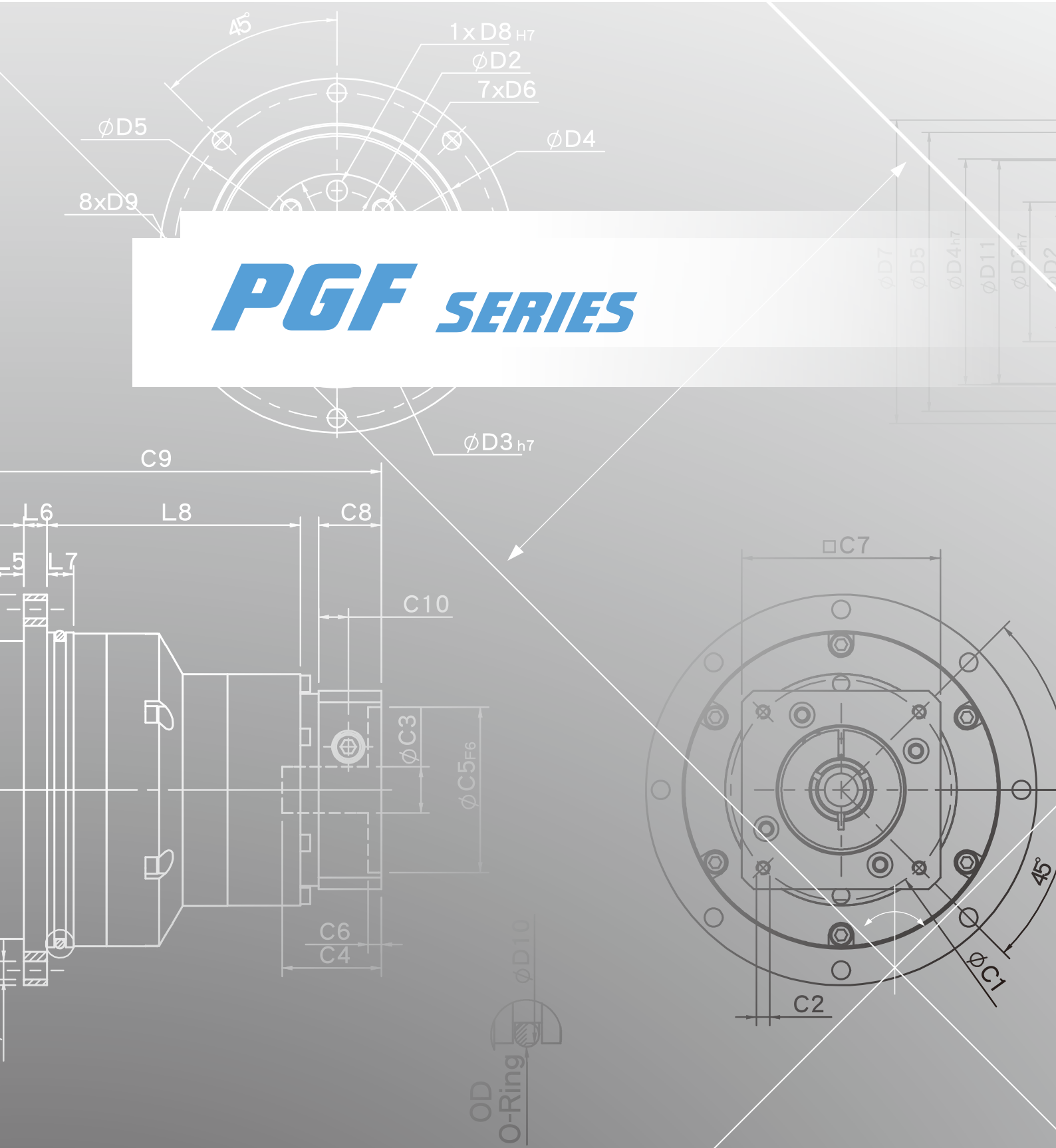
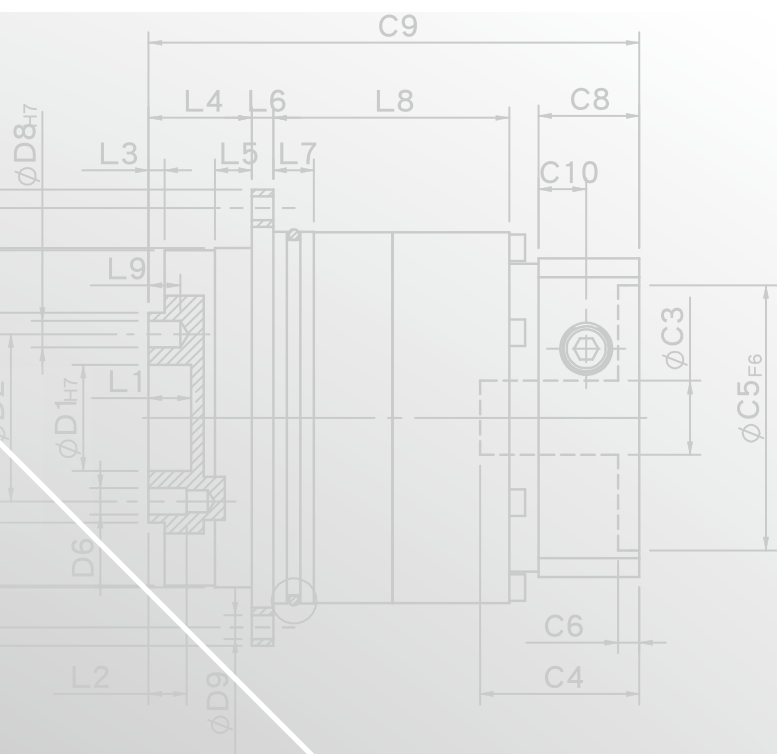
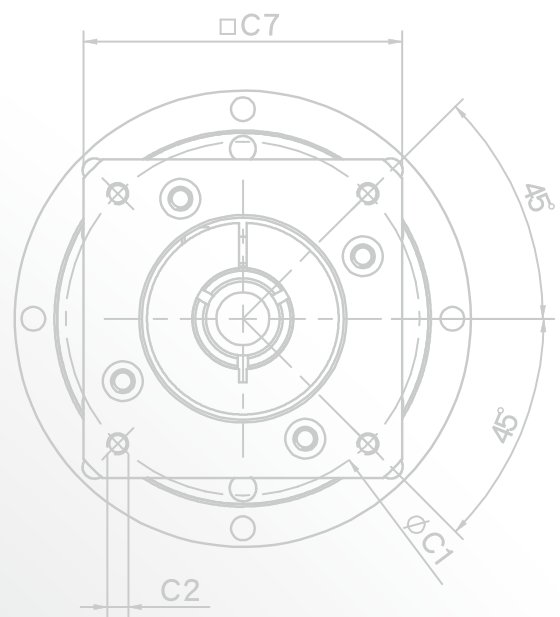


PGF SERIES

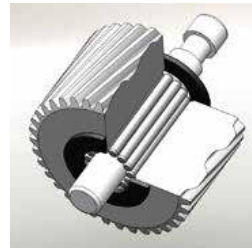




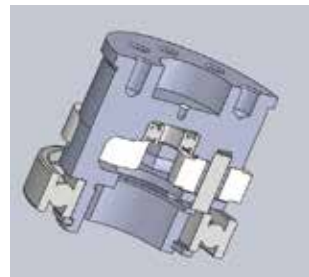
OD
O-Ring $\phi D10$



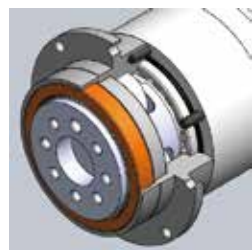
PGF SERIES FEATURES



Planet gear transmission interface equipped with needle bearings, full needle roller bearings aligned without retainer achieve maximum exposure but smallest gap tolerances. Enhance over-all gear structure rigid and output torque.

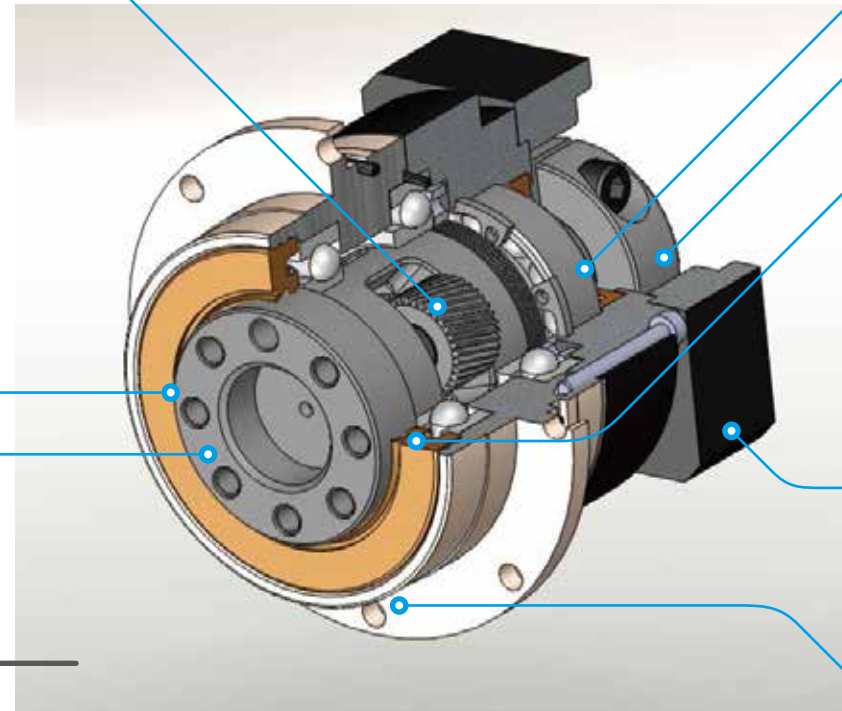
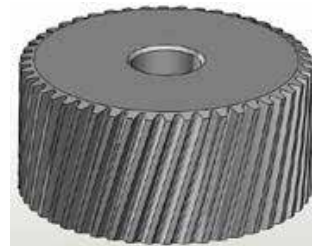


Planetary arm bracket and output shaft are one-piece constructed, setting bearing apart for larger span to reach the largest reverse rigid and contribute high axis radial load capacity.

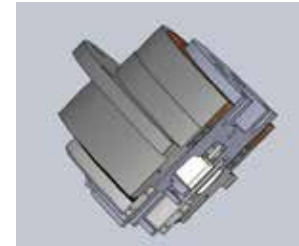


Grinding process to smooth surface of output shaft, and with oil-seal to minimum friction coefficient and reducing start up load; result in the best seal-ability and extended lifespan. Hollow out-put shaft connects perfectly with circular flange drastically reducing the installation space.

Alloy steel gear with unique heat treatment. Additionally, with gear grinding processing to get the best accuracy, high wear resistance and high impact toughness.



PGF Series overall design suitable for combination operation with servo motor high-speed input and achieves maximum torque output. Hollow out-put shaft connects perfectly with circular flange drastically reducing the installation space. Precision gear design and gear processing create a planetary gearhead with low backlash operation, high efficiency, low noise and long lifespan.



The sun gear bearing is placed directly into the planetary arm bracket, the overall mechanical structure designed to ensure concentricity of the transmission components.



Input-end and motor shaft are coupled through a dynamic balanced collar clamping mechanism to ensure connection interface concentricity and zero slip power transmission at high speed.



High-tech oil seal design on the upper lip guard against dust intruder, lower lip to guard against oil leak. Protection grade IP65 safeguards fully avoid leaking problem, and given it maintenance-free.



Advanced motor bracket design coupled with the input shaft bushing is easy to mount to any servo or stepper motor.

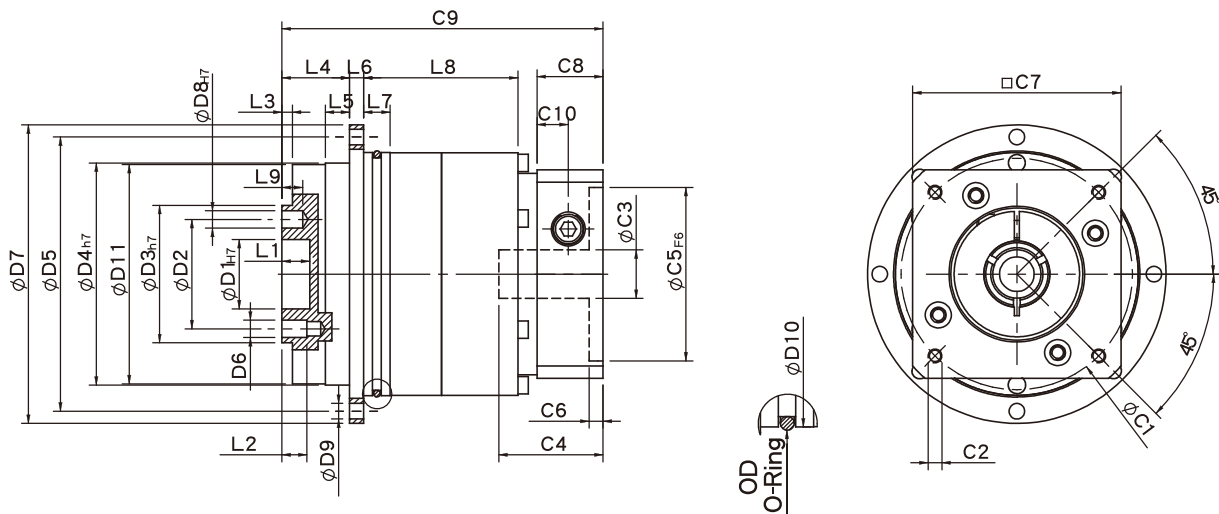


Advanced electroless nickel plating surface treatment resists scratch and corrosion. Suitable for stringent require of high-tech equipment. The gear box and internal gear ring are one-piece constructed, and then processed with advanced Germany gear shaper machinery for high-precision, high torque and abrade consumption.

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PHL PHR PHH PGH PUR PUL PGLH PCL PGC PGE PGRH PGR PGFR PGF PBC PBE PAE PAC PAN PGS PNS

PGF Single Stage Dimensions



Specifications

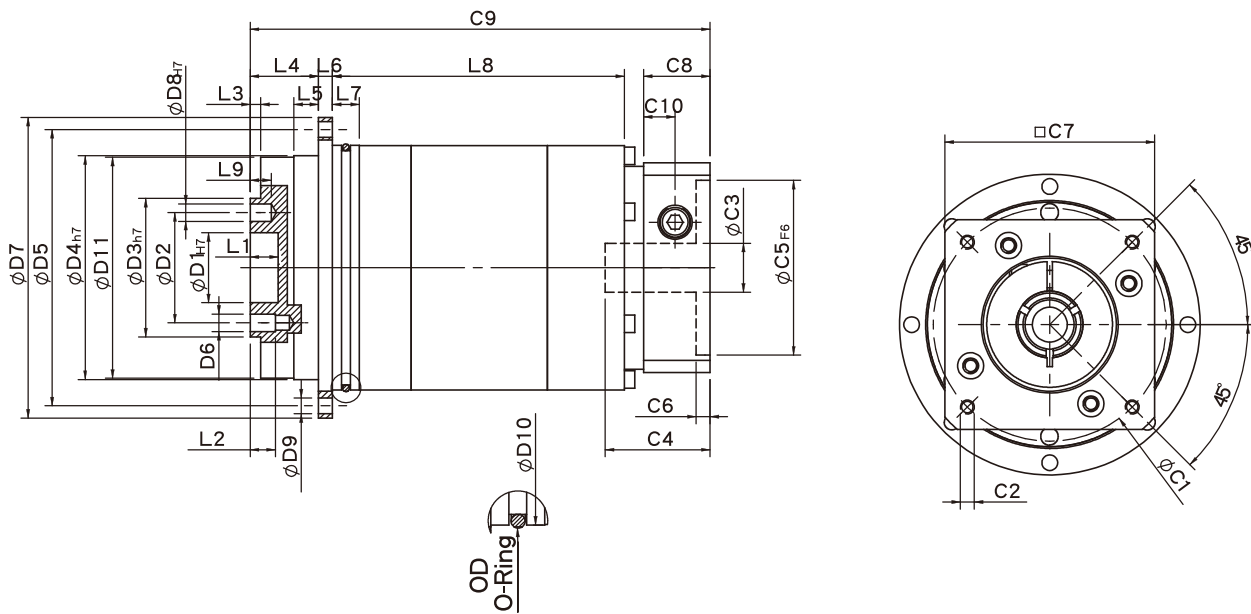
Unit:mm

Dimensions	PGF42	PGF60	PGF90	PGF115
D1 _{H7}	12	20	31.5	40
D2	20	31.5	50	63
D3 _{H7}	28	40	63	80
D4 _{H7}	47	64	90	110
D5	67	79	109	135
D6	M3x0.5P	M5x0.8P	M6x1.0P	M6x1.0P
D7	72	86	118	145
D8 _{H7}	3	5	6	6
D9	3.4	4.5	5.5	5.5
D10	60	70	95	120
D11	46.2	63.2	89.2	109.2
L1	4	8	12	12
L2	6	7.2	12	13.5
L3	3	3	6	6
L4	19.5	19.5	29	29
L5	7	7	10	10
L6	4	4	7	8
L7	5	7.7	8	10
L8	25	29.5	35	50.5
L9	4	6	7	7
C1 ²	46	70	90	115
C2 ²	M4x0.7P	M5x0.8P	M6x1.0P	M8x1.25P
C3 ²	≤8/≤11	≤14	≤19/≤24	≤24/≤32
C4 ²	28.1	36.5	41.2	51.1
C5 ² _{F6}	30	50	70	95
C6 ²	4	4	6.7	6
C7 ²	42	60	90	115
C8 ²	16.5	19	25.5	30
C9 ²	74.8	84.5	104.5	127.5
C10 ²	7.4	9	11.3	13.9
OD	56x2	66x2	90x3	110x3

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

★ Specification subject to change without notice.

PGF Double Stage Dimensions-1



Specifications

Unit:mm

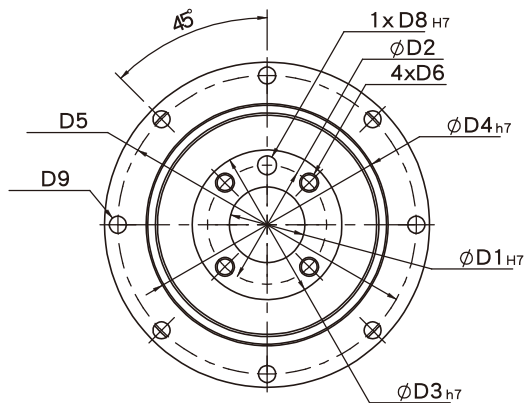
Dimensions	PGF42	PGF60	PGF90
D1 H7	12	20	31.5
D2	20	31.5	50
D3 h7	28	40	63
D4 h7	47	64	90
D5	67	79	109
D6	M3x0.5P	M5x0.8P	M6x1.0P
D7	72	86	118
D8 H7	3	5	6
D9	3.4	4.5	5.5
D10	60	70	95
D11	46.2	63.2	89.2
L1	4	8	12
L2	6	7.2	12
L3	3	3	6
L4	19.5	19.5	29
L5	7	7	10
L6	4	4	7
L7	5	7.7	8
L8	54.5	68.5	80
L9	4	6	7
C1 ²	46	70	90
C2 ²	M4x0.7P	M5x0.8P	M6x1.0P
C3 ²	≤ 8	≤ 14	$\leq 19/\leq 24$
C4 ²	28.1	36.5	41.2
C5 ² F6	30	50	70
C6 ²	4	4	6.7
C7 ²	42	60	90
C8 ²	16.5	19	25.5
C9 ²	102.5	123.5	148.6
C10 ²	7.4	9	11.3
OD	56x2	66x2	90x3

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

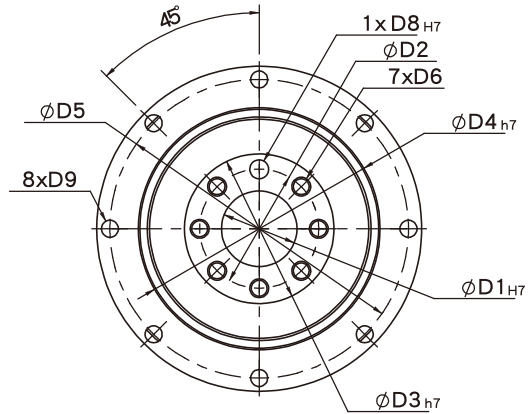
* Specification subject to change without notice.

PGF Flange Dimensions

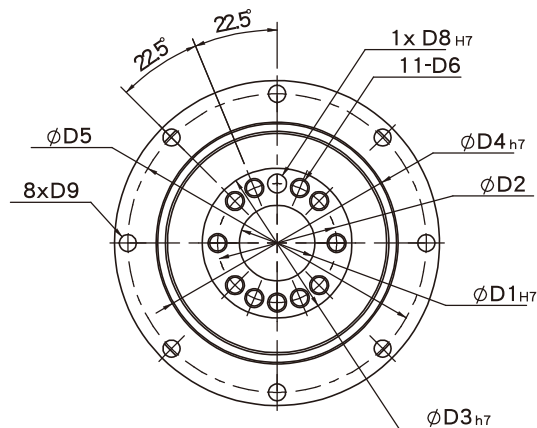
PGF42



PGF60
PGF90



PGF115



Specifications

Unit:mm

Dimensions	PGF42	PGF60	PGF90	PGF115
D1 _{H7}	12	20	31.5	40
D2	20	31.5	50	63
D3 _{h7}	28	40	63	80
D4 _{h7}	47	64	90	110
D5	67	79	109	135
D6	M3x0.5P	M5x0.8P	M6x1.0P	M6x1.0P
D8 _{H7}	3	5	6	6
D9	3.4	4.5	5.5	5.5

★ Specification subject to change without notice.

PGF Specifications Table

Specifications		Stage	Ratio	PGF-42	PGF-60	PGF-90	PGF-115
Nominal Output Torque T _{2N}	N • m	1	3	-	40	105	180
			4	16	43	110	240
			5	17	50	130	290
			7	14	44	125	270
			10	11	37	95	220
		Stage	Ratio	PGF-42	PGF-60(T)	PGF-90(T)	PGF-115T
		2	15	-	40	105	180
			20	16	43	110	240
			25	17	50	130	290
			30	17	50	130	290
			35	17	50	130	290
			40	17	50	130	290
			50	17	50	130	290
			70	14	44	125	270
		100	11	37	95	220	
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
Max. Input Speed n _{1max}	rpm	1,2	3-100	10000	10000	8000	8000
Micro Backlash P0	arcmin	1 2	3-10 12-100	≤ 3 ≤ 5	≤ 3 ≤ 5	≤ 3 ≤ 5	≤ 1 ≤ 3
Precision Backlash P1	arcmin	1 2	3-10 12-100	≤ 5 ≤ 7	≤ 5 ≤ 7	≤ 5 ≤ 7	≤ 3 ≤ 5
Standard Backlash P2	arcmin	1 2	3-10 12-100	≤ 7 ≤ 9	≤ 7 ≤ 9	≤ 7 ≤ 9	≤ 5 ≤ 7
Torsional Rigidity	N • m /arcmin	1,2	3-100	6	12	28	75
Max. Bending Moment M _{2kB} ¹	N • m	1,2	3-100	22.5	36	76	140
Max. Axial Load F _{2aB} ¹	N	1,2	3-100	465	635	1060	1580
Operating Temp.	°C		3-100	-10 °C ~ +90 °C			
Service Life	hr		3-100	20,000 (10,000/ Continuous operation)			
Efficiency	%	1 2	3-10 12-100	≥ 97% ≥ 94%			
Weight	kg	1 2	3-10 12-100	0.7 1.1	1.4 2.2/1.7	3.2 5.9/4.0	6.0 7.9
Mounting Position	-	1,2	3-100	Any direction			
Noise Level ²	dBA/1m	1,2	3-100	56	58	60	63
Protection Class	-	1,2	3-100	IP65			
Lubrication	-	1,2	3-100	Synthetic Lubricant			
Inertia(J1)							
Stage	Ratio	unit		PGF-42	PGF-60	PGF-90	PGF-115
1	3	Kg • cm ²		-	0.19	0.72	2.35
	4			0.02	0.18	0.67	1.66
	5			0.02	0.17	0.65	1.50
	7			0.02	0.14	0.60	1.45
	10			0.02	0.14	0.58	1.41
Stage	Ratio			PGF-42	PGF-60(T)	PGF-90(T)	PGF-115T
2	15/20/25			0.02	0.17(0.02)	0.65(0.17)	0.65
	30/35/40			0.02	0.14(0.02)	0.60(0.14)	0.60
	50/70/100			0.02	0.14(0.02)	0.58(0.14)	0.58

* 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.

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