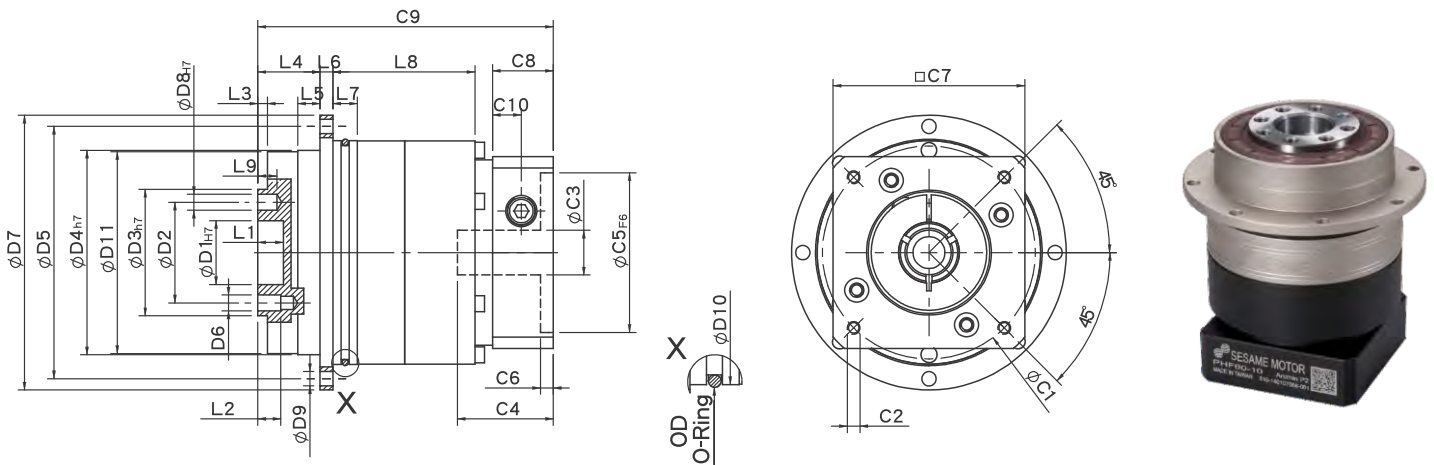


## PHF Single Stage Dimensions



Unit:mm

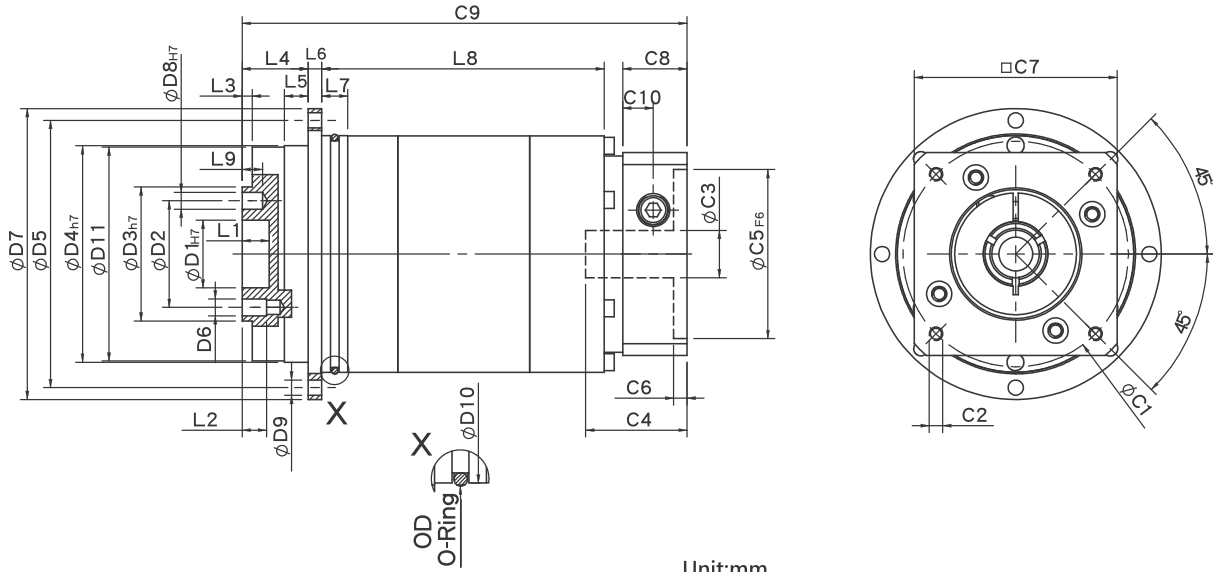
Dimensions	PHF42	PHF60	PHF90	PHF115	PHF142	PHF200	PHF255
D1 <sub>H7</sub>	12	20	31.5	40	50	80	100
D2	20	31.5	50	63	80	125	140
D3 <sub>h7</sub>	28	40	63	80	100	160	180
D4 <sub>h7</sub>	47	64	90	110	140	200	255
D5	67	79	109	135	168	233	280
D6	M3x0.5P	M5x0.8P	M6x1.0P	M6x1.0P	M8x1.25P	M10x1.5P	M16x2.0P
D7	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	60	70	95	120	152	212	255
D11	46.2	63.2	89.2	109.2	139.2	199.2	254.2
L1	4	8	12	12	12	12	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	5	7.7	8	10	12	17	39.5
L8	25	37.5	36.5	54.5	65	92	118
L9	4	6	7	7	7	10	10
C1 <sup>2</sup>	46	70	90	115	145	200	235
C2 <sup>2</sup>	M4x0.7P	M5x0.8P	M6x1.0P	M8x1.25P	M8x1.25P	M12x1.75P	M12x1.75P
C3 <sup>2</sup>	≤8/≤11	≤14	≤19/≤24	≤24/≤32	≤35/≤38	≤50	≤55
C4 <sup>2</sup>	28.1	36.5	41.2	51.1	69.7	81	112
C5 <sup>2</sup> <sub>F6</sub>	30	50	70	95	110	114.3	200
C6 <sup>2</sup>	4	4	6.7	6	8.5	6	6
C7 <sup>2</sup>	42	60	90	115	140	182	220
C8 <sup>2</sup>	16.5	19	25.5	30	38	40	50
C9 <sup>2</sup>	74.8	92.5	107	131.5	171.5	215	271
C10 <sup>2</sup>	7.4	9	11.3	13.9	17.8	21	21
OD	56x2	66x2	90x3	110x3	145x3	200x5	238x5

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

\* Specification subject to change without notice.



## PHF Double Stage Dimensions-1



Unit:mm

Dimensions	PHF42	PHF60	PHF90
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	60	70	95
D11	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	5	7.7	8
L8	54.5	72.5	81.5
L9	4	6	7
C1 <sup>2</sup>	46	70	90
C2 <sup>2</sup>	M4x0.7P	M5x0.8P	M6x1.0P
C3 <sup>2</sup>	≤8/≤11	≤14	≤19/≤24
C4 <sup>2</sup>	28.1	36.4	41.2
C5 <sup>2</sup> <sub>F6</sub>	30	50	70
C6 <sup>2</sup>	4	4	6.7
C7 <sup>2</sup>	42	60	90
C8 <sup>2</sup>	16.5	19	25.5
C9 <sup>2</sup>	102.5	127.5	151.1
C10 <sup>2</sup>	7.4	9	11.3
OD	56x2	66x2	90x3



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

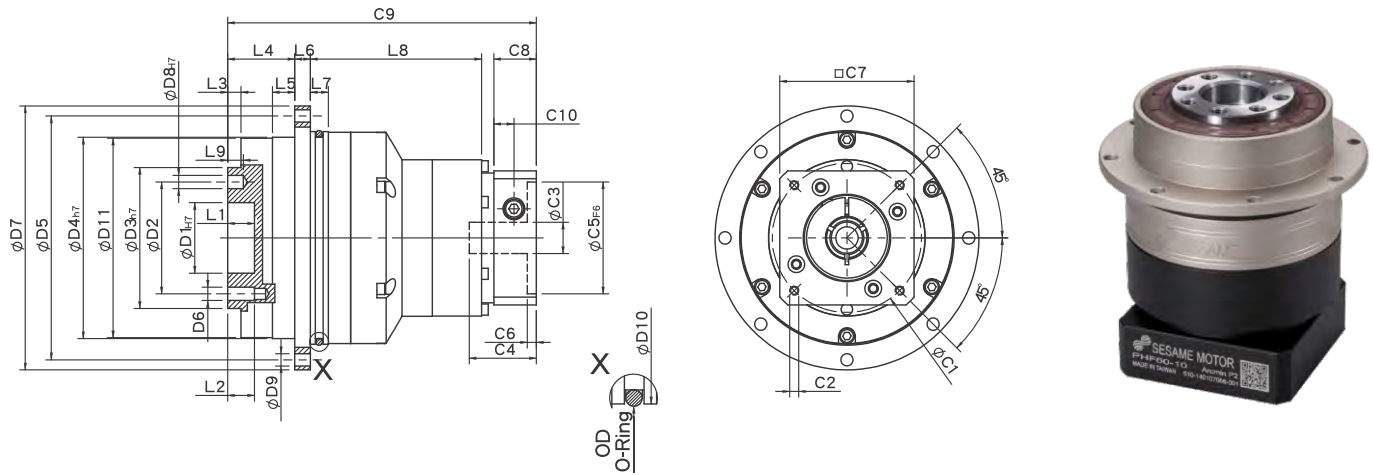
\* Specification subject to change without notice.



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## PHF Double Stage Dimensions-2



Unit:mm

Dimensions	PHF60T	PHF90T	PHF115T	PHF142T	PHF200T	PHF255T
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	70	95	120	152	212	255
D11	63.2	89.2	109.2	139.2	199.2	254.2
L1	8	12	12	12	12	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	7.7	8	10	12	17	39.5
L8	65.2	69.5	93.5	110	161.7	192
L9	6	7	7	7	10	10
C1 <sup>2</sup>	46	70	90	115	145	200
C2 <sup>2</sup>	M4x0.7P	M5x0.8P	M6x1.0P	M8x1.25P	M8x1.25P	M12x1.75P
C3 <sup>2</sup>	≤8/≤11	≤14	≤19/≤24	≤24/≤32	≤35/≤38	≤50
C4 <sup>2</sup>	28.1	36.5	41.2	51.1	69.7	81
C5 <sup>2</sup> <sub>F6</sub>	30	50	70	95	110	114.3
C6 <sup>2</sup>	4	4	6.7	6	8.5	6
C7 <sup>2</sup>	42	60	90	115	140	180
C8 <sup>2</sup>	16.5	19	25.5	30	38	40
C9 <sup>2</sup>	113.2	138	163.1	198	281	335
C10 <sup>2</sup>	7.4	9	11.3	13.9	17.8	21
OD	66x2	90x3	110x3	145x3	200x5	238x5

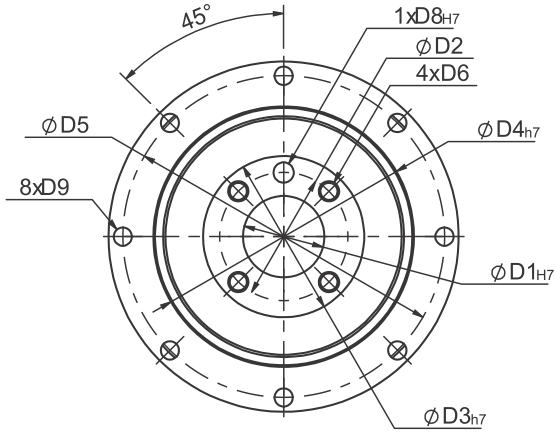
\* C1~C9 are motor specific dimensions(metric std shown ), Size may vary according to motor flange.

\* Specification subject to change without notice.

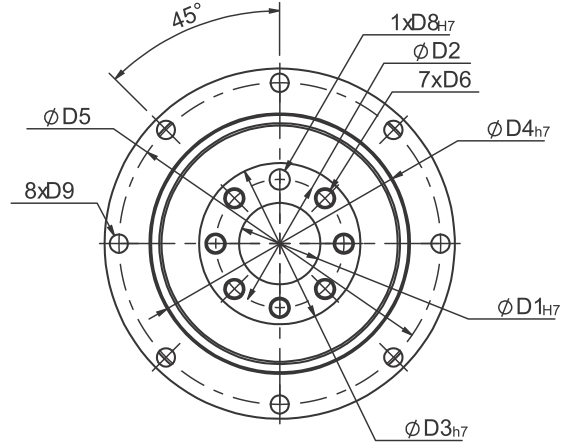


## PHF Flange Dimensions

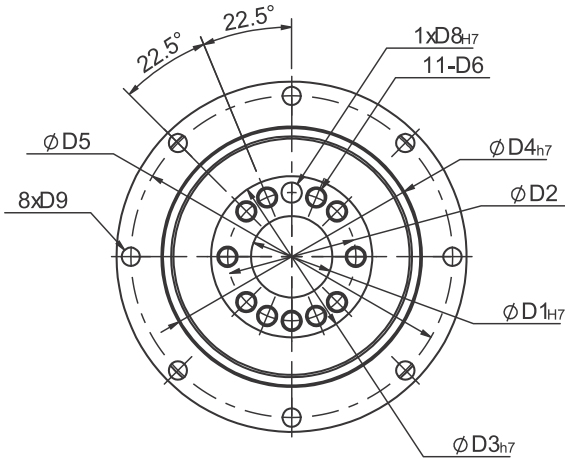
### PHF42



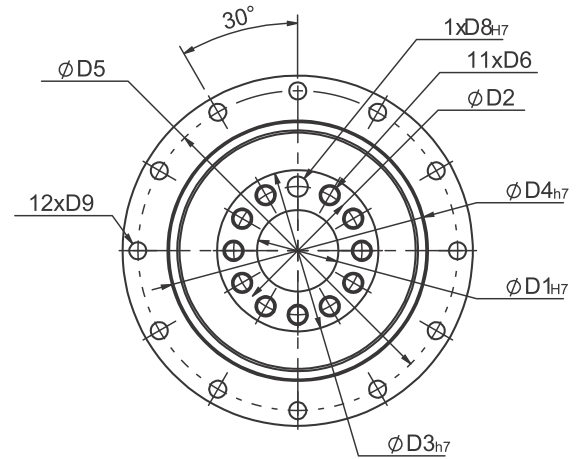
### PHF60 PHF90



### PHF115



### PHF142 PHF200 PHF255



Unit:mm

Dimensions	PHF42	PHF60	PHF90	PHF115	PHF142	PHF200	PHF255
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
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

★ Specification subject to change without notice.



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## PHF Specifications Table

Specifications		Stage	Ratio	PHF-42	PHF-60	PHF-90	PHF-115	PHF-142	PHF-200	PHF-255
Nominal Output Torque $T_{2N}$	N • m	1	3	-	40	105	180	310	580	1100
			4	16	43	110	240	450	1100	1700
			5	17	50	130	290	530	1200	2000
			7	14	44	125	270	450	1100	1750
			10	11	37	95	220	360	900	1450
		Stage	Ratio	PHF-42	PHF-60 (T)	PHF-90(T)	PHF-115T	PHF-142T	PHF-200T	PHF-255T
		2	15	-	40	105	180	310	580	2000
			20	16	43	110	240	450	1100	2000
			25	17	50	130	290	530	1200	2000
			30	17	50	130	290	530	1200	2000
	35		17	50	130	290	530	1200	2000	
	40		17	50	130	290	530	1200	2000	
	50		17	50	130	290	530	1200	2000	
	70	14	44	125	270	450	1100	1750		
100	11	37	95	220	360	900	1450			
Emergency Stop Torque $T_{2NOT}$	N • m	3.0 times of Nominal Output Torque (* Max. Output Torque $T_{2B}$ = 60% of Emergency Stop Torque)								
Nominal Input Speed $n_{1N}$	rpm	1,2	3-100	5000	5000	4000	4000	3000	3000	2000
Max. Input Speed $n_{1max}$	rpm	1,2	3-100	10000	10000	8000	8000	6000	5000	4000
Micro Backlash P0	arcmin	1	3-10	$\leq 2$	$\leq 2$	$\leq 2$	$\leq 1$	$\leq 1$	$\leq 1$	$\leq 1$
		2	12-100	$\leq 4$	$\leq 4$	$\leq 4$	$\leq 3$	$\leq 3$	$\leq 3$	$\leq 3$
Precision Backlash P1	arcmin	1	3-10	$\leq 4$	$\leq 4$	$\leq 4$	$\leq 3$	$\leq 3$	$\leq 3$	$\leq 3$
		2	12-100	$\leq 6$	$\leq 6$	$\leq 6$	$\leq 5$	$\leq 5$	$\leq 5$	$\leq 5$
Standard Backlash P2	arcmin	1	3-10	$\leq 6$	$\leq 6$	$\leq 6$	$\leq 5$	$\leq 5$	$\leq 5$	$\leq 5$
		2	12-100	$\leq 8$	$\leq 8$	$\leq 8$	$\leq 7$	$\leq 7$	$\leq 7$	$\leq 7$
Torsional Rigidity	N • m / arcmin	1,2	3-100	6	12	30	80	150	450	1000
Max. Bending Moment $M_{2kB}^1$	N • m	1,2	3-100	43	125	288	503	1470	2950	6080
Max. Axial Load $F_{2aB}^1$	N	1,2	3-100	1015	1340	2868	3890	9850	12560	21850
Operating Temp.	°C	-10 °C ~ +90 °C								
Service Life	hr	30,000 (15,000/ Continuous operation)								
Efficiency	%	1	3-10	$\geq 97\%$						
		2	12-100	$\geq 94\%$						
Weight	kg	1	3-10	0.7	1.5	3.3	6.2	13.6	32.1	63.3
		2	12-100	1.1	2.3/1.8	6.0/4.1	8.1	17.9	38.6	79.5
Mounting Position	-	1,2	3-100	Any direction						
Noise Level <sup>2</sup>	dB(A)/1m	1,2	3-100	56	58	60	63	65	67	70
Protection Class	-	1,2	3-100	IP65						
Lubrication	-	1,2	3-100	Synthetic Lubricant						
Inertia(J1)										
Stage	Ratio	unit		PHF-42	PHF-60	PHF-90	PHF-115	PHF-142	PHF-200	PHF-255
1	3	Kg • cm <sup>2</sup>		-	0.19	0.72	2.35	9.05	29.80	72.50
	4			0.02	0.18	0.67	1.66	7.17	25.86	58.21
	5			0.02	0.17	0.65	1.50	6.52	23.63	54.36
	7			0.02	0.14	0.60	1.45	6.17	22.92	54.12
	10			0.02	0.14	0.58	1.41	6.10	22.73	53.98
Stage	Ratio			PHF-42	PHF-60(T)	PHF-90(T)	PHF-115T	PHF-142T	PHF-200T	PHF-255T
2	15/20/25			0.02	0.17(0.02)	0.65(0.17)	0.65	1.50	6.52	23.63
	30/35/40			0.02	0.14(0.02)	0.60(0.14)	0.60	1.45	6.17	22.92
	50/70/100			0.02	0.14(0.02)	0.58(0.14)	0.58	1.41	6.10	22.73

\* 1. Applied to the output shaft center @100rpm.

\* 2. Measured at 3000rpm with no load

※ The above figures/specifications are subject to change without prior notice.

Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty.

