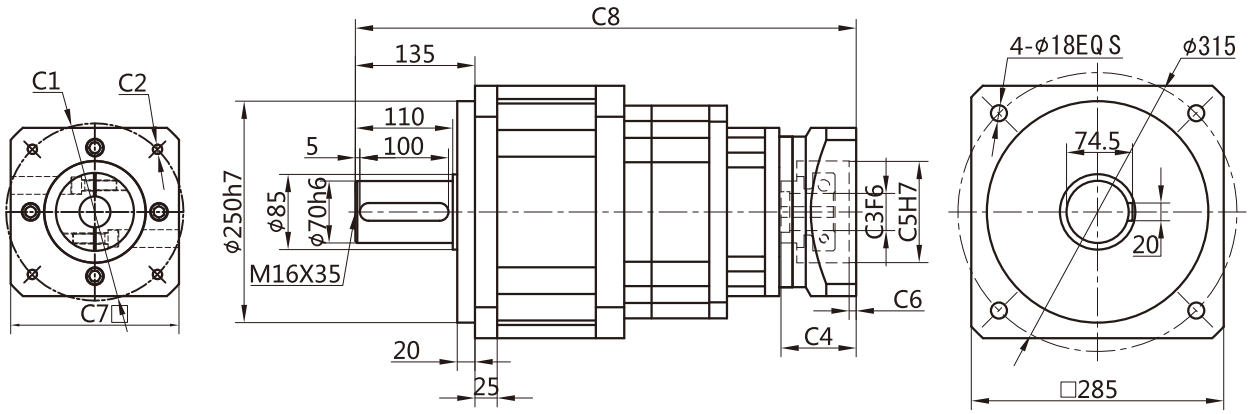


适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PLX-330-L3	Φ215	4-M12	Φ38/Φ42	85	Φ180	7	150	637
	Φ200	4-M12	Φ35	115	Φ114.3	7	150	667
	Φ235	4-M12	Φ38/Φ42	120	Φ200	7	150	673
	Φ200	4-M12	Φ35	85	Φ114.3	7	180	637

外形尺寸图表
Outline dimensional

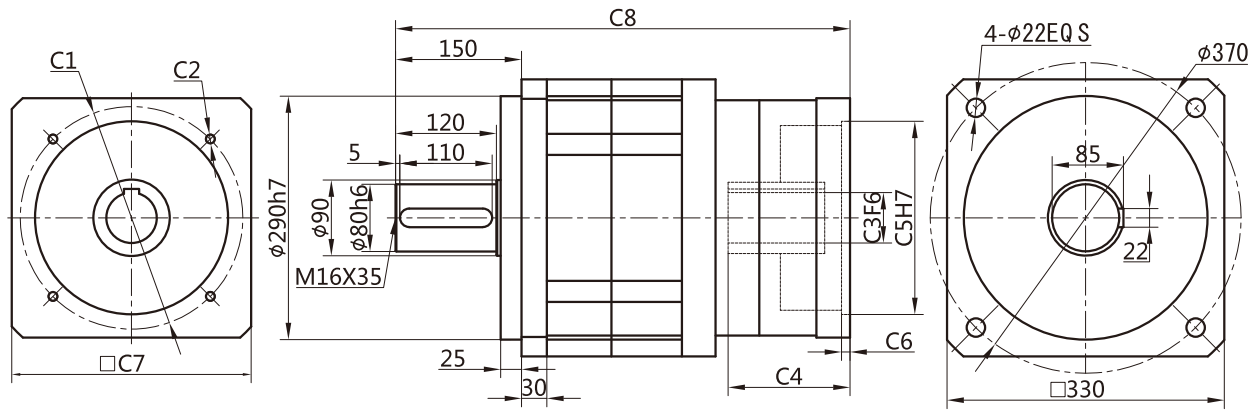
PLX-285-L3



适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PLX-285-L3	Φ215	4-M12	Φ38/Φ42	85	Φ180	7	150	565.5
	Φ200	4-M12	Φ35	115	Φ114.3	7	150	595.5
	Φ235	4-M12	Φ38/Φ42	120	Φ200	7	150	600.5
	Φ200	4-M12	Φ35	85	Φ114.3	7	180	565.5

PLX-330-L1

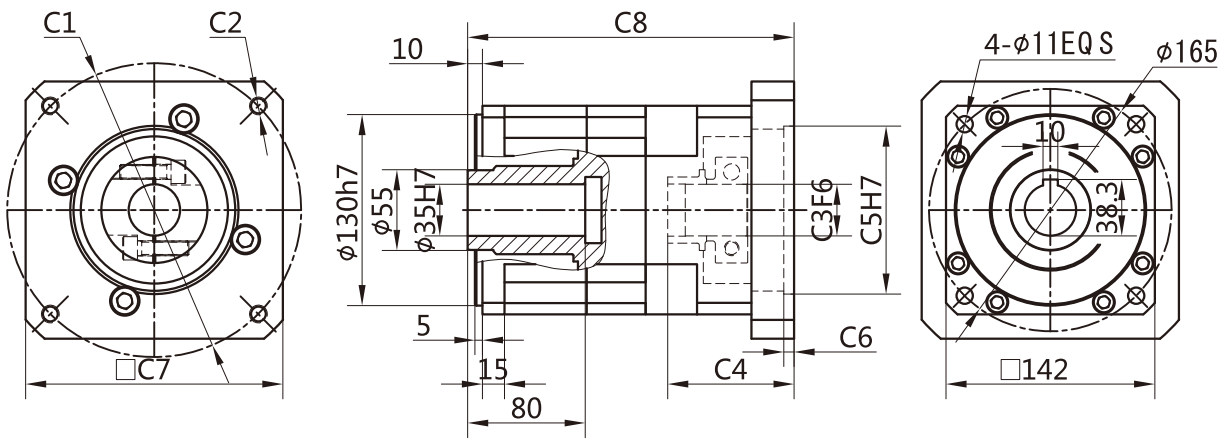


适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PLX-330-L1	Φ265	4-M12	Φ60	145	Φ230	10	150	541

外形尺寸图表
Outline dimensional

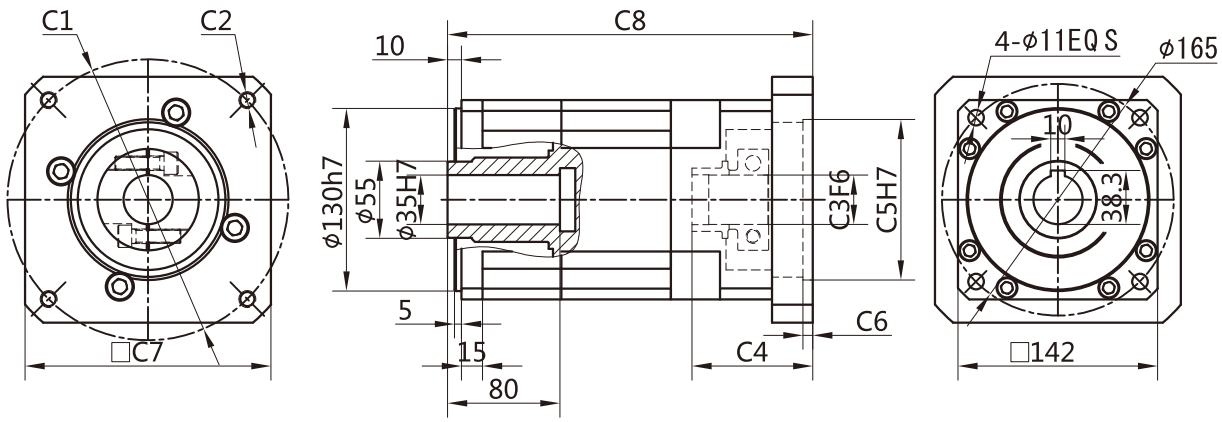
PLXK-142-L1



适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PLXK-142-L1	Φ130	4-M8	Φ22	62	Φ95	7	142	198
	Φ145	4-M8	Φ22/Φ24	62	Φ110	7	142	198
	Φ165	4-M10	Φ32	62	Φ130	7	142	198
	Φ200	4-M12	Φ35	86	Φ114.3	7	175	222
	Φ200	4-M12	Φ35	117	Φ114.3	7	175	253
	Φ215	4-M12	Φ38/Φ42	86	Φ180	7	190	222

PLXK-142-L2

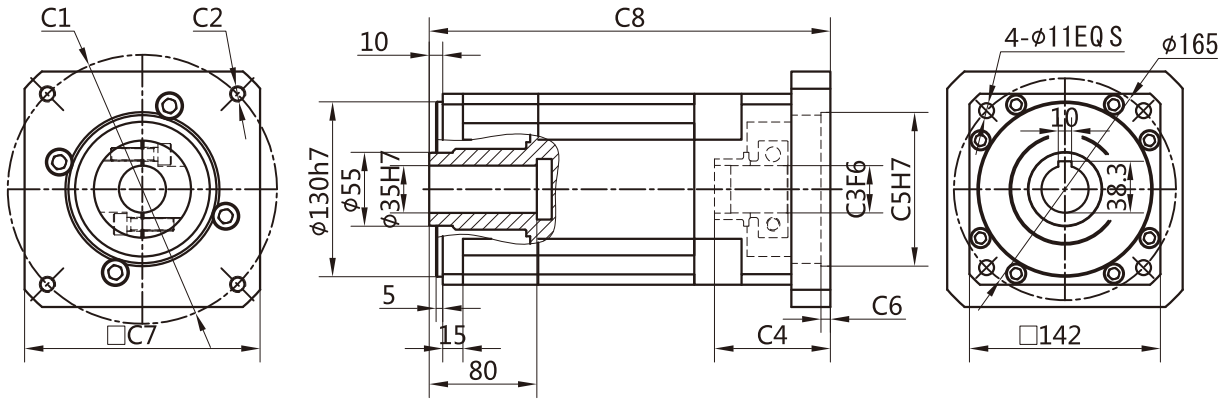


适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
PLXK-142-L2	Φ130	4-M8	Φ22	62	Φ95	7	142	236
	Φ145	4-M8	Φ22/Φ24	62	Φ110	7	142	236
	Φ165	4-M10	Φ32	62	Φ130	7	142	236
	Φ200	4-M12	Φ35	86	Φ114.3	7	175	260
	Φ200	4-M12	Φ35	117	Φ114.3	7	175	291
	Φ215	4-M12	Φ38/Φ42	86	Φ180	7	190	260

外形尺寸图表
Outline dimensional

PLXK-142-L3

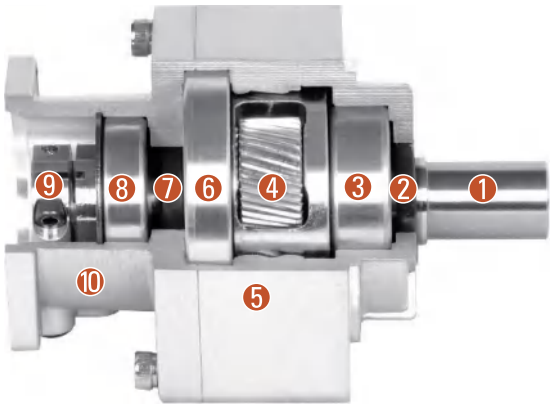


适配电机输入接口尺寸(左端为输入尺寸)
Adapter motor input interface size (The left end is the input size)

尺寸 Size	C1	C2	C3	C4	C5	C6	C7	C8
ZPLX-142-L3	Φ130	4-M8	Φ22	62	Φ95	7	142	274
	Φ145	4-M8	Φ22/Φ24	62	Φ110	7	142	274
	Φ165	4-M10	Φ32	62	Φ130	7	142	274
	Φ200	4-M12	Φ35	86	Φ114.3	7	175	298
	Φ200	4-M12	Φ35	117	Φ114.3	7	175	329
	Φ215	4-M12	Φ38/Φ42	86	Φ180	7	190	298

VRSF 减速比、机型号
VRSFREDUCTION RATIO & TYPE NUMBER

剖视图 Sectional Drawing



① 输出轴 Output shaft
② 油封 Seal for the output shaft
③ 输出轴前轴承 Bearing for the output shaft
④ 行星轮 Planetary gear
⑤ 前盖 Front cover
⑥ 输出轴后轴承 Bearing for the output shaft
⑦ 油封 Seal for the output shaft
⑧ 输入轴轴承 Bearing for the input shaft
⑨ 精密装夹系统 Precision clamping system
⑩ 后盖 Rear cover

输入转速为3000rpm时 When Input Speed is 3000rpm

减速比Reduction Ratio / 马达功率Motor Power(W)	单级减速 1 Stage Reduction			两级减速 2 Stage Reduction					
	1/3	1/5	1/9	1/15	1/20	1/25	1/35	1/45	1/81
50W	52			52					98
100W								98	125
200W				78			98		
400W		78						125	
750W				98					
1000W	98			125					
1500W									
2000W									
2500W	125			–			–		
3000W									
3500W			–						
4000W									
4500W									
5000W									

注1) 全部为斜齿轮适用范围 Note1) All corresponding to helical gear

输入转速为2000rpm时 When Input Speed is 2000rpm

减速比Reduction Ratio / 马达功率Motor Power(W)	单级减速 1 Stage Reduction			两级减速 2 Stage Reduction					
	1/3	1/5	1/9	1/15	1/20	1/25	1/35	1/45	1/81
50W	52			52					
100W									
200W				78				98	
400W		78							
750W				98					
1000W	98			125					
1500W									
2000W		125					–		
2500W									
3000W			–						
3500W									

注1) 全部为斜齿轮适用范围
Note1) All corresponding to helical gear

※以下为限扭矩机种:
52: 1/5减速(100W)
78: 1/81减速(50W)
98: 1/3减速(1500W)、1/45减速(200W)
1/81减速(100W)
125:1/3减速(3500W)、1/25减速(750W)

※Torque is limited to the following types:
52: 1/5 reduction(100W)
78: 1/81 reduction(50W)
98: 1/3 reduction(1500W),1/45 reduction(200W)
1/81 reduction(100W)
125:1/3 reduction(3500W),1/25 reduction(250W)

关于润滑油 About Lubricant

• 润滑: 润滑脂 • 更换: 不可	• Lubrication: Grease • Replacement: Not available

VRSF 系列减速机
VRSF GEAR BOX

系列号、机型标识说明 Type And Model Number

VRSF 减速机 VRSF Reducers	伺服电机 Servo Motor

78 ① VRSF ② 20 ③ ( ) ④ (S) ⑤ - 750 ⑥ T1 ⑦ ■ ⑧

① 减速机机座号: VRSF：52,78,98,125	Gear head frame size: VRSF ：52,78,98,125
② 减速机系列代号:VRSF: 斜齿精密型	Gear head series code: VRSF： Oblique tooth precision
③ 减速比: VRSF： 单级3,4,5,6,7,8,9,10; 两级15,20,25,35,45,81	Gear Ratio: VRSF： Single Stage 3,4,5,6,7,8,9,10; Two Stages 15,20,25,35,45,81

④ 精度 Amount of backlash
输出轴负荷量为容许输出扭矩的±5%时的值
precision (the load of output shaft is±5% of allowable output torque)

机型号 Reducer Type No.	级数 Stage	标准型P2(省略) Standard Type	精密型P1 Low-blacklash Type	高精密型P0 High Precision Type
52 VRSF	1	12分arc-min	10分arc-min	3分arc-min
	2	15分arc-min	12分arc-min	5分arc-min
78 VRSF	1	8分arc-min	5分arc-min	3分arc-min
	2	12分arc-min	8分arc-min	5分arc-min
98 VRSF	1	8分arc-min	5分arc-min	3分arc-min
	2	12分arc-min	8分arc-min	5分arc-min
125 VRSF	1	8分arc-min	5分arc-min	3分arc-min
	2	12分arc-min	8分arc-min	5分arc-min
				-
				-

⑤ 输出轴型式 S:整体锁紧(省略)(无论马达是否有键槽都可使用，但"D"字型不适用) S1:带锁紧环锁紧(无论马达是否有键槽都可使用，但"D"字型不适用) S2:带键槽锁紧(输入轴带键) K:带键槽 A:其他适配器(请与本公司联系)	nput shaft type S:Overall locking(Omission)(regardless whether the motor with keyway can use it. But D Cut can't use) S1:Locking with locking ring(regardless whether the motor with keyway can use it. But D Cut can't use) S2:Locking with keyway (input shaft with key) K:With keyway A:Other type (please contact with us)
⑥ 适用伺服马达功率(W)	Applicable servo motor power (W)
⑦ 伺服马达厂家名称	Manufacturer name of servo motor
⑧ 伺服马达型号	Model of servo motor

VRSF 性能表（输入转速为3,000rpm时）
VRSFPERFORMANCE TABLE (WHEN INPUT SPEED IS 3000RPM)

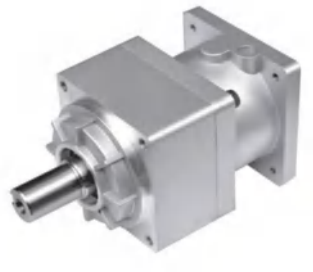
性能表 Performance Table

减速比 Reduction Ratio	系列号 Model				输出轴转速 Outout Shaft Speed	额定输出扭矩 Standard Output Torque	瞬间最大输出扭矩 Instantaneous max.Output Torque	容许径向负荷 Permissible Radial Load	容许轴向负荷 Permissible Axial Load	输入轴换算内部惯性力矩 Internal Moment Ofinertia Of Input Shaftconversion	容许输出扭矩 Permissible Output Torque	瞬间最大容许输出扭矩 Instantaneous Max. Permissible Output Torque
	机座号 Type No.	系列号 Model	减速比 Reduction Ratio	马达功率 Motor	(rpm)	(N.m)	(N.m)	(N)	(N)	($x10^{-4}$ kg.m^2)	(N.m)	(N.m)
1/3	52	VRSF	3	-50	1000	0.255	0.784	392	196	0.0575	3.43	10.3
	52	VRSF	3	-100	1000	0.715	2.06	392	196	0.0575	3.43	10.3
	52	VRSF	3	-200	1000	1.47	4.51	392	196	0.135	3.43	10.3
	52	VRSF	3	-400	1000	3.43	10.3	392	196	0.145	3.43	10.3
	78	VRSF	3	-750	1000	6.37	19.3	784	392	0.913	6.86	20.6
	98	VRSF	3	-1000	1000	7.55	22.8	882	441	2.43	18.3	54.9
	98	VRSF	3	-1500	1000	12.3	37.1	882	441	2.43	18.3	54.9
	98	VRSF	3	-2000	1000	17.2	51.5	882	441	2.43	18.3	54.9
	125	VRSF	3	-2500	1000	19.0	57.2	1370	686	5.55	44.1	132
	125	VRSF	3	-3000	1000	23.7	71.2	1370	686	5.50	44.1	132
	125	VRSF	3	-3500	1000	28.3	85.2	1370	686	5.50	44.1	132
	125	VRSF	3	-4000	1000	33.1	99.0	1370	686	5.78	44.1	132
	125	VRSF	3	-4500	1000	37.7	113	1370	686	5.78	44.1	132
	125	VRSF	3	-5000	1000	42.9	128	1370	686	5.78	44.1	132
1/5	52	VRSF	5	-50	600	0.510	1.47	490	245	0.04	1.57	4.70
	52	VRSF	5	-100	600	1.18	3.72	490	245	0.04	1.57	4.70
	52	VRSF	5	-200	600	2.65	8.04	490	245	0.118	2.84	8.53
	78	VRSF	5	-400	600	5.39	16.2	980	490	0.363	6.57	19.7
	78	VRSF	5	-750	600	10.7	32.1	980	490	0.713	11.5	34.3
	98	VRSF	5	-1000	600	13.4	40.5	1080	539	1.85	23.5	70.6
	98	VRSF	5	-1500	600	21.5	64.4	1080	539	1.85	23.5	70.6
	125	VRSF	5	-2000	600	23.8	71.5	1670	833	3.50	56.8	171
	125	VRSF	5	-2500	600	31.8	95.5	1670	833	3.50	56.8	171
	125	VRSF	5	-3000	600	39.6	119	1670	833	3.48	56.8	171
	125	VRSF	5	-3500	600	47.2	141	1670	833	3.48	56.8	171
	125	VRSF	5	-4000	600	55.3	166	1670	833	3.75	56.8	171
1/9	52	VRSF	9	-50	333	0.921	2.74	588	294	0.035	2.35	7.25
	52	VRSF	9	-100	333	2.25	6.86	588	294	0.035	2.35	7.25
	78	VRSF	9	-200	333	3.72	11.3	1180	588	0.275	9.70	29.2
	78	VRSF	9	-400	333	9.51	28.5	1180	588	0.275	9.70	29.2
	98	VRSF	9	-750	333	18.2	54.7	1470	735	0.650	18.2	54.7
	125	VRSF	9	-1000	333	20.0	60.1	1960	980	2.81	73.5	221
	125	VRSF	9	-1500	333	34.3	103	1960	980	2.81	73.5	221
	125	VRSF	9	-2000	333	48.6	146	1960	980	2.81	73.5	221
	125	VRSF	9	-2500	333	60.8	182	1960	980	2.81	73.5	221
	125	VRSF	9	-3000	333	73.0	219	1960	980	2.77	73.5	221

注1) 输入轴换算惯性力矩仅为减速机的数值，不包括马达的惯性力矩。
注2) 最高输入转速为5000rpm，正常情况下请将转速控制在3000rpm以下。
注3) 容许径向负荷为输出轴中央部的数值。
注4) 全部为斜齿轮适用范围。

Note1) The moment of input shaft conversion is only gained from the reducer, so it does not include moment of inertia of the motor.
Note2) The max. input speed is 5000rpm. Usually set to 3000rpm or less.
Note3) The permissble radial load is indicated on the center of the output shaft.
Note4) All values are within the range corresponding to helical gear.

VRSF 性能表（输入转速为3,000rpm时）
VRSFPERFORMANCE TABLE (WHEN INPUT SPEED IS 3000RPM)



性能表 Performance Table

减速比 Reduction Ratio	系列号 Model				输出轴转速 Outout Shaft Speed	额定输出扭矩 Standard Output Torque	瞬间最大输出扭矩 Instantaneous Max.Output Torque	容许径向负荷 Permissible Radial Load	容许轴向负荷 Permissible Axial Load	输入轴换算内部惯性力矩 Internal Moment Ofinertia Of Input Shaftconversion	容许输出扭矩 Permissible Output Torque	瞬间最大容许输出扭矩 Instantaneous Max. Permissible Output Torque
	机座号 Type No.	系列号 Model	减速比 Reduction Ratio	马达功率 Motor	(rpm)	(N.m)	(N.m)	(N)	(N)	($x10^{-4}$ kg.m^2)	(N.m)	(N.m)
1/15	52	VRSF	15	-50	200	1.67	5.00	784	392	0.035	4.02	12.2
	52	VRSF	15	-100	200	3.72	11.4	784	392	0.035	4.02	12.2
	78	VRSF	15	-200	200	6.27	18.8	1470	735	0.300	16.2	48.6
	78	VRSF	15	-400	200	15.8	47.5	1470	735	0.300	16.2	48.6
	98	VRSF	15	-750	200	30.4	91.2	1760	882	0.700	30.4	91.2
	125	VRSF	15	-1000	200	33.3	100	2350	1180	1.95	91.4	274
	125	VRSF	15	-1500	200	57.2	172	2350	1180	2.80	91.4	274
	125	VRSF	15	-2000	200	81.0	243	2350	1180	2.80	91.4	274
1/20	52	VRSF	20	-50	150	2.21	6.63	804	402	0.034	5.00	15.0
	52	VRSF	20	-100	150	5.00	15.0	804	402	0.034	5.00	15.0
	78	VRSF	20	-200	150	8.69	26.1	1570	785	0.294	21.1	63.3
	78	VRSF	20	-400	150	21.1	63.3	1570	785	0.294	21.1	63.3
	98	VRSF	20	-750	150	40.6	122	1910	955	0.690	40.6	122
1/25	52	VRSF	25	-50	120	2.74	8.33	882	441	0.0325	4.02	12.2
	52	VRSF	25	-100	120	6.27	19.0	882	441	0.0325	6.27	19.0
	78	VRSF	25	-200	120	11.1	33.3	1670	833	0.288	21.7	64.9
	78	VRSF	25	-400	120	26.4	79.2	1670	833	0.288	26.4	79.2
	98	VRSF	25	-750	120	50.7	152	2060	1030	0.680	50.7	152
	125	VRSF	25	-1000	120	55.7	167	2650	1320	1.880	65.4	196
1/35	52	VRSF	35	-50	85	3.84	11.5	882	441	0.030	3.84	11.5
	78	VRSF	35	-100	85	7.24	21.7	1670	833	0.065	13.9	41.7
	78	VRSF	35	-200	85	15.5	46.6	1670	833	0.262	15.5	46.6
	98	VRSF	35	-400	85	37.0	111	2060	1030	0.269	37.0	111
	125	VRSF	35	-750	85	71.0	213	3430	1715	0.473	71.0	213
1/45	78	VRSF	45	-50	66	3.86	11.6	1670	833	0.0285	9.50	28.6
	78	VRSF	45	-100	66	9.31	28.0	1670	833	0.0285	9.50	28.6
	98	VRSF	45	-200	66	21.1	63.5	2060	1030	0.0256	28.3	85.2
	125	VRSF	45	-400	66	47.5	142.5	3520	1760	0.245	57.0	171
	125	VRSF	45	-750	66	91.3	274	3520	1760	1.770	91.3	274
1/81	78	VRSF	81	-50	37	7.02	20.8	1670	833	0.027	9.70	29.2
	98	VRSF	81	-100	37	14.0	42.0	2060	1030	0.030	17.8	53.5
	125	VRSF	81	-200	37	36.1	108.3	3530	1765	0.240	43.3	129.9

注1) 输入轴换算惯性力矩仅为减速机的数值，不包括马达的惯性力矩。
注2) 最高输入转速为5000rpm，正常情况下请将转速控制在3000rpm以下。
注3) 容许径向负荷为输出轴中央部的数值。
注4) 全部为斜齿轮适用范围。

Note1) The moment of input shaft conversion is only gained from the reducer, so it does not include moment of inertia of the motor.
Note2) The max. input speed is 5000rpm. Usually set to 3000rpm or less.
Note3) The permissble radial load is indicated on the center of the output shaft.
Note4) All values are within the range corresponding to helical gear.

VRSF 性能表（输入转速为2,000rpm时）
VRSF PERFORMANCE TABLE (WHEN INPUT SPEED IS 2000RPM)

性能表 Performance Table

标准型、P1(精密型)、P2(高精密型)均为相同的规格 The same specification applies to all of standard type, P1(low backlash), and P2(high precision type).

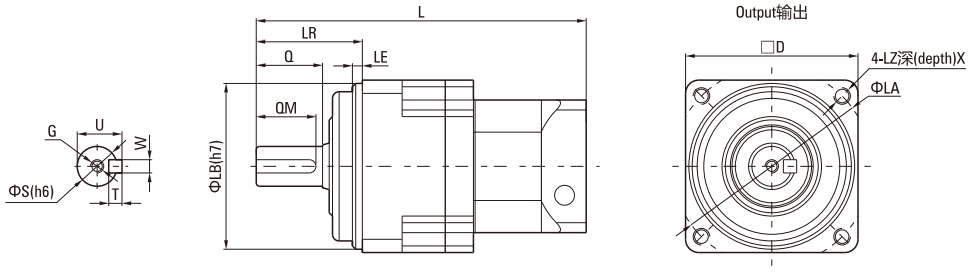
减速比 Reduction Ratio	系列号 Model				输出轴转速 Outout Shaft Speed	额定输出扭矩 Standard Output Torque	瞬间最大输出扭矩 Instantaneous Max.Output Torque	容许径向负荷 Permissible Radial Load	容许轴向负荷 Permissible Axial Load	输入轴换算内部惯性力矩 Internal Moment Ofinertia Of Input Shaftconversion	容许输出扭矩 Permissible Output Torque	瞬间最大容许输出扭矩 Instantaneous Max. Permissible Output Torque
	机座号 Type No.	系列号 Model	减速比 Reduction Ratio	马达功率 Motor	(rpm)	(N.m)	(N.m)	(N)	(N)	($x10^{-4}$ kg.m^2)	(N.m)	(N.m)
1/3	52	VRSF	3	-50	666	0.477	1.43	450	225	0.0575	3.43	10.3
	52	VRSF	3	-100	666	1.05	3.15	450	225	0.135	3.43	10.3
	52	VRSF	3	-200	666	2.48	7.45	450	225	0.145	3.43	10.3
	78	VRSF	3	-400	666	5.01	15.0	900	450	0.913	6.86	20.6
	98	VRSF	3	-750	666	8.73	26.2	1010	505	2.43	18.3	54.9
	98	VRSF	3	-1000	666	12.3	37.1	1010	505	2.43	18.3	54.9
	98	VRSF	3	-1500	666	18.3	54.9	1010	505	2.43	18.3	54.9
	125	VRSF	3	-2000	666	23.7	71.2	1570	785	5.50	44.1	132
	125	VRSF	3	-2500	666	30.8	92.5	1570	785	5.50	44.1	132
	125	VRSF	3	-3000	666	37.7	113	1570	785	5.50	44.1	132
	125	VRSF	3	-3500	666	44.1	132	1570	785	5.78	44.1	132
1/5	52	VRSF	5	-50	400	0.795	2.39	560	280	0.040	1.57	4.70
	52	VRSF	5	-100	400	1.57	4.70	560	280	0.118	1.57	4.70
	78	VRSF	5	-200	400	3.82	11.5	1120	560	0.363	6.57	19.7
	78	VRSF	5	-400	400	8.35	25.1	1120	560	0.713	11.5	34.3
	98	VRSF	5	-750	400	15.5	46.5	1230	615	1.85	23.5	70.6
	98	VRSF	5	-1000	400	21.5	64.4	1230	615	1.85	23.5	70.6
	125	VRSF	5	-1500	400	27.8	83.5	1900	950	3.50	56.8	171
	125	VRSF	5	-2000	400	39.6	119	1900	950	3.48	56.8	171
	125	VRSF	5	-2500	400	51.4	154	1900	950	3.75	56.8	171
1/9	52	VRSF	9	-50	222	1.57	4.72	670	335	0.035	2.35	7.25
	78	VRSF	9	-100	222	2.35	7.04	1340	670	0.275	9.70	29.2
	78	VRSF	9	-200	222	6.64	19.9	1340	670	0.275	9.70	29.2
	98	VRSF	9	-400	222	14.0	41.9	1680	840	0.650	18.2	54.7
	125	VRSF	9	-750	222	23.6	70.9	2240	1120	2.81	73.5	221
	125	VRSF	9	-1000	222	34.3	103	2240	1120	2.81	73.5	221
	125	VRSF	9	-1500	222	53.7	161	2240	1120	2.81	73.5	221
	125	VRSF	9	-2000	222	73.0	219	2240	1120	2.77	73.5	221
1/15	52	VRSF	15	-50	133	2.62	7.87	882	441	0.035	4.02	12.2
	78	VRSF	15	-100	133	3.91	11.7	1670	833	0.300	16.2	48.6
	78	VRSF	15	-200	133	11.1	33.2	1670	833	0.300	16.2	48.6
	98	VRSF	15	-400	133	23.3	69.8	2020	1010	0.700	30.4	91.2
	125	VRSF	15	-750	133	39.4	118	2650	1320	2.80	91.4	274
	125	VRSF	15	-1000	133	57.2	172	2650	1320	2.80	91.4	274
	125	VRSF	15	-1500	133	91.3	274	2650	1320	2.80	91.4	274
1/20	52	VRSF	20	-50	100	3.50	10.5	910	455	0.034	5.00	15.0
	78	VRSF	20	-100	100	5.73	17.2	1790	895	0.294	21.1	63.3
	78	VRSF	20	-200	100	14.8	44.4	1790	895	0.294	21.1	63.3
	98	VRSF	20	-400	100	31.0	93.1	2180	1090	0.294	40.6	122
1/25	52	VRSF	25	-50	80.0	4.37	13.1	882	441	0.0325	6.27	19.0
	78	VRSF	25	-100	80.0	7.16	21.5	1670	833	0.288	21.7	64.9
	78	VRSF	25	-200	80.0	18.5	55.4	1670	833	0.288	21.7	64.9
	98	VRSF	25	-400	80.0	38.8	116	2060	1030	0.680	50.7	152
	125	VRSF	25	-750	80.0	65.4	196	2650	1320	1.88	65.4	196
1/35	78	VRSF	35	-50	57.0	4.43	13.3	1900	950	0.262	15.5	46.6
	78	VRSF	35	-100	57.0	12.7	38.1	1900	950	0.262	15.5	46.6
	98	VRSF	35	-200	57.0	22.0	66.0	2340	1170	0.269	37.0	111
1/45	78	VRSF	45	-50	44.4	5.80	17.4	1670	833	0.0285	9.50	28.6
	98	VRSF	45	-100	44.4	14.0	42.1	2060	1030	0.0285	28.3	85.2
	98	VRSF	45	-200	44.4	28.3	85.2	2060	1030	0.0285	28.3	85.2
1/81	78	VRSF	81	-50	24.6	9.70	29.2	1670	833	0.0270	9.70	29.2
	98	VRSF	81	-100	24.6	17.8	53.5	2060	1030	0.0300	17.8	53.5

注1) 输入轴换算惯性力矩仅为减速机的数值，不包括马达的惯性力矩。
注2) 容许径向负荷为输出轴中央部的数值。
注3) 全部为斜齿轮适用范围。

Note1) The moment of input shaft conversion is only gained from the reducer, so it does not include moment of inertia of the motor.
Note2) The permissble radial load is indicated on the center of the output shaft.
Note3) All values are within the range corresponding to helical gear.

VRSF同芯轴型减速机尺寸表
DIMENSIONAL TABLE FOR ZDR CONCENTRIC SHAFT REDUCER

机械参数 Dimensions



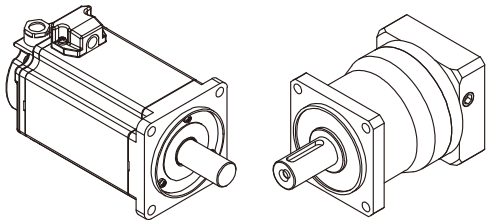
尺寸表 Dimensional Table

型号 Type				全长 Total Length L			输出轴 Output Shaft							法兰 Flange					
机座号 Type No.	系列号 Model	减速比 Reduction Ratio	马达功率 Motor	松下电器生产 Panasonic-made MSMA	安川电机生产 Yaskawa-made SGMASH SGMSH	三菱电机生产 Mitsubishi-made HC-KFS HC-RFS	LR	S	Q	QM	QM	W×U	T	D	LB	LE	LA	LZ	X
52	VRSF	3·5·9	50	99.5			32	12	20	18	M4(depth)12	4×13.5	4	52	50	3	60	M5	12
52	VRSF	15·20·25·35	50	110															
52	VRSF	3·5·9	100	99.5															
52	VRSF	15·20·25	100	110															
52	VRSF	3·5	200	104.5															
52	VRSF	3	400																
78	VRSF	45·81	50	142			50	19	30	26	M5(depth)15	6×21.5	6	80	70	3	90	M6	20
78	VRSF	35	100	150															
78	VRSF	45	100	142															
78	VRSF	9	200	139.5															
78	VRSF	15·20·25·35	200	150															
78	VRSF	5·9	400	139.5															
78	VRSF	15·20·25	400	150															
78	VRSF	3·5	750	143.5															
98	VRSF	81	100	158			61	24	40	35	M6(depth)20	8×27	7	100	90	5	115	M8	20
98	VRSF	45	200	165															
98	VRSF	35	400																
98	VRSF	9	750	158.5															
98	VRSF	15·20·25	750	171															
98	VRSF	3.5	1000	177															
98	VRSF	3.5	1500																
98	VRSF	3	2000																
125	VRSF	81	200	210			75	32	55	52	M10(depth)20	10×35	8	125	110	5	135	M10	20
125	VRSF	45	400																
125	VRSF	35	750																
125	VRSF	45	750	235															
125	VRSF	9	1000	215															
125	VRSF	15·25	1000	235															
125	VRSF	9	1500	215															
125	VRSF	15	1500	235															
125	VRSF	5·9	2000	215															
125	VRSF	15	2000	235															
125	VRSF	3·5·9	2500	215	-	-													
125	VRSF	3·5·9	3000	215	225	-													
125	VRSF	3.5	3500	215	-	225													
125	VRSF	3.5	4000	225	225	-													
125	VRSF	3	4500	225	-	-													
125	VRSF	3	5000	225															

注1) 基准系列(马达对应表记载系列)以外的马达，请咨询。(因为根据马达安装的不同法兰尺寸可能不同)
注2) 输出轴旋转方向与马达输入旋转方向相同。
注3) 全部为斜齿轮适用范围。
Note1) Please inquire to us if motor model isn't standard (Matching motor list). (The flange dimension may be different if motor assension is different.)
Note2) Rotation of the output shaft is in the same direction as that of motor input.
Note3) All values are within the range corresponding to helical gear.

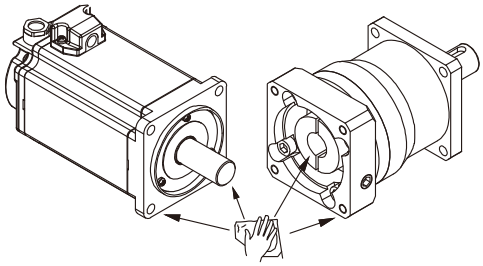
减速机安装指南
Speed reducer installation guide

第一步
确认电机和减速机是否完好（若有电机轴键，需移走）



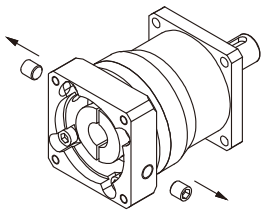
安装前确认电机和减速机是否完好无损，并且严格检查电机与减速机相连接的各部位尺寸是否匹配，主要指电机的凸台尺寸与减速机凹槽等尺寸及配合公差。

第二步
将电机轴和减速机的连接部分清洁干净



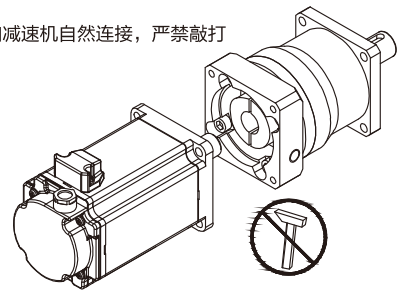
将电机输出轴、定位凸台及减速机连接部位的防锈油用汽油或锌钠水擦拭干净，其目的是保证连接的紧密性及运转的灵活性，并且防止不必要的磨损。

第三步
旋掉减速机法兰外侧的螺钉，插入内六角扳手



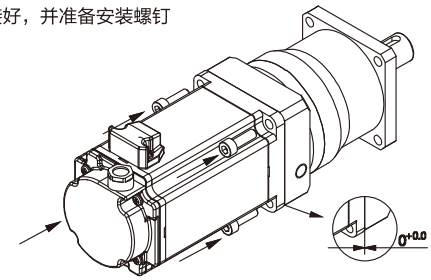
取下减速机法兰外侧工艺孔上的防尘盖，调整减速机输入轴弹性夹紧装置使其紧固螺栓与工艺孔对齐，插入内六角扳手。此步骤适合筒夹式锁紧机构联接。

第四步
将电机和减速机自然连接，严禁敲打



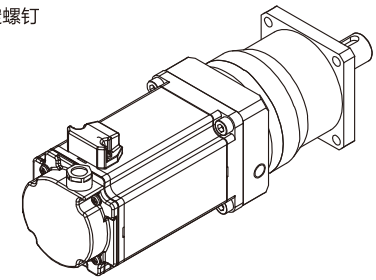
连接时必须保证减速机输出轴与电机输入轴同轴度一致，且二者外侧法兰平行，如果轴度不一致，会导致电机轴折断或减速机齿轮磨损。另外，在安装时，严禁用铁锤等击打，防止轴向力或径向力过大损坏轴承或齿轮。

第五步
试连接好，并准备安装螺钉



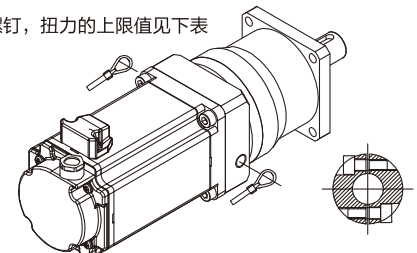
在电机与减速机连接前，请先将减速机锁紧螺钉对准工艺孔，便于扳手介入。

第六步
锁紧固定螺钉



为保证受力均匀，请先将任意对角位置的安装螺钉旋上，但不要旋紧，再旋上另外两个对角位置的安装螺钉，最后逐个旋紧四个安装螺钉。

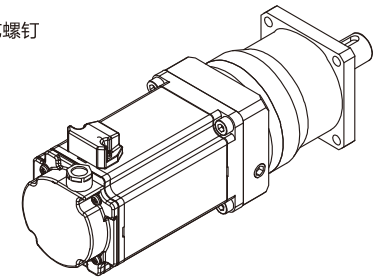
第七步
锁紧抱紧螺钉，扭力的上限值见下表



型号	60系列	85系列	115系列	140系列
螺钉规格	M5	M6	M8	M10
锁紧扭矩(Nm)	9.5	16.5	40	80

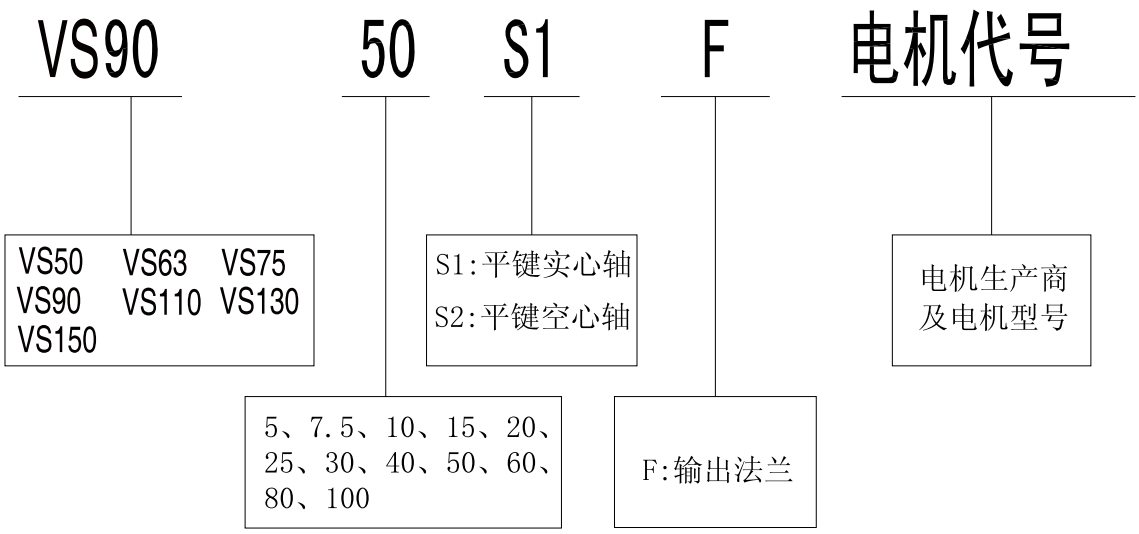
减速机抱紧螺钉有两颗，请逐步加力，均匀锁紧。

第八步
安装工艺螺钉



工艺螺钉的安装可以更好的达到防护等级。

VS精密伺服蜗轮减速机



例：VS90-50-S1-F/施耐德BCH1304N11A

减速机性能参数:

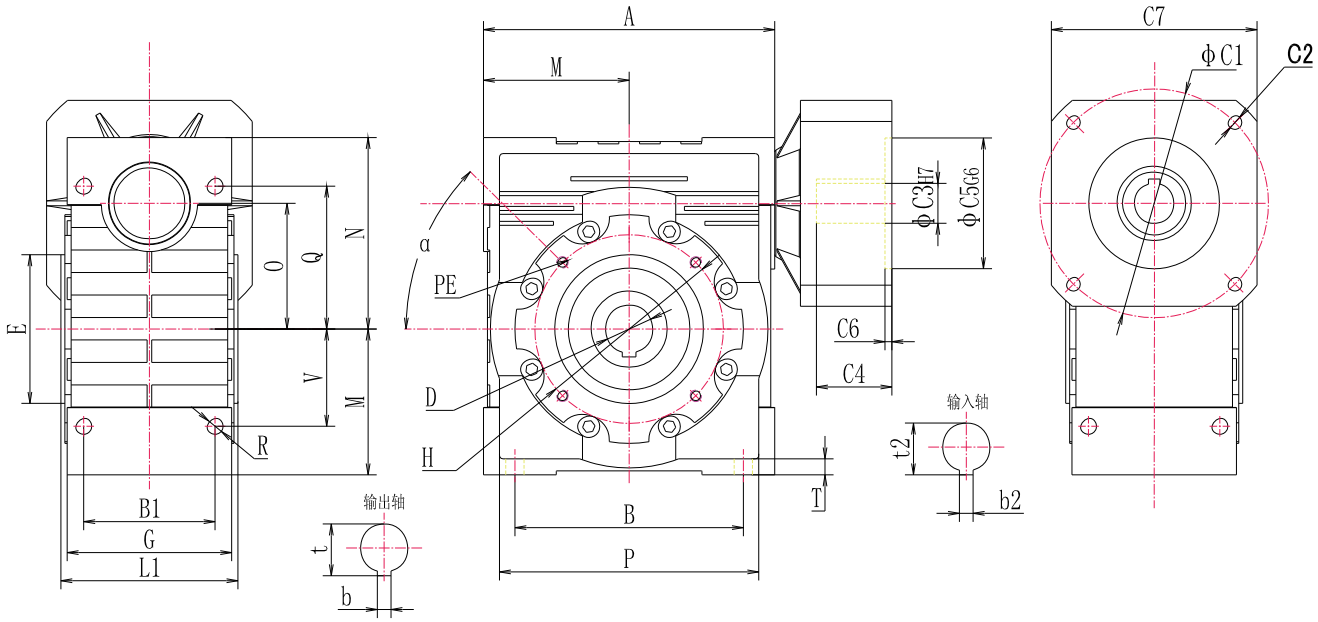
规格	单位	速比	VS50	VS63	VS75	VS90	VS110	VS130	VS150
额定输出扭矩 T_{2N}	Nm	5	65						
		7.5	65	135	310	480	610	950	1660
		10	65	135	310	480	610	950	1660
		15	65	135	310	480	610	950	1660
		20	65	135	310	480	610	950	1660
		25	65	135	310	480	610	950	1660
		30	65	135	310	480	610	950	1660
		40	50	115	280	450	550	880	1420
		50	50	115	280	450	550	880	1420
		60	50	100	260	420	530	840	1360
		80	40	85	220	410	480	750	1250
		100	35	65	170	320	410	650	1100
最大输出扭矩T2B	Nm	5-100	2倍额定输出扭矩						
额定输入转数n1N	rpm	5-100	3000	3000	2500	2500	2000	2000	2000
最大输入转数n1B	rpm	5-100	5000	5000	4000	4000	3000	3000	3000
回程背隙	arcmin	5	≤8	≤8	≤8	≤8	≤8	≤8	≤8
		7.5	≤8	≤8	≤8	≤8	≤8	≤8	≤8
		10	≤8	≤8	≤8	≤8	≤8	≤8	≤8
		15	≤8	≤8	≤8	≤8	≤8	≤8	≤8
		20	≤8	≤8	≤8	≤8	≤8	≤8	≤8
		25	≤10	≤10	≤10	≤10	≤10	≤10	≤10
		30	≤10	≤10	≤10	≤10	≤10	≤10	≤10
		40	≤10	≤10	≤10	≤10	≤10	≤10	≤10
		50	≤12	≤12	≤12	≤12	≤12	≤12	≤12
		60	≤12	≤12	≤12	≤12	≤12	≤12	≤12
		80	≤15	≤15	≤15	≤15	≤15	≤15	≤15
		100	≤15	≤15	≤15	≤15	≤15	≤15	≤15
容许径向力F1	N	3-1000	1850	2800	3200	3800	4500	7200	9500
使用寿命	h	3-1000	10000						
动态效率 η_d	%	5	88%						
		7.5	86%	88%	90%	90%	90%	91%	91%
		10	85%	87%	89%	89%	89%	89%	90%
		15	80%	83%	87%	87%	86%	87%	88%
		20	80%	82%	85%	85%	84%	86%	85%
		25	76%	78%	84%	82%	85%	84%	85%
		30	71%	74%	81%	80%	79%	80%	83%
		40	69%	71%	77%	76%	77%	77%	77%
		50	64%	66%	76%	72%	76%	76%	77%
		60	53%	57%	69%	69%	72%	74%	73%
		80	53%	56%	63%	63%	69%	67%	70%
		100	48%	48%	61%	57%	62%	65%	63%
重量	kg	5-100	4.5	7.2	9.8	14.0	44.0	62.0	95
噪音	dB	5-100	≤58	≤58	≤60	≤62	≤65	≤65	≤68
使用温度	℃	5-100	+10℃～+60℃						
润滑油量(WA320)	L	5-100	0.153	0.3	0.58	1.05	2.85	4.55	6.85

功率配置

(n1=1500r/min)

	功率 \ 速比	5	7.5	10	15	20	25	30	40	50	60	80	100
050	100W	●	●	●	●	●	●	●	○	○	○	○	○
	200W	●	●	●	●	●	●	●	○	○	○	○	○
	400W	○	○	○	○	○	○	○	○	○	○		
	500W	○	○	○	○	○	○	○	○				
	750W	○	○	○	○	○	○						
063	200W	×	●	●	●	●	●	●	●	●	●	○	○
	400W	×	●	●	●	●	●	●	○	○	○	○	○
	500W	×	●	●	○	○	○	○	○	○	○		
	750W	×	○	○	○	○	○	○	○				
	1000W	×	○	○	○	○	○	○					
	1500W	×	○	○	○	○							
075	500W	×	●	●	●	●	●	●	○	○	○	○	○
	750W	×	●	●	●	●	●	○	○	○	○		
	1000W	×	○	○	○	○	○	○	○				
	1500W	×	○	○	○	○	○	○					
	2000W	×	○	○	○								
	3000W	×	○	○	○								
	4000W	×	○										
090	750W	×	●	●	●	●	●	●	●	○	○	○	○
	1000W	×	●	●	●	●	●	●	○	○	○		
	1500W	×	●	●	●	●	○	○	○	○	○		
	2000W	×	○	○	○	○	○	○					
	3000W	×	○	○	○	○	○	○					
	4000W	×	○	○	○	○							
110	1000W	×	●	●	●	●	●	●	●	●	○	○	○
	1500W	×	●	●	●	●	●	●	●	○	○	○	
	2000W	×	○	○	○	○	○	○	○	○	○		
	3000W	×	○	○	○	○	○	○	○	○			
	4000W	×	○	○	○	○	○	○					
	5000W	×	○	○	○	○							
	7500W	×	○	○									
130	1500W	×	●	●	●	●	●	●	●	●	●	○	○
	2000W	×	●	●	●	●	●	●	●	○	○	○	○
	3000W	×	●	●	●	●	●	●	○	○	○		
	4000W	×	○	○	○	○	○	○	○	○	○		
	5000W	×	○	○	○	○	○	○	○				
	7500W	×	○	○	○	○	○						
150	2000W	×	●	●	●	●	●	●	●	○	○	○	○
	3000W	×	●	●	●	●	●	●	○	○	○	○	○
	4000W	×	●	●	●	●	○	○	○	○	○	○	
	5000W	×	●	●	●	○	○	○	○	○	○		
	7500W	×	●	●	●	○	○	○	○				
	11000W	×	○	○	○	○	○						
	15000W	×	○	○	○	○							

注：● 表示允许但不推荐的配置,空格部分为不允许的配置，× 表示无此速比规格，○ 表示可选择的配置



型号	A	B	E	O	Q	N	M	R	V	G	B1	L1	α	PE
VS50	120	80	70	50	64	84	60	8.5	40	85	70	92	45°	M8×10(n=4)
VS63	144	100	80	63	80	102	70	8.5	50	103	85	112	45°	M8×14(n=8)
VS75	172	120	95	75	93	119	86	11	60	112	90	120	45°	M8×14(n=8)
VS90	206	140	110	90	102	135	103	13	70	130	100	140	45°	M10×18(n=8)
VS110	255	170	130	110	125	167.5	127.5	14	85	144	115	155	45°	M10×18(n=8)
VS130	293	200	180	130	140	187.5	146.5	16	100	155	120	170	45°	M12×21(n=8)
VS150	340	240	180	150	180	230	170	18	120	185	145	200	45°	M12×21(n=8)

型号	D	H	P	T	t	b	C7	C2	C6	φC1	b2	t2	φC5G6	φC3H7
VS50	25(24)	85	100	7	28.3(27.3)	8	75	M5	5	70	5/5/5	14.3/16.3/18.3	50	12/14/16
VS63	25(28)	95	110	8	28.3(31.3)	8	95	M6	8	90	5/5/6	16.3/18.3/21.8	70	14/16/19
VS75	28(35)	115	140	10	31.3(38.3)	8	115	M8	10	115	6/8/8	21.8/25.3/27.3	95	19/22/24
VS90	35(38)	130	160	11	38.3(41.3)	10	130	M8	10	145	8/8/8	25.3/27.3/31.3	110	22/24/28
VS110	42	165	200	14	45.3	12	180	M12	10	200	8/8/10	27.3/31.3/38.3	114.3	24/28/35
VS130	45	215	250	15	48.8	14	190	M12	10	215	8/10/10	31.3/38.3/41.3	180	28/35/38
VS150	50	215	250	18	53.8	14	240	M12	10	215	10/10/12	38.3/41.3/45.3	180	35/38/42