



***Suntech***

# RV CYCLOIDAL PIN WHEEL REDUCER

摆线针轮RV减速器

# 术语和定义 TERMS AND DEFINITIONS

GB/T10107.1摆线针轮行星传动基本术语和JB/T10419摆线针轮行星传动、摆线齿轮和针轮、精度中确定的和下列术语和定义适用于本标准。

GB/T10107.1 the basic planetary transmission terms of cycloidal-pin wheel and JB/T10419 cycloidal-pin wheel planetary transmission, cycloid gear, pin wheel, and accuracy terms all suitable for this standard.

## ■ 迟滞曲线 Hysteresis Curve

固定输入齿轮，向输出端施加转矩，得到转矩同扭转角的对应关系，绘出迟滞曲线。(图1)

The fixed input gear is applied to the output to obtain the corresponding relationship between the torque and the torsion angle, and the hysteresis curve is drawn. (Figure 1)

## ■ 传动精度 Transmission Accuracy

传动精度( $\theta$ ): 指输入任意旋转角时的理论旋转角度( $\theta_{in}$ )和实际输出旋转角度( $\theta_{out}$ )之间的差，公式表示:  $\theta = \theta_{in}/k - \theta_{out}$  ( $k$ --- 速比值)。

Transmission accuracy ( $\theta$ ): refers to the input with arbitrary rotation angle when the theory of rotation angle ( $\theta_{in}$ ) and the actual output rotation angle ( $\theta_{out}$ ) between poor and formula:  $\theta = \theta_{in}/k - \theta_{out}$  ( $k$ --- ratio values).

## ■ 回差 Backlash

指在额定转矩的 $\pm 3\%$ 处的迟滞曲线宽度的中间点的扭转角。(图1)

The intermediate point of the hysteresis curve of the nominal torque of 3%. (Figure 1)

## ■ 齿隙 Backlash

指在额定转矩为“零”处的扭转角。(图1)

Torsion angle at the rated torque of zero. (Figure 1)

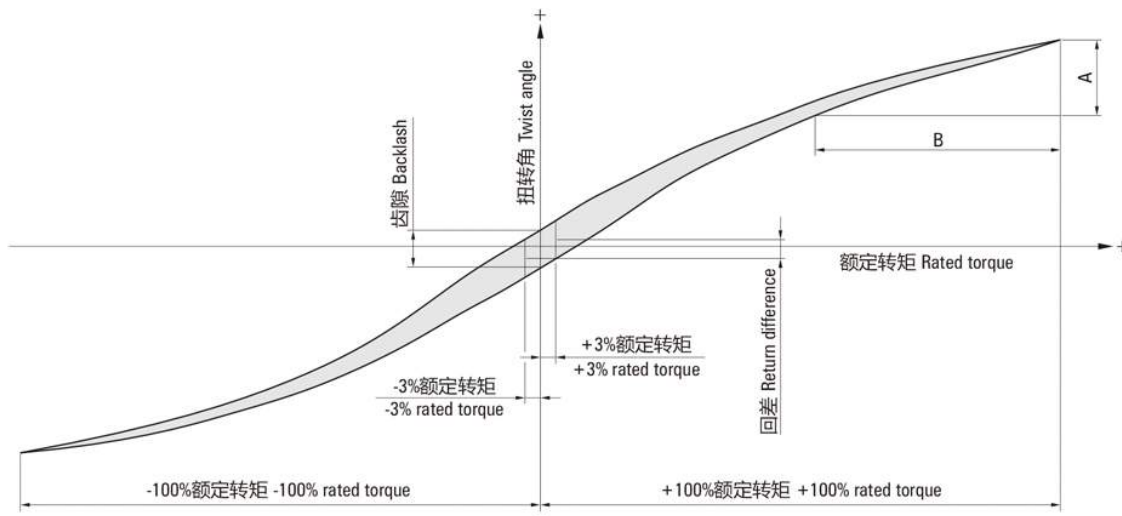
## ■ 扭转刚度 Torsional Stiffness

扭转刚度 =  $B/A$ 。(图1)

Torsional stiffness =  $B/A$ . (Figure 1)

● 图1-迟滞曲线 Figure 1 - Hysteresis curve

单位 Unit: (Nm/arc min)



# 产品构造、型号和尺寸

## PRODUCT STRUCTURE, MODEL AND DIMENSION

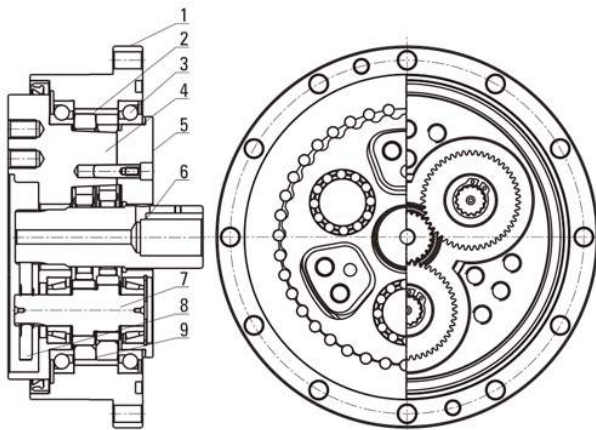
减速器由输出法兰、支撑法兰、针齿壳、摆线齿轮、曲柄轴、行星齿轮、针齿、输入齿轮（选件）、主轴承、圆锥滚子轴承、滚针轴承连保持架、油封等组成。

The reducer is composed by output flange, supporting flange, needle gear housing, cycloid gear, crank shaft, planetary gear, gear pin, input gear (optional), main bearing, cone roller bearings, needle roller bearings to keep frame and oil seal.

### ■ 减速器构造 Reducer Structure

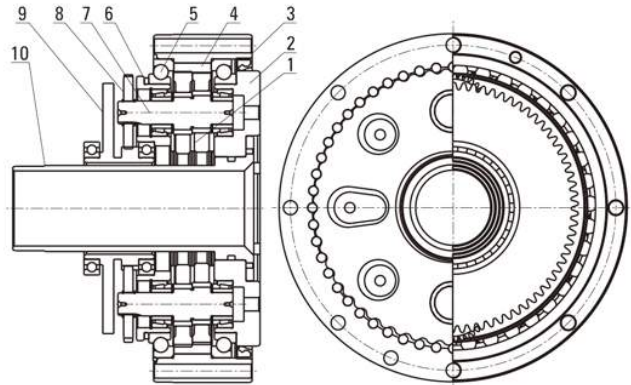
● 图2-E系列减速器构造 Figure 2-E series reducer structure

- |                          |                       |
|--------------------------|-----------------------|
| 1-针齿壳 Needle tooth shell | 2-针齿 Pin gear         |
| 3-主轴承 Main bearing       | 4-输出法兰 Output flange  |
| 5-支撑法兰 Supporting flange | 6-输入轴 Input shaft     |
| 7-曲轴 Crankshaft          | 8-行星齿轮 Planetary gear |
| 9-摆线齿轮 Cycloidal gear    |                       |



● 图3-C系列减速器构造 Figure 3-C series reducer structure

- |                          |                          |
|--------------------------|--------------------------|
| 1-摆线齿轮 Cycloidal Gear    | 2-输出法兰 Output flange     |
| 3-针齿壳 Needle tooth shell | 4-针齿 Pin gear            |
| 5-主轴承 Main bearing       | 6-支撑法兰 Supporting flange |
| 7-曲轴 Crankshaft          | 8-行星齿轮 Planetary gear    |
| 9-中心齿轮 Central gear      | 10-低速管 Low speed tube    |



### ■ 减速器外形尺寸 Reducer Outline Dimension

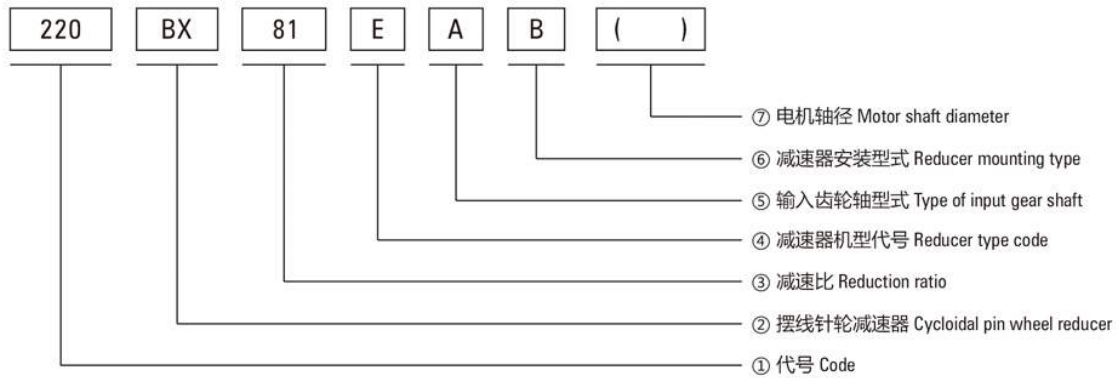
- E系列减速器外形尺寸参见P09~P14。 E series reducer outline dimensions see P09~P14.
- C系列减速器外形尺寸参见P20~P23。 C series reducer outline dimensions see P20~P23.

### ■ 使用环境 Using Environment

- 在下列的环境条件下，减速器应能正常运行 In the following environmental conditions, the reducer should be able to operate normally:

- 环境空气最高温度随季节而变化，但不超过40°C。 The highest ambient temperature is changed by seasons and less than 40°C.
- 环境空气最低温度为-10°C。 The lowest ambient temperature is -10°C.

## 型号命名 Model Number



- ① 代号, 具体见表1 Code, specific see table 1

### 减速器代号 Reducer Code

E 系列 E Series			C 系列 C Series		
代号 Code	外形尺寸(mm) Outline dimension (mm)	通用型号 General model	代号 Code	外形尺寸(mm) Outline dimension (mm)	通用型号 General model
120	Φ122	6E	150	Φ146	10C
150	Φ145	20E	180	Φ181	27C
190	Φ190	40E	220	Φ222	50C
220	Φ222	80E	250	Φ250	100C
250	Φ244	110E	350	Φ346	200C
280	Φ280	160E	440	Φ440	320C
320	Φ325	320E	520	Φ520	500C
370	Φ370	450E	/	/	/

- ② BX: 摆线针轮减速器 BX: Cycloidal pin wheel reducer

- ③ 81: 减速比, 具体见表2 81: Gear ratio, specific see table 2

### 减速比 Reduction Ratio

E 系列 E Series		C 系列 C Series	
代号 Code	减速比 (输出法兰输出) Reduction ratio (output flange output)	代号 Code	单体减速比 Monomer reduction ratio
120	43, 53.5, 59, 79, 103	150	27.00
150	81, 105, 121, 141, 161	180	36.57
190	81, 105, 121, 153	220	32.54
220	81, 101, 121, 153	250	36.75
250	81, 111, 161, 175.28	350	34.86
280	81, 101, 129, 145, 171	440	35.61
320	81, 101, 118.5, 129, 141, 171, 185	520	37.34
370	81, 101, 118.5, 129, 154.8, 171, 192.4	/	/

注1: E系列如由外壳(针齿壳)输出, 减速比相应减1。 Note 1: E series, such as by the shell (pin shell) output, reduction ratio of the corresponding reduction of 1.

注2: C系列减速比是指电机安装在外壳的减速比, 如安装在输出法兰侧, 减速比相应减1。 Note 2: C series gear ratio refers to the motor installed in the casing of the reduction ratio, if installed on the output flange side, the corresponding reduction ratio by 1.

- ④ 减速器机型代号 Reducer type code

E: 主轴承内置E型 Main bearing built-in E type  
C: 中空型 Hollow type

- ⑤ 输入齿轮轴型式 Type of input gear shaft

A: 标准型式A Standard type A  
B: 标准型式B Standard type B  
Z: 特配型式 Special matching type  
W: 无 Nothing

- ⑥ 减速器安装型式 Reducer mounting type

B: 输出轴螺栓紧固连接 Output shaft bolt fastening connection  
P: 输出轴螺栓及定位销并用连接 Use both output shaft bolt and locating pin.  
F: 配法兰安装型式 Flange mounting type

- ⑦ 电机轴径 Motor shaft diameter

# 技术要求 TECHNICAL REQUIREMENT

## 外观质量、标志：减速机外观应整洁、美观，标志清晰、正确

Appearance Quality, Marks: Reducer Appearance Should Be Neat, Beautiful, Clear, Correct

- 减速机表面不应有碰伤、划痕、毛刺、凹坑和锈蚀等明显缺陷。Reducer's appearance should not be bumps, scratches, burrs, pits and coeosion etc.
- 紧固件连接应牢靠，锁紧，密封应可靠。Fastener connection should be firm, lock, seal should be reliable.
- 标志的字迹应清晰、正确，经规定的环境条件试验后，标记和字迹仍应清晰可见。Mark should be clear and correct after the testing, the mark should be clearly.
- 减速器应有可靠的防锈措施。Reducer should have reliable anti rust measures.

## 基本尺寸 Basic Dimensions

- 减速器的外形尺寸、安装尺寸应符合P09~P19和P20~P27的图纸或客户要求并得到客户确认的图纸要求。  
Deceleration device installation size, size should be consistent with the P09~P19 and P20~P27 of the drawing or customer requirements and customer confirmation drawings.
- 输入齿轮轴、安装法兰等可依客户要求生产，生产前相关图纸应得到客户的确认。  
Input shaft and installation flange can be produced as customer's requirements. before the producing, it should get customer's confirmation drawing.

## 空转试验 Idle Test

- 空转运行试验：减速机在输入转速 $\leq 3000r/min$ 下空载运行10min，减速机运转应平稳正常，无异常或冲击性噪声。  
Noload operating test: After reducers work under noload for 10min with input speed  $\leq 3000r/min$ , reducer can run steadily, no abnormal or impacting noise.
- 速比试验：减速机速比应符合标定值。  
Ratio test: The speed ratio of the reducer should be in accordance with the calibration value.

## 噪声 Noise

- 减速机在输入转速 $\leq 3000r/min$ 下空载运行，其噪声应小于 $70^{+3}dB(A)$ 。  
The reducer running in no-load input speed is less than or equal to 3000r/min, the noise should be less than  $70^{+3}dB(A)$ .

## 转矩 Torque

- 减速机在额定输出转矩条件下连续运转2小时以上，减速机能正常运转，无异音。  
Reducers work continuously for over 2 hours at rated torque, no abnormal noise.
- 减速机在工作环境温度、额定负载下连续工作，减速机壳温升应小于 $45^{\circ}C$ ，轴承温度小于 $95^{\circ}C$ 。  
after reducers work continuously, reducer's temperature should less than  $45^{\circ}C$ , bearing temperature is  $< 95^{\circ}C$ .
- 减速机传动效率应符合表3、表4的要求。  
Gear reducer transmission efficiency should meet the requirements of table 3, table 4.
- E系列减速机输出转矩符合表3的规定。  
E series reducer output torque in accordance with the provisions of table 3.
- C系列减速机输出转矩符合表4的规定。  
C series reducer output torque in accordance with the provisions of table 4.

表3-E系列输出转矩及效率 Table 3-E series output torque and efficiency

输出转速项目 Output Speed Project 型号 Model	5 r/min		18 r/min			25 r/min		30 r/min		容许最高输出转速 Maximum Allowable Loss Out Speed r/min
	输出转矩 Output Torque	输入功率 Input Power	输出转矩 Output Torque	输入功率 Input Power	效率 Efficiency	输出转矩 Output Torque	输入功率 Input Power	输出转矩 Output Torque	输入功率 Input Power	
	N.m	Kw	N.m	Kw	%	N.m	Kw	N.m	Kw	
120BX	115	0.075	64	0.15	80	62	0.2	64	0.25	100
150BX	245	0.160	170	0.40	80	153	0.5	153	0.60	75
190BX	612	0.400	425	1.00	80	367	1.2	382	1.50	70
220BX	1146	0.750	743	1.75	80	673	2.2	637	2.50	70
250BX	1528	1.000	934	2.20	80	978	3.2	892	3.50	50
280BX	2292	1.500	1571	3.70	80	1437	4.7	1274	5.00	45
320BX	4584	3.000	2972	7.00	80	2903	9.5	2802	11.0	35
370BX	6112	4.000	3905	9.20	80	/	/	/	/	25

注1: 额定转矩是指输出转速为18 r/min时的输出转矩。输入功率考虑了减速器的效率。

Note 1: The rated torque is the output torque of the output speed of 18 r/min. The input power considers the efficiency of the reducer.

注2: 转矩计算公式: Note 2: Torque calculation formula:

$T=9549 \times P \times \eta / N$  ( T: 转矩Nm, P: 功率Kw, N: 转速r/min,  $\eta$ : 效率% )。  $T=9549 \times P \times \eta / N$  (T: torque Nm, P: power Kw, N: speed r/min,  $\eta$ : efficiency%)

● 表4-C系列输出转矩及效率 Table 4-C output series torque and efficiency

型号 Model	5 r/min		18 r/min			25 r/min		30 r/min		容许最高输出转速 Maximum Allowable Loss Out Speed r/min
	输出转矩 Output Torque	输入功率 Input Power	输出转矩 Output Torque	输入功率 Input Power	效率 Efficiency	输出转矩 Output Torque	输入功率 Input Power	输出转矩 Output Torque	输入功率 Input Power	
	N.m	Kw	N.m	Kw	%	N.m	Kw	N.m	Kw	
150BX	134	0.09	99	0.24	78	89	0.3	87	0.35	80
180BX	372	0.25	269	0.65	78	239	0.8	223	0.90	60
220BX	745	0.50	455	1.10	78	447	1.5	434	1.75	50
250BX	1490	1.00	994	2.40	78	894	3.0	819	3.30	40
350BX	2235	2.00	1986	4.80	78	1788	6.0	1638	6.60	30
440BX	4470	3.00	3103	7.50	78	2830	9.5	/	/	25
520BX	7003	4.70	4966	12.0	78	/	/	/	/	20

注1: 额定转矩是指输出转速为18rpm时的输出转矩。输入功率考虑了减速器的效率。  
 Note 1: the rated torque is the output torque of the output speed of 18rpm. The input power considers the efficiency of the reducer.

注2: 转矩计算公式: Note 2: torque calculation formula:  
 $T=9549 \times P \times \eta / N$  ( T: 转矩Nm, P: 功率Kw, N: 转速RPM,  $\eta$ : 效率% )。  $T=9549 \times P \times \eta / N$  ( T: torque Nm, P: power Kw, N: speed RPM,  $\eta$ : efficiency% ).

### ■ 传动精度、扭转刚度、齿隙与回差 Transmission Precision, Torsional Stiffness, Backlash And Backlash

- 减速器扭转刚度、齿隙和回差应符合表5及表6的要求。  
The torsional stiffness, backlash and backlash of the gear reducer shall meet the requirements of table 5 and table 6.
- 减速器传动精度应符合表5及表6的要求。  
The transmission accuracy of gear reducer shall conform to the requirements of table 5 and table 6.

### ■ 寿命 Life

- 减速器在额定转速和额定负载下运转，减速器工作寿命应为6000小时以上。  
When the reducer is working on rated speed and on-loading, reducer's lift time is more than 6000 hours.

### ■ 容许力矩 Allowable Torque

- 减速器容许力矩应符合表5、表6的要求。  
The allowable torque of the gear reducer shall meet to the requirements of table 5 and table 6.

### ■ 过载 Overload

- 减速机在额定扭矩的125%进行过载试验运行5min，运行期间不得有异常噪声和损坏等现象。  
After reducer working under over-load for 5min with 125% rated torque, dudring the running, it have no noise and other damage .

### ■ 减速器技术参数参见表5及表6 Reducer Technical Parameters See Table 5 And Table 6

● 表5-C系列技术参数 Table 5-C series of technical parameters

项目 Project	减速器 单体减速比 Retarder Monomer Reduction Ratio	容许力矩 Allowable Moment	扭转刚度 Torsional Rigidity	瞬时容许最大转矩 Instantaneous Maximum Torque	传动精度 Transmission Accuracy	齿隙回差 Backlash Of Backlash	寿命 Life	减速器单体 惯性力矩 Retarder Inertia Moment	重量 Weight
型号 Model		N.m	N.m/(Arc.min)	N.m	Arc.min	Arc.min	h	Kg.m <sup>2</sup>	kg
150BX	27.00	686	47	490	1.0	1.0	6000	1.380X10 <sup>-5</sup>	4.60
180BX	36.57	980	147	1323	1.0	1.0	6000	0.550X10 <sup>-4</sup>	8.50
220BX	32.54	1764	255	2450	1.0	1.0	6000	1.820X10 <sup>-4</sup>	14.6
250BX	36.75	2450	510	4900	1.0	1.0	6000	0.475X10 <sup>-3</sup>	19.5
350BX	34.86	8820	980	9800	1.0	1.0	6000	1.390X10 <sup>-3</sup>	55.6
440BX	35.61	20580	1960	15680	1.0	1.0	6000	0.518X10 <sup>-2</sup>	79.5
520BX	37.34	34300	3430	24500	1.0	1.0	6000	0.996X10 <sup>-2</sup>	154

● 表6-E系列技术参数 Table 6-E series of technical parameters

项目 Project 型号 Model	速比值 Ratio Value		容许力矩 Allowable Moment N.m	扭转刚度 Torsional Rigidity N.m/(Arc.min)	瞬时容许最大扭矩 Instantaneous Maximum Torque N.m	传动精度 Transmission Accuracy Arc.min	齿隙回差 Backlash Of Backlash Arc.min	寿命 Life h	重量 Weight kg
	轴输出 Axis Output	壳输出 Shell Output							
120BX	53.50	52.50	196	20	294	1.5	1.5	6000	2.50
	59.00	58.00							
	79.00	78.00							
	103.0	102.0							
150BX	81.00	80.00	880	49	820	1.0	1.0	6000	4.70
	105.0	104.0							
	121.0	120.0							
	141.0	140.0							
	161.0	160.0							
190BX	81.00	80.00	1600	108	2000	1.0	1.0	6000	9.30
	105.0	104.0							
	121.0	120.0							
	153.0	152.0							
220BX	81.00	80.00	2000	196	3600	1.0	1.0	6000	13.1
	101.0	100.0							
	121.0	120.0							
	153.0	152.0							
250BX	81.00	80.00	2900	294	5380	1.0	1.0	6000	17.4
	111.0	110.0							
	161.0	160.0							
	175.28	174.28							
280BX	81.00	80.00	3900	392	7800	1.0	1.0	6000	26.4
	101.0	100.0							
	129.0	128.0							
	145.0	144.0							
	171.0	170.0							
320BX	81.00	80.00	7000	980	15600	1.0	1.0	6000	44.3
	101.0	100.0							
	118.5	117.5							
	129.0	128.0							
	141.0	140.0							
	171.0	170.0							
	185.0	184.0							
370BX	81.00	80.00	8820	1176	22000	1.0	1.0	6000	66.4
	101.0	100.0							
	118.5	117.5							
	129.0	128.0							
	154.8	153.8							
	171.0	170.0							
	192.4	191.4							

## 润滑 LUBRICATION

- 减速器使用润滑油脂：Molywhite RE-00 或 VIGO-grease REO 其它相同品级精密减速器专用润滑脂

Reducer using lubricating oil: Molywhite RE-00 or VIGO-grease REO other similar grade precision reducer special grease

- 减速器出厂时未填充润滑油脂，在安装时填充建议的润滑油脂，充填量约为减速器内部空腔体积的90%

The lubrication grease is not filled before gearbox leave factory. Please fill in the suggested lubrication grease during assembly, the amount is roughly 90% of the gearbox inside cavity volume.

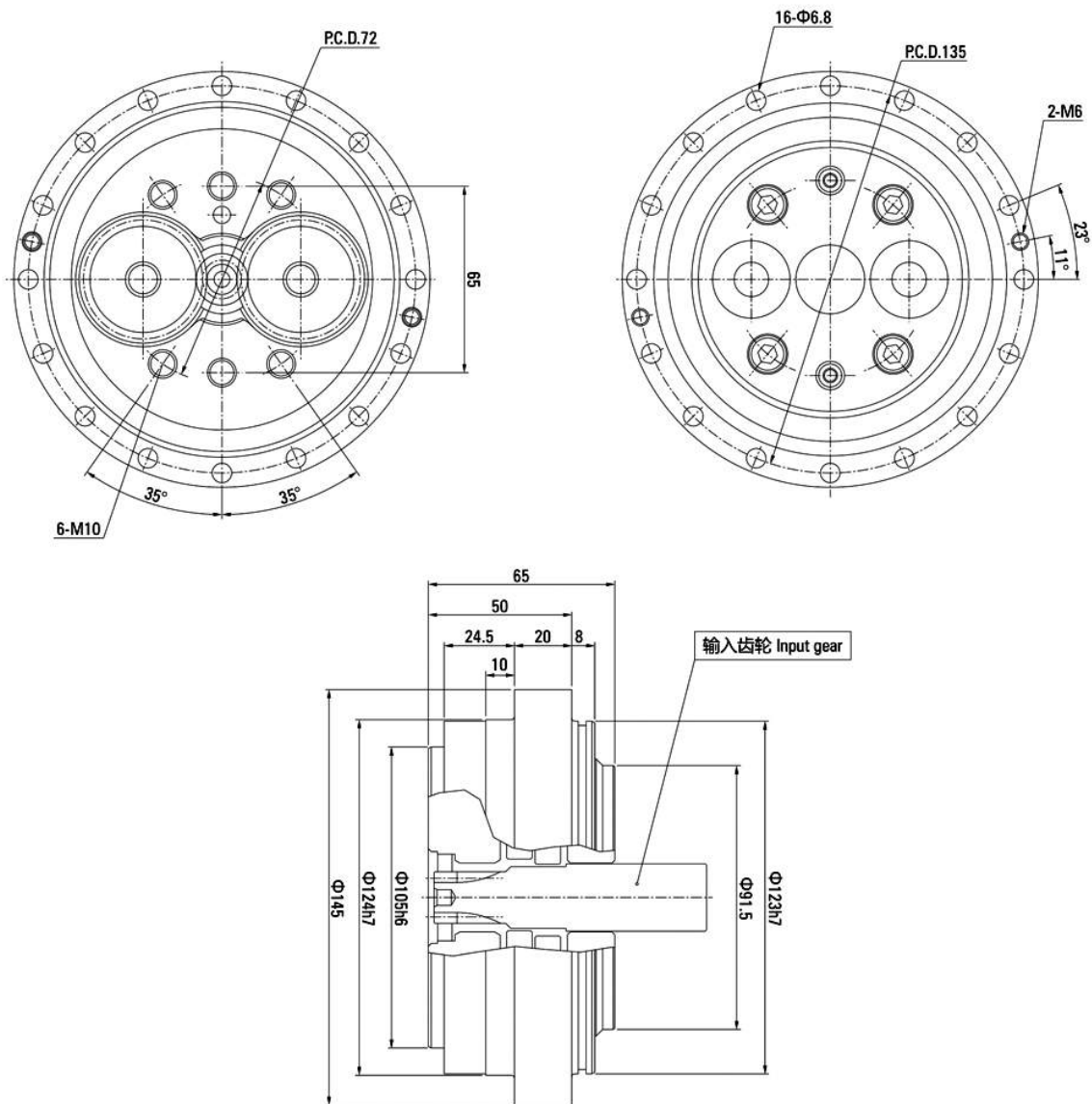
- 润滑油脂标准更换时间为20,000小时。润滑油脂被污染或在恶劣的环境下使用时，需检查润滑油脂老化、被污染的情况，并规定更换时间

Lubricating grease standard replacement time is 20000 hours. When the grease is contaminated or is used in harsh environment, it is necessary to check the condition of aging and pollution, and to change the time

**E系列外形尺寸图**  
**E SERIES OUTLINE DIMENSION DRAWING**



■ 150BX-E 外形图 150BX-E Outline Drawing



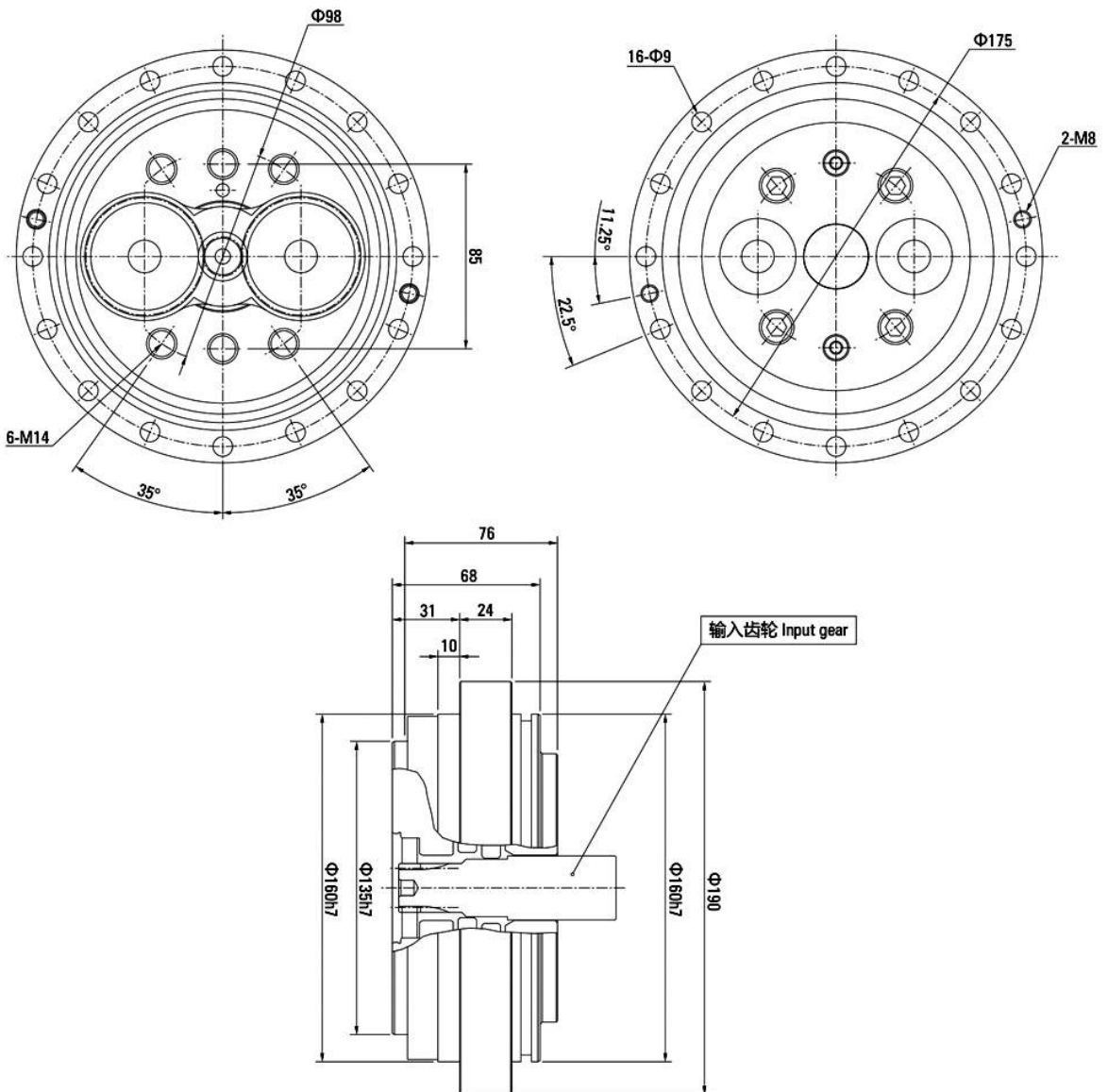


# E系列外形尺寸图

## E SERIES OUTLINE DIMENSION DRAWING



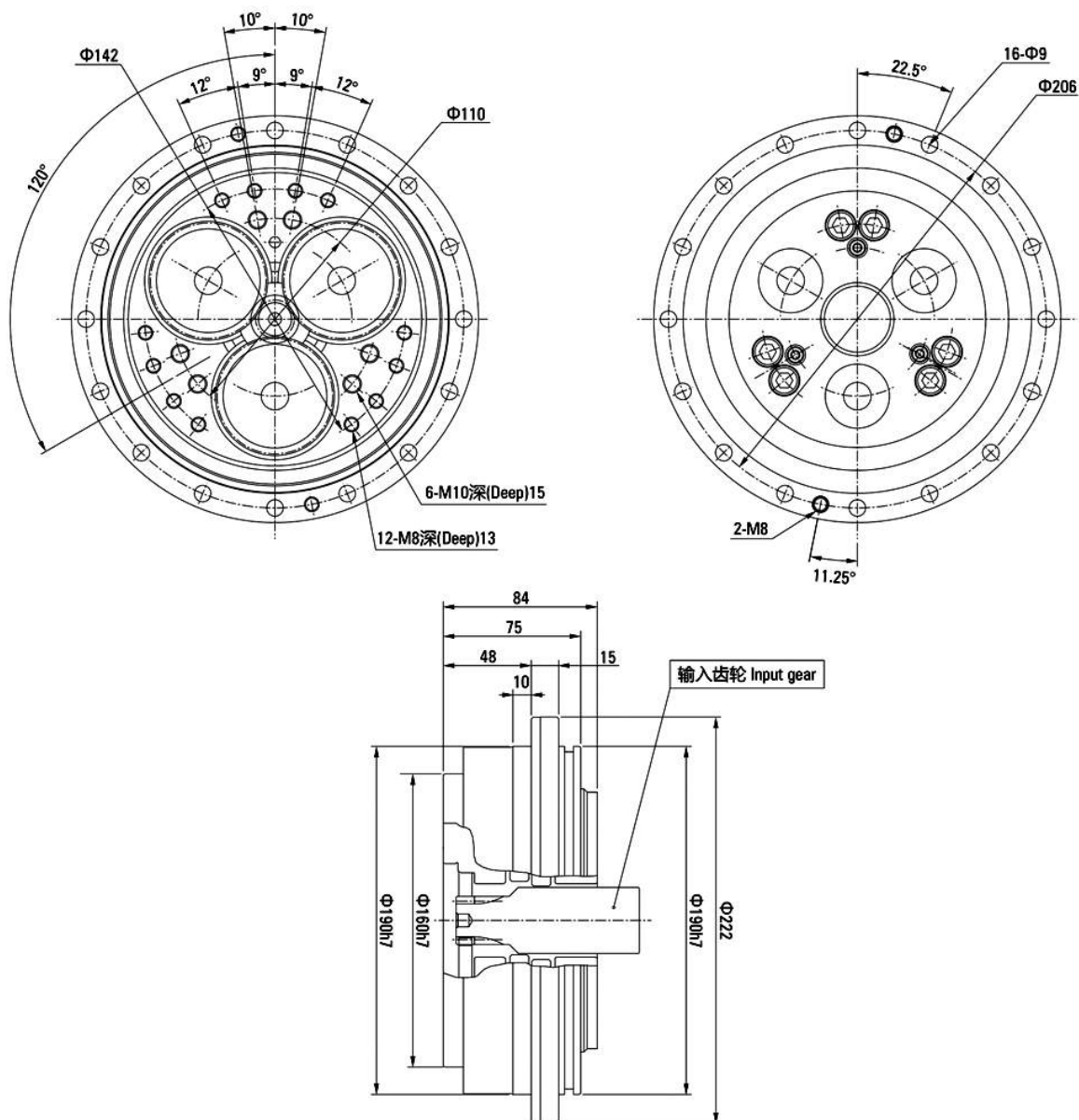
190BX-E 外形图 190BX-E Outline Drawing



# E系列外形尺寸图 E SERIES OUTLINE DIMENSION DRAWING



■ 220BX-E 外形图 220BX-E Outline Drawing

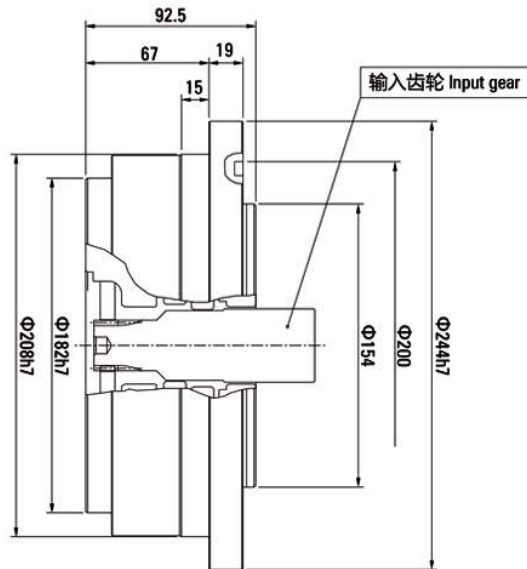
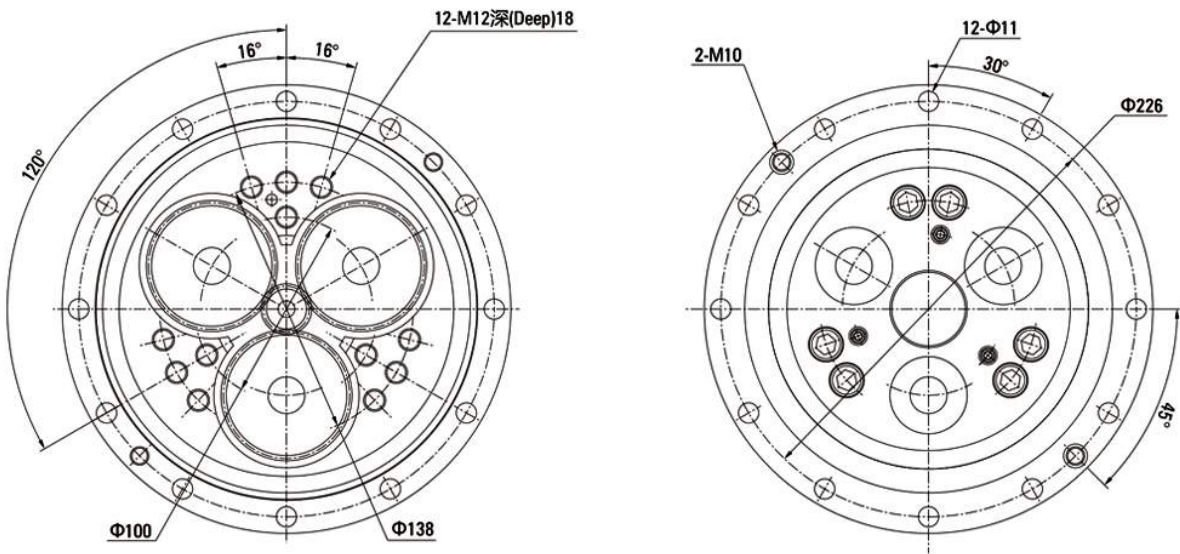


# E系列外形尺寸图

## E SERIES OUTLINE DIMENSION DRAWING



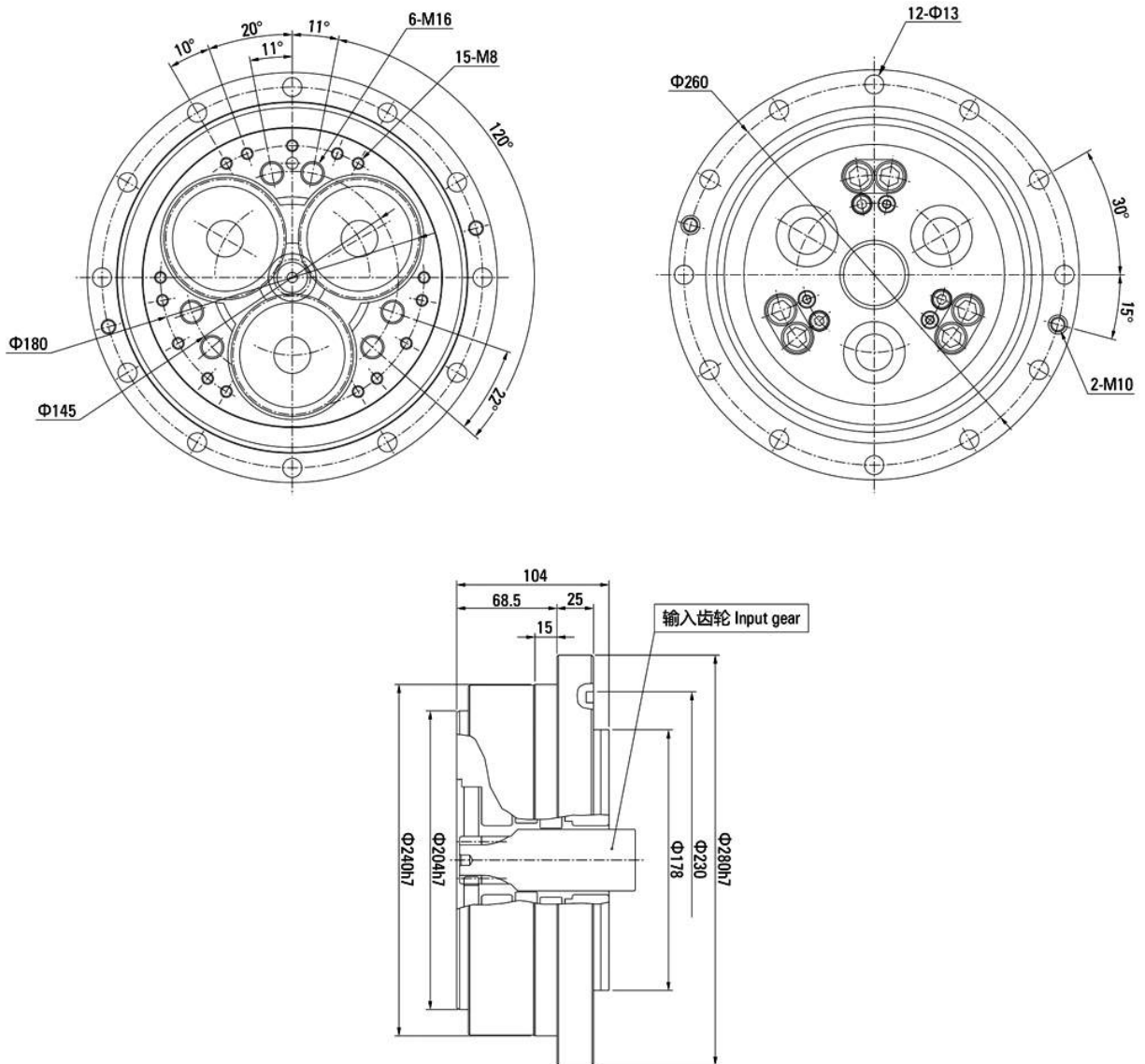
250BX-E 外形图 250BX-E Outline Drawing



**E系列外形尺寸图**  
**E SERIES OUTLINE DIMENSION DRAWING**



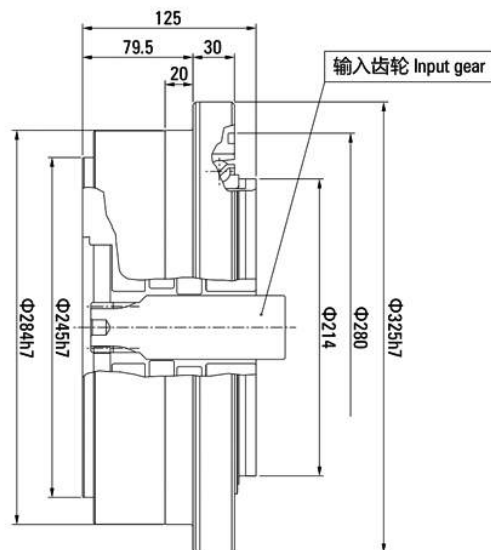
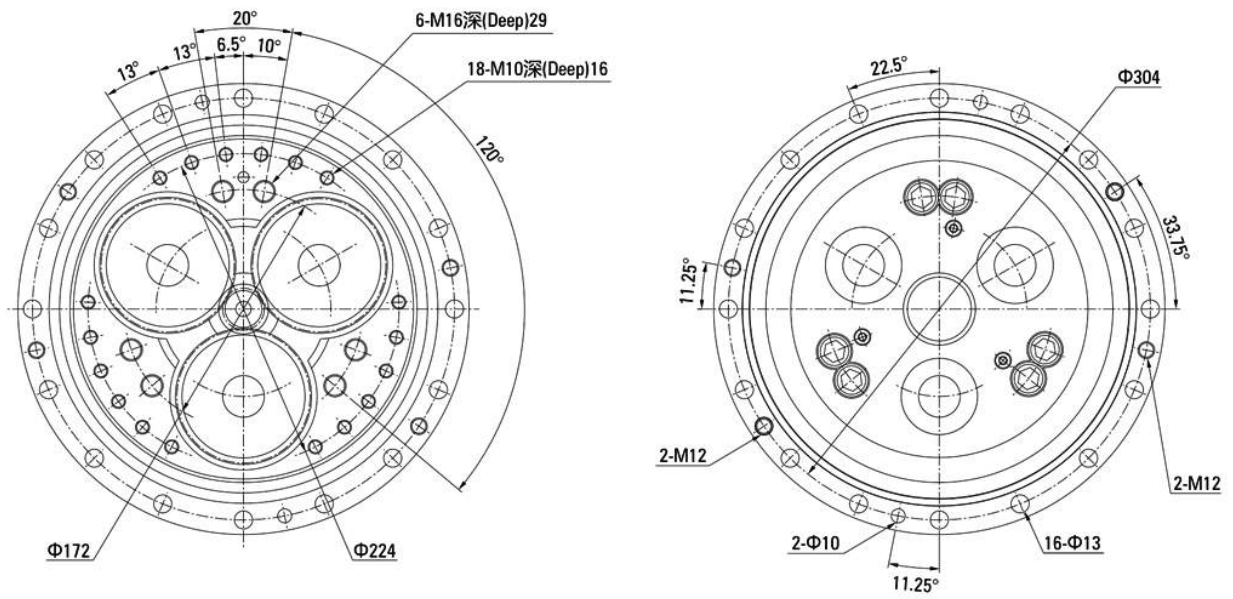
**280BX-E 外形图** 280BX-E Outline Drawing



# E系列外形尺寸图 E SERIES OUTLINE DIMENSION DRAWING



■ 320BX-E 外形图 320BX-E Outline Drawing



# E型减速器安装要领

## E TYPE REDUCER INSTALLATION ESSENTIALS

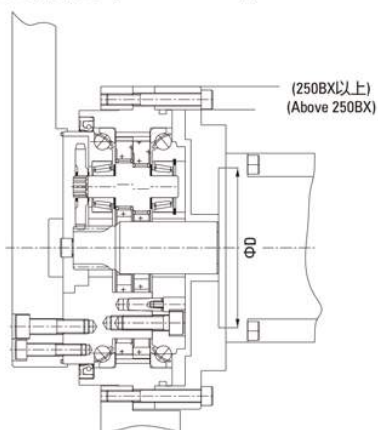
为了充分发挥RVE减速器的性能，需要对减速器安装精度、安装方法、润滑以及密封进行最佳设计。  
 in order to make fully use of RVC type reducer, it is need to make a best design of the assembly precision, installation method, lubrication and seal.

### ■ 装配精度 Assembly Precision

电机轴同减速器的同轴度误差 $a$ 小于0.03mm (280BX以上机型小于0.05)。  
 Coaxiality tolerance ( $a$ ) of motor shaft and reducer is lower than 0.03mm (for models above 280BX, lower than 0.05).

如安装精度不良，特别容易造成振动及噪音。  
 Because of the poor assembly accuracy, especially easy to cause vibration and noise.

● 图C.1: 装配精度 Figure C.1: Assembly precision

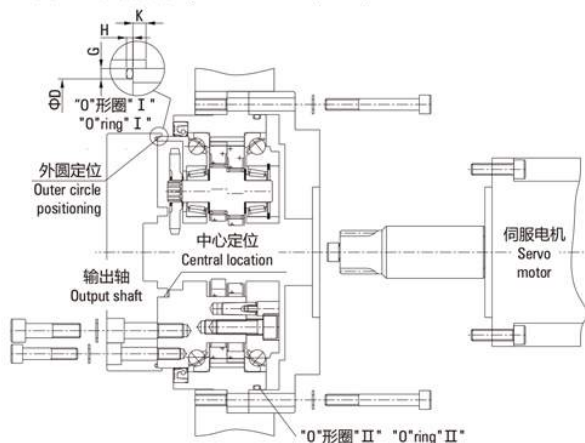


### ■ 装配要领 Assembly Method

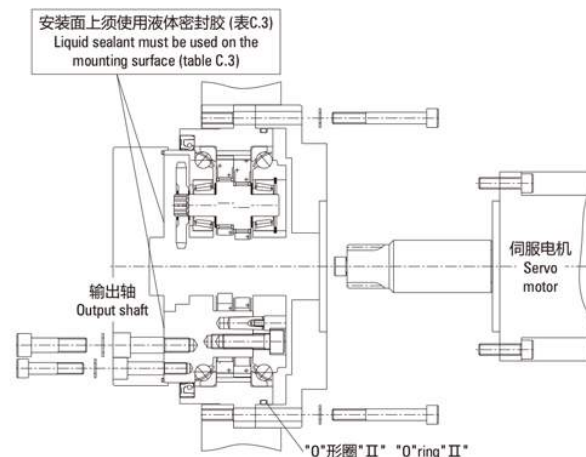
- 装配时须按指定用量封入指定润滑油脂。  
 The assembly according to the specified dosage specified sealed grease.
- 减速器装配在配套部件时的标准图示，图C.2所示，图C.2中的“O”形圈位置需进行密封。  
 Reducer assembly in the supporting parts of the standard icon, shown in figure C.2, figure C.2 in the "O" ring position to be sealed.
- 如结构上不允许使用“O”型圈，请使用表C.3的液体密封胶。  
 If the structure is not allowed to use the "O" - shaped ring, please use the table C.3 liquid sealant.
- 装配图示及“O”型圈密封尺寸，见图C.2, 图C.3, 图C.4, 及表C.1, 表C.2。  
 Assembly diagram and "O" - shaped ring seal size, see figure C.2, figure C.3, figure C.4, and table C.1, table C.2.

### ■ 150BX、190BX、220BX:

● 图C.3: 装配示例 Figure C.3: Assembly example

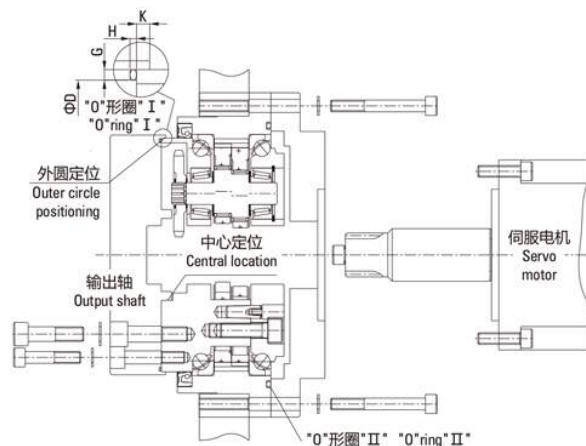


● 图C.2: 装配密封 Figure C.2: Assembly seal



### ■ 250BX、280BX、320BX:

● 图C.4: 装配示例 Figure C.4: Assembly example



● 表C.1: “O”型圈 (II) : Table C.1: "O" - shaped ring (II)

机型 Model	适用“O”型圈 Apply The "O" Shape Ring
150BX	S120
190BX	AS568-258
220BX	AS568-263
240BX	G190 (B2401)
280BX	G220 (B2401)
320BX	G270 (B2401)

◀ 图C.3注: 中心定位和外圆定位选其一。  
 Figure C.3 note: Center positioning or outer circle positioning.

● 表C.2: “O”型圈(I)密封尺寸表(mm): Table C.2: "O" - shaped ring (I) sealing size table (mm)

代号 Code		机型 Model	150BX (A)	150BX (B)	190BX	220BX	240BX	280BX	320BX
参数 Parameter	O形圈 O ring	代号 Code	AS568-045	S100	S132	AS568-163	AS568-167	AS568-265	AS568-271
		线径 Wire diameter	Φ1.78±0.07	Φ2±0.1	Φ2±0.1	Φ2.62±0.07	Φ2.62±0.07	Φ3.53±0.1	Φ3.53±0.1
		内径 Internal diameter	Φ101.32±0.38	Φ99.5±0.4	Φ131.5±0.6	Φ152.07±0.58	Φ177.47±0.58	Φ196.44±0.76	Φ234.54±0.76
	凹槽 尺寸 Groove size	外径D Outside diameter D	Φ105	Φ105	Φ135	Φ160	Φ182	Φ204	Φ243
		深度H Depth H	1.27±0.05	1.5 <sup>0.1</sup> <sub>0</sub>	1.5 <sup>0.1</sup> <sub>0</sub>	2.06±0.05	2.06±0.05	2.82±0.05	2.82±0.05
		宽度G Width G	2.39 <sup>+0.25</sup> <sub>0</sub>	2.70 <sup>+0.25</sup> <sub>0</sub>	2.70 <sup>+0.25</sup> <sub>0</sub>	3.58 <sup>+0.25</sup> <sub>0</sub>	3.58 <sup>+0.25</sup> <sub>0</sub>	4.78 <sup>+0.25</sup> <sub>0</sub>	4.78 <sup>+0.25</sup> <sub>0</sub>
	高度K Height K	3	3	3	3	3	4	4	

注: 上表中“O”形圈A, B任选一个。Note: On the table of "O" - ring, from A, B option one.

● 表C.3: 推荐液体密封胶 Table C.3: Recommended liquid sealant

名称 (制造商) Name (Manufacturer)	性质及用途 Properties And Uses
Three Bond 1211 (Three Bond)	<ul style="list-style-type: none"> <li>■ 硅系无溶剂型 Silicone based non solvent type</li> <li>■ 半干性充填 Half dry filling</li> </ul>
HERME SERL SS-60F (Nihon-Hermetic)	<ul style="list-style-type: none"> <li>■ 无溶剂弹性密封 Solvent free elastic seal</li> <li>■ 金属接触面适用 Metal contact surface</li> </ul>

■ 注: 螺栓和销并用型装配请问向本公司技术人员  
Note: Bolt and pin and assembly please ask the company's technical staff

## ■ 螺钉的紧固转矩 Fastening Torque Of The Screw

E型减速机, 使用内六角螺钉(GB/T 70.1 12.9级), 请按表C.4紧固转矩进行紧固。输出轴螺钉及销并用型(P型), 请用圆锥销(GB/T 118-2000)。为了防  
止内六角螺栓松动, 建议使用碟形弹簧垫圈。

E type gear reducer, using allen screw (GB/T 70.1 12.9 level), Pls. fasten follow the table C.4 fastening torque. The output shaft screw and pin (P type), Pls. use the the taper pin (GB/T 118-2000). To keep the allen screw from moving, recommend use the disc spring washers.

● 表C.4: 螺钉紧固转矩 Table C.4: Fastening torque of the screw

内六角螺钉 Allen Screw	紧固转矩(Nm) Fastening Torque (Nm)	螺钉参数 Screw Parameters
M5X0.8	9±0.5	1- GB/T 70.1 2- 12.9级 12.9 level 3- 发黑处理 Blackening 4- 圆柱头 Cylinder head 5- 螺纹精度: 6g或2级 Thread precision: 6g or 2 class
M6X1.0	16±0.8	
M8X1.25	37±1.8	
M10X1.5	73±3.5	
M12X1.75	129±6.5	
M14X2.0	205±10	
M16X2.0	318±16	

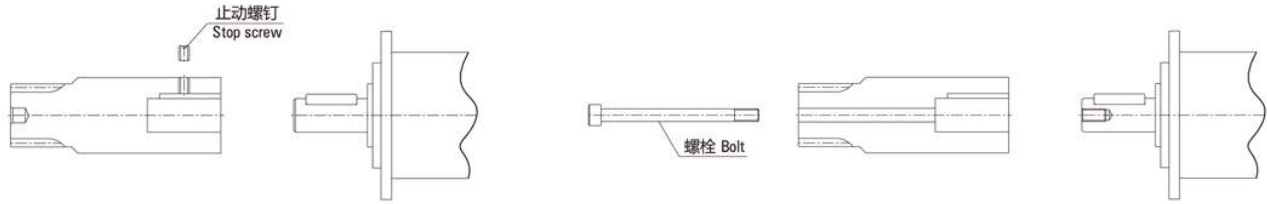
## ■ 输入齿轮 Input Gear

- 标准输入齿轮是未进行电机轴安装孔加工的产品。  
Standard input gear is without any machine mouting hole of the motor.
- 安装示例如图C.5: (共三种)  
Install sample as shown in picutre C.5: (Three way)

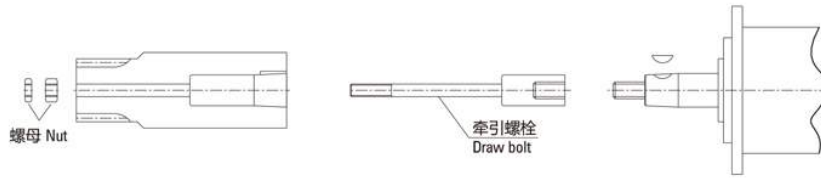
● 图C.5: 输入齿轮装配 Figure C.5: Input gear assembly

(直轴: 伺服马达轴没螺孔 Direct-axis: Servo motor shaft without thread )

(直轴: 伺服马达轴有螺孔 Direct-axis: Servo motor shaft with thread )



(锥轴: 伺服马达轴有螺栓 Cone axis: Servo motor shaft with bolt )



● 表C.5: 输入齿轮轴A型 Table C.5: A type of input gear shaft

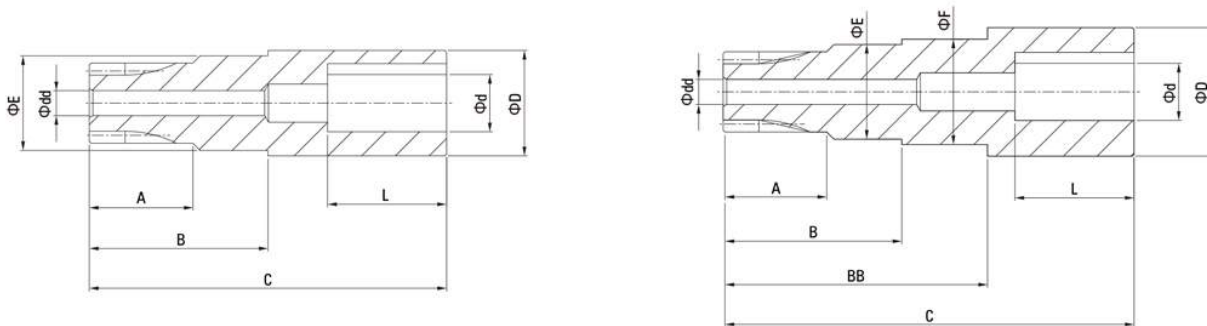
尺寸代号 Size Code	A	B	C	D	d	dd	E	L	NOTE
150BX-E	25	46	95	23.5	11,14	5.5	21.5	-	-
190BX-E	29	53	100	29.5	14,19	6.5	29.5	-	-
220BX-E	29	-	100	36.0	19,22	7.0	-	-	-
250BX-E	34	70	120	40.0	19,22,24	9.0	38.0	-	-
280BX-E	35	-	120	42.0	22,24,28	7.0	-	-	-
320BX-E	35	-	140	46.0	24,28	11	-	-	-
370BX-E	38	-	155	56.0	28,35	11	-	-	-

● 表C.6: 输入齿轮轴B型 Table C.6 : B type of input gear shaft

尺寸代号 Size Code	A	B	BB	C	D	E	F	d	dd	L	NOTE
150BX-E	25	50	66	100	30	23.5	21.5	11,14	5.5	-	-
190BX-E	29	33	76	115	36	29.5	26.5	14,19	6.5	-	-
220BX-E	29	80	-	130	42	36.0	-	19,22,24	7.0	-	-
280BX-E	35	105	-	170	50	42.0	-	24,28,35	9.0	-	-
320BX-E	35	122	-	185	50	46.0	-	24,28,35	11	-	-
370BX-E	38	139	-	215	58	56.0	-	35	11	-	-

(输入齿轮轴A型 A type of input gear shaft)

(输入齿轮轴B型 B type of input gear shaft)



● 输入齿轮定制服务 Input gear customized service

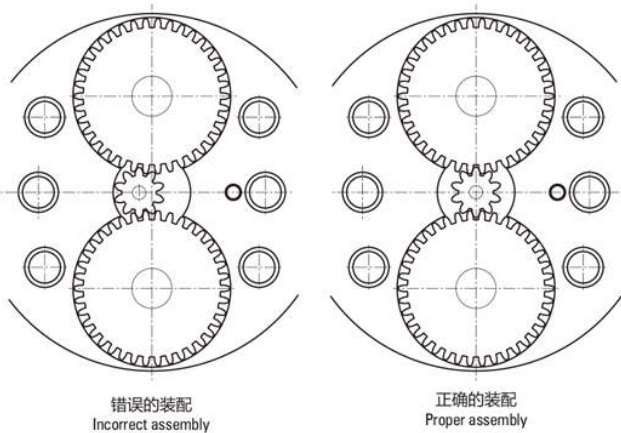
本公司可提供依所选电机型式进行输入齿轮的定制、加工服务。  
Our company can provide input gear customized service according to motor.



150BX、190BX的行星齿轮是二个，装配输入齿轮时需特别注意输入齿轮要径直插入，位置正确，插入时要轻轻旋入，不可强制插入，也不可倾斜插入。(图C.6)

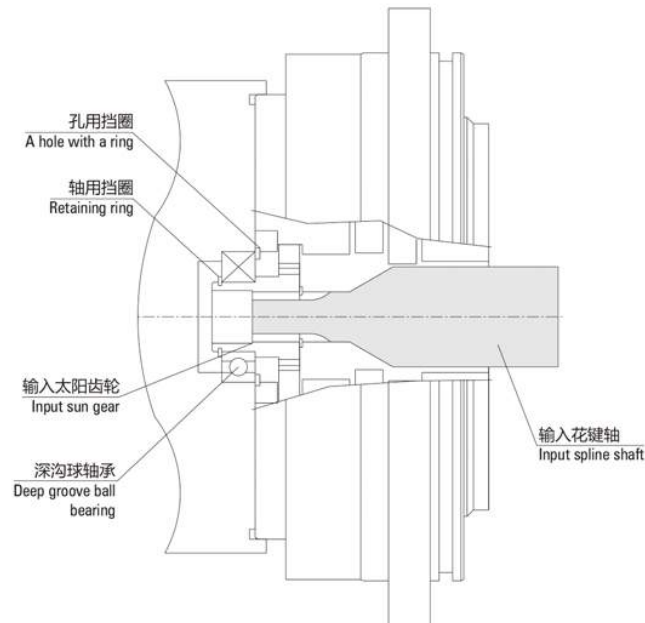
150BX, 190BX have 2 planetary gears. Please pay attention to put gear directly, correctly, and lightly when mounting gear. Do not use force, do not be incline when mounting. (Figure C.6)

● 图C.6: 装配位置 Figure C.6: Assembly position



● 图C.8: 不能贯通减速器内部的速比安装示例

Figure C.8: To be unable to hole-through ratio of gearbox intall shown



• 能贯通减速器内部的速比和不能贯通的速比。

To be able to hole-through ratio of gearbox and can't hole-through ratio.

不能贯通的速比如表C7，安装示例见图C.8。

To be unable to hole-through ratio as table C7, install sample as shown in picture C.8.

● 表C.7: 不能贯通的速比 Table C.7: Speed ratio can not be through

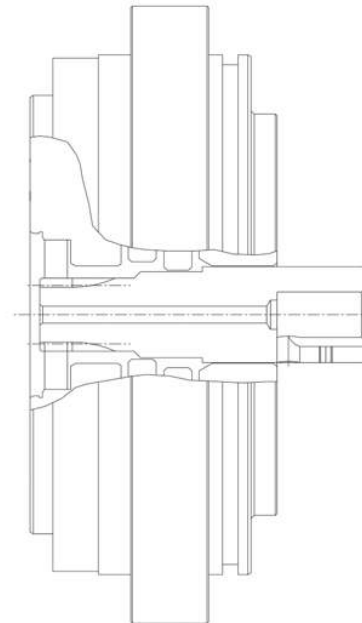
	150BX	190BX	220BX
输出轴输出 From output shaft	57	57	57
外壳输出 Housing output	56	56	56

注: 表2中速比为能贯通的速比。能贯通减速器内部的速比安装示例图C.7:

Note: Table 2 is shown hole-through ratio. To be able to hole-through ratio of gearbox is C.7:

● 图C.7: 能贯通减速器内部的速比安装示例

Figure C.7: To be able to hole-through ratio of gearbox intall shown



## ■ 润滑 Lubrication

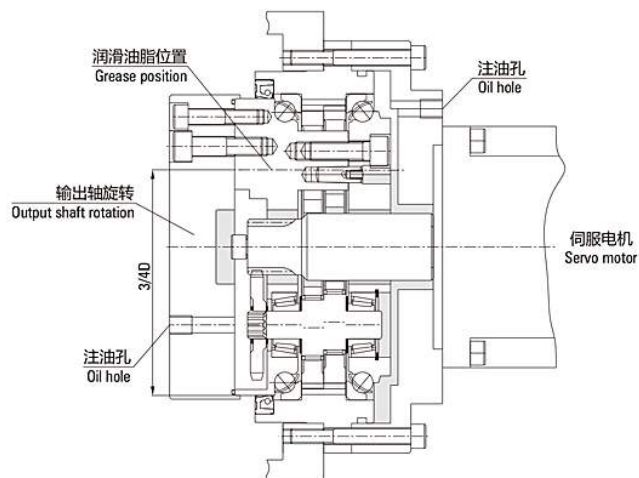
- 减速器使用润滑油脂: Molywhite RE-00或VIGO-Grease RE0其它相同品级精密减速器专用润滑脂。  
Reducer using lubricating oil: Molywhite RE-00 or VIGO-Grease RE0 other similar grade precision reducer special grease.
- 减速器出厂时未填充润滑油脂, 在安装时填充建议的润滑油脂, 填充量约为减速器内部空腔体积的90%。  
When the gear reducer is not filled with grease, it is recommended to fill the grease at the time of installation, and the filling amount is about 90% of the internal cavity volume of the reducer.
- 润滑油脂标准更换时间为20000小时。润滑油脂被污染或在恶劣的环境下使用时, 需检查润滑油脂老化、被污染的情况, 并规定更换时间。  
Lubricating grease standard replacement time is 20000 hours. When the grease is contaminated or is used in harsh environment, it is necessary to check the condition of aging and pollution, and changed within the allotted time.
- 减速器润滑油脂建议用量如表C.8:  
Reducer lubrication grease recommended dosage as shown in table C.8:
- 润滑油脂充填位置如图C.9, 图C.10:  
Grease filling position as shown in figure C.9, figure C.10:

● 表 C.8: 润滑油脂注入量 Table C.8: Lubricating oil injection

型号 Model	填充量 Filling Amount	水平安装 Horizontal Installation	垂直安装 Vertical Installation
		(cc)	(cc)
150BX-RVE		87	100
190BX-RVE		195	224
220BX-RVE		383	439
240BX-RVE		432	495
280BX-RVE		630	694
320BX-RVE		1040	1193

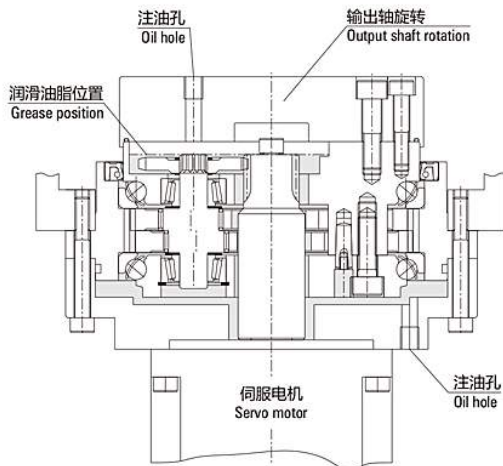
● 图 C.9: 润滑油注入位置(水平) Figure C.9: Lubricating oil injection position (horizontal)

(安装水平轴 Install horizontal axis)

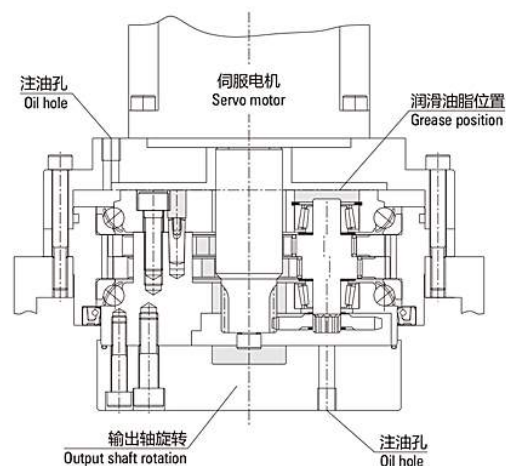


● 图 C.10: 润滑油注入位置(垂直) Figure C.10: Lubricating oil injection position (vertical)

(安装垂直轴-1 Install vertical axis-1)



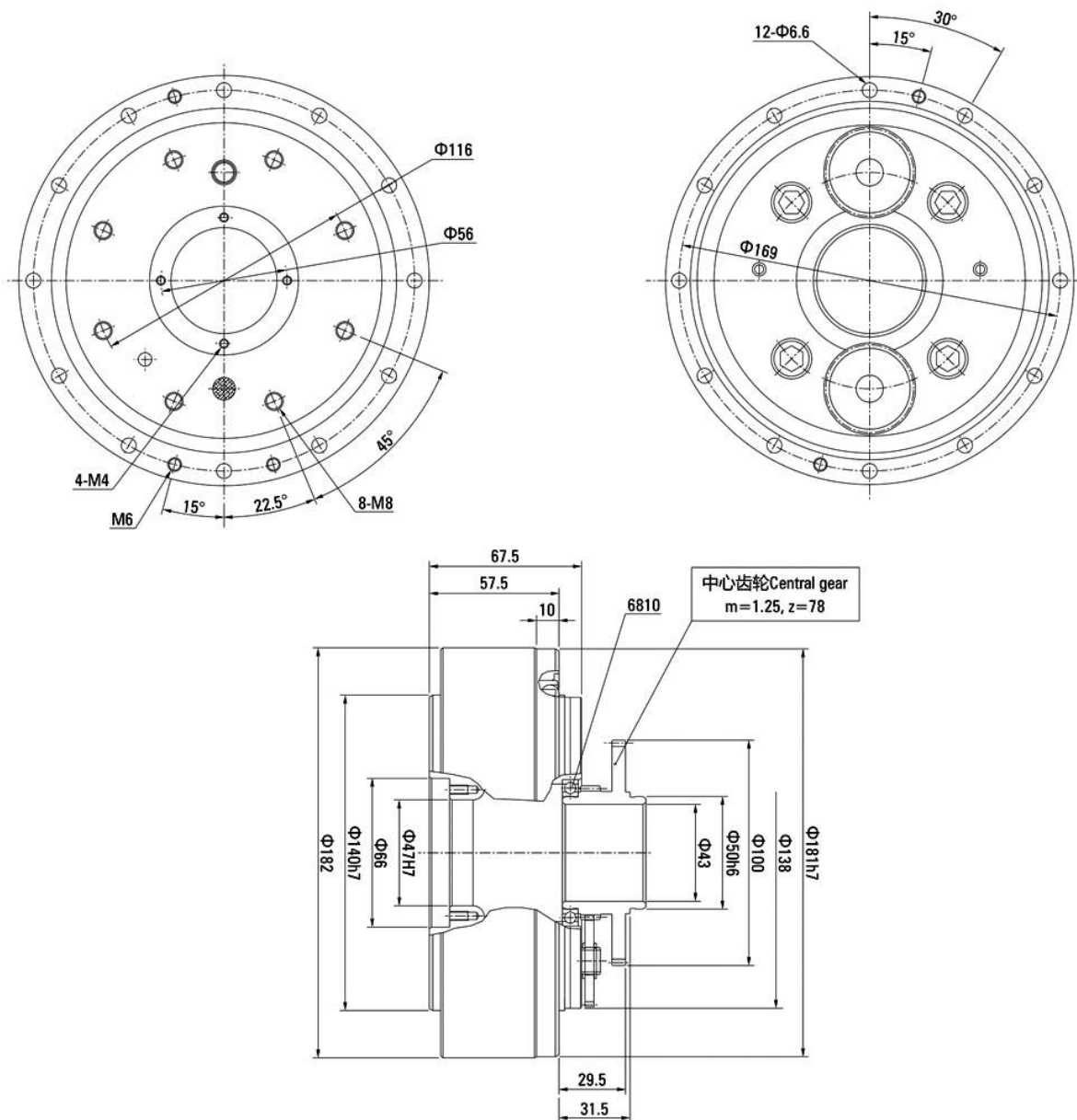
(安装垂直轴-2 Install vertical axis-2)



# C系列外形尺寸图 C SERIES OUTLINE DIMENSION DRAWING



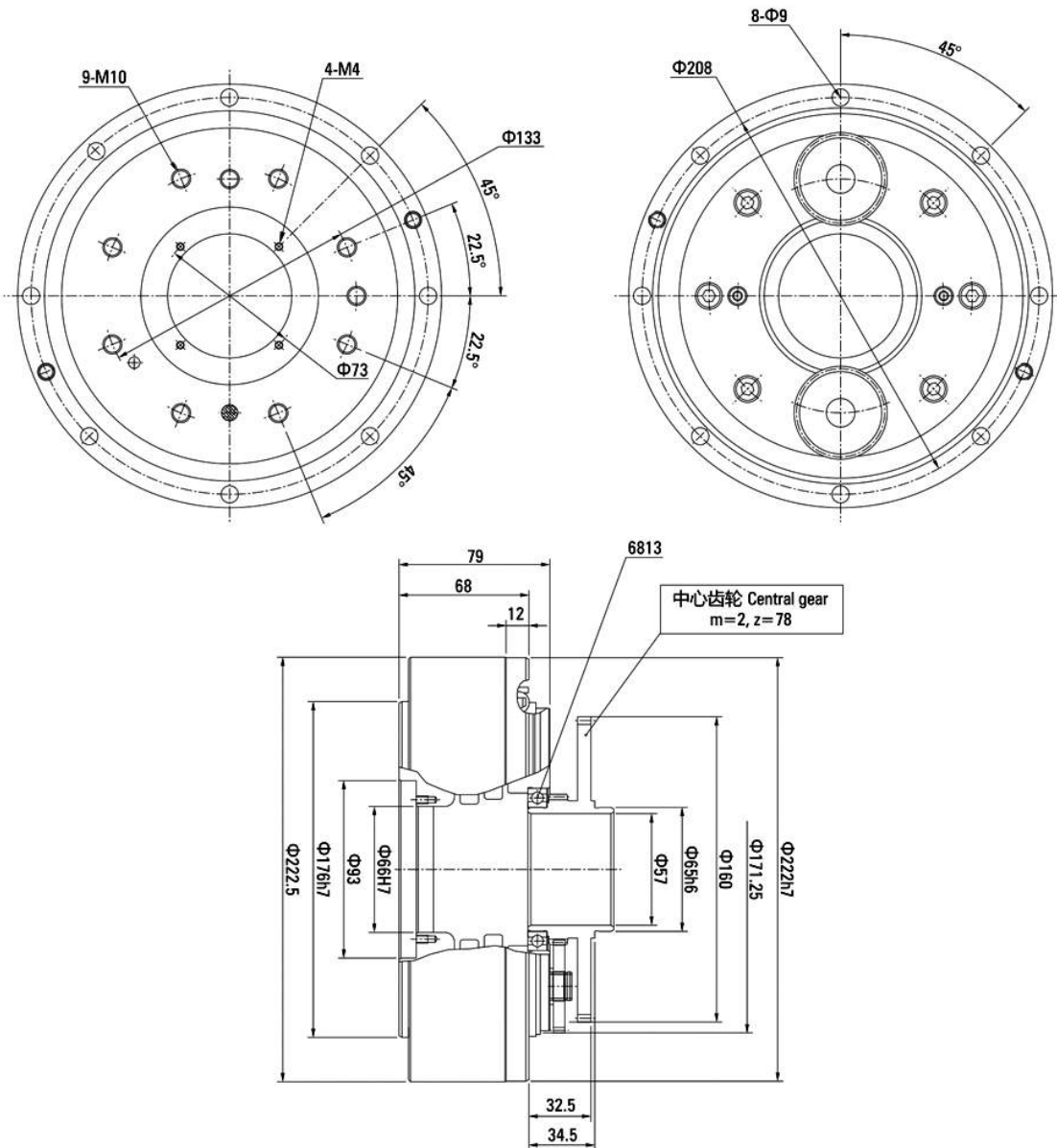
■ 180BX-C 外形图 180BX-C Outline Drawing



# C系列外形尺寸图 C SERIES OUTLINE DIMENSION DRAWING



■ 220BX-C 外形图 220BX-C Outline Drawing

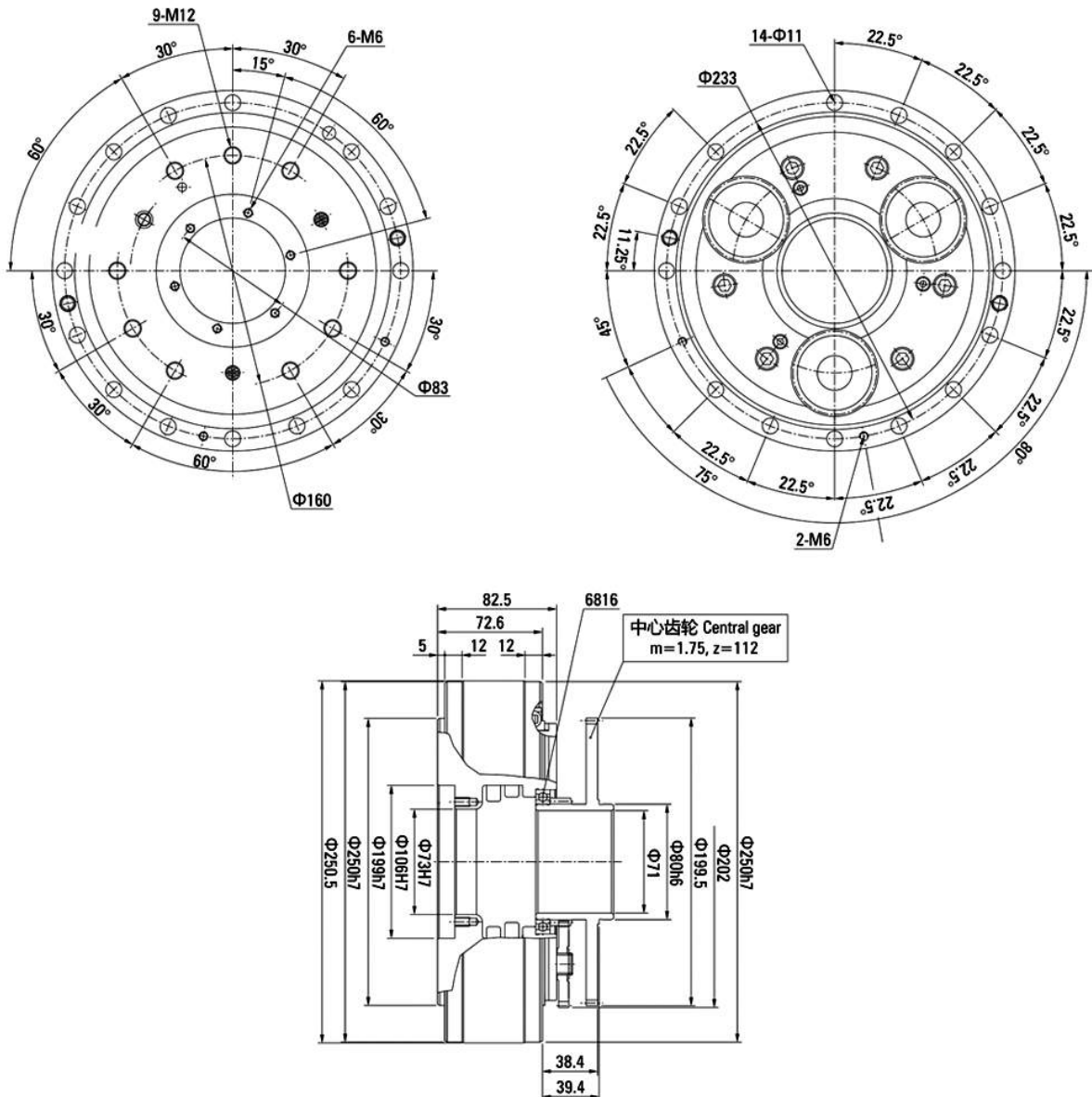


# C系列外形尺寸图

## C SERIES OUTLINE DIMENSION DRAWING



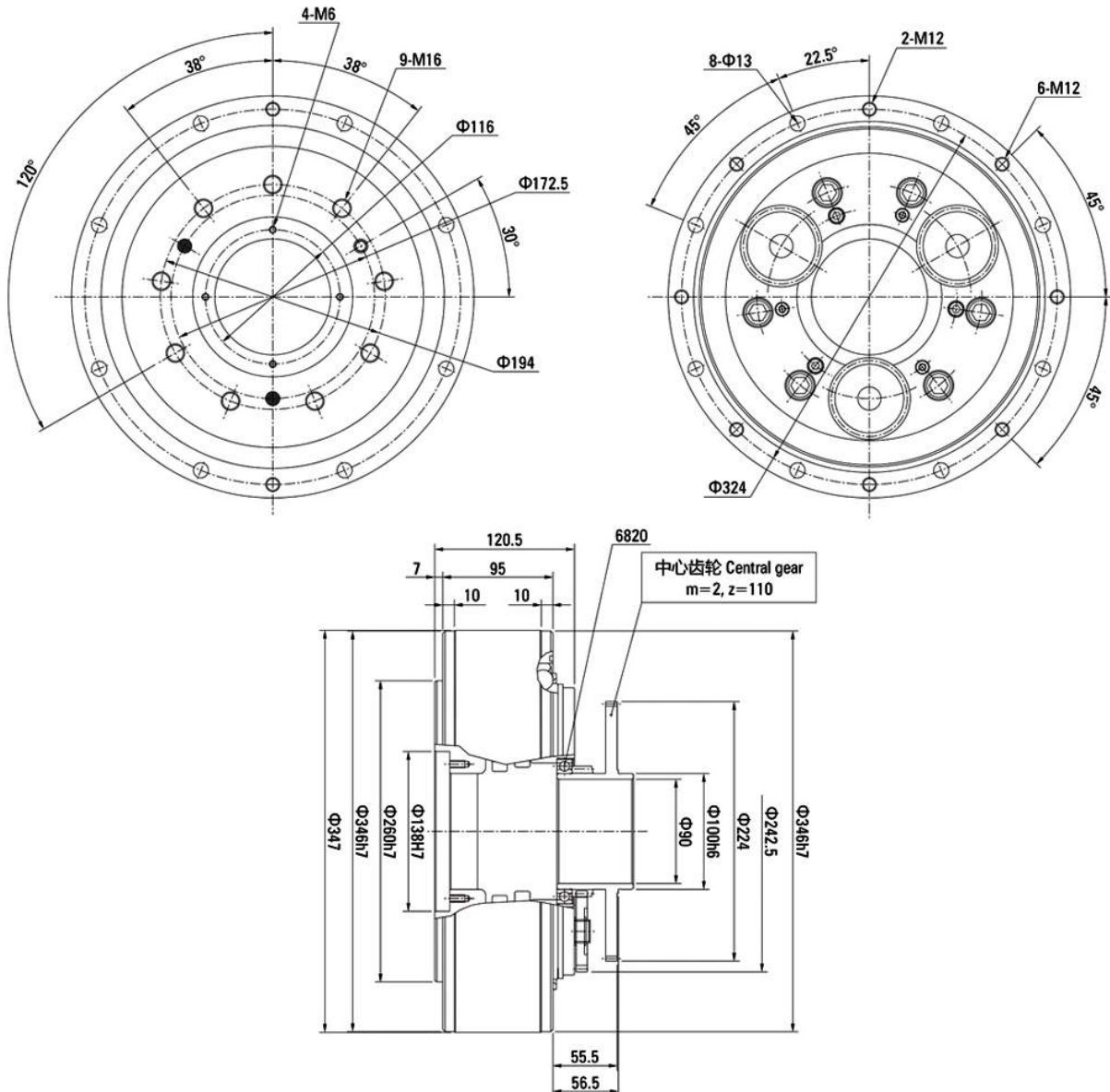
250BX-C 外形图 250BX-C Outline Drawing



# C系列外形尺寸图 C SERIES OUTLINE DIMENSION DRAWING



■ 350BX-C 外形图 350BX-C Outline Drawing



# C型减速器安装要领

## C TYPE REDUCER INSTALLATION GUIDE

为了充分发挥RVC型减速器的性能，对装配精度、安装方法、润滑以及密封进行最佳设计是十分重要的。

In order to make fully use of RVC type reducer, it is very important to do optimal design of assembly precision, installation method, lubrication.

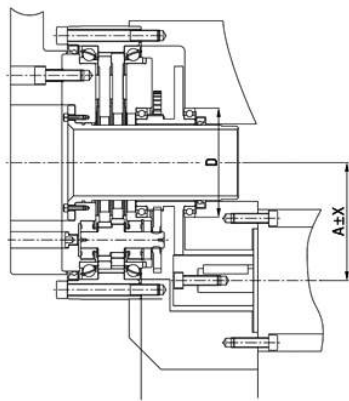
请认真阅读以下注意事项。Please carefully read the following notes.

### ■ 装配精度 Assembly Precision

RVC型减速器的安装侧部件请按附图D.1进行设计。如果装配不良会造成振动、噪声、齿隙等问题。

The installation of side components of RVC type reducers shall be designed based on drawing D.1. Poor assembly will cause shaking, noise and tooth gap, etc.

● 图 D.1: RVC系列装配精度 Figure D.1: RVC series assembly precision



(A为减速机中心到电机中心的距离)

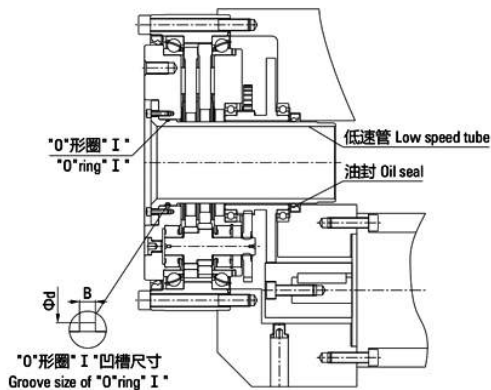
(A is the distance from the center of the speed reducer to the motor center)

● 表 D.1: RVC系列装配精度尺寸表 Table D.1: RVC series assembly precision size table

(单位 Unit: mm)

型号 Model	项目 Item	中心间距离公差 Center Distance Tolerance	同心度公差 Concentric Tolerance	平行度公差 Parallelism Tolerance
		X	a	b
150BX-RVC		±0.03	Max0.03	Max0.03
180BX-RVC				
220BX-RVC				
250BX-RVC				
350BX-RVC				
440BX-RVC				
520BX-RVC				

● 图 D.2: 装配示例 Figure D.2: Assembly example



### ■ 装配要领 Assembly Method

RVC型减速器安装在配套部件时的标准图例参见图D.2。装配时，请务必按指定量注入润滑脂。

RVC type reducer installed on the supporting parts of standard legend for see figure D.2. When assembly, please be sure to inject the specified amount of grease.

图D.2，图D.3表示了“O”型圈的密封位置，因此请参照进行密封设计。Figure D.2, figure D.3 shows the “O” type of ring seal position, so please refer to the seal design.

结构上不能使用“O”型圈时，请使用表C.3的液体密封等密封剂。The structure can not be used “O” ring, please use the form C.3 liquid sealing sealant.

### ■ 低速管装配示例 Example Of Low Speed Tube Assembly

低速管用于保护通过中空部位的电缆以及密封减速器内部的润滑脂。

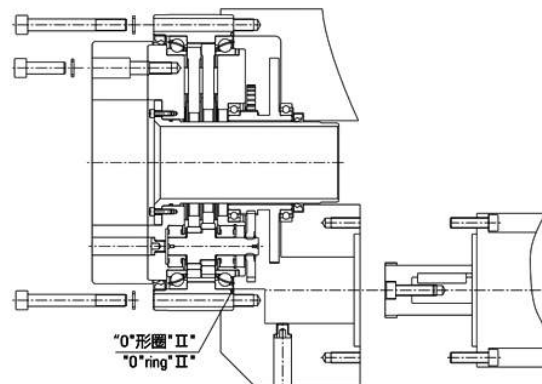
图D.2是低速管的安装参考示例。

Low speed tube for protection through the hollow part of the cable and the lubrication grease inside the seal reducer. Figure D.2 is a reference example for the installation of a low speed tube.

### ■ 输出轴螺栓紧固装配示例：图D.3

Output Shaft Bolt Fastening Assembly Example: Figure D.3

● 图 D.3: 装配示例 Figure D.3: Assembly example



● 表D.2: “O”型圈 ( I ) 密封尺寸表 (mm): Table D.2: "O" - shaped ring (I) sealing size table (mm)

机型 Model		150BX-RVC	180BX-RVC	220BX-RVC	250BX-RVC	350BX-RVC	440BX-RVC	520BX-RVC
代号 Code O形圈 O ring	公称号码 Nominal number	CO-0625	CO-0634	CO-0643	S70	G95	G135	G145
	线径 Wire diameter	Φ2.40	Φ2.40	Φ3.50	Φ2.00	Φ3.10	Φ3.10	Φ3.10
	内径 Internal diameter	Φ29.7	Φ42.2	Φ59.6	Φ69.5	Φ94.4	Φ134.4	Φ144.4
凹槽尺寸 Groove size	内径d Internal diameter d	Φ30.2	Φ43.2	Φ60.3	Φ70.0	Φ95.0	Φ135.0	Φ145.0
	宽度B Width B	3.2	3.2	4.7	2.7	4.1	4.1	4.1

● 表D.3: “O”型圈 ( II ): Table D.3: "O" - shaped ring (II)

机型 Model	适用“O”型圈 Apply The "O" Shape Ring
150BX-RVC	AS568-048
180BX-RVC	AS568-163
220BX-RVC	AS568-169
250BX-RVC	AS568-173
350BX-RVC	AS568-277
440BX-RVC	AS568-281
520BX-RVC	B2401-G460

### ■ 中心齿轮、输入齿轮 Central Gear, Input Gear

● 中心齿轮、输入齿轮的精度 Center gear, input gear precision

如果中心齿轮、输入齿轮的精度不良, 就会产生噪声、齿隙, 所以需要按以下精度进行设计。

If the center gear, the input gear's precision is bad, can produce the noise, the tooth gap, therefore needs to carry on the design according to the following precision.

表D.4 中心齿轮、输入齿轮的精度。

Table D.4 center gear, the accuracy of the input gear.

● 表D.4: 中心齿轮、输入齿轮的精度 Table D.4: Center gear, input gear precision

配合公差 Fit Tolerance X	同心度公差 Concentric Tolerance a	中心齿轮小齿轮 Central Gear Pinion 精度等级 Precision Grade	中心齿轮大齿轮 Central Gear 精度等级 Precision Grade	输入齿轮 Input Gear 精度等级 Precision Grade
h6	Max0.03	GB/T10095 8级 level	GB/T10095 7级 level	GB/T10095 8级 level

● 表D.5: 输入齿轮与中心齿轮大齿轮的齿隙 (公法线) Table D.5: Gear gap of the input gear and the big gear of the central gear (normal line)

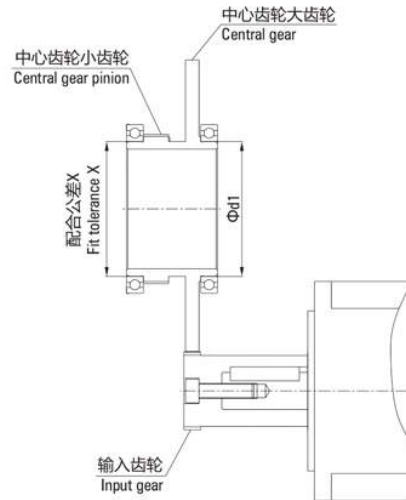
机型 Model	齿隙(公法线) Tooth Gap (Common Law) (mm)
150BX-RVC	0.035~0.090
180BX-RVC	0.040~0.110
220BX-RVC	0.050~0.130
250BX-RVC	0.060~0.140
350BX-RVC	0.075~0.180
440BX-RVC	
520BX-RVC	

### ■ 输出轴通孔螺栓坚固型装配, 请咨询公司相关技术人员。

Output shaft through hole bolt solid assembly, please ask the company related technical personnel.

● 图 D.4: 中心齿轮、输入齿轮的精度

Figure D.4: Center gear, input gear precision



● 表D.6: 中心齿轮小齿轮的齿轮参数

Table D.6: Gear parameters of central gear pinion

机型 Model	齿轮模数 Gear Modulus m	齿轮 Gear z	变位系数 Coefficient Of Variation x
150BX-RVC	1.00	48	-0.04
180BX-RVC	1.00	57	+0.2
220BX-RVC	1.25	61	0
250BX-RVC	1.75	48	+0.3
350BX-RVC	2.50	43	0
440BX-RVC	2.00	78	0
520BX-RVC	2.00	83	0



● **标准中心齿轮 Standard Center Gear**

RVC型减速器备有标准中心齿轮。如果需要标准中心齿轮，请在订购时指定。表D.7为标准中心齿轮大齿轮的齿轮参数。

RVC type gear reducer with standard center gear. If you need a standard center gear, please specify when ordering. Table D.7 gear parameters of the standard center gear.

● **表D.7: 标准中心齿轮大齿轮的齿轮参数**

Table D.7: Gear parameters of standard center gear

机型 Model	齿轮模数 Gear Modulus m	齿轮 Gear z	变位系数 Coefficient Of Variation x
150BX-RVC	2.00	57	0
180BX-RVC	1.25	78	0
220BX-RVC	2.00	78	0
250BX-RVC	1.75	112	0
350BX-RVC	2.00	110	0
440BX-RVC	2.00	125	0
520BX-RVC	2.00	150	0

■ **润滑 Lubrication**

- 减速器在出厂时未填充润滑脂，因此在安装减速器时，请务必根据所需填充量填充建议的润滑剂。

Reducer in the factory is not filled with grease, so in the installation of the reducer, be sure to fill according to the required amount of filling the recommended lubricant.

- 减速器的润滑剂填充量一般占内部空间的70-90%，请确保有10%左右的空间未注满。

Reducer lubricant filling amount accounts for the interior space of the 70-90%, please make sure that there are about 10% of the space is not filled up.

- 减速器安装设计时请注意需要二个注油孔，需要密封及方便加注油脂，排出油脂。

Please note that the design of reducer installation needs two oil filling hole, need to seal and convenient oil filling, discharge of oil.

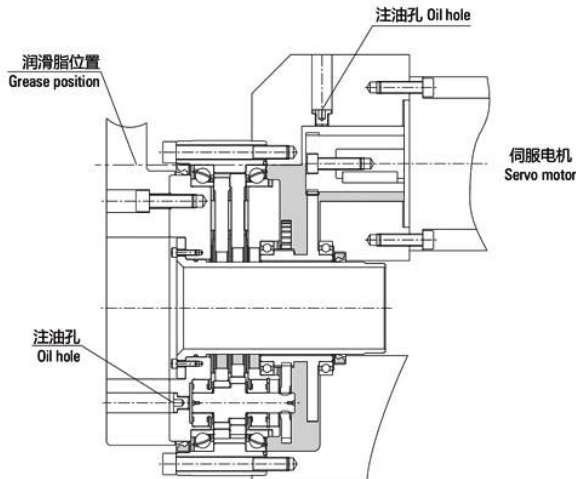
- 减速器封入油脂后，一般更换油脂时间为5000小时左右，请定期检查润滑脂的老化、污染情况，并规定更换时间。

Reducer sealed grease, the general replacement of oil time is about 5000 hours, please regularly check the grease of aging, pollution, and the provisions of replacement time.

● **图 D.6: 润滑油注入位置(水平)**

Figure D.6: Lubricating oil injection position (horizontal)

(安装水平轴 Install horizontal axis)



■ **螺栓的紧固转扭 Tightening Torque Of Bolts**

RVC型减速器使用内六角螺栓，请按表C.4的紧固转矩进行紧固，螺栓请使用碟形弹簧垫圈，防止螺栓松动及擦伤螺栓座面。

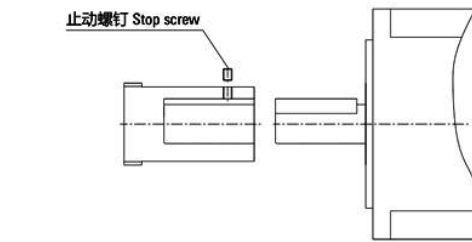
RVC type reducer using the six angle bolt, according to the table C.4 fastening torque for fastening, bolts, please use the disc spring washer, to prevent bolt loose and scratch the bolt seat.

■ **安装输入齿轮 Install Input Gear**

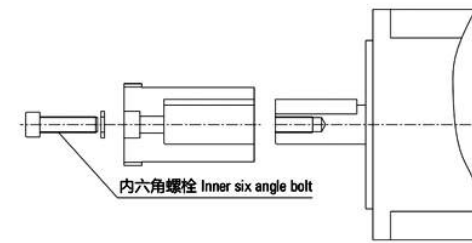
图D.5: 表示伺服电机轴的形状和输入齿轮的安装示例，请参照此图进行设计。

Figure D.5: indicates the shape of the servo motor shaft and the installation of the input gear sample, please refer to this diagram for design.

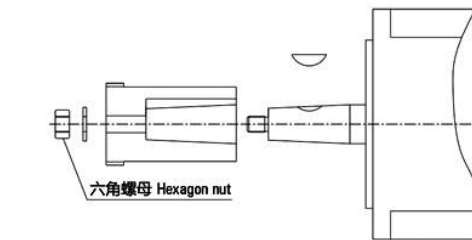
● **图 D.5: 输入齿轮装配 Figure D.5: Input gear assembly**



电机轴没有螺孔 No screw motor shaft



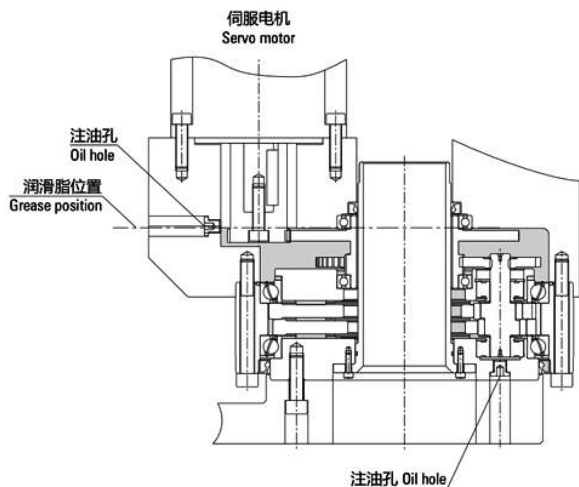
电机轴有螺孔 The motor shaft with a screw hole



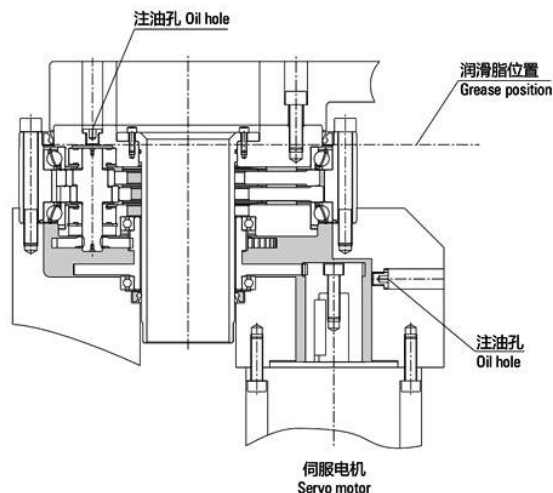
电机轴为锥形轴且带螺栓 The motor shaft is a conical shaft and is provided with a bolt

● 图 D.7: 润滑油注入位置(垂直) Figure D.7: Lubricating oil injection position (vertical)

(安装垂直轴-1 Install vertical axis-1)



(安装垂直轴-2 Install vertical axis-2)



● 表 D.8: 润滑脂填充量 Table D.8: Grease filling amount

机型 Model	安装水平轴 (CC) Install Horizontal Axis (CC)	安装垂直轴 (cc) Install Vertical Axis (CC)
150BX-RVC	147	167
180BX-RVC	266	305
220BX-RVC	498	571
250BX-RVC	756	857
350BX-RVC	1831	2076
440BX-RVC	3536	4047
520BX-RVC	5934	6900

## ■ 保修 Guarantee

保修期及保修范围规定如下。 The warranty period and the scope of the warranty provisions are as follows.

### ● 保修期 Warranty period

在产品目录中记载的正常组装状态及润滑状态下使用的前提下，保修期为交货后的一年时间或该产品运行时间达到2000小时两者中最先达到的时间。

In the product catalog records of the normal assembly and lubrication under the condition of the use of the premise, the warranty period for the delivery of a year or the product running time of 2000 hours to reach the first time between the two.

### ● 保修范围 Warranty coverage

在上述保修期内，因公司产品缺陷导致故障时，由本公司负责对本产品进行维修或更换。

During the warranty period, the company shall be responsible for the maintenance or replacement of the product as a result of the failure of the company's product defects.

但以下情况不在保修范围内。

But the following conditions are not within the scope of the warranty.

- |                     |  |
|---------------------|--|
| ❶ 因客户不当操作或使用导致故障的   | Failure due to improper operation or use of the customer                               |
| ❷ 非本公司实施的改造或修理导致故障的 | Non the company's implementation of the transformation or repair of the failure of the |
| ❸ 非本产品原因导致故障的       | Non product causes of failure  |
| ❹ 其它天灾等非本公司责任导致故障的  | Other natural disasters and other non liability of the company led to the failure of   |

而且，这里所说的保修是指对本产品的保修。

Moreover, the warranty here refers to the warranty for this product.

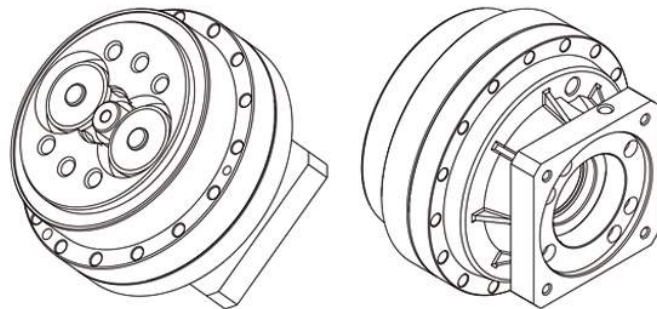
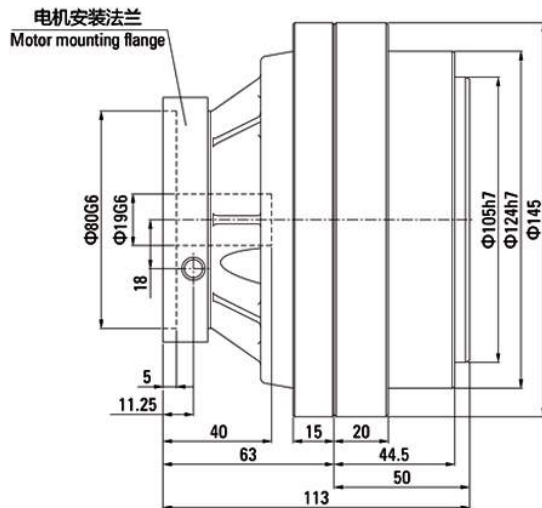
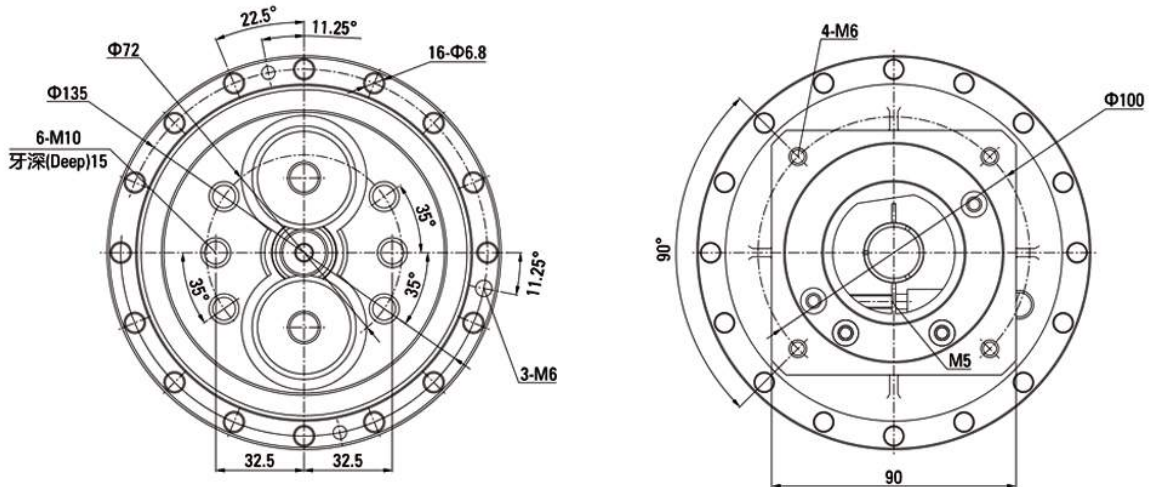
对于因本产品故障引发的其它损失、与设备上拆装相关的工时、费用等，不在本公司负责范围内。

For other losses caused by the failure of this product, and the equipment on the dismantling of the hours, costs, etc., are not responsible for the company.

# A系列外形尺寸图 A SERIES OUTLINE DIMENSION DRAWING



150BX-RVA-19 外形图 150BX-RVA-19 Outline Drawing



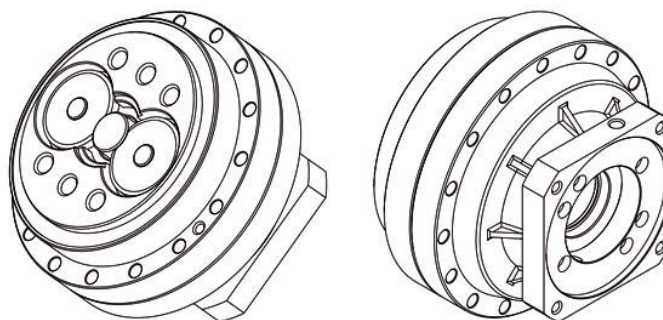
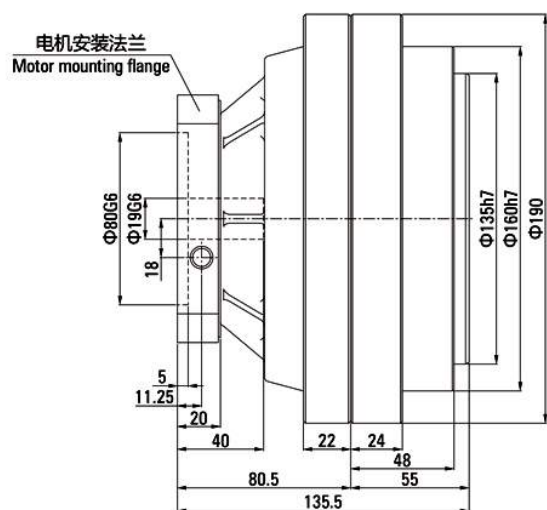
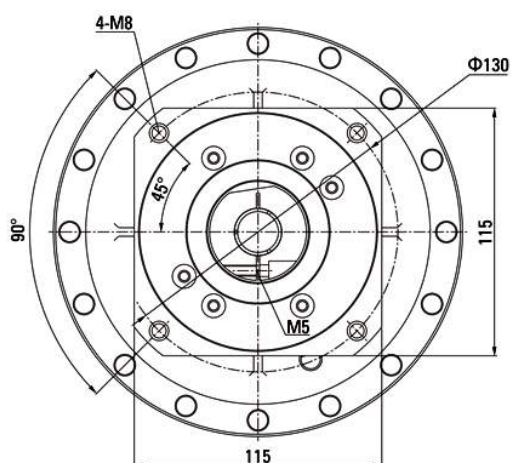
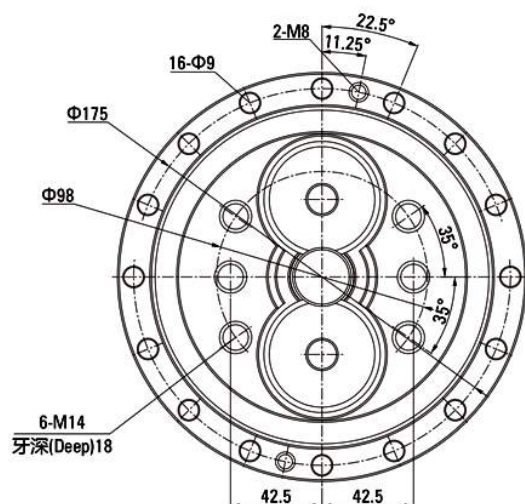
说明 Note:

1. 本图适用电机轴:  $\leq 19 \times 40L$ ; 电机轴用锁紧器锁紧; This figure applies to the motor shaft:  $\leq 19 \times 40L$ ; motor shaft lock use locker;
2. 电机安装法兰依电机型号提供; Motor mounting flange according to motor model;

# A系列外形尺寸图 A SERIES OUTLINE DIMENSION DRAWING



190BX-RVA-19 外形图 190BX-RVA-19 Outline Drawing



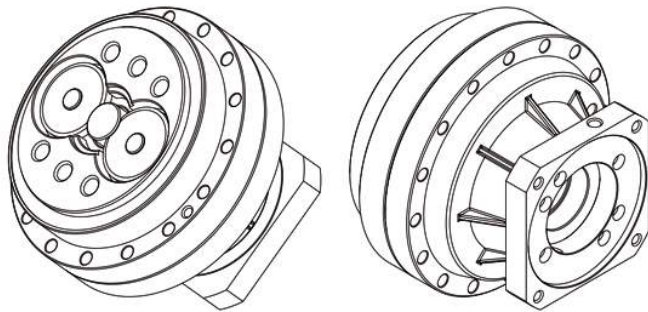
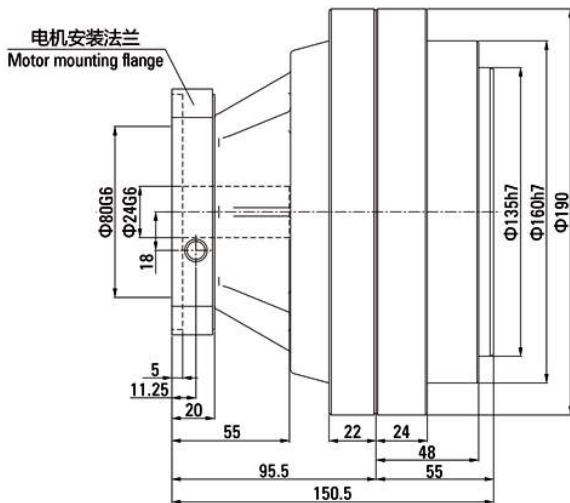
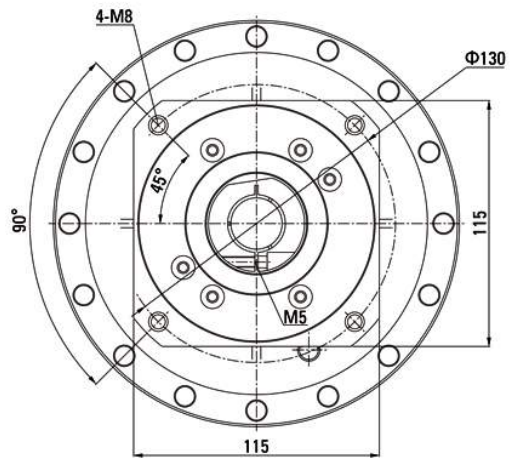
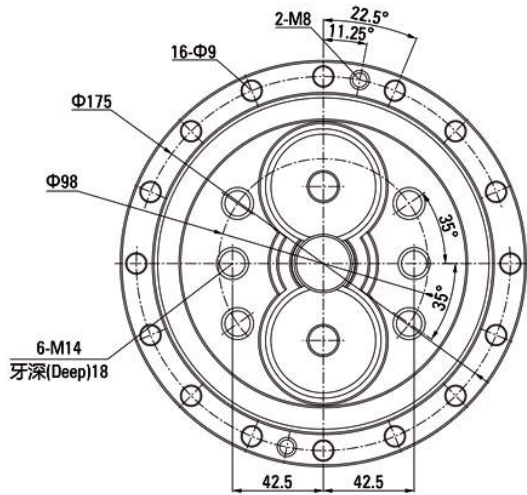
说明 Note:

1. 本图适用电机轴:  $\leq 19 \times 40L$ ; 电机轴用锁紧器锁紧; This figure applies to the motor shaft:  $\leq 19 \times 40L$ ; motor shaft lock use locker;
2. 电机安装法兰依电机型号提供。 Motor mounting flange according to motor model.

# A系列外形尺寸图 A SERIES OUTLINE DIMENSION DRAWING



■ 190BX-RVA-24 外形图 190BX-RVA-24 Outline Drawing



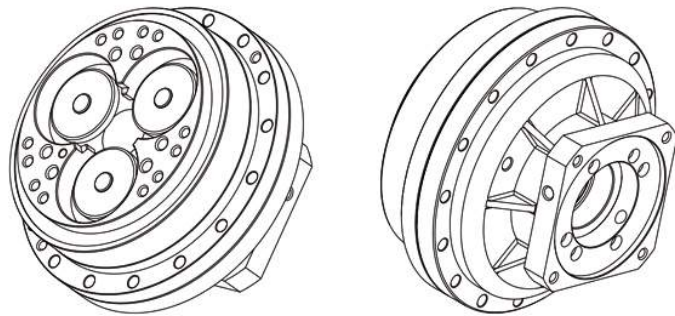
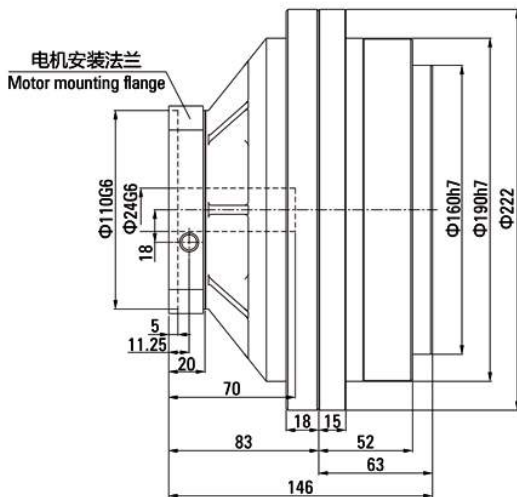
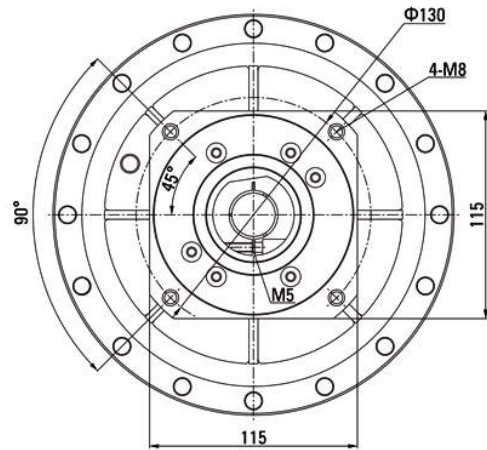
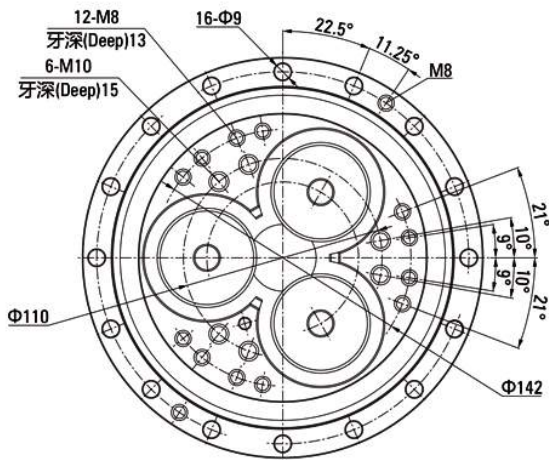
说明 Note:

1. 本图适用电机轴:  $\leq 24 \times 55L$ ; 电机轴用锁紧器锁紧; This figure applies to the motor shaft:  $\leq 24 \times 55L$ ; motor shaft lock use locker;
2. 电机安装法兰依电机型号提供。Motor mounting flange according to motor model.

# A系列外形尺寸图 A SERIES OUTLINE DIMENSION DRAWING



■ 220BX-RVA-24 外形图 220BX-RVA-24 Outline Drawing



说明 Note:

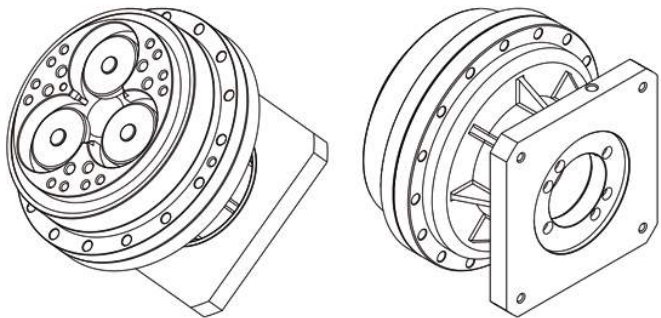
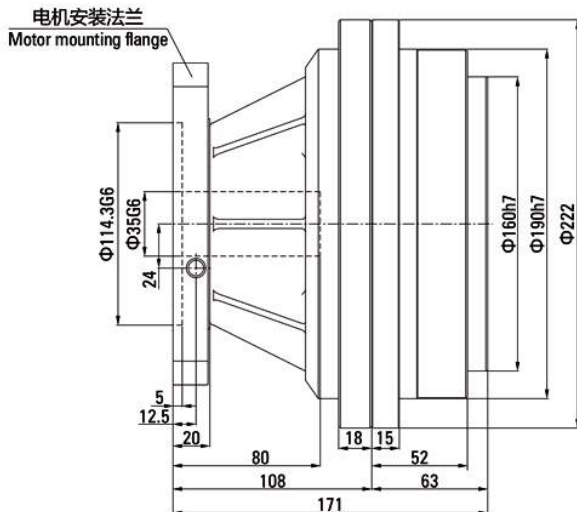
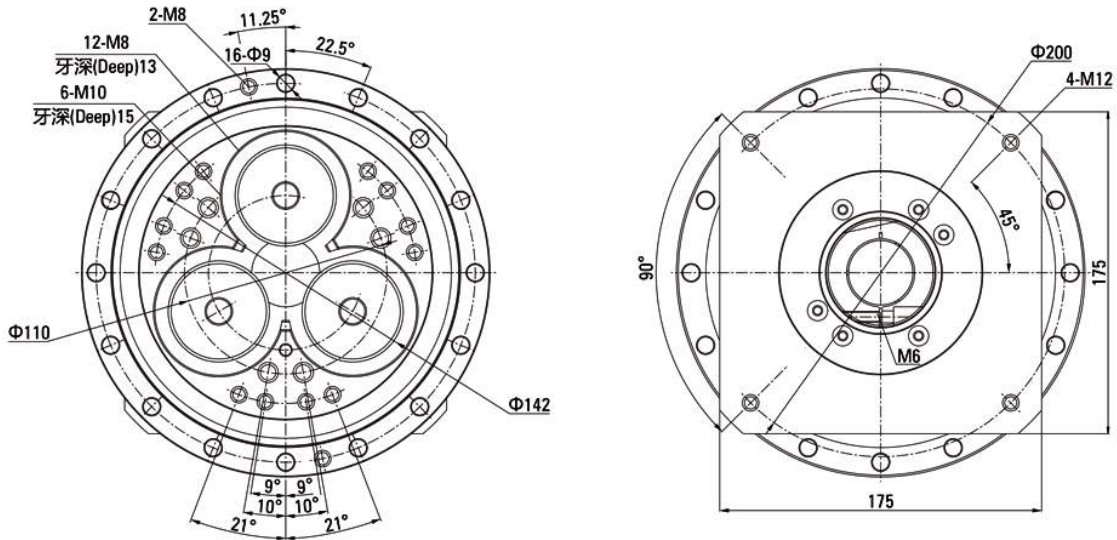
1. 本图适用电机轴:  $\leq 24 \times 70L$ ; 电机轴用锁紧器锁紧; This figure applies to the motor shaft:  $\leq 24 \times 70L$ ; motor shaft lock use locker;
2. 电机安装法兰依电机型号提供。Motor mounting flange according to motor model.

# A系列外形尺寸图

## A SERIES OUTLINE DIMENSION DRAWING



■ 220BX-RVA-35 外形图 220BX-RVA-35 Outline Drawing

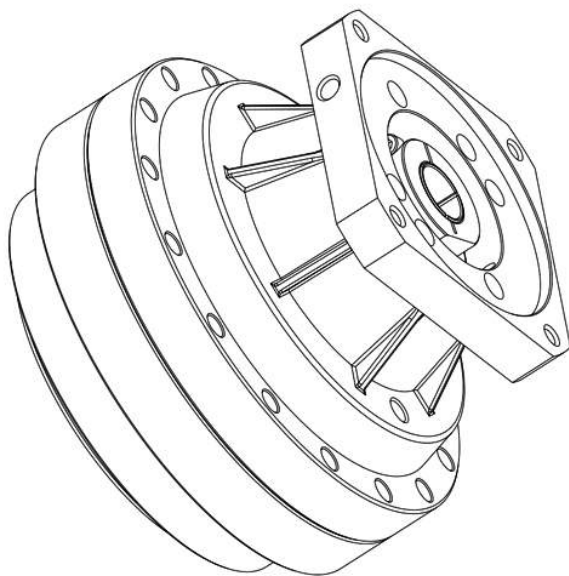


说明 Note:

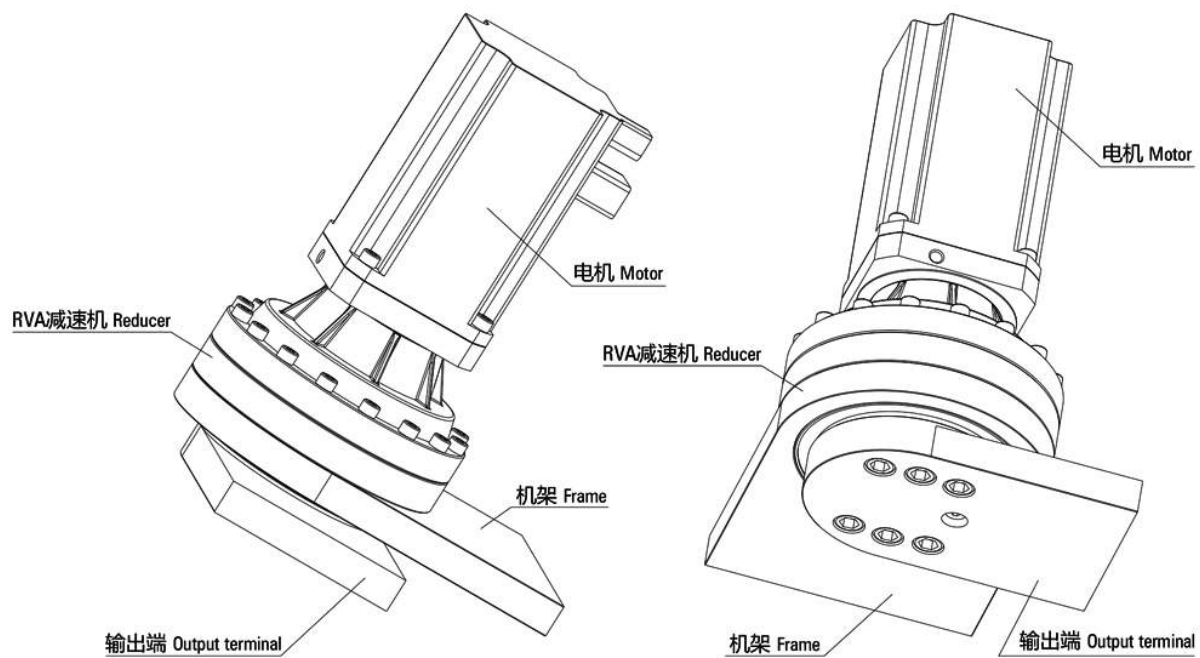
1. 本图适用电机轴:  $\leq 35 \times 80L$ ; 电机轴用锁紧器锁紧; This figure applies to the motor shaft:  $\leq 35 \times 80L$ ; motor shaft lock use locker;
2. 电机安装法兰依电机型号提供。 Motor mounting flange according to motor model.

# A系列减速机安装图 A SERIES INSTALLATION DRAWING

## ■ RVA系列减速机 RVA Series Reducer



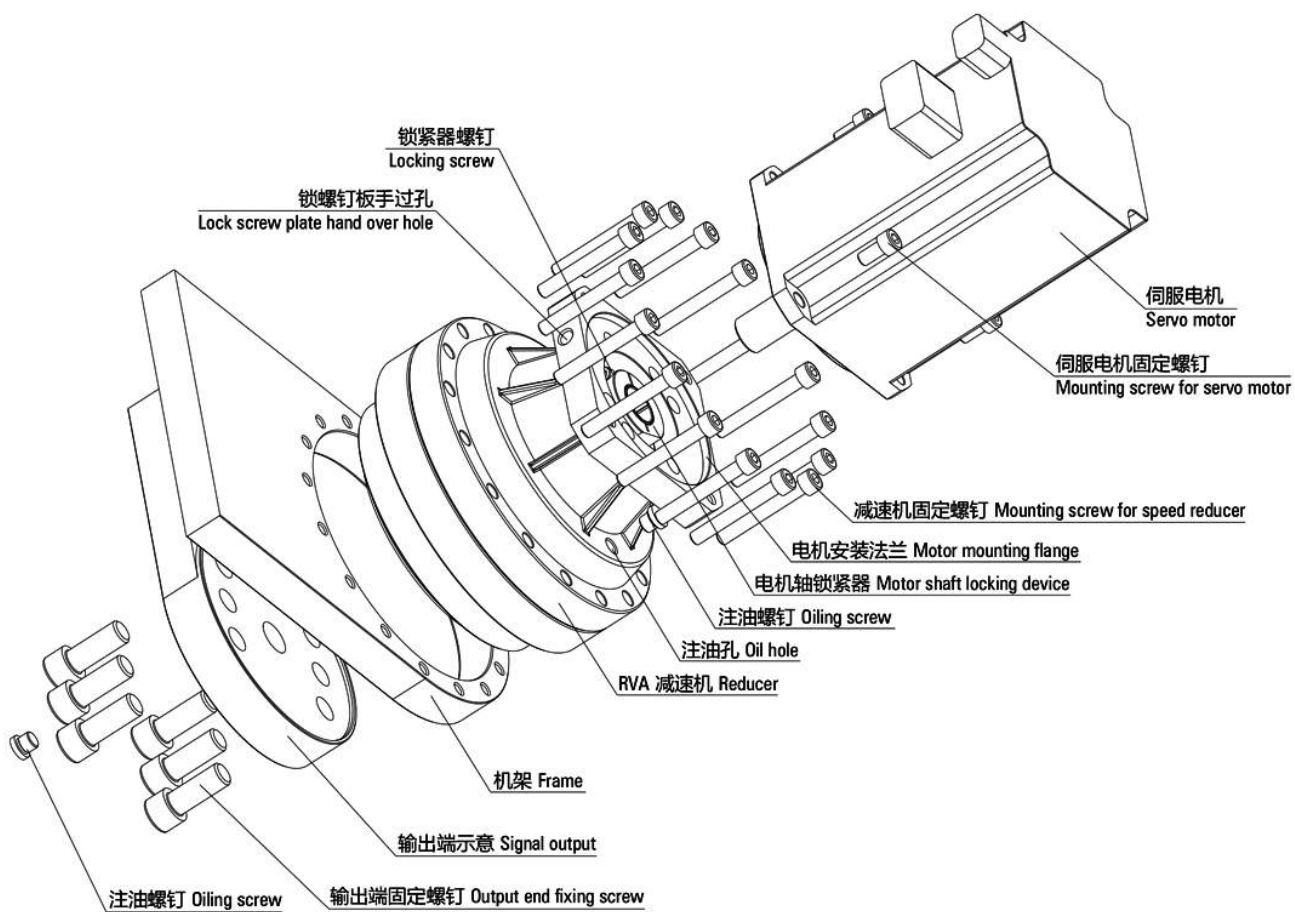
## ■ RVA系列减速机安装示例 RVA Series Reducer Installation Example





# A系列减速机安装图 A SERIES INSTALLATION DRAWING

## ■ RVA系列减速机安装拆解示意图 RVA Series Mounting Schematic Diagram (Disassemble Diagram)



# 订购时确认事项 CONFIRMATION OF ORDER

订购时确认事项 Confirmation Of Order						
使用部位 Use site						
机械名称 Mechanical name:				用途 Purpose:		
型号 Model:	BX					
负载条件 Load condition						
载荷 Load:	径向 Radial:	(kg)	力臂长 The long arm:	(m)	轴向 Axial:	(kg)
运转时间 Running time:	连续 Continuity:	(s)	停止 Stop it:	(s)	正反转 Positive inversion:	是 <input type="checkbox"/> 否 <input type="checkbox"/>
输出转速 Output speed:	(r/min)					
启动转矩 Starting torque:	(Nm)	停止转矩 Stop torque:	(Nm)	稳定转矩 Stable torque:	(Nm) Max.	
使用环境 Use environment						
温度 Temperature:	(°C)	湿度 Humidity:	%	其它 Other:		
安装方法 Installation method						
水平 Level	<input type="checkbox"/>	垂直 (电机在上) Vertical (motor)	<input type="checkbox"/>	垂直 (电机在下) Vertical (motor):	<input type="checkbox"/>	

安装简图 Installation diagram:

输入齿轮轴规格 Input gear shaft size					
型式 Type:	A <input type="checkbox"/>	B <input type="checkbox"/>	Z(附图Figure) <input type="checkbox"/>	电机轴径X长度 Motor shaft diameter X length:	$\Phi$ <input type="checkbox"/> X <input type="checkbox"/> L <input type="checkbox"/>
减速比 Reduction ratio:	其它 Other:				
输入轴简图 Input shaft diagram:					

电机规格 Motor specifications					
型号 Model:					
功率 Power:	(kw)	转速 Speed:	(r/min)	额定转矩 Rated torque:	(Nm)
止口 Stop:	(mm)	螺孔 Screw:	(PCD)	M	X
其它 Other					
输入法兰 Input flange	<input type="checkbox"/>	输出法兰 Output flange	<input type="checkbox"/>		
润滑脂 Grease	<input type="checkbox"/>	润滑油 Lubricating oil	<input type="checkbox"/>		
其它事宜 Other matters:					



**Suntech**