PGE

PGE precision type planetary gear reducer series are offering 3 precision levels and 7 frame sizes to choose. They are ready for most industry and general servo motor motion control applications. Square mounting flange, caged precision class spur planetary gears in an in-line housing through sizes 220mm. High torque capacity, quiet operation with backlash as low as < 3 arc-min. Ratios 3:1 to 100:1.

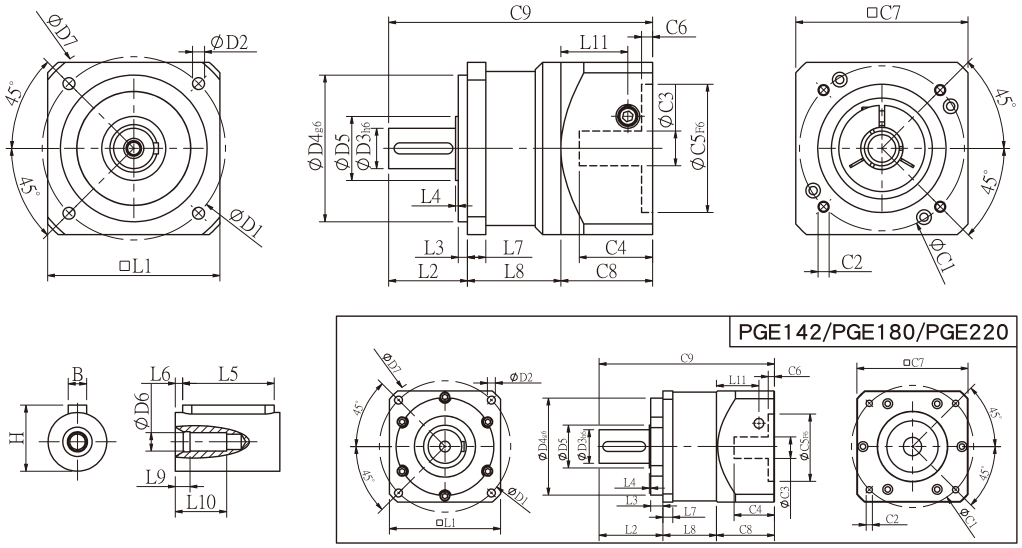


Frame Size (mm)	50, 70, 90, 120, 142, 180, 220
Ratio	3 : 1 - 100 : 1
Nominal Input Speed(rpm)	2,000 - 3,000
Max Input Speed(rpm)	4,000 - 6,000
Backlash(arc-min)	1 Stage : 3 - 12 2 Stages : 5 - 15
Noise Level(dBA / 1m)	60 - 75

Features

- ▶ In-line configuration with output shaft 13 mm through 75 mm diameter.
- ▶ Torque capacity range: 10 Nm through 1670 Nm.
- ▶ Caged planet carrier: with precision planet gear set.
- ▶ One-piece planet gears carrier & output shaft.
- ▶ High performance, efficiencies and low acoustics.
- ▶ Wide range of ratios: 5 single stage ratios and up to 9 two-stage ratios.
- ▶ Output bearings deliver radial load capacity as high as 13500 N, and axial capacities up to 7300 N.
- ▶ Square servo and step motor input: accommodates 50 mm through 220 mm, with optional sizes available.
- ▶ Service life lubricant.

PGE Single Stage Dimensions



Specifications

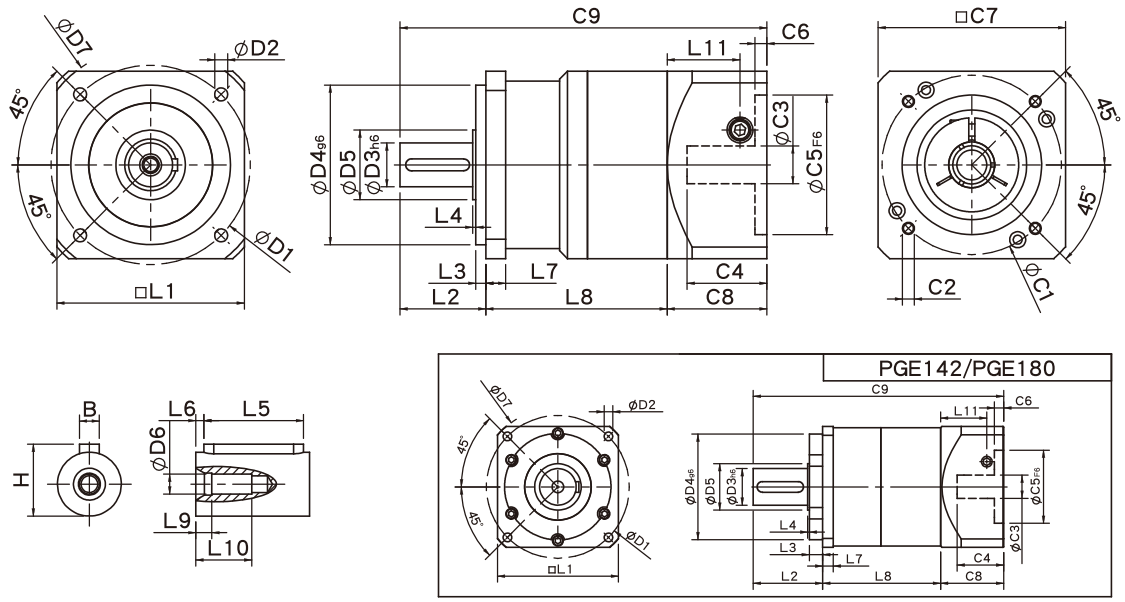
Unit:mm

Dimensions	PGE50	PGE70	PGE90	PGE120	PGE142	PGE180	PGE220
D1	50	70	100	130	165	215	250
D2	3.4	6	6.5	8.5	10.5	13	17
D3h6	13	16	22	32	40	55	75
D4g6	35	50	80	110	130	160	180
D5	15	25	35	45	50	70	90
D6	M4x0.7P	M5x0.8P	M8x1.25P	M12x1.75P	M16x2.0P	M20x2.5P	M20x2.5P
D7	64	90	120	152	186	239	292
L1	50	70	94	120	142	182	220
L2	24.5	37	43	60	93	104.5	138
L3	4	7	5	6	8	20	30
L4	1.5	1.5	1.5	3	6	2.5	3
L5	15	25	32	40	60	70	90
L6	2	2	3	5	5	6	7
L7	5	6	10	12	18	16	20
L8	30	36	51	61	79	87.5	117.5
L9	4	4	4.5	6	6	8	7
L10	14	16.5	20.2	30	38	48	42
L11	24.4	31.5	36.5	42	63	69.5	102.2
C1[2]	46	70	90	115	145	200	235
C2[2]	M4x0.7P	M5x0.8P	M6x1.0P	M8x1.25P	M8x1.25P	M12x1.75P	M12x1.75P
C3[2]	≦8	≦14	≦19/≦24	≦24/≦28	≦35	≦50	≦55
C4[2]	27	35	43	58	66	82	98
C5[2] F6	30	50	70	95	110	114.3	200
C6[2]	4	5	5	8	6	13	12
C7[2]	50	70	94	120	140	182	220
C8[2]	38.5	46	55	63	80	95	130
C9[2]	93	119	149	184	252	287	385.5
B	5	5	6	10	12	16	20
H	15	18	24.5	35	43	59	79.5

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

★ Specification subject to change without notice.

PGE Double Stage Dimensions-1



Specifications

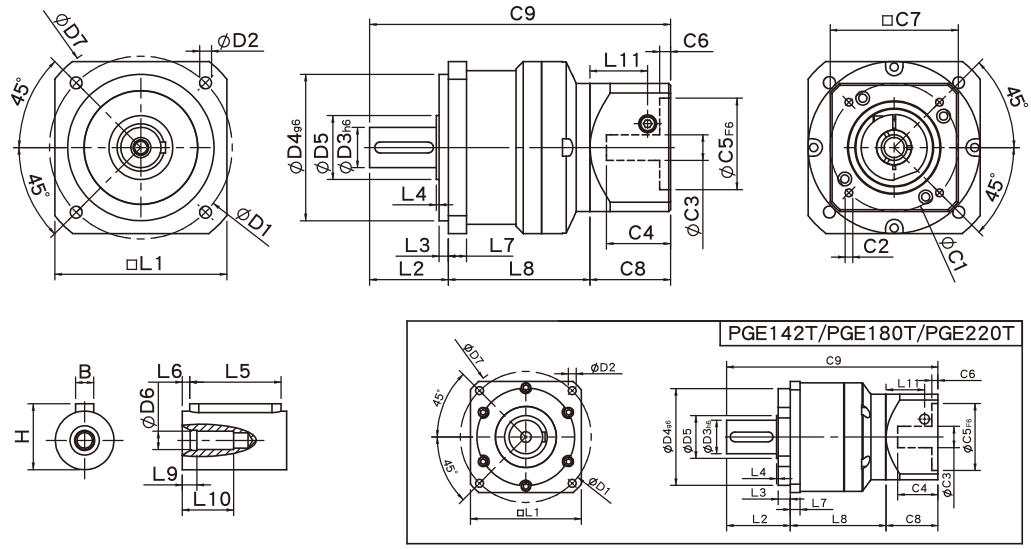
Unit:mm

Dimensions	PGE50	PGE70	PGE90	PGE120	PGE142	PGE180
D1	50	70	100	130	165	215
D2	3.4	6	6.5	8.5	10.5	13
D3h6	13	16	22	32	40	55
D4g6	35	50	80	110	130	160
D5	15	25	35	45	50	70
D6	M4x0.7P	M5x0.8P	M8x1.25P	M12x1.75P	M16x2.0P	M20x2.5P
D7	64	90	120	152	186	239
L1	50	70	94	120	142	182
L2	24.5	37	43	60	93	104.5
L3	4	7	5	6	8	20
L4	1.5	1.5	1.5	3	6	2.5
L5	15	25	32	40	60	70
L6	2	2	3	5	5	6
L7	5	6	10	12	18	16
L8	56	64	91	109	140	177.5
L9	4	4	4.5	6	6	8
L10	14	16.5	20.2	30	38	48
L11	24.4	31.5	36.5	42	63	69.5
C1 [2]	46	70	90	115	145	200
C2 [2]	M4x0.7P	M5x0.8P	M6x1.0P	M8x1.25P	M8x1.25P	M12x1.75P
C3 [2]	≦8	≦14	≦19/≦24	≦24/≦28	≦35	≦50
C4 [2]	27	35	43	58	66	82
C5 [2] F6	30	50	70	95	110	114.3
C6 [2]	4	5	5	8	6	13
C7 [2]	50	70	94	120	140	182
C8 [2]	38.5	46	55	63	80	95
C9 [2]	119	147	189	232	313	377
B	5	5	6	10	12	16
H	15	18	24.5	35	43	59

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

★ Specification subject to change without notice.

PGE Double Stage Dimensions-2



Specifications

Unit:mm

Dimensions	PGE70T	PGE90T	PGE120T	PGE142T	PGE180T	PGE220T
D1	70	100	130	165	215	250
D2	6	6.5	8.5	10.5	13	17
D3 h6	16	22	32	40	55	75
D4 g6	50	80	110	130	160	180
D5	25	35	45	50	70	90
D6	M5x0.8P	M8x1.25P	M12x1.75P	M16x2.0P	M20x2.5P	M20x2.5P
D7	90	120	152	186	239	292
L1	70	94	120	142	182	220
L2	37	43	60	93	104.5	138
L3	7	5	6	8	20	30
L4	1.5	1.5	3	6	2.5	3
L5	25	32	40	60	70	90
L6	2	3	5	5	6	7
L7	6	10	12	18	16	20
L8	58.8	77.5	99.4	127	157	199.5
L9	4	4.5	6	6	8	7
L10	16.5	20.5	30	38	48	42
L11	29	35.5	40.5	42	63	69.5
C1 2	66.67	70	90	115	145	200
C2 2	M5x0.8P	M5x0.8P	M6x1.0P	M8x1.25P	M8x1.25P	M12x1.75P
C3 2	≦8	≦14	≦19/≦24	≦24/≦28	≦35	≦50
C4 2	27	41	47.75	58	66	82
C5 2 F6	38.1	50	70	95	110	114.3
C6 2	4	8	6	8	6	13
C7 2	60	70	94	120	140	182
C8 2	38.5	50	55	63	80	95
C9 2	134.3	170.5	214.4	283	341.5	432.5
B	5	6	10	12	16	20
H	18	24.5	35	43	59	79.5

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

★ Specification subject to change without notice.

PGE Specifications

Specifications		Stage	Ratio	PGE-50	PGE-70	PGE-90	PGE-120	PGE-142	PGE-180	PGE-220
Nominal Output Torque T_{2N}	N • m	1	3	13.8	44.2	95.2	283	482	1151	1670
			4	11.9	35.9	74.6	249	490	1055	1574
			5	13.8	43.0	95.2	283	473	1151	1670
			7	11.9	36.0	85.6	219	400	1055	1574
			10	10.1	25.0	75.0	210	320	763	1184
		Stage	Ratio	PGE-50	PGE-70(T)	PGE-90(T)	PGE-120(T)	PGE-142(T)	PGE-180(T)	PGE-220T
		2	15	13.8	44.2	95.2	283	482	1151	1670
			20	11.9	35.9	74.6	249	490	1055	1574
			25	13.8	43.0	95.2	283	473	1151	1670
			30	13.8	43.0	95.2	283	473	1151	1670
			35	13.8	43.0	95.2	283	473	1151	1670
			40	13.8	43.0	95.2	283	473	1151	1670
			50	13.8	43.0	95.2	283	473	1151	1670
			70	11.9	36.0	85.6	219	400	1055	1574
			100	10.1	25.0	75.0	210	320	763	1184
Emergency Stop Torque T_{2NOT}	N • m		3.0 Times of Nominal Output Torque) (* Max. Output Torque T_{2B} =60% of Nominal Output Torque)							
Nominal Input Speed n_{1N}	rpm	1,2	3-100	3000	3000	3000	2500	2000	2000	2000
Max. Input Speed n_{1max}	rpm	1,2	3-100	6000	6000	6000	5000	4000	4000	4000
Micro Backlash P0	arcmin	1 2	3-10 15-100	- -	- -	- -	≦3 ≦5	≦3 ≦5	≦3 ≦5	≦3 ≦5
Precision Backlash P1	arcmin	1 2	3-10 15-100	- -	≦6 ≦9	≦6 ≦9	≦5 ≦7	≦5 ≦7	≦5 ≦7	≦5 ≦7
Standard Backlash P2	arcmin	1 2	3-10 15-100	≦12 ≦15	≦9 ≦12	≦9 ≦12	≦7 ≦9	≦7 ≦9	≦7 ≦9	≦7 ≦9
Torsional Rigidity	N • m /arcmin	1,2	3-100	1.0	2.8	7.5	15.5	30	57	110
Max. Radial Load F_{2rB} [1]	N	1,2	3-100	450	1200	2050	4250	7680	9080	13500
Max. Axial Load F_{2aB} [1]	N	1,2	3-100	320	900	1420	2930	4680	5100	7300
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	≧ 96% ≧ 92%						
Weight	kg	1 2	3-10 12-100	0.7 0.9	1.4 2.2/1.7	3.0 5.0/3.4	7.3 11.5/8.5	15.6 20.7/17.2	26 36/31	56 80/62
Mounting Position	-	1,2	3-100	Any Direction						
Noise Level [2]	dBA/1m	1,2	3-100	60	62	65	65	70	70	75
Protection Class	-	1,2	3-100	IP65						
Lubrication	-	1,2	3-100	Synthetic Lubricant						

Inertia(J1)

Stage	Ratio	unit	PGE-50	PGE-70	PGE-90	PGE-120	PGE-142	PGE-180	PGE-220
1	3	Kg • cm^2	0.03	0.20	0.81	2.20	7.89	25.2	77.9
	4		0.02	0.16	0.65	1.80	5.83	19.8	56.5
	5		0.02	0.15	0.62	1.61	5.38	18.3	53.3
	7		0.02	0.14	0.60	1.55	5.22	17.8	53.0
	10		0.02	0.14	0.60	1.53	5.20	17.6	52.9
Stage	Ratio		PGE-50	PGE-70(T)	PGE-90(T)	PGE-120(T)	PGE-142(T)	PGE-180(T)	PGE-220T
2	15/20/25		0.02	0.15(0.02)	0.62(0.15)	1.61(0.62)	5.38(1.61)	18.3(5.38)	53.9(18.3)
	30/35/40		0.02	0.14(0.02)	0.60(0.14)	1.55(0.60)	5.22(1.55)	17.8(5.22)	53.0(17.8)
	50/70/100		0.02	0.14(0.02)	0.60(0.14)	1.53(0.60)	5.20(1.53)	17.6(5.20)	52.9(17.6)

* 1. Applied to the output shaft center at 100 rpm.
* 2. Environment noise level 30 dB; distance 1m; measured under free loading with input speed 3000 rpm; ratio = 10 (1-stage) or ratio = 100 (2-stage).
※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.