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关于 新立盈

新立盈成立于2010年，一直专注于工业传动领域的各类减速机应用解决方案提供商及相关智能系统研发的高新企业。总部坐落在创新之都深圳市富桥工业园区。主营产品有：同步升降平台、行星减速机、精密换向器、中空旋转平台、减速电机、RV摆线针轮减速器、谐波减速机等自动化设备，被广泛应用于新能源、工业机器人、数控弹簧机、工作母机、医疗器械、激光雕刻和切割机、物流分离和称重机、精度凹凸印刷机、精密涂布机等自动化工业领域。

我们的 优势

响应迅速
交期快速
服务高效

核心理念

新传动
立匠心
共创盈

应用 案例



P001



斜齿行星减速机

P149



直角换向器

P189



机械手减速机

P092



直齿行星减速机

新立盈减速机
系列产品

P242



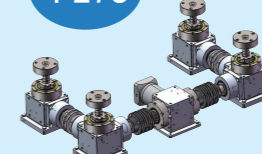
准双曲面减速机

P119



中空旋转平台

P275

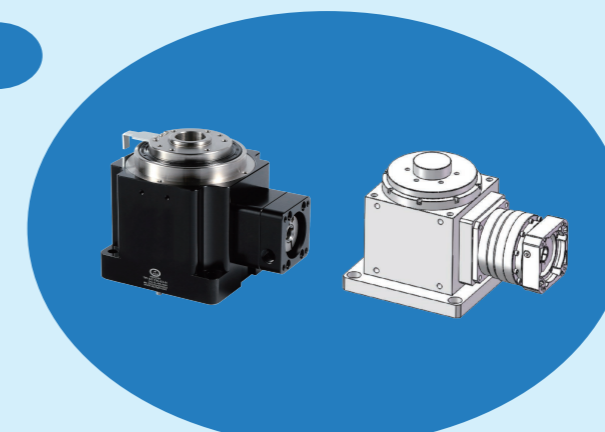


同步升降机

P257



伺服电缸



产品特性 / PRODUCTS FEATURES



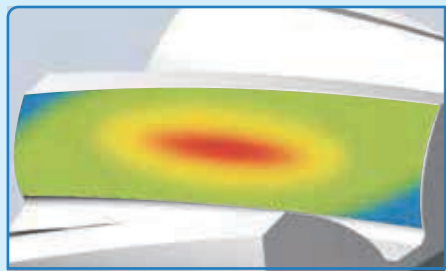
行星齿轮的传动介面采用不含保持架之满滚针设计，增加接触面积以提高结构刚性及输出扭矩。



减速机构采用螺旋齿轮设计，其齿形啮合率为一般正齿轮的两倍以上，具有运转平顺、低噪音、高输出扭矩和低背隙的特性。



输入轴与马达的连接采用筒夹式的锁紧机构并经动平衡分析，以确保在高输入转速下接口的同心度和零背隙的动力传递。



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



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

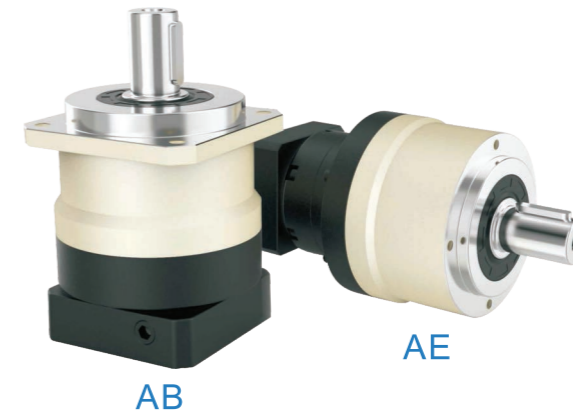


行星架与输出轴采用一体式双支撑的结构设计，确保最大的扭转刚性。



太阳齿轮与输入轴采用一体式的结构设计，确保最大的扭转刚性及高输入转速下的零背隙动力传递。

型号说明 / MODEL ILLUMINATE



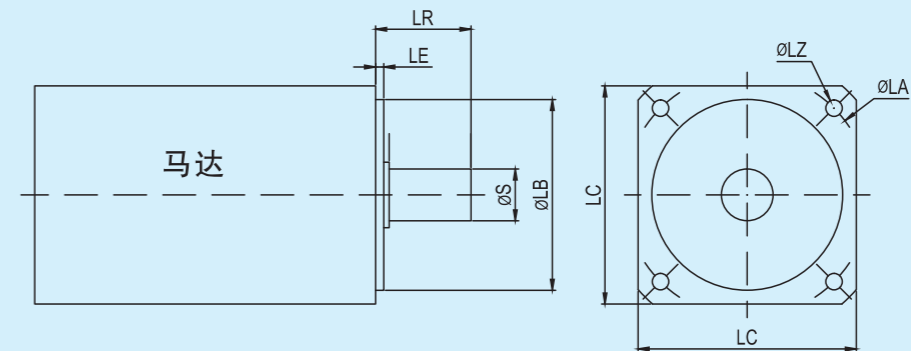
型号定义 / MODEL ILLUMINATE

选型注意事项请参照315页

AB060	-	10	-	S□	/	马达
减速机型式： AB060/AB090/AB115/AB142/AB180 AB220 AE070/AE090/AE120/AE155/AE205 AE235				马达型号： 1-马达制造商及型号 2-马达安装尺寸		
减速比：单级(L1)：3,4,5,6,7,8,10 双级(L2)：12,15,20,25,30,35,40,50,60,70,80,100				背隙：S2：标准背隙		

选用范例：AB060-10-S□ MHMD-042G1U

型号定义② AB060-10-S□-50*3/14*30/70/M4



减速机性能资料 / GEAR BOX PERFORMANCE INFORMATION

规格	级数	减速比 ¹	AB042	AB060 AE070	AB090 AE090	AB115 AE120	AB142 AE155	AB180 AE205	AB220 AE235	
额定输出力矩T _{2N}	1	3	20	55	130	208	342	588	1,140	
		4	19	50	140	290	542	1,050	1,700	
		5	22	60	160	330	650	1,200	2,000	
		6	20	55	150	310	600	-	-	
		7	19	50	140	300	550	1,100	1,800	
		8	17	45	120	260	500	1,000	1,600	
		10	14	40	100	230	450	520	1,220	
	2	12	20	55	130	208	342	-	-	
		15	20	55	130	208	342	588	1,140	
		20	19	50	140	290	542	1,050	1,700	
		25	22	60	160	330	650	1,200	2,000	
		30	22	50	130	208	342	588	1,140	
		35	22	60	160	330	650	1,200	2,000	
		40	22	50	140	290	542	1,050	1,700	
		50	22	60	160	330	650	1,200	2,000	
		60	20	55	150	310	600	-	-	
		70	19	50	140	300	550	1,100	1,800	
80	17	45	120	260	500	1,000	1,600			
100	14	40	100	230	450	520	1,220			
最大输出力矩T _{2B}	Nm	1,2	3倍额定输出力矩							
额定输入转速n ₁	rpm	1,2	5,000	5,000	4,000	4,000	3,000	3,000	2,000	
最大输入转速n _{1B}	rpm	1,2	3~100	10,000	10,000	8,000	8,000	6,000	6,000	
背隙S1	arcmin	1	3~10	≤5	≤5	≤5	≤5	≤5	≤5	
		2	12~100	≤7	≤7	≤7	≤7	≤7	≤7	
背隙S2	arcmin	1	3~10	≤7	≤7	≤7	≤7	≤7	≤7	
		2	12~100	≤8	≤8	≤8	≤8	≤8	≤8	
扭转刚性	Nm/arcmin	1,2	3~100	3	7	14	25	50	145	
容许径向力F _{2rB} ²	N	1,2	3~100	780	1,530	3,250	6,700	9,400	14,500	
容许轴向力F _{2a1B} ²	N	1,2	3~100	350	630	1,300	3,000	4,000	6,200	
容许轴向力F _{2a2B} ²	N	1,2	3~100	390	765	1,625	3,350	4,700	7,250	
使用寿命	hr	1,2	3~100	20,000*						
效率η	%	1	3~10	≥97%						
		2	12~100	≥94%						
重量	kg	1	3~10	0.5	1.3	3.7	7.8	14.5	29	48
		2	12~100	0.8	1.9	4.1	9	17.5	33	60
使用温度	°C	1,2	3~100	-10°C~+90°C						
润滑		1,2	3~100	合成润滑油脂						
防护等级		1,2	3~100	IP65						
安装方向		1,2	3~100	任意方向						
噪音值 (n ₁ =3000rpm)	dB	1,2	3~100	≤56	≤58	≤60	≤63	≤65	≤67	

减速机转动惯量

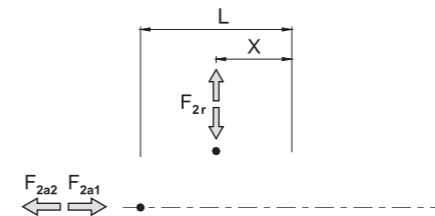
规格	级数	减速比 ¹	AB042	AB060 AE070	AB090 AE090	AB115 AE120	AB142 AE155	AB180 AE205	AB220 AE235
转动惯量J ₁	1	3	0.03	0.16	0.61	3.25	9.21	28.98	69.61
		4	0.03	0.14	0.48	2.74	7.54	23.67	54.37
		5	0.03	0.13	0.47	2.71	7.42	23.29	53.27
		6	0.03	0.13	0.45	2.65	7.25	22.75	51.72
		7	0.03	0.13	0.45	2.62	7.14	22.48	50.97
		8	0.03	0.13	0.44	2.58	7.07	22.59	50.84
		10	0.03	0.13	0.44	2.57	7.03	22.51	50.56
	2	12	0.03	0.03	0.13	0.47	2.71	7.42	23.29
		15	0.03	0.03	0.13	0.47	2.71	7.42	23.29
		20	0.03	0.03	0.13	0.47	2.71	7.42	23.29
		25	0.03	0.03	0.13	0.47	2.71	7.42	23.29
		30	0.03	0.03	0.13	0.47	2.71	7.42	23.29
		35	0.03	0.03	0.13	0.47	2.71	7.42	23.29
		40	0.03	0.03	0.13	0.47	2.71	7.42	23.29
		50	0.03	0.03	0.13	0.44	2.57	7.03	22.51
		60	0.03	0.03	0.13	0.44	2.57	7.03	22.51
		70	0.03	0.03	0.13	0.44	2.57	7.03	22.51
80	0.03	0.03	0.13	0.44	2.57	7.03	22.51		
100	0.03	0.03	0.13	0.44	2.57	7.03	22.51		

1. 减速比 (i=N_{in}/N_{out})
* 连续运转降低使用寿命二分之一。

2. 输出转速 100rpm 时, 作用于输出轴中心位置。

减速机输出轴之容许径向力及轴向力

REDUCER OUTPUT SHAFT OF THE PERMISSIBLE RADIAL FORCE AND SHAFT AND FORCE

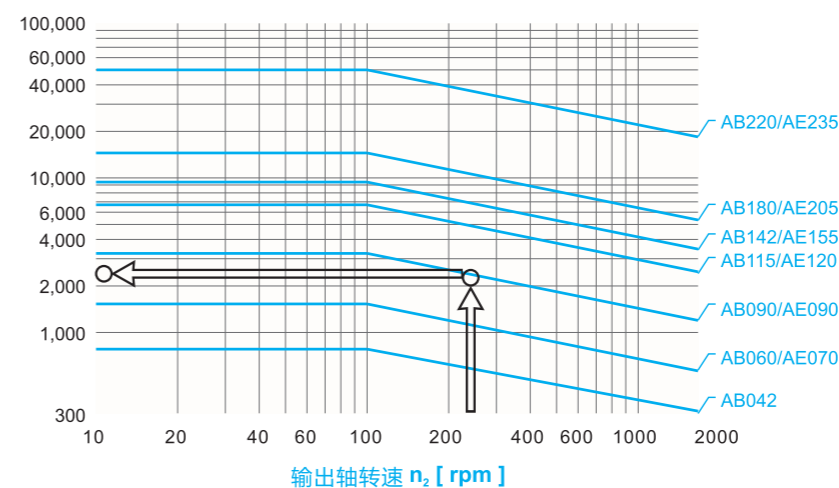


减速机输出轴所能承受之最大径向力及轴向力,端视内部支撑轴承之设计,减速机采用大尺寸的轴承及较大跨距的设计,其能承受更大的径向及轴向负荷。

F_{2r} 径向力

F_{2a} 轴向力

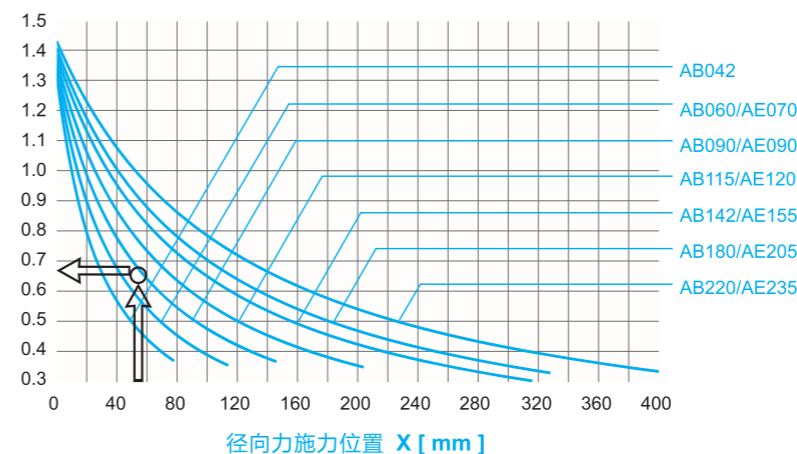
容许径向力F_{2rB} [N] 施力于轴中心位置



当径向力F_{2r}施力于轴中心位置即X=1/2xL时,不同规格之减速机在不同输出转速运用下使用寿命为20,000hr*时,所能承受之容许径向力F_{2rB},请参照左图,而能承受之容许轴向力F_{2aB},为

F_{2a1B} = 0.2 x F_{2rB}
F_{2a2B} = 0.1 x F_{2rB}

位置符合系数K_b



当径向力F_{2r}施力不在轴中心位置时,越靠近减速机即X < 1/2xL,所能承受之容许径向力变大,越远离减速机即X > 1/2xL时,所能承受之容许径向力则变小,藉由左图,依减速机规格及径向力施力位置X,查出位置负荷系数K_b,在代入下列公式,求出容许径向力:

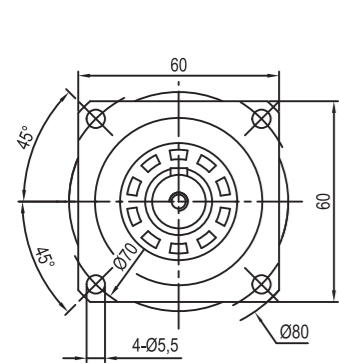
F'_{2rB} = K_b x F_{2rB}
轴力:
F'_{2a1B} = 0.2 x F'_{2rB}
F'_{2a2B} = 0.1 x F'_{2rB}

* 连续运转降低使用寿命二分之一。

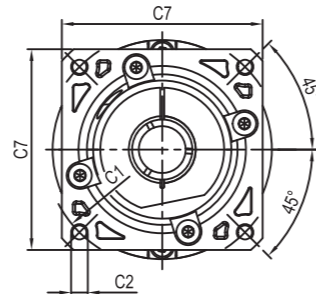
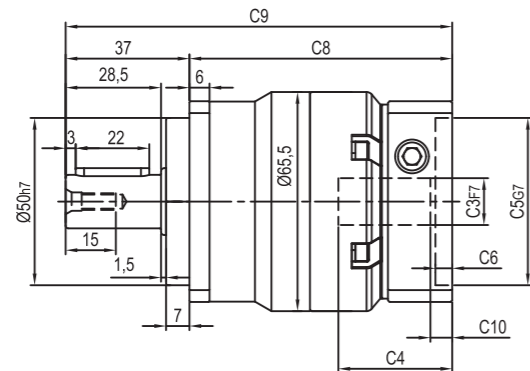
外形尺寸图表 / OUTLINE DIMENSION SHEET

AB060-L1

输出端 / OUTPUT

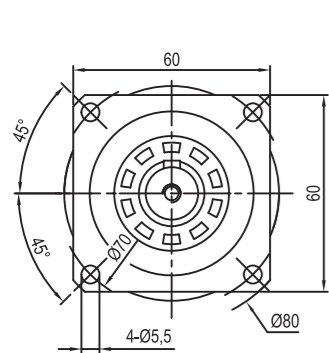


输入端 / INPUT

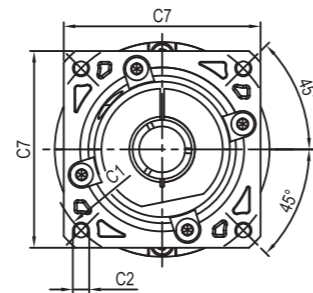
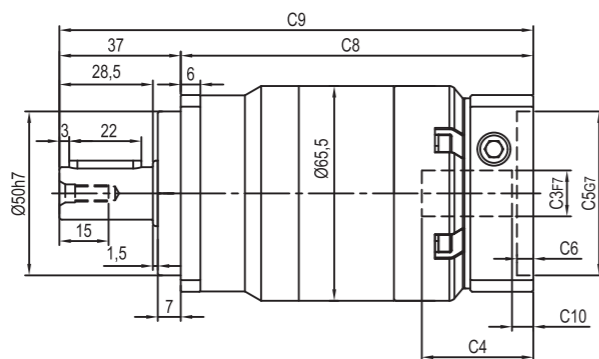


AB060-L2

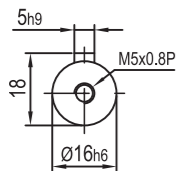
输出端 / OUTPUT



输入端 / INPUT



输出轴径 / Output Diameter



轴型式

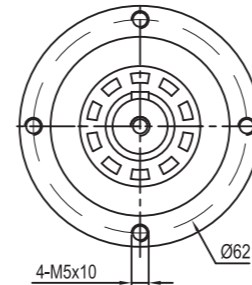
尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
AB060-L1	Ø66.7	4-M4x10	Ø8	34	Ø38.1	5	60	78.5	115.5	5.5
AB060-L2	Ø70	4-M4x10,4-M5x12	Ø11,Ø14	34	Ø50	5	60	107.5	144.5	5.5
AB060-L1	Ø90	4-M5x12,4-M6x14	Ø19	42	Ø70	6.5	80	85	122	12
AB060-L2								114	151	12

* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7are motor(metric standard) specific dimensions, which could be customised.

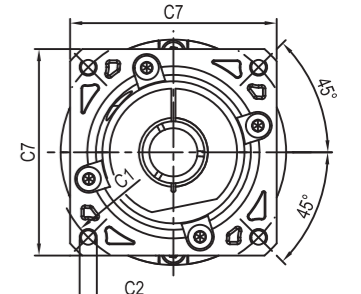
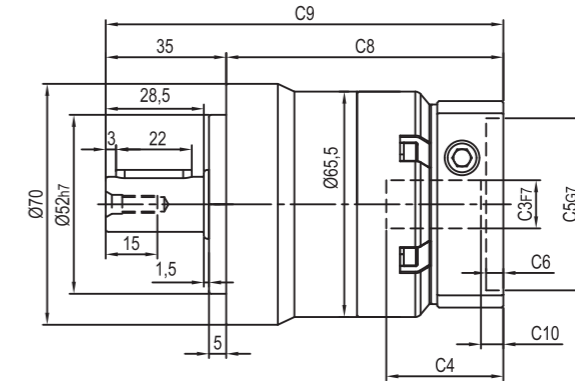
外形尺寸图表 / OUTLINE DIMENSION SHEET

AE070-L1

输出端 / OUTPUT

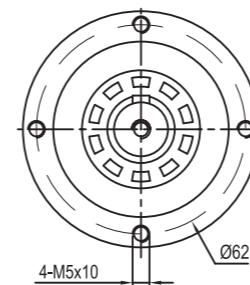


输入端 / INPUT

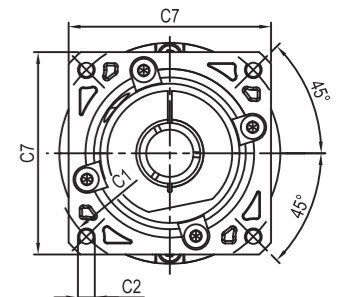
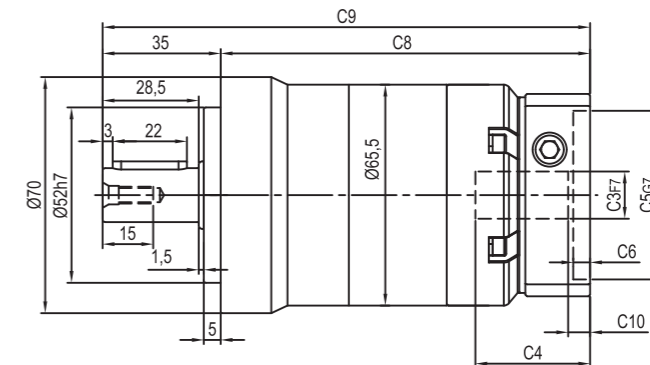


AE070-L2

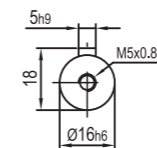
输出端 / OUTPUT



输入端 / INPUT



输出轴径 / Output Diameter



轴型式

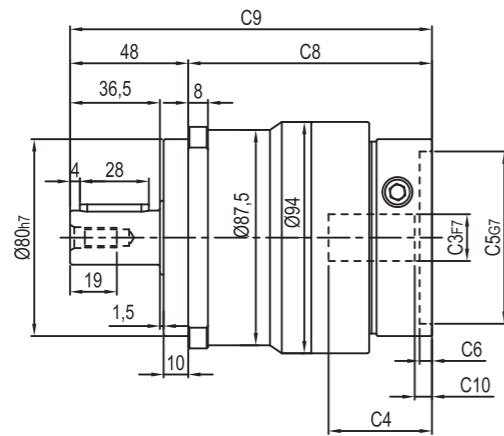
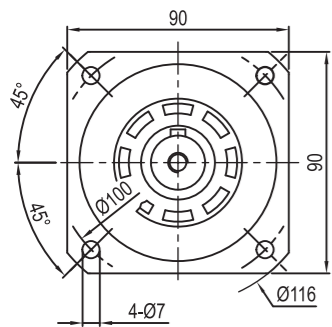
尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
AE070-L1	Ø66.7	4-M4x10	Ø8	34	Ø38.1	5	60	80.5	115.5	5.5
AE070-L2	Ø70	4-M4x10,4-M5x12	Ø11,Ø14	34	Ø50	5	60	109.5	144.5	5.5
AE070-L1	Ø90	4-M5x12,4-M6x14	Ø19	42	Ø70	6.5	80	87	122	12
AE070-L2								116	151	12

* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7are motor(metric standard) specific dimensions, which could be customised.

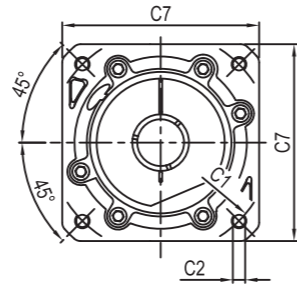
外形尺寸图表 / OUTLINE DIMENSION SHEET

AB090-L1

输出端/OUTPUT

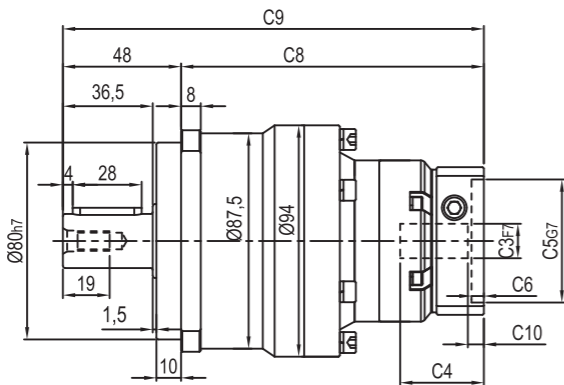
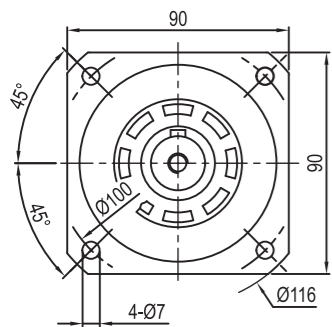


输入端/INPUT

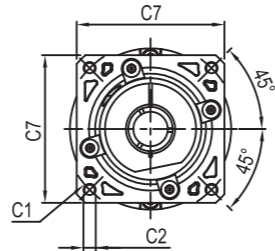


AB090-L2

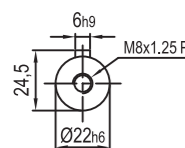
输出端/OUTPUT



输入端/INPUT



输出轴径/Output Diameter



轴型式

尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
AB090-L1	Ø90	4-M5x12,4-M6x14	Ø19	42	Ø70	6.5	80	99	147	7
	Ø100	4-M6x14	Ø16	42	Ø80	6.5	86	99	147	6
AB090-L1	Ø115	4-M8x20	Ø19,Ø22	56.5	Ø95	8	100	114.5	162.5	16.5
	Ø145	4-M8x20	Ø19,Ø22,Ø24	59	Ø110	11	130	117	165	19
AB090-L2	Ø66.7	4-M4x10	Ø8	34	Ø38.1	5	60	123	171	5.5
	Ø70	4-M4x10,4-M5x12	Ø11,Ø14	34	Ø50	5	60	123	171	5.5
AB090-L2	Ø90	4-M5x12,4-M6x14	Ø19	42	Ø70	6.5	80	129.5	177.5	12
	Ø100	4-M6x14	Ø16	42	Ø80	6.5	86	129.5	177.5	11

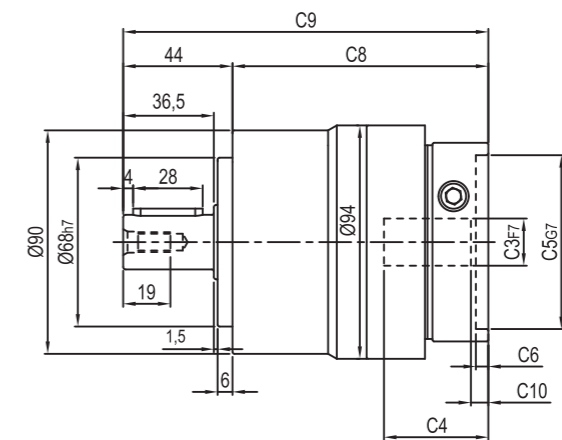
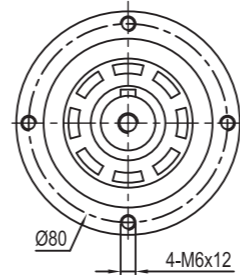
* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。

* C1~C7are motor(metric standard) specific dimensions, which could be customised.

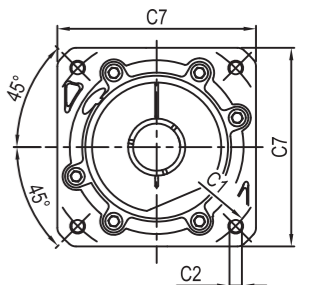
外形尺寸图表 / OUTLINE DIMENSION SHEET

AE090-L1

输出端 / OUTPUT

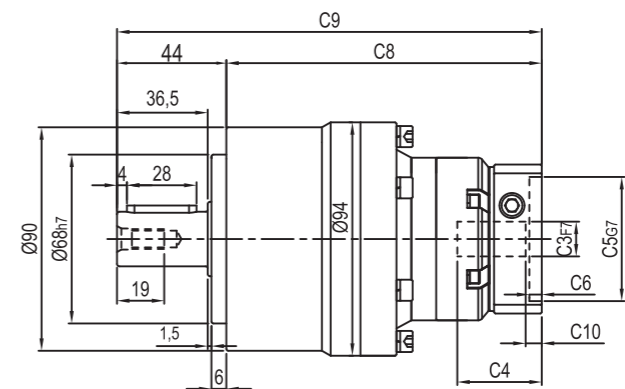
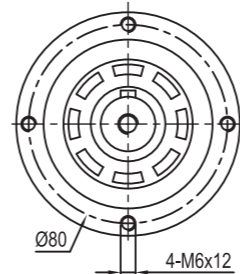


输入端 / INPUT

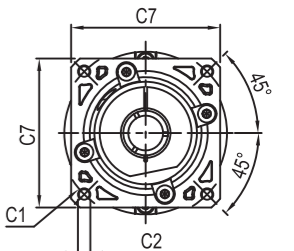


AE090-L2

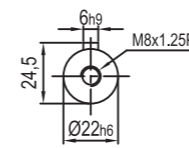
输出端 / OUTPUT



输入端 / INPUT



输出轴径/Output Diameter



轴型式

尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
AE090-L1	Ø90	4-M5x12,4-M6x14	Ø19	42	Ø70	6.5	80	103	147	7
	Ø100	4-M6x14	Ø16	42	Ø80	6.5	86	103	147	6
AE090-L1	Ø115	4-M8x20	Ø19,Ø22	56.5	Ø95	8	100	118.5	162.5	16.5
	Ø145	4-M8x20	Ø19,Ø22,Ø24	59	Ø110	11	130	121	165	19
AE090-L2	Ø66.7	4-M4x10	Ø8	34	Ø38.1	5	60	127	171	5.5
	Ø70	4-M4x10,4-M5x12	Ø11,Ø14	34	Ø50	5	60	127	171	5.5
AE090-L2	Ø90	4-M5x12,4-M6x14	Ø19	42	Ø70	6.5	80	133.5	177.5	12
	Ø100	4-M6x14	Ø16	42	Ø80	6.5	86	133.5	177.5	11

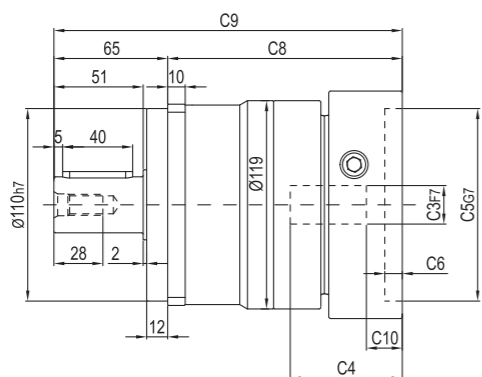
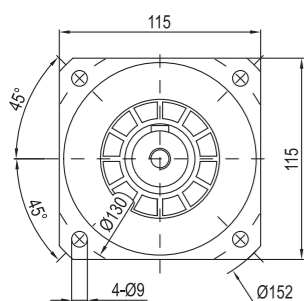
* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。

* C1~C7are motor(metric standard) specific dimensions, which could be customised.

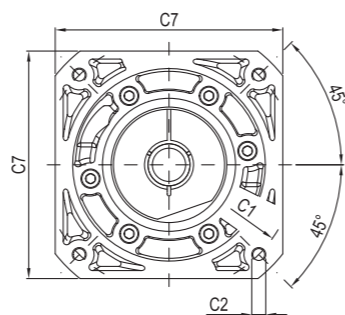
外形尺寸图表 / OUTLINE DIMENSION SHEET

AB115-L1

输出端 / OUTPUT

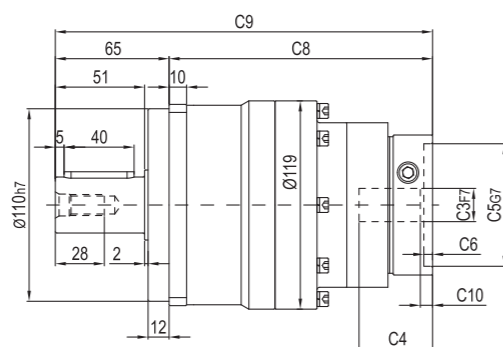
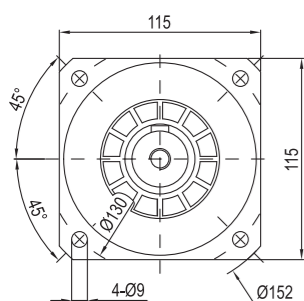


输入端 / INPUT

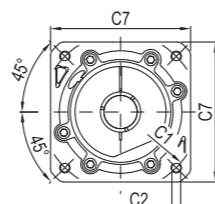


AB115-L2

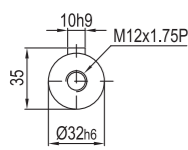
输出端 / OUTPUT



输入端 / INPUT



输出轴径 / Output Diameter



轴型式

尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
AB115-L1	Ø145	4-M8x20	Ø19,Ø22,Ø24	64	Ø110	10	130	134	199	19.5
AB115-L1	Ø200	4-M12x28	Ø35	81	Ø114.3	10	180	151.5	216.5	28
AB115-L2	Ø90	4-M5x12, 4-M6x14	Ø19	42	Ø70	6.5	80	150.5	215.5	7
	Ø100	4-M6x14	Ø16	42	Ø80	6.5	86	150.5	215.5	6
AB115-L2	Ø115	4-M8x20	Ø19,Ø22	56.5	Ø95	8	100	166	231	16.5
	Ø145	4-M8x20	Ø19,Ø22,Ø24	59	Ø110	11	130	168.5	233.5	19

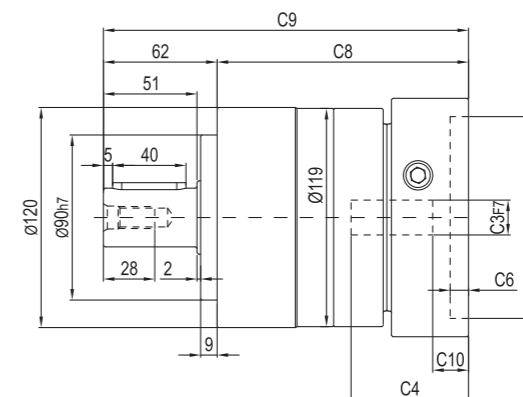
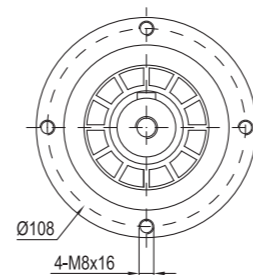
* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。

* C1~C7are motor(metric standard) specific dimensions, which could be customised.

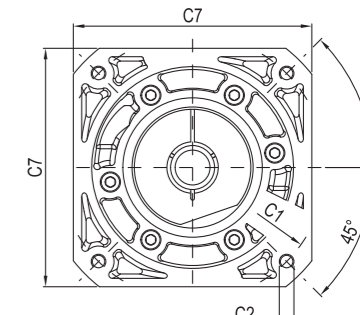
外形尺寸图表 / OUTLINE DIMENSION SHEET

AE120-L1

输出端 / OUTPUT

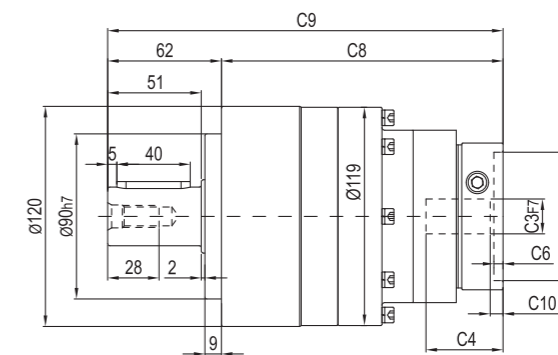
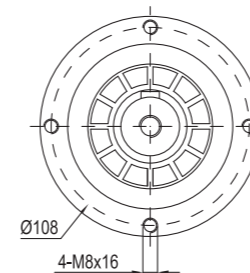


输入端 / INPUT

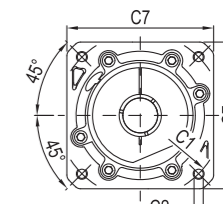


AE120-L2

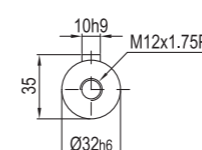
输出端 / OUTPUT



输入端 / INPUT



输出轴径 / Output Diameter



轴型式

尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
AE120-L1	Ø145	4-M8x20	Ø19,Ø22,Ø24	64	Ø110	10	130	137	199	19.5
AE120-L1	Ø200	4-M12x28	Ø35	81	Ø114.3	10	180	154.5	216.5	28
AE120-L2	Ø90	4-M5x12, 4-M6x14	Ø19	42	Ø70	6.5	80	153.5	215.5	7
	Ø100	4-M6x14	Ø16	42	Ø80	6.5	86	153.5	215.5	6
AE120-L2	Ø115	4-M8x20	Ø19,Ø22	56.5	Ø95	8	100	169	231	16.5
	Ø145	4-M8x20	Ø19,Ø22,Ø24	59	Ø110	11	130	171.5	233.5	19

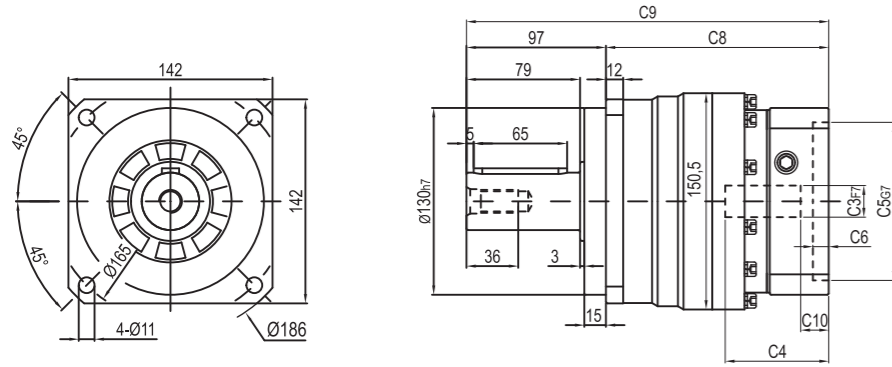
* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。

* C1~C7are motor(metric standard) specific dimensions, which could be customised.

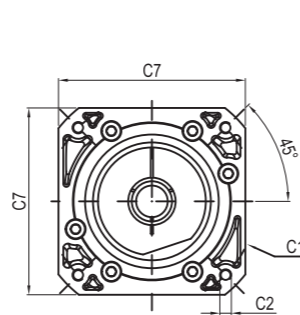
外形尺寸图表 / OUTLINE DIMENSION SHEET

AB142-L1

输出端/OUTPUT

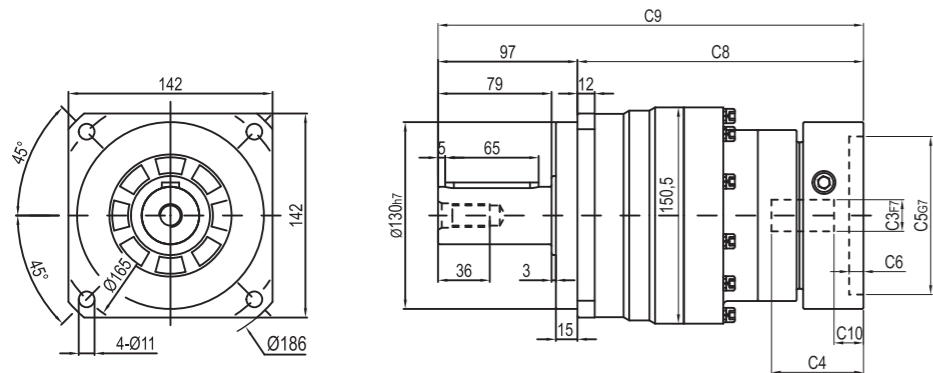


输入端 / INPUT

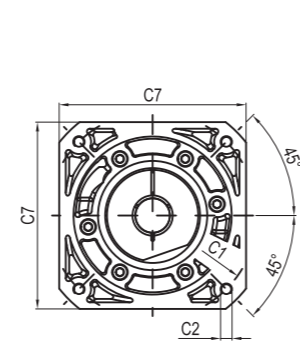


AB142-L2

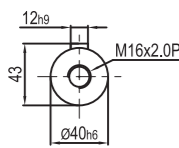
输出端/OUTPUT



输入端 / INPUT



输出轴径/Output Diameter



轴型式

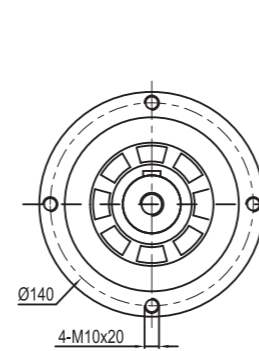
尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
AB142-L1	Ø145	4-M8x20	Ø22,Ø24	72	Ø110	11	130	155	252	19.5
	Ø200	4-M12x28	Ø35	81.5	Ø114.3	8	180	165	262	25
AB142-L2	Ø145	4-M8x20	Ø19,Ø22,Ø24	64	Ø110	10	130	199	296	19.5
	Ø200	4-M12x28	Ø35	81	Ø114.3	10	180	216.5	313.5	28

* C1-C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1-C7are motor(metric standard) specific dimensions, which could be customised.

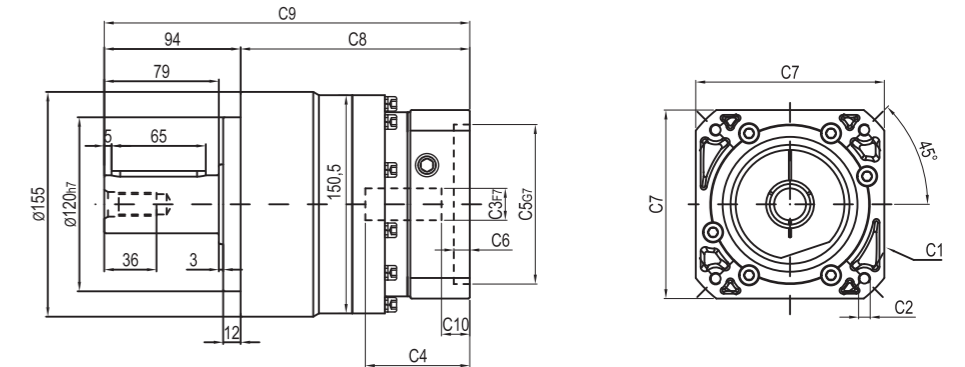
外形尺寸图表 / OUTLINE DIMENSION SHEET

AE155-L1

输出端 / OUTPUT

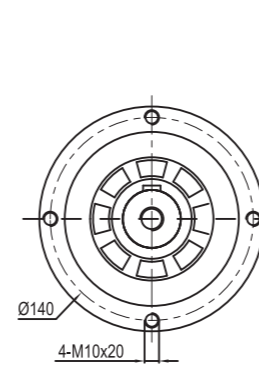


输入端 / INPUT

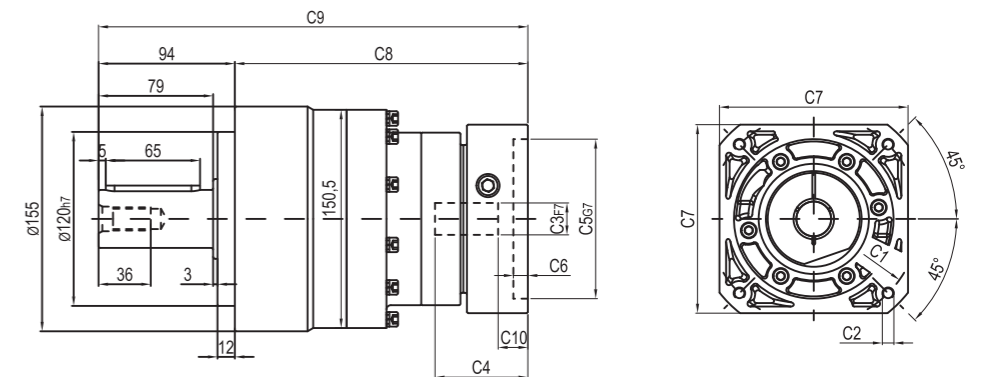


AE155-L2

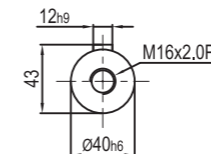
输出端 / OUTPUT



输入端 / INPUT



输出轴径/Output Diameter



轴型式

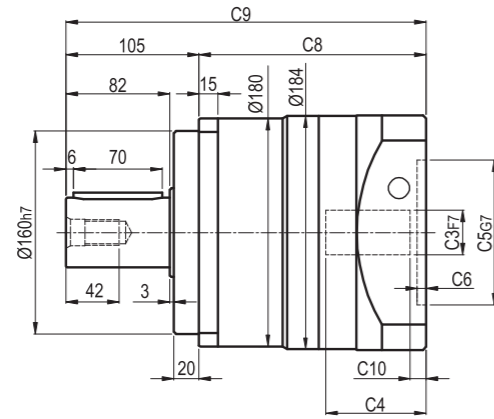
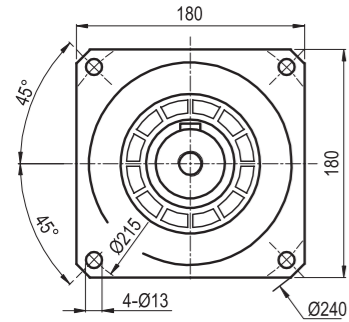
尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
AE155-L1	Ø145	4-M8x20	Ø22,Ø24	72	Ø110	11	130	158	252	19.5
	Ø200	4-M12x28	Ø35	81.5	Ø114.3	8	180	168	262	25
AE155-L2	Ø145	4-M8x20	Ø19,Ø22,Ø24	64	Ø110	10	130	202	296	19.5
	Ø200	4-M12x28	Ø35	81	Ø114.3	10	180	219.5	313.5	28

* C1-C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1-C7are motor(metric standard) specific dimensions, which could be customised.

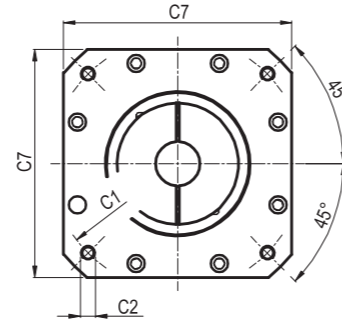
外形尺寸图表 / OUTLINE DIMENSION SHEET

AB180-L1

输出端 / OUTPUT

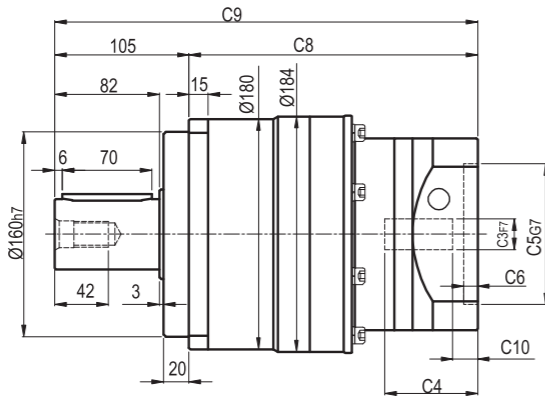
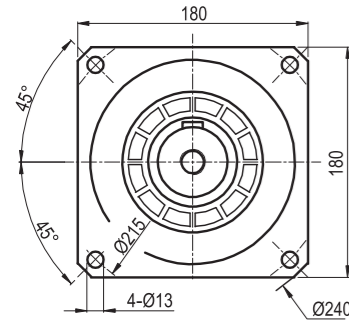


输入端 / INPUT

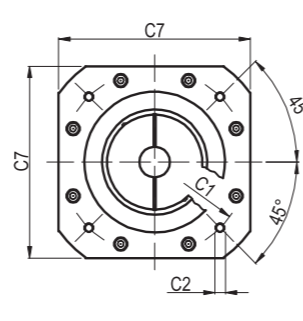


AB180-L2

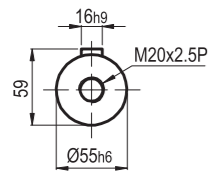
输出端 / OUTPUT



输入端 / INPUT



输出轴径/Output Diameter



轴型式

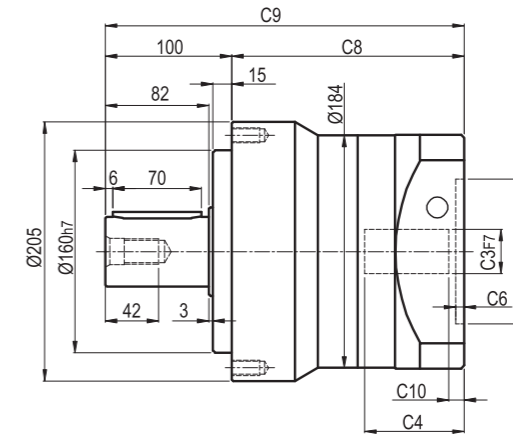
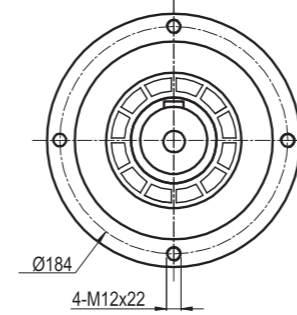
尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
AB180-L1	Ø200	4-M12x28	Ø35	85	Ø114.3	7	180	179	284	7.5
	Ø200	4-M12x30	Ø42	116	Ø114.3	7	180	210	315	40
	Ø215	4-M12x30	Ø42	90	Ø180	8	200	184	289	14
	Ø235	4-M12x30	Ø42	120	Ø200	10	220	214	319	44
AB180-L2	Ø145	4-M8x25	Ø22, Ø24	72.5	Ø110	11	150	225.5	330.5	19.5
	Ø200	4-M12x30	Ø35	82	Ø114.3	8	180	235	340	30

* 输入马达连接板之尺寸,可根据客户要求单独定做。
* The inout motor specific dimensions could be customised.

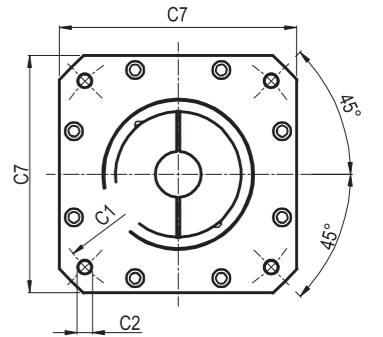
外形尺寸图表 / OUTLINE DIMENSION SHEET

AE205-L1

输出端 / OUTPUT

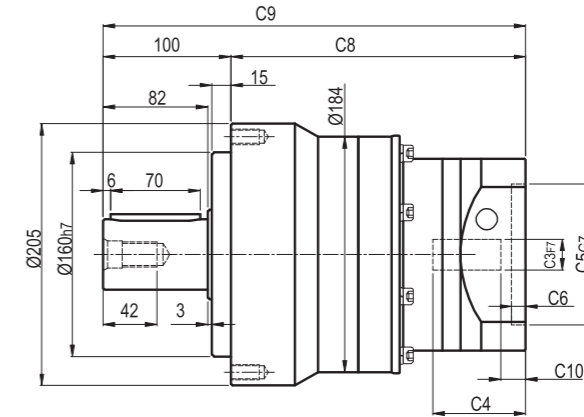
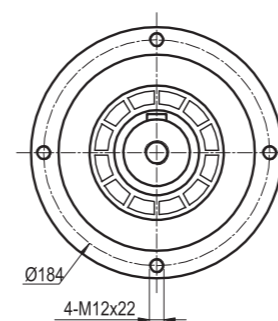


输入端 / INPUT

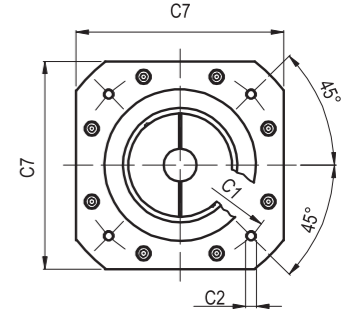


AE205-L2

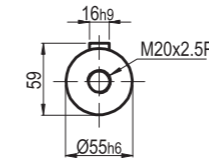
输出端 / OUTPUT



输入端 / INPUT



输出轴径/Output Diameter



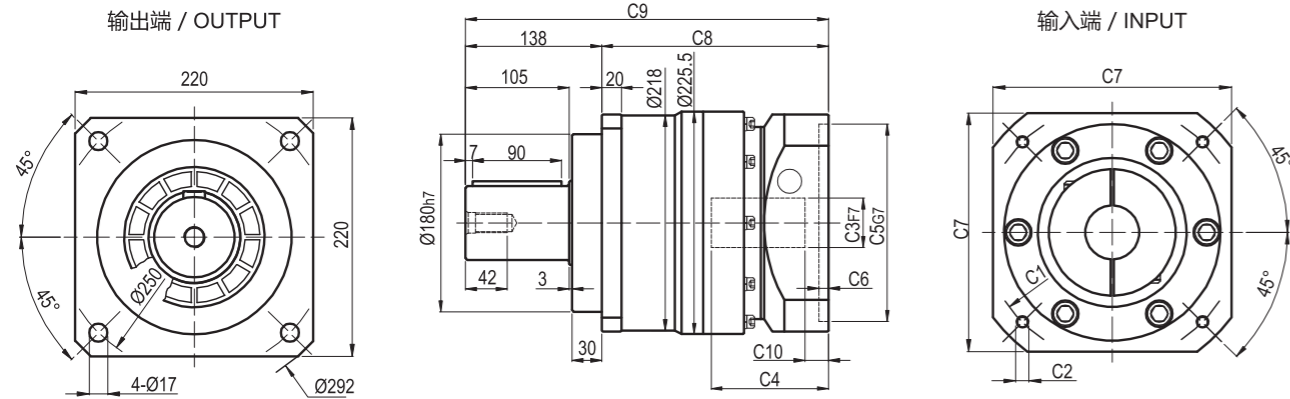
轴型式

尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
AE205-L1	Ø200	4-M12x28	Ø35	85	Ø114.3	7	180	184	284	7.5
	Ø200	4-M12x30	Ø42	116	Ø114.3	7	180	215	315	40
	Ø215	4-M12x30	Ø42	90	Ø180	8	200	189	289	14
	Ø235	4-M12x30	Ø42	120	Ø200	10	220	219	319	44
AE205-L2	Ø145	4-M8x25	Ø22, Ø24	72.5	Ø110	11	150	230.5	330.5	19.5
	Ø200	4-M12x30	Ø35	82	Ø114.3	8	180	240	340	30

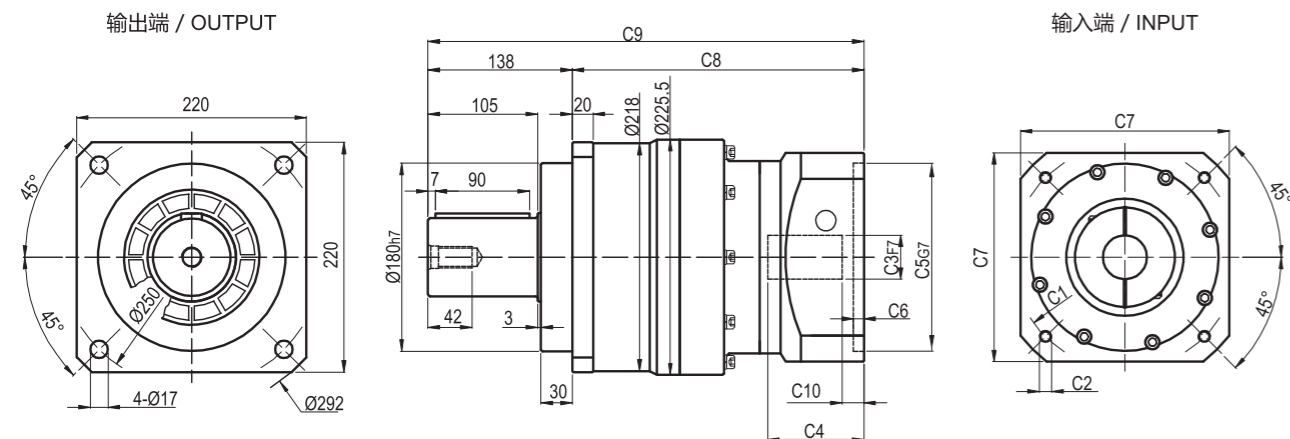
* 输入马达连接板之尺寸,可根据客户要求单独定做。
* The inout motor specific dimensions could be customised.

外形尺寸图表 / OUTLINE DIMENSION SHEET

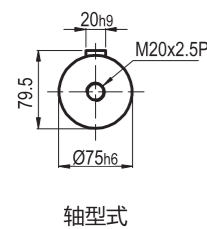
AB220-L1



AB220-L2



输出轴径/Output Diameter

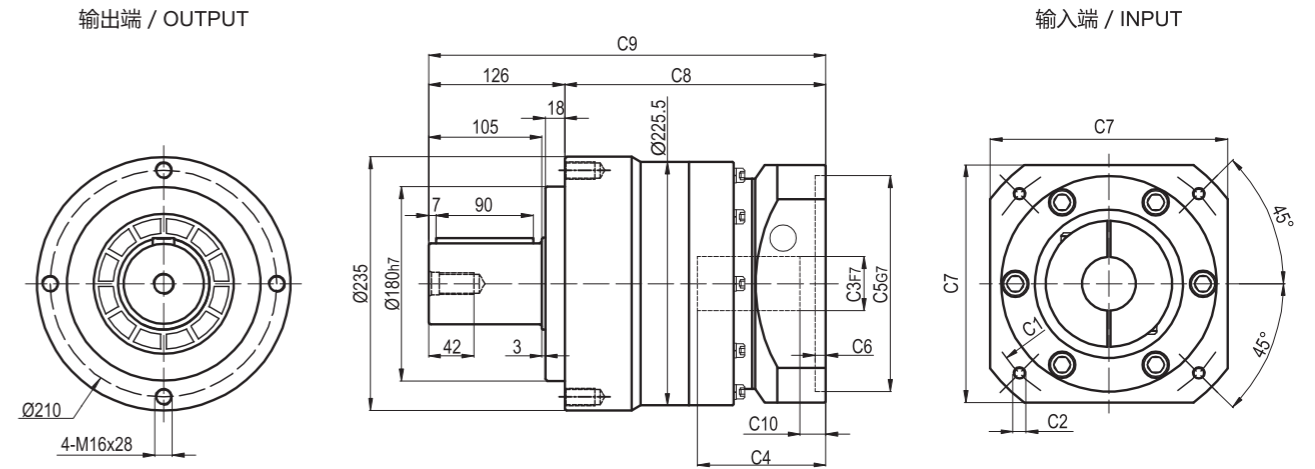


尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
AB220-L1	Ø200	4-M12x28	Ø35, Ø42	116	Ø114.3	15	200	227	365	19.5
	Ø215	4-M12x30	Ø42	109	Ø180	8	200	220	358	12.5
	Ø235	4-M12x30	Ø42, Ø55	119	Ø200	10	220	230	368	22.5
AB220-L2	Ø200	4-M12x30	Ø35	85	Ø114.3	7	180	264	402	7.5
	Ø200	4-M12x30	Ø42	116	Ø114.3	7	180	295	433	40
	Ø215	4-M12x30	Ø42	90	Ø180	8	200	269	407	14
Ø235	4-M12x30	Ø42	120	Ø200	10	220	299	437	44	

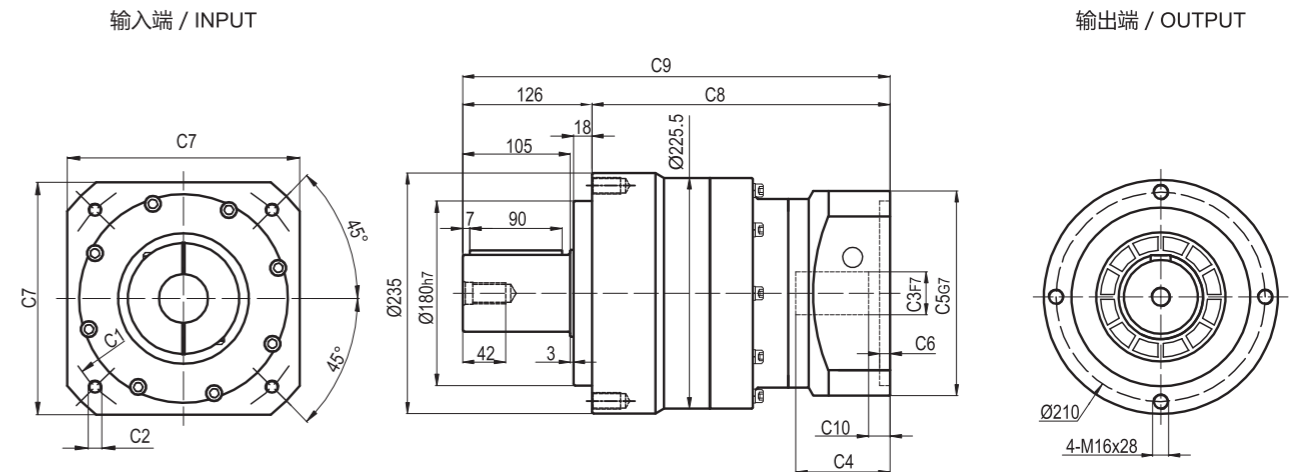
* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7are motor(metric standard) specific dimensions, which could be customised.

外形尺寸图表 / OUTLINE DIMENSION SHEET

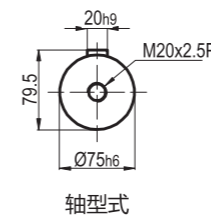
AE235-L1



AE235-L2



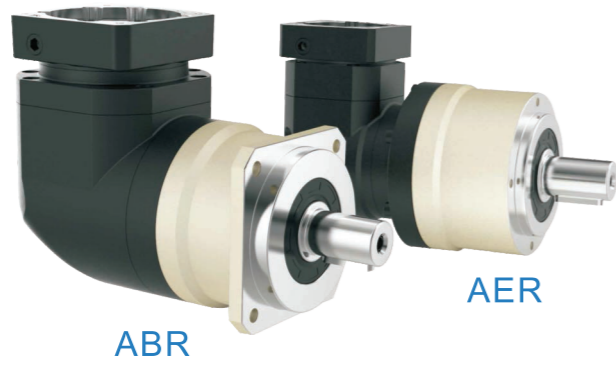
输出轴径/Output Diameter



尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
AE235-L1	Ø200	4-M12x30	Ø35, Ø42	116	Ø114.3	15	200	239	365	19.5
	Ø215	4-M12x30	Ø42	109	Ø180	8	200	232	358	12.5
	Ø235	4-M12x30	Ø42, Ø55	119	Ø200	10	220	242	368	22.5
AE235-L2	Ø200	4-M12x30	Ø35	85	Ø114.3	7	180	276	402	7.5
	Ø200	4-M12x30	Ø42	116	Ø114.3	7	180	307	433	40
	Ø215	4-M12x30	Ø42	90	Ø180	8	200	281	407	14
Ø235	4-M12x30	Ø42	120	Ø200	10	220	311	437	44	

* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7are motor(metric standard) specific dimensions, which could be customised.

型号说明 / MODEL ILLUMINATION



型号定义 / MODEL ILLUMINATE

ABR060 - 10 - S□ / 马达

减速机型式： ABR060/AER070
ABR090/AER090
ABR115/AER120
ABR142/AER155

马达型号：
1-马达制造商及型号
2-马达安装尺寸

减速比：单级 (L1) : 3,4,5,6,7,8,10,14,20
双级 (L2) : 12,15,20,25,30,35,40,50,60,
70,80,100,120,140,160,200

背隙： S2: 标准背隙

选用范例： ABR060-10-S□ MHMD-042G1U

型号定义② ABR060-10-S□-50*3/14*30/70/M4
LB*LE S*LR LA LZ

减速机性能资料 / GEAR BOX PERFORMANCE INFORMATION

规格	级数	减速比 ¹	ABR060 AER070	ABR090 AER090	ABR115 AER120	ABR142 AER155	ABR180	ABR220		
额定输出力矩T _{2N}	1	3	55	130	208	342	588	1,140		
		4	50	140	290	542	1,050	1,700		
		5	60	160	330	650	1,200	2,000		
		6	55	150	310	600	1,100	1,900		
		7	50	140	300	550	1,100	1,800		
		8	50	140	290	542	1,000	1,600		
		10	60	160	330	650	520	1,220		
	14	50	140	300	550	1,100	1,800			
	定货时备注L1或	20	40	100	230	450				
	2	12	55	130	208	342	588	1,140		
		15	55	130	208	342	588	1,140		
		20	50	140	290	542	1,050	1,700		
		25	60	160	330	650	1,200	2,000		
		30	55	130	208	342	588	1,140		
35		60	160	330	650	1,200	2,000			
40		50	140	290	542	1,050	1,700			
50		60	160	330	650	1,200	2,000			
60		55	150	310	600	1,200	2,000			
70		60	160	330	650	1,200	2,000			
80		50	140	290	542	1,200	2,000			
100		60	160	330	650	1,200	2,000			
120		-	150	310	600	1,100	1,900			
140	-	140	300	550	1,100	1,800				
160	-	120	260	500	1,000	1,600				
200	-	100	230	450	520	1,220				
最大输出力矩T _{2B}	Nm	1,2	3倍额定输出力矩							
额定输入转速n ₁	rpm	1,2	5,000	4,000	4,000	3,000	3,000	2,000		
最大输入转速n _{1B}	rpm	1,2	3~200	10,000	8,000	8,000	6,000	6,000	4,000	
背隙S1	arcmin	1	3~20	≤7	≤7	≤7	≤7	≤7	≤7	
		2	12~200	≤10	≤10	≤10	≤10	≤10	≤10	
背隙S2	arcmin	1	3~20	≤10	≤10	≤10	≤10	≤10	≤10	
		2	12~200	≤12	≤12	≤12	≤12	≤12	≤12	
扭转刚性	Nm/arcmin	1,2	3~200	7	14	25	50	145	225	
容许径向力F _{2rB} ²	N	1,2	3~200	1,530	3,250	6,700	9,400	14,500	50,000	
容许轴向力F _{2a1B} ²	N	1,2	3~200	630	1,300	3,000	4,000	6,200	35,000	
容许轴向力F _{2a2B} ²	N	1,2	3~200	765	1,625	3,350	4,700	7,250	25,000	
使用寿命	hr	1,2	3~200	20,000*						
效率η	%	1	3~20	≤95%						
		2	12~200	≤92%						
重量	kg	1	3~20	2.1	6.4	13	24.5	51	83	
		2	12~200	2.5	7.8	14.2	27.5	54	95	
使用温度	°C	1,2	3~200	-10°C~+90°C						
润滑		1,2	3~200	合成润滑油脂						
防护等级		1,2	3~200	IP65						
安装方向		1,2	3~200	任意方向						
噪音值 (n ₁ =3000rpm)	dB	1,2	3~200	≤63	≤65	≤68	≤70	≤72	≤74	

减速机转动惯量

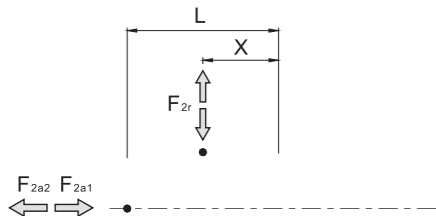
规格	级数	减速比 ¹	ABR060 AER070	ABR090 AER090	ABR115 AER120	ABR142 AER155	ABR180	ABR220
转动惯量J ₁	1	3~7	0.35	2.25	6.84	23.4	68.9	135.4
		8~10	0.07	1.87	6.25	21.8	65.6	119.8
		14~20	0.07	1.87	6.25	21.8	65.6	119.8
	2	12~40	0.09	0.35	2.25	6.84	23.4	68.9
		50	0.09	0.31	1.87	6.25	21.8	65.6
		60	0.09	0.35	2.25	6.84	23.4	68.9
		70~100	0.09	0.31	1.87	6.25	21.8	65.6
120~200	-	0.31	1.87	6.25	21.8	65.6		

1. 减速比 (i=N_{in}/N_{out})
* 连续运转降低使用寿命二分之一。

2. 输出转速 100rpm 时，作用于输出轴中心位置。

减速机输出轴之容许径向力及轴向力

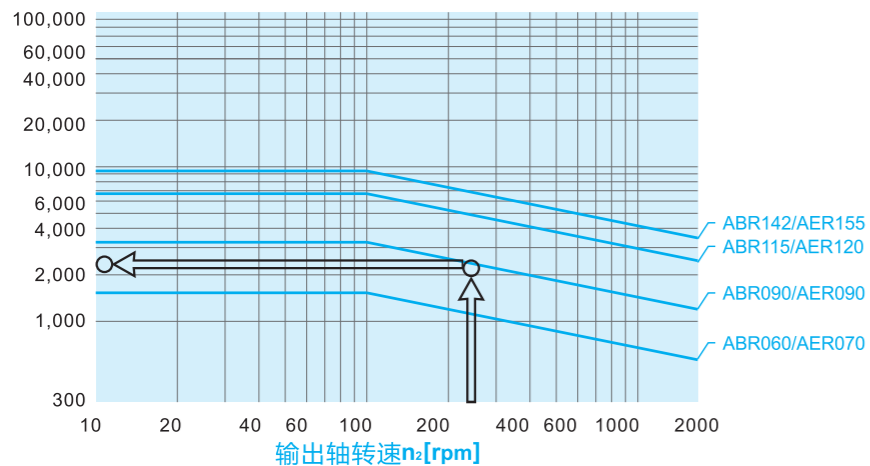
REDUCER OUTPUT SHAFT OF THE PERMISSIBLE RADIAL FORCE AND SHAFT AND FORCE



减速机输出轴所能承受之最大径向力及轴向力,端视内部支撑轴承之设计,减速机采用大尺寸的轴承及较大跨距的设计,其能承受更大的径向及轴向负荷.

F_{2r} 径向力
 F_{2a} 轴向力

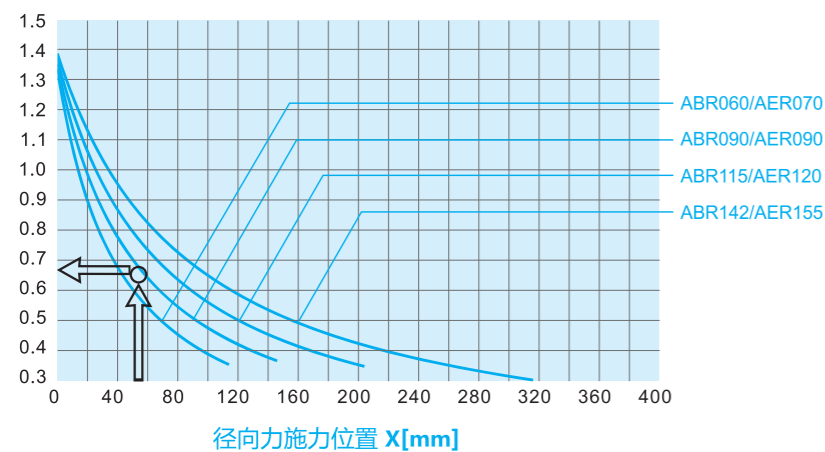
容许径向力 F_{2rB} [N] 施力于轴中心位置



当径向力 F_{2r} 施力于轴中心位置即 $X=1/2 \times L$ 时,不同规格之减速机在不同输出转速运用下使用寿命为 20,000hr* 时,所能承受之容许径向力 F_{2rB} ,请参照左图,而能承受之容许轴向力 F_{2aB} ,为

$F_{2a1B} = 0.2 \times F_{2rB}$
 $F_{2a2B} = 0.1 \times F_{2rB}$

位置负荷系数 k_b



当径向力 F_{2r} 施力不在轴中心位置时,越靠近减速机即 $X < 1/2 \times L$,所能承受之容许径向力变大,越远离减速机即 $X > 1/2 \times L$ 时,所能承受之容许径向力则变小,藉由左图,依减速机规格及径向力施力位置 X ,查出位置负荷系数 k_b ,在代入下列公式,求出容许径向力:

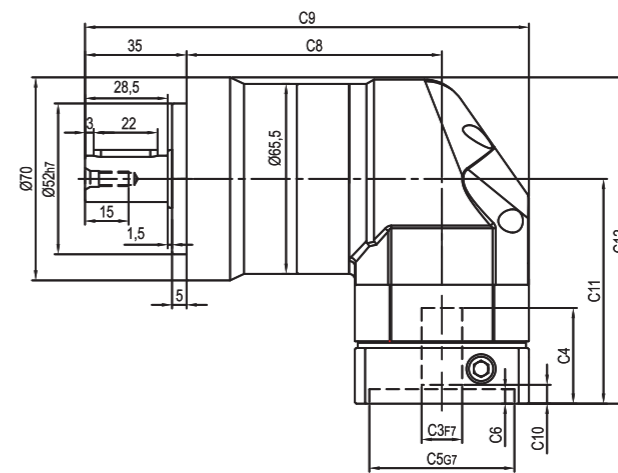
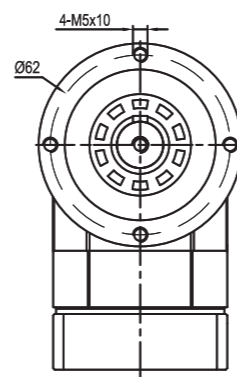
$F'_{2rB} = k_b \times F_{2rB}$
轴向力:
 $F'_{2a1B} = 0.2 \times F'_{2rB}$
 $F'_{2a2B} = 0.1 \times F'_{2rB}$

*连续运转降低使用寿命二分之一。

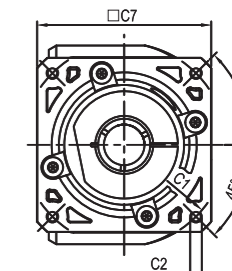
外形尺寸图表 / OUTLINE DIMENSION SHEET

AER070-L1

输出端 / OUTPUT

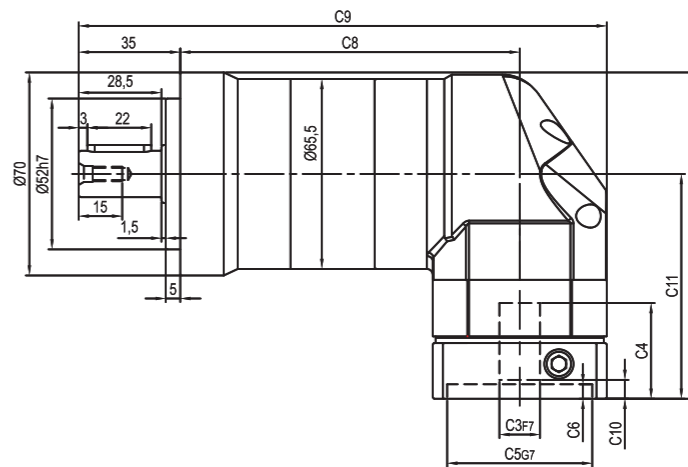
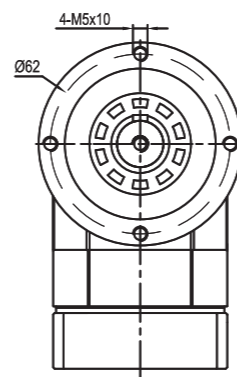


输入端 / INPUT

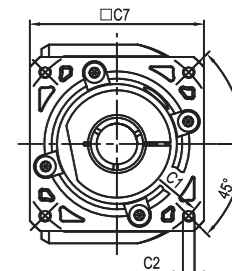


AER070-L2

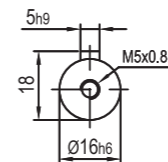
输出端 / OUTPUT



输入端 / INPUT



输出轴径 / Output Diameter



轴型式

尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
AER070-L1	Ø66.7	4-M4x10	Ø8	33	Ø38.1	5	60	88	153	5.5	77.5	112.5
AER070-L2	Ø70	4-M4x10, 4-M5x12	Ø11, Ø14	33	Ø50	5	60	117	182	5.5	77.5	112.5
AER070-L1	Ø90	4-M5x12, 4-M6x14	Ø19	42.5	Ø70	6.5	80	88	163	12	87	122
AER070-L2								117	192			

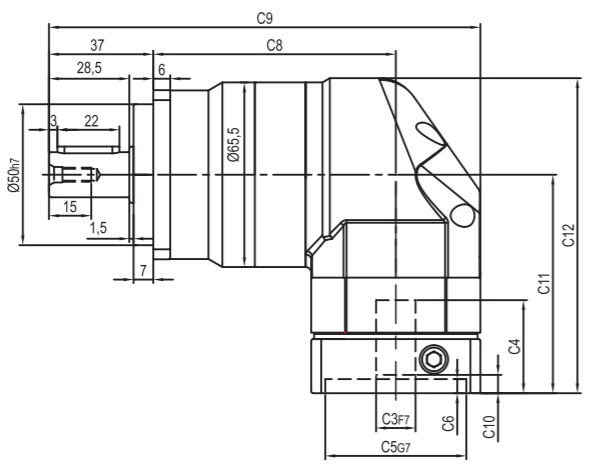
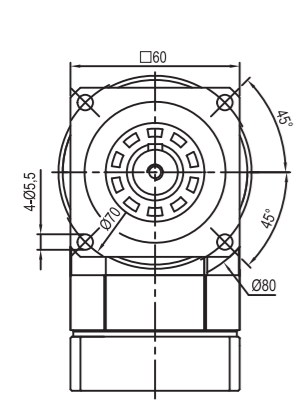
* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。

* C1~C7are motor(metric standard) specific dimensions, which could be customised.

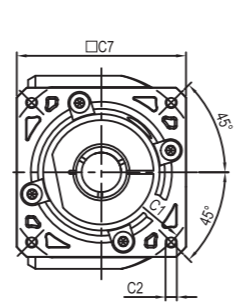
外形尺寸图表 / OUTLINE DIMENSION SHEET

ABR060-L1

输出端 / OUTPUT

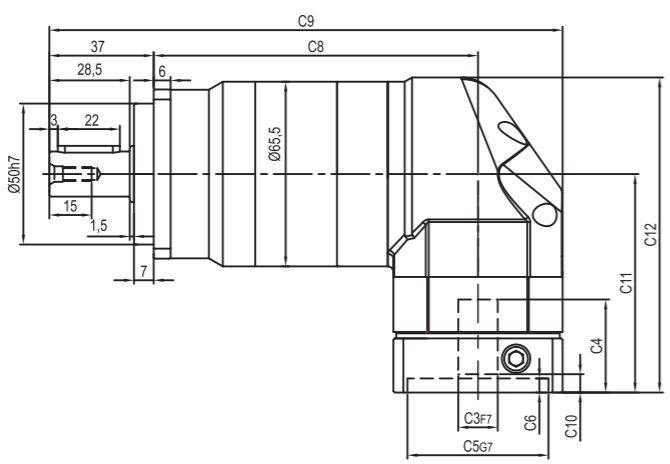
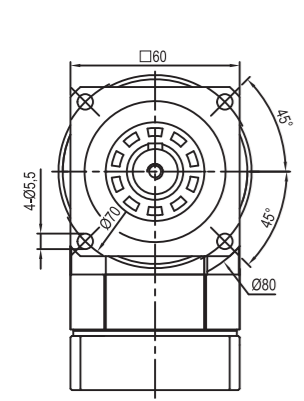


输入端 / INPUT

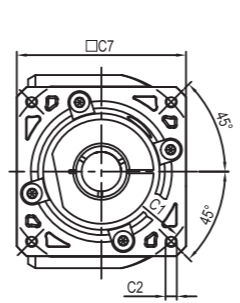


ABR060-L2

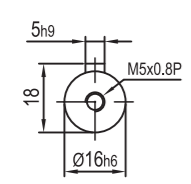
输出端 / OUTPUT



输入端 / INPUT



输出轴径/Output Diameter



轴型式

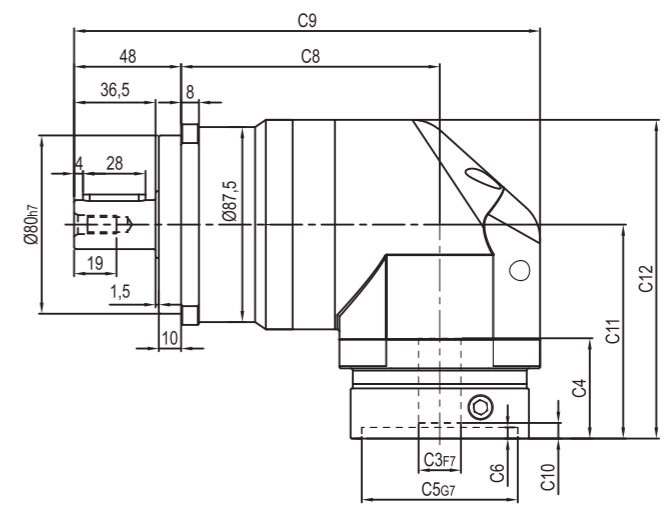
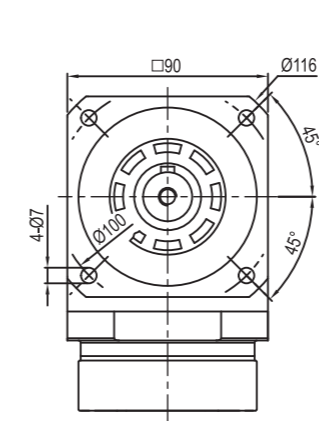
尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
ABR060-L1	Ø66.7	4-M4x10	Ø8	33	Ø38.1	5	60	86	153	5.5	77.5	111.75
ABR060-L2	Ø70	4-M4x10,4-M5x12	Ø11,Ø14	33	Ø50	5	60	115	182	5.5	77.5	111.75
ABR060-L1	Ø90	4-M5x12,4-M6x14	Ø19	42.5	Ø70	6.5	80	86	163	12	87	121.25
ABR060-L2	Ø90	4-M5x12,4-M6x14	Ø19	42.5	Ø70	6.5	80	115	192	12	87	121.25

* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7are motor(metric standard) specific dimensions, which could be customised.

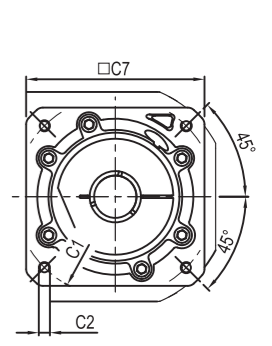
外形尺寸图表 / OUTLINE DIMENSION SHEET

ABR090-L1

输出端 / OUTPUT

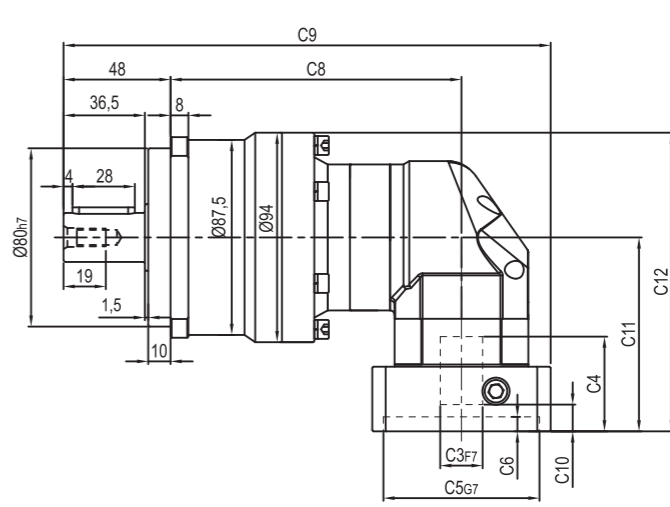
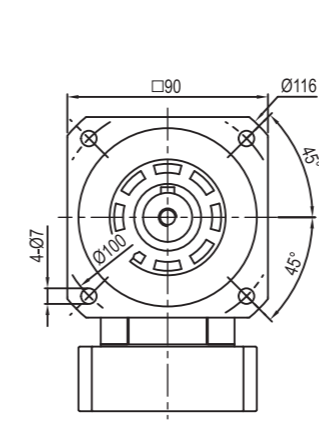


输入端 / INPUT

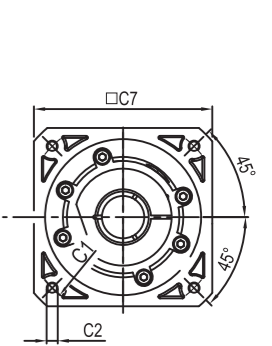


ABR090-L2

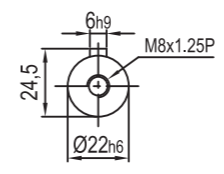
输出端 / OUTPUT



输入端 / INPUT



输出轴径/Output Diameter



轴型式

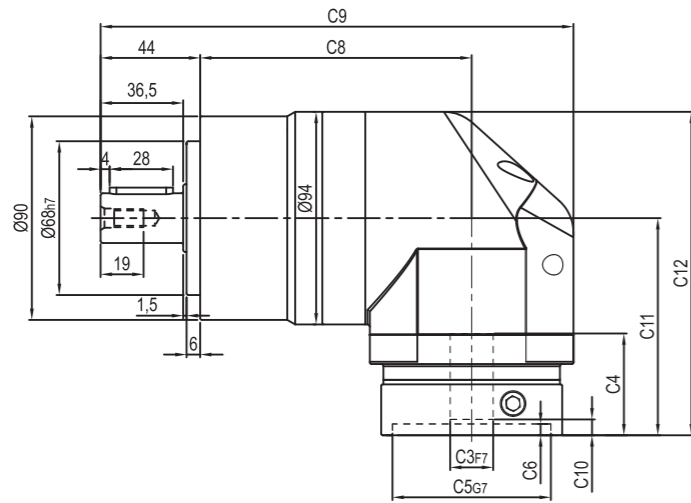
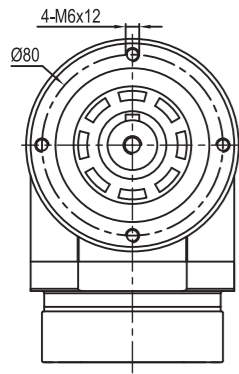
尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
ABR090-L1	Ø90	4-M5x12,4-M6x14	Ø19	45	Ø70	6.5	80	116	209	7	96	143
	Ø100	4-M6x14	Ø16	45	Ø80	6.5	86	116	209	6	96	143
	Ø115	4-M8x20	Ø19,Ø22	56.5	Ø95	8	100	116	214	16.5	117.5	164.5
ABR090-L2	Ø145	4-M8x20	Ø19,Ø22,Ø24	59	Ø110	11	130	116	229	19	120	167
	Ø66.7	4-M4x10	Ø8	33	Ø38.1	5	60	130.5	208.5	5.5	77.5	124.5
	Ø70	4-M4x10,4-M5x12	Ø11,Ø14	33	Ø50	5	60	130.5	208.5	5.5	77.5	124.5
ABR090-L2	Ø90	4-M5x12,4-M6x14	Ø19	42.5	Ø70	6.5	80	130.5	218.5	12	87	134
	Ø100	4-M6x14	Ø16	42.5	Ø80	6.5	86	130.5	221.5	11	87	134

* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7are motor(metric standard) specific dimensions, which could be customised.

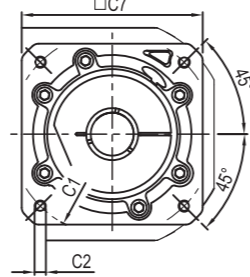
外形尺寸图表 / OUTLINE DIMENSION SHEET

AER090-L1

输出端 / OUTPUT

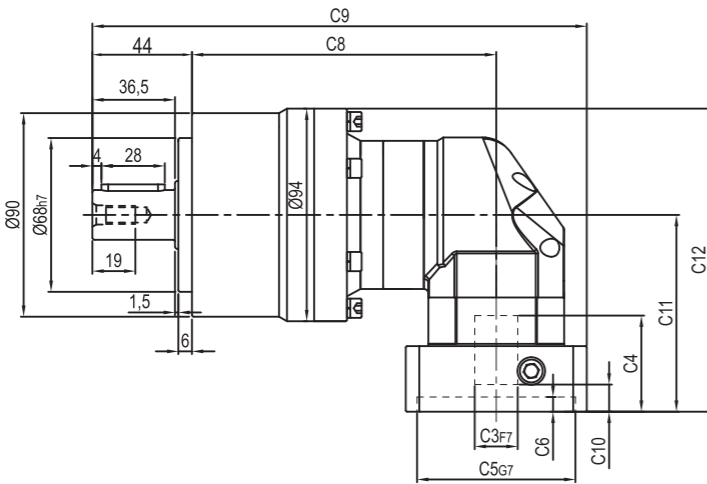
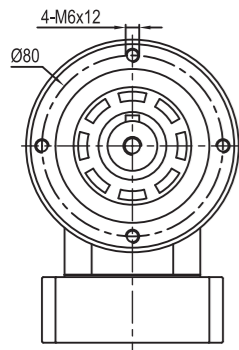


输入端 / INPUT

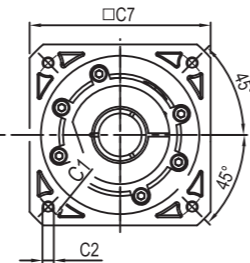


AER090-L2

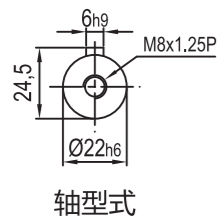
输出端 / OUTPUT



输入端 / INPUT



输出轴径/Output Diameter



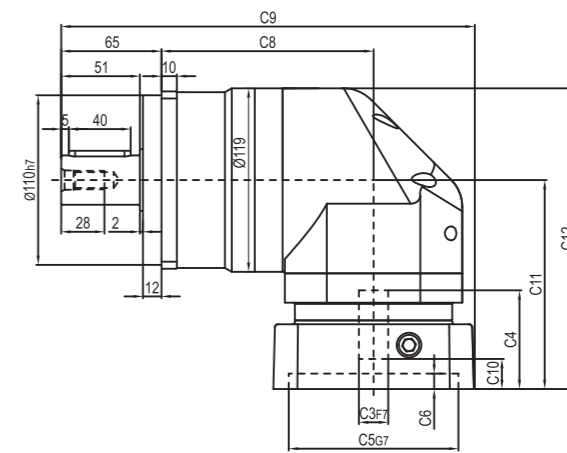
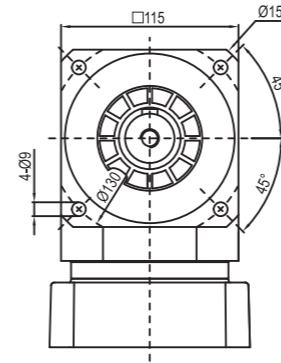
尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
AER090-L1	Ø90	4-M5x12,4-M6x14	Ø19	45	Ø70	6.5	80	120	209	7	96	143
	Ø100	4-M6x14	Ø16	45	Ø80	6.5	86	120	209	6	96	143
	Ø115	4-M8x20	Ø19,Ø22	56.5	Ø95	8	100	120	214	16.5	117.5	164.5
	Ø145	4-M8x20	Ø19,Ø22,Ø24	59	Ø110	11	130	120	229	19	120	167
AER090-L2	Ø66.7	4-M4x10	Ø8	33	Ø38.1	5	60	134.5	208.5	5.5	77.5	124.5
	Ø70	4-M4x10,4-M5x12	Ø11,Ø14	33	Ø50	5	60	134.5	208.5	5.5	77.5	124.5
	Ø90	4-M5x12,4-M6x14	Ø19	42.5	Ø70	6.5	80	134.5	218.5	12	87	134
	Ø100	4-M6x14	Ø16	42.5	Ø80	6.5	86	134.5	221.5	11	87	134

* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7are motor(metric standard) specific dimensions, which could be customised.

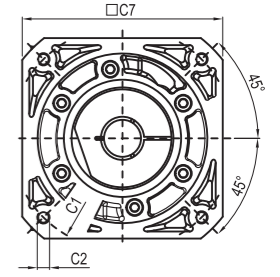
外形尺寸图表 / OUTLINE DIMENSION SHEET

ABR115-L1

输出端 / OUTPUT

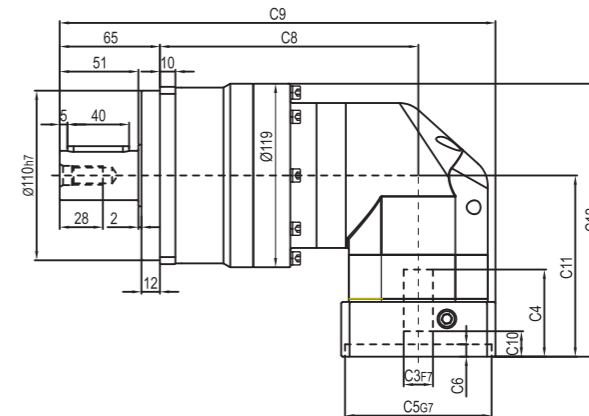
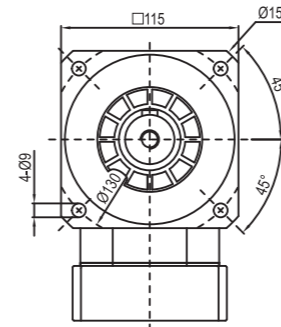


输入端 / INPUT

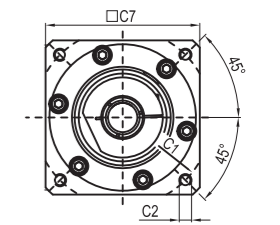


ABR115-L2

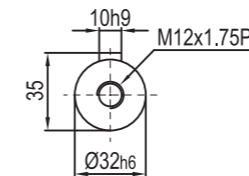
输出端 / OUTPUT



输入端 / INPUT



输出轴径/Output Diameter



轴型式

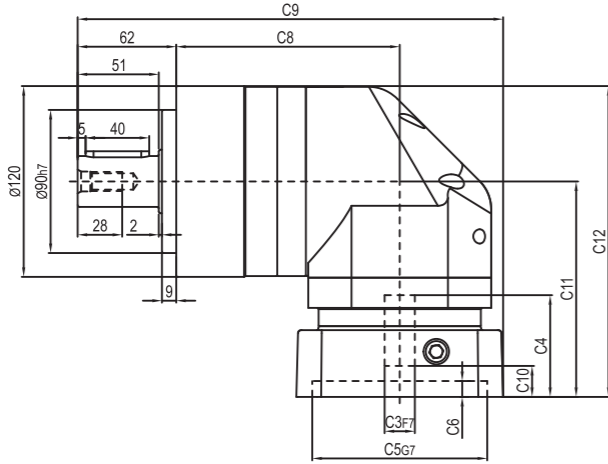
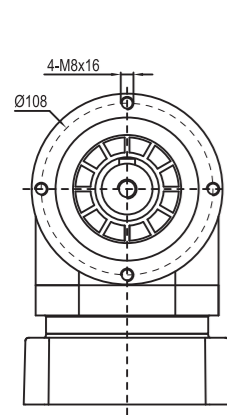
尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
ABR115-L1	Ø145	4-M8x20	Ø19,Ø22,Ø24	64	Ø110	10	130	137.5	267.5	19.5	135.5	195
	Ø200	4-M12x28	Ø35	81	Ø114.3	10	180	137.5	292.5	28	152.5	212
ABR115-L2	Ø90	4-M5x12,4-M6x14	Ø19	45	Ø70	6.5	80	167.5	277.5	7	96	155.5
	Ø100	4-M6x14	Ø16	45	Ø80	6.5	86	167.5	277.5	6	96	155.5
	Ø115	4-M8x20	Ø19,Ø22	56.5	Ø95	8	100	167.5	282.5	16.5	117.5	177
	Ø145	4-M8x20	Ø19,Ø22,Ø24	59	Ø110	11	130	167.5	297.5	19	120	179.5

* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7are motor(metric standard) specific dimensions, which could be customised.

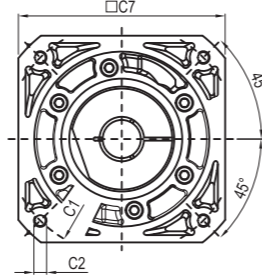
外形尺寸图表 / OUTLINE DIMENSION SHEET

AER120-L1

输出端 / OUTPUT

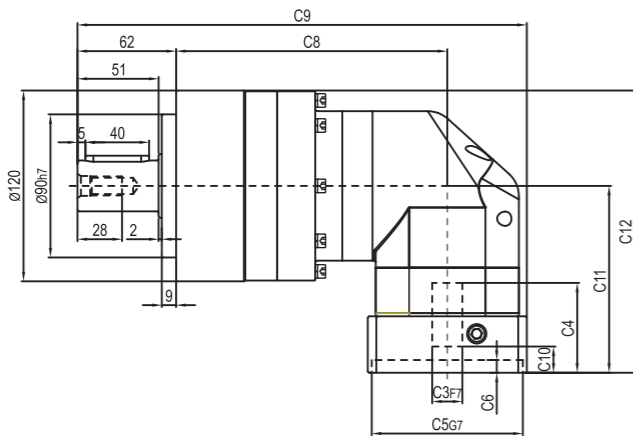
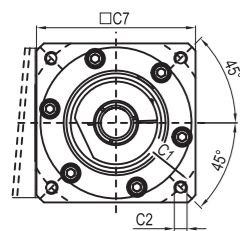


输入端 / INPUT

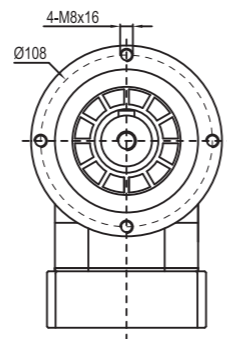


AER120-L2

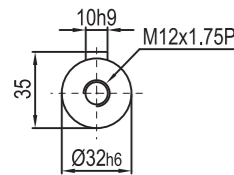
输入端 / INPUT



输出端 / OUTPUT



输出轴径/Output Diameter



轴型式

尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
AER120-L1	Ø145	4-M8x20	Ø19,Ø22,Ø24	64	Ø110	10	130	140.5	267.5	19.5	135.5	195.5
	Ø200	4-M12x28	Ø35	81	Ø114.3	10	180	140.5	292.5	28	152.5	212.5
AER120-L2	Ø90	4-M5x12, 4-M6x14	Ø19	45	Ø70	6.5	80	170.5	277.5	7	96	156
	Ø100	4-M6x14	Ø16	45	Ø80	6.5	86	170.5	277.5	6	96	156
	Ø115	4-M8x20	Ø19,Ø22	56.5	Ø95	8	100	170.5	282.5	16.5	117.5	177.5
	Ø145	4-M8x20	Ø19,Ø22,Ø24	59	Ø110	11	130	170.5	297.5	19	120	180

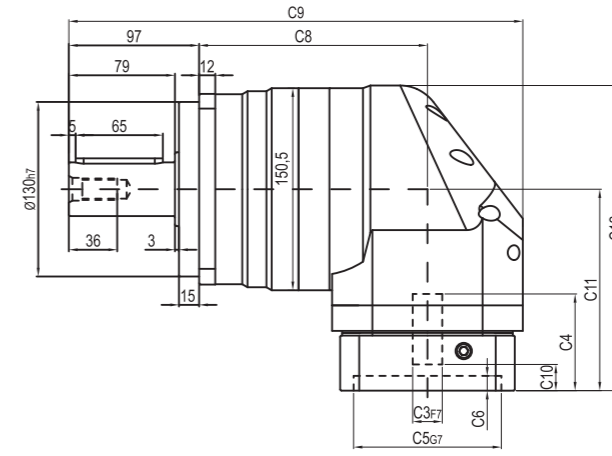
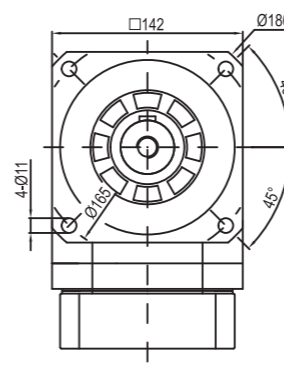
* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。

* C1~C7are motor(metric standard) specific dimensions, which could be customised.

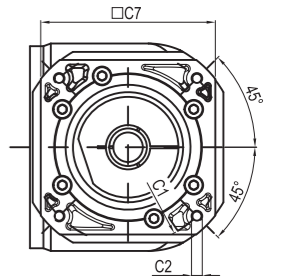
外形尺寸图表 / OUTLINE DIMENSION SHEET

ABR142-L1

输出端 / OUTPUT

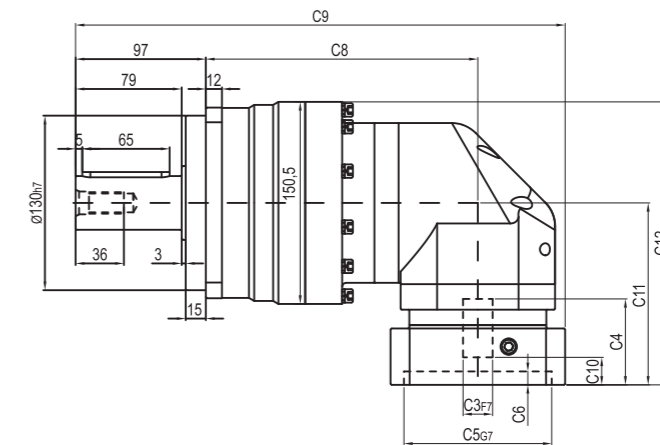
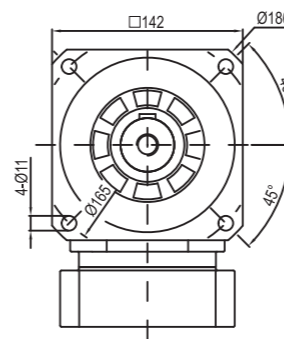


输入端 / INPUT

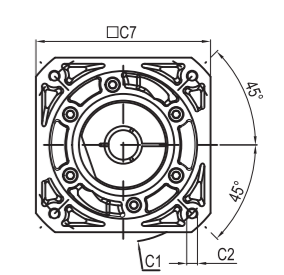


ABR142-L2

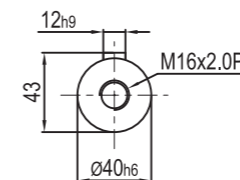
输出端 / OUTPUT



输入端 / INPUT



输出轴径/Output Diameter



轴型式

尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
ABR142-L1	Ø145	4-M8x20	Ø22,Ø24	72	Ø110	11	130	170	338	19.5	150	227.25
	Ø200	4-M12x28	Ø35	82	Ø114.3	8	180	170	357	25	160	237.25
ABR142-L2	Ø145	4-M8x20	Ø19,Ø22,Ø24	64	Ø110	10	130	202.5	364.5	19.5	135.5	210.75
	Ø200	4-M12x28	Ø35	81	Ø114.3	10	180	202.5	389.5	28	152.5	227.75

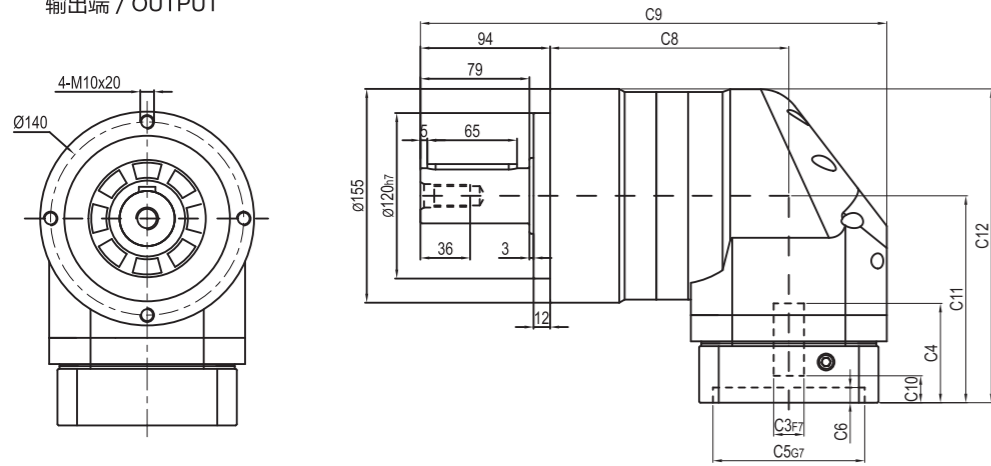
* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。

* C1~C7are motor(metric standard) specific dimensions, which could be customised.

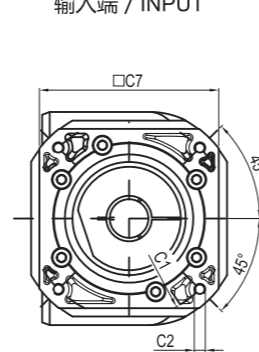
外形尺寸图表 / OUTLINE DIMENSION SHEET

AER155-L1

输出端 / OUTPUT

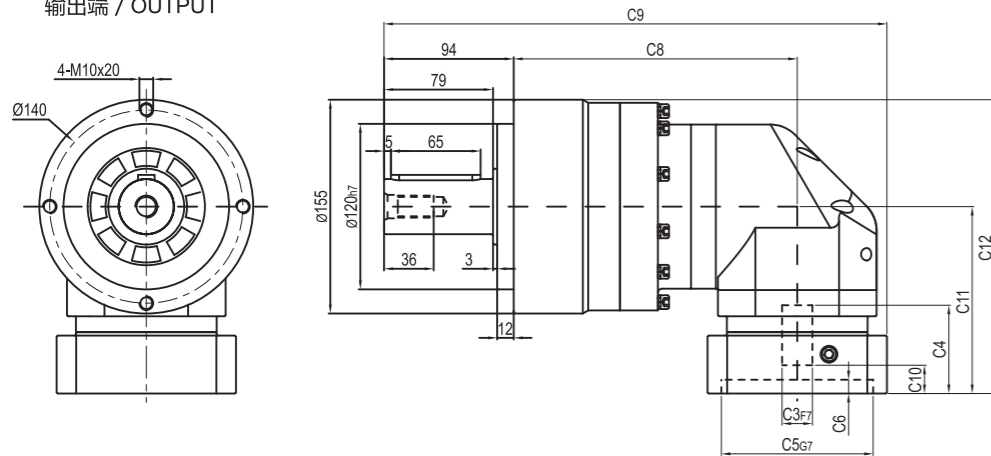


输入端 / INPUT

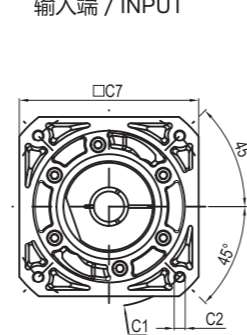


AER115-L2

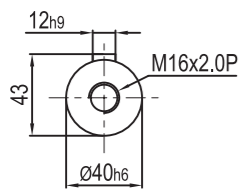
输出端 / OUTPUT



输入端 / INPUT



输出轴径 / Output Diameter



轴型式

尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
AER155-L1	Ø145	4-M8x20	Ø22, Ø24	72	Ø110	11	130	173	338	19.5	150	227.5
	Ø200	4-M12x28	Ø35	82	Ø114.3	8	180	173	357	25	160	237.5
AER155-L2	Ø145	4-M8x20	Ø19, Ø22, Ø24	64	Ø110	10	130	205.5	364.5	19.5	135.5	213
	Ø200	4-M12x28	Ø35	81	Ø114.3	10	180	205.5	389.5	28	152.5	230

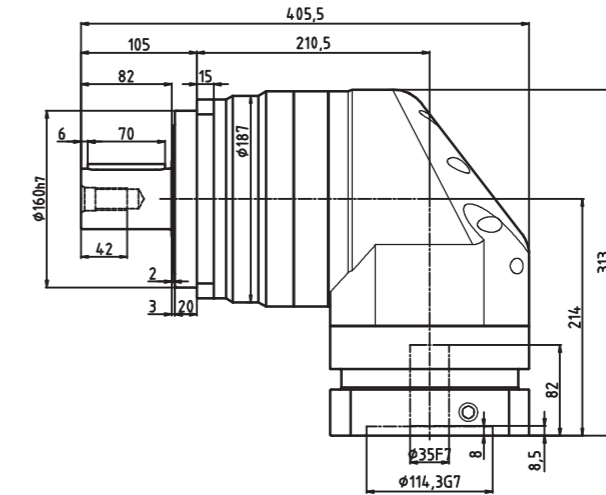
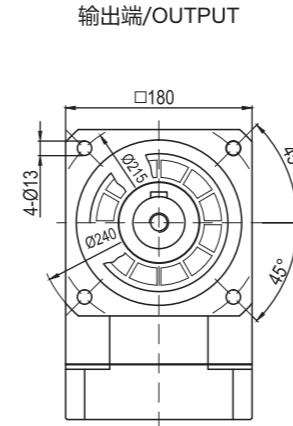
* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。

* C1~C7are motor(metric standard) specific dimensions, which could be customised.

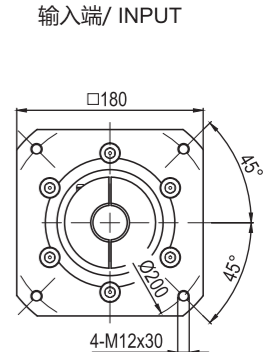
外形尺寸图表 / OUTLINE DIMENSION SHEET

ABR180-L1

输出端 / OUTPUT

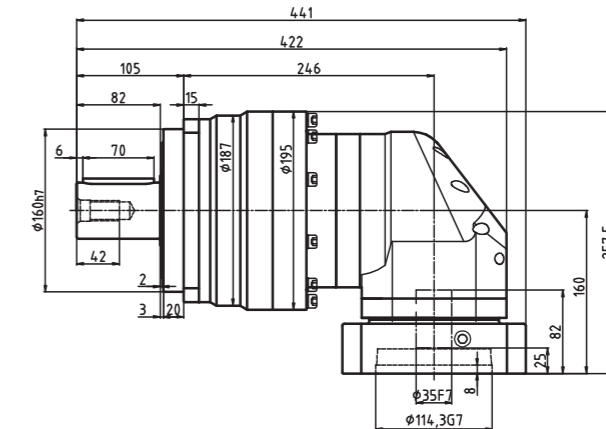
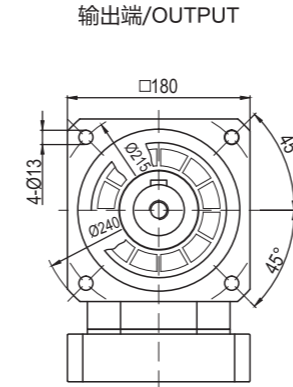


输入端 / INPUT

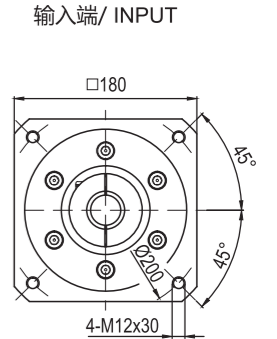


ABR180-L2

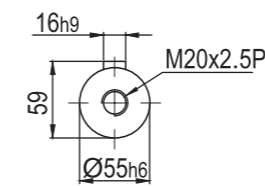
输出端 / OUTPUT



输入端 / INPUT



输出轴径 / Output Diameter



轴型式

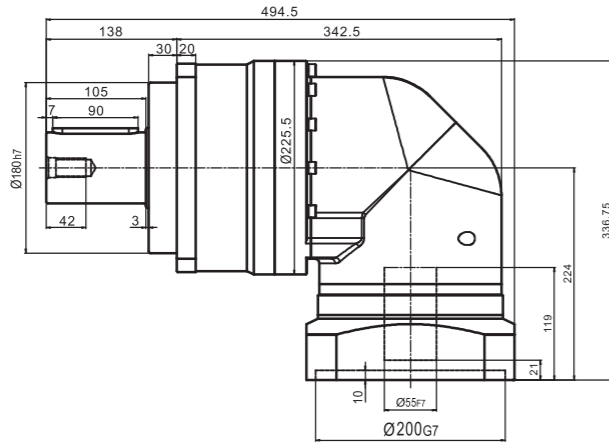
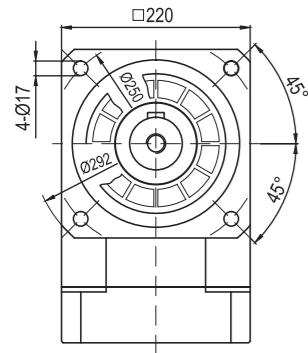
*输入马达连接板之尺寸,可根据客户要求单独定做。

*The input motor specific dimensions could be customised.

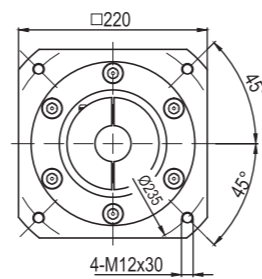
外形尺寸图表 / OUTLINE DIMENSION SHEET

ABR220-L1

输出端 / OUTPUT

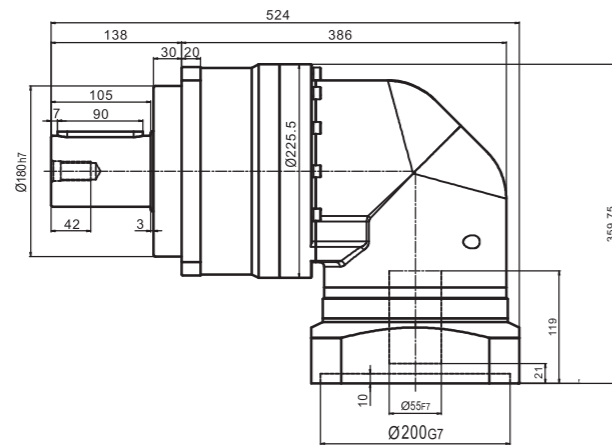
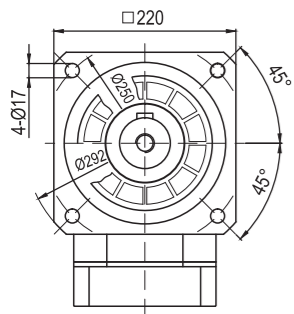


输入端 / INPUT

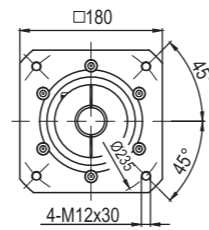


ABR220-L2

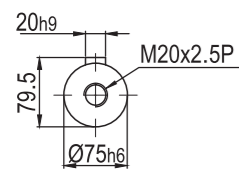
输出端 / OUTPUT



输入端 / INPUT



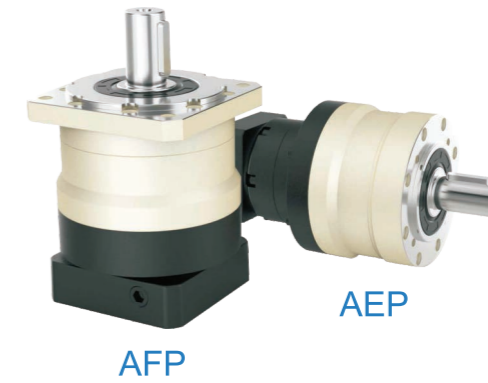
输出轴径 / Output Diameter



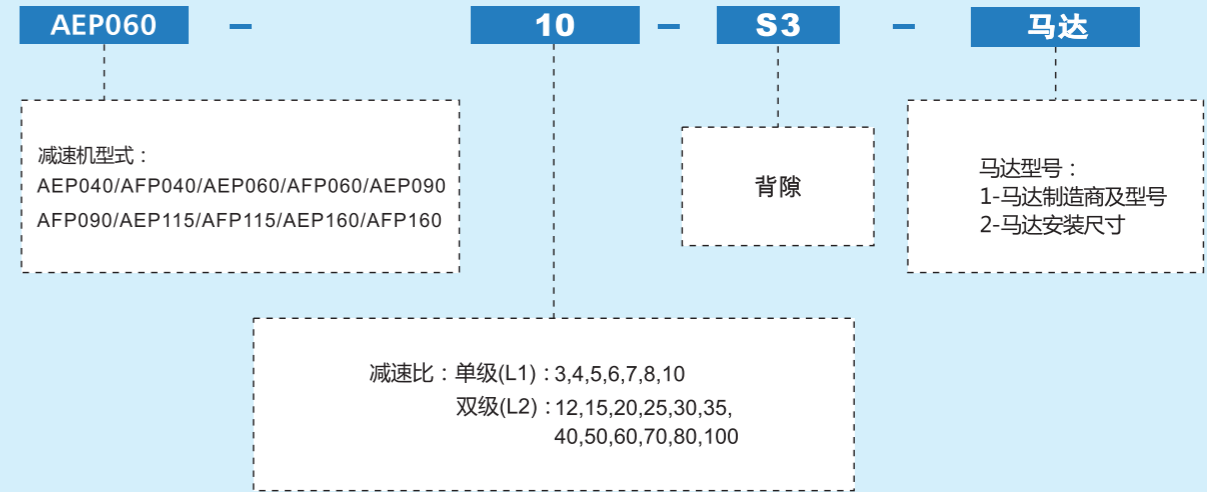
轴型式

*输入马达连接板之尺寸,可根据客户要求单独定做。
*The input motor specific dimensions could be customised.

型号说明 / MODEL ILLUMINATE

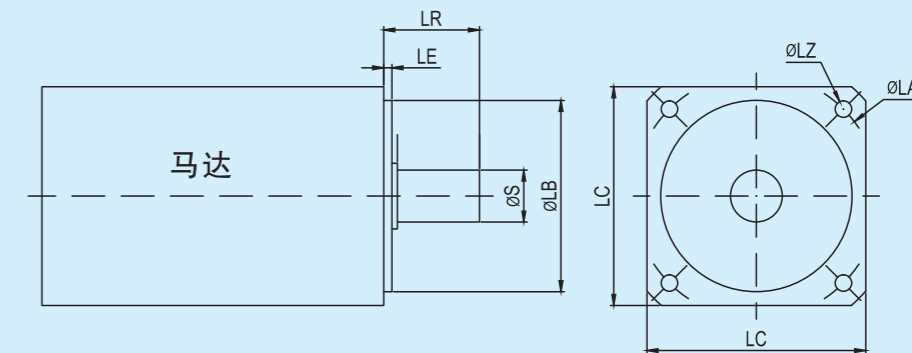


型号定义 / MODEL ILLUMINATE



选用范例：AEP060-10-S3-MHMD-042G1U

型号定义② AEP060-10-S3-50*3/14*30/70/M4
LB*LE S*LR LA LZ



减速机性能资料 / GEAR BOX PERFORMANCE INFORMATION

规格	级数	减速比 ¹	AEP040 AFP040	AEP060 AFP060	AEP090 AFP090	AEP115 AFP115	AEP160 AFP160	
额定输出转矩 T_{2N}	1	3	20	55	130	208	342	
		4	19	50	140	290	542	
		5	22	60	160	330	650	
		6	20	55	150	310	600	
		7	19	50	140	300	550	
		8	17	45	120	260	500	
		10	14	40	100	230	450	
		2	12	20	55	130	208	342
			15	20	55	130	208	342
			20	19	50	140	290	542
	25		22	60	160	330	650	
	30		22	55	130	208	342	
	35		22	60	160	330	650	
	40		22	50	140	290	542	
	50		22	60	160	330	650	
	60		20	55	150	310	600	
	70	19	50	140	300	550		
	80	17	45	120	260	500		
	100	14	40	100	230	450		
最大输出转矩 T_{2B}	Nm	1.2	3倍额定输出转矩					
额定输入转速 n_1	rpm	1.2	5,000	5,000	4,000	4,000	3,000	
最大输入转速 n_{1B}	rpm	1.2	10,000	10,000	8,000	8,000	6,000	
背隙 S3	arcmin	1	≤8	≤8	≤8	≤8	≤8	
		2	≤10	≤10	≤10	≤10	≤10	
扭转刚性	Nm/arcmin	1.2	3	7	14	25	50	
容许径向力 F_{2rB}^2	N	1.2	780	1,530	3,250	6,700	9,400	
容许轴向力 F_{2a1B}^2	N	1.2	350	630	1,300	3,000	4,000	
容许轴向力 F_{2a2B}^2	N	1.2	390	765	1,625	3,350	4,700	
使用寿命	hr	1.2	20,000*					
		1	≥97%					
		2	≥94%					
效率 η	%	1	≥94%					
		2	≥94%					
重量	kg	1	0.5	1.3	3.7	7.8	14.5	
		2	0.8	1.9	4.1	9	17.5	
使用温度	°C	1.2	-10°C~+90°C					
润滑		1.2	合成润滑油脂					
防护等级		1.2	IP65					
安装方向		1.2	任意方向					
噪音值 ($n_1=3000rpm$)	dB	1.2	≤56	≤58	≤60	≤63	≤65	

减速机转动惯量

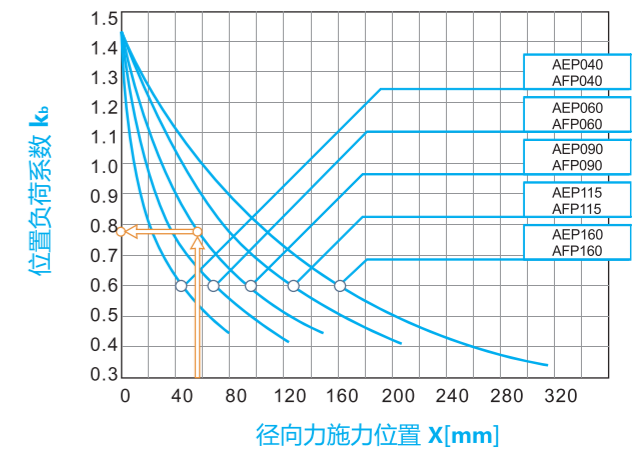
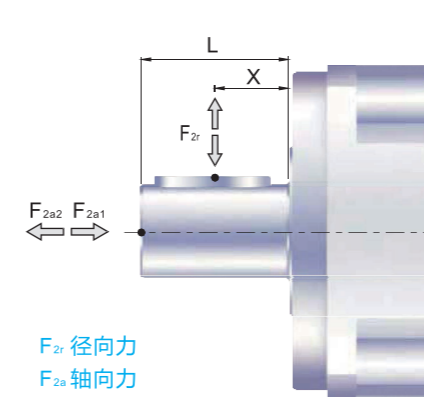
规格	级数	减速比 ¹	AEP040 AFP040	AEP060 AFP060	AEP090 AFP090	AEP115 AFP115	AEP160 AFP160	
转动惯量 J_1	1	3	0.03	0.16	0.61	3.25	9.21	
		4	0.03	0.14	0.48	2.74	7.54	
		5	0.03	0.13	0.47	2.71	7.42	
		6	0.03	0.13	0.45	2.65	7.25	
		7	0.03	0.13	0.45	2.62	7.14	
		8	0.03	0.13	0.44	2.58	7.07	
		10	0.03	0.13	0.44	2.57	7.03	
		2	12	0.03	0.03	0.13	0.47	2.71
			15	0.03	0.03	0.13	0.47	2.71
			20	0.03	0.03	0.13	0.47	2.71
	25		0.03	0.03	0.13	0.47	2.71	
	30		0.03	0.03	0.13	0.47	2.71	
	35		0.03	0.03	0.13	0.47	2.71	
	40		0.03	0.03	0.13	0.47	2.71	
	50		0.03	0.03	0.13	0.44	2.57	
	60		0.03	0.03	0.13	0.44	2.57	
	70	0.03	0.03	0.13	0.44	2.57		
	80	0.03	0.03	0.13	0.44	2.57		
	100	0.03	0.03	0.13	0.44	2.57		

1. 减速比 ($i=N_{in}/N_{out}$)
* 连续运转降低使用寿命二分之一。

2. 输出转数 100rpm 时, 作用于输出轴中心位置。

减速机输出轴之容许径向力及轴向力

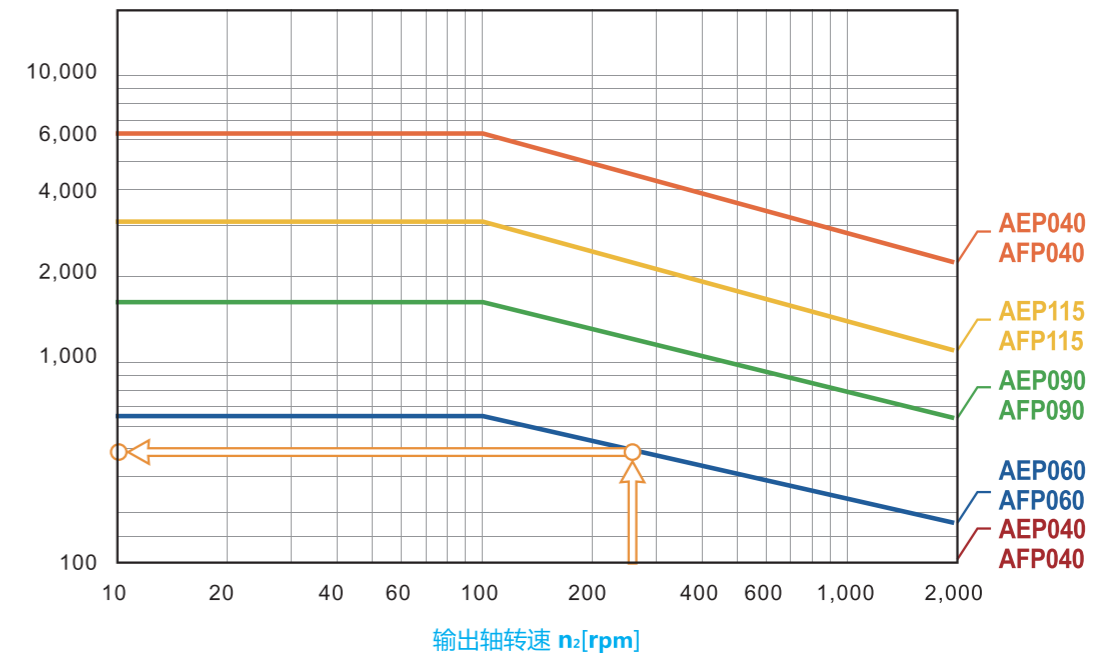
REDUCER OUTPUT SHAFT OF THE PERMISSIBLE RADIAL FORCE AND SHAFT AND FORCE



减速机输出轴所能承受之最大径向力及轴向力, 端视内部支撑轴承之设计。

当径向力 F_{2r} 施力不在轴中心位置, 越靠近减速机即 $X < 1/2 \times L$, 所能承受之容许径向力变大; 越远离减速机即 $X > 1/2 \times L$, 所能承受之容许径向力变小。藉由上图, 依减速机规格及径向施力位置 X , 可查出位置负荷系数 k_b 。

容许径向力 F_{2rB} [N] 施力于轴中心位置



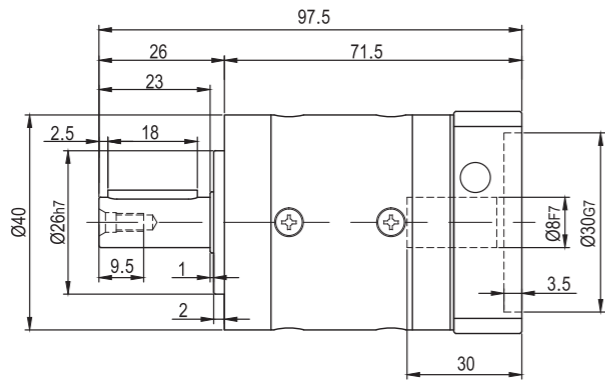
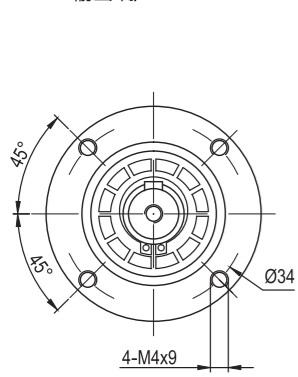
当径向力 F_{2r} 施力于轴中心位置, 即 $X=1/2 \times L$ 时, 不同之减速机在不同输出转速运用下, 使用寿命为20,000*小时, 所能承受之容许径向力, 请参照上图。

* 连续运转(S1)下之使用寿命降低50%。

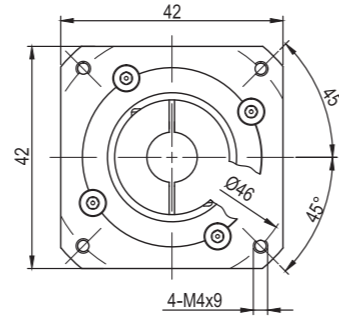
外形尺寸图表 / OUTLINE DIMENSION SHEET

AEP040-L1

输出端 / OUTPUT

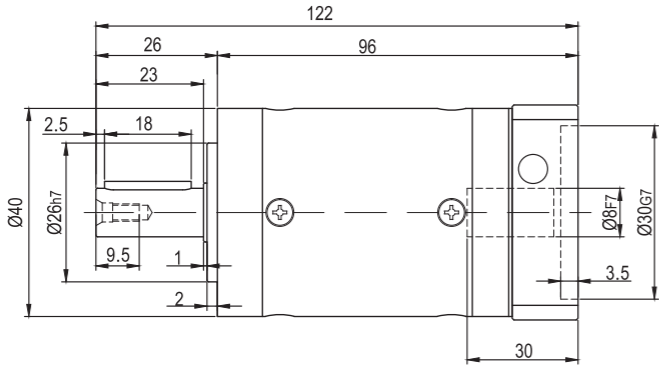
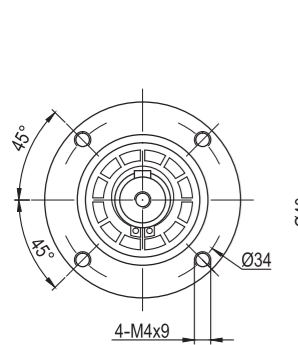


输入端 / INPUT

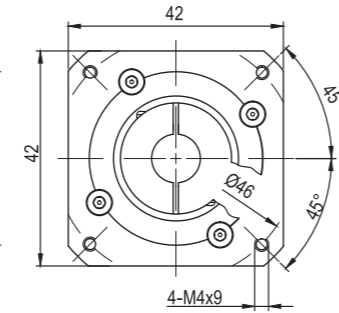


AEP040-L2

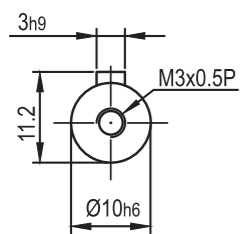
输出端 / OUTPUT



输入端 / INPUT



输出轴径 / Output Diameter

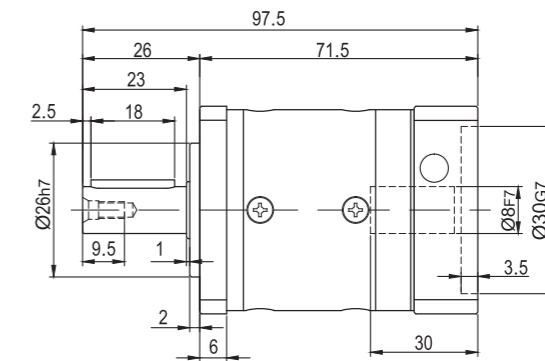
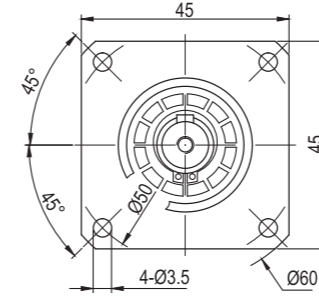


*输入马达连接板之尺寸,可根据客户要求单独定做。
*The input motor specific dimensions could be customised.

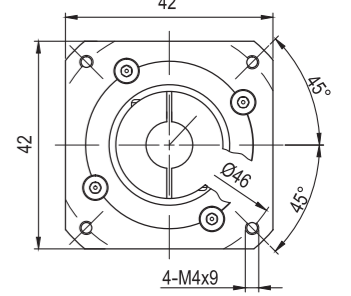
外形尺寸图表 / OUTLINE DIMENSION SHEET

AFP040-L1

输出端 / OUTPUT

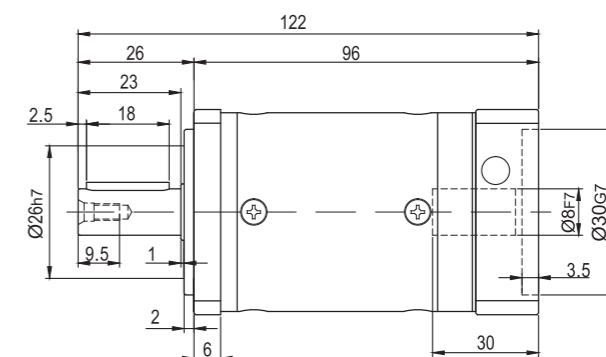
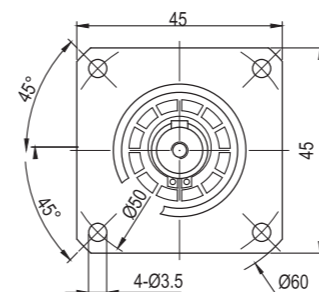


输入端 / INPUT

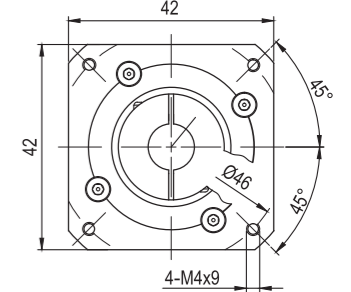


AFP040-L2

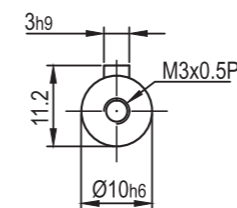
输出端 / OUTPUT



输入端 / INPUT



输出轴径 / Output Diameter

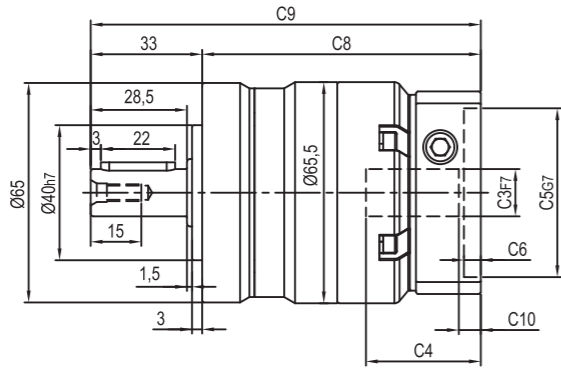
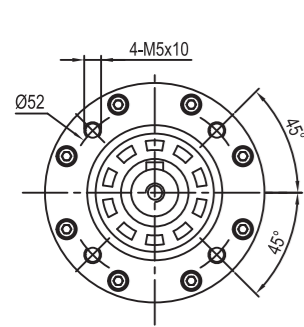


*输入马达连接板之尺寸,可根据客户要求单独定做。
*The input motor specific dimensions could be cumised.

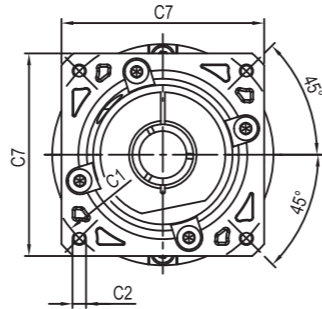
外形尺寸图表 / OUTLINE DIMENSION SHEET

AEP060-L1

输出端 / OUTPUT

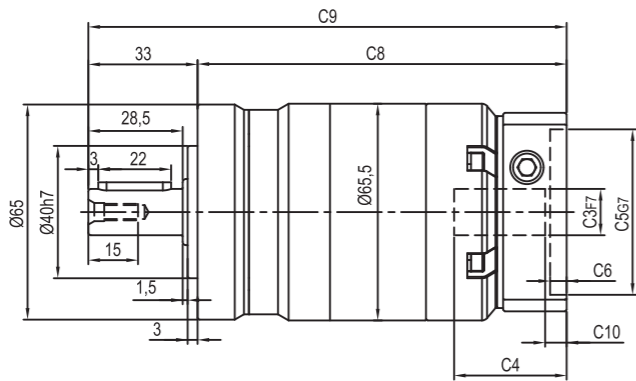
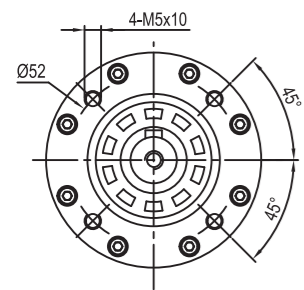


输入端 / INPUT

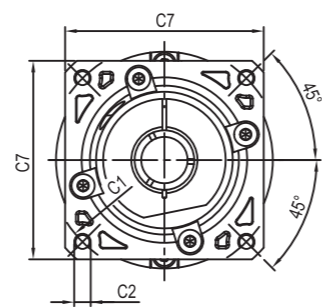


AEP060-L2

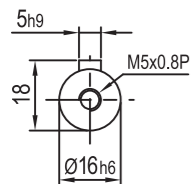
输出端 / OUTPUT



输入端 / INPUT



输出轴径 / Output Diameter



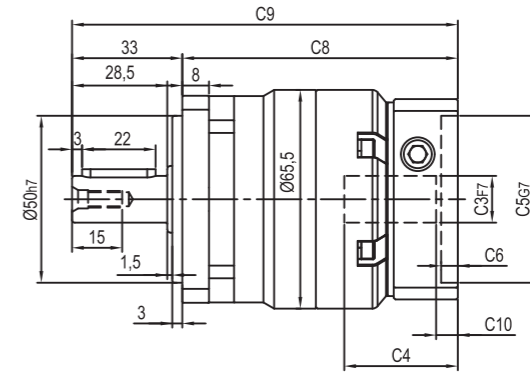
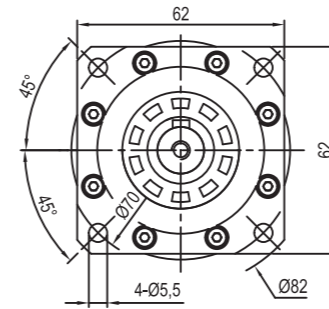
尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
AEP060-L1								82.5	115.5	5.5
AEP060-L2	Ø66.7	4-M4x10	Ø6.35, Ø8	34	Ø38.1	5	60	111.5	144.5	5.5
AEP060-L1								82.5	115.5	5.5
AEP060-L2	Ø70	4-M4x10, 4-M5x12	Ø11, Ø14	34	Ø50	5	60	111.5	144.5	5.5
AEP060-L1								89	122	12
AEP060-L2	Ø90	4-M5x12, 4-M6x14	Ø19	42	Ø70	6.5	80	118	151	12

* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7are motor(metric standard) specific dimensions, which could be customised.

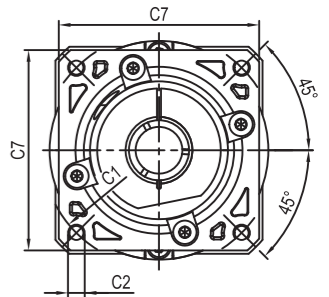
外形尺寸图表 / OUTLINE DIMENSION SHEET

AFP060-L1

输出端 / OUTPUT

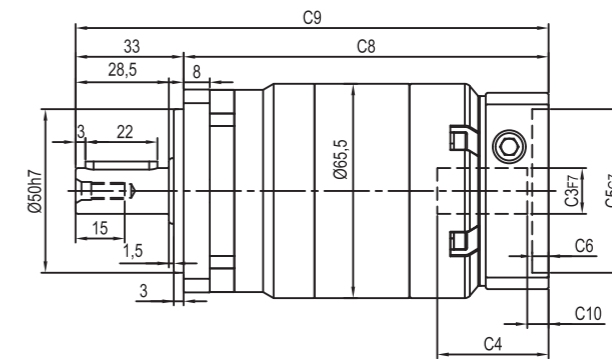
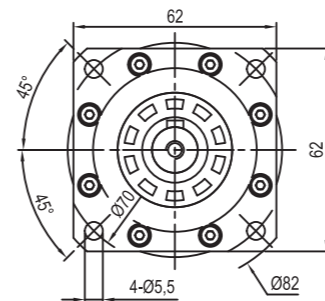


输入端 / INPUT

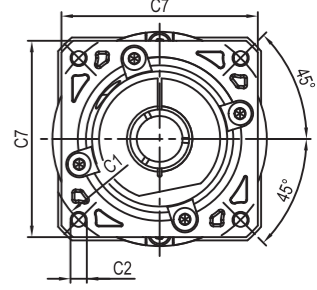


AFP060-L2

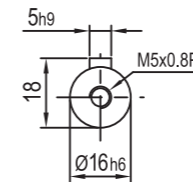
输出端 / OUTPUT



输入端 / INPUT



输出轴径 / Output Diameter



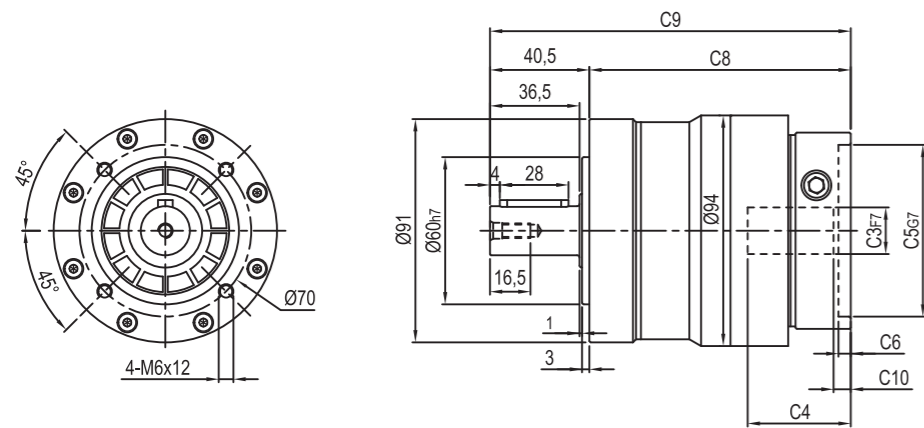
尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
AFP060-L1								82.5	115.5	5.5
AFP060-L2	Ø66.7	4-M4x10	Ø6.35, Ø8	34	Ø38.1	5	60	111.5	144.5	5.5
AFP060-L1								82.5	115.5	5.5
AFP060-L2	Ø70	4-M4x10, 4-M5x12	Ø11, Ø14	34	Ø50	5	60	111.5	144.5	5.5
AFP060-L1								89	122	12
AFP060-L2	Ø90	4-M5x12, 4-M6x14	Ø19	42	Ø70	6.5	80	118	151	12

* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7are motor(metric standard) specific dimensions, which could be customised.

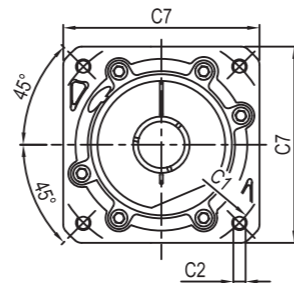
外形尺寸图表 / OUTLINE DIMENSION SHEET

AEP090-L1

输出端 / OUTPUT

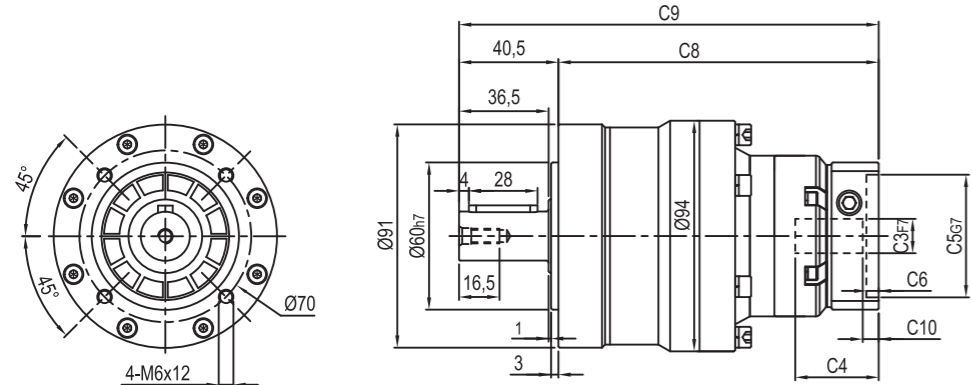


输入端 / INPUT

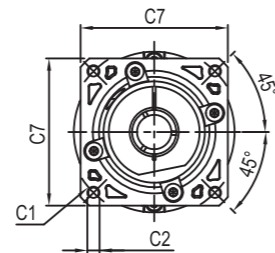


AEP090-L2

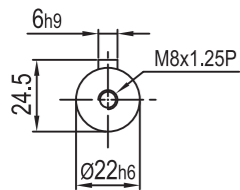
输出端 / OUTPUT



输入端 / INPUT



输出轴径 / Output Diameter



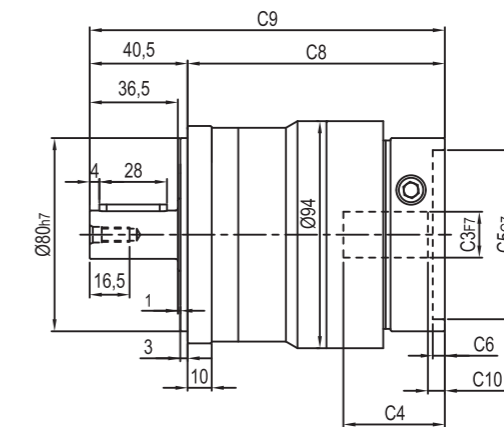
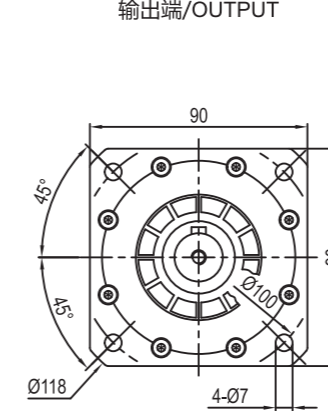
尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
AEP090-L1	Ø90	4-M5x12,4-M6x14	Ø19	42	Ø70	6.5	80	106.5	147	7
	Ø100	4-M6x14	Ø16	42	Ø80	6.5	86	106.5	147	6
AEP090-L1	Ø115	4-M8x20	Ø19,Ø22	56.5	Ø95	8	100	122	162.5	16.5
	Ø145	4-M8x20	Ø19,Ø22,Ø24	59	Ø110	11	130	124.5	165	19
AEP090-L2	Ø66.7	4-M4x10	Ø8	34	Ø38.1	5	60	130.5	171	5.5
	Ø70	4-M4x10,4-M5x12	Ø11,Ø14	34	Ø50	5	60	130.5	171	5.5
AEP090-L2	Ø90	4-M5x12,4-M6x14	Ø19	42	Ø70	6.5	80	137	177.5	12
	Ø100	4-M6x14	Ø16	42	Ø80	6.5	86	137	177.5	11

* C1-C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1-C7are motor(metric standard) specific dimensions, which could be customised.

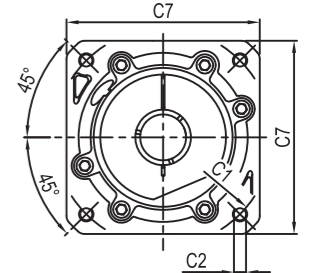
外形尺寸图表 / OUTLINE DIMENSION SHEET

AFP090-L1

输出端 / OUTPUT

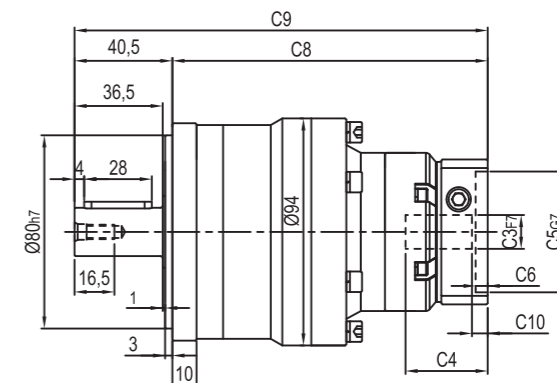
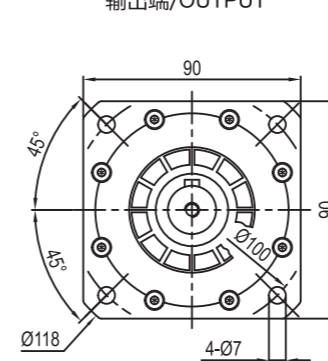


输入端 / INPUT

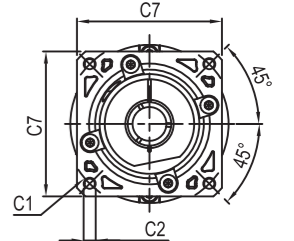


AFP090-L2

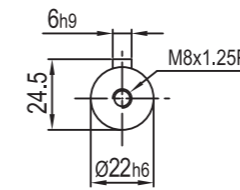
输出端 / OUTPUT



输入端 / INPUT



输出轴径 / Output Diameter



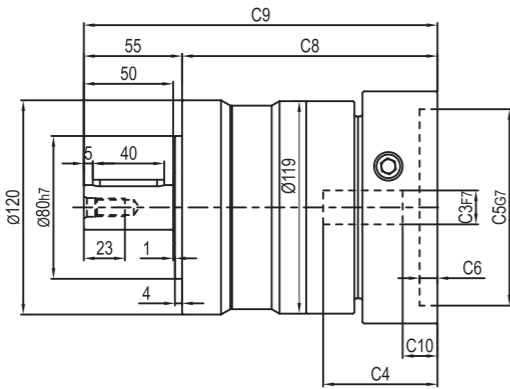
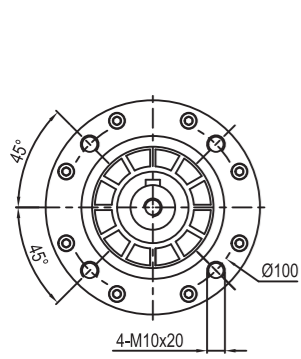
尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
AFP090-L1	Ø90	4-M5x12,4-M6x14	Ø19	42	Ø70	6.5	80	106.5	147	7
	Ø100	4-M6x14	Ø16	42	Ø80	6.5	86	106.5	147	6
	Ø115	4-M8x20	Ø19,Ø22	56.5	Ø95	8	100	122	162.5	16.5
	Ø145	4-M8x20	Ø19,Ø22,Ø24	59	Ø110	11	130	124.5	165	19
AFP090-L2	Ø66.7	4-M4x10	Ø8	34	Ø38.1	5	60	130.5	171	5.5
	Ø70	4-M4x10,4-M5x12	Ø11,Ø14	34	Ø50	5	60	130.5	171	5.5
	Ø90	4-M5x12,4-M6x14	Ø19	42	Ø70	6.5	80	137	177.5	12
	Ø100	4-M6x14	Ø16	42	Ø80	6.5	86	137	177.5	11

* C1-C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1-C7are motor(metric standard) specific dimensions, which could be customised.

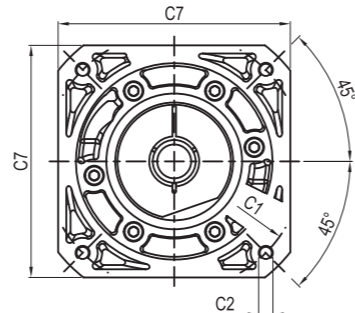
外形尺寸图表 / OUTLINE DIMENSION SHEET

AEP115-L1

输出端 / OUTPUT

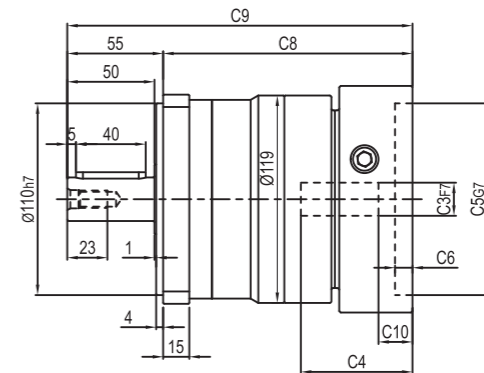
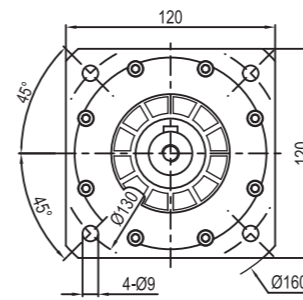


输入端 / INPUT

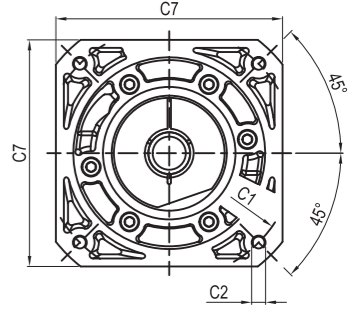


AFP115-L1

输出端 / OUTPUT

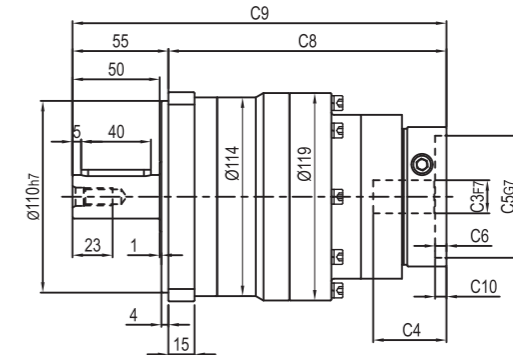
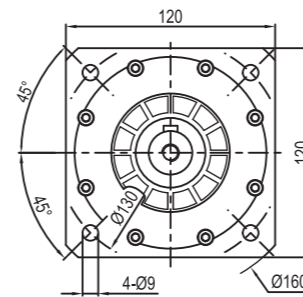


输入端 / INPUT

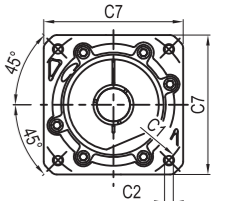


AFP115-L2

输出端 / OUTPUT

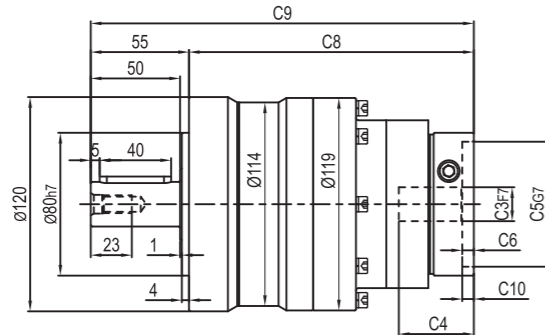
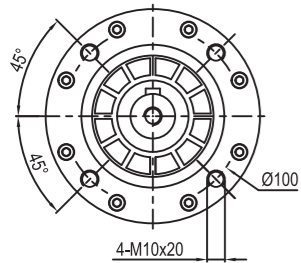


输入端 / INPUT

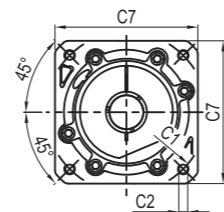


AEP115-L2

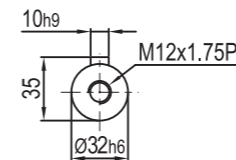
输出端 / OUTPUT



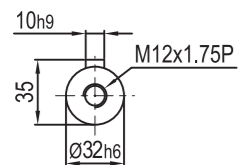
输入端 / INPUT



输出轴径 / Output Diameter



输出轴径 / Output Diameter



尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
AEP115-L1	Ø145	4-M8x20	Ø19,Ø22,Ø24	64	Ø110	10	130	143	198	19.5
	Ø200	4-M12x28	Ø35	81	Ø114.3	10	180	160.5	215.5	28
AEP115-L2	Ø90	4-M5x12, 4-M6x14	Ø19	42	Ø70	6.5	80	159.5	214.5	7
	Ø100	4-M6x14	Ø16	42	Ø80	6.5	86	159.5	214.5	6
	Ø115	4-M8x20	Ø19,Ø22	56.5	Ø95	8	100	175	230	16.5
	Ø145	4-M8x20	Ø19,Ø22,Ø24	59	Ø110	11	130	177.5	232.5	19

* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。

* C1~C7are motor(metric standard) specific dimensions, which could be customised.

尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
AFP115-L1	Ø145	4-M8x20	Ø19,Ø22,Ø24	64	Ø110	10	130	143	198	19.5
AFP115-L1	Ø200	4-M12x28	Ø35	81	Ø114.3	10	180	160.5	215.5	28
AFP115-L2	Ø90	4-M5x12, 4-M6x14	Ø19	42	Ø70	6.5	80	159.5	214.5	7
	Ø100	4-M6x14	Ø16	42	Ø80	6.5	86	159.5	214.5	6
AFP115-L2	Ø115	4-M8x20	Ø19,Ø22	56.5	Ø95	8	100	175	230	16.5
	Ø145	4-M8x20	Ø19,Ø22,Ø24	59	Ø110	11	130	177.5	232.5	19

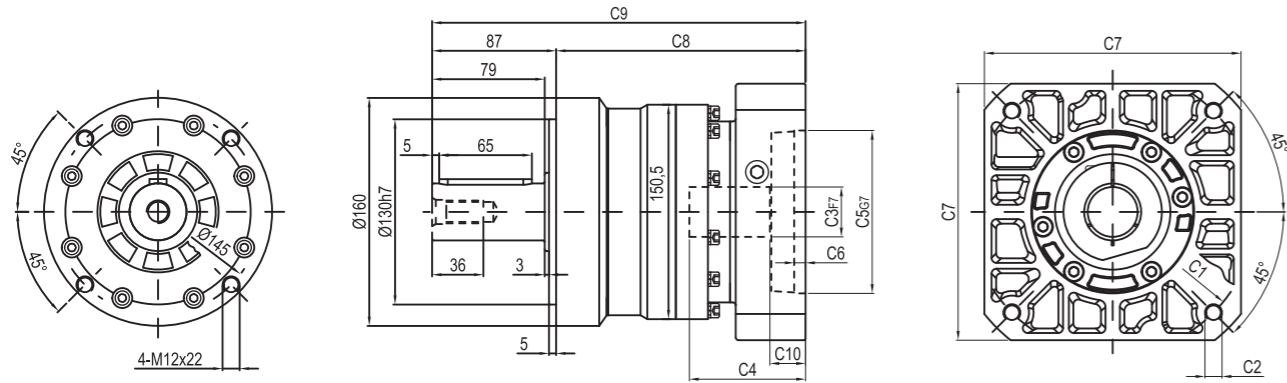
* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。

* C1~C7are motor(metric standard) specific dimensions, which could be customised.

外形尺寸图表 / OUTLINE DIMENSION SHEET

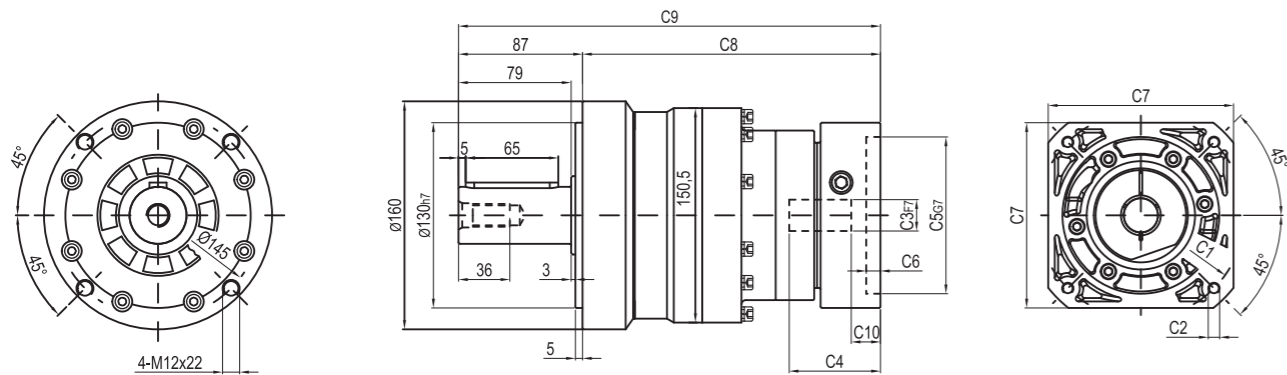
AEP160-L1

输出端 / OUTPUT

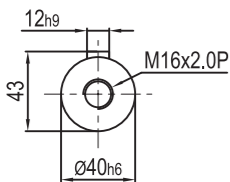


AEP160-L2

输出端 / OUTPUT



输出轴径 / Output Diameter



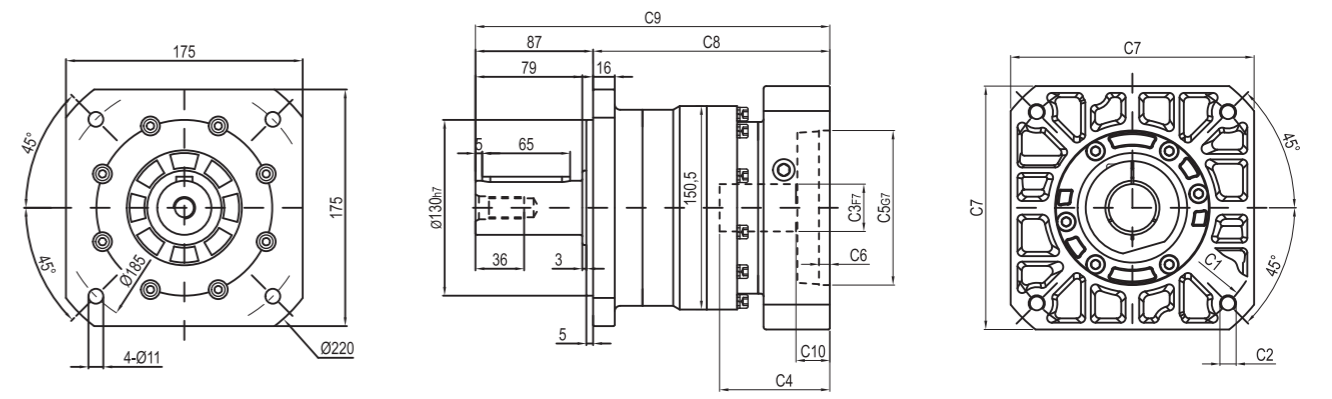
尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
AEP160-L1	$\varnothing 145$	4-M8x20	$\varnothing 22, \varnothing 24$	72	$\varnothing 110$	11	130	165	252	19.5
AEP160-L1	$\varnothing 200$	4-M12x28	$\varnothing 35$	81.5	$\varnothing 114.3$	8	180	175	262	25
AEP160-L2	$\varnothing 145$	4-M8x20	$\varnothing 19, \varnothing 22, \varnothing 24$	64	$\varnothing 110$	10	130	209	296	19.5
AEP160-L2	$\varnothing 200$	4-M12x28	$\varnothing 35$	81	$\varnothing 114.3$	10	180	226.5	313.5	28

* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7are motor(metric standard) specific dimensions, which could be customised.

外形尺寸图表 / OUTLINE DIMENSION SHEET

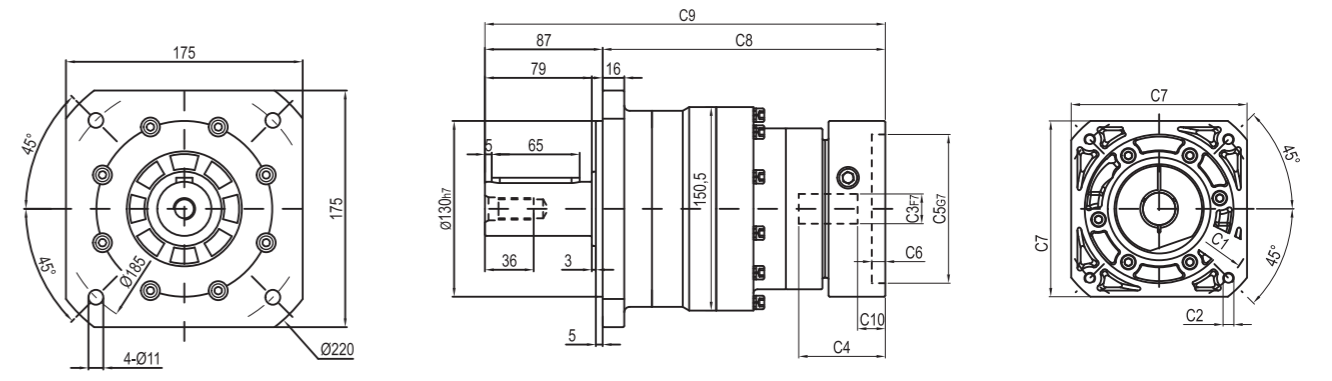
AFP160-L1

输出端 / OUTPUT

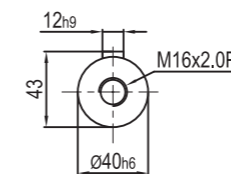


AFP160-L2

输出端 / OUTPUT



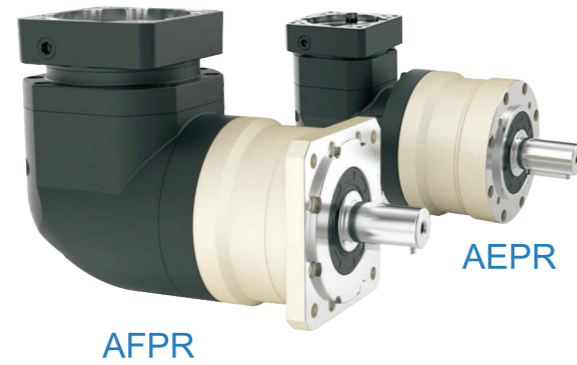
输出轴径 / Output Diameter



尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
AFP160-L1	$\varnothing 145$	4-M8x20	$\varnothing 22, \varnothing 24$	72	$\varnothing 110$	11	130	165	252	19.5
AFP160-L1	$\varnothing 200$	4-M12x28	$\varnothing 35$	81.5	$\varnothing 114.3$	8	180	175	262	25
AFP160-L2	$\varnothing 145$	4-M8x20	$\varnothing 19, \varnothing 22, \varnothing 24$	64	$\varnothing 110$	10	130	209	296	19.5
AFP160-L2	$\varnothing 200$	4-M12x28	$\varnothing 35$	81	$\varnothing 114.3$	10	180	226.5	313.5	28

* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7are motor(metric standard) specific dimensions, which could be customised.

型号说明 / MODEL ILLUMINATE



型号定义 / MODEL ILLUMINATE

AEPR060 - **10** - **S3** - **马达**

减速机型式：
AEPR060/AFPR060/AEPR090/AFPR090
AEPR115/AFPR115/AEPR160/AFPR160

背隙

马达型号：
1-马达制造商及型号
2-马达安装尺寸

减速比：单级(L1)：3,4,5,6,7,8,10,14,20
双级(L2)：12,15,20,25,30,35,40,50,60,70,80,100,120,140,160,200

选用范例：AEPR060-10-S3-MHMD-042G1U

型号定义② AEPR060-10-S3-50*3/14*30/70/M4
LB*LE S*LR LA LZ

减速机性能资料 / GEAR BOX PERFORMANCE INFORMATION

规格	级数	减速比 ¹	AEPR060 AFPR060	AEPR090 AFPR090	AEPR115 AFPR115	AEPR160 AFPR160	
额定输出力矩T _{2N}	1	3	55	130	208	342	
		4	50	140	290	542	
		5	60	160	330	650	
		6	55	150	310	600	
		7	50	140	300	550	
		8	50	140	290	542	
		10	60	160	330	650	
		14	50	140	300	550	
		定货时备注L1级	20	40	100	230	450
		12	55	130	208	342	
	15	55	130	208	342		
	20	50	140	290	542		
	25	60	160	330	650		
	30	55	130	208	342		
	35	60	160	330	650		
	40	50	140	290	542		
	50	60	160	330	650		
	60	55	150	310	600		
	70	60	160	330	650		
	80	50	140	290	542		
100	60	160	330	650			
120	-	150	310	600			
140	-	140	300	550			
160	-	120	260	500			
200	-	100	230	450			
最大输出力矩T _{2B}	Nm	1,2	3倍额定输出力矩				
额定输入转速n ₁	rpm	1,2	5,000	4,000	4,000	3,000	
最大输入转速n _{1B}	rpm	1,2	10,000	8,000	8,000	6,000	
背隙S3	arcmin	1	3~20	≤13	≤13	≤13	
		2	12~200	≤15	≤15	≤15	
扭转刚性	Nm/arcmin	1,2	3~200	7	14	25	
容许径向力F _{2rB} ²	N	1,2	3~200	1,530	3,250	6,700	
容许轴向力F _{2a1B} ²	N	1,2	3~200	630	1,300	3,000	
容许轴向力F _{2a2B} ²	N	1,2	3~200	765	1,625	3,350	
使用寿命	hr	1,2	3~200				
效率η	%	1	3~20				
		2	12~200				
重量	kg	1	3~20	2.1	6.4	13	
		2	12~200	2.5	7.8	14.2	
使用温度	°C	1,2	3~200				
润滑		1,2	3~200				
防护等级		1,2	3~200				
安装方向		1,2	3~200				
噪音值 (n ₁ =3000rpm)	dB	1,2	3~200	≤63	≤65	≤68	

减速机转动惯量

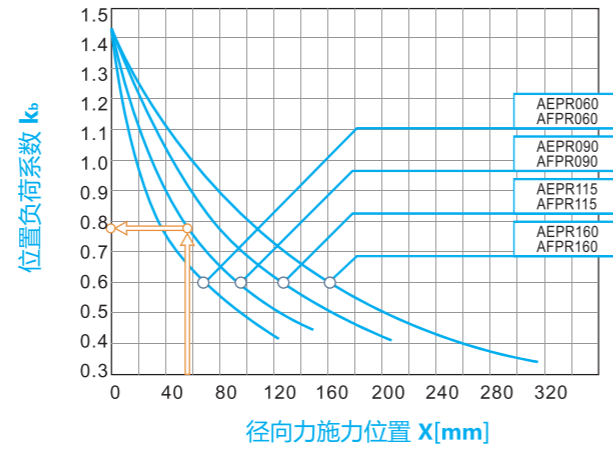
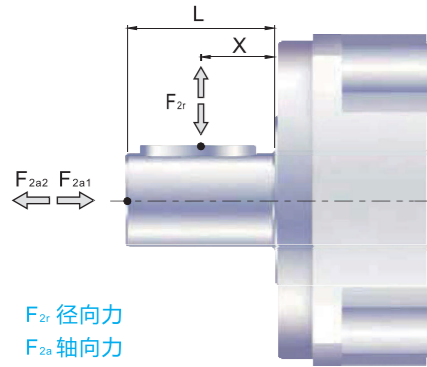
规格	级数	减速比 ¹	AEPR060 AFPR060	AEPR090 AFPR090	AEPR115 AFPR115	AEPR160 AFPR160
转动惯量J _i	1	3~7	0.35	2.25	6.84	23.4
		8~10	0.07	1.87	6.25	21.8
		14~20	0.07	1.87	6.25	21.8
	2	12~40	0.09	0.35	2.25	6.84
		50	0.09	0.31	1.87	6.25
		60	0.09	0.35	2.25	6.84
		70~100	0.09	0.31	1.87	6.25
		120~200	-	0.31	1.87	6.25

1.减速比 (i=N_{in}/N_{out})
* 连续运转降低使用寿命二分之一。

2.输出转速 100rpm 时，作用于输出轴中心位置。

减速机输出轴之容许径向力及轴向力

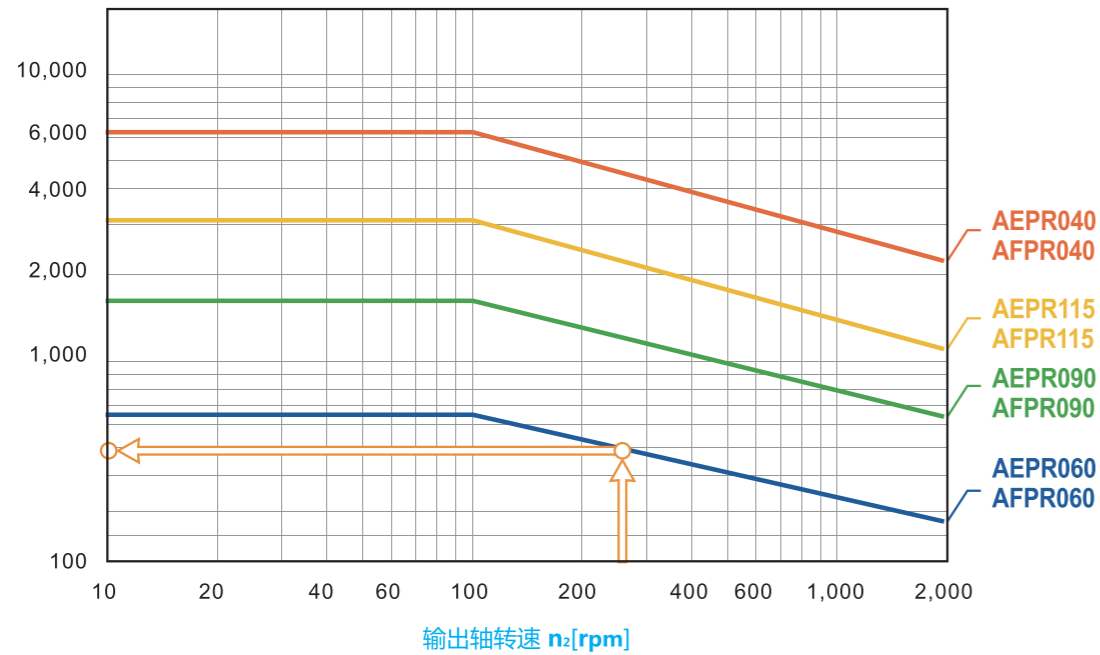
REDUCER OUTPUT SHAFT OF THE PERMISSIBLE RADIAL FORCE AND SHAFT AND FORCE



减速机输出轴所能承受之最大径向力及轴向力,端视内部支撑轴承之设计。

当径向力 F_{2r} 施力不在轴中心位置,越靠近减速机即 $X < 1/2 \times L$,所能承受之容许径向力变大;越远离减速机即 $X > 1/2 \times L$,所能承受之容许径向力变小。藉由上图,依减速机规格及径向施力位置 X ,可查出位置负荷系数 k_b 。

容许径向力 F_{2rB} [N] 施力于轴中心位置



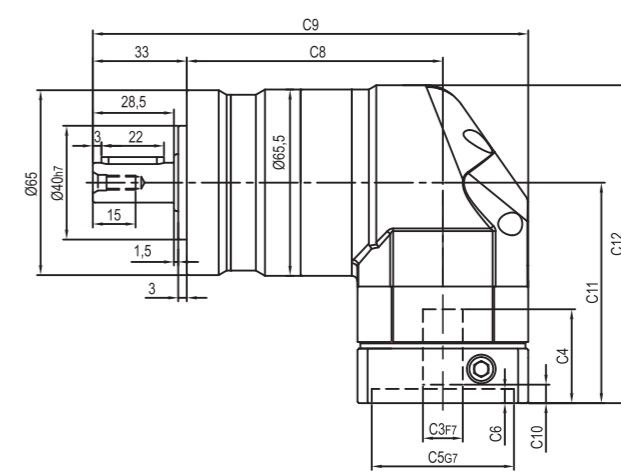
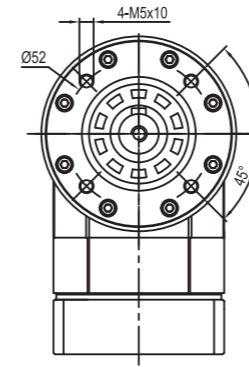
当径向力 F_{2r} 施力于轴中心位置,即 $X=1/2 \times L$ 时,不同之减速机在不同输出转速运用下,使用寿命为20,000*小时,所能承受之容许径向力,请参照上图。

*连续运转(S1)下之使用寿命降低50%。

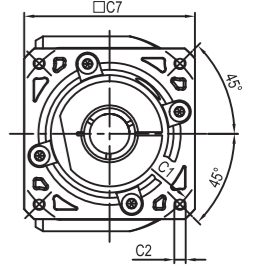
外形尺寸图表 / OUTLINE DIMENSION SHEET

AEPR060-L1

输出端 / OUTPUT

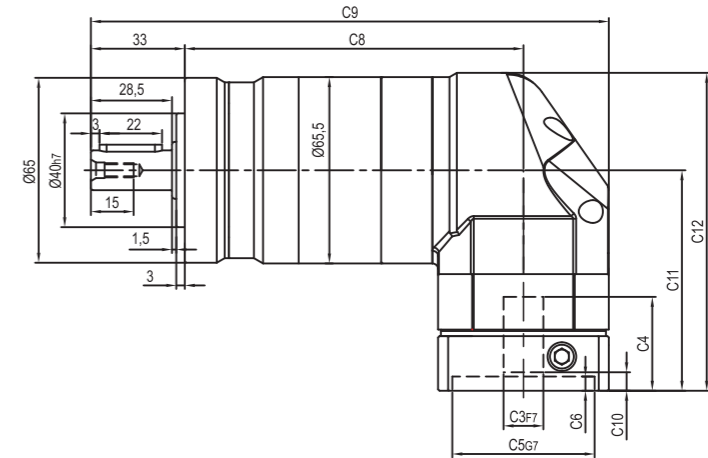
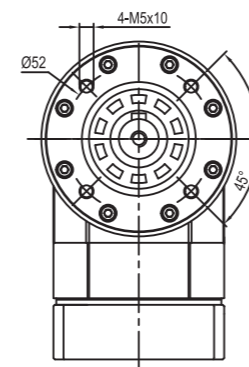


输入端 / INPUT

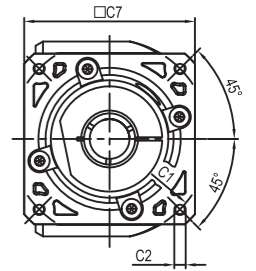


AEPR060-L2

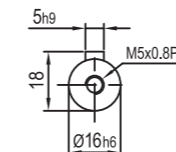
输出端 / OUTPUT



输入端 / INPUT



输出轴径 / Output Diameter



尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
AEPR060-L1	Ø66.7	4-M4x10	Ø6.35, Ø8	33	Ø38.1	5	60	90	153	5.5	77.5	111.75
AEPR060-L2	Ø70	4-M4x10, 4-M5x12	Ø11, Ø14	33	Ø50	5	60	119	182	5.5	77.5	111.75
AEPR060-L1	Ø90	4-M5x12, 4-M6x14	Ø19	42.5	Ø70	6.5	80	90	163	12	87	121.25
AEPR060-L2	Ø90	4-M5x12, 4-M6x14	Ø19	42.5	Ø70	6.5	80	119	192	12	87	121.25

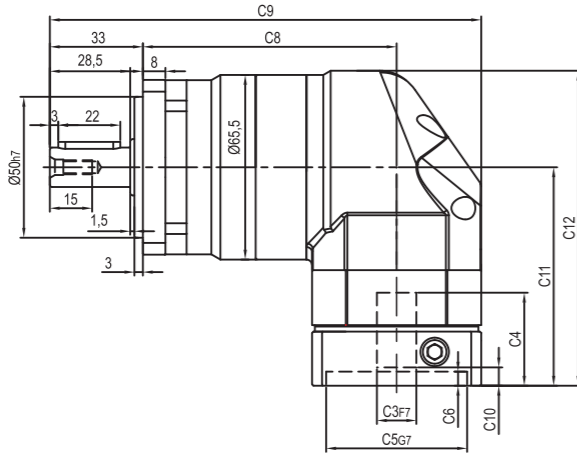
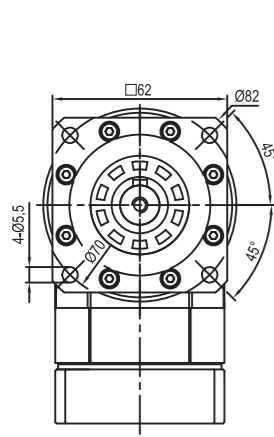
* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。

* C1~C7are motor(metric standard) specific dimensions, which could be customised.

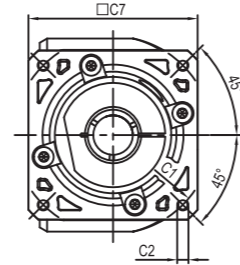
外形尺寸图表 / OUTLINE DIMENSION SHEET

AFPR060-L1

输出端 / OUTPUT

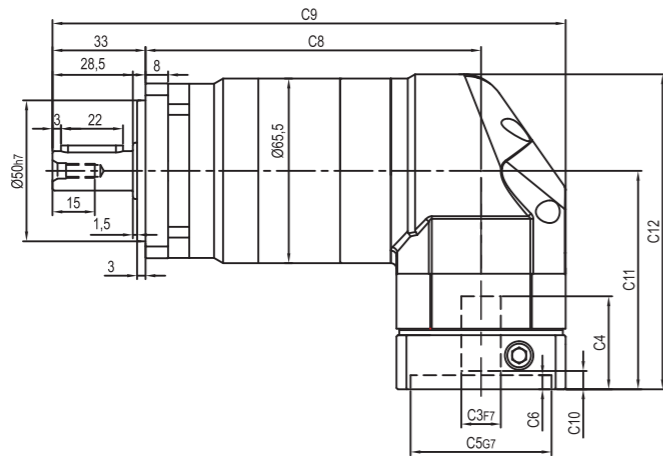
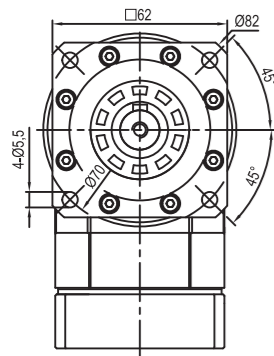


输入端 / INPUT

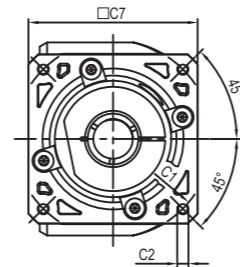


AFPR060-L2

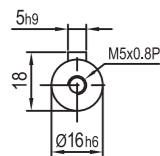
输出端 / OUTPUT



输入端 / INPUT



输出轴径 / Output Diameter



尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
AFPR060-L1	Ø66.7	4-M4x10	Ø6.35, Ø8	33	Ø38.1	5	60	90	153			
AFPR060-L2	Ø70	4-M4x10, 4-M5x12	Ø11, Ø14	33	Ø50	5	60	119	182	5.5	77.5	111.75
AFPR060-L1	Ø90	4-M5x12, 4-M6x14	Ø19	42.5	Ø70	6.5	80	90	163	12	87	121.25
AFPR060-L2	Ø90	4-M5x12, 4-M6x14	Ø19	42.5	Ø70	6.5	80	119	192			

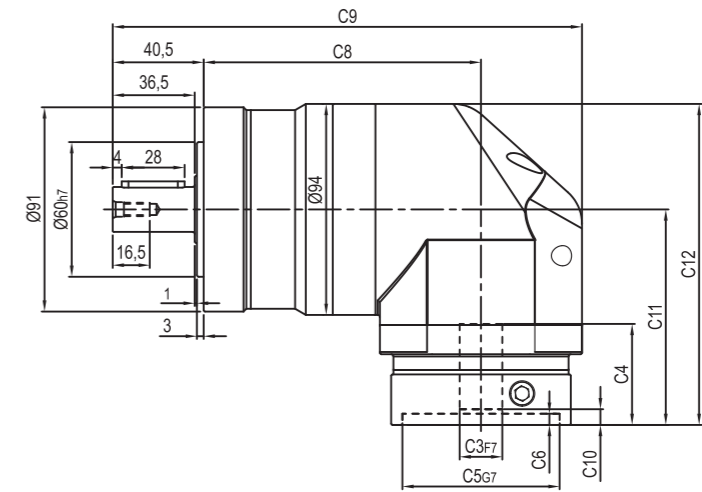
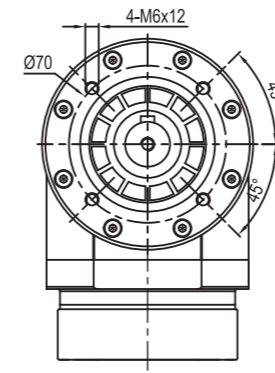
* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。

* C1~C7are motor(metric standard) specific dimensions, which could be customised.

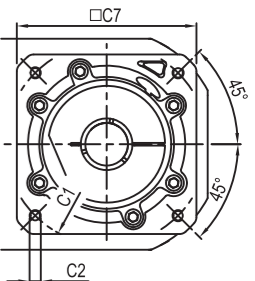
外形尺寸图表 / OUTLINE DIMENSION SHEET

AEPR090-L1

输出端 / OUTPUT

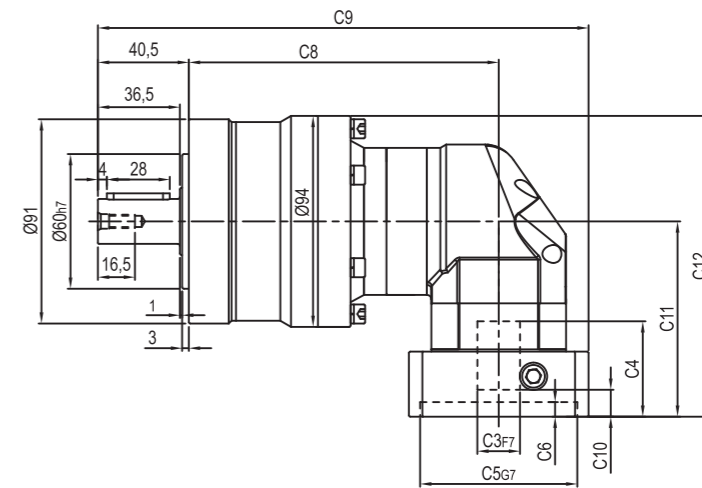
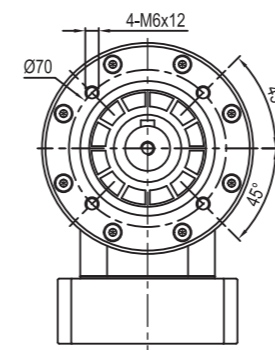


输入端 / INPUT

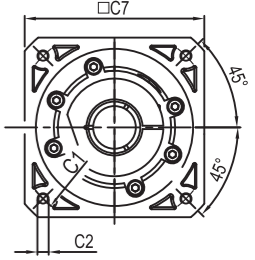


AEPR090-L2

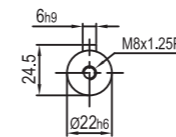
输出端 / OUTPUT



输入端 / INPUT



输出轴径 / Output Diameter



尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
AEPR090-L1	Ø90	4-M5x12, 4-M6x14	Ø19	45	Ø70	6.5	80	123.5	209	7	96	143
	Ø100	4-M6x14	Ø16	45	Ø80	6.5	86	123.5	209	6	96	143
	Ø115	4-M8x20	Ø19, Ø22	56.5	Ø95	8	100	123.5	214	16.5	117.5	164.5
	Ø145	4-M8x20	Ø19, Ø22, Ø24	59	Ø110	11	130	123.5	229	19	120	167
AEPR090-L2	Ø66.7	4-M4x10	Ø8	33	Ø38.1	5	60	138	208.5	5.5	77.5	124.5
	Ø70	4-M4x10, 4-M5x12	Ø11, Ø14	33	Ø50	5	60	138	208.5	5.5	77.5	124.5
	Ø90	4-M5x12, 4-M6x14	Ø19	42.5	Ø70	6.5	80	138	218.5	12	87	134
	Ø100	4-M6x14	Ø16	42.5	Ø80	6.5	86	138	221.5	11	87	134

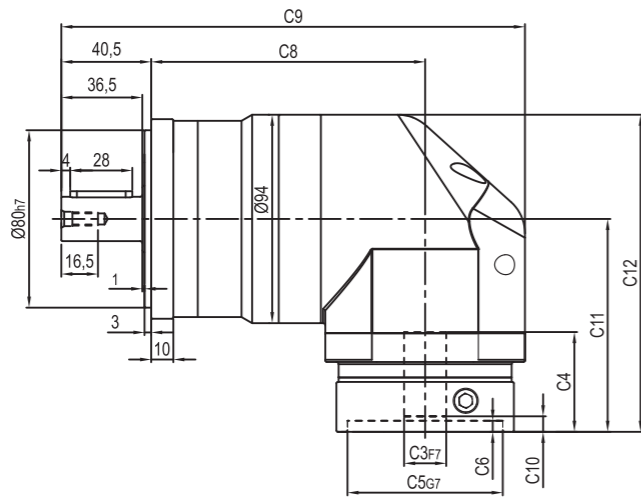
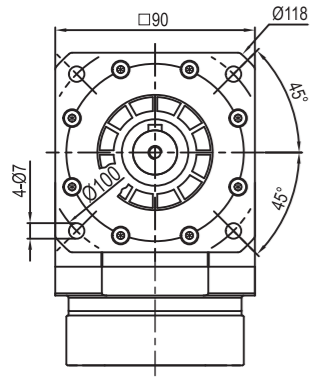
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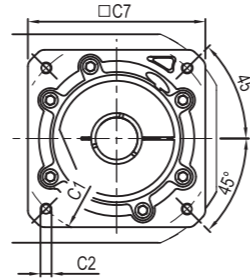
外形尺寸图表 / OUTLINE DIMENSION SHEET

AFPR090-L1

输出端 / OUTPUT

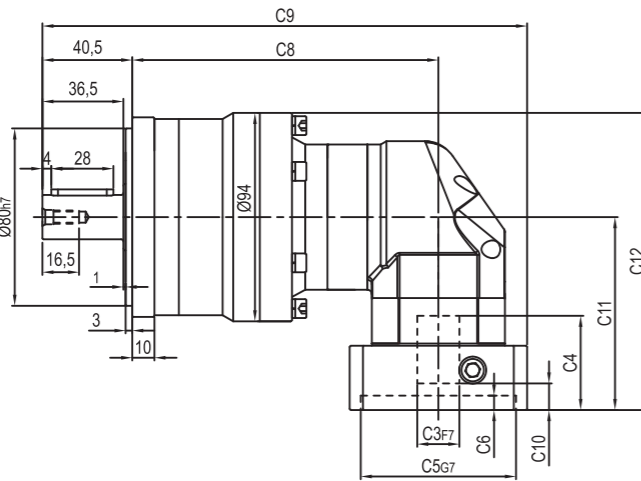
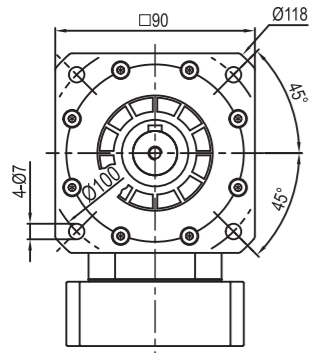


输入端 / INPUT

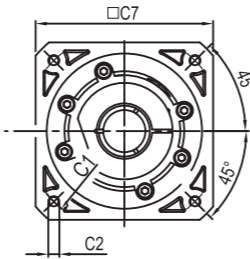


AFPR090-L2

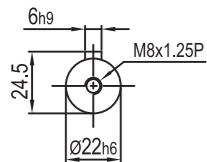
输出端 / OUTPUT



输入端 / INPUT



输出轴径/Output Diameter



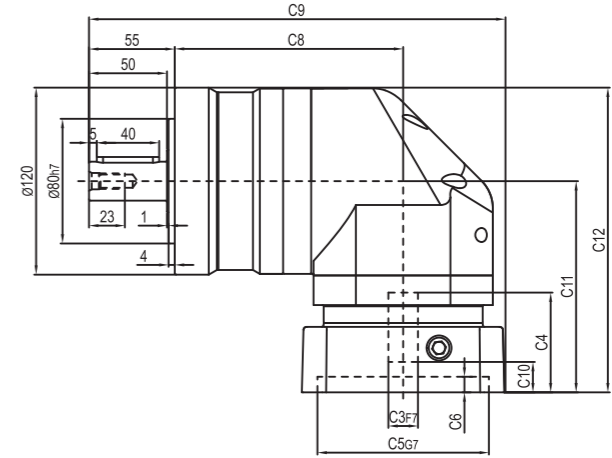
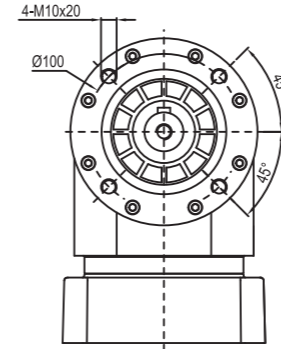
尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
AFPR090-L1	Ø90	4-M5x12,4-M6x14	Ø19	45	Ø70	6.5	80	123.5	209	7	96	143
	Ø100	4-M6x14	Ø16	45	Ø80	6.5	86	123.5	209	6	96	143
	Ø115	4-M8x20	Ø19,Ø22	56.5	Ø95	8	100	123.5	214	16.5	117.5	164.5
AFPR090-L2	Ø66.7	4-M4x10	Ø8	33	Ø38.1	5	60	138	208.5	5.5	77.5	124.5
	Ø70	4-M4x10,4-M5x12	Ø11,Ø14	33	Ø50	5	60	138	208.5	5.5	77.5	124.5
	Ø90	4-M5x12,4-M6x14	Ø19	42.5	Ø70	6.5	80	138	218.5	12	87	134
	Ø100	4-M6x14	Ø16	42.5	Ø80	6.5	86	138	221.5	11	87	134

* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7are motor(metric standard) specific dimensions, which could be customised.

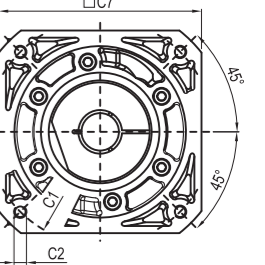
外形尺寸图表 / OUTLINE DIMENSION SHEET

AEPR115-L1

输出端 / OUTPUT

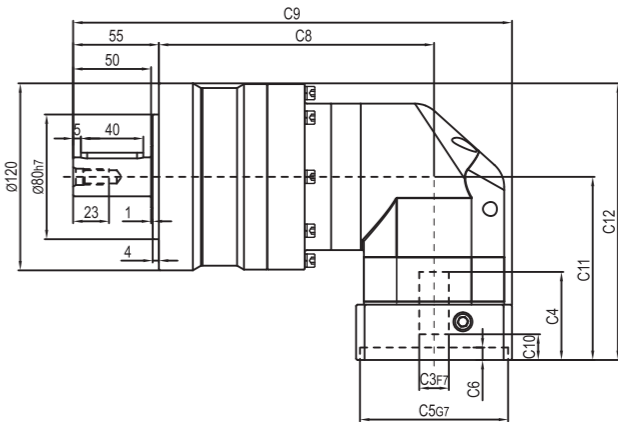
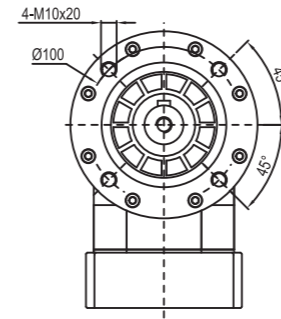


输入端 / INPUT

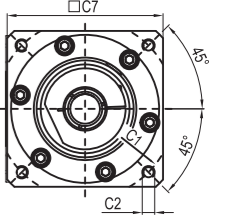


AEPR115-L2

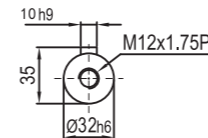
输出端 / OUTPUT



输入端 / INPUT



输出轴径/Output Diameter



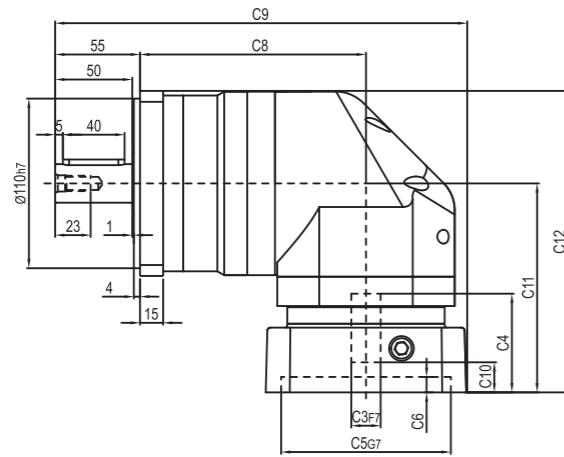
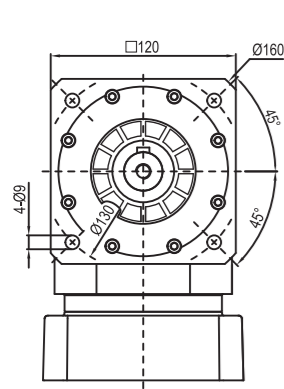
尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
AEPR115-L1	Ø145	4-M8x20	Ø19,Ø22,Ø24	64	Ø110	10	130	146.5	266.5	19.5	135.5	195.5
	Ø200	4-M12x28	Ø35	81	Ø114.3	10	180	146.5	291.5	28	152.5	212.5
AEPR115-L2	Ø90	4-M5x12,4-M6x14	Ø19	45	Ø70	6.5	80	176.5	276.5	7	96	156
	Ø100	4-M6x14	Ø16	45	Ø80	6.5	86	176.5	276.5	6	96	156
	Ø115	4-M8x20	Ø19,Ø22	56.5	Ø95	8	100	176.5	281.5	16.5	117.5	177.5
	Ø145	4-M8x20	Ø19,Ø22,Ø24	59	Ø110	11	130	176.5	296.5	19	120	180

* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7are motor(metric standard) specific dimensions, which could be customised.

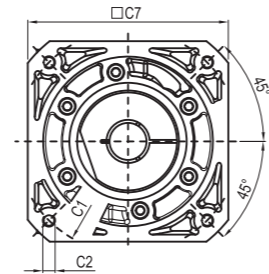
外形尺寸图表 / OUTLINE DIMENSION SHEET

AFPR115-L1

输出端 / OUTPUT

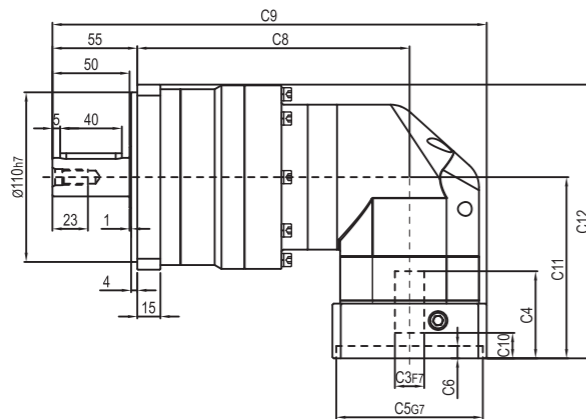
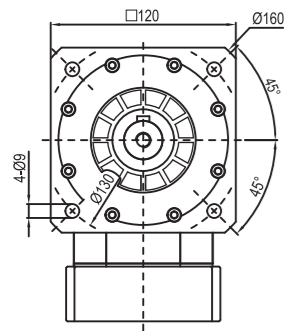


输入端 / INPUT

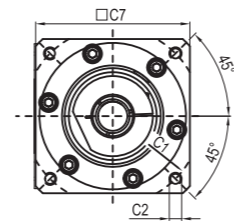


AFPR115-L2

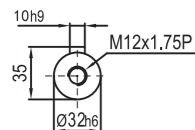
输出端 / OUTPUT



输入端 / INPUT



输出轴直径/Output Diameter



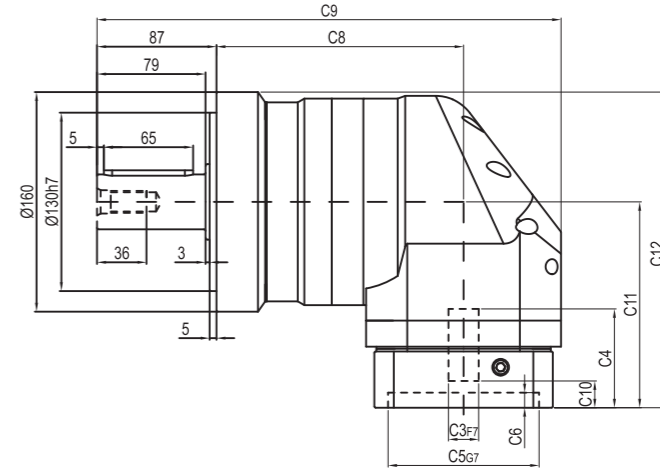
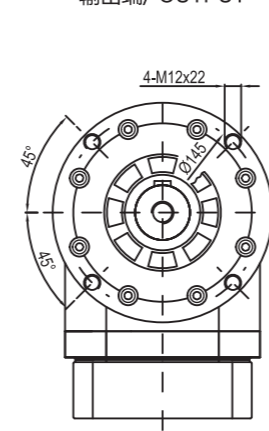
尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
AFPR115-L1	Ø145	4-M8x20	Ø19,Ø22,Ø24	64	Ø110	10	130	146.5	266.5	19.5	135.5	195.5
	Ø200	4-M12x28	Ø35	81	Ø114.3	10	180	146.5	291.5	28	152.5	212.5
AFPR115-L2	Ø90	4-M5x12,4-M6x14	Ø19	45	Ø70	6.5	80	176.5	276.5	7	96	156
	Ø100	4-M6x14	Ø16	45	Ø80	6.5	86	176.5	276.5	6	96	156
	Ø115	4-M8x20	Ø19,Ø22	56.5	Ø95	8	100	176.5	281.5	16.5	117.5	177.5
	Ø145	4-M8x20	Ø19,Ø22,Ø24	59	Ø110	11	130	176.5	296.5	19	120	180

* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7are motor(metric standard) specific dimensions, which could be customised.

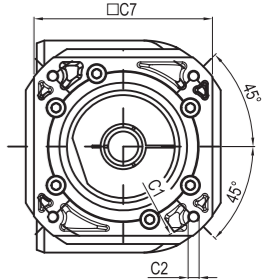
外形尺寸图表 / OUTLINE DIMENSION SHEET

AEPR160-L1

输出端 / OUTPUT

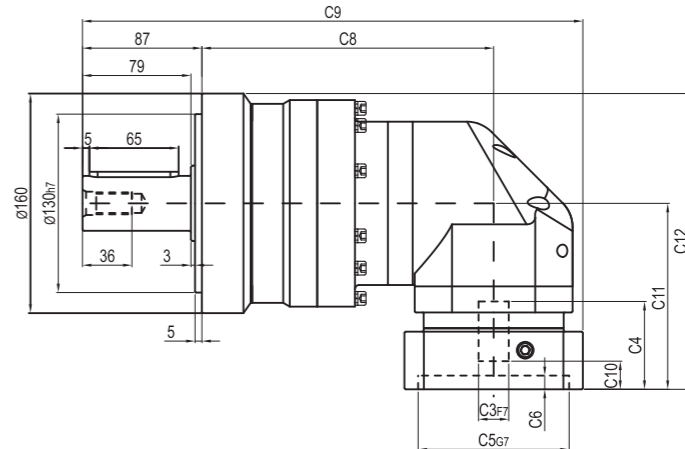
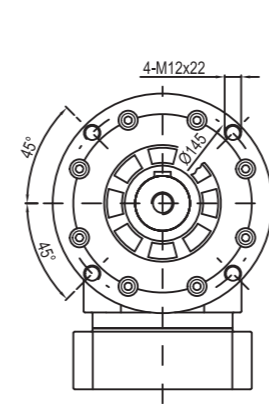


输入端 / INPUT

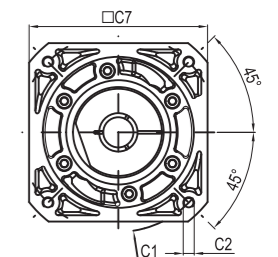


AEPR160-L2

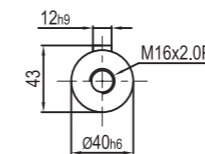
输出端 / OUTPUT



输入端 / INPUT



输出轴直径/Output Diameter



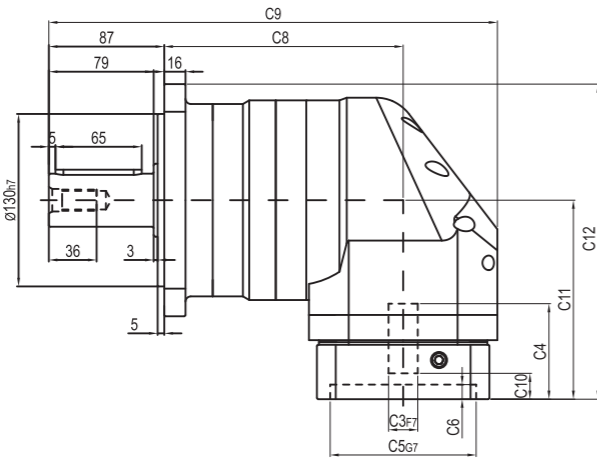
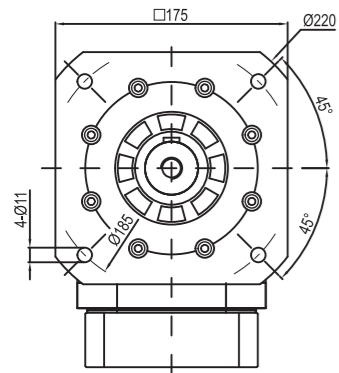
尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
AEPR160-L1	Ø145	4-M8x20	Ø22,Ø24	72	Ø110	11	130	180	338	19.5	150	230
	Ø200	4-M12x28	Ø35	82	Ø114.3	8	180	180	357	25	160	240
AEPR160-L2	Ø145	4-M8x20	Ø19,Ø22,Ø24	64	Ø110	10	130	212.5	364.5	19.5	135.5	215.5
	Ø200	4-M12x28	Ø35	81	Ø114.3	10	180	212.5	389.5	28	152.5	232.5

* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7are motor(metric standard) specific dimensions, which could be customised.

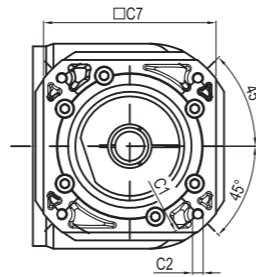
外形尺寸图表 / OUTLINE DIMENSION SHEET

AFPR160-L1

输出端 / OUTPUT

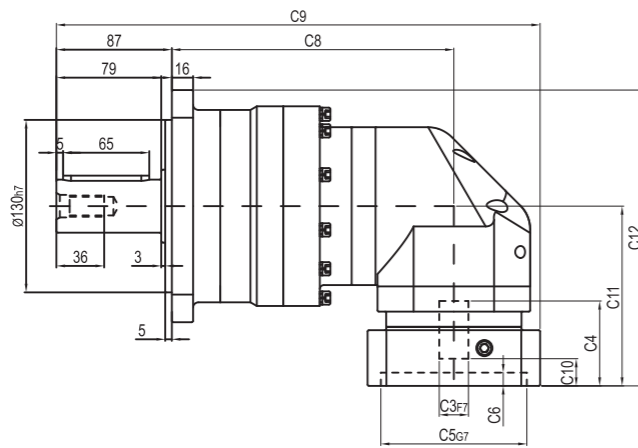
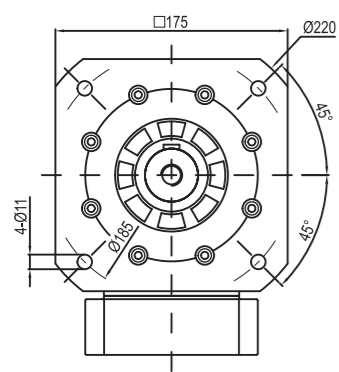


输入端 / INPUT

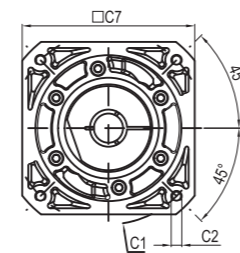


AFPR160-L2

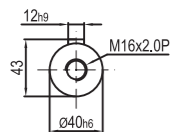
输出端 / OUTPUT



输入端 / INPUT



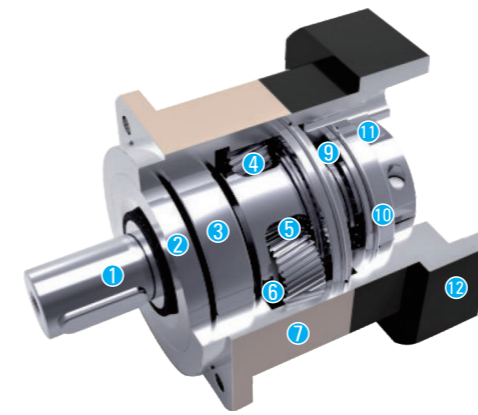
输出轴径 / Output Diameter



尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
AFPR160-L1	Ø145	4-M8x20	Ø22, Ø24	72	Ø110	11	130	180	338	19.5	150	237.5
	Ø200	4-M12x28	Ø35	82	Ø114.3	8	180	180	357	25	160	247.5
AFPR160-L2	Ø145	4-M8x20	Ø19, Ø22, Ø24	64	Ø110	10	130	212.5	364.5	19.5	135.5	223
	Ø200	4-M12x28	Ø35	81	Ø114.3	10	180	212.5	389.5	28	152.5	240

* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。

* C1~C7are motor(metric standard) specific dimensions, which could be customised.



- ① 输出轴 Output shaft
- ② 油封 Oil seal
- ③ 输出轴前轴承 Output shaft front bearing
- ④ 行星轮 Planetary gear
- ⑤ 太阳轮 Solar wheel
- ⑥ 满针轴承 Full needle bearing
- ⑦ 前盖 Front cover
- ⑧ 输出轴后轴承 Output shaft rear bearing
- ⑨ 油封 Oil seal
- ⑩ 联轴器 Coupling
- ⑪ 锁紧环 Lock ring
- ⑫ 后盖 rear cover

型号定义 / MODEL ILLUMINATE

GAB060 - 10 - K□ / 马达

减速机型式:

GAB060/GAB090/GAB115
GAB142/GAB180/GAB220

马达型号:

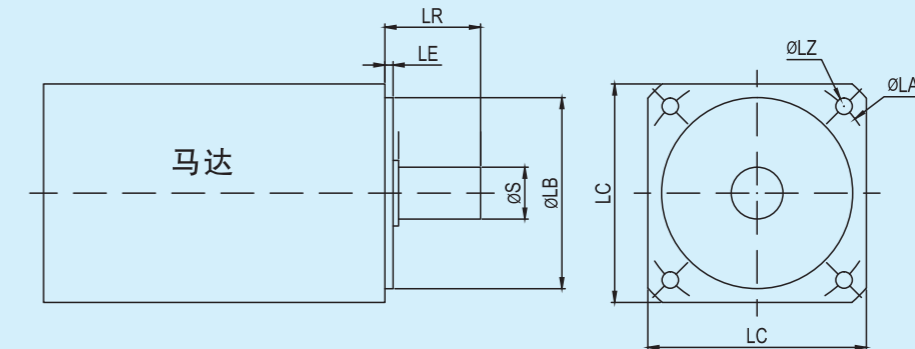
1-马达制造商及型号
2-马达安装尺寸

减速比: 单级(L1): 3, 4, 5, 6, 7, 8, 10
双级(L2): 12, 15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 100

背隙: K1: 超精密背隙
K3: 精密背隙
K5: 标准背隙

型号定义① GAB060-10-K□-/MHMD-042G1U

型号定义② GAB060-10-K□-50*3/14*30/70/M4
LB*LE S*LR LA LZ



减速机性能资料 / GEAR BOX PERFORMANCE INFORMATION

规格	级数	减速比 ¹	GAB042	GAB060	GAB090	GAB115	GAB142	GAB180	GAB220	
额定输出力矩T _{2B}	1	3	20	55	130	208	342	588	1,140	
		4	19	50	140	290	542	1,050	1,700	
		5	22	60	160	330	650	1,200	2,000	
		6	20	55	150	310	600	1,100	1,900	
		7	19	50	140	300	550	1,100	1,800	
		8	17	45	120	260	500	1,000	1,600	
	2	10	14	40	100	230	450	520	1,220	
		12	20	55	130	208	342	588	1,140	
		15	20	55	130	208	342	588	1,140	
		20	19	50	140	290	542	1,050	1,700	
		25	22	60	160	330	650	1,200	2,000	
		30	22	55	130	208	342	588	1,140	
		35	22	60	160	330	650	1,200	2,000	
		40	22	50	140	290	542	1,050	1,700	
		50	22	60	160	330	650	1,200	2,000	
		60	20	55	150	310	600	1,100	1,900	
		70	19	50	140	300	550	1,100	1,800	
		80	17	45	120	260	500	1,000	1,600	
100	14	40	100	230	450	520	1,220			
最大输出力矩T _{2B}	Nm	1.2	3~100	3倍额定输出力矩						
额定输入转速n ₁	rpm	1.2	3~100	5,000	5,000	4,000	4,000	3,000	3,000	2,000
最大输入转速n _{1B}	rpm	1.2	3~100	10,000	10,000	8,000	8,000	6,000	6,000	4,000
超精密背隙 K1	arcmin	1	3~10	—	—	≤1	≤1	≤1	≤1	≤1
精密背隙 K3	arcmin	1	3~100	—	—	≤3	≤3	≤3	≤3	≤3
		2	12~100	≤5	≤5	≤5	≤5	≤5	≤5	≤5
标准背隙 K5	arcmin	1	3~10	≤5	≤5	≤5	≤5	≤5	≤5	≤5
		2	12~100	≤7	≤7	≤7	≤7	≤7	≤7	≤7
扭转刚性	Nm/arcmin	1.2	3~100	3	7	14	25	50	145	225
容许径向力F _{2rB} ²	N	1.2	3~100	780	1,530	3,250	6,700	9,400	14,500	50,000
容许轴向力F _{2a1B} ²	N	1.2	3~100	350	630	1,300	3,000	4,000	6,200	35,000
容许轴向力F _{2a2B} ²	N	1.2	3~100	390	765	1,625	3,350	4,700	7,250	25,000
使用寿命	hr	1.2	3~100	20,000*						
效率 η	%	1	3~10	≥97%						
		2	12~100	≥94%						
重量	kg	1	3~10	0.5	1.3	3.7	7.8	14.5	29	48
		2	12~100	0.8	1.9	4.1	9	17.5	33	60
使用温度	°C	1.2	3~100	-10°C~+90°C						
润滑		1.2	3~100	合成润滑油脂						
防护等级		1.2	3~100	IP65						
安装方向		1.2	3~100	任意方向						
噪音值 (n ₁ =3000rpm)	dB	1.2	3~100	≤56	≤58	≤60	≤63	≤65	≤67	≤70

减速机转动惯量

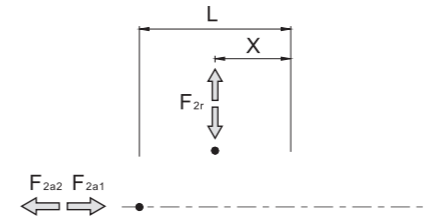
规格	级数	减速比 ¹	GAB042	GAB060	GAB090	GAB115	GAB142	GAB180	GAB220
转动惯量J ₁	1	3	0.03	0.16	0.61	3.25	9.21	28.98	69.61
		4	0.03	0.14	0.48	2.74	7.54	23.67	54.37
		5	0.03	0.13	0.47	2.71	7.42	23.29	53.27
		6	0.03	0.13	0.45	2.65	7.25	22.75	51.72
		7	0.03	0.13	0.45	2.62	7.14	22.48	50.97
		8	0.03	0.13	0.44	2.58	7.07	22.59	50.84
	2	10	0.03	0.13	0.44	2.57	7.03	22.51	50.56
		12	0.03	0.03	0.13	0.47	2.71	7.42	23.29
		15	0.03	0.03	0.13	0.47	2.71	7.42	23.29
		20	0.03	0.03	0.13	0.47	2.71	7.42	23.29
		25	0.03	0.03	0.13	0.47	2.71	7.42	23.29
		30	0.03	0.03	0.13	0.47	2.71	7.42	23.29
		35	0.03	0.03	0.13	0.47	2.71	7.42	23.29
		40	0.03	0.03	0.13	0.47	2.71	7.42	23.29
		50	0.03	0.03	0.13	0.44	2.57	7.03	22.51
		60	0.03	0.03	0.13	0.44	2.57	7.03	22.51
		70	0.03	0.03	0.13	0.44	2.57	7.03	22.51
		80	0.03	0.03	0.13	0.44	2.57	7.03	22.51
100	0.03	0.03	0.13	0.44	2.57	7.03	22.51		

1. 减速比 (i=N_{in}/N_{out})
* 连续运转降低使用寿命二分之一。

2. 输出转速 100rpm 时, 作用于输出轴中心位置。

减速机输出轴之容许径向力及轴向力

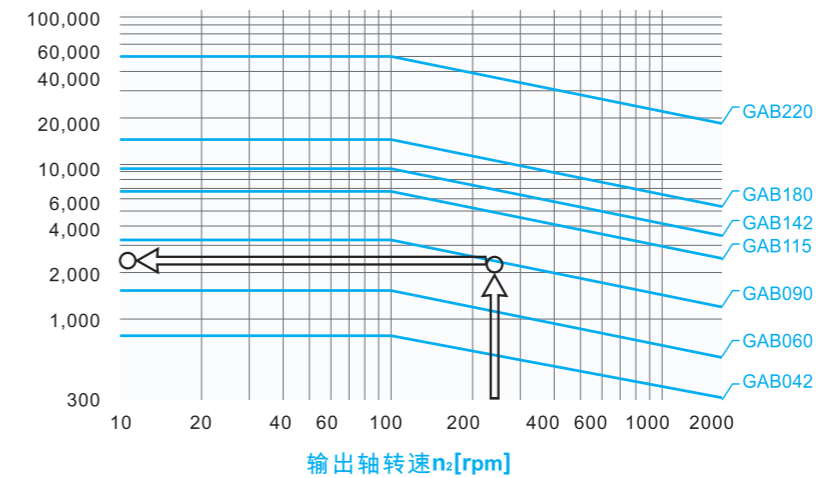
REDUCER OUTPUT SHAFT OF THE PERMISSIBLE RADIAL FORCE AND SHAFT AND FORCE



减速机输出轴所能承受之最大径向力及轴向力。端视内部支撑轴承之设计, 减速机采用大尺寸的轴承及较大跨距的设计, 其能承受更大的径向及轴向负荷。

F_{2r} 径向力
F_{2a} 轴向力

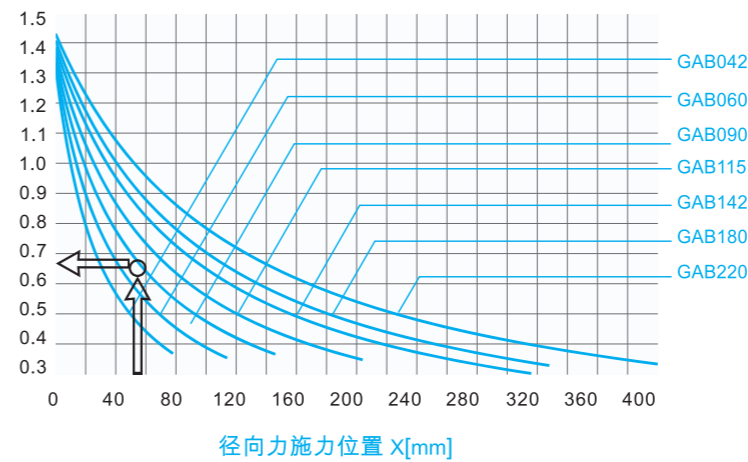
容许径向力 F_{2rB}[N] 施力于轴中心位置



当径向力F_{2r}施力于轴中心位置即X=1/2xL时, 不同规格之减速机在不同输出转速运用下使用寿命为20,000hr*时, 所能承受之容许径向力F_{2rB}, 请参照左图, 而能承受之容许轴向力F_{2aB}, 为

F_{2a1B}=0.2x F_{2rB}
F_{2a2B}=0.1x F_{2rB}

位置负荷系数k_b



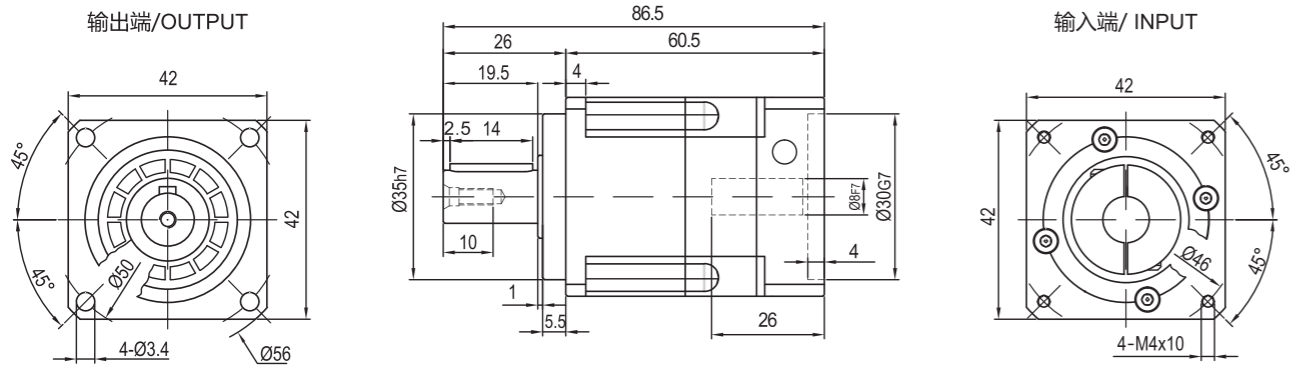
当径向力F_{2r}施力不在轴中心位置时, 越靠近减速机即X < 1/2xL, 所能承受之容许径向力变大, 越远离减速机即X > 1/2xL时, 所能承受之容许径向力则变小, 藉由左图, 依减速机规格及径向力施力位置X, 查出位置负荷系数k_b, 在代入下列公式, 求出容许

径向力:
F_{2rB} = k_b x F_{2rB}
轴向力:
F_{2a1B} = 0.2 x F_{2rB}
F_{2a2B} = 0.1 x F_{2rB}

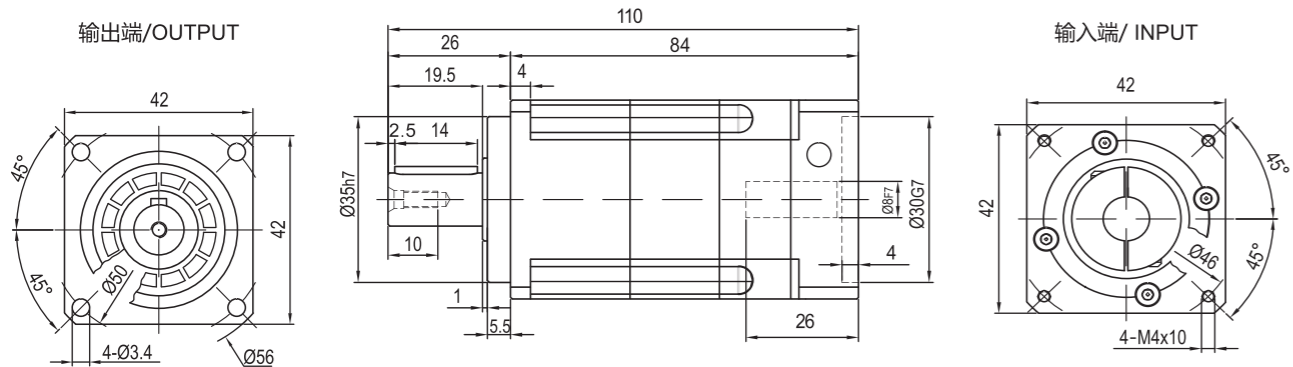
* 连续运转降低使用寿命二分之一。

外形尺寸图表 / OUTLINE DIMENSION SHEET

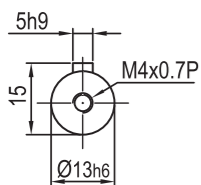
GAB042-L1



GAB042-L2



输出轴径/Output Diameter

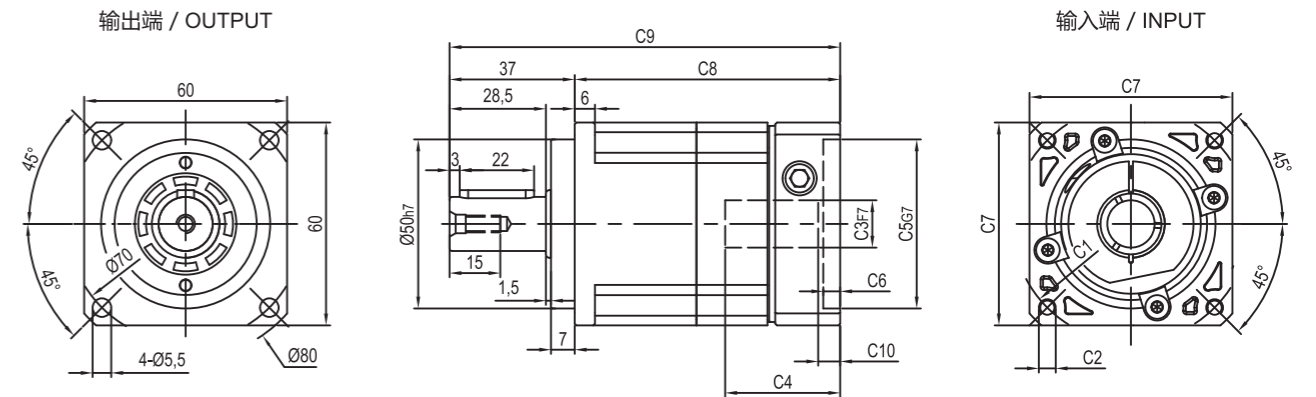


轴型式

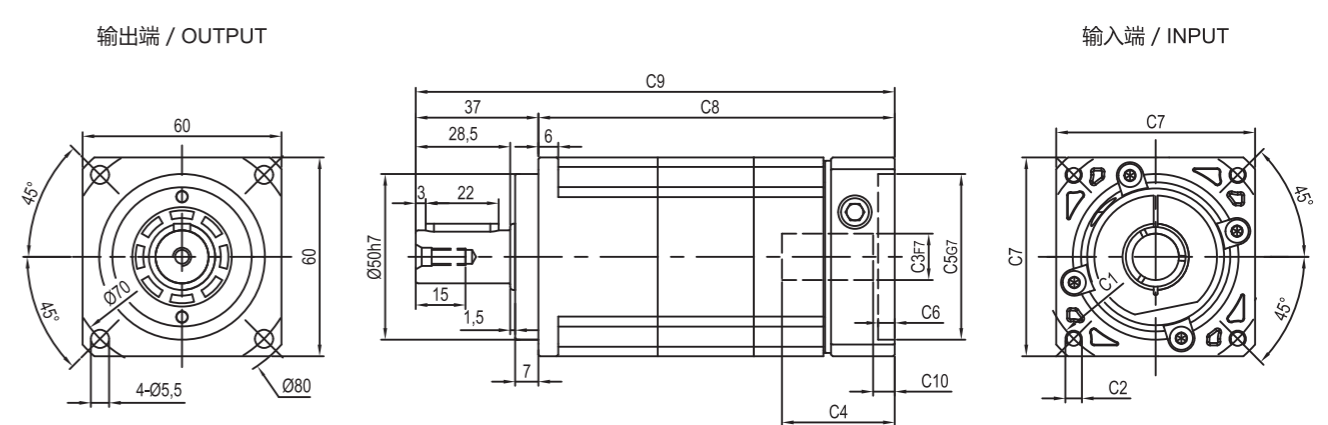
*输入马达连接板之尺寸,可根据客户要求单独定做。
*The input motor specific dimensions could be customised.

外形尺寸图表 / OUTLINE DIMENSION SHEET

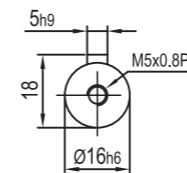
GAB060-L1



GAB060-L2



输出轴径/Output Diameter



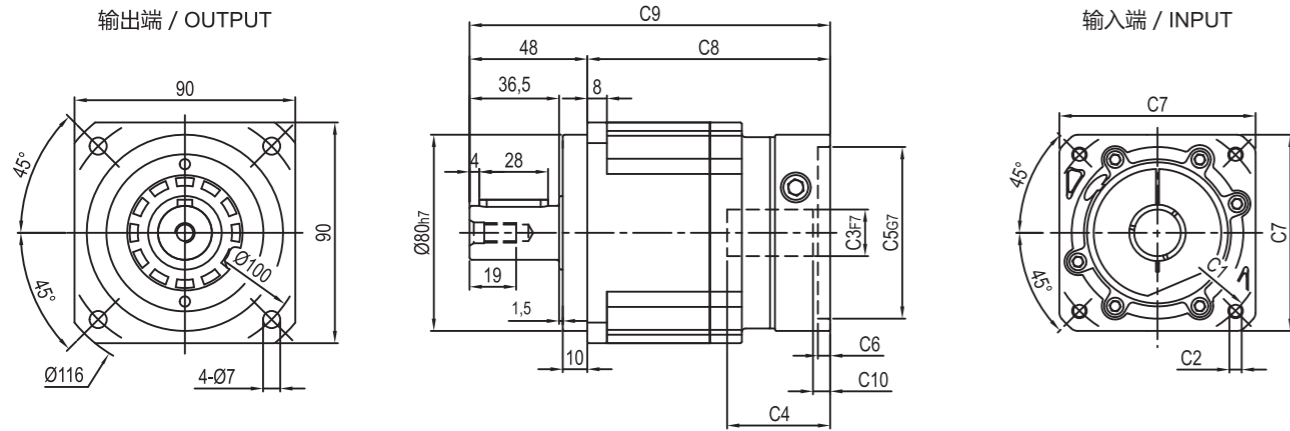
轴型式

尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
GAB060-L1										
GAB060-L2	Ø66.7	4-M4x10	Ø8	34	Ø38.1	5	60	78.5	115.5	5.5
GAB060-L1										
GAB060-L2	Ø70	4-M4x10,4-M5x12	Ø11,Ø14	34	Ø50	5	60	78.5	115.5	5.5
GAB060-L1										
GAB060-L2	Ø90	4-M5x12,4-M6x14	Ø19	42	Ø70	6.5	80	85	122	12
								114	151	12

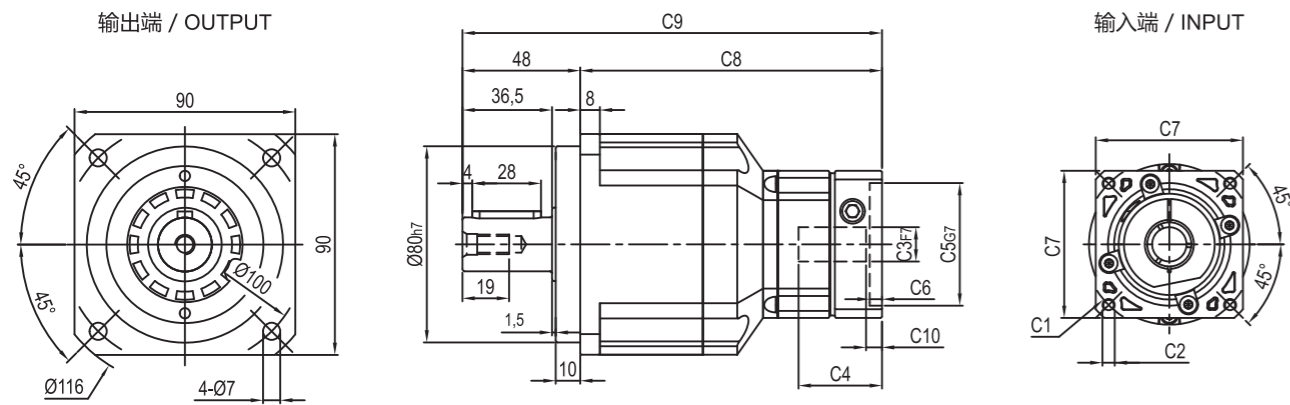
* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7are motor(metric standard) specific dimensions, which could be customised.

外形尺寸图表 / OUTLINE DIMENSION SHEET

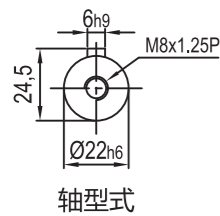
GAB090-L1



GAB090-L2



输出轴径/Output Diameter

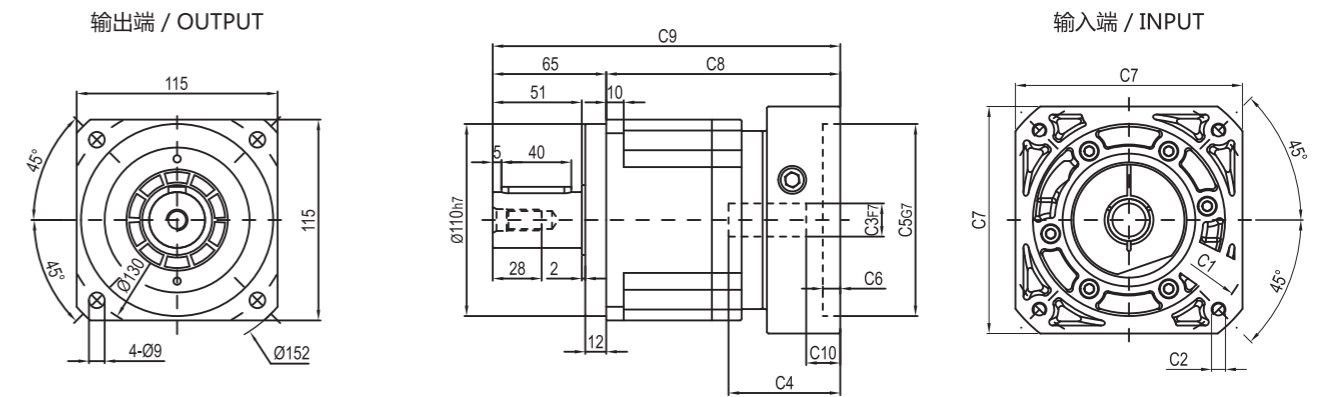


尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
GAB090-L1	Ø90	4-M5x12,4-M6x14	Ø19	42	Ø70	6.5	80	99	147	7
	Ø100	4-M6x14	Ø16	42	Ø80	6.5	86	99	147	6
GAB090-L1	Ø115	4-M8x20	Ø19,Ø22	56.5	Ø95	8	100	114.5	162.5	16.5
	Ø145	4-M8x20	Ø19,Ø22,Ø24	59	Ø110	11	130	117	165	19
GAB090-L2	Ø66.7	4-M4x10	Ø8	34	Ø38.1	5	60	123	171	5.5
	Ø70	4-M4x10,4-M5x12	Ø11,Ø14	34	Ø50	5	60	123	171	5.5
GAB090-L2	Ø90	4-M5x12,4-M6x14	Ø19	42	Ø70	6.5	80	129.5	177.5	12
	Ø100	4-M6x14	Ø16	42	Ø80	6.5	86	129.5	177.5	11

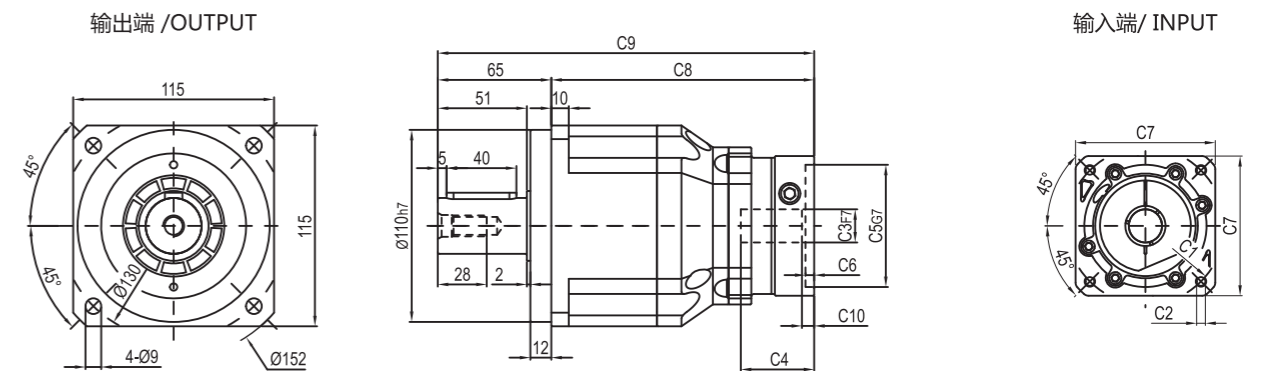
* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7are motor(metric standard) specific dimensions, which could be customised.

外形尺寸图表 / OUTLINE DIMENSION SHEET

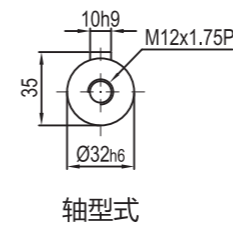
GAB115-L1



GAB115-L2



输出轴径/Output Diameter

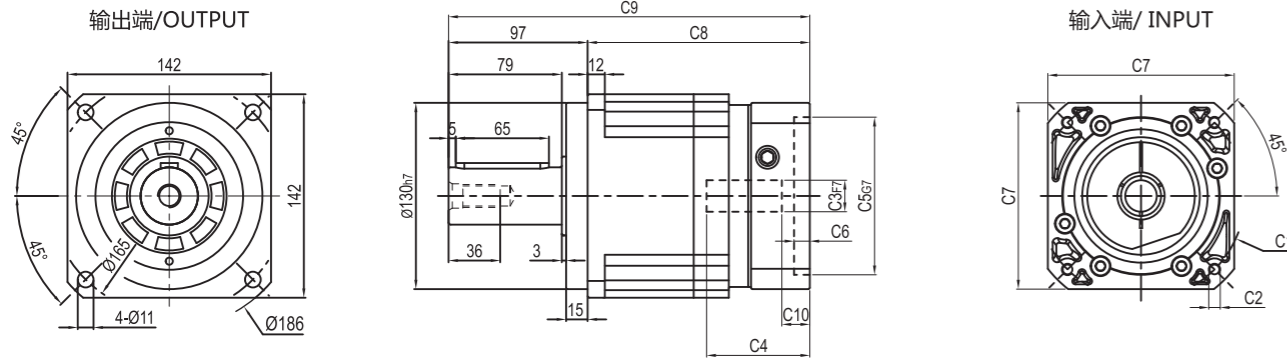


尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
GAB115-L1	Ø145	4-M8x20	Ø19,Ø22,Ø24	64	Ø110	10	130	134	199	19.5
	Ø200	4-M12x28	Ø35	81	Ø114.3	10	180	151.5	216.5	28
GAB115-L2	Ø90	4-M5x12,4-M6x14	Ø19	42	Ø70	6.5	80	150.5	215.5	7
	Ø100	4-M6x14	Ø16	42	Ø80	6.5	86	150.5	215.5	6
	Ø115	4-M8x20	Ø19,Ø22	56.5	Ø95	8	100	166	231	16.5
	Ø145	4-M8x20	Ø19,Ø22,Ø24	59	Ø110	11	130	168.5	233.5	19

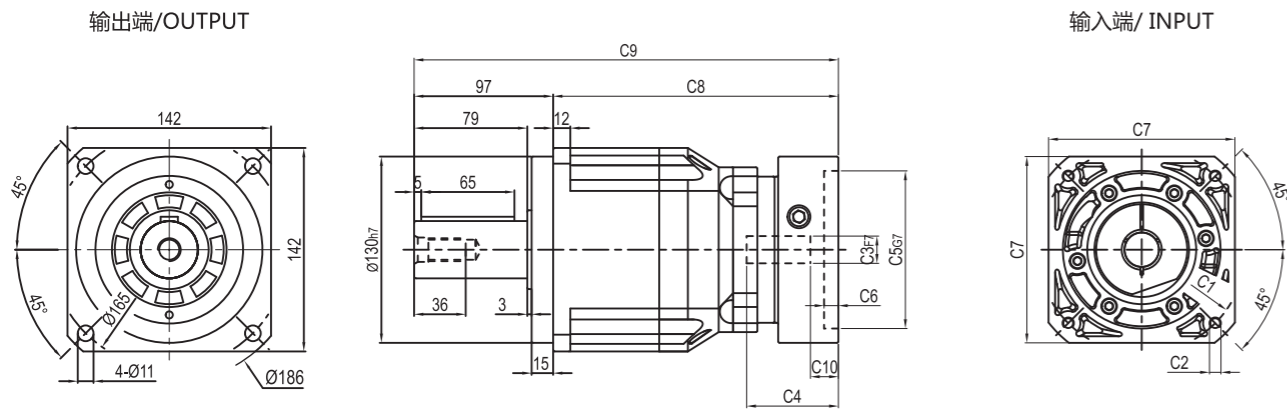
* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7are motor(metric standard) specific dimensions, which could be customised.

外形尺寸图表 / OUTLINE DIMENSION SHEET

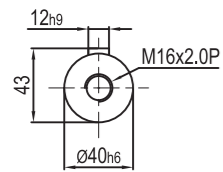
GAB142-L1



GAB142-L2



输出轴径/Output Diameter



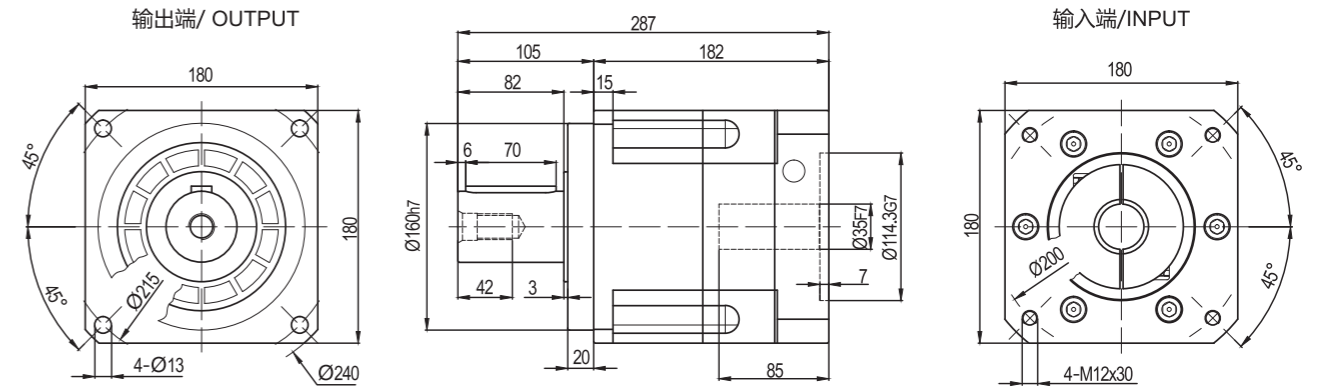
轴型式

尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
GAB142-L1	Ø145	4-M8x20	Ø22, Ø24	72	Ø110	11	130	155	252	19.5
	Ø200	4-M12x28	Ø35	81.5	Ø114.3	8	180	165	262	25
GAB142-L2	Ø145	4-M8x20	Ø19, Ø22, Ø24	64	Ø110	10	130	199	296	19.5
	Ø200	4-M12x28	Ø35	81	Ø114.3	10	180	216.5	313.5	28

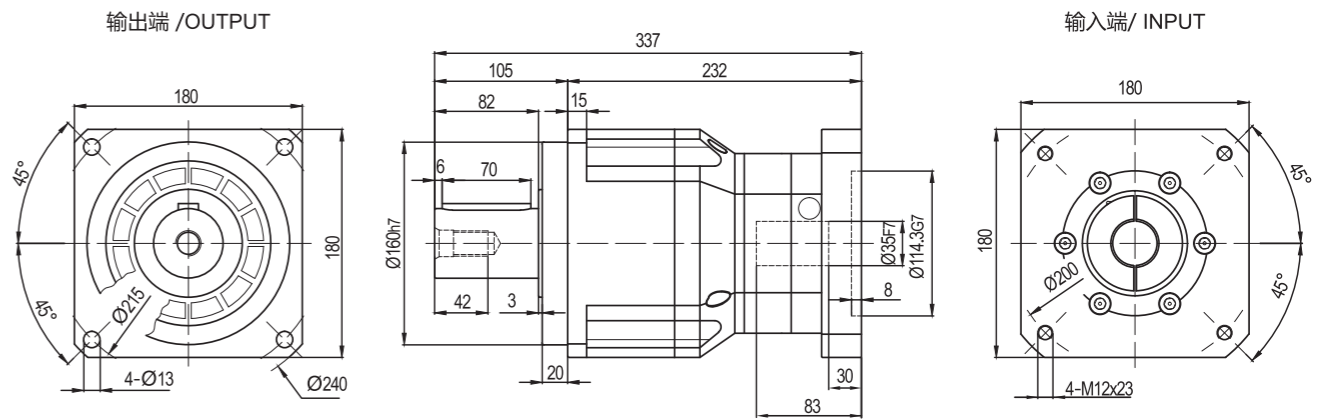
* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7are motor(metric standard) specific dimensions, which could be customised.

外形尺寸图表 / OUTLINE DIMENSION SHEET

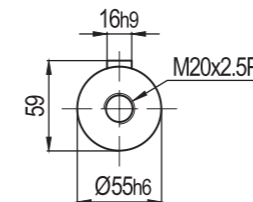
GAB180-L1



GAB180-L2



输出轴径/Output Diameter

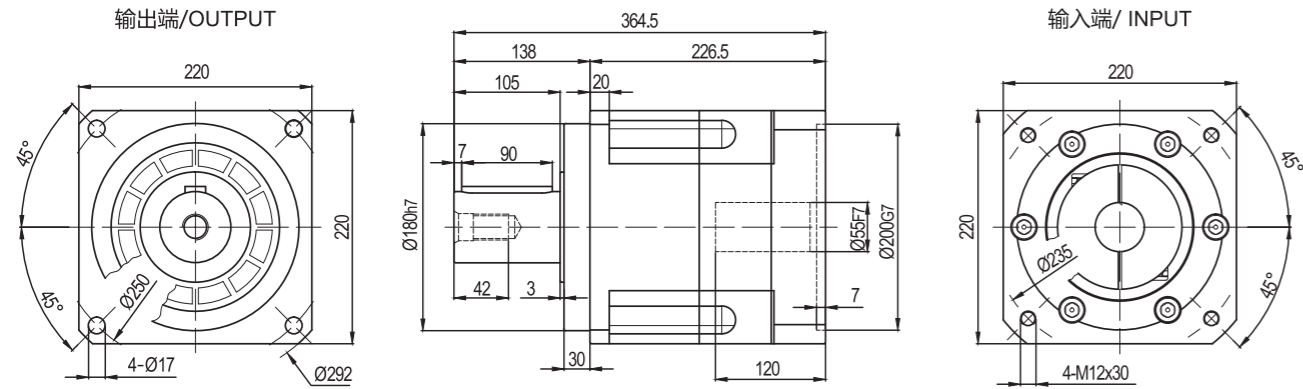


轴型式

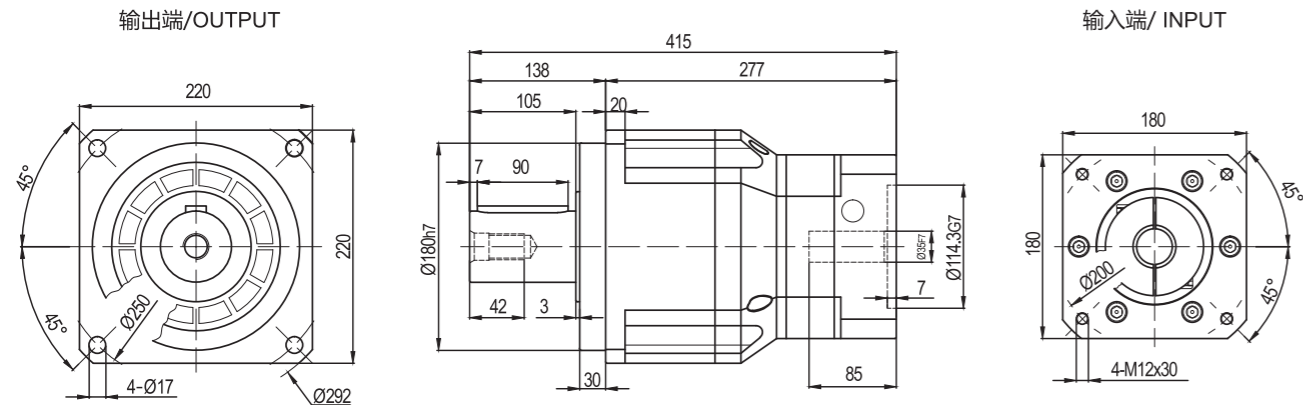
*输入马达连接板之尺寸,可根据客户要求单独定做。
*The input motor specific dimensions could be customised.

外形尺寸图表 / OUTLINE DIMENSION SHEET

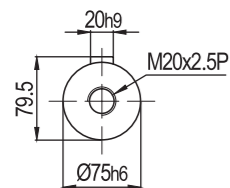
GAB220-L1



GAB220-L2



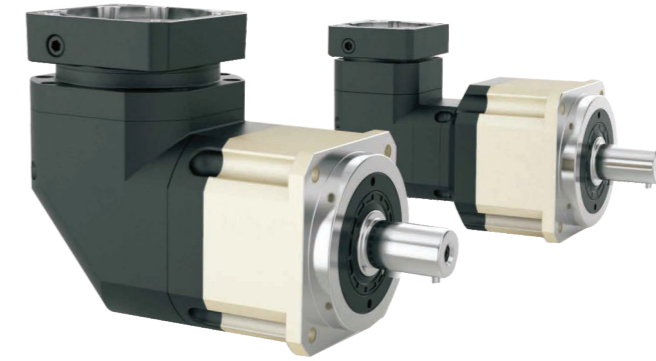
输出轴径/Output Diameter



轴型式

*输入马达连接板之尺寸,可根据客户要求单独定做。
*The input motor specific dimensions could be customised.

型号说明 / MODEL ILLUMINATE



型号定义 / MODEL ILLUMINATE

GABR060 - 10 - K□ / 马达

减速机型式:
GABR042/GABR060/GABR090
GABR115/GABR142/GABR180/GABR220

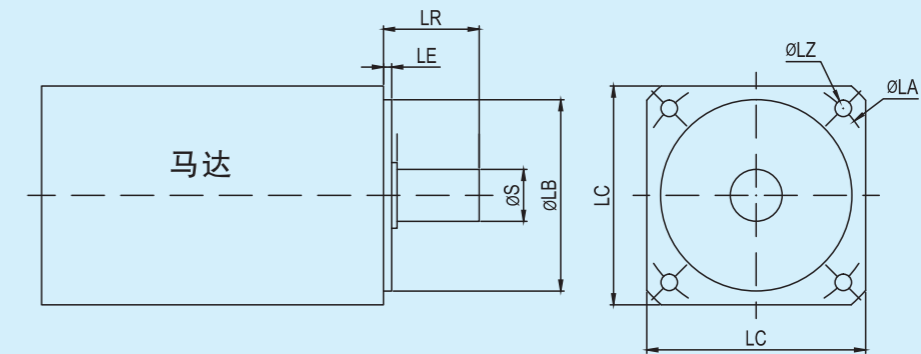
马达型号:
1-马达制造商及型号
2-马达安装尺寸

减速比: 单级(L1): 3,4,5,6,7,8,10,14,20
双级(L2): 12,15,20,25,30,35,40,50,60,70,80,100,120,140,160,200

背隙: K1: 超精密背隙
K3: 精密背隙
K5: 标准背隙

选用范例: GABR060-10-K□ - MHMD-042G1U

型号定义② GABR060-10-K□-50*3/14*30/70/M4
LB*LE S*LR LA LZ



减速机性能资料 / GEAR BOX PERFORMANCE INFORMATION

规格	级数	减速比 ¹	GABR042	GABR060	GABR090	GABR115	GABR142	GABR180	GABR220	
额定输出力矩T _{2N}	1	3	20	55	130	208	342	588	1,140	
		4	19	50	140	290	542	1,050	1,700	
		5	22	60	160	330	650	1,200	2,000	
		6	20	55	150	310	600	1,100	1,900	
		7	19	50	140	300	550	1,100	1,800	
		8	17	50	140	290	542	1,000	1,600	
		10	14	60	160	330	650	520	1,220	
		14	-	50	140	300	550	1,100	1,800	
		订货备注1级	20	-	40	100	230	450	520	1,220
		12	-	55	130	208	342	588	1,140	
	15	20	55	130	208	342	588	1,140		
	20	19	50	140	290	542	1,050	1,700		
	25	22	60	160	330	650	1,200	2,000		
	30	22	55	130	208	342	588	1,140		
	35	22	60	160	330	650	1,200	2,000		
	40	22	50	140	290	542	1,050	1,700		
	50	22	60	160	330	650	1,200	2,000		
	60	22	55	150	310	600	1,200	2,000		
	70	22	60	160	330	650	1,200	2,000		
	80	22	50	140	290	542	1,200	2,000		
100	22	60	160	330	650	1,200	2,000			
120	-	-	150	310	600	1,100	1,900			
140	-	-	140	300	550	1,100	1,800			
160	-	-	120	260	500	1,000	1,600			
200	-	-	100	230	450	520	1,220			
最大输出力矩T _{2B}	Nm	1,2	3~200	3倍额定输出力矩						
额定输入转速n ₁	rpm	1,2	3~200	5,000	5,000	4,000	4,000	3,000	3,000	2,000
最大输入转速n _{1B}	rpm	1,2	3~200	10,000	10,000	8,000	8,000	6,000	6,000	4,000
超精密背隙 K1	arcmin	1	3~20	-	-	≤2	≤2	≤2	≤2	≤2
		2	12~200	-	-	≤4	≤4	≤4	≤4	≤4
精密背隙 K3	arcmin	1	3~20	≤4	≤4	≤4	≤4	≤4	≤4	≤4
		2	12~200	≤7	≤7	≤7	≤7	≤7	≤7	≤7
标准背隙 K5	arcmin	1	3~20	≤6	≤6	≤6	≤6	≤6	≤6	≤4
		2	12~200	≤9	≤9	≤9	≤9	≤9	≤9	≤7
扭转刚性	Nm/arcmin	1,2	3~200	3	7	14	25	50	145	225
容许径向力F _{2rB} ²	N	1,2	3~200	780	1,530	3,250	6,700	9,400	14,500	50,000
容许轴向力F _{2a1B} ²	N	1,2	3~200	350	630	1,300	3,000	4,000	6,200	35,000
容许轴向力F _{2a2B} ²	N	1,2	3~200	390	765	1,625	3,350	4,700	7,250	25,000
使用寿命	hr	1,2	3~200	20,000*						
效率 η	%	1	3~20	≤95%						
		2	12~200	≤92%						
重量	kg	1	3~20	0.9	2.1	6.4	13	24.5	51	83
		2	12~200	1.2	2.5	7.8	14.2	27.5	54	95
使用温度	°C	1,2	3~200	-10°C~+90°C						
润滑		1,2	3~200	合成润滑油脂						
防护等级		1,2	3~200	IP65						
安装方向		1,2	3~200	任意方向						
噪音值 (n ₁ =3000rpm)	dB	1,2	3~200	≤61	≤63	≤65	≤68	≤70	≤72	≤74

减速机转动惯量

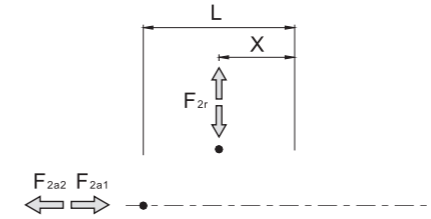
规格	级数	减速比 ¹	GABR042	GABR060	GABR090	GABR115	GABR142	GABR180	GABR220
转动惯量J ₁	1	3~7	0.09	0.35	2.25	6.84	23.4	68.9	135.4
		8~10	0.09	0.07	1.87	6.25	21.8	65.6	119.8
		14~20	-	0.07	1.87	6.25	21.8	65.6	119.8
	2	12~40	0.09	0.09	0.35	2.25	6.84	23.4	68.9
		50	0.09	0.09	0.31	1.87	6.25	21.8	65.6
		60	0.09	0.09	0.35	2.25	6.84	23.4	68.9
		70~100	0.09	0.09	0.31	1.87	6.25	21.8	65.6
		120~200	-	-	0.31	1.87	6.25	21.8	65.6

1. 减速比 (i=N_{in}/N_{out})
* 连续运转降低使用寿命二分之一。

2. 输出转速 100rpm 时, 作用于输出轴中心位置。

减速机输出轴之容许径向力及轴向力

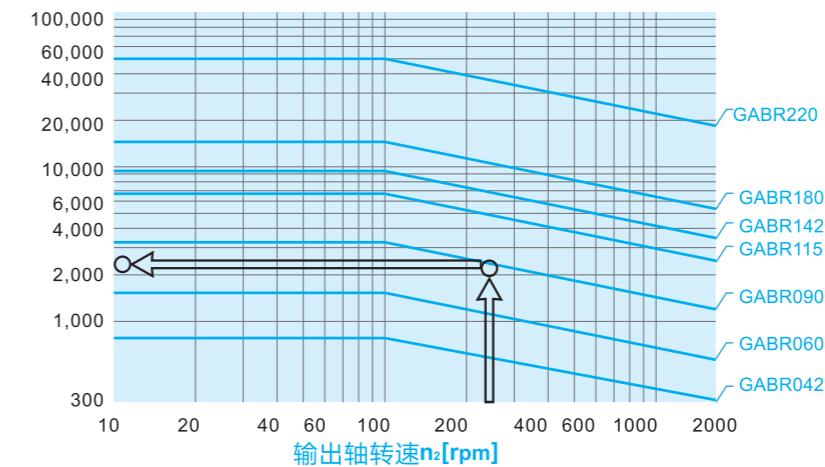
REDUCER OUTPUT SHAFT OF THE PERMISSIBLE RADIAL FORCE AND SHAFT AND FORCE



减速机输出轴所能承受之最大径向力及轴向力,端视内部支撑轴承之设计,减速机采用大尺寸的轴承及较大跨距的设计,其能承受更大的径向及轴向负荷。

F_{2r} 径向力
F_{2a} 轴向力

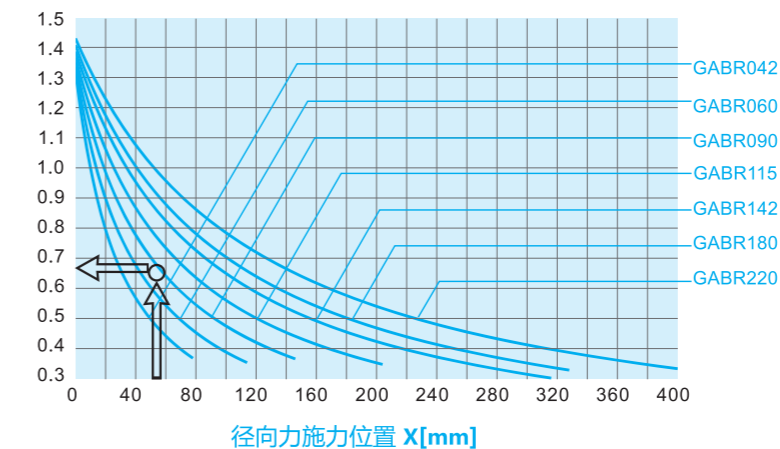
容许径向力 F_{2rB}[N] 施力于轴中心位置



当径向力F_{2r}施力于轴中心位置即X=1/2xL时,不同规格之减速机在不同输出转速运用下使用寿命为20,000hr*时,所能承受之容许径向力F_{2rB},请参照左图,而能承受之容许轴向力F_{2aB},为

F_{2a1B}=0.2x F_{2rB}
F_{2a2B}=0.1x F_{2rB}

位置负荷系数K_b



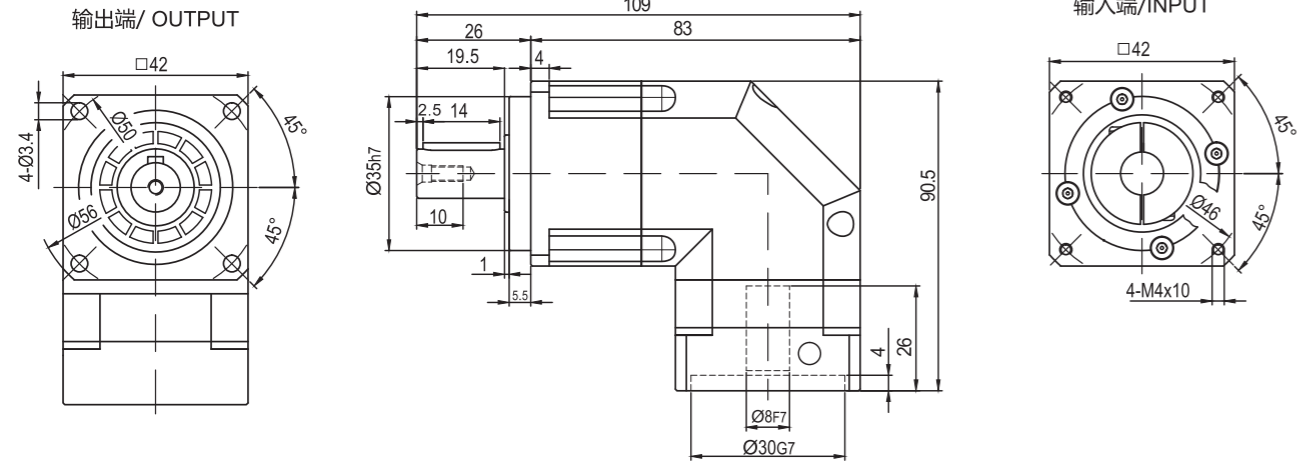
当径向力F_{2r}施力不在轴中心位置时,越靠近减速机即X < 1/2xL,所能承受之容许径向力变大,越远离减速机即X > 1/2xL时,所能承受之容许径向力则变小,藉由左图,依减速机规格及径向力施力位置X,查出位置负荷系数K_b,在代入下列公式,求出容许径向力:

F_{2rB}'=K_bx F_{2rB}
轴向力:
F_{2a1B}'=0.2x F_{2rB}'
F_{2a2B}'=0.1x F_{2rB}'

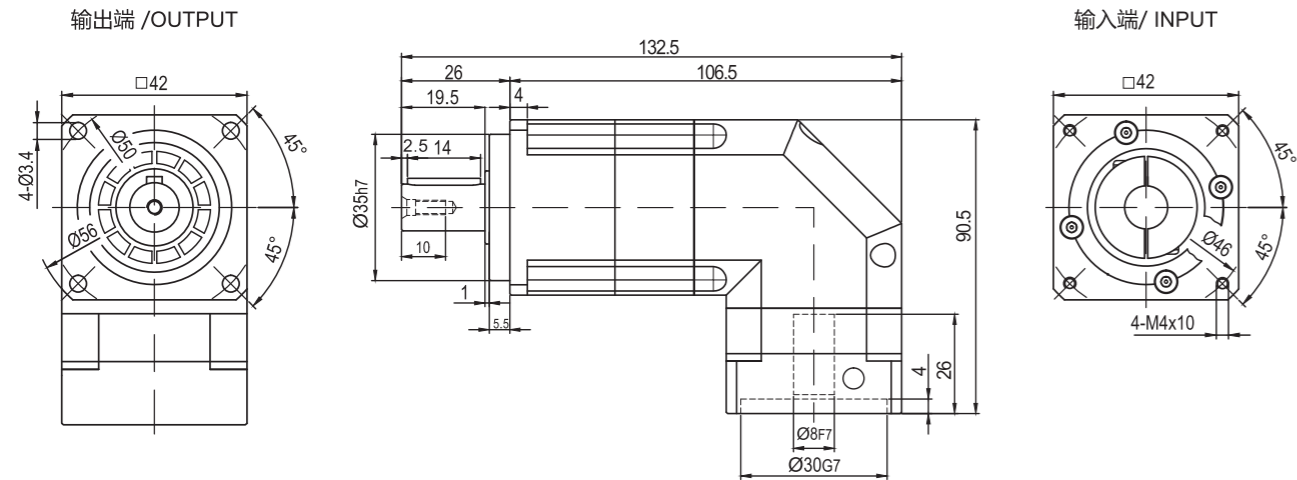
* 连续运转降低使用寿命二分之一。

外形尺寸图表 / OUTLINE DIMENSION SHEET

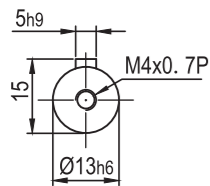
GABR042-L1



GABR042-L2



输出轴径/Output Diameter

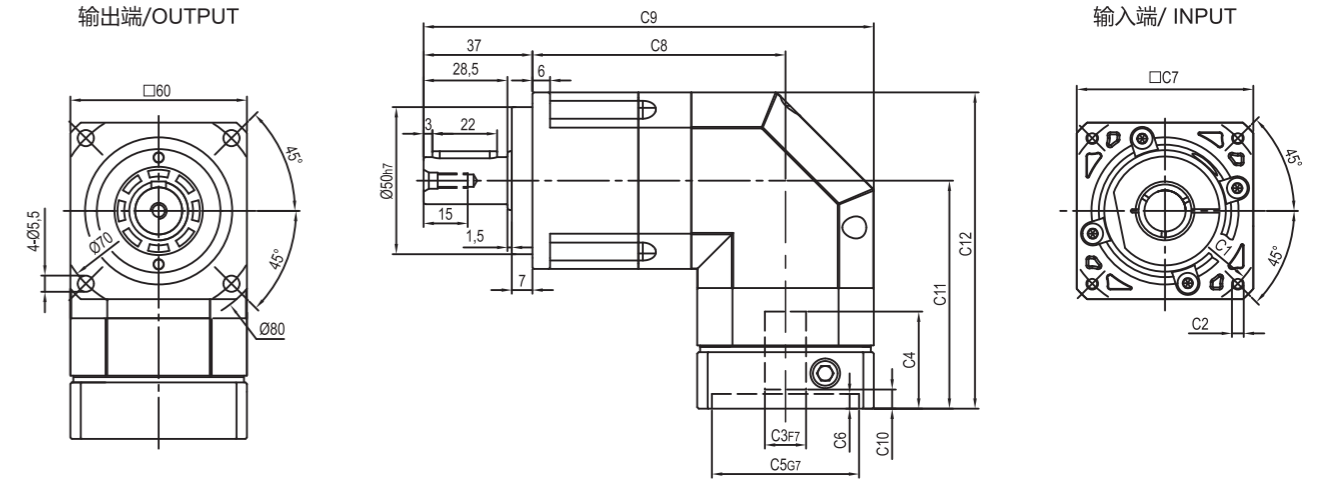


轴型式

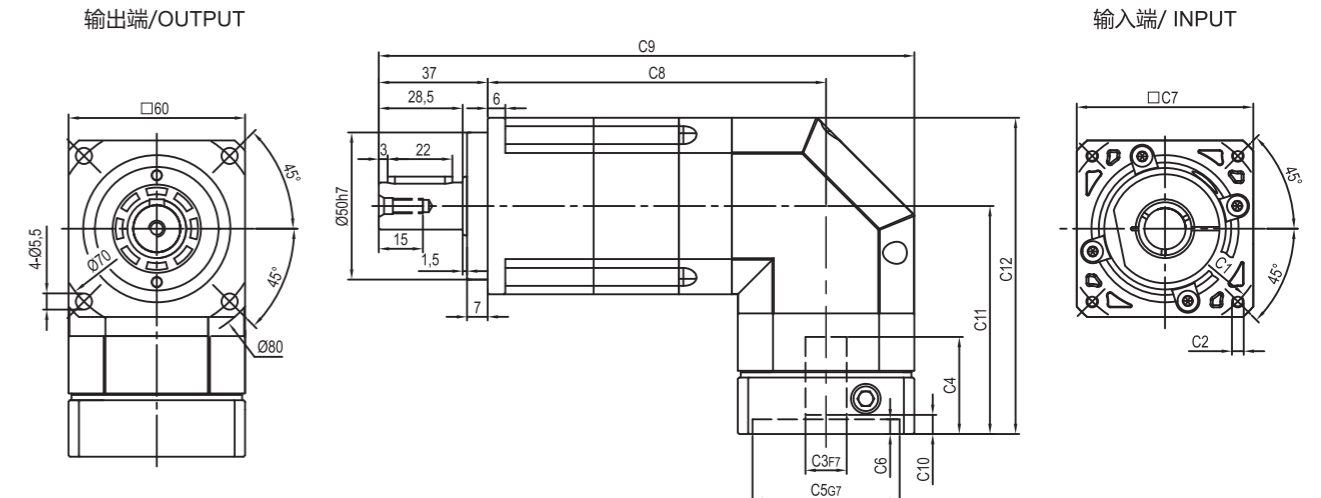
*输入马达连接板之尺寸,可根据客户要求单独定做。
*The input motor specific dimensions could be customised.

外形尺寸图表 / OUTLINE DIMENSION SHEET

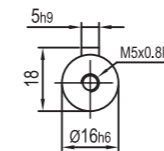
GABR060-L1



GABR060-L2



输出轴径/Output Diameter



轴型式

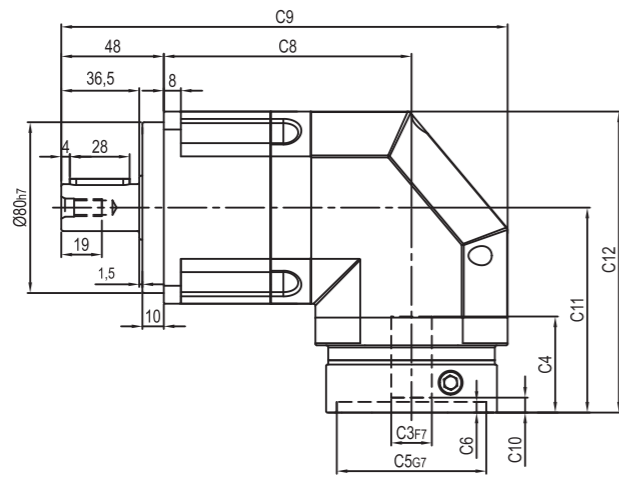
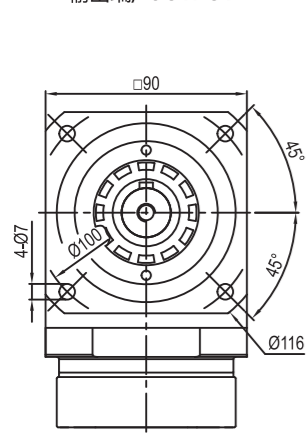
尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
GABR060-L1	Ø66.7	4-M4x10	Ø8	33	Ø38.1	5	60	86	153	5.5	77.5	107.5
GABR060-L2	Ø70	4-M4x10,4-M5x12	Ø11,Ø14	33	Ø50	5	60	86	153	5.5	77.5	107.5
GABR060-L1	Ø90	4-M5x12,4-M6x14	Ø19	42.5	Ø70	6.5	80	86	163	12	87	117
GABR060-L2								115	192			

*C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
*C1~C7are motor(metric standard) specific dimensions, which could be customised.

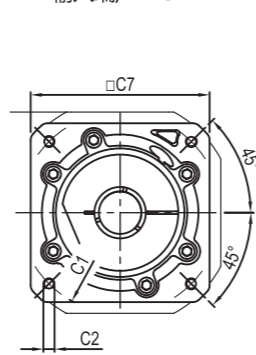
外形尺寸图表 / OUTLINE DIMENSION SHEET

GABR090-L1

输出端/ OUTPUT

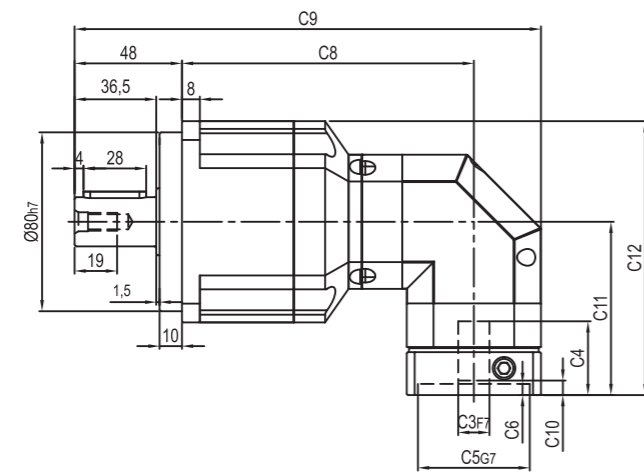
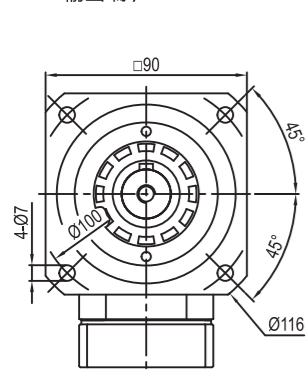


输入端/INPUT

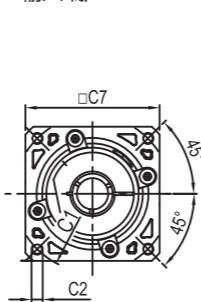


GABR090-L2

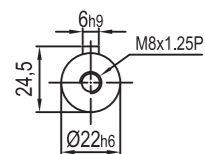
输出端 /OUTPUT



输入端/ INPUT



输出轴径/Output Diameter



轴型式

尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
GABR090-L1	Ø90	4-M5x12,4-M6x14	Ø19	45	Ø70	6.5	80	116	209	7	96	141
GABR090-L1	Ø100	4-M6x14	Ø16	45	Ø80	6.5	86	116	209	6	96	141
GABR090-L1	Ø115	4-M8x20	Ø19,Ø22	56.5	Ø95	8	100	116	214	16.5	117.5	162.5
GABR090-L1	Ø145	4-M8x20	Ø19,Ø22,Ø24	59	Ø110	11	130	116	229	19	120	165
GABR090-L2	Ø66.7	4-M4x10	Ø8	33	Ø38.1	5	60	130.5	208.5	5.5	77.5	122.5
GABR090-L2	Ø70	4-M4x10,4-M5x12	Ø11,Ø14	33	Ø50	5	60	130.5	208.5	5.5	77.5	122.5
GABR090-L2	Ø90	4-M5x12,4-M6x14	Ø19	42.5	Ø70	6.5	80	130.5	218.5	12	87	132
GABR090-L2	Ø100	4-M6x14	Ø16	42.5	Ø80	6.5	86	130.5	221.5	11	87	132

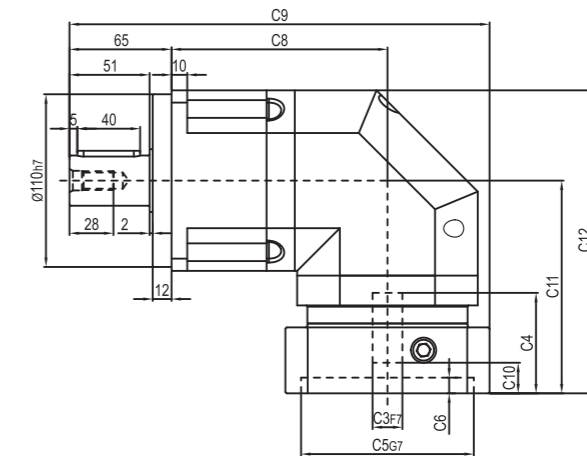
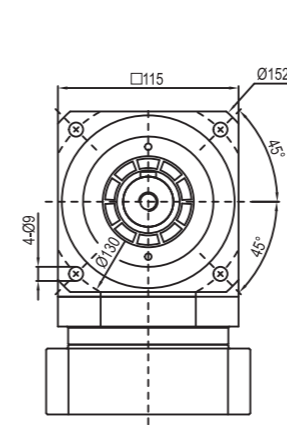
* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。

* C1~C7are motor(metric standard) specific dimensions, which could be customised.

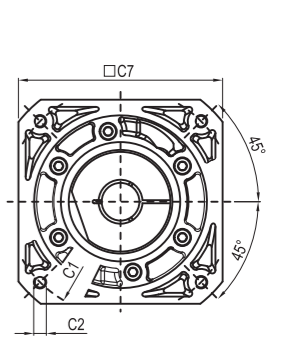
外形尺寸图表 / OUTLINE DIMENSION SHEET

GABR115-L1

输出端/OUTPUT

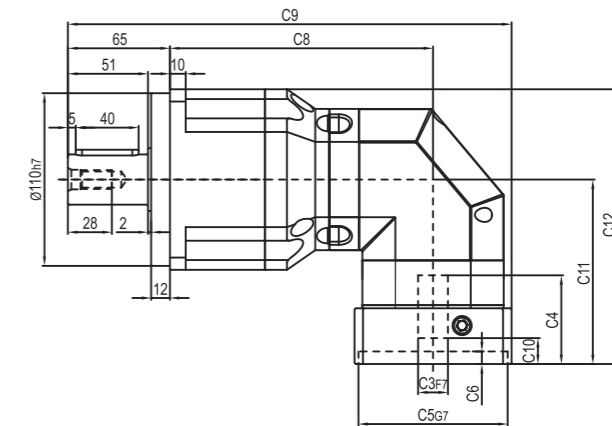
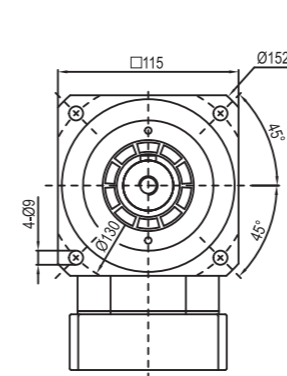


输入端/ INPUT

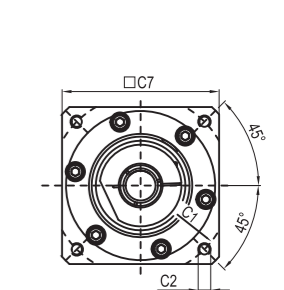


GABR115-L2

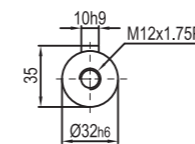
输出端/OUTPUT



输入端/ INPUT



输出轴径/Output Diameter



轴型式

尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
GABR115-L1	Ø145	4-M8x20	Ø19,Ø22,Ø24	64	Ø110	10	130	137.5	267.5	19.5	135.5	193
GABR115-L1	Ø200	4-M12x28	Ø35	81	Ø114.3	10	180	137.5	292.5	28	152.5	210
GABR115-L2	Ø90	4-M5x12,4-M6x14	Ø19	45	Ø70	6.5	80	167.5	277.5	7	96	153.5
GABR115-L2	Ø100	4-M6x14	Ø16	45	Ø80	6.5	86	167.5	277.5	6	96	153.5
GABR115-L2	Ø115	4-M8x20	Ø19,Ø22	56.5	Ø95	8	100	167.5	282.5	16.5	117.5	175
GABR115-L2	Ø145	4-M8x20	Ø19,Ø22,Ø24	59	Ø110	11	130	167.5	297.5	19	120	177.5

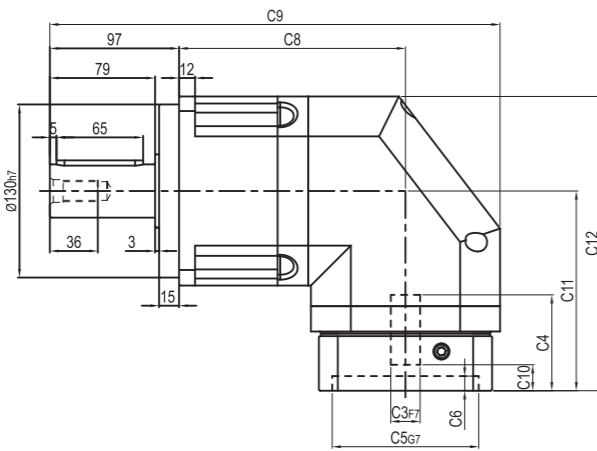
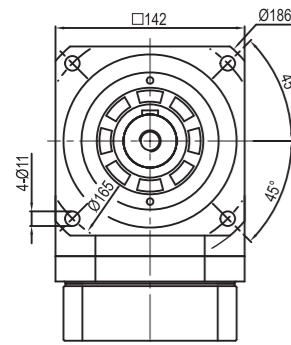
* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。

* C1~C7are motor(metric standard) specific dimensions, which could be customised.

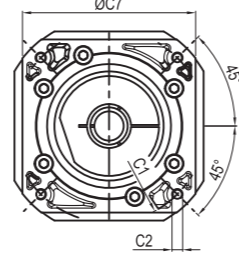
外形尺寸图表 / OUTLINE DIMENSION SHEET

GABR142-L1

输出端 / OUTPUT

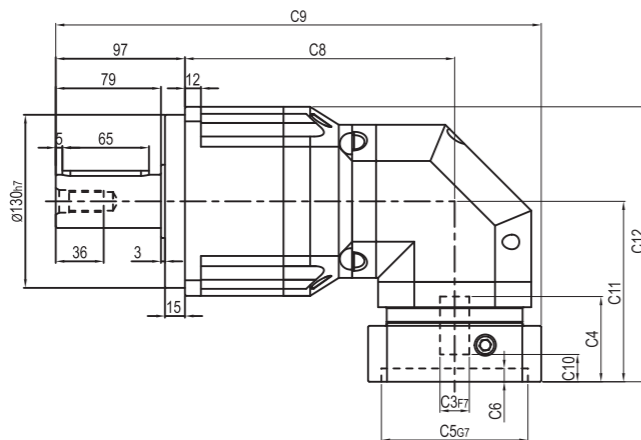
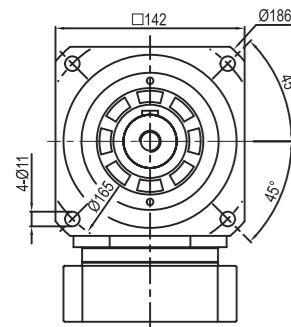


输入端 / INPUT

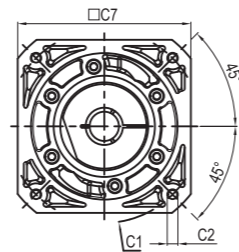


GABR142-L2

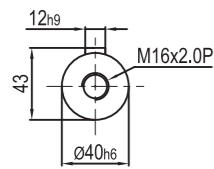
输出端 / OUTPUT



输入端 / INPUT



输出轴径 / Output Diameter



轴型式

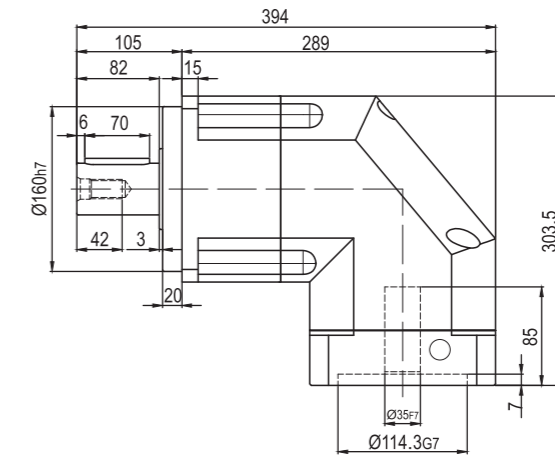
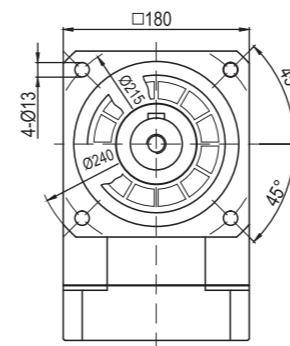
尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
GABR142-L1	Ø145	4-M8x20	Ø22,Ø24	72	Ø110	11	130	170	338	19.5	150	221
	Ø200	4-M12x28	Ø35	82	Ø114.3	8	180	170	357	25	160	231
GABR142-L2	Ø145	4-M8x20	Ø19,Ø22,Ø24	64	Ø110	10	130	202.5	364.5	19.5	135.5	206.5
GABR142-L2	Ø200	4-M12x28	Ø35	81	Ø114.3	10	180	202.5	389.5	28	152.5	223.5

* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7 are motor (metric standard) specific dimensions, which could be customised.

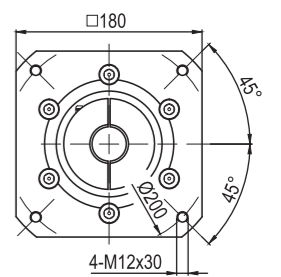
外形尺寸图表 / OUTLINE DIMENSION SHEET

GAB180-L1

输出端 / OUTPUT

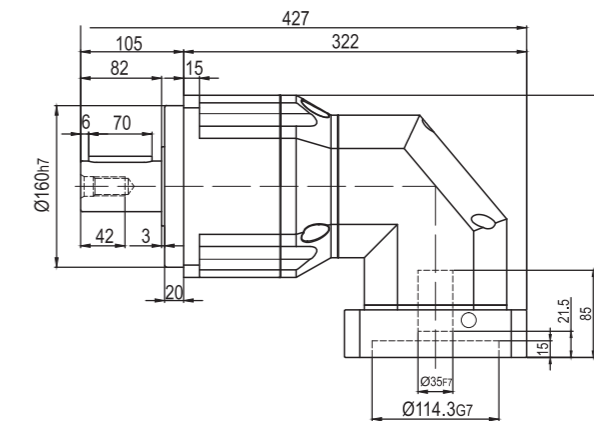
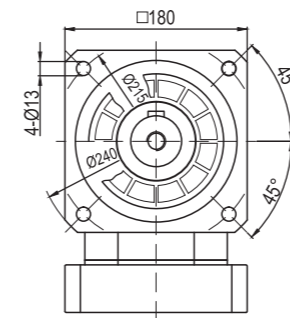


输入端 / INPUT

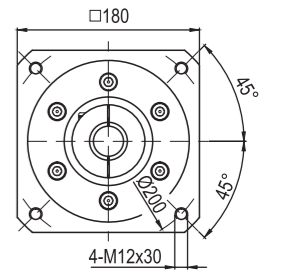


GAB180-L2

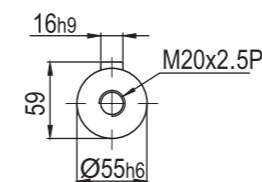
输出端 / OUTPUT



输入端 / INPUT



输出轴径 / Output Diameter



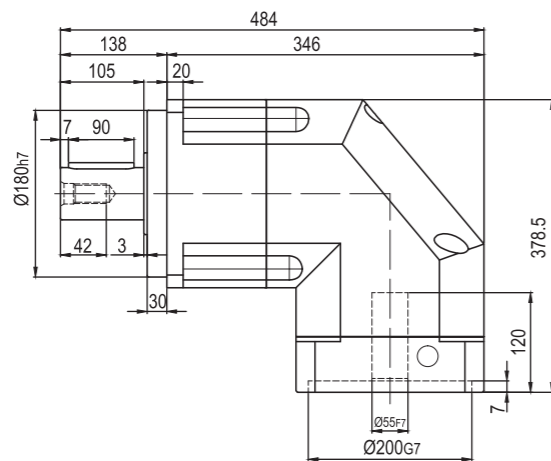
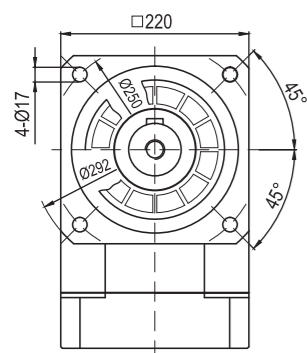
轴型式

*输入马达连接板之尺寸,可根据客户要求单独定做。
*The input motor specific dimensions could be customised.

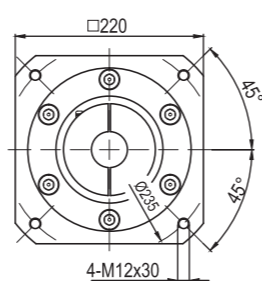
外形尺寸图表 / OUTLINE DIMENSION SHEET

GABR220-L1

输出端/ OUTPUT

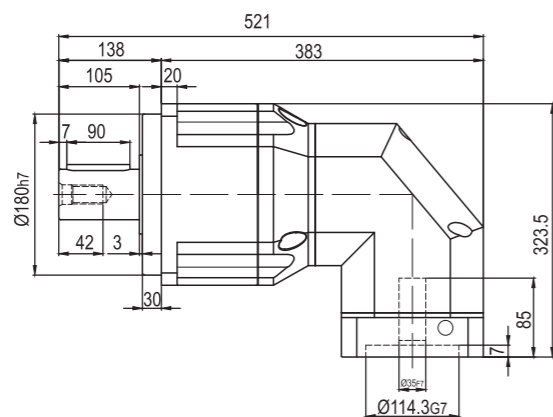
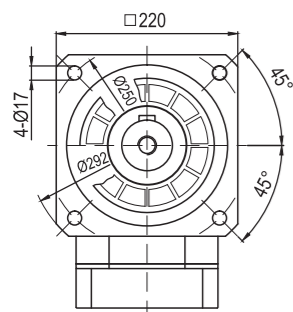


输入端/INPUT

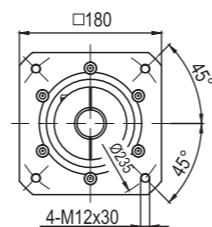


GABR220-L2

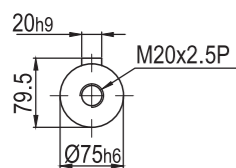
输出端 /OUTPUT



输入端/ INPUT



输出轴径/Output Diameter



轴型式

*输入马达连接板之尺寸,可根据客户要求单独定做。
*The input motor specific dimensions could be customised.

型号说明 / MODEL ILLUMINATE



型号定义 / MODEL ILLUMINATE

AD 060 - 10 - S□ / 马达

减速机型式：
AD047/AD064/AD090
AD110/AD140/AD200/AD255

马达型号：
1-马达制造商及型号
2-马达安装尺寸

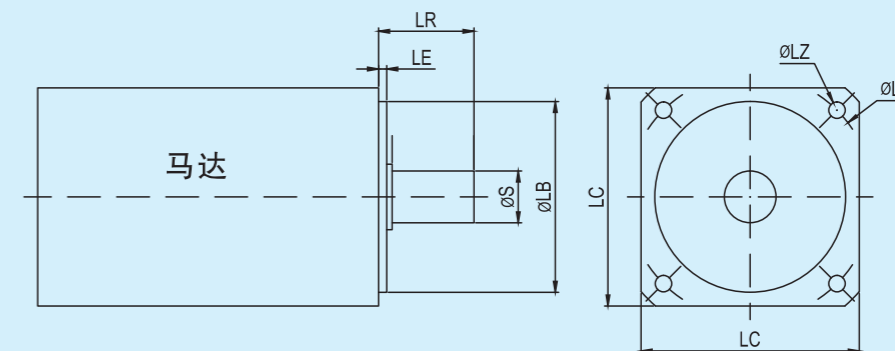
减速比：单级(L1)：4,5,6,7,8,10
双级(L2)：20,25,35,40,50,60,70,80,100

背隙：S0：超精密背隙
S1：精密背隙
S2：标准背隙

选用范例：AD060-10-S□ MHMD-042G1U

型号定义② AD060-10-S□-50*3/14*30/70/M4

LB*LE S*LR LA LZ



减速机性能资料 / GEAR BOX PERFORMANCE INFORMATION

规格	级数	减速比 ¹	AD047	AD064	AD090	AD110	AD140	AD200	AD255	
额定输出力矩T _{2N}	1	4	19	48	130	270	560	1,100	1,700	
		5	22	60	160	330	650	1,200	2,000	
		6	-	55	150	310	600	-	-	
		7	19	50	140	300	550	1,100	1,800	
		8	17	45	120	260	500	1,000	1,600	
		10	14	40	100	230	450	520	1,220	
	2	20	19	48	130	270	560	1,100	1,700	
		25	22	60	160	330	650	1,200	2,000	
		35	22	60	160	330	650	1,200	2,000	
		40	22	48	130	270	560	1,200	2,000	
		50	22	60	160	330	650	1,200	2,000	
		60	-	55	150	310	600	-	-	
		70	19	50	140	300	550	1,100	1,800	
		80	-	45	120	260	500	-	-	
100	14	40	100	230	450	520	1,220			
最大输出力矩T _{2B}	Nm	1,2	4~100	3倍额定输出力矩						
额定输入转速n ₁	rpm	1,2	4~100	5,000	5,000	4,000	4,000	3,000	3,000	2,000
最大输入转速n _{1B}	rpm	1,2	4~100	10,000	10,000	8,000	8,000	6,000	6,000	4,000
超精密背隙 S0	arcmin	1	4~100	-	-	≤1	≤1	≤1	≤1	≤1
		2	4~10	-	-	≤3	≤3	≤3	≤3	≤3
精密背隙 S1	arcmin	1	20~100	≤3	≤3	≤3	≤3	≤3	≤3	≤3
		2	4~10	≤5	≤5	≤5	≤5	≤5	≤5	≤5
标准背隙 S2	arcmin	1	20~100	≤5	≤5	≤5	≤5	≤5	≤5	≤5
		2	4~10	≤7	≤7	≤7	≤7	≤7	≤7	≤7
扭转刚性	Nm/arcmin	1,2	20~100	7	13	31	82	151	440	1,006
最大弯曲力矩M _{2KB} ²	Nm	1,2	4~100	42.5	125	235	430	1,300	3,064	5,900
容许径向力F _{2B} ²	N	1,2	4~100	1,080	2,110	2,310	4,800	6,200	5,450	10,600
使用寿命	hr	1,2	4~100	20,000*						
效率 η	%	1	4~10	≥97%						
		2	20~100	≥94%						
重量	kg	1	4~10	0.7	1.2	3.0	5.6	11.9	31.6	56.1
		2	20~100	1.0	1.6	3.7	7.3	15.9	36.9	70.4
使用温度	°C	1,2	4~100	-10°C~+90°C						
润滑		1,2	4~100	合成润滑油脂						
防护等级		1,2	4~100	IP65						
安装方向		1,2	4~100	任意方向						
噪音值 (n ₁ =3000rpm)	dB	1,2	4~100	≤56	≤58	≤60	≤63	≤65	≤67	≤70

减速机转动惯量

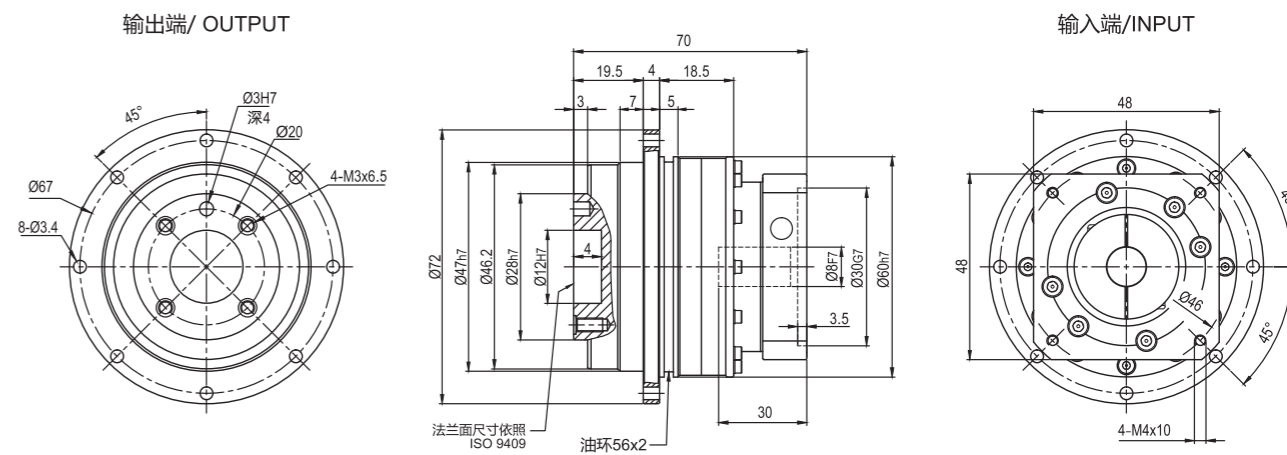
规格	级数	减速比 ¹	AD047	AD064	AD090	AD110	AD140	AD200	AD255
转动惯量J ₁	1	4	0.03	0.14	0.51	2.87	7.54	25.03	58.31
		5	0.03	0.13	0.47	2.71	7.42	23.29	53.27
		6	-	0.13	0.45	2.65	7.25	-	-
		7	0.03	0.13	0.45	2.62	7.14	22.48	50.97
		8	0.03	0.13	0.45	2.58	7.07	22.48	50.97
		10	0.03	0.13	0.44	2.57	7.03	22.51	50.56
	2	20	0.03	0.03	0.13	0.47	2.71	7.42	23.29
		25	0.03	0.03	0.13	0.47	2.71	7.42	23.29
		35	0.03	0.03	0.13	0.47	2.71	7.42	23.29
		40	0.03	0.03	0.13	0.44	2.57	7.03	22.51
		50	0.03	0.03	0.13	0.44	2.57	7.03	22.51
		60	-	0.03	0.13	0.44	2.57	-	-
		70	0.03	0.03	0.13	0.44	2.57	7.03	22.51
		80	-	0.03	0.13	0.44	2.57	-	-
100	0.03	0.03	0.13	0.44	2.57	7.03	22.51		

1. 减速比 (i = N_{in}/N_{out})
* 连续运转降低使用寿命二分之一。

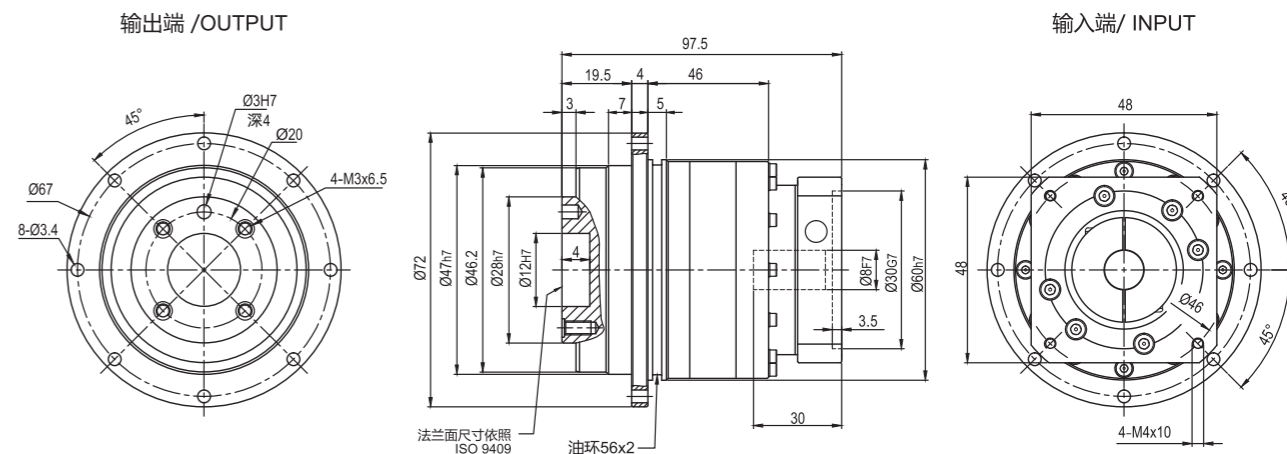
2. 输出转速 100rpm 时, 作用于输出轴中心位置。

外形尺寸图表 / OUTLINE DIMENSION SHEET

AD047-L1



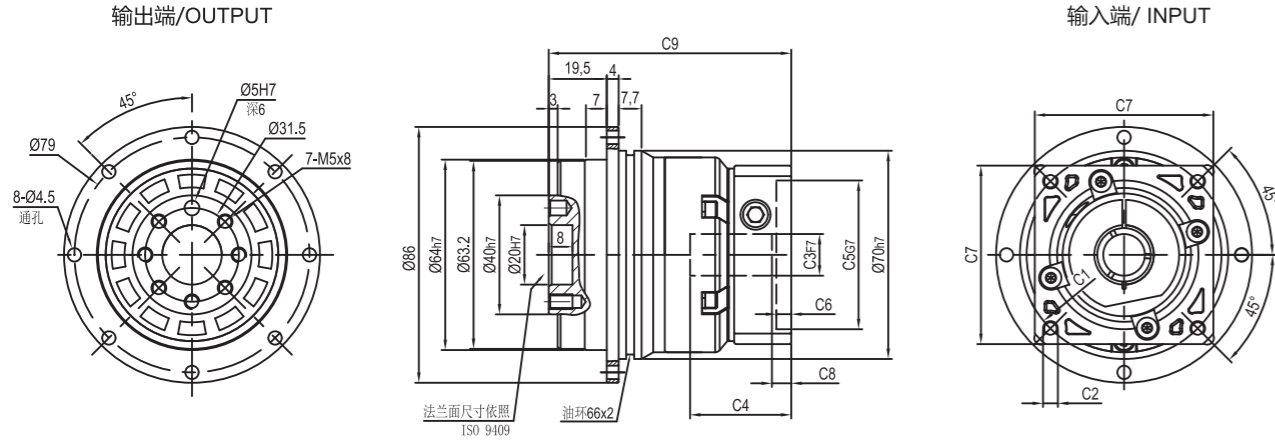
AD047-L2



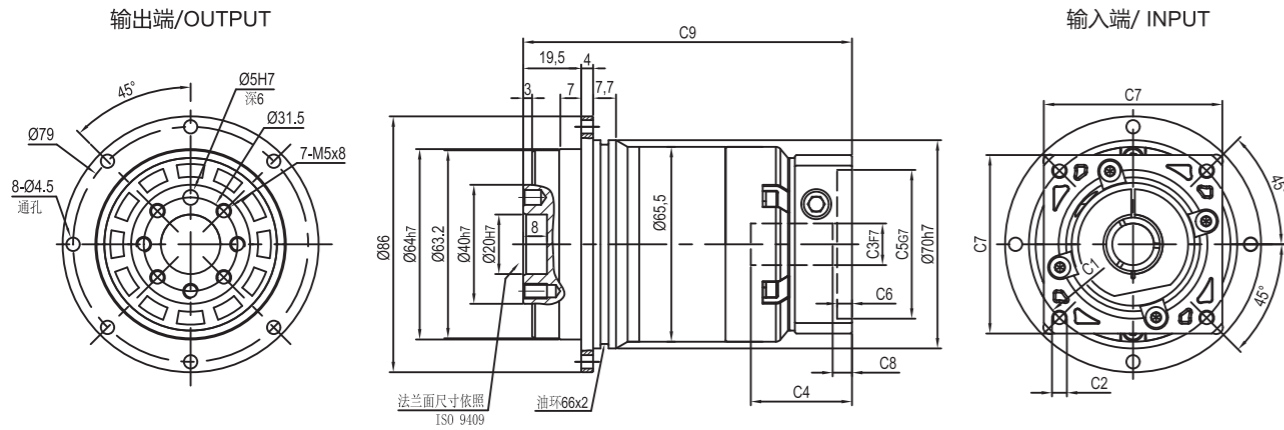
*输入马达连接板之尺寸, 可根据客户要求单独定做。
*The input motor specific dimensions could be customised.

外形尺寸图表 / OUTLINE DIMENSION SHEET

AD064-L1



AD064-L2

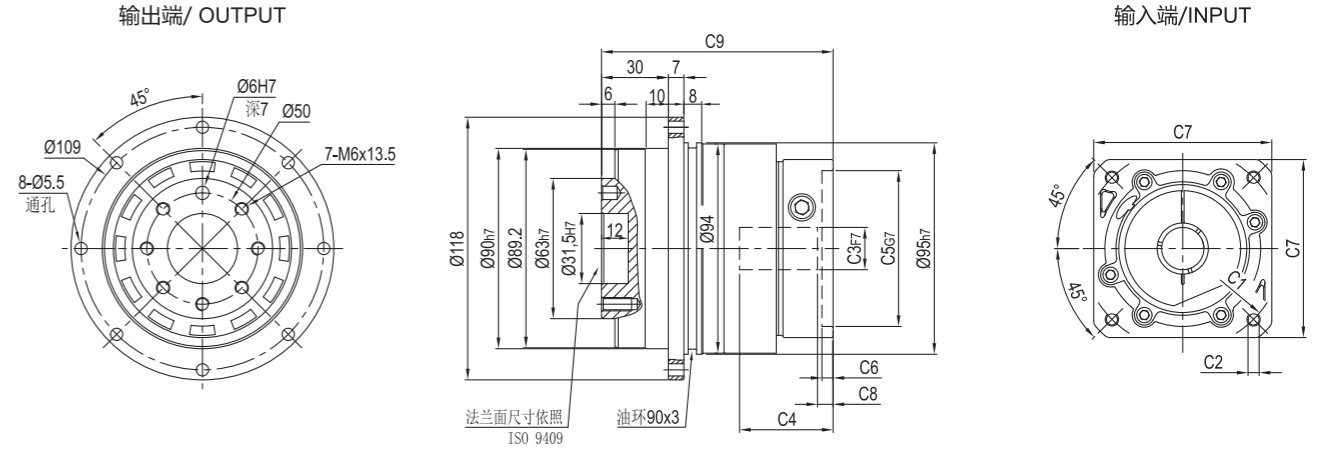


尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9
AD064-L1	Ø66.7	4-M4x10	Ø8	34	Ø38.1	5	60	5.5	81.5
AD064-L2	Ø70	4-M4x10, 4-M5x12	Ø11, Ø14	34	Ø50	5	60	5.5	110.5
AD064-L1	Ø70	4-M4x10, 4-M5x12	Ø11, Ø14	34	Ø50	5	60	5.5	81.5
AD064-L2	Ø90	4-M5x12, 4-M6x14	Ø19	42	Ø70	6.5	80	12	117

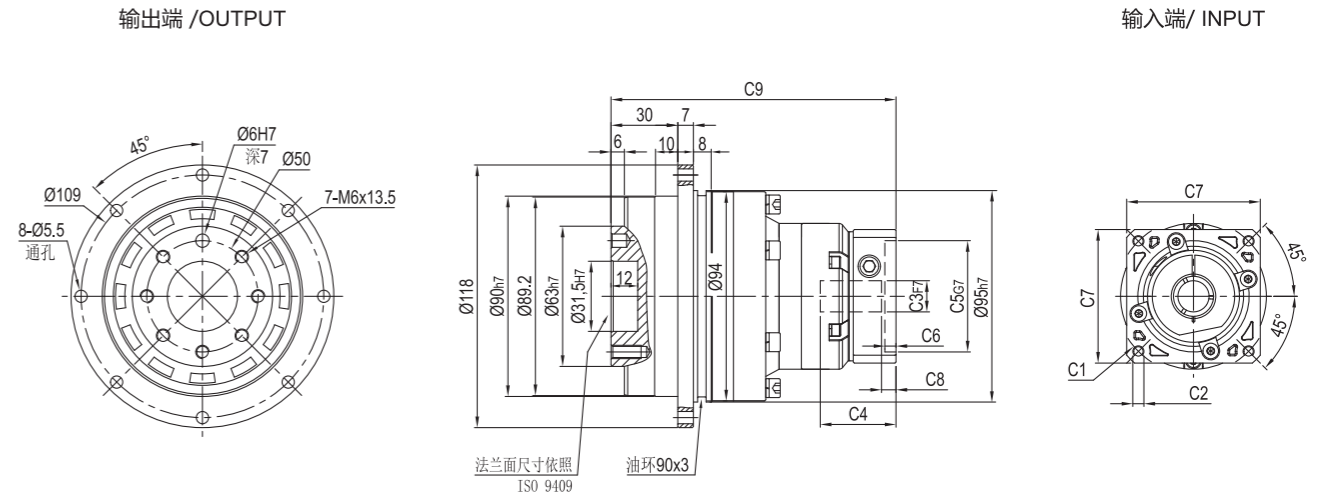
* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7are motor(metric standard) specific dimensions, which could be customised.

外形尺寸图表 / OUTLINE DIMENSION SHEET

AD090-L1



AD090-L2



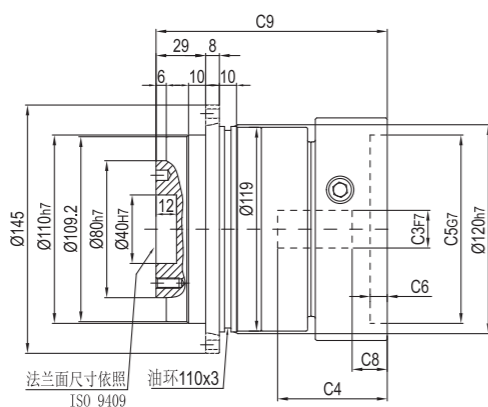
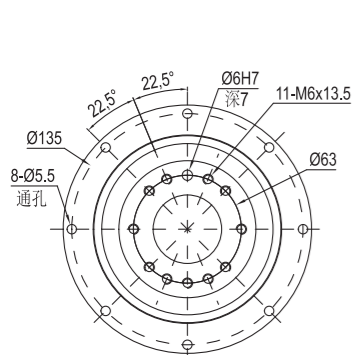
尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9
AD090-L1	Ø90	4-M5x12, 4-M6x14	Ø19	42	Ø70	6.5	80	7	104
	Ø100	4-M6x14	Ø16	42	Ø80	6.5	86	6	104
	Ø115	4-M8x20	Ø19, Ø22	56.5	Ø95	8	100	16.5	119.5
	Ø145	4-M8x20	Ø19, Ø22, Ø24	59	Ø110	11	130	19	122
AD090-L2	Ø66.7	4-M4x10	Ø8	34	Ø38.1	5	60	5.5	128
	Ø70	4-M4x10, 4-M5x12	Ø11, Ø14	34	Ø50	5	60	5.5	128
	Ø90	4-M5x12, 4-M6x14	Ø19	42	Ø70	6.5	80	12	134.5
	Ø100	4-M6x14	Ø16	42	Ø80	6.5	86	11	134.5

* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7are motor(metric standard) specific dimensions, which could be customised.

外形尺寸图表 / OUTLINE DIMENSION SHEET

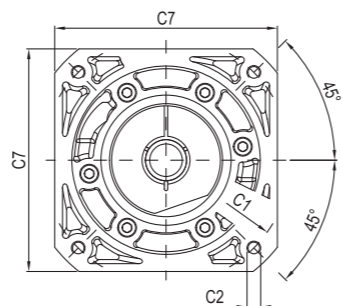
AD110-L1

输出端/OUTPUT



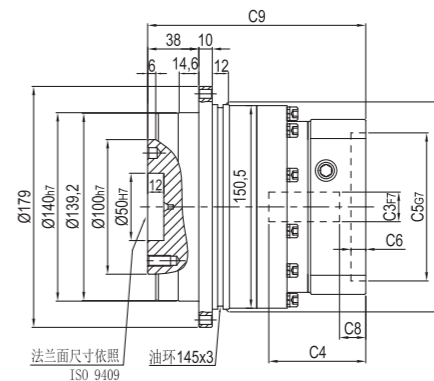
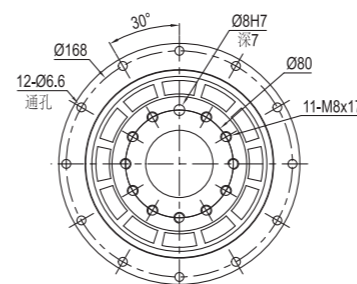
法兰面尺寸依照 ISO 9409
油环110x3

输入端/ INPUT



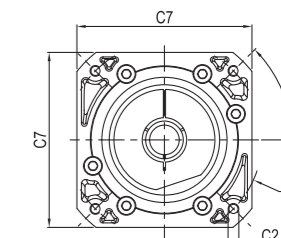
AD140-L1

输出端/ OUTPUT



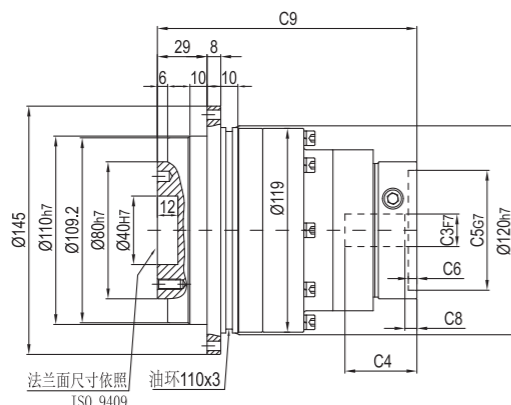
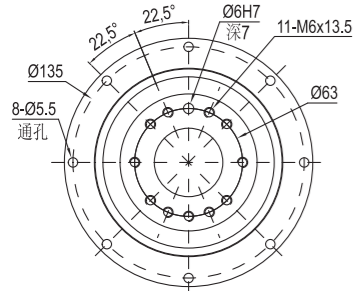
法兰面尺寸依照 ISO 9409
油环145x3

输入端/INPUT



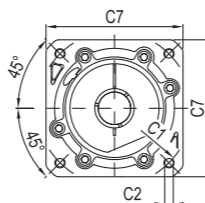
AD110-L2

输出端/OUTPUT



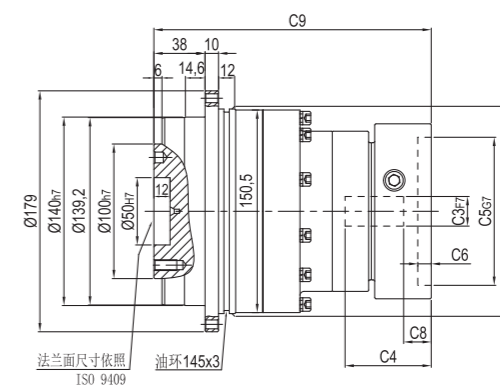
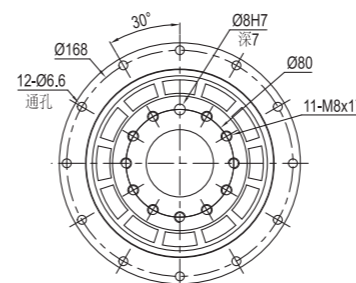
法兰面尺寸依照 ISO 9409
油环110x3

输入端/ INPUT



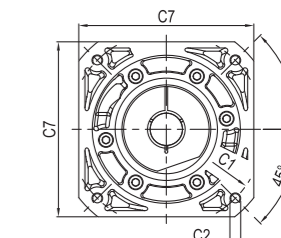
AD140-L2

输出端/OUTPUT



法兰面尺寸依照 ISO 9409
油环145x3

输入端/ INPUT



尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9
AD110-L1	Ø145	4-M8x20	Ø19,Ø22,Ø24	64	Ø110	10	130	19.5	135
	Ø200	4-M12x28	Ø35	81	Ø114.3	10	180	28	152.5
AD110-L2	Ø90	4-M5x12, 4-M6x14	Ø19	42	Ø70	6.5	80	7	151.5
	Ø100	4-M6x14	Ø16	42	Ø80	6.5	86	6	151.5
	Ø115	4-M8x20	Ø19,Ø22	56.5	Ø95	8	100	16.5	167
	Ø145	4-M8x20	Ø19,Ø22,Ø24	59	Ø110	11	130	19	169.5

* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。

* C1~C7are motor(metric standard) specific dimensions, which could be customised.

外形尺寸图表 / OUTLINE DIMENSION SHEET

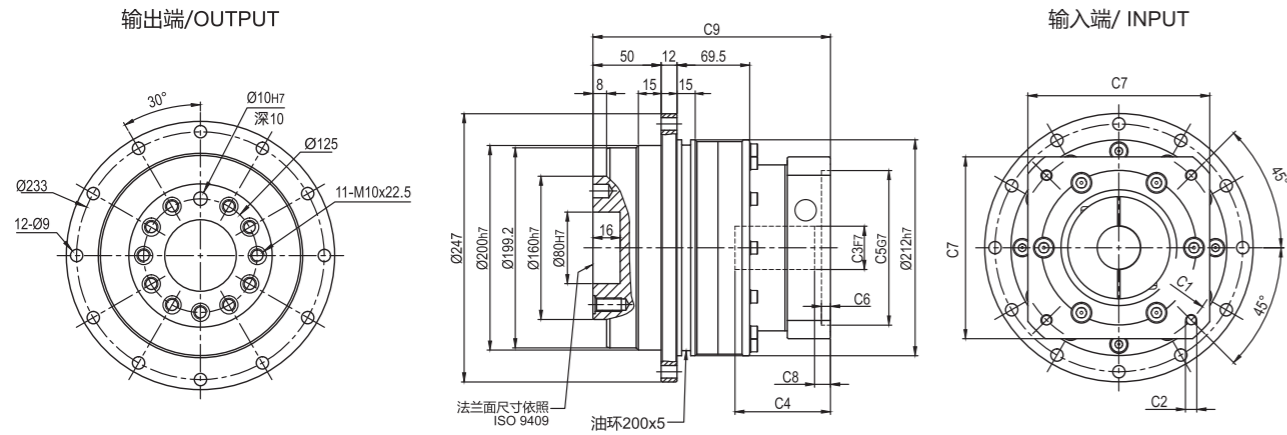
尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9
AD140-L1	Ø145	4-M8x20	Ø22,Ø24	72	Ø110	11	130	19.5	162
	Ø200	4-M12x28	Ø35	81.5	Ø114.3	8	180	25	172
AD140-L2	Ø145	4-M8x20	Ø19,Ø22,Ø24	64	Ø110	10	130	19.5	206
	Ø200	4-M12x28	Ø35	81	Ø114.3	10	180	28	223.5

* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。

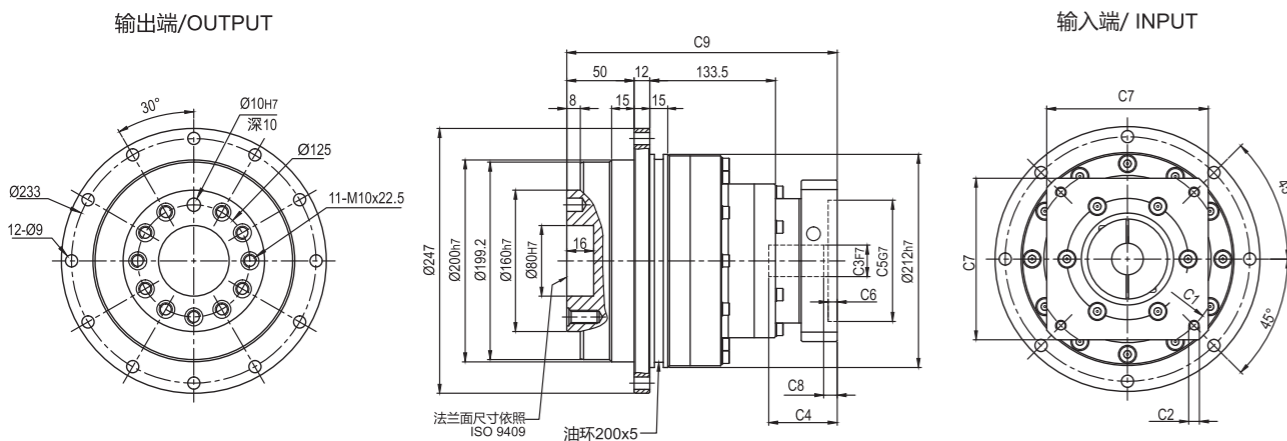
* C1~C7are motor(metric standard) specific dimensions, which could be customised.

外形尺寸图表 / OUTLINE DIMENSION SHEET

AD200-L1



AB200-L2

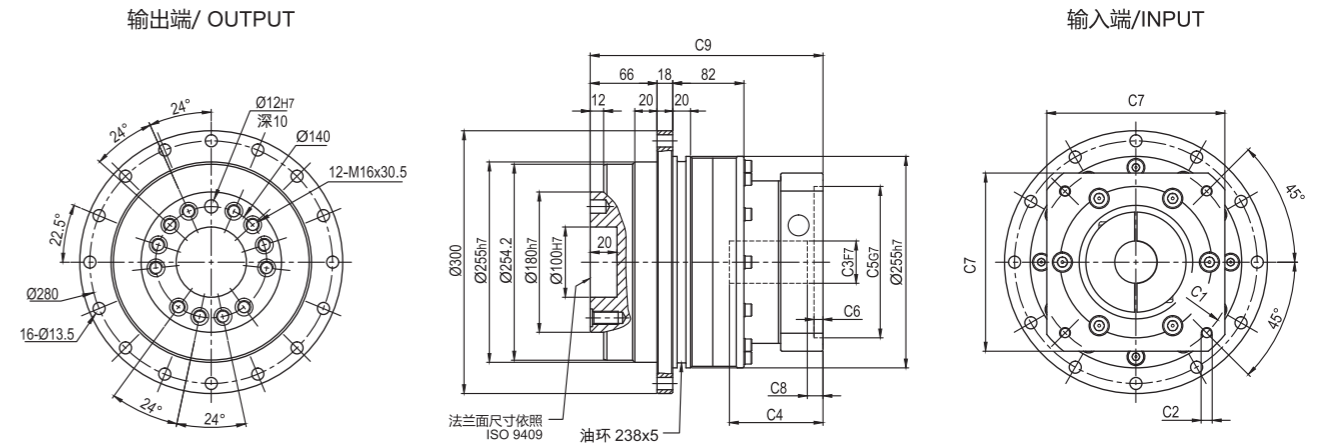


尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9
AD200-L1	Ø165	4-M10x25	Ø32	86	Ø130	6	168	8.5	199.5
	Ø200	4-M12x28	Ø35	86	Ø114.3	6	180	8.5	199.5
AD200-L2	Ø145	4-M8x25	Ø22,Ø24	75	Ø110	11	130	19	249.5
	Ø200	4-M12x30	Ø35	83	Ø114.3	8	180	28	257.5

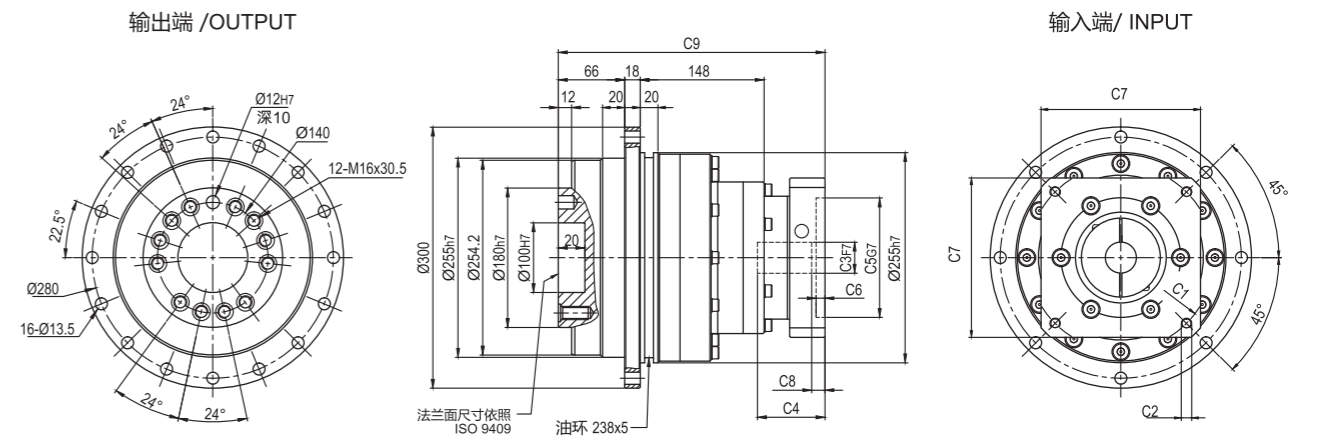
* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7are motor(metric standard) specific dimensions, which could be customised.

外形尺寸图表 / OUTLINE DIMENSION SHEET

A255-L1



AD255-L2



尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9
AD255-L1	Ø235	4-M12x28	Ø38,Ø42	116	Ø200	6	220	10	256.5
	Ø200	4-M12x28	Ø35	85	Ø114.3	6	180	10	311.5
AD255-L2	Ø215	4-M12x28	Ø38	85	Ø180	6	190	19	311.5

* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7are motor(metric standard) specific dimensions, which could be customised.

型号说明 / MODEL ILLUMINATE



型号定义 / MODEL ILLUMINATE

ADR 060 - 10 - S□ / 马达

减速机型式：
ADR047/ADR064/ADR090
ADR110/ADR140/ADR200/ADR255

马达型号：
1-马达制造商及型号
2-马达安装尺寸

减速比：单级(L1)：4,5,6,7,8,10,14,20
双级(L2)：20,25,35,40,50,60,70,80,100,120,140,160,200

背隙：S0：超精密背隙
S1：精密背隙
S2：标准背隙

选用范例：ADR060-10-S□ MHMD-042G1U

型号定义② ADR060-10-S□-50*3/14*30/70/M4
LB*LE S*LR LA LZ

减速机性能资料/ GEAR BOX PERFORMANCE INFORMATION

规格	级数	减速比 ¹	ADR047	ADR064	ADR090	ADR110	ADR140	ADR200	ADR255	
额定输出力矩 T _{2N}	1	4	19	48	130	270	560	1,100	1,700	
		5	22	60	160	330	650	1,200	2,000	
		6	-	55	150	310	600	-	-	
		7	19	50	140	300	550	1,100	1,800	
		8	17	48	130	270	560	1,000	1,600	
		10	14	60	160	330	650	520	1,220	
		14	-	50	140	300	550	1,100	1,800	
	定货时备注L1级	20	-	40	100	230	450	520	1,220	
	2	20	19	48	130	270	560	1,100	1,700	
		25	22	60	160	330	650	1,200	2,000	
		35	22	60	160	330	650	1,200	2,000	
		40	22	48	130	270	560	1,200	2,000	
		50	22	60	160	330	650	1,200	2,000	
		60	-	55	150	310	600	-	-	
70		22	60	160	330	650	1,200	2,000		
最大输出力矩 T _{2B}	Nm	80	-	48	130	270	560	-	-	
		100	22	60	160	330	650	1,200	2,000	
		120	-	-	150	310	600	-	-	
		140	-	-	140	300	550	1,100	1,800	
		160	-	-	120	260	500	-	-	
		200	-	-	100	230	450	520	1,220	
		3倍额定输出力矩	1,2	4~200	5,000	5,000	4,000	4,000	3,000	3,000
额定输入转速 n ₁	rpm	1,2	4~200	10,000	10,000	8,000	8,000	6,000	6,000	4,000
最大输入转速 n _{1B}	rpm	1,2	4~200	10,000	10,000	8,000	8,000	6,000	6,000	4,000
超精密背隙 S0	arcmin	1	4~20	-	-	≤2	≤2	≤2	≤2	≤2
		2	20~200	-	-	≤4	≤4	≤4	≤4	≤4
精密背隙 S1	arcmin	1	4~20	≤4	≤4	≤4	≤4	≤4	≤4	≤4
		2	20~200	≤7	≤7	≤7	≤7	≤7	≤7	≤7
标准背隙 S2	arcmin	1	4~20	≤6	≤6	≤6	≤6	≤6	≤6	≤6
		2	20~200	≤9	≤9	≤9	≤9	≤9	≤9	≤9
扭转刚性		1,2	4~200	7	13	31	82	151	440	1,006
最大弯曲力矩 M _{2kB} ²	Nm	1,2	4~200	42.5	125	235	430	1,300	3,064	5,900
容许径向力 F _{2B} ²	N	1,2	4~200	1,080	2,110	2,310	4,800	6,200	5,450	10,600
使用寿命	hr	1,2	4~200	20,000*						
效率 η	%	1	4~20	≥95%						
		2	20~200	≥92%						
重量	kg	1	4~20	1.1	1.9	4.5	9.8	20.1	45.4	85.4
		2	20~200	1.4	2.1	5.9	10.5	21.9	50.9	85.9
使用温度	°C	1,2	4~200	-10°C~+90°C						
润滑		1,2	4~200	合成润滑油脂						
防护等级		1,2	4~200	IP65						
安装方向		1,2	4~200	任意方向						
噪音值 (n ₁ =3000rpm)	dB	1,2	4~200	≤61	≤63	≤65	≤68	≤70	≤72	≤74

减速机转动惯量

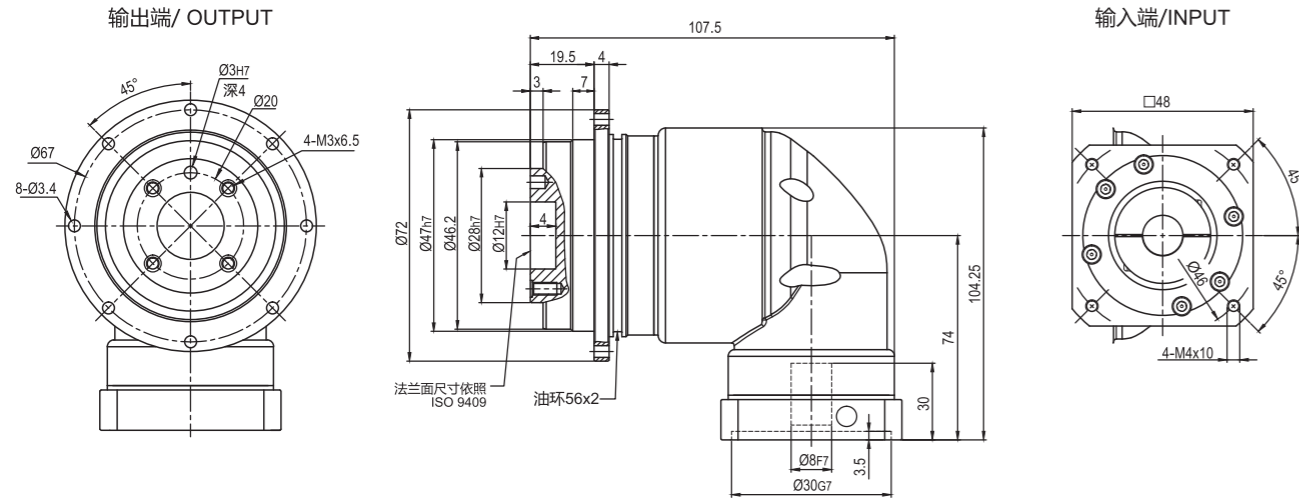
规格	级数	减速比 ¹	ADR047	ADR064	ADR090	ADR110	ADR140	ADR200	ADR255
转动惯量 J ₁	1	4~7	0.09	0.35	2.25	6.84	23.4	68.9	135.4
		8~10	0.09	0.07	1.87	6.25	21.8	65.6	119.8
		14~20	-	0.07	1.87	6.25	21.8	65.6	119.8
	2	20~40	0.09	0.09	0.35	2.25	6.84	23.4	68.9
		50	-	0.09	0.31	1.87	6.25	21.8	65.6
		60	-	0.09	0.35	2.25	6.84	-	-
		70~100	-	0.09	0.31	1.87	6.25	21.8	65.6
120~200	-	-	0.31	1.87	6.25	21.8	65.6		

1. 减速比 (i=N_{in}/N_{out})
* 连续运转降低使用寿命二分之一。

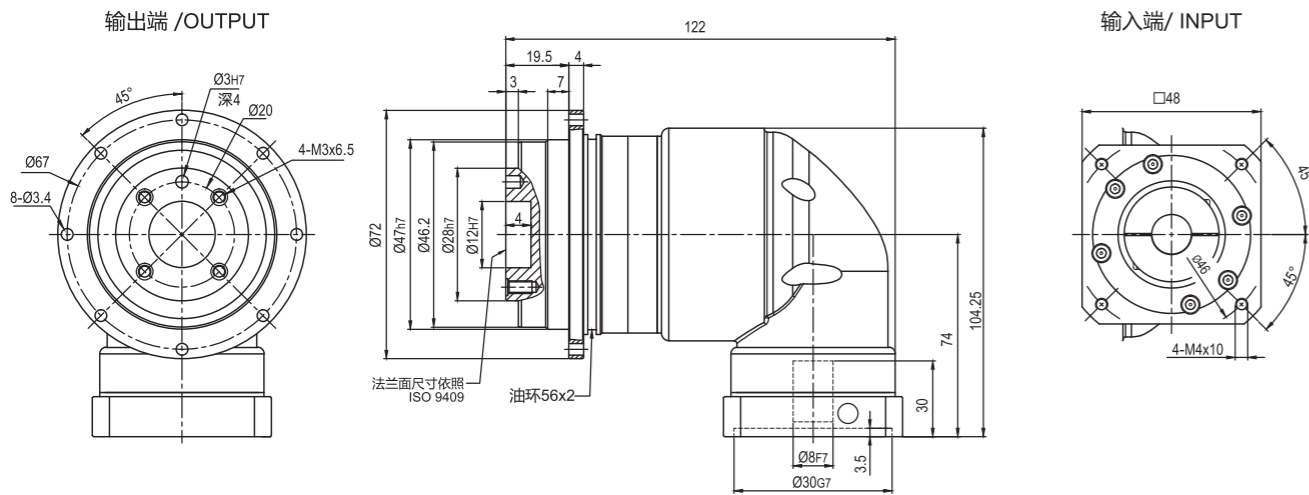
2. 输出转速 100rpm 时，作用于输出轴中心位置。

外形尺寸图表 / OUTLINE DIMENSION SHEET

ADR047-L1



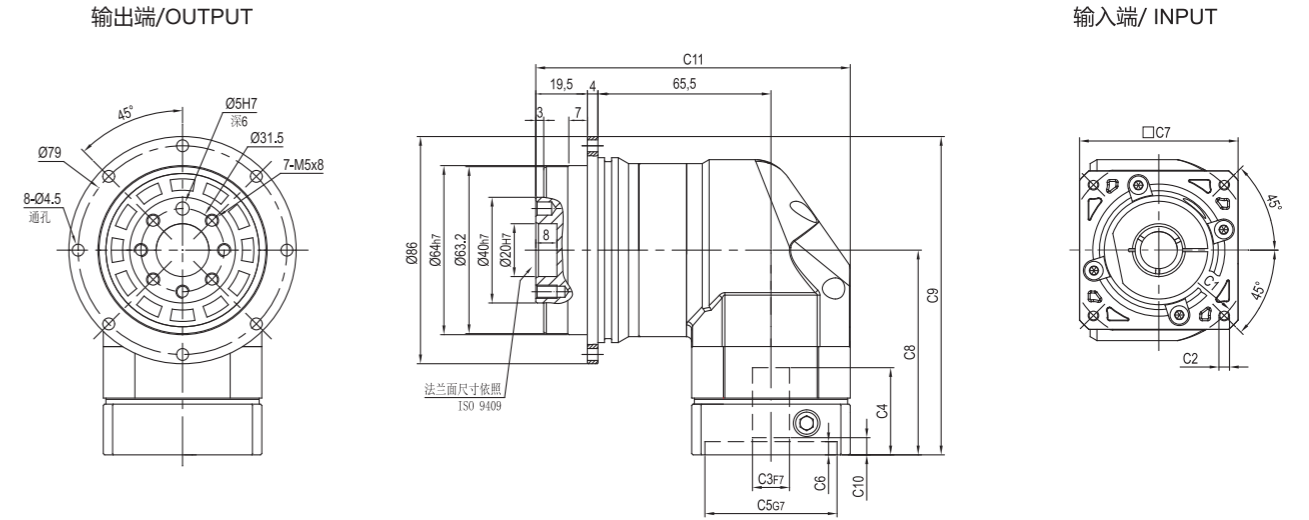
ADR047-L2



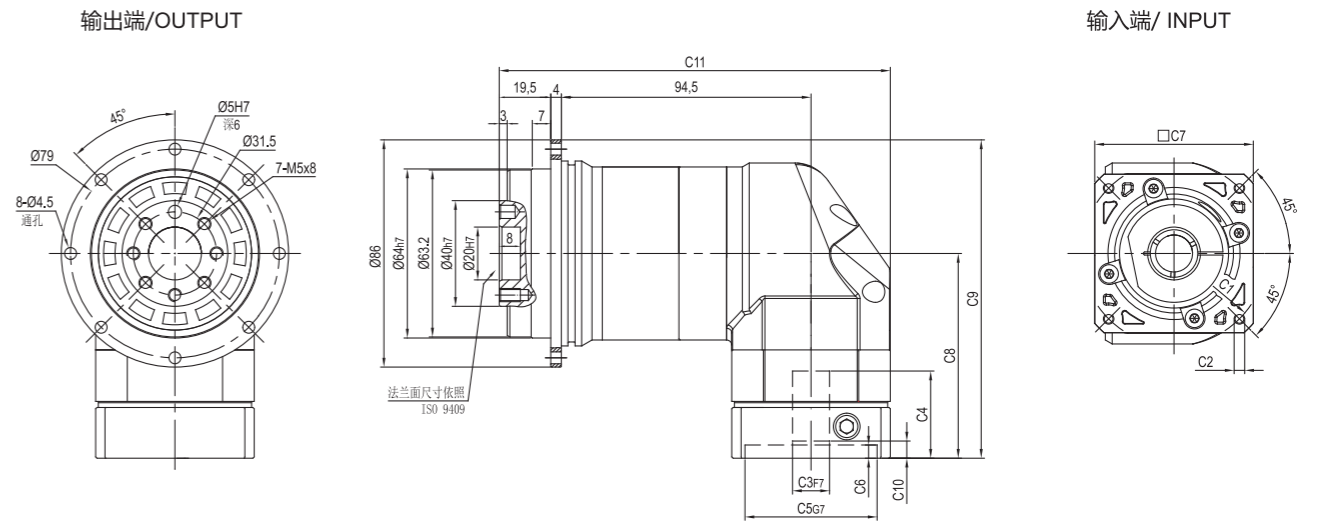
*输入马达连接板之尺寸,可根据客户要求单独定做。
*The input motor specific dimensions could be customised.

外形尺寸图表 / OUTLINE DIMENSION SHEET

ADR064-L1



ADR064-L2



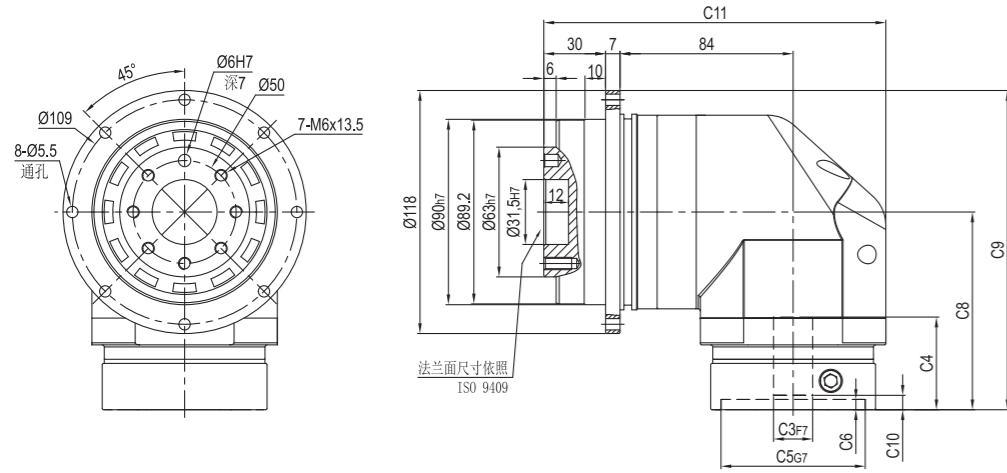
尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11
ADR064-L1	Ø66.7	4-M4x10	Ø8	33	Ø38.1	5	60	77.5	120.5	5.5	119
ADR064-L2											148
ADR064-L1	Ø70	4-M4x10,4-M5x12	Ø11,Ø14	33	Ø50	5	60	77.5	120.5	5.5	119
ADR064-L2											148
ADR064-L1	Ø90	4-M5x12,4-M6x14	Ø19	42.5	Ø70	6.5	80	87	130	12	129
ADR064-L2											158

* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7are motor(metric standard) specific dimensions, which could be customised.

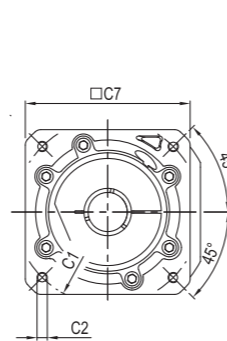
外形尺寸图表 / OUTLINE DIMENSION SHEET

ADR090-L1

输出端 / OUTPUT

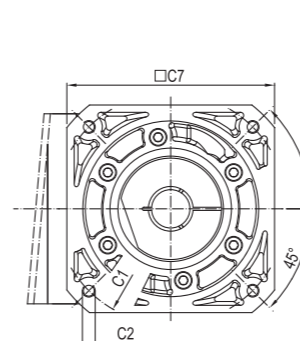


输入端 / INPUT

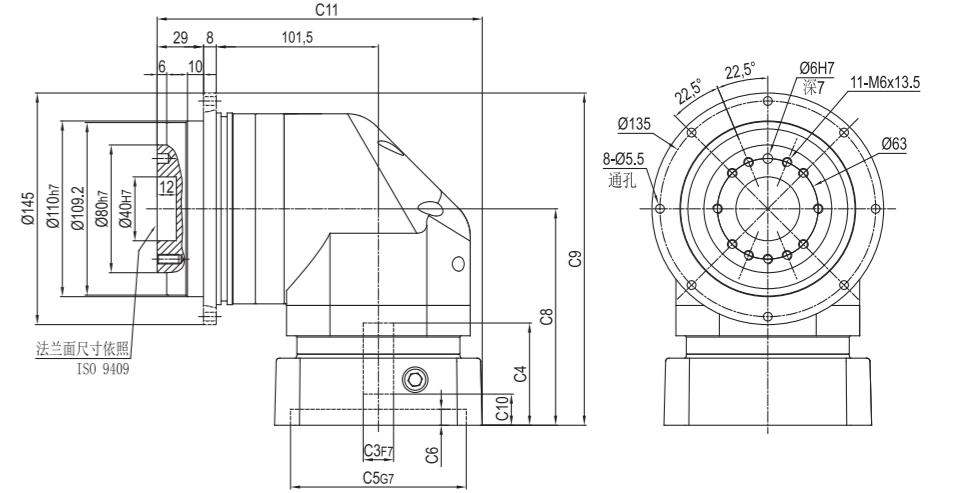


ADR110-L1

输入端 / INPUT

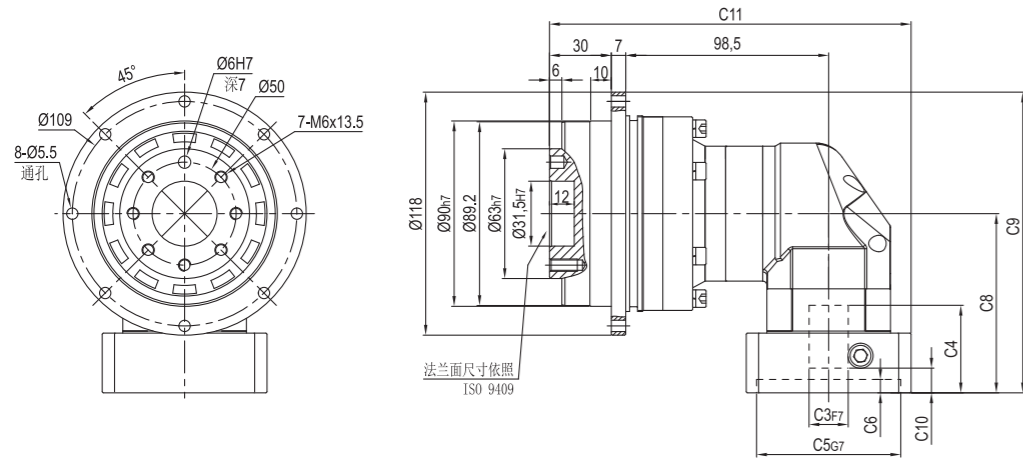


输出端 / OUTPUT

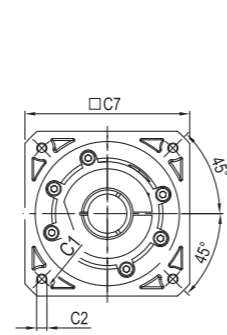


ADR090-L2

输出端 / OUTPUT

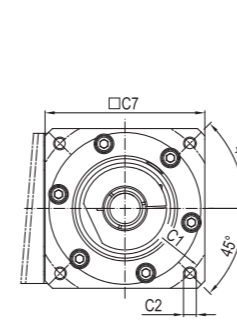


输入端 / INPUT

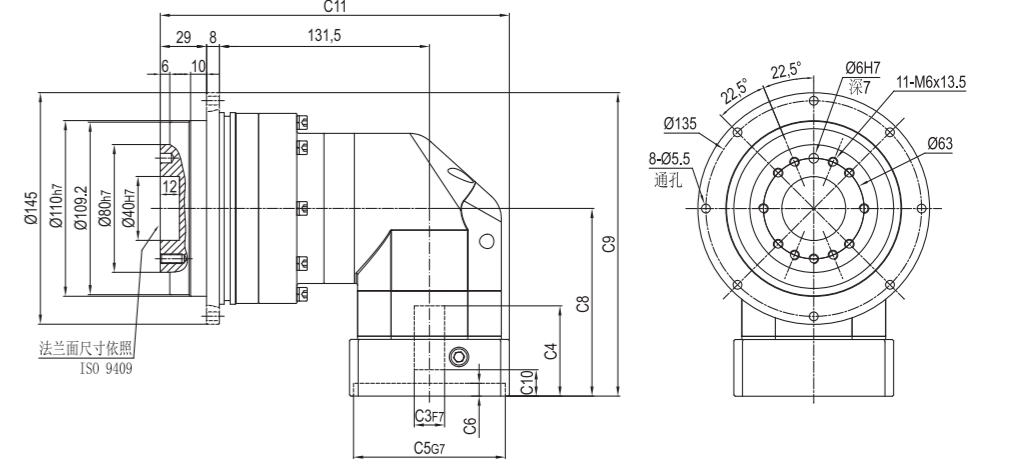


ADR110-L2

输入端 / INPUT



输出端 / OUTPUT



尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11
ADR090-L1	Ø90	4-M5x12,4-M6x14	Ø19	45	Ø70	6.5	80	96	155	7	166
	Ø100	4-M6x14	Ø16	45	Ø80	6.5	86	96	155	6	166
	Ø115	4-M8x20	Ø19,Ø22	56.5	Ø95	8	100	117.5	176.5	16.5	171
	Ø145	4-M8x20	Ø19,Ø22,Ø24	59	Ø110	11	130	120	179	19	186
ADR090-L2	Ø66.7	4-M4x10	Ø8	33	Ø38.1	5	60	77.5	136.5	5.5	165.5
	Ø70	4-M4x10,4-M5x12	Ø11,Ø14	33	Ø50	5	60	77.5	136.5	5.5	165.5
	Ø90	4-M5x12,4-M6x14	Ø19	42.5	Ø70	6.5	80	87	146	12	175.5
	Ø100	4-M6x14	Ø16	42.5	Ø80	6.5	86	87	146	11	175.5

* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7are motor(metric standard) specific dimensions, which could be customised.

外形尺寸图表 / OUTLINE DIMENSION SHEET

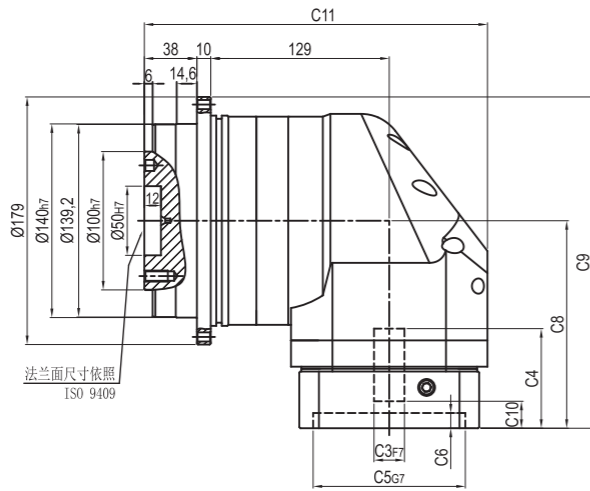
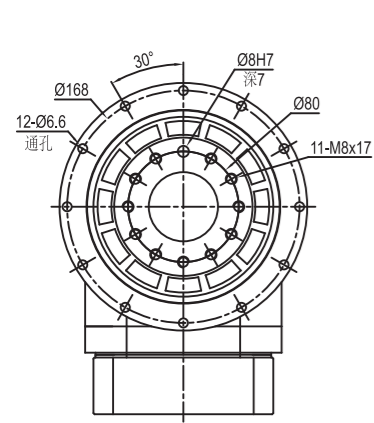
尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11
ADR110-L1	Ø145	4-M8x20	Ø19,Ø22,Ø24	64	Ø110	10	130	135.5	208	19.5	203.5
	Ø200	4-M12x28	Ø35	81	Ø114.3	10	180	152.5	225	28	228.5
ADR110-L2	Ø90	4-M5x12,4-M6x14	Ø19	45	Ø70	6.5	80	96	168.5	7	213.5
	Ø100	4-M6x14	Ø16	45	Ø80	6.5	86	96	168.5	6	213.5
	Ø115	4-M8x20	Ø19,Ø22	56.5	Ø95	8	100	117.5	190	16.5	218.5
	Ø145	4-M8x20	Ø19,Ø22,Ø24	59	Ø110	11	130	120	192.5	19	233.5

* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7are motor(metric standard) specific dimensions, which could be customised.

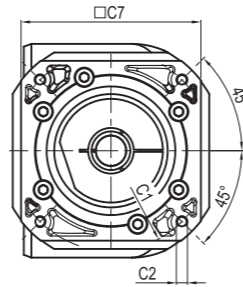
外形尺寸图表 / OUTLINE DIMENSION SHEET

ADR140-L1

输出端/ OUTPUT

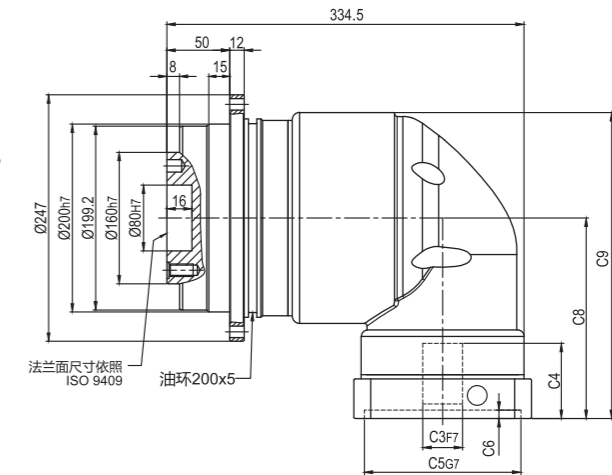
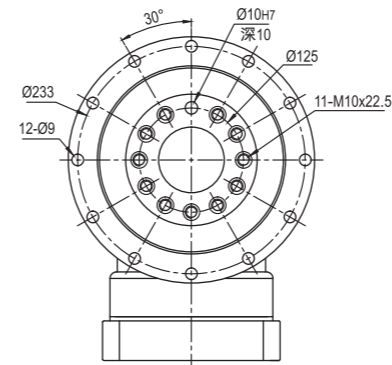


输入端/INPUT

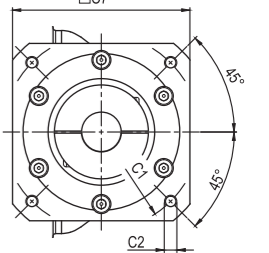


ADR200-L1

输出端/OUTPUT

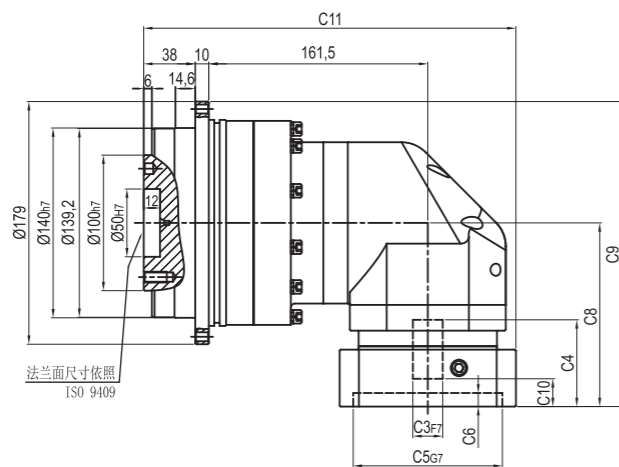
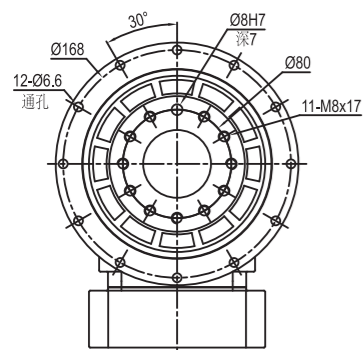


输入端/ INPUT

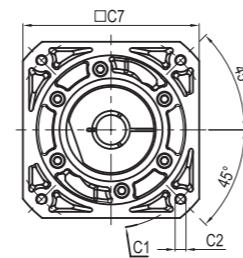


ADR140-L2

输出端 /OUTPUT

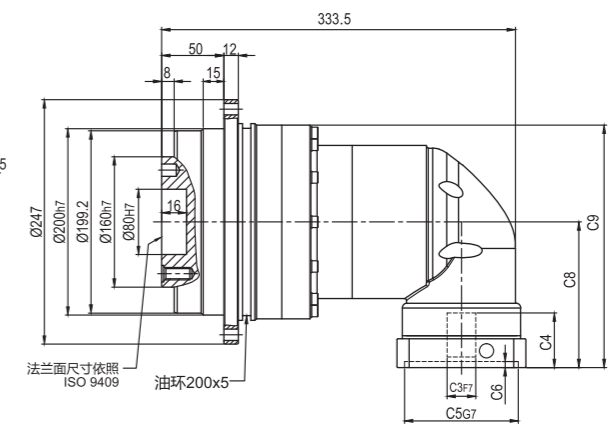
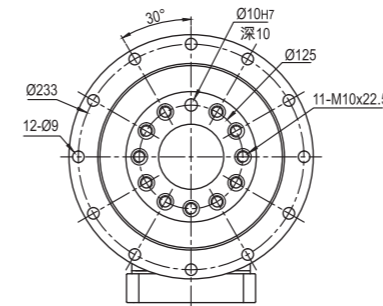


输入端/ INPUT

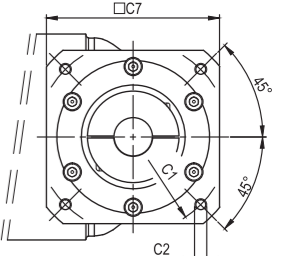


ADR200-L2

输出端/OUTPUT



输入端/ INPUT



尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11
ADR140-L1	Ø145	4-M8x20	Ø22,Ø24	72	Ø110	11	130	150	239.5	19.5	248
	Ø200	4-M12x28	Ø35	82	Ø114.3	8	180	160	249.5	25	267
ADR140-L2	Ø145	4-M8x20	Ø19,Ø22,Ø24	64	Ø110	10	130	135.5	225	19.5	274.5
	Ø200	4-M12x28	Ø35	81	Ø114.3	10	180	152.5	242	28	299.5

* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7are motor(metric standard) specific dimensions, which could be customised.

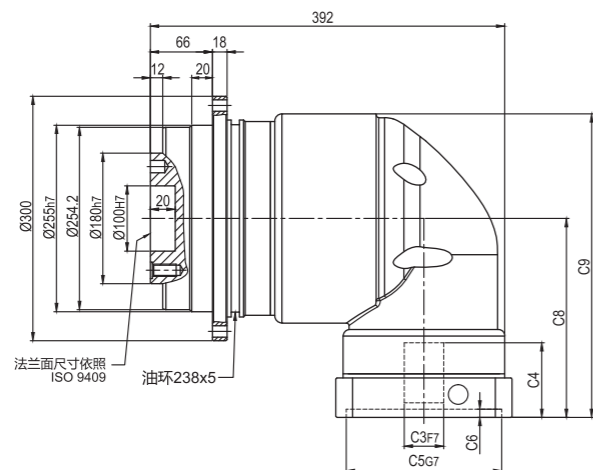
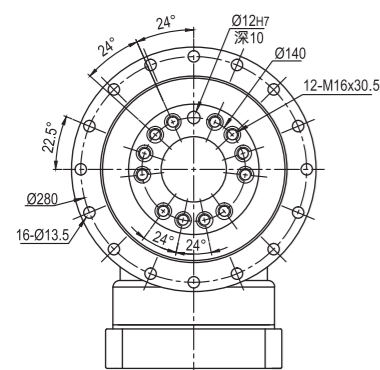
尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9
ADR200-L1	Ø200	4-M12x28	Ø35	85	Ø114.3	6	180	213.5	316
	Ø215	4-M12x28	Ø38	85	Ø180	6	190	213.5	316
ADR200-L2	Ø165	4-M10x25	Ø28	60	Ø130	6	142	164.5	269.5
	Ø200	4-M12x28	Ø35	85	Ø114.3	6	180	189.5	294.5

* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7are motor(metric standard) specific dimensions, which could be customised.

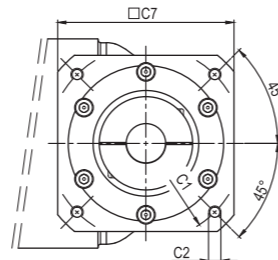
外形尺寸图表 / OUTLINE DIMENSION SHEET

ADR255-L1

输出端 / OUTPUT

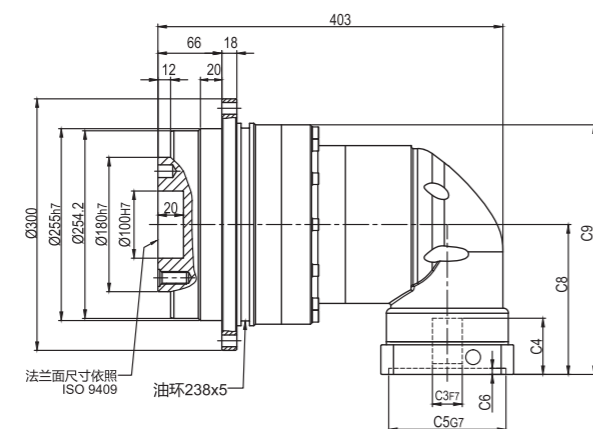
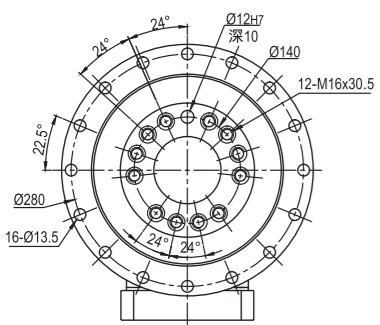


输入端 / INPUT

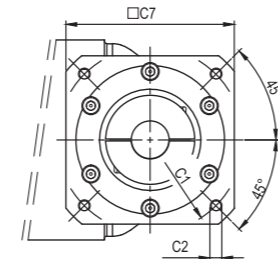


ADR255-L2

输出端 / OUTPUT



输入端 / INPUT



尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9
ADR255-L1	Ø235	4-M12x28	Ø38, Ø42	116	Ø200	6	220	268.5	398.5
ADR255-L2	Ø200	4-M12x28	Ø35	85	Ø114.3	6	180	213.5	340
	Ø215	4-M12x28	Ø38	85	Ø180	6	190	213.5	340

* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。

* C1~C7are motor(metric standard) specific dimensions, which could be customised.



ESP

ESPZ

FSP

FSPZ

型号定义 / MODEL ILLUMINATE

ESP60 - 10 - 马达

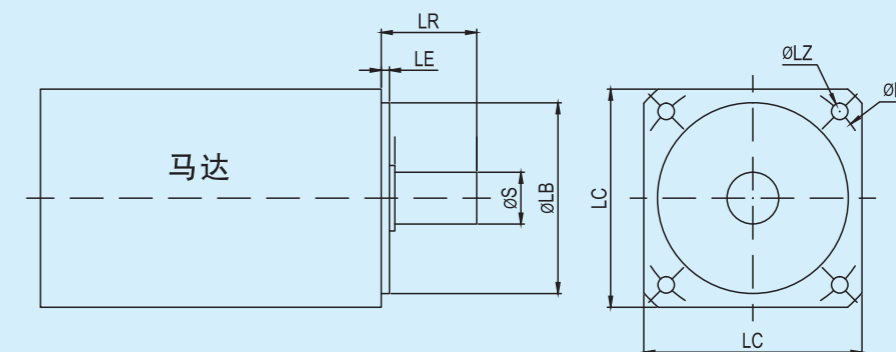
减速机型式：
ESP60/ESPZ60/ESP90/ESPZ90
ESP120/ESPZ120/ESP160/ESPZ160

马达型号：
1-马达制造商及型号
2-马达安装尺寸

减速比：单级(L1)：3,4,5,6,7,8,10,14,20
双级(L2)：12,15,20,25,30,35,
40,50,60,70,80,100,
120,140,160,200

选用范例：ESP60-10-MHMD-042G1U

型号定义② ESP60-10- 50*3/14*30/70/M4
LB*LE S*LR LA LZ



减速机性能资料 / GEAR BOX PERFORMANCE INFORMATION

规格	级数	减速比 ¹	ESP40 FSP40	ESP60 FSP60	ESP90 FSP90	ESP120 FSP120	ESP160 FSP160		
额定输出力矩 T_{2N}	Nm	1	3	16	27	96	161	364	
			4	16	40	122	210	423	
			5	15	40	122	210	423	
			7	12	34	90	170	358	
			8	10	34	95	150	350	
		10	10	16	90	86	210		
		2	12	15	27	56	161	364	
			15	16	27	96	161	423	
			20	16	27	96	210	423	
			25	15	40	122	210	423	
	30		15	27	96	161	364		
	Nm	35	12	40	122	210	423		
		40	16	40	122	210	423		
		50	15	40	122	210	423		
		70	12	34	95	170	358		
		100	10	16	56	86	210		
		最大输出力矩 T_{2B}	Nm	1,2	二倍额定输出力矩				
		额定输入转速 n_1	rpm	1,2	4500	4,000	3,600	3,000	2,500
最大输入转速 n_{1B}		rpm	1,2	3~100	8000	6,000	6,000	4,800	3,600
背隙*	arcmin	1	3~10	≤ 8	≤ 8	≤ 8	≤ 8	≤ 8	
		2	12~100	≤ 10	≤ 12	≤ 12	≤ 12	≤ 12	
扭转刚性	Nm/arcmin	1,2	3~100	0.8	1.8	4.8	11	35	
容许径向力 F_{2rB}^2	N	1,2	3~100	/	/	/	/	/	
容许轴向力 F_{2aB}^2	N	1,2	3~100	150	220	430	1000	1500	
使用寿命	hr	1,2	3~100	20,000*					
效率 η	%	1	3~10	≥ 97%					
		2	12~100	≥ 94%					
重量	kg	1	3~10	0.43	1.1	3.2	7	15	
		2	12~100	0.65	1.3	4.0	9	17	
使用温度	°C	1,2	3~100	-10°C~+90°C					
润滑		1,2	3~100	合成润滑油脂					
防护等级		1,2	3~100	IP64					
安装方向		1,2	3~100	任意方向					
噪音值 (3 000)	dB	1,2	3~100	≤ 55	≤ 58	≤ 60	≤ 65	≤ 70	

减速机转动惯量

规格	级数	减速比 ¹	ESP40 FSP40	ESP60 FSP60	ESP90 FSP90	ESP120 FSP120	ESP160 FSP160	
转动惯量 J_1	kg·cm ²	1	3	0.10	0.46	1.73	12.84	36.72
			4	0.10	0.46	1.73	12.22	34.63
			5	0.10	0.46	1.73	12.10	34.24
			7	0.10	0.46	1.73	12.05	34.07
			8	0.06	0.41	1.42	12.03	34.02
		10	0.06	0.41	1.42	12.03	34.02	
		2	12	0.08	0.44	1.49	12.10	34.24
			15	0.08	0.44	1.49	12.10	34.24
			20	0.08	0.44	1.49	12.10	34.24
			25	0.08	0.44	1.49	12.10	34.24
	30		0.08	0.44	1.49	12.03	34.02	
	kg·cm ²	35	0.08	0.44	1.49	12.10	34.24	
		40	0.08	0.44	1.49	12.03	34.02	
		50	0.08	0.44	1.49	12.03	34.02	
		70	0.05	0.34	1.25	12.03	34.02	
		100	0.05	0.34	1.25	12.03	34.02	

1.减速比($i=N_{in}/N_{out}$)

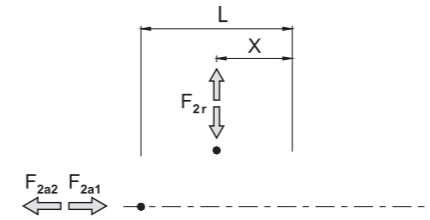
*周期性运转(S5)下之使用寿命为20,000小时, 连续运转(S1)下之使用寿命则降低50%.

*背隙值为在2%额定力矩 T_{2N} 的扭力下所测得

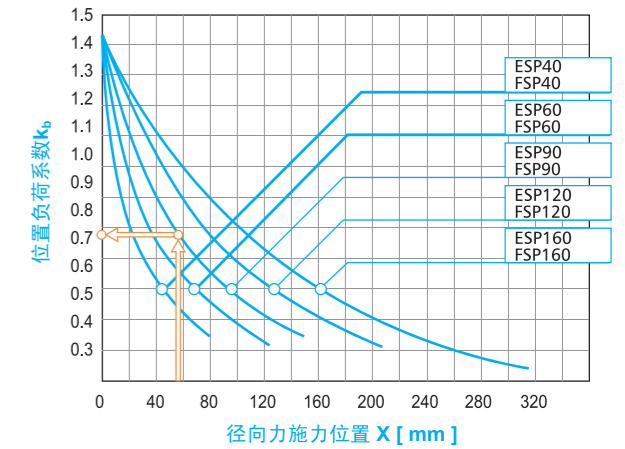
2. F_{2rB} 、 F_{2aB} 输出转速100rpm时, 作用于输出轴中心位置*

减速机输出轴之容许径向力及轴向力

REDUCER OUTPUT SHAFT OF THE PERMISSIBLE RADIAL FORCE AND SHAFT AND FORCE



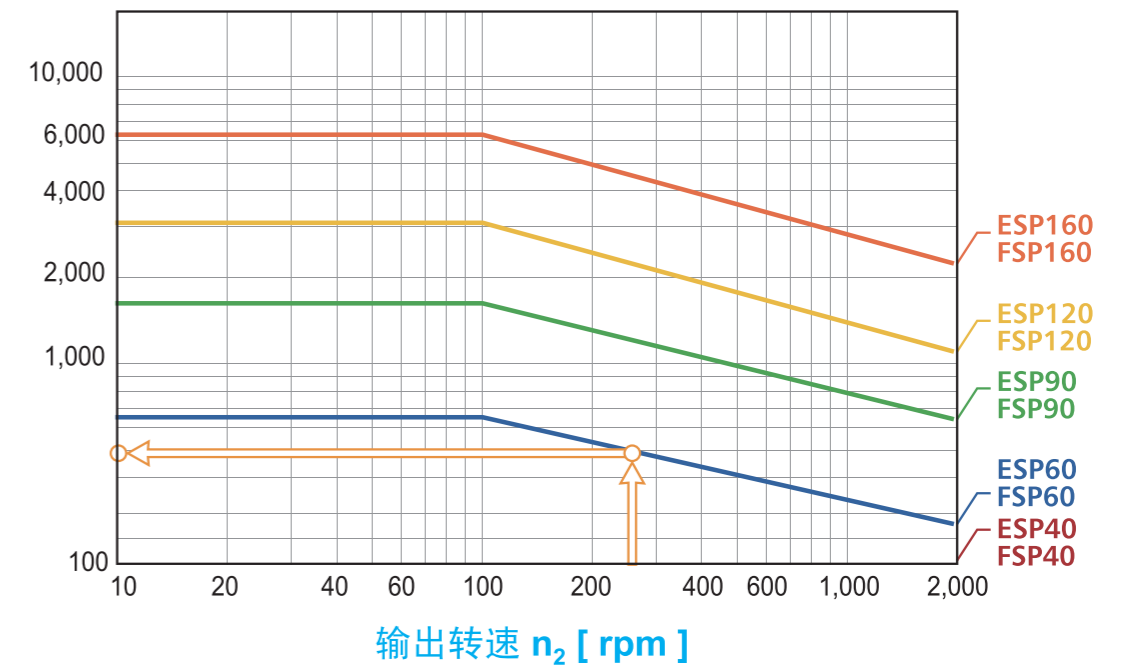
F_{2r} 径向力
 F_{2a} 轴向力



减速机输出轴所能承受之最大径向力及轴向力, 端视内部支撑轴承之设计。

当径向力 F_{2r} 施力不在轴中心位置, 越靠近减速机即 $X < 1/2 \times L$, 所能承受之容许径向力变大; 越远离减速机即 $X > 1/2 \times L$, 所能承受之容许径向力变小。藉由上图, 依减速机规格及径向施力位置 X , 可查出位置负荷系数 k_b 。

容许径向力 F_{2rB} [N] 施力于轴中心位置

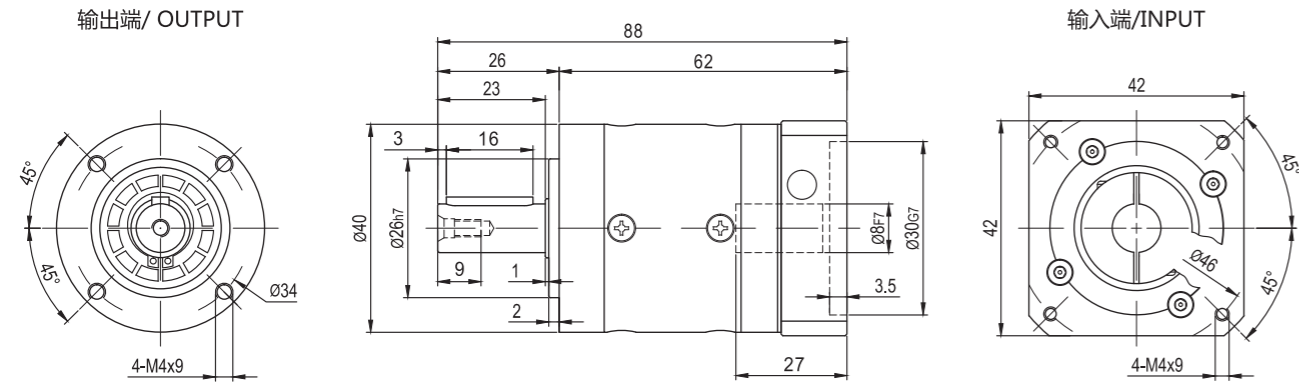


当径向力 F_{2r} 施力于轴中心位置, 即 $X = 1/2 \times L$ 时, 不同之减速机在不同输出转速运用下, 使用寿命为 20,000* 小时, 所能承受之容许径向力, 请参照上图。

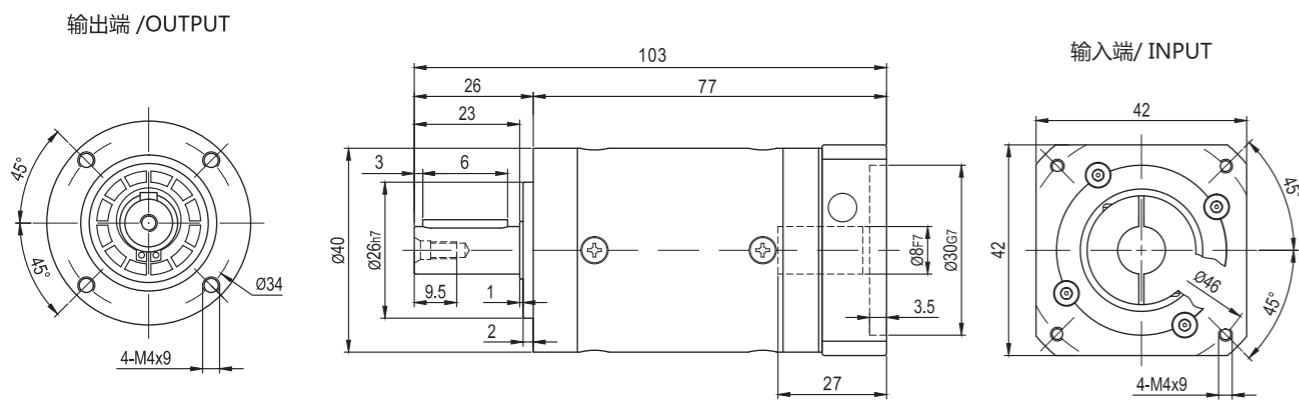
*连续运转(S1)下之使用寿命降低50%

外形尺寸图表 / OUTLINE DIMENSION SHEET

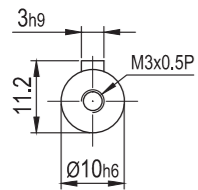
ESP040-L1



ESP040-L2



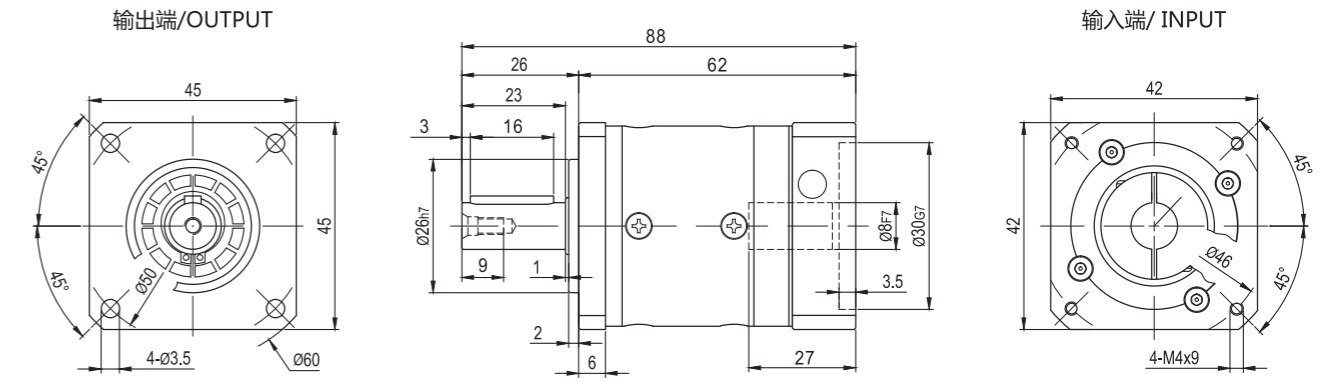
输出轴直径/Output Diameter



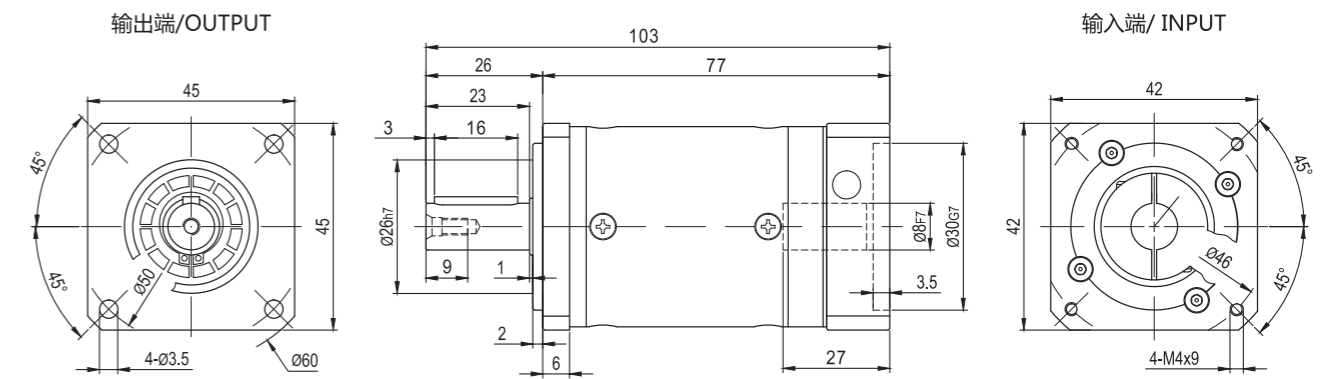
*输入马达连接板之尺寸,可根据客户要求单独定做。
The input motor specific dimensions could be customised.

外形尺寸图表 / OUTLINE DIMENSION SHEET

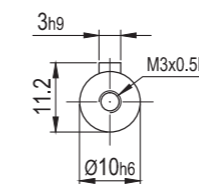
FSP040-L1



FSP040-L2



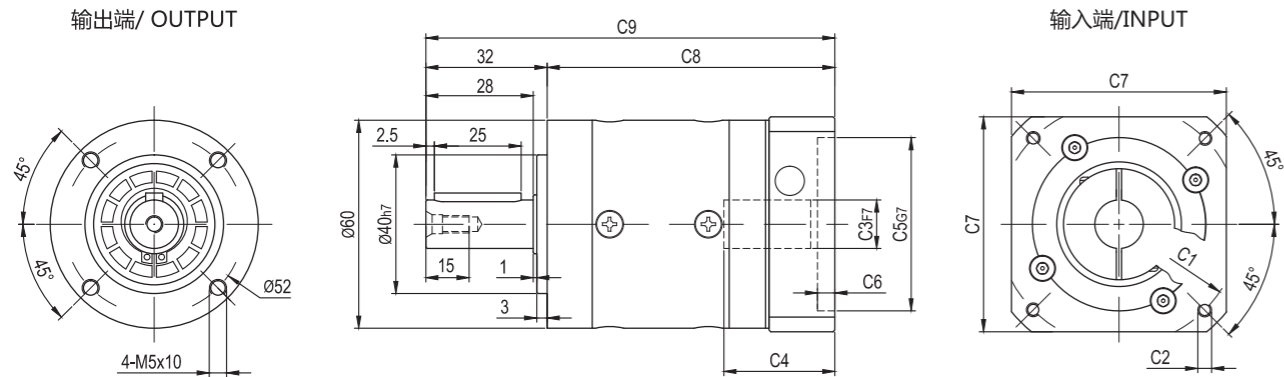
输出轴直径/Output Diameter



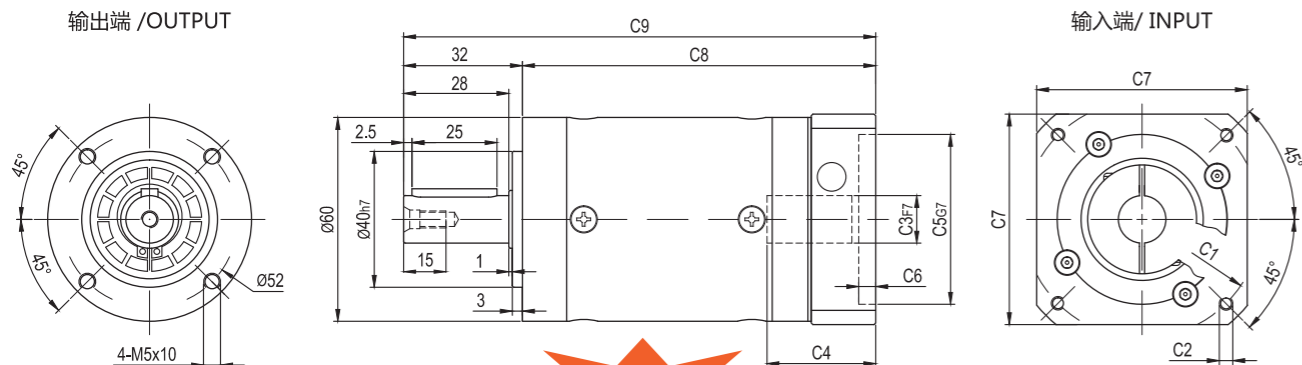
*输入马达连接板之尺寸,可根据客户要求单独定做。
*The input motor specific dimensions could be customised.

外形尺寸图表 / OUTLINE DIMENSION SHEET

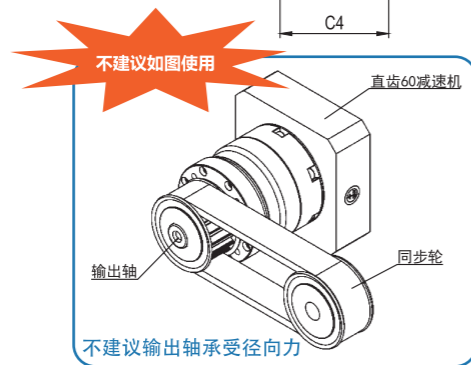
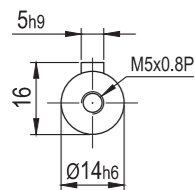
ESP060-L1



ESP060-L2



输出轴直径 / Output Diameter

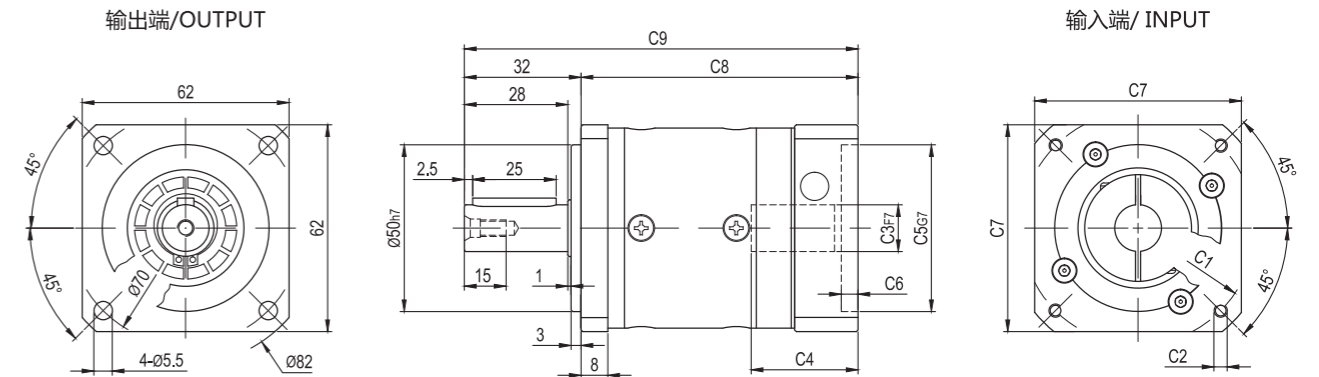


尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9
ESP60-L1	Ø46	4-M4x10	Ø8	31	Ø30	5	62	80	112
ESP60-L2	Ø66.7	4-M4x10	Ø8	31	Ø38.1	5	62	101	133
ESP60-L1	Ø70	4-M4x10,4-M5x12	Ø11,Ø14	32	Ø50	5	62	81	113
ESP60-L2								102	134

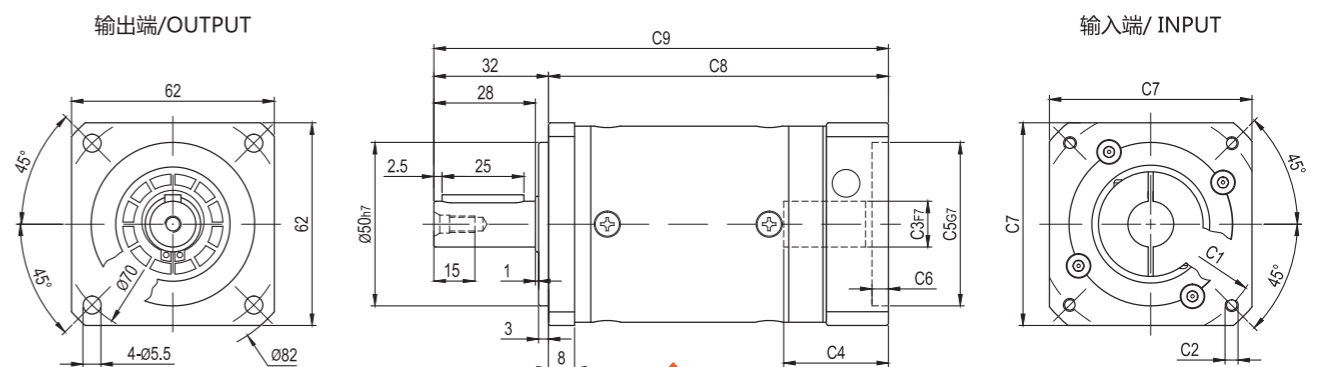
* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7are motor(metric standard) specific dimensions, which could be customised.

外形尺寸图表 / OUTLINE DIMENSION SHEET

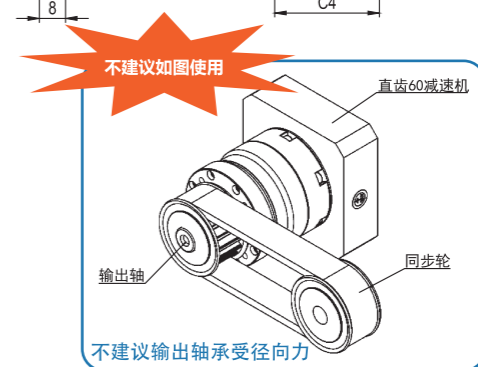
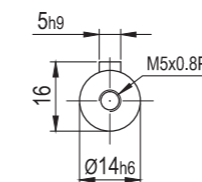
FSP060-L1



FSP060-L2



输出轴直径 / Output Diameter

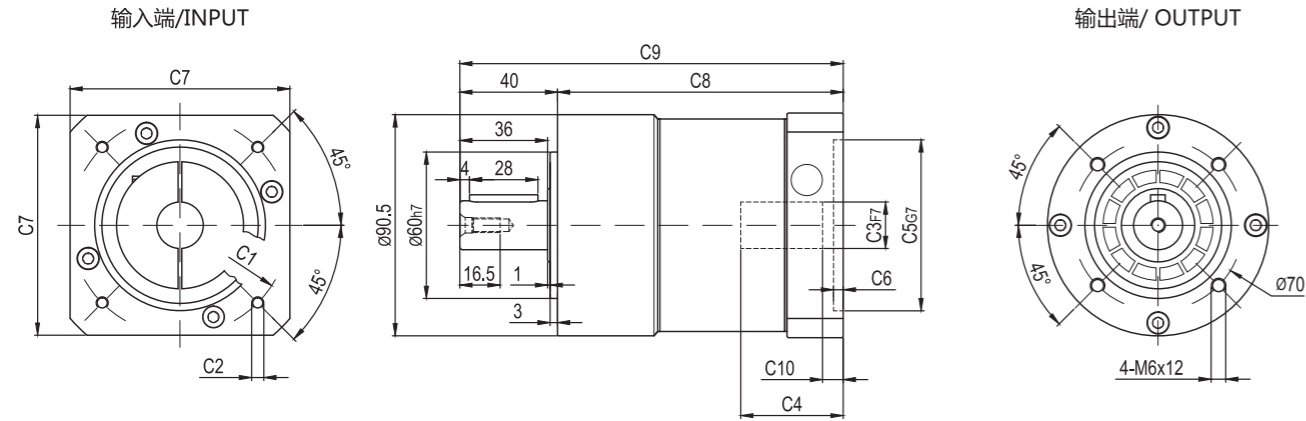


尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9
FSP60-L1	Ø46	4-M4x10	Ø8	31	Ø30	5	62	80	112
FSP60-L2	Ø66.7	4-M4x10	Ø8	31	Ø38.1	5	62	101	133
FSP60-L1	Ø70	4-M4x10,4-M5x12	Ø11,Ø14	32	Ø50	5	62	81	113
FSP60-L2								102	134

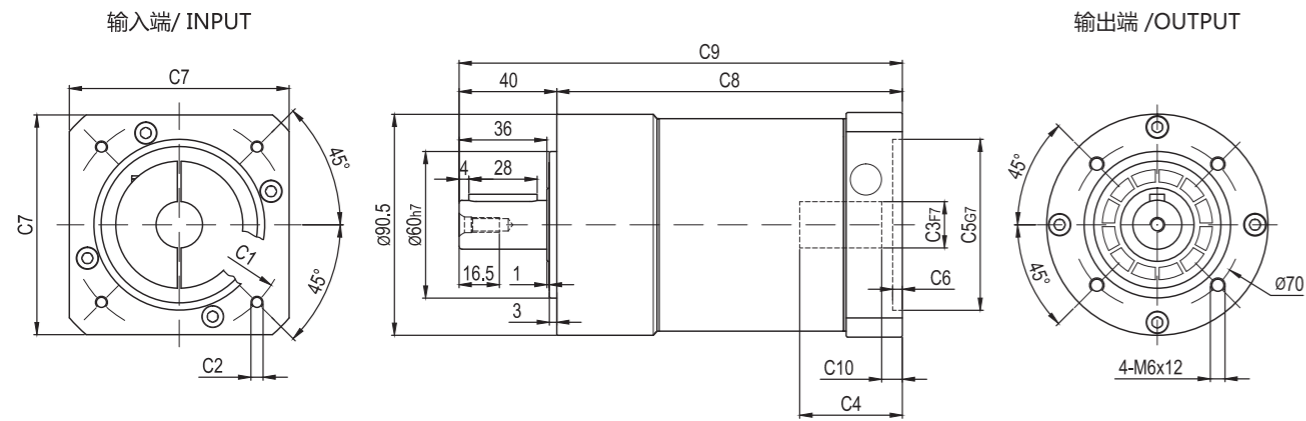
* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7are motor(metric standard) specific dimensions, which could be customised.

外形尺寸图表 / OUTLINE DIMENSION SHEET

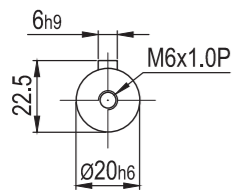
ESP090-L1



ESP090-L2



输出轴径/Output Diameter

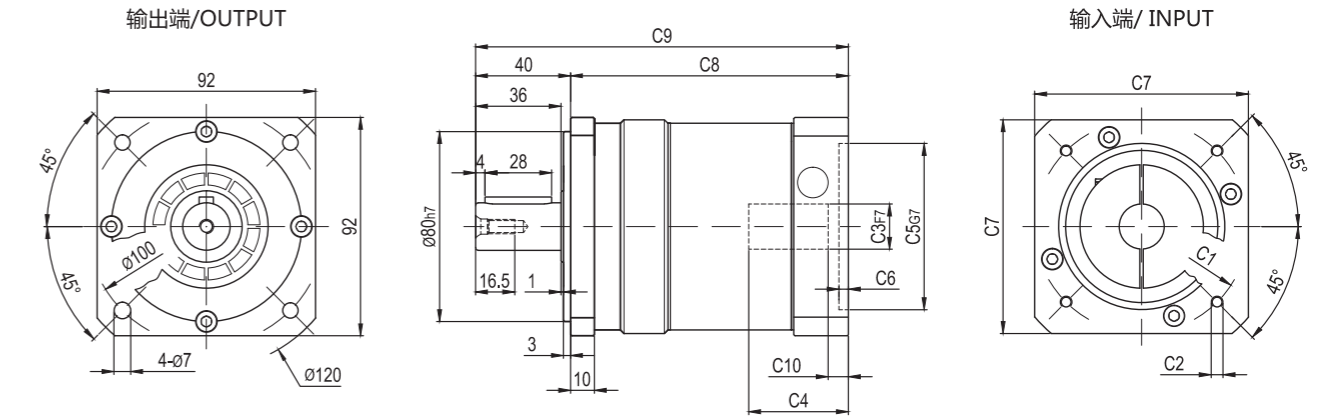


尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
ESP90-L1	Ø70	4-M4x10, 4-M5x12	Ø11, Ø14	41	Ø50	5	90	113.5	153.5	5
ESP90-L2	Ø90	4-M5x12, 4-M6x12	Ø19	42	Ø70	6	90	142	182	7
ESP90-L1	Ø100	4-M6x12	Ø16	42	Ø80	4	90	117	157	6
ESP90-L2	Ø115	4-M8x20	Ø19, Ø22	58	Ø95	6	100	142	182	7
ESP90-L1	Ø115	4-M8x20	Ø19, Ø22	58	Ø95	6	100	133	173	22
ESP90-L2	Ø145	4-M8x25	Ø19, Ø22, Ø24	61	Ø110	8	130	157.5	197.5	22
ESP90-L1	Ø145	4-M8x25	Ø19, Ø22, Ø24	61	Ø110	8	130	136	176	25
ESP90-L2								160.5	200.5	

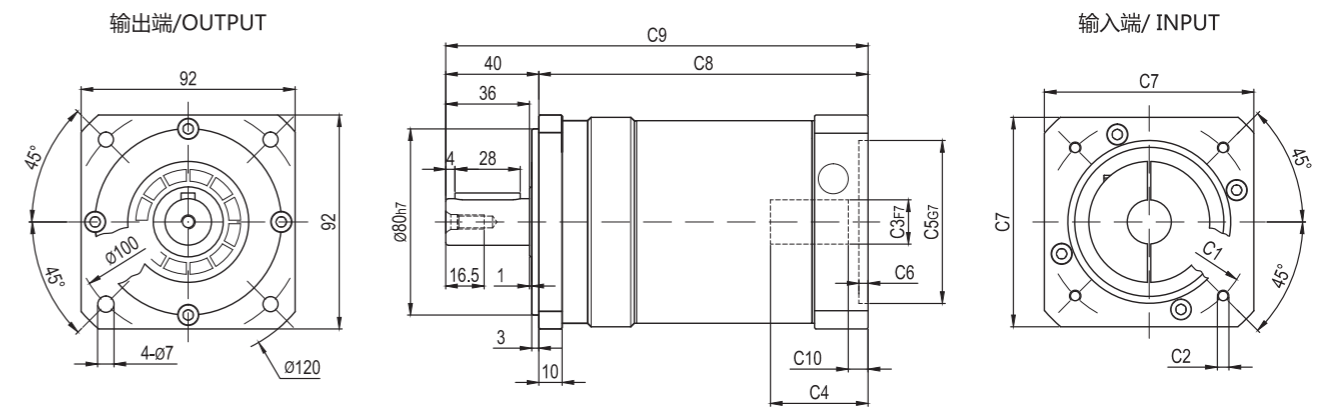
* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7 are motor (metric standard) specific dimensions, which could be customised.

外形尺寸图表 / OUTLINE DIMENSION SHEET

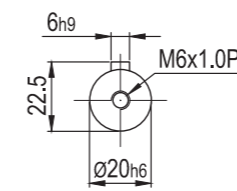
FSP090-L1



FSP090-L2



输出轴径/Output Diameter



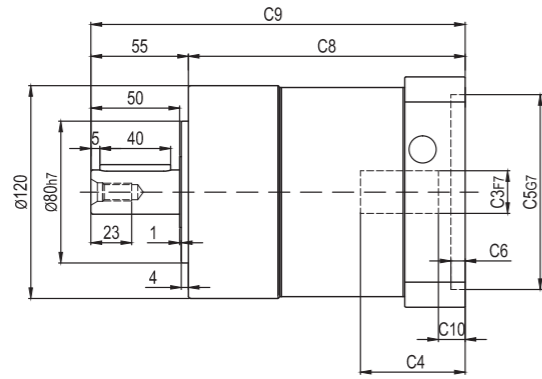
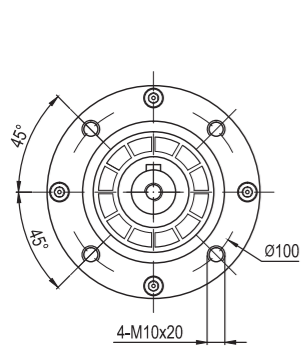
尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
FSP90-L1	Ø70	4-M4x10, 4-M5x12	Ø11, Ø14	41	Ø50	5	90	113.5	153.5	5
FSP90-L2	Ø90	4-M5x12, 4-M6x12	Ø19	42	Ø70	6	90	142	182	7
FSP90-L1	Ø100	4-M6x12	Ø16	42	Ø80	4	90	117	157	6
FSP90-L2	Ø115	4-M8x20	Ø19, Ø22	58	Ø95	6	100	142	182	7
FSP90-L1	Ø115	4-M8x20	Ø19, Ø22	58	Ø95	6	100	133	173	22
FSP90-L2	Ø145	4-M8x25	Ø19, Ø22, Ø24	61	Ø110	8	130	157.5	197.5	22
FSP90-L1	Ø145	4-M8x25	Ø19, Ø22, Ø24	61	Ø110	8	130	136	176	25
FSP90-L2								160.5	200.5	

* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7 are motor (metric standard) specific dimensions, which could be customised.

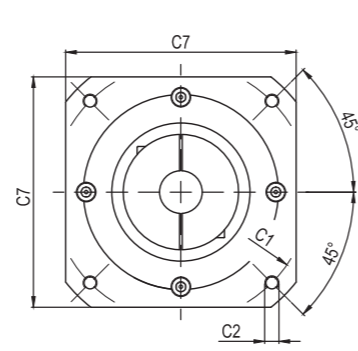
外形尺寸图表 / OUTLINE DIMENSION SHEET

ESP120-L1

输出端 / OUTPUT

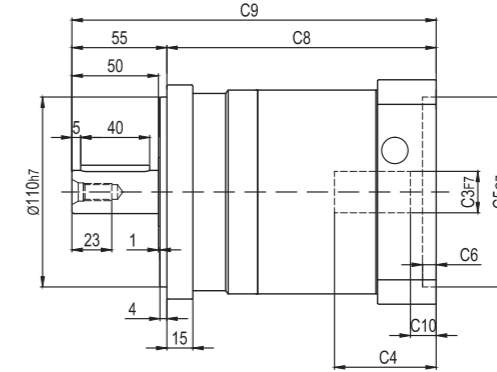
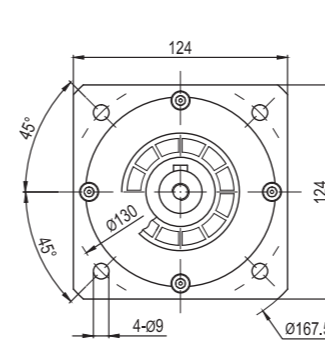


输入端 / INPUT

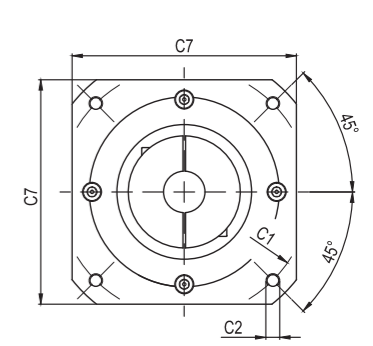


FSP120-L1

输出端 / OUTPUT

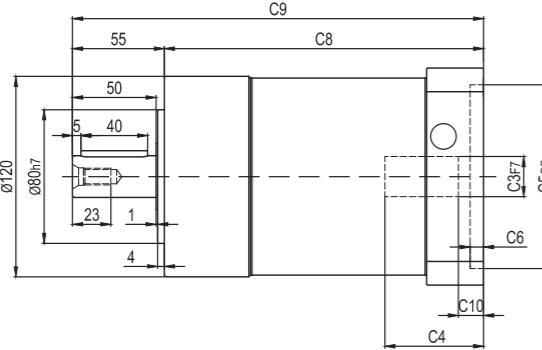
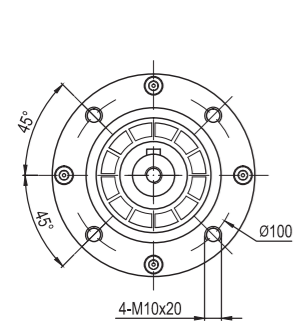


输入端 / INPUT

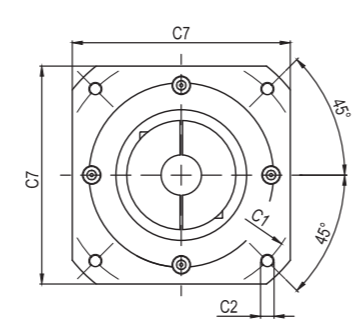


ESP120-L2

输出端 / OUTPUT

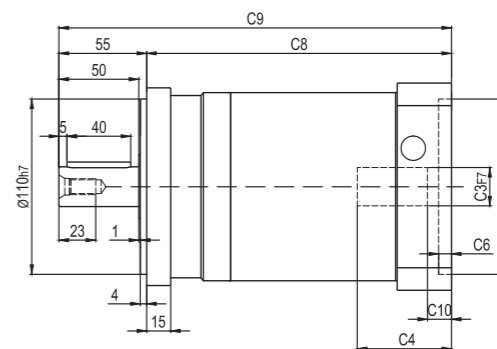
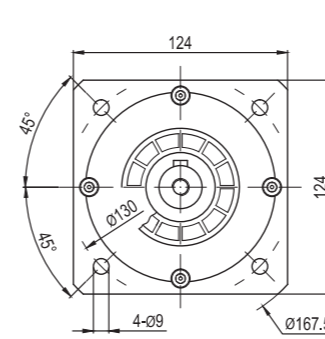


输入端 / INPUT

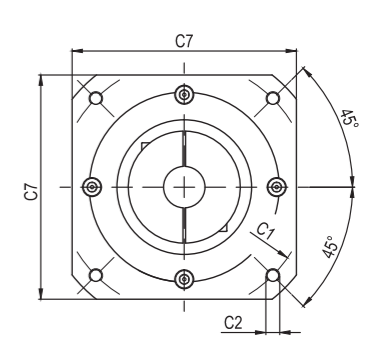


FSP120-L2

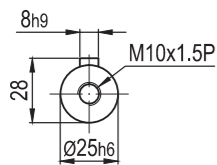
输出端 / OUTPUT



输入端 / INPUT



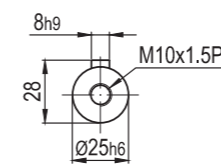
输出轴径 / Output Diameter



尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
ESP120-L1	Ø90	4-M5x12, 4-M6x14	Ø19	53	Ø70	8	120	150	205	9
ESP120-L2	Ø115	4-M8x25	Ø19, Ø22	59	Ø95	8	120	153	208	15
ESP120-L1	Ø145	4-M8x25	Ø19, Ø22, Ø24	59	Ø110	8	130	153	208	15
ESP120-L2	Ø145	4-M8x25	Ø19, Ø22, Ø24	64	Ø110	8	130	190.5	245.5	20
ESP120-L1	Ø145	4-M8x25	Ø19, Ø22, Ø24	64	Ø110	8	130	161	216	20
ESP120-L2	Ø145	4-M8x25	Ø19, Ø22, Ø24	64	Ø110	8	130	196	251	20

* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7 are motor (metric standard) specific dimensions, which could be customised.

输出轴径 / Output Diameter

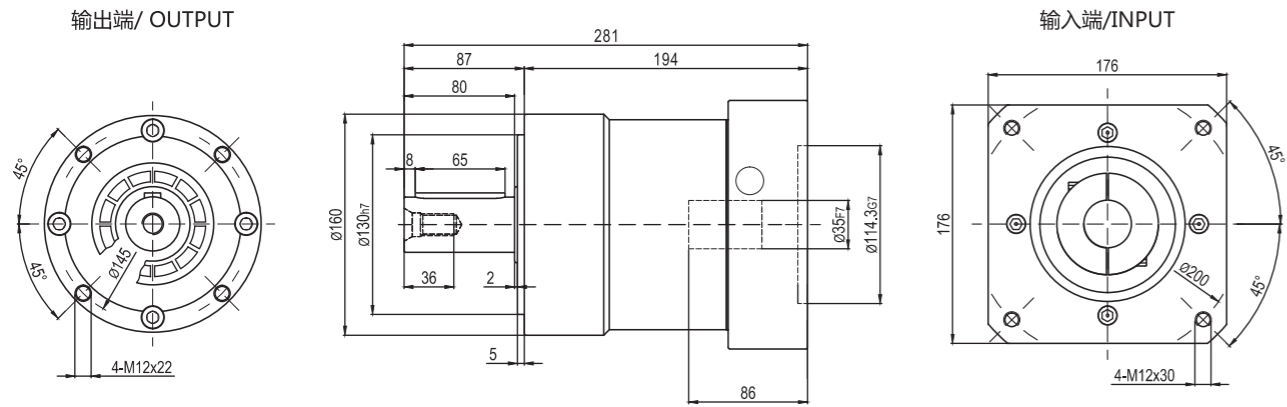


尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
FSP120-L1	Ø90	4-M5x12, 4-M6x14	Ø19	53	Ø70	8	120	150	205	9
FSP120-L2	Ø115	4-M8x25	Ø19, Ø22	59	Ø95	8	120	153	208	15
FSP120-L1	Ø145	4-M8x25	Ø19, Ø22, Ø24	59	Ø110	8	130	153	208	15
FSP120-L2	Ø145	4-M8x25	Ø19, Ø22, Ø24	64	Ø110	8	130	190.5	245.5	20
FSP120-L1	Ø145	4-M8x25	Ø19, Ø22, Ø24	64	Ø110	8	130	161	216	20
FSP120-L2	Ø145	4-M8x25	Ø19, Ø22, Ø24	64	Ø110	8	130	196	251	20

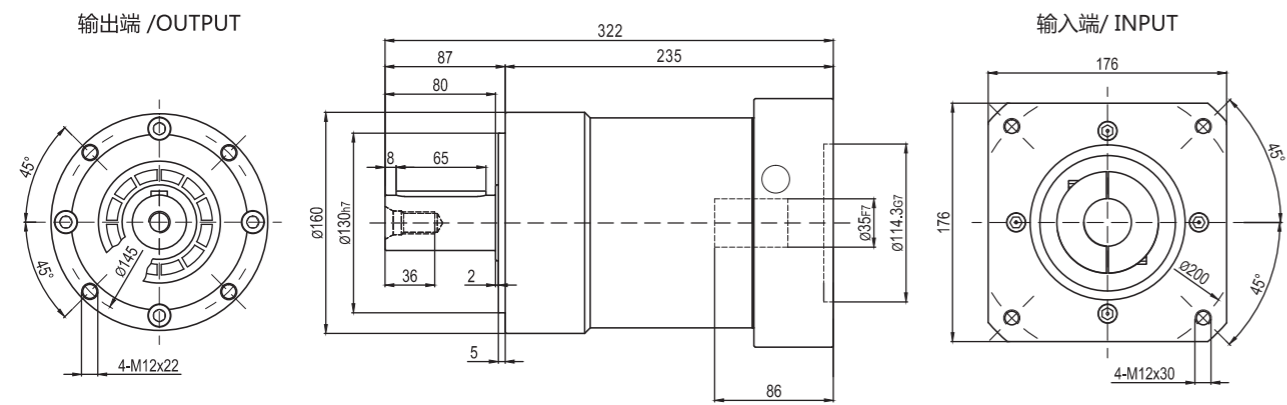
* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
* C1~C7 are motor (metric standard) specific dimensions, which could be customised.

外形尺寸图表 / OUTLINE DIMENSION SHEET

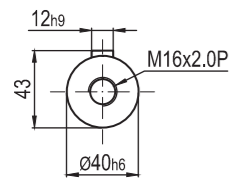
ESP160-L1



ESP160-L2



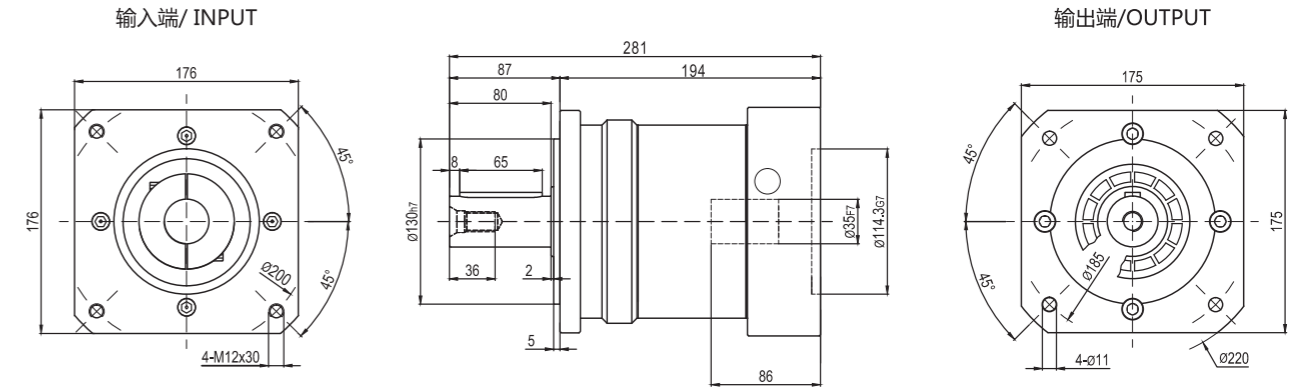
输出轴径/Output Diameter



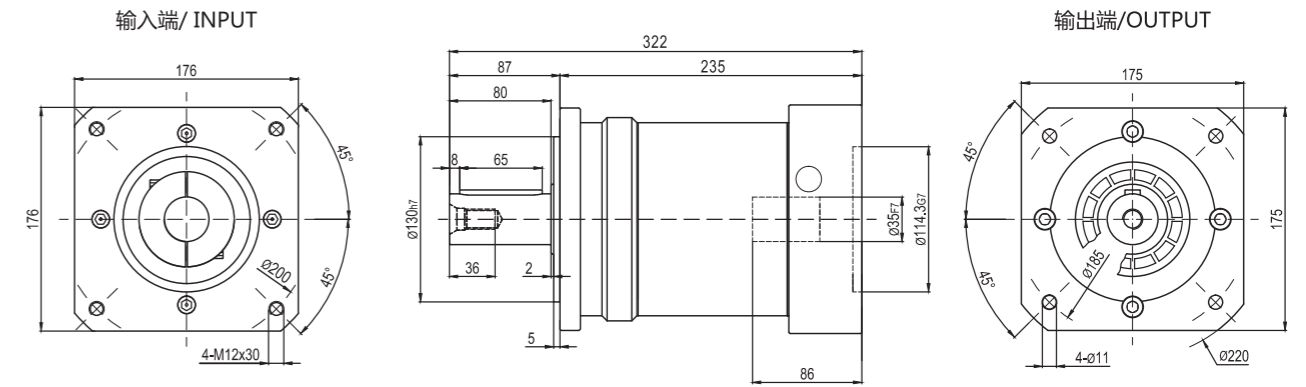
*输入马达连接板之尺寸,可根据客户要求单独定做。
The input motor specific dimensions could be customised.

外形尺寸图表 / OUTLINE DIMENSION SHEET

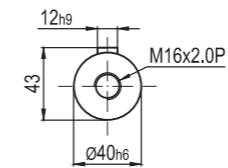
FSP160-L1



FSP160-L2

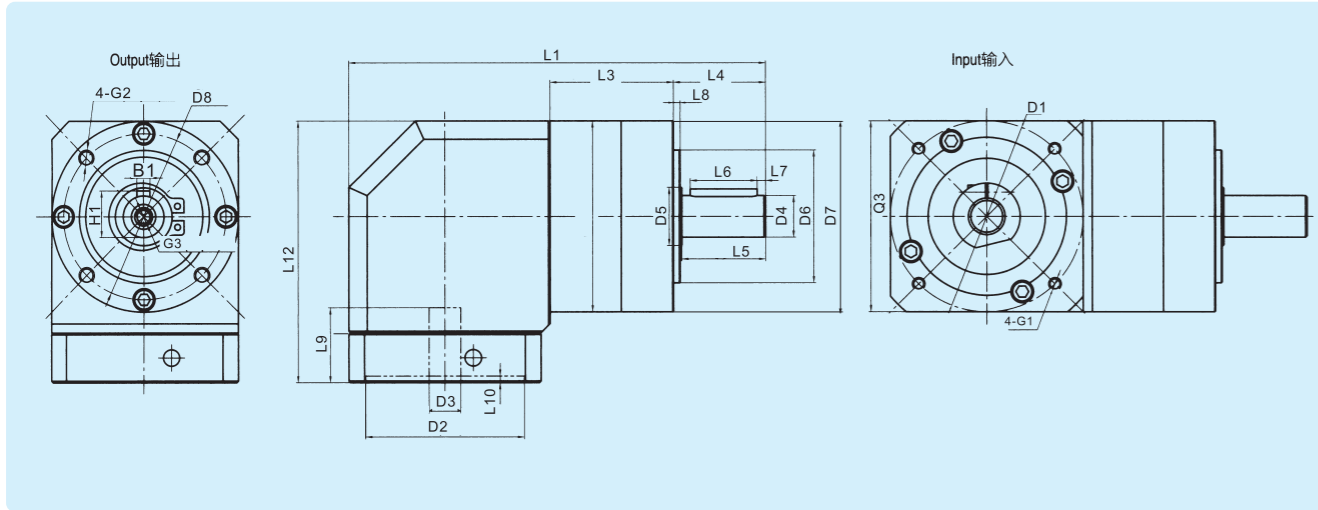


输出轴径/Output Diameter



*输入马达连接板之尺寸,可根据客户要求单独定做。
*The input motor specific dimensions could be customised.

外形尺寸图表 / OUTLINE DIMENSION SHEET



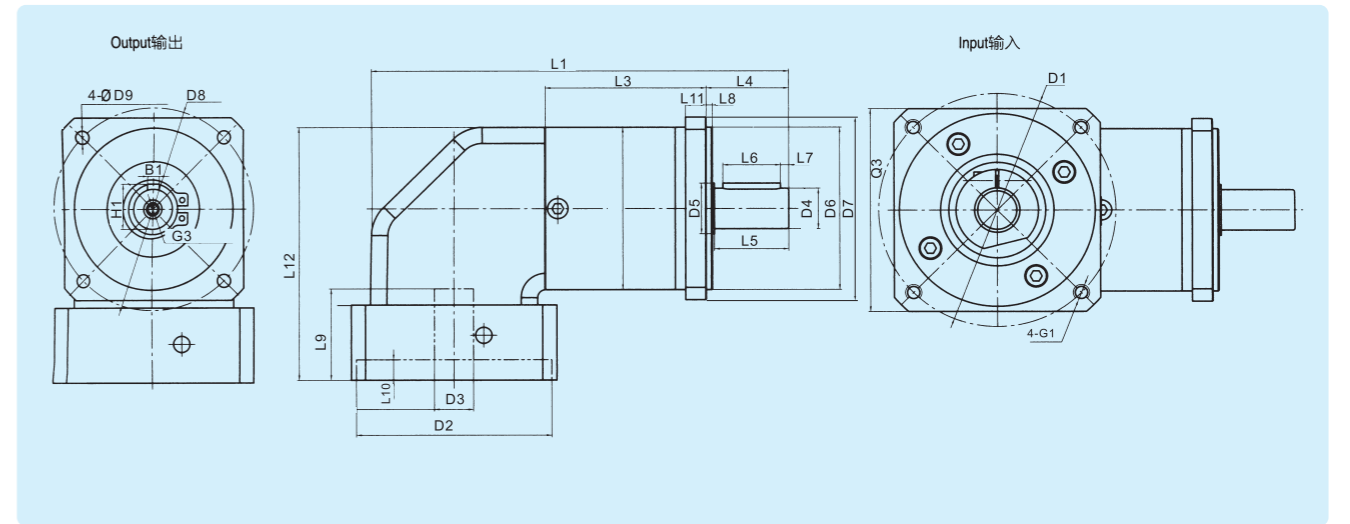
此系列减速机倒装时请提前告知

单位Unit:mm

产品型号Product type	ESPZ60			ESPZ90			ESPZ120			ESPZ160		
级数 Number of stage	L1	L2	/	L1	L2	/	L1	L2	/	L1	L2	/
L1箱体总长 L1 overall length	148.5	166	/	192	212	/	255	284.5	/	368	471.5	/
L3箱体长度 L3 body length	42	59.5	/	57.5	77.5	/	75.5	105	/	129	178.5	/
L12总高 L12 overall height	100.5			130			169			229		
输出端 Output												
L4出轴长度 L4 output shaft length	35			40.5			55.5			87		
L5出轴长至轴肩 L5 output length to the shaft shoulder	30			36			50			80		
L6键长度 L6 key length	20			25			40			70		
L7键至轴末端长 L7 key length to the shaft end	3			3			5			5		
L8定位凸台长度 L8 spigot length	3			3			4			5		
D4出轴直径 D4 output shaft diameter	φ 14h7			φ 20h7			φ 25h7			φ 40h7		
D5轴肩直径 D5 shaft shoulder diameter	φ 17			φ 25			φ 35			φ 55		
D6定位凸台直径 D6 spigot diameter	φ 40			φ 60			φ 80			φ 130		
D7齿轮箱端面 D7 gear box section	φ 60			φ 80			φ 115			φ 175		
D8安装孔分布圆 D8 Mounting hole distribution circle	φ 52			φ 70			φ 100			φ 145		
B1键宽 B1 key width	5			6			8			12		
H1键高 H1 key height	16			22.5			28			43		
G2安装螺纹孔 G2 × 深度 mounting screw hole × depth	M5X8			M6X10			M10X16			M12X20		
G3中心螺纹孔 G3 center screw hole	M5X12			M6X16			M10X22			M12X25		
输入端 Input												
L9电机轴长度 L9 motor shaft length	≤30			≤40			≤58			≤81		
L10定位凸台深度 L10 spigot depth	根据电机尺寸			根据电机尺寸			根据电机尺寸			根据电机尺寸		
D1安装孔分布圆 D1 mounting hole distribution circle	根据电机尺寸			根据电机尺寸			根据电机尺寸			根据电机尺寸		
D2定位凸台直径 D2 spigot diameter	根据电机尺寸			根据电机尺寸			根据电机尺寸			根据电机尺寸		
D3输入轴轴径 D3 input shaft diameter	≤14			≤19			≤24			≤42		
G1安装螺纹孔 G1 mounting screw hole	根据电机尺寸			根据电机尺寸			根据电机尺寸			根据电机尺寸		
Q3输入法兰 Q3 input flange	根据电机尺寸			根据电机尺寸			根据电机尺寸			根据电机尺寸		

※输入端尺寸可根据电机尺寸制作。
※Input size made according to motor size.

外形尺寸图表 / OUTLINE DIMENSION SHEET



此系列减速机倒装时请提前告知

单位Unit:mm

产品型号Product type	FSPZ60			FSPZ90			FSPZ120			FSPZ160		
级数 Number of stage	L1	L2	/	L1	L2	/	L1	L2	/	L1	L2	/
L1箱体总长 L1 overall length	148.5	166	/	192	212	/	255	284.5	/	368	471.5	/
L3箱体长度 L3 body length	42	59.5	/	57.5	77.5	/	75.5	105	/	129	178.5	/
L12总高 L12 overall height	100.5			130			169			229		
输出端 Output												
L4出轴长度 L4 output shaft length	35			40.5			55.5			87		
L5出轴长至轴肩 L5 output length to the shaft shoulder	30			36			50			80		
L6键长度 L6 key length	20			25			40			70		
L7键至轴末端长 L7 key length to the shaft end	3			3			5			5		
L8定位凸台长度 L8 spigot length	3			3			4			5		
D11法兰厚度 L11 flange thickness	8			10			15					
D4出轴直径 D4 output shaft diameter	φ 14h7			φ 20h7			φ 25h7			φ 40h7		
D5轴肩直径 D5 shaft shoulder diameter	φ 17			φ 25			φ 35			φ 55		
D6定位凸台直径 D6 spigot diameter	φ 50			φ 80			φ 110			φ 130		
D7齿轮箱端面 D7 gear box section	□ 60			□ 90			□ 120			φ 175		
D8安装孔分布圆 D8 Mounting hole distribution circle	φ 70			φ 100			φ 130			φ 185		
D9法兰安装孔 D9 flange mounting hole	φ 5.5			φ 6.5			φ 8.5			φ 11		
B1键宽 B1 key width	5			6			8			12		
H1键高 H1 key height	16			22.5			28			43		
G3中心螺纹孔 G3 center screw hole	M5X12			M6X16			M10X22			M12X25		
输入端 Input												
L9电机轴长度 L9 motor shaft length	≤30			≤40			≤58			≤81		
L10定位凸台深度 L10 spigot depth	根据电机尺寸			根据电机尺寸			根据电机尺寸			根据电机尺寸		
D1安装孔分布圆 D1 mounting hole distribution circle	根据电机尺寸			根据电机尺寸			根据电机尺寸			根据电机尺寸		
D2定位凸台直径 D2 spigot diameter	根据电机尺寸			根据电机尺寸			根据电机尺寸			根据电机尺寸		
D3输入轴轴径 D3 input shaft diameter	≤14			≤19			≤24			≤42		
G1安装螺纹孔 G1 mounting screw hole	根据电机尺寸			根据电机尺寸			根据电机尺寸			根据电机尺寸		
Q3输入法兰 Q3 input flange	根据电机尺寸			根据电机尺寸			根据电机尺寸			根据电机尺寸		

※输入端尺寸可根据电机尺寸制作。
※Input size made according to motor size.

减速机性能资料 / GEAR BOX PERFORMANCE INFORMATION

规格	级数	减速比 ¹	ESPZ60 FSPZ60	ESPZ90 FSPZ90	ESPZ120 FSPZ120	ESPZ160 FSPZ160		
额定输出力矩 T _{2N}	Nm	1	3	27	96	161	364	
			4	40	122	210	423	
			5	40	122	210	423	
		7	34	90	170	358		
		8	34	95	150	350		
		10	16	90	86	210		
		2	12	27	56	161	364	
			15	27	96	161	423	
			20	27	96	210	423	
	25		40	122	210	423		
	30		27	96	161	364		
	35		40	122	210	423		
	2	40	40	122	210	423		
		50	40	122	210	423		
		70	34	95	170	358		
		100	16	56	86	210		
		最大输出力矩 T _{2B}	Nm	1,2	二倍额定输出力矩			
		额定输入转速 n ₁	rpm	1,2	4,000	3,600	3,000	2,500
最大输入转速 n _{1B}	rpm	1,2	6,000	6,000	4,800	3,600		
背隙*	arcmin	1	3~10	≤ 10	≤ 12	≤ 15	≤ 15	
		2	12~100	≤ 15	≤ 20	≤ 30	≤ 30	
扭转刚性	Nm/arcmin	1,2	3~100	2.2	7.2	14.5	65.5	
容许径向力 F _{2rB} ²	N	1,2	3~100	240	450	1240	2250	
容许轴向力 F _{2aB} ²	N	1,2	3~100	220	430	1000	1500	
使用寿命	hr	1,2	3~100	20,000*				
效率 η	%	1	3~10	≥ 97%				
		2	12~100	≥ 94%				
重量	kg	1	3~10	1.7	4.4	12.0	26.5	
		2	12~100	1.9	5.0	14.0	29.6	
使用温度	°C	1,2	3~100	-10°C~+90°C				
润滑		1,2	3~100	合成润滑油脂				
防护等级		1,2	3~100	IP64				
安装方向		1,2	3~100	任意方向				
噪音值 (3 000)	dB	1,2	3~100	≤ 58	≤ 60	≤ 65	≤ 75	

减速机转动惯量

规格	级数	减速比 ¹	ESPZ60 FSPZ60	ESPZ90 FSPZ90	ESPZ120 FSPZ120	ESPZ160 FSPZ160	
转动惯量 J ₁	kg·cm ²	1	3	0.46	1.73	12.84	36.72
			4	0.46	1.73	12.22	34.63
			5	0.46	1.73	12.10	34.24
		7	0.46	1.73	12.05	34.07	
		8	0.41	1.42	12.03	34.02	
		10	0.41	1.42	12.03	34.02	
		2	12	0.44	1.49	12.10	34.24
			15	0.44	1.49	12.10	34.24
			20	0.44	1.49	12.10	34.24
	25		0.44	1.49	12.10	34.24	
	30		0.44	1.49	12.03	34.02	
	35		0.44	1.49	12.10	34.24	
	2	40	0.44	1.49	12.03	34.02	
		50	0.44	1.49	12.03	34.02	
		70	0.34	1.25	12.03	34.02	
		100	0.34	1.25	12.03	34.02	

1. 减速比 (i=N_{in}/N_{out})

* 周期性运转(S5)下之使用寿命为20,000小时, 连续运转(S1)下之使用寿命则降低50%。

* 背隙值为在2%额定力矩T_{2N}的扭力下所测得

2. F_{2rB}、F_{2aB} 输出转速100rpm时, 作用于输出轴中心位置²

型号 Model	单位 Unit	PTK60	PTK85	PTK115	PTK160	减速比 Ratios(i)	级数 Stages
额定输出扭矩 TN Nominal torque TN	Nm	15.8	60.0	150.0	310.0	3	1- stages
		25.5	88.0	225.0	605.0	4	
		27.5	95.0	240.0	420.0	5	
		19.2	66.0	160.0	270.0	7	
		12.0	40.0	90.0	-	10	2- stages
		28.0	98.0	250.0	340.0	12	
		29.5	98.0	250.0	680.0	16	
		29.5	98.0	250.0	680.0	20	
		31.5	105.0	270.0	460.0	25	
		29.5	98.0	250.0	680.0	28	
		31.5	105.0	270.0	-	35	
		29.5	98.0	250.0	460.0	40	
		31.5	105.0	270.0	310.0	50	3- stages
		22.5	75.0	180.0	310.0	70	
		35.0	125.0	315.0	310.0	80	
		35.5	125.0	315.0	900.0	100	
		38.5	135.0	335.0	580.0	125	
		35.5	125.0	315.0	900.0	140	
		38.5	135.0	335.0	-	175	
		35.5	125.0	315.0	580.0	200	
		38.5	135.0	335.0	900.0	250	
		35.5	125.0	315.0	580.0	280	
		38.5	135.0	335.0	580.0	350	
		37.0	125.0	315.0	580.0	400	
40.0	135.0	335.0	400.0	500			
27.0	93.0	225.0	-	700			
17.2	58.0	130.0	-	1000			
故障停止扭矩 T _{2N} Max.output torque T _{2N}	Nm	2倍额定输出扭矩/ 2* Nominal torque					
回程侧隙 ² Backlash ²	arcmin	< 8	< 8	< 8	< 8		1- stages
		< 10	< 10	< 10	< 10		2- stages
		< 12	< 12	< 12	< 12		3- stages
空载扭矩 No-load torque	Nm	0.6	0.7	1.2	3.2		1- stages
		0.3	0.4	0.7	2.0		2- stages
		0.3	0.3	0.6	2.0		3- stages
额定输入转速 Rated input speed	rpm	4000	3500	3000	2500		
最大输入转速 Max.input speed	rpm	8000	6000	5000	4500		
噪声 ³ / Noise ³	dB	≤ 58	≤ 60	≤ 62	≤ 65		

说明:

■ 回程侧隙是在受力2%的额定输出力矩T_{2N}下测得;

■ 噪声值60、85、115系列是在额定输入转速N_{in}=3000rpm且无负载下测得; 160系列是在额定输入转速N_{in}=2500rpm且无负载下测得。



型号说明 / MODEL ILLUMINATE

PTK60 - **10** - **K□** / **马达**

减速机型式:
PTK60/PTK85/PTK115
PTK160

马达型号:
马达制造及型号

减速比: 单级(L1): 3,4,5,7,10
双级(L2): 12,16,20,25,28,35,40,50,70
三级(L3): 80,100,125,140,170,200,250,280,
350,400,500,700,1000

输出孔径: PTK60-(8/14/16孔)
PTK85-(16/20孔)
PTK115(20/28孔)
PTK160(40孔)

选用范例: PTK85-10-K□-/MHMD-082G1U

技术参数

型号 Model	单位 Unit	PTK	级数 Stages
寿命 lifetime	h	20000	
最低工作温度 Min.operating temp	℃	-25	
最高工作温度 Max.operating temp	℃	+90	
防护等级 Degree of protection	IP	IP65	
润滑方式 Lubrication		长效润滑/ Life lubrication	
安装方式 Mounting position		任意/ Any	
旋转方向 Direction of rotation		输出、输入同向/Same direction	
满载效率 Maximum efficiency	%	96%	1- stages
		94%	2- stages
		90%	3- stages

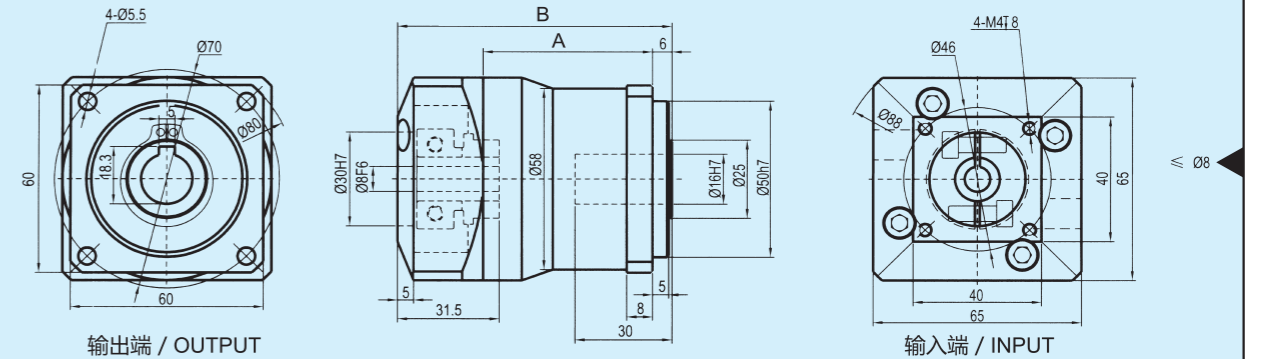
型号 Model	单位 Unit	PTK60	PTK85	PTK115	PTK160	级数 Stages
最大容许径向力 Max.radial force®	N	1900	6800	8150	15500	1- stages
		2400	8000	9900	19000	2- stages
		4100	13000	16000	31000	3- stages
最大容许轴向力 Max.axial force®	N	450	6000	10000	16000	1- stages
		640	7600	12000	21000	2- stages
		1300	12000	20000	36000	3- stages

说明:
 ■ 寿命是在额定负载下, 连续运转的时间;
 ■ 最大容许径向力/轴向力PTK60、PTK85、PTK115、PTK160单级在输出转速为100rpm时, 双级在输出转速为50rpm时, 三级在输出转速为10rpm时, 作用于输出轴孔内中心所测得允许径向力及轴向力。
 如有其它特殊要求时, 请与销售人员联系。

	*A*长度 length	*B*长度 length	重量 weight
单级 1-stage	52.5	85.0	1.2Kg
单级 2-stage	68.5	101.0	1.5Kg
单级 3-stage	84.5	117.0	1.8Kg

如图16孔为加强型

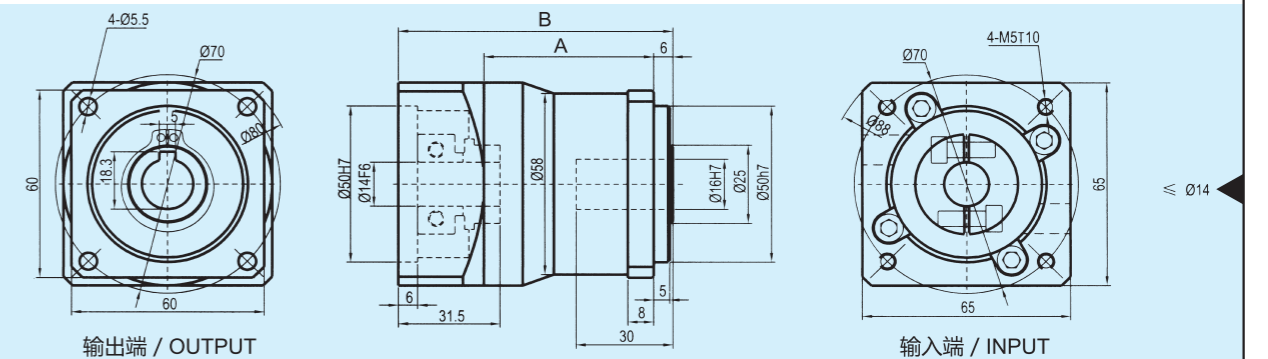
PTK60-8



	*A*长度 length	*B*长度 length	重量 weight
单级 1-stage	52.5	90.0	1.2Kg
单级 2-stage	68.5	101.0	1.5Kg
单级 3-stage	84.5	117.0	1.8Kg

如图16孔为加强型

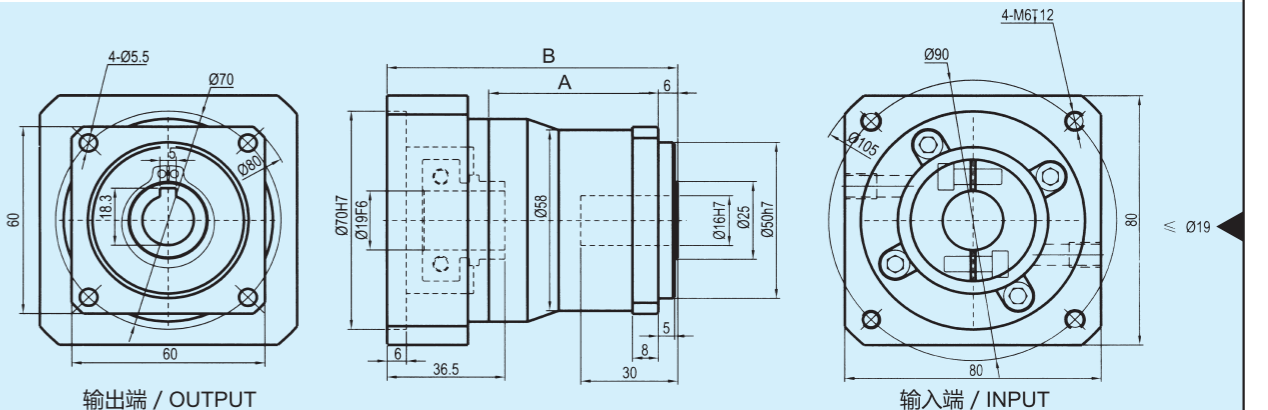
PTK60-14



	*A*长度 length	*B*长度 length	重量 weight
单级 1-stage	52.5	90.0	1.4Kg
单级 2-stage	68.5	106.0	1.7Kg

如图16孔为加强型

PTK60-19



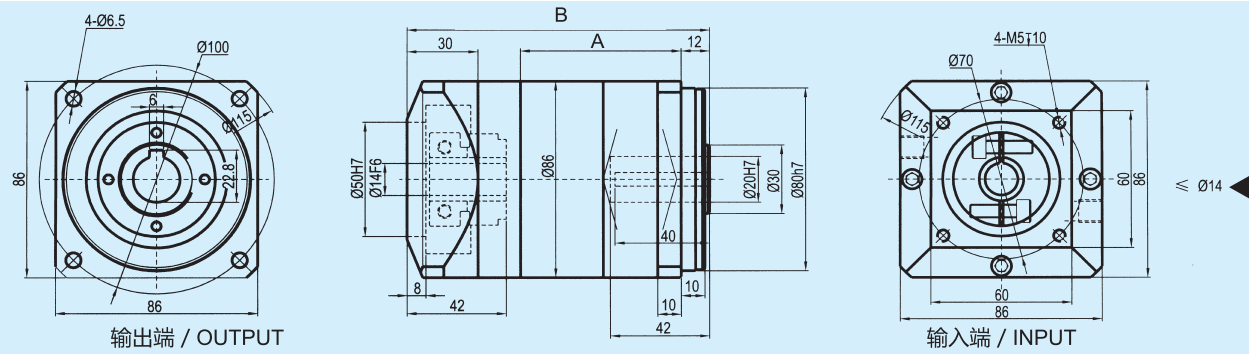
- (1) 以上电机轴径尺寸可做参考。在轴以上配电机范围内时, 可加轴套。其余特殊马达, 请与销售人员联系
- (2) 减速机输入端尺寸, 依电机输出安装尺寸而变。其余特殊马达, 请与销售人员联系
- (3) 如无合适的尺寸, 请与销售人员联系
- (4) 以上视图标准为

适配电机功率	输入轴参考直径	配电机输出安装尺寸(减速机连接法兰尺寸)
100W	Ø8	Øx31.5/Ø30x64-M4-Ø45/Ø46
400W	Ø14	Øx31.5/Ø50x64-M4-M5-Ø70
750W	Ø19	Øx41/Ø70x64-M5(M6)-Ø90
57步进电机	Ø11	Øx31.5/Ø38.1x54-M4-47.14x47.14
86步进电机	Ø14	Øx41/Ø73x64-M5(M6)-69.6x69.6

	*A*长度 length	*B*长度 length	重量 weight
单级 1-stage	54	128.0	2.6Kg
单级 2-stage	77	151.5	3.2Kg
单级 3-stage	100	174.5	3.8Kg

如图20孔为加强型

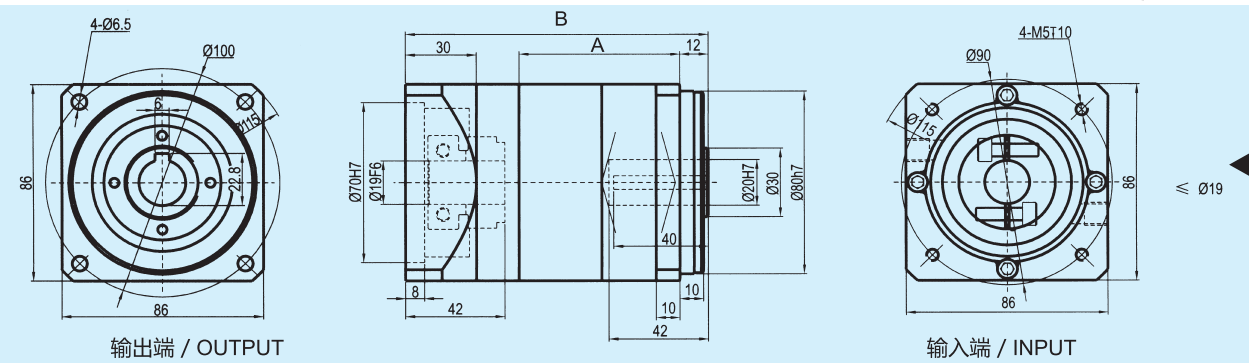
PTK85-14



	*A*长度 length	*B*长度 length	重量 weight
单级 1-stage	54	128.0	2.6Kg
单级 2-stage	77	151.5	3.2Kg
单级 3-stage	100	174.5	3.8Kg

如图20孔为加强型

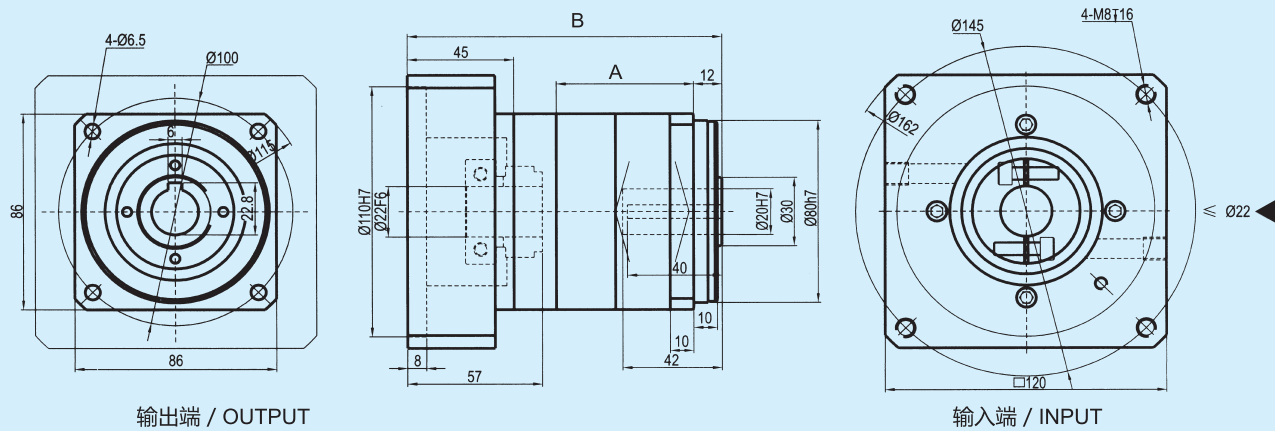
PTK85-19



	*A*长度 length	*B*长度 length	重量 weight
单级 1-stage	54	143.5	2.9Kg
单级 2-stage	77	166.5	3.5Kg

如图20孔为加强型

PTK85-22



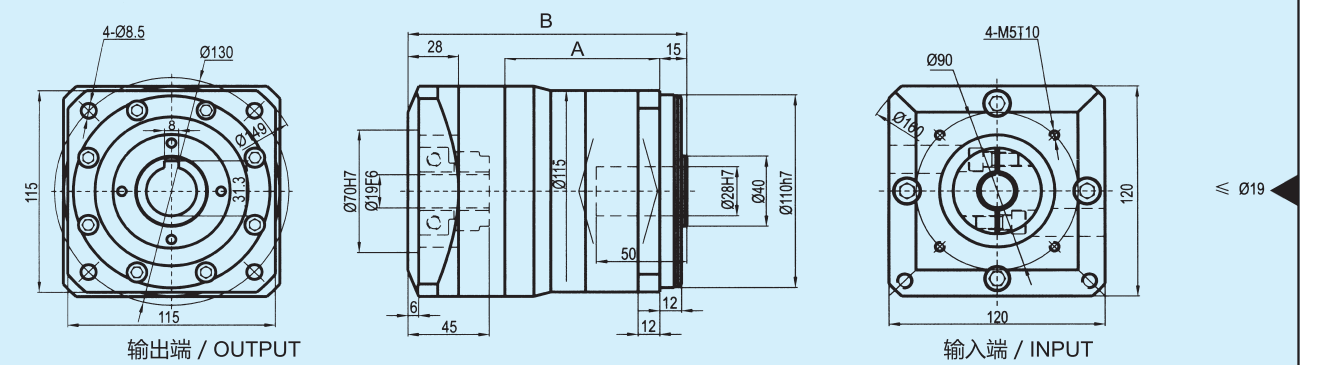
- (1) 以上电机轴径尺寸可做参考。在轴以上配电机径范围内时，可加轴套。其余特殊马达，请与销售人员联系
- (2) 减速机输入端尺寸，依电机输出安装尺寸而变。其余特殊马达，请与销售人员联系
- (3) 如无合适的尺寸，请与销售人员联系
- (4) 以上视图标准为

适用电机功率	输入轴参考直径	配电机输出安装尺寸(减速机连接法兰尺寸)
400W	Ø14	Øx42/Ø50xØ4-M4(M5)-Ø70
750W	Ø19	Øx42/Ø70xØ4-M5(M6)-Ø90
1500W	Ø22	Øx57/Ø110xØ4-M6-Ø145
57步进电机	Ø14	Øx42/Ø38.1xØ4-M4-AT.14x7.14
86步进电机	Ø14/Ø15.875	Øx42/Ø73xØ4-M5(M6)-69.6x69.6

	*A*长度 length	*B*长度 length	重量 weight
单级 1-stage	85.5	154.0	6.1Kg
单级 2-stage	115.5	184.0	8.1Kg
单级 3-stage	145.5	214.0	10.1Kg

如图28孔为加强型

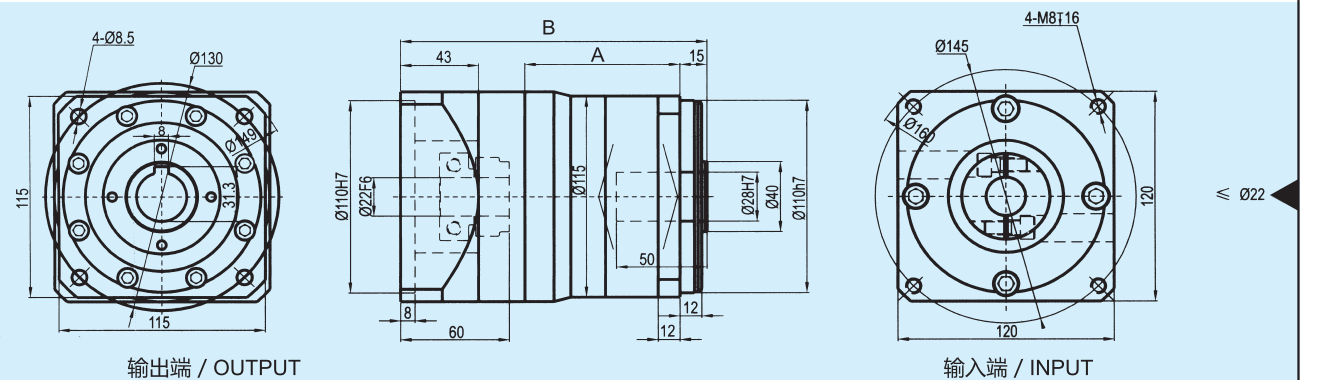
PTK115-19



	*A*长度 length	*B*长度 length	重量 weight
单级 1-stage	85.5	154.0	6.4Kg
单级 2-stage	115.5	184.0	8.4Kg
单级 3-stage	145.5	214.0	10.4Kg

如图28孔为加强型

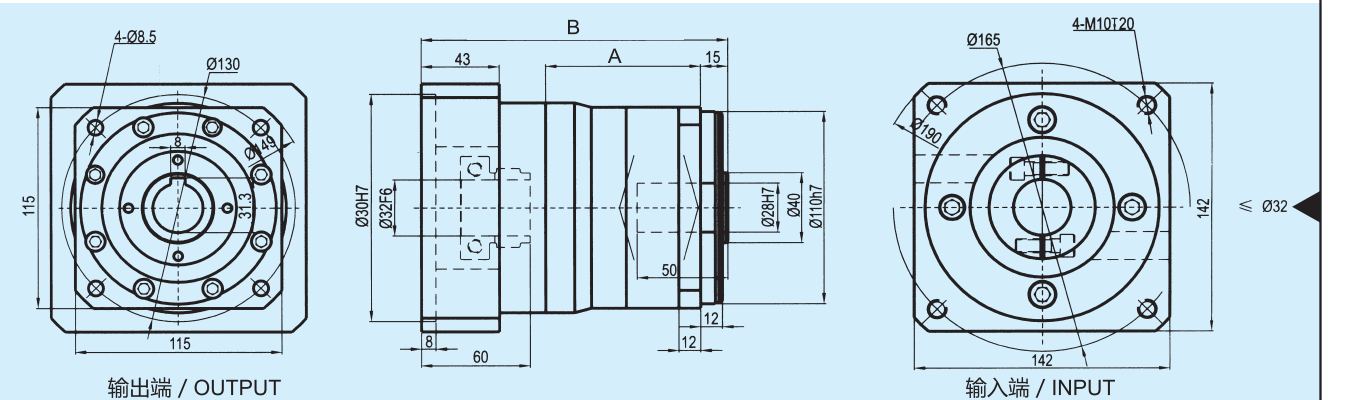
PTK115-22



	*A*长度 length	*B*长度 length	重量 weight
单级 1-stage	85.5	154.0	6.6Kg
单级 2-stage	115.5	184.0	8.6Kg
单级 3-stage	145.5	214.0	10.6Kg

如图28孔为加强型

PTK115-32



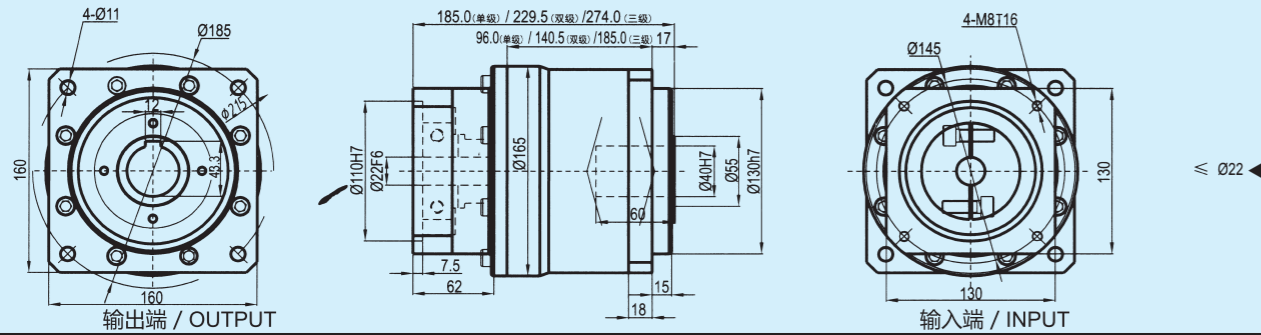
- (1) 以上电机轴径尺寸可做参考。在轴以上配电机径范围内时，可加轴套。其余特殊马达，请与销售人员联系
- (2) 减速机输入端尺寸，依电机输出安装尺寸而变。其余特殊马达，请与销售人员联系
- (3) 如无合适的尺寸，请与销售人员联系
- (4) 以上视图标准为

适用电机功率	输入轴参考直径	配电机输出安装尺寸(减速机连接法兰尺寸)
750W	Ø19	Øx50/Ø70xØ4-M5(M6)-Ø90
1500W	Ø22	Øx60/Ø110xØ4-M6-Ø145
2000W	Ø32	Øx60/Ø130xØ4-M10-Ø165
110步进电机	Ø14/Ø19	Øx50/Ø55.5xØ4-M6-Ø69.6
130步进电机	Ø19/Ø22	Øx60/Ø100xØ4-M10-109.6x109.6

	*A*长度 length	*B*长度 length	重量 weight
单级 1-stage	96.0	185.0	14.0Kg
单级 2-stage	140.5	229.5	20.0Kg
单级 3-stage	185.0	274.0	26.0Kg

如图40孔
为加强型

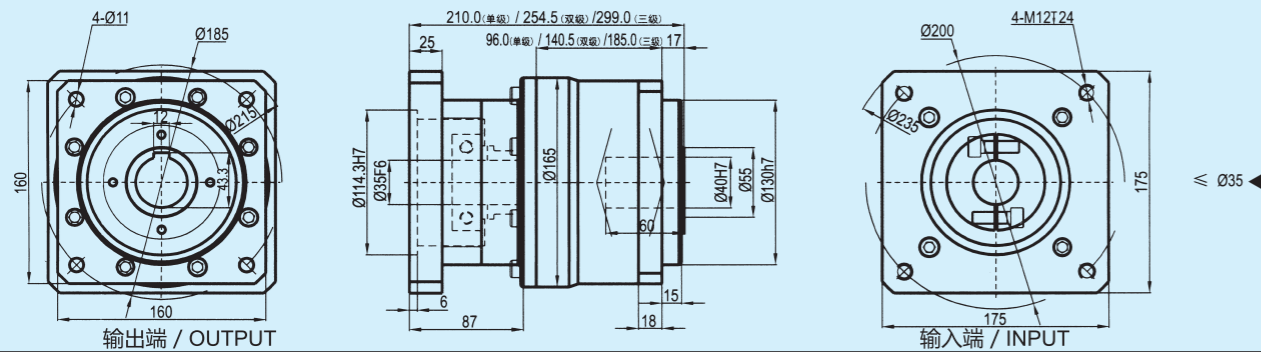
PTK160-22



	*A*长度 length	*B*长度 length	重量 weight
单级 1-stage	96.0	185.0	16.0Kg
单级 2-stage	140.5	229.5	22.0Kg
单级 3-stage	185.0	274.0	28.0Kg

如图40孔
为加强型

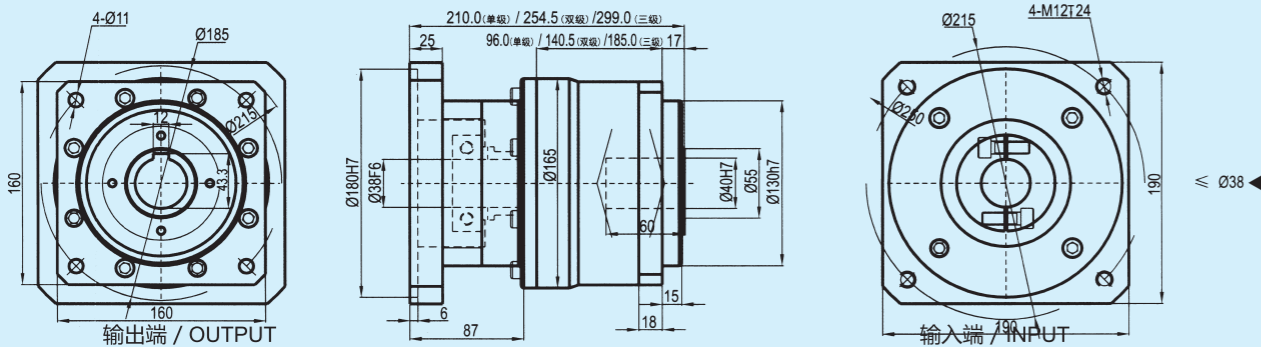
PTK160-35



	*A*长度 length	*B*长度 length	重量 weight
单级 1-stage	96.0	185.0	17.0Kg
单级 2-stage	140.5	229.5	23.0Kg
单级 3-stage	185.0	274.0	29.0Kg

如图40孔
为加强型

PTK160-38



- (1) 以上电机轴径尺寸可做参考。在轴以上配电机范围内时，可加轴套。其余特殊马达，请与销售人员联系
- (2) 减速机输入端尺寸，依电机输出安装尺寸而变。其余特殊马达，请与销售人员联系
- (3) 如无合适的尺寸，请与销售人员联系
- (4) 以上视图标准为

额定电机功率	输入轴轴套直径	配电机轴输出尺寸(或理论轴输出尺寸)
1500W	Ø22	Ø62/Ø110x7.5/4-M8-Ø145
3000W	Ø35	Ø67/Ø114.3x8/4-M12-Ø200
3000W	Ø38	Ø67/Ø114.3x8/4-M12-Ø215
130步进电机	Ø19/Ø22	Ø62/Ø100x8/4-M10-109.6x109.6

型号 Model	单位 Unit	WPTK60	WPTK85	WPTK115	WPTK160	减速比 Ratios(i)	级数 Stages
额定输出扭矩 TN Nominal torquet TN	Nm	15.8	60.0	150.0	310.0	3	1- stages
		25.5	88.0	225.0	605.0	4	
		27.5	95.0	240.0	420.0	5	
		19.2	66.0	160.0	270.0	7	2- stages
		12.0	40.0	90.0	-	10	
		28.0	98.0	250.0	340.0	12	
		29.5	98.0	250.0	680.0	16	
		29.5	98.0	250.0	680.0	20	
		31.5	105.0	270.0	460.0	25	
		29.5	98.0	250.0	680.0	28	
		31.5	105.0	270.0	-	35	
		29.5	98.0	250.0	460.0	40	
		31.5	105.0	270.0	310.0	50	
		22.5	75.0	180.0	310.0	70	3- stages
		35.0	125.0	315.0	310.0	80	
		35.5	125.0	315.0	900.0	100	
		38.5	135.0	335.0	580.0	125	
		35.5	125.0	315.0	900.0	140	
		38.5	135.0	335.0	-	175	
		35.5	125.0	315.0	580.0	200	
38.5	135.0	335.0	900.0	250			
35.5	125.0	315.0	580.0	280			
38.5	135.0	335.0	580.0	350			
37.0	125.0	315.0	580.0	400			
40.0	135.0	335.0	400.0	500			
27.0	93.0	225.0	-	700			
17.2	58.0	130.0	-	1000			
故障停止扭矩 T _{2N} Max.output torque T _{2N}	Nm	2倍额定输出扭矩/ 2* Nominal torquet					
回程侧隙® Backlash®	arcmin	< 10	< 10	< 10	< 10		1- stages
		< 12	< 12	< 12	< 12		2- stages
		< 14	< 14	< 14	< 14		3- stages
空载扭矩 No-load torque	Nm	0.6	0.7	1.2	3.2		1- stages
		0.3	0.4	0.7	2.0		2- stages
		0.3	0.3	0.6	2.0		3- stages
额定输入转速 Rated input speed	rpm	4000	3500	3000	2500		
最大输入转速 Max.input speed	rpm	8000	6000	5000	4500		
噪声® / Noise®	dB	≤60	≤62	≤65	≤65		

说明:

- 回程间隙是在受力2%的额定输出力矩T_{2N}下测得;
- 噪声值60、85、115系列是在额定输入转速N_{1N}=3000rpm且无负载下测得; 160系列是在额定输入转速N_{1N}=2500rpm且无负载下测得。



型号说明 / MODEL ILLUMINATE

WPTK60 - 10 - K □ / 马达

减速机型式:
WPTK60/WPTK85/WPTK115
WPTK160

马达型号:
马达制造及型号

减速比: 单级(L1): 3,4,5,7,10
双级(L2): 12,16,20,25,28,35,40,50,70
三级(L3): 80,100,125,140,170,200,250,280,
350,400,500,700,1000

输出孔径: WPTK60-(8/14/16孔)
WPTK85-(16/20孔)
WPTK115(20/28孔)
WPTK160(40孔)

选用范例: WPTK85-10-K □-/MHMD-082G1U

型号 Model	单位 Unit	WPTK	级数 Stages
寿命 lifetime	h	20000	
最低工作温度 Min.operating temp	℃	-25	
最高工作温度 Max.operating temp	℃	+90	
防护等级 Degree of protection	IP	IP65	
润滑方式 Lubrication		长效润滑/ Life lubrication	
安装方式 Mounting position		任意/ Any	
旋转方向 Direction of rotation		输出、输入同向/Same direction	
满载效率 Maximum efficiency	%	94%	1- stages
		92%	2- stages
		88%	3- stages

型号 Model	单位 Unit	WPTK60	WPTK85	WPTK115	WPTK160	级数 Stages
最大容许径向力 Max.radial force ²	N	1900	6800	8150	15500	1- stages
		2400	8000	9900	19000	2- stages
		4100	13000	16000	31000	3- stages
最大容许轴向力 Max.axial force ²	N	450	6000	10000	16000	1- stages
		640	7600	12000	21000	2- stages
		1300	12000	20000	36000	3- stages

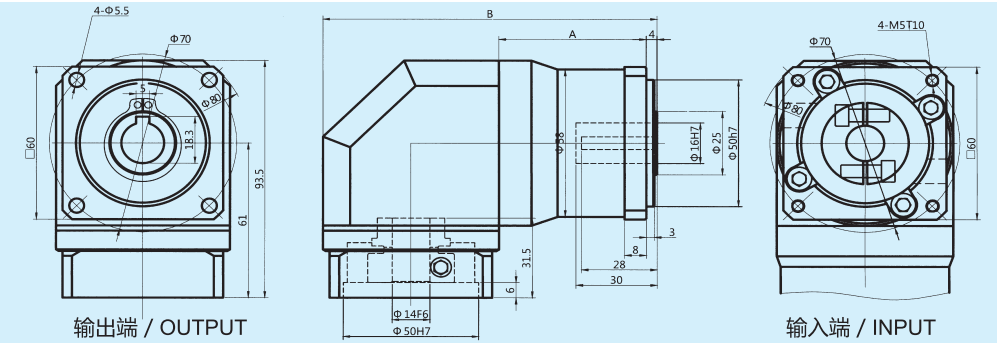
说明:

- 寿命是在额定负载下, 连续运转的时间;
 - 最大容许径向力/轴向力单级在输出转速为100rpm时, 双级在输出转速为50rpm时, 三级在输出转速为10rpm时, 作用于输出轴中心位置(1/2轴长处)所测得允许径向力及轴向力;
 - 最大容许径向力/轴向力单级在输出转速为100rpm时, 双级在输出转速为50rpm时, 三级在输出转速为10rpm时, 作用于输出轴外端面所测得允许径向力及轴向力。
- 如有其它特殊要求时, 请与销售人员联系。

WPTK60

	*A*长度 length	*B*长度 length	重量 weight
单级 1-stage	49.5	118.5	2.0 Kg
双级 2-stage	65.5	134.5	2.3 Kg

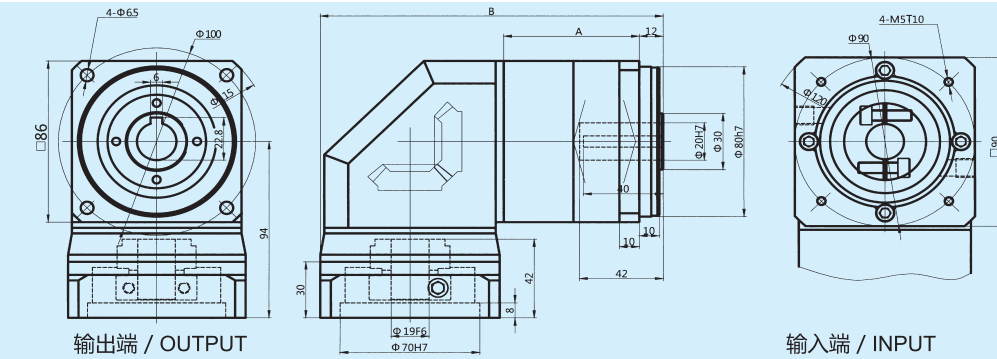
右侧如图16孔为加强型



WPTK85

	*A*长度 length	*B*长度 length	重量 weight
单级 1-stage	54	179	4.6 Kg
双级 2-stage	77	202	5.2 Kg

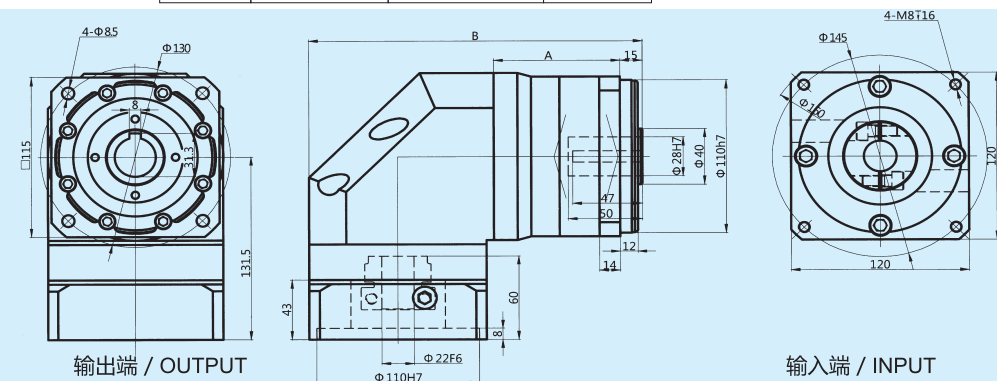
右侧如图20孔为加强型



WPTK115

	*A*长度 length	*B*长度 length	重量 weight
单级 1-stage	68.5	207.5	9.0Kg
双级 2-stage	98.5	237.5	11.0Kg

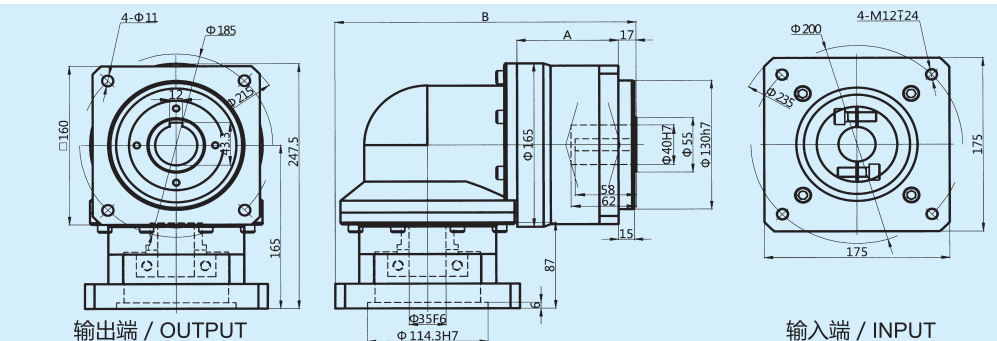
右侧如图28孔为加强型



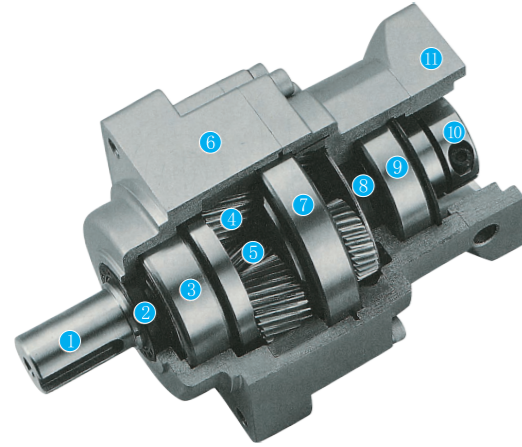
WPTK160

	*A*长度 length	*B*长度 length	重量 weight
单级 1-stage	96.0	285.5	19.5Kg
双级 2-stage	140.5	330.0	25.5Kg

右侧如图40孔为加强型



■ 剖视图 SECTIONAL DRAWING

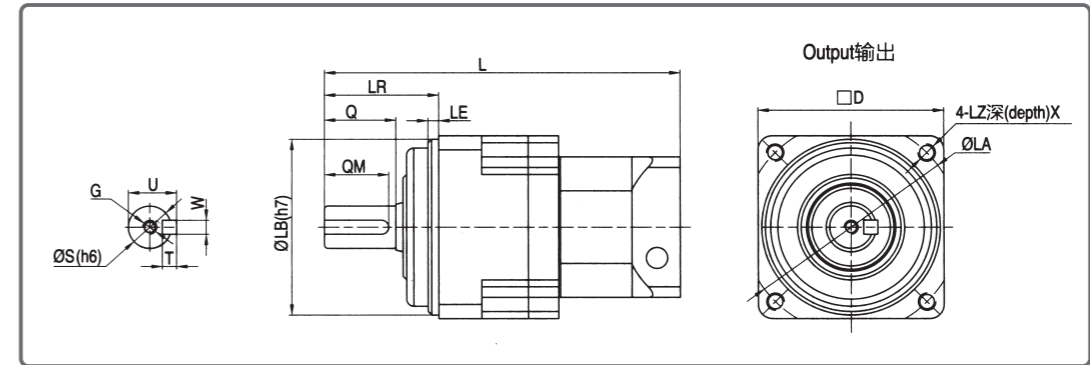


- ① 输出轴 Output shaft
- ② 油封 Seal for the output shaft
- ③ 输出轴后轴承 Bearing for the output shaft
- ④ 行星轮 Planetary gear
- ⑤ 太阳轮 Sunwheel
- ⑥ 前盖 Front cover
- ⑦ 输出轴后轴承 Bearing for the output shaft
- ⑧ 油封 Seal for the input shaft
- ⑨ 输入轴轴承 Bearing for the input shaft
- ⑩ 精密装夹系统 Precision clamping system
- ⑪ 后盖 rear cover

■ 系列号、机型标识说明 Type and model number

PTR减速机, PTR Reducers		伺服电机 Servo Motor			
<p>78 PTR 20 () (S) - 750 T1 </p> <p>① ② ③ ④ ⑤ ⑥ ⑦ ⑧</p>					
① 减速机机座号: 78	Gear head frame size: 78				
② 减速机系列代号: PTR	Gear head series code: PTR				
③ 减速比: 单级3,4,5,6,7,8,9,10; 两级15,20,25,35,45,81	Gear ratio: Single stage 3, 4, 5, 6, 7, 8, 9, 10, Two stages 15, 20, 25, 35, 45, 81				
④ 精度Amount of backlash: 输出轴负荷量为容许输出扭矩的±5%时的值。 Precision(the load of output shaft is ±5% of allowable output torque)	机座号 reducer type no.	级数 Stage	标准型 Standard type	精密型P1 Low-backlash type	高精型P2 High precision type
			52	1 12分arc-min	10分arc-min
	78	1 8分arc-min	5分arc-min	3分arc-min	
		2 12分arc-min	8分arc-min	5分arc-min	
	98	1 8分arc-min	5分arc-min	3分arc-min	
		2 12分arc-min	8分arc-min	5分arc-min	
125	1 8分arc-min	5分arc-min	3分arc-min		
	2 12分arc-min	8分arc-min	5分arc-min		
⑤ 输入轴型式	input shaft type				
S:整体锁紧(省略)(无论马达是否有键槽都可用,但"D"字型不适用)	S:Overall locking (Omission)(regardless)whether the motor with keyway can use it. But D Cut can't use)				
S1:带锁紧环锁紧(无论马达是否有键槽都可用,但"D"字型不适用)	S1:Locking with locking ring (regardless whether the motor with keyway can use it. But D Cut can't use)				
S2:带键槽锁紧(输入轴带键)	S2: Locking with keyway (input shaft with key)				
K:带键槽	K: with keyway				
A:其他适配器(请与本公司联系)	A: Other type (please contact with us)				
⑥ 适用伺服马达功率(W)	applicable servo motor power(W)				
⑦ 伺服马达厂家名称(P188)	manufacturer name of servo motor(P188)				
⑧ 伺服马达型号	model of servo motor				

■ 机械参数 DIMENSIONS



■ 尺寸表 Dimensional Table

机座号 Type no.	系列号 Model	减速比 Reduction ratio	马达功率 Motor	全长 Total length L			输出轴 Output shaft						法兰 Flange																			
				松下电器生产 Panasonic- made MSMA	安川电机生产 Yaskawa-made SGMASH SGMSH	三菱电机生产 Mitsubishi-made HC-KFS HC-RFS	LR	S	Q	QM	G	W x U	T	D	LB	LE	LA	LZ	X													
52	PTR	3-5-9	50	99.5			32	12	20	18	M4 (depth) 12	4x13.5	4	52	50	3	60	M5	12													
52	PTR	15-20-25-35	50	110																												
52	PTR	3-5-9	100	99.5																												
52	PTR	15-20-25	100	110																												
52	PTR	3-5	200	104.5			50	19	30	26	M5 (depth) 15	6x21.5	6	80	70	3	90	M6	20													
52	PTR	3	400	142																												
78	PTR	45-81	50	150																												
78	PTR	35	100	142																												
78	PTR	45	100	139.5																												
78	PTR	9	200	150																												
78	PTR	15-20-25-35	200	139.5																												
78	PTR	5-9	400	150																												
78	PTR	15-20-25	400	143.5																												
78	PTR	3-5	750	158			61	24	40	35	M6 (depth) 20	8x27	7	100	90	5	115	M8	20													
98	PTR	81	100	165																												
98	PTR	45	200	171																												
98	PTR	35	400	177																												
98	PTR	9	750	210																												
98	PTR	15-20-25	750	235																												
98	PTR	3-5	1000	215																												
98	PTR	3-5	1500	235																												
98	PTR	3	2000	215																												
125	PTR	81	200	215																75	32	55	52	M10 (depth) 20	10x35	8	125	110	5	135	M10	20
125	PTR	45	400	225																												
125	PTR	35	750	225																												
125	PTR	45	750	225																												
125	PTR	9	1000	225																												
125	PTR	15-25	1000	225																												
125	PTR	9	1500	225																												
125	PTR	15	1500	225																												
125	PTR	5-9	2000	225																												
125	PTR	15	2000	225																												
125	PTR	3-5-9	2500	215	-	-																										
125	PTR	3-5-9	3000	215	225	-																										
125	PTR	3-5	3500	215	-	225																										
125	PTR	3-5	4000	225	225	-																										
125	PTR	3	4500	225	-	-																										
125	PTR	3	5000	225	-	-																										

注1)基准系列(马达对应表记载系列)以外的马达, 请咨询。(因为根据马达安装的不同法兰尺寸可能不同)

注2)输出轴旋转方向与马达输入旋转方向相同。

注3)全部为斜齿轮适用范围。

Note 1) Please inquire to us if motor model isn't standard (Matching motor list).(The flange dimension may be different if motor assembly dimension is different.)

Note 2) Rotation of the output shaft is in the same direction as that of motor input.

Note 3) All values are within the range corresponding to helical gear.