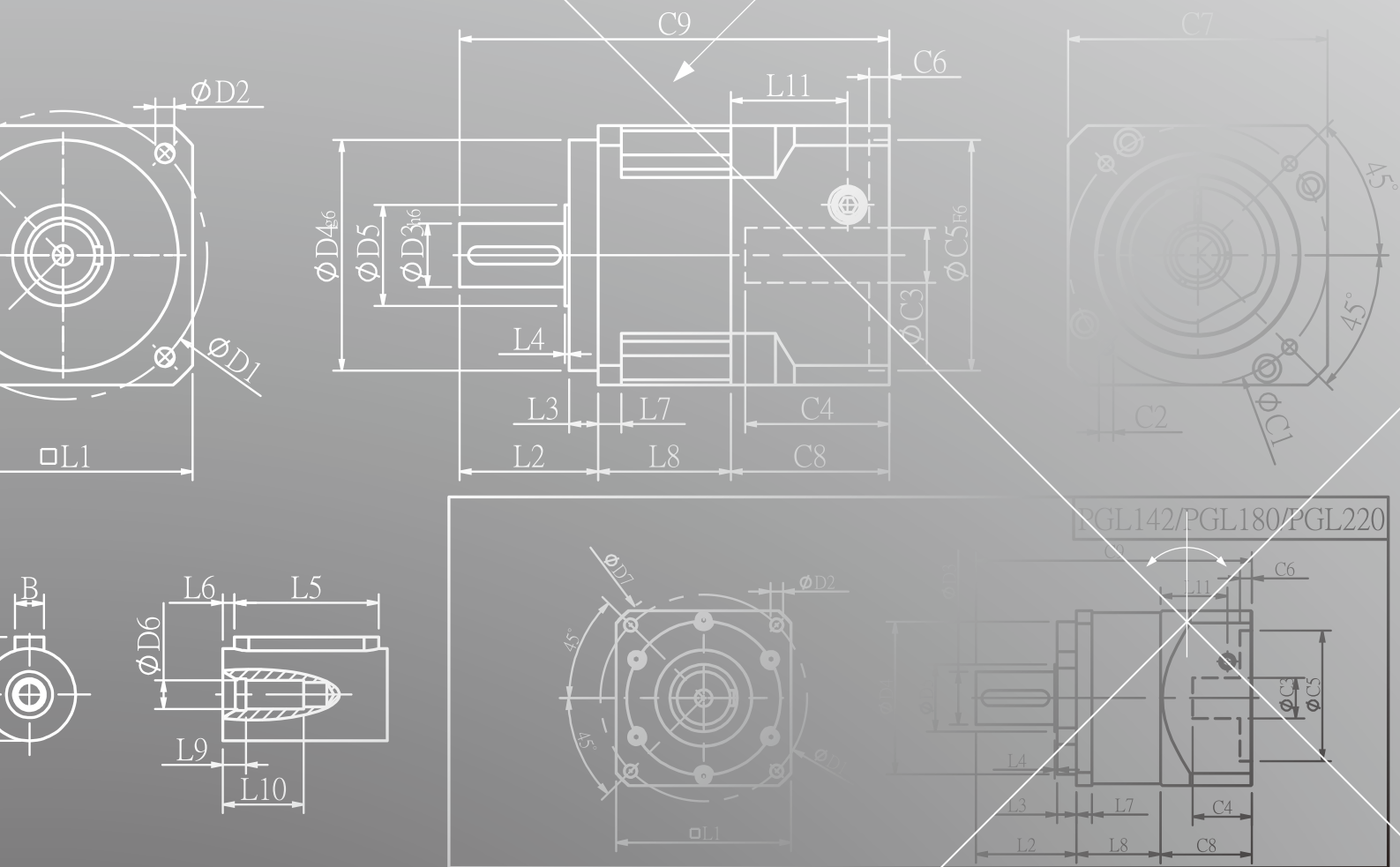
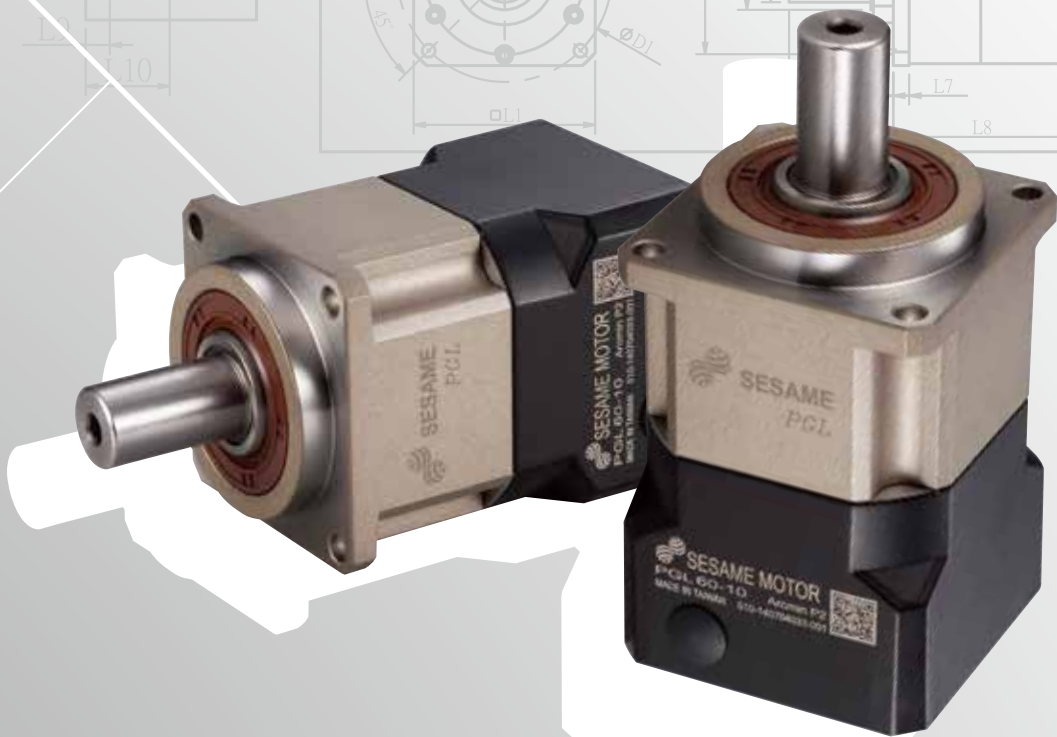
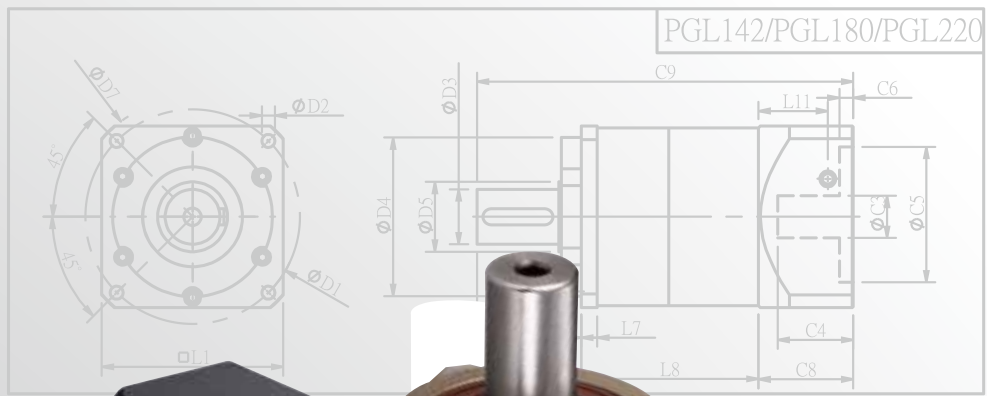
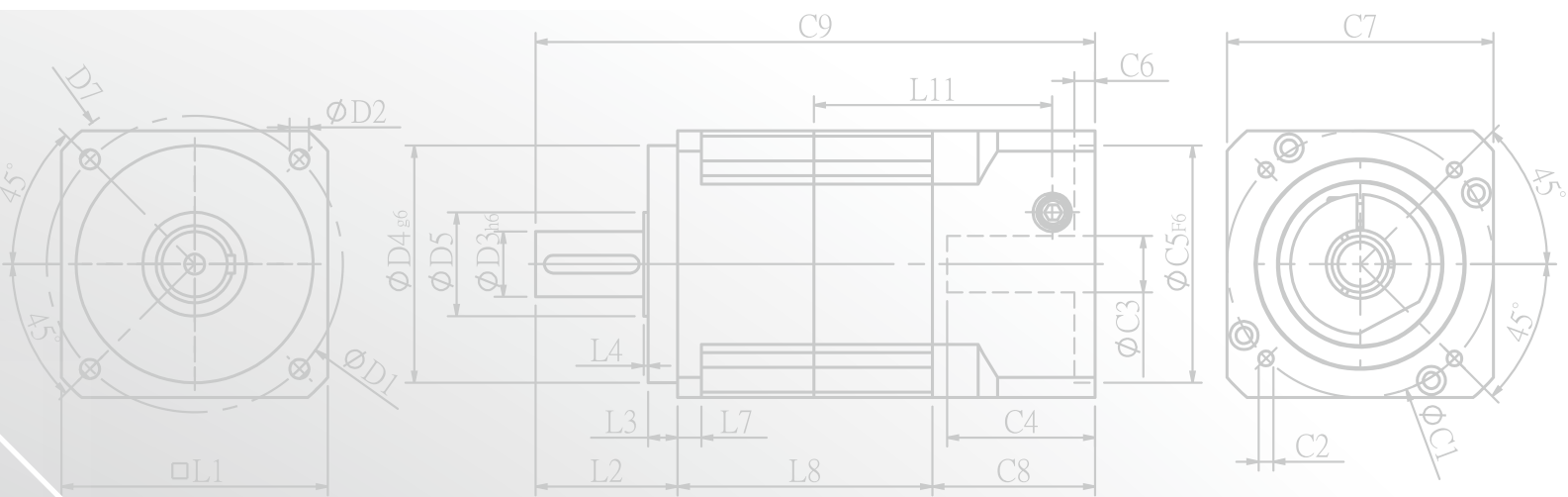


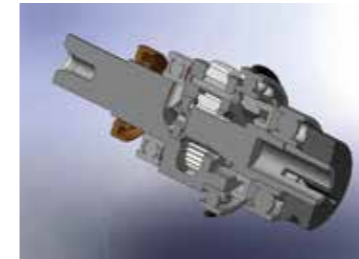
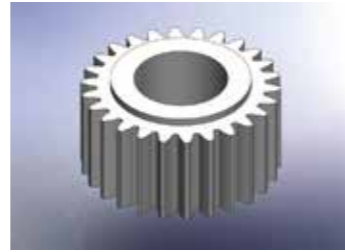
# PGL SERIES





PGL SERIES FEATURES

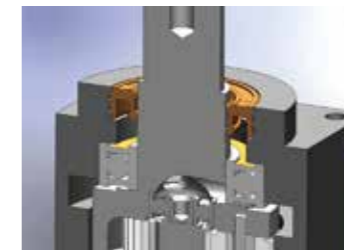
Alloy steel gear with unique heat treatment. Additionally, with gear grinding processing to get the best accuracy, high wear resistance and high impact toughness.



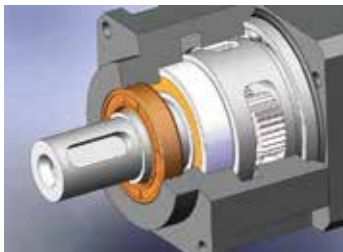
The sun gear bearing is placed directly into the planetary arm bracket, the overall mechanical structure designed to ensure concentricity of the transmission components.



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.

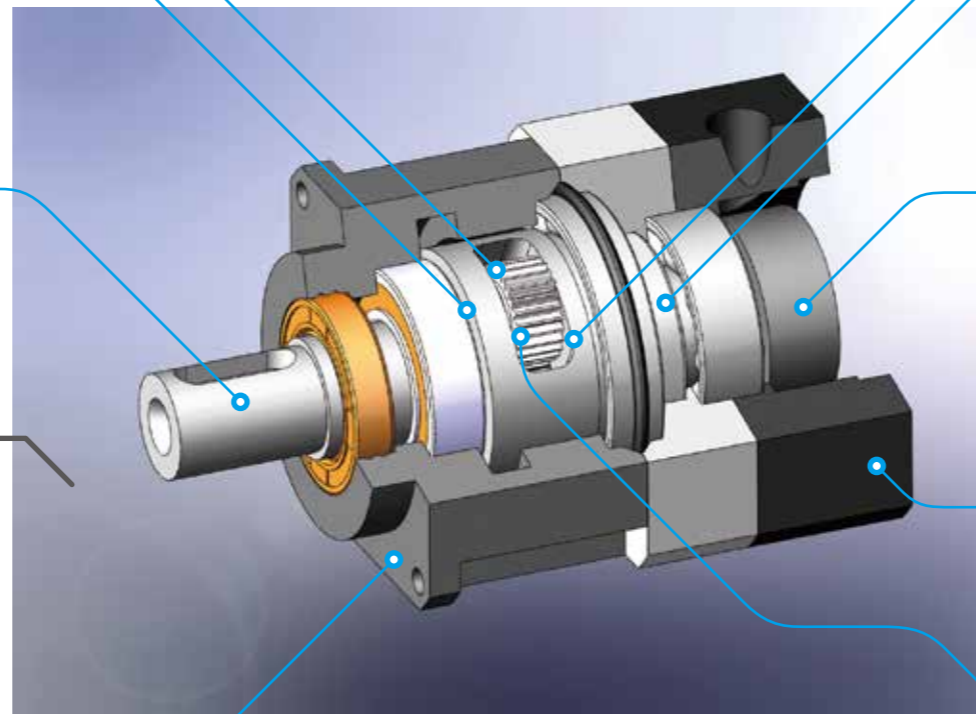


High-tech oil seal design on the upper lip guard against dust intruder, lower lip to guard against oil leak. Advanced lubricants grease and IP65 protection safeguards fully avoid leaking and given it maintenance-free.

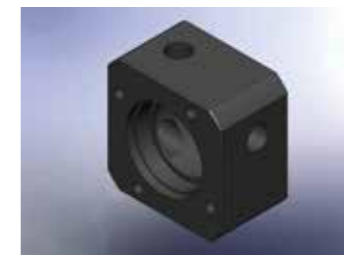


Grinding process to smooth surface of output shaft, and with oil-seal to minimum friction coefficient and reducing start up load; result in the best seal-ability and extended lifespan.

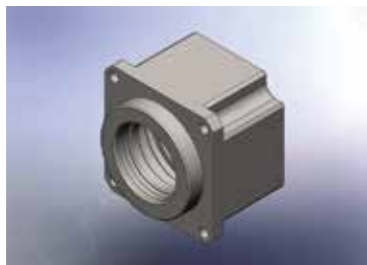
**PGL Series overall design suitable for combination operation with servo motor high-speed input and achieves maximum torque output. Precision gear design and gear processing, create a low backlash operation, high efficiency, low noise and long-life of the planetary gear.**



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.



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.

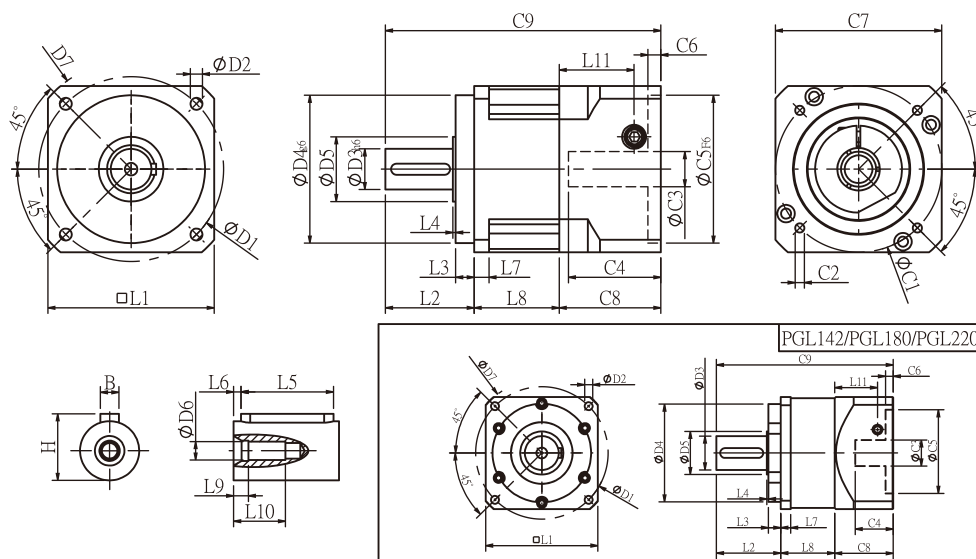


Planet gear transmission interface equipped with needle bearings, full needle roller bearings aligned without retainer achieve maximum exposure but smallest gap tolerances. Enhance over-all gear structure rigid and output torque.

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

PHL  
PHR  
PL  
PGH  
PUR  
PUL  
PGLH  
PGL  
PGC  
PGE  
PGRH  
PGR  
PGRF  
PGF  
PBC  
PBE  
PAE  
PAC  
PAN  
PGS  
PNS

## PGL Single Stage Dimensions



## Specifications

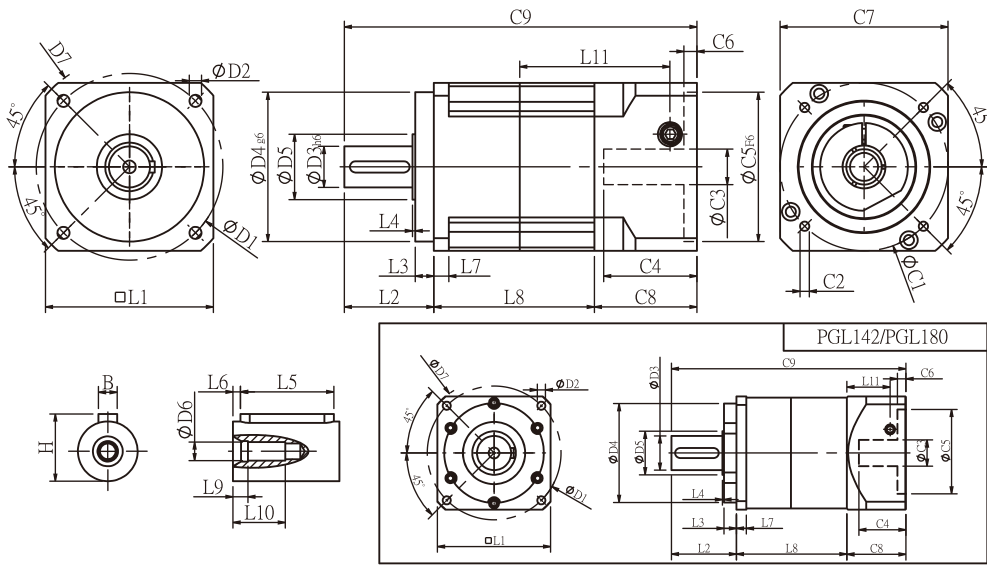
Unit:mm

Dimensions	PGL42	PGL60	PGL90	PGL115	PGL142	PGL180	PGL220
D1	50	70	100	130	165	215	250
D2	3.4	5.5	6.5	8.5	10.5	13	17
D3 h6	13	16	22	32	40	55	75
D4 g6	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	56	80	118	148	186	239	292
L1	42.6	60	90	115	142	182	220
L2	26	37	48	62	93	104.5	138
L3	5.5	7	10	8	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	4	6	8	12	18	16	20
L8	28.3	36	46	59	79	87.5	117.5
L9	4	4	4.5	6	6	8	7
L10	14	16.5	20.5	30	38	48	42
L11	29	35.5	40.5	42	63	69.5	102.2
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	≤14	≤19/≤24	≤24/≤28	≤35	≤50	≤55
C4 <sup>2</sup>	27	37	47	58	66	82	98
C5 <sup>2</sup> F6	30	50	70	95	110	114.3	200
C6 <sup>2</sup>	4	4	6	10	6	13	12
C7 <sup>2</sup>	42.6	60	90	115	140	182	220
C8 <sup>2</sup>	38.5	46	55	63	80	95	130
C9 <sup>2</sup>	92.8	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 the motor flange chosen.

★ Specification subject to change without notice.

## PGL Double Stage Dimensions-1



## Specifications

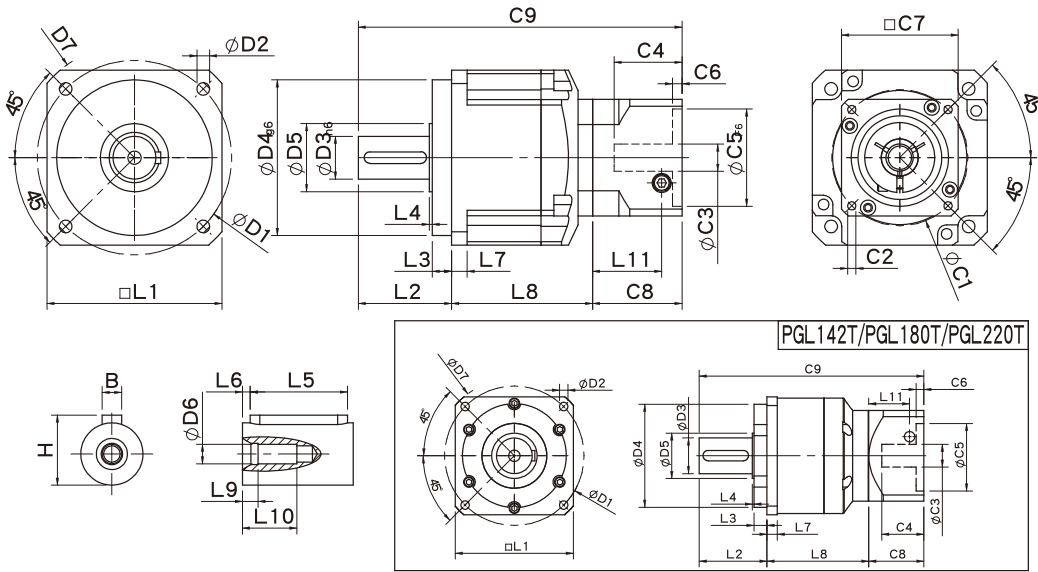
Unit:mm

Dimensions	PGL42	PGL60	PGL90	PGL115	PGL142	PGL180
D1	50	70	100	130	165	215
D2	3.4	5.5	6.5	8.5	10.5	13
D3 h6	13	16	22	32	40	55
D4 g6	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	56	80	118	148	186	239
L1	42.6	60	90	115	142	182
L2	26	37	48	62	93	104.5
L3	5.5	7	10	8	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	4	6	8	12	18	16
L8	54.3	64	86	107	140	177.5
L9	4	4	4.5	6	6	8
L10	14	16.5	20.5	30	38	48
L11	29	35.5	40.5	42	63	69.5
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	≤14	≤19/≤24	≤24/≤28	≤35	≤50
C4 <sup>2</sup>	27	37	47	58	66	82
C5 <sup>2</sup> F6	30	50	70	95	110	114.3
C6 <sup>2</sup>	4	4	6	10	6	13
C7 <sup>2</sup>	42.6	60	90	115	140	182
C8 <sup>2</sup>	38.5	46	55	63	80	95
C9 <sup>2</sup>	118.8	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 the motor flange chosen.

★ Specification subject to change without notice.

## PGL Double Stage Dimensions-2



## Specifications

Unit:mm

Dimensions	PGL60T	PGL90T	PGL115T	PGL142T	PGL180T	PGL220T
D1	70	100	130	165	215	250
D2	5.5	6.5	8.5	10.5	13	17
D3 <sub>h6</sub>	16	22	32	40	55	75
D4 <sub>g6</sub>	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	80	118	148	186	239	292
L1	60	90	115	142	182	220
L2	37	48	62	93	104.5	138
L3	7	10	8	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	8	12	18	16	20
L8	58.8	72.5	97.4	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 <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	≤14	≤19/≤24	≤24/≤28	≤35	≤50
C4 <sup>2</sup>	27	37	47	58	66	82
C5 <sup>2</sup> <sub>F6</sub>	30	50	70	95	110	114.3
C6 <sup>2</sup>	4	4	6	10	6	13
C7 <sup>2</sup>	42.6	60	90	115	140	182
C8 <sup>2</sup>	38.5	46	55	63	80	95
C9 <sup>2</sup>	134.3	166.5	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 the motor flange chosen.

★ Specification subject to change without notice.

## PGL Specifications Table

Specifications		Stage	Ratio	PGL-42	PGL-60	PGL-90	PGL-115	PGL-142	PGL-180	PGL-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	
			6	12.5	39.4	90.9	266	436	1055	1574	
			7	11.9	36.0	85.6	219	400	1055	1574	
			8	10.9	32.4	85.0	216	363	860	1184	
			9	9.8	28.7	80.0	210	320	764	1185	
			10	10.1	25.0	75.0	210	320	763	1184	
			Stage	Ratio	PGL-42	PGL-60 (T)	PGL-90(T)	PGL-115(T)	PGL-142(T)	PGL-180(T)	PGL-220 T
			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	
		45		13.8	43.0	95.2	283	473	1151	1670	
		50		13.8	43.0	95.2	283	473	990	1670	
		60		12.5	39.4	90.9	266	436	1055	1574	
		70		11.9	36.0	85.6	219	400	1055	1574	
		80	10.9	32.4	85.0	216	363	860	1184		
90	9.8	28.7	80.0	210	320	764	1185				
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 Emergency Stop 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	3-10	-	-	-	≤ 3	≤ 3	≤ 3	≤ 3	
		2	12-100	-	-	-	≤ 5	≤ 5	≤ 5	≤ 5	
Precision Backlash P1	arcmin	1	3-10	-	≤ 6	≤ 6	≤ 5	≤ 5	≤ 5	≤ 5	
		2	12-100	-	≤ 9	≤ 9	≤ 7	≤ 7	≤ 7	≤ 7	
Standard Backlash P2	arcmin	1	3-10	≤ 12	≤ 9	≤ 9	≤ 7	≤ 7	≤ 7	≤ 7	
		2	12-100	≤ 15	≤ 12	≤ 12	≤ 9	≤ 9	≤ 9	≤ 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	350	960	1630	3380	6150	7260	11120	
Max. Axial Load $F_{2aB}^1$	N	1,2	3-100	320	900	1420	2930	5510	5550	8560	
Operating Temp.	°C		3-100	-10 °C ~ +90 °C							
Service Life	hr		3-100	20,000 (10,000/Continuous operation)							
Efficiency	%	1	3-10	≥ 96%							
		2	12-100	≥ 92%							
Weight	kg	1	3-10	0.6	1.2	3.2	7.5	15.6	26	56	
		2	12-100	0.8	1.9/1.5	5.3/3.6	12/8.8	20.7/17.2	36/31	80/62	
Mounting Position	-	1,2	3-100	Any direction							
Noise Level <sup>2</sup>	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	PGL-42	PGL-60	PGL-90	PGL-115	PGL-142	PGL-180	PGL-220		
1	3	Kg • cm <sup>2</sup>	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		
	6/7/8		0.02	0.14	0.60	1.55	5.22	17.8	53.0		
	9/10		0.02	0.14	0.60	1.53	5.20	17.6	52.9		
Stage	Ratio		PGL-42	PGL-60(T)	PGL-90(T)	PGL-115(T)	PGL-142(T)	PGL-180(T)	PGL-220 T		
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)		
	45/50/60/70/80/90/100		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 @100rpm.  
\* 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.  
※ 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.