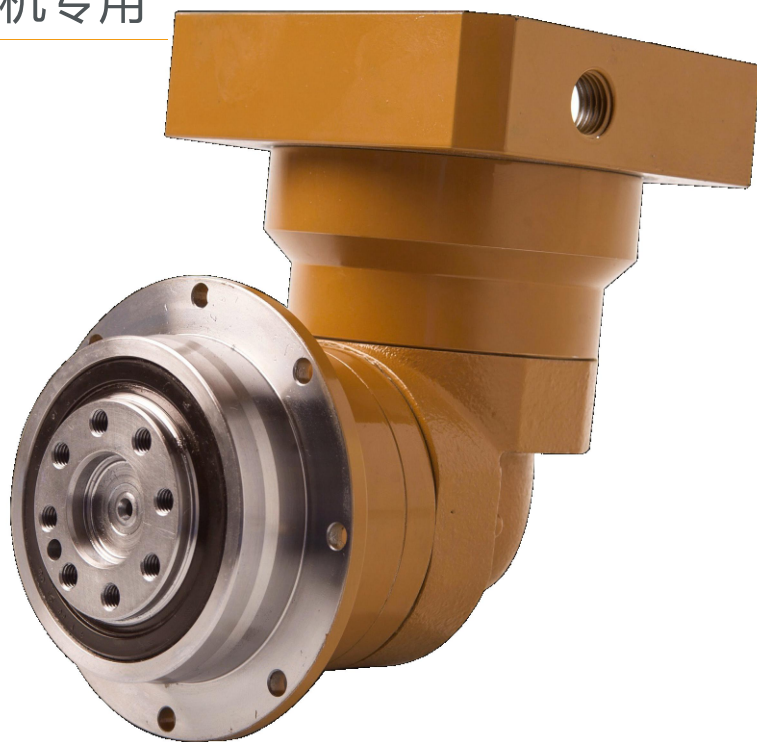


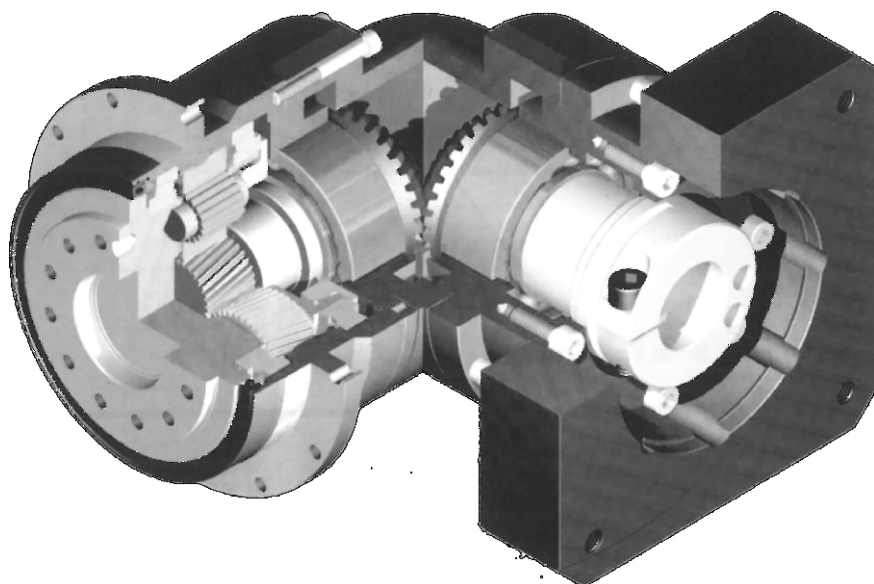
精密行星齿轮减速机

ATR

伺服电机专用



ATR series



省空间

直交型减速机使用螺旋式伞齿轮，电机的安装可实现90度弯曲，节省了安装空间。

Space - saving

Right angle reducer using spiral bevel gear
Customer can locate the motor at 90 degree away from the reducer if required to save space.

高刚性、高扭矩

使用整体式滚针轴承，大大提高了刚性和扭矩。

High rigidity & torque

High rigidity & high torque was achieved by uncaged needle roller bearings.

高负载

主轴承采用锥形滚子轴承，实现高负载容量。
●采用064•090尺寸球轴承

High load

Adopting taper roller bearing for the main output shaft to increase radial and axial load.
●Frame size 064•090 adopt ball bearing.

连接器、轴套方式

可以安装到世界上任何一台马达上。

Adapter-bushing connection

Can be attached to any motor all over the world.

维护方便

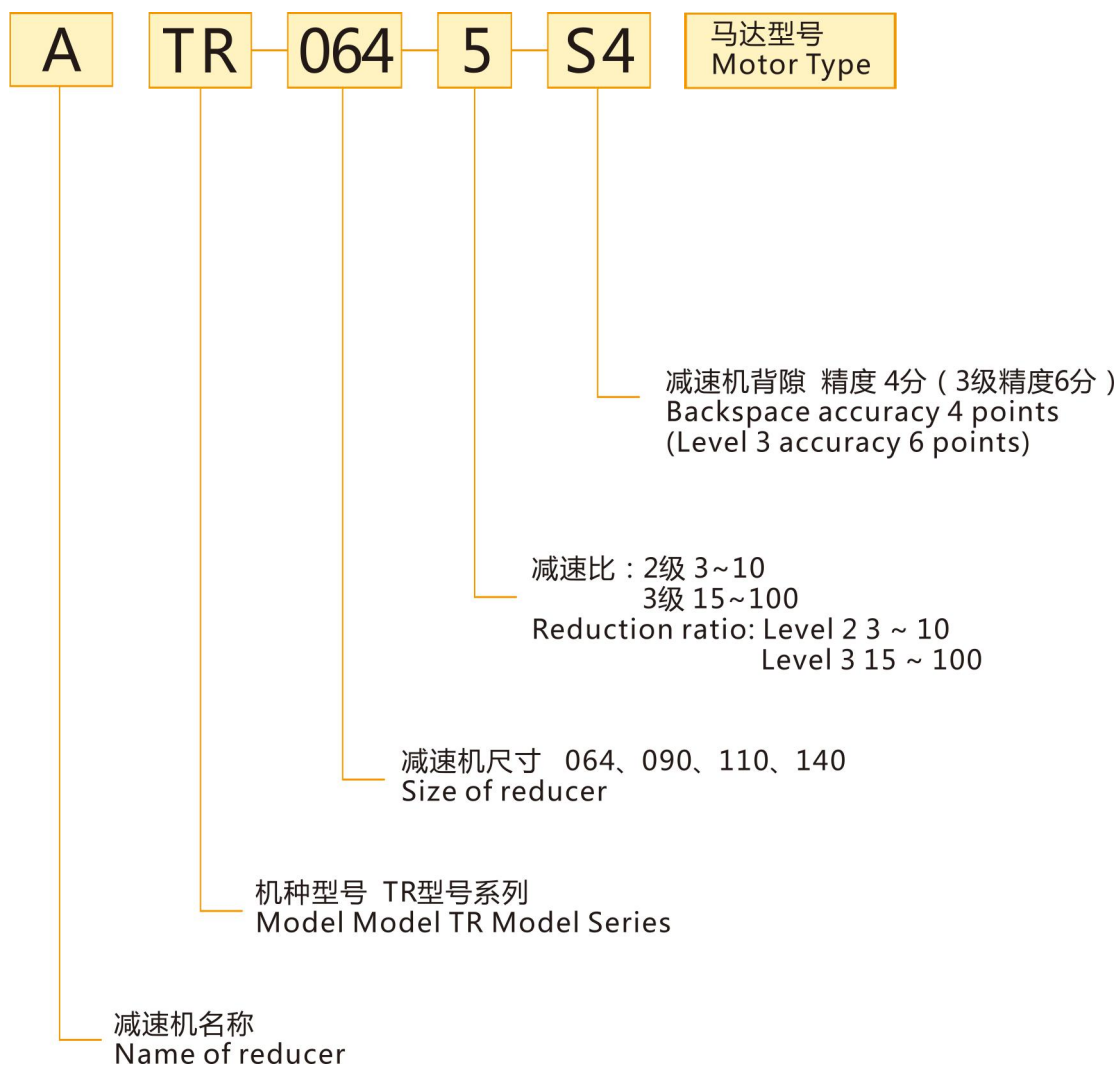
在产品寿命期内无需更换润滑脂，安装更便捷。

Maintenance-free

No need to replace the grease for the life time.
Can be attached in any position.

ATR series

机种、型号代码 Model number



ATR-064

尺寸 Frame Size	机种 Model	减速比 Ratio	⊙1										⊙2		⊙3		⊙4		⊙5		重量 Weight	惯性力矩 Moment of inertia		
			额定扭矩	最大扭矩	急停 最大扭矩	输入转速	输入转速	额定径向力	额定轴向力	最大 径向负荷	最大 轴向负荷													
			Nominal Output Torque	Maximum Output Torque	Emergency Stop Torque	Nominal Input Speed	Maximum Input Speed	Permitted radial load	Permitted radial load	Permitted axial load	Backlash													
			[Nm]	[Nm]	[Nm]	[rpm]	[rpm]	[N]	[N]	[N]	[N]	[N]	[N]	[kg]	[kg·cm ²]	[kg·cm ²]	[kg·cm ²]							
064	2	4	16	32	65	3000	6000	370	360	1500	750	1.9	0.305	0.379	0.569									
		5	22	40	80	3000	6000	400	390	1500	750		0.273	0.348	0.537									
		6	24	45	90	3000	6000	420	430	1500	750		0.256	0.331	0.521									
		7	24	45	90	3000	6000	440	460	1500	750		0.246	0.321	0.510									
		8	24	45	90	3000	6000	460	480	1500	750		0.240	0.315	0.504									
		9	16	32	65	3000	6000	480	510	1500	750		0.236	0.311	0.500									
	3	10	16	32	65	3000	6000	500	530	1500	750	0.233	0.308	0.497										
		16	24	45	90	3000	6000	580	650	1500	750	0.082	0.126	—										
		20	24	45	90	3000	6000	630	720	1500	750	0.073	0.118	—										
		25	24	45	90	3000	6000	680	750	1500	750	0.072	0.116	—										
		28	24	45	90	3000	6000	700	750	1500	750	0.078	0.123	—										
		35	24	45	90	3000	6000	760	750	1500	750	0.071	0.115	—										
		40	24	45	90	3000	6000	790	750	1500	750	0.062	0.106	—										
		45	16	32	65	3000	6000	820	750	1500	750	0.070	0.115	—										
		50	24	45	90	3000	6000	850	750	1500	750	0.061	0.106	—										
		60	24	45	90	3000	6000	910	750	1500	750	0.061	0.106	—										
		70	24	45	90	3000	6000	950	750	1500	750	0.061	0.106	—										
		80	24	45	90	3000	6000	1000	750	1500	750	0.061	0.106	—										
		90	16	32	65	3000	6000	1000	750	1500	750	0.061	0.106	—										
		100	16	32	65	3000	6000	1100	750	1500	750	0.061	0.105	—										

ATR-090

尺寸 Frame Size	机种 Model	减速比 Ratio	⊙1⊙2⊙3⊙4⊙5										重量 Weight	惯性力矩 Moment of inertia			
			额定扭矩 Output Torque	最大扭矩 Maximum Output Torque	急停 最大扭矩 Emergency Stop Torque	输入转速 Nominal Input Speed	输入转速 Maximum Input Speed	额定径向力 Permitted radial load	额定轴向力 Permitted radial load	最大 径向负荷 Permitted axial load	最大 轴向负荷 Backlash	(≤ φ 8)		(≤ φ 14)	(≤ φ 19)	(≤ φ 28)	
			[Nm]	[Nm]	[Nm]	[rpm]	[rpm]	[N]	[N]	[N]	[N]	[kg·cm ²]		[kg·cm ²]	[kg·cm ²]	[kg·cm ²]	
090	2	4	60	90	170	3000	6000	720	620	3300	1700	5.1	—	2.17	2.50	4.63	
		5	65	90	220	3000	6000	780	680	3300	1700		—	1.98	2.31	4.43	
		6	65	90	220	3000	6000	830	740	3300	1700		—	1.88	2.21	4.33	
		7	65	90	220	3000	6000	870	790	3300	1700		—	1.81	2.14	4.27	
		8	65	90	220	3000	6000	910	830	3300	1700		—	1.78	2.10	4.23	
		9	45	65	170	3000	6000	950	880	3300	1700		—	1.75	2.08	4.21	
	3	10	45	65	170	3000	6000	980	920	3300	1700	4.3	—	1.73	2.06	4.19	
		16	65	110	220	3000	6000	1200	1100	3300	1700		0.40	0.48	0.66	—	
		20	65	110	220	3000	6000	1200	1200	3300	1700		0.34	0.41	0.60	—	
		25	65	110	220	3000	6000	1300	1400	3300	1700		0.33	0.41	0.59	—	
		28	65	110	220	3000	6000	1400	1400	3300	1700		0.38	0.45	0.64	—	
		35	65	110	220	3000	6000	1500	1600	3300	1700		0.32	0.40	0.59	—	
		40	65	110	220	3000	6000	1600	1700	3300	1700		0.25	0.33	0.51	—	
		45	45	65	170	3000	6000	1600	1700	3300	1700		0.32	0.40	0.59	—	
		50	65	110	220	3000	6000	1700	1700	3300	1700		0.25	0.32	0.51	—	
		60	65	110	220	3000	6000	1800	1700	3300	1700		0.25	0.32	0.51	—	
		70	65	110	220	3000	6000	1900	1700	3300	1700		0.25	0.32	0.51	—	
		80	65	110	220	3000	6000	2000	1700	3300	1700		0.25	0.32	0.51	—	
		90	45	65	170	3000	6000	2000	1700	3300	1700		0.25	0.32	0.51	—	
		100	45	65	170	3000	6000	2100	1700	3300	1700		0.25	0.32	0.51	—	

- ⊙1 输入转速为额定转速时，使用寿命为 20000 小时的值
 ⊙2 输入转速为额定转速时，使用寿命为 20000 小时的值
 （作用于轴中央，轴向负荷为 0 时）
 ⊙3 输入转速为额定转速时，使用寿命为 20000 小时的值
 （作用于轴芯，径向负荷为 0 时）
 ⊙4 径向负荷的容许最大值
 ⊙5 轴向负荷的容许最大值
 注：使用温度 -20℃ ~ 175℃（使用温度可根据用户要求定制）

- ⊙1 With nominal input speed, service life is 20,000 hours.
 ⊙2 With this load and nominal input speed, service life will be 20,000 hours.
 (Applied to the output shaft center, at axial load 0)
 ⊙3 With this load and nominal input speed, service life will be 20,000 hours.
 (Applied to the output side bearing, at radial load 0)
 ⊙4 The maximum radial load the reducer can accept.
 ⊙5 The maximum axial load the reducer can accept.
 Note: Use the temperature -20℃ ~ 175℃
 The use temperature can be customized according to user requirements.

ATR-110

⊙ 1								⊙ 2		⊙ 3	⊙ 4	⊙ 5						
尺寸 Frame Size	机种 Model	减速比 Ratio	额定扭矩	最大扭矩	急停 最大扭矩	输入转速	输入转速	额定径向力	额定轴向力	最大 径向负荷	最大 轴向负荷	重量	惯性力矩 Moment of inertia					
			Nominal Output Torque	Maximum Output Torque	Emergency Stop Torque	Nominal Input Speed	Maximum Input Speed	Permitted radial load	Permitted radial load	Permitted axial load	Backlash	Weight	(≤ φ 14)	(≤ φ 19)	(≤ φ 28)	(≤ φ 38)		
			[Nm]	[Nm]	[Nm]	[rpm]	[rpm]	[N]	[N]	[N]	[N]	[kg]	[kg·cm²]	[kg·cm²]	[kg·cm²]	[kg·cm²]		
110	2	4	100	200	430	3000	6000	4700	3200	12000	8800	9.5	—	6.46	8.06	15.13		
		5	120	240	500	3000	6000	5000	3400	12000	8800		—	5.65	7.24	14.31		
		7	150	300	550	3000	6000	5600	3800	12000	8800		—	4.97	6.56	13.63		
		10	110	200	450	3000	6000	6200	4200	12000	8800		—	4.62	6.21	13.28		
	3	16	130	260	550	3000	6000	7100	4800	12000	8800	9.0	2.52	2.85	4.98	—		
		20	150	300	550	3000	6000	7600	5200	12000	8800		2.24	2.57	4.69	—		
		25	150	300	550	3000	6000	8200	5500	12000	8800		2.20	2.53	4.66	—		
		28	150	300	550	3000	6000	8500	5700	12000	8800		2.42	2.75	4.88	—		
		35	150	300	550	3000	6000	9000	6100	12000	8800		2.17	2.50	4.63	—		
		40	150	300	550	3000	6000	9400	6400	12000	8800		1.87	2.20	4.33	—		
		50	150	300	550	3000	6000	10000	6800	12000	8800		1.86	2.19	4.32	—		
		70	150	300	550	3000	6000	11000	7500	12000	8800		1.85	2.18	4.31	—		
		100	110	200	450	3000	6000	12000	8400	12000	8800		1.85	2.18	4.31	—		

ATR-140

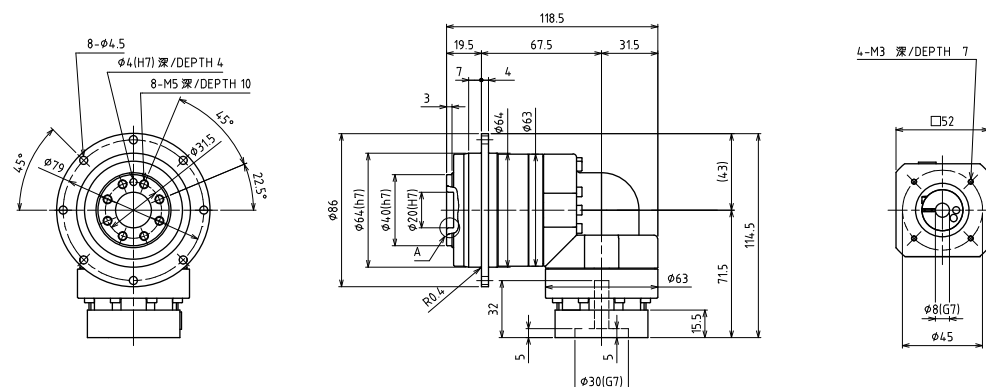
⚙ 1														⚙ 2														⚙ 3														⚙ 4														⚙ 5													
尺寸 Frame Size	机种 Model	减速比 Ratio	额定扭矩	最大扭矩	急停 最大扭矩	输入转速	输入转速	额定径向力	额定轴向力	最大 径向负荷	最大 轴向负荷	重量 Weight	惯性力矩 Moment of inertia																																																								
			Nominal Output Torque	Maximum Output Torque	Emergency Stop Torque	Nominal Input Speed	Maximum Input Speed	Permitted radial load	Permitted axial load	Permitted axial load	Backlash		⊙ ≤ φ 19	⊙ ≤ φ 28	⊙ ≤ φ 38	⊙ ≤ φ 48																																																					
			[Nm]	[Nm]	[Nm]	[rpm]	[rpm]	[N]	[N]	[N]	[N]		[kg·cm²]	[kg·cm²]	[kg·cm²]	[kg·cm²]																																																					
140	2	4	170	340	950	2000	4000	8000	5600	19000	14000	17.4	—	22.58	26.96	40.19																																																					
		5	200	400	1100	2000	4000	8500	6000	19000	14000		—	19.57	23.94	37.17																																																					
		7	300	600	1100	2000	4000	9400	6700	19000	14000		—	17.07	21.45	34.68																																																					
		10	200	400	750	2000	4000	10000	7400	19000	14000		—	15.36	19.73	32.96																																																					
	3	16	300	600	1100	2000	4000	12000	8500	19000	14000	17.6	7.24	8.83	15.91	—																																																					
		20	300	600	1100	2000	4000	13000	9100	19000	14000		6.21	7.80	14.88	—																																																					
		25	300	600	1100	2000	4000	14000	9800	19000	14000		6.09	7.69	14.76	—																																																					
		28	300	600	1100	2000	4000	14000	10000	19000	14000		6.89	8.48	15.55	—																																																					
		35	300	600	1100	2000	4000	15000	11000	19000	14000		5.98	7.58	14.65	—																																																					
		40	300	600	1100	2000	4000	16000	11000	19000	14000		4.94	6.53	13.60	—																																																					
		50	300	600	1100	2000	4000	17000	12000	19000	14000		4.91	6.50	13.58	—																																																					
		70	300	600	1100	2000	4000	19000	13000	19000	14000		4.88	6.48	13.55	—																																																					
100	200	400	750	2000	4000	19000	14000	19000	14000	4.87	6.46	13.54	—																																																								

- ⊙ 1 输入转速为额定转速时，使用寿命为 20000 小时的值
 ⊙ 2 输入转速为额定转速时，使用寿命为 20000 小时的值
 （作用于轴中央，轴向负荷为 0 时）
 ⊙ 3 输入转速为额定转速时，使用寿命为 20000 小时的值
 （作用于轴芯，径向负荷为 0 时）
 ⊙ 4 径向负荷的容许最大值
 ⊙ 5 轴向负荷的容许最大值
 注：使用温度 -20℃ ~ 175℃（使用温度可根据用户要求定制）

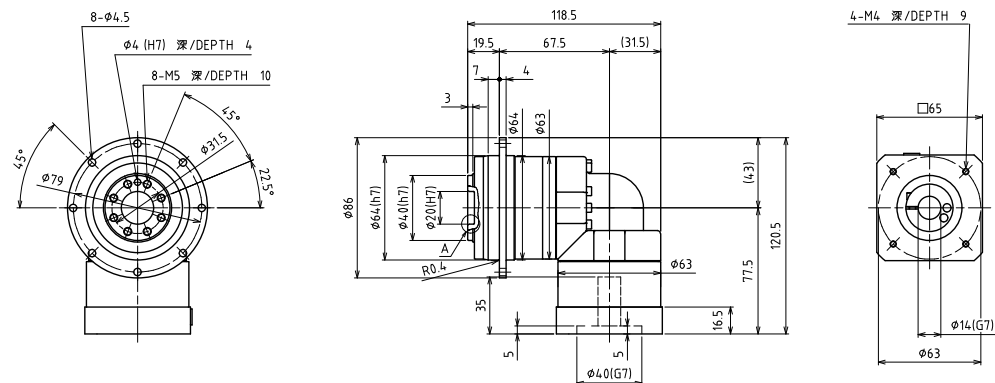
- ⊙ 1 With nominal input speed, service life is 20,000 hours.
 ⊙ 2 With this load and nominal input speed, service life will be 20,000 hours.
 (Applied to the output shaft center, at axial load 0)
 ⊙ 3 With this load and nominal input speed, service life will be 20,000 hours.
 (Applied to the output side bearing, at radial load 0)
 ⊙ 4 The maximum radial load the reducer can accept.
 ⊙ 5 The maximum axial load the reducer can accept.
 Note: Use the temperature -20℃ ~ 175℃
 The use temperature can be customized according to user requirements.

ATR-064 2段 2stage

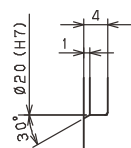
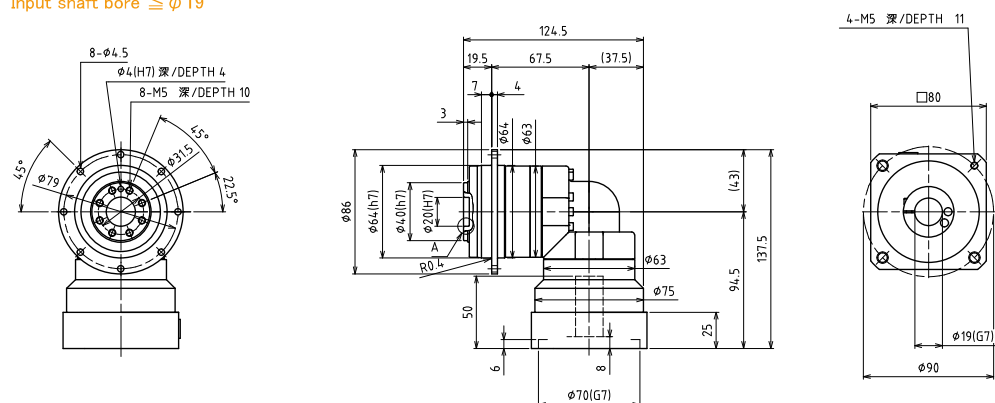
输入轴内径 Input shaft bore $\leq \phi 8$



输入轴内径 Input shaft bore $\leq \phi 14$



输入轴内径 Input shaft bore $\leq \phi 19$



A部详细图
Enlarged detail A

备注1: 机身尺寸随安装电机的不同而有所差异。

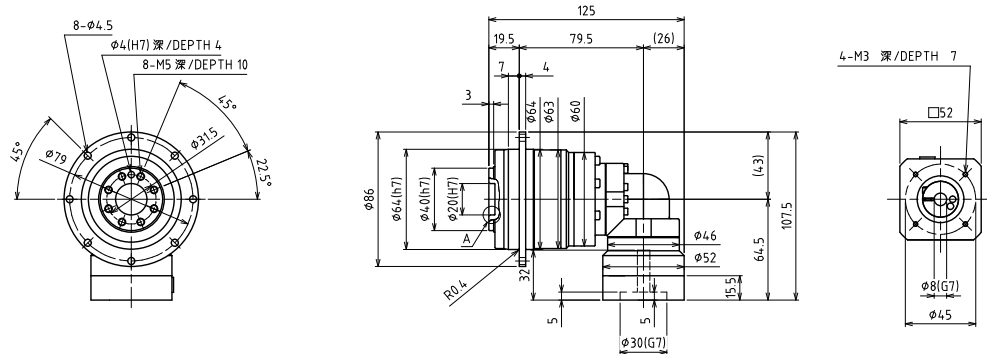
备注2: 电机轴径与输入轴径不同时, 可插入轴套。

Note1: Body Size Length will vary depending on motor.

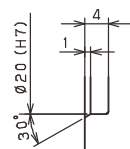
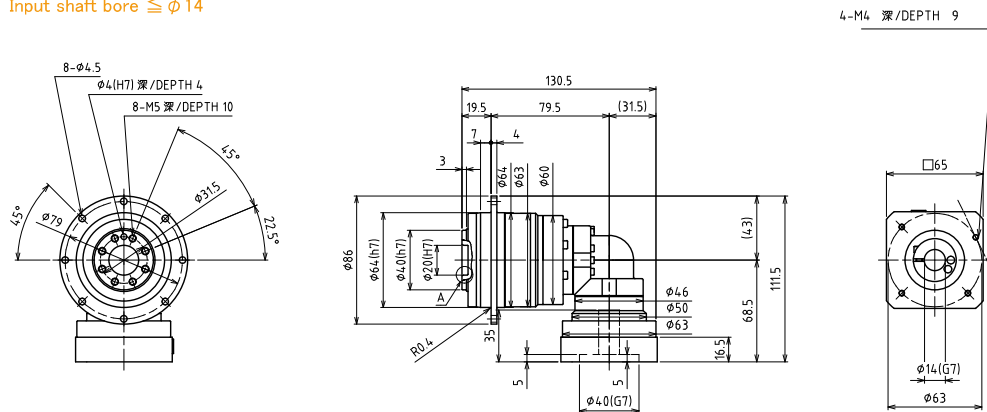
Note2: Bushing will be inserted to adapt to motor shaft.

ATR-064 3段 3stage

输入轴内径 Input shaft bore $\leq \phi 8$



输入轴内径 Input shaft bore $\leq \phi 14$

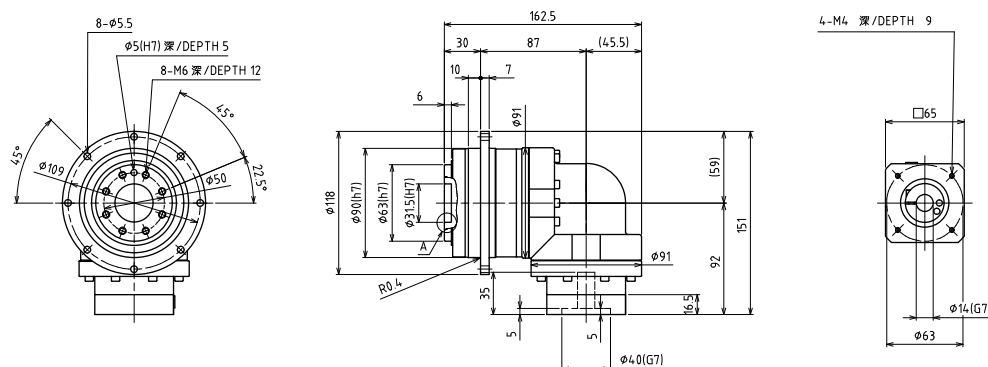


A部详细图
Enlarged detail A

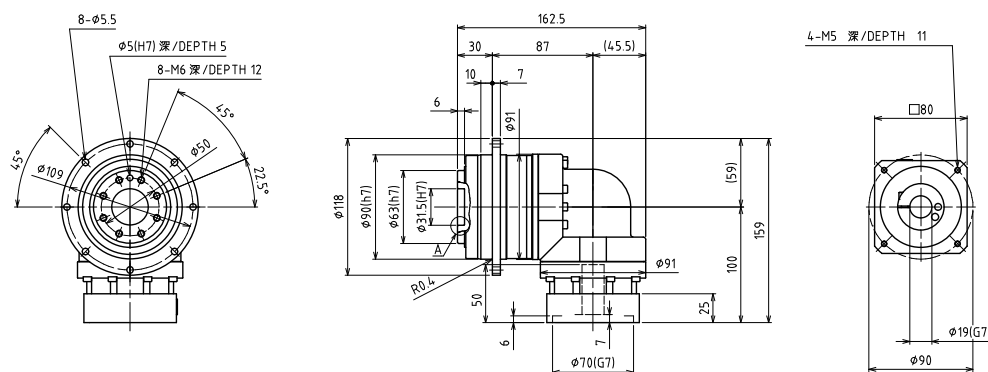
备注1: 机身尺寸随安装电机的不同而有所差异。
备注2: 电机轴径与输入轴径不同时, 可插入轴套。
Note1: Body Size Length will vary depending on motor.
Note2: Bushing will be inserted to adapt to motor shaft.

ATR-090 2段 2stage

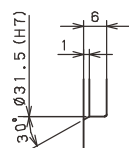
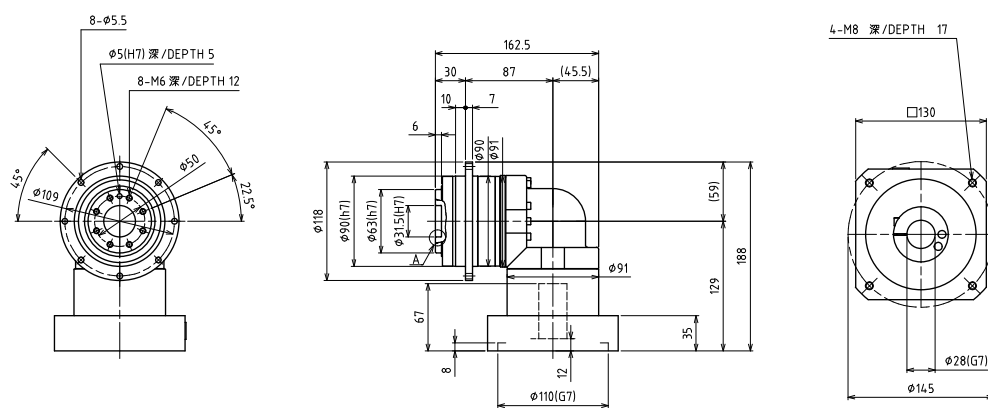
输入轴内径 Input shaft bore $\leq \phi 14$



输入轴内径 Input shaft bore $\leq \phi 19$



输入轴内径 Input shaft bore $\leq \phi 28$



A部详细图
Enlarged detail A

备注1: 机身尺寸随安装电机的不同而有所差异。

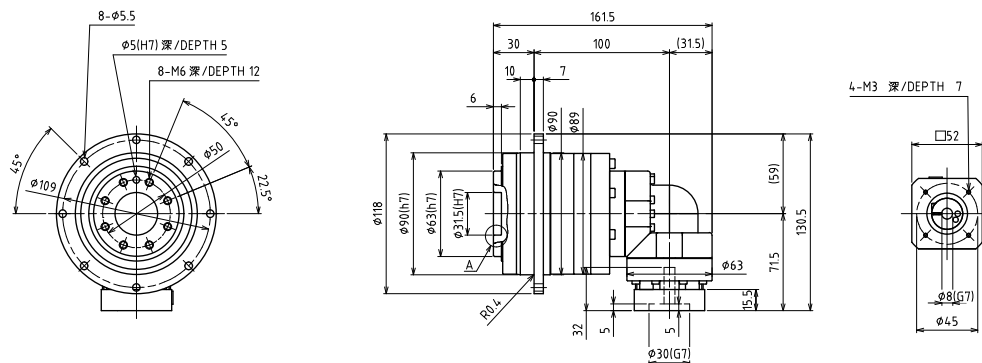
备注2: 电机轴径与输入轴径不同时, 可插入轴套。

Note1: Body Size Length will vary depending on motor.

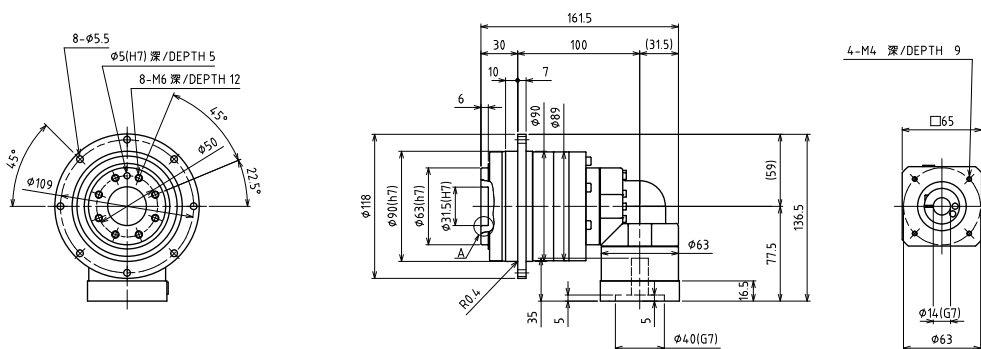
Note2: Bushing will be inserted to adapt to motor shaft.

ATR-090 3段 3stage

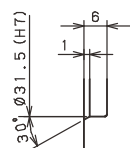
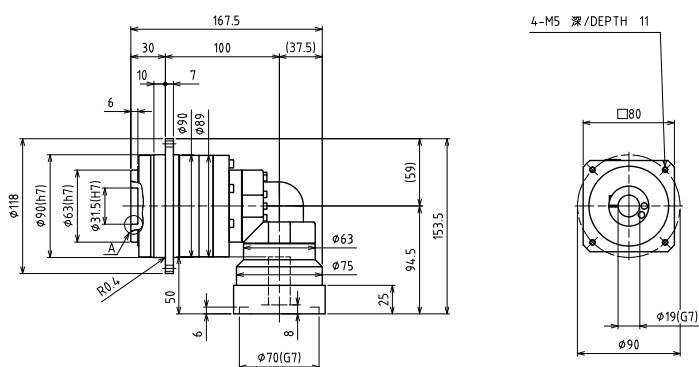
输入轴内径 Input shaft bore $\leq \phi 8$



输入轴内径 Input shaft bore $\leq \phi 14$



输入轴内径 Input shaft bore $\leq \phi 19$

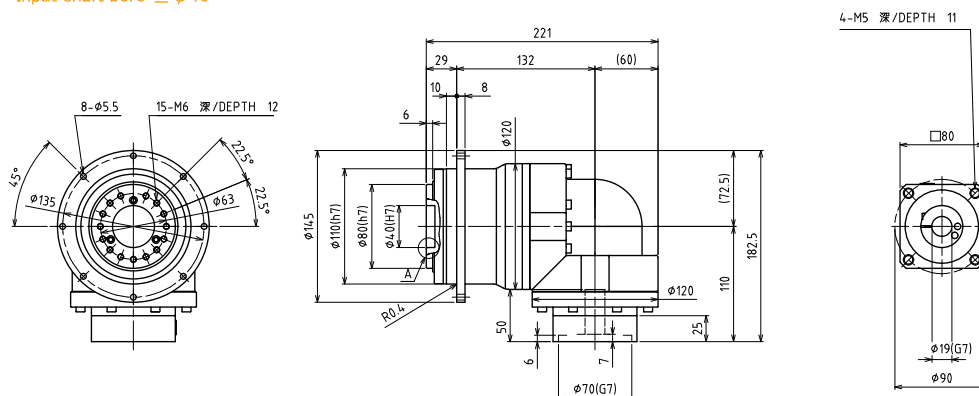


A部详细图
Enlarged detail A

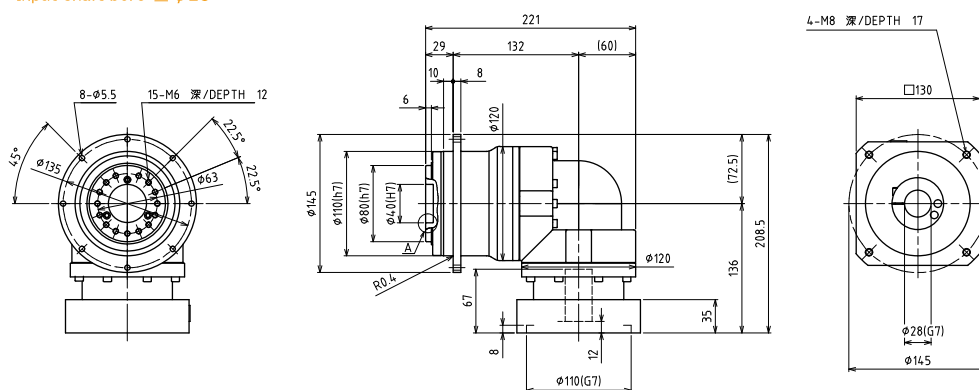
备注1: 机身尺寸随安装电机的不同而有所差异。
备注2: 电机轴径与输入轴径不同时, 可插入轴套。
Note1: Body Size Length will vary depending on motor.
Note2: Bushing will be inserted to adapt to motor shaft.

ATR-110 2段 2stage

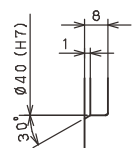
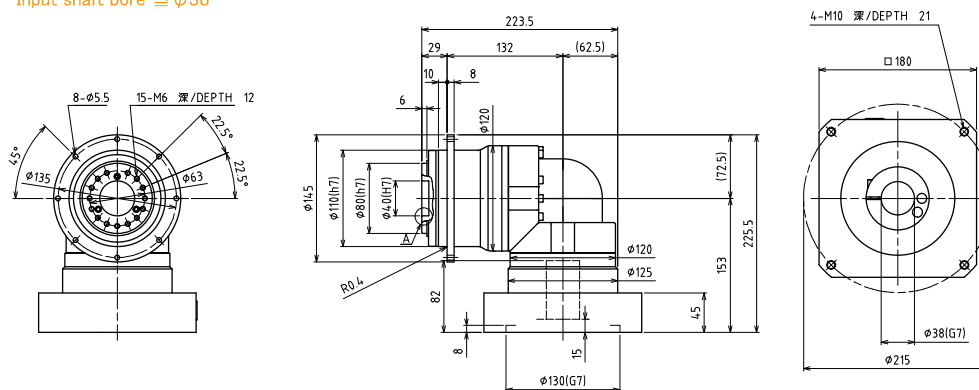
输入轴内径 Input shaft bore $\leq \phi 19$



输入轴内径 Input shaft bore $\leq \phi 28$



输入轴内径 Input shaft bore $\leq \phi 38$

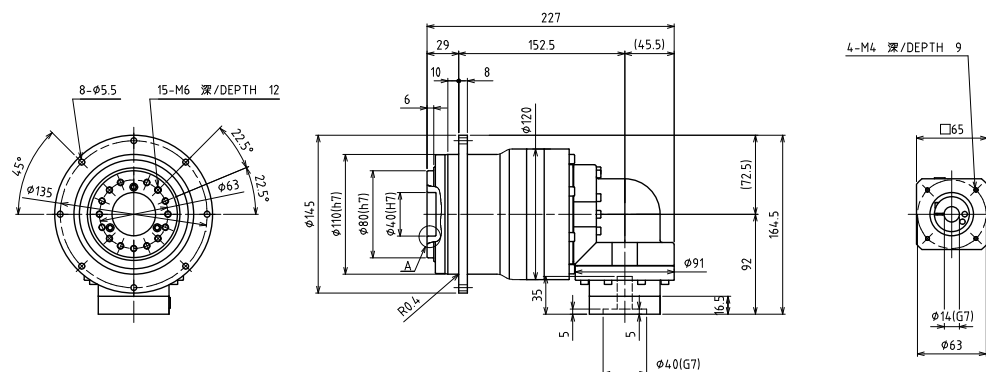


A部详细图
Enlarged detail A

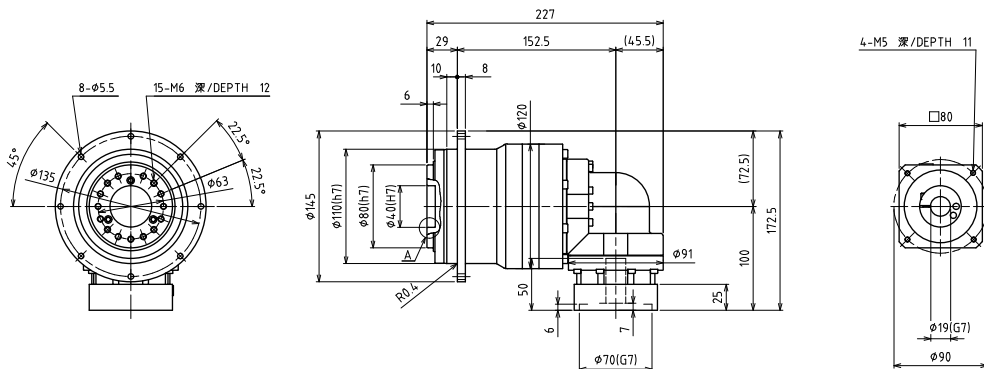
备注1: 机身尺寸随安装电机的不同而有所差异。
备注2: 电机轴径与输入轴径不同时, 可插入轴套。
Note1: Body Size Length will vary depending on motor.
Note2: Bushing will be inserted to adapt to motor shaft.

ATR-110 3段 3stage

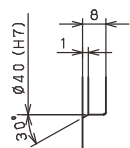
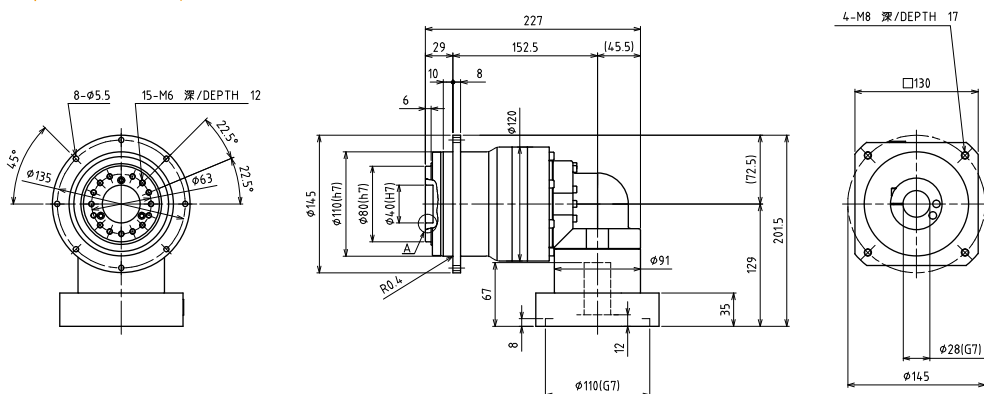
输入轴内径 Input shaft bore $\leq \phi 14$



输入轴内径 Input shaft bore $\leq \phi 19$



输入轴内径 Input shaft bore $\leq \phi 28$

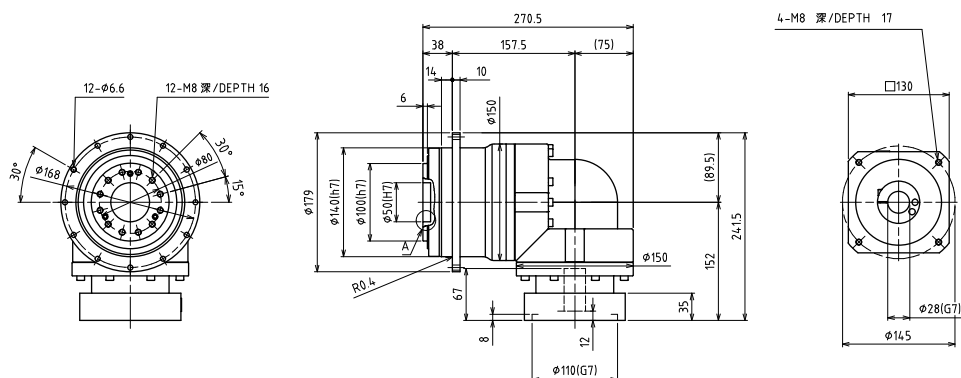


A部详细图
Enlarged detail A

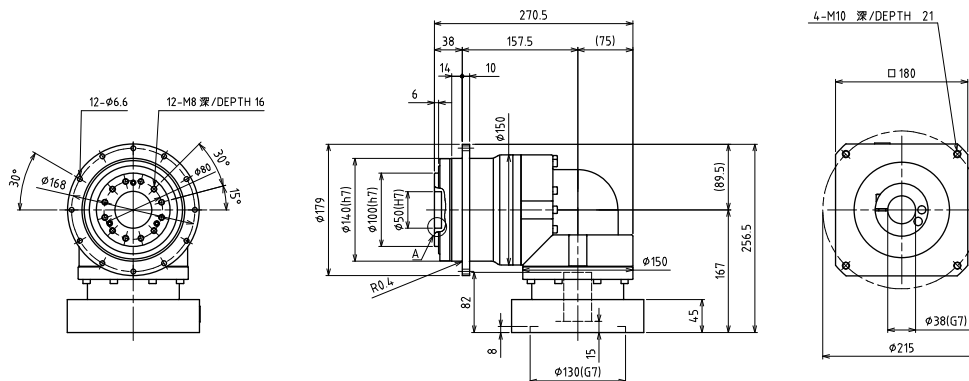
备注1: 机身尺寸随安装电机的不同而有所差异。
备注2: 电机轴径与输入轴径不同时, 可插入轴套。
Note1: Body Size Length will vary depending on motor.
Note2: Bushing will be inserted to adapt to motor shaft.

ATR-140 2段 2stage

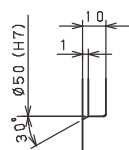
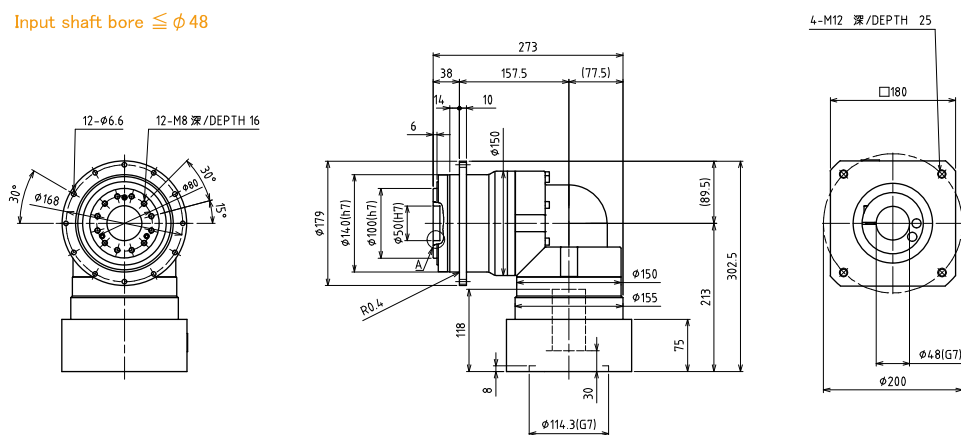
输入轴内径 Input shaft bore $\leq \phi 28$



输入轴内径 Input shaft bore $\leq \phi 38$



输入轴内径 Input shaft bore $\leq \phi 48$

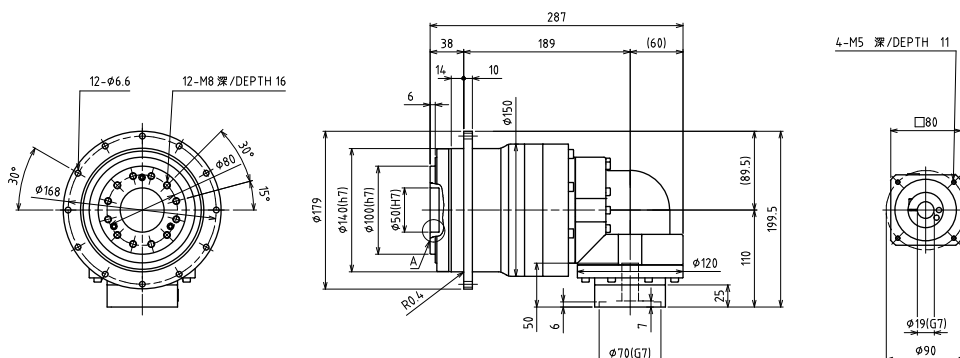


A部详细图
Enlarged detail A

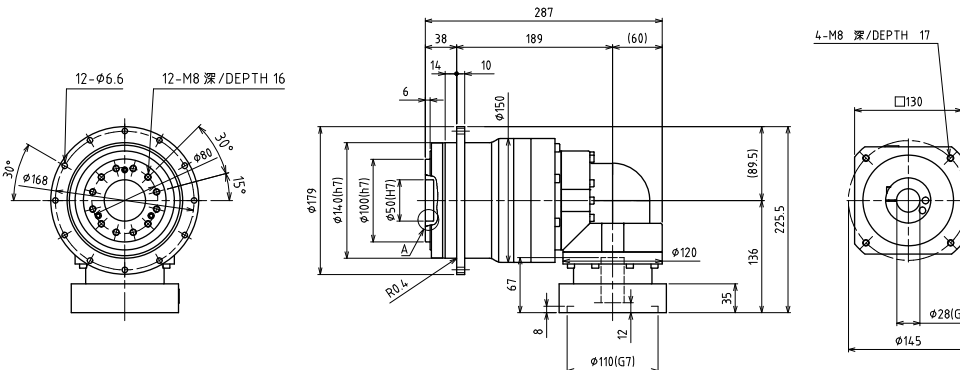
备注1: 机身尺寸随安装电机的不同而有所差异。
备注2: 电机轴径与输入轴径不同时, 可插入轴套。
Note1: Body Size Length will vary depending on motor.
Note2: Bushing will be inserted to adapt to motor shaft.

ATR-140 3段 3stage

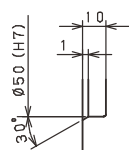
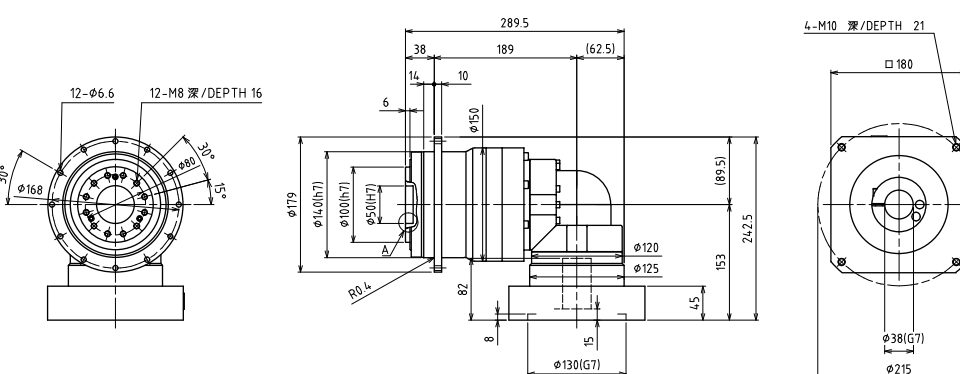
输入轴内径 Input shaft bore $\leq \phi 19$



输入轴内径 Input shaft bore $\leq \phi 28$



输入轴内径 Input shaft bore $\leq \phi 38$

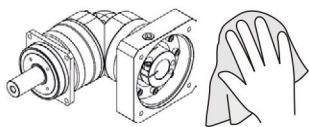


A部详细图
Enlarged detail A

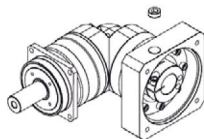
备注1: 机身尺寸随安装电机的不同而有所差异。
备注2: 电机轴径与输入轴径不同时, 可插入轴套。
Note1: Body Size Length will vary depending on motor.
Note2: Bushing will be inserted to adapt to motor shaft.

1 电机安装步骤 Mounting procedure to the motor

- 1 擦拭电机轴上的防锈剂、润滑脂等。
Wipe off anti-rust agent and oil on the motor shaft.



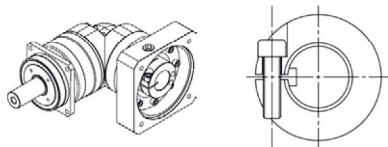
- 2 取下堵头。
Remove the plug.



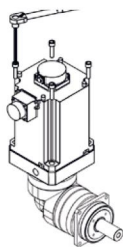
- 3 旋转输入轴使紧固螺栓的头对准塞孔。此时，请确认紧固螺栓是松动的。
Turn the input shaft until the cap screw is seen. Make sure the cap screw is loosened.

如带有轴套，安装方法如图所示。

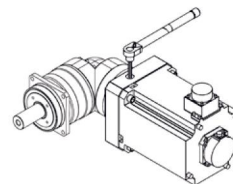
In case the bushing has been attached, Please fix it to the reducer as the drawing below.



- 4 将减速机垂直放置在平坦的地方，使减速机的电机安装面朝上侧。将电机轴慢慢地插入输入轴，注意避免撞击到输入轴，请确认电机的法兰面紧靠减速机的法兰面。按指定的紧固扭矩拧紧电机安装螺栓。（参考表1）
Please place reducer vertically on the flat surface so the motor mounting part faces up. Carefully insert the motor shaft into the input shaft. (It should be inserted smoothly) Make sure the motor flange is perfectly fit to the reducer's flange. Tighten the motor installing bolts to the proper torque.(See table1)



- 5 使用转矩扳手等按照指定的紧固扭矩拧紧紧固螺栓。（参考表1）
Tighten the clamping bolt of the input shaft with torque wrench to the proper torque.(See table1)



- 6 安装堵头，安装完成。
Reinstall the plug. The procedure is done.

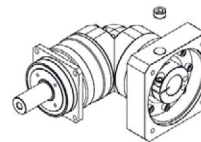


表1 Table 1

螺栓 尺寸 Bolt size	电机安装螺栓 Motor installing bolts		紧固螺栓 Clamping bolt	
	Nm	kgfm	Nm	kgfm
M3	1.1	0.11	1.9	0.18
M4	2.5	0.26	4.3	0.44
M5	5.1	0.52	8.7	0.89
M6	8.7	0.89	15	1.5
M8	21	2.1	36	3.7
M10	42	4.3	71	7.2
M12	72	7.3	125	13
M16	134	14	—	—

表2 Table 2

螺栓 尺寸 Bolt size	紧固扭矩 Tightening torque	
	Nm	kgfm
M3	1.9	0.18
M4	4.3	0.44
M5	8.7	0.89
M6	15	1.5
M8	36	3.7
M10	71	7.2
M12	125	13
M16	310	32
M20	603	62

◎推荐螺栓：强度12.9以上

◎Recommended bolt: Strength 12.9

2 减速机的安装

要将减速机安装到设备上时，请先确认安装面平坦且没有毛边等，然后使用扭矩扳手等按照指定的紧固扭矩拧紧螺栓。（参考表2）

Reducer installation

After confirming the installation surface is flat and clean, tighten the bolt using a torque wrench to the proper torque.(See table2)