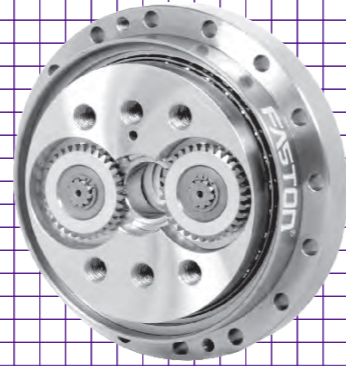
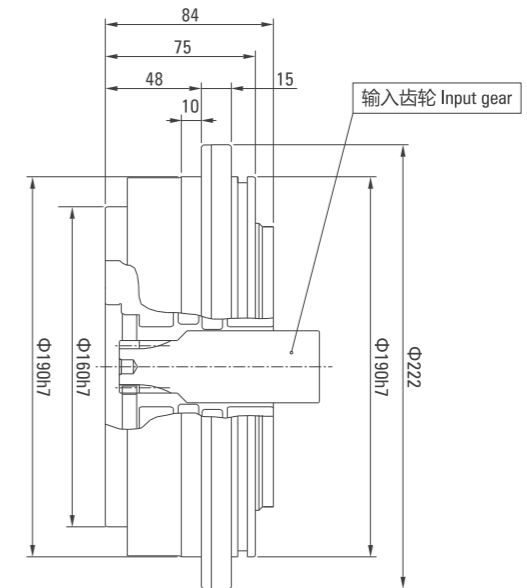
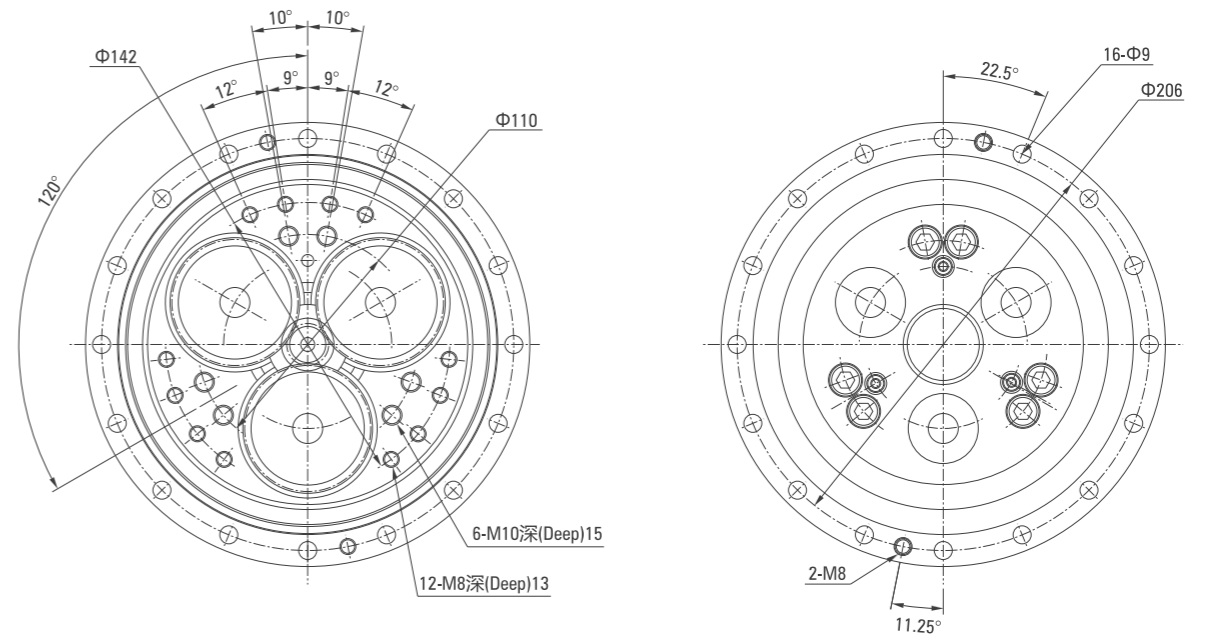
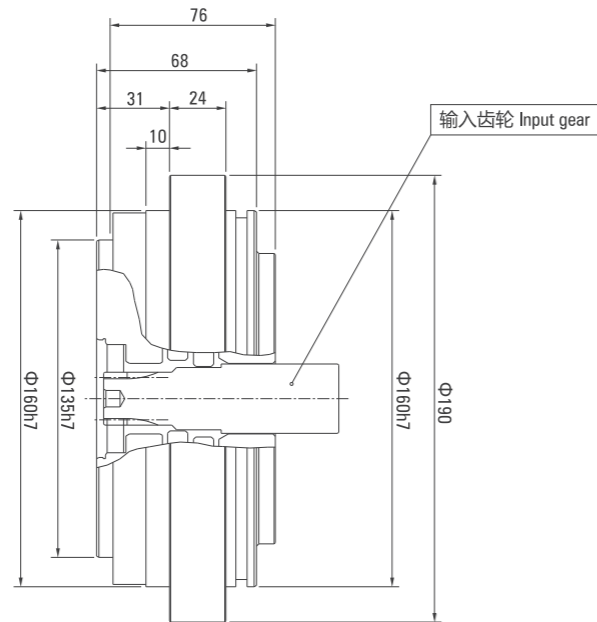
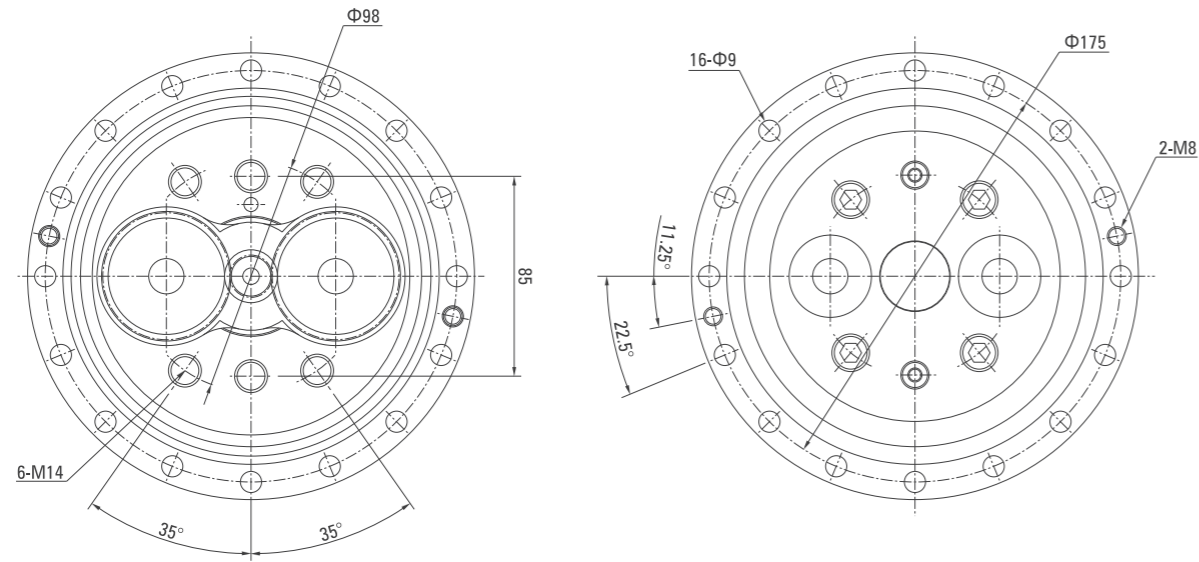
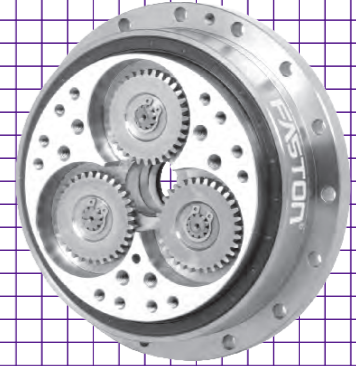


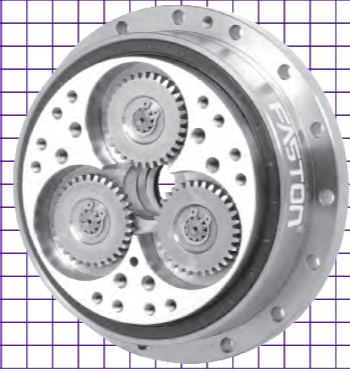
40E外形图
40E Outline Drawing
减速比 Ratio (81,105,121,153)



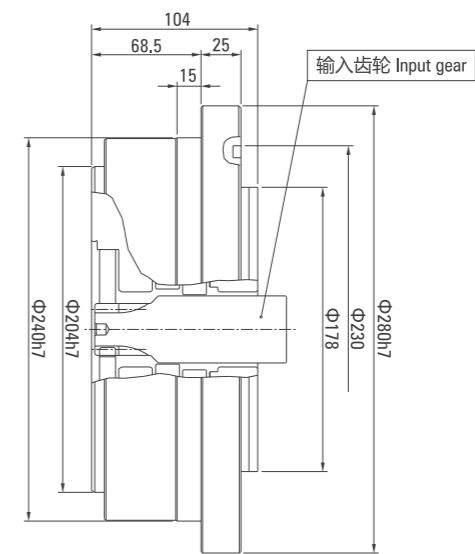
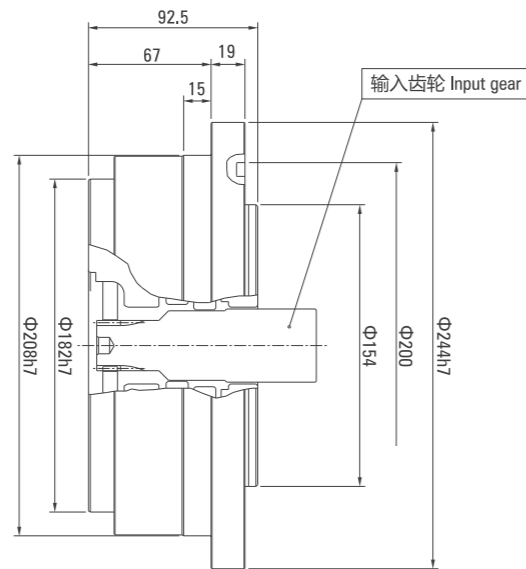
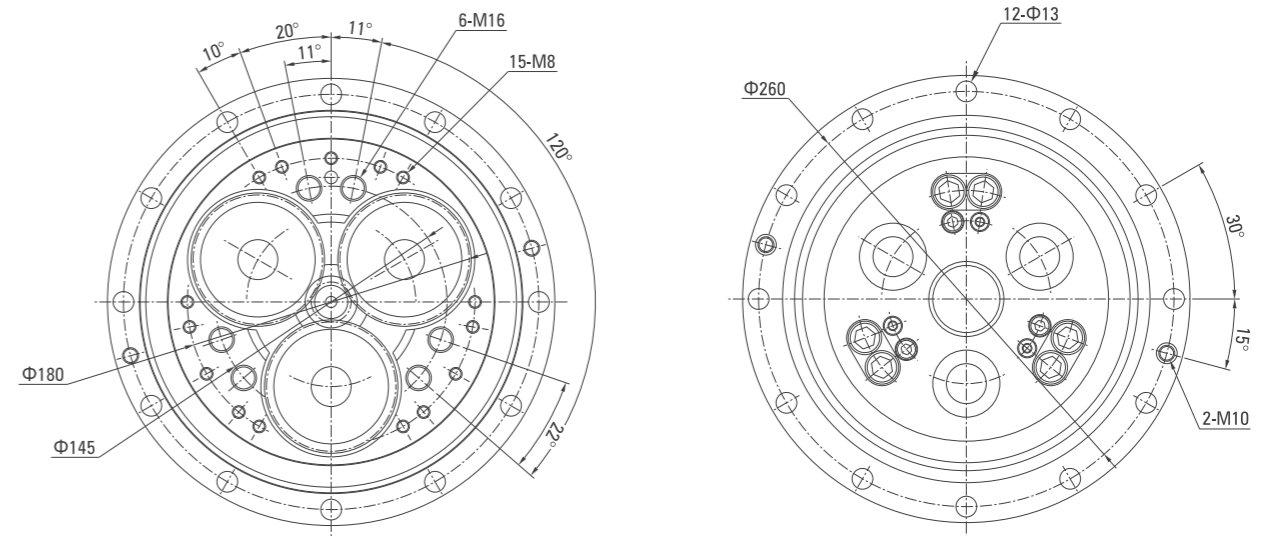
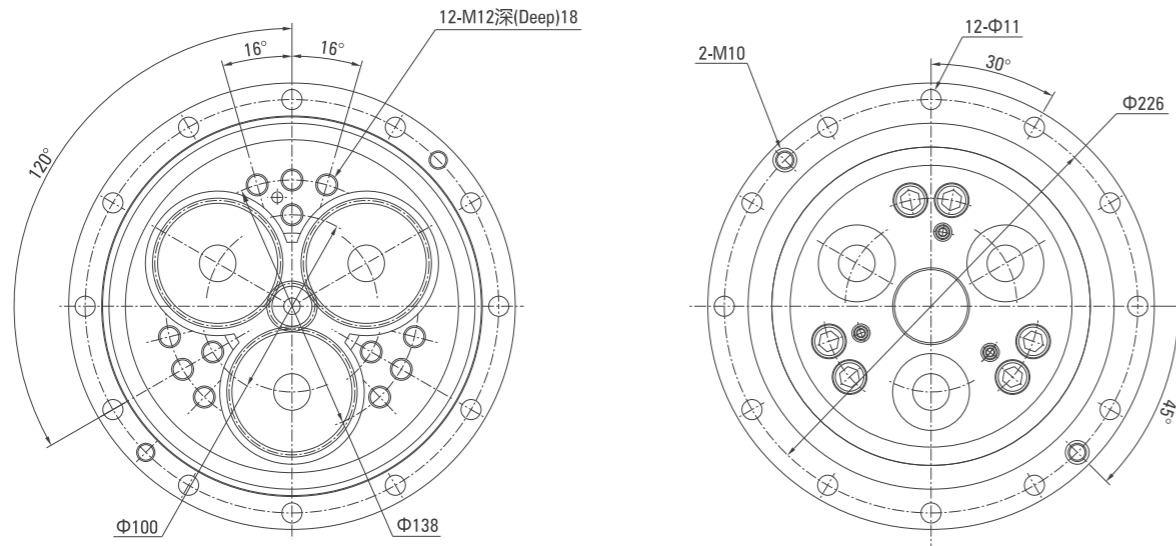
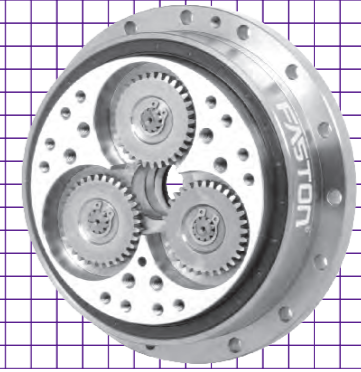
80E外形图
80E Outline Drawing
减速比 Ratio (81,101,121,153)



110E外形图
110E Outline Drawing
减速比 Ratio (81,111,161,175.28)



160E外形图
160E Outline Drawing
减速比 Ratio (81,101,129,145,171)

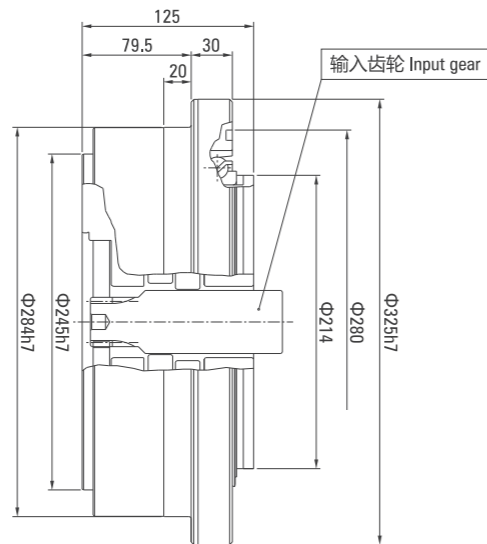
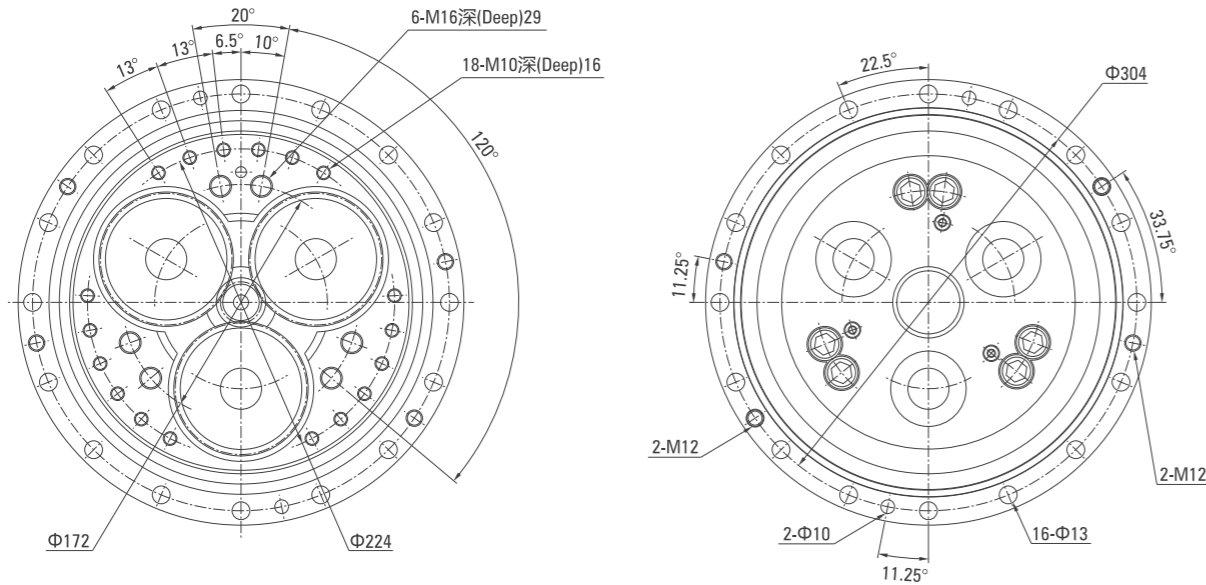
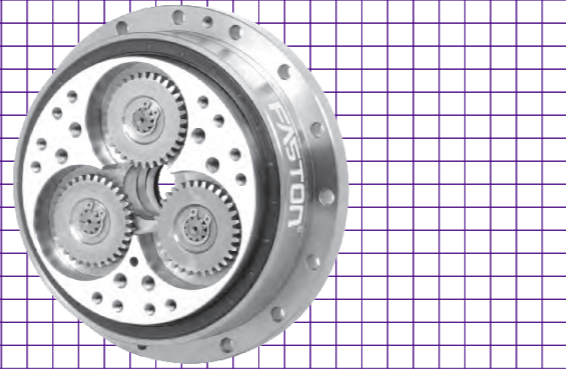


320E外形图

320E Outline Drawing

减速比 Ratio

(81,101,118.5,129,141,171,185)



为了充分发挥FVE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 FVC 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

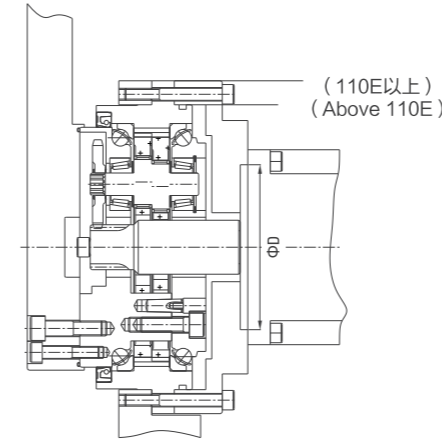
电机轴同减速器的同轴度误差a小于0.03mm (160E以上机型小于0.05)。

Coaxiality tolerance (a) of motor shaft and reducer is lower than 0.03mm (for models above 160E, lower than 0.05).

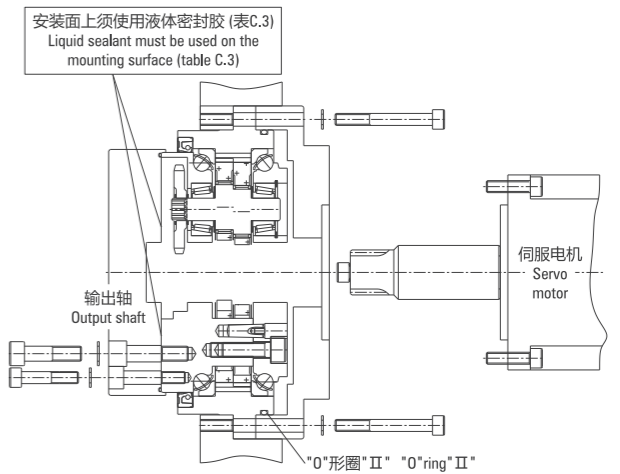
如安装精度不良,特别容易造成振动及噪音。

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



图C.2:装配密封 Figure C.2: Assembly seal



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。

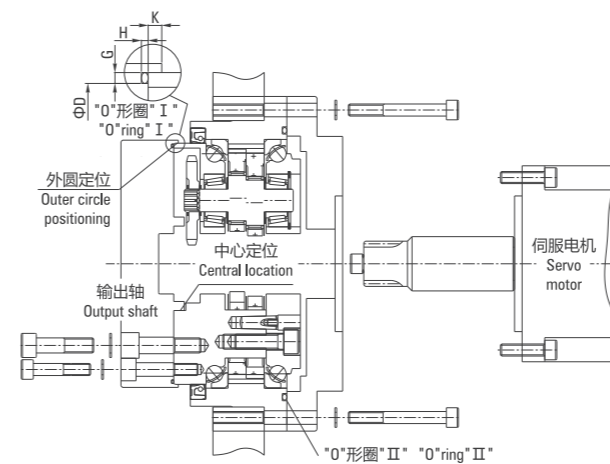
If the structure is not allowed to use the "O"-shaped ring, please use the table C.3 liquid sealant.

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.

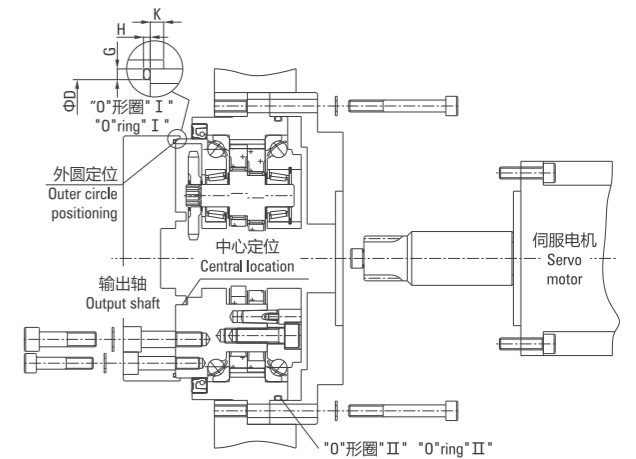
110E、160E、320E:

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



20E、40E、80E:

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



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

机型Model	适用“O”型圈Apply The "O" Shape Ring
20E	S120
40E	AS568-258
80E	AS568-263
110E	G190 (B2401)
160E	G220 (B2401)
320E	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.

E型减速器安装要领 E TYPE REDUCER INSTALLATION ESSENTIALS

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

代号 Code		机型 Model	20E(A)	20E(B)	40E	80E	110E	160E	320E
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	φ 1.78 ± 0.07	φ 2 ± 0.1	φ 2 ± 0.1	φ 2.62 ± 0.07	φ 2.62 ± 0.07	φ 3.53 ± 0.1	φ 3.53 ± 0.1
	内径Internal diameter	φ 101.32 ± 0.38	φ 99.5 ± 0.4	φ 131.5 ± 0.6	φ 152.07 ± 0.58	φ 177.47 ± 0.58	φ 196.44 ± 0.76	φ 234.54 ± 0.76	
	凹槽 尺寸 Groove Size	外径D Outside diameter D	φ 105	φ 105	φ 135	φ 160	φ 182	φ 204	φ 243
		深度H Depth H	1.27 ± 0.05	1.5 _{-0.1}	1.5 _{-0.1}	2.06 ± 0.05	2.06 ± 0.05	2.82 ± 0.05	2.82 ± 0.05
		宽度G Width G	2.39 ^{+0.25}	2.70 ^{+0.25}	2.70 ^{+0.25}	3.58 ^{+0.25}	3.58 ^{+0.25}	4.78 ^{+0.25}	4.78 ^{+0.25}
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)	硅系无溶剂型 Silicone based non solvent type 半干性充填 Half dry filling
HERME SERL SS-60F (Nihon-Hermetic)	无溶剂弹性密封 Solvent free elastic seal 金属接触面适用 Metal contact surface

注:螺栓和销并用型装配请咨询本公司技术人员
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型减速器, 使用内六角螺钉(GB/T70.112.9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/T118-2000)。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.

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)

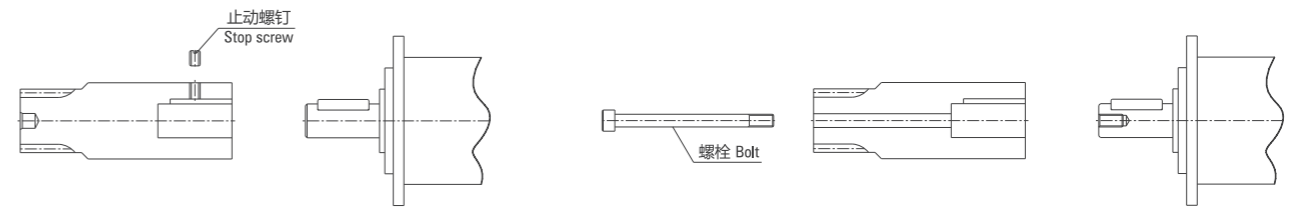
Install sample as shown in picutre C.5:(Three way)

E型减速器安装要领 E TYPE REDUCER INSTALLATION ESSENTIALS

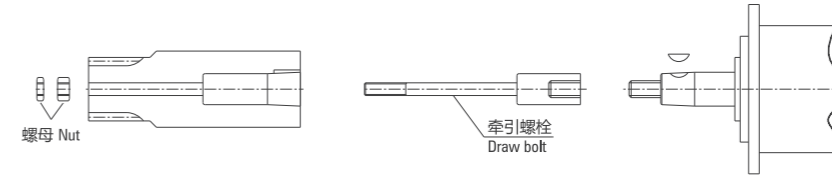
图C.5:输入齿轮装配 Figure C.5:Input gear assembly

(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)



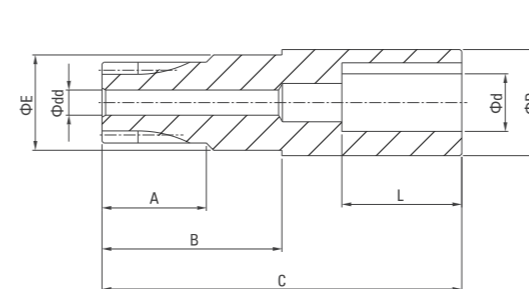
表C.5:输入齿轮轴A型 Table C.5:A type of input gear shaft

尺寸代号 Size Code	A	B	C	D	dd	E	L	NOTE
20E	25	46	95	23.5	11,14	21.5	-	-
40E	29	53	100	29.5	14,19	29.5	-	-
80E	29	-	100	36.0	19,22	-	-	-
110E	34	70	120	40.0	19,22,24	38.0	-	-
160E	35	-	120	42.0	22,24,28	-	-	-
320E	35	-	140	46.0	24,28	-	-	-
450E	38	-	155	56.0	28,35	-	-	-

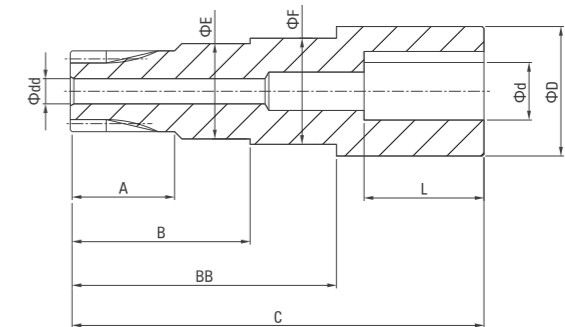
表C.6:输入齿轮轴B型 Table C.6:B type of input gear shaft

尺寸代号 Size Code	A	B	BB	C	D	E	F	d	dd	L	NOTE
20E	25	50	66	100	30	23.5	21.5	11,14	5.5	-	-
40E	29	33	76	115	36	29.5	26.5	14,19	6.5	-	-
80E	29	80	-	130	42	36.0	-	19,22,24	7.0	-	-
160E	35	105	-	170	50	42.0	-	24,28,35	9.0	-	-
320E	35	122	-	185	50	46.0	-	24,28,35	11	-	-
450E	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.

E型减速器安装要领 E TYPE REDUCER INSTALLATION ESSENTIALS

20E、40E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)

20E、40E 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)

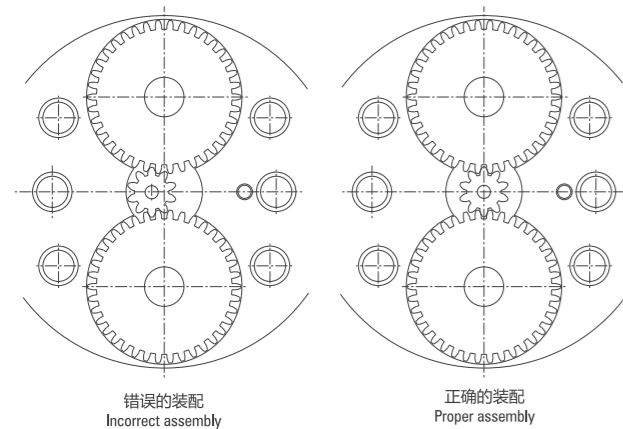
能贯通减速器内部的速比和不能贯通的速比。

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.

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

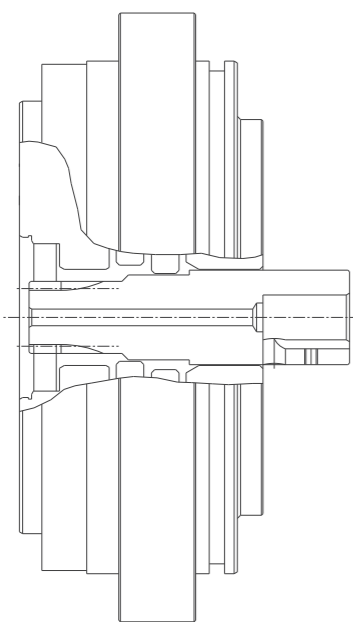


表C.7: 不能贯通的速比
Table C.7: Speed ratio can not be through

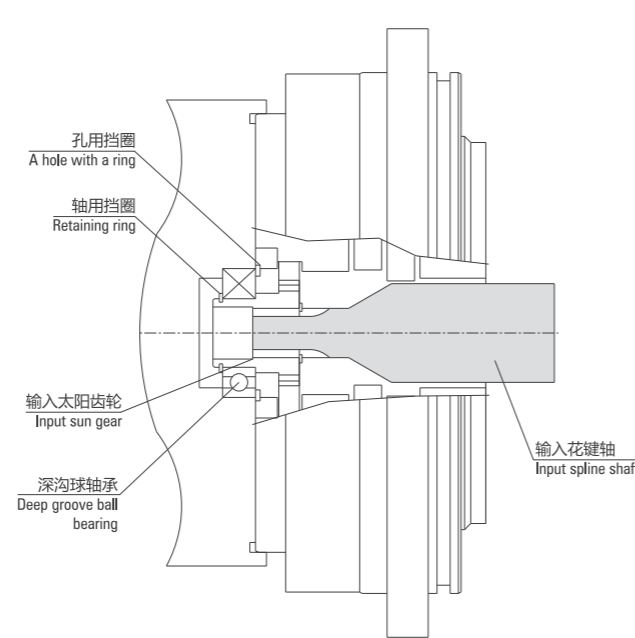
	20E	40E	80E
输出轴输出 From output shaft	57	57	57
外壳输出 Housing output	56	56	56

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



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



E型减速器安装要领 E TYPE REDUCER INSTALLATION ESSENTIALS

润滑 Lubrication

减速器使用润滑油脂: Molywhite FE-00或VIGO-Grease FEO其它相同品级精密减速器专用润滑脂。

Reducer using lubricating oil: Molywhite FE-00 or VIGO-Grease FEO 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%。

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:

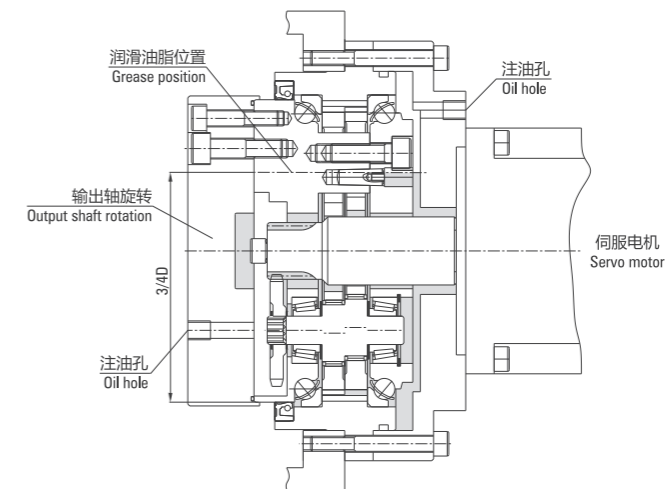
Grease filing position as shown in figure C.9, figure C.10:

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)
20E-FVE		87	100
40E-FVE		195	224
80E-FVE		383	439
110E-FVE		432	495
160E-FVE		630	694
320E-FVE		1040	1193

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

(安装水平轴 Install horizontal axis)



图C.10: 润滑油脂注入位置(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)

