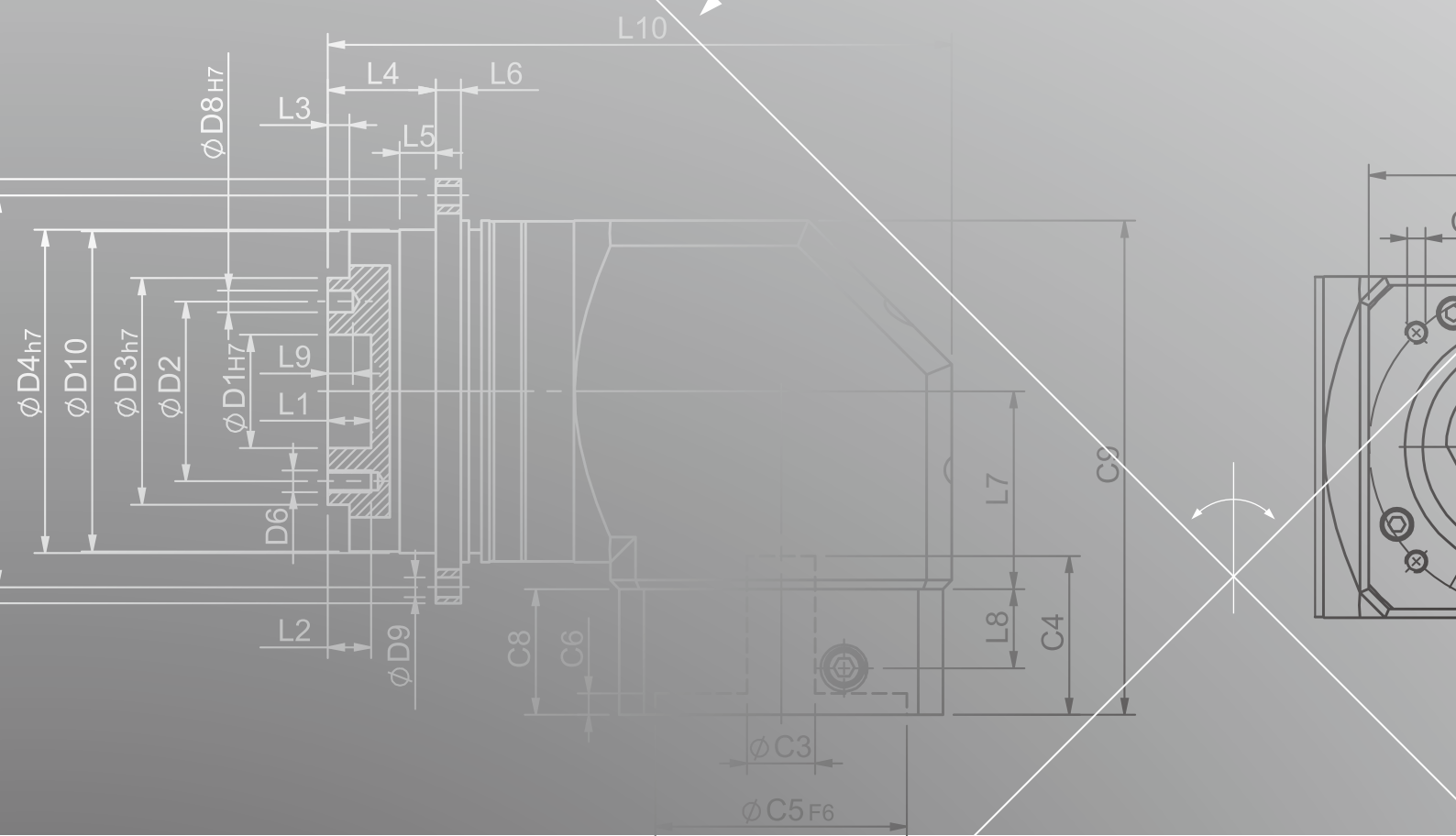
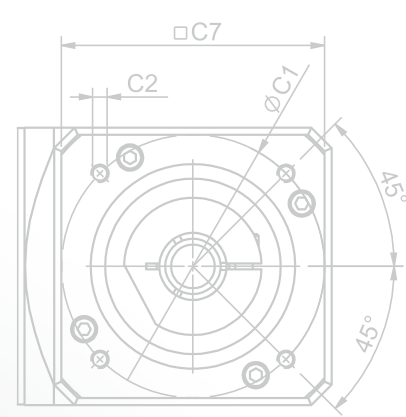
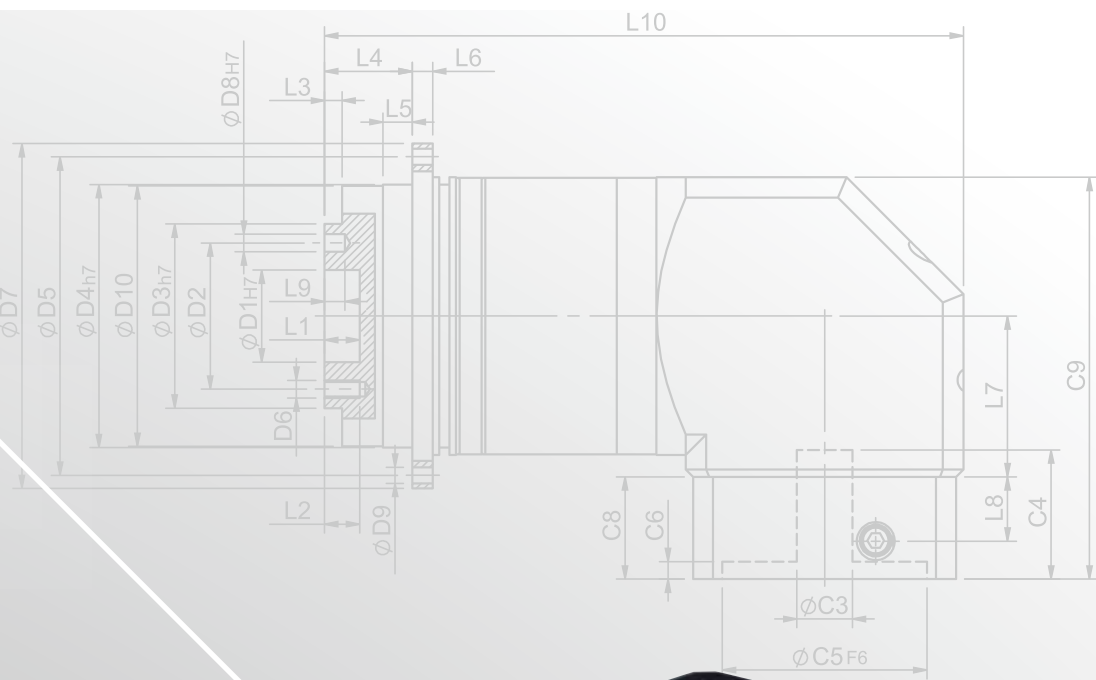
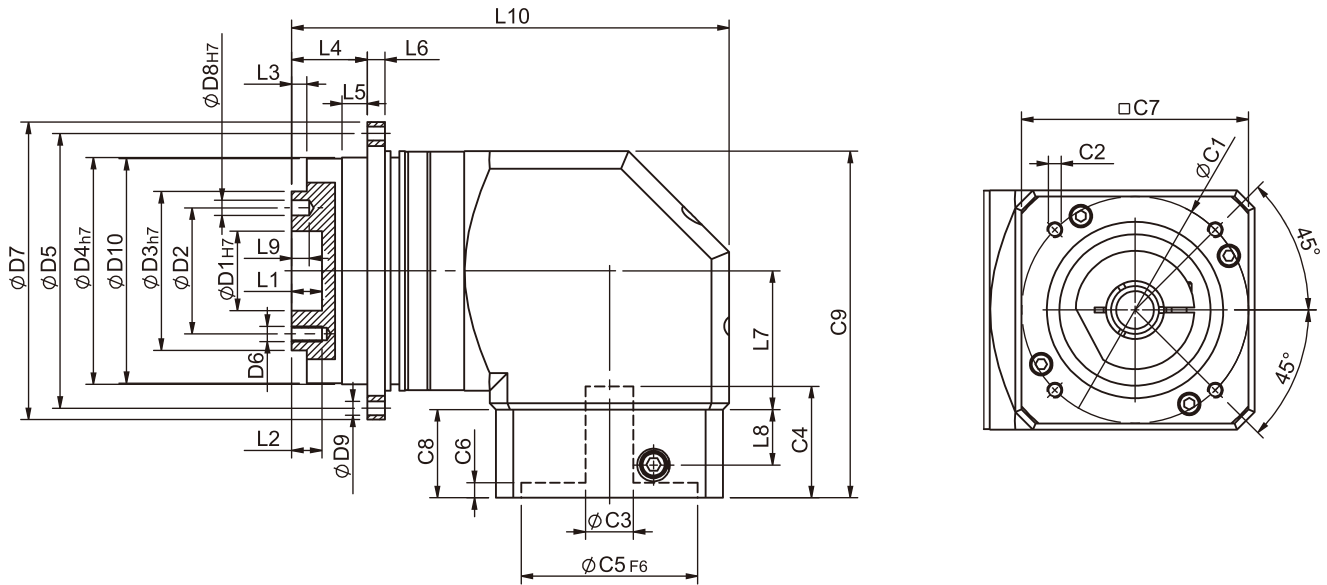


PHFR SERIES





PHFR Single Stage Dimensions



Specifications

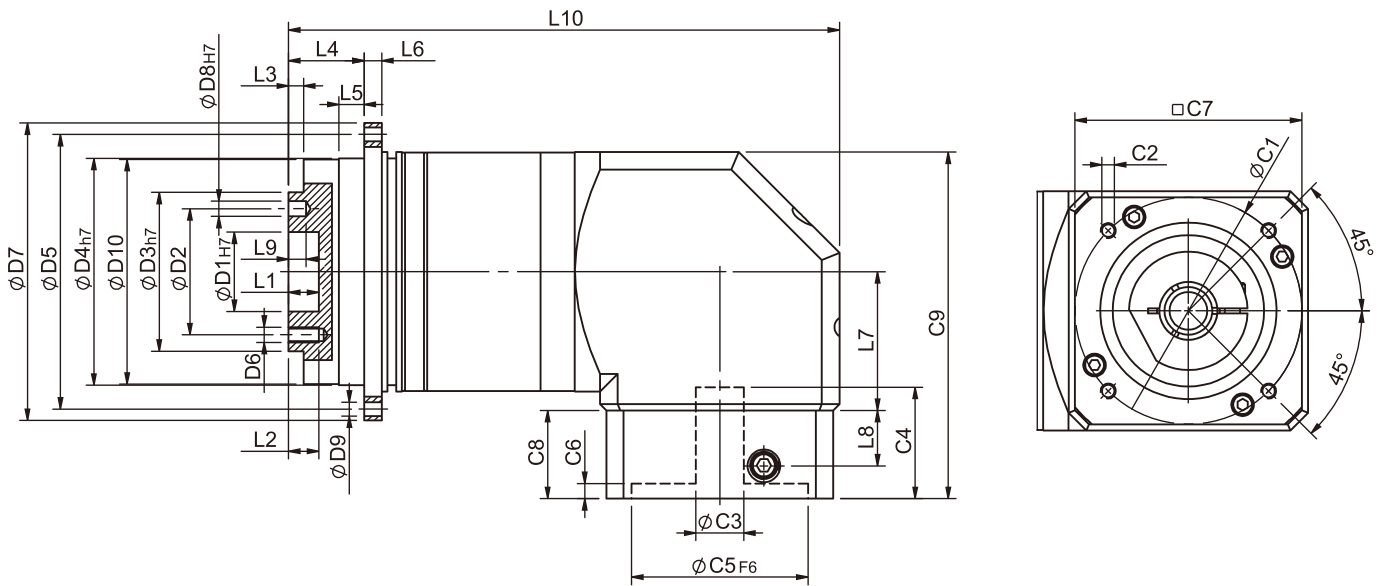
Unit:mm

Dimensions	PHFR42	PHFR60	PHFR90	PHFR115	PHFR142	PHFR200	PHFR255
D1 _{H7}	12	20	31.5	40	50	80	100
D2	20	31.5	50	63	80	125	140
D3 _{H7}	28	40	63	80	100	160	180
D4 _{H7}	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 _{H7}	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 ²	46	70	90	90	145	200	215
C2 ²	M4x0.7P	M5x0.8P	M6x1.0P	M6x1.0P	M8x1.25P	M12x1.75P	M12x1.75P
C3 ²	≤8/≤11	≤14/≤19	≤19/≤24	≤24/≤32	≤35	≤50	≤55
C4 ²	29	34	44	53.5	76.8	78.8	98.7
C5 ² _{F6}	30	50	70	70	110	114.3	180
C6 ²	6	5	5	5.5	9	6	6
C7 ²	42.6	60	90	115	140	180	220
C8 ²	25	33	35	48	65	65	85
C9 ²	78.5	112.8	137.5	176.5	225.5	246.5	266.5

★ 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

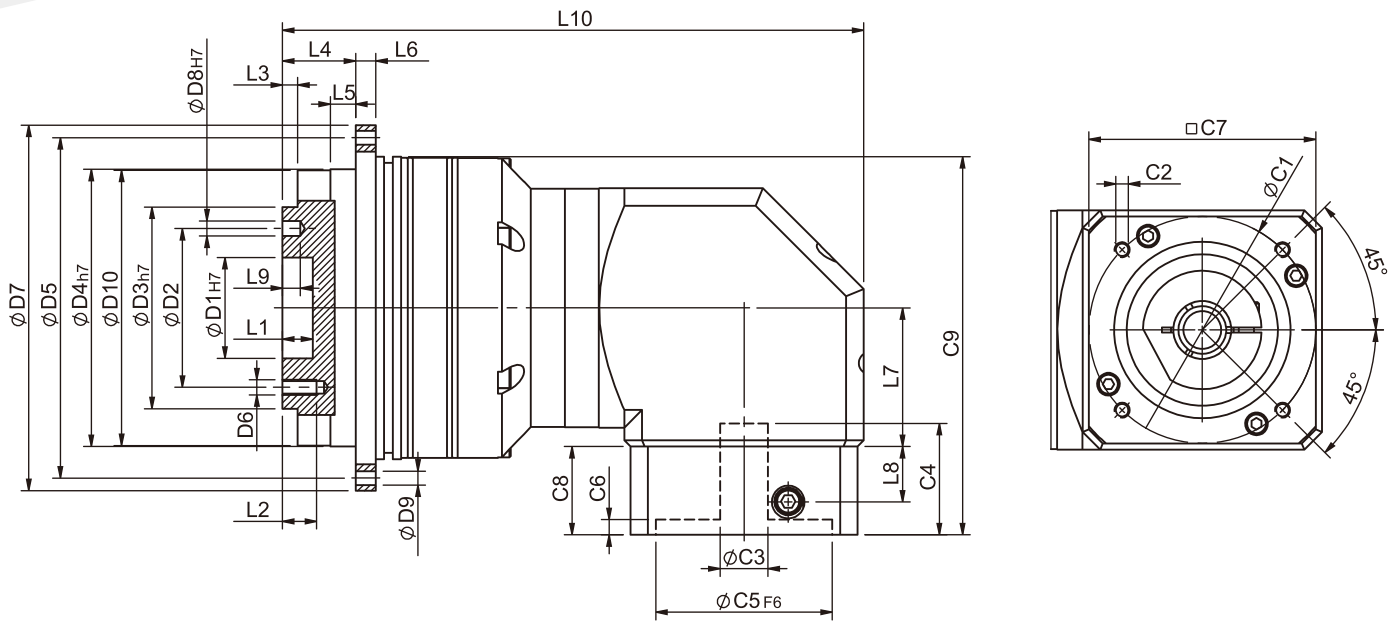
Unit:mm

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

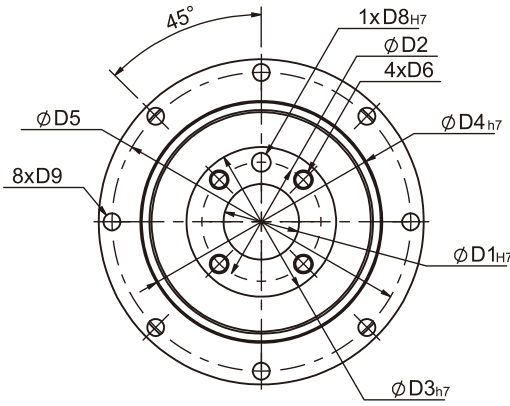
Dimensions	PHFR60T	PHFR90T	PHFR115T	PHFR142T	PHFR200T	PHFR255T
D1 _{H7}	20	31.5	40	50	80	100
D2	31.5	50	63	80	125	140
D3 _{h7}	40	63	80	100	160	180
D4 _{h7}	64	90	110	140	200	255
D5	79	109	135	168	233	280
D6	M5x0.8P	M6x1.0P	M6x1.0P	M8x1.25P	M10x1.5P	M16x2.0P
D7	86	118	145	179	247	300
D8 _{H7}	5	6	6	8	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 ²	46	70	90	90	145	200
C2 ²	M4x0.7P	M5x0.8P	M6x1.0P	M6x1.0P	M8x1.25P	M12x1.75P
C3 ²	≤8/≤11	≤14/≤19	≤19/≤24	≤24/≤32	≤35	≤50
C4 ²	29	34	44	53.5	76.8	78.8
C5 ² _{F6}	30	50	70	70	110	114.3
C6 ²	6	5	5	5.5	9	6
C7 ²	42.6	60	90	115	140	92.5
C8 ²	25	33	35	48	65	65
C9 ²	84.4	125.3	150	176.5	259.5	284

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

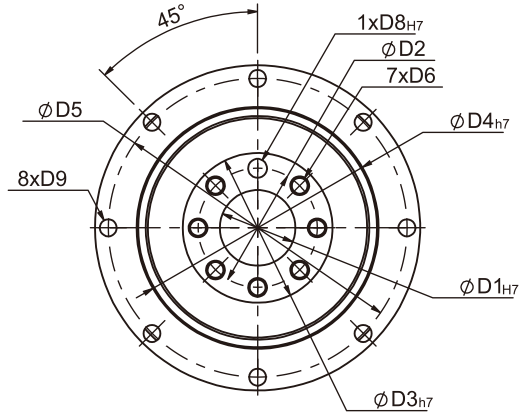
* Specification subject to change without notice.

PHFR Flange Dimensions

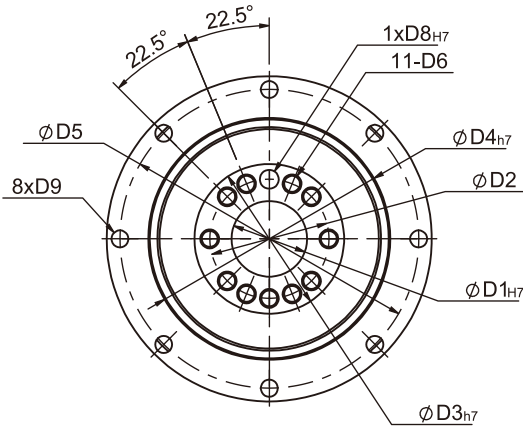
PHFR42



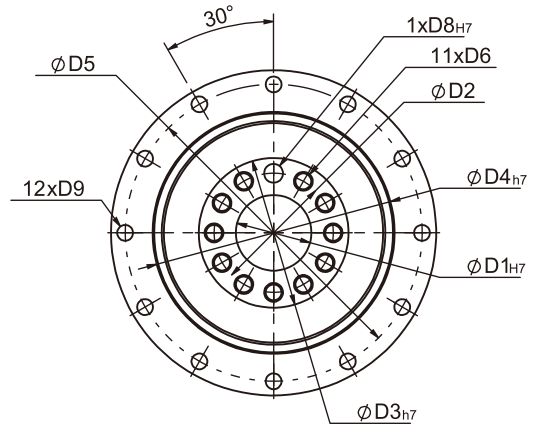
PHFR60 PHFR90



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	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	
		Stage	Ratio	PHFR-42	PHFR-60 (T)	PHFR-90(T)	PHFR-115T	PHFR-142T	PHFR-200T	PHFR-255T
		2	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			
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 P0	arcmin	1	3-20	-	-	≤ 3	≤ 2	≤ 2	≤ 2	≤ 2
		2	15-200	-	-	≤ 5	≤ 4	≤ 4	≤ 4	≤ 4
Precision Backlash P1	arcmin	1	3-20	≤ 5	≤ 5	≤ 5	≤ 4	≤ 4	≤ 4	≤ 4
		2	15-200	≤ 7	≤ 7	≤ 7	≤ 7	≤ 7	≤ 7	≤ 7
Standard Backlash P2	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	3-200	6	12	30	80	150	450	1000
Max. Bending Moment M_{2kB}^1	N • m	1,2	3-200	43	125	288	503	1470	2950	6500
Max. Axial Load F_{2aB}^1	N	1,2	3-200	1015	1340	2868	3890	9850	12560	21850
Operating Temp.	°C		3-200	-10 °C ~ +90 °C						
Service Life	hr		3-200	20,000 (10,000 Continuous operation)						
Efficiency	%	1	3-20	≥ 95%						
		2	15-200	≥ 92%						
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
Mounting Position	-	1,2	3-200	Any direction						
Noise Level ²	dBA/1m	1,2	3-200	62	64	66	68	70	72	74
Protection Class	-	1,2	3-200	IP65						
Lubrication	-	1,2	3-200	Synthetic Lubricant						
Inertia (J1)										
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
<p>* 1. Applied to the output shaft center at 100 rpm.</p> <p>* 2. 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.</p> <p>※ The above figures/specifications are subject to change without prior notice.</p>										

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