

# TTRA-E 系列

## TTRA-E SERIES

直結輸出，緊固鎖固，保證精度  
DIRECT OUTPUT, TIGHT ENGAGEMENT  
AND HIGH PRECISION



### Overview

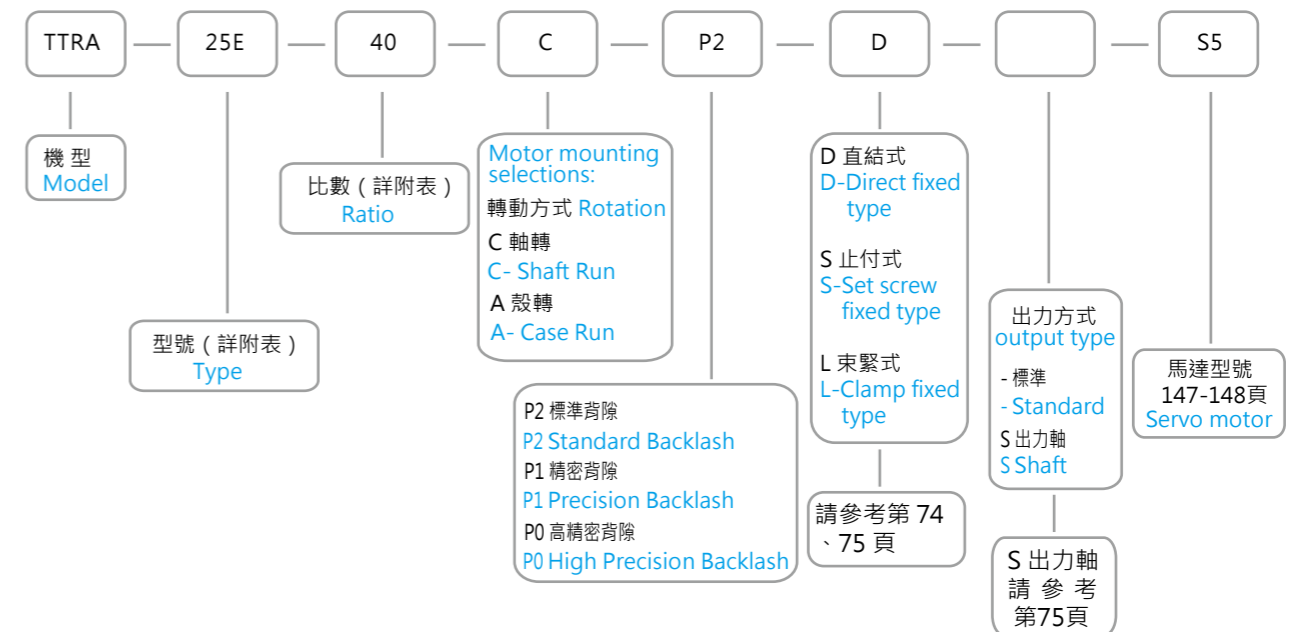
- Type : TTRA-5E ~ TTRA-450E
- Backlash :  $\leq 2-5$  Arc.min
- Ratio : 1/35 ~ 1/140
- Capacity : 0.2KW ~ 15KW
- Rotation : Shaft Run or Case Run
- Rated output torque : 60NM ~ 5100NM

- 型 式 : TTRA-5E ~ TTRA-450E
- 背 隙 :  $\leq 2-5$ 弧分
- 減速比 : 1/35 ~ 1/140
- 容 量 : 0.2KW ~ 15KW
- 轉動方式 : 軸轉動 or 殼轉動
- 額定輸出扭矩 : 60NM ~ 5100NM

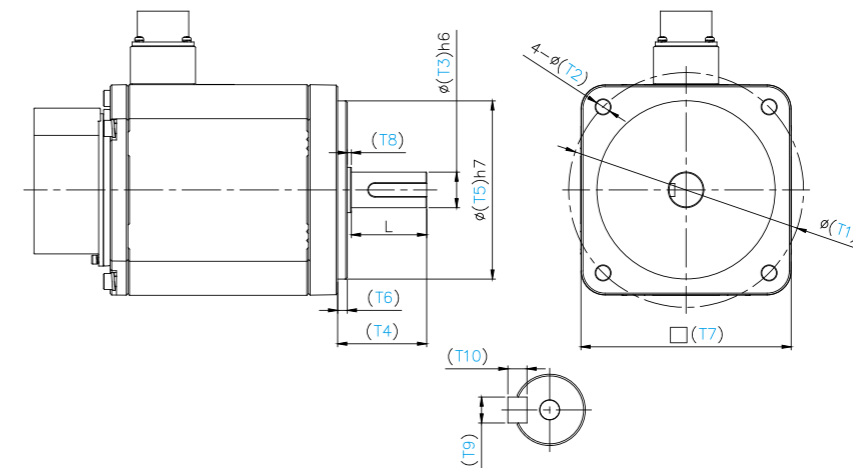
## TTRA-E 訂購說明 TTRA-E ORDERING INSTRUCTIONS

### ● 機型代碼 ORDERING CODE EXAMPLE :

(型號和比數請參考後面附表 For the type and ratio, please refer to technical specifications table.)



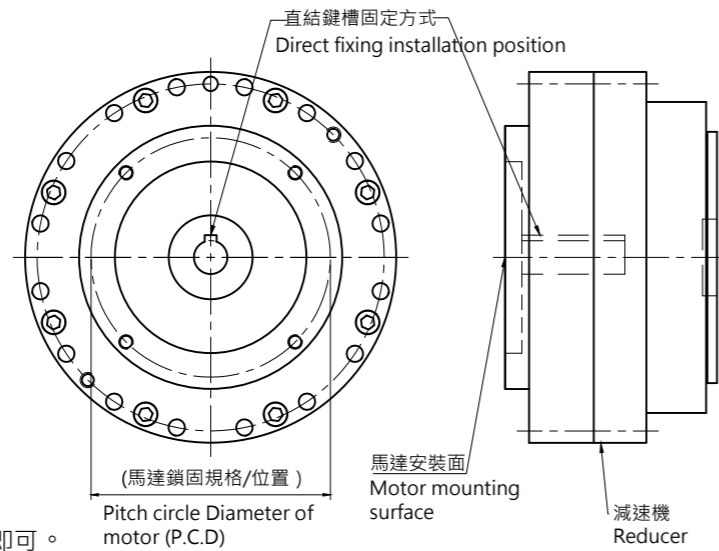
### ● 訂購時請提供電機尺寸 Please provide the motor dimension below when ordering



馬達廠牌 Motor Brand :					
馬達型號 Motor Model :					
T1	T2	T3	T4	T5	T6
螺絲孔中心距 P.C.D	螺絲孔直徑 Bolt Hole Diameter	馬達軸外徑 Motor Shaft Diameter	馬達軸長度 Motor shaft length	馬達凸緣外徑 Motor Pilot Diameter	馬達緣高度 Motor Pilot Height
T7	L	T8	T9	T10	
馬達面尺寸 Motor Outline Dimension	馬達軸有效長 Motor Shaft Length	非安川免填 Diameter required when using YASKAWA made motor	鍵寬 Key Width	鍵高 Key Thickness	

## ■ 安裝方式選項 MOTOR MOUNTING SELECTIONS:

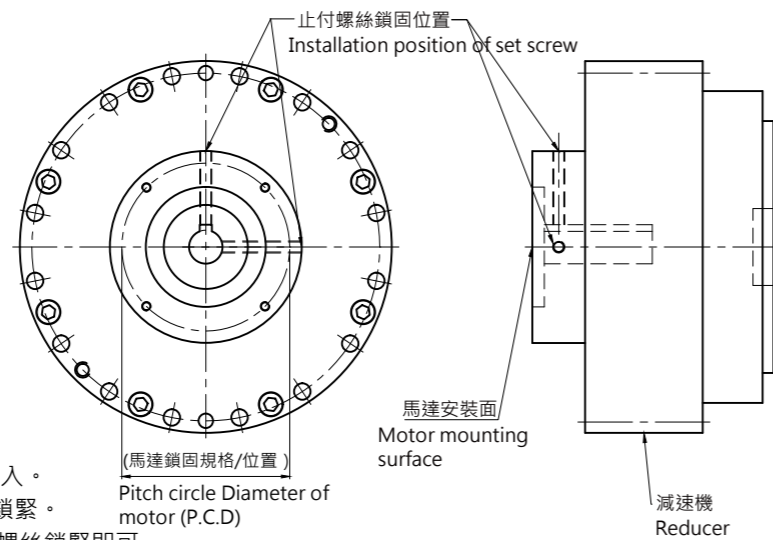
### ● D-直結式 D-Direct fixed type



1. 馬達軸心鍵與減速機入力軸鍵槽對齊置入。
2. 馬達與減速機結合後將馬達上4根螺絲鎖緊即可。

1. Place motor shaft key and reducer input shaft key way in a straight line, and insert motor shaft into reducer input shaft.
2. After connection of motor and reducer, tighten four screws into hex-socket cap screw holes.

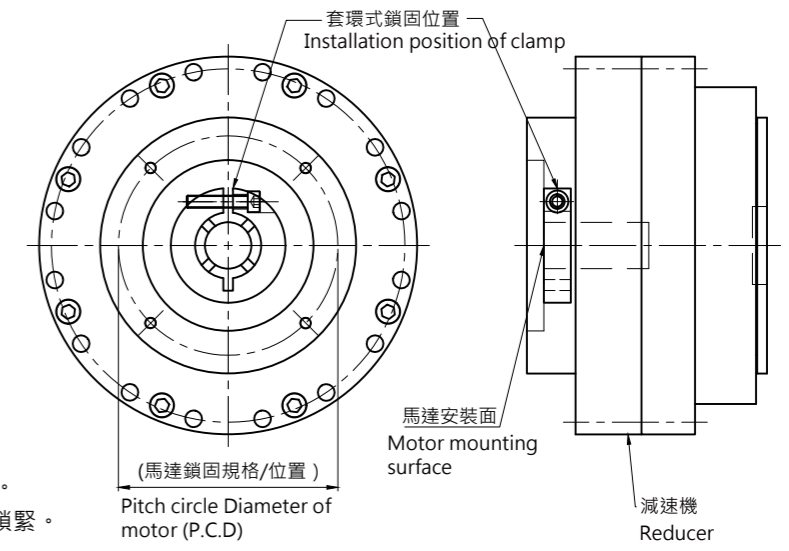
### ● S-止付式 S-Set screw fixed type



1. 馬達軸心鍵與減速機入力軸鍵槽對齊置入。
2. 馬達與減速機結合後將馬達上4根螺絲鎖緊。
3. 使用T型板手將減速機入力軸內的止付螺絲鎖緊即可。

1. Place motor shaft key and reducer input shaft key way in a straight line, and insert motor shaft into reducer input shaft.
2. After connection of motor and reducer, tighten four screws into hex-socket cap screw holes.
3. Fix the set screw on reducer input shaft by T-type spanner.

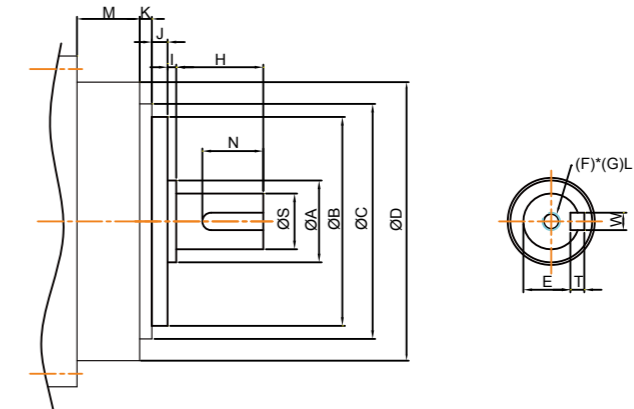
### ● L-束緊式: L-Clamp fixed type



1. 馬達軸心鍵與減速機入力軸鍵槽對齊置入。
2. 馬達與減速機結合後，將馬達上4根螺絲鎖緊。
3. 使用T型板手將入力軸束緊環鎖緊即可。

1. Place motor shaft key and reducer input shaft key way in a straight line, and insert motor shaft into reducer input shaft.
2. After connection of motor and reducer, tighten four screws into hex-socket cap screw holes.
3. Tighten the clamp of reducer input shaft by T-type spanner.

### 出力方式：S-出力軸 Output type : S-Shaft



Model TTRA	M	K	J	I	H	N	A	B	C	D	S	W	T	E	F	G
5E	22	3	10	3	30	20	42	47	49	66	19	6	6	15.5	M6	12
7E	21	3	12	3	35	30	40	80	86	106	28	8	7	24	M8	15
25E	25	4.5	12	3	55	49	54	85	105	130	38	10	8	33	M8	15
45E	36	7	15	5	90	80	80	120	135	160	60	18	11	53	M10	18
135E	47.5	7.1	15	5	90	80	80	140	145	228	60	18	11	53	M10	18
165E	51	8	20	5	105	95	90	204	204	240	70	20	12	62.5	M12	24
325E	63.5	8	20	5	130	120	110	230	245	284	90	25	14	81	M16	30
450E	64	8	25	5	165	155	120	275	275	328	100	28	16	90	M20	40

# TTRA-E 性能表 TTRA-E TECHNICAL SPECIFICATION TABLE

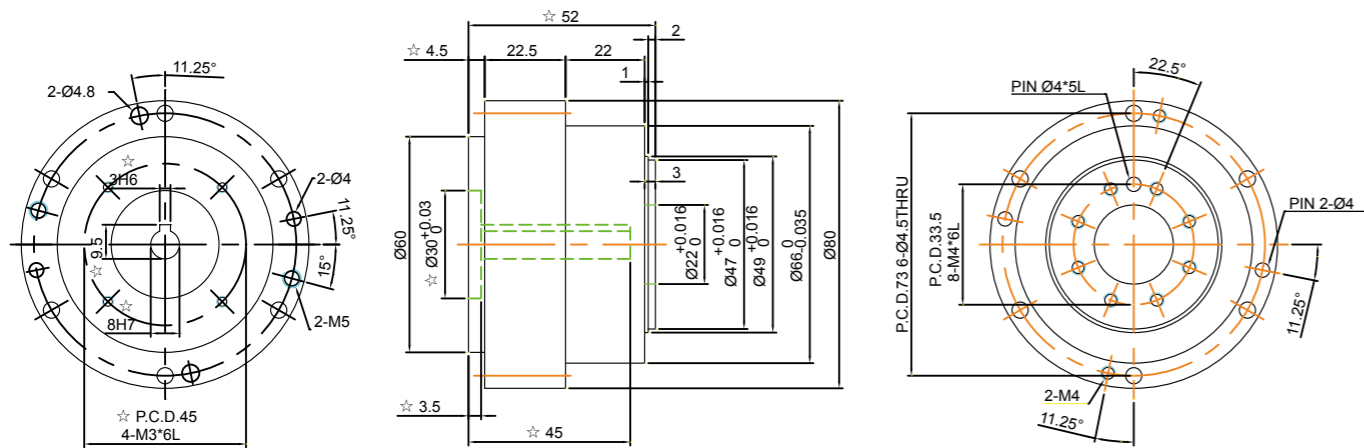
Specification 規格		TTRA-E Technical Specification Table						TTRA-E Technical Specification Table												
		TTRA-5E		TTRA-7E		TTRA-25E		TTRA-45E		TTRA-135E		TTRA-165E		TTRA-325E		TTRA-450E		TTRA-700E		
Rotation 轉動方式		Shaft Run 軸轉動	Case Run 殼轉動	Shaft Run 軸轉動	Case Run 殼轉動	Shaft Run 軸轉動	Case Run 殼轉動	Shaft Run 軸轉動	Case Run 殼轉動	Shaft Run 軸轉動	Case Run 殼轉動	Shaft Run 軸轉動	Case Run 殼轉動	Shaft Run 軸轉動	Case Run 殼轉動	Shaft Run 軸轉動	Case Run 殼轉動	Shaft Run 軸轉動	Case Run 殼轉動	-
Ratio 減速比		40	41	29	30	35	36			35	36	50	51	50	51	45	46	59	60	-
		50	51	35	36	40	41			40	41	60	61	60	61	59	60	79	80	
		-	-	40	41	50	51			50	51	79	80	79	80	79	80	99	100	
		-	-	50	51	60	61			59	60	99	100	99	100	99	100	119	120	
		-	-	59	60	79	80			79	80	119	120	119	120	119	120	139	140	
Rated Output Torque 額定輸出扭矩	Nm kgf-m	60 (6.1)	83 (8.46)			245 (25)				460 (46.8)	1400 (136)	1615 (165)		3595 (366)	5100 (520)					-
Acceleration & Braking Torque 加速和制動扭矩	Nm kgf-m	97.5 (9.9)	136 (14)			515 (52)				1158 (118)	2083 (212)	4043 (412)		7963 (812)	11025 (1125)					-
Instantaneous Max. Allowable Torque 瞬時最大容許轉矩	Nm kgf-m	245 (25)	415 (42)			1000 (102)				2300 (234.4)	4155 (423.5)	8075 (823)		17975 (1830)	25500 (2600)					-
Rated Input Speed 額定輸入轉速	Nr (rpm)	2000	2000			2000				2000	2000	1500		1500	1500					-
Rated Lifetime 額定壽命	Hr	6000	6000			6000				6000	6000	6000		6000	6000					-
Allowable Max. Input Speed 瞬時容許最高輸入轉速	Nmax (rpm)	3000	3000			3000				3000	2500	2500		2000	2000					-
Tilting Stiffness 傾斜鋼度	Nm/arc.min kgf-m/arc.min	82 (8.3)	117 (12)			372 (38)				931 (95)	1176 (120)	2940 (300)		4900 (500)	7448 (760)					-
Torsional Stiffness 扭轉鋼度	Nm/arc.min kgf-m/arc.min	18 (1.83)	20 (2)			49 (5)				108 (11)	196 (20)	392 (40)		980 (100)	1176 (120)					-
Max.Lost Motion 最大無效行程	(arc.min)	<3.0	<3.0			<2.0				<2.0	<1.5	<1.5		<1.5	<1.5					-
Angular Transmission Error 扭轉傳輸中角度偏移量	ATE (arc.sec)	40	80			40				40	40	40		40	40					-
Backlash 背隙	Standard Backlash 標準背隙	(arc.min)	<5.0	<5.0		<5.0				<5.0	<4.0	<4.0		<4.0	<4.0					-
	Precision Backlash 精密背隙		<3.0	<3.0		<3.0				<3.0	<2.0	<2.0	<2.0		<2.0	<2.0				
Maximum Tilting Moment 最大傾斜力矩	Nm kgf-m	282 (28.8)	392 (40)			1764 (180)				3332 (340)	4312 (440)	7840 (800)		14112 (1440)	17640 (1800)					-
Rated Radial Force 額定徑向力	Nm	118	196			882				1666	2156	3920		7056	8820					-
Max. Axial Force 最大軸向推力	N	885	1470			3920				5194	7840	14700		19600	24500					-
(I=GD <sup>2</sup> /4)	Input Inertia Kg-m <sup>2</sup> 輸入慣量	1.65×10 <sup>-6</sup>	2.60×10 <sup>-6</sup>			1.08×10 <sup>-5</sup>				4.50×10 <sup>-5</sup>	5.65×10 <sup>-5</sup>	1.9×10 <sup>-4</sup>		6×10 <sup>-4</sup>	9×10 <sup>-4</sup>					-
		1.46×10 <sup>-6</sup>	1.85×10 <sup>-6</sup>			0.65×10 <sup>-5</sup>				3.75×10 <sup>-5</sup>	4.40×10 <sup>-5</sup>	1.8×10 <sup>-4</sup>		5.4×10 <sup>-4</sup>	7.3×10 <sup>-4</sup>					
		-	1.66×10 <sup>-6</sup>			0.45×10 <sup>-5</sup>				2.4×10 <sup>-5</sup>	3.53×10 <sup>-5</sup>	1.78×10 <sup>-4</sup>		4×10 <sup>-4</sup>	6×10 <sup>-4</sup>					
		-	-			-				1.75×10 <sup>-5</sup>	2.63×10 <sup>-5</sup>	1.51×10 <sup>-4</sup>		2.8×10 <sup>-4</sup>	4.8×10 <sup>-4</sup>					
		-	-			-				2.4×10 <sup>-5</sup>	-	-		-	4.2×10 <sup>-4</sup>					
Weight 重量	KG	1.5	4.5			8.5				12	32.5	37		65	81					-

PS:需要上述速比之外的減速比時，請洽詢本公司，電機轉速超出額定輸入轉速時，運轉噪音將會提高，請注意  
減速機容許負載使用表面溫度需低於70°C。

Please contact us for other ratio selections. Please be noted that the noise will be increased when the input speed (RPM:revolution per minute)of motor is higher than rated input speed; the operating temperature and motor service temperature should be under 70°C.

# TTRA-E 尺寸圖 DRAWING & DIMENSION

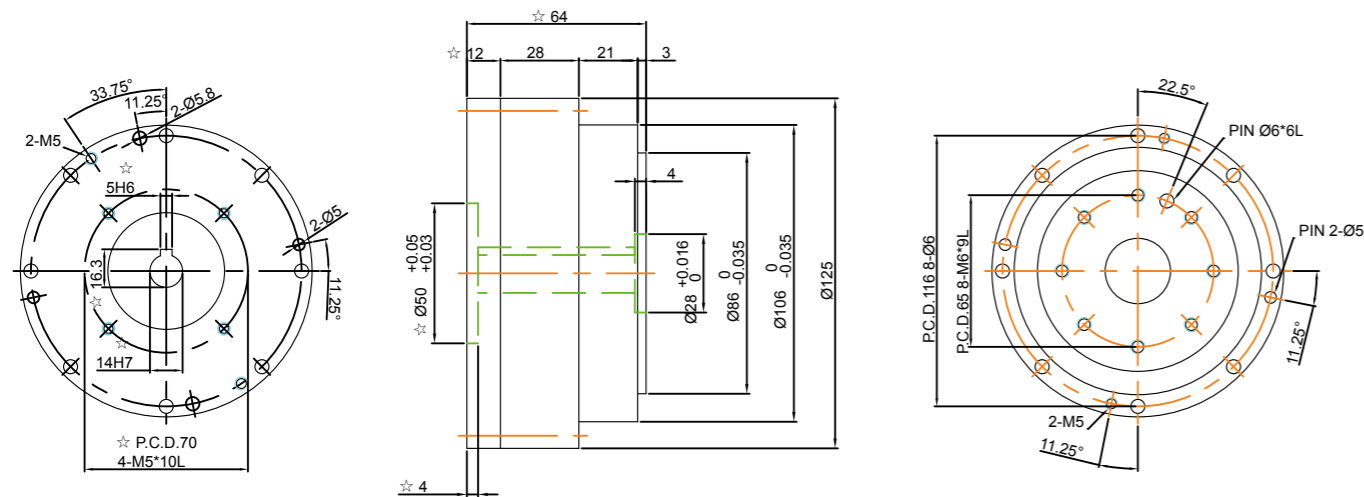
## TTRA-5E-□-C-□-D



1. ☆ 會隨伺服馬達不同有所變更
2. 本機軸心可從Φ8~Φ11
3. 此圖為軸心轉動·殼轉動圖請洽詢本公司

1. "☆" The dimensions modify with motor specification.
2. Output shaft diameter: Φ8~Φ11 mm.
3. This drawing is model of shaft rotation, for case run drawing, please contact us.

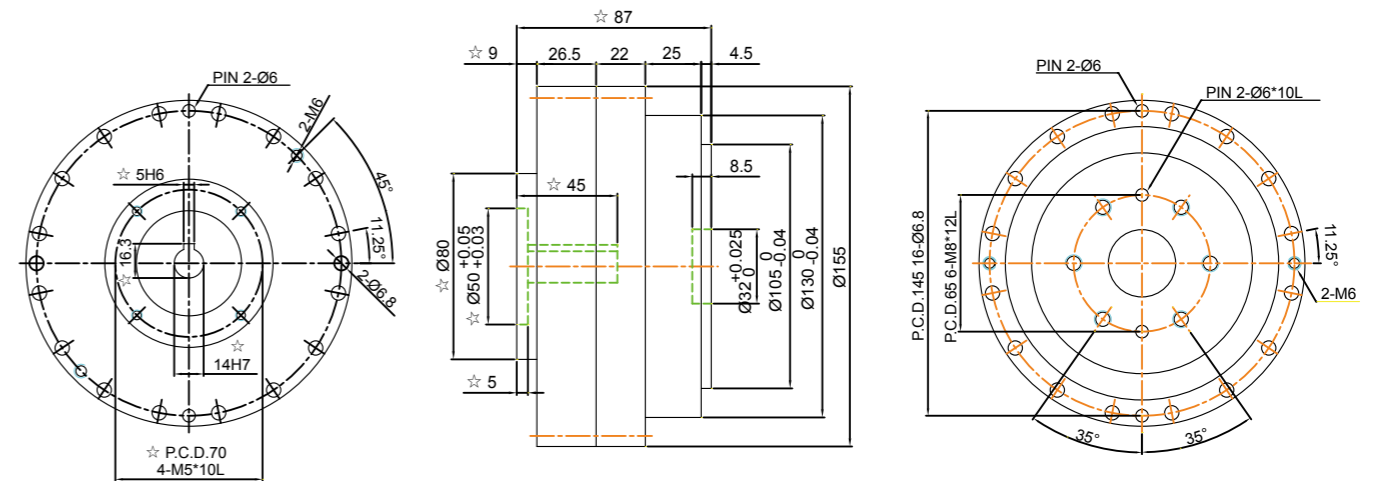
## TTRA-7E-□-C-□-D



1. ☆ 會隨伺服馬達不同有所變更
2. 本機軸心可從Φ11~Φ19
3. 此圖為軸心轉動·殼轉動圖請洽詢本公司

1. "☆" The dimensions modify with motor specification.
2. Output shaft diameter: Φ11~Φ19 mm.
3. This drawing is model of shaft rotation, for case run drawing, please contact us.

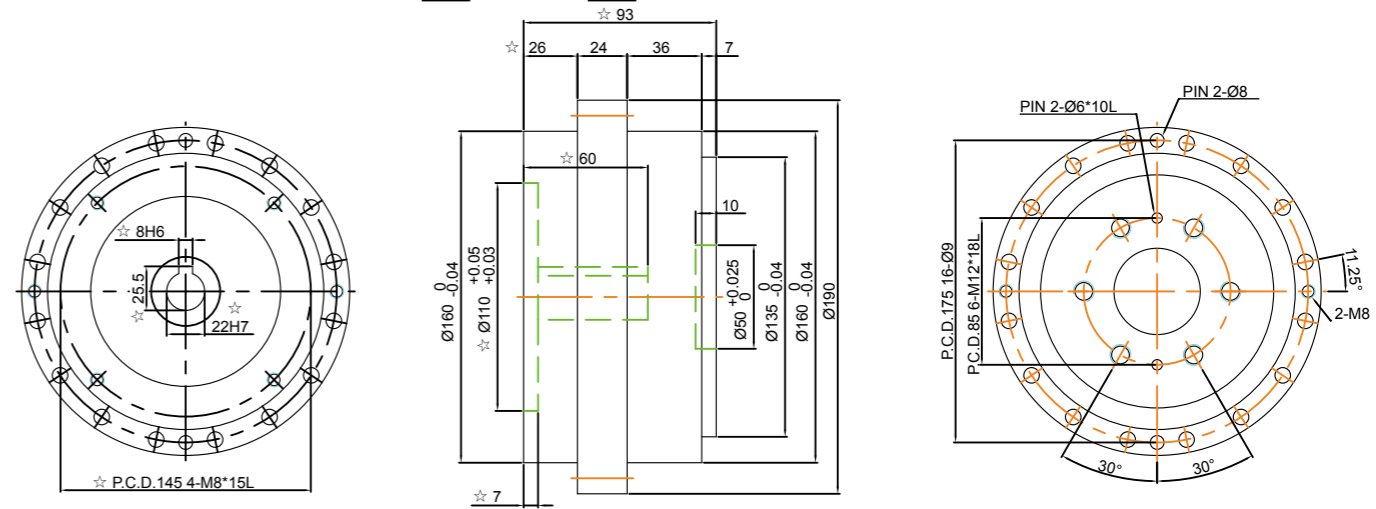
## TTRA-25E-□-C-□-D



1. ☆ 會隨伺服馬達不同有所變更
2. 本機軸心可從Φ11~Φ24
3. 此圖為軸心轉動·殼轉動圖請洽詢本公司

1. "☆" The dimensions modify with motor specification.
2. Output shaft diameter: Φ11~Φ24 mm.
3. This drawing is model of shaft rotation, for case run drawing, please contact us.

## TTRA-45E-□-C-□-D

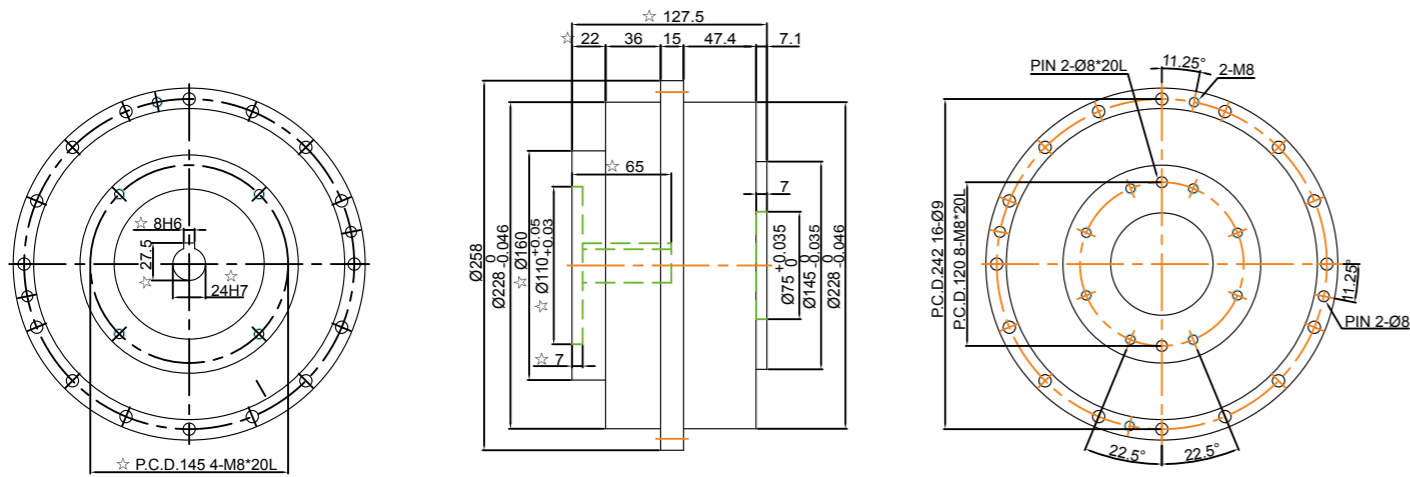


1. ☆ 會隨伺服馬達不同有所變更
2. 本機軸心可從Φ14~Φ28
3. 此圖為軸心轉動·殼轉動圖請洽詢本公司

1. "☆" The dimensions modify with motor specification.
2. Output shaft diameter: Φ14~Φ28 mm.
3. This drawing is model of shaft rotation, for case run drawing, please contact us.

# TTRA-E 尺寸圖 DRAWING & DIMENSION

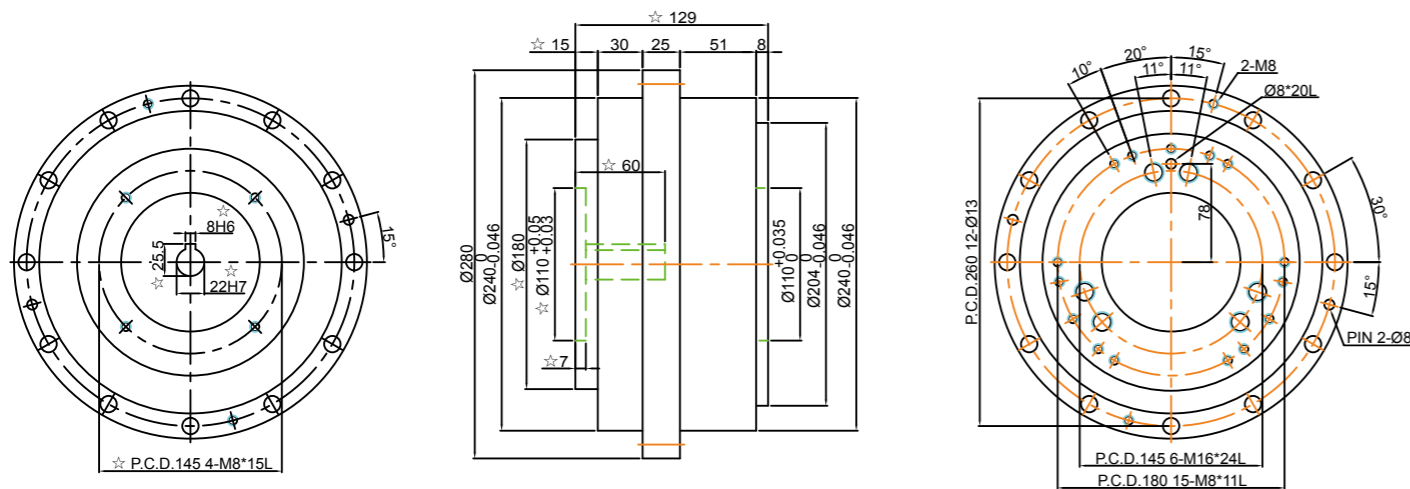
## TTRA-135E-□-C-□-D



1. ☆ 會隨伺服馬達不同有所變更
2. 本機軸心可從Φ19~Φ35
3. 此圖為軸心轉動·殼轉動圖請洽詢本公司

1. "☆" The dimensions modify with motor specification.
2. Output shaft diameter: Φ19~Φ35 mm.
3. This drawing is model of shaft rotation, for case run drawing, please contact us.

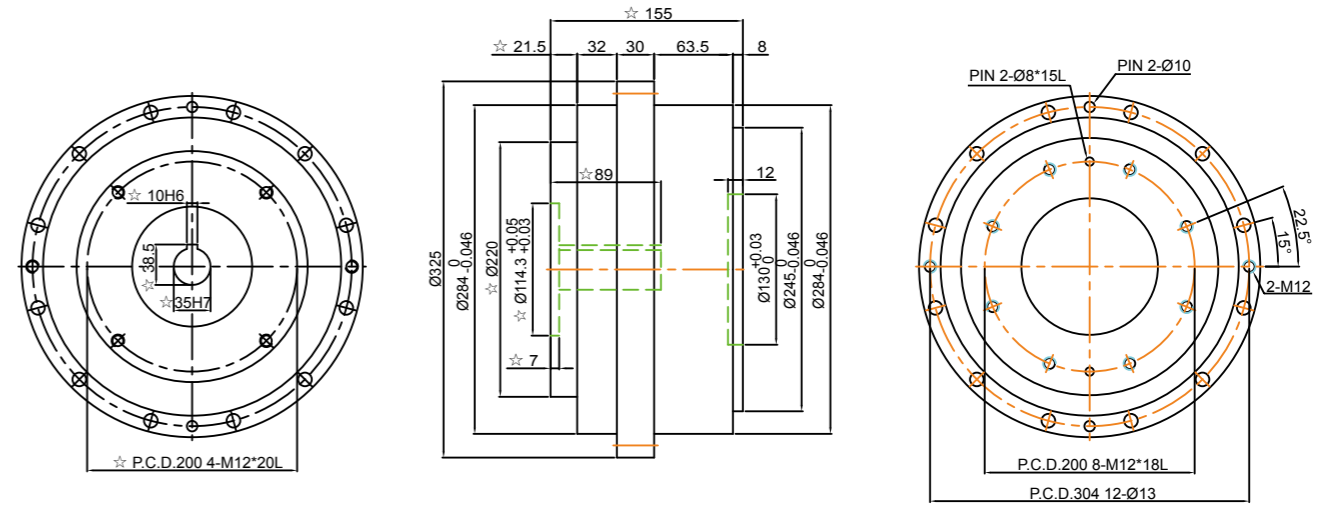
## TTRA-165E-□-C-□-D



1. ☆ 會隨伺服馬達不同有所變更
2. 本機軸心可從Φ22~Φ42
3. 此圖為軸心轉動·殼轉動圖請洽詢本公司

1. "☆" The dimensions modify with motor specification.
2. Output shaft diameter: Φ22~Φ42 mm.
3. This drawing is model of shaft rotation, for case run drawing, please contact us.

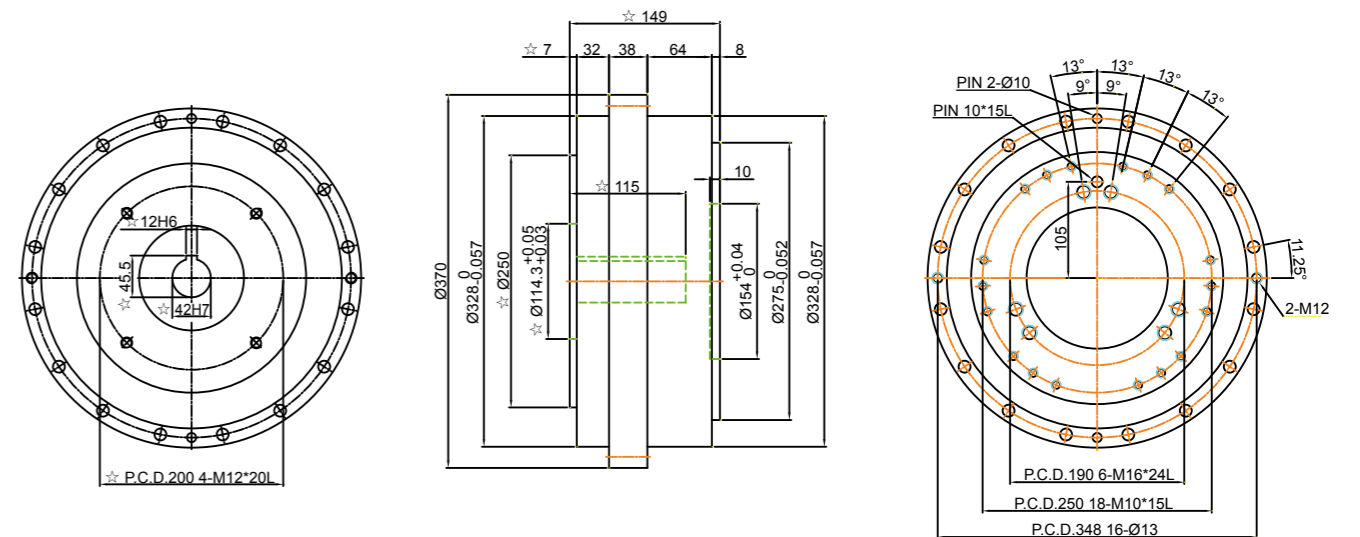
## TTRA-325E-□-C-□-D



1. ☆ 會隨伺服馬達不同有所變更
2. 本機軸心可從Φ24~Φ42
3. 此圖為軸心轉動·殼轉動圖請洽詢本公司

1. "☆" The dimensions modify with motor specification.
2. Output shaft diameter: Φ24~Φ42 mm.
3. This drawing is model of shaft rotation, for case run drawing, please contact us.

## TTRA-450E-□-C-□-D



1. ☆ 會隨伺服馬達不同有所變更
2. 本機軸心可從Φ35~Φ60
3. 此圖為軸心轉動·殼轉動圖請洽詢本公司

1. "☆" The dimensions modify with motor specification.
2. Output shaft diameter: Φ35~Φ60 mm.
3. This drawing is model of shaft rotation, for case run drawing, please contact us.