

精密行星减速机

Precision Planetary Reducer



其优势在于：此款行星减速机即使在最高转速时也能达到最高效率，十分适用于高标准的生产工况，一款真正强效且价格合理的产品。

The advantage is that this planetary reducer achieves maximum efficiency even at the highest speeds, making it ideal for high-standard production conditions, a truly powerful and reasonably priced product.

TECHMECH DRIVES THE FUTURE

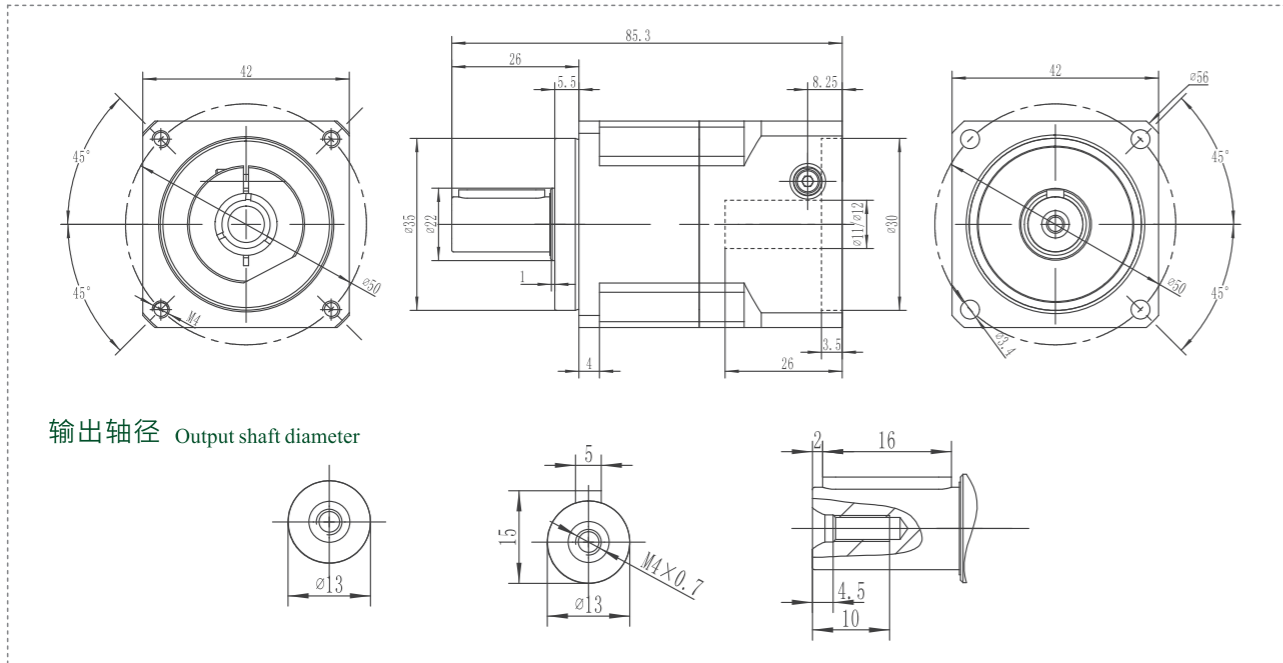
钛科玛格 传动未来



TB042系列* TB042 Series

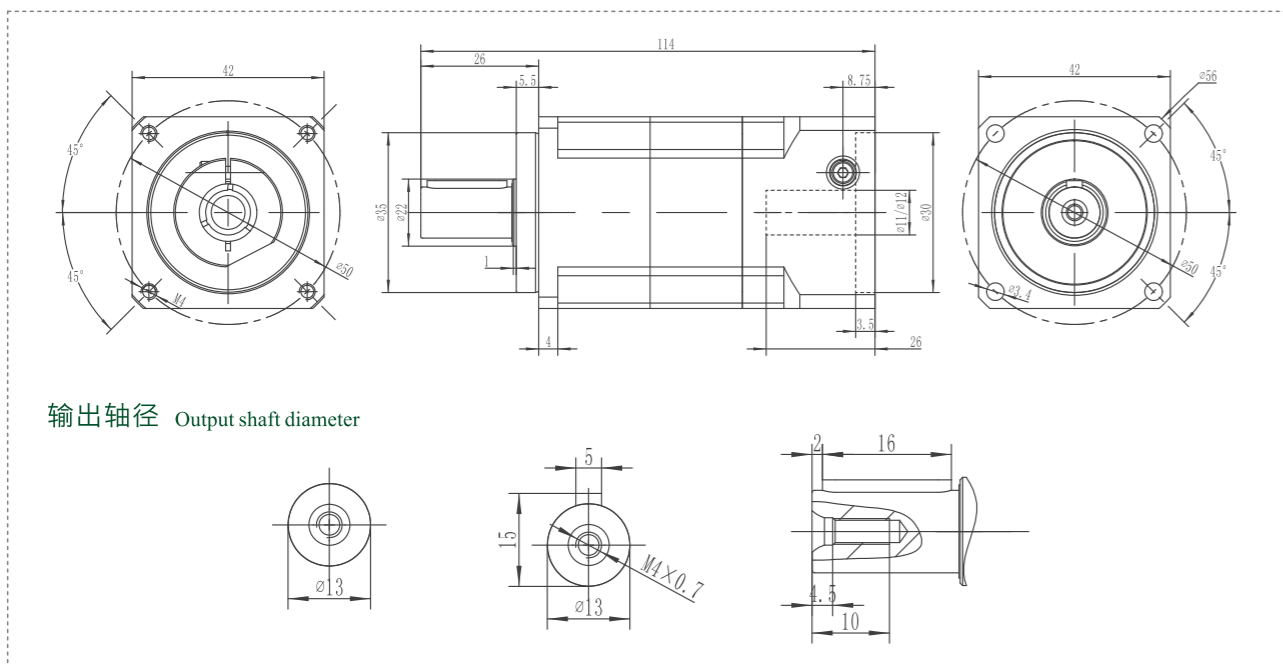
外形尺寸表

TB042单节* TB042 One Stage



输出轴径 Output shaft diameter

TB042双节* TB042 Two Stage



输出轴径 Output shaft diameter

性能资料 Performance data

TB系列减速机采用了标准化的法兰界面，PSFN的安装便捷安全，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 of PSFN is convenient and safe. Due to the high anti-tilt torque, this high-precision planetary reducer can perform many difficult tasks.

TB042		单节 One Stage										双节 Two Stage										
速比 Speed Ratio	i	3	4	5	6	7	8	9	10	15	20	25	30	35	40	50	60	70	80	100		
额定输出转矩 Rated Output Torque	T ₁	Nm	20	19	22	20	19	17	-	14	20	19	22	20	19	17	22	20	19	17	14	
急停扭矩 Emergency Stop Torque	T ₂	Nm	T ₁ ×3										T ₁ ×3									
额定输入转速 Rated Input Speed	S ₁	rpm	5000										5000									
最大输入转速 Maximum Input Speed	S ₂	rpm	10000										10000									
最大输出转矩 Maximum Output Torque	T ₄	Nm	T ₁ ×3×60%										T ₁ ×3×60%									
最大径向力 Maximum Radial Force	F _a	N	780										780									
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 Effectiveness	β	%	≥97%										≥94%									
寿命 Life	☒	h	20000h										20000h									
反馈噪音 Feedback Noise	☒	dB	≤55dB										≤55dB									
重量 Weight	☒	Kg	0.6										0.8									
回程间隙 Return Gap	P0	arcmin	≤1										≤3									
	P1	arcmin	≤3										≤5									
	P2	arcmin	≤5										≤7									
使用温度 Operating Temperature	☒	°C	-10°C~90°C										-10°C~90°C									
润滑 Lubricating	☒		合成油脂 Synthetic Grease										合成油脂 Synthetic Grease									
防护等级 Protection Level	☒		IP65										IP65									
安装方向 Installation Direction	☒		任意方向 Any Direction										任意方向 Any Direction									
传动惯量 Transmission 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。

According to the instructions:

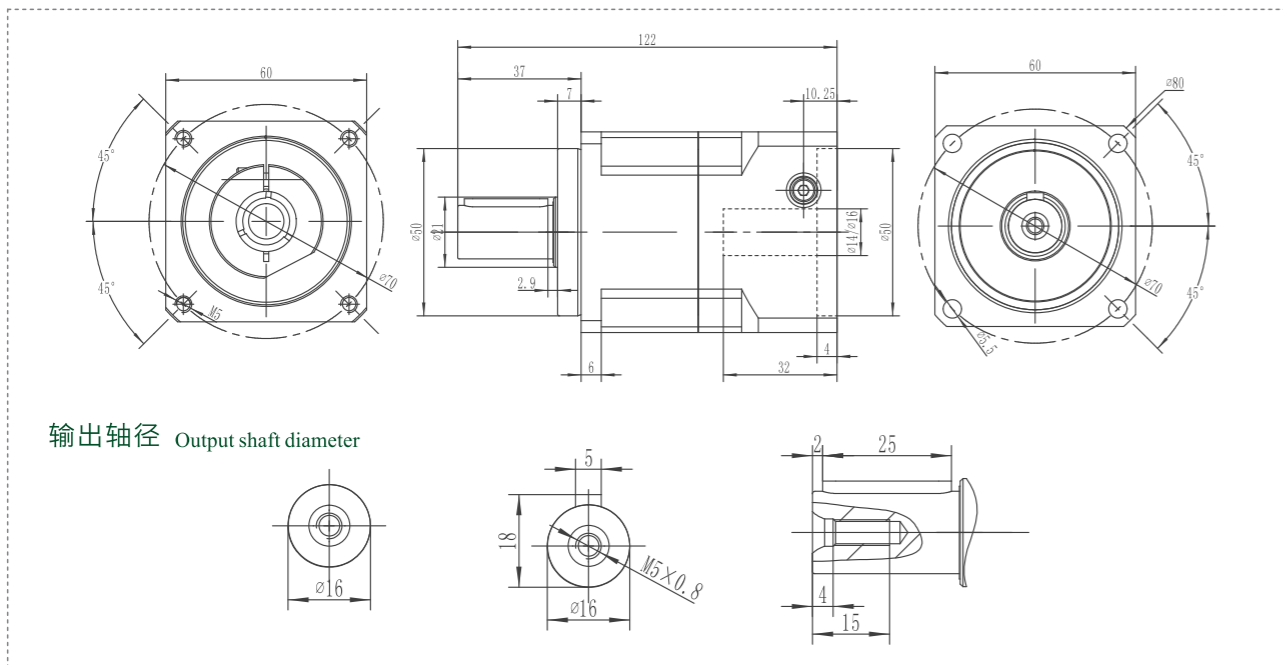
- ① Speed ratio ($i=S_{in}/S_{out}$)
- ② As a result, when the output speed is 100 rpm, it acts on the center of the output shaft.
- ③ Continuous operation life of 10000h.
- ④ The noise value was obtained based on the input rotational speed of 3000 rpm, $i=10$.

此样本中的所有产品型号及参数如有变更恕不另行通告, 订货前请与本公司确认。
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TB060系列* TB060 Series

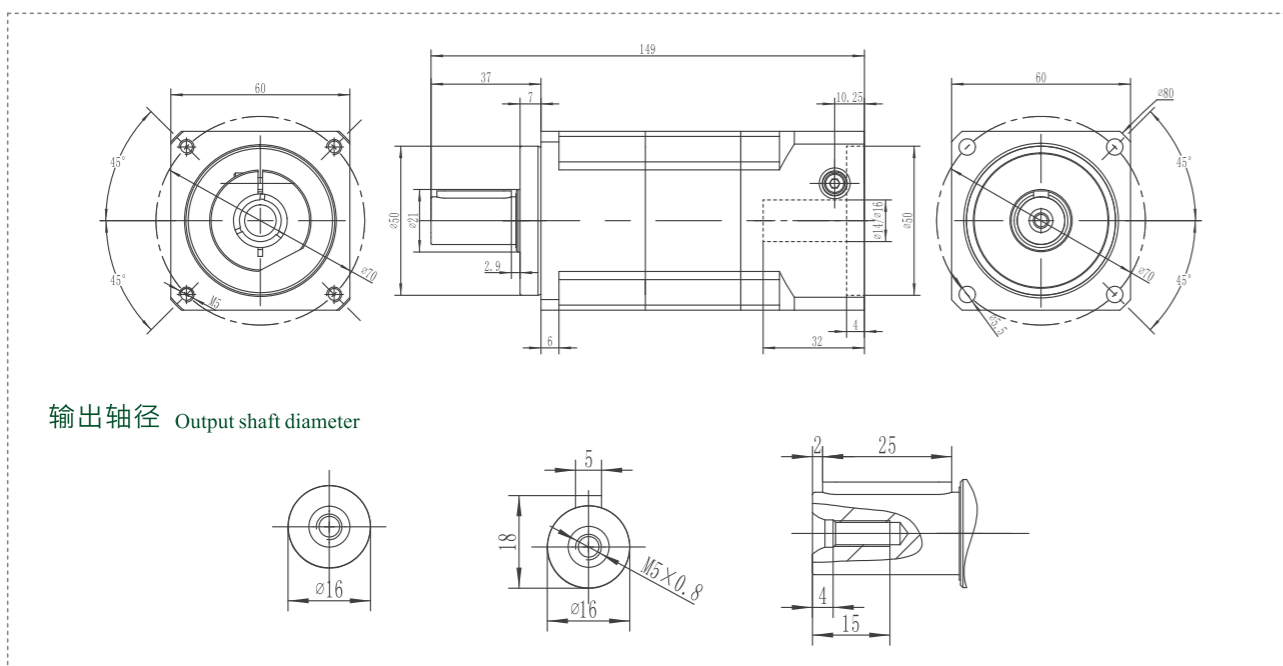
外形尺寸表

TB060单节* TB060 One Stage



输出轴径 Output shaft diameter

TB060双节* TB060 Two Stage



输出轴径 Output shaft diameter

性能资料 Performance data

TB系列减速机采用了标准化的法兰界面，PSFN的安装便捷安全，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 of PSFN is convenient and safe. Due to the high anti-tilt torque, this high-precision planetary reducer can perform many difficult tasks.

TB060		单节 One Stage										双节 Two Stage												
速比 Speed Ratio	i		3	4	5	6	7	8	9	10	15	20	25	30	35	40	50	60	70	80	100			
额定输出转矩 Rated 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 ×3										T ₁ ×3											
额定输入转速 Rated Input Speed	S ₁	rpm	5000										5000											
最大输入转速 Maximum Input Speed	S ₂	rpm	10000										10000											
最大输出转矩 Maximum Output Torque	T ₄	Nm	T ₁ ×3×60%										T ₁ ×3×60%											
最大径向力 Maximum Radial Force	F _a	N	1530										1530											
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 Effectiveness	β	%	≥97%										≥94%											
寿命 Life	☒	h	20000h										20000h											
反馈噪音 Feedback Noise	☒	dB	≤58dB										≤58dB											
重量 Weight	☒	Kg	1.3										1.9											
回程间隙 Return Gap	P0		≤1										≤3											
	P1	arcmin	≤3										≤5											
	P2		≤5										≤7											
使用温度 Operating Temperature	☒	°C	-10°C~90°C										-10°C~90°C											
润滑 Lubricating	☒		合成油脂 Synthetic Grease										合成油脂 Synthetic Grease											
防护等级 Protection Level	☒		IP65										IP65											
安装方向 Installation Direction	☒		任意方向 Any Direction										任意方向 Any Direction											
传动惯量 Transmission Inertia	J	kg·cm ²	0.16	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。

According to the instructions:

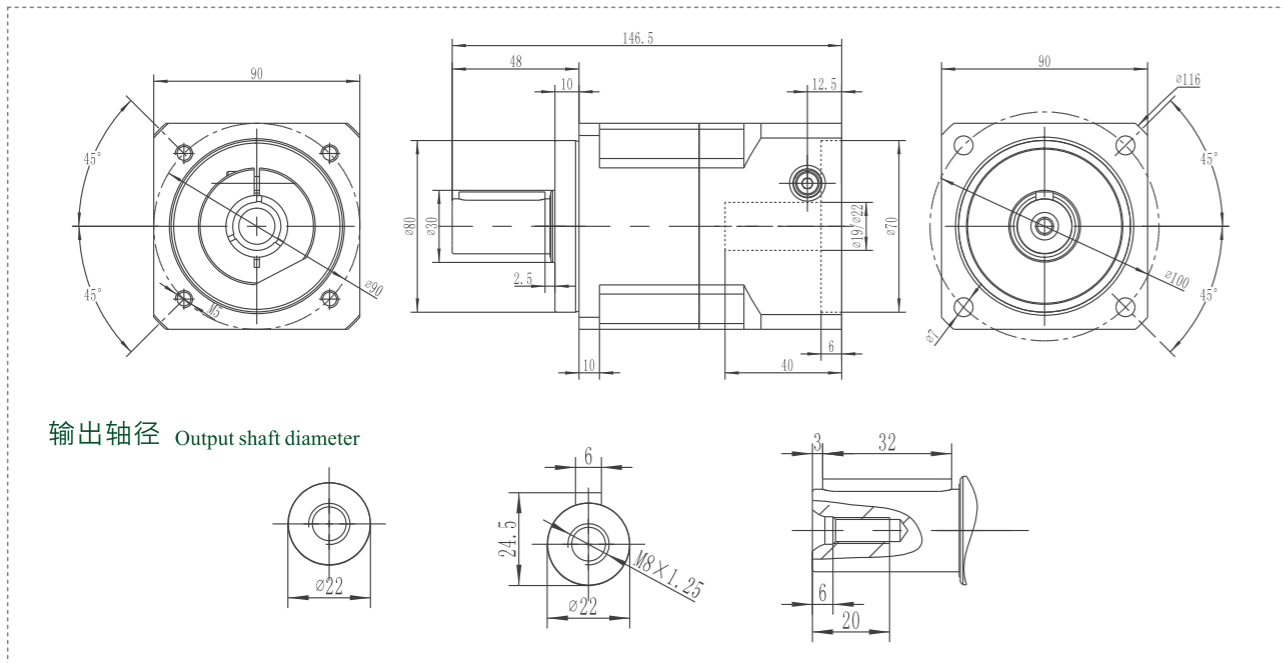
- ① Speed ratio (i=S_{in}/S_{out})
- ② As a result, when the output speed is 100 rpm, it acts on the center of the output shaft.
- ③ Continuous operation life of 10000h.
- ④ The noise value was obtained based on the input rotational speed of 3000 rpm, i=10.

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TB090系列* TB090 Series

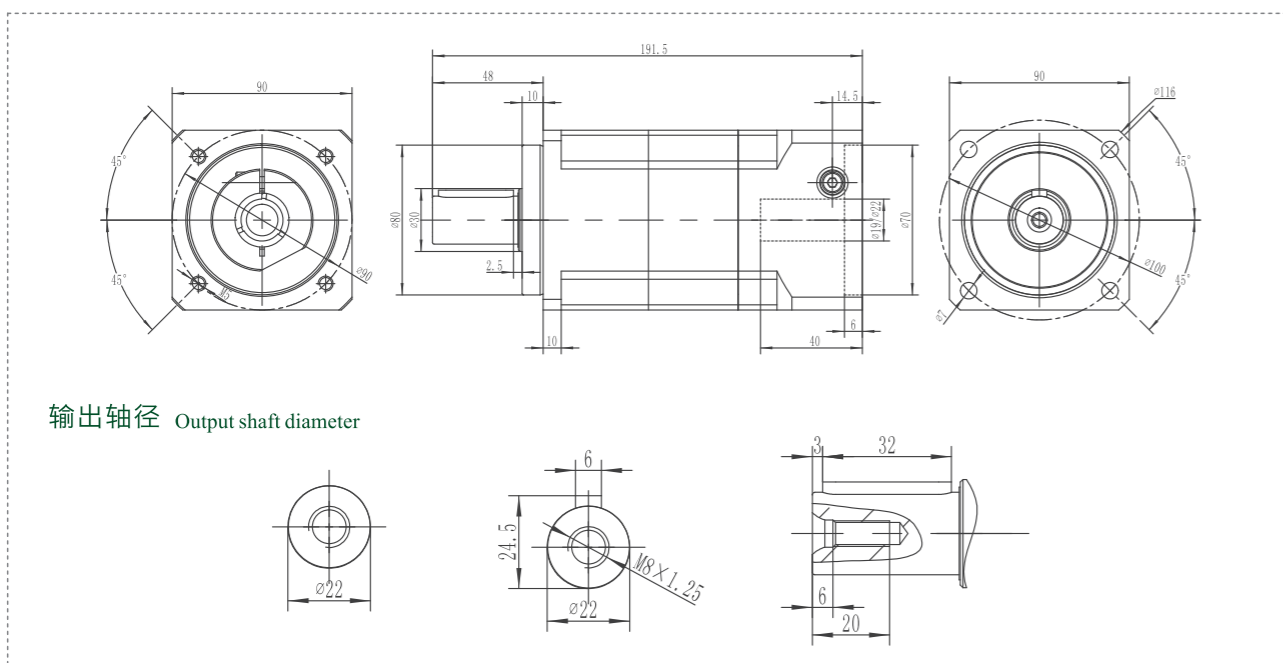
外形尺寸表

TB090单节* TB090 One Stage



输出轴径 Output shaft diameter

TB090双节* TB090 Two Stage



输出轴径 Output shaft diameter

性能资料 Performance data

TB系列减速机采用了标准化的法兰界面，PSFN的安装便捷安全，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 of PSFN is convenient and safe. Due to the high anti-tilt torque, this high-precision planetary reducer can perform many difficult tasks.

TB090		单节 One Stage										双节 Two Stage																									
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 Rated 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 Rated 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	$T_1 \times 3 \times 60\%$										$T_1 \times 3 \times 60\%$																								
最大径向力 Maximum Radial Force	F_a	N	3250										3250																								
最大轴向力 Maximum Axial Force	F_b	N	1625										1625																								
扭转刚度 Torsional Rigidity	-	Nm/arcmin	14										14																								
效率 Effectiveness	β	%	$\geq 97\%$										$\geq 94\%$																								
寿命 Life	\boxtimes	h	20000h										20000h																								
反馈噪音 Feedback Noise	\boxtimes	dB	$\leq 63\text{dB}$										$\leq 63\text{dB}$																								
重量 Weight	\boxtimes	Kg	3.6										5.1																								
回程间隙 Return Gap	P_0		≤ 1										≤ 3																								
	P_1	arcmin	≤ 3										≤ 5																								
	P_2		≤ 5										≤ 7																								
使用温度 Operating Temperature	\boxtimes	$^{\circ}\text{C}$	$-10^{\circ}\text{C} - 90^{\circ}\text{C}$										$-10^{\circ}\text{C} - 90^{\circ}\text{C}$																								
润滑 Lubricating	\boxtimes		合成油脂 Synthetic Grease										合成油脂 Synthetic Grease																								
防护等级 Protection Level	\boxtimes		IP65										IP65																								
安装方向 Installation Direction	\boxtimes		任意方向 Any Direction										任意方向 Any Direction																								
传动惯量 Transmission Inertia	J	$\text{kg}\cdot\text{cm}^2$	0.61	0.48	0.47	0.45	0.45	0.44	\boxtimes 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。

According to the instructions:

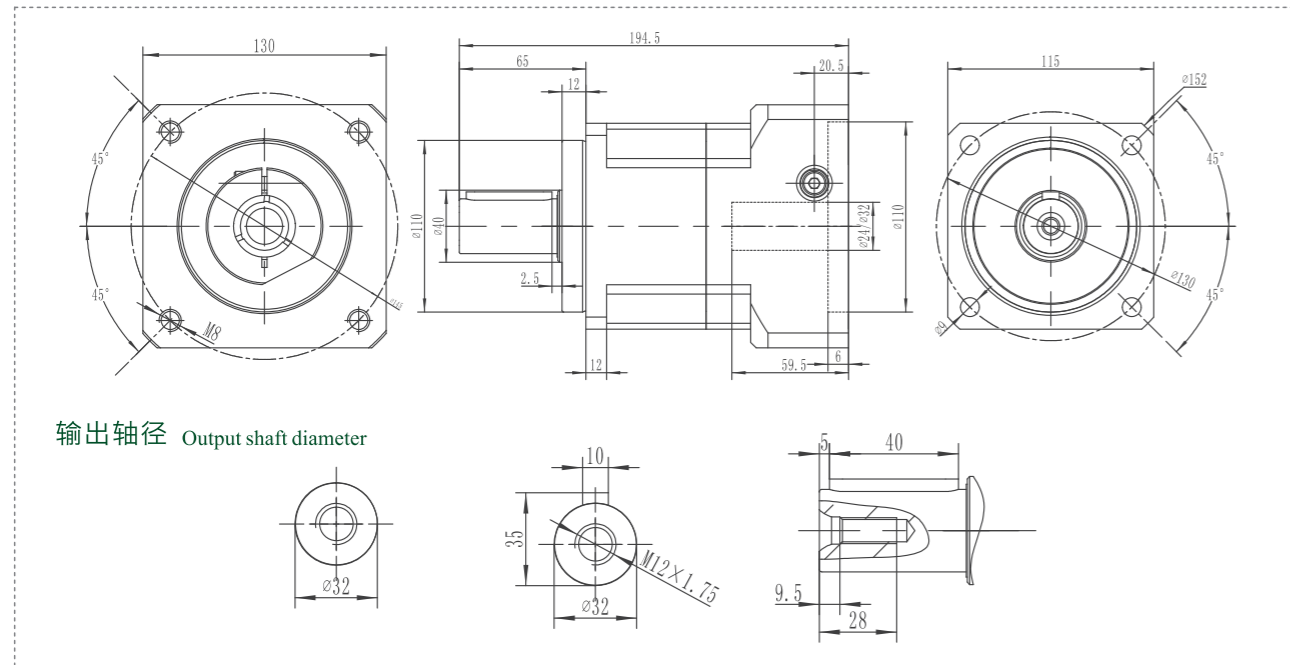
- ① Speed ratio ($i=S_{in}/S_{out}$)
- ② As a result, when the output speed is 100 rpm, it acts on the center of the output shaft.
- ③ Continuous operation life of 10000h.
- ④ The noise value was obtained based on the input rotational speed of 3000 rpm, $i=10$.

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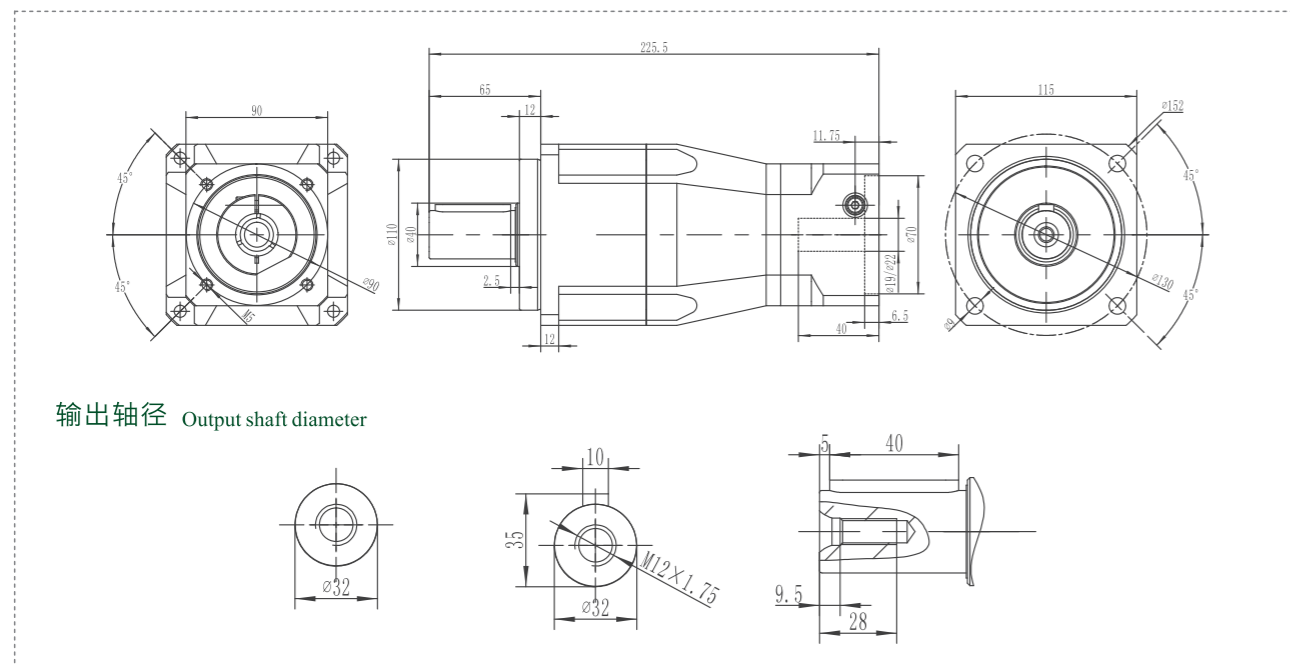
TB115系列* TB115 Series

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 of PSFN is convenient and safe. Due to the high anti-tilt torque, this high-precision planetary reducer can perform many difficult tasks.

TB115	单节 One Stage										双节 Two Stage											
	i	3	4	5	6	7	8	9	10	15	20	25	30	35	40	50	60	70	80	100		
速比 Speed Ratio																						
额定输出转矩 Rated 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 Rated Input Speed	S ₁	rpm	4000										4000									
最大输入转速 Maximum Input Speed	S ₂	rpm	8000										8000									
最大输出转矩 Maximum Output Torque	T ₄	Nm	T ₁ × 3 × 60%										T ₁ × 3 × 60%									
最大径向力 Maximum Radial Force	F _a	N	6700										6700									
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 Effectiveness	β	%	≥97%										≥94%									
寿命 Life	☒	h	20000h										20000h									
反馈噪音 Feedback Noise	☒	dB	≤60dB										≤60dB									
重量 Weight	☒	Kg	7.7										9									
回程间隙 Return Gap	P0		≤1										≤3									
	P1	arcmin	≤3										≤5									
	P2		≤5										≤7									
使用温度 Operating Temperature	☒	°C	-10°C-90°C										-10°C-90°C									
润滑 Lubricating	☒		合成油脂 Synthetic Grease										合成油脂 Synthetic Grease									
防护等级 Protection Level	☒		IP65										IP65									
安装方向 Installation Direction	☒		任意方向 Any Direction										任意方向 Any Direction									
传动惯量 Transmission Inertia	J	kg·cm ²	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。

According to the instructions:

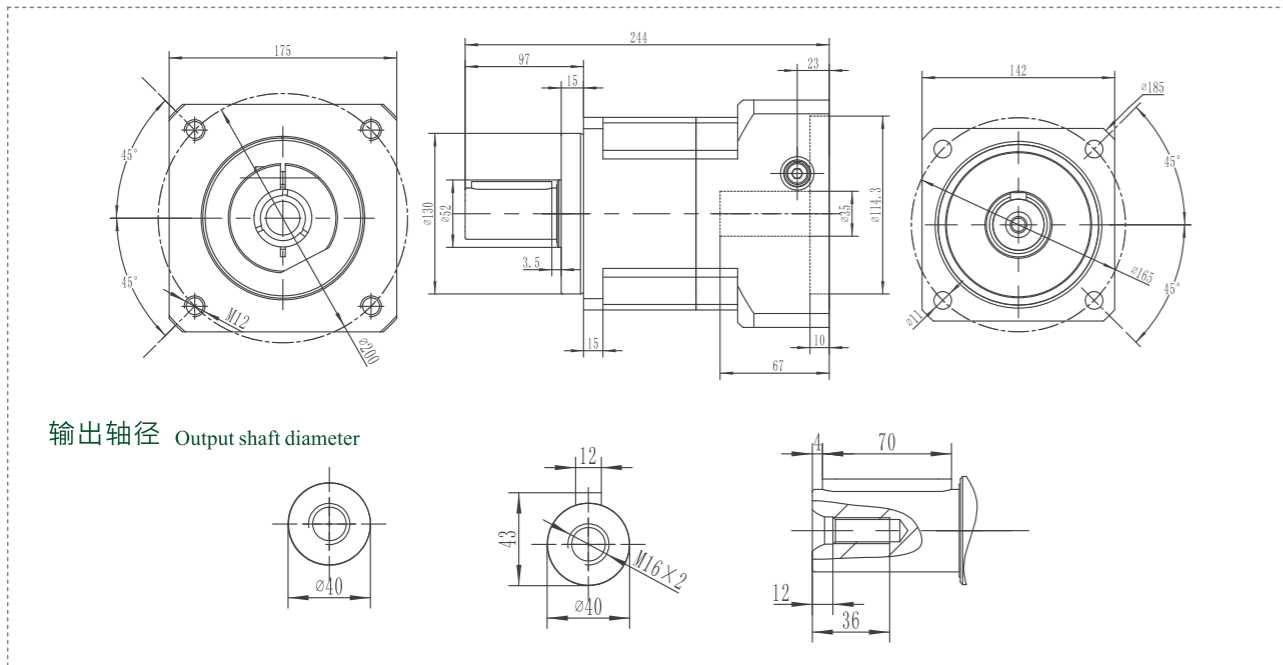
- ① Speed ratio (i=S_{in}/S_{out})
- ② As a result, when the output speed is 100 rpm, it acts on the center of the output shaft.
- ③ Continuous operation life of 10000h.
- ④ The noise value was obtained based on the input rotational speed of 3000 rpm, i=10.

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TB142系列* TB142 Series

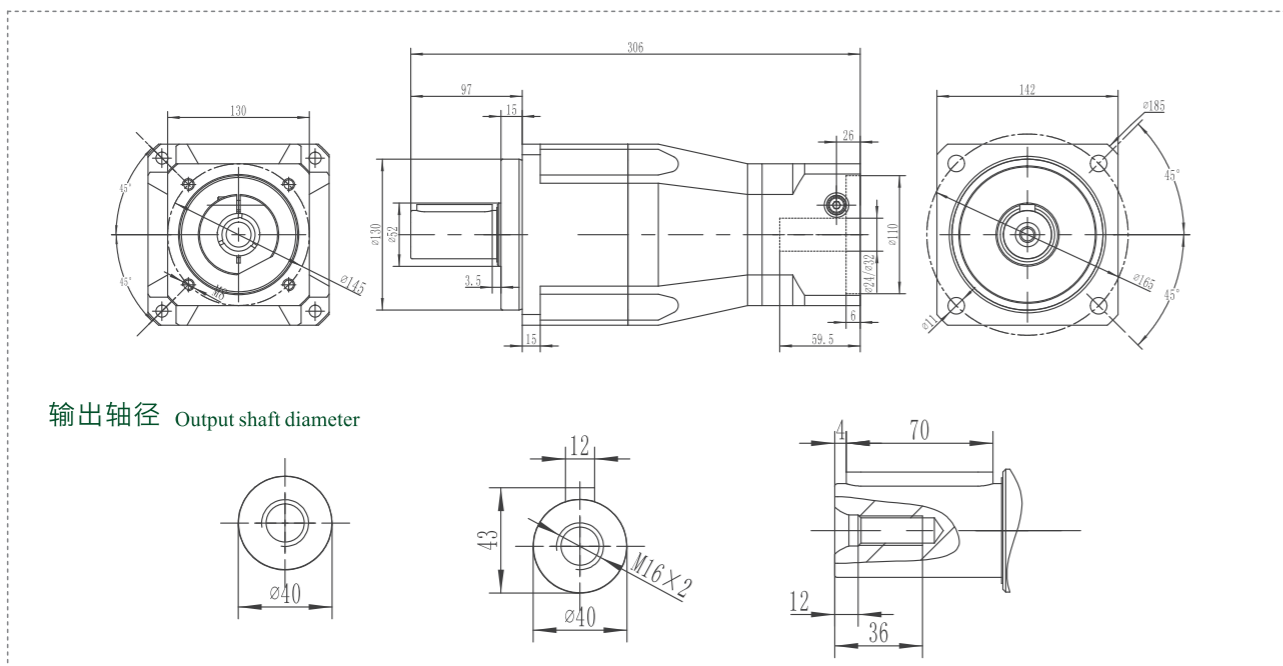
外形尺寸表

TB142单节* TB142 One Stage



输出轴径 Output shaft diameter

TB142双节* TB142 Two Stage



输出轴径 Output shaft diameter

性能资料 Performance data

TB系列减速机采用了标准化的法兰界面，PSFN的安装便捷安全，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 of PSFN is convenient and safe. Due to the high anti-tilt torque, this high-precision planetary reducer can perform many difficult tasks.

TB142		单节 One Stage	双节 Two Stage																		
			3	4	5	6	7	8	9	10	15	20	25	30	35	40	50	60	70	80	100
速比 Speed Ratio	i		3	4	5	6	7	8	9	10	15	20	25	30	35	40	50	60	70	80	100
额定输出转矩 Rated 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 × 3																		
额定输入转速 Rated Input Speed	S ₁	rpm	3000																		
最大输入转速 Maximum Input Speed	S ₂	rpm	6000																		
最大输出转矩 Maximum Output Torque	T ₄	Nm	T ₁ × 3 × 60%																		
最大径向力 Maximum Radial Force	F _a	N	9400																		
最大轴向力 Maximum Axial Force	F _b	N	4700																		
扭转刚性 Torsional Rigidity	-	Nm/arcmin	50																		
效率 Effectiveness	β	%	≥97%																		
寿命 Life	☒	h	20000h																		
反馈噪音 Feedback Noise	☒	dB	≤65dB																		
重量 Weight	☒	Kg	14.5																		
回程间隙 Return Gap	P0		≤1																		
	P1	arcmin	≤3																		
	P2		≤5																		
使用温度 Operating Temperature	☒	°C	-10°C~90°C																		
润滑 Lubricating	☒		合成油脂 Synthetic Grease																		
防护等级 Protection Level	☒		IP65																		
安装方向 Installation Direction	☒		任意方向 Any Direction																		
传动惯量 Transmission Inertia	J	kg·cm ²	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。

According to the instructions:

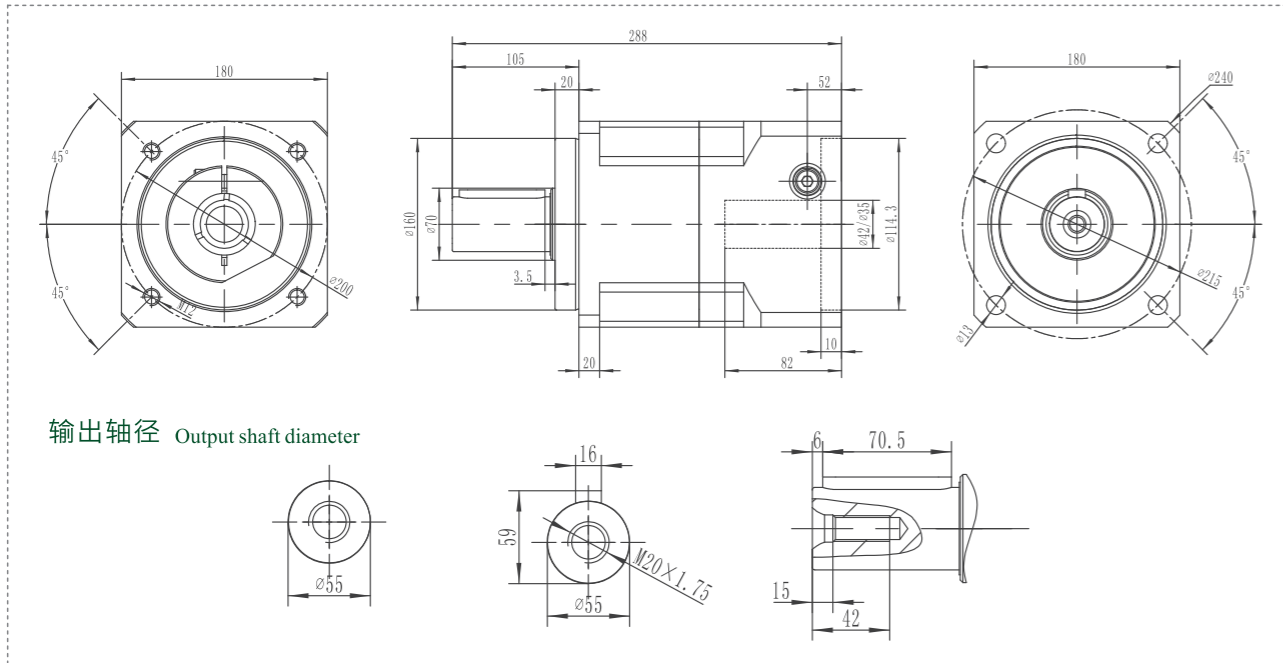
- ① Speed ratio (i=S_{in}/S_{out})
- ② As a result, when the output speed is 100 rpm, it acts on the center of the output shaft.
- ③ Continuous operation life of 10000h.
- ④ The noise value was obtained based on the input rotational speed of 3000 rpm, i=10.

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TB180系列* TB180 Series

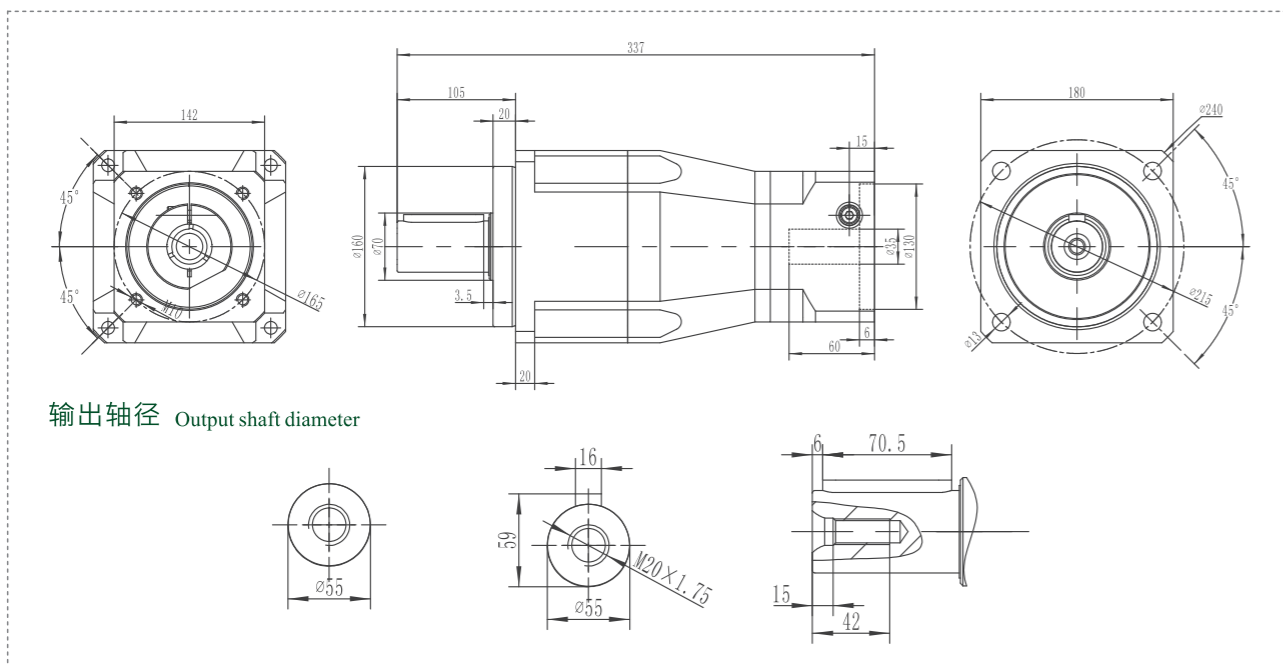
外形尺寸表

TB180单节* TB180 One Stage



输出轴径 Output shaft diameter

TB180双节* TB180 Two Stage



输出轴径 Output shaft diameter

性能资料 Performance data

TB系列减速机采用了标准化的法兰界面，PSFN的安装便捷安全，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 of PSFN is convenient and safe. Due to the high anti-tilt torque, this high-precision planetary reducer can perform many difficult tasks.

TB180	单节 One Stage										双节 Two Stage											
	速比 Speed Ratio	i	3	4	5	6	7	8	9	10	15	20	25	30	35	40	50	60	70	80	100	
额定输出转矩 Rated Output Torque	T ₁	Nm	588	1040	1200	1100	1100	1000	-	900	-	-	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 Rated Input Speed	S ₁	rpm	3000										3000									
最大输入转速 Maximum Input Speed	S ₂	rpm	6000										6000									
最大输出转矩 Maximum Output Torque	T ₄	Nm	T ₁ × 3 × 60%										T ₁ × 3 × 60%									
最大径向力 Maximum Radial Force	F _a	N	14500										14500									
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 Effectiveness	β	%	≥97%										≥94%									
寿命 Life	☒	h	20000h										20000h									
反馈噪音 Feedback Noise	☒	dB	≤66dB										≤66dB									
重量 Weight	☒	Kg	29										33									
回程间隙 Return Gap	P0		≤1										≤3									
	P1	arcmin	≤3										≤5									
	P2		≤5										≤7									
使用温度 Operating Temperature	☒	°C	-10°C~90°C										-10°C~90°C									
润滑 Lubricating	☒		合成油脂 Synthetic Grease										合成油脂 Synthetic Grease									
防护等级 Protection Level	☒		IP65										IP65									
安装方向 Installation Direction	☒		任意方向 Any Direction										任意方向 Any Direction									
传动惯量 Transmission 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。

According to the instructions:

- ① Speed ratio (i=S_{in}/S_{out})
- ② As a result, when the output speed is 100 rpm, it acts on the center of the output shaft.
- ③ Continuous operation life of 10000h.
- ④ The noise value was obtained based on the input rotational speed of 3000 rpm, i=10.

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