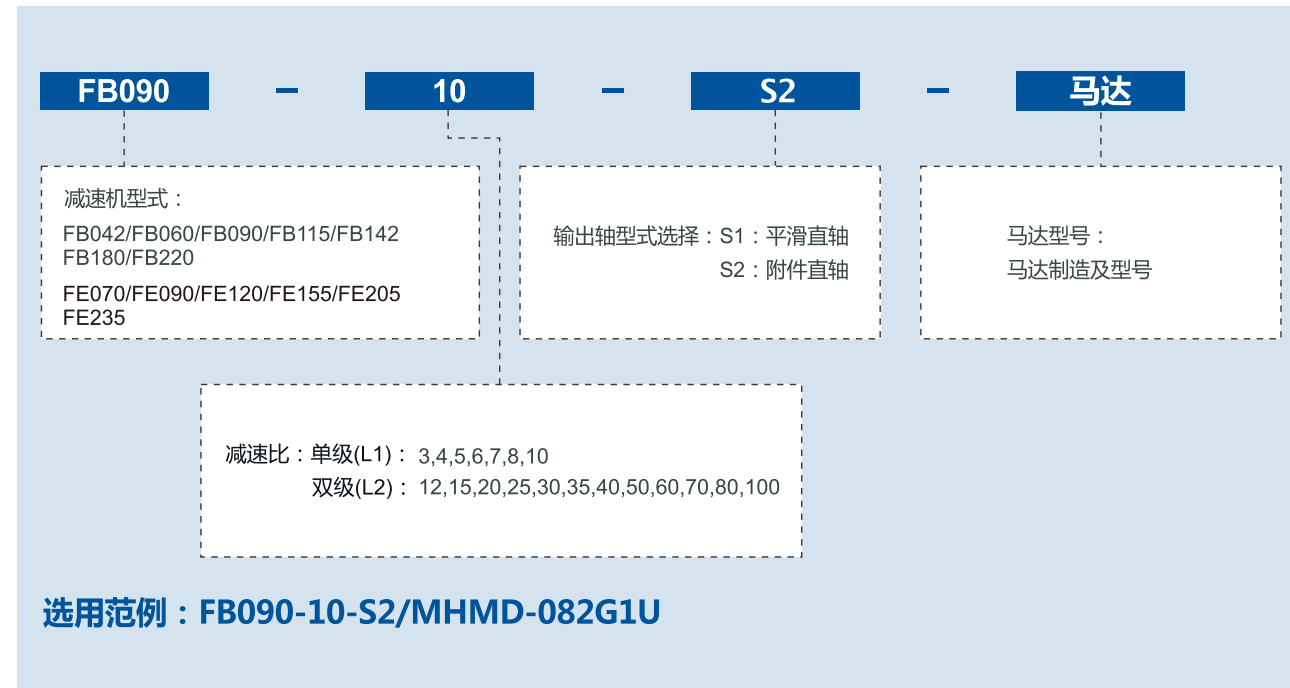




## 型号说明 / MODEL ILLUMINATE



## 减速机性能资料 / GEAR BOX PERFORMANCE INFORMATION

规格	级数	减速比 <sup>1</sup>	FB042	FB060 FE070	FB090 FE090	FB115 FE120	FB142 FE155	FB180 FE205	FB220 FE235			
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	1,200	2,000			
	35		22	60	160	330	650	1,200	2,000			
	40		22	50	140	290	542	1,200	2,000			
	50		22	60	160	330	650	1,200	2,000			
	最大输出力矩 $T_{2B}$	Nm	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
背隙			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 $\eta$	%	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 ( $n_1=3000\text{rpm}$ )	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 <sup>1</sup>	FB042	FB060 FE070	FB090 FE090	FB115 FE120	FB142 FE155	FB180 FE205	FB220 FE235	
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			

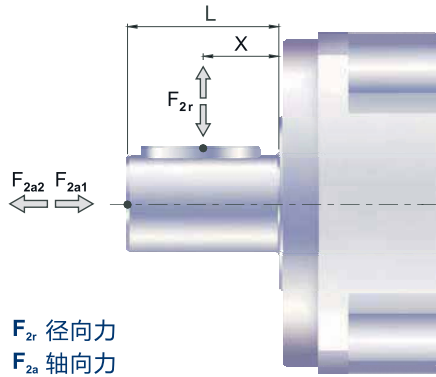
1. 减速比 (  $i=N_{in}/N_{out}$  )

\* 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

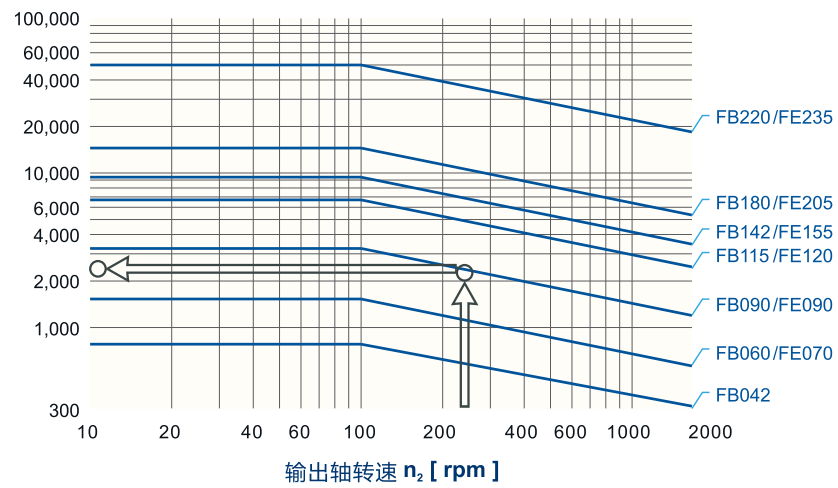
REDUCER OUTPUT SHAFT OF THE PERMISSIBLE RADIAL FORCE AND SHAFT AND FORCE



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

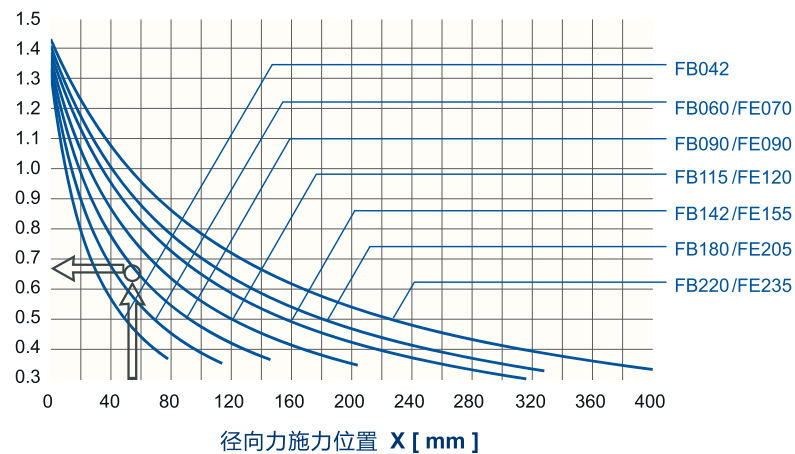


当径向力  $F_{2r}$  施力于轴中心位置即  $X=1/2 \times L$  时,不同规格之减速机在不同输出转速运用下使用寿命为 20,000hr\* 时,所能承受之容许径向力  $F_{2rB}$ ,请参照左图,而能承受之容许轴向力  $F_{2aB}$ ,为

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

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

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  $X < 1/2 \times L$ ,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  $X$ ,查出位置符合系数  $k_b$ ,在代入下列公式,求出容许径向力:

$$F'_{2rB} = k_b \times F_{2rB}$$

轴向力:

$$F'_{2a1B} = 0.2 \times F'_{2rB}$$

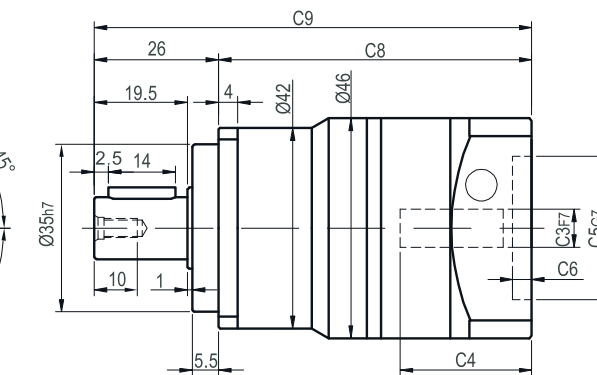
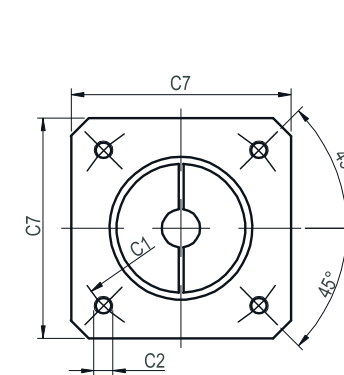
$$F'_{2a2B} = 0.1 \times F'_{2rB}$$

\* 连续运转降低使用寿命二分之一。

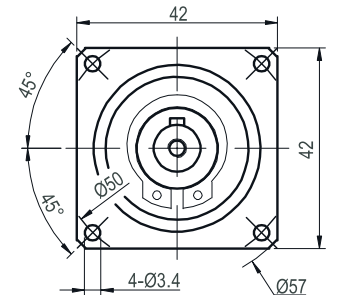
## 外形尺寸图表 / OUTLINE DIMENSION SHEET

FB-042-L1

输入端/ INPUT

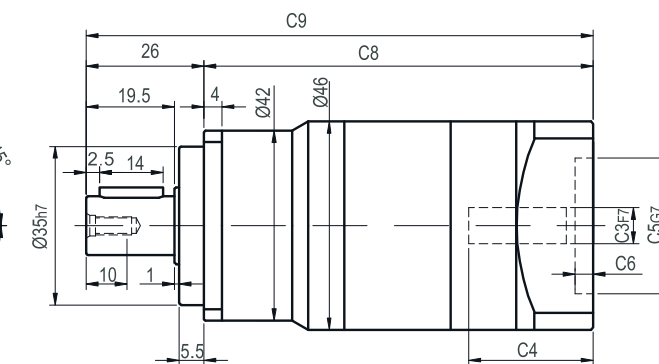
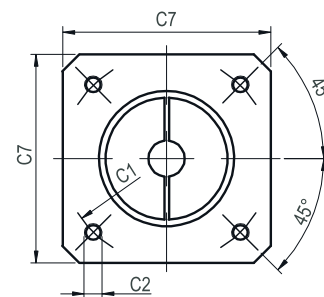


输出端/OUTPUT

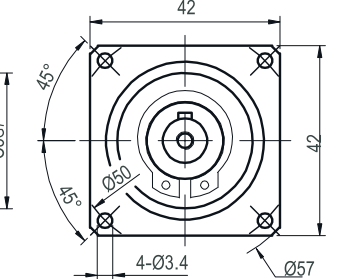


FB-042-L2

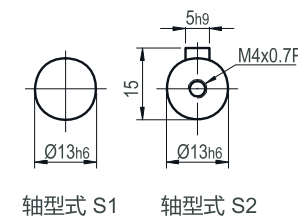
输入端/ INPUT



输出端/OUTPUT



输出轴径/Output Diameter



轴型式 S1 轴型式 S2

尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9
FB-042-L1	Ø45	4-M3x8	Ø8	27.5	Ø30	5	46	65.5	91.5
	Ø46	4-M4x10	Ø8	27.5	Ø30	5	46	65.5	91.5
	Ø66.67	4-M4x10	Ø6.35, Ø8	27.5	Ø38.1	5	57	65.5	91.5
	Ø70	4-M4x10, 4-M5x12	Ø11	32	Ø50	5	60	70	96
FB-042-L2	Ø45	4-M3x8	Ø8	27.5	Ø30	5	46	86	112
	Ø46	4-M4x10	Ø8	27.5	Ø30	5	46	86	112
	Ø66.67	4-M4x10	Ø6.35, Ø8	27.5	Ø38.1	5	57	86	112

\* 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。

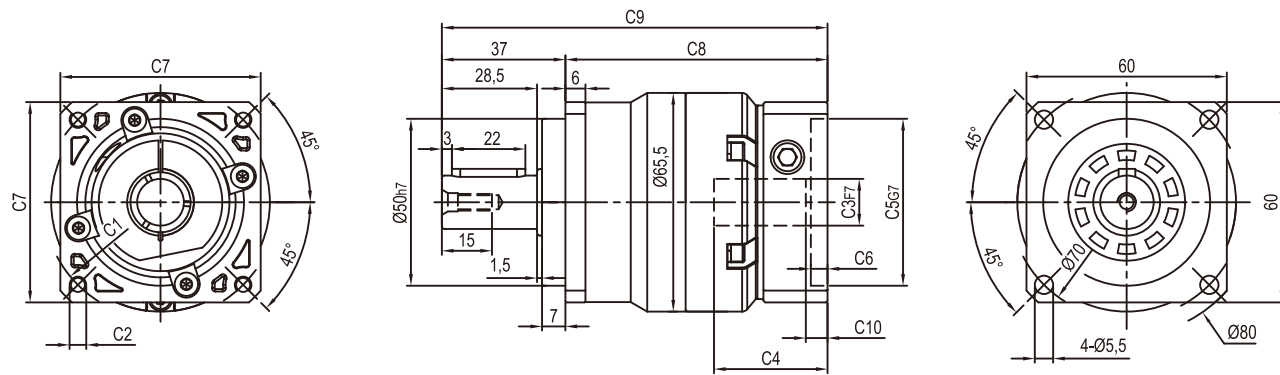
\* C1-C7 are motor (metric standard) specific dimensions, which could be customised.

## 外形尺寸图表 / OUTLINE DIMENSION SHEET

### FB-060D(M1)-L1

输入端/INPUT

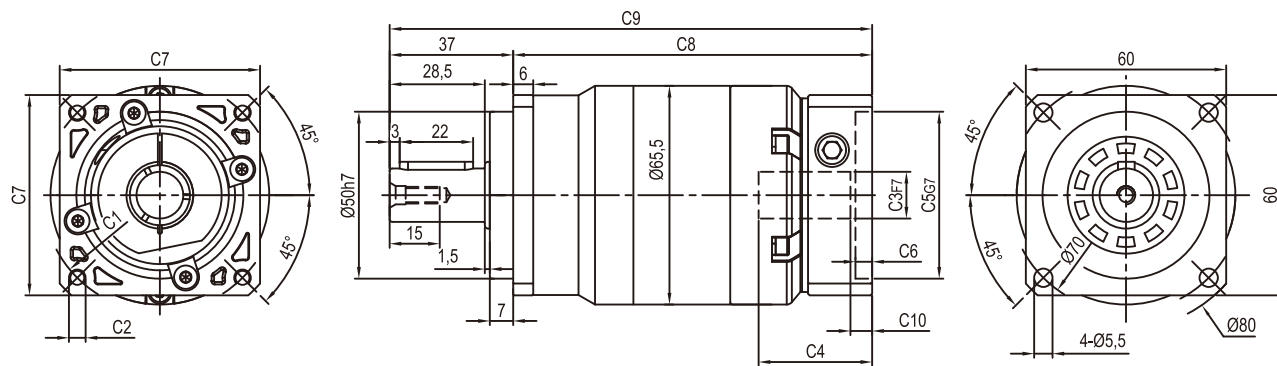
输出端/OUTPUT



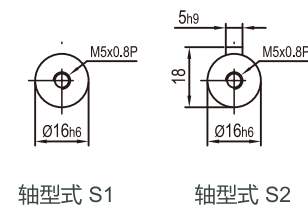
### FB-060D(M1)-L2

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
FB-060D-L1	Ø66.7	4-M4x10	Ø8	34	Ø38.1	5	60	78.5	115.5	5.5
FB-060D-L2	Ø66.7	4-M4x10	Ø8	34	Ø38.1	5	60	107.5	144.5	5.5
FB-060D-L1	Ø70	4-M4x10,4-M5x12	Ø11,Ø14	34	Ø50	5	60	78.5	115.5	5.5
FB-060D-L2	Ø70	4-M4x10,4-M5x12	Ø11,Ø14	34	Ø50	5	60	107.5	144.5	5.5
FB-060M1-L1	Ø90	4-M5x12,4-M6x14	Ø19	42	Ø70	6.5	80	85	122	12
FB-060M1-L2	Ø90	4-M5x12,4-M6x14	Ø19	42	Ø70	6.5	80	114	151	12

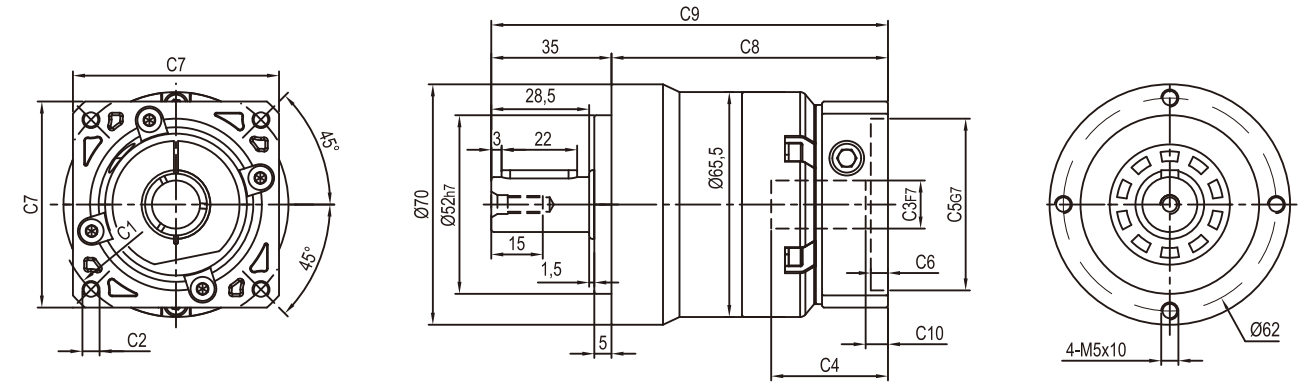
\* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。  
 \* C1~C7are motor(metric standard) specific dimensions, which could be customised.  
 \* D:常规孔, M1:极限孔  
 \* D: Conventional Hole, M1: Limit Hole

## 外形尺寸图表 / OUTLINE DIMENSION SHEET

### FE-070D(M1)-L1

输入端/INPUT

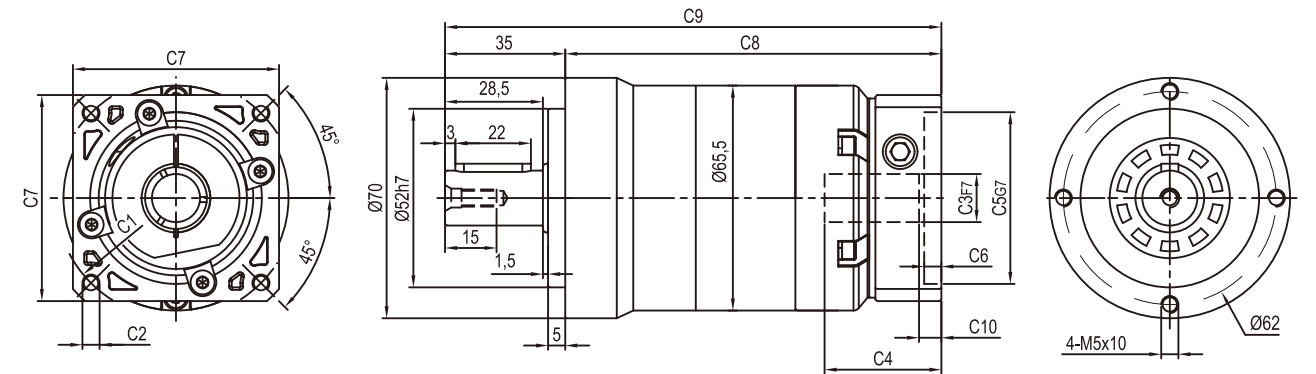
输出端/OUTPUT



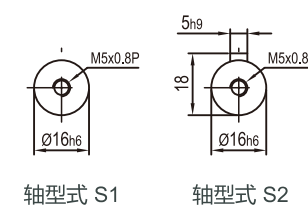
### FE-070D(M1)-L2

输入端/INPUT

输出端/OUTPUT



### 输出轴径/Output Diameter

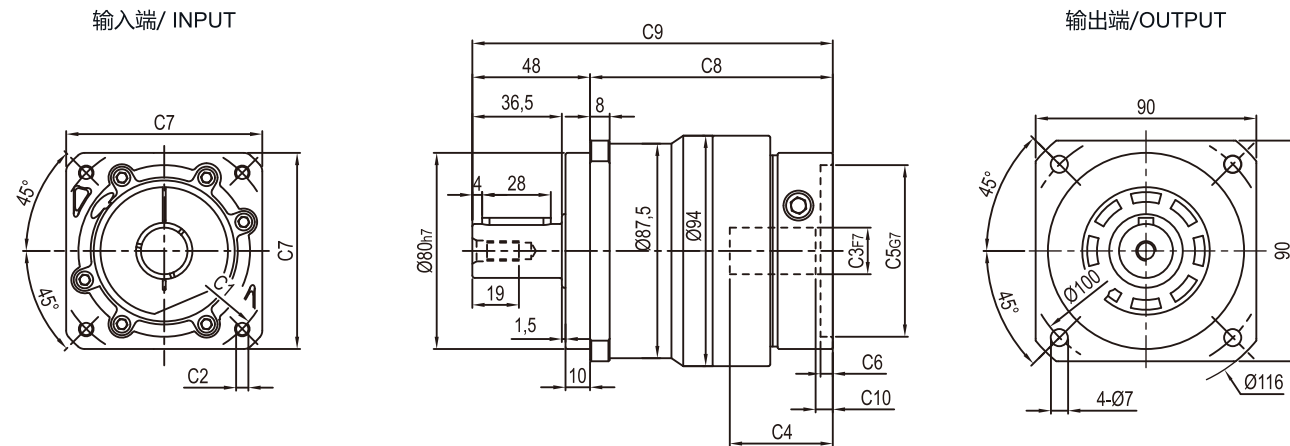


尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
FE-070D-L1	Ø66.7	4-M4x10	Ø8	34	Ø38.1	5	60	80.5	115.5	5.5
FE-070D-L2	Ø66.7	4-M4x10	Ø8	34	Ø38.1	5	60	109.5	144.5	5.5
FE-070D-L1	Ø70	4-M4x10,4-M5x12	Ø11,Ø14	34	Ø50	5	60	80.5	115.5	5.5
FE-070D-L2	Ø70	4-M4x10,4-M5x12	Ø11,Ø14	34	Ø50	5	60	109.5	144.5	5.5
FE-070M1-L1	Ø90	4-M5x12,4-M6x14	Ø19	42	Ø70	6.5	80	87	122	12
FE-070M1-L2	Ø90	4-M5x12,4-M6x14	Ø19	42	Ø70	6.5	80	116	151	12

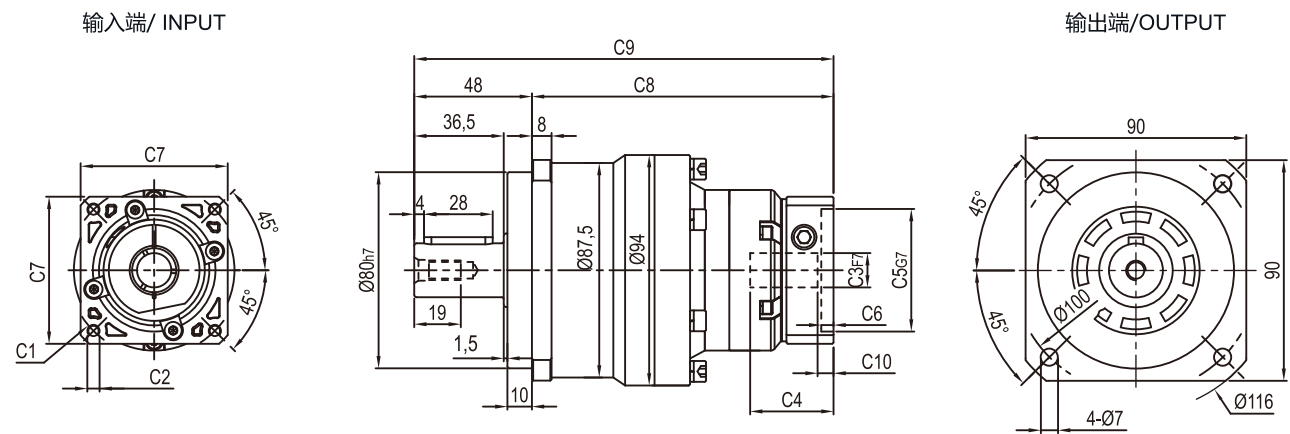
\* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。  
 \* C1~C7are motor(metric standard) specific dimensions, which could be customised.  
 \* D:常规孔, M1:极限孔  
 \* D: Conventional Hole, M1: Limit Hole

## 外形尺寸图表 / OUTLINE DIMENSION SHEET

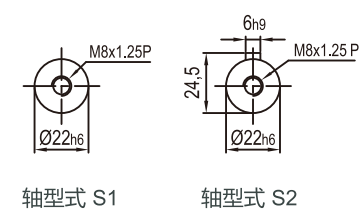
### FB-090D(M1)-L1



### FB-090D(M1)-L2



### 输出轴径/Output Diameter

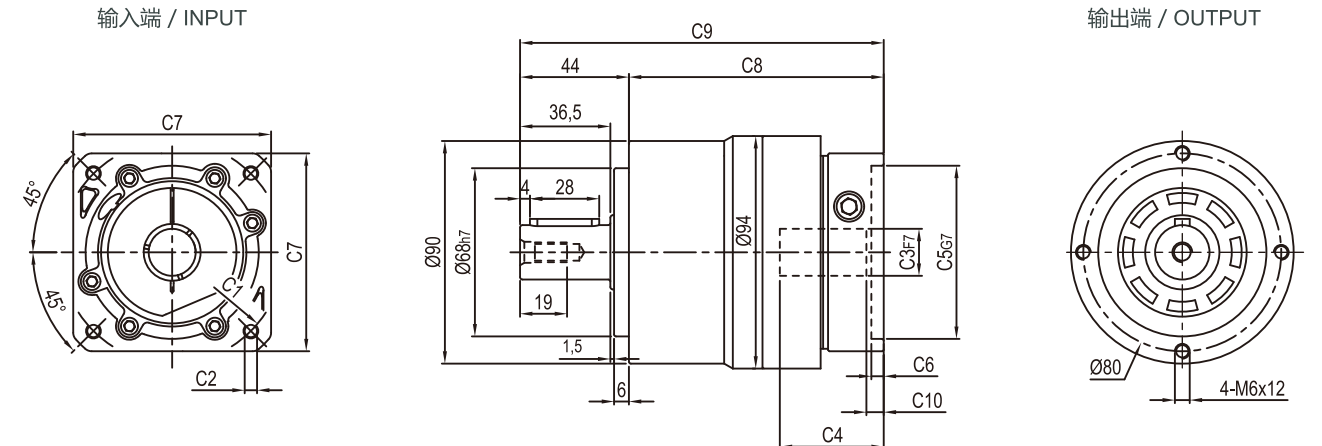


尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
FB-090D-L1	Ø90	4-M5x12,4-M6x14	Ø19	42	Ø70	6.5	80	99	147	7
	Ø100	4-M6x14	Ø16	42	Ø80	6.5	86	99	147	6
FB-090M1-L1	Ø115	4-M8x20	Ø19,Ø22	56.5	Ø95	8	100	114.5	162.5	16.5
	Ø145	4-M8x20	Ø19,Ø22,Ø24	59	Ø110	11	130	117	165	19
FB-090D-L2	Ø66.7	4-M4x10	Ø8	34	Ø38.1	5	60	123	171	5.5
	Ø70	4-M4x10,4-M5x12	Ø11,Ø14	34	Ø50	5	60	123	171	5.5
FB-090M1-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

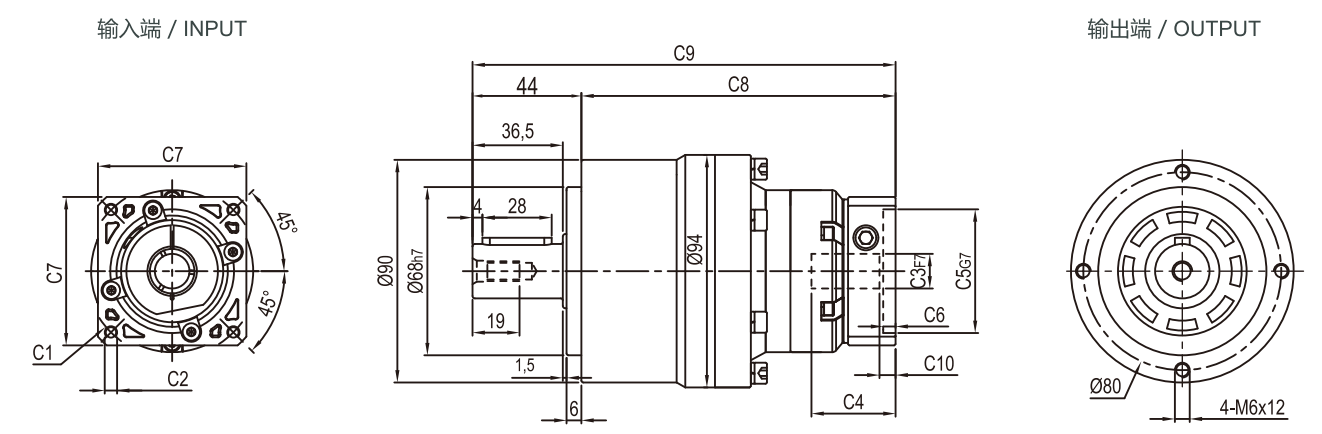
- \* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。
- \* C1~C7are motor(metric standard) specific dimensions, which could be customised.
- D:常规孔,M1:极限孔
- D: Conventional Hole, M1: Limit Hole

## 外形尺寸图表 / OUTLINE DIMENSION SHEET

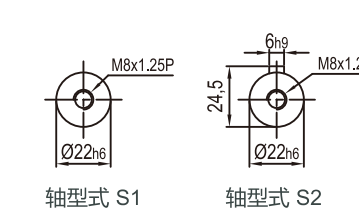
### FE-090D(M1)-L1



### FE-090D(M1)-L2



### 输出轴径/Output Diameter



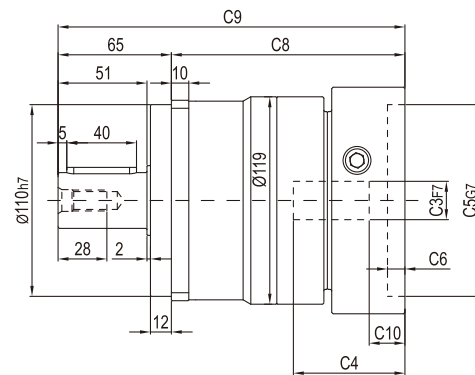
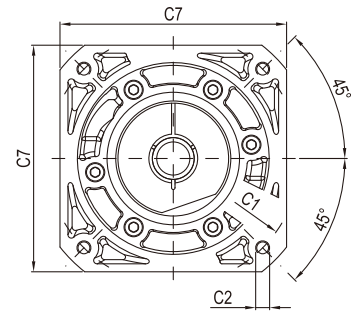
尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
FE-090D-L1	Ø90	4-M5x12,4-M6x14	Ø19	42	Ø70	6.5	80	103	147	7
	Ø100	4-M6x14	Ø16	42	Ø80	6.5	86	103	147	6
FE-090M1-L1	Ø115	4-M8x20	Ø19,Ø22	56.5	Ø95	8	100	118.5	162.5	16.5
	Ø145	4-M8x20	Ø19,Ø22,Ø24	59	Ø110	11	130	121	165	19
FE-090D-L2	Ø66.7	4-M4x10	Ø8	34	Ø38.1	5	60	127	171	5.5
	Ø70	4-M4x10,4-M5x12	Ø11,Ø14	34	Ø50	5	60	127	171	5.5
FE-090M1-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.
- D:常规孔,M1:极限孔
- D: Conventional Hole, M1: Limit Hole

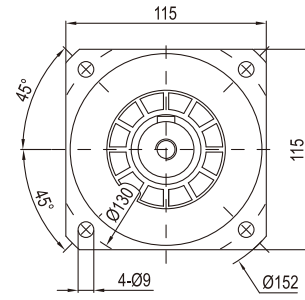
## 外形尺寸图表 / OUTLINE DIMENSION SHEET

### FB-115D(M1)-L1

输入端/INPUT

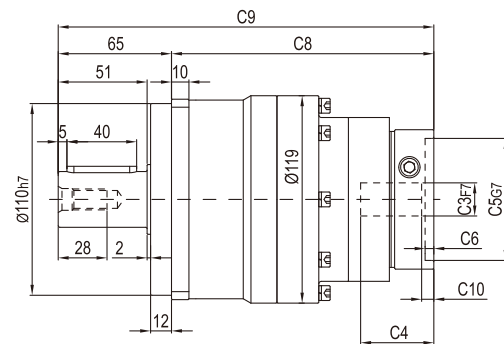
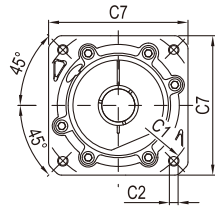


输出端/ OUTPUT

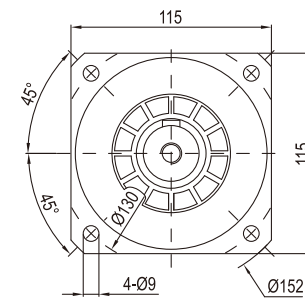


### FB-115D(M1)-L2

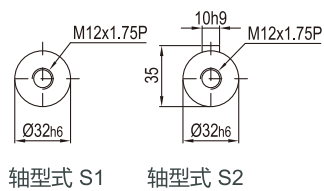
输入端/ INPUT



输出端/OUTPUT



### 输出轴径/Output Diameter



尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
FB-115D-L1	Ø145	4-M8x20	Ø19,Ø22,Ø24	64	Ø110	10	130	134	199	19.5
FB-115M1-L1	Ø200	4-M12x28	Ø35	81	Ø114.3	10	180	151.5	216.5	28
FB-115D-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
FB-115M1-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.

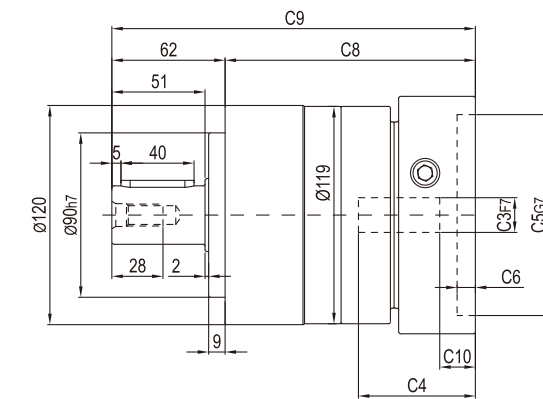
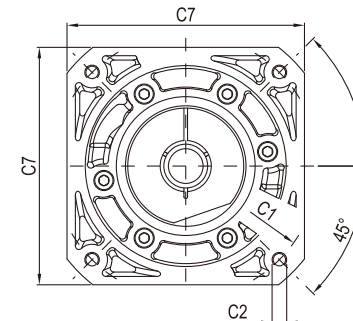
\* D:常规孔,M1:极限孔

\* D: Conventional Hole, M1: Limit Hole

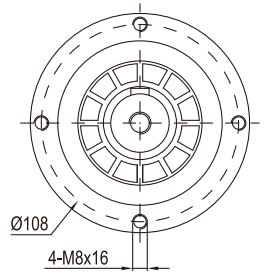
## 外形尺寸图表 / OUTLINE DIMENSION SHEET

### FE-120D(M1)-L1

输入端 / INPUT

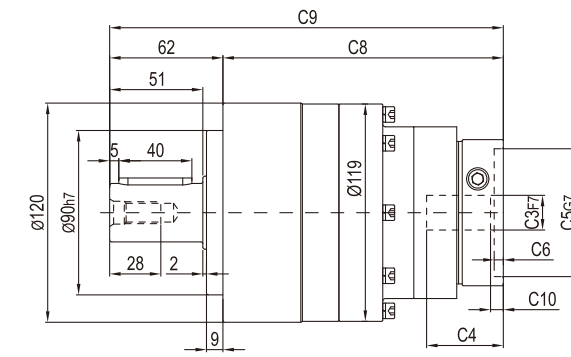
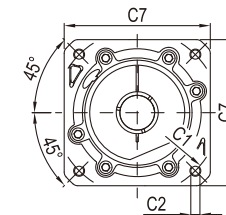


输出端 / OUTPUT

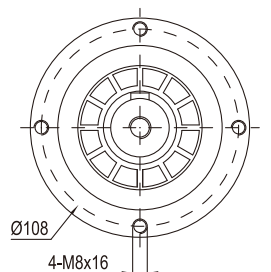


### FE-120D(M1)-L2

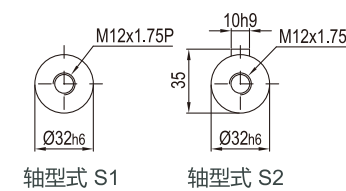
输入端 / INPUT



输出端 / OUTPUT



### 输出轴径/Output Diameter



尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
FE-120D-L1	Ø145	4-M8x20	Ø19,Ø22,Ø24	64	Ø110	10	130	137	199	19.5
FE-120M1-L1	Ø200	4-M12x28	Ø35	81	Ø114.3	10	180	154.5	216.5	28
FE-120D-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
FE-120M1-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.

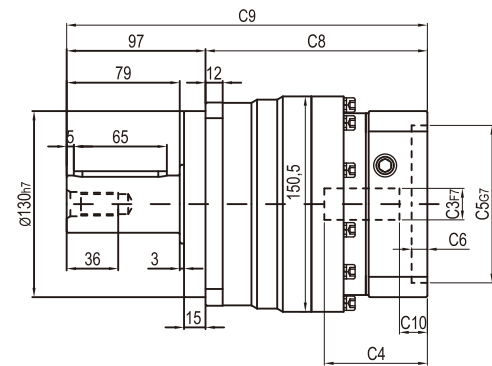
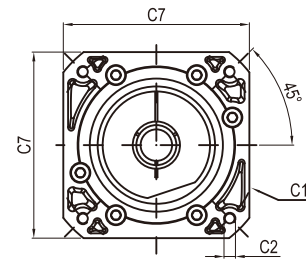
\* D:常规孔,M1:极限孔

\* D: Conventional Hole, M1: Limit Hole

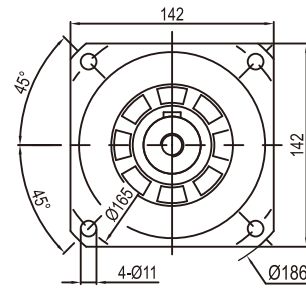
## 外形尺寸图表 / OUTLINE DIMENSION SHEET

### FB-142D(M1)-L1

输入端 / INPUT



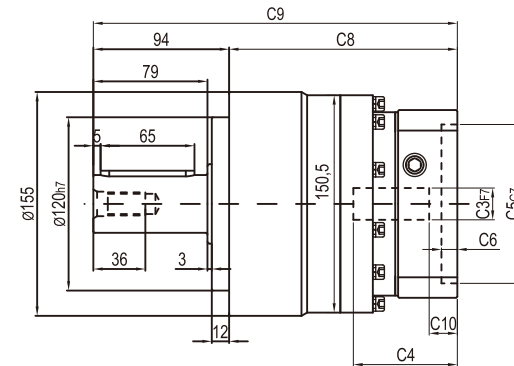
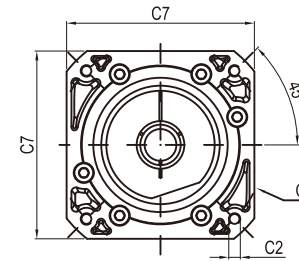
输出端 / OUTPUT



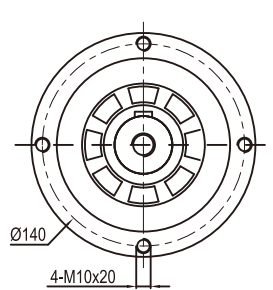
## 外形尺寸图表 / OUTLINE DIMENSION SHEET

### FE-155D(M1)-L1

输入端 / INPUT

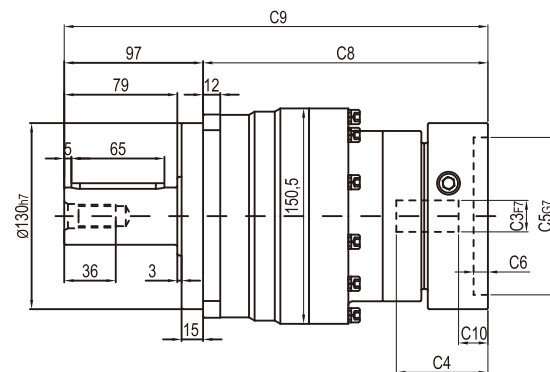
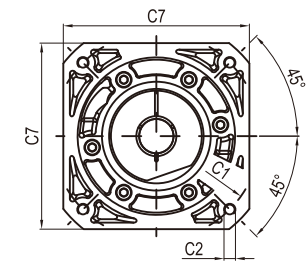


输出端 / OUTPUT

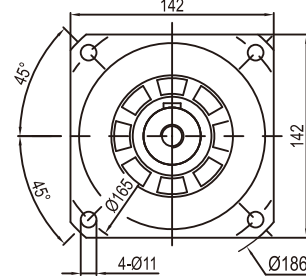


### FB-142D(M1)-L2

输入端 / INPUT

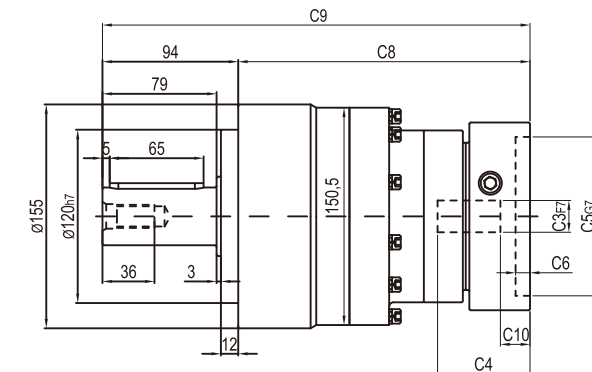
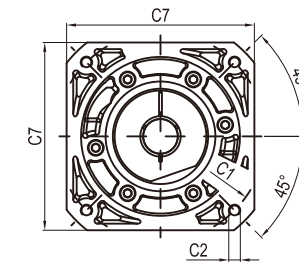


输出端 / OUTPUT

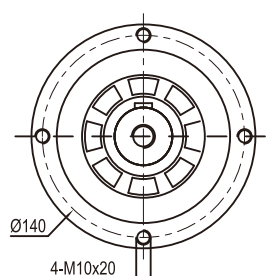


### FE-155D(M1)-L2

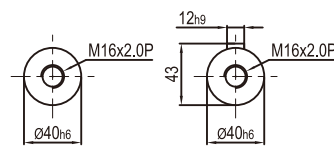
输入端 / INPUT



输出端 / OUTPUT



## 输出轴径 / Output Diameter



轴型式 S1 轴型式 S2

尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
FB-142D-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
FB-142D-L2	Ø145	4-M8x20	Ø19, Ø22, Ø24	64	Ø110	10	130	199	296	19.5
FB-142M1-L2	Ø200	4-M12x28	Ø35	81	Ø114.3	10	180	216.5	313.5	28

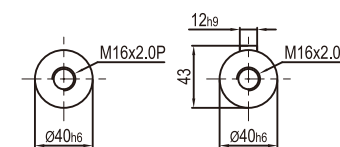
\* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。

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

\* D:常规孔, M1:极限孔

\* D: Conventional Hole, M1: Limit Hole

## 输出轴径 / Output Diameter



轴型式 S1 轴型式 S2

尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
FE-155D-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
FE-155D-L2	Ø145	4-M8x20	Ø19, Ø22, Ø24	64	Ø110	10	130	202	296	19.5
FE-155M1-L2	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。

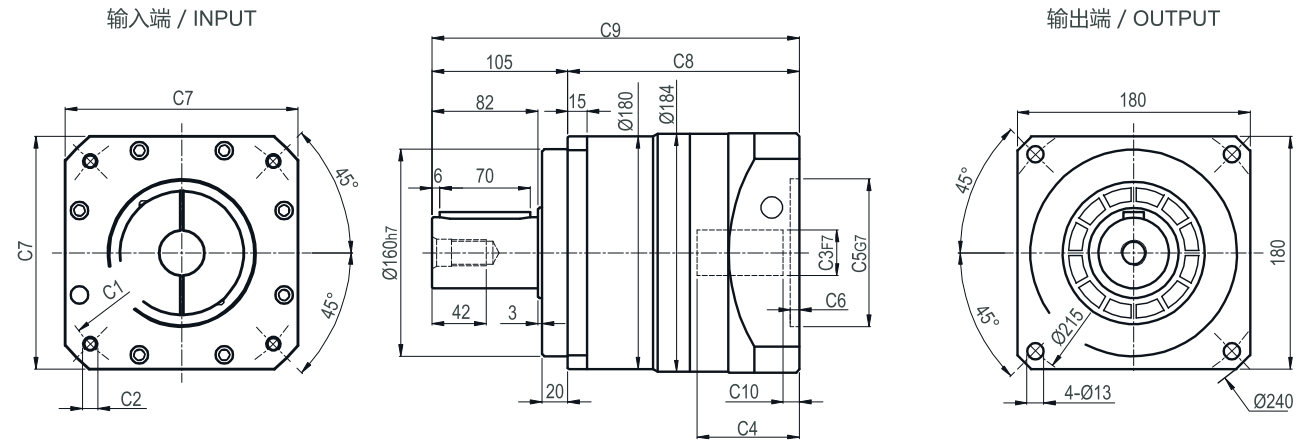
\* C1~C7are motor(metric standard) specific dimensions, which could be customised.

\* D:常规孔, M1:极限孔

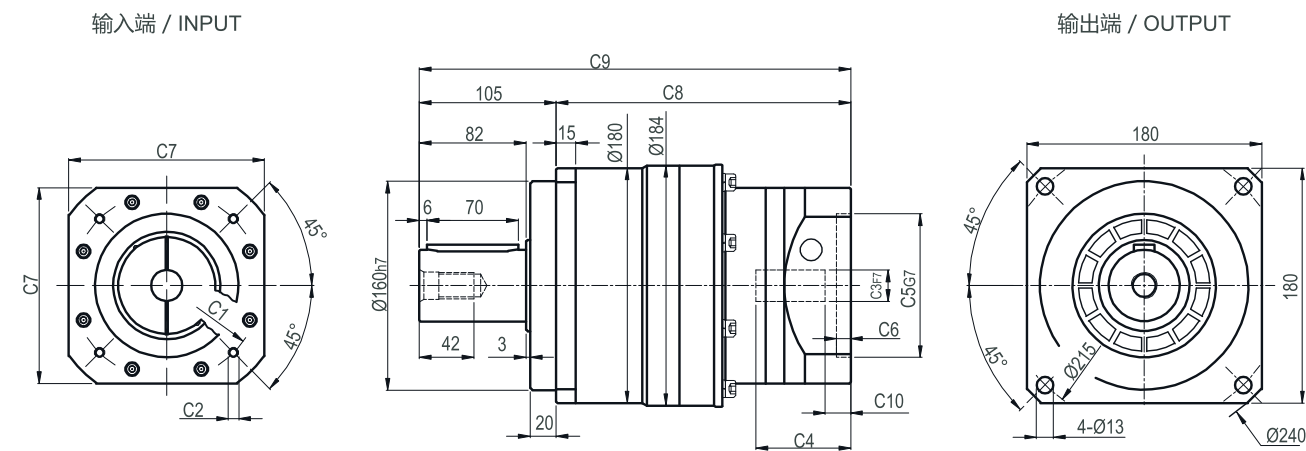
\* D: Conventional Hole, M1: Limit Hole

## 外形尺寸图表 / OUTLINE DIMENSION SHEET

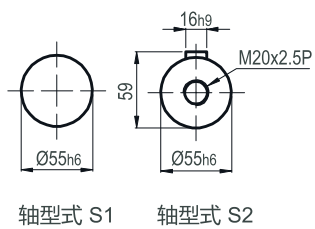
FB-180-L1



FB-180-L2



### 输出轴径/Output Diameter

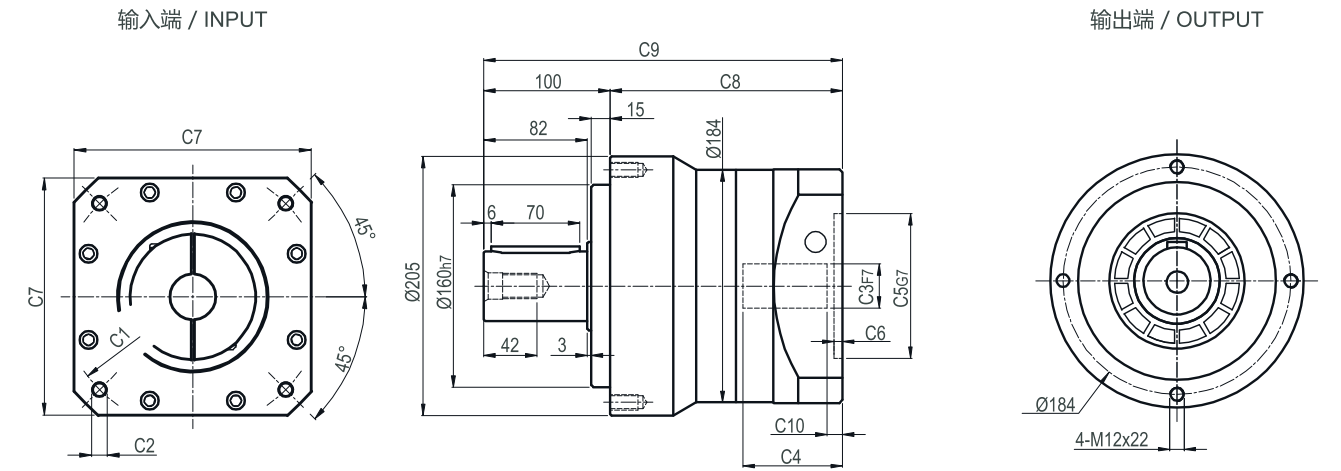


尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
FB-180-L1	Ø200	4-M12x28	Ø35	85	Ø114.3	7	180	179	284	7.5
	Ø200	4-M12x30	Ø42	116	Ø114.3	7	180	210	315	40
	Ø215	4-M12x30	Ø42	90	Ø180	8	200	184	289	14
	Ø235	4-M12x30	Ø42	120	Ø200	10	220	214	319	44
FB-180-L2	Ø145	4-M8x25	Ø22,Ø24	72.5	Ø110	11	150	225.5	330.5	19.5
	Ø200	4-M12x30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

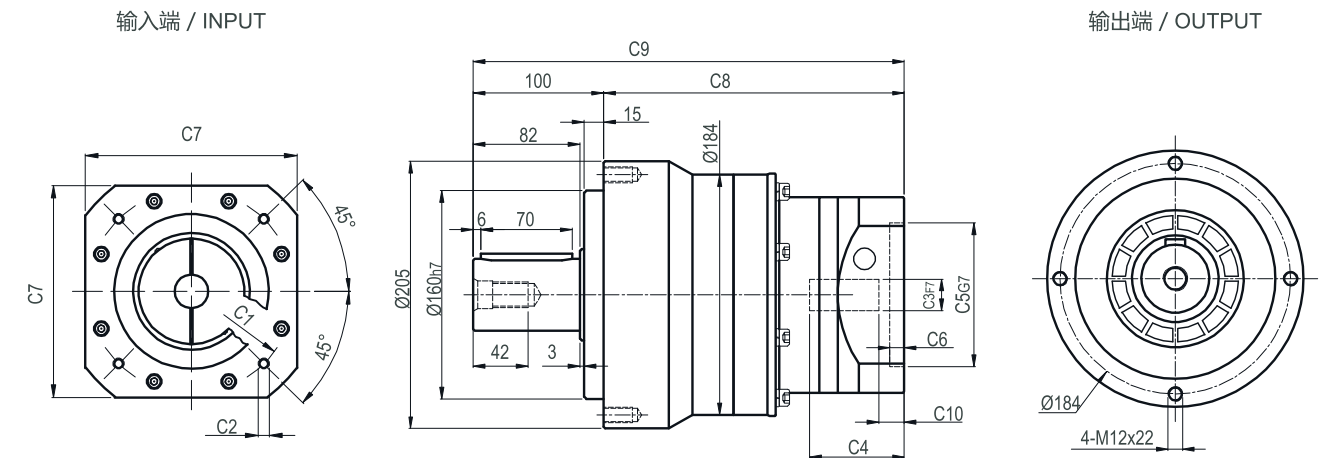
\* 输入马达连接板之尺寸,可根据客户要求单独定做。  
\* The inout motor specific dimensions could be customised.

## 外形尺寸图表 / OUTLINE DIMENSION SHEET

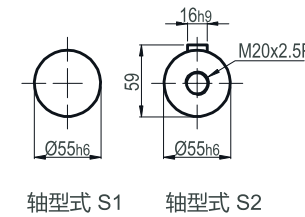
FE-205-L1



FE-205-L2



### 输出轴径/Output Diameter



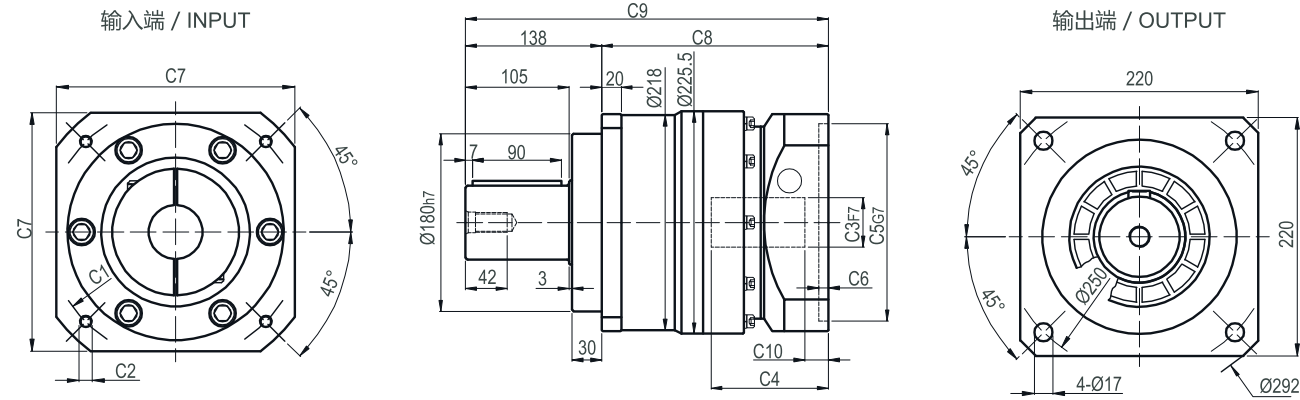
尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
FE-205-L1	Ø200	4-M12x28	Ø35	85	Ø114.3	7	180	184	284	7.5
	Ø200	4-M12x30	Ø42	116	Ø114.3	7	180	215	315	40
	Ø215	4-M12x30	Ø42	90	Ø180	8	200	189	289	14
	Ø235	4-M12x30	Ø42	120	Ø200	10	220	219	319	44
FE-205-L2	Ø145	4-M8x25	Ø22,Ø24	72.5	Ø110	11	150	230.5	330.5	19.5
	Ø200	4-M12x30	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.

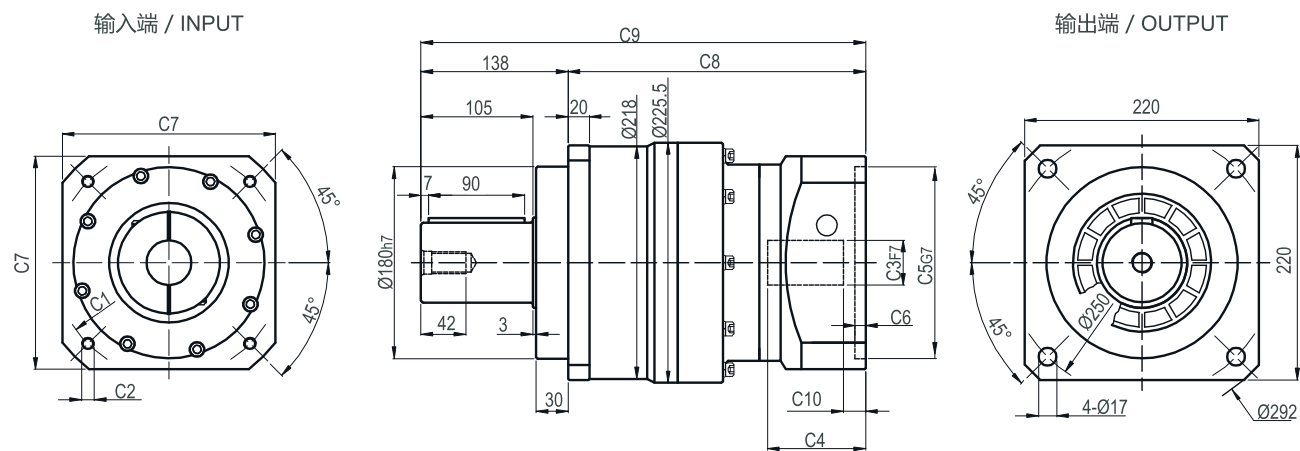


## 外形尺寸图表 / OUTLINE DIMENSION SHEET

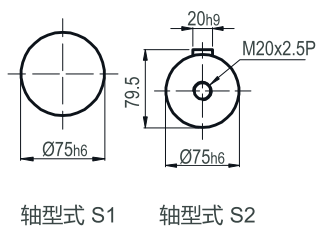
FB-220-L1



FB-220-L2



### 输出轴径/Output Diameter

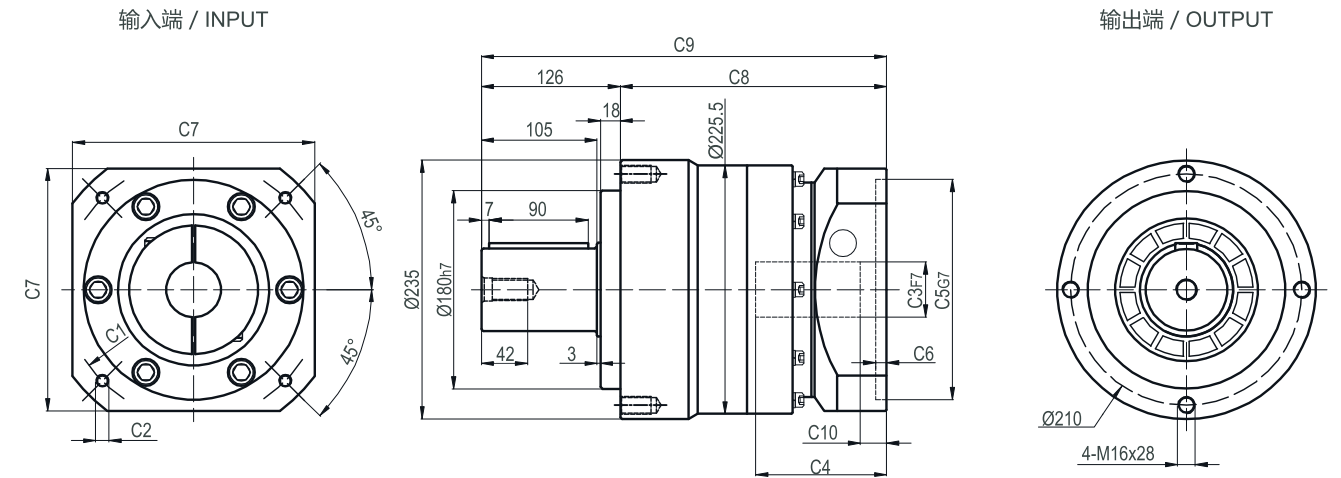


尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
FB-220-L1	Ø200	4-M12x28	Ø35,Ø42	116	Ø114.3	15	200	227	365	19.5
	Ø215	4-M12x30	Ø42	109	Ø180	8	200	220	358	12.5
	Ø235	4-M12x30	Ø42,Ø55	119	Ø200	10	220	230	368	22.5
FB-220-L2	Ø200	4-M12x30	Ø35	85	Ø114.3	7	180	264	402	7.5
	Ø200	4-M12x30	Ø42	116	Ø114.3	7	180	295	433	40
	Ø215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

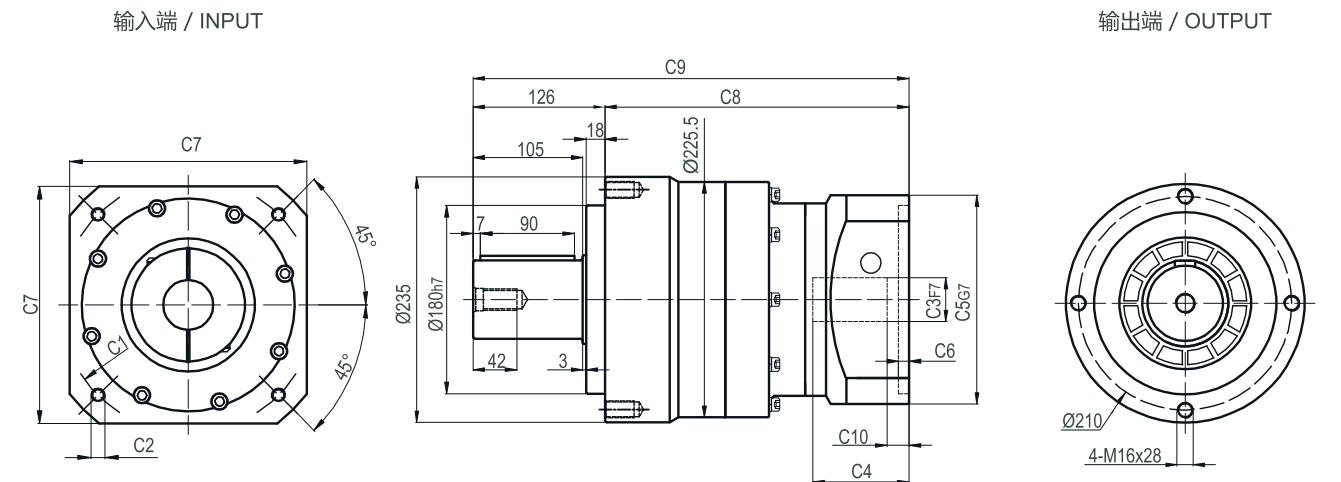
\* C1~C7是公制标准马达连接板之尺寸,可根据客户要求单独定做。  
\* C1~C7are motor(metric standard) specific dimensions, which could be customised.

## 外形尺寸图表 / OUTLINE DIMENSION SHEET

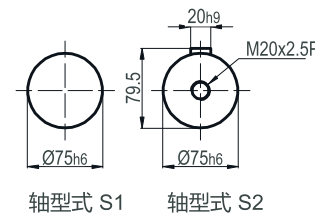
FE-235-L1



FE-235-L2



### 输出轴径/Output Diameter



尺寸	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
FE-235-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
FE-235-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.