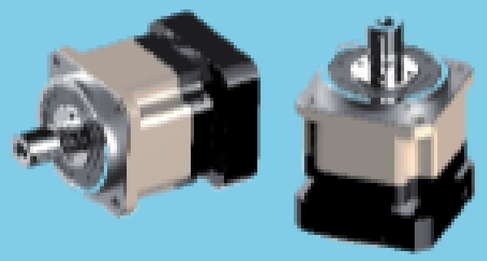
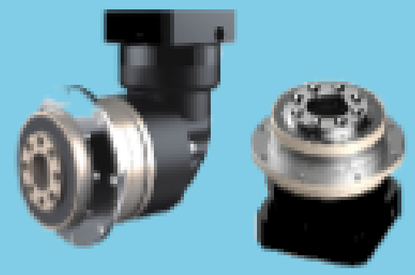
HCCDY

TB、TD精密行星减速机





减速机电动机选型手册

微型交流减速马达|小型交流减速马达|蜗轮蜗杆减速器

行星减速机|十字转向器

恒阳传动

目录

产品特性
PRODUCT FEATURES

精密行星齿轮减速机是我司自主研发的新一代实用性产品：
低噪音: 低于65db。
低背隙: 单级可达3弧分内，双级可达5弧分内。
高扭矩: 比般标准行星减速机扭矩高。
高稳定性: 采用高强度合金钢材，整颗齿轮经硬化处理,非只有表面硬代度。
高减速比: 采用模组化设计，行星齿箱可相互连结。

The precision planetary gear reducer is a new generation of practical products independently developed by our company:

Low noise: below 65db.

Low backlash: Single stage can reach 3 arcs, and double level can reach 5 arc points.

High torque: Higher torque than standard planetary gearboxes.

High stability: High-strength alloy steel is used, and the whole gear is hardened, not only the surface hardness.

High reduction ratio: modular design, the planetary gear boxes can be connected to each other.

性能特点 Product Characteristics

1. 齿轮:材料采用优质合金钢，经碳-氮共渗处理，从而获得最佳的耐磨性和耐冲击韧性。

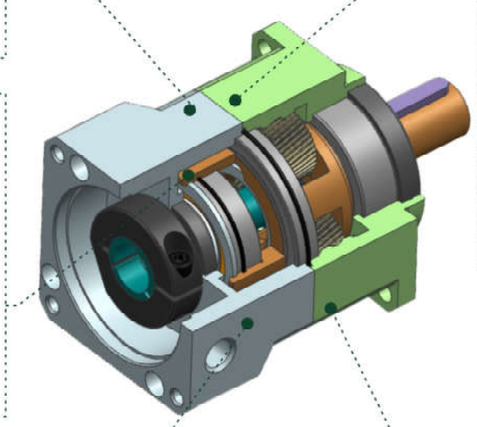
1. Gear: The material is made of high quality alloy steel and carbon-nitrogen co-infiltrated to obtain the best wear resistance and impact toughness.

2. 输出行星架采用一体式(双支撑)的结构设计。前后轴承大跨距分布于箱体内，形成稳定的一体式结构，以确保较高的扭转刚性和精度。

2. The output planet carrier adopts an integrated (double support) structure design. The front and rear bearings are distributed in the box body to form a stable integrated structure to ensure high torsional rigidity and precision.

4. 利用ANSYS技术对齿轮强度进行有限元分析，同时对齿面作齿形及导程修整，以减低齿轮啮合的冲击和噪音，增加齿轮系的使用寿命。

4. Using ANSYS technology to carry out finite element analysis of gear strength, and at the same time make tooth profile and lead trimming on the tooth surface to reduce the impact and noise of gear meshing and increase the service life of the gear train.



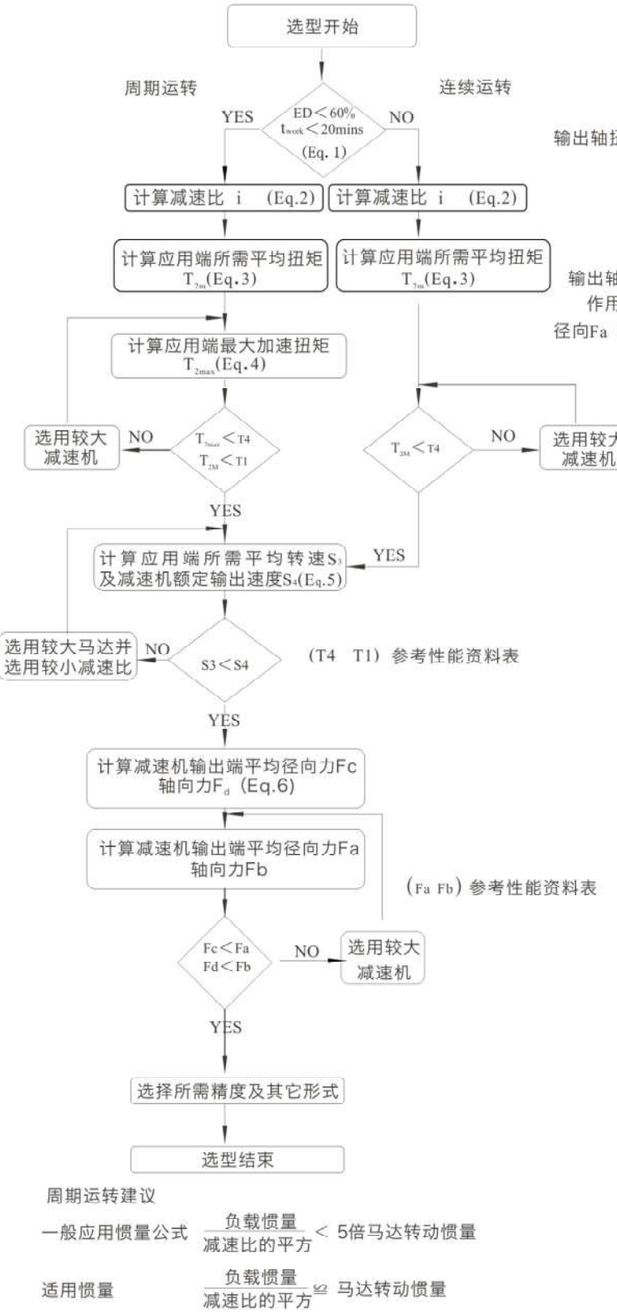
3. 齿圈与输出壳体采用一体化设计，采用优质钢材，经热锻成形，从而获得较高的材料密度。一体化设计能保证所有几何尺寸一次性加工完成，与其它内嵌式、夹装式等结构相比具有更高的精度和强度。

3. The gear ring and the output bright body adopt an integrated design, which is made of high-quality steel and hot forged to obtain a higher material density. The all-in-one design ensures that all geometries are processed in one shot, with higher precision and strength than other in-line, clip-on and other structures.

5. 输入轴与锁紧装置采用一体化设计，双螺栓对称分布，达到动平衡的同时，通过双螺栓的强力锁死，有效防止电机轴传动打滑，实现高精度零背隙的动力传送。

5. The input shaft and the locking device adopt the integrated design, and the double bolts are symmetrically distributed. When the dynamic balance is achieved, the strong bolting of the double bolts can effectively prevent the motor shaft drive from slipping and realize the high-precision zero backlash power transmission.

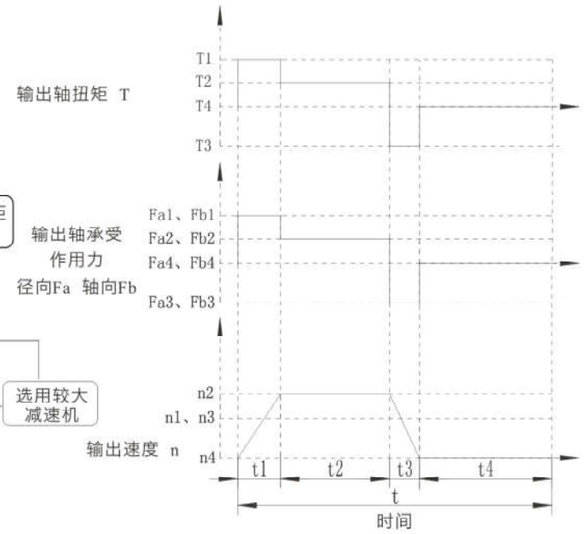
行星减速机选型
REDUCER SELECTION



周期运转建议

一般应用惯量公式 $\frac{\text{负载惯量}}{\text{减速比的平方}}$ ＜ 5倍马达转动惯量

适用惯量 $\frac{\text{负载惯量}}{\text{减速比的平方}}$ ≦ 马达转动惯量



注释：1.加速 2.等速
3.减速 4.停止

Eq. 1: $ED = \frac{t1+t2+t3}{t} \times 100\%$, $t_{work} = t1+t2+t3$

Eq. 2: $i = \frac{\text{马达输出速度}}{\text{实际应用速度}}$

Eq. 3: $T_{2m} = 3\sqrt{\frac{n1\times t1\times T1^3+n2\times t2\times T2^3+n3\times t3\times T3^3}{n1\times t1+n2\times t2+n3\times t3}}$

Eq. 4: T_{2max}= 马达最大输出扭矩 × 减速比 × 传动效率 × 负载系数

负载系数	周期次数/小时
1	0-1000
1.1	1000-1500
1.3	1500-2000
1.6	2000-3000
1.8	3000-5000

Eq. 5: $n1 = n3 = \frac{1}{2} \times n2$

$S_3 = \frac{n1\times t1+n2\times t2+n3\times t3}{t1+t2+t3}$

$S_4 = \frac{\text{额定输入速度}}{\text{减速比}}$

Eq. 6: $F_C = \sqrt[3]{\frac{n1\times t1\times Fa1^3+n2\times t2\times Fa2^3+n3\times t3\times Fa3^3}{n1\times t1+n2\times t2+n3\times t3}}$

$F_d = \sqrt[3]{\frac{n1\times t1\times Fb1^3+n2\times t2\times Fb2^3+n3\times t3\times Fb3^3}{n1\times t1+n2\times t2+n3\times t3}}$

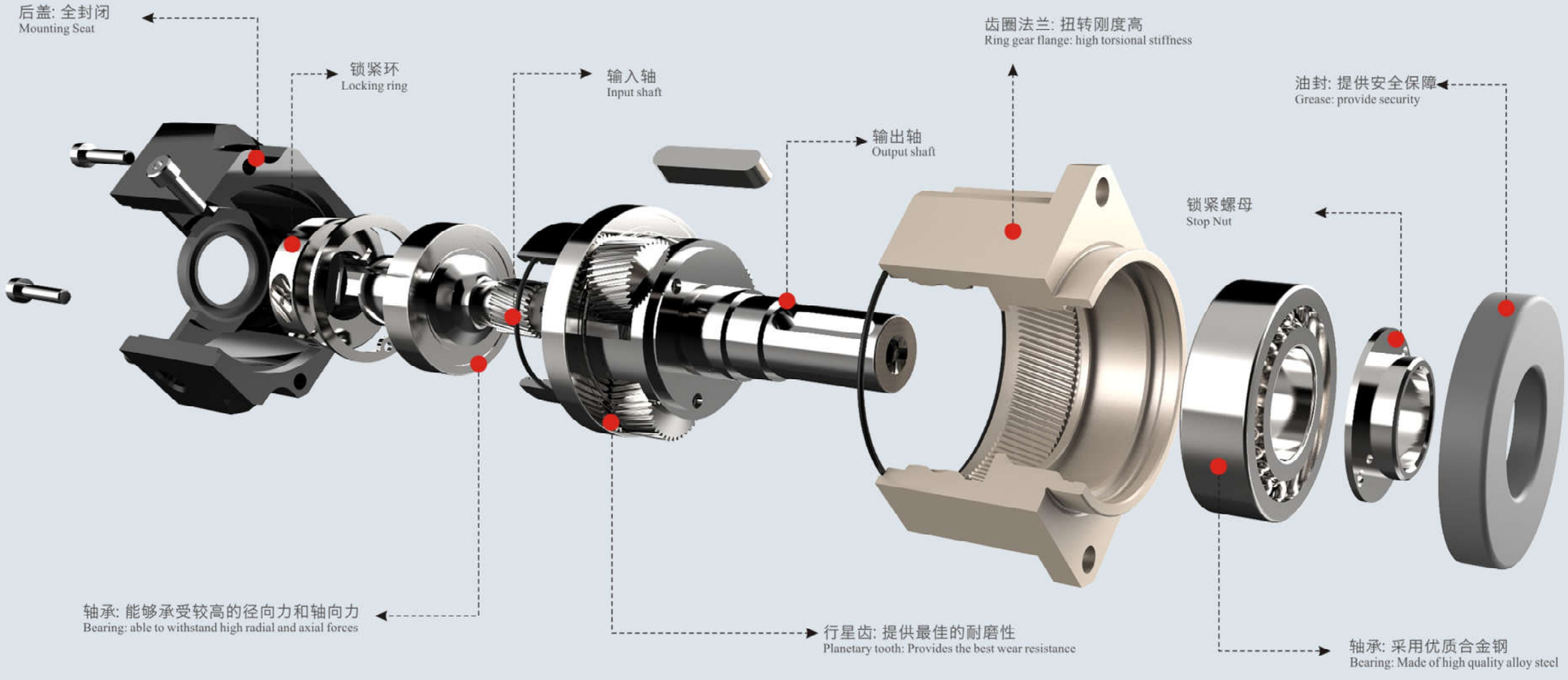
先进技术 让传动更精密
ADVANCED TECHNOLOGY TO MAKE THE DRIVE MORE PRECISE

钛科玛格
全面实施标准化生产工艺流程
实现更安全、更稳定、更高效的生产效能创造价值。

TECHMECH
Full implementation of standardized production processes
Create value by achieving safer, more stable, and more efficient production performance.

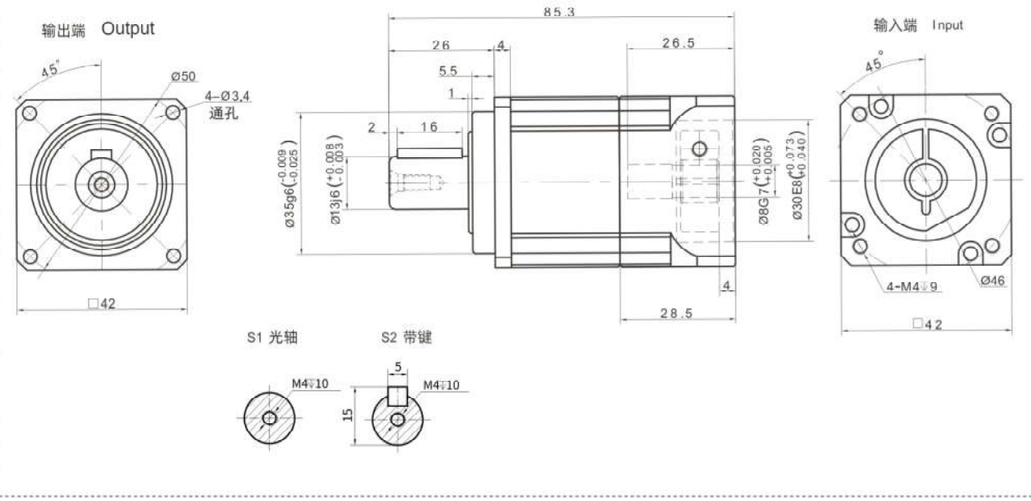
TB - 060 - 10 - S1 - P1

背隙 Backlash	P0:超精密级 Micro Backlash	
	P1:精密级 Reduced Backlash	
	P2:标准级 Standand Backlash	
输出方式 Output Style	S1:光轴 Smooth output shaft	
	S2:输出轴带键槽 Output shaft with key	
减速比 Ratio	单节: One Stage	3、4、5、6、7、8、9、10
	双节: Two Stages	15、16、20、25、28、30、35、40、45、50 60、70、80、90、100
尺寸 Frame size	060、090、115 etc	
系列名称 Series name	TB系列 TB Series	

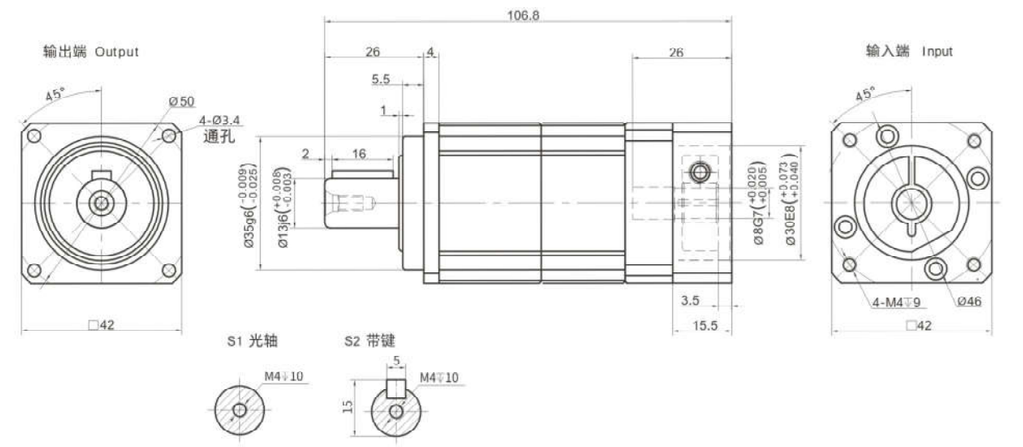


TB042系列* TB042 Series 外形尺寸表

TB042单节* TB042 One Stage



TB042双节* TB042 Two Stage



性能资料 Performance data

TB系列减速机采用了标准化的法兰界面，安装便捷安全，由于抗倾斜力矩很高，这款高精度行星减速机可以完成许多高难度任务。

The TB series reducer adopts a standardized flange interface. The installation is convenient and quick. Due to its integral structure design, this high-precision model can operate excellently in many demanding working environment.

TB042			单节 One Stage								双节 Two Stage									
①速比 Speed Ratio		i	-	4	5	6	7	8	9	10	-	20	25	30	35	40	50	60	70	80	100
额定输出力矩 Norminal Output Torque	T_1	Nm	-	19	22	20	19	17	-	14	-	19	22	20	19	17	22	20	19	17	14
急停扭矩 Emergency Stop Torque	T_2	Nm	$T_1 \times 3$								$T_1 \times 3$									
额定输入转速 Norminal Input Speed	S_1	rpm	5000								5000									
最大输入转速 Maximum Input Speed	S_2	rpm	10000								10000									
最大输出力矩 Maximum Output Torque	T_4	Nm	$T_1 \times 3 \times 60\%$								$T_1 \times 3 \times 60\%$									
②最大径向力 Maximum Radial Force	F_a	N	780								780									
②最大轴向力 Maximum Axial Force	F_b	N	390								390									
扭转刚性 Torsional Rigidity	-	Nm/arcmin	3								3									
效率 Efficiency	η	%	⩾97								⩾94									
③寿命 Service Life	-	h	20000								20000									
④反馈噪音 Noise	-	dB	⩽55								⩽55									
重量 Weight	-	Kg	0.6								0.8									
回程间隙 Backlash	P0	arcmin	⩽1								⩽3									
	P1		⩽3								⩽5									
	P2		⩽5								⩽7									
使用温度 Operating Temperature	-	℃	-20~90								-20~90									
润滑 Lubrication		-	合成润滑油脂 Synthetic Grease								合成润滑油脂 Synthetic Grease									
防护等级 Protection Class		-	IP65								IP65									
安装方向 Mounting Position		-	任意方向 Any Direction								任意方向 Any Direction									
转动惯量 Moment of Inertia	J	$kg.cm^2$	0.03								0.03									

依据说明:

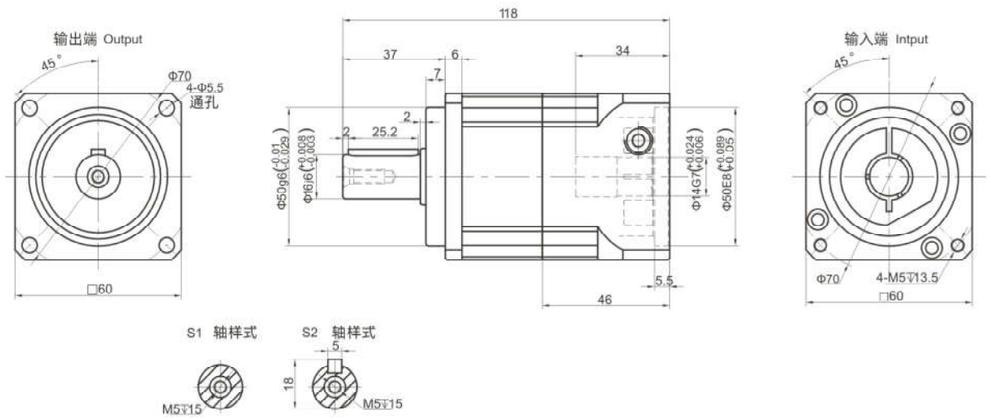
① 变速比($i=S_{in}/S_{out}$)
② 结果输出转速100rpm时， 作用于输出轴中心。
③ 连续运转寿命10000h。
④ 噪音值基于输入转速3000rpm, i=10所得。

Notes:

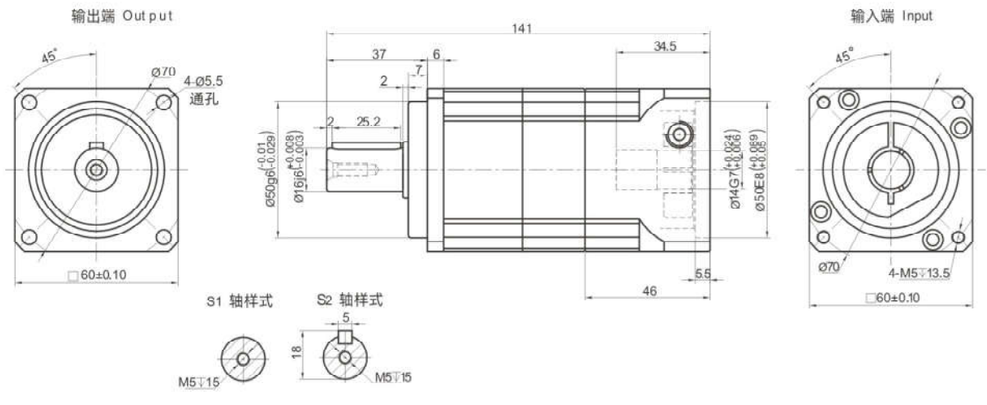
① Speed ratio ($i=Sin/Sout$)
② When the output speed is 100 rpm, it acts on the center of the output shaft.
③ For continous operation, the service life is no lessthan 10,000 hours.
④ The noise value was measured based on the input rotational speed of 3000 rpm, i=10.

TB060系列* TB060 Series 外形尺寸表

TB060单节* TB060 One Stage



TB060双节* TB060 Two Stage



性能资料 Performance data

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The TB series reducer adopts a standardized flange interface. The installation is convenient and quick. Due to its integral structure design, this high-precision model can operate excellently in many demanding working environment.

TB060			单节 One Stage								双节 Two Stage										
①速比 Speed Ratio		i	3	4	5	6	7	8	9	10	15	20	25	30	35	40	50	60	70	80	100
额定输出力矩 Norminal Output Torque	T_1	Nm	55	50	60	55	50	45	-	40	55	50	60	55	50	45	60	55	50	45	40
急停扭矩 Emergency Stop Torque	T_2	Nm	$T_1 \times 3$								$T_1 \times 3$										
额定输入转速 Norminal Input Speed	S_1	rpm	5000								5000										
最大输入转速 Maximum Input Speed	S_2	rpm	10000								10000										
最大输出力矩 Maximum Output Torque	T_4	Nm	$T_1 \times 3 \times 60\%$								$T_1 \times 3 \times 60\%$										
②最大径向力 Maximum Radial Force	F_a	N	1530								1530										
②最大轴向力 Maximum Axial Force	F_b	N	765								765										
扭转刚性 Torsional Rigidity	-	Nm/arcmin	7								7										
效率 Efficiency	η	%	⩾97								⩾94										
③寿命 Service Life	-	h	20000								20000										
④反馈噪音 Noise	-	dB	⩽58								⩽60										
重量 Weight	-	Kg	1.3								1.9										
回程间隙 Backlash	P0	arcmin	⩽1								⩽3										
	P1		⩽3								⩽5										
	P2		⩽5								⩽7										
使用温度 Operating Temperature	-	℃	-20~90								-20~90										
润滑 Lubrication		-	合成润滑油脂 Synthetic Grease								合成润滑油脂 Synthetic Grease										
防护等级 Protection Class		-	IP65								IP65										
安装方向 Mounting Position		-	任意方向 Any Direction								任意方向 Any Direction										
转动惯量 Moment of Inertia	J	$kg.cm^2$	0.16	0.14	0.13						0.13										

依据说明:

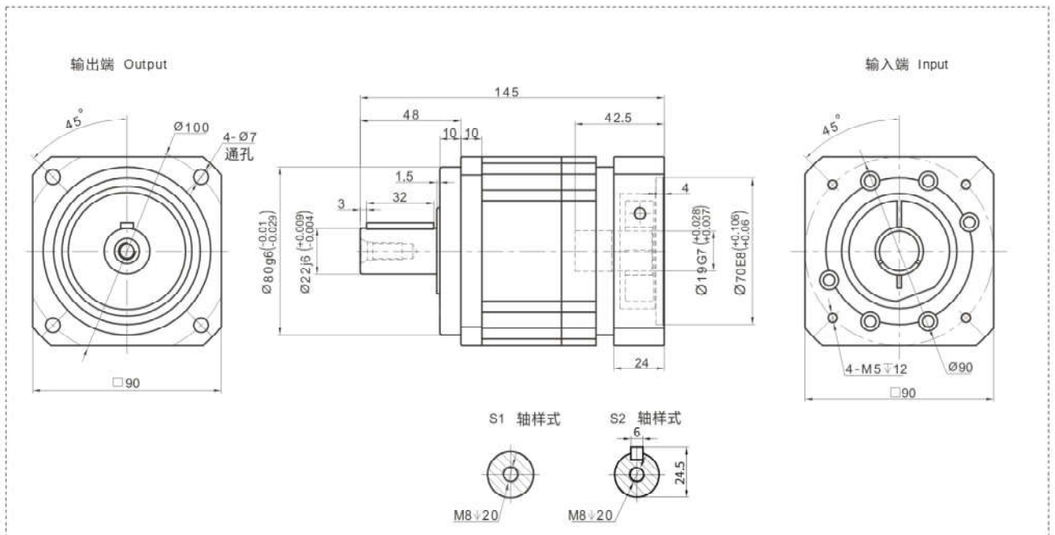
① 变速比($i=S_{in}/S_{out}$)
② 结果输出转速100rpm时，作用于输出轴中心。
③ 连续运转寿命10000h。
④ 噪音值基于输入转速3000rpm, i=10所得。

Notes:

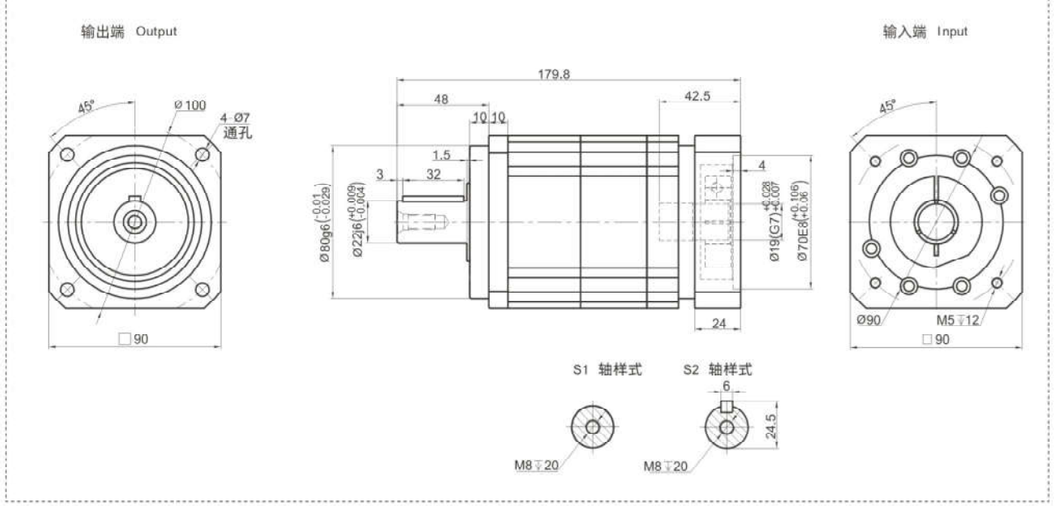
① Speed ratio (i=Sin/Sout)
② When the output speed is 100 rpm, it acts on the center of the output shaft.
③ For continous operation, the service life is no lessthan 10,000 hours.
④ The noise value was measured based on the input rotational speed of 3000 rpm, i=10.

TB090系列* TB090 Series 外形尺寸表

TB090单节* TB090 One Stage



TB090双节* TB090 Two Stage



性能资料 Performance data

TB系列减速机采用了标准化的法兰界面，安装便捷安全，由于抗倾斜力矩很高，这款高精度行星减速机可以完成许多高难度任务。

The TB series reducer adopts a standardized flange interface. The installation is convenient and quick. Due to its integral structure design, this high-precision model can operate excellently in many demanding working environment.

TB090			单节 One Stage								双节 Two Stage									
①速比 Speed Ratio		i	3	4	5	6	7	8	9	10	15	20	25	30	35	40	50	60	70	80	100
额定输出力矩 Norminal Output Torque	T_1	Nm	130	140	160	150	140	120	-	100	130	140	160	150	140	120	160	150	140	120	100
急停扭矩 Emergency Stop Torque	T_2	Nm	$T_1 \times 3$								$T_1 \times 3$									
额定输入转速 Norminal Input Speed	S_1	rpm	4000								4000									
最大输入转速 Maximum Input Speed	S_2	rpm	8000								8000									
最大输出力矩 Maximum Output Torque	T_4	Nm	$T_1 \times 3 \times 60\%$								$T_1 \times 3 \times 60\%$									
②最大径向力 Maximum Radial Force	F_a	N	3250								3250									
②最大轴向力 Maximum Axial Force	F_b	N	1625								1625									
扭转刚性 Torsional Rigidity	–	Nm/arcmin	14								14									
效率 Effciency	η	%	≥97								≥94									
③寿命 Service Life	–	h	20000								20000									
④反馈噪音 Noise	–	dB	≤60								≤63									
重量 Weight	–	Kg	3.6								5.1									
回程间隙 Backlash	P0	arcmin	≤1								≤3									
	P1		≤3								≤5									
	P2		≤5								≤7									
使用温度 Operating Temperature	–	℃	-20~90								-20~90									
润滑 Lubrication		–	合成润滑油脂 Synthetic Grease								合成润滑油脂 Synthetic Grease									
防护等级 Protection Class		–	IP65								IP65									
安装方向 Mounting Position		–	任意方向 Any Direction								任意方向 Any Direction									
转动惯量 Moment of Inertia	J	kg.cm²	0.61	0.48	0.47	0.45	0.44				0.47						0.44			

依据说明:

① 变速比(i=S_{in}/S_{out})

② 结果输出转速100rpm时， 作用于输出轴中心。

③ 连续运转寿命10000h。

④ 噪音值基于输入转速3000rpm, i=10所得。

Notes:

① Speed ratio (i=Sin/Sout)

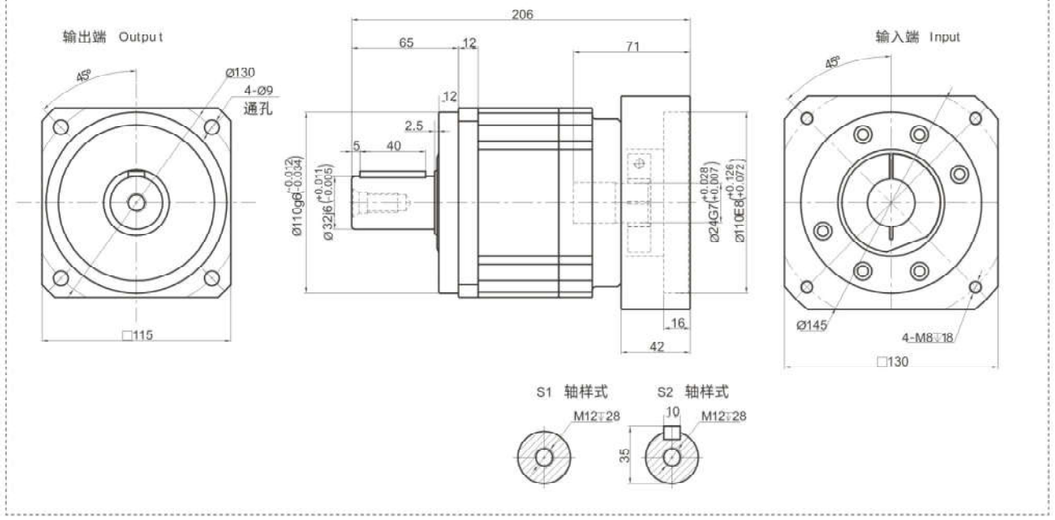
② When the output speed is 100 rpm, it acts on the center of the output shaft.

③ For continous operation, the service life is no lessthan 10,000 hours.

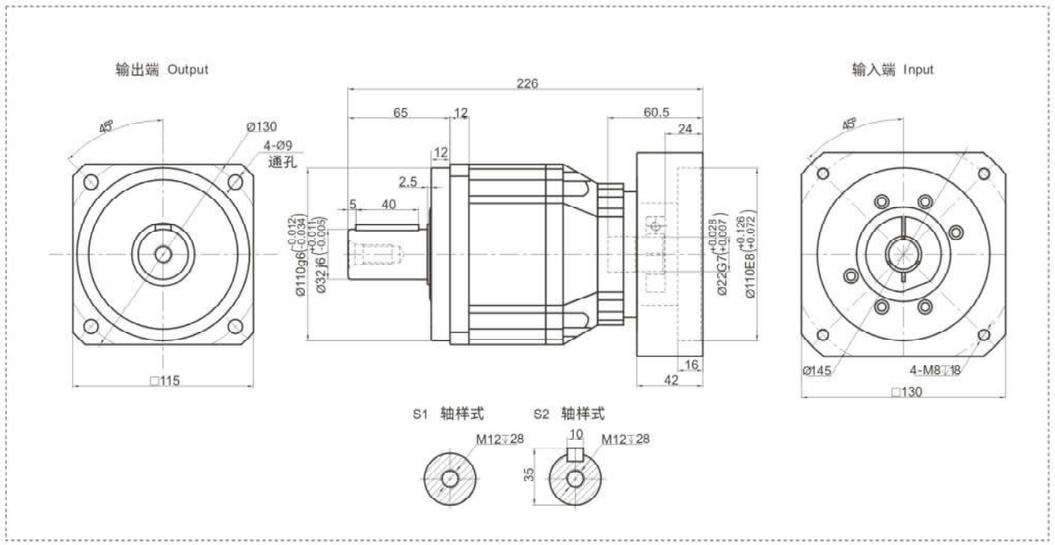
④ The noise value was measured based on the input rotational speed of 3000 rpm, i=10.

TB115系列* TB115 Series　外形尺寸表

TB115单节* TB115 One Stage



TB115双节* TB115 Two Stage



性能资料 Performance data

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The TB series reducer adopts a standardized flange interface. The installation is convenient and quick. Due to its integral structure design, this high-precision model can operate excellently in many demanding working environment.

TB115			单节 One Stage								双节 Two Stage									
①速比 Speed Ratio		i	3	4	5	6	7	8	9	10	15	20	25	30	35	40	50	60	70	80	100
额定输出力矩 Norminal Output Torque	T_1	Nm	208	290	330	310	300	260	-	230	208	290	330	310	300	260	330	310	300	260	230
急停扭矩 Emergency Stop Torque	T_2	Nm	T_1×3								T_1×3										
额定输入转速 Norminal Input Speed	S_1	rpm	4000								4000										
最大输入转速 Maximum Input Speed	S_2	rpm	8000								8000										
最大输出力矩 Maximum Output Torque	T_4	Nm	T_1×3×60%								T_1×3×60%										
②最大径向力 Maximum Radial Force	F_a	N	6700								6700										
②最大轴向力 Maximum Axial Force	F_b	N	3350								3350										
扭转刚性 Torsional Rigidity	-	Nm/arcmin	25								25										
效率 Effciency	η	%	⩾97								⩾94										
③寿命 Service Life	-	h	20000								20000										
④反馈噪音 Noise	-	dB	⩽63								⩽63										
重量 Weight	-	Kg	7.7								9										
回程间隙 Backlash	P0	arcmin	⩽1								⩽3										
	P1		⩽3								⩽5										
	P2		⩽5								⩽7										
使用温度 Operating Temperature	-	℃	-20~90								-20~90										
润滑 Lubrication		-	合成润滑油脂 Synthetic Grease								合成润滑油脂 Synthetic Grease										
防护等级 Protection Class		-	IP65								IP65										
安装方向 Mounting Position		-	任意方向 Any Direction								任意方向 Any Direction										
转动惯量 Moment of Inertia	J	kg.cm²	325	274	271	265	262	258	-	257	0.47										
											0.44										

依据说明:

① 变速比(i=S_{in}/S_{out})

② 结果输出转速100rpm时， 作用于输出轴中心。

③ 连续运转寿命10000h。

④ 噪音值基于输入转速3000rpm, i=10所得。

Notes:

① Speed ratio (i=Sin/Sout)

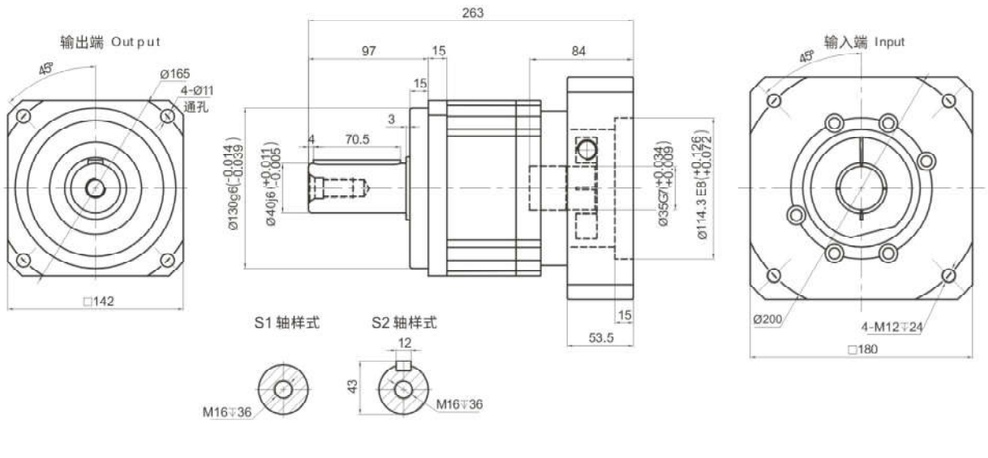
② When the output speed is 100 rpm, it acts on the center of the output shaft.

③ For continous operation, the service life is no lessthan 10,000 hours.

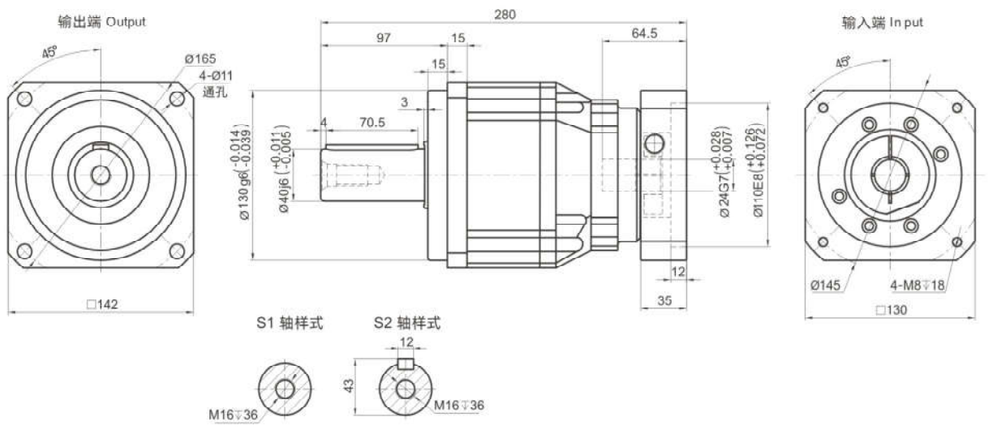
④ The noise value was measured based on the input rotational speed of 3000 rpm, i=10.

TB142系列* TB142 Series 外形尺寸表

TB142单节* TB142 One Stage



TB142双节* TB142 Two Stage



性能资料 Performance data

TB系列减速机采用了标准化的法兰界面，安装便捷安全，由于抗倾斜力矩很高，这款高精度行星减速机可以完成许多高难度任务。

The TB series reducer adopts a standardized flange interface. The installation is convenient and quick. Due to its integral structure design, this high-precision model can operate excellently in many demanding working environment.

TB142			单节 One Stage							双节 Two Stage											
①速比 Speed Ratio		i	3	4	5	6	7	8	9	10	15	20	25	30	35	40	50	60	70	80	100
额定输出力矩 Norminal Output Torque	T_1	Nm	342	542	650	600	550	500	-	450	342	542	650	600	550	500	650	600	550	500	450
急停扭矩 Emergency Stop Torque	T_2	Nm	$T_1\times3$							$T_1\times3$											
额定输入转速 Norminal Input Speed	S_1	rpm	3000							3000											
最大输入转速 Maximum Input Speed	S_2	rpm	6000							6000											
最大输出力矩 Maximum Output Torque	T_4	Nm	$T_1\times3\times60\%$							$T_1\times3\times60\%$											
②最大径向力 Maximum Radial Force	F_a	N	9400							9400											
②最大轴向力 Maximum Axial Force	F_b	N	4700							4700											
扭转刚性 Torsional Rigidity	-	Nm/arcmin	50							50											
效率 Effciency	η	%	≥97							≥94											
③寿命 Service Life	-	h	20000							20000											
④反馈噪音 Noise	-	dB	≤65							≤65											
重量 Weight	-	Kg	14.5							17.5											
回程间隙 Backlash	P0	arcmin	≤1							≤3											
	P1		≤3							≤5											
	P2		≤5							≤7											
使用温度 Operating Temperature	-	℃	-20~90							-20~90											
润滑 Lubrication		-	合成润滑油脂 Synthetic Grease							合成润滑油脂 Synthetic Grease											
防护等级 Protection Class		-	IP65							IP65											
安装方向 Mounting Position		-	任意方向 Any Direction							任意方向 Any Direction											
转动惯量 Moment of Inertia	J	kg.cm²	9.21	7.54	7.42	7.25	7.14	7.07	-	7.03	2.71						2.57				

依据说明:

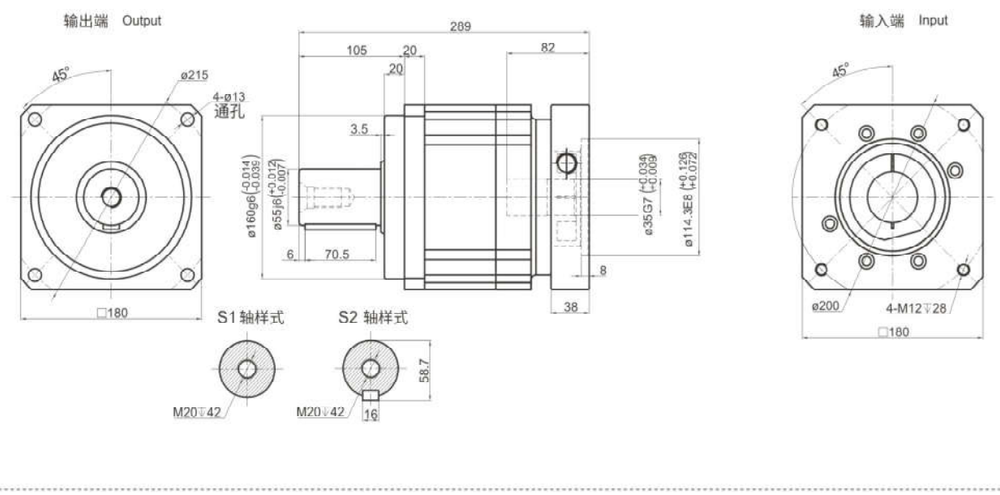
① 变速比($i=S_{in}/S_{out}$)
② 结果输出转速100rpm时， 作用于输出轴中心。
③ 连续运转寿命10000h。
④ 噪音值基于输入转速3000rpm, i=10所得。

Notes:

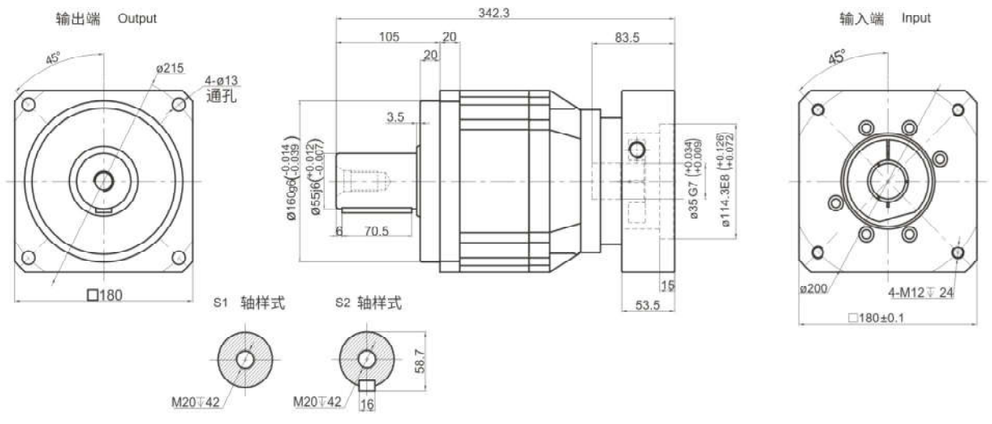
① Speed ratio ($i=Sin/Sout$)
② When the output speed is 100 rpm, it acts on the center of the output shaft.
③ For continous operation, the service life is no lessthan 10,000 hours.
④ The noise value was measured based on the input rotational speed of 3000 rpm, i=10.

TB180系列* TB180 Series 外形尺寸表

TB180单节* TB180 One Stage



TB180双节* TB180 Two Stage



性能资料 Performance data

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The TB series reducer adopts a standardized flange interface. The installation is convenient and quick. Due to its integral structure design, this high-precision model can operate excellently in many demanding working environment.

TB180			单节 One Stage								双节 Two Stage										
①速比 Speed Ratio		i	3	4	5	6	7	8	9	10	15	20	25	30	35	40	50	60	70	80	100
额定输出力矩 Norminal Output Torque	T_1	Nm	588	1050	1200	1100	1100	1000	-	900	588	1050	1200	1100	1100	1000	1200	1100	1100	1000	900
急停扭矩 Emergency Stop Torque	T_2	Nm	T_1×3								T_1×3										
额定输入转速 Norminal Input Speed	S_1	rpm	3000								3000										
最大输入转速 Maximum Input Speed	S_2	rpm	6000								6000										
最大输出力矩 Maximum Output Torque	T_4	Nm	T_1×3×60%								T_1×3×60%										
②最大径向力 Maximum Radial Force	F_a	N	14500								14500										
②最大轴向力 Maximum Axial Force	F_b	N	7250								7250										
扭转刚性 Torsional Rigidity	-	Nm/arcmin	145								145										
效率 Efficiency	η	%	≥97								≥94										
③寿命 Service Life	–	h	20000								20000										
④反馈噪音 Noise	–	dB	≤66								≤66										
重量 Weight	–	Kg	29								33										
回程间隙 Backlash	P0	arcmin	≤1								≤3										
	P1		≤3								≤5										
	P2		≤5								≤7										
使用温度 Operating Temperature	–	℃	-20~90								-20~90										
润滑 Lubrication		–	合成润滑油脂 Synthetic Grease								合成润滑油脂 Synthetic Grease										
防护等级 Protection Class		–	IP65								IP65										
安装方向 Mounting Position		–	任意方向 Any Direction								任意方向 Any Direction										
转动惯量 Moment of Inertia	J	$kg.cm^2$	28.98	23.67	23.29	22.75	22.48	22.59	–	22.51	7.42						7.03				

依据说明:

① 变速比($i=S_{in}/S_{out}$)

② 结果输出转速100rpm时， 作用于输出轴中心。

③ 连续运转寿命10000h。

④ 噪音值基于输入转速3000rpm, i=10所得。

Notes:

① Speed ratio (i=Sin/Sout)

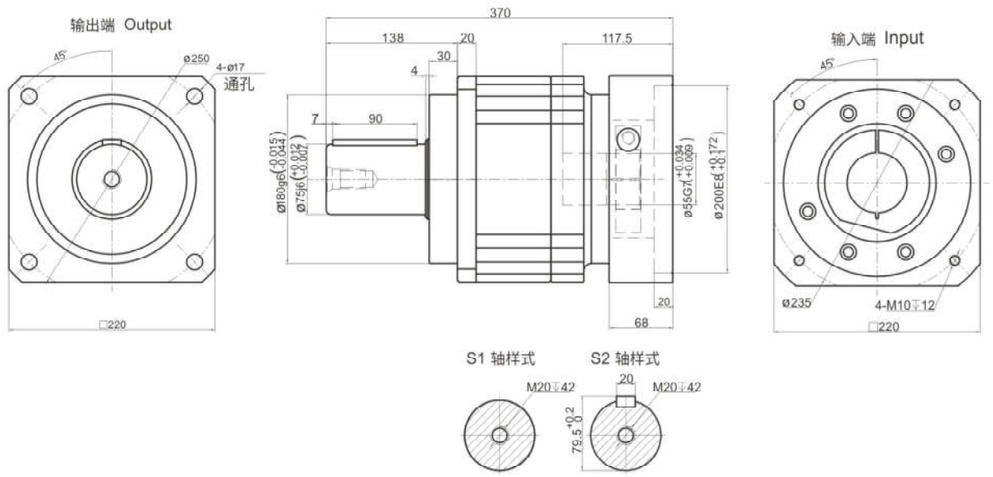
② When the output speed is 100 rpm, it acts on the center of the output shaft.

③ For continous operation, the service life is no lessthan 10,000 hours.

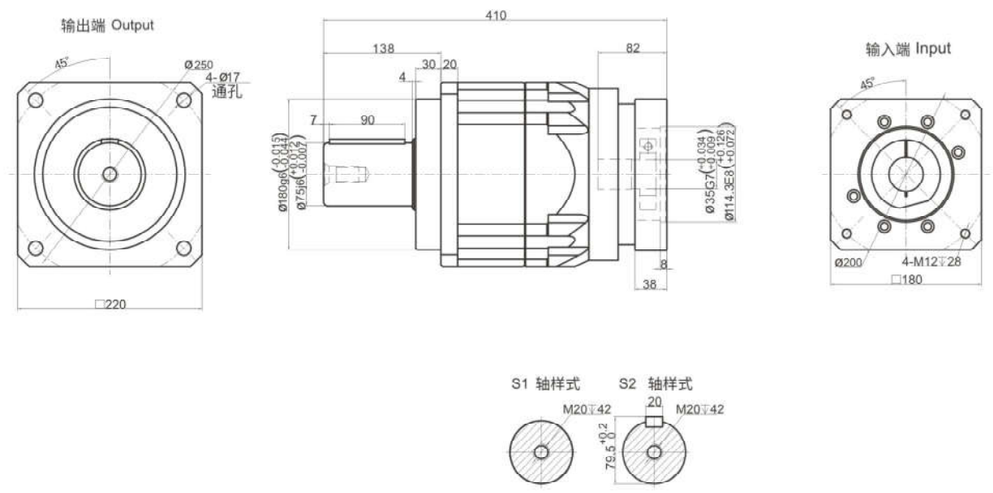
④ The noise value was measured based on the input rotational speed of 3000 rpm, i=10.

TB220系列* Tb220 Series　　外形尺寸表

TB220单节* TB220 One Stage



TB220双节* TB220 Two Stage



性能资料 Performance data

TB系列减速机采用了标准化的法兰界面，安装便捷安全，由于抗倾斜力矩很高，这款高精度行星减速机可以完成许多高难度任务。

The TB series reducer adopts a standardized flange interface. The installation is convenient and quick. Due to its integral structure design, this high-precision model can operate excellently in many demanding working environment.

TB220			单节 One Stage								双节 Two Stage										
①速比 Speed Ratio		i	3	4	5	6	7	8	9	10	15	20	25	30	35	40	50	60	70	80	100
额定输出力矩 Norminal Output Torque	T_1	Nm	1140	1700	2000	1900	1800	1600	-	1500	1140	1700	2000	1900	1800	1600	2000	1900	1800	1600	1500
急停扭矩 Emergency Stop Torque	T_2	Nm	$T_1\times3$								$T_1\times3$										
额定输入转速 Norminal Input Speed	S_1	rpm	2000								2000										
最大输入转速 Maximum Input Speed	S_2	rpm	4000								4000										
最大输出力矩 Maximum Output Torque	T_4	Nm	$T_1\times3\times60\%$								$T_1\times3\times60\%$										
②最大径向力 Maximum Radial Force	F_a	N	50000								50000										
②最大轴向力 Maximum Axial Force	F_b	N	25000								25000										
扭转刚性 Torsional Rigidity	-	Nm/arcmin	225								225										
效率 Effciency	η	%	≥97								≥94										
③寿命 Service Life	-	h	20000								20000										
④反馈噪音 Noise	-	dB	≤70								≤70										
重量 Weight	-	Kg	48								60										
回程间隙 Backlash	P0	arcmin	≤1								≤3										
	P1		≤3								≤5										
	P2		≤5								≤7										
使用温度 Operating Temperature	-	℃	-20~90								-20~90										
润滑 Lubrication		-	合成润滑油脂 Synthetic Grease								合成润滑油脂 Synthetic Grease										
防护等级 Protection Class		-	IP65								IP65										
安装方向 Mounting Position		-	任意方向 Any Direction								任意方向 Any Direction										
转动惯量 Moment of Inertia	J	$kg.cm^2$	69.61	54.37	53.27	51.72	50.97	50.84	-	50.56	23.29						22.51				

依据说明:

① 变速比($i=S_{in}/S_{out}$)

② 结果输出转速100rpm时， 作用于输出轴中心。

③ 连续运转寿命10000h。

④ 噪音值基于输入转速3000rpm, i=10所得。

Notes:

① Speed ratio ($i=Sin/Sout$)

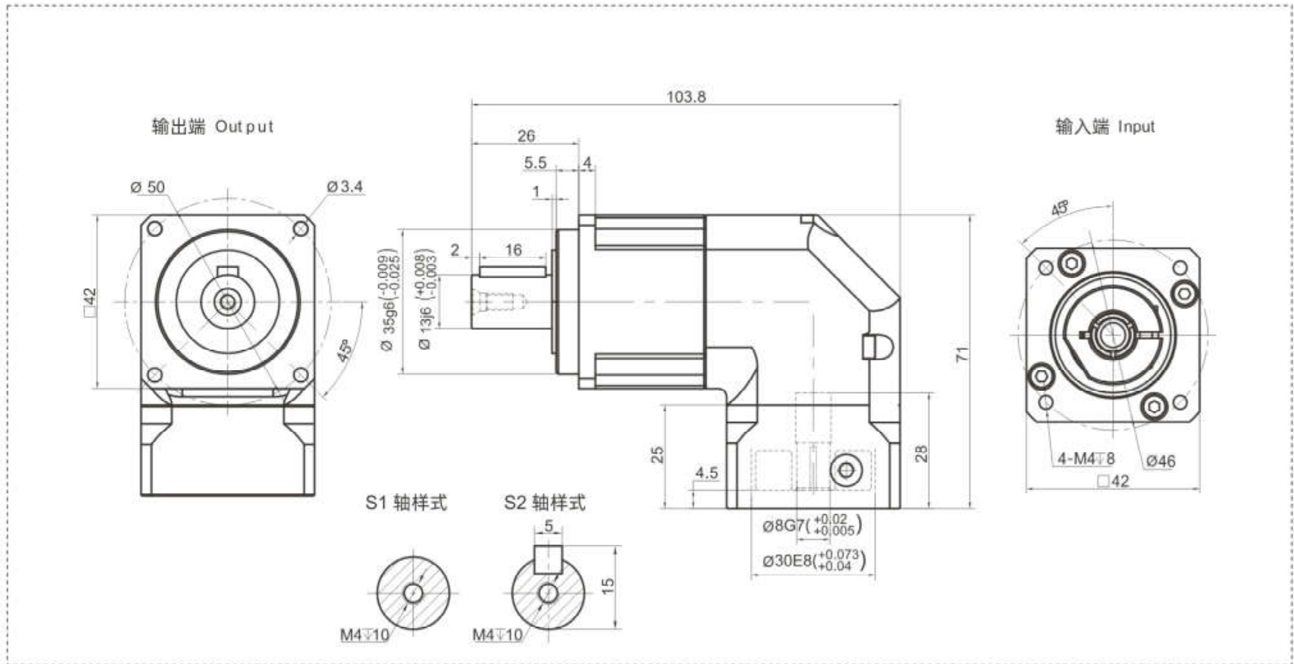
② When the output speed is 100 rpm, it acts on the center of the output shaft.

③ For continous operation, the service life is no lessthan 10,000 hours.

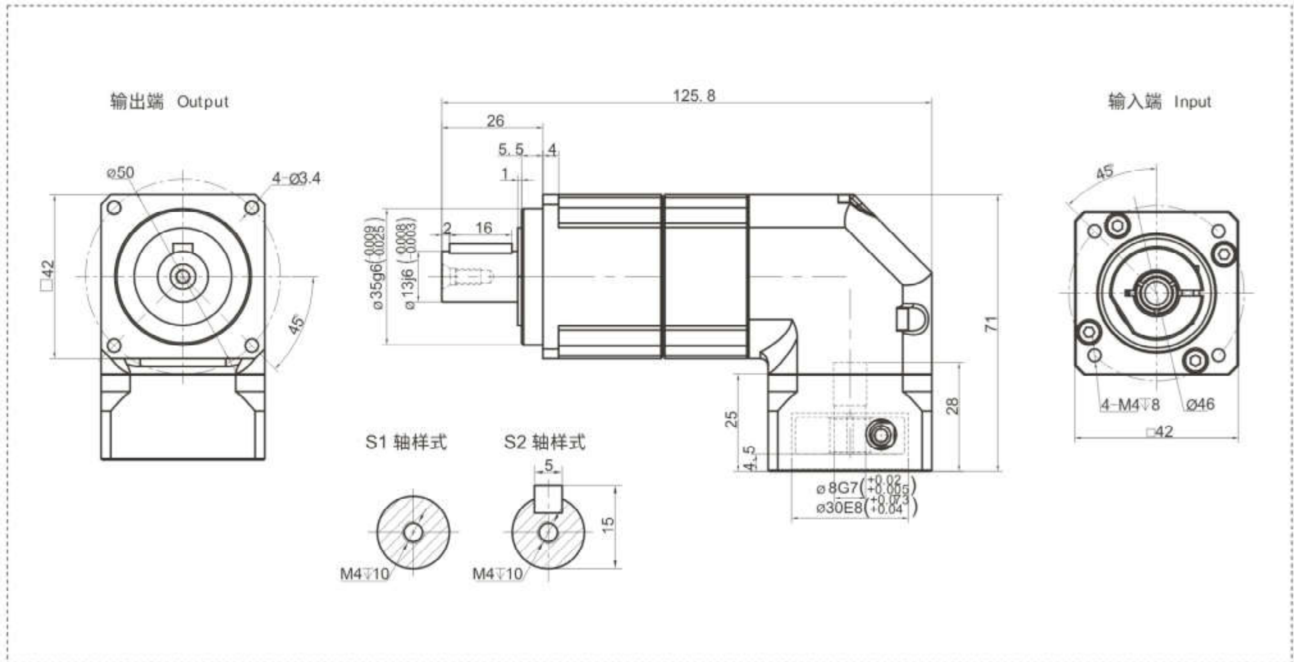
④ The noise value was measured based on the input rotational speed of 3000 rpm, i=10.

TBR042系列* TBR042 Series　　外形尺寸表

TBR042单节* TBR042 One Stage



TBR042双节* TBR042 Two Stage



性能资料 Performance data

TB系列减速机采用了标准化的法兰界面，安装便捷安全，由于抗倾斜力矩很高，这款高精度行星减速机可以完成许多高难度任务。

The TB series reducer adopts a standardized flange interface. The installation is convenient and quick. Due to its integral structure design, this high-precision model can operate excellently in many demanding working environment.

TBR042																												
①速比 Speed Ratio		i	–	4	5	6	7	8	9	10	12	14	16	20	25	30	35	40	50	60	70	80	100	120	140	160	180	200
额定输出力矩 Norminal Output Torque	T_1	Nm	–	12	15	18	19	17	-	14	18	-	17	14	15	20	19	17	14	20	19	17	14	-	-	-	-	-

TBR042			单节 One Stage	双节 Two Stage
急停扭矩 Emergency Stop Torque	T_2	Nm	$T_1 \times 3$	$T_1 \times 3$
额定输入转速 Norminal Input Speed	S_1	rpm	5000	5000
最大输入转速 Maximum Input Speed	S_2	rpm	10000	10000
最大输出力矩 Maximum Output Torque	T_4	Nm	$T_1 \times 3 \times 60\%$	$T_1 \times 3 \times 60\%$
②最大径向力 Maximum Radial Force	F_a	N	780	780
②最大轴向力 Maximum Axial Force	F_b	N	390	390
扭转刚性 Torsional Rigidity	–	Nm/arcmin	3	3
效率 Effciency	η	%	⩾95	⩾92
③寿命 Service Life	–	h	20000	20000
④反馈噪音 Noise	–	dB	⩽61	⩽61
重量 Weight	–	Kg	0.9	1.2
回程间隙 Backlash	P0	arcmin	-	-
	P1	arcmin	⩽4	⩽7
	P2	arcmin	⩽6	⩽9
使用温度 Operating Temperature	–	℃	-20~90	-20~90
润滑 Lubrication		–	合成润滑油脂 Synthetic Grease	合成润滑油脂 Synthetic Grease
防护等级 Protection Class		–	IP65	IP65
安装方向 Mounting Position		–	任意方向 Any Direction	任意方向 Any Direction
转动惯量 Moment of Inertia	J	kg.cm²	0.09	0.09

依据说明:

① 变速比($i=S_{in}/S_{out}$)
② 结果输出转速100rpm时，作用于输出轴中心。
③ 连续运转寿命10000h。
④ 噪音值基于输入转速3000rpm, i=10所得。

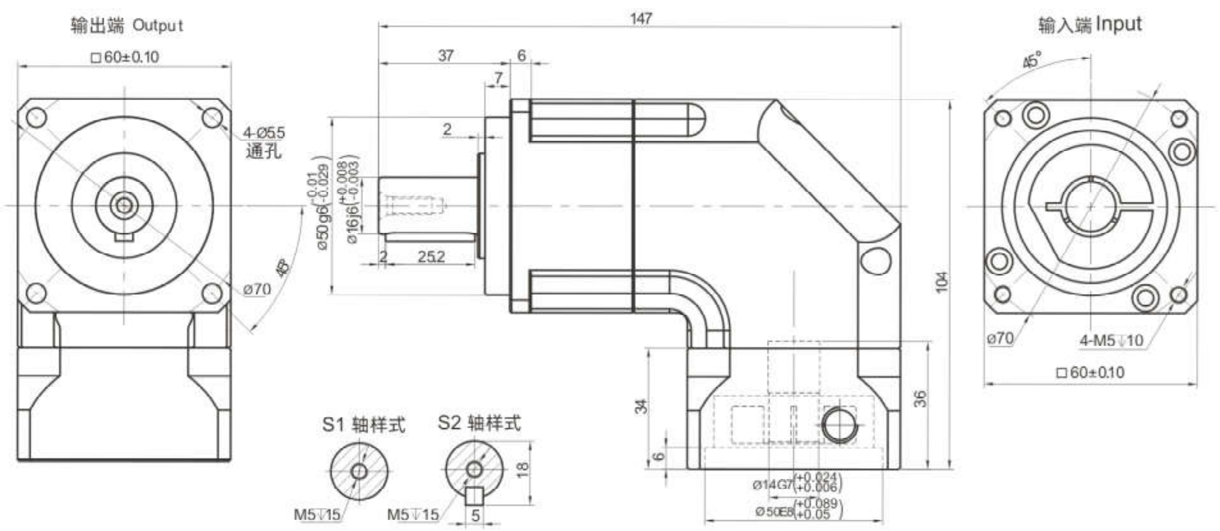
Notes:

① Speed ratio (i=Sin/Sout)
② When the output speed is 100 rpm, it acts on the center of the output shaft.
③ For continous operation, the service life is no lessthan 10,000 hours.
④ The noise value was measured based on the input rotational speed of 3000 rpm, i=10.

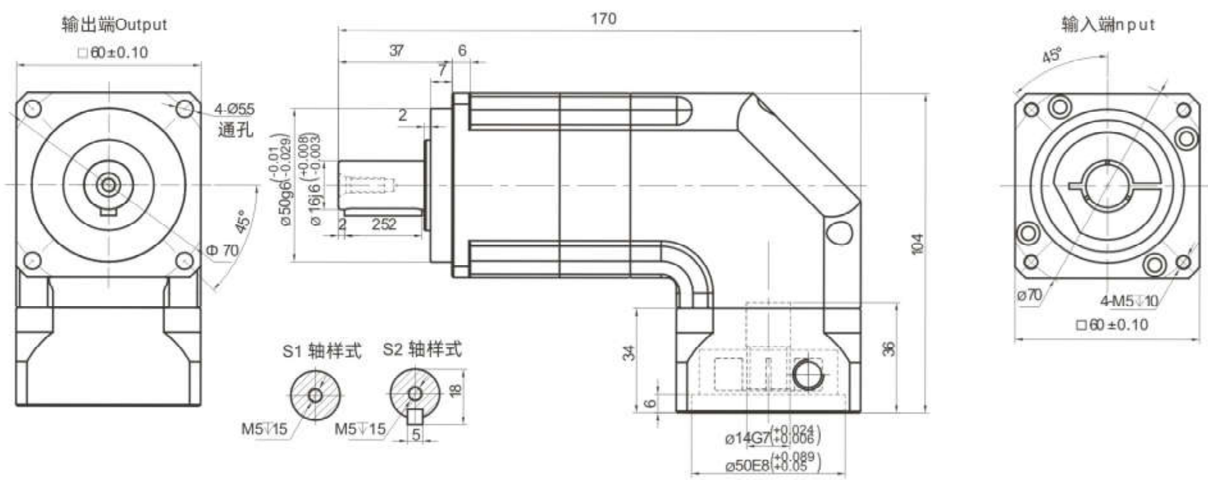
TB系列——高度灵活
TB Series - High Speed and Precision

TBR060系列* TBR060 Series 外形尺寸表

TBR060单节* TBR060 One Stage



TBR060双节* TBR060 Two Stage



性能资料 Performance data

TB系列减速机采用了标准化的法兰界面，安装便捷安全，由于抗倾斜力矩很高，这款高精度行星减速机可以完成许多高难度任务。

The TB series reducer adopts a standardized flange interface. The installation is convenient and quick. Due to its integral structure design, this high-precision model can operate excellently in many demanding working environment.

TBR060			单节 One Stage												双节 Two Stage													
①速比 Speed Ratio		i	3	4	5	6	7	8	9	10	12	14	16	20	25	30	35	40	50	60	70	80	100	120	140	160	180	200
额定输出力矩 Norminal Output Torque	T_1	Nm	36	48	60	55	50	45	-	40	55	42	45	40	60	55	50	45	60	55	50	45	40	55	50	45	-	40
急停扭矩 Emergency Stop Torque	T_2	Nm	$T_1\times3$												$T_1\times3$													
额定输入转速 Norminal Input Speed	S_1	rpm	5000												5000													
最大输入转速 Maximum Input Speed	S_2	rpm	10000												10000													
最大输出力矩 Maximum Output Torque	T_4	Nm	$T_1\times3\times60\%$												$T_1\times3\times60\%$													
②最大径向力 Maximum Radial Force	F_a	N	1530												1530													
②最大轴向力 Maximum Axial Force	F_b	N	765												765													
扭转刚性 Torsional Rigidity	–	Nm/arcmin	7												7													
效率 Effciency	η	%	≥95												≥92													
③寿命 Service Life	–	h	20000												20000													
④反馈噪音 Noise	–	dB	≤63												≤63													
重量 Weight	–	Kg	1.5												2.1													
回程间隙 Backlash	P0		-												-													
	P1	arcmin	≤4												≤7													
	P2		≤6												≤9													
使用温度 Operating Temperature	–	℃	-20~90												-20~90													
润滑 Lubrication		–	合成润滑油脂 Synthetic Grease												合成润滑油脂 Synthetic Grease													
防护等级 Protection Class		–	IP65												IP65													
安装方向 Mounting Position		–	任意方向 Any Direction												任意方向 Any Direction													
转动惯量 Moment of Inertia	J	kg.cm²	0.35							0.07					0.09													

依据说明:

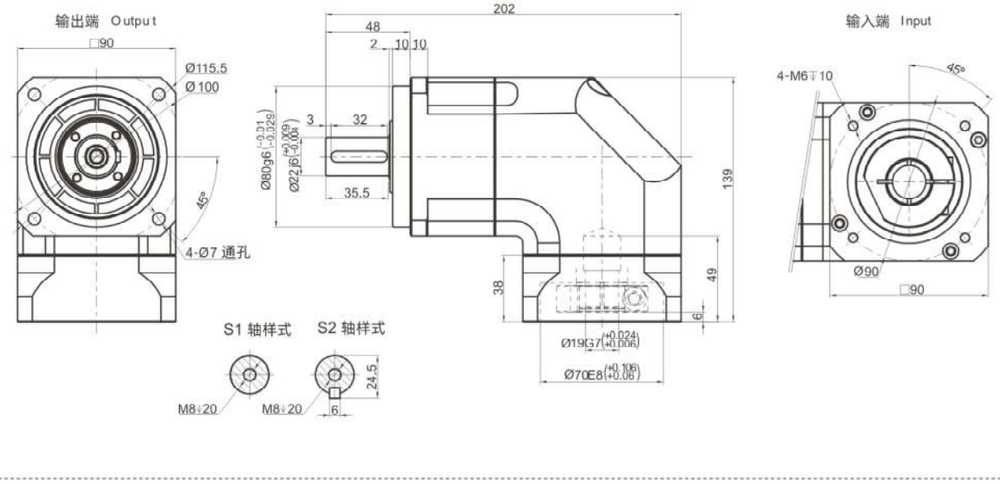
① 变速比($i=S_{in}/S_{out}$)
② 结果输出转速100rpm时，作用于输出轴中心。
③ 连续运转寿命10000h。
④ 噪音值基于输入转速3000rpm, i=10所得。

Notes:

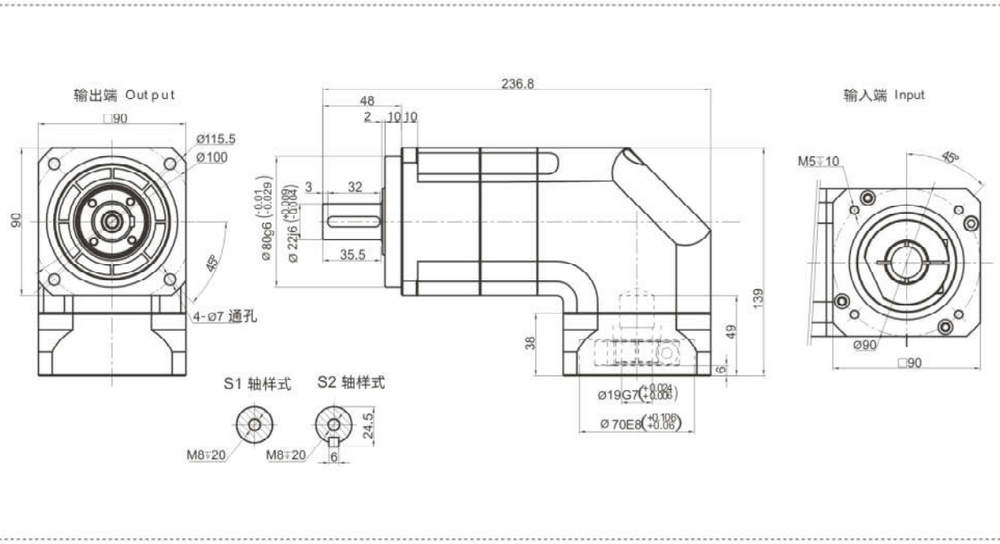
① Speed ratio (i=Sin/Sout)
② When the output speed is 100 rpm, it acts on the center of the output shaft.
③ For continous operation, the service life is no lessthan 10,000 hours.
④ The noise value was measured based on the input rotational speed of 3000 rpm, i=10.

TBR090系列* TBR090 Series 外形尺寸表

TBR090单节* TBR090 One Stage



TBR090双节* TBR090 Two Stage



性能资料 Performance data

TB系列减速机采用了标准化的法兰界面，安装便捷安全，由于抗倾斜力矩很高，这款高精度行星减速机可以完成许多高难度任务。

The TB series reducer adopts a standardized flange interface. The installation is convenient and quick. Due to its integral structure design, this high-precision model can operate excellently in many demanding working environment.

TBR090			单节 One Stage		双节 Two Stage	
①速比 Speed Ratio	i		3 4 5 6 7 8 9 10 12 14 16 20 25 30 35 40 50 60 70 80 100 120 140 160 180 200			
额定输出力矩 Norminal Output Torque	T_1	Nm	90 120 150 150 140 120 - 100		150 140 120 100 150 150 140 120 100 150 140 120 100 150 140 120 - 100	
急停扭矩 Emergency Stop Torque	T_2	Nm	T_1×3		T_1×3	
额定输入转速 Norminal Input Speed	S_1	rpm	4000		4000	
最大输入转速 Maximum Input Speed	S_2	rpm	8000		8000	
最大输出力矩 Maximum Output Torque	T_4	Nm	T_1×3×60%		T_1×3×60%	
②最大径向力 Maximum Radial Force	F_a	N	3250		3250	
②最大轴向力 Maximum Axial Force	F_b	N	1625		1625	
扭转刚性 Torsional Rigidity	–	Nm/arcmin	14		14	
效率 Effciency	η	%	⩾95		⩾92	
③寿命 Service Life	–	h	20000		20000	
④反馈噪音 Noise	–	dB	⩽65		⩽65	
重量 Weight	–	Kg	6.4		7.7	
回程间隙 Backlash	P0	arcmin	⩽2		⩽4	
	P1		⩽4		⩽7	
	P2		⩽6		⩽9	
使用温度 Operating Temperature	–	℃	-20~90		-20~90	
润滑 Lubrication		–	合成润滑油脂 Synthetic Grease		合成润滑油脂 Synthetic Grease	
防护等级 Protection Class		–	IP65		IP65	
安装方向 Mounting Position		–	任意方向 Any Direction		任意方向 Any Direction	
转动惯量 Moment of Inertia	J	kg.cm²	2.25	1.87	0.35	0.31

依据说明:

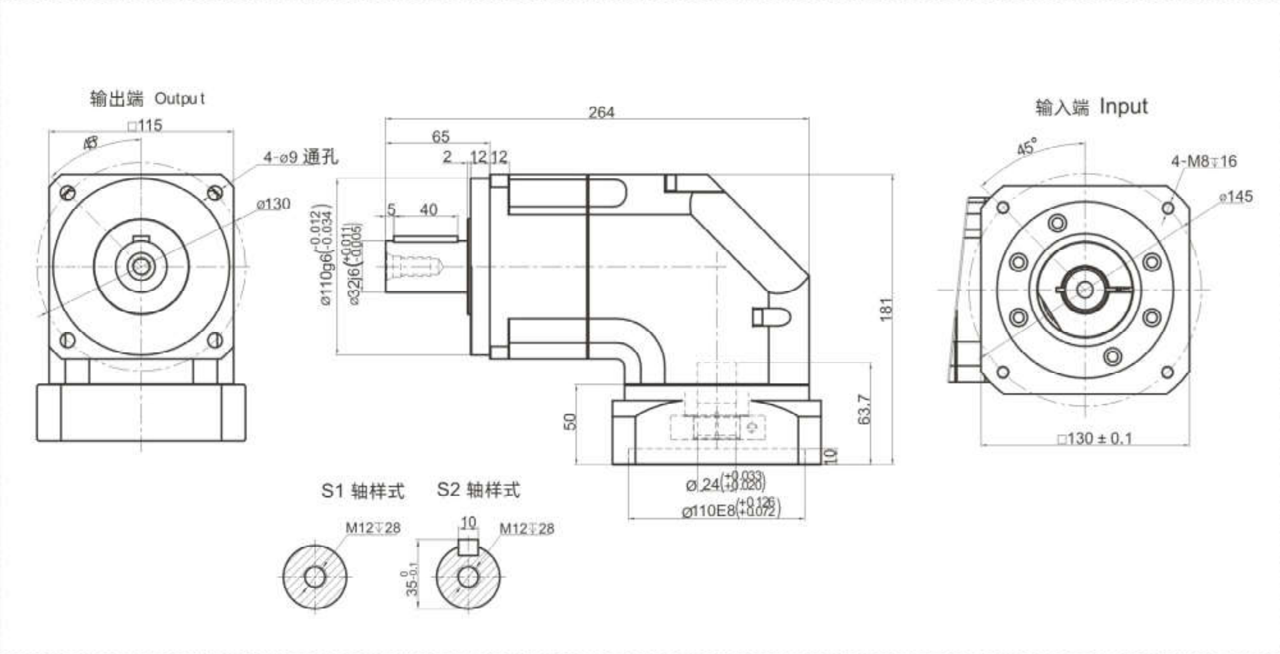
① 变速比($i=S_{in}/S_{out}$)
② 结果输出转速100rpm时， 作用于输出轴中心。
③ 连续运转寿命10000h。
④ 噪音值基于输入转速3000rpm, i=10所得。

Notes:

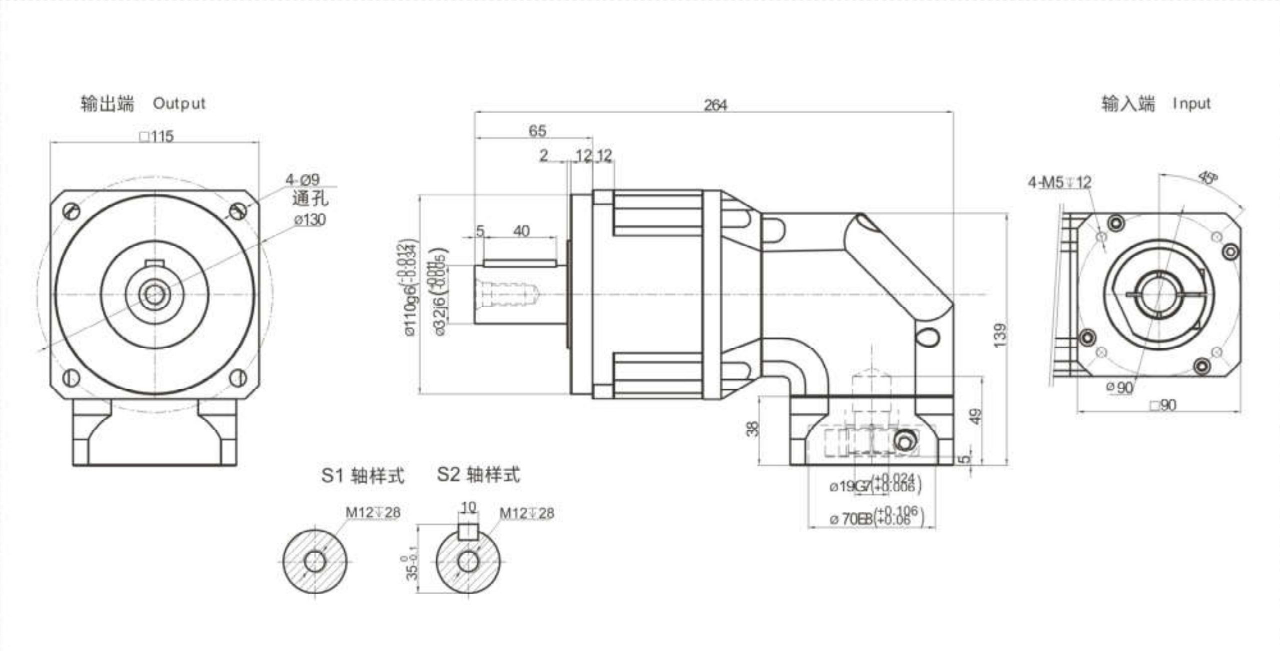
① Speed ratio (i=Sin/Sout)
② When the output speed is 100 rpm, it acts on the center of the output shaft.
③ For continous operation, the service life is no lessthan 10,000 hours.
④ The noise value was measured based on the input rotational speed of 3000 rpm, i=10.

TBR115系列* TBR115 Series 外形尺寸表

TBR115单节* TBR115 One Stage



TBR115双节* TBR115 Two Stage



性能资料 Performance data

TB系列减速机采用了标准化的法兰界面，安装便捷安全，由于抗倾斜力矩很高，这款高精度行星减速机可以完成许多高难度任务。

The TB series reducer adopts a standardized flange interface. The installation is convenient and quick. Due to its integral structure design, this high-precision model can operate excellently in many demanding working environment.

TBR115			单节 One Stage												双节 Two Stage															
①速比 Speed Ratio		i	3	4	5	6	7	8	9	10	12	14	16	20	25	30	35	40	50	60	70	80	100	120	140	160	180	200
额定输出力矩 Norminal Output Torque	T_1	Nm	195	260	325	310	300	260	-	230	310	300	260	230	325	310	300	260	230	310	300	260	230	310	300	260	-	230
急停扭矩 Emergency Stop Torque	T_2	Nm	$T_1 \times 3$												$T_1 \times 3$															
额定输入转速 Norminal Input Speed	S_1	rpm	4000												4000															
最大输入转速 Maximum Input Speed	S_2	rpm	8000												8000															
最大输出力矩 Maximum Output Torque	T_4	Nm	$T_1 \times 3 \times 60\%$												$T_1 \times 3 \times 60\%$															
②最大径向力 Maximum Radial Force	F_a	N	6700												6700															
②最大轴向力 Maximum Axial Force	F_b	N	3350												3350															
扭转刚性 Torsional Rigidity	–	Nm/arcmin	25												25															
效率 Efficiency	η	%	≥95												≥92															
③寿命 Service Life	–	h	20000												20000															
④反馈噪音 Noise	–	dB	≤68												≤68															
重量 Weight	–	Kg	13												14															
回程间隙 Backlash	P0	arcmin	≤2												≤4															
	P1	arcmin	≤4												≤7															
	P2	arcmin	≤6												≤9															
使用温度 Operating Temperature	–	℃	-20~90												-20~90															
润滑 Lubrication		–	合成润滑油脂 Synthetic Grease												合成润滑油脂 Synthetic Grease															
防护等级 Protection Class		–	IP65												IP65															
安装方向 Mounting Position		–	任意方向 Any Direction												任意方向 Any Direction															
转动惯量 Moment of Inertia	J	kg.cm²	6.84							6.25					2.25									1.87						

依据说明:

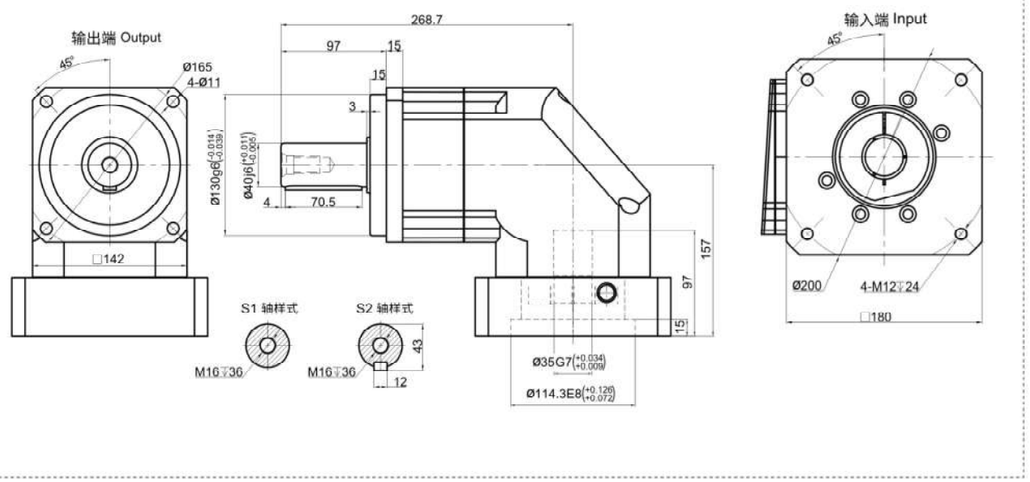
① 变速比($i=S_{in}/S_{out}$)
② 结果输出转速100rpm时，作用于输出轴中心。
③ 连续运转寿命10000h。
④ 噪音值基于输入转速3000rpm, i=10所得。

Notes:

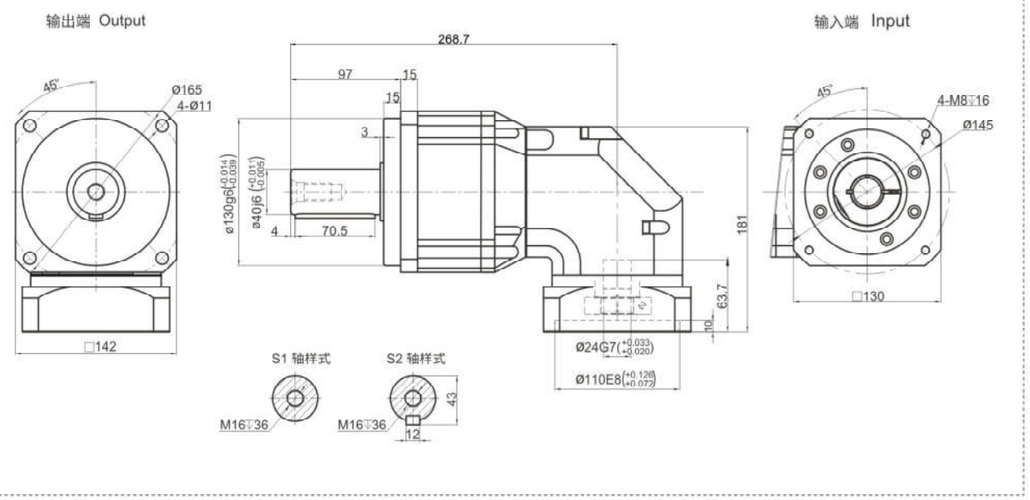
① Speed ratio (i=Sin/Sout)
② When the output speed is 100 rpm, it acts on the center of the output shaft.
③ For continous operation, the service life is no lessthan 10,000 hours.
④ The noise value was measured based on the input rotational speed of 3000 rpm, i=10.

TBR142系列* TBR142 Series　外形尺寸表

TBR142单节* TBR142 One Stage



TBR142双节* TBR142 Two Stage



性能资料 Performance data

TB系列减速机采用了标准化的法兰界面，安装便捷安全，由于抗倾斜力矩很高，这款高精度行星减速机可以完成许多高难度任务。

The TB series reducer adopts a standardized flange interface. The installation is convenient and quick. Due to its integral structure design, this high-precision model can operate excellently in many demanding working environment.

TBR142			单节 One Stage																	双节 Two Stage																	
①速比 Speed Ratio	i		3	4	5	6	7	8	9	10	12	14	16	20	25	30	35	40	50	60	70	80	100	120	140	160	180	200										
额定输出力矩 Norminal Output Torque	T_1	Nm	342	520	650	600	550	500	-	450	600	550	500	450	650	600	550	500	650	600	550	500	450	600	550	550	-	450										
急停扭矩 Emergency Stop Torque	T_2	Nm	$T_1 \times 3$																$T_1 \times 3$																			
额定输入转速 Norminal Input Speed	S_1	rpm	3000																3000																			
最大输入转速 Maximum Input Speed	S_2	rpm	6000																6000																			
最大输出力矩 Maximum Output Torque	T_4	Nm	$T_1 \times 3 \times 60\%$																$T_1 \times 3 \times 60\%$																			
②最大径向力 Maximum Radial Force	F_a	N	9400																9400																			
②最大轴向力 Maximum Axial Force	F_b	N	4700																4700																			
扭转刚性 Torsional Rigidity	–	Nm/arcmin	50																50																			
效率 Efficiency	η	%	≥95																≥92																			
③寿命 Service Life	–	h	20000																20000																			
④反馈噪音 Noise	–	dB	≤70																≤70																			
重量 Weight	–	Kg	24.5																27.5																			
回程间隙 Backlash	P0	arcmin	≤2																≤4																			
	P1		≤4																≤7																			
	P2		≤6																≤9																			
使用温度 Operating Temperature	–	℃	-20~90																-20~90																			
润滑 Lubrication	–		合成润滑油脂 Synthetic Grease																合成润滑油脂 Synthetic Grease																			
防护等级 Protection Class	–		IP65																IP65																			
安装方向 Mounting Position	–		任意方向 Any Direction																任意方向 Any Direction																			
转动惯量 Moment of Inertia	J	kg.cm²	23.4							21.8									6.84																	6.25		

依据说明:

① 变速比($i=S_{in}/S_{out}$)

② 结果输出转速100rpm时，作用于输出轴中心。

③ 连续运转寿命10000h。

④ 噪音值基于输入转速3000rpm, i=10所得。

Notes:

① Speed ratio ($i=Sin/Sout$)

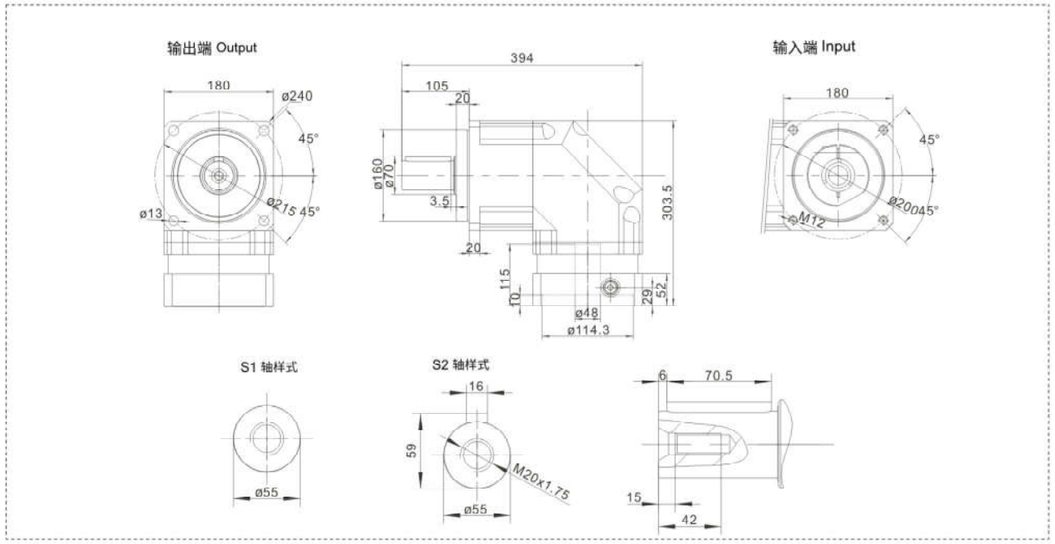
② When the output speed is 100 rpm, it acts on the center of the output shaft.

③ For continous operation, the service life is no lessthan 10,000 hours.

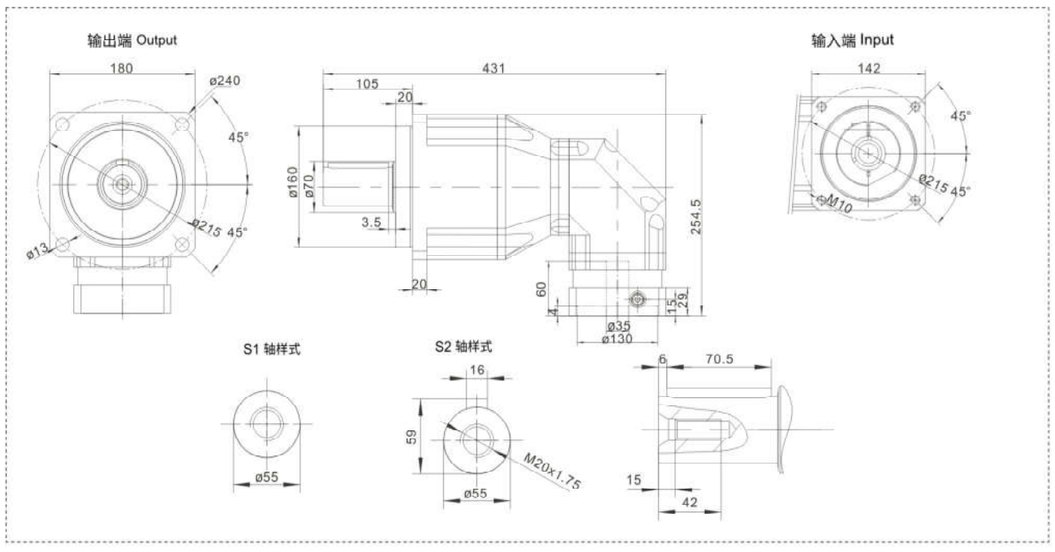
④ The noise value was measured based on the input rotational speed of 3000 rpm, i=10.

TBR180系列* TBR180 Series 外形尺寸表

TBR180单节* TBR180 One Stage



TBR180双节* TBR180 Two Stage



性能资料 Performance data

TB系列减速机采用了标准化的法兰界面，安装便捷安全，由于抗倾斜力矩很高，这款高精度行星减速机可以完成许多高难度任务。

The TB series reducer adopts a standardized flange interface. The installation is convenient and quick. Due to its integral structure design, this high-precision model can operate excellently in many demanding working environment.

TBR180			单节 One Stage																双节 Two Stage															
①速比 Speed Ratio	i		3	4	5	6	7	8	9	10	12	14	16	20	25	30	35	40	50	60	70	80	100	120	140	160	180	200
额定输出力矩 Norminal Output Torque	T_1	Nm	588	1040	1200	1100	1100	1000	-	900	-	1100	1000	900	1200	1100	1100	1000	1200	1100	1100	1000	900	1100	1100	1000	-	900
急停扭矩 Emergency Stop Torque	T_2	Nm	$T_1 \times 3$												$T_1 \times 3$													
额定输入转速 Norminal Input Speed	S_1	rpm	3000												3000													
最大输入转速 Maximum Input Speed	S_2	rpm	6000												6000													
最大输出力矩 Maximum Output Torque	T_4	Nm	$T_1 \times 3 \times 60\%$												$T_1 \times 3 \times 60\%$													
②最大径向力 Maximum Radial Force	F_a	N	14500												14500													
②最大轴向力 Maximum Axial Force	F_b	N	7250												7250													
扭转刚性 Torsional Rigidity	–	Nm/arcmin	145												145													
效率 Effciency	η	%	≥95												≥92													
③寿命 Service Life	–	h	20000												20000													
④反馈噪音 Noise	–	dB	≤72												≤72													
重量 Weight	–	Kg	51												54													
回程间隙 Backlash	P0	arcmin	≤2												≤4													
	P1		≤4												≤7													
	P2		≤6												≤9													
使用温度 Operating Temperature	–	℃	-20~90												-20~90													
润滑 Lubrication		–	合成润滑油脂 Synthetic Grease												合成润滑油脂 Synthetic Grease													
防护等级 Protection Class		–	IP65												IP65													
安装方向 Mounting Position		–	任意方向 Any Direction												任意方向 Any Direction													
转动惯量 Moment of Inertia	J	kg.cm²	68.9							65.6					23.4													21.8

依据说明:

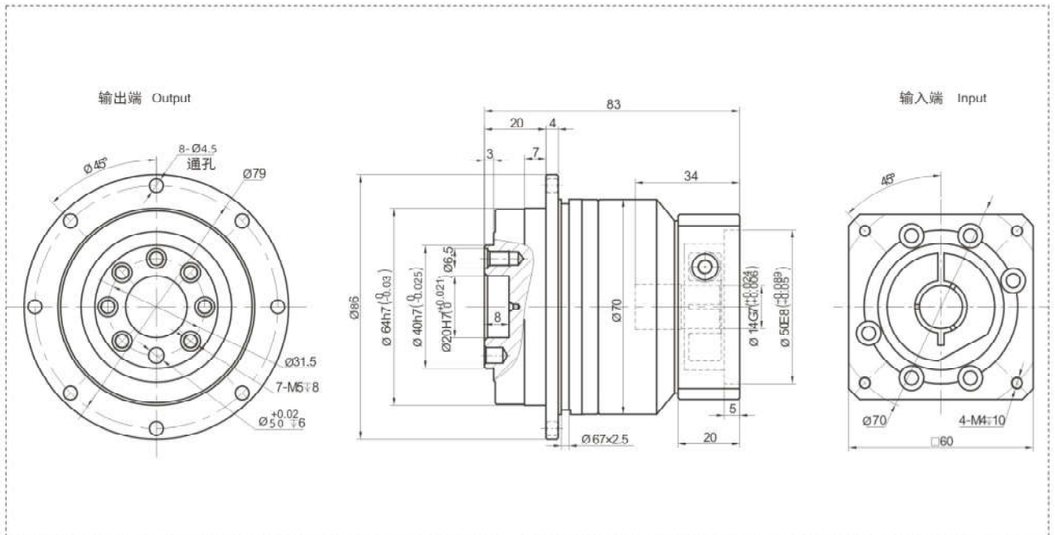
① 变速比(i=S_{in}/S_{out})
② 结果输出转速100rpm时，作用于输出轴中心。
③ 连续运转寿命10000h。
④ 噪音值基于输入转速3000rpm, i=10所得。

Notes:

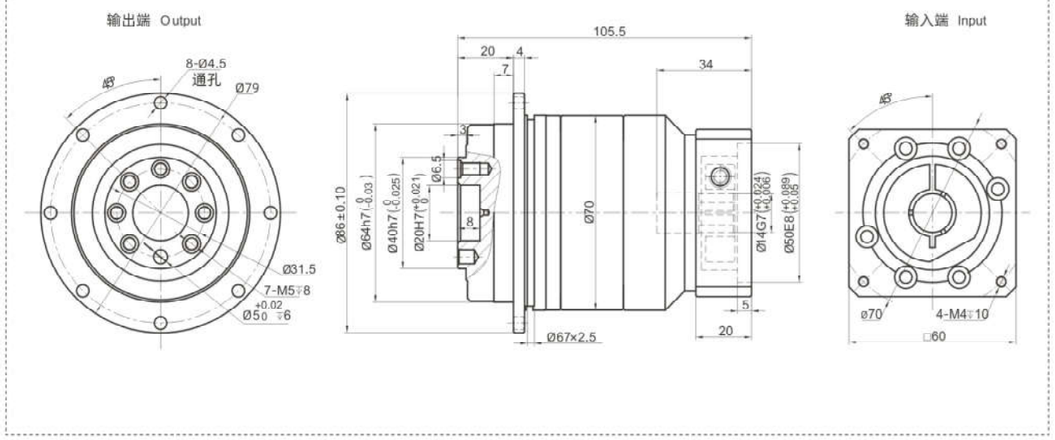
① Speed ratio (i=Sin/Sout)
② When the output speed is 100 rpm, it acts on the center of the output shaft.
③ For continous operation, the service life is no lessthan 10,000 hours.
④ The noise value was measured based on the input rotational speed of 3000 rpm, i=10.

TD064系列* TD064 Series 外形尺寸表

TD064单节* TD064 One Stage



TD064双节* TD064 Two Stage



性能资料 Performance data

TD系列减速机能满足一些非常特殊的需求，高刚度、高性能和结构紧凑多变性是该产品最主要的特点，可任意搭配。

TD series reducer offers quiet operation with high axial load and tilt moment. High quality and capacity load bearing ensures smooth operation for all flange-operated applications.

TD064			单节 One Stage				双节 Two Stage						
①速比 Speed Ratio		i	4	5	7	10	20	25	35	40	50	70	100
额定输出力矩 Norminal Output Torque	T_1	Nm	48	60	50	40	48	60	50	48	60	50	40
急停扭矩 Emergency Stop Torque	T_2	Nm	$T_1 \times 3$				$T_1 \times 3$						
额定输入转速 Norminal Input Speed	S_1	rpm	5000				5000						
最大输入转速 Maximum Input Speed	S_2	rpm	10000				10000						
最大输出力矩 Maximum Output Torque	T_4	Nm	$T_1 \times 3 \times 60\%$				$T_1 \times 3 \times 60\%$						
②最大弯曲力矩 Maximum Bending Moment	M_a	Nm	125				125						
②最大轴向力 Maximum Axial Force	F_b	N	1050				1050						
扭转刚性 Torsional Rigidity	–	Nm/arcmin	13				13						
效率 Efficiency	η	%	⩾97				⩾94						
③寿命 Service Life	–	h	30000				30000						
④反馈噪音 Noise	–	dB	⩽58				⩽58						
重量 Weight	–	Kg	1.2				1.6						
回程间隙 Backlash	P0	arcmin	⩽1				⩽3						
	P1		⩽3				⩽5						
	P2		⩽5				⩽7						
使用温度 Operating Temperature	–	℃	-20~90				-20~90						
润滑 Lubrication	–		合成润滑油脂 Synthetic Grease				合成润滑油脂 Synthetic Grease						
防护等级 Protection Class	–		IP65				IP65						
安装方向 Mounting Position	–		任意方向 Any Direction				任意方向 Any Direction						
转动惯量 Moment of Inertia	J	$kg.cm^2$	0.14	0.13			0.03						

依据说明:

① 变速比($i=S_{in}/S_{out}$)

② 结果输出转速100rpm时，作用于输出轴中心。

③ 连续运转寿命10000h。

④ 噪音值基于输入转速3000rpm, i=10所得。

Notes:

① Speed ratio ($i=Sin/Sout$)

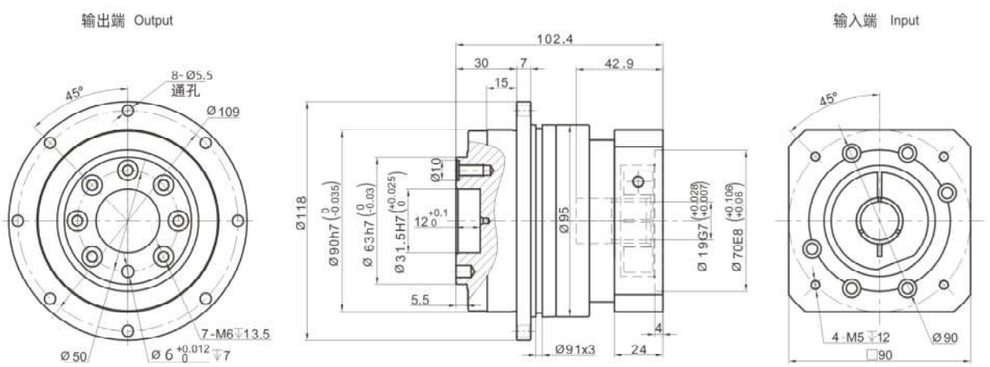
② When the output speed is 100 rpm, it acts on the center of the output shaft.

③ For continous operation, the service life is no lessthan 10,000 hours.

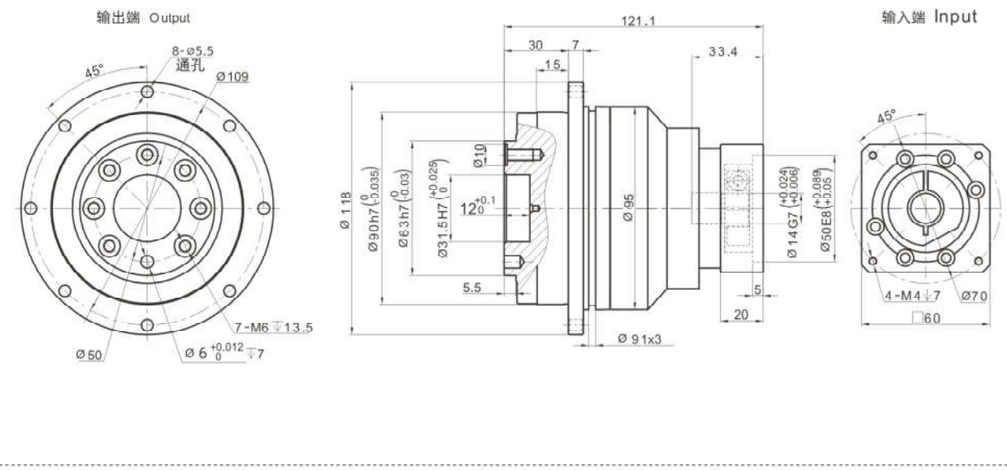
④ The noise value was measured based on the input rotational speed of 3000 rpm, i=10.

TD090系列* TD090 Series　外形尺寸表

TD090单节* TD090 One Stage



TD090双节* TD090 Two Stage



性能资料 Performance data

TD系列减速机能满足一些非常特殊的需求，高刚度、高性能和结构紧凑多变性是该产品最主要的特点，可任意搭配。

TD series reducer offers quiet operation with high axial load and tilt moment. High quality and capacity load bearing ensures smooth operation for all flange-operated applications.

TD090			单节 One Stage				双节 Two Stage						
①速比 Speed Ratio		i	4	5	7	10	20	25	35	40	50	70	100
额定输出力矩 Norminal Output Torque	T_1	Nm	130	160	140	100	130	160	140	130	160	140	100
急停扭矩 Emergency Stop Torque	T_2	Nm	T_1×3				T_1×3						
额定输入转速 Norminal Input Speed	S_1	rpm	4000				4000						
最大输入转速 Maximum Input Speed	S_2	rpm	8000				8000						
最大输出力矩 Maximum Output Torque	T_4	Nm	T_1×3×60%				T_1×3×60%						
②最大弯曲力矩 Maximum Bending Moment	M_a	Nm	235				235						
②最大轴向力 Maximum Axial Force	F_b	N	2850				2850						
扭转刚性 Torsional Rigidity	–	Nm/arcmin	31				31						
效率 Efficiency	η	%	≥97				≥94						
③寿命 Service Life	–	h	30000				30000						
④反馈噪音 Noise	–	dB	≤60				≤60						
重量 Weight	–	Kg	3.0				3.7						
回程间隙 Backlash	P0	arcmin	≤1				≤3						
	P1		≤3				≤5						
	P2		≤5				≤7						
使用温度 Operating Temperature	–	℃	-20~90				-20~90						
润滑 Lubrication	–		合成润滑油脂 Synthetic Grease				合成润滑油脂 Synthetic Grease						
防护等级 Protection Class	–		IP65				IP65						
安装方向 Mounting Position	–		任意方向 Any Direction				任意方向 Any Direction						
转动惯量 Moment of Inertia	J	$kg.cm^2$	0.51	0.47	0.45	0.44	0.13						

依据说明:

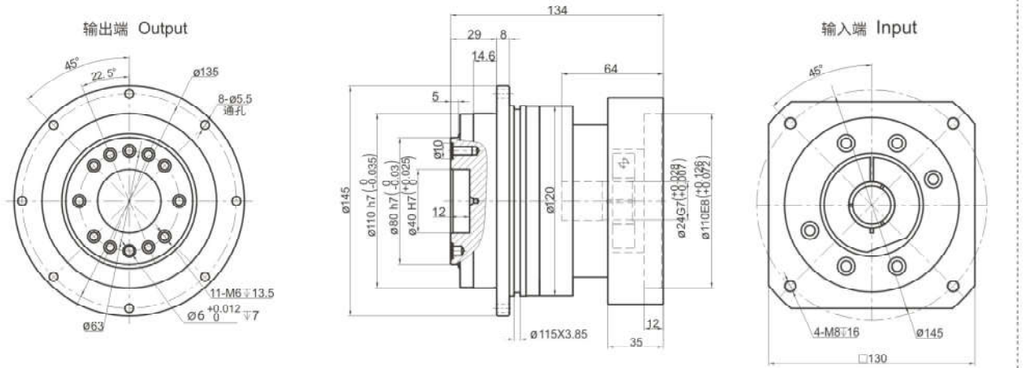
① 变速比(i=S_{in}/S_{out})
② 结果输出转速100rpm时，作用于输出轴中心。
③ 连续运转寿命10000h。
④ 噪音值基于输入转速3000rpm, i=10所得。

Notes:

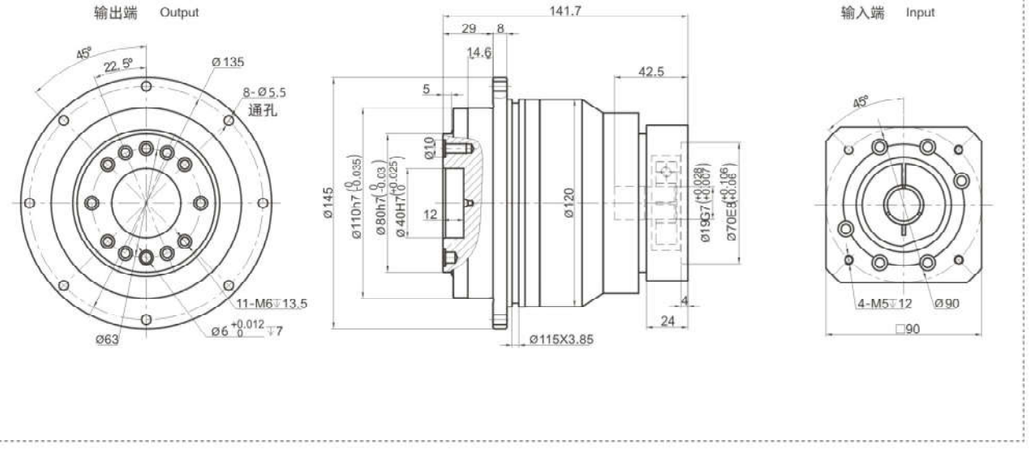
① Speed ratio (i=Sin/Sout)
② When the output speed is 100 rpm, it acts on the center of the output shaft.
③ For continous operation, the service life is no lessthan 10,000 hours.
④ The noise value was measured based on the input rotational speed of 3000 rpm, i=10.

TD110系列* TD110 Series　外形尺寸表

TD110单节* TD110 One Stage



TD110双节* TD110 Two Stage



性能资料 Performance data

TD系列减速机能满足一些非常特殊的需求，高刚度、高性能和结构紧凑多变性是该产品最主要的特点，可任意搭配。

TD series reducer offers quiet operation with high axial load and tilt moment. High quality and capacity load bearing ensures smooth operation for all flange-operated applications.

TD110			单节 One Stage				双节 Two Stage						
①速比 Speed Ratio		i	4	5	7	10	20	25	35	40	50	70	100
额定输出力矩 Norminal Output Torque	T_1	Nm	270	330	300	230	270	330	300	270	330	300	230
急停扭矩 Emergency Stop Torque	T_2	Nm	T_1×3				T_1×3						
额定输入转速 Norminal Input Speed	S_1	rpm	4000				4000						
最大输入转速 Maximum Input Speed	S_2	rpm	8000				8000						
最大输出力矩 Maximum Output Torque	T_4	Nm	T_1×3×60%				T_1×3×60%						
②最大弯曲力矩 Maximum Bending Moment	M_a	Nm	430				430						
②最大轴向力 Maximum Axial Force	F_b	N	2990				2990						
扭转刚性 Torsional Rigidity	–	Nm/arcmin	82				82						
效率 Effciency	η	%	≥97				≥94						
③寿命 Service Life	–	h	30000				30000						
④反馈噪音 Noise	–	dB	≤63				≤63						
重量 Weight	–	Kg	5.6				7.3						
回程间隙 Backlash	P0	arcmin	≤1				≤3						
	P1		≤3				≤5						
	P2		≤5				≤7						
使用温度 Operating Temperature	–	℃	-20~90				-20~90						
润滑 Lubrication	–		合成润滑油脂 Synthetic Grease				合成润滑油脂 Synthetic Grease						
防护等级 Protection Class	–		IP65				IP65						
安装方向 Mounting Position	–		任意方向 Any Direction				任意方向 Any Direction						
转动惯量 Moment of Inertia	J	kg.cm²	2.87	2.71	2.62	2.57	0.47		0.44				

依据说明:

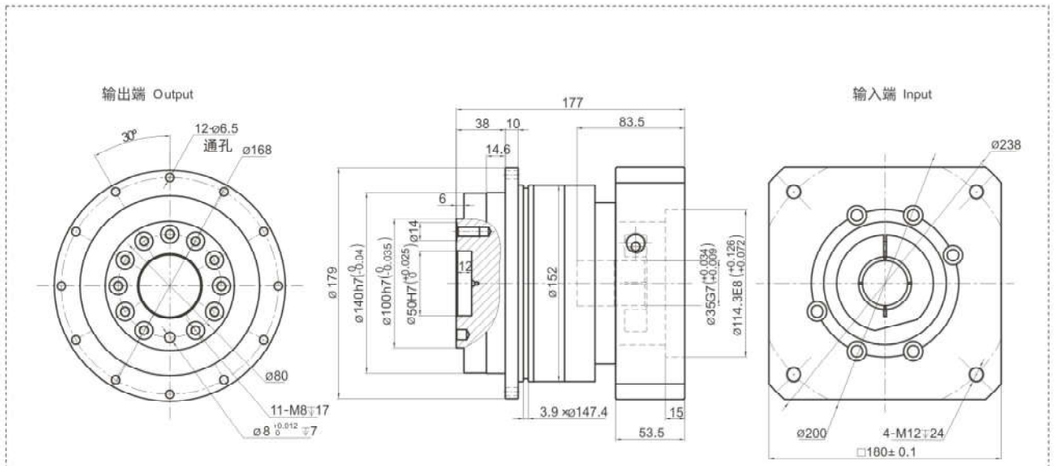
① 变速比(i=S_{in}/S_{out})
② 结果输出转速100rpm时，作用于输出轴中心。
③ 连续运转寿命10000h。
④ 噪音值基于输入转速3000rpm, i=10所得。

Notes:

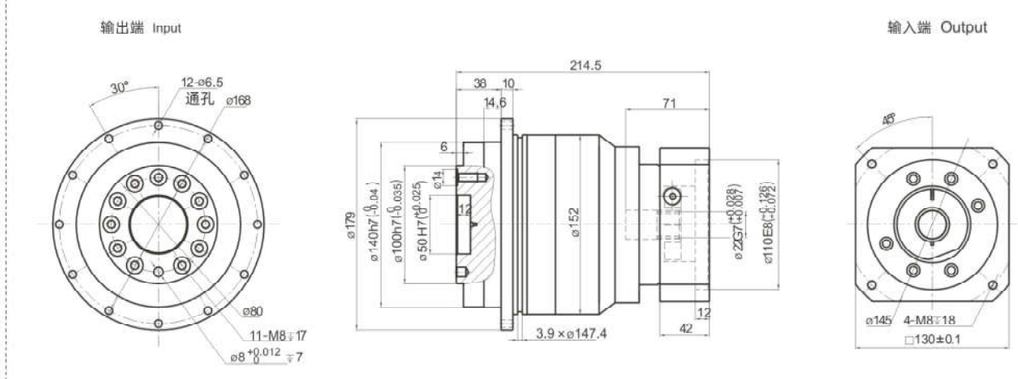
① Speed ratio (i=Sin/Sout)
② When the output speed is 100 rpm, it acts on the center of the output shaft.
③ For continous operation, the service life is no lessthan 10,000 hours.
④ The noise value was measured based on the input rotational speed of 3000 rpm, i=10.

TD140系列* TD140 Series　外形尺寸表

TD140单节* TD140 One Stage



TD140双节* TD140 Two Stage



性能资料 Performance data

TD系列减速机能满足一些非常特殊的需求，高刚度、高性能和结构紧凑多变性是该产品最主要的特点，可任意搭配。

TD series reducer offers quiet operation with high axial load and tilt moment. High quality and capacity load bearing ensures smooth operation for all flange-operated applications.

TD140			单节 One Stage				双节 Two Stage						
①速比 Speed Ratio		i	4	5	7	10	20	25	35	40	50	70	100
额定输出力矩 Norminal Output Torque	T_1	Nm	560	650	550	450	560	650	550	560	650	550	450
急停扭矩 Emergency Stop Torque	T_2	Nm	T_1×3				T_1×3						
额定输入转速 Norminal Input Speed	S_1	rpm	3000				3000						
最大输入转速 Maximum Input Speed	S_2	rpm	6000				6000						
最大输出力矩 Maximum Output Torque	T_4	Nm	T_1×3×60%				T_1×3×60%						
②最大弯曲力矩 Maximum Bending Moment	M_a	Nm	1300				1300						
②最大轴向力 Maximum Axial Force	F_b	N	10590				10590						
扭转刚性 Torsional Rigidity	–	Nm/arcmin	151				151						
效率 Effciency	η	%	≥97				≥94						
③寿命 Service Life	–	h	30000				30000						
④反馈噪音 Noise	–	dB	≤65				≤65						
重量 Weight	–	Kg	11.9				15.9						
回程间隙 Backlash	P0	arcmin	≤1				≤3						
	P1		≤3				≤5						
	P2		≤5				≤7						
使用温度 Operating Temperature	–	℃	-20~90				-20~90						
润滑 Lubrication	–		合成润滑油脂 Synthetic Grease				合成润滑油脂 Synthetic Grease						
防护等级 Protection Class	–		IP65				IP65						
安装方向 Mounting Position	–		任意方向 Any Direction				任意方向 Any Direction						
转动惯量 Moment of Inertia	J	kg.cm²	7.54	7.42	7.14	7.03	2.71		2.57				

依据说明:

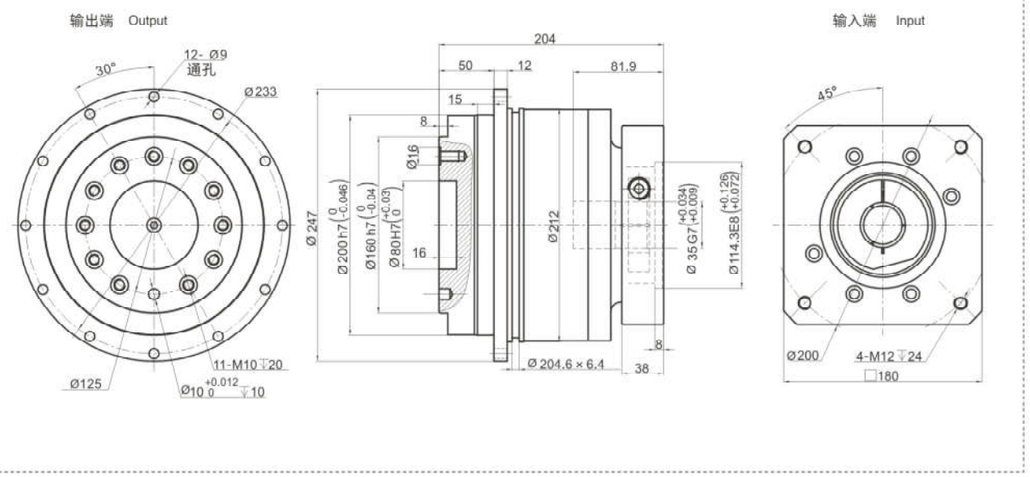
① 变速比(i=S_{in}/S_{out})
② 结果输出转速100rpm时，作用于输出轴中心。
③ 连续运转寿命10000h。
④ 噪音值基于输入转速3000rpm, i=10所得。

Notes:

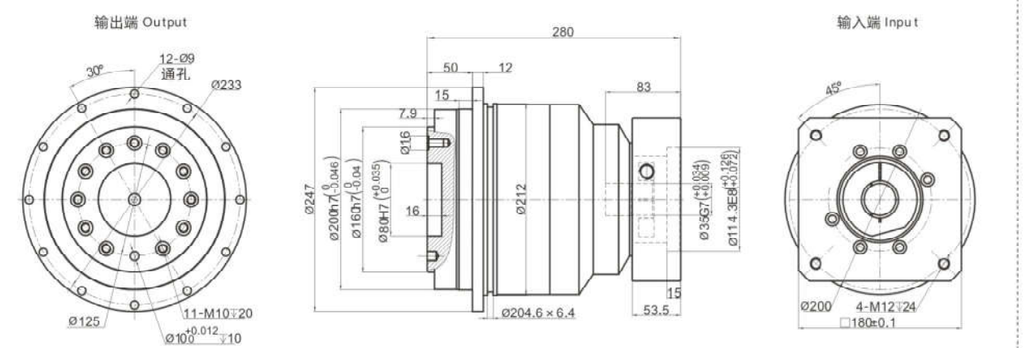
① Speed ratio (i=Sin/Sout)
② When the output speed is 100 rpm, it acts on the center of the output shaft.
③ For continous operation, the service life is no lessthan 10,000 hours.
④ The noise value was measured based on the input rotational speed of 3000 rpm, i=10.

TD200系列* TD200 Series 外形尺寸表

TD200单节* TD200 One Stage



TD200双节* TD200 Two Stage



性能资料 Performance data

TD系列减速机能满足一些非常特殊的需求，高刚度、高性能和结构紧凑多变性是该产品最主要的特点，可任意搭配。

TD series reducer offers quiet operation with high axial load and tilt moment. High quality and capacity load bearing ensures smooth operation for all flange-operated applications.

TD200			单节 One Stage				双节 Two Stage						
①速比 Speed Ratio		i	4	5	7	10	20	25	35	40	50	70	100
额定输出力矩 Norminal Output Torque	T_1	Nm	1100	1200	1100	900	1100	1200	1100	1100	1200	1100	900
急停扭矩 Emergency Stop Torque	T_2	Nm	T_1×3				T_1×3						
额定输入转速 Norminal Input Speed	S_1	rpm	3000				3000						
最大输入转速 Maximum Input Speed	S_2	rpm	6000				6000						
最大输出力矩 Maximum Output Torque	T_4	Nm	T_1×3×60%				T_1×3×60%						
②最大弯曲力矩 Maximum Bending Moment	M_a	Nm	3064				3064						
②最大轴向力 Maximum Axial Force	F_b	N	16660				16660						
扭转刚性 Torsional Rigidity	–	Nm/arcmin	440				440						
效率 Effciency	η	%	≥97				≥94						
③寿命 Service Life	–	h	30000				30000						
④反馈噪音 Noise	–	dB	≤66				≤66						
重量 Weight	–	Kg	31.6				36.9						
回程间隙 Backlash	P0	arcmin	≤1				≤3						
	P1		≤3				≤5						
	P2		≤5				≤7						
使用温度 Operating Temperature	–	℃	-20~90				-20~90						
润滑 Lubrication	–		合成润滑油脂 Synthetic Grease				合成润滑油脂 Synthetic Grease						
防护等级 Protection Class	–		IP65				IP65						
安装方向 Mounting Position	–		任意方向 Any Direction				任意方向 Any Direction						
转动惯量 Moment of Inertia	J	kg.cm²	25.03	23.29	22.48	22.51	7.42		7.03				

依据说明:

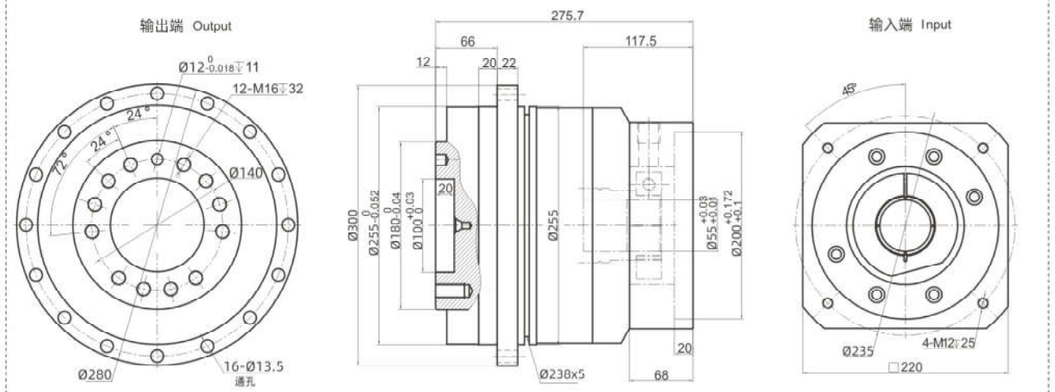
① 变速比($i=S_{in}/S_{out}$)
② 结果输出转速100rpm时， 作用于输出轴中心。
③ 连续运转寿命10000h。
④ 噪音值基于输入转速3000rpm, i=10所得。

Notes:

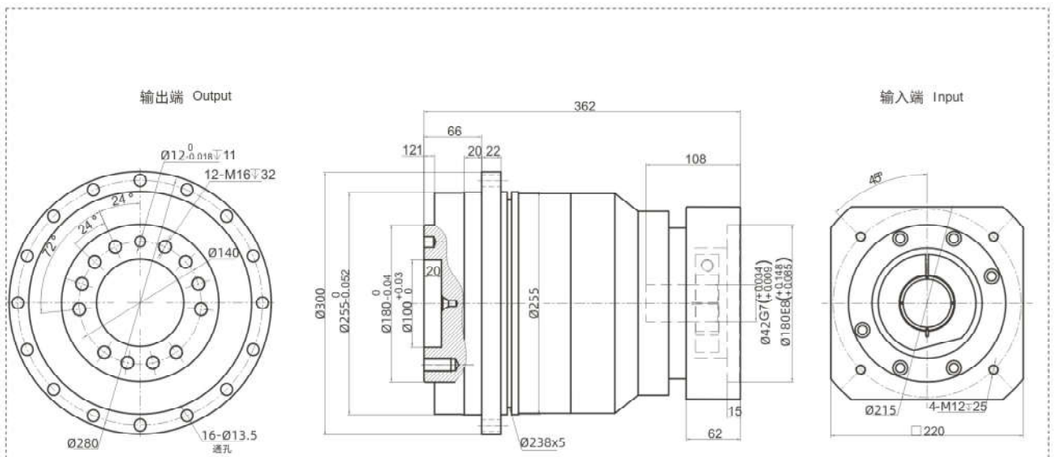
① Speed ratio (i=Sin/Sout)
② When the output speed is 100 rpm, it acts on the center of the output shaft.
③ For continous operation, the service life is no lessthan 10,000 hours.
④ The noise value was measured based on the input rotational speed of 3000 rpm, i=10.

TD255系列* TD255 Series　外形尺寸表

TD255单节* TD255 One Stage



TD255双节* TD255 Two Stage



性能资料 Performance data

TD系列减速机能满足一些非常特殊的需求，高刚度、高性能和结构紧凑多变性是该产品最主要的特点，可任意搭配。

TD series reducer offers quiet operation with high axial load and tilt moment. High quality and capacity load bearing ensures smooth operation for all flange-operated applications.

TD255			单节 One Stage				双节 Two Stage						
①速比 Speed Ratio		i	4	5	7	10	20	25	35	40	50	70	100
额定输出力矩 Norminal Output Torque	T_1	Nm	1700	2000	1800	1500	1700	2000	1800	1700	2000	1800	1500
急停扭矩 Emergency Stop Torque	T_2	Nm	T_1×3				T_1×3						
额定输入转速 Norminal Input Speed	S_1	rpm	2000				2000						
最大输入转速 Maximum Input Speed	S_2	rpm	4000				4000						
最大输出力矩 Maximum Output Torque	T_4	Nm	T_1×3×60%				T_1×3×60%						
②最大弯曲力矩 Maximum Bending Moment	M_a	Nm	5900				5900						
②最大轴向力 Maximum Axial Force	F_b	N	29430				29430						
扭转刚性 Torsional Rigidity	–	Nm/arcmin	1006				1006						
效率 Effciency	η	%	≥97				≥94						
③寿命 Service Life	–	h	30000				30000						
④反馈噪音 Noise	–	dB	≤70				≤70						
重量 Weight	–	Kg	56.1				70.4						
回程间隙 Backlash	P0	arcmin	≤1				≤3						
	P1		≤3				≤5						
	P2		≤5				≤7						
使用温度 Operating Temperature	–	℃	-20~90				-20~90						
润滑 Lubrication	–		合成润滑油脂 Synthetic Grease				合成润滑油脂 Synthetic Grease						
防护等级 Protection Class	–		IP65				IP65						
安装方向 Mounting Position	–		任意方向 Any Direction				任意方向 Any Direction						
转动惯量 Moment of Inertia	J	kg.cm²	58.31	53.27	50.97	50.56	23.29			22.51			

依据说明:

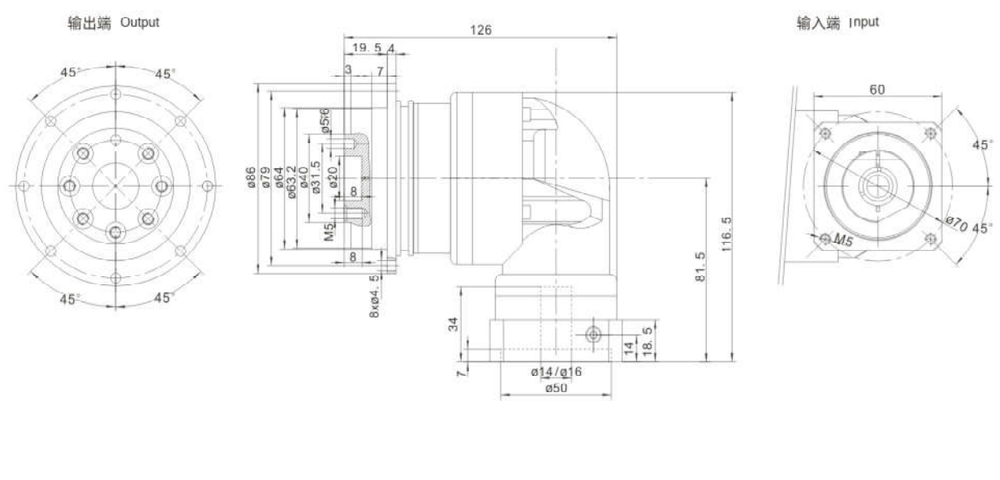
① 变速比(i=S_{in}/S_{out})
② 结果输出转速100rpm时， 作用于输出轴中心。
③ 连续运转寿命10000h。
④ 噪音值基于输入转速3000rpm, i=10所得。

Notes:

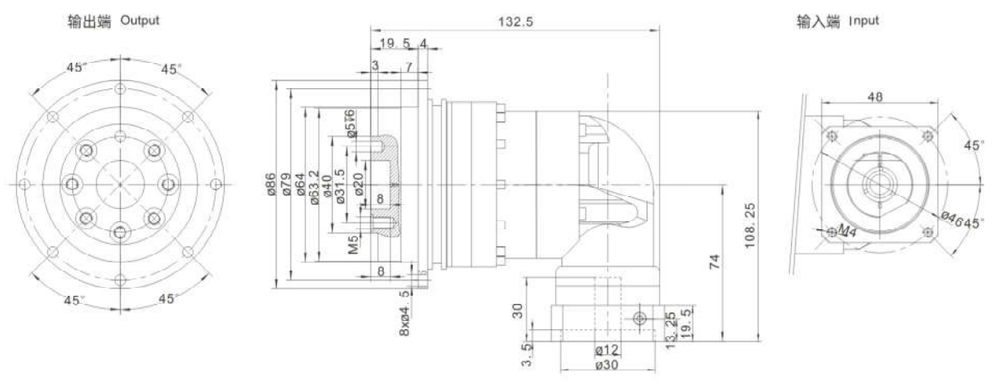
① Speed ratio (i=Sin/Sout)
② When the output speed is 100 rpm, it acts on the center of the output shaft.
③ For continous operation, the service life is no lessthan 10,000 hours.
④ The noise value was measured based on the input rotational speed of 3000 rpm, i=10.

TDR064系列* TDR064 Series　外形尺寸表

TDR064单节* TDR064 One Stage



TDR064双节* TDR064 Two Stage



性能资料 Performance data

TD系列减速机能满足一些非常特殊的需求，高刚度、高性能和结构紧凑多变性是该产品最主要的特点，可任意搭配。

TD series reducer offers quiet operation with high axial load and tilt moment. High quality and capacity load bearing ensures smooth operation for all flange-operated applications.

TDR064			单节 One Stage							双节 Two Stage							
①速比 Speed Ratio	i		4	5	7	10	14	20	25	35	40	50	70	100	140	200
额定输出力矩 Norminal Output Torque	T_1	Nm	48	60	50	40	42	40	60	50	48	60	50	40	-	-
急停扭矩 Emergency Stop Torque	T_2	Nm	T_1×3							T_1×3						
额定输入转速 Norminal Input Speed	S_1	rpm	5000							5000						
最大输入转速 Maximum Input Speed	S_2	rpm	10000							10000						
最大输出力矩 Maximum Output Torque	T_4	Nm	T_1×3×60%							T_1×3×60%						
②最大弯曲力矩 Maximum Bending Moment	M_a	Nm	125							125						
②最大轴向力 Maximum Axial Force	F_b	N	1050							1050						
扭转刚性 Torsional Rigidity	–	Nm/arcmin	13							13						
效率 Efficiency	η	%	≥95							≥92						
③寿命 Service Life	–	h	30000							30000						
④反馈噪音 Noise	–	dB	≤63							≤63						
重量 Weight	–	Kg	2.1							2.4						
回程间隙 Backlash	P0	arcmin	–							–						
	P1		≤4							≤7						
	P2		≤6							≤9						
使用温度 Operating Temperature	–	℃	-20~90							-20~90						
润滑 Lubrication		–	合成润滑油脂 Synthetic Grease							合成润滑油脂 Synthetic Grease						
防护等级 Protection Class		–	IP65							IP65						
安装方向 Mounting Position		–	任意方向 Any Direction							任意方向 Any Direction						
转动惯量 Moment of Inertia	J	kg.cm²	0.35			0.07				0.09						

依据说明:

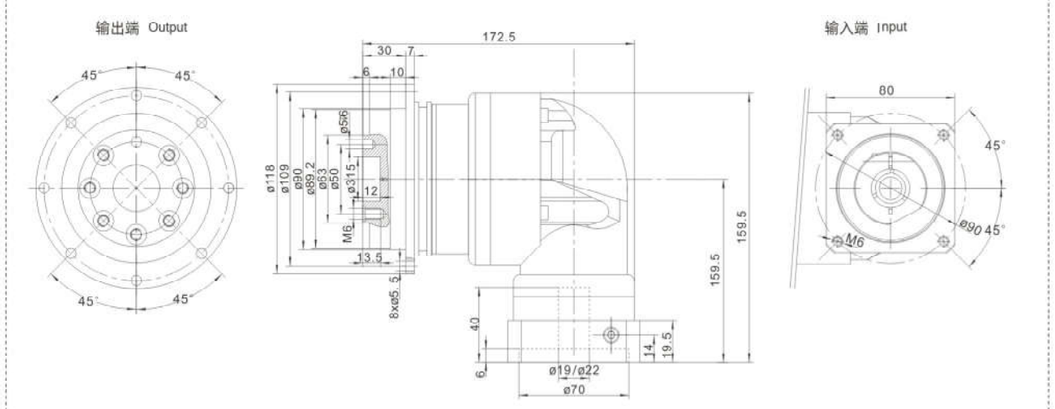
① 变速比($i=S_{in}/S_{out}$)
② 结果输出转速100rpm时，作用于输出轴中心。
③ 连续运转寿命10000h。
④ 噪音值基于输入转速3000rpm, i=10所得。

Notes:

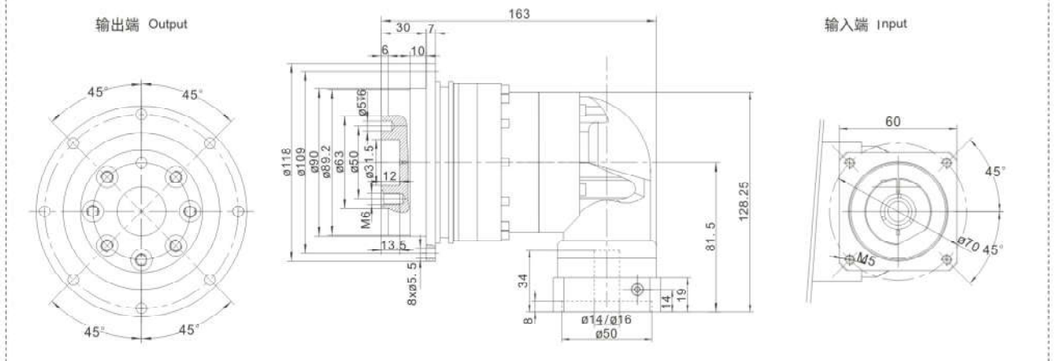
① Speed ratio ($i=Sin/Sout$)
② When the output speed is 100 rpm, it acts on the center of the output shaft.
③ For continous operation, the service life is no lessthan 10,000 hours.
④ The noise value was measured based on the input rotational speed of 3000 rpm, i=10.

TDR090系列* TDR090 Series　外形尺寸表

TDR090单节* TDR090 One Stage



TDR090双节* TDR090 Two Stage



性能资料 Performance data

TD系列减速机能满足一些非常特殊的需求，高刚度、高性能和结构紧凑多变性是该产品最主要的特点，可任意搭配。

TD series reducer offers quiet operation with high axial load and tilt moment. High quality and capacity load bearing ensures smooth operation for all flange-operated applications.

TDR090			单节 One Stage							双节 Two Stage						
①速比 Speed Ratio	i		4	5	7	10	14	20	25	35	40	50	70	100	140	200
额定输出力矩 Norminal Output Torque	T_1	Nm	130	160	140	100	140	100	160	140	130	160	140	100	140	100
急停扭矩 Emergency Stop Torque	T_2	Nm	$T_1 \times 3$							$T_1 \times 3$						
额定输入转速 Norminal Input Speed	S_1	rpm	4000							4000						
最大输入转速 Maximum Input Speed	S_2	rpm	8000							8000						
最大输出力矩 Maximum Output Torque	T_4	Nm	$T_1 \times 3 \times 60\%$							$T_1 \times 3 \times 60\%$						
②最大弯曲力矩 Maximum Bending Moment	M_a	Nm	235							235						
②最大轴向力 Maximum Axial Force	F_b	N	2850							2850						
扭转刚性 Torsional Rigidity	–	Nm/arcmin	31							31						
效率 Efficiency	η	%	≥95							≥92						
③寿命 Service Life	–	h	30000							30000						
④反馈噪音 Noise	–	dB	≤65							≤65						
重量 Weight	–	Kg	5.9							4.5						
回程间隙 Backlash	P0	arcmin	≤2							≤4						
	P1		≤4							≤7						
	P2		≤6							≤9						
使用温度 Operating Temperature	–	℃	-20~90							-20~90						
润滑 Lubrication	–		合成润滑油脂 Synthetic Grease							合成润滑油脂 Synthetic Grease						
防护等级 Protection Class	–		IP65							IP65						
安装方向 Mounting Position	–		任意方向 Any Direction							任意方向 Any Direction						
转动惯量 Moment of Inertia	J	kg.cm²	2.25			1.87				0.35				0.31		

依据说明:

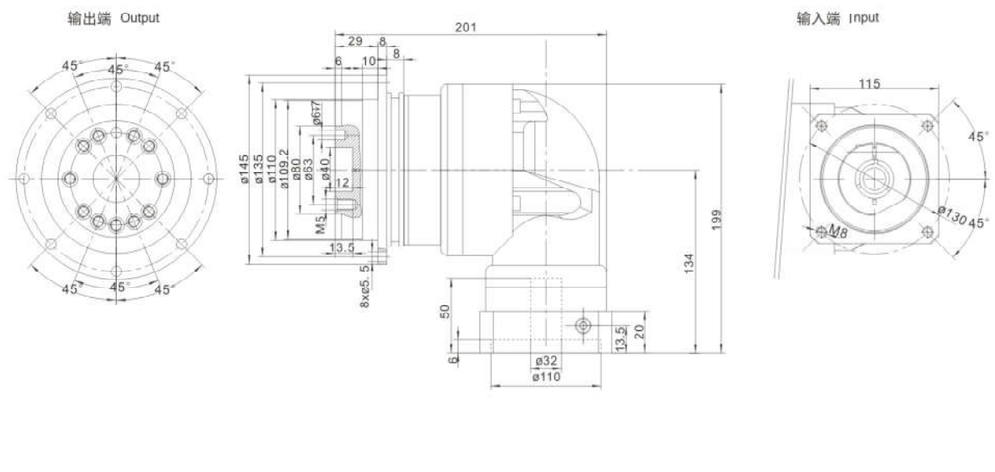
① 变速比(i=S_{in}/S_{out})
② 结果输出转速100rpm时，作用于输出轴中心。
③ 连续运转寿命10000h。
④ 噪音值基于输入转速3000rpm, i=10所得。

Notes:

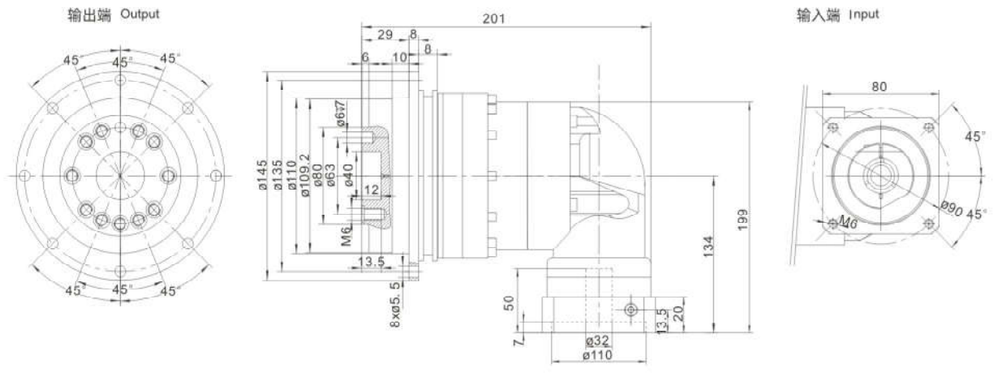
① Speed ratio (i=Sin/Sout)
② When the output speed is 100 rpm, it acts on the center of the output shaft.
③ For continous operation, the service life is no lessthan 10,000 hours.
④ The noise value was measured based on the input rotational speed of 3000 rpm, i=10.

TDR110系列* TDR110 Series 外形尺寸表

TDR110单节* TDR110 One Stage



TDR110双节* TDR110 Two Stage



性能资料 Performance data

TD系列减速机能满足一些非常特殊的需求，高刚度、高性能和结构紧凑多变性是该产品最主要的特点，可任意搭配。

TD series reducer offers quiet operation with high axial load and tilt moment. High quality and capacity load bearing ensures smooth operation for all flange-operated applications.

TDR110			单节 One Stage							双节 Two Stage						
①速比 Speed Ratio	i		4	5	7	10	14	20	25	35	40	50	70	100	140	200
额定输出力矩 Norminal Output Torque	T_1	Nm	270	330	300	230	300	230	330	300	270	330	300	230	300	230
急停扭矩 Emergency Stop Torque	T_2	Nm	$T_1 \times 3$							$T_1 \times 3$						
额定输入转速 Norminal Input Speed	S_1	rpm	4000							4000						
最大输入转速 Maximum Input Speed	S_2	rpm	8000							8000						
最大输出力矩 Maximum Output Torque	T_4	Nm	$T_1 \times 3 \times 60\%$							$T_1 \times 3 \times 60\%$						
②最大弯曲力矩 Maximum Bending Moment	M_a	Nm	430							430						
②最大轴向力 Maximum Axial Force	F_b	N	2990							2990						
扭转刚性 Torsional Rigidity	–	Nm/arcmin	82							82						
效率 Efficiency	η	%	≥95							≥92						
③寿命 Service Life	–	h	30000							30000						
④反馈噪音 Noise	–	dB	≤68							≤68						
重量 Weight	–	Kg	10.5							9.8						
回程间隙 Backlash	P0	arcmin	≤2							≤4						
	P1		≤4							≤7						
	P2		≤6							≤9						
使用温度 Operating Temperature	–	℃	-20~90							-20~90						
润滑 Lubrication	–		合成润滑油脂 Synthetic Grease							合成润滑油脂 Synthetic Grease						
防护等级 Protection Class	–		IP65							IP65						
安装方向 Mounting Position	–		任意方向 Any Direction							任意方向 Any Direction						
转动惯量 Moment of Inertia	J	kg.cm²	6.84			6.25				2.25				1.87		

依据说明:

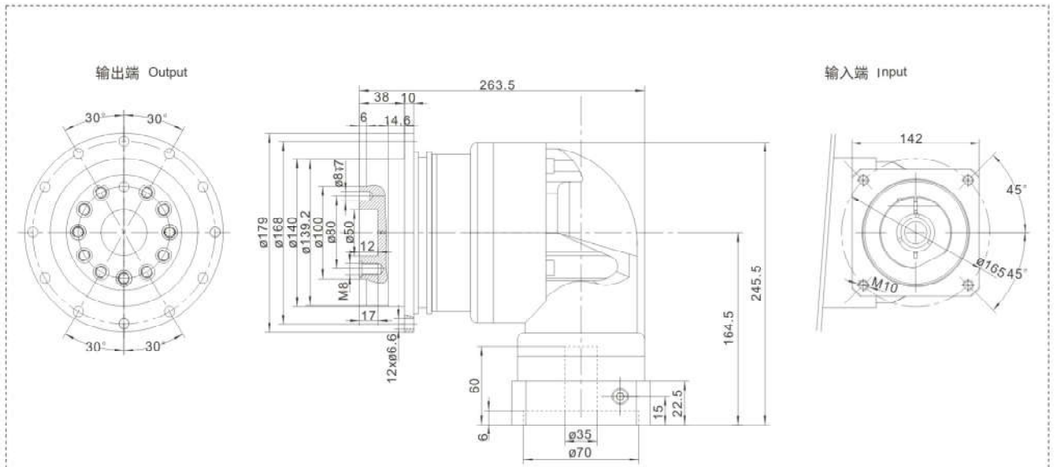
① 变速比(i=S_{in}/S_{out})
② 结果输出转速100rpm时，作用于输出轴中心。
③ 连续运转寿命10000h。
④ 噪音值基于输入转速3000rpm, i=10所得。

Notes:

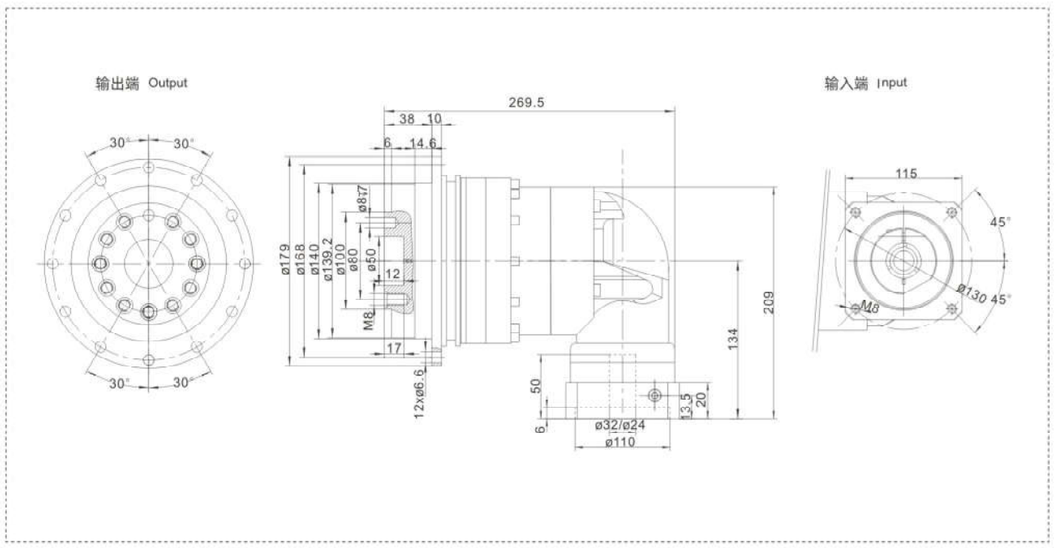
① Speed ratio (i=Sin/Sout)
② When the output speed is 100 rpm, it acts on the center of the output shaft.
③ For continous operation, the service life is no lessthan 10,000 hours.
④ The noise value was measured based on the input rotational speed of 3000 rpm, i=10.

TDR140系列* TDR140 Series　外形尺寸表

TDR140单节* TDR140 One Stage



TDR140双节* TDR140 Two Stage



性能资料 Performance data

TD系列减速机能满足一些非常特殊的需求，高刚度、高性能和结构紧凑多变性是该产品最主要的特点，可任意搭配。

TD series reducer offers quiet operation with high axial load and tilt moment. High quality and capacity load bearing ensures smooth operation for all flange-operated applications.

TDR140			单节 One Stage						双节 Two Stage							
①速比 Speed Ratio	i		4	5	7	10	14	20	25	35	40	50	70	100	140	200
额定输出力矩 Norminal Output Torque	T_1	Nm	560	650	550	450	550	450	650	550	560	650	550	450	550	450
急停扭矩 Emergency Stop Torque	T_2	Nm	T_1×3						T_1×3							
额定输入转速 Norminal Input Speed	S_1	rpm	3000						3000							
最大输入转速 Maximum Input Speed	S_2	rpm	6000						6000							
最大输出力矩 Maximum Output Torque	T_4	Nm	T_1×3×60%						T_1×3×60%							
②最大弯曲力矩 Maximum Bending Moment	M_a	Nm	1300						1300							
②最大轴向力 Maximum Axial Force	F_b	N	10590						10590							
扭转刚性 Torsional Rigidity	–	Nm/arcmin	151						151							
效率 Effciency	η	%	≥95						≥92							
③寿命 Service Life	–	h	30000						30000							
④反馈噪音 Noise	–	dB	≤70						≤70							
重量 Weight	–	Kg	21.9						20.1							
回程间隙 Backlash	P0	arcmin	≤2						≤4							
	P1		≤4						≤7							
	P2		≤6						≤9							
使用温度 Operating Temperature	–	℃	-20~90						-20~90							
润滑 Lubrcation		–	合成润滑油脂 Synthetic Grease						合成润滑油脂 Synthetic Grease							
防护等级 Protection Class		–	IP65						IP65							
安装方向 Mounting Position		–	任意方向 Any Direction						任意方向 Any Direction							
转动惯量 Moment of Inertia	J	kg.cm²	23.4			21.8			6.84				6.25			

依据说明:

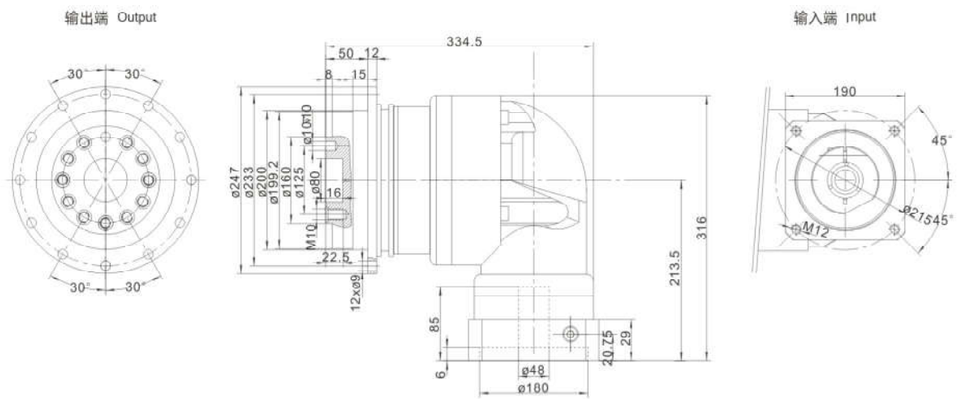
① 变速比(i=S_{in}/S_{out})
② 结果输出转速100rpm时，作用于输出轴中心。
③ 连续运转寿命10000h。
④ 噪音值基于输入转速3000rpm, i=10所得。

Notes:

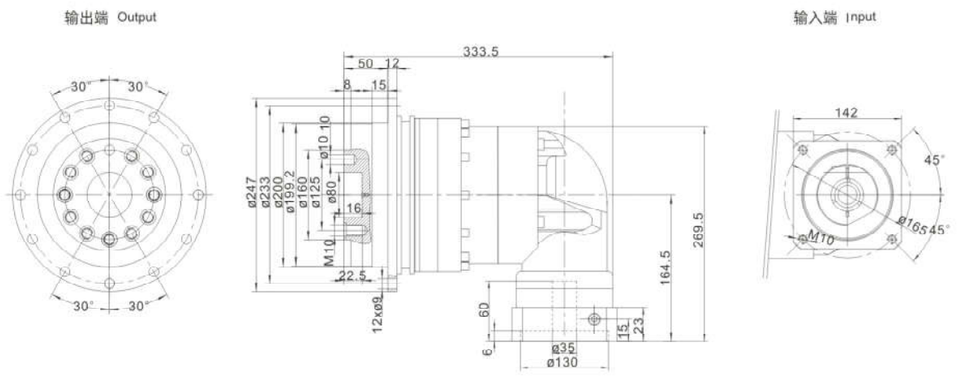
① Speed ratio (i=Sin/Sout)
② When the output speed is 100 rpm, it acts on the center of the output shaft.
③ For continous operation, the service life is no lessthan 10,000 hours.
④ The noise value was measured based on the input rotational speed of 3000 rpm, i=10.

TDR200系列* TDR200 Series　外形尺寸表

TDR200单节* TDR200 One Stage



TDR200双节* TDR200 Two Stage



性能资料 Performance data

TD系列减速机能满足一些非常特殊的需求，高刚度、高性能和结构紧凑多变性是该产品最主要的特点，可任意搭配。

TD series reducer offers quiet operation with high axial load and tilt moment. High quality and capacity load bearing ensures smooth operation for all flange-operated applications.

TDR200			单节 One Stage						双节 Two Stage							
①速比 Speed Ratio	i		4	5	7	10	14	20	25	35	40	50	70	100	140	200
额定输出力矩 Norminal Output Torque	T_1	Nm	1100	1200	1100	900	1100	900	1200	1100	1100	1200	1100	900	1100	900
急停扭矩 Emergency Stop Torque	T_2	Nm	T_1×3						T_1×3							
额定输入转速 Norminal Input Speed	S_1	rpm	3000						3000							
最大输入转速 Maximum Input Speed	S_2	rpm	6000						6000							
最大输出力矩 Maximum Output Torque	T_4	Nm	T_1×3×60%						T_1×3×60%							
②最大弯曲力矩 Maximum Bending Moment	M_a	Nm	3064						3064							
②最大轴向力 Maximum Axial Force	F_b	N	16660						16660							
扭转刚性 Torsional Rigidity	–	Nm/arcmin	440						440							
效率 Efficiency	η	%	≥95						≥92							
③寿命 Service Life	–	h	30000						30000							
④反馈噪音 Noise	–	dB	≤72						≤72							
重量 Weight	–	Kg	50.9						45.4							
回程间隙 Backlash	P0	arcmin	≤2						≤4							
	P1		≤4						≤7							
	P2		≤6						≤9							
使用温度 Operating Temperature	–	℃	-20~90						-20~90							
润滑 Lubrication		–	合成润滑油脂 Synthetic Grease						合成润滑油脂 Synthetic Grease							
防护等级 Protection Class		–	IP65						IP65							
安装方向 Mounting Position		–	任意方向 Any Direction						任意方向 Any Direction							
转动惯量 Moment of Inertia	J	kg.cm²	68.9			65.6			23.4				21.8			

依据说明:

① 变速比(i=S_{in}/S_{out})
② 结果输出转速100rpm时，作用于输出轴中心。
③ 连续运转寿命10000h。
④ 噪音值基于输入转速3000rpm, i=10所得。

Notes:

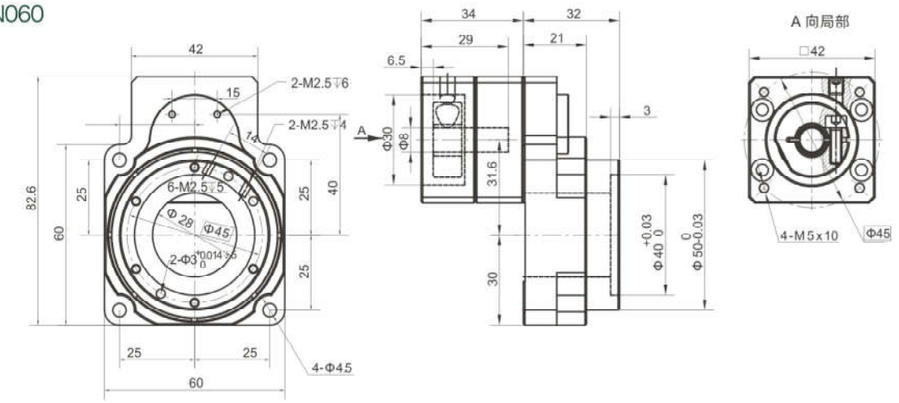
① Speed ratio (i=Sin/Sout)
② When the output speed is 100 rpm, it acts on the center of the output shaft.
③ For continous operation, the service life is no lessthan 10,000 hours.
④ The noise value was measured based on the input rotational speed of 3000 rpm, i=10.

TMN系列* TMN Series　　外形尺寸表

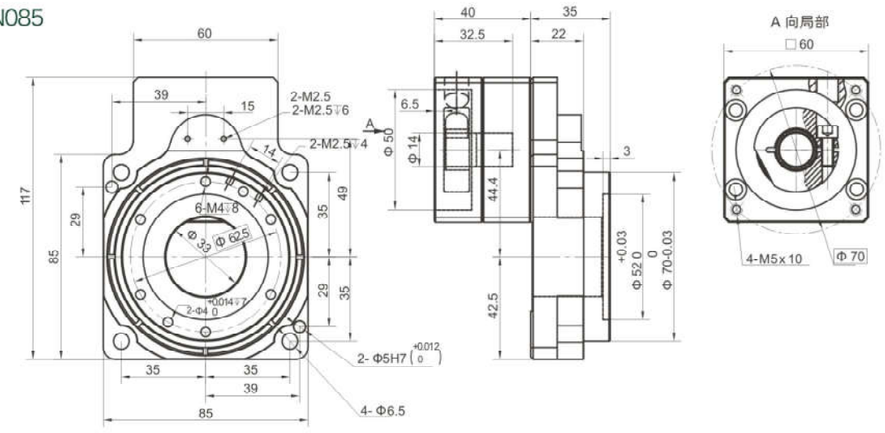
TMN – 060 – K – 05 – N

TMN	060	K	05	N
旋转平台系列 Rotate platform series	规格 specification		减速比 Reduction ratio	选配 Optional
	060 085 130 200	K:行星减速机 T:直角减速机 K: Planetary reducer T: Right angle reducer	05 10 18	N: 伺服电机 B: 步进电机 S: 关环步进电机 N: servo motor B: Stepper motor S: closed loop stepper motor

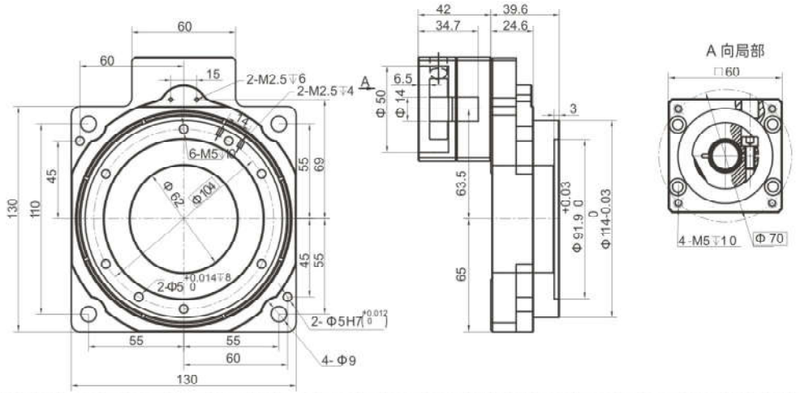
TMN060



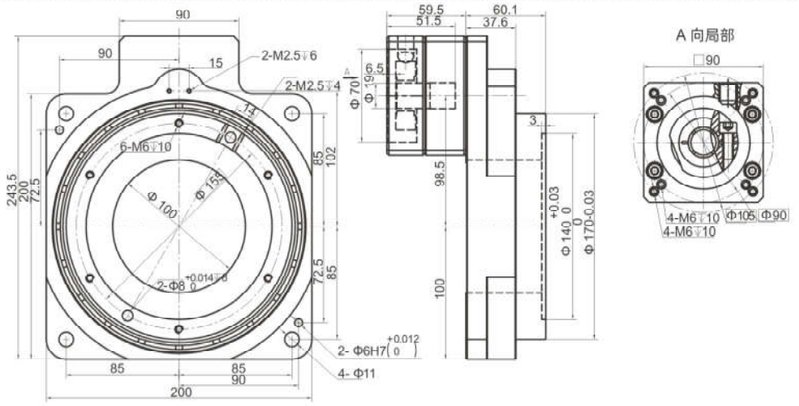
TMN085



TMN130



TMN200

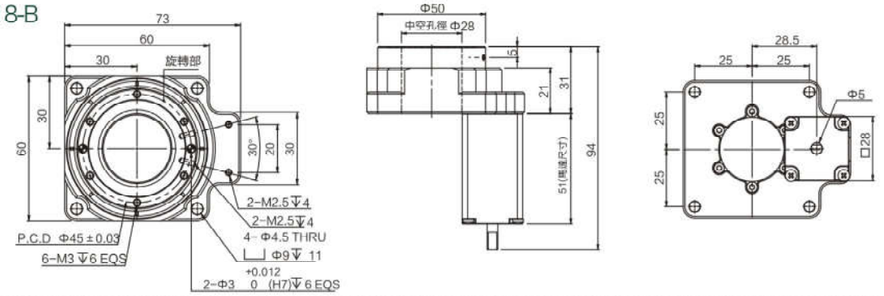


型号		TMN060		TMN085		TMN130		TMN200	
速比 Speed Ratio		5	10	5	10	10	18	10	18
匹配伺服电机 Matching servo motor	W	50～100		200～400		200～400		750	
轴承类型 Bearing Type		交叉滚子轴承		交叉滚子轴承		交叉滚子轴承		交叉滚子轴承	
容许转矩 Allowable torque	N.m	5.2		8		32		65	
转动惯量 Moment of inertia	$kg.cm^2$	3.5		12.59		81.56		361.22	361.23
容许盘面输出转速 Allowable disk output speed	rpm	300	250	300	250	250	150	250	
容许惯性力矩负荷 Allowable moment of inertia load	N.m	5		10		50		100	
容许轴向负载 Allowable axial load	N	250		500		2000		4000	
重复定位精度 Repeat positioning accuracy	sec	±5		±5		±5		±5	
定位精度 Positioning accuracy	arcmin	±0.25		±0.25		±0.25		±0.5	
旋转平台同心度 Concentricity of rotating platform	mm	±0.003		±0.005		±0.005		±0.01	
旋转平台平行度 Parallelism of rotating platform	mm	±0.003		±0.003		±0.003		±0.015	
精度寿命 Precision	h	15000		20000		20000		20000	
防护等级 Protection Class		IP40		IP40		IP40		IP40	
重量 Weight	kg	1.2		1.8		4		8	

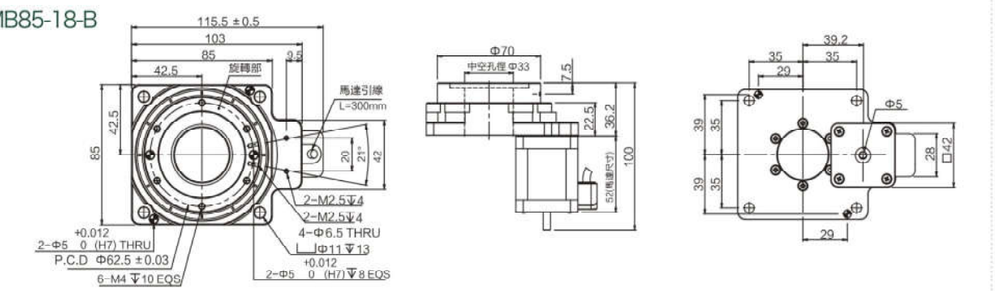
TMB系列* TMB Series　　外形尺寸表

TMB	–	60	–	18	–	B
旋转平台系列 Rotate platform series		规格 specification		减速比 Reduction ratio		选配 Optional
		60 85 130 200		18		B：步进电机 B: Stepper motor

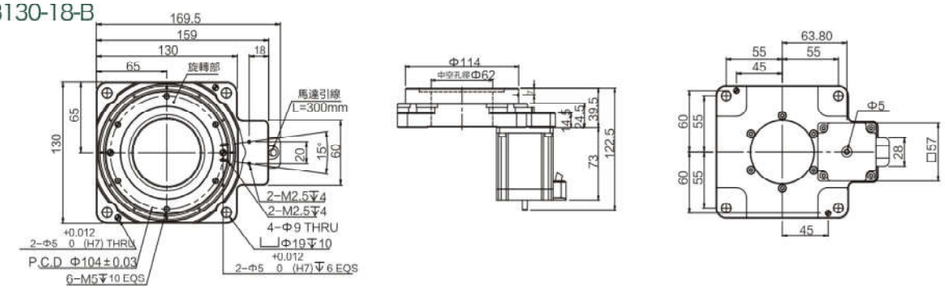
TMB60-18-B



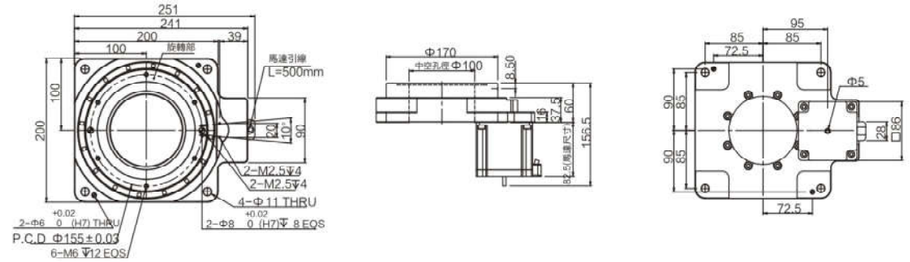
TMB85-18-B



TMB130-18-B



TMB200-18-B



		TMB60	TMB85	TMB130	TMB200
减速比 Reduction ratio		18	18	18	18
匹配步进电机 Matching stepper motor	mm	28	42	57	86
轴承结构 Bearing structure		交叉滚子轴承 Crossed roller bearing	交叉滚子轴承 Crossed roller bearing	交叉滚子轴承 Crossed roller bearing	交叉滚子轴承 Crossed roller bearing
容许转矩 Allowable torque	N.M	2.2	6	25	60
转动惯量 Moment of inertia	$kg.m^2$	3500×10^{-7}	21800×10^{-7}	150030×10^{-7}	915000×10^{-7}
容许盘面输出转速 Allow disk output speed	r/min	200	200	200	200
容许惯性力矩负荷 Allowable moment of inertia load	N.M	5.6	25	65	120
容许轴向负载 Allowable axial load	N	300	800	2500	4500
重负定位精度 Heavy negative positioning accuracy	arc-sec	±5	±5	±5	±5
定位精度 positioning accuracy	arc-min	±0.5	±0.5	±0.5	±0.5
旋转平台面偏差（平面跳动） Rotating platform surface deviation (plane jump)	mm	±0.005	±0.005	±0.005	±0.005
旋转平台同心度 Rotating platform concentricity	mm	±0.01	±0.01	±0.01	±0.01
旋转平台平行度 Rotating platform parallelism	mm	±0.015	±0.015	±0.015	±0.015
精度寿命 Precision life	h	25000	25000	25000	25000
防护等级 Protection level		IP40	IP40	IP40	IP40
质量 quality	kg	0.52	1.22	3.1	9

步进角 Step angle	o	1.8	1.8	1.8	1.8
额定电压 Norminal voltage	V	3.5	3.5	3.5	3.4
额定电流 Norminal current	A	1.2	1.3	3	5.5
保持力矩 Holding torque	N.m	0.13	0.5	2	4.2
相数 Phase		2	2	2	2
引线数 Number of leads		4	4	4	4
接线方式 Wiring		绿(A+)蓝(B+)黑(A-)红(B-) Green (A+) Blue (B+) Black (A-) Red (B-)	红(A+)棕(B+)黄(A-)橙(B-) Red (A+) Brown (B+) Yellow (A-) Orange (B-)	红(A+)棕(B+)黄(A-)橙(B-) Red (A+) Brown (B+) Yellow (A-) Orange (B-)	红(A+)棕(B+)黄(A-)橙(B-) Red (A+) Brown (B+) Yellow (A-) Orange (B-)

TMS——中空旋转平台
TMS - Hollow Rotary Actuators

TMS系列* TMS Series　　外形尺寸表

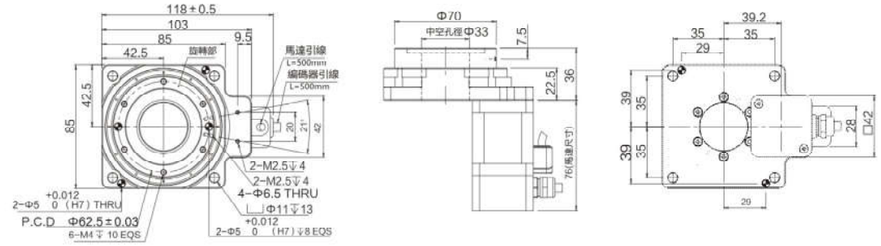
TMS – 60 – 18 – S

- TMS：旋转平台系列 Rotate platform series
- 60：规格 specification（60 / 85 / 130 / 200）
- 18：减速比 Reduction ratio
- S：选配 Optional（S: 关环步进电机 S: Closed loop stepper motor）

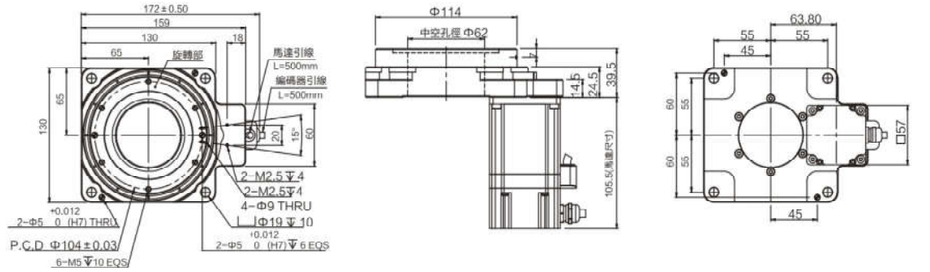
		TMS 85	TMS 130	TMS 200
减速比 Reduction ratio		18	18	18
匹配步进电机 Matching closed loop stepper motor	mm	42	57	86
轴承结构 Bearing structure		交叉滚子轴承 Crossed roller bearing	交叉滚子轴承 Crossed roller bearing	交叉滚子轴承 Crossed roller bearing
容许转矩 Allowable torque	N.M	6	25	60
转动惯量 Moment of inertia	$kg.m^2$	21800×10^{-7}	150030×10^{-7}	915000×10^{-7}
容许盘面输出转速 Allow disk output speed	r/min	200	200	200
容许惯性力矩负荷 Allowable moment of inertia load	N.M	25	65	120
容许轴向负载 Allowable axial load	N	800	2500	4500
重负定位精度 Heavy negative positioning accuracy	arc-sec	±5	±5	±5
定位精度 positioning accuracy	arc-min	±0.5	±0.5	±0.5
旋转平台面偏差（平面跳动） Rotating platform surface deviation (plane jump)	mm	±0.005	±0.005	±0.005
旋转平台同心度 Rotating platform concentricity	mm	±0.01	±0.01	±0.01
旋转平台平行度 Rotating platform parallelism	mm	±0.015	±0.015	±0.015
精度寿命 Precision life	h	25000	25000	25000
防护等级 Protection level		IP40	IP40	IP40
质量 quality	kg	1.3	3.4	9.8

步进角 Step angle	o	1.8	1.8	1.8
额定电压 Norminal voltage	V	3.3	3.5	3.5
额定电流 Norminal current	A	1.3	1.3	3
保持力矩 Holding torque	N.m	0.5	0.5	2
相数 Phase		2	2	2
引线数 Number of leads		4	4	4
接线方式 Wiring		红（A'）棕（B'）黄（A）橙（B） Red (A') Brown (B') Yellow (A) Orange (B)	红（A'）棕（B'）黄（A）橙（B） Red (A') Brown (B') Yellow (A) Orange (B)	红（A'）棕（B'）黄（A）橙（B） Red (A') Brown (B') Yellow (A) Orange (B)

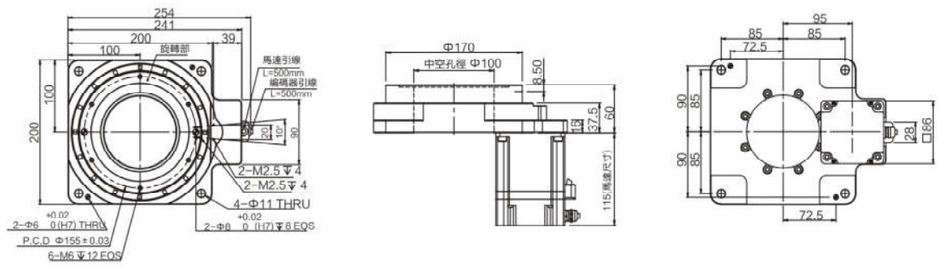
TMS85-18-S



TMS130-18-S



TMS200-18-S

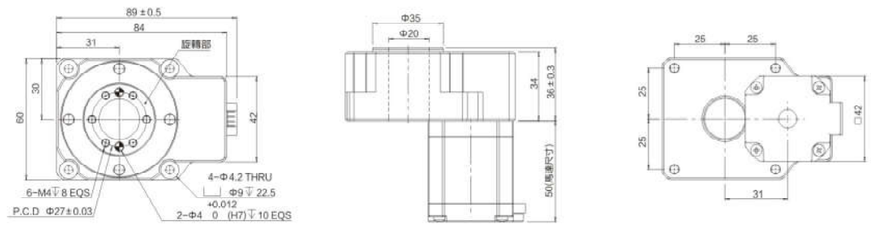


TMH系列* TMH Series　　外形尺寸表

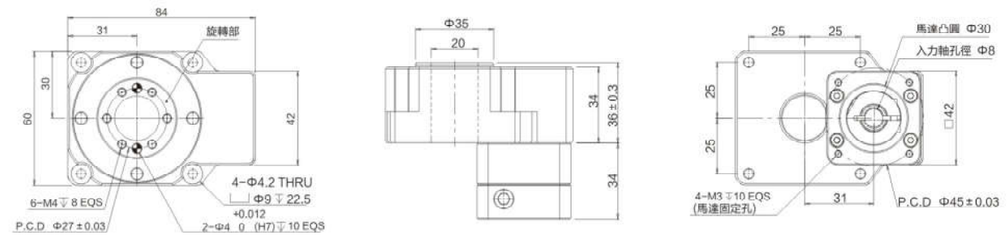
TMH	–	60	–	K	–	05	–	N
旋转平台系列 Rotate platform series		规格 specification				减速比 Reduction ratio		选配 Optional
		60 100 130 200		K:行星减速机 T:直角减速机 K: Planetary reducer T: Right angle reducer		05 08 10		N: 伺服电机 B: 步进电机 S: 关环步进电机 N: servo motor B: Stepper motor S: closed loop stepper motor

		TMH60	TMH100	TMH130	TMH200
减速比 Reduction ratio		5	8	10	10
匹配伺服马达 Matching servo motor	W	100	400	400	750
轴承结构 Bearing structure		滚沟滚珠+上推滚珠轴承 Grooved ball + push-up ball bearing	圆锥滚子轴承 Tapered Roller Bearings	圆锥滚子轴承 Tapered Roller Bearings	圆锥滚子轴承 Tapered Roller Bearings
容许转矩 Allowable torque	N.M	5	48	50	90
转动惯量 Moment of inertia	$kg.m^2$	4500×10^{-7}	68540×10^{-7}	110725×10^{-7}	876410×10^{-7}
容许盘面输出转速 Allow disk output speed	r/min	200	200	200	200
容许惯性力矩负荷 Allowable moment of inertia load	N.M	9	76	85	145
容许轴向负载 Allowable axial load	N	200	900	1800	3700
重负定位精度 Heavy negative positioning accuracy	arc-sec	±5	±5	±5	±5
定位精度 positioning accuracy	arc-min	±0.5	±0.5	±0.5	±0.5
旋转平台面偏差（平面跳动） Rotating platform surface deviation (plane jump)	mm	±0.01	±0.01	±0.01	±0.01
旋转平台同心度 Rotating platform concentricity	mm	±0.01	±0.01	±0.01	±0.01
旋转平台平行度 Rotating platform parallelism	mm	±0.02	±0.015	±0.015	±0.015
精度寿命 Precision life	h	25000	25000	25000	25000
防护等级 Protection level		IP40	IP40	IP40	IP40
质量 quality	kg	0.74/0.92	2.76	4.56	12

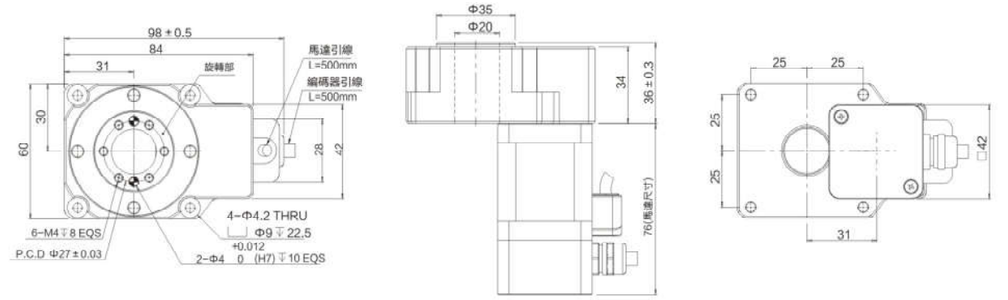
TMH60-05-B



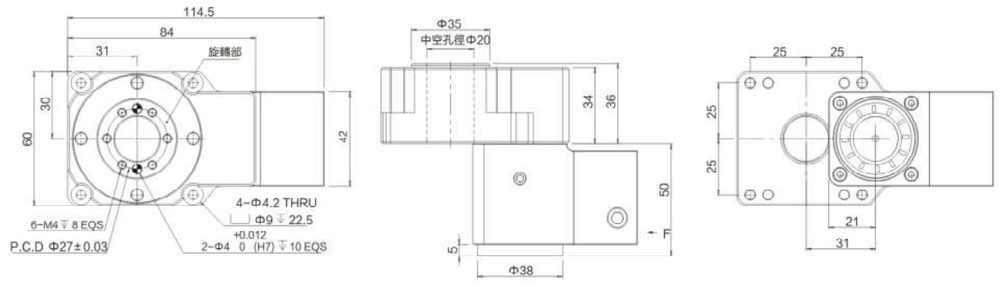
TMH60-05-N



TMH60-05-S

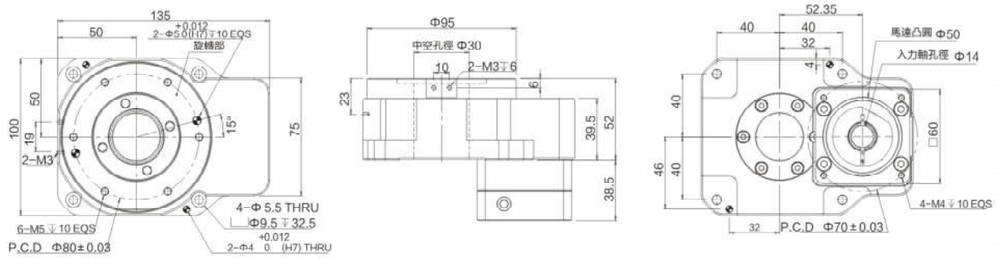


TMH60-T-15-N

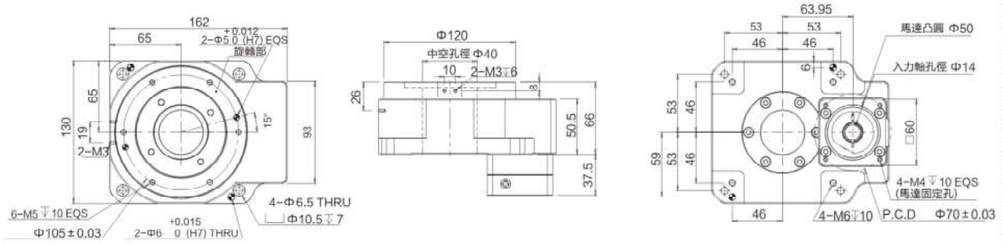


TMH——中空旋转平台
TMH - Hollow Rotary Actuators

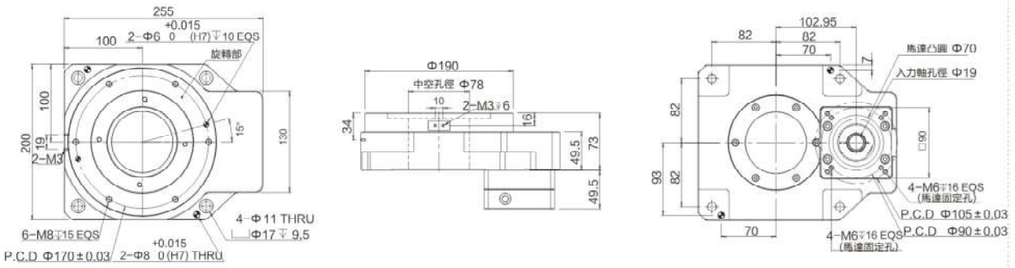
TMH100-08-N



TMH130-10-N



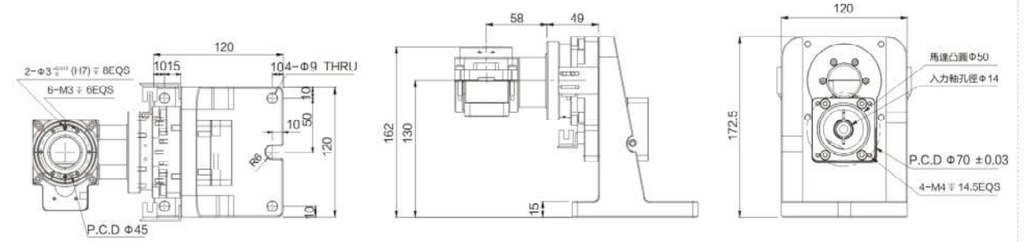
TMH200-10-N



5M——微型旋转轴
5M - Miniature Rotary Axis

5M系列* 5M SERIES

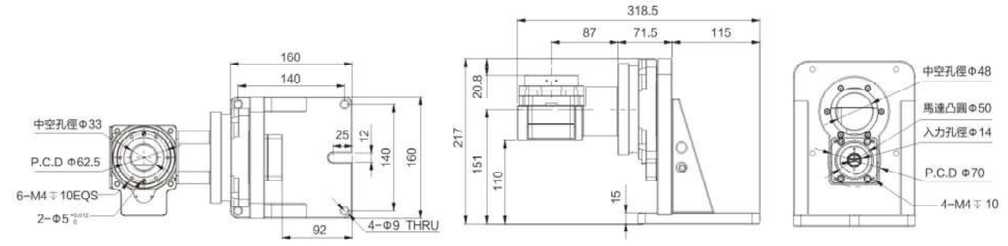
5M86-N



	第四轴（TMN85）
工作台转速 Table speed	0-200rpm/min
工作台运动角度范围 Worktable movement angle range	±60°
启停时允许峰值扭矩 Allowable peak torque at start and stop	50Nm
额定扭矩 Rated torque	15Nm
最大载重量 Maximum load	<10kg
中心高度 Center height	130mm
输出法兰端面圆跳动 Output flange end face beating	≤0.01mm
输出法兰径向圆跳动 Output flange radial round jump	≤0.01mm
输出法兰与机台安装面垂直度 Output flange and machine mounting surface perpendicularity	≤0.015mm
重复定位精度 Repeatability	≤±0.03°

	第五轴（TMN60）
工作台转速 Table speed	0-200rpm/min
工作台运动角度范围 Worktable movement angle range	360°
启停时允许峰值扭矩 Allowable peak torque at start and stop	30Nm
额定扭矩 Rated torque	8Nm
最大载重量 Maximum load	<4kg
输出法兰端面圆跳动 Output flange end face beating	≤0.01mm
输出法兰径向圆跳动 Output flange radial round jump	≤0.01mm
输出法兰与机台安装面平行度 Output flange is parallel to the mounting surface of the machine	≤0.015mm
重复定位精度 Repeatability	≤±0.003°

5M13085-N



	第四轴（TMN130）
工作台转速 Table speed	0-100rpm/min
工作台运动角度范围 Worktable movement angle range	±75°
启停时允许峰值扭矩 Allowable peak torque at start and stop	60Nm
额定扭矩 Nominal torque	30Nm
最大载重量 Maximum load	<15kg
中心高度 Center height	151mm
输出法兰端面圆跳动 Output flange end face beating	≤0.015mm
输出法兰径向圆跳动 Output flange radial round jump	≤0.015mm
输出法兰与机台安装面垂直度 Output flange and machine mounting surface perpendicularity	≤0.015mm
重复定位精度 Repeatability	≤±0.03°

	第五轴（TMN85）
工作台转速 Table speed	0-200rpm/min
工作台运动角度范围 Worktable movement angle range	360°
启停时允许峰值扭矩 Allowable peak torque at start and stop	35Nm
额定扭矩 Nominal torque	15Nm
最大载重量 Maximum load	<8kg
输出法兰端面圆跳动 Output flange end face beating	≤0.015mm
输出法兰径向圆跳动 Output flange radial round jump	≤0.015mm
输出法兰与机台安装面平行度 Output flange is parallel to the mounting surface of the machine	≤0.015mm
重复定位精度 Repeatability	≤±0.003°

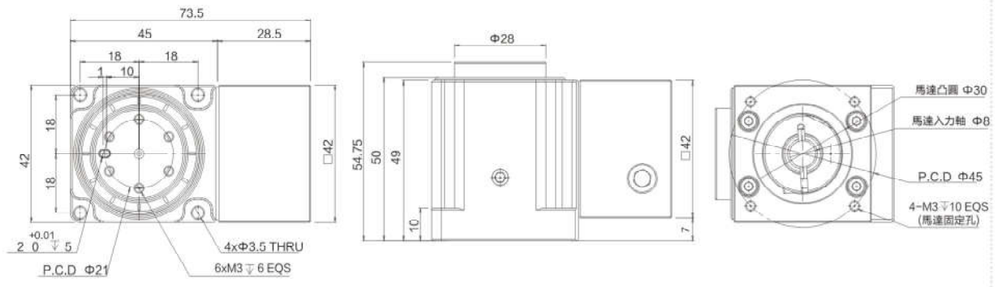
TMT——直角中空旋转平台
TMT - Right Angle Hollow Rotating Platform

TMT系列* TMT Series　　外形尺寸表

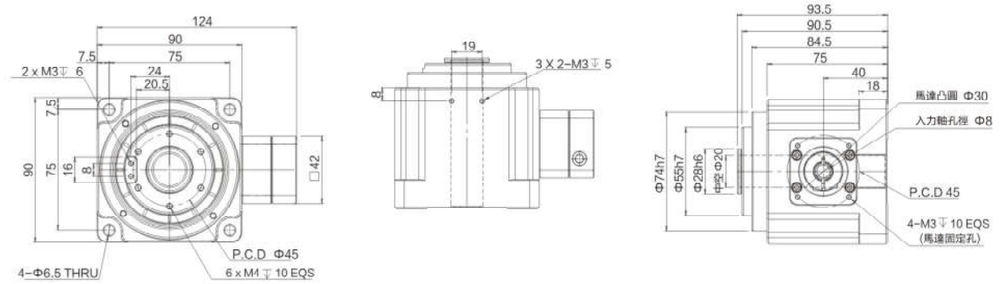
TMT	–	42	–	K	–	05	–	N
旋转平台系列 Rotate platform series		规格 specification				减速比 Reduction ratio		选配 Optional
		42 90 130 200		K:行星减速机 T:直角减速机 K: Planetary reducer T: Right angle reducer		03、05 09、15 20、21 25、30 50		N: 伺服电机 B: 步进电机 S: 关环步进电机 N: servo motor B: Stepper motor S: closed loop stepper motor

		TMT42	TMT90	TMT130	TMT200
减速比 Reduction ratio		3	3	3	5
匹配伺服马达 Matching servo motor	W	100	100	400	750
轴承结构 Bearing structure		圆锥滚子轴承 Tapered Roller Bearings	圆锥滚子轴承 Tapered Roller Bearings	圆锥滚子轴承 Tapered Roller Bearings	圆锥滚子轴承 Tapered Roller Bearings
容许转矩 Allowable torque	N.M	14	35	60	100
转动惯量 Moment of inertia	$kg.m^2$	3610×10^{-7}	68540×10^{-7}	110725×10^{-7}	876410×10^{-7}
容许输入转速 Allow disk output speed	r/min	2500	2500	2500	2500
容许惯性力矩负荷 Allowable moment of inertia load	N.M	20	76	90	160
容许轴向负载 Allowable axial load	N	250	1000	2000	4000
重负定位精度 Heavy negative positioning accuracy	arc-sec	±5	±5	±5	±5
定位精度 positioning accuracy	arc-min	±0.5	±0.5	±0.5	±0.5
旋转平台面偏差（平面跳动） Rotating platform surface deviation (plane jump)	mm	±0.01	±0.01	±0.01	±0.01
旋转平台同心度 Rotating platform concentricity	mm	±0.01	±0.01	±0.01	±0.01
旋转平台平行度 Rotating platform parallelism	mm	±0.02	±0.015	±0.015	±0.015
精度寿命 Precision life	h	25000	25000	25000	25000
防护等级 Protection level		IP40	IP40	IP40	IP40
质量 quality	kg	1.2	3.3	6.5	18

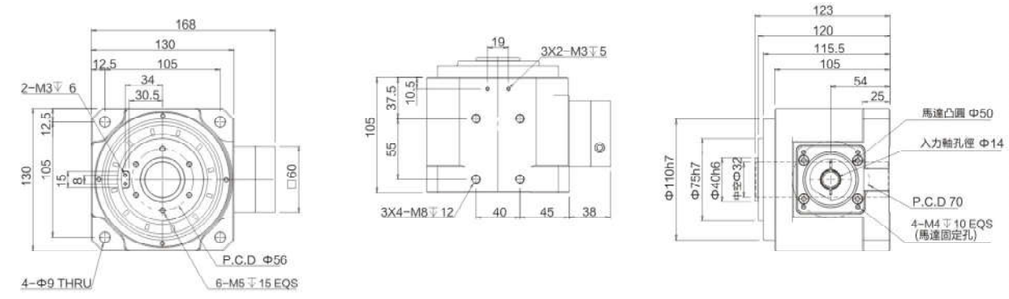
TMT42-03-N



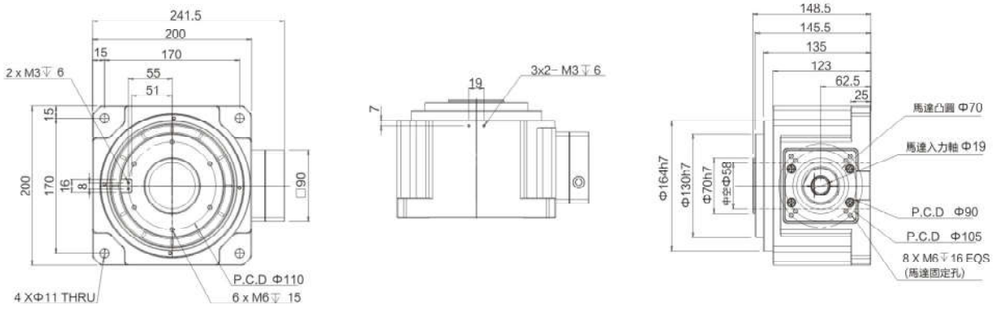
TMT90-03-N



TMT130-03-N



TMT200-05-N



笔记：

此选型样册技术参数仅供参考，实际根据客户提供数据，会出具相关的技术参数及尺寸！

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