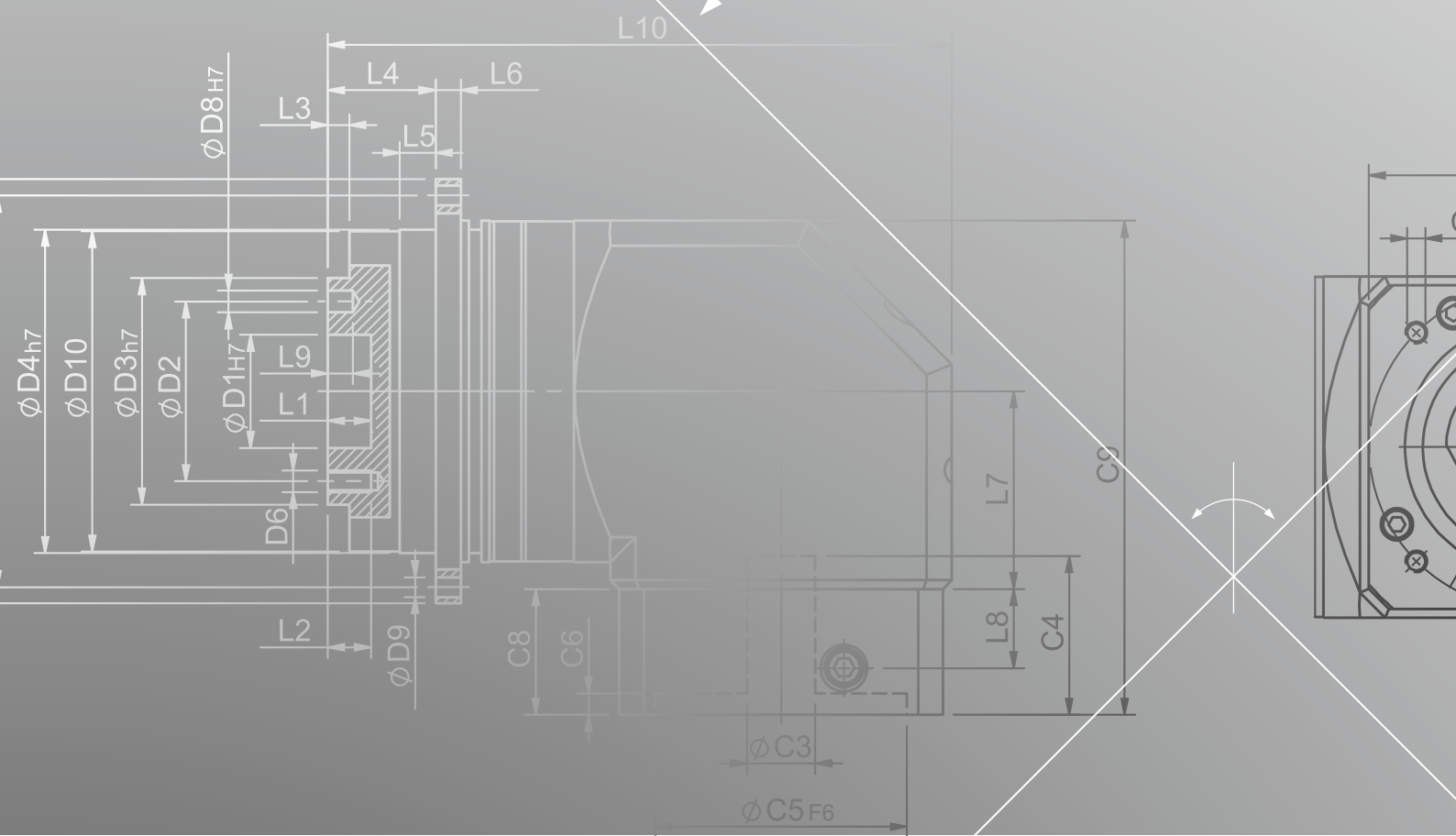
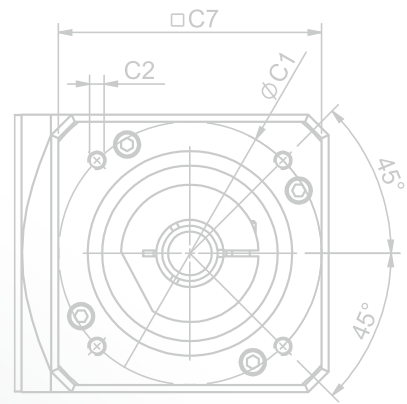
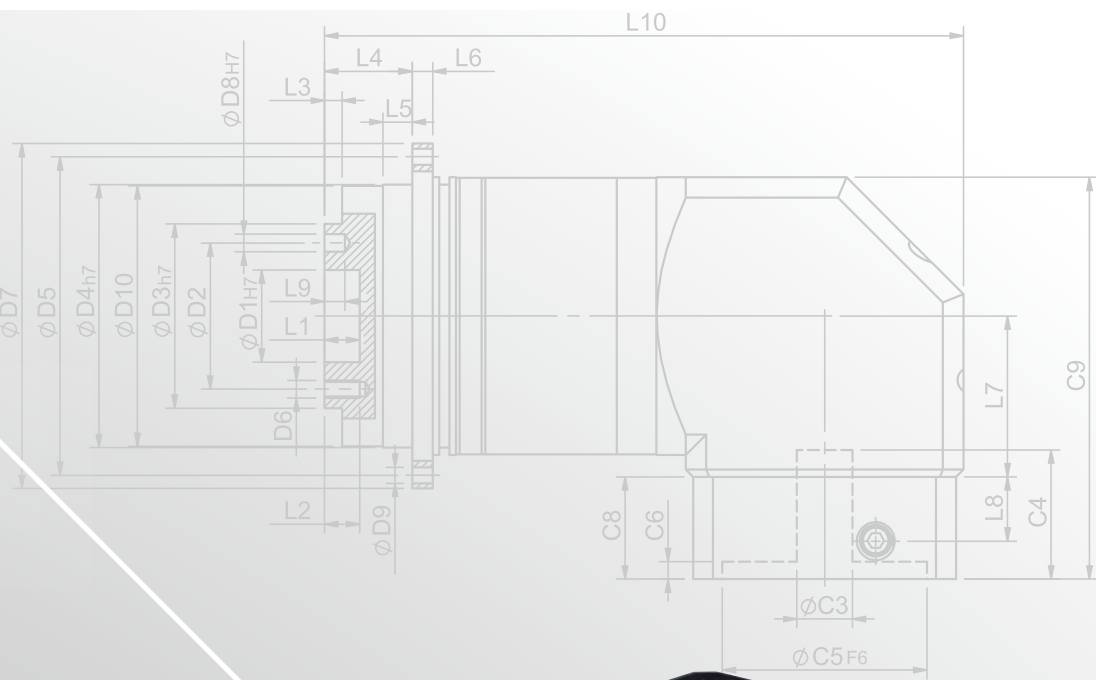
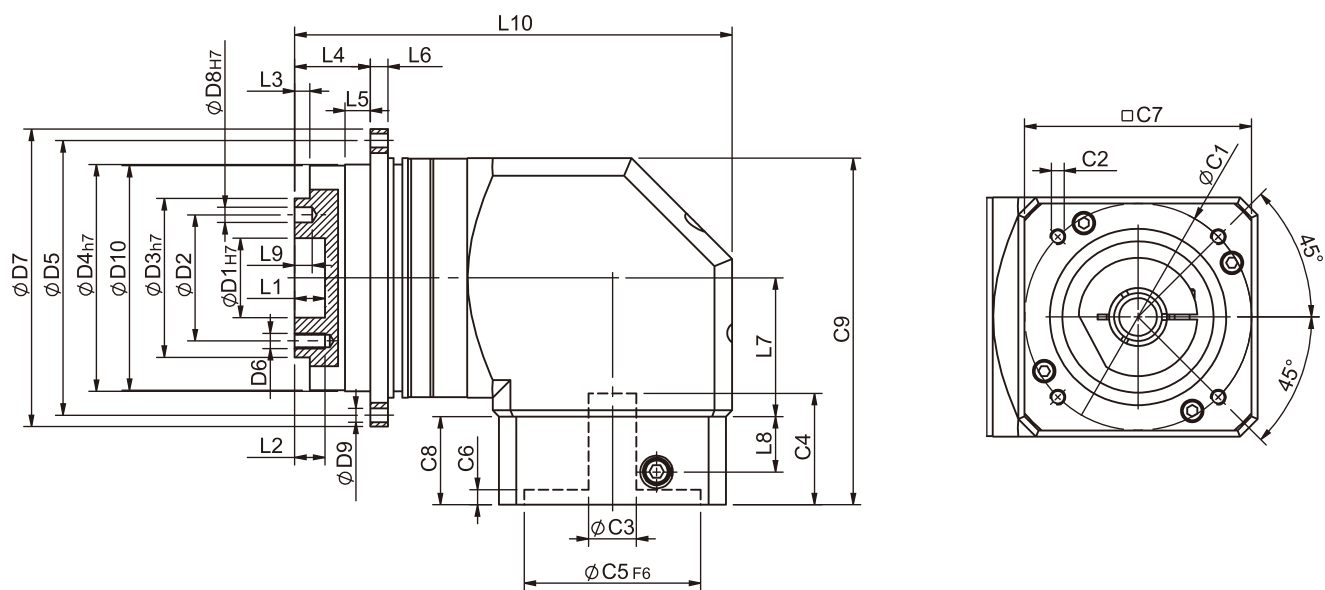


# ***PHFR*** SERIES





## PHFR Single Stage Dimensions PHFR單段外型尺寸圖



## Specifications 規格

Unit:mm

尺寸 Dimensions	PHFR42	PHFR60	PHFR90	PHFR115	PHFR142	PHFR200	PHFR255
D1 <sub>H7</sub>	12	20	31.5	40	50	80	100
D2	20	31.5	50	63	80	125	140
D3 <sub>h7</sub>	28	40	63	80	100	160	180
D4 <sub>h7</sub>	47	64	90	110	140	200	255
D5	67	79	109	135	168	233	280
D6	M3x0.5P	M5x0.8P	M6x1.0P	M6x1.0P	M8x1.25P	M10x1.5P	M16x2.0P
D7	72	86	118	145	179	247	300
D8 <sub>H7</sub>	3	5	6	6	8	10	12
D9	3.4	4.5	5.5	5.5	6.6	9	13.5
D10	46.2	63.2	89.2	109.2	139.2	199.2	254.2
L1	4	8	12	12	12	16	20
L2	6	7.2	12	13.5	16	22.5	30.5
L3	3	3	6	6	6	8	12
L4	19.5	19.5	30	29	38	50	66
L5	7	7	10	10	14.6	15	20
L6	4	4	7	8	10	12	18
L7	32.2	44.8	55	69	71	92.5	92.5
L8	13.5	21.5	22	32	44.7	44	60
L9	4	6	7	7	7	10	10
L10	92.2	128.3	173.6	204.2	250.7	330.7	392.2
C1 <sup>2</sup>	46	70	90	90	145	200	215
C2 <sup>2</sup>	M4x0.7P	M5x0.8P	M6x1.0P	M6x1.0P	M8x1.25P	M12x1.75P	M12x1.75P
C3 <sup>2</sup>	≤8/≤11	≤14/≤19	≤19/≤24	≤24/≤32	≤35	≤50	≤55
C4 <sup>2</sup>	29	34	44	53.5	76.8	78.8	98.7
C5 <sup>2</sup> <sub>F6</sub>	30	50	70	70	110	114.3	180
C6 <sup>2</sup>	6	5	5	5.5	9	6	6
C7 <sup>2</sup>	42.6	60	90	115	140	180	220
C8 <sup>2</sup>	25	33	35	48	65	65	85
C9 <sup>2</sup>	78.5	112.8	137.5	176.5	225.5	246.5	266.5

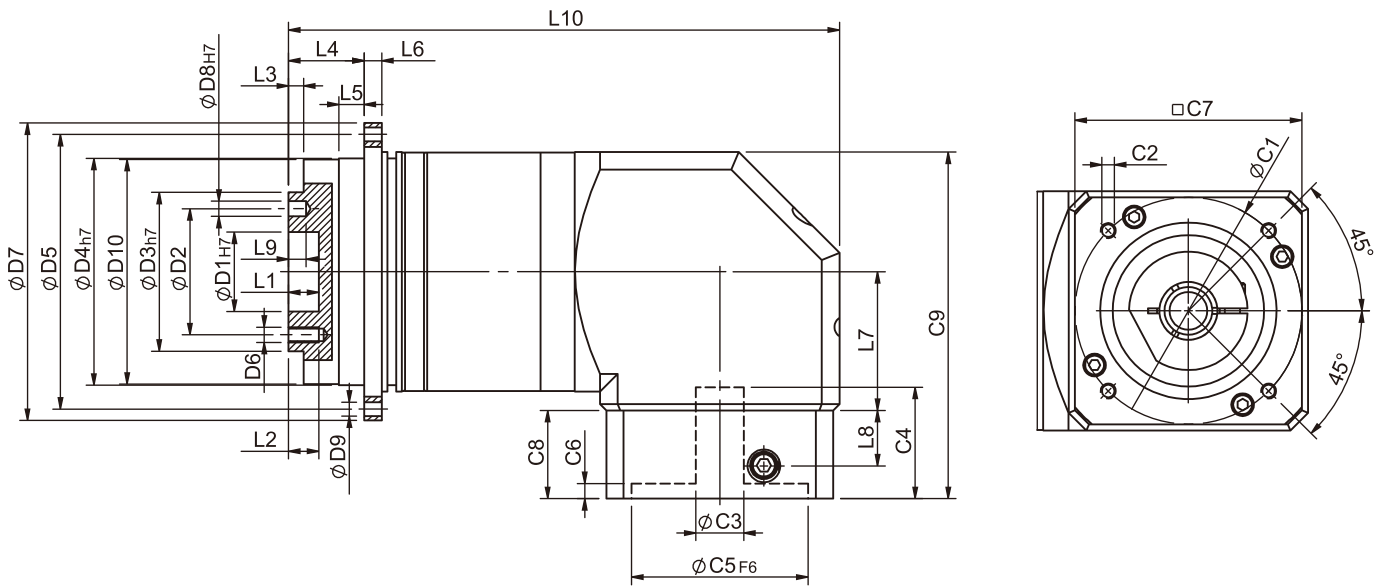
★ C1~C9是公製標準馬達連接板尺寸,請依所選用的馬達決定。

★ 本公司有權針對以上數據規格進行設計變更不先行告知。

★ C1~C9 are motor specific dimensions(metric std shown ), Size may vary according to motor flange.

★ Specification subject to change without notice.

## PHFR Double Stage Dimensions-1 PHFR雙段外型尺寸圖-1



## Specifications 規格

Unit:mm

尺寸 Dimensions	PHFR42	PHFR60	PHFR90
D1 <sub>H7</sub>	12	20	31.5
D2	20	31.5	50
D3 <sub>h7</sub>	28	40	63
D4 <sub>h7</sub>	47	64	90
D5	67	79	109
D6	M3x0.5P	M5x0.8P	M6x1.0P
D7	72	86	118
D8 <sub>H7</sub>	3	5	6
D9	3.4	4.5	5.5
D10	46.2	63.2	89.2
L1	4	8	12
L2	6	7.2	12
L3	3	3	6
L4	19.5	19.5	30
L5	7	7	10
L6	4	4	7
L7	32.2	44.8	55
L8	13.5	21.5	22
L9	4	6	7
L10	119.9	163.3	218.6
C1 <sup>2</sup>	46	70	90
C2 <sup>2</sup>	M4x0.7P	M5x0.8P	M6x1.0P
C3 <sup>2</sup>	≤8	≤14	≤19/≤24
C4 <sup>2</sup>	29	34	44
C5 <sup>2</sup> F6	30	50	70
C6 <sup>2</sup>	6	5	5
C7 <sup>2</sup>	42.6	60	90
C8 <sup>2</sup>	25	33	35
C9 <sup>2</sup>	78.5	112.8	137.5

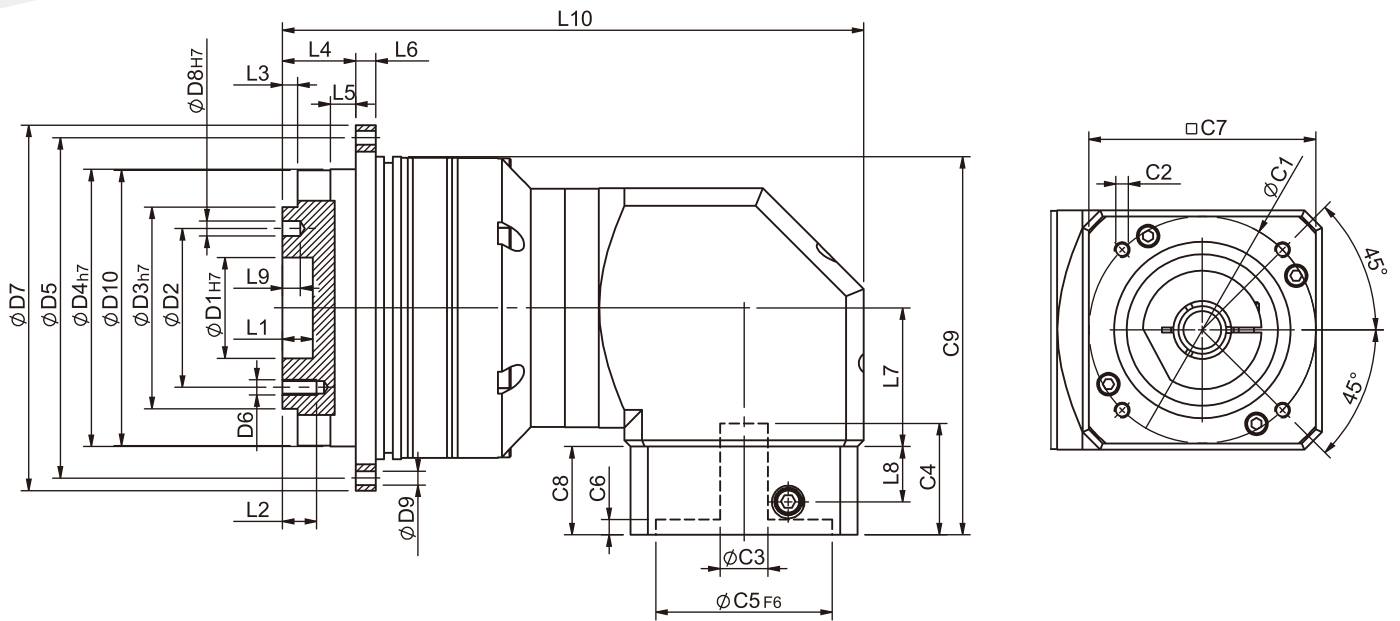
★ C1~C9是公製標準馬達連接板尺寸,請依所選用的馬達決定。

★ 本公司有權針對以上數據規格進行設計變更不先行告知。

★ C1~C9 are motor specific dimensions(metric std shown), Size may vary according to motor flange.

★ Specification subject to change without notice.

## PHFR Double Stage Dimensions-2 PHFR雙段外型尺寸圖-2



## Specifications 規格

Unit:mm

尺寸 Dimensions	PHFR60T	PHFR90T	PHFR115T	PHFR142T	PHFR200T	PHFR255T
D1 <sub>H7</sub>	20	31.5	40	50	80	100
D2	31.5	50	63	80	125	140
D3 <sub>h7</sub>	40	63	80	100	160	180
D4 <sub>h7</sub>	64	90	110	140	200	255
D5	79	109	135	168	233	280
D6	M5x0.8P	M6x1.0P	M6x1.0P	M8x1.25P	M10x1.5P	M16x2.0P
D7	86	118	145	179	247	300
D8 <sub>H7</sub>	5	6	6	8	10	12
D9	4.5	5.5	5.5	6.6	9	13.5
D10	63.2	89.2	109.2	139.2	199.2	254.2
L1	8	12	12	12	16	20
L2	7.2	12	13.5	16	22.5	30.5
L3	3	6	6	6	8	12
L4	19.5	30	29	38	50	66
L5	7	10	10	14.6	15	20
L6	4	7	8	10	12	18
L7	32.2	44.8	55	69	71	92.5
L8	13.5	21.5	22	32	44.7	44
L9	6	7	7	7	10	10
L10	130.6	173.8	230.6	270.7	361.4	439.2
C1 <sup>2</sup>	46	70	90	90	145	200
C2 <sup>2</sup>	M4x0.7P	M5x0.8P	M6x1.0P	M6x1.0P	M8x1.25P	M12x1.75P
C3 <sup>2</sup>	≤8/≤11	≤14/≤19	≤19/≤24	≤24/≤32	≤35	≤50
C4 <sup>2</sup>	29	34	44	53.5	76.8	78.8
C5 <sup>2</sup> <sub>F6</sub>	30	50	70	70	110	114.3
C6 <sup>2</sup>	6	5	5	5.5	9	6
C7 <sup>2</sup>	42.6	60	90	115	140	92.5
C8 <sup>2</sup>	25	33	35	48	65	65
C9 <sup>2</sup>	84.4	125.3	150	176.5	259.5	284

★ C1~C9是公製標準馬達連接板尺寸,請依所選用的馬達決定。

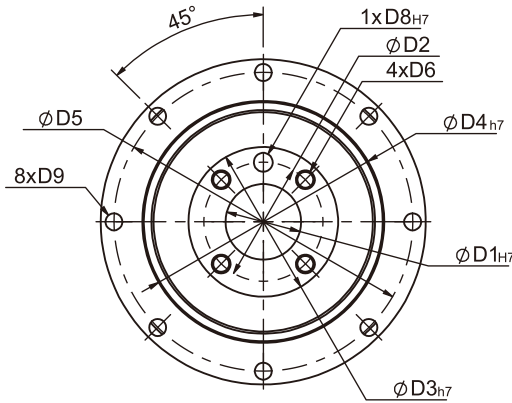
★ 本公司有權針對以上數據規格進行設計變更不先行告知。

★ C1~C9 are motor specific dimensions(metric std shown ), Size may vary according to motor flange.

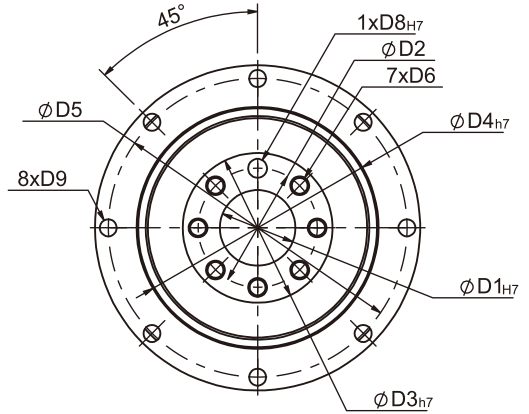
★ Specification subject to change without notice.

## PHFR Flange Dimensions PHFR法蘭面尺寸圖

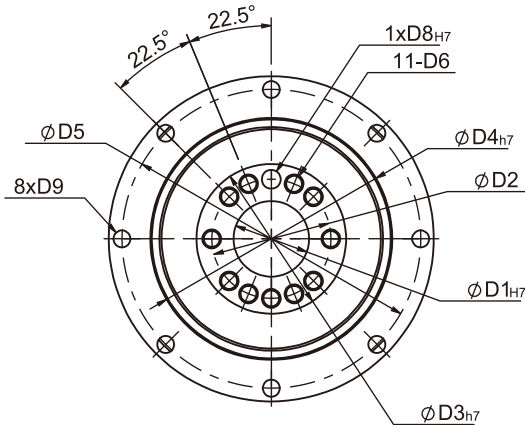
### PHFR42



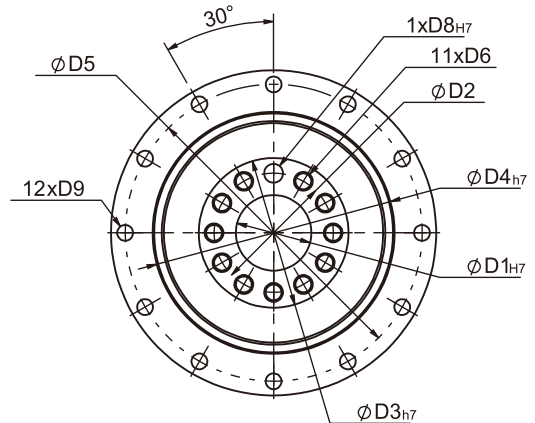
### PHFR60 PHFR90



### PHFR115



### PHFR142 PHFR200



## Specifications 規格

Unit:mm

尺寸 Dimensions	PHFR42	PHFR60	PHFR90	PHFR115	PHFR142	PHFR200
D1 H7	12	20	31.5	40	50	80
D2	20	31.5	50	63	80	125
D3 h7	28	40	63	80	100	160
D4 h7	47	64	90	110	140	200
D5	67	79	109	135	168	233
D6	M3x0.5P	M5x0.8P	M6x1.0P	M6x1.0P	M8x1.25P	M10x1.5P
D8 H7	3	5	6	6	8	10
D9	3.4	4.5	5.5	5.5	6.6	9

★ 本公司有權針對以上數據規格逕行設計變更不先行告知。

★ Specification subject to change without notice.

## PHFR Specifications Table PHFR性能規格共表

規格 Specifications		節數 Stage	減速比 Ratio	PHFR-42	PHFR-60	PHFR-90	PHFR-115	PHFR-142	PHFR-200	PHFR-255	
額定輸出力矩 $T_{2N}$ Nominal Output Torque	N • m	1	3	-	40	105	180	340	580	950	
			4	16	43	110	240	500	1100	1500	
			5	17	50	130	290	600	1200	1800	
			7	14	44	125	270	530	1100	1750	
			10	17	50	130	260	540	900	1500	
			14	14	44	125	270	530	1100	1750	
		20	11	37	95	220	430	900	1450		
		2	2	減速比 Ratio	PHFR-42	PHFR-60 (T)	PHFR-90(T)	PHFR-115T	PHFR-142T	PHFR-200T	PHFR-255T
		15		-	40	105	180	600	1200	2000	
		20		16	43	110	240	600	1200	2000	
		25		17	50	130	290	600	1200	2000	
		30		17	40	105	180	600	1200	2000	
		35		17	50	130	290	600	1200	2000	
		40		16	43	110	240	600	1200	2000	
		50		17	50	130	290	600	1200	2000	
		70		14	44	125	270	530	1100	1750	
		100		11	37	95	220	430	900	1450	
		140		14	44	125	270	530	1100	1750	
200	11	37		95	220	430	900	1450			
急停力矩 $T_{2NOT}$ Emergency Stop Torque	N • m		3.0 倍額定輸出力矩 ( 3.0 times of Nominal Output Torque) (* 最大輸出力矩 Max. Output Torque $T_{2B}$ = 60% of Emergency Stop Torque)								
額定輸入轉速 $n_{1N}$ Nominal Input Speed	rpm	1,2	3-200	5000	5000	4000	4000	3000	3000	2000	
最大輸入轉速 $n_{1max}$ Max. Input Speed	rpm	1,2	3-200	10000	10000	8000	8000	6000	6000	4000	
超精密背隙 Micro Backlash P0	arcmin	1	3-20	-	-	≤ 3	≤ 2	≤ 2	≤ 2	≤ 2	
		2	15-200	-	-	≤ 5	≤ 4	≤ 4	≤ 4	≤ 4	
精密背隙 Precision Backlash P1	arcmin	1	3-20	≤ 5	≤ 5	≤ 5	≤ 4	≤ 4	≤ 4	≤ 4	
		2	15-200	≤ 7	≤ 7	≤ 7	≤ 7	≤ 7	≤ 7	≤ 7	
標準背隙 Standard Backlash P2	arcmin	1	3-20	≤ 7	≤ 7	≤ 7	≤ 6	≤ 6	≤ 6	≤ 6	
		2	15-200	≤ 9	≤ 9	≤ 9	≤ 9	≤ 9	≤ 9	≤ 9	
扭轉剛性 Torsional Rigidity	N • m / arcmin	1,2	3-200	6	12	30	80	150	450	1000	
容許彎曲力矩 $M_{2kB}^{-1}$ Max. Bending Moment	N • m	1,2	3-200	43	125	288	503	1470	2950	6500	
容許軸向力 $F_{2aB}^{-1}$ Max. Axial Load	N	1,2	3-200	1015	1340	2868	3890	9850	12560	21850	
使用溫度 Operating Temp.	°C		3-200	-10 °C ~ +90 °C							
使用壽命 Service Life	hr		3-200	20,000 (10,000/ 連續運轉 Continuous operation)							
效率 Efficiency	%	1	3-20	≥ 95%							
		2	15-200	≥ 92%							
重量 Weight	kg	1	3-20	1.1	2.3	6.6	13.5	25.1	50	85	
		2	15-200	1.6	3.2/2.2	8.6/5.3	14.8	26.7	55	88	
安裝方向 Mounting Position	-	1,2	3-200	任意方向 Any direction							
噪音值 Noise Level <sup>2</sup>	dBA/1m	1,2	3-200	62	64	66	68	70	72	74	
防護等級 Protection Class	-	1,2	3-200	IP65							
潤滑 Lubrication	-	1,2	3-200	全合成潤滑油脂 Synthetic Lubricant							
減速機轉動慣量 Inertia(J1)											
節數 Stage	減速比 Ratio	單位 unit		PHFR-42	PHFR-60	PHFR-90	PHFR-115	PHFR-142	PHFR-200	PHFR-255	
1	3/4/5/7/9	Kg • cm <sup>2</sup>		0.06	0.40	2.28	6.87	24.2	69.8	138.2	
	10/14/20		0.05	0.30	1.45	4.76	14.5	50.3	103.6		
節數 Stage	減速比 Ratio			PHFR-42	PHFR-60(T)	PHFR-90(T)	PHFR-115T	PHFR-142T	PHFR-200T	PHFR-255T	
2	15/20/25/35			0.06	0.40(0.08)	2.28(0.72)	3.02	7.83	27.7	80.3	
	others			0.05	0.30(0.06)	1.45(0.38)	1.64	5.00	15.9	55.3	

\* 1. 輸出轉速 100rpm 時，作用於輸出軸中心位置。Applied to the output shaft center @100rpm.  
 \* 2. 3000rpm 空載量測。Measured at 3000 rpm with no load. These values are measured by gearbox with ratio = 10 (1-stage) or ratio = 100 (2-stage) at nominal input speed or 3000 rpm (if nominal input speed is higher than 3000 rpm) with no load.  
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