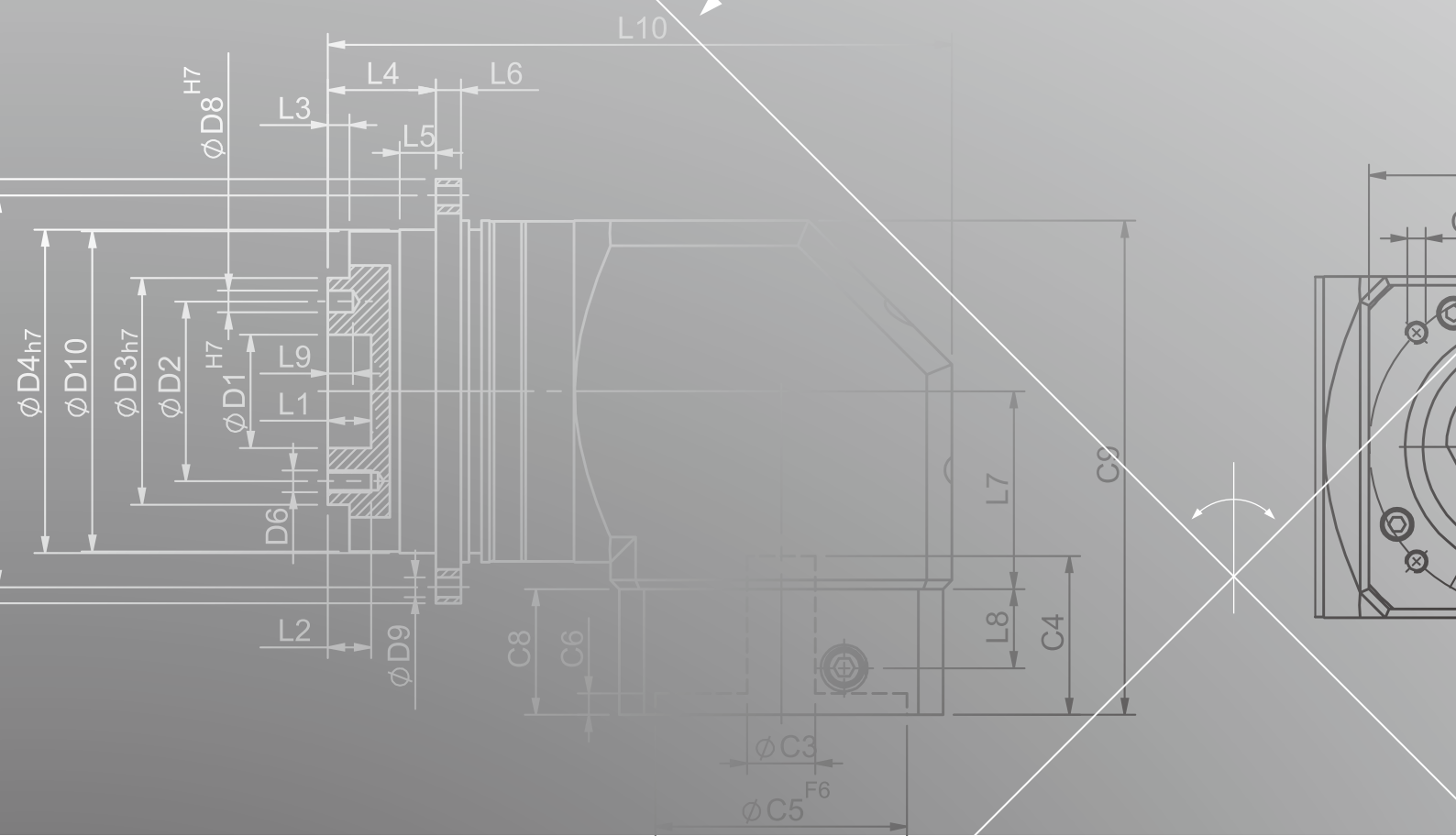
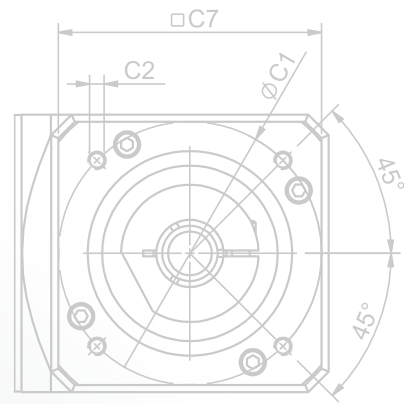
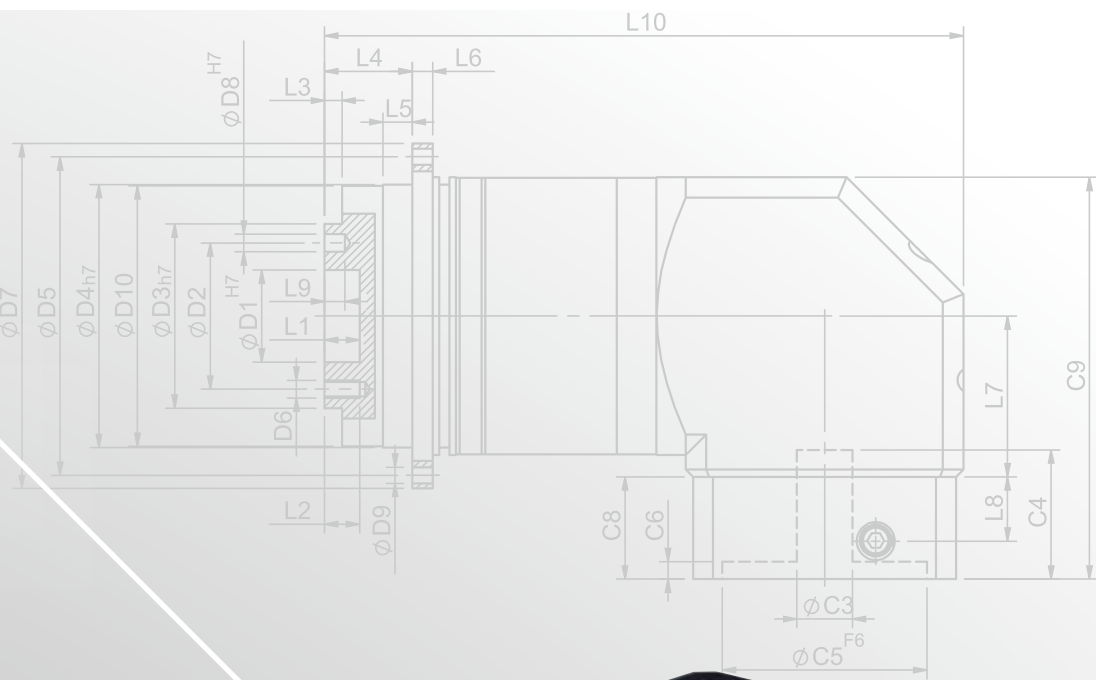
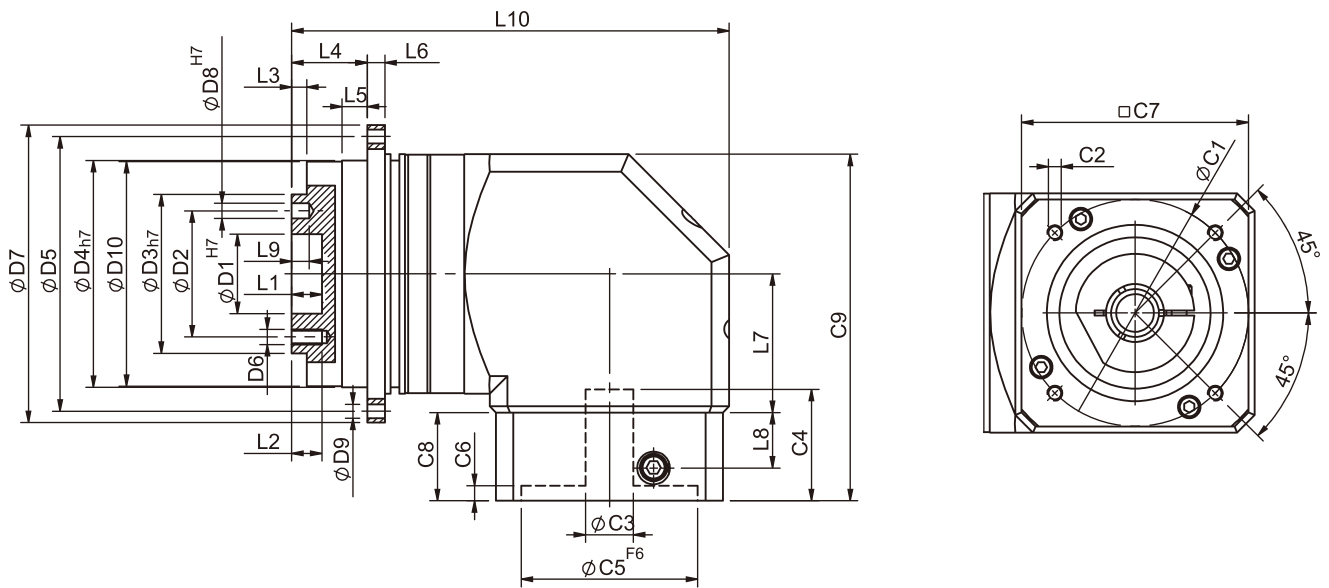


PHFR SERIES





PHFR Single Stage Dimensions



Specifications

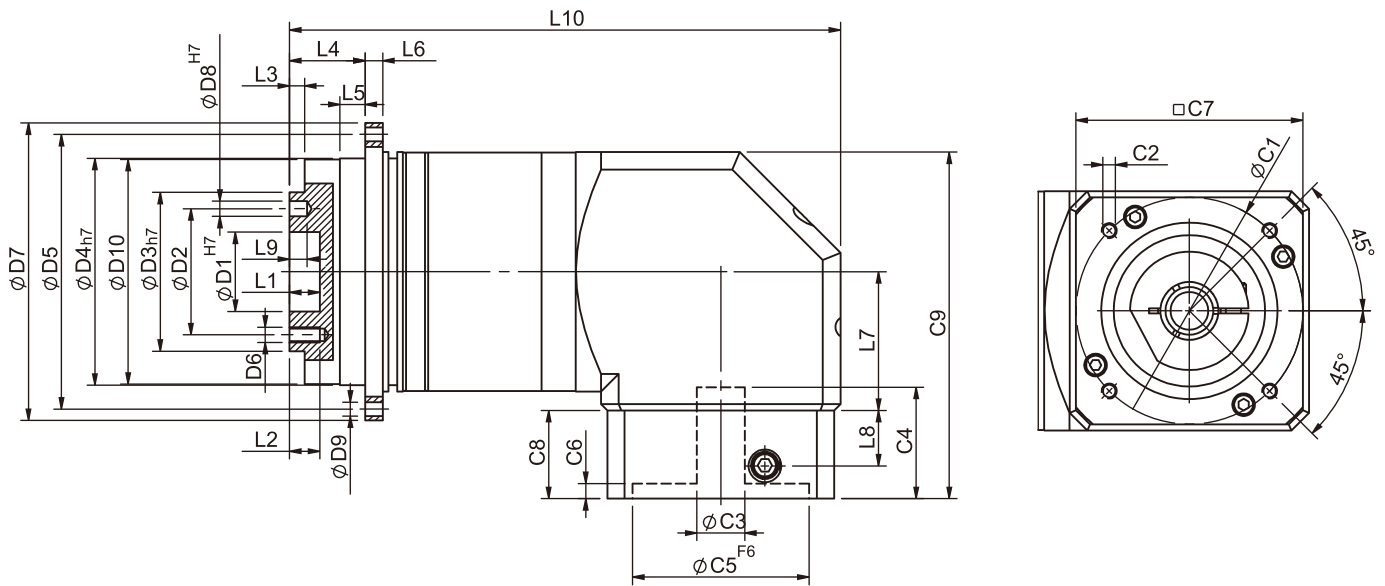
Unit:mm

Dimensions	PHFR42	PHFR60	PHFR90	PHFR115	PHFR142	PHFR200
D1 _{H7}	12	20	31.5	-	-	-
D2	20	31.5	50	-	-	-
D3 _{h7}	28	40	63	-	-	-
D4 _{h7}	47	64	90	-	-	-
D5	67	79	109	-	-	-
D6	M3x0.5P	M5x0.8P	M6x1.0P	-	-	-
D7	72	86	118	-	-	-
D8 _{H7}	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	92.2	128.3	173.6	-	-	-
C1 ²	46	70	90	-	-	-
C2 ²	M4x0.7P	M5x0.8P	M6x1.0P	-	-	-
C3 ²	≤ 8	≤ 14	≤ 19/≤ 24	-	-	-
C4 ²	29	34	44	-	-	-
C5 ² _{F6}	30	50	70	-	-	-
C6 ²	6	5	5	-	-	-
C7 ²	42.6	60	90	-	-	-
C8 ²	25	33	35	-	-	-
C9 ²	78.5	112.8	137.5	-	-	-

★ 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



Specifications

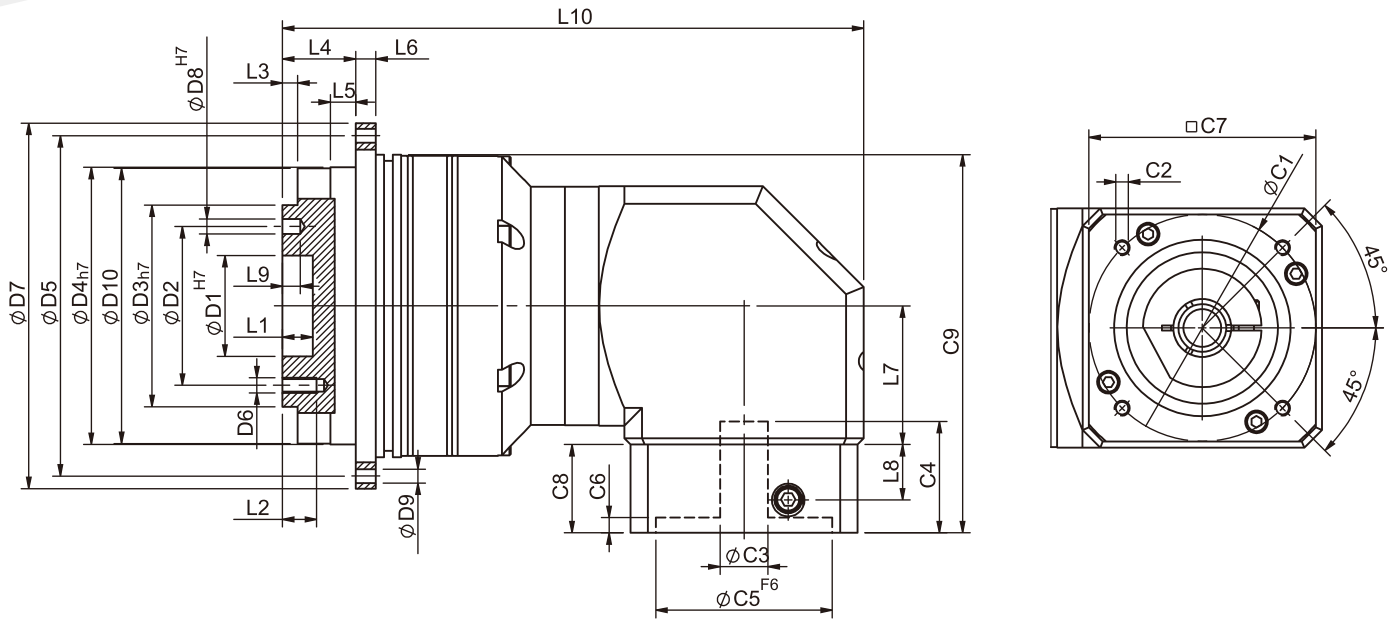
Unit:mm

Dimensions	PHFR42	PHFR60	PHFR90
D1 _{H7}	12	20	31.5
D2	20	31.5	50
D3 _{h7}	28	40	63
D4 _{h7}	47	64	90
D5	67	79	109
D6	M3x0.5P	M5x0.8P	M6x1.0P
D7	72	86	118
D8 _{H7}	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 ²	46	70	90
C2 ²	M4x0.7P	M5x0.8P	M6x1.0P
C3 ²	≤ 8	≤ 14	≤ 19/≤ 24
C4 ²	29	34	44
C5 ² _{F6}	30	50	70
C6 ²	6	5	5
C7 ²	42.6	60	90
C8 ²	25	33	35
C9 ²	78.5	112.8	137.5

* 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



Specifications

Unit:mm

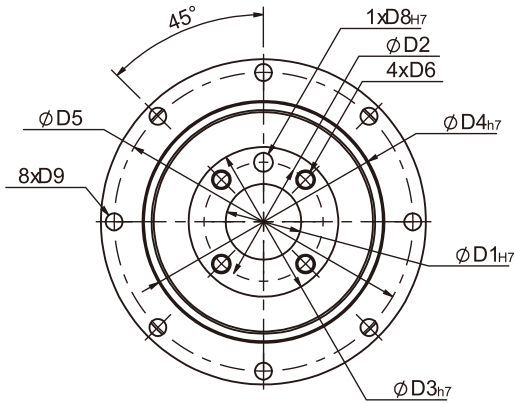
Dimensions	PHFR60T	PHFR90T	PHFR115T	PHFR142T	PHFR200T	PHFR255T
D1 _{H7}	20	31.5	40	-	-	-
D2	31.5	50	63	-	-	-
D3 _{h7}	40	63	80	-	-	-
D4 _{h7}	64	90	110	-	-	-
D5	79	109	135	-	-	-
D6	M5x0.8P	M6x1.0P	M6x1.0P	-	-	-
D7	86	118	145	-	-	-
D8 _{H7}	5	6	6	-	-	-
D9	4.5	5.5	5.5	-	-	-
D10	63.2	89.2	109.2	-	-	-
L1	8	12	12	-	-	-
L2	7.2	12	13.5	-	-	-
L3	3	6	6	-	-	-
L4	19.5	30	29	-	-	-
L5	7	10	10	-	-	-
L6	4	7	8	-	-	-
L7	32.2	44.8	55	-	-	-
L8	13.5	21.5	22	-	-	-
L9	4	7	7	-	-	-
L10	130.6	173.8	230.6	-	-	-
C1 ²	46	70	90	-	-	-
C2 ²	M4x0.7P	M5x0.8P	M6x1.0P	-	-	-
C3 ²	≤ 8	≤ 14	≤ 19/≤ 24	-	-	-
C4 ²	29	34	44	-	-	-
C5 ² _{F6}	30	50	70	-	-	-
C6 ²	6	5	5	-	-	-
C7 ²	42.6	60	90	-	-	-
C8 ²	25	33	35	-	-	-
C9 ²	84.4	125.3	150	-	-	-

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

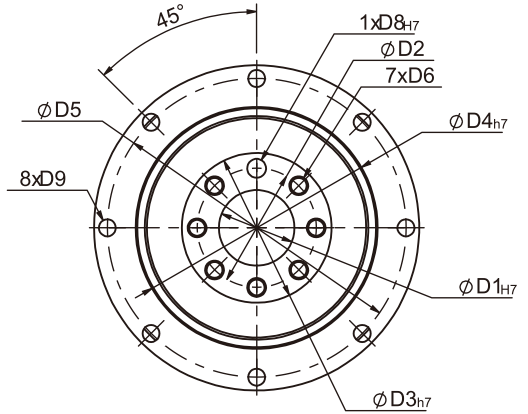
* Specification subject to change without notice.

PHFR Flange Dimensions

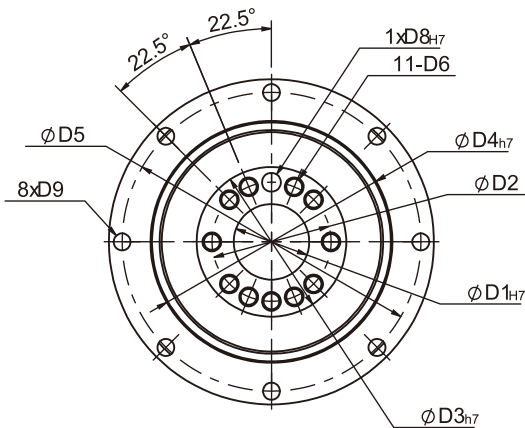
PHFR42



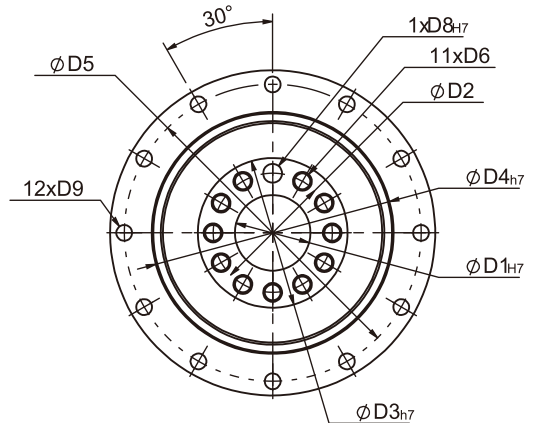
PHFR60 PHFR90



PHFR115



PHFR142 PHFR200



Specifications

Unit:mm

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

★ Specification subject to change without notice.

PHFR Specifications Table

Specifications		Stage	Ratio	PHFR-42	PHFR-60	PHFR-90	PHFR-115	PHFR-142	PHFR-200	PHFR-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
			14	14	44	125	270	450	1100	1750
		20	11	37	95	220	360	900	1450	
		Stage	Ratio	PHFR-42	PHFR-60 (T)	PHFR-90(T)	PHFR-115T	PHFR-142T	PHFR-200T	PHFR-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
			140	14	44	125	270	450	1100	1750
200	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	3-200	5000	5000	4000	4000	3000	3000	2000
Max. Input Speed n_{1max}	rpm	1,2	3-200	10000	10000	8000	8000	6000	6000	4000
Micro Backlash P_0	arcmin	1	3-20	-	-	≤ 3	≤ 2	≤ 2	≤ 2	≤ 2
		2	15-200	-	-	≤ 5	≤ 4	≤ 4	≤ 4	≤ 4
Precision Backlash P_1	arcmin	1	3-20	≤ 5	≤ 5	≤ 5	≤ 4	≤ 4	≤ 4	≤ 4
		2	15-200	≤ 7	≤ 7	≤ 7	≤ 7	≤ 7	≤ 7	≤ 7
Standard Backlash P_2	arcmin	1	3-20	≤ 7	≤ 7	≤ 7	≤ 6	≤ 6	≤ 6	≤ 6
		2	15-200	≤ 9	≤ 9	≤ 9	≤ 9	≤ 9	≤ 9	≤ 9
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	6500
Max. Axial Load F_{2aB}^1	N	1,2	3-100	1015	1340	2868	3890	9850	12560	21850
Operating Temp.	°C		3-100	-10 °C ~ +90 °C						
Service Life	hr		3-100	20,000 (10,000/ Continuous operation)						
Efficiency	%	1	3-10	≥ 95%						
		2	12-100	≥ 92%						
Weight	kg	1	3-10	1.0	2.6	6.6	13.5	25.1	50	85
		2	12-100	1.1	3.3/2.2	8.6/5.3	14.8	26.7	55	88
Mounting Position	-	1,2	3-100	Any direction						
Noise Level ²	dBA/1m	1,2	3-100	62	64	66	68	70	72	74
Protection Class	-	1,2	3-100	IP65						
Lubrication	-	1,2	3-100	Synthetic Lubricant						
Inertia(J)										
Stage	Ratio	unit		PHFR-42	PHFR-60	PHFR-90	PHFR-115	PHFR-142	PHFR-200	PHFR-255
1	3/4/5/7/9	Kg • cm ²		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
Stage	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. 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.

SERVO MOTOR GEARHEADS



PHL

PHFR

PHF

PGH

PUR

PUL

PGLH

PGL

PGC

PGE

PGRH

PCR

PGFR

PGF

PBC

PBE

PAE

PAC

PAN

PGS

PNS