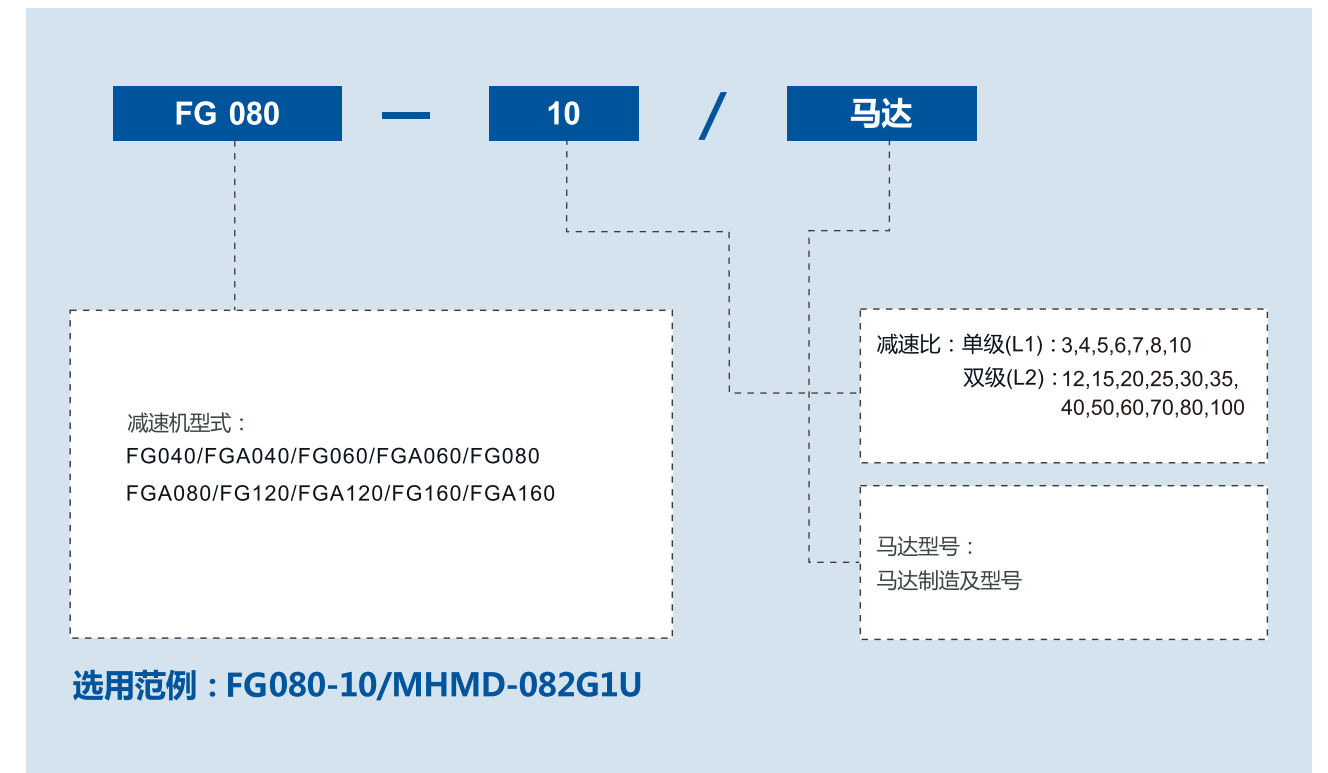


FG/FGA SERIES



型号说明 / MODEL ILLUMINATE



减速机性能资料 / GEAR BOX PERFORMANCE INFORMATION

规格	级数	减速比 ¹	FG040 FGA040	FG060 FGA060	FG080 FGA080	FG120 FGA120	FG160 FGA160	
额定输出力矩 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		
	最大输出力矩 T_{2B}	Nm	3~100	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	
最大输入转速 n_{1B}	rpm	1.2	3~100	10,000	10,000	8,000	8,000	6,000
背隙	arcmin	1	3~10	≤8	≤8	≤8	≤8	≤8
		2	12~100	≤10	≤10	≤10	≤10	≤10
扭转刚性	Nm/arcmin	1.2	3~100	3	7	14	25	50
容许径向力 F_{2rB}	N	1.2	3~100	780	1,530	3,250	6,700	9,400
容许轴向力 F_{2aB}	N	1.2	3~100	350	630	1,300	3,000	4,000
容许轴向力 F_{2a2B}	N	1.2	3~100	390	765	1,625	3,350	4,700
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
		2	12~100	0.8	1.9	4.1	9	17.5
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 ($n_1=3000\text{rpm}$)	dB	1.2	3~100	≤56	≤58	≤60	≤63	≤65

减速机转动惯量

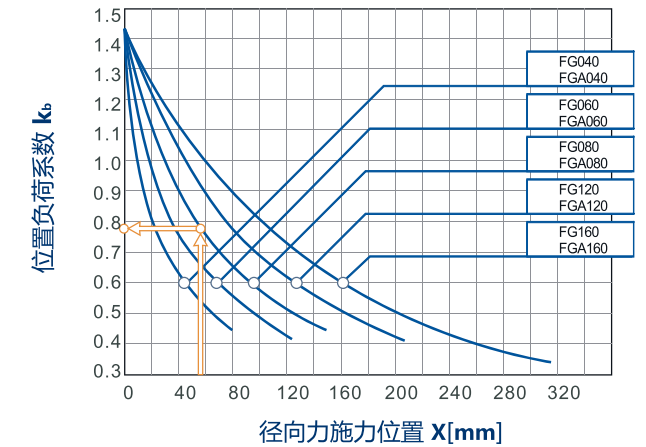
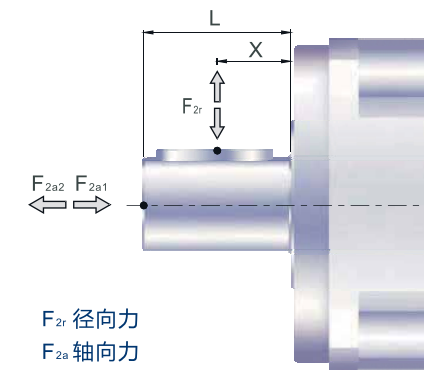
规格	级数	减速比 ¹	FG040 FGA040	FG060 FGA060	FG080 FGA080	FG120 FGA120	FG160 FGA160	
转动惯量 J_1	1	3	0.03	0.16	0.61	3.25	9.21	
		4	0.03	0.14	0.48	2.74	7.54	
		5	0.03	0.13	0.47	2.71	7.42	
		6	0.03	0.13	0.45	2.65	7.25	
		7	0.03	0.13	0.45	2.62	7.14	
		8	0.03	0.13	0.44	2.58	7.07	
		10	0.03	0.13	0.44	2.57	7.03	
		2	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

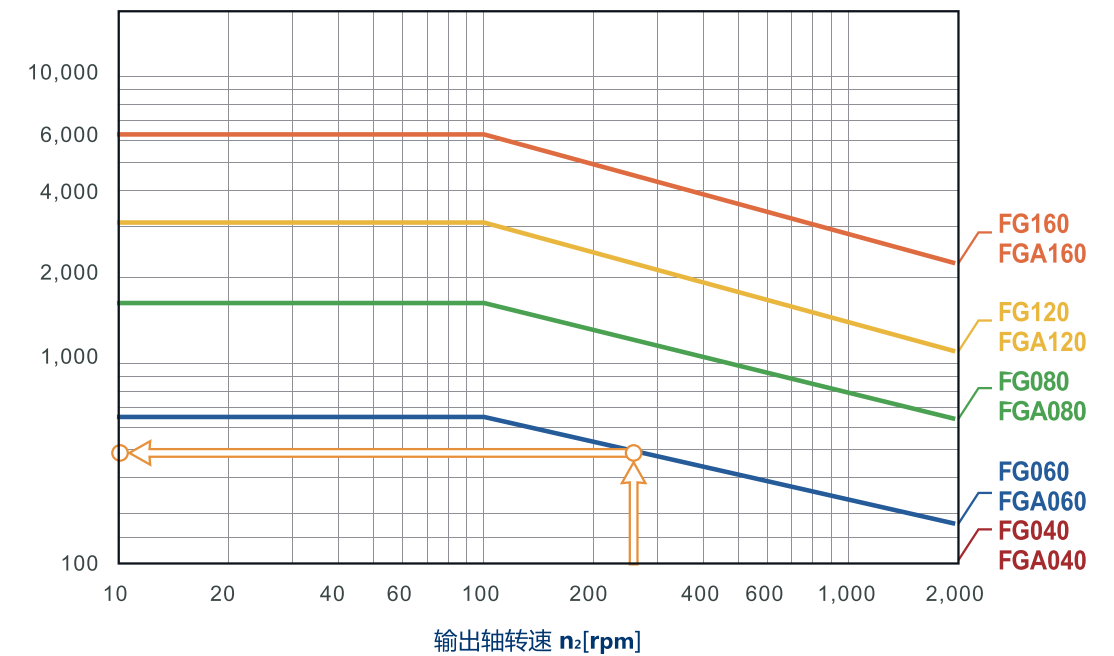
REDUCER OUTPUT SHAFT OF THE PERMISSIBLE RADIAL FORCE AND SHAFT AND FORCE



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_0 。

容许径向力 F_{2rB} [N] 施力于轴中心位置

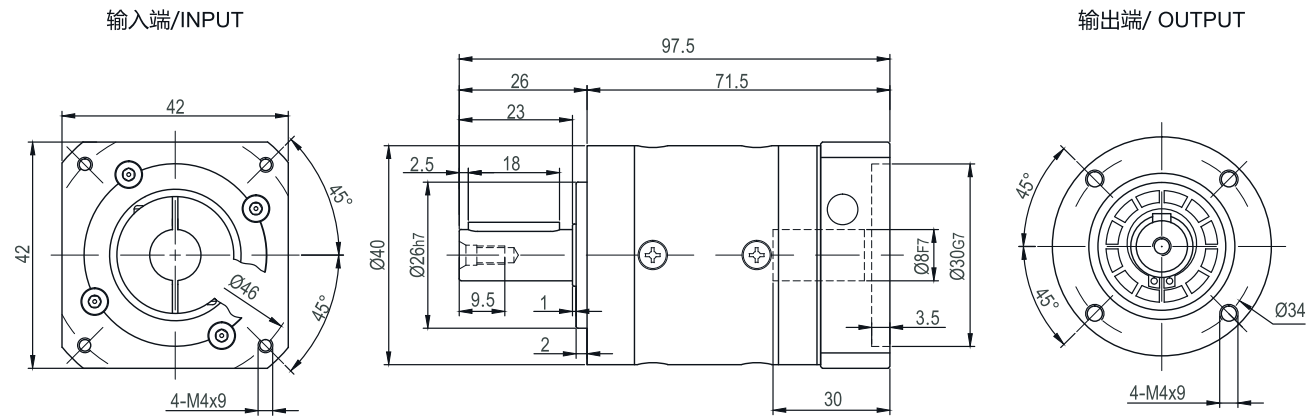


当径向力 F_{2r} 施力于轴中心位置,即 $X=1/2 \times L$ 时,不同之减速机在不同输出转速运用下,使用寿命为20,000*小时,所能承受之容许径向力,请参照上图。

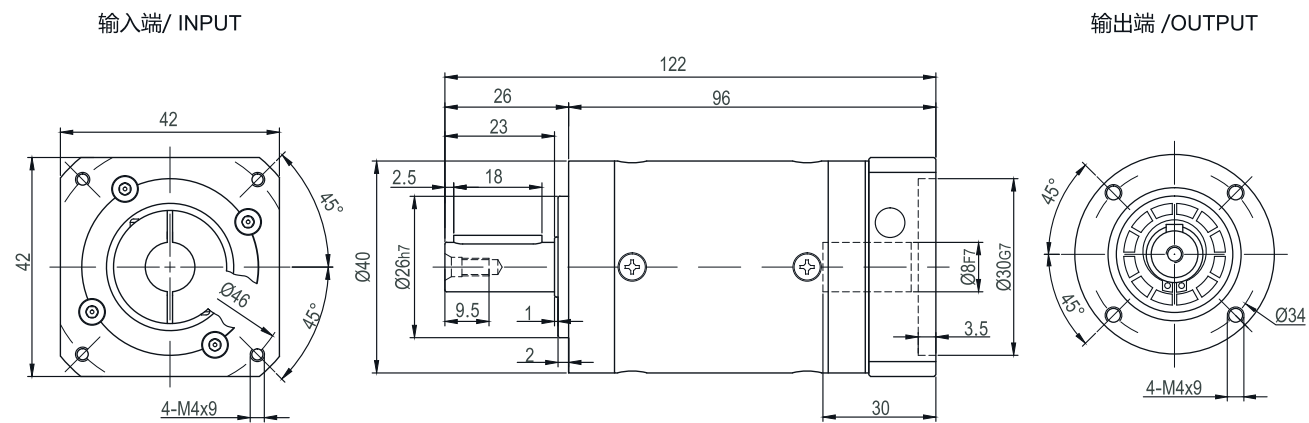
*连续运转(S1)下之使用寿命降低50%。

外形尺寸图表 / OUTLINE DIMENSION SHEET

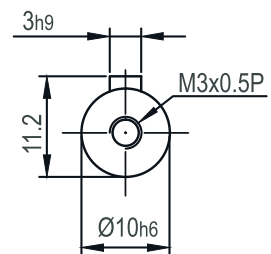
FG-040-L1



FG-040-L2



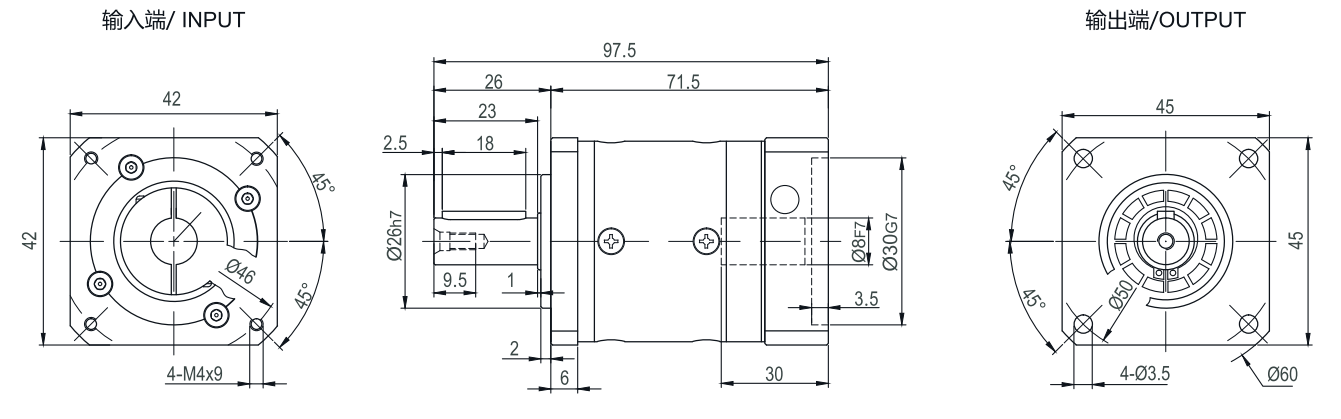
输出轴径/Output Diameter



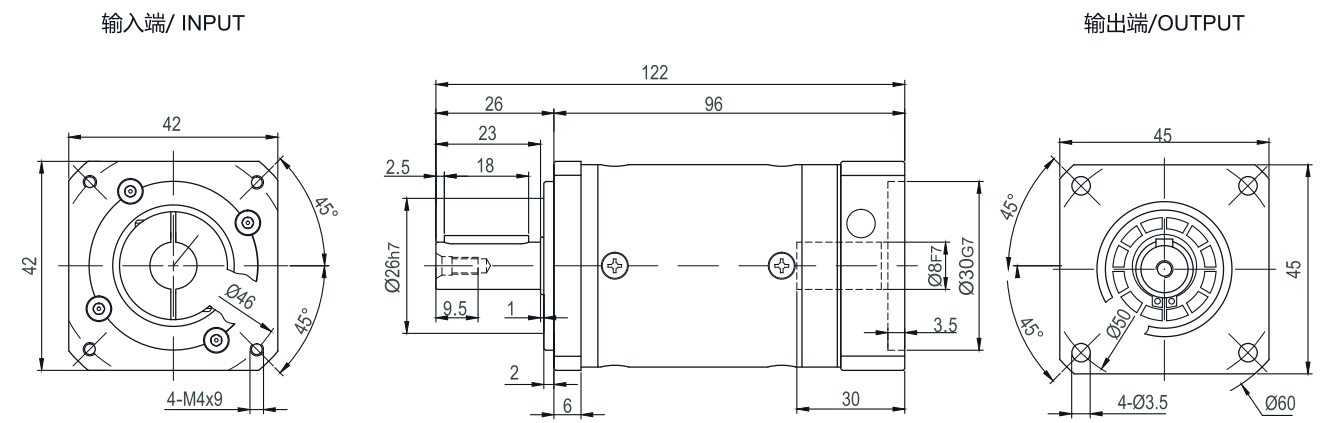
*输入马达连接板之尺寸,可根据客户要求单独定做。
 *The input motor specific dimensions could be customised.

外形尺寸图表 / OUTLINE DIMENSION SHEET

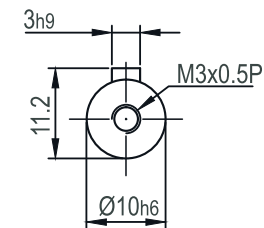
FGA-040-L1



FGA-040-L2



输出轴径/Output Diameter



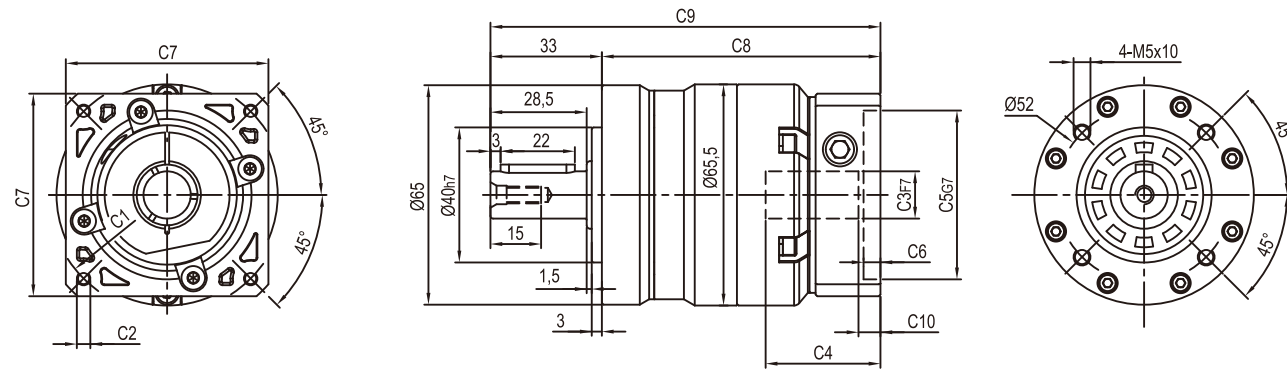
*输入马达连接板之尺寸,可根据客户要求单独定做。
 *The input motor specific dimensions could be customised.

外形尺寸图表 / OUTLINE DIMENSION SHEET

FG-060D(M1)-L1

输入端/INPUT

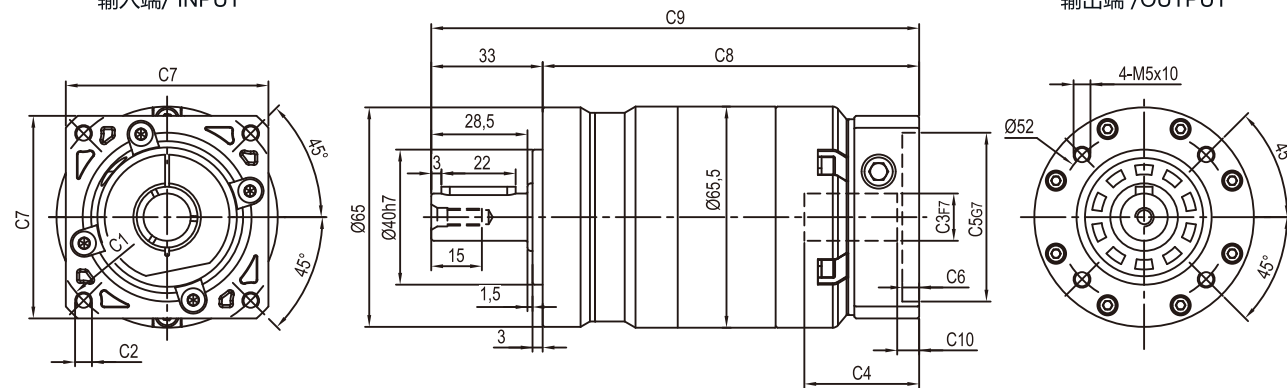
输出端/OUTPUT



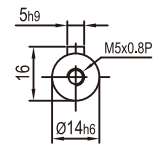
FG-060D(M1)-L2

输入端/INPUT

输出端/OUTPUT



输出轴径/Output Diameter



尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
FG-060D-L1	Ø66.7	4-M4x10	Ø8	34	Ø38.1	5	60	82.5	115.5	5.5
FG-060D-L2								111.5	144.5	5.5
FG-060D-L1	Ø70	4-M4x10,4-M5x12	Ø11,Ø14	34	Ø50	5	60	82.5	115.5	5.5
FG-060D-L2								111.5	144.5	5.5
FG-060M1-L1	Ø90	4-M5x12,4-M6x14	Ø19	42	Ø70	6.5	80	89	122	12
FG-060M1-L2								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.

* D:常规孔,M1:极限孔

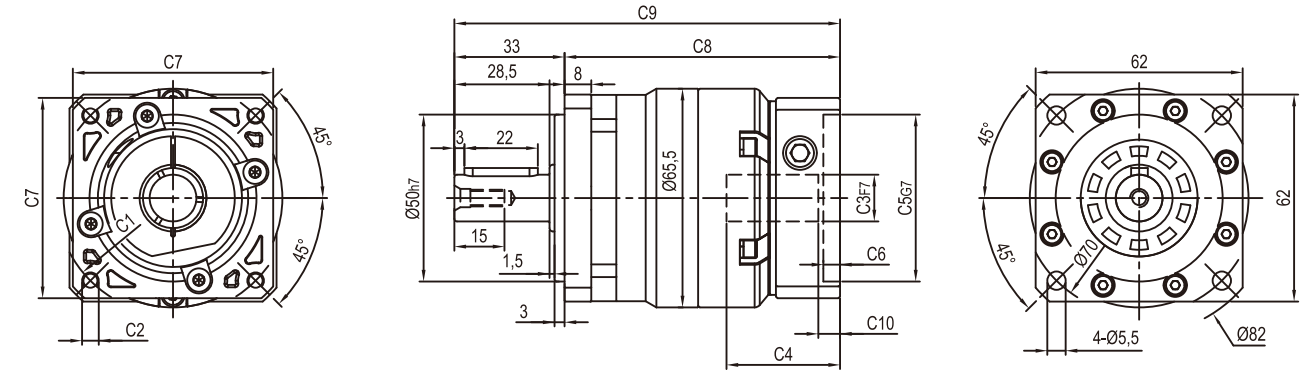
* D: Conventional Hole, M1: Limit Hole

外形尺寸图表 / OUTLINE DIMENSION SHEET

FGA-060D(M1)-L1

输入端/INPUT

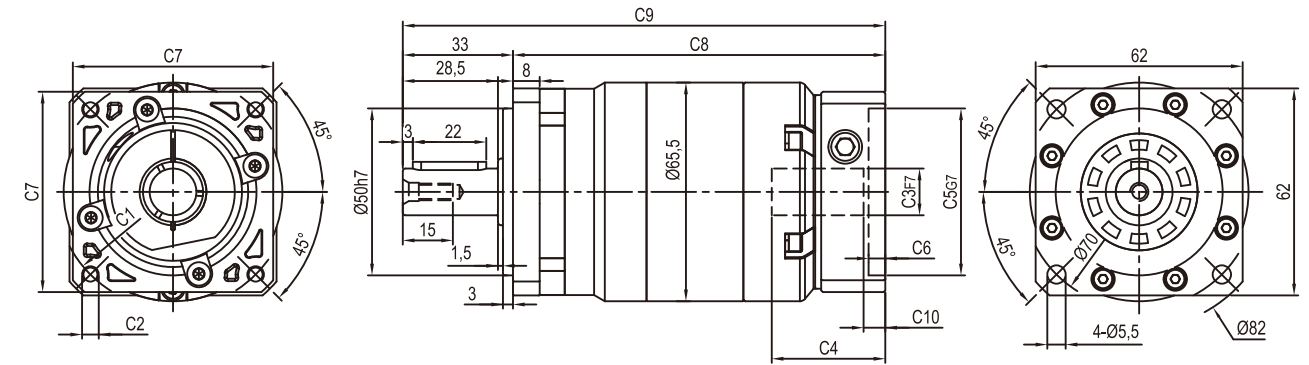
输出端/OUTPUT



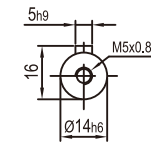
FGA-060D(M1)-L2

输入端/INPUT

输出端/OUTPUT



输出轴径/Output Diameter



尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
FGA-060D-L1	Ø66.7	4-M4x10	Ø8	34	Ø38.1	5	60	82.5	115.5	5.5
FGA-060D-L2								111.5	144.5	5.5
FGA-060D-L1	Ø70	4-M4x10,4-M5x12	Ø11,Ø14	34	Ø50	5	60	82.5	115.5	5.5
FGA-060D-L2								111.5	144.5	5.5
FGA-060M1-L1	Ø90	4-M5x12,4-M6x14	Ø19	42	Ø70	6.5	80	89	122	12
FGA-060M1-L2								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.

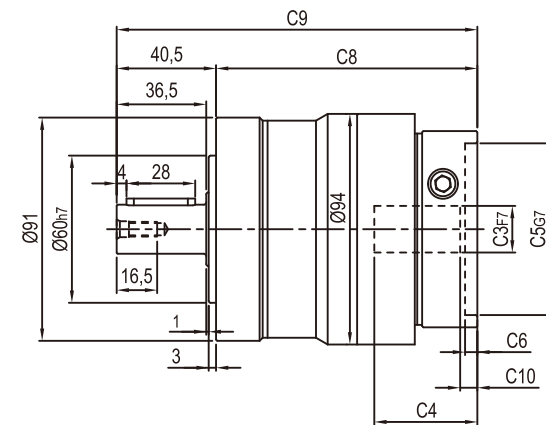
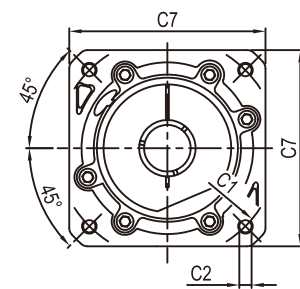
* D:常规孔,M1:极限孔

* D: Conventional Hole, M1: Limit Hole

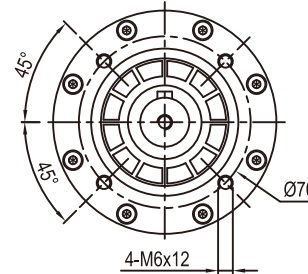
外形尺寸图表 / OUTLINE DIMENSION SHEET

FG-080D(M1)-L1

输入端/INPUT

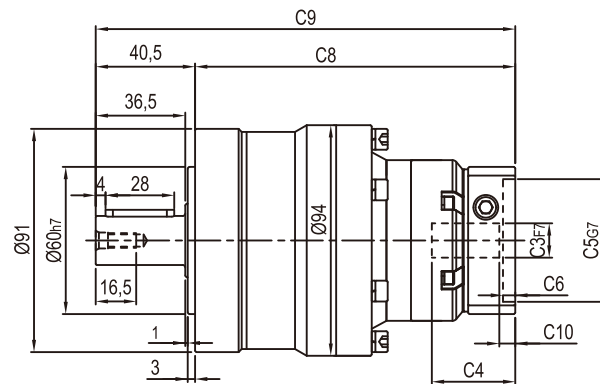
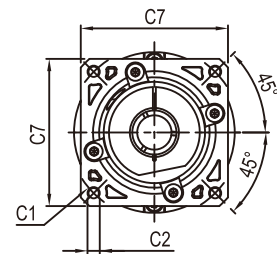


输出端/ OUTPUT

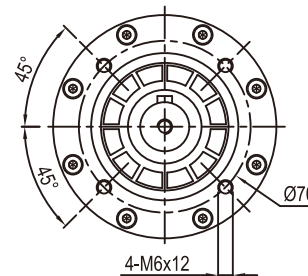


FG-080D(M1)-L2

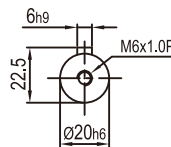
输入端/ INPUT



输出端/OUTPUT



输出轴径/Output Diameter



尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
FG-080D-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
FG-080M1-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
FG-080D-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
FG-080M1-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.

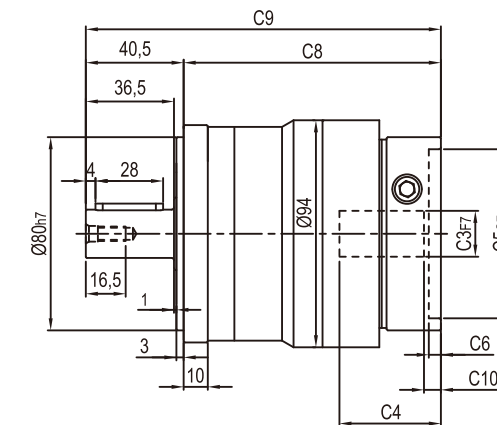
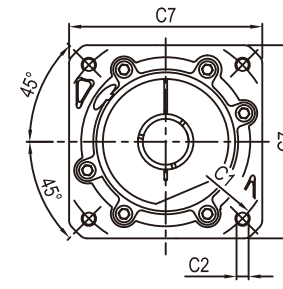
* D:常规孔,M1:极限孔

* D: Conventional Hole, M1: Limit Hole

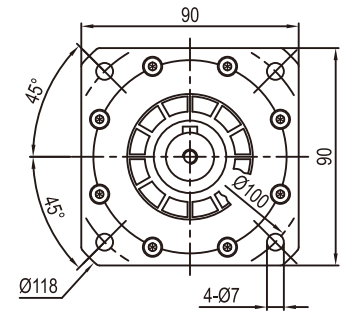
外形尺寸图表 / OUTLINE DIMENSION SHEET

FGA-080D(M1)-L1

输入端/ INPUT

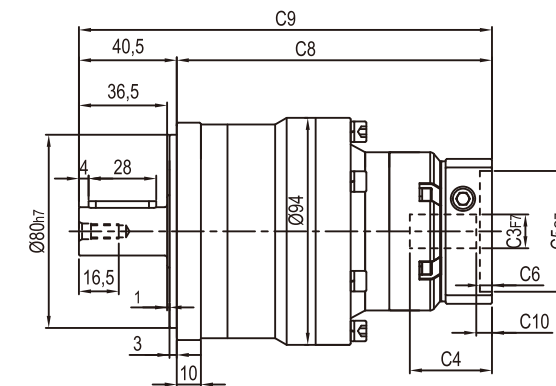
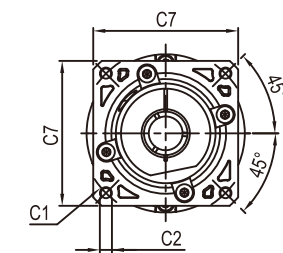


输出端/OUTPUT

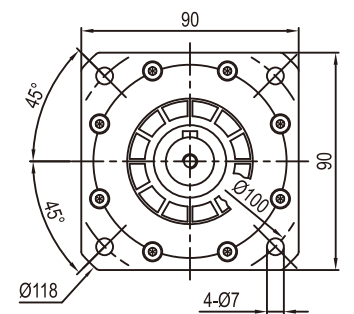


FGA-080D(M1)-L2

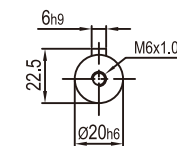
输入端/ INPUT



输出端/OUTPUT



输出轴径/Output Diameter



尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
FGA-080D-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
FGA-080M1-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
FGA-080D-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
FGA-080M1-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.

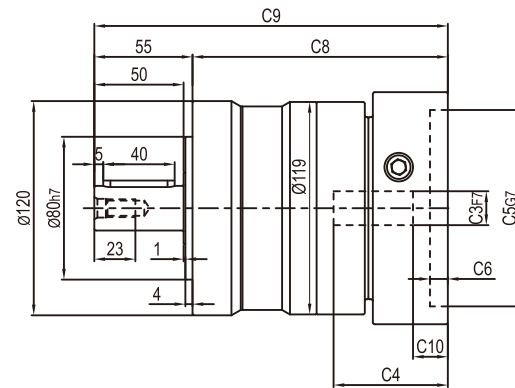
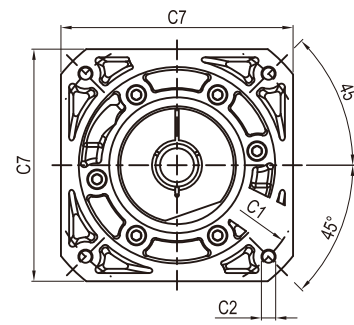
* D:常规孔,M1:极限孔

* D: Conventional Hole, M1: Limit Hole

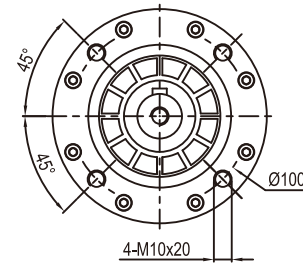
外形尺寸图表 / OUTLINE DIMENSION SHEET

FG-120D(M1)-L1

输入端/INPUT



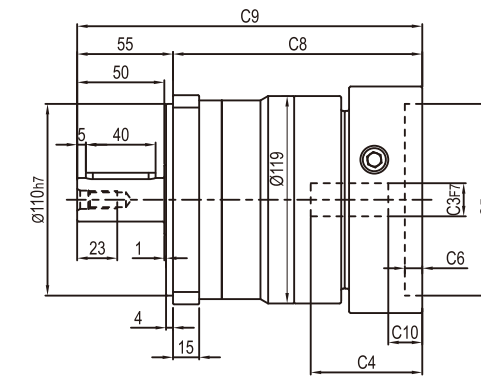
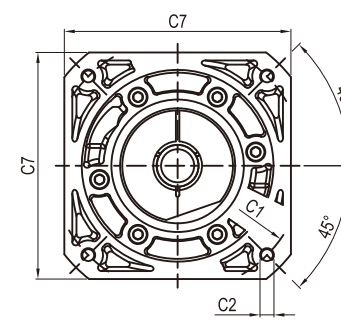
输出端/OUTPUT



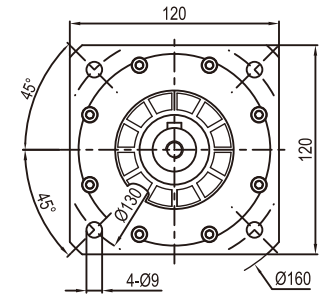
外形尺寸图表 / OUTLINE DIMENSION SHEET

FGA-120D(M1)-L1

输入端/INPUT

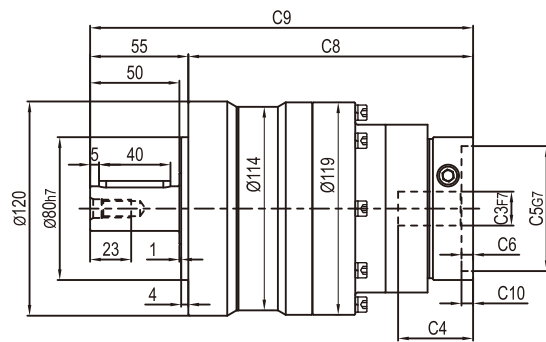
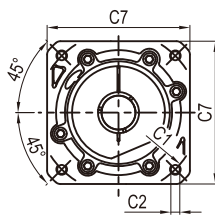


输出端/OUTPUT

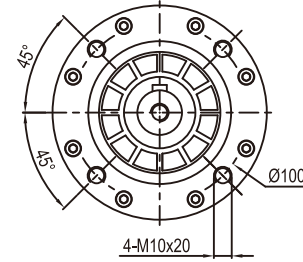


FG-120D(M1)-L2

输入端/INPUT

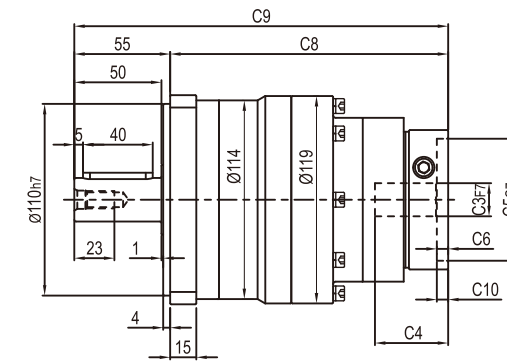
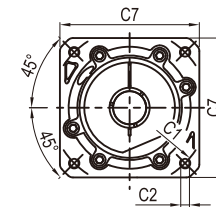


输出端/OUTPUT

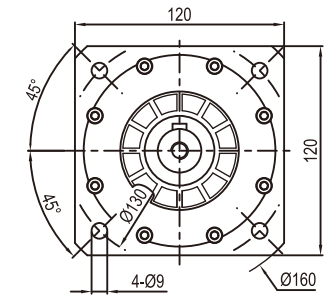


FGA-120D(M1)-L2

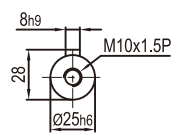
输入端/INPUT



输出端/OUTPUT



输出轴径/Output Diameter



尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
FG-120D-L1	Ø145	4-M8x20	Ø19,Ø22,Ø24	64	Ø110	10	130	143	198	19.5
FG-120M1-L1	Ø200	4-M12x28	Ø35	81	Ø114.3	10	180	160.5	215.5	28
FG-120D-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
FG-120M1-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

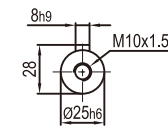
* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。

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

* D:常规孔,M1:极限孔

* D: Conventional Hole, M1: Limit Hole

输出轴径/Output Diameter



尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
FG-120D-L1	Ø145	4-M8x20	Ø19,Ø22,Ø24	64	Ø110	10	130	143	198	19.5
FG-120M1-L1	Ø200	4-M12x28	Ø35	81	Ø114.3	10	180	160.5	215.5	28
FG-120D-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
FG-120M1-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.

* D:常规孔,M1:极限孔

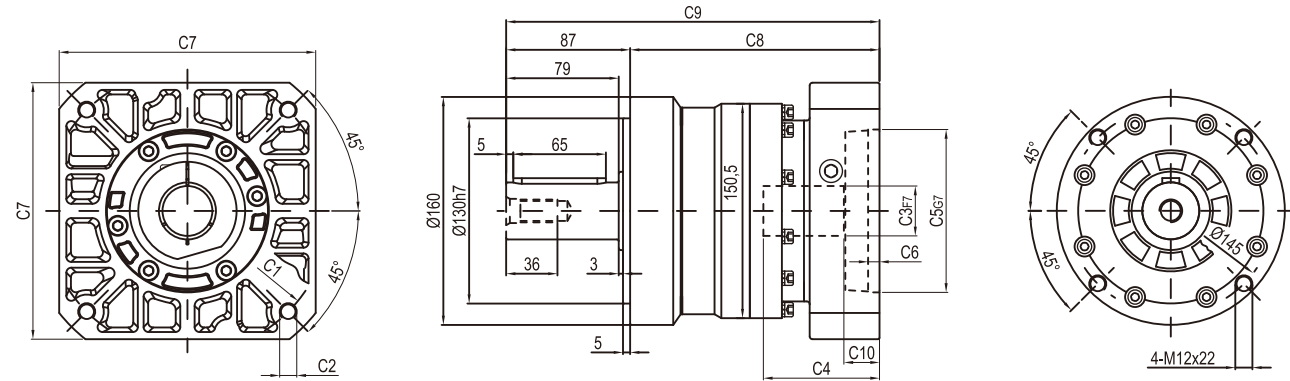
* D: Conventional Hole, M1: Limit Hole

外形尺寸图表 / OUTLINE DIMENSION SHEET

FG-160D(M1)-L1

输入端/INPUT

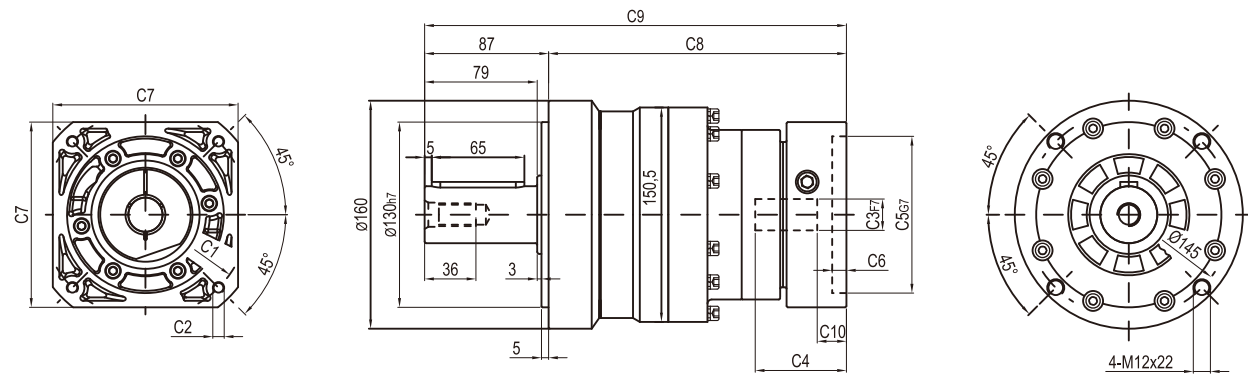
输出端/OUTPUT



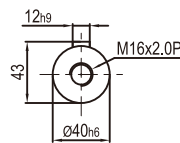
FG-160D(M1)-L2

输入端/INPUT

输出端/OUTPUT



输出轴径/Output Diameter



尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
FG-160D-L1	Ø145	4-M8x20	Ø22, Ø24	72	Ø110	11	130	165	252	19.5
	Ø200	4-M12x28	Ø35	81.5	Ø114.3	8	180	175	262	25
FG-160D-L2	Ø145	4-M8x20	Ø19, Ø22, Ø24	64	Ø110	10	130	209	296	19.5
FG-160M1-L2	Ø200	4-M12x28	Ø35	81	Ø114.3	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.

• D:常规孔, M1:极限孔

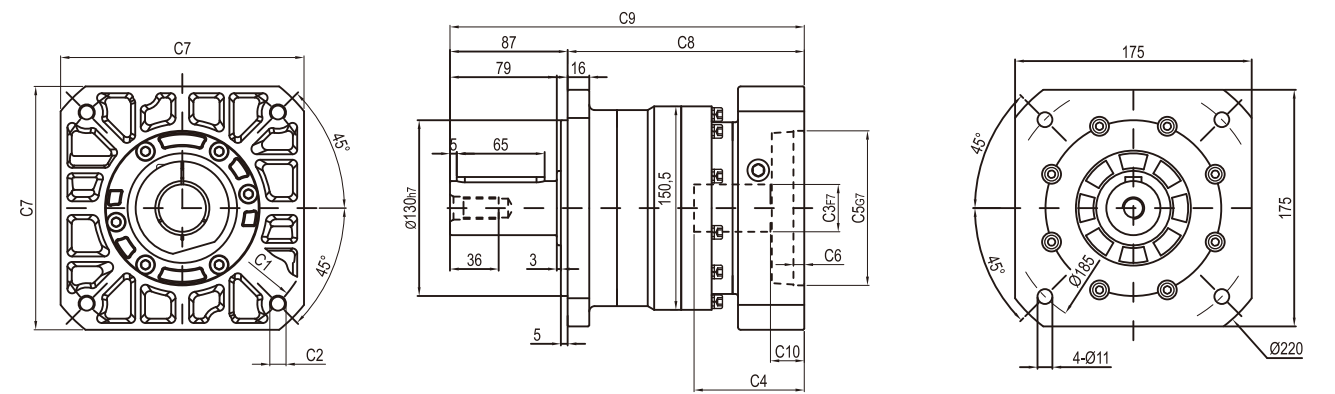
• D: Conventional Hole, M1: Limit Hole

外形尺寸图表 / OUTLINE DIMENSION SHEET

FGA-160D(M1)-L1

输入端/INPUT

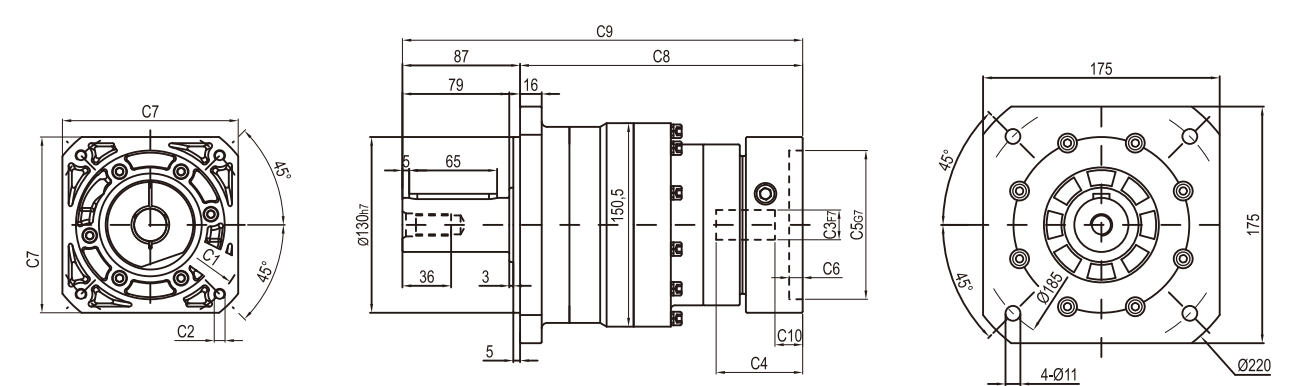
输出端/OUTPUT



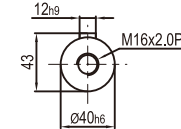
FGA-160D(M1)-L2

输入端/INPUT

输出端/OUTPUT



输出轴径/Output Diameter



尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
FGA-160D-L1	Ø145	4-M8x20	Ø22, Ø24	72	Ø110	11	130	165	252	19.5
	Ø200	4-M12x28	Ø35	81.5	Ø114.3	8	180	175	262	25
FGA-160D-L2	Ø145	4-M8x20	Ø19, Ø22, Ø24	64	Ø110	10	130	209	296	19.5
FGA-160M1-L2	Ø200	4-M12x28	Ø35	81	Ø114.3	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.

• D:常规孔, M1:极限孔

• D: Conventional Hole, M1: Limit Hole