SESAME

Sesame Motor Corp., A leading brand in gear technology.

PLANETARY GEARHEADS

100%
Made in Taiwan

www.sesamemotor.com

SESAME

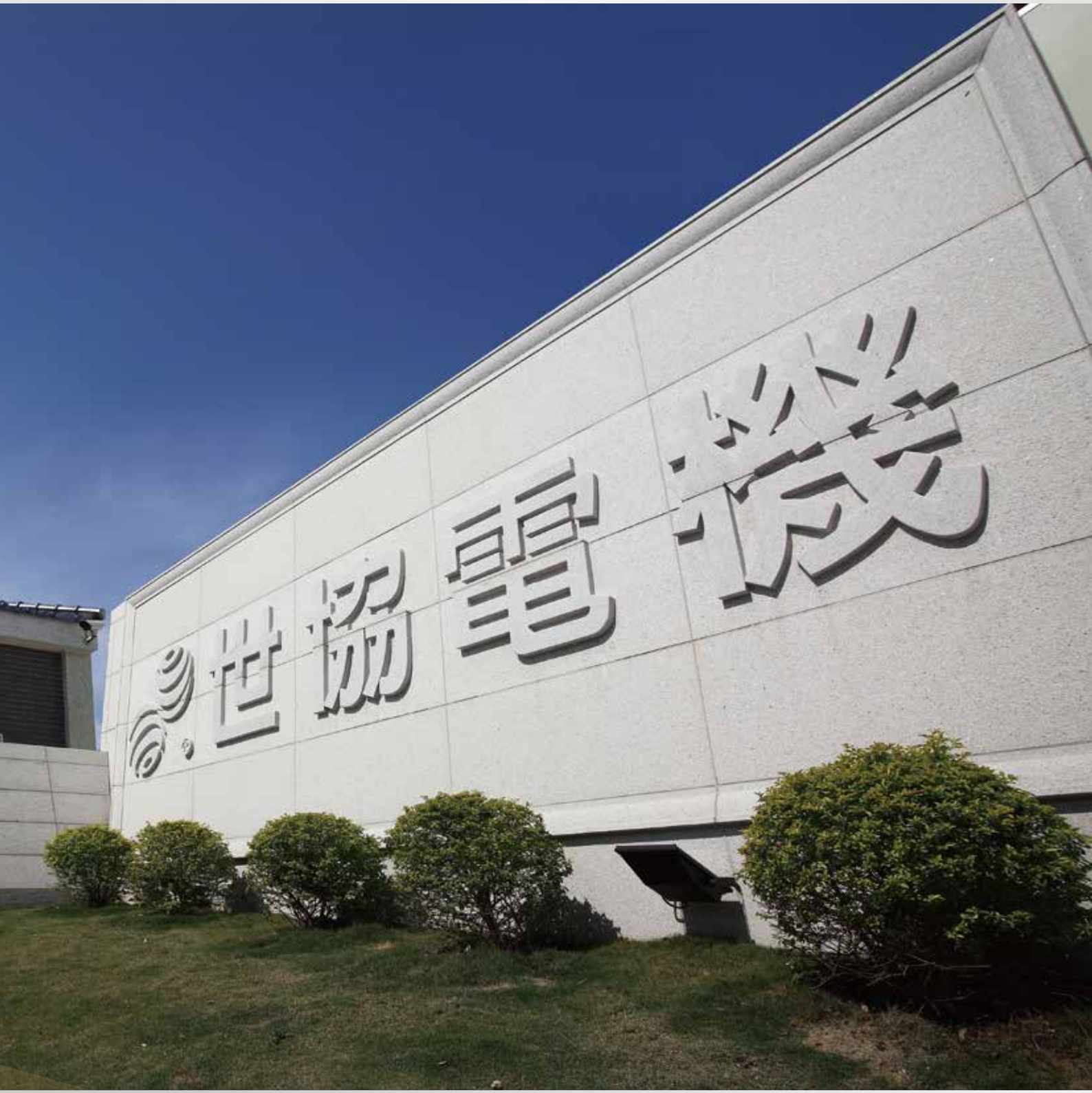


TABLE OF CONTENTS

Company Profile

Sesame Motor Corp., as a leading brand in Motor and gear reducer technology.
"SESAME MOTOR CORP." Founded in 1990, have more than 25 years of professional motor and gearbox manufacturing and sales experience. SESAME MOTOR's 7000 square meters factory locates at Sheng Kang. Adding modern workshop facilities with the effective integration of ERP systems, purchase new processing and testing equipment; as we continuously enhance key parts' productivity we had not only expending overall productivity, shorten delivery, and ensure products' quality do achieve customer satisfaction. SESAME MOTOR products have received unanimous praise.

Quality Policy :

"Honesty" , to provide integrity and pragmatic services
"Creativity" , to create customer competitive advantage
"Positivity" , positive support and responsibility
"Innovation" , moving forward of technical innovation

Environmental Policy :

Full participation to comply with eco-regulation
Prevent pollution; save energy and reduce waste
Keep improving and propagating Green Concept

"SESAME MOTOR" is built base on spirit of "customer satisfaction, priority service" philosophy, providing three privileges "best quality, fastest delivery, and best sale service". Our products have obtained high market share in Taiwan, that had lead "SESAME MOTOR" be a well-known brand. In addition to our official branch in Shanghai, we have agents in the Unite States, Germany, Denmark, Poland, UK, Turkey, Russia, Korea, Japan, China, Thailand, Malaysia and India.

"SESAME MOTOR" also has a professional R & D team and experienced production-related sectors; can provide high accuracy products for different customer needs; high-quality gear and the surrounding transmission components, develop and produce other kinds of gear; customized motor products, products with detailed-oriented, high precision,low noise, high efficiency, and good quality properties. Product development are aiming three directions "science and technology, environmental protection, and innovation". Product will be used in tool machines, industrial robots, semiconductor devices, aircraft industrial, medical and rehabilitation equipment, electric scooter, electric bike, auto storage devices, green energy-related industries, testing and food machinery, bakery equipment, packaging machinery, agricultural equipment and other sophisticated automation equipment.

Company Profile

"SESAME MOTOR" has been successively obtained CE,CCC,UL, ISO9001 and ISO14001 certification and honorary awards. As we continuously, progressively for created finest quality products; with "Honesty" for providing integrity and pragmatic service; with "Creativity" given customer "Positivity" to support & responsible for the efficiency of productivity; with "Innovation" on profession and knowledge of knowhow, by these four philosophy management, we aims to become the first market trend indicators. "SESAME MOTOR" strong operating team adhere to the blue ocean strategy of entering the international market and high-tech field, to create the future more professional, better quality of sustainable management systems, establishment of "a combination of leading technology and brand reputation" for competitive advantage.

Trade Mark & Certification

CE Certification

UL Certification

ISO 9001:2008 ISO 14001:2004

China Compulsory Certification (CCC)

Planetary Gearhead
PHL Series
China SIPO Patent

ISO9001
Registration Number: 8580921716

ISO14001
Registration Number: 38E08580

ROHS
SESAME MOTOR CORP.

c UL us
Cert.No.E209009

The United States, European Union, China, Taiwan, Korea, Philippines, Vietnam, Malaysia, Singapore ...etc. trade mark certifications.

SESAME

Corporate Environment

SESAME

Corporate Environment

Production Line

Planetary Gearheads Production Line

Induction Motor and
Speed Reducer Production Line

Precision Gear Motor Production Line

Applications

Applications of Planetary Gearhead

Machine Tools

Metal Cutting Machines, Machining Centers, CNC Drilling Machines, Lathes and Turning Machines, Milling and Boring Machines, Grinding Machines, Drilling Machines, Planning Machines, Metal Forming Machine Tools,
Presses, Tube and Wire Processing Machines.

Industry Machinery

Packaging Machinery, Food and Beverage Processing Machinery, Bakery Equipment, Agricultural Machinery,
Textile Machinery,, Shoemaking Machinery, Wood Working Machinery, Printing Machinery, Plastic processing
Machinery, laser Cutting and welding Machines.

Automation Equipment

Industrial Robots, Semiconductor Devices, Automatic Storage System,
Surface Treatment Equipments.

Aerospace Industry

Medical and Rehabilitation Equipment

Electric Scooter

Green Energy-Related Industries

Testing Devices

Automation and Precise Positioning Equipment with Servo Motors

PLANETARY GEARHEADS SERIES LINEUP

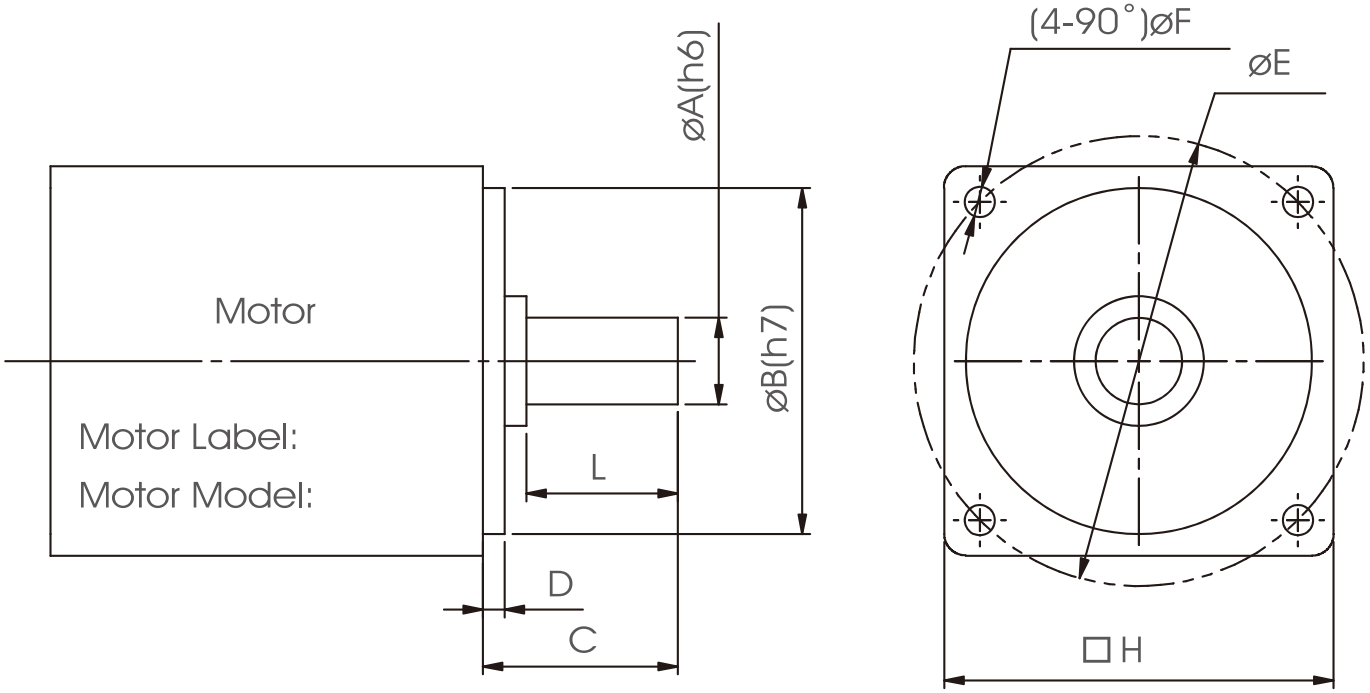
	Output Shaft	Output Flange	Right Angle
Premium Type (Helical Gear)	 PHL Series High Precision  PGH Series High Performance  PUL Series High Radial Load	 PHF Series	 PHFR Series  PUR Series
Precision Type (Helical Gear)	 PGLH Series	 PGF Series	 PGFR Series  PGRH Series
Precision Type (Spur Gear)	 PGL Series  PGC Series  PGE Series		 PGR Series
Standard Type (Spur Gear)	 PEL Series  PEC Series  PEE Series		
Primary Type (Spur Gear)	 PBC Series High Ratio (max. i=1000)  PBE Series High Ratio (max. i=1000)  PAE Series		

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

CODING SYSTEM

P	(Planetary)	
G	(Grade)	H: Premium Type Helical Series G: Precision Series E: Standard Series U: Heavy Duty Series B: Muti-Ratio Series T: Muti-Shafted Series
L	(Connection)	L: Square Housing with Flange C: Round Housing without Flange E: Round Housing with Flange R: Right Angle F: Plate Type H：Square Flange Helical Gear (Square Flange Helical Gear for G Grade (Precision Series) Only) LH: Square Flange Helical Gear RH: Right Angle Helical Gear FR: Output Flange Right Angle Type
60	(Size)	42:□42 60:□60 90:□90 115:□115 142:□142 180:□180 220:□220
I		
30	(Speed Reduction Ratio)	Single Stage:3,4,5,6,7,8,9,10 Double Stage:12,15,20,25,30,35,40,45,50,60,70,80,90,100 Muti-Stage: 125~1000
I		
P1	(Backlash)	P0: Micro Backlash P1: Precision Backlash P2: Standard Backlash
I		
Y	(Customer Specification)	
I		
MOTOR	(Motor Model)	

FILL IN DATA OF MOTOR



SPECIFICATIONS

Motor Shaft Dia.	Flange Dia.	Motor Shaft Length	Flange Height	P.C.D of Bore	Bore Dia.	Motor Flange Square	Actual Length of Motor Shaft	Backlash
øA(h6)	øB(h7)	C	D	øE	øF	□H	L	P0/P1/P2

*Sesame Planetary Gearheads are produced under strickly exclusive pairing process to ensure accuracy and lifespan.

1.NOTE

1.1 Preparation before installation

- Please read this operation manual before using this gearbox. Any problems caused by inappropriate operation contrary with the manual, or damage caused by natural disasters, or restructure the gear-box without our permission, Sesame will not hold any responsibility nor will the gearbox be cover by warranty.

- Warranty start within one year after purchase the gearbox. Within warranty period, if gearbox damage is not caused by operation error nor by natural disaster, then please send back the gearbox, we should replace the damage.

- Installation, disassemble, maintenance on the gearbox, needed to be performing by trained technicians.

- According to the application and operation environment, the gearbox temperature might be raising after period of running. Please do not touch the gearbox directly during operation, or right off from operation.

- Do not touch any rotating components when the gearbox is running. Ensure that the plugs of the gearbox were inserted after installation.
  Avoid any small object fall into the gearbox.

- Handle the gearbox gently during installation, do not knock the gearbox by any tool, to avoid the influence of running accuracy.

- Do not disassemble or modify gearhbox to prevent injury or equipment damage .

- Synthetic lubricant is sealed in gear there is no need to change lubricant.

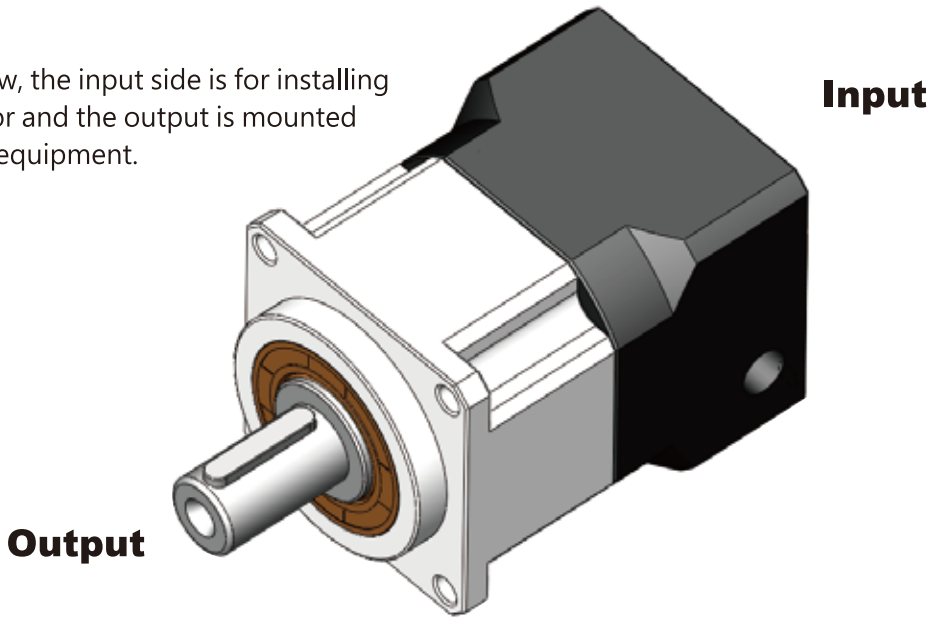
1.2 Installation environment limitation

Gearbox must be installed under following terms to prevent damages which are not covered by warranty.

- Gearbox is designed or manufactured, to be used in the other of mechanical equipment assembly.
- Operate temperature is between -10 ℃ to + 90 ℃.
- Operate altitude may not be higher than 1000m above sea-level
- Avoid continuity vibration or hit.
- Avoid Gearbox used in flammable gas or corrosion gas environment.
- Humidity: no more than 85%, in order to avoid condensation.
- Avoid direct sunlight, dust accumulation.
- Avoid water or oil splashed.
- Used in good ventilated place.

2.Gearbox Introduction

As shown below, the input side is for installing the servo motor and the output is mounted to application equipment.



To ensure the product performance, both the input and output ends must be protected carefully to avoid any damage and cause improper operation.

PLANETARY GEARBOX WITH MOTOR MOUNTING INSTRUCTIONS

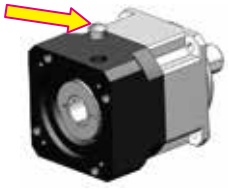
For General Type

1

Check the motor and gearbox size. Clean the mounting surface.

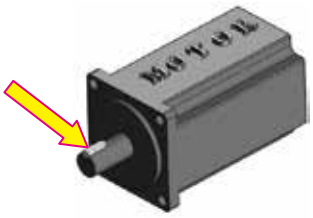
2

Take off the plug from the bracket. Revolve the set collar until the bolt is aligned with the hole.



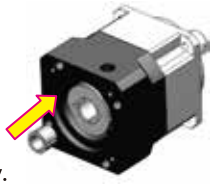
3

Remove the key from the motor shaft. Mounting the balance key if necessary.



4

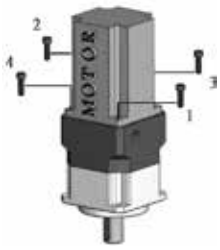
Make sure the motor shaft size. Choose the right bushing if necessary.



As installing on flatted shaft, be sure to align the collet gap over the flat and the set collar bolt perpendicular to the flat.

5

Tighten the mounting bolts in 1~4 order with torque wrench to 5% specified torque. (See Page 119.)



6

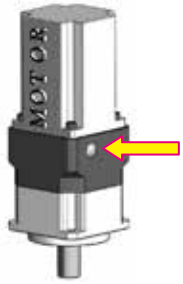
Install gearbox and motor vertically. Tighten the set collar bolt with torque wrench to specified toeque. (See Page 119.)

7

Tighten the mounting bolts in 1~4 order with torque wrench to specified torque. (See Page 119.)

8

Put the plug back.



For Hollow Spindle

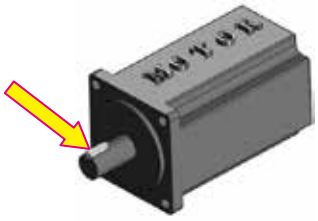
1

Check the motor and gearbox size. Clean the mounting surface.

2

Take off the plug from the adapter plate. Revolve the set collar until the bolt is aligned with the hole.

3



Remove the key from the motor shaft. Mounting the balance key if necessary.

4

Make sure the motor shaft size. Choose the right bushing if necessary.

As installing on flatted shaft, be sure to align the collet gap over the flat and the set collar bolt perpendicular to the flat.

5

Tighten the mounting bolts in 1~4 order with torque wrench to 5% specified torque. (See Page 119.)

6

Install gearbox and motor vertically. Tighten the set collar bolt with torque wrench to specified toeque. (See Page 119.)

7

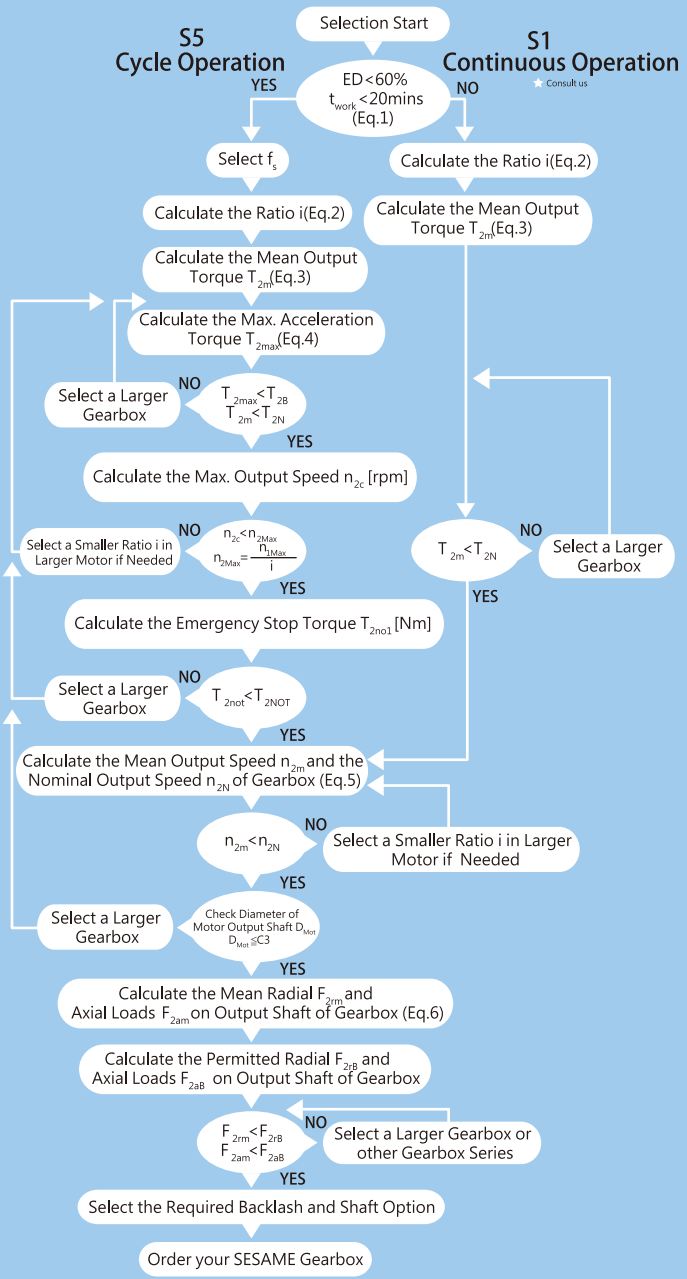
Tighten the mounting bolts in 1~4 order with torque wrench to specified torque. (See Page 119.)

8

Put the plug back.

SELECTION OF THE OPTIMUM GEARBOX

Selection of the Optimum Gearbox



Recommended (for S5 Cycle Operation)

The general design is given for

$$\frac{J_L}{i^2} \leqq 4 \times J_m$$

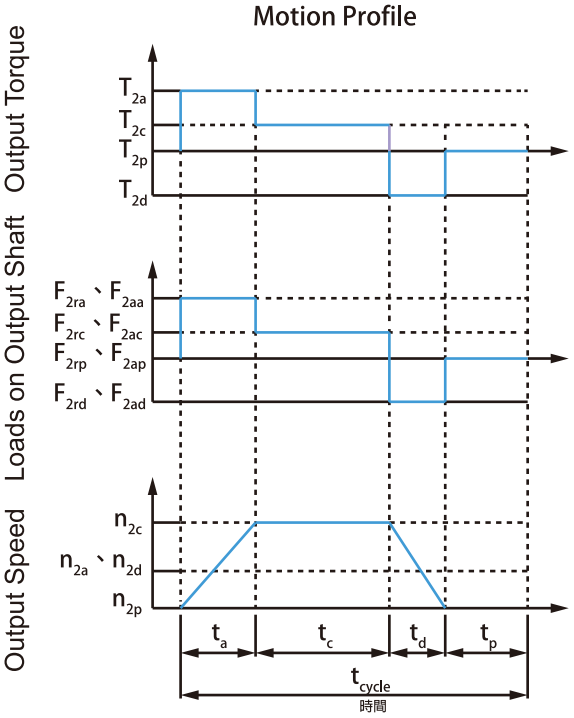
The optimal design is given for

$$\frac{J_L}{i^2} \backsimeq J_m$$

J_L Load Inertia

J_m Motor Inertia

Motion Profile



1. $ED = \frac{t_{work}}{t_{cycle}} \times 100\%, t_{work} = t_a + t_c + t_d$

Index：a. Acceleration, c. Constant,
d. Deceleration, p. Pause (Eq.1)

---

2. $i \cong \frac{n_m}{n_{work}}$

n_m Output Speed of the Motor
n_{work} Working Speed (Eq.2)

---

3. $T_{2m} = \sqrt[3]{\frac{n_{2a} \times t_a \times T_{2a}^3 \times n_{2c} \times t_c \times T_{2c}^3 + n_{2d} \times t_d \times T_{2d}^3}{n_{2a} \times t_a + n_{2c} \times t_c + n_{2d} \times t_d}}$ (Eq.3)

---

4. $T_{2max} = T_{mB} \times i \times f_s \times \eta$

Where f_s is

f_s	No. of Cycles / hr
1.0	0 ~ 1,000
1.1	1,000 ~ 1,500
1.3	1,500 ~ 2,000
1.6	2,000 ~ 3,000
1.8	3,000 ~ 5,000

T_{mB} Max. Output Torque of the Motor
η Efficiency of the Gearbox (Eq.4)

---

5. $n_{2a} = n_{2d} = \frac{1}{2} \times n_{2c}$

$$n_{2m} = \frac{n_{2a} \times t_a + n_{2c} \times t_c + n_{2d} \times t_d}{t_a + t_c + t_d}$$

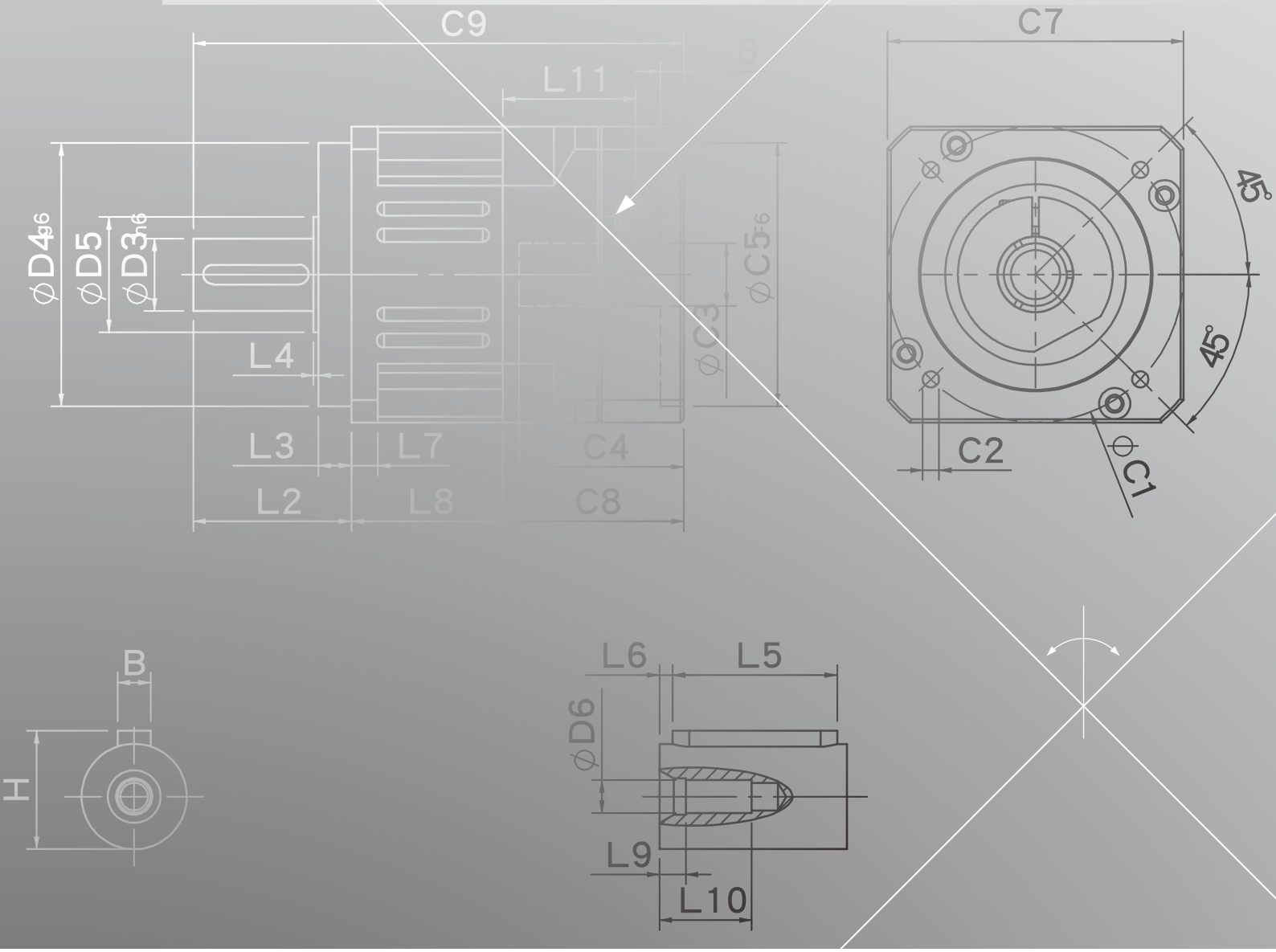
$$n_{2N} = \frac{n_{1N}}{i}$$ (Eq.5)

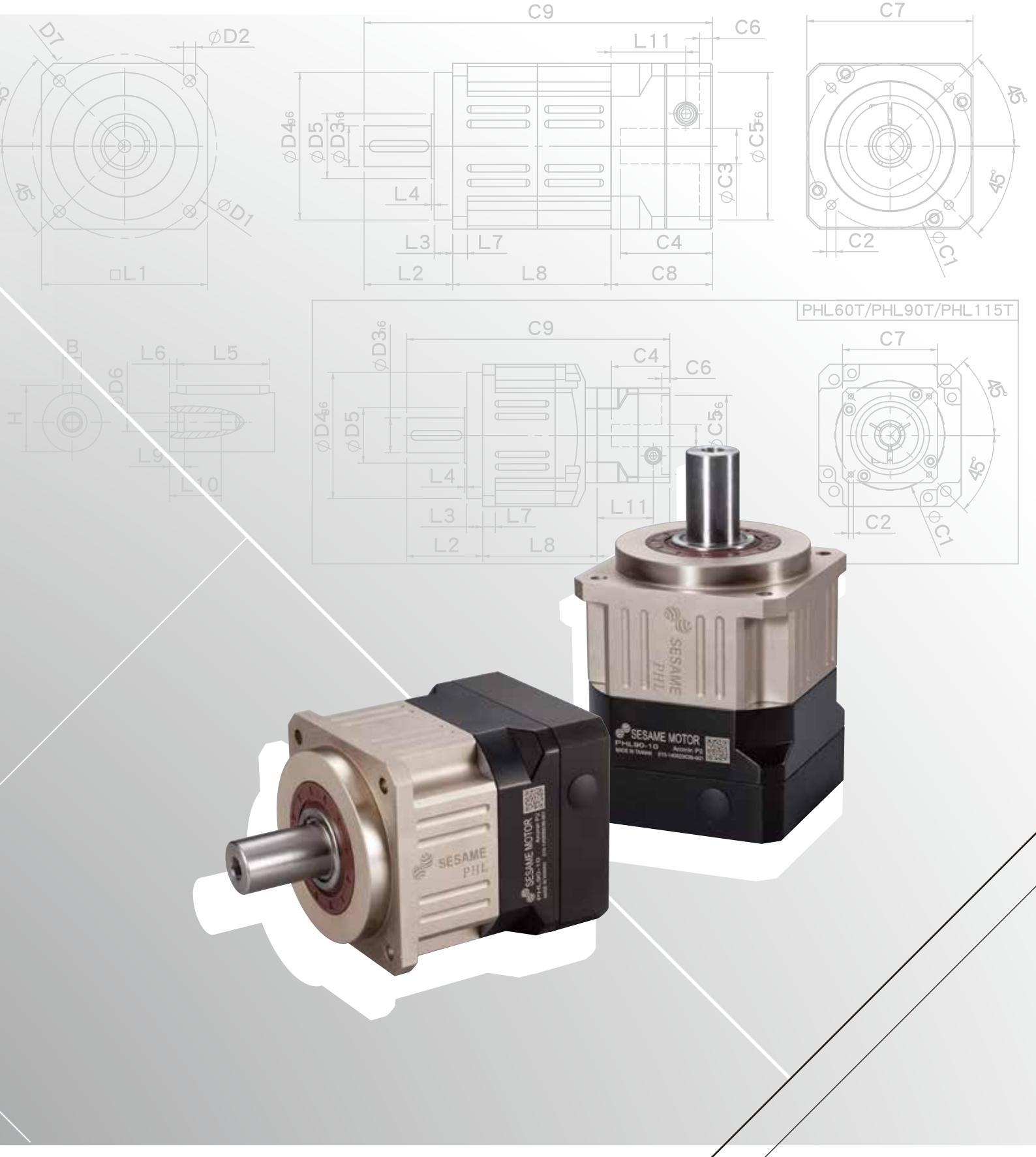
---

6. $F_{2rm} = \sqrt[3]{\frac{n_{2a} \times t_a \times F_{2ra}^3 \times n_{2c} \times t_c \times F_{2rc}^3 + n_{2d} \times t_d \times F_{2rd}^3}{n_{2a} \times t_a + n_{2c} \times t_c + n_{2d} \times t_d}}$

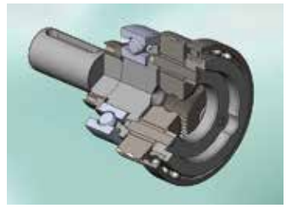
$F_{2am} = \sqrt[3]{\frac{n_{2a} \times t_a \times F_{2aa}^3 \times n_{2c} \times t_c \times F_{2ac}^3 + n_{2d} \times t_d \times F_{2ad}^3}{n_{2a} \times t_a + n_{2c} \times t_c + n_{2d} \times t_d}}$ (Eq.6)

PHL SERIES

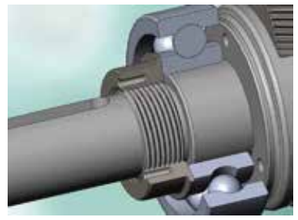

C9
L11
C7
45°
45°
ØD4
ØD5
ØD3
L4
L3
L7
C4
L2
L8
C8
ØC3
ØC5
C2
ØC1
B
H
L6
L5
ØD6
L9
L10


C9
C6
L11
C7
D7
ØD2
45°
ØD4
ØD5
ØD3
L4
ØC3
ØC5
45°
ØD1
L3
L7
C4
C2
ØC1
□L1
L2
L8
C8
PHL60T/PHL90T/PHL115T
B
L6
L5
D6
H
L9
L10
C9
C4
C6
ØD3
ØD4
ØD5
ØC5
L4
L11
L3
L7
L2
L8
C7
45°
45°
C2
ØC1
SESAME MOTOR
PHL90-10
SESAME
PHL

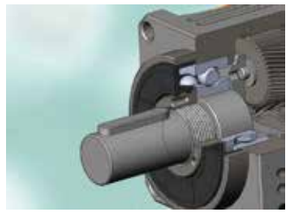
PHL SERIES FEATURES



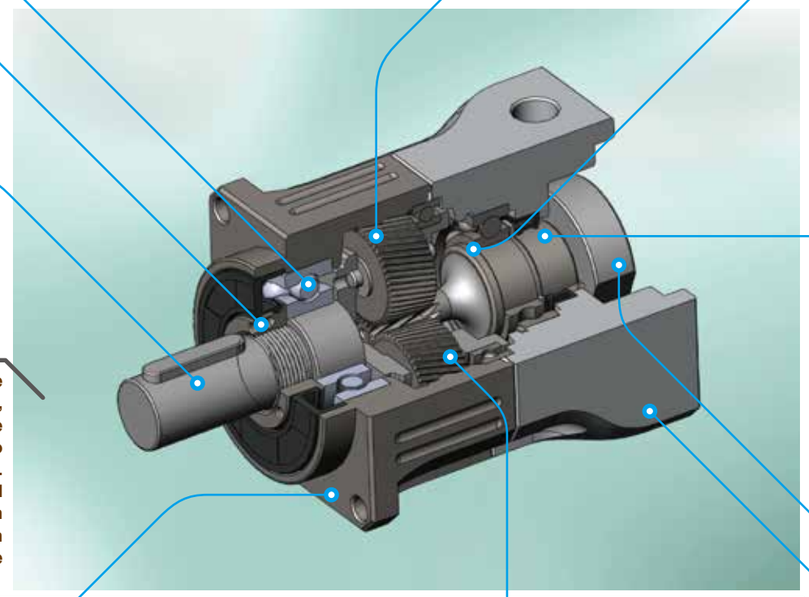
Planetary arm bracket and output shaft are one-piece constructed, setting bearing apart for larger span to reach the largest reverse rigid and contribute high axis radial load capacity.



Special locking mechanisms designed of the output shaft ensure its integration closely with positioning gear, power transmission efficiency, and eternal precision.

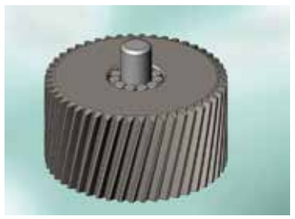


Grinding process to smooth surface of output shaft, and with oil-seal to minimum friction coefficient and reducing sart up load; result in the best seal-ability and extended lifespan.



PHL series helical gear design, enhance tooth engagement rate of 30% or more, special helix design, which reduces the axial thrust, allowing high-speed servo motor input, maximum torque output. Precison gear design and professional gear processing create a low backlash operation, high efficiency, smooth running , low noice and long life of the planetary gear.

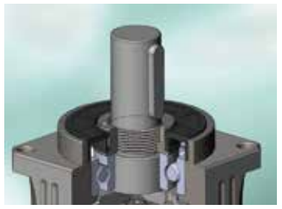
The gear box and internal gear ring are one-piece constructed, and then processed with advanced Germany gear shaper machinery for high-precision, high torque and abrade consumption.
Advanced electroless nickel plating surface treatment resists scratch and corrosion. Suitable for stringent require of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



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

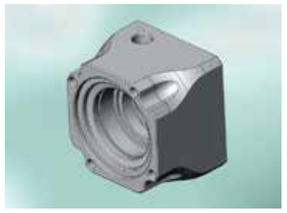
Planet gear transmission interface equipped with needle bearings, full needle roller bearings aligned without retainer achieve maximum exposure but smallest gap tolerances. Enhance over-all gear structure rigid and out put torque.

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



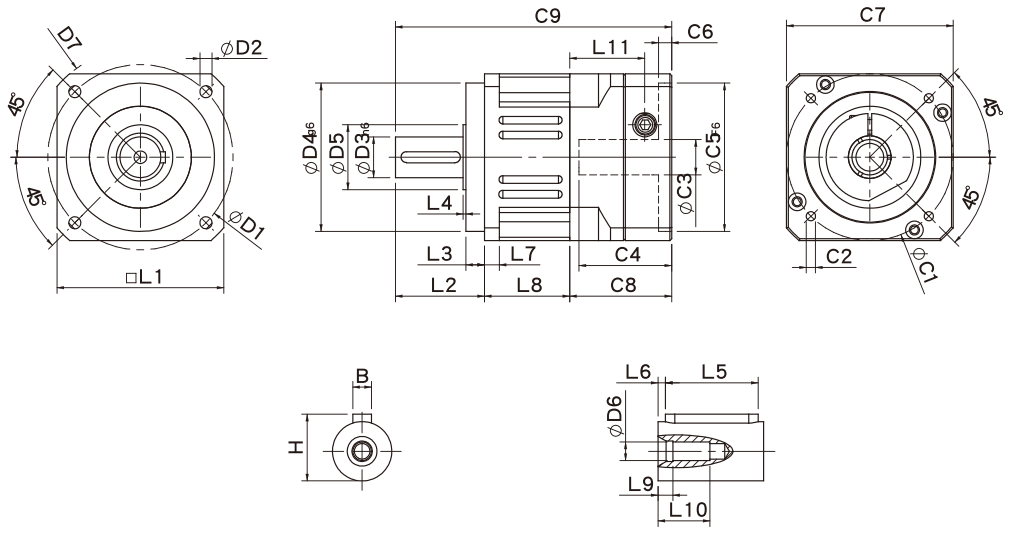
High-tech oil seal design on the upper lip guard against dust intruder, lower lip to guard against oil leak. Protection grade IP65 safeguards fully avoid leaking problem, and given it maintenance-free.

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.

PHL Single Stage Dimensions



Specifications

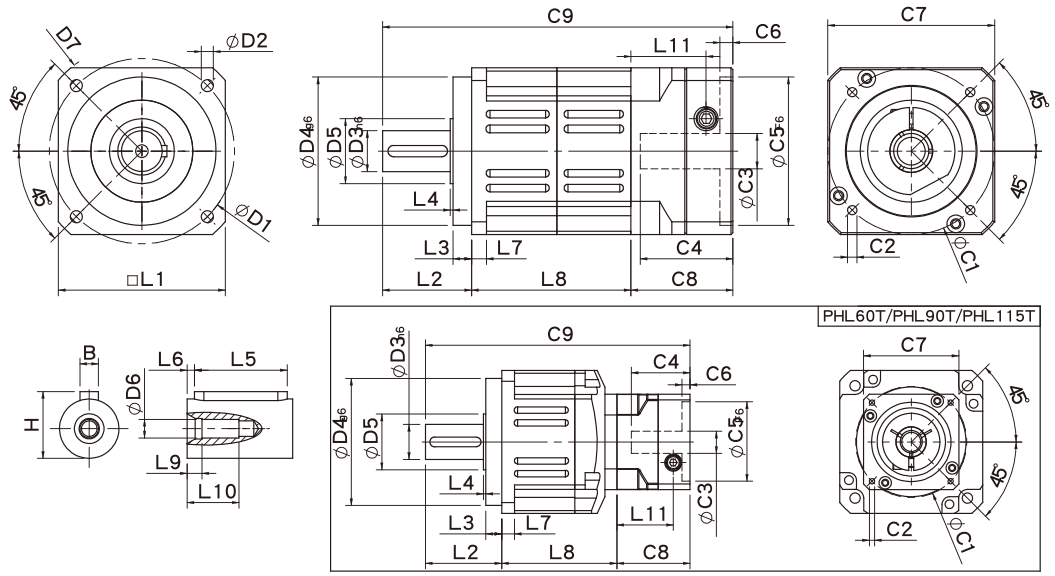
Unit:mm

Dimensions	PHL42	PHL60	PHL90
D1	50	70	100
D2	3.4	5.5	6.5
D3 h6	13	16	22
D4 g6	35	50	80
D5	15	25	35
D6	M4x0.7P	M5x0.8P	M8x1.25P
D7	56	80	118
L1	42.6	60	90
L2	26	37	48
L3	5.5	7	10
L4	1	1.5	1.5
L5	15	25	32
L6	2	2	3
L7	4	6	8
L8	28.3	37	46
L9	4	4	4.5
L10	14	16.5	20.5
L11	29	35.5	40.5
C1 [2]	46	70	90
C2 [2]	M4x0.7P	M5x0.8P	M6x1.0P
C3 [2]	≦8	≦14	≦19/≦24
C4 [2]	27	37	47
C5 [2] F6	30	50	70
C6 [2]	4	4	6
C7 [2]	42.6	60	90
C8 [2]	38.5	46	55
C9 [2]	92.8	120	149
B	5	5	6
H	15	18	24.5

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

★ Specification subject to change without notice.

PHL Double Stage Dimensions



Specifications

Unit:mm

Dimensions	PHL42	PHL60	PHL60T	PHL90	PHL90T
D1	50	70		100	
D2	3.4	5.5		6.5	
D3 h6	13	16		22	
D4 g6	35	50		80	
D5	15	25		35	
D6	M4x0.7P	M5x0.8P		M8x1.25P	
D7	56	80		118	
L1	42.6	60		90	
L2	26	37		48	
L3	5.5	7		10	
L4	1.5	1.5		1.5	
L5	15	25		32	
L6	2	2		3	
L7	4	6		8	
L8	55.3	70	65.5	86	78.5
L9	4	4		4.5	
L10	14	16.5		20.5	
L11	29	35.5	29	40.5	35.5
C1 [2]	46	70	46	90	70
C2 [2]	M4x0.7P	M5x0.8P	M5x0.8P	M6x1.0P	M5x0.8P
C3 [2]	≦8	≦14	≦8	≦19/≦24	≦14
C4 [2]	27	37	27	47	37
C5 [2] F6	30	50	30	70	50
C6 [2]	4	4	4	6	4
C7 [2]	42.6	60	42.6	90	60
C8 [2]	38.5	46	38.5	55	46
C9 [2]	119.8	153	141	189	172.5
B	5	5		6	
H	15	18		24.5	

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

★ Specification subject to change without notice.

PHL Specifications Table

Specifications		Stage	Ratio	PHL-42	PHL-60	PHL-90
Nominal Output Torque	N • m	1	3	19	53	145
			4	20	55	150
			5	17	54	140
			6	15	46	135
			7	14	44	125
			8	12	41	110
			9	11	37	95.0
			10	11	37	95.0
		Stage	Ratio	PHL-42	PHL-60(T)	PHL-90(T)
		2	15	19	53	145
			20	20	55	150
			25	17	54	140
			30	17	54	140
			35	17	54	140
			40	17	54	140
			45	17	54	140
			50	17	54	140
			60	15	46	135
			70	14	44	125
			80	12	41	110
			90	11	37	95
			100	11	37	95
Emergency Stop Torque	N • m		3.0 times of Nominal Output Torque (* Max. Output Torque T2B =60% of Emergency Stop Torque)			
Nominal Input Speed	rpm	1,2	3-100	5000	5000	4000
Max. Input Speed	rpm	1,2	3-100	10000	10000	8000
Micro Backlash P0	arcmin	1	3-10	≦1	≦1	≦1
		2	12-100	≦3	≦3	≦3
Precision Backlash P1	arcmin	1	3-10	≦3	≦3	≦3
		2	12-100	≦5	≦5	≦5
Standard Backlash P2	arcmin	1	3-10	≦5	≦5	≦5
		2	12-100	≦7	≦7	≦7
Torsional Rigidity	N • m /arcmin	1,2	3-100	2.5	6	12
Max. Radial Load	N • m	1,2	3-100	760	1570	2780
Max. Axial Load	N	1,2	3-100	410	750	1870
Operating Temp.	°C		3-100	-10 °C ~+90 °C		
Service Life	hr		3-100	20,000 (10,000/ Continuous operation)		
Efficiency	%	1	3-10	≧97%		
		2	12-100	≧94%		
Weight	kg	1	3-10	0.6	1.3	3.5
		2	12-100	0.9	2.0/1.6	5.6/3.9
Mounting Position	-	1,2	3-100	Any direction		
Noise Level [2]	dBA/1m	1,2	3-100	56	58	60
Protection Class	-	1,2	3-100	IP65		
Lubrication	-	1,2	3-100	Synthetic Lubricant		

Inertia(J1)

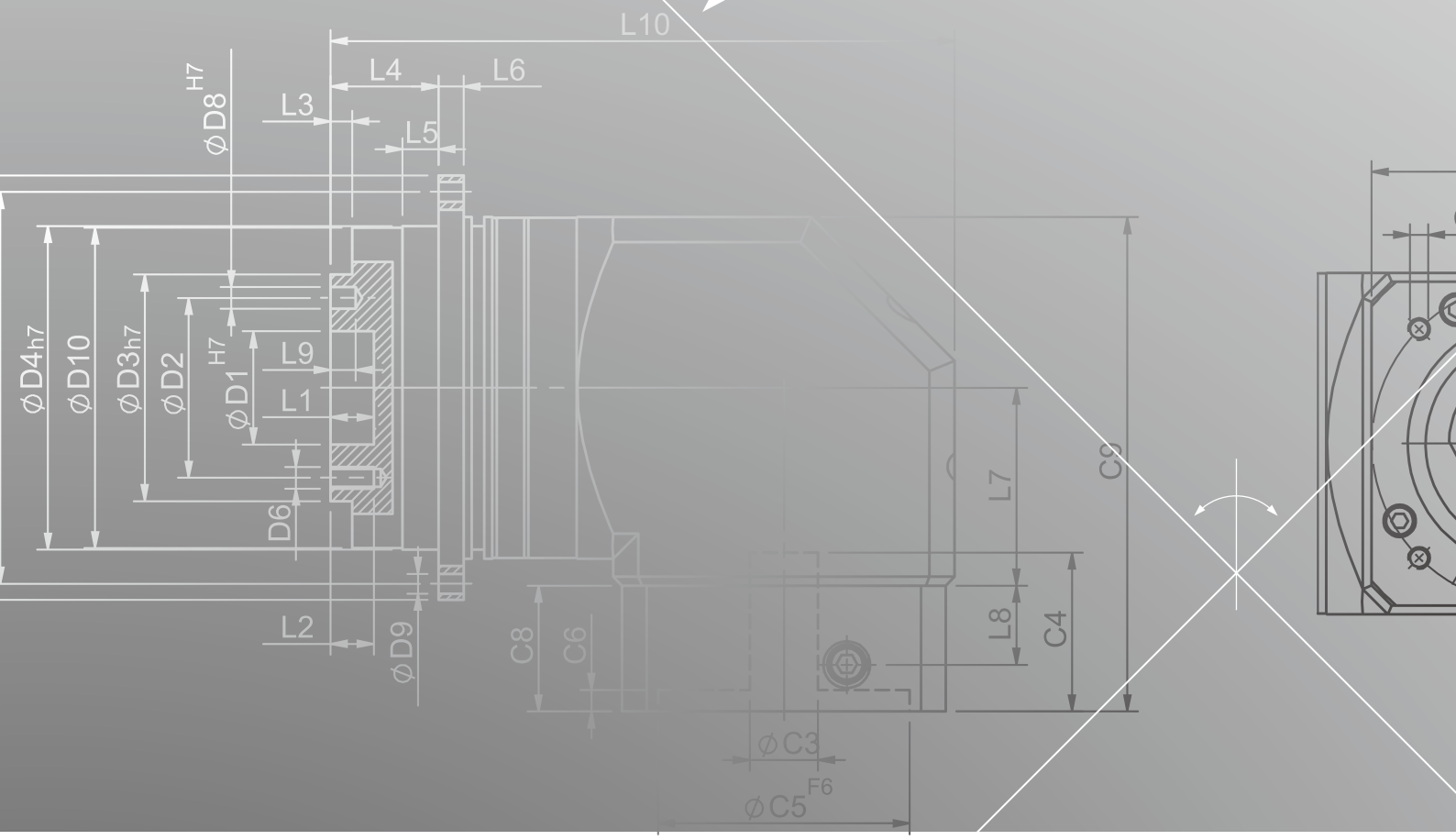
Stage	Ratio	unit	PHL-42	PHL-60	PHL-90
1	3	Kg • cm^2	0.03	0.23	0.97
	4		0.02	0.18	0.67
	5		0.02	0.17	0.65
	6/7/8		0.02	0.14	0.60
	9/10		0.03	0.14	0.58
Stage	Ratio		PHL-42	PHL-60(T)	PHL-90(T)
2	15/20/25		0.02	0.17(0.02)	0.65(0.17)
	30/35/40		0.02	0.14(0.02)	0.60(0.14)
	45/50/60/70/80/90/100		0.02	0.14(0.02)	0.58(0.14)

* 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.

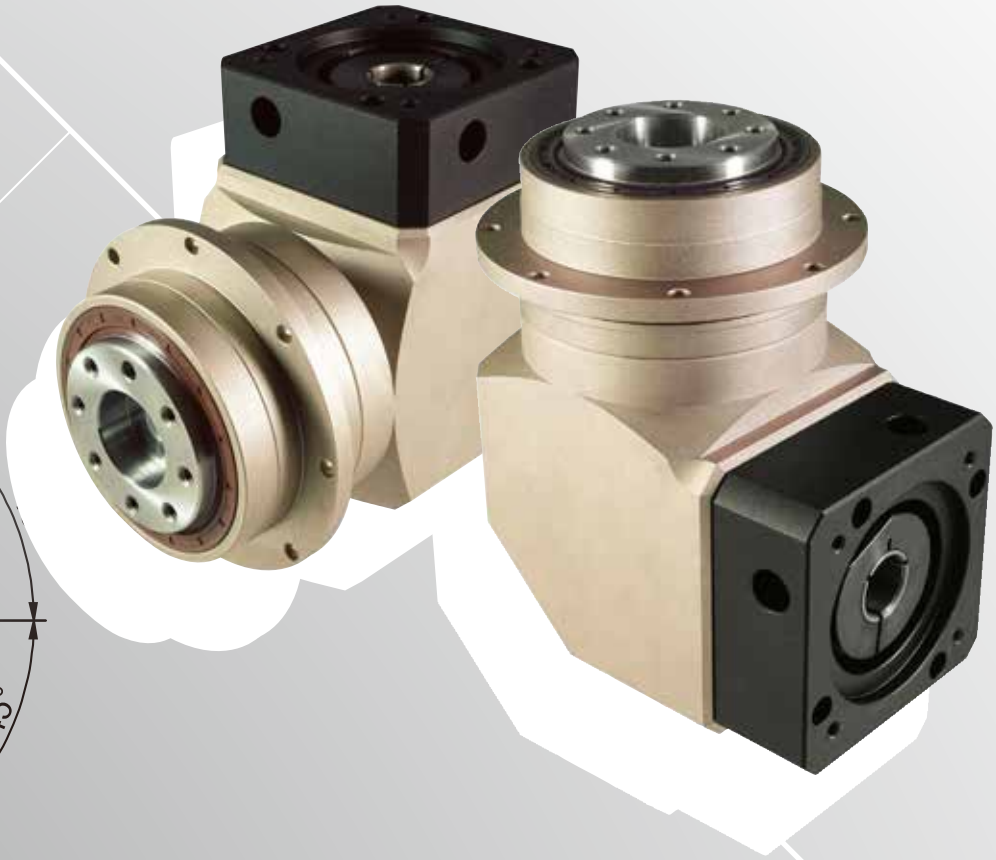

SESAME MOTOR
SESAME MOTOR
SESAME MOTOR

PHFR SERIES


L10
L4
L6
L3
L5
ØD8 H7
ØD4h7
ØD10
ØD3h7
ØD2
ØD1 H7
L9
L1
D6
L2
ØD9
C8
C6
L7
L8
C9
C4
ØC3
ØC5 F6

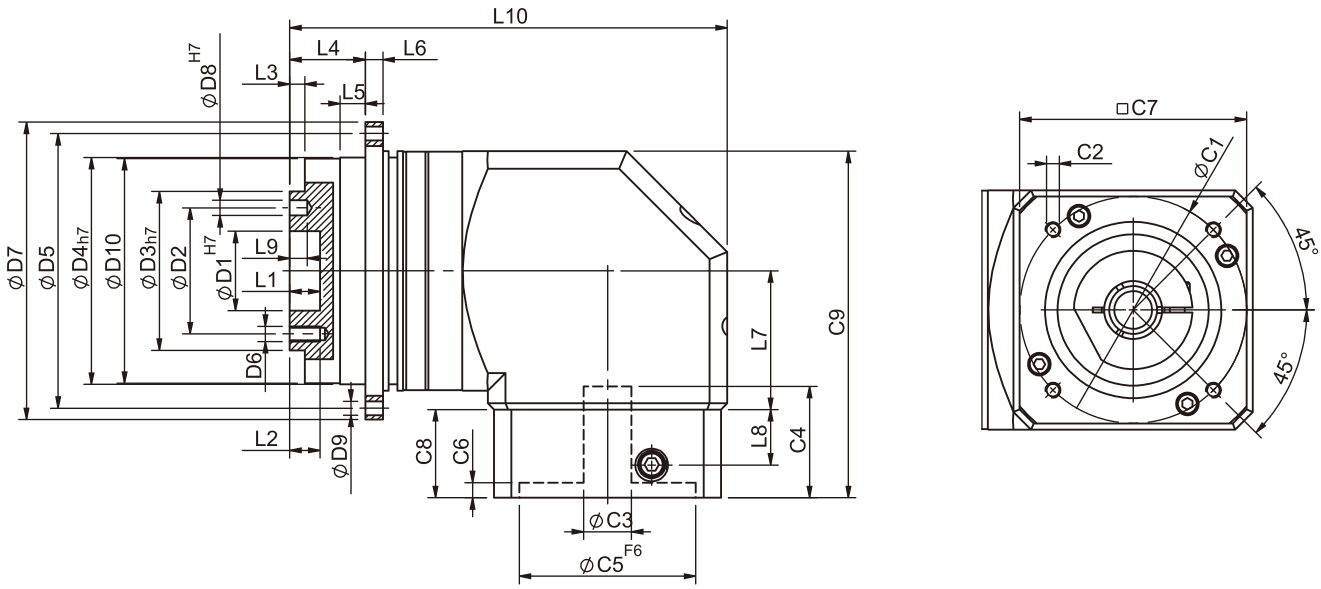
L10
L4
L6
L3
L5
ØD8 H7
ØD7
ØD5
ØD4h7
ØD10
ØD3h7
ØD2
ØD1 H7
L9
L1
D6
L2
ØD9
C9
L7
L8
C4
C8
C6
ØC3
ØC5 F6

□C7
C2
ØC1
45°
45°




□C7
C2
ØC1
45°

PHFR Single Stage Dimensions



Specifications

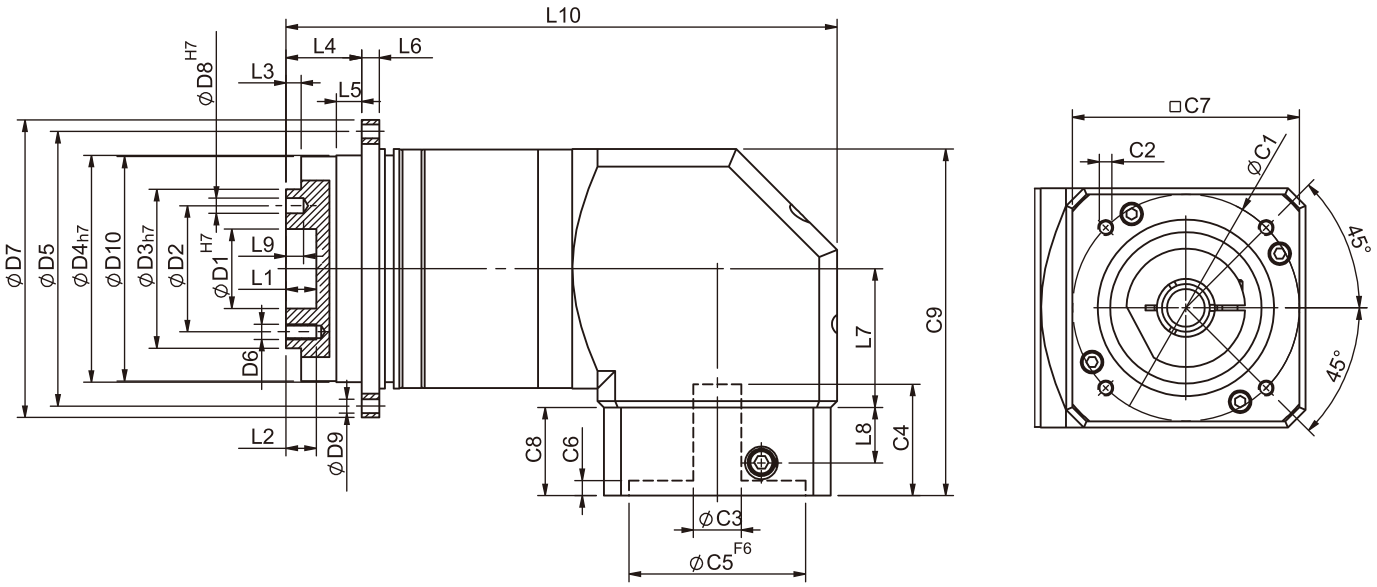
Unit:mm

Dimensions	PHFR42	PHFR60	PHFR90	PHFR115	PHFR142	PHFR200
D1 H7	-	-	31.5	-	-	-
D2	-	-	50	-	-	-
D3 h7	-	-	63	-	-	-
D4 h7	-	-	90	-	-	-
D5	-	-	109	-	-	-
D6	-	-	M6x1.0P	-	-	-
D7	-	-	118	-	-	-
D8 H7	-	-	6	-	-	-
D9	-	-	5.5	-	-	-
D10	-	-	89.2	-	-	-
L1	-	-	12	-	-	-
L2	-	-	12	-	-	-
L3	-	-	6	-	-	-
L4	-	-	30	-	-	-
L5	-	-	10	-	-	-
L6	-	-	7	-	-	-
L7	-	-	55	-	-	-
L8	-	-	22	-	-	-
L9	-	-	7	-	-	-
L10	-	-	173.6	-	-	-
C1 [2]	-	-	90	-	-	-
C2 [2]	-	-	M6x1.0P	-	-	-
C3 [2]	-	-	≦19/≦24	-	-	-
C4 [2]	-	-	44	-	-	-
C5 [2] F6	-	-	70	-	-	-
C6 [2]	-	-	5	-	-	-
C7 [2]	-	-	90	-	-	-
C8 [2]	-	-	35	-	-	-
C9 [2]	-	-	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

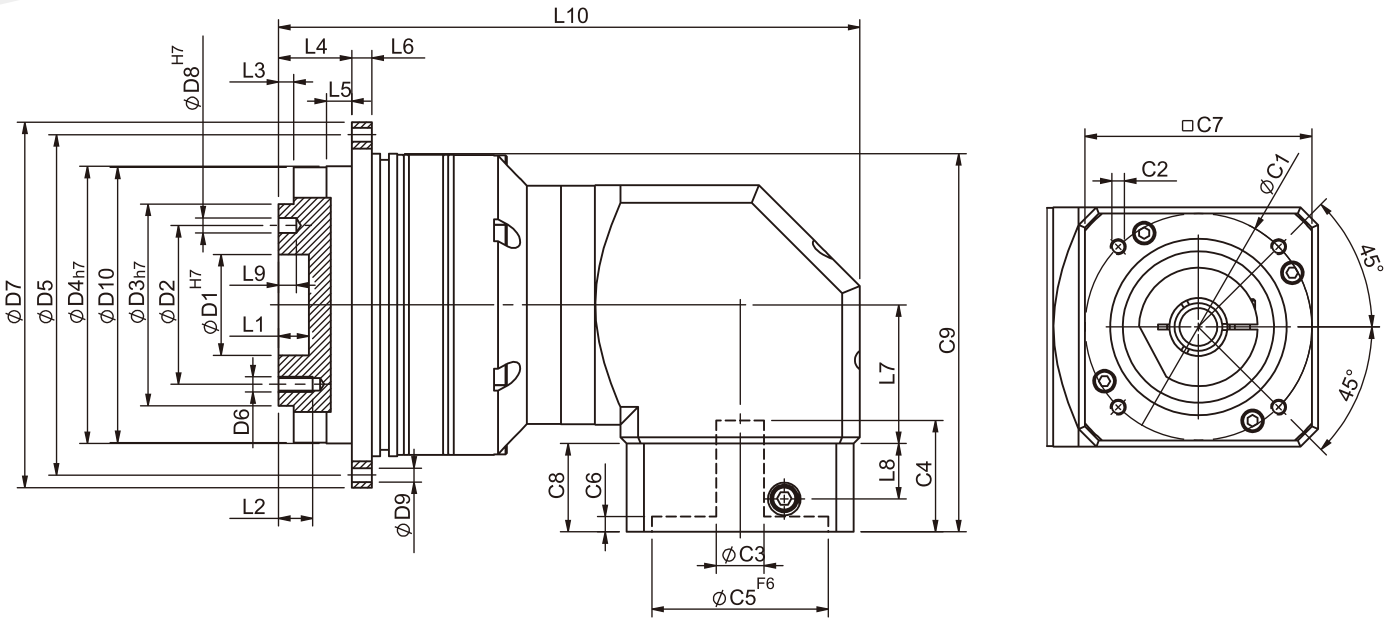
Unit:mm

Dimensions	PHFR42	PHFR60	PHFR90	PHFR115	PHFR142	PHFR200
D1 H7	-	-	31.5	-	-	-
D2	-	-	50	-	-	-
D3 h7	-	-	63	-	-	-
D4 h7	-	-	90	-	-	-
D5	-	-	109	-	-	-
D6	-	-	M6x1.0P	-	-	-
D7	-	-	118	-	-	-
D8 H7	-	-	6	-	-	-
D9	-	-	5.5	-	-	-
D10	-	-	89.2	-	-	-
L1	-	-	12	-	-	-
L2	-	-	12	-	-	-
L3	-	-	6	-	-	-
L4	-	-	30	-	-	-
L5	-	-	10	-	-	-
L6	-	-	7	-	-	-
L7	-	-	55	-	-	-
L8	-	-	22	-	-	-
L9	-	-	7	-	-	-
L10	-	-	218.6	-	-	-
C1 [2]	-	-	90	-	-	-
C2 [2]	-	-	M6x1.0P	-	-	-
C3 [2]	-	-	≦19/≦24	-	-	-
C4 [2]	-	-	44	-	-	-
C5 [2] F6	-	-	70	-	-	-
C6 [2]	-	-	5	-	-	-
C7 [2]	-	-	90	-	-	-
C8 [2]	-	-	35	-	-	-
C9 [2]	-	-	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

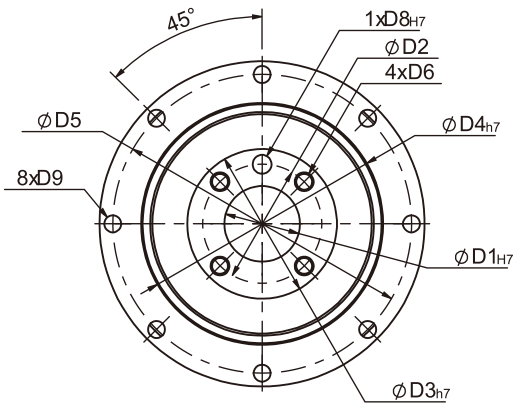
Dimensions	PHFR60T	PHFR90T	PHFR115T	PHFR142T	PHFR200T	PHFR255T
D1 H7	-	-	40	-	-	-
D2	-	-	63	-	-	-
D3 h7	-	-	80	-	-	-
D4 h7	-	-	110	-	-	-
D5	-	-	135	-	-	-
D6	-	-	M6x1.0P	-	-	-
D7	-	-	145	-	-	-
D8 H7	-	-	6	-	-	-
D9	-	-	5.5	-	-	-
D10	-	-	109.2	-	-	-
L1	-	-	12	-	-	-
L2	-	-	13.5	-	-	-
L3	-	-	6	-	-	-
L4	-	-	29	-	-	-
L5	-	-	10	-	-	-
L6	-	-	8	-	-	-
L7	-	-	55	-	-	-
L8	-	-	22	-	-	-
L9	-	-	7	-	-	-
L10	-	-	230.6	-	-	-
C1 [2]	-	-	90	-	-	-
C2 [2]	-	-	M6x1.0P	-	-	-
C3 [2]	-	-	≦19/≦24	-	-	-
C4 [2]	-	-	44	-	-	-
C5 [2] F6	-	-	70	-	-	-
C6 [2]	-	-	5	-	-	-
C7 [2]	-	-	90	-	-	-
C8 [2]	-	-	35	-	-	-
C9 [2]	-	-	150	-	-	-

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

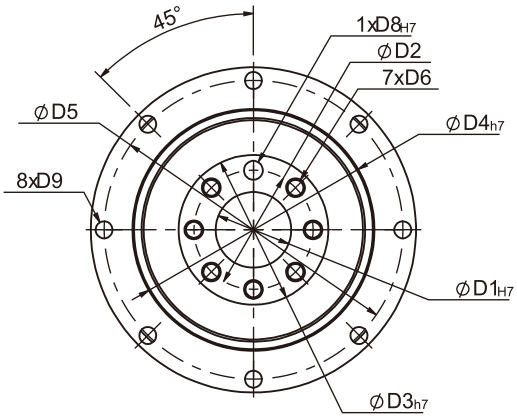
★ Specification subject to change without notice.

PHFR Flange Dimensions

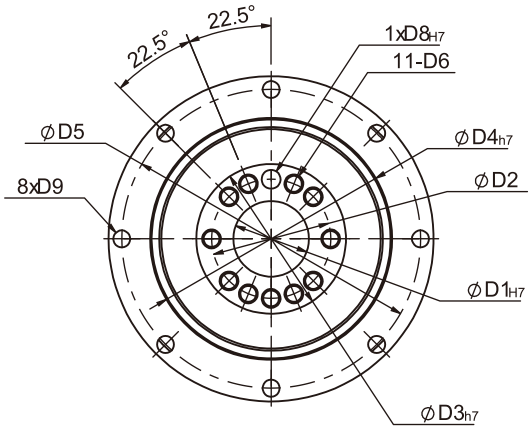
PHFR42



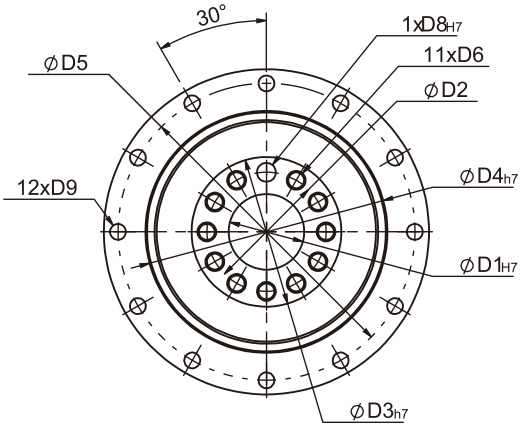
PHFR60
PHFR90



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	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	1900
			7	14	44	125	270	450	1100	1650
			10	11	37	95	220	360	900	1450
			14	14	44	125	270	450	1100	1650
			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	1100
			20	16	43	110	240	450	1100	1700
			25	17	50	130	290	530	1200	1900
			30	17	50	130	290	530	1200	1900
			35	17	50	130	290	530	1200	1900
			40	17	50	130	290	530	1200	1900
			50	17	50	130	290	530	1200	1900
			70	14	44	125	270	450	1100	1650
			100	11	37	95	220	360	900	1450
			140	14	44	125	270	450	1100	1650
			200	11	37	95	220	360	900	1450
Emergency Stop Torque	N • m		3.0 times of Nominal Output Torque (* Max. Output Torque T2B =60% of Emergency Stop Torque)							
Nominal Input Speed	rpm	1,2	3-200	5000	5000	4000	4000	3000	3000	2000
Max. Input Speed	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	3-100	6	12	28	75	130	400	920
Max. Bending Moment	N • m	1,2	3-100	43	125	260	503	1140	3430	6600
Max. Axial Load	N	1,2	3-100	1015	1340	2450	3890	8360	15500	28500
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	3.3/2.9	8.6/7.0	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(J1)

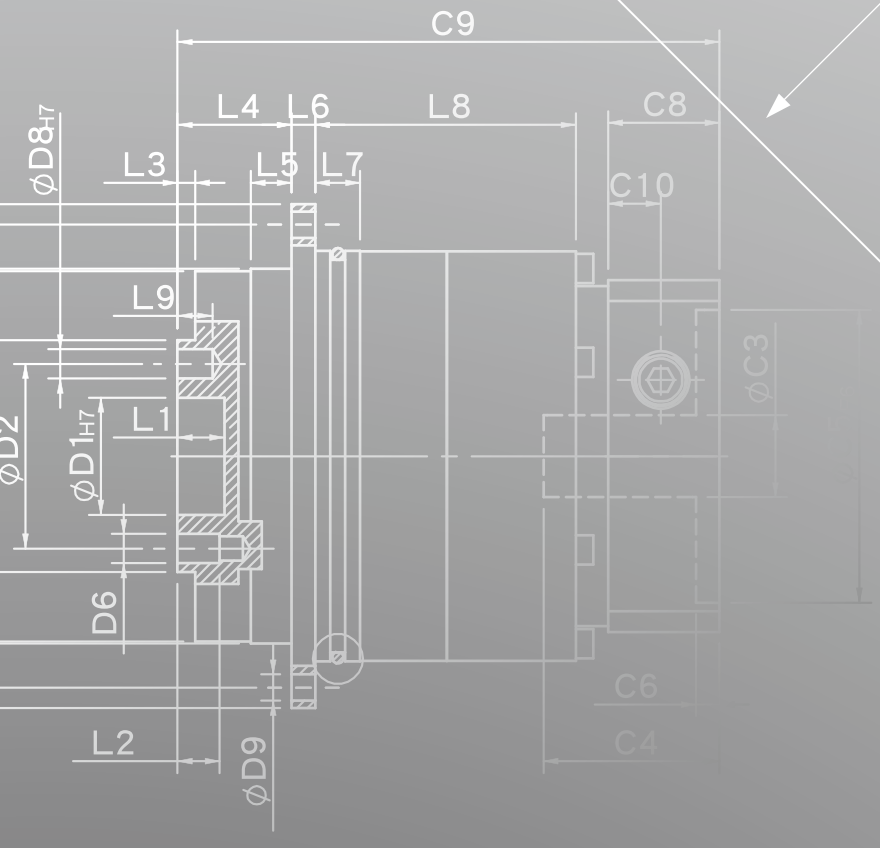
Stage	Ratio	unit	PHFR-42	PHFR-60	PHFR-90	PHFR-115	PHFR-142	PHFR-200	PHFR-255
1	3/4/5/7/9	Kg • cm^2	0.06	0.40	2.28	6.87	24.2	69.8	138.2
	10/14/20		0.05	0.30	1.45	4.76	14.5	50.3	103.6
Stage	Ratio		PHFR-42	PHFR-60(T)	PHFR-90(T)	PHFR-115T	PHFR-142T	PHFR-200T	PHFR-255T
2	15/20/25/35		0.06	0.40(0.08)	2.28(0.72)	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

* 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.

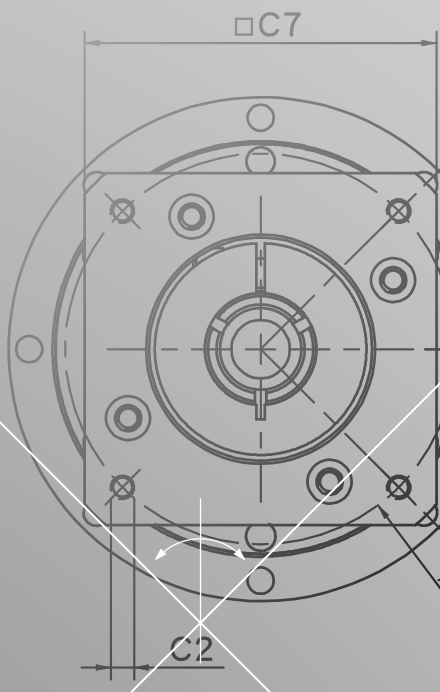
Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty.


SESAME MOTOR
SESAME MOTOR
SESAME MOTOR

PHF SERIES


C9
L4
L6
L8
C8
ØD8H7
L3
L5
L7
C10
L9
ØC3
ØD2
ØD1H7
L1
D6
C6
C4
L2
ØD9

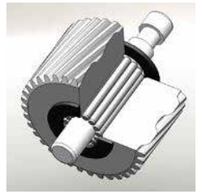

ØD10
OD
O-Ring


□C7
C2

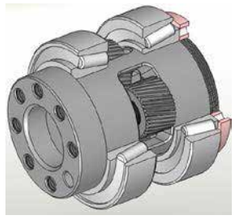

C9
L4
L6
L8
C8
L3
L5
L7
C10
L9
L1
L2
C6
C4
C3
C5
D10
OD
O-Ring
D9
D6
D1
D2
D3
D11
D4
D5
D7
C7
C2
C1
45°
SESAME MOTOR
PHF60-10
SESAME

PHF SERIES FEATURES

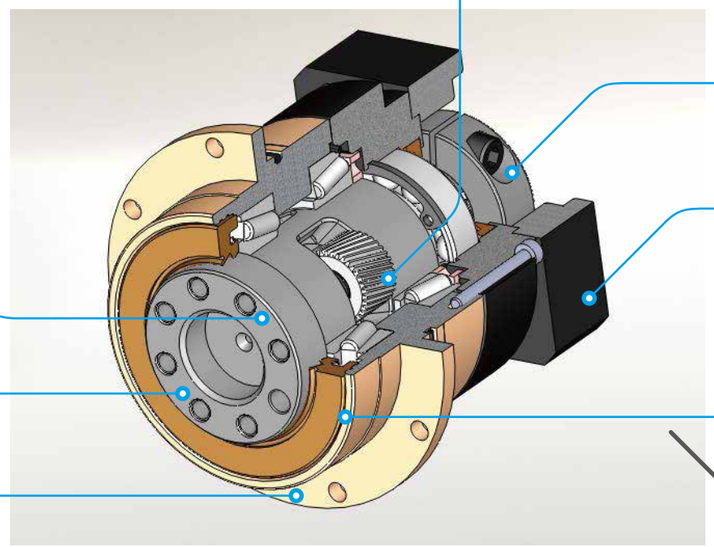
Alloy steel gear with unique heat treatment. Additionally, with gear grinding process-ing to get the best accuracy, high wear resistance and high impact toughness.

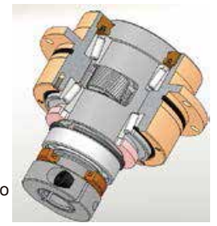


Planet gear transmission interface equipped with needle bearings, full needle roller bearing aligned without retainer achieve maximum exposure but smallest gap tolerances. Enhance over-all gear structure rigid and output torque.



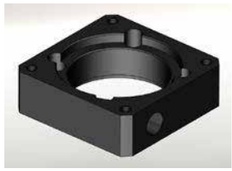
Planetary arm bracket and output shaft are one-piece constructed, using tapered roller bearings can bear the axial load and radial load that are more than deep groove ball bearings. Setting the bearing apart for larger span to reach the largest torsional rigidity and contribute high axial load and radial load capacity.



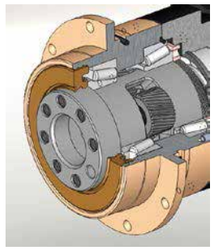


Input-end and motor shaft are coupled through a dynamic balanced collar clamping mechanism to ensure connection interface concentricity and zero slip power transmission at high speed.

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

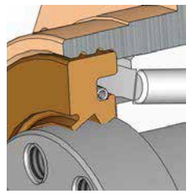


Grinding process to smooth surface of output shaft, and with oil seal to minimum friction coefficient and reducing start up load; result in the best seal-ability and extended lifespan. Hollow output shaft connect perfectly with circular flange drastically reducing the installation space.



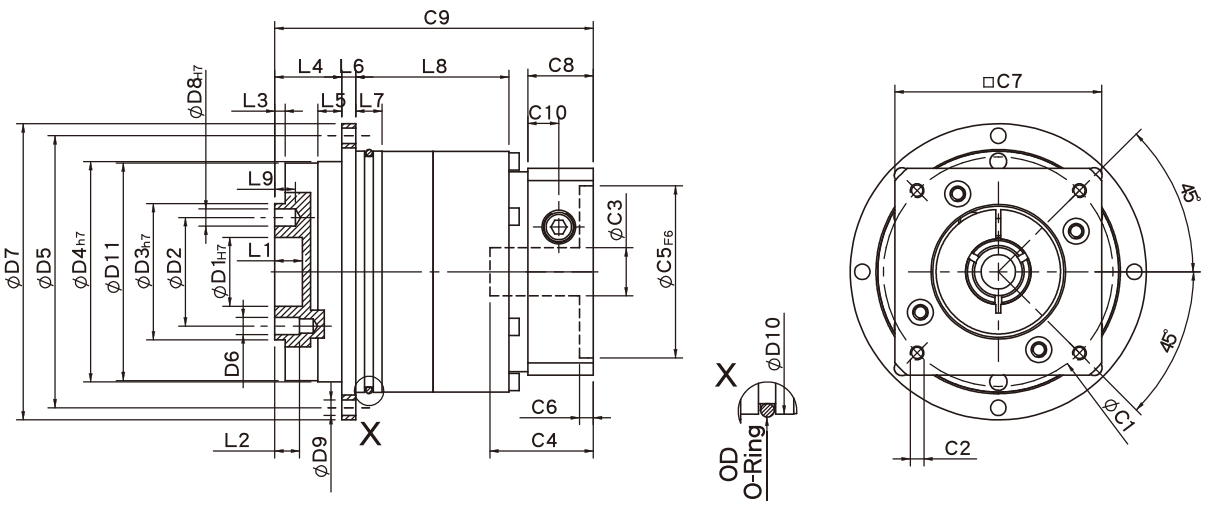
Advanced electroless nickel plating surface treatment resists scratch and corrosion. Suitable for stringent require of high-tech equipment. The gearbox and internal gear ring are one-piece constructed, and then processed with advanced Germany gear shaper machinery for high precision, high torque and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

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



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

PHF Single Stage Dimensions



Specifications

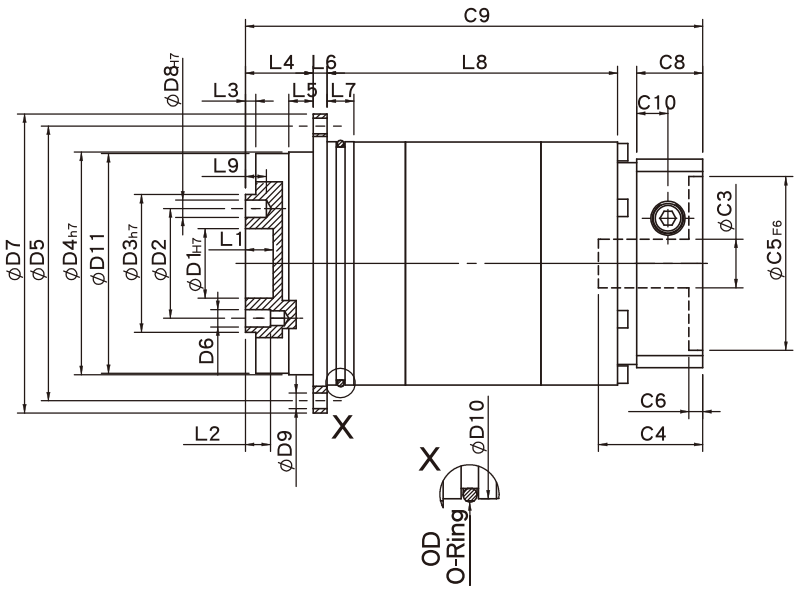
Unit:mm

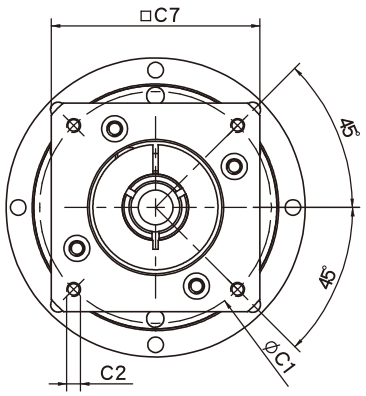
Dimensions	PHF42	PHF60	PHF90	PHF115	PHF142	PHF200	PHF255
D1 H7	12	20	31.5	40	50	80	-
D2	20	31.5	50	63	80	125	-
D3 h7	28	40	63	80	100	160	-
D4 h7	47	64	90	110	140	200	-
D5	67	79	109	135	168	233	-
D6	M3x0.5P	M5x0.8P	M6x1.0P	M6x1.0P	M8x1.25P	M10x1.5P	-
D7	72	86	118	145	179	247	-
D8 H7	3	5	6	6	8	10	-
D9	3.4	4.5	5.5	5.5	6.6	9	-
D10	60	70	95	120	152	212	-
D11	46.2	63.2	89.2	109.2	139.2	199.2	-
L1	4	8	12	12	12	12	-
L2	6	7.2	12	13.5	16	22.5	-
L3	3	3	6	6	6	8	-
L4	19.5	19.5	30	29	38	50	-
L5	7	7	10	10	14.6	15	-
L6	4	4	7	8	10	12	-
L7	5	7.7	8	10	12	17	-
L8	25	37.5	36.5	54.5	65	92	-
L9	4	6	7	7	7	10	-
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/≦11	≦14	≦19/≦24	≦24/≦32	≦35/≦38	≦50	-
C4 [2]	28.1	36.5	41.2	51.1	69.7	81	-
C5 [2] F6	30	50	70	95	110	114.3	-
C6 [2]	4	4	6.7	6	8.5	6	-
C7 [2]	42	60	90	115	140	182	-
C8 [2]	16.5	19	25.5	30	38	40	-
C9 [2]	74.8	92.5	107	131.5	171.5	215	-
C10 [2]	7.4	9	11.3	13.9	17.8	21	-
OD	56x2	66x2	90x3	110x3	145x3	200x5	-

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

★ Specification subject to change without notice.

PHF Double Stage Dimensions-1





Specifications

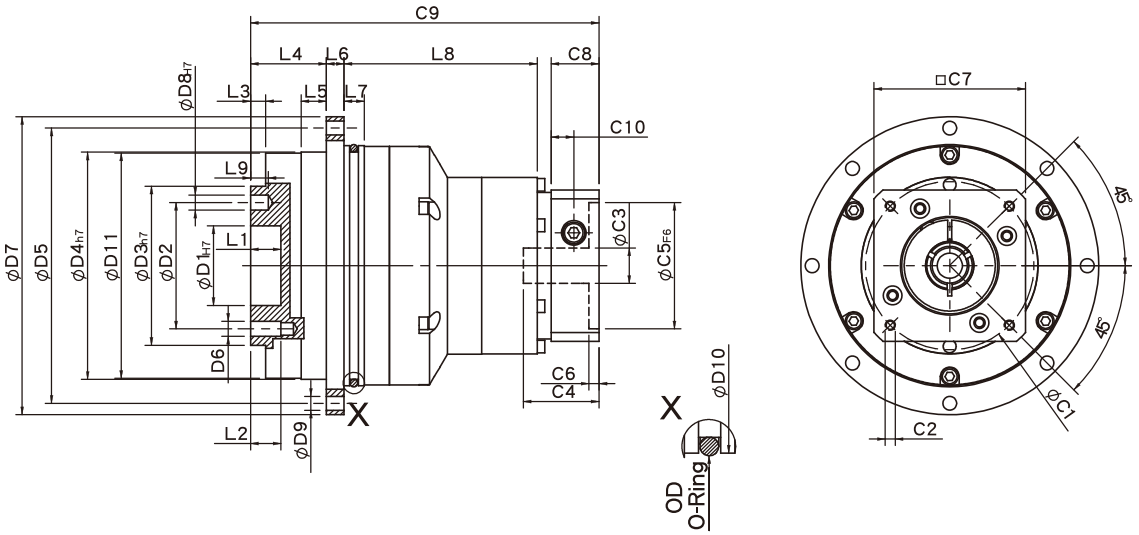
Unit:mm

Dimensions	PHF42	PHF60	PHF90	PHF115	PHF142	PHF200	PHF255
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	30	-	-	-	-
L5	7	7	10	-	-	-	-
L6	4	4	7	-	-	-	-
L7	5	7.7	8	-	-	-	-
L8	54.5	72.5	81.5	-	-	-	-
L9	4	6	7	-	-	-	-
C1 [2]	46	70	90	-	-	-	-
C2 [2]	M4x0.7P	M5x0.8P	M6x1.0P	-	-	-	-
C3 [2]	≦8/≦11	≦14	≦19/≦24	-	-	-	-
C4 [2]	28.1	36.4	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	127.5	151.1	-	-	-	-
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 motor flange.

★ Specification subject to change without notice.

PHF Double Stage Dimensions-2



Specifications

Unit:mm

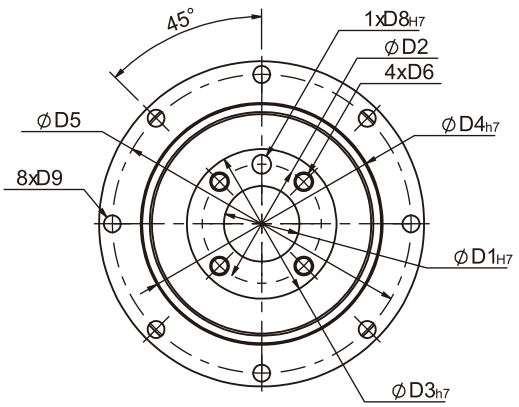
Dimensions	PHF60T	PHF90T	PHF115T	PHF142T	PHF200T	PHF255T
D1 H7	20	31.5	40	50	80	-
D2	31.5	50	63	80	125	-
D3 h7	40	63	80	100	160	-
D4 h7	64	90	110	140	200	-
D5	79	109	135	168	233	-
D6	M5x0.8P	M6x1.0P	M6x1.0P	M8x1.25P	M10x1.5P	-
D7	86	118	145	179	247	-
D8 H7	5	6	6	8	10	-
D9	4.5	5.5	5.5	6.6	9	-
D10	70	95	120	152	212	-
D11	63.2	89.2	109.2	139.2	199.2	-
L1	8	12	12	12	12	-
L2	7.2	12	13.5	16	22.5	-
L3	3	6	6	6	8	-
L4	19.5	30	29	38	50	-
L5	7	10	10	14.6	15	-
L6	4	7	8	10	12	-
L7	7.7	8	10	12	17	-
L8	65.2	69.5	93.5	110	161.7	-
L9	6	7	7	7	10	-
C1 [2]	46	70	90	115	145	-
C2 [2]	M4x0.7P	M5x0.8P	M6x1.0P	M8x1.25P	M8x1.25P	-
C3 [2]	≦8/≦11	≦14	≦19/≦24	≦24/≦32	≦35/≦38	-
C4 [2]	28.1	36.5	41.2	51.1	69.7	-
C5 [2] F6	30	50	70	95	110	-
C6 [2]	4	4	6.7	6	8.5	-
C7 [2]	42	60	90	115	140	-
C8 [2]	16.5	19	25.5	30	38	-
C9 [2]	113.2	138	163.1	198	281	-
C10 [2]	7.4	9	11.3	13.9	17.8	-
OD	66x2	90x3	110x3	145x3	200x5	-

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

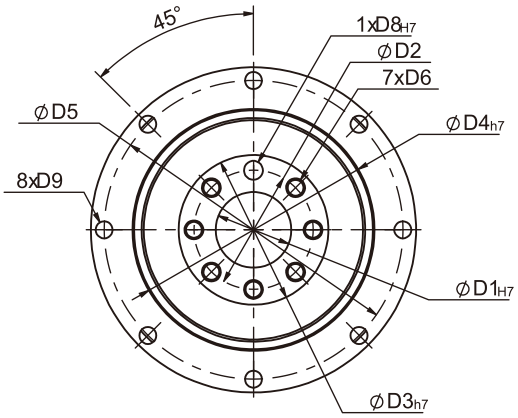
★ Specification subject to change without notice.

PHF Flange Dimensions

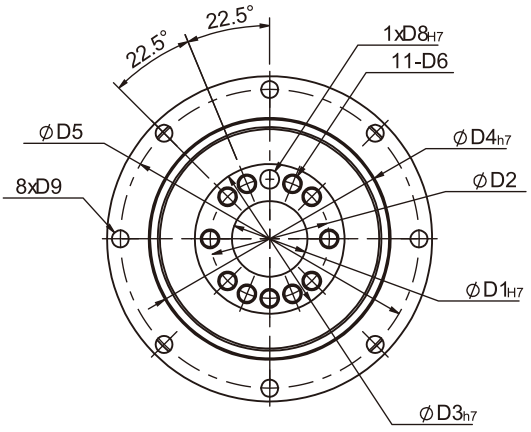
PHF42



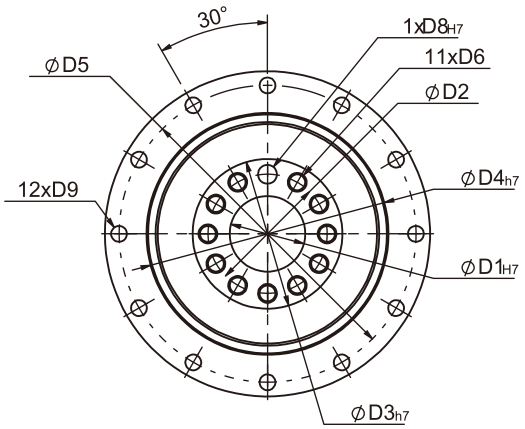
PHF60
PHF90



PHF115



PHF142
PHF200
PHF255



Specifications

Unit:mm

Dimensions	PHF42	PHF60	PHF90	PHF115	PHF142
D1 H7	12	20	31.5	40	50
D2	20	31.5	50	63	80
D3 h7	28	40	63	80	100
D4 h7	47	64	90	110	140
D5	67	79	109	135	168
D6	M3x0.5P	M5x0.8P	M6x1.0P	M6x1.0P	M8x1.25P
D8 H7	3	5	6	6	8
D9	3.4	4.5	5.5	5.5	6.6

★ Specification subject to change without notice.

PHF Specifications Table

Specifications		Stage	Ratio	PHF-42	PHF-60	PHF-90	PHF-115	PHF-142	PHF-200	PHF-255
Nominal Output Torque	N • m	1	3	-	40	105	180	310	760	1240
			4	16	43	110	240	450	950	1600
			5	17	50	130	290	530	1260	2050
			7	14	44	125	270	450	1150	1850
			10	11	37	95	220	360	960	1500
		Stage	Ratio	PHF-42	PHF-60 (T)	PHF-90(T)	PHF-115T	PHF-142T	PHF-200T	PHF-255T
		2	15	-	40	105	180	310	760	1240
			20	16	43	110	240	450	950	1600
			25	17	50	130	290	530	1260	2050
			30	17	50	130	290	530	1260	2050
			35	17	50	130	290	530	1260	2050
			40	17	50	130	290	530	1260	2050
			50	17	50	130	290	530	1260	2050
			70	14	44	125	270	450	1150	1850
			100	11	37	95	220	360	960	1500
Emergency Stop Torque	N • m			3.0 times of Nominal Output Torque (* Max. Output Torque T2B =60% of Emergency Stop Torque)						
Nominal Input Speed	rpm	1,2	3-100	5000	5000	4000	4000	3000	3000	2000
Max. Input Speed	rpm	1,2	3-100	10000	10000	8000	8000	6000	5000	4000
Micro Backlash P0	arcmin	1	3-10	≦2	≦2	≦2	≦1	≦1	≦1	≦1
		2	12-100	≦4	≦4	≦4	≦3	≦3	≦3	≦3
Precision Backlash P1	arcmin	1	3-10	≦4	≦4	≦4	≦3	≦3	≦3	≦3
		2	12-100	≦6	≦6	≦6	≦5	≦5	≦5	≦5
Standard Backlash P2	arcmin	1	3-10	≦6	≦6	≦6	≦5	≦5	≦5	≦5
		2	12-100	≦8	≦8	≦8	≦7	≦7	≦7	≦7
Torsional Rigidity	N • m /arcmin	1,2	3-100	6	12	30	80	150	450	1000
Max. Bending Moment	N • m	1,2	3-100	43	125	288	503	1470	2950	6500
Max. Axial Load	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	30,000 (15,000/ Continuous operation)						
Efficiency	%	1	3-10	≧97%						
		2	12-100	≧94%						
Weight	kg	1	3-10	0.7	1.5	3.3	6.2	13.6	32.1	58.8
		2	12-100	1.1	2.3/1.8	6.0/4.1	8.1	17.9	38.6	72.5
Mounting Position	-	1,2	3-100	Any direction						
Noise Level [2]	dBA/1m	1,2	3-100	56	58	60	63	65	67	70
Protection Class	-	1,2	3-100	IP65						
Lubrication	-	1,2	3-100	Synthetic Lubricant						

Inertia(J1)

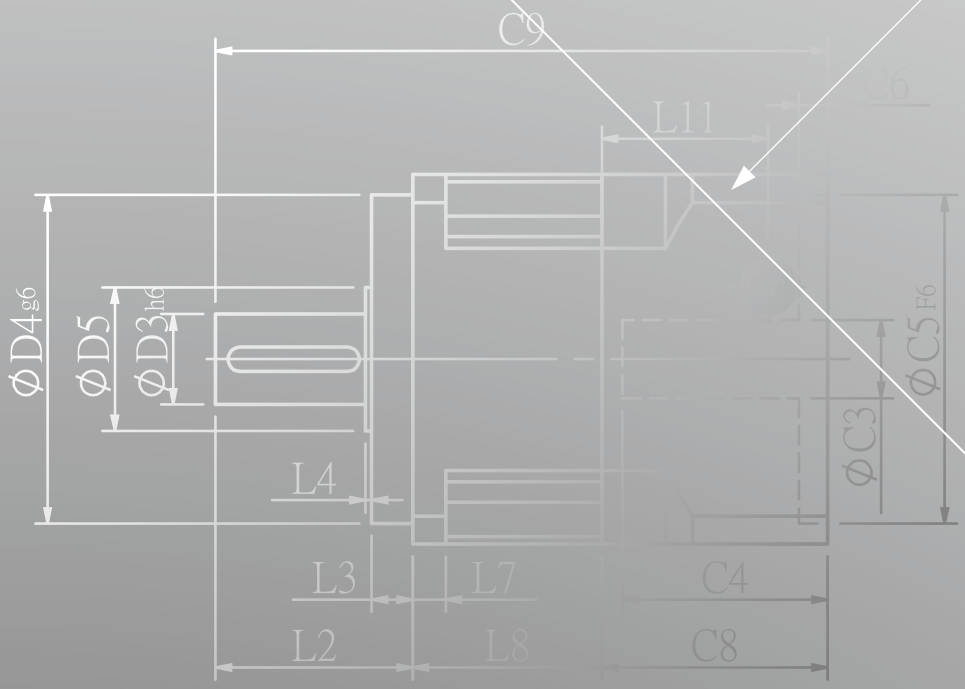
Stage	Ratio	unit	PHF-42	PHF-60	PHF-90	PHF-115	PHF-142	PHF-200	PHF-255
1	3	Kg • cm^2	-	0.19	0.72	2.35	9.05	29.80	72.50
	4		0.02	0.18	0.67	1.66	7.17	25.86	58.21
	5		0.02	0.17	0.65	1.50	6.52	23.63	54.36
	7		0.02	0.14	0.60	1.45	6.17	22.92	54.12
	10		0.02	0.14	0.58	1.41	6.10	22.73	53.98
Stage	Ratio		PHF-42	PHF-60(T)	PHF-90(T)	PHF-115T	PHF-142T	PHF-200T	PHF-255T
2	15/20/25		0.02	0.17(0.02)	0.65(0.17)	0.65	1.50	6.52	23.63
	30/35/40		0.02	0.14(0.02)	0.60(0.14)	0.60	1.45	6.17	22.92
	50/70/100		0.02	0.14(0.02)	0.58(0.14)	0.58	1.41	6.10	22.73

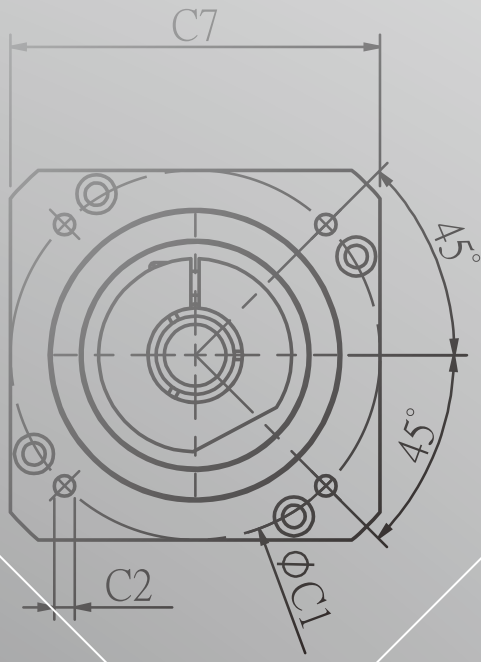
* 1. Applied to the output shaft center @100rpm.
* 2. Measured at 3000rpm with no load
※ The above figures/specifications are subject to change without prior notice.

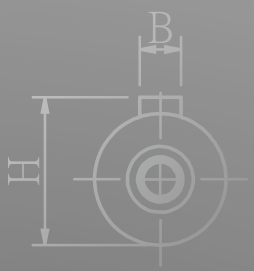
Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty.

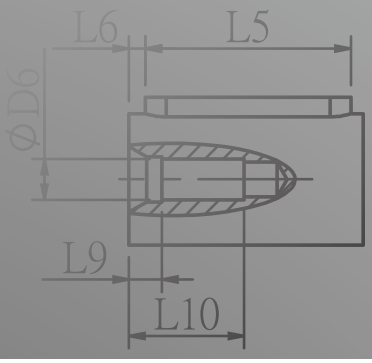

SESAME MOTOR
SESAME MOTOR
SESAME MOTOR

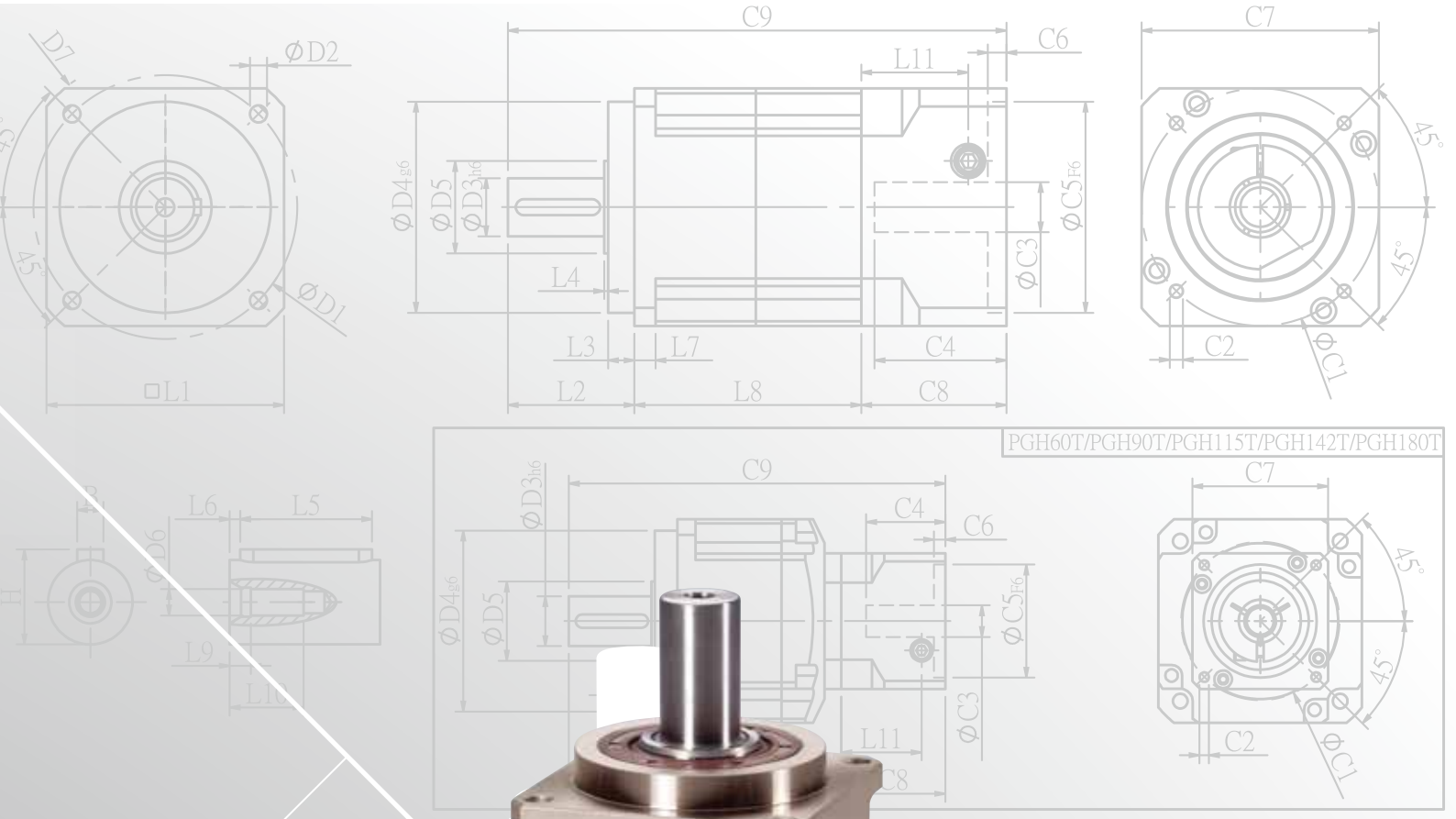
PGH SERIES


C9
L11
C6
ϕD4g6
ϕD5
ϕD3h6
ϕC5F6
ϕC3
L4
L3
L7
C4
L2
L8
C8


C7
45°
45°
C2
ϕC1


B
H


L6
L5
ϕD6
L9
L10

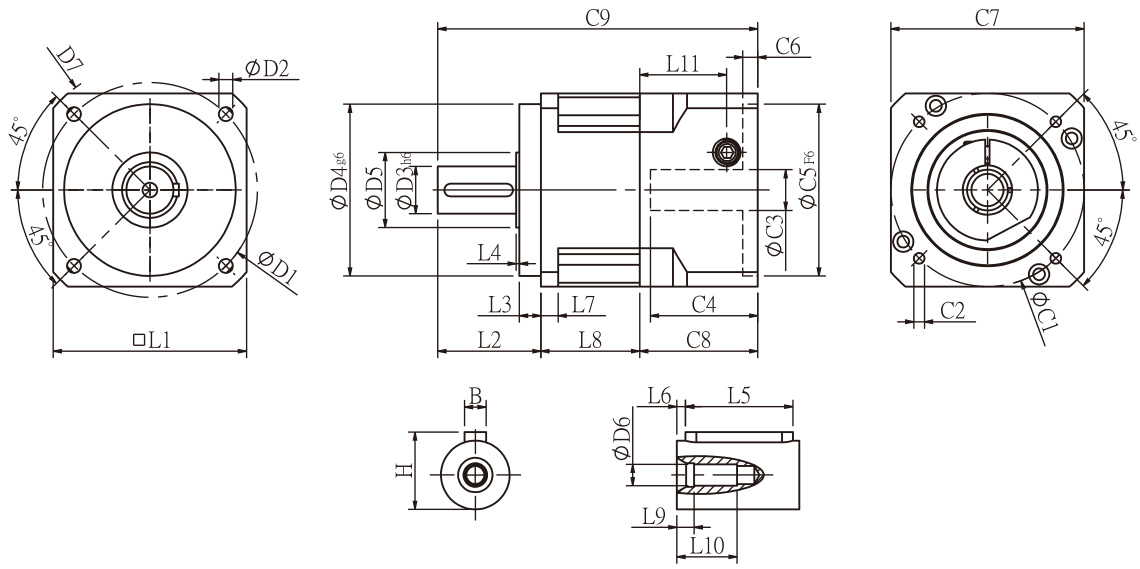

C9
C6
L11
C7
D7
ØD2
ØD4g6
ØD5
ØD3h6
L4
ØC3
ØC5F6
45°
45°
ØD1
L3
L7
C4
C2
ØC1
□L1
L2
L8
C8

PGH60T/PGH90T/PGH115T/PGH142T/PGH180T
C9
C7
ØD3h6
C4
C6
45°
ØD4g6
ØD5
ØC5F6
45°
L11
ØC3
C2
ØC1
C8

L6
L5
L9
L10


SESAME
PGH
SESAME MOTOR
PGH60-10
MADE IN TAIWAN
SESAME
PGH
SESAME MOTOR

PGH Single Stage Dimensions



Specifications

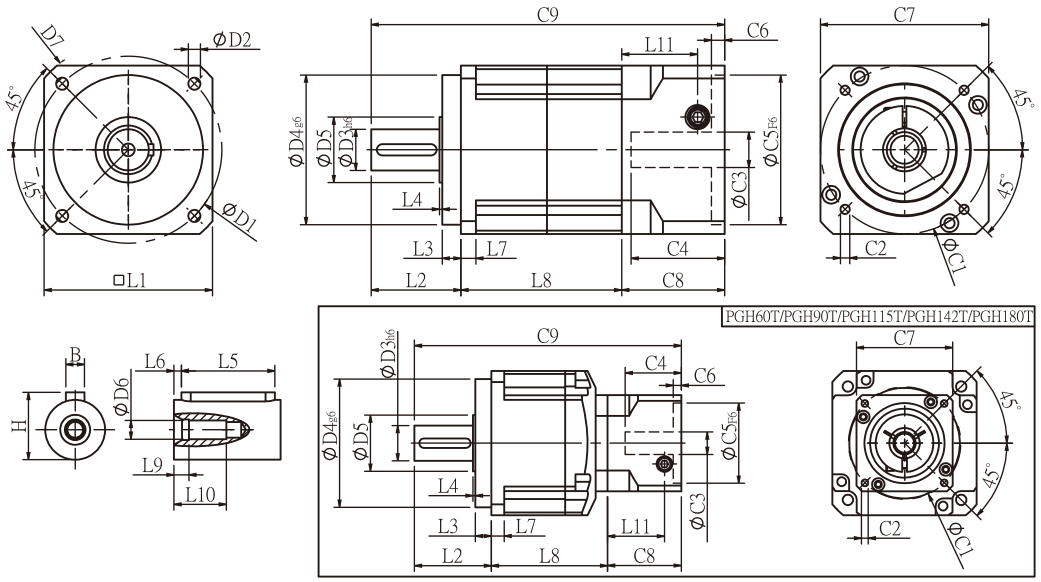
Unit:mm

Dimensions	PGH42	PGH60	PGH90	PGH115	PGH142	PGH180	PGH220
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	63	91.5	100.5	-
L3	5.5	7	10	10	10	16	-
L4	1	1.5	1.5	3.5	2.5	2.5	-
L5	15	25	32	40	60	70	-
L6	2	2	3	5	5	6	-
L7	4	6	8	11	16	18	-
L8	28.3	37	46	57	75.5	94	-
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 [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/≦32	≦35/≦38	≦50	-
C4 [2]	27	37	47	56	66.5	82	-
C5 [2] F6	30	50	70	95	110	114.3	-
C6 [2]	4	4	6	10	6	13	-
C7 [2]	42.6	60	90	115	140	182	-
C8 [2]	38.5	46	55	63	80	95	-
C9 [2]	92.8	120	149	183	247	289.5	-
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.

PGH Double Stage Dimensions



Specifications

Unit:mm

Dimensions	PGH42	PGH60	PGH60T	PGH90	PGH90T	PGH115T	PGH142T	PGH180T	PGH220T
D1	50	70		100		130	165	215	-
D2	3.4	5.5		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	56	80		118		148	186	239	-
L1	42.6	60		90		115	142	182	-
L2	26	37		48		63	91.5	100.5	-
L3	5.5	7		10		10	10	16	-
L4	1	1.5		1.5		3.5	2.5	2.5	-
L5	15	25		32		40	60	70	-
L6	2	2		3		5	5	6	-
L7	4	6		8		11	16	18	-
L8	55.3	70	65.5	86	78.5	99.5	127.5	166	-
L9	4	4		4.5		6	6	8	-
L10	14	16.5		20.5		30	38	48	-
L11	29	35.5	29	40.5	35.5	40.5	42	63	-
C1 [2]	46	70	46	90	70	90	115	145	-
C2 [2]	M4x0.7P	M5x0.8P	M4x0.7P	M6x1.0P	M5x0.8P	M6x1.0P	M8x1.25P	M8x1.25P	-
C3 [2]	≦8	≦14	≦8	≦19/≦24	≦14	≦19/≦24	≦24/≦32	≦35/≦38	-
C4 [2]	27	37	27	47	37	47	56	66.5	-
C5 [2] F6	30	50	30	70	50	70	95	110	-
C6 [2]	4	4	4	6	4	6	10	6	-
C7 [2]	42.6	60	42.6	90	60	90	115	140	-
C8 [2]	38.5	46	38.5	55	46	55	63	80	-
C9 [2]	119.8	153	141	189	172.5	217.5	282	346.5	-
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.

PGH Specifications Table

Specifications		Stage	Ratio	PGH-42	PGH-60	PGH-90	PGH-115	PGH-142	PGH-180	PGH-220
Nominal Output Torque	N • m	1	3	19	53	145	290	520	950	1100
			4	20	55	150	300	550	1000	1700
			5	17	54	140	290	530	1050	2000
			6	15	46	135	280	490	1000	1850
			7	14	44	125	270	450	960	1750
			8	12	41	110	240	390	900	1550
			9	11	37	95	220	360	800	1500
			10	11	37	95	220	360	800	1450
		Stage	Ratio	PGH-42	PGH-60 (T)	PGH-90(T)	PGH-115T	PGH-142T	PGH-180T	PGH-220T
		2	15	19	53	145	290	520	950	2000
			20	20	55	150	300	550	1000	2000
			25	17	54	140	290	530	1050	2000
			30	17	54	140	290	530	1050	2000
			35	17	54	140	290	530	1050	2000
			40	17	54	140	290	530	1050	2000
			45	17	54	140	290	530	1050	2000
			50	17	54	140	290	530	1050	2000
			60	15	46	135	280	490	1000	1850
			70	14	44	125	270	450	960	1750
			80	12	41	110	240	390	900	1550
			90	11	37	95	220	360	800	1500
			100	11	37	95	220	360	800	1450
Emergency Stop Torque	N • m		3.0 times of Nominal Output Torque (* Max. Output Torque T2B =60% of Emergency Stop Torque)							
Nominal Input Speed	rpm	1,2	3-100	5000	5000	4000	4000	3000	3000	2000
Max. Input Speed	rpm	1,2	3-100	10000	10000	8000	8000	6000	6000	4000
Micro Backlash P0	arcmin	1	3-10	≦2	≦2	≦2	≦1	≦1	≦1	≦1
		2	12-100	≦4	≦4	≦4	≦3	≦3	≦3	≦3
Precision Backlash P1	arcmin	1	3-10	≦4	≦4	≦4	≦3	≦3	≦3	≦3
		2	12-100	≦6	≦6	≦6	≦5	≦5	≦5	≦5
Standard Backlash P2	arcmin	1	3-10	≦6	≦6	≦6	≦5	≦5	≦5	≦5
		2	12-100	≦8	≦8	≦8	≦7	≦7	≦7	≦7
Torsional Rigidity	N • m /arcmin	1,2	3-100	2.5	6	12	23	45	75	220
Max. Radial Load	N	1,2	3-100	760	1570	2780	5340	8400	13000	31810
Max. Axial Load	N	1,2	3-100	410	750	1870	3310	4670	6460	18530
Operating Temp.	°C		3-100	-10 °C ~+90 °C						
Service Life	hr		3-100	20,000 (10,000/ Continuous operation)						
Efficiency	%	1	3-10	≧97%						
		2	12-100	≧94%						
Weight	kg	1	3-10	0.6	1.3	3.5	7.8	16.1	27	58
		2	12-100	0.9	2.0/1.6	5.6/3.9	9.5	19	34	68.5
Mounting Position	-	1,2	3-100	Any direction						
Noise Level [2]	dBA/1m	1,2	3-100	56	58	60	63	65	67	70
Protection Class	-	1,2	3-100	IP65						
Lubrication	-	1,2	3-100	Synthetic Lubricant						

Inertia(J1)

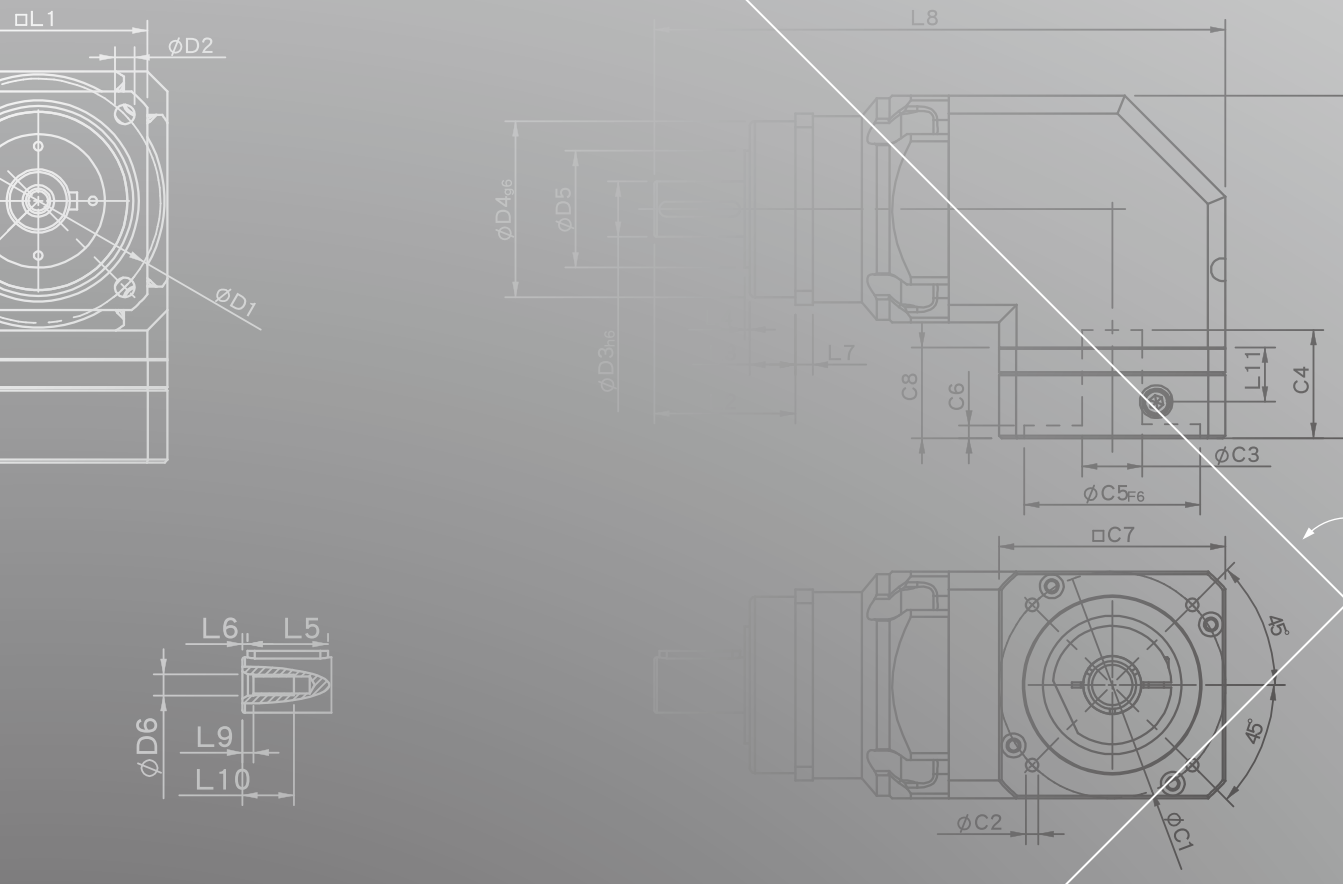
Stage	Ratio	unit	PGH-42	PGH-60	PGH-90	PGH-115	PGH-142	PGH-180	PGH-220
1	3	Kg • cm^2	0.03	0.23	0.97	2.35	10.00	30.50	79.50
	4		0.02	0.18	0.67	1.66	7.17	25.86	58.21
	5		0.02	0.17	0.65	1.50	6.52	23.63	54.36
	6/7/8		0.02	0.14	0.60	1.45	6.17	22.92	54.12
	9/10		0.02	0.14	0.58	1.41	6.10	22.73	53.98
Stage	Ratio		PGH-42	PGH-60(T)	PGH-90(T)	PGH-115T	PGH-142T	PGH-180T	PGH-220T
2	15/20/25		0.02	0.17(0.02)	0.65(0.17)	0.65	1.50	6.52	23.63
	30/35/40		0.02	0.14(0.02)	0.60(0.14)	0.60	1.45	6.17	22.92
	45/50/60/70/80/90/100		0.02	0.14(0.02)	0.58(0.14)	0.58	1.41	6.10	22.73

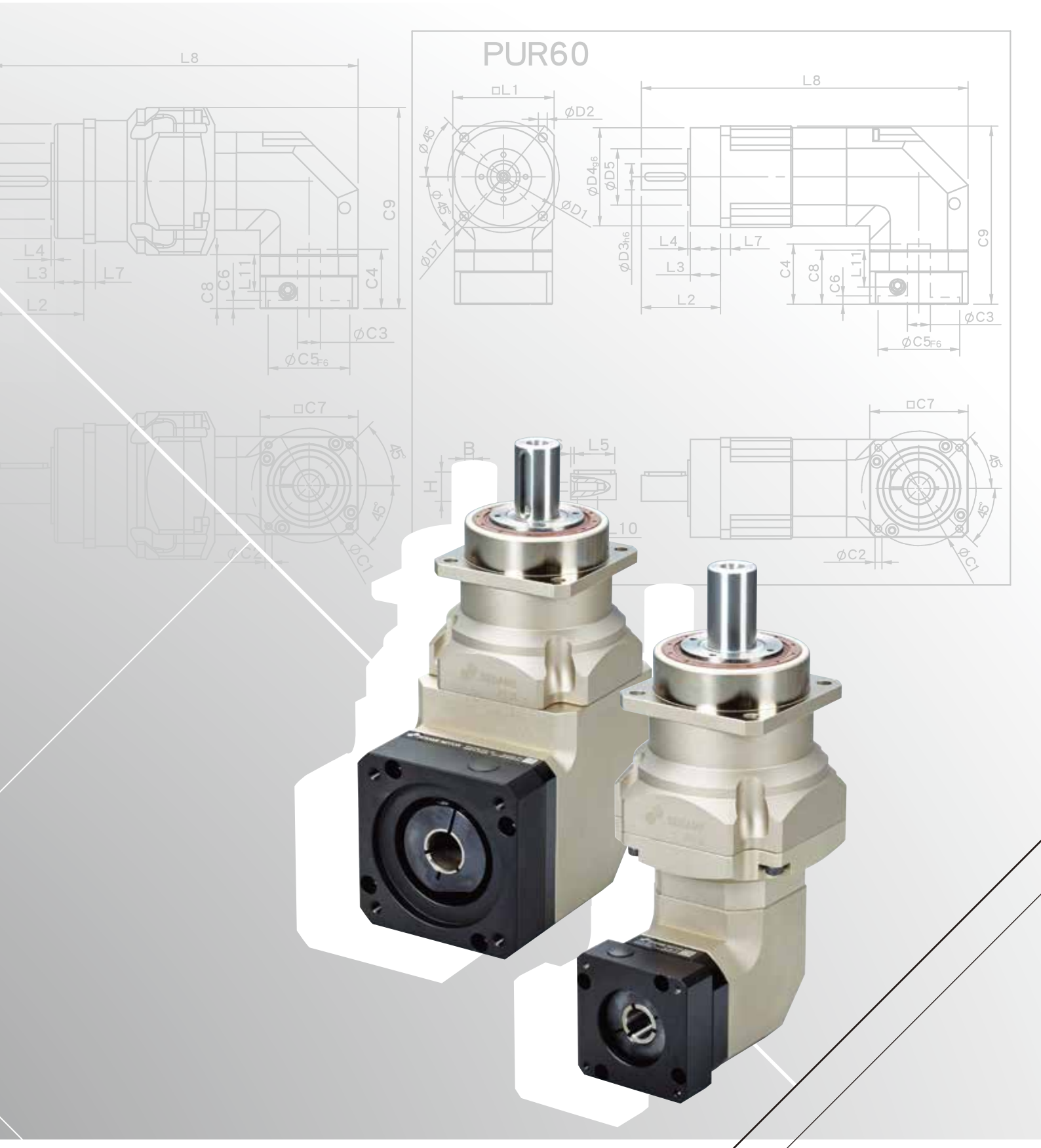
* 1. Applied to the output shaft center @100rpm.
* 2. Measured at 3000rpm with no load
※ The above figures/specifications are subject to change without prior notice.

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

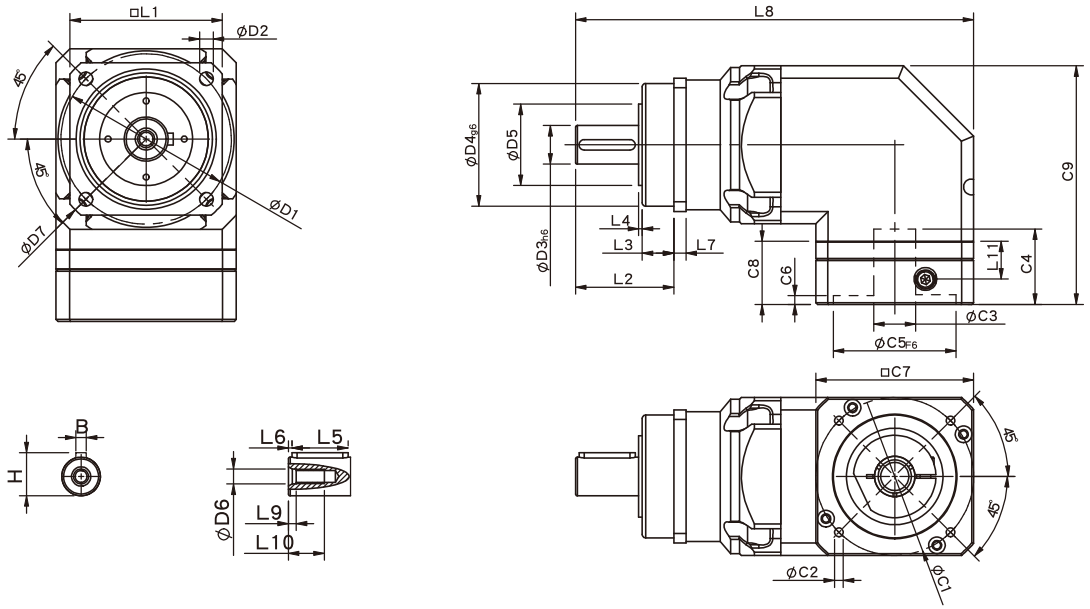

SESAME MOTOR
SESAME MOTOR
SESAME MOTOR

PUR SERIES


□L1
ØD2
ØD1
L8
ØD4g6
ØD5
ØD3h6
L7
C8
C6
C9
L11
C4
ØC3
ØC5F6
□C7
45°
45°
ØC2
ØC1
L6
L5
ØD6
L9
L10


PUR60
L8
□L1
ØD2
Ø45°
ØD4g6
ØD5
ØD1
ØD7
ØD3h6
L4
L7
L3
L2
C9
C4
C8
C6
L11
ØC3
ØC5F6
□C7
B
L5
H
L10
ØC2
ØC1

PUR Single Stage Dimensions



Specifications

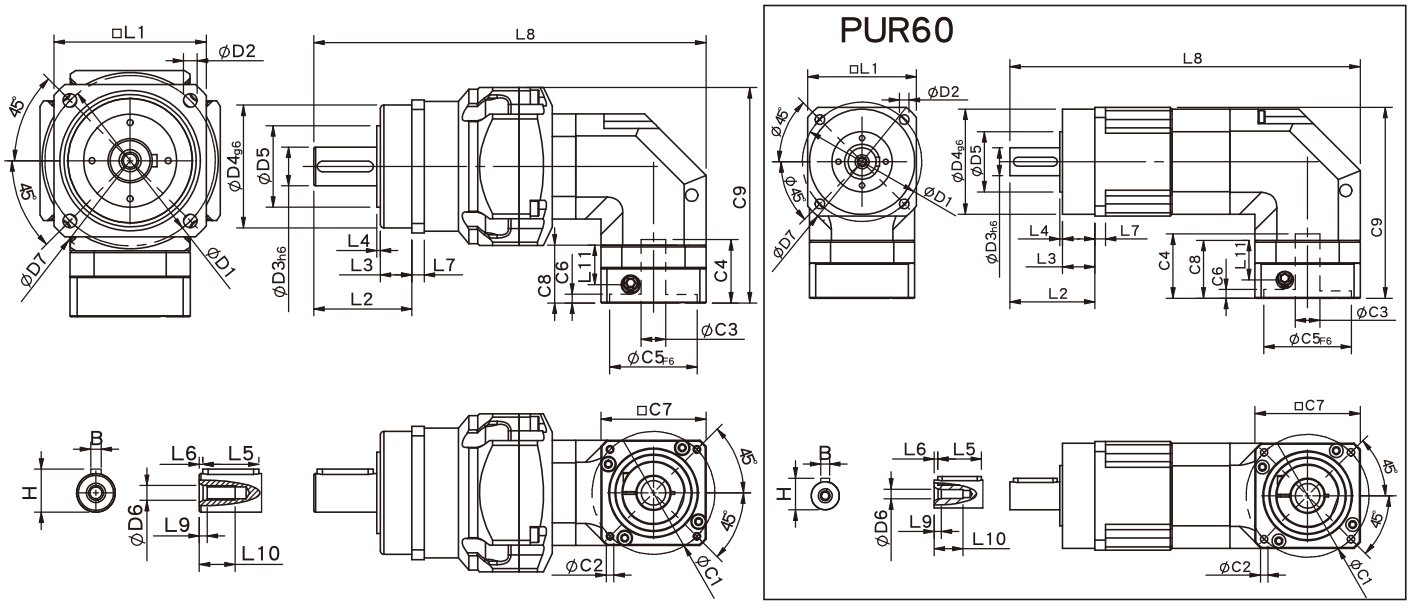
Unit:mm

Dimensions	PUR60	PUR75	PUR100	PUR140
D1	68	85	120	-
D2	5.5	6.8	9	-
D3 h6	16	22	32	-
D4 g6	60	70	90	-
D5	34.6	46.4	59.6	-
D6	M5x0.8P	M8x1.25P	M12x1.75P	-
D7	80	100	138	-
L1	62	76	105	-
L2	48.5	56	88	-
L3	18.5	18	28	-
L4	1.5	2	2	-
L5	25	32	40	-
L6	2	2	5	-
L7	6	7	10	-
L8	166.7	227	260.5	-
L9	4	4.5	6	-
L10	16.5	20.5	30	-
L11	22.5	21.5	31.8	-
C1 [2]	70	90	115	-
C2 [2]	M5x0.8P	M6x1.0P	M8x1.25P	-
C3 [2]	≦14/≦19	≦14/≦19	≦24/≦32	-
C4 [2]	34	45	53	-
C5 [2] F6	50	70	95	-
C6 [2]	4	4	6	-
C7 [2]	60	90	115	-
C8 [2]	33	36	48	-
C9 [2]	108.8	136	174.5	-
B	5	6	10	-
H	18	24.5	35	-

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

★ Specification subject to change without notice.

PUR Double Stage Dimensions



Specifications

Unit:mm

Dimensions	PUR60	PUR60T	PUR75T	PUR100T
D1	68	68	85	120
D2	5.5	5.5	6.8	9
D3 h6	16	16	22	32
D4 g6	60	60	70	90
D5	34.6	34.6	46.4	59.6
D6	M5x0.8P	M5x0.8P	M8x1.25P	M12x1.75P
D7	80	80	100	138
L1	62	62	76	105
L2	48.5	48.5	56	88
L3	18.5	18.5	18	28
L4	1.5	1.5	2	2
L5	25	25	32	40
L6	2	2	2	5
L7	6	6	7	10
L8	199.7	170.3	223.7	286.5
L9	4.5	4	4.5	6
L10	20.5	16.5	20.5	30
L11	22.5	15.5	22.5	21.5
C1 [2]	70	46	70	90
C2 [2]	M5x0.8P	M4x0.7P	M5x0.8P	M6x1.0P
C3 [2]	≦14/≦19	≦8	≦14/≦19	≦19/≦24
C4 [2]	34	29	34	45
C5 [2] F6	50	30	50	70
C6 [2]	4	4	4	6
C7 [2]	60	42.6	60	90
C8 [2]	33	25	33	36
C9 [2]	108.8	80.5	122.8	148.5
B	6	5	6	10
H	24.5	18	24.5	35

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

★ Specification subject to change without notice.

PUR Specifications Table

Specifications		Stage	Ratio	PUR-60	PUR-75	PUR-100	PUR-140	PUR-180	PUR-220
Nominal Output Torque	N • m	1	3	53	145	290	520	580	1100
			4	55	150	300	550	1100	1700
			5	54	140	290	530	1200	2000
			6	46	135	280	490	1100	1850
			7	44	125	270	450	1100	1750
			8	41	110	240	390	1000	1550
			9	37	95	220	360	900	1500
			10	37	95	220	360	900	1450
			14	44	125	270	450	1100	1750
			20	37	95	220	360	900	1450
		Stage	Ratio	PUR-60 (T)	PUR-75T	PUR-100T	PUR-140T	PUR-180T	PUR-220T
		2	15	53	145	290	520	580	2000
			20	55	150	300	550	1100	2000
			25	54	140	290	530	1200	2000
			30	54	140	290	530	1200	2000
			35	54	140	290	530	1200	2000
			40	54	140	290	530	1200	2000
			45	54	140	290	530	1200	2000
			50	54	140	290	530	1200	2000
			60	46	135	280	490	1100	1850
			70	44	125	270	450	1100	1750
			80	41	110	240	390	1000	1550
			90	37	95	220	360	900	1500
			100	37	95	220	360	900	1450
			120	46	135	280	490	1100	1850
			140	44	125	270	450	1100	1750
			160	41	110	240	390	1000	1550
			180	37	95	220	360	900	1500
			200	37	95	220	360	900	1450
Emergency Stop Torque	N • m		3.0 times of Nominal Output Torque (* Max. Output Torque T2B =60% of Emergency Stop Torque)						
Nominal Input Speed	rpm	1,2	3-200	5000	4000	4000	3000	3000	2000
Max. Input Speed	rpm	1,2	3-200	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	≦4	≦4	≦4	≦4
		2	15-200	≦7	≦7	≦7	≦7	≦7	≦7
Standard Backlash P2	arcmin	1	3-20	≦7	≦7	≦6	≦6	≦6	≦6
		2	15-200	≦9	≦9	≦9	≦9	≦9	≦9
Torsional Rigidity	N • m /arcmin	1,2	3-100	7	14	25	50	150	220
Max. Radial Load	N	1,2	3-100	4130	5220	10650	17600	22000	27800
Max. Axial Load	N	1,2	3-100	2500	3300	5700	11300	14000	16200
Operating Temp.	°C		3-100	-10 °C ~+90 °C					
Service Life	hr		3-100	30,000 (15,000/ Continuous operation)					
Efficiency	%	1	3-10	≧95%					
		2	12-100	≧92%					
Weight	kg	1	3-10	-	5.46	-	-	-	-
		2	12-100	-	4.87	-	-	-	-
Mounting Position	-	1,2	3-100	Any direction					
Noise Level [2]	dBA/1m	1,2	3-100	64	66	68	70	72	74
Protection Class	-	1,2	3-100	IP65					
Lubrication	-	1,2	3-100	Synthetic Lubricant					

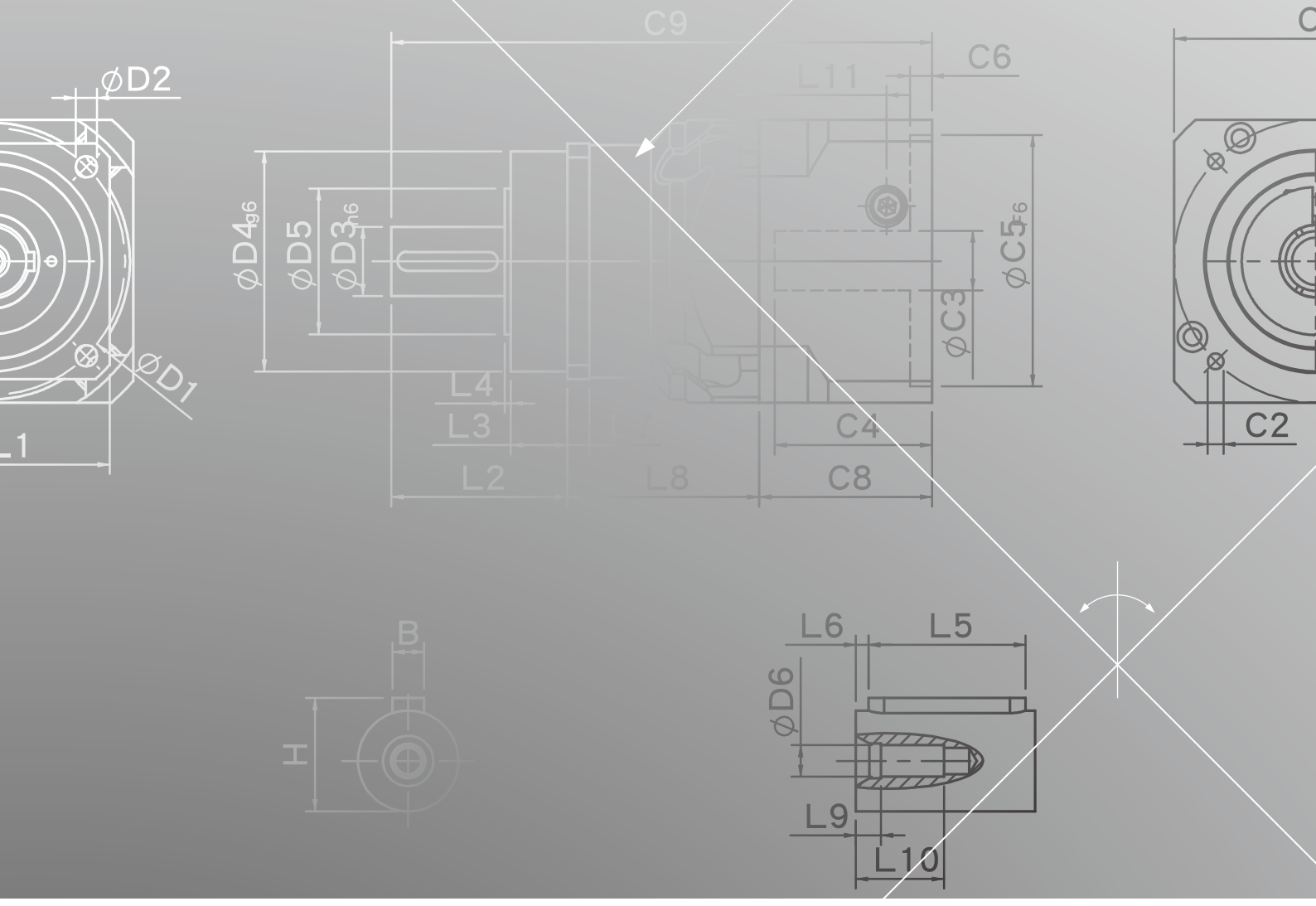
Inertia(J1)

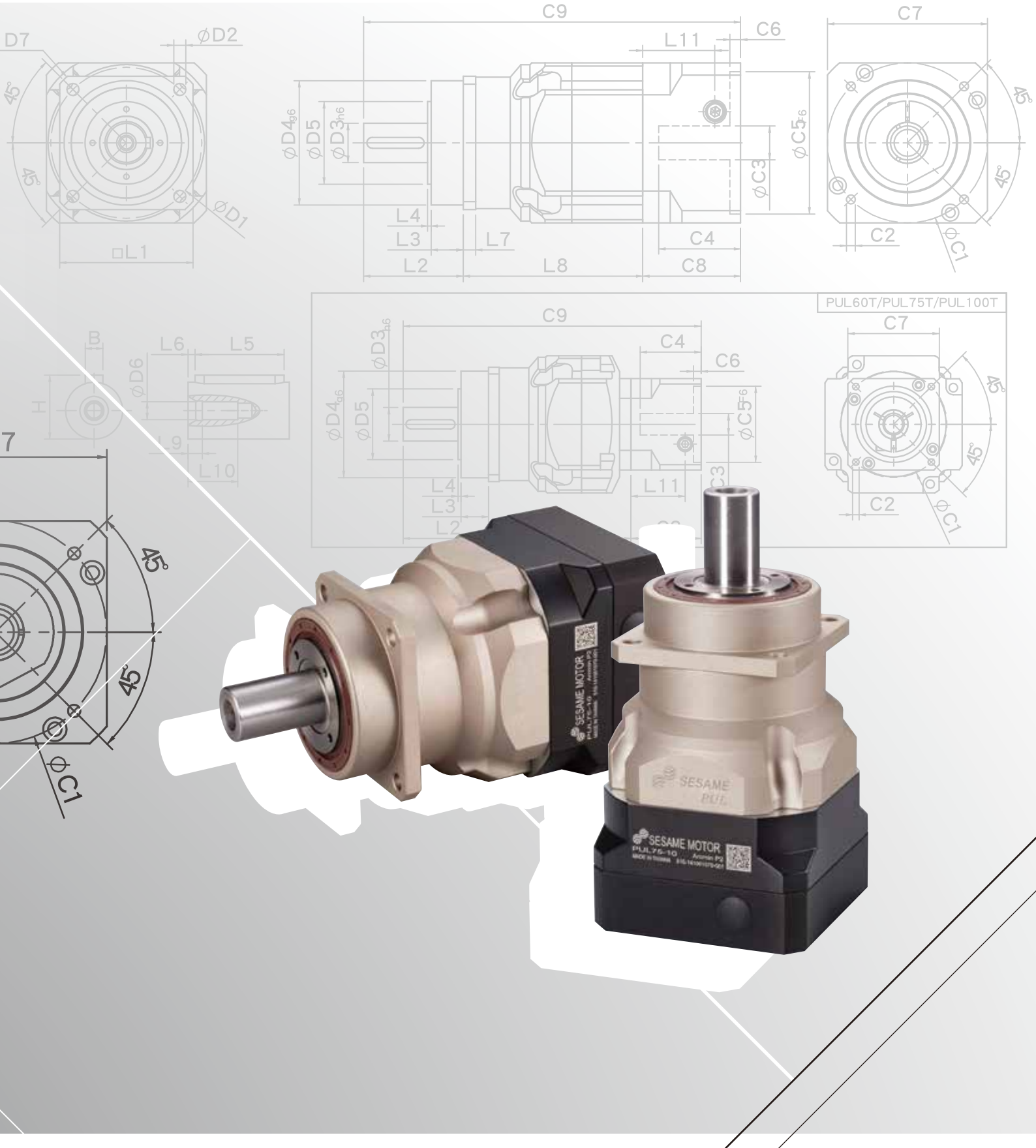
Stage	Ratio	unit	PUR-60	PUR-90	PUR-115	PUR-140	PUR-180	PUR-220
1	3/4/5/7/9	Kg • cm^2	0.40	2.28	6.87	24.2	69.8	138.2
	6/8/10/14/20		0.30	1.45	4.76	14.5	50.3	103.6
Stage	Ratio		PUR-60(T)	PUR-90T	PUR-115T	PUR-140T	PUR-180T	PUR-220T
2	15/20/25/35/45		0.40(0.08)	0.72	3.02	7.83	27.7	80.3
	others		0.30(0.06)	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.

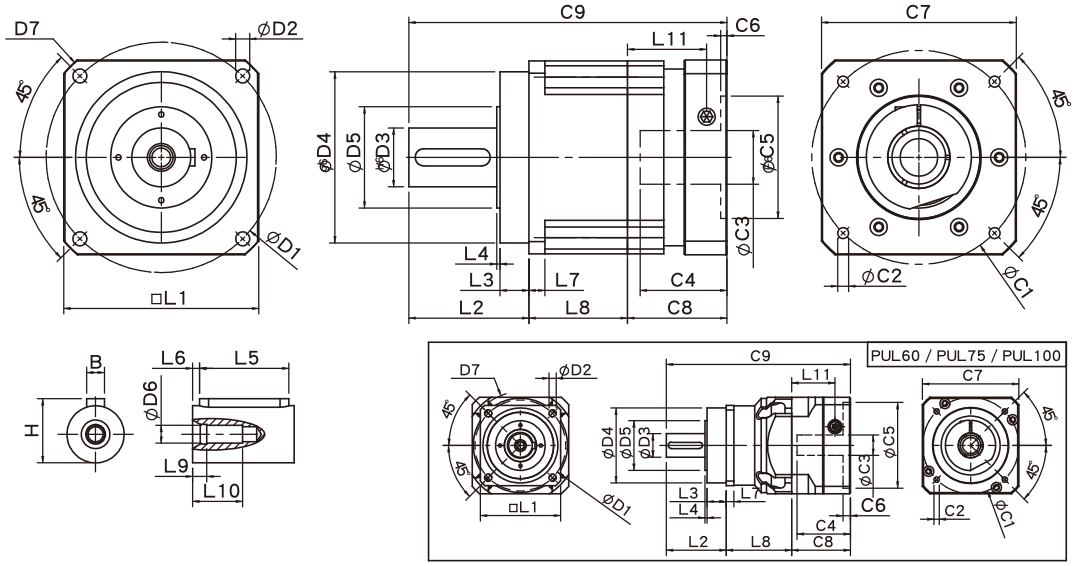
Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty.

PUL SERIES


C9
C6
L11
C
ØD2
ØD4g6
ØD5
ØD3H6
ØC5H6
ØC3
ØD1
L4
L3
L2
L8
C4
C8
C2
L1
B
H
L6
L5
ØD6
L9
L10


C9
C6
L11
C7
D7
ØD2
45°
ØD1
□L1
ØD4g6
ØD5
ØD3h6
ØC3
ØC5f6
L4
L3
L7
L2
L8
C4
C8
C2
ØC1
PUL60T/PUL75T/PUL100T
B
L6
L5
ØD6
H
L9
L10
C3
SESAME MOTOR
PUL75-10

PUL Single Stage Dimensions



Specifications

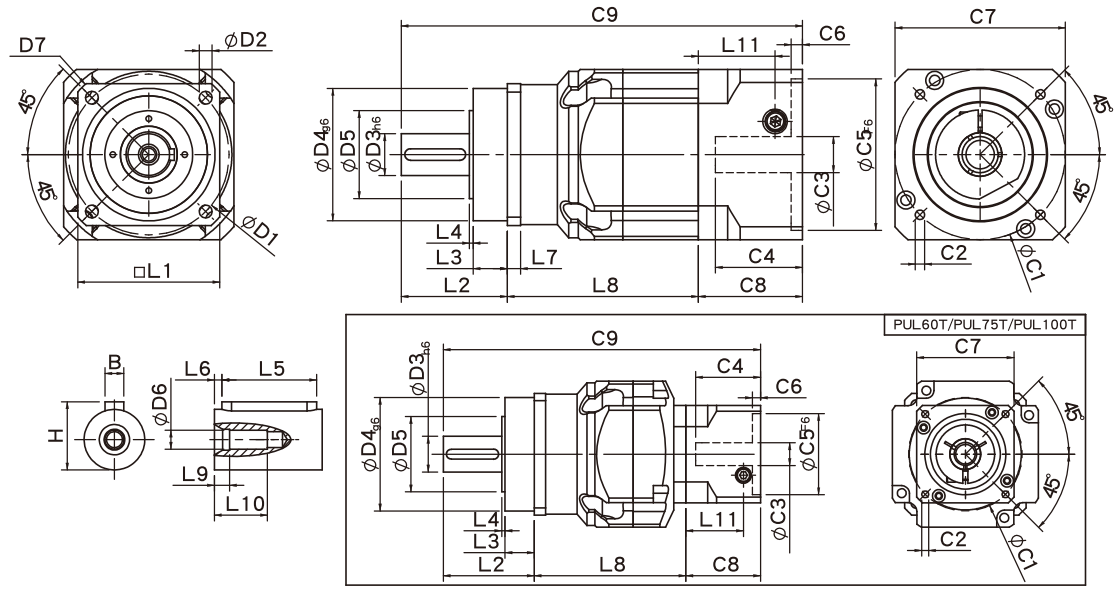
Unit:mm

Dimensions	PUL60	PUL75	PUL100	PUL140	PUL180	PUL220
D1	68	85	120	165	215	250
D2	5.5	6.8	9	11	13	17
D3 $_{h6}$	16	22	32	40	55	75
D4 $_{g6}$	60	70	90	130	160	180
D5	34.6	46.4	59.6	79.2	94.5	114.4
D6	M5x0.8P	M8x1.25P	M12x1.75P	M16x2.0P	M20x2.5P	M20x2.5P
D7	80	100	138	186	239	292
L1	62	76	105	142	180	220
L2	48.5	56	88	112	112	138
L3	18.5	18	28	27	27	30
L4	1.5	2	2	3	3	3
L5	25	32	40	60	70	90
L6	2	2	5	5	6	7
L7	6	7	10	12	15	20
L8	44	61	46	64.5	92	111
L9	4	4.5	6	6	8	15
L10	16.5	20.5	30	38	48	42
L11	35.5	40.5	41.8	70	74	96
C1 [2]	70	90	115	165	200	235
C2 [2]	M5x0.8P	M6x1P	M8x1.25P	M10x1.5P	M12x1.75P	M12x1.75P
C3 [2]	≦14	≦19/≦24	≦24/≦32	≦35/≦38	≦50	≦55
C4 [2]	37	47	51	66.7	81	112
C5 [2] $_{F6}$	50	70	95	130	114.3	200
C6 [2]	4	6	6	5.5	6	6
C7 [2]	60	90	115	140	182	220
C8 [2]	46	55	58	87.2	93	120
C9 [2]	138.5	172	192	263.7	297	369
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.

PUL Double Stage Dimensions-1



Specifications

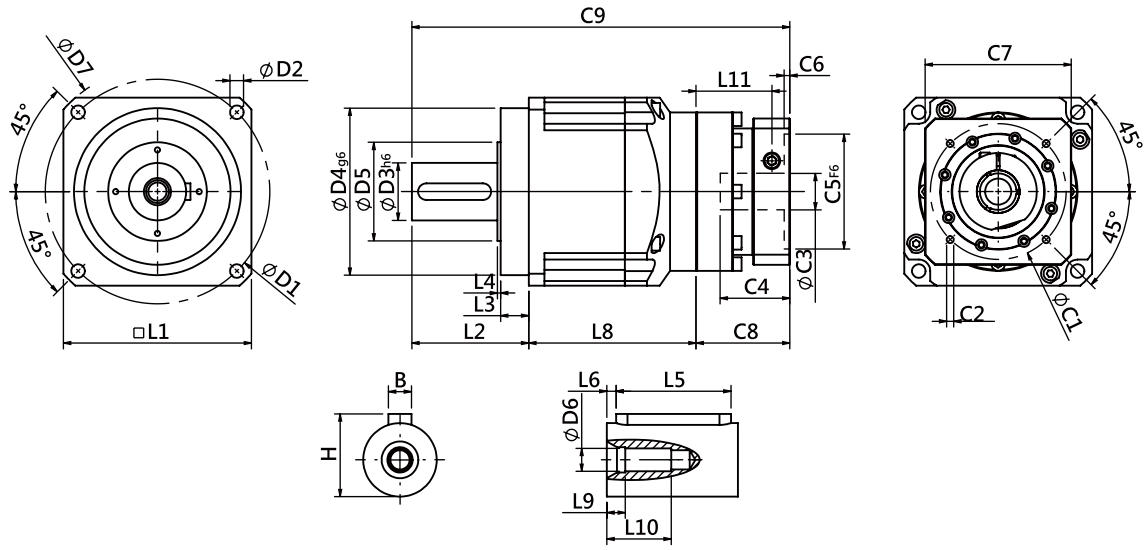
Unit:mm

Dimensions	PUL60/PUL60T		PUL75/PUL75T		PUL100T
D1	68		85		120
D2	5.5		6.8		9
D3 h6	16		22		32
D4 g6	60		70		90
D5	34.6		46.4		59.6
D6	M5x0.8P		M8x1.25P		M12x1.75P
D7	80		100		138
L1	62		76		105
L2	48.5		56		88
L3	18.5		18		28
L4	1.5		2		2
L5	25		32		40
L6	2		2		5
L7	6		7		10
L8	77	72.5	101	93.5	88.5
L9	4		4.5		6
L10	16.5		20.5		30
L11	35.5	29	40.5	35.5	40.5
C1 [2]	70	46	90	70	90
C2 [2]	M5x0.8P	M4x0.7P	M6x1P	M5x0.8P	M6x1P
C3 [2]	≦14	≦8	≦19/≦24	≦14	≦19/≦24
C4 [2]	37	27	47	37	47
C5 [2] F6	50	30	70	50	70
C6 [2]	4	4	6	4	6
C7 [2]	60	42.6	90	60	90
C8 [2]	46	38.5	55	46	55
C9 [2]	171.5	159.5	212	195.5	231.5
B	5		6		10
H	18		24.5		35

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

★ Specification subject to change without notice.

PUL Double Stage Dimensions-2



Specifications

Unit:mm

Dimensions	PUL140T	PUL180T	PUL220T
D1	-	215	-
D2	-	13	-
D3 h6	-	55	-
D4 g6	-	160	-
D5	-	94.5	-
D6	-	M20x2.5P	-
D7	-	239	-
L1	-	180	-
L2	-	112	-
L3	-	27	-
L4	-	3	-
L5	-	70	-
L6	-	6	-
L7	-	15	-
L8	-	160.2	-
L9	-	8	-
L10	-	48	-
L11	-	72.6	-
C1 [2]	-	130	-
C2 [2]	-	M8x1.25P	-
C3 [2]	-	≦35/≦38	-
C4 [2]	-	66.7	-
C5 [2] F6	-	110	-
C6 [2]	-	5.5	-
C7 [2]	-	140	-
C8 [2]	-	89.8	-
C9 [2]	-	362	-
B	-	16	-
H	-	59	-

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

★ Specification subject to change without notice.

PUL Specifications Table

Specifications		Stage	Ratio	PUL-60	PUL-75	PUL-100	PUL-140	PUL-180	PUL-220
Nominal Output Torque	N • m	1	3	53	145	290	520	580	1100
			4	55	150	300	550	1100	1700
			5	54	140	290	530	1200	2000
			6	46	135	280	490	1100	1850
			7	44	125	270	450	1100	1750
			8	41	110	240	390	1000	1550
			9	37	95	220	360	900	1500
			10	37	95	220	360	900	1450
		Stage	Ratio	PUL-60 (T)	PUL-75(T)	PUL-100T	PUL-140T	PUL-180T	PUL-220T
		2	15	53	145	290	520	580	2000
			20	55	150	300	550	1100	2000
			25	54	140	290	530	1200	2000
			30	54	140	290	530	1200	2000
			35	54	140	290	530	1200	2000
			40	54	140	290	530	1200	2000
			45	54	140	290	530	1200	2000
			50	54	140	290	530	1200	2000
			60	46	135	280	490	1200	1850
			70	44	125	270	450	1100	1750
			80	41	110	240	390	1000	1550
			90	37	95	220	360	900	1500
			100	37	95	220	360	900	1450
Emergency Stop Torque	N • m		3.0 times of Nominal Output Torque (* Max. Output Torque T2B =60% of Emergency Stop Torque)						
Nominal Input Speed	rpm	1,2	3-100	5000	4000	4000	3000	3000	2000
Max. Input Speed	rpm	1,2	3-100	10000	8000	8000	6000	6000	4000
Micro Backlash P0	arcmin	1	3-10	≦2	≦2	≦1	≦1	≦1	≦1
		2	12-100	≦4	≦4	≦3	≦3	≦3	≦3
Precision Backlash P1	arcmin	1	3-10	≦4	≦4	≦3	≦3	≦3	≦3
		2	12-100	≦6	≦6	≦5	≦5	≦5	≦5
Standard Backlash P2	arcmin	1	3-10	≦6	≦6	≦5	≦5	≦5	≦5
		2	12-100	≦8	≦8	≦7	≦7	≦7	≦7
Torsional Rigidity	N • m /arcmin	1,2	3-100	7	14	25	50	150	220
Max. Radial Load	N	1,2	3-100	4130	5220	10650	-	22000	27800
Max. Axial Load	N	1,2	3-100	2500	3300	5700	-	14000	16200
Operating Temp.	°C		3-100	-10 °C ~+90 °C					
Service Life	hr		3-100	30,000 (15,000/ Continuous operation)					
Efficiency	%	1	3-10	≧97%					
		2	12-100	≧94%					
Weight	kg	1	3-10	1.8	4.0	6.7	-	30.8	55
		2	12-100	2.4/2.0	5.7/4.5	8.2	-	37	68.5
Mounting Position	-	1,2	3-100	Any direction					
Noise Level [2]	dBA/1m	1,2	3-100	58	60	63	65	67	70
Protection Class	-	1,2	3-100	IP65					
Lubrication	-	1,2	3-100	Synthetic Lubricant					

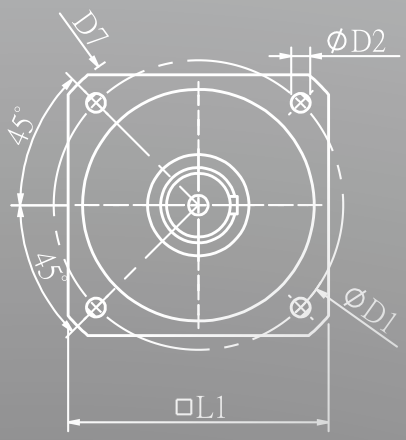
Inertia(J1)

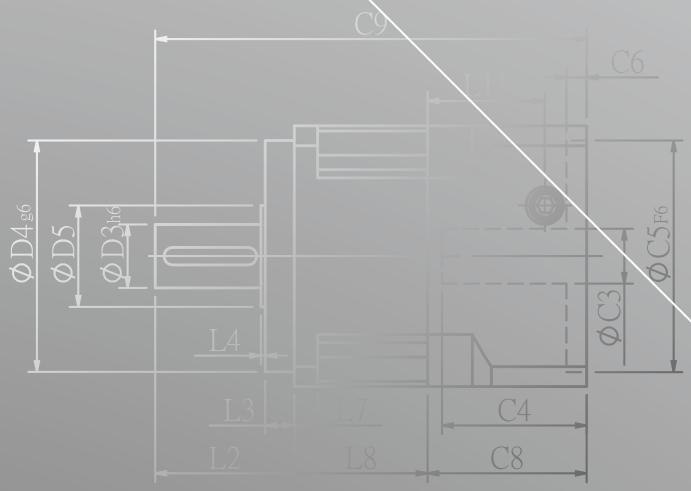
Stage	Ratio	unit	PUL-60	PUL-75	PUL-100	PUL-140	PUL-180	PUL-220
1	3	Kg • cm^2	0.23	0.97	2.35	10.00	30.50	79.50
	4		0.18	0.67	1.66	7.17	25.86	58.21
	5		0.17	0.65	1.50	6.52	23.63	54.36
	6/7/8		0.14	0.60	1.45	6.17	22.92	54.12
	9/10		0.14	0.58	1.41	6.10	22.73	53.98
Stage	Ratio		PUL-60(T)	PUL-75(T)	PUL-100T	PUL-140T	PUL-180T	PUL-220T
2	15/20/25		0.17(0.02)	0.65(0.17)	0.65	1.50	6.52	23.63
	30/35/40		0.14(0.02)	0.60(0.14)	0.60	1.45	6.17	22.92
	45/50/60/70/80/90/100		0.14(0.02)	0.58(0.14)	0.58	1.41	6.10	22.73

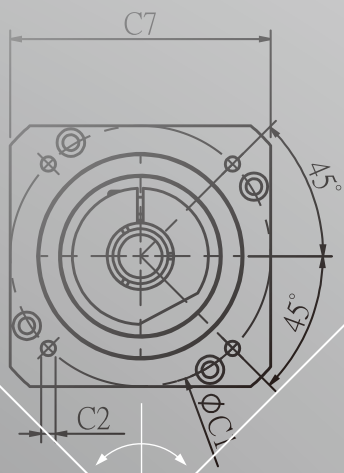
* 1. Applied to the output shaft center @100rpm.
* 2. Measured at 3000rpm with no load
※ The above figures/specifications are subject to change without prior notice.

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

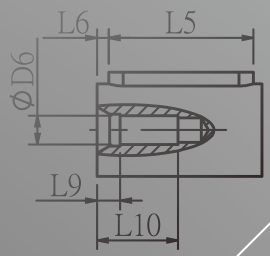
PGLH SERIES

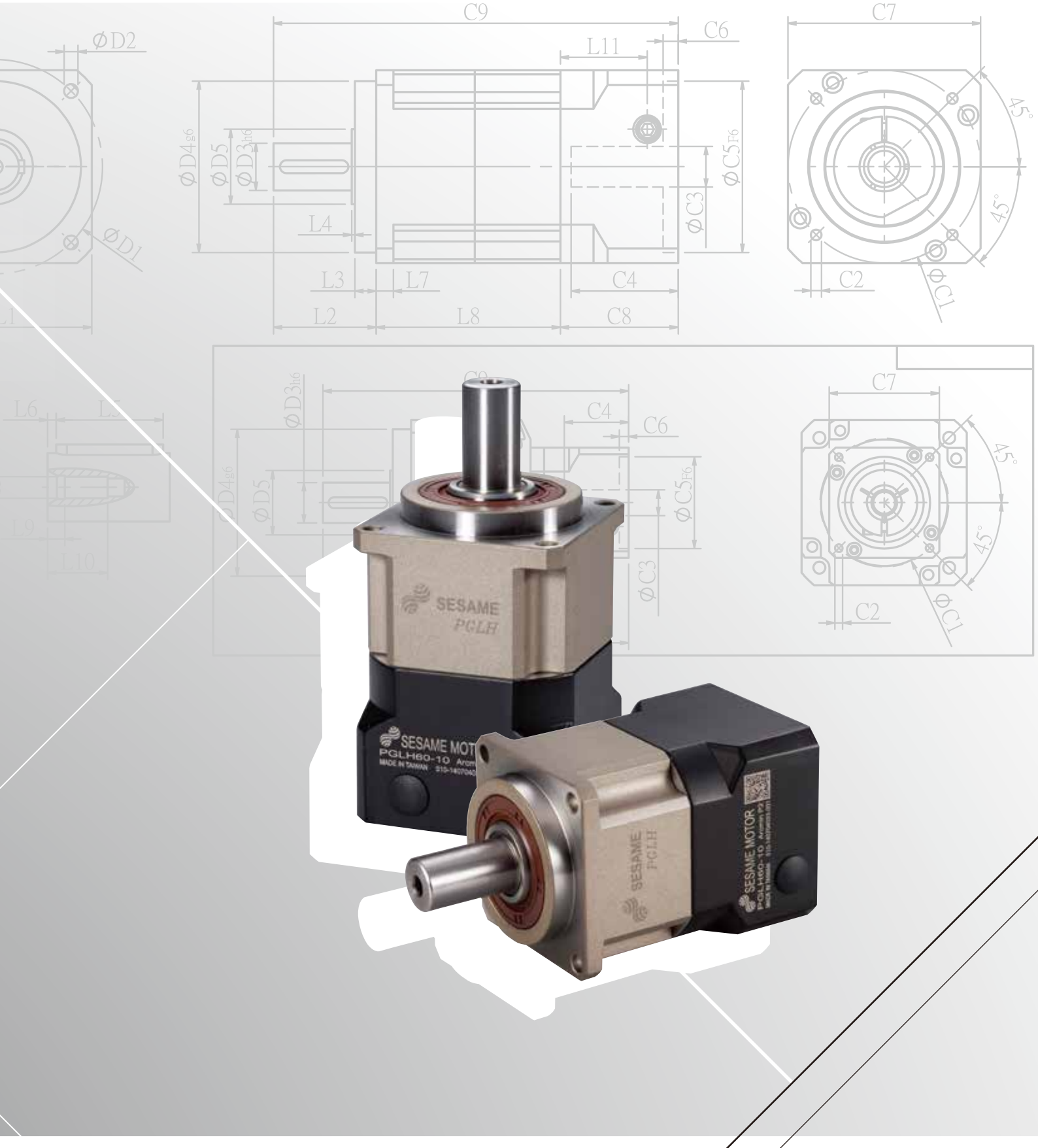

D7
ØD2
45°
45°
ØD1
□L1


C9
C6
ØD4g6
ØD5
ØD3h6
ØC5F6
ØC3
L4
L3
L7
C4
L2
L8
C8

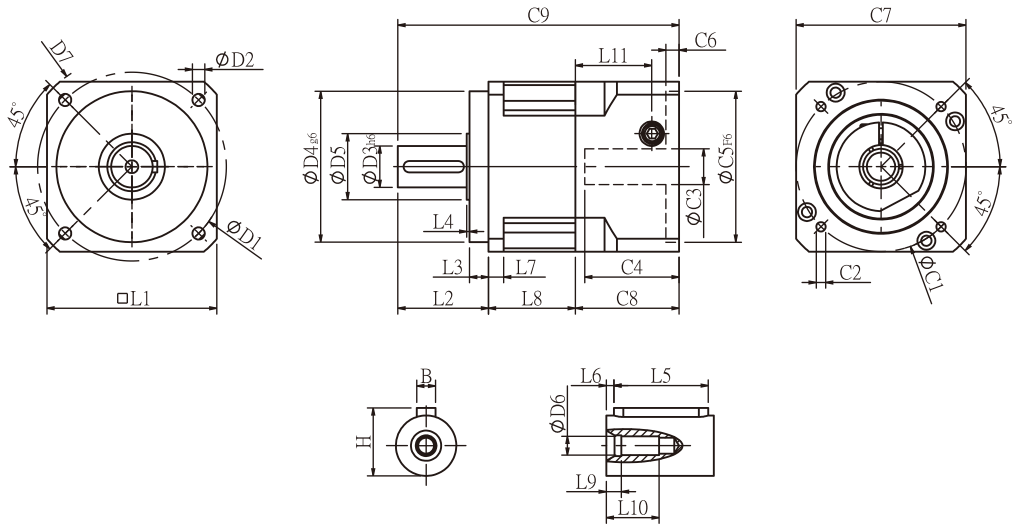

C7
45°
45°
C2
ØC1


B
H


L6
L5
ØD6
L9
L10


C9
C6
L11
C7
ØD2
ØD4g6
ØD5
ØD3h6
ØC5F6
ØC3
L4
ØD1
L3
L7
C4
L2
L8
C8
45°
C2
ØC1
L6
L9
L10
SESAME
PGLH
SESAME MOTOR
PGLH60-10

PGLH Single Stage Dimensions



Specifications

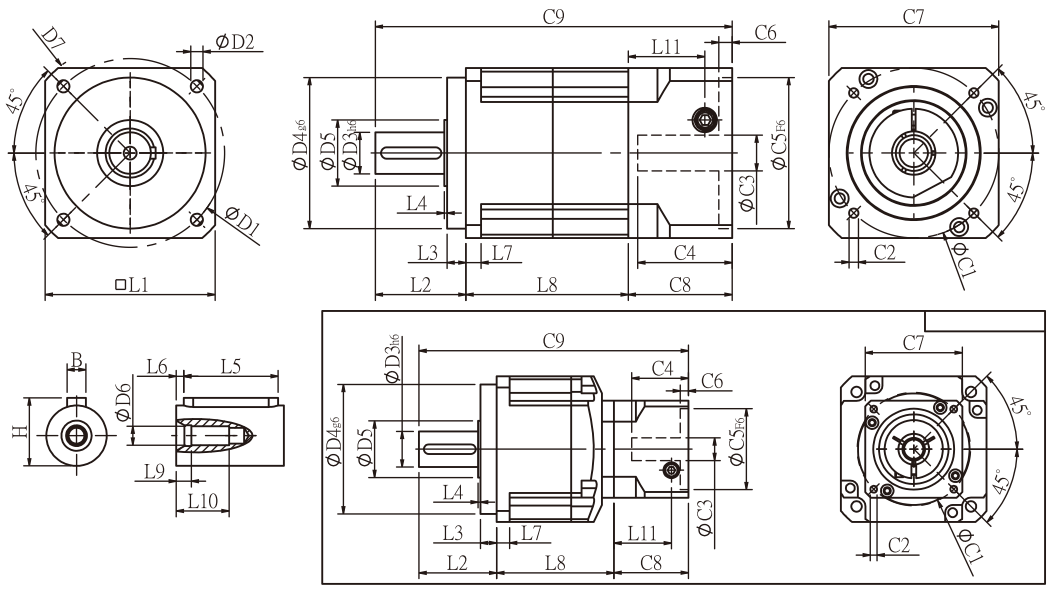
Unit:mm

Dimensions	PGLH42	PGLH60	PGLH90	PGLH115
D1	50	70	100	130
D2	3.4	5.5	6.5	8.5
D3 h6	13	16	22	32
D4 g6	35	50	80	110
D5	15	25	35	45
D6	M4x0.7P	M5x0.8P	M8x1.25P	M12x1.75P
D7	56	80	118	148
L1	42.6	60	90	115
L2	26	37	48	63
L3	5.5	7	10	10
L4	1	1.5	1.5	3.5
L5	15	25	32	40
L6	2	2	3	5
L7	4	6	8	11
L8	28.3	37	46	57
L9	4	4	4.5	6
L10	14	16.5	20.5	30
L11	29	35.5	40.5	53.7
C1 [2]	46	70	90	115
C2 [2]	M4x0.7P	M5x0.8P	M6x1.0P	M8x1.25P
C3 [2]	≦8/≦14	≦14/≦19	≦19/≦24	≦24/≦32/≦38
C4 [2]	27	37	41	56.3
C5 [2] F6	30	50	70	95
C6 [2]	4	4	6	10
C7 [2]	42.6	60	90	115
C8 [2]	38.5	46	55	75
C9 [2]	92.8	120	149	195
B	5	5	6	10
H	15	18	24.5	35

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

★ Specification subject to change without notice.

PGLH Double Stage Dimensions



Specifications

Unit:mm

Dimensions	PGLH42	PGLH60	PGLH60T	PGLH90	PGLH90T	PGLH115
D1	50	70		100		130
D2	3.4	5.5		6.5		8.5
D3 h6	13	16		22		32
D4 g6	35	50		80		110
D5	15	25		35		45
D6	M4x0.7P	M5x0.8P		M8x1.25P		M12x1.75P
D7	56	80		118		148
L1	42.6	60		90		115
L2	26	37		48		63
L3	5.5	7		10		10
L4	1	1.5		1.5		3.5
L5	15	25		32		40
L6	2	2		3		5
L7	4	6		8		11
L8	55.3	70	65.5	90	78.5	99.5
L9	4	4		4.5		6
L10	14	16.5		20.5		30
L11	29	35.5	29	40.5	35.5	40.7
C1 [2]	46	70	46	90	70	90
C2 [2]	M4x0.7P	M5x0.8P	M4x0.7P	M6x1.0P	M5x0.8P	M6x1.0P
C3 [2]	≦8/≦14	≦14/≦19	≦8/≦14	≦19/≦24	≦14/≦19	≦19/≦24
C4 [2]	27	37	27	41	37	46
C5 [2] F6	30	50	30	70	50	70
C6 [2]	4	4	4	6	4	10
C7 [2]	42.6	60	42.6	90	60	90
C8 [2]	38.5	46	38.5	55	46	60
C9 [2]	119.8	153	141	193	172.5	222.5
B	5	5		6		10
H	15	18		24.5		35

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

★ Specification subject to change without notice.

PGLH Specifications Table

Specifications		Stage	Ratio	PGLH-42	PGLH-60	PGLH-90	PGLH-115
Nominal Output Torque	N • m	1	3	19	53	145	290
			4	20	55	150	300
			5	17	54	140	290
			7	14	44	125	270
			10	11	37	95	220
		Stage	Ratio	PGLH-42	PGLH-60(T)	PGLH-90(T)	PGLH-115T
		2	15	19	53	145	290
			20	20	55	150	300
			25	17	54	140	290
			30	17	54	140	290
			35	17	54	140	290
			40	17	54	140	290
			50	17	54	140	290
			70	14	44	125	270
			100	11	37	95	220
Emergency Stop Torque	N • m		3.0 times of Nominal Output Torque (* Max. Output Torque T2B =60% of Emergency Stop Torque)				
Nominal Input Speed	rpm	1,2	3-100	4000	4000	3000	3000
Max. Input Speed	rpm	1,2	3-100	8000	8000	6000	6000
Precision Backlash P1	arcmin	1	3-10	≦6	≦6	≦6	≦5
		2	12-100	≦8	≦8	≦8	≦7
Standard Backlash P2	arcmin	1	3-10	≦8	≦8	≦8	≦7
		2	12-100	≦10	≦10	≦10	≦9
Torsional Rigidity	N • m /arcmin	1,2	3-100	2.5	6	12	23
Max. Radial Load	N	1,2	3-100	640	1260	2230	4300
Max. Axial Load	N	1,2	3-100	410	600	1500	3310
Operating Temp.	°C		3-100	-10 °C ~+90 °C			
Service Life	hr		3-100	20,000 (10,000/ Continuous operation)			
Efficiency	%	1	3-10	≧97%			
		2	12-100	≧94%			
Weight	kg	1	3-10	0.6	1.3	3.5	7.8
		2	12-100	0.9	2.0/1.56	5.6/3.9	9.5
Mounting Position	-	1,2	3-100	Any direction			
Noise Level [2]	dBA/1m	1,2	3-100	58	60	63	65
Protection Class	-	1,2	3-100	IP65			
Lubrication	-	1,2	3-100	Synthetic Lubricant			

Inertia(J1)

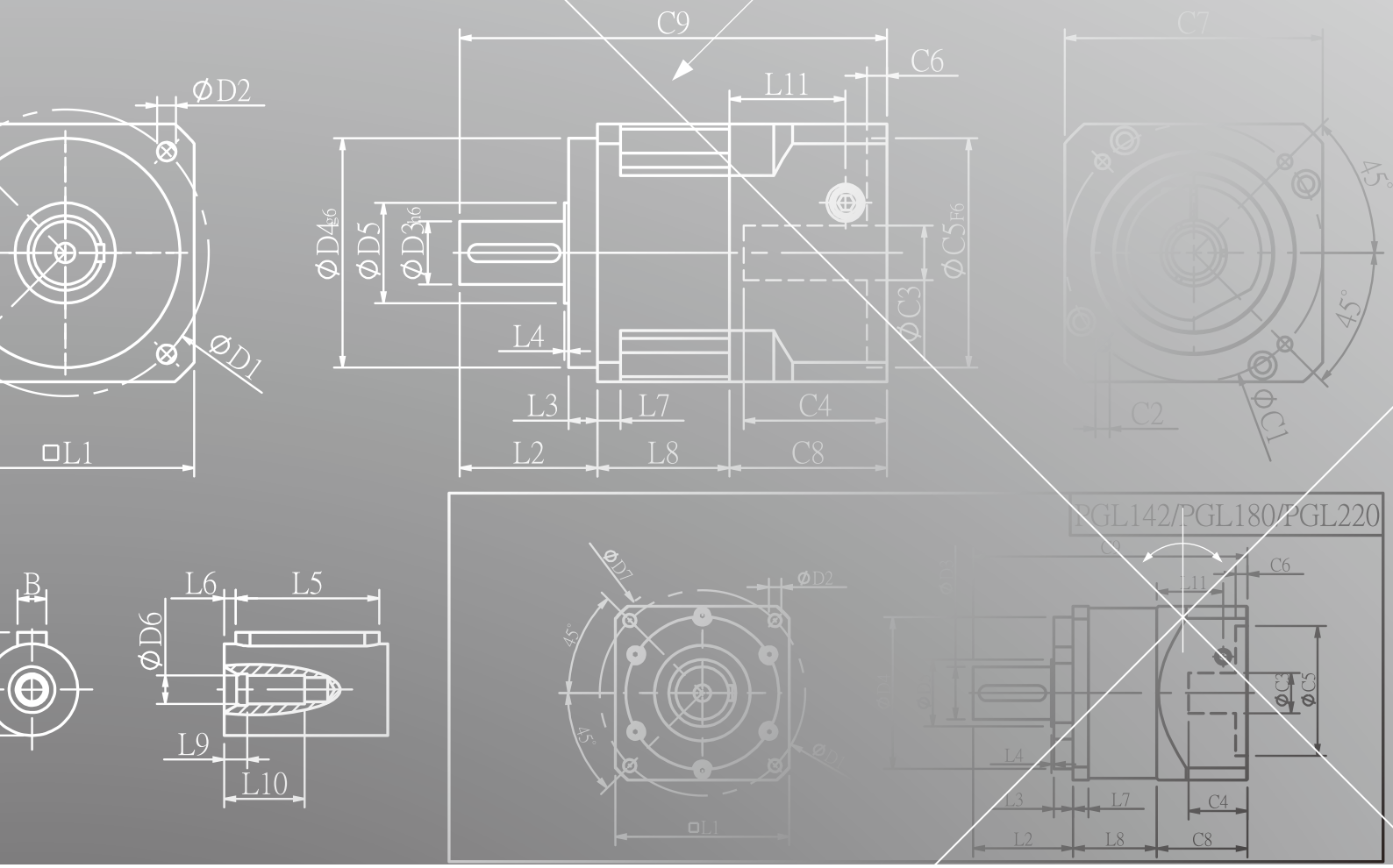
Stage	Ratio	unit	PGLH-42	PGLH-60	PGLH-90	PGLH-115
1	3	Kg • cm^2	0.03	0.23	0.97	2.35
	4		0.02	0.18	0.67	1.66
	5		0.02	0.17	0.65	1.50
	7		0.02	0.14	0.60	1.45
	10		0.02	0.14	0.58	1.41
Stage	Ratio		PGLH-42	PGLH-60(T)	PGLH-90(T)	PGLH-115T
2	15/20/25		0.02	0.17(0.02)	0.65(0.17)	0.65
	30/35/40		0.02	0.14(0.02)	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.

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


SESAME MOTOR
SESAME MOTOR

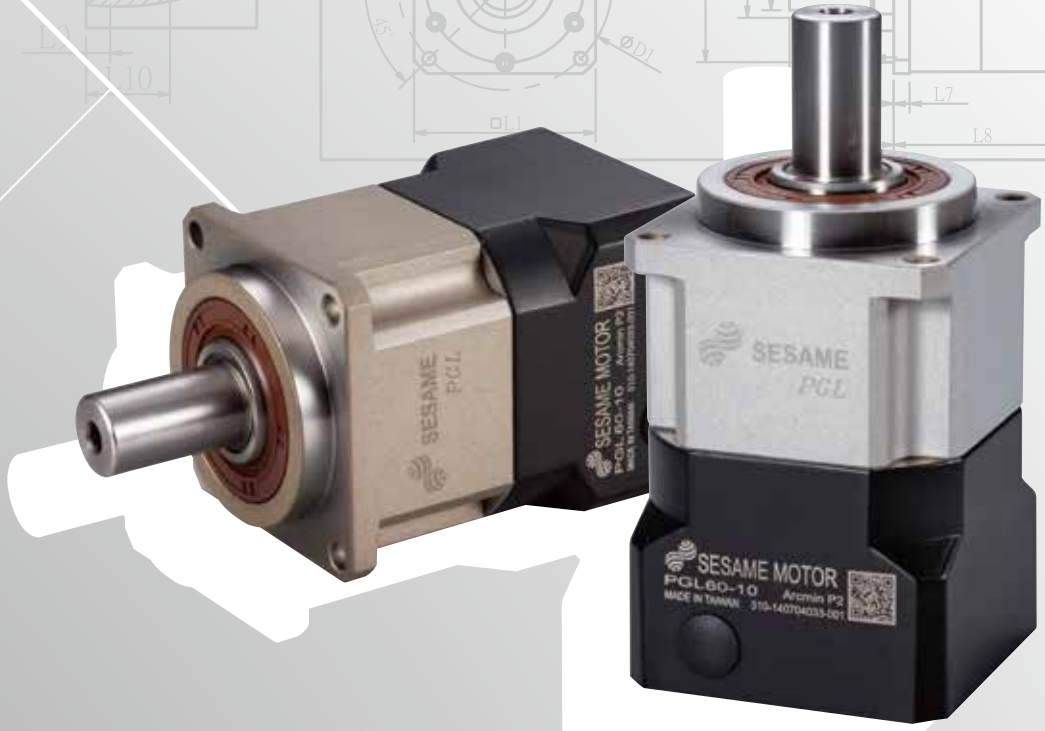
PGL SERIES


C9
C6
L11
ØD2
ØD1
ØD4
ØD5
ØD3
ØC5
ØC3
L4
L3
L7
C4
L2
L8
C8
□L1
C7
45°
45°
C2
ØC1
B
L6
L5
ØD6
L9
L10
ØD7
ØD2
45°
45°
ØD1
□L1
PGL142/PGL180/PGL220
C9
C6
L11
ØC3
ØC5
L4
L3
L7
C4
L2
L8
C8

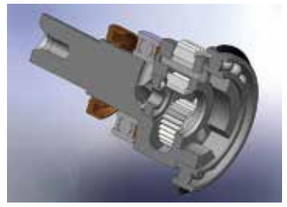
C9
C6
L11
C7
ØD2
ØD7
ØD4g6
ØD5
ØD3h6
ØC5F6
ØC3
45°
45°
ØD1
L4
L3
L7
C4
ØC1
C2
□L1
L2
L8
C8


PGL142/PGL180/PGL220
ØD7
ØD2
ØD3
C9
C6
L11
45°
ØD4
ØD5
ØC4
ØC5
ØD1
L7
C4
□L1
L8
C8

L6
L5
ØD6
10

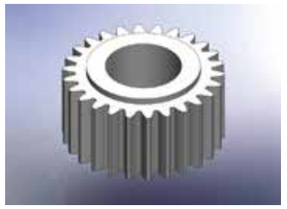

SESAME MOTOR
PGL60-10
Arcmin P2
SESAME
PGL

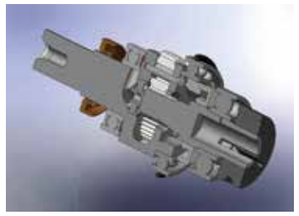
PGL SERIES FEATURES



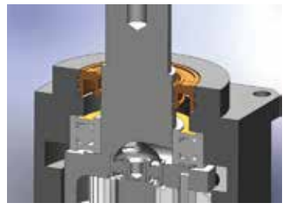
Planetary arm bracket and output shaft are one-piece constructed, setting bearing apart for larger span to reach the largest reverse rigid and contribute high axis radial load capacity.

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

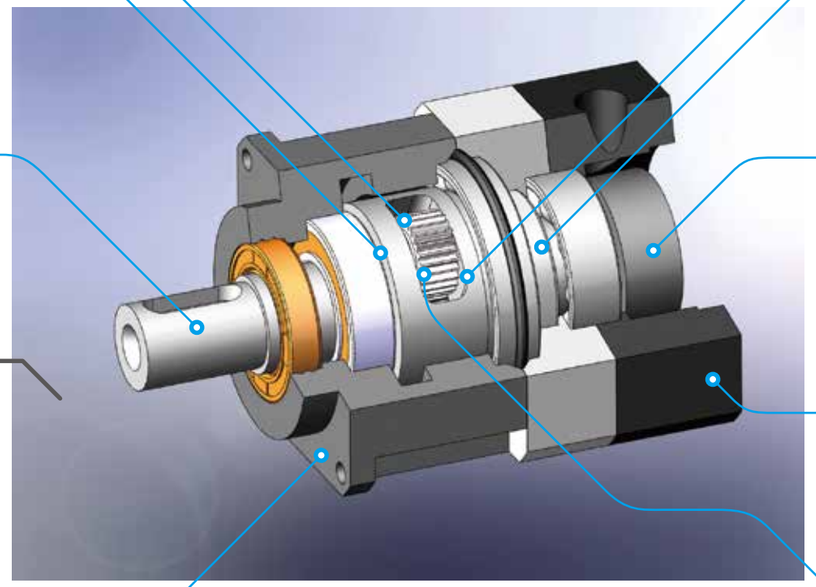


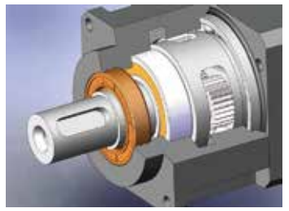


The sun gear bearing is placed directly into the planetary arm bracket, the overall mechanical structure designed to ensure concentricity of the transmission components.



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

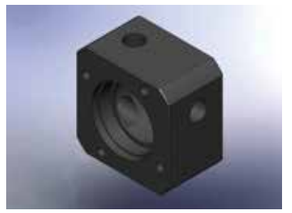




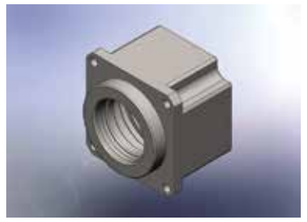
Grinding process to smooth surface of output shaft, and with oil seal to minimum friction coefficient and reducing start up load; result in the best seal-ability and extended lifespan.

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.



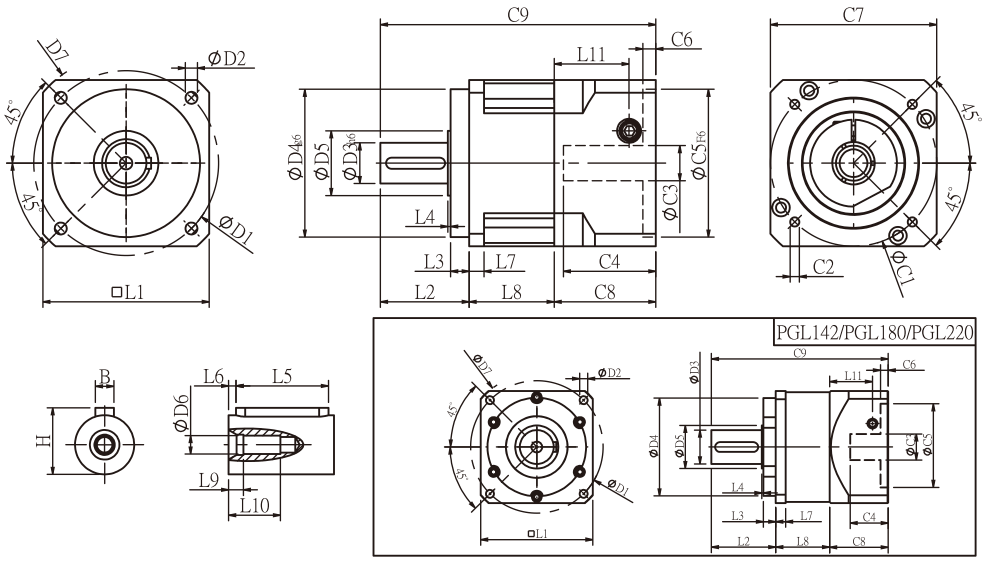
Advanced motor bracket design coupled with the input shaft bushing is easy to mount to any servo or stepper motor.



Advanced electroless nickel plating surface treatment resists scratch and corrosion. Suitable for stringent require of high-tech equipment.
The gearbox 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 bearing aligned without retainer achieve maximum exposure but smallest gap tolerances. Enhance over-all gear structure rigid and output torque.

PGL Single Stage Dimensions



Specifications

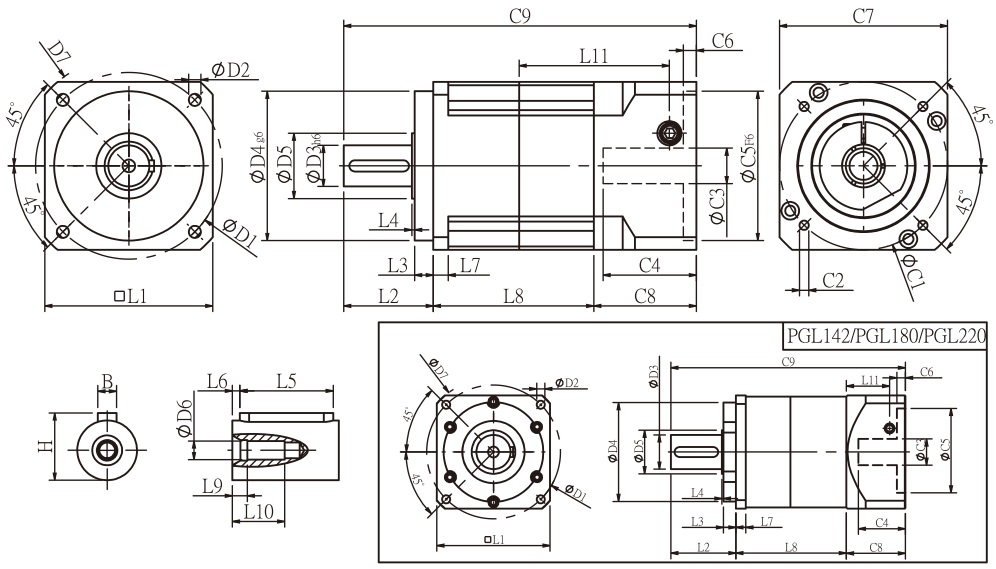
Unit:mm

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 [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	37	47	58	66	82	98
C5 [2] F6	30	50	70	95	110	114.3	200
C6 [2]	4	4	6	10	6	13	12
C7 [2]	42.6	60	90	115	140	182	220
C8 [2]	38.5	46	55	63	80	95	130
C9 [2]	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 motor flange.

★ Specification subject to change without notice.

PGL Double Stage Dimensions-1



Specifications

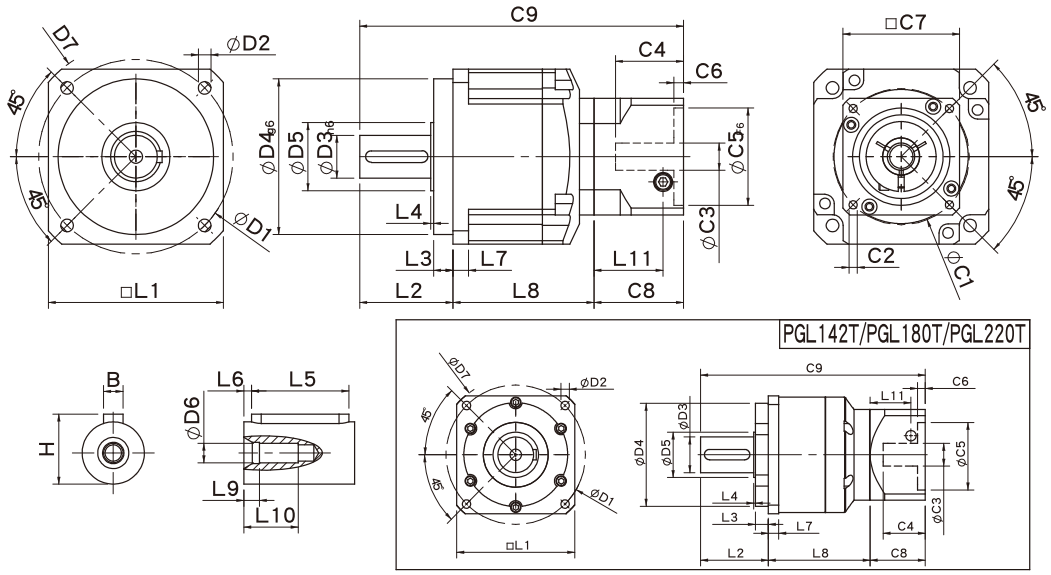
Unit:mm

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	54.3	64	86	107	140	177.5	232
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 [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	37	47	58	66	82	98
C5 [2] F6	30	50	70	95	110	114.3	200
C6 [2]	4	4	6	10	6	13	12
C7 [2]	42.6	60	90	115	140	182	220
C8 [2]	38.5	46	55	63	80	95	130
C9 [2]	118.8	147	189	232	313	377	500
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.

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 $_{h6}$	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	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 [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	37	47	58	66	82
C5 [2] $_{F6}$	30	50	70	95	110	114.3
C6 [2]	4	4	6	10	6	13
C7 [2]	42.6	60	90	115	140	182
C8 [2]	38.5	46	55	63	80	95
C9 [2]	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	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	N • m		3.0 times of Nominal Output Torque (* Max. Output Torque T2B =60% of Emergency Stop Torque)							
Nominal Input Speed	rpm	1,2	3-100	3000	3000	3000	2500	2000	2000	2000
Max. Input Speed	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	N	1,2	3-100	350	960	1630	3380	6150	7260	11120
Max. Axial Load	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 [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						

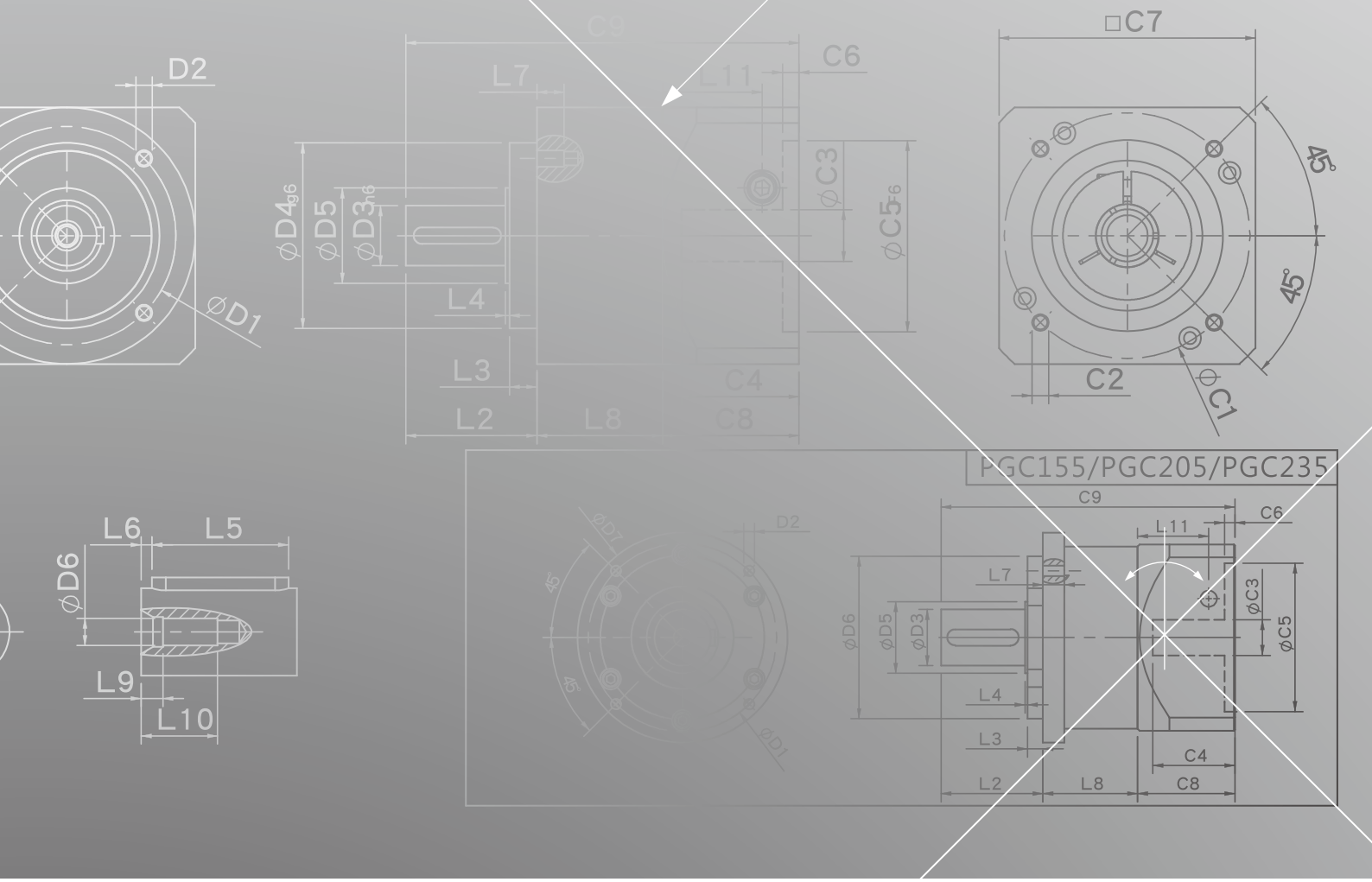
Inertia(J1)

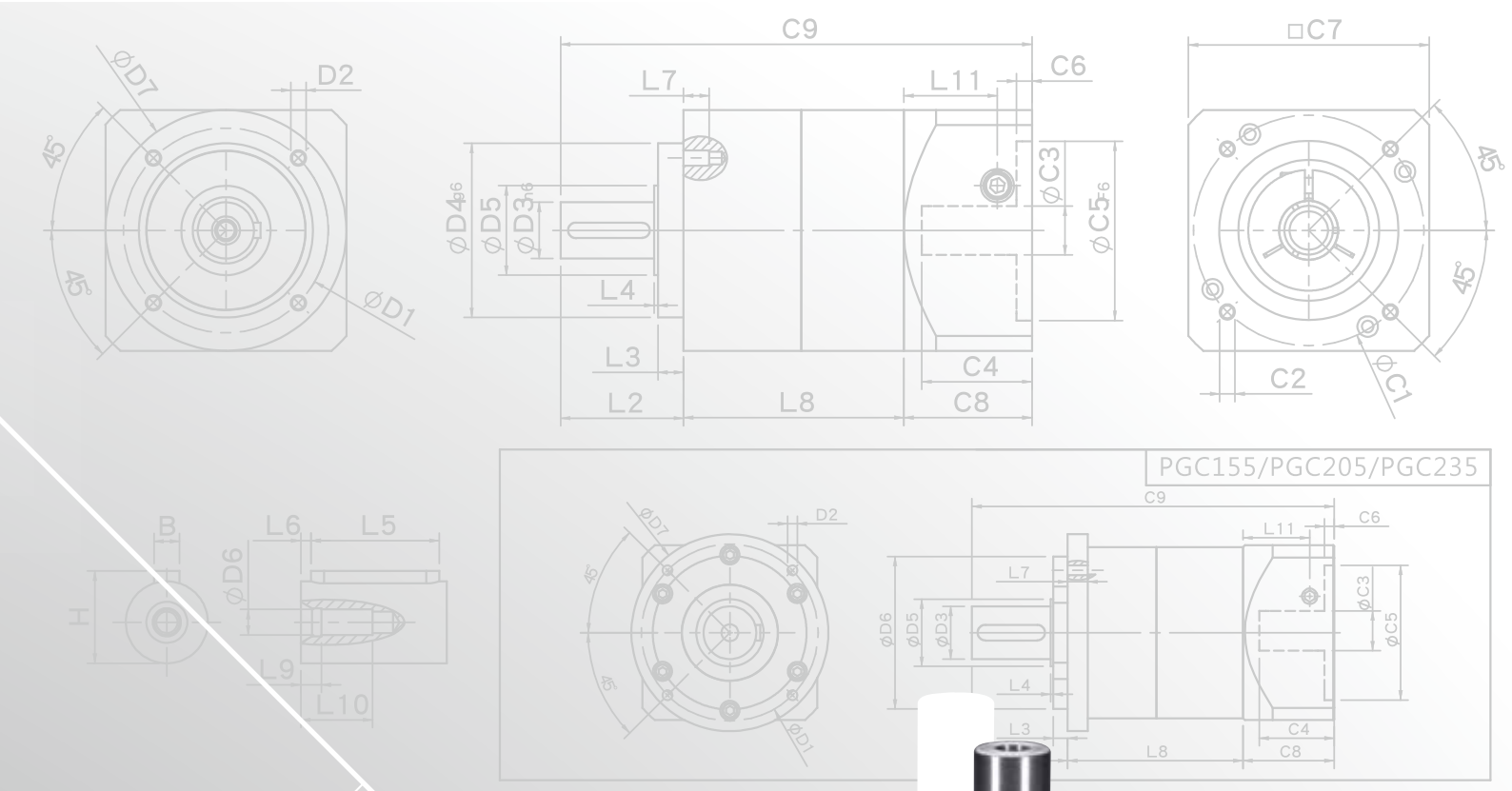
Stage	Ratio	unit	PGL-42	PGL-60	PGL-90	PGL-115	PGL-142	PGL-180	PGL-220
1	3	Kg • cm^2	0.03	0.20	0.81	2.20	7.89	25.2	77.9
	4		0.02	0.16	0.65	1.80	5.83	19.8	56.5
	5		0.02	0.15	0.62	1.61	5.38	18.3	53.3
	6/7/8		0.02	0.14	0.60	1.55	5.22	17.8	53.0
	9/10		0.02	0.14	0.60	1.53	5.20	17.6	52.9
Stage	Ratio		PGL-42	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 3000rpm with no load
* 3. PGL60T - □□ - P1、PGL90T - □□ - P1, and PGL115T - □□ - P0, are not applicable.
※ 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.

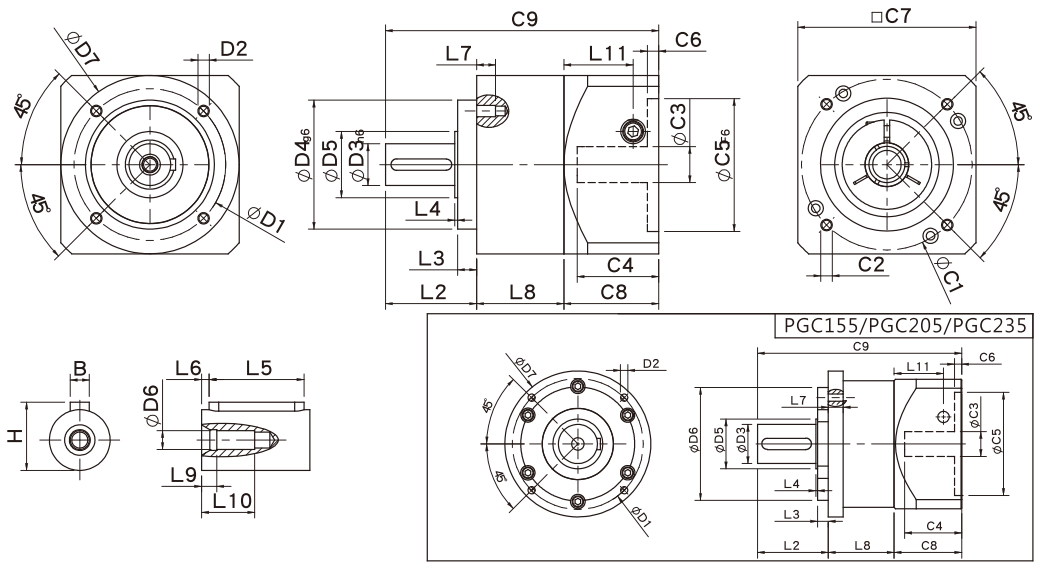
PGC SERIES


D2
ØD1
L7
C9
C6
L11
ØD4g6
ØD5
ØD3g6
L4
L3
L2
L8
C4
C8
ØC3
ØC5g6
□C7
45°
45°
C2
ØC1
L6
L5
ØD6
L9
L10
PGC155/PGC205/PGC235
C9
C6
L11
L7
ØD6
ØD5
ØD3
ØC3
ØC5
L4
L3
L2
L8
C4
C8
D2
ØD7
45°
ØD1


C9
C6
L7
L11
□C7
ØD7
D2
45°
ØD4
ØD5
ØD3
ØC3
ØC5
L4
L3
C4
L2
L8
C8
ØD1
C2
ØC1
PGC155/PGC205/PGC235
B
L6
L5
ØD6
H
L9
L10


SESAME
PGC
SESAME MOTOR
Armin P2

PGC Single Stage Dimensions



Specifications

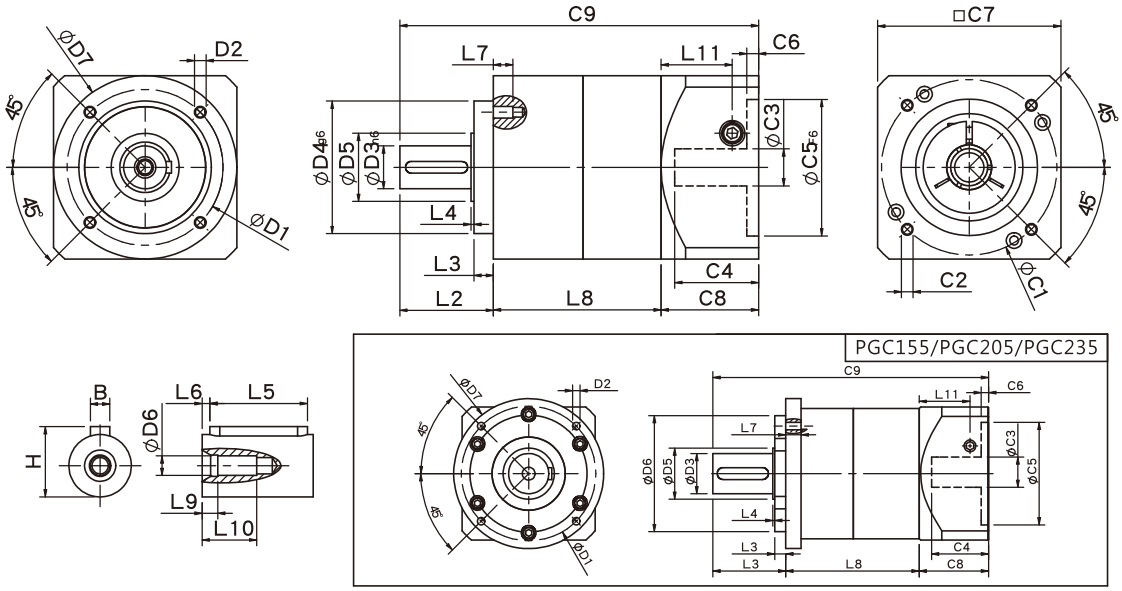
Unit:mm

Dimensions	PGC50	PGC70	PGC90	PGC120	PGC155	PGC205	PGC235
D1	44	62	80	108	140	184	210
D2	M4x0.7P	M5x0.8P	M6x1.0P	M8x1.25P	M10x1.5P	M12x1.75P	M16x2.0P
D3 $_{h6}$	13	16	22	32	40	55	75
D4 $_{g6}$	35	52	68	90	120	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	50	70	94	120	155	205	235
L2	24.5	35	48	60	93	99.5	126
L3	4	5	10	6	8	15	18
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	8	10	10	15	18	21	32
L8	30	38	46	61	79	92.5	129.5
L9	4	4	4.5	6	6	8	7
L10	14	16.5	20.5	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]	34	44	50	63	80	95	130
C9 [2]	88.5	117	144	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.

PGC Double Stage Dimensions-1



Specifications

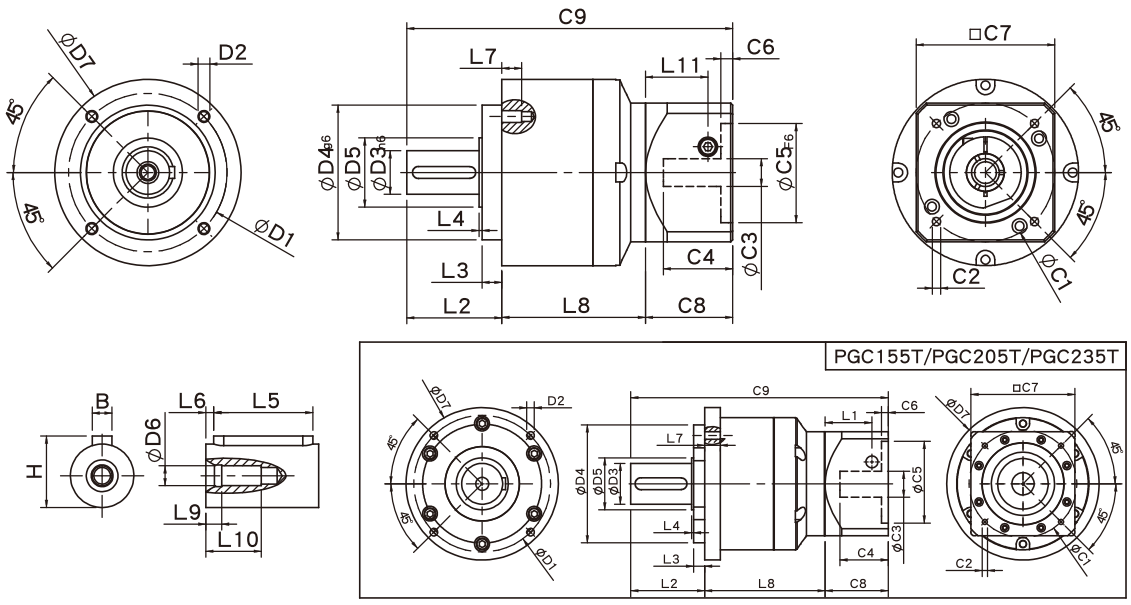
Unit:mm

Dimensions	PGC50	PGC70	PGC90	PGC120	PGC155	PGC205	PGC235
D1	44	62	80	108	140	184	210
D2	M4x0.7P	M5x0.8P	M6x1.0P	M8x1.25P	M8x1.5P	M12x1.75P	M16x2.0P
D3 $_{h6}$	13	16	22	32	40	55	75
D4 $_{g6}$	35	52	68	90	120	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	50	70	94	120	155	205	235
L2	24.5	35	48	60	93	99.5	126
L3	4	5	10	6	8	15	18
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	8	10	10	15	18	21	32
L8	56	66	86	109	140	182.5	244
L9	4	4	4.5	6	6	8	7
L10	14	16.5	20.5	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]	34	44	50	63	80	95	130
C9 [2]	114.5	145	184	232	313	377	500
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.

PGC Double Stage Dimensions-2



Specifications

Unit:mm

Dimensions	PGC70T	PGC90T	PGC120T	PGC155T	PGC205T	PGC235T
D1	62	80	108	140	184	210
D2	M5x0.8P	M6x1.0P	M8x1.25P	M10x1.5P	M12x1.75P	M16x2.0P
D3 $_{h6}$	16	22	32	40	55	75
D4 $_{g6}$	52	68	90	120	160	180
D5	25	35	45	50	70	90
D6	M5x0.8P	M8x1.25P	M12x1.75P	M16x2.0P	M20x2.5P	M20x2.5P
D7	70	94	120	155	205	235
L2	35	48	60	93	99.5	126
L3	5	10	6	8	15	18
L4	1.5	1.5	3	6	2.5	3
L5	25	32.5	40	60	70	90
L6	2	3	5	5	6	7
L7	10	10	15	18	21	32
L8	60.8	70.5	99.4	127	162	211.5
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]	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]	28.5	41	47.75	58	66	82
C5 [2] $_{F6}$	30	50	70	95	110	114.3
C6 [2]	5.5	8	6	8	6	13
C7 [2]	50	70	94	120	140	182
C8 [2]	40	50	55	63	80	95
C9 [2]	135.8	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 the motor flange chosen.

★ Specification subject to change without notice.

PGC Specifications Table

Specifications		Stage	Ratio	PGC-50	PGC-70	PGC-90	PGC-120	PGC-155	PGC-205	PGC-235
Nominal Output Torque	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	PGC-50	PGC-70(T)	PGC-90(T)	PGC-120(T)	PGC-155(T)	PGC-205(T)	PGC-235(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
			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	N • m		3.0 times of Nominal Output Torque (* Max. Output Torque T2B =60% of Emergency Stop Torque)							
Nominal Input Speed	rpm	1,2	3-100	3000	3000	3000	2500	2000	2000	2000
Max. Input Speed	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. Bending Moment	N • m	1,2	3-100	350	960	1630	3380	6150	7260	11120
Max. Axial Load	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	0.7	1.4	3.0	7.3	15.6	26	56
		2	12-100	0.9	2.2/1.7	5.0/3.4	11.5/8.5	20.7/17.2	36/31	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						

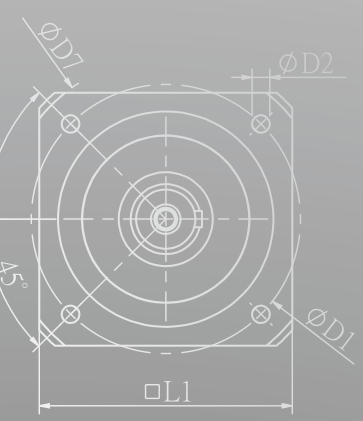
Inertia(J1)

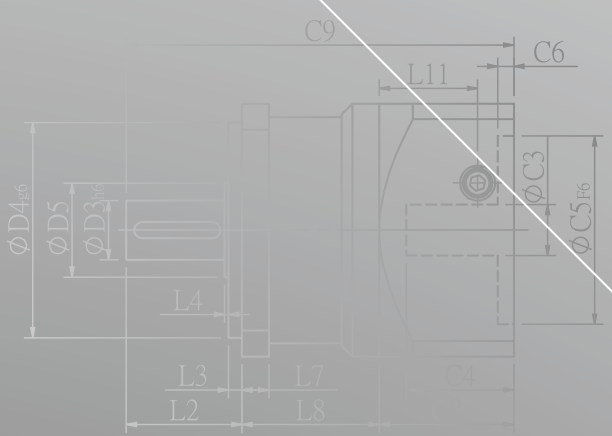
Stage	Ratio	unit	PGC-50	PGC-70	PGC-90	PGC-120	PGC-155	PGC-205	PGC-235
1	3	Kg • cm²	0.03	0.20	0.81	2.20	7.89	25.2	77.9
	4		0.02	0.16	0.65	1.80	5.83	19.8	56.5
	5		0.02	0.15	0.62	1.61	5.38	18.3	53.3
	7		0.02	0.14	0.60	1.55	5.22	17.8	53.0
	10		0.02	0.14	0.60	1.53	5.20	17.6	52.9
Stage	Ratio		PGC-50	PGC-70(T)	PGC-90(T)	PGC-120(T)	PGC-155(T)	PGC-205(T)	PGC-235(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)
	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)

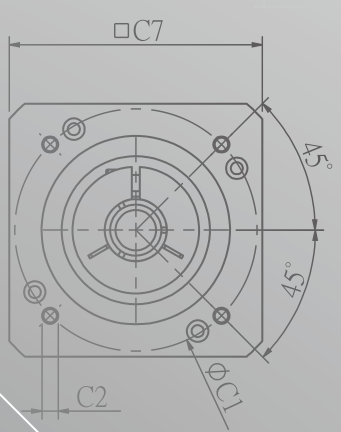
* 1. Applied to the output shaft center @100rpm. * 2. Measured at 3000rpm with no load
* 3. PGL60T - □□ - P1、PGL90T - □□ - P1, and PGL115T - □□ - P0, are not applicable.
※ The above figures/specifications are subject to change without prior notice.

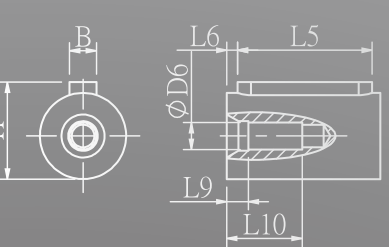
Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty.

PGE SERIES


ØD7
ØD2
45°
ØD1
□L1


C9
C6
L11
ØC3
ØC5F6
ØD4±0.6
ØD5
ØD3F6
L4
L3
L7
L2
L8
C4


□C7
45°
45°
C2
ØC1


B
L6
L5
ØD6
L9
L10

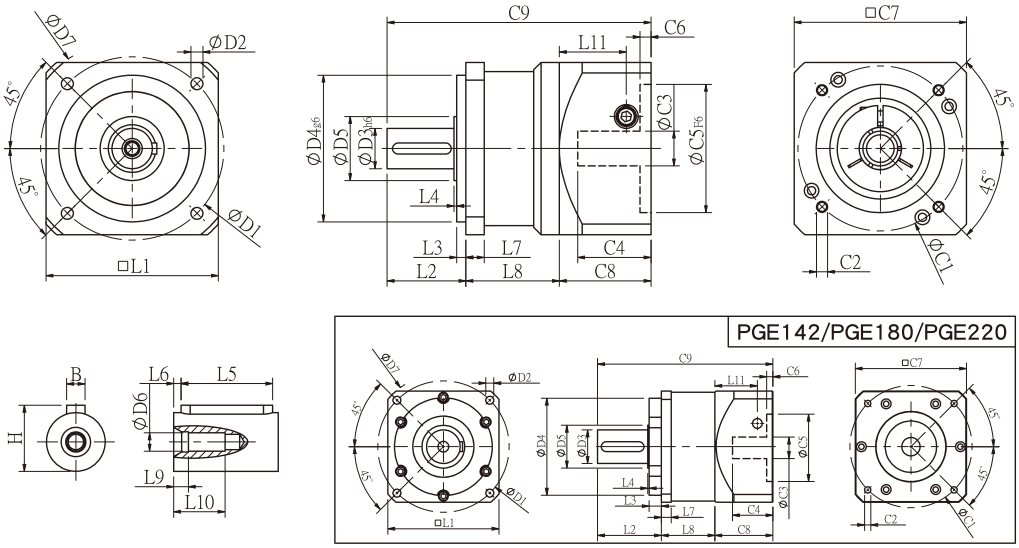

PGE142/PGE180/PGE220

C9
C6
L11
□C7
ØD2
ØD4
ØD5
ØD3
ØC3
ØC5
L4
L3
L7
C4
L2
L8
C8
45°
45°
ØD1
C2
ØC1


PGE142/PGE180/PGE220
ØD7
ØD2
C9
C6
L11
ØD4
ØD5
ØD3
ØC5
ØC3
L4
L3
L7
C4
L2
L8
C8
L6
L5

SESAME
PGE
SESAME MOTOR
PGE90-S
Axoman P2

PGE Single Stage Dimensions



Specifications

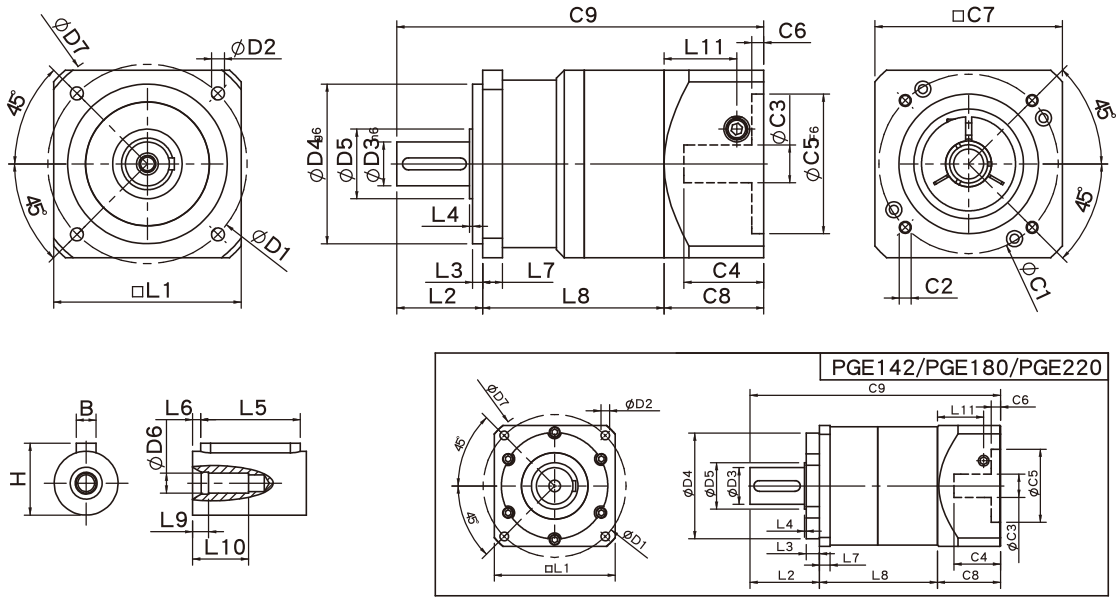
Unit:mm

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
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	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	20.5	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]	34	44	50	63	80	95	130
C9 [2]	88.5	117	144	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.

PGE Double Stage Dimensions-1



Specifications

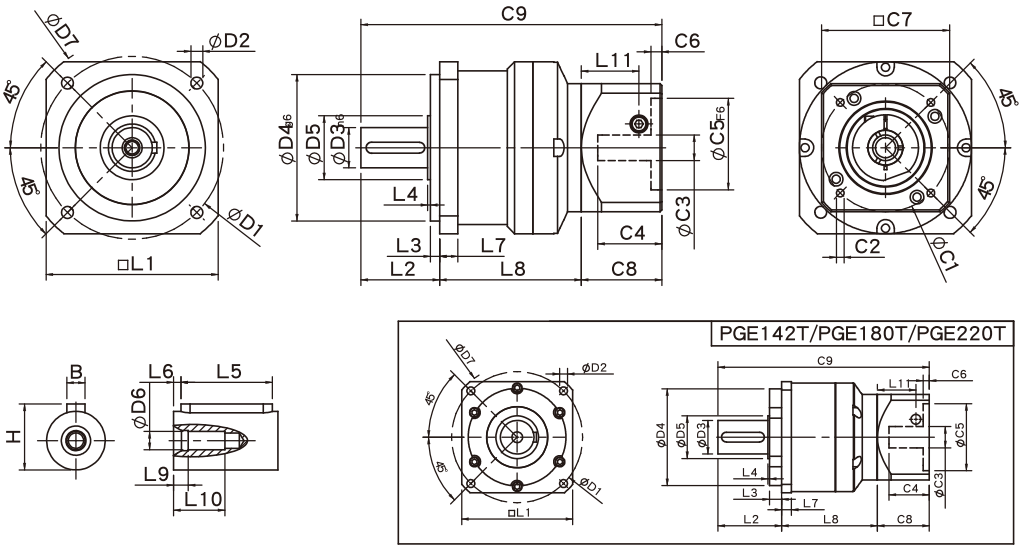
Unit:mm

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
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	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	56	64	91	109	140	177.5	232
L9	4	4	4.5	6	6	8	7
L10	14	16.5	20.5	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]	34	44	50	63	80	95	130
C9 [2]	114.5	145	184	232	313	377	500
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.

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]	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]	28.5	41	47.75	58	66	82
C5 [2] F6	30	50	70	95	110	114.3
C6 [2]	5.5	8	6	8	6	13
C7 [2]	50	70	94	120	140	182
C8 [2]	40	50	55	63	80	95
C9 [2]	135.8	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 the motor flange chosen.

★ Specification subject to change without notice.

PGE Specifications Table

Specifications		Stage	Ratio	PGE-50	PGE-70	PGE-90	PGE-120	PGE-142	PGE-180	PGE-220
Nominal Output Torque	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-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
			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	N • m		3.0 times of Nominal Output Torque (* Max. Output Torque T2B =60% of Emergency Stop Torque)							
Nominal Input Speed	rpm	1,2	3-100	3000	3000	3000	2500	2000	2000	2000
Max. Input Speed	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. Bending Moment	N • m	1,2	3-100	350	960	1630	3380	6150	7260	11120
Max. Axial Load	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	0.7	1.4	3.0	7.3	15.6	26	56
		2	12-100	0.9	2.2/1.7	5.0/3.4	11.5/8.5	20.7/17.2	36/31	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						

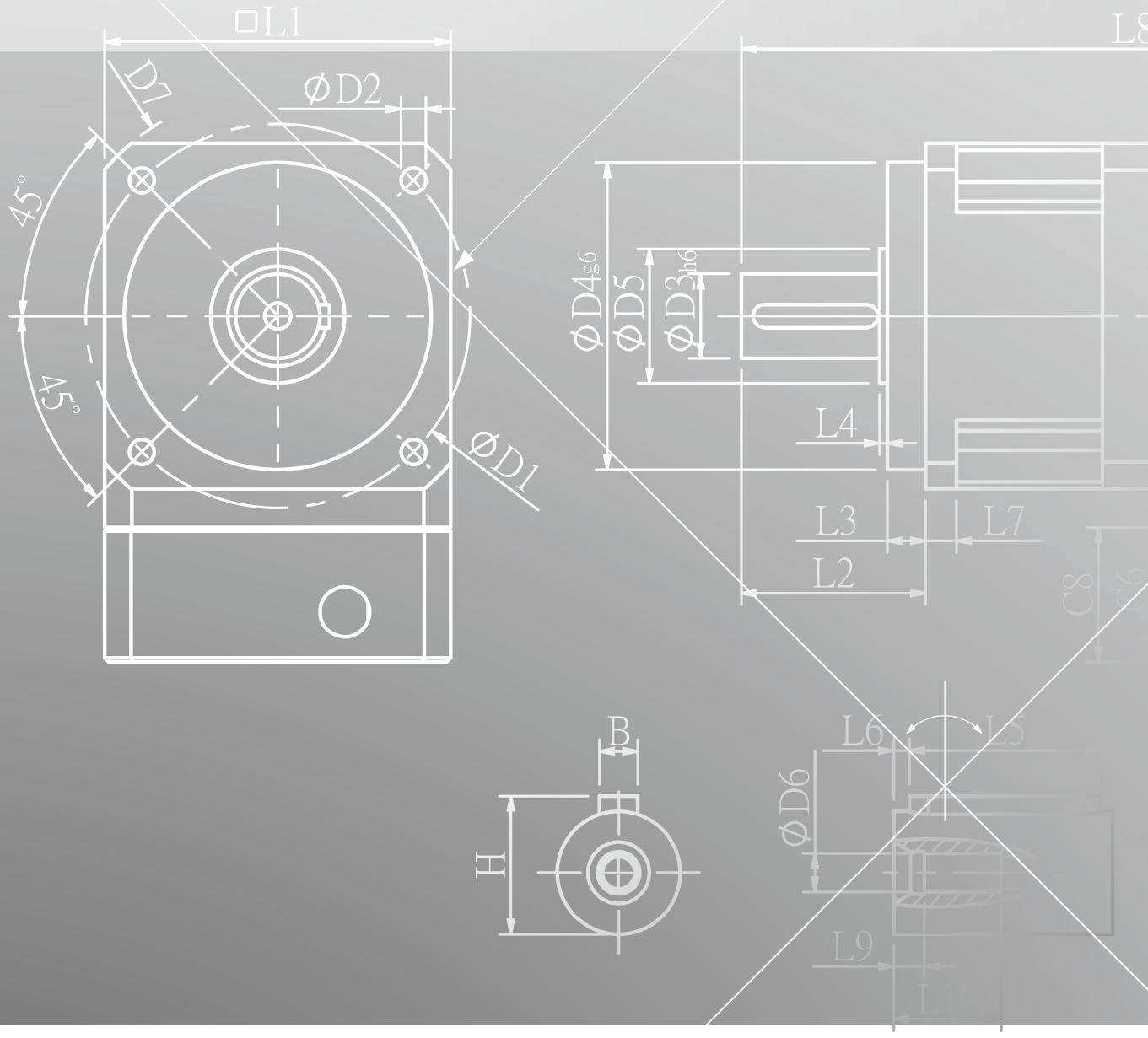
Inertia(J1)

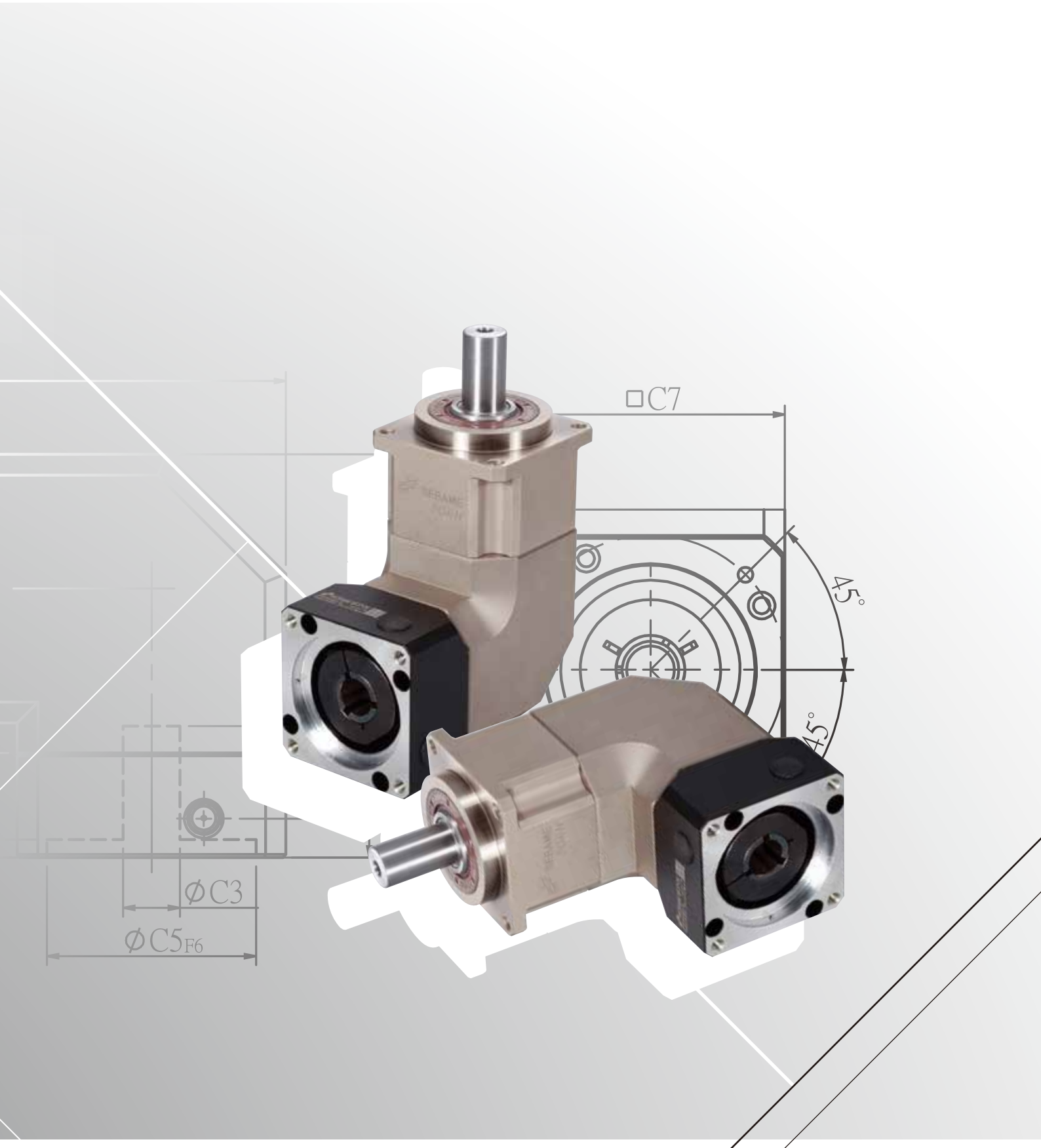
Stage	Ratio	unit	PGE-50	PGE-70	PGE-90	PGE-120	PGE-142	PGE-180	PGE-220
1	3	Kg • cm²	0.03	0.20	0.81	2.20	7.89	25.2	77.9
	4		0.02	0.16	0.65	1.80	5.83	19.8	56.5
	5		0.02	0.15	0.62	1.61	5.38	18.3	53.3
	7		0.02	0.14	0.60	1.55	5.22	17.8	53.0
	10		0.02	0.14	0.60	1.53	5.20	17.6	52.9
Stage	Ratio		PGE-50	PGE-70(T)	PGE-90(T)	PGE-120(T)	PGE-142(T)	PGE-180(T)	PGE-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)
	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 @100rpm. * 2. Measured at 3000rpm with no load
* 3. PGL60T - □□ - P1、PGL90T - □□ - P1, and PGL115T - □□ - P0, are not applicable.
※ The above figures/specifications are subject to change without prior notice.

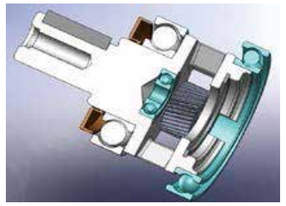
Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty.

PGRH SERIES



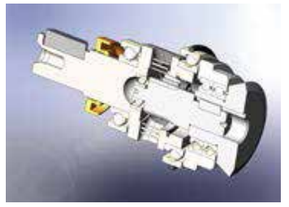

□C7
45°
45°
ØC3
ØC5F6

PGRH SERIES FEATURES



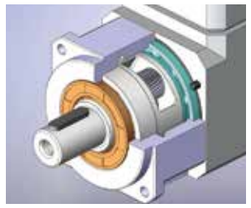
Planetary arm bracket and output shaft are one-piece constructed, setting bearing apart for larger span to reach the largest reverse rigid and contribute high axis radial load capacity.

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

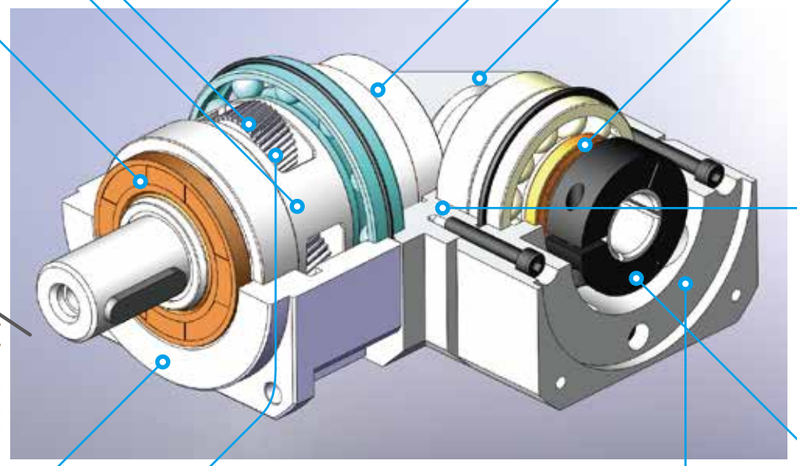


The sun gear bearing is placed directly into the planetary arm bracket, the overall mechanical structure designed to ensure concentricity of the transmission components.

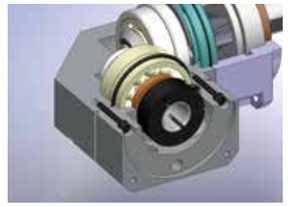
Alloy steel spiral bevel gears selected after hobbing and heat treatment to ensure high accuracy of the engagement point, low backlash and low noise.



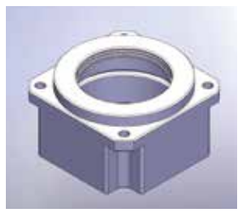
Grinding process to smooth surface of output shaft, and with oil seal to minimum friction coefficient and reducing start up load; result in the best seal-ability and extended lifespan.



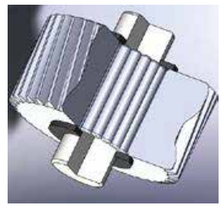
PGRH series overall design suitable for combination operation with servo motor high speed input and achieves maximum torque output. Precision gear design and gear processing, create a low backlash operation, high efficiency, low noise and planetary gear.



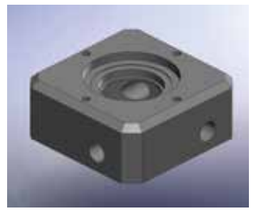
High-tech oil seal design on the upper lip guard against dust intruder, lower lip guard against oil leak. Protection grade IP65 safeguards fully avoid leaking problem, and given it maintenance free.



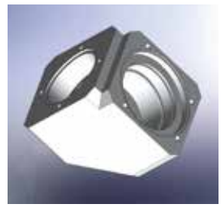
Advanced electroless nickel plating surface treatment resists scratch and corrosion. Suitable for stringent require of high-tech equipment.
The gearbox and internal gear ring are one-piece constructed, and then processed with advanced Germany gear shaper machinery for high precision, high torque and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



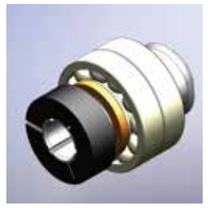
Planet gear transmission interface equipped with needle bearings, full needle roller bearing aligned without retainer achieve maximum exposure but smallest gap tolerances. Enhance over-all gear structure rigid and output torque.



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

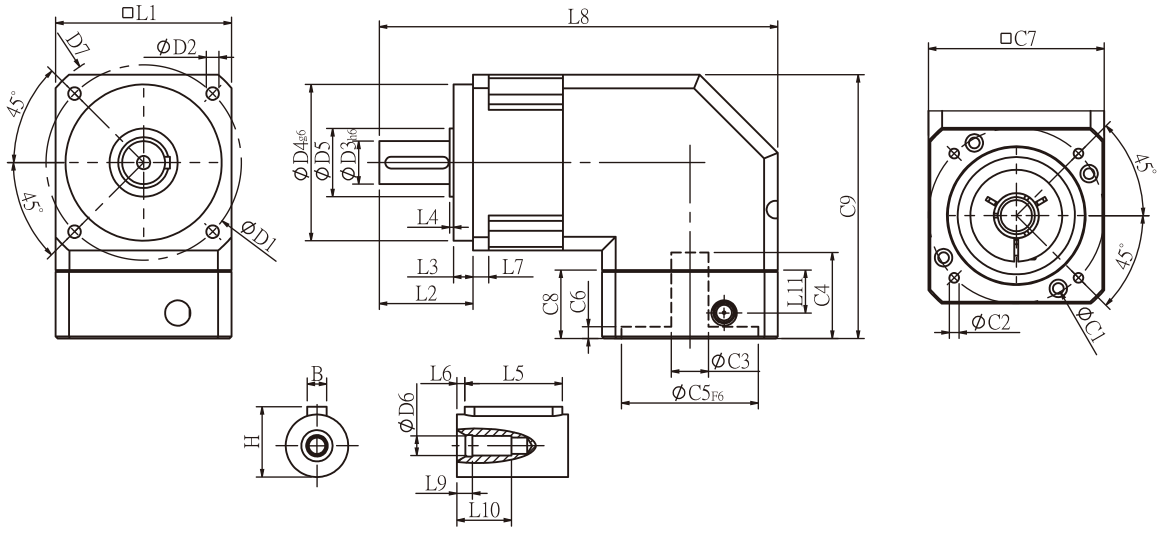


Right angular gear box processed by precision CNC equipment to obtain the highest combination with spiral bevel gears. Advanced electroless nickel plating surface treatment resists scratch and corrosion. Suitable for stringent require of high-tech equipment.



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.

PGRH Single Stage Dimensions



Specifications

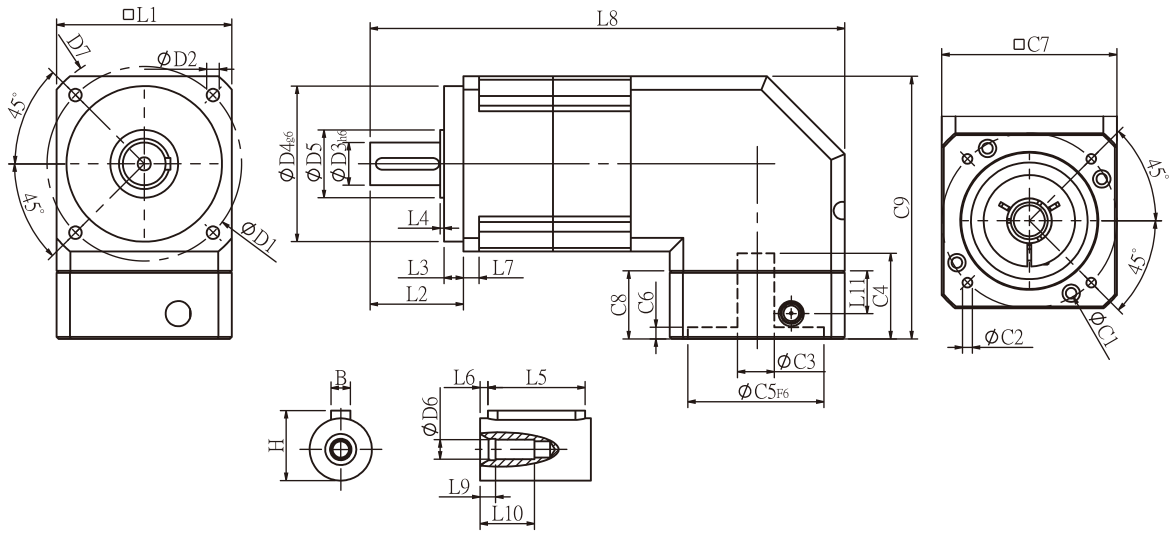
Unit:mm

Dimensions	PGRH42	PGRH60	PGRH90	PGRH115	PGRH142
D1	50	70	100	130	165
D2	3.4	5.5	6.5	8.5	10.5
D3 h6	13	16	22	32	40
D4 g6	35	50	80	110	130
D5	15	25	35	45	50
D6	M4x0.7P	M5x0.8P	M8x1.25P	M12x1.75P	M16x2P
D7	56	80	118	148	186
L1	42.6	60	90	115	142
L2	26	37	48	63	91.5
L3	5.5	7	10	10	10
L4	1.5	1.5	1.5	3.5	3.5
L5	15	25	32	40	60
L6	2	2	3	5	5
L7	4	6	8	12	18
L8	103.6	148.2	204	246.5	325
L9	4	4	4.5	6	6
L10	14	16.5	20.5	30	38
L11	13.5	21.5	22	32	44.7
C1 [2]	46	70	90	115	145
C2 [2]	M4x0.7P	M5x0.8P	M6x1P	M8x1.25P	M8x1.25P
C3 [2]	≦8	≦14	≦19/≦24	≦24/≦28	≦35
C4 [2]	29	34	44	53	76
C5 [2] F6	30	50	70	95	110
C6 [2]	6	5	5	6	9
C7 [2]	42.6	60	90	115	140
C8 [2]	25	33	35	48	65
C9 [2]	70.8	107.8	135	174.5	207
B	5	5	6	10	12
H	15	18	24.5	35	43

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

★ Specification subject to change without notice.

PGRH Double Stage Dimensions-1



Specifications

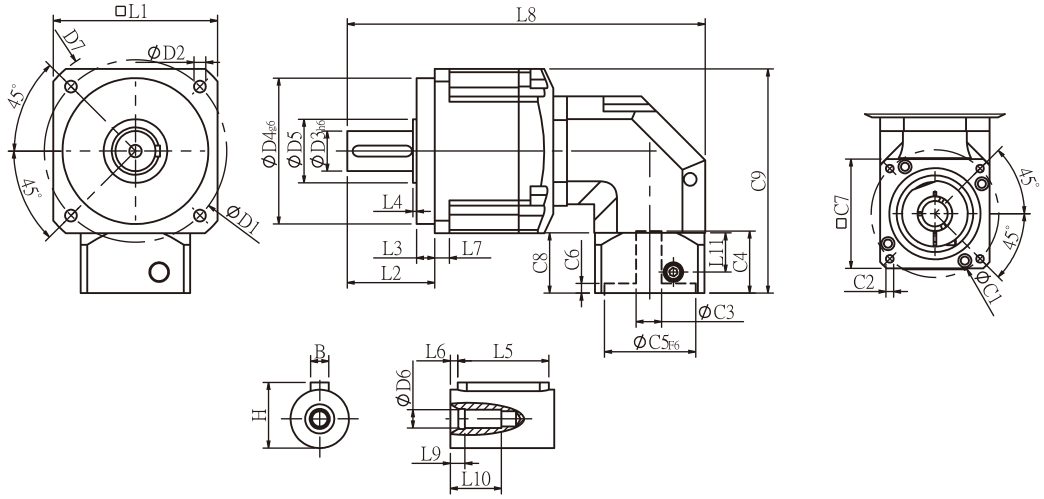
Unit:mm

Dimensions	PGRH42	PGRH60	PGRH90
D1	50	70	100
D2	3.4	5.5	6.5
D3 h6	13	16	22
D4 g6	35	50	80
D5	15	25	35
D6	M4x0.7P	M5x0.8P	M8x1.25P
D7	56	80	118
L1	42.6	60	90
L2	26	37	48
L3	5.5	7	10
L4	1.5	1.5	1.5
L5	15	25	32
L6	2	2	3
L7	4	6	8
L8	130.6	181.2	248
L9	4	4	4.5
L10	14	16.5	20.5
L11	13.5	21.5	22
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]	70.8	107.8	135
B	5	5	6
H	15	18	24.5

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

★ Specification subject to change without notice.

PGRH Double Stage Dimensions-2



Specifications

Unit:mm

Dimensions	PGRH60T	PGRH90T	PGRH115T	PGRH142T	PGRH180T	PGRH220T
D1	70	100	130	165	215	-
D2	5.5	6.5	8.5	10.5	13	-
D3 h6	16	22	32	40	55	-
D4 g6	50	80	110	130	160	-
D5	25	35	45	50	70	-
D6	M5x0.8P	M8x1.25P	M12x1.75P	M16x2.0P	M20x2.5P	-
D7	80	118	148	186	239	-
L1	60	90	115	142	182	-
L2	37	48	63	91.5	100.5	-
L3	7	10	10	10	16	-
L4	1.5	1.5	3	6	2.5	-
L5	25	32	40	60	70	-
L6	2	3	5	5	6	-
L7	6	8	11	16	18	-
L8	151.8	200.7	272.5	345.5	424.5	-
L9	4	4.5	6	6	8	-
L10	16.5	20.5	30	38	48	-
L11	13.5	21.5	22	32	44.7	-
C1 [2]	46	70	90	115	145	-
C2 [2]	M4x0.7P	M5x0.8P	M6x1.0P	M8x1.25P	M8x1.25P	-
C3 [2]	≦8	≦14	≦19/≦24	≦24	≦35	-
C4 [2]	29	34	44	53	76	-
C5 [2] F6	30	50	70	95	110	-
C6 [2]	6	5	5	6	9	-
C7 [2]	42.6	60	90	115	140	-
C8 [2]	25	33	35	48	65	-
C9 [2]	79.5	122.8	147.5	188	207	-
B	5	6	10	12	16	-
H	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.

PGRH Specifications Table

Specifications		Stage	Ratio	PGRH-42	PGRH-60	PGRH-90	PGRH-115	PGRH-142	PGRH-180	PGRH-220
Nominal Output Torque	N • m	1	3	19	53	145	290	520	950	1550
			4	20	55	150	300	550	1000	1650
			5	17	54	140	290	530	1050	1700
			6	15	46	135	280	490	1000	1600
			7	14	44	125	270	450	960	1500
			8	12	41	110	240	390	900	1350
			9	11	37	95	220	360	800	1250
			10	11	37	95	220	360	800	1250
			14	14	44	125	270	450	960	1500
			20	11	37	95	220	360	800	1250
		Stage	Ratio	PGRH-42	PGRH-60 (T)	PGRH-90(T)	PGRH-115(T)	PGRH-142(T)	PGRH-180T	PGRH-220T
		2	15	19	53	145	290	520	950	1550
			20	20	55	150	300	550	1000	1650
			25	17	54	140	290	530	1050	1700
			30	17	54	140	290	530	1050	1700
			35	17	54	140	290	530	1050	1700
			40	17	54	140	290	530	1050	1700
			45	17	54	140	290	530	1050	1700
			50	17	54	140	290	530	1050	1700
			60	15	46	135	280	490	1000	1600
			70	14	44	125	270	450	960	1500
			80	12	41	110	240	390	900	1350
			90	11	37	95	220	360	800	1250
			100	11	37	95	220	360	800	1250
			120	15	46	135	280	490	1000	1600
			140	14	44	125	270	450	960	1500
			160	12	41	110	240	390	900	1350
			180	11	37	95	220	360	800	1250
			200	11	37	95	220	360	800	1250
Emergency Stop Torque	N • m		3.0 times of Nominal Output Torque (* Max. Output Torque T2B =60% of Emergency Stop Torque)							
Nominal Input Speed	rpm	1,2	3-200	5000	5000	4000	4000	3000	3000	2000
Max. Input Speed	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	3-100	2.5	6	12	23	45	75	130
Max. Radial Load	N	1,2	3-100	760	1570	2780	5340	8400	13000	35000
Max. Axial Load	N	1,2	3-100	410	750	1870	3310	4670	6460	21400
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	6.8	13.5	25.1	50	82
		2	12-100	1.4	3.3/2.9	8.9/7.2	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						

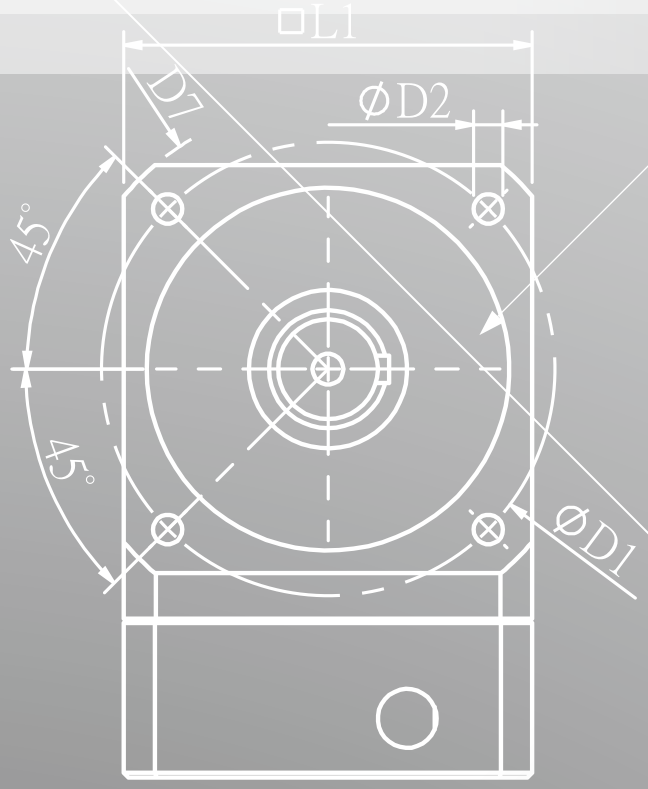
Inertia(J1)

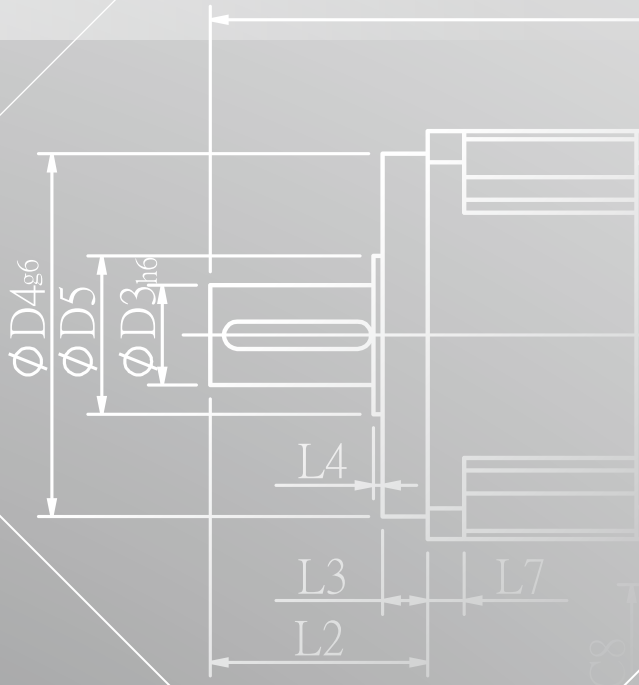
Stage	Ratio	unit	PGRH-42	PGRH-60	PGRH-90	PGRH-115	PGRH-142	PGRH-180	PGRH-220
1	3/4/5/7/9	Kg • cm^2	0.06	0.40	2.28	6.87	24.2	69.8	138.2
	6/8/10/14/20		0.05	0.30	1.45	4.76	14.5	50.3	103.6
Stage	Ratio		PGRH-42	PGRH-60(T)	PGRH-90(T)	PGRH-115(T)	PGRH-142(T)	PGRH-180T	PGRH-220T
2	15/20/25/35/45		0.06	0.40(0.08)	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

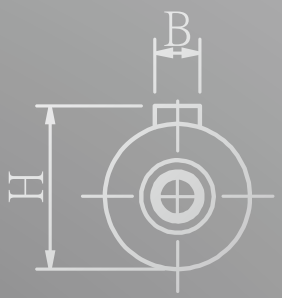
* 1. Applied to the output shaft center @100rpm.
* 2. Measured at 3000rpm with no load
※ The above figures/specifications are subject to change without prior notice.

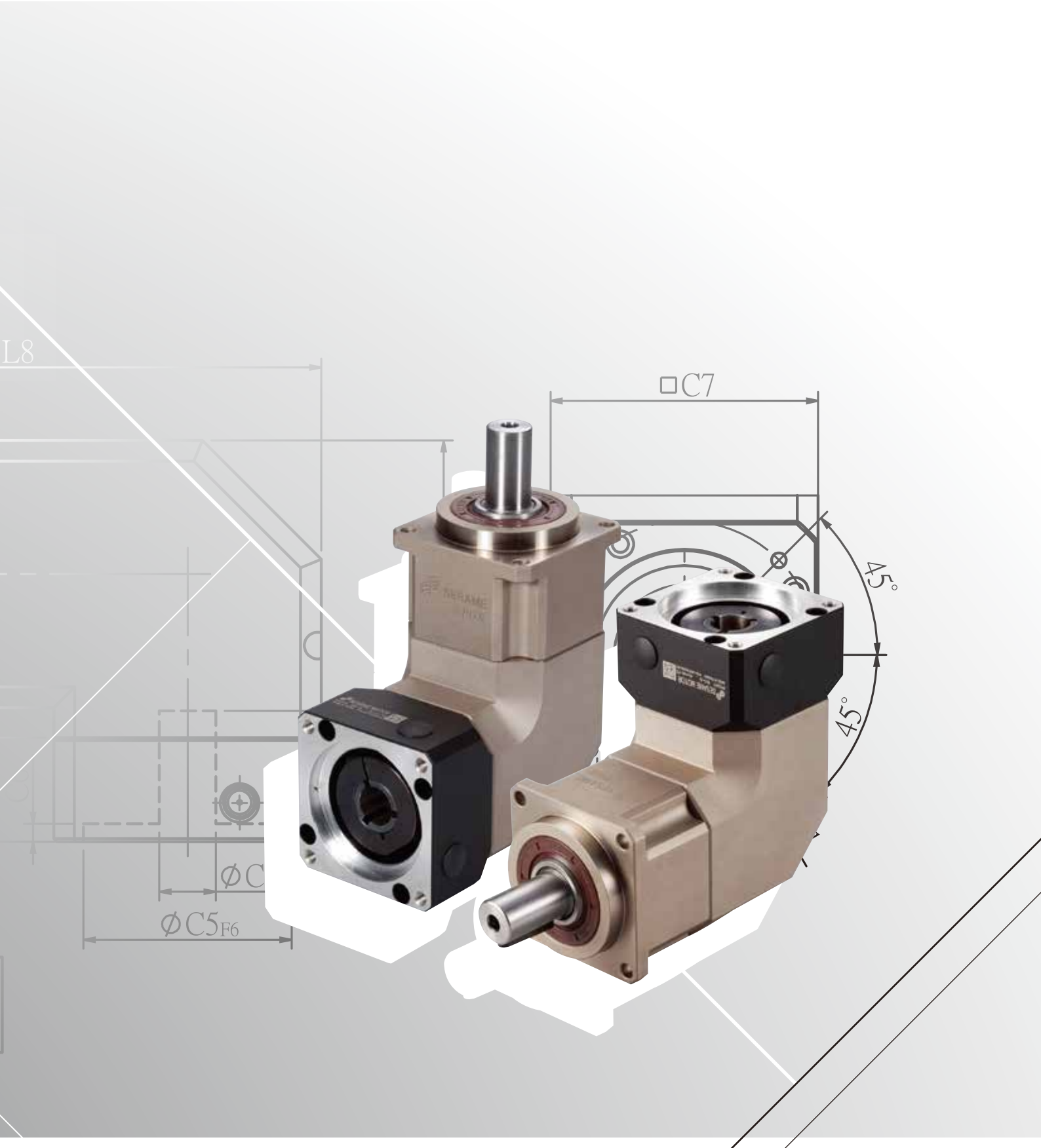
Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty.

PGR SERIES

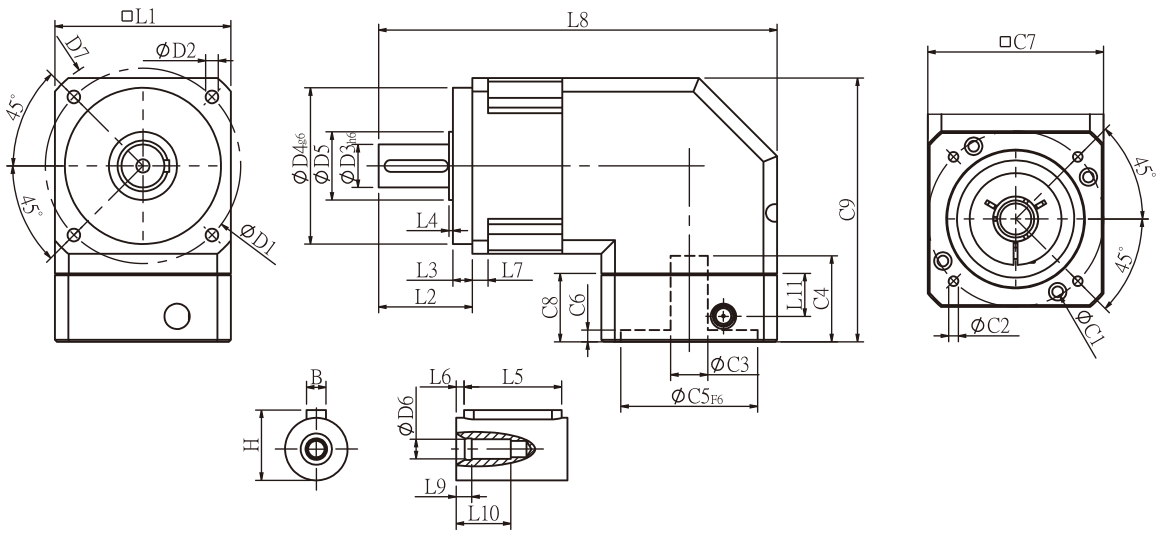







L8
□C7
45°
45°
ØC
ØC5F6

PGR Single Stage Dimensions



Specifications

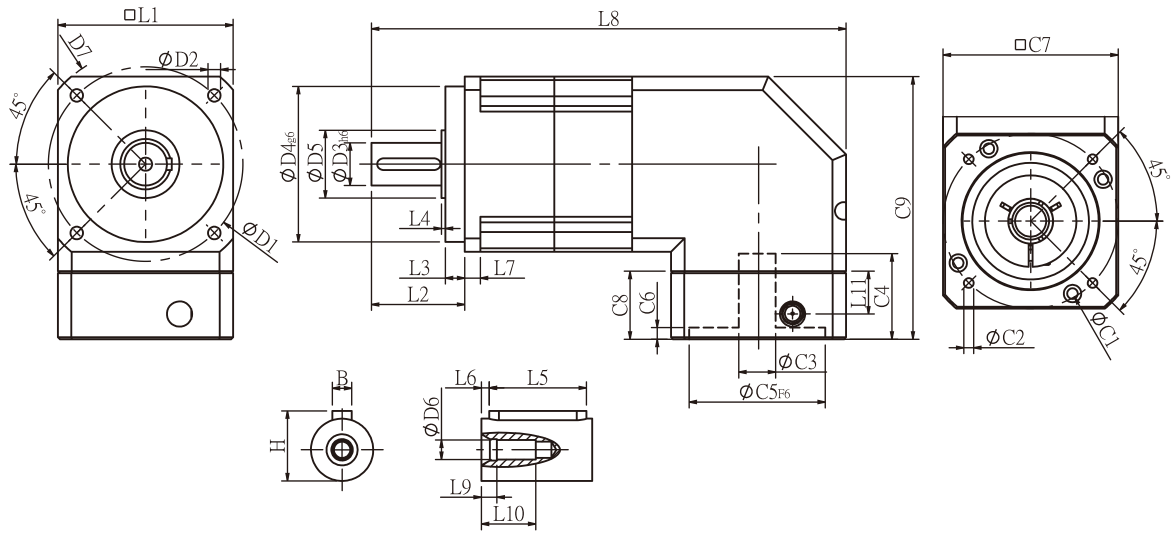
Unit:mm

Dimensions	PGR42	PGR60	PGR90	PGR115	PGR142	PGR180	PGR220
D1	50	70	100	130	165	-	-
D2	3.4	5.5	6.5	8.5	10.5	-	-
D3 h6	13	16	22	32	40	-	-
D4 g6	35	50	80	110	130	-	-
D5	15	25	35	45	50	-	-
D6	M4x0.7P	M5x0.8P	M8x1.25P	M12x1.75P	M16x2.0P	-	-
D7	56	80	118	148	186	-	-
L1	42.6	60	90	115	142	-	-
L2	26	37	48	62	93	-	-
L3	5.5	7	10	8	8	-	-
L4	1.5	1.5	1.5	3	6	-	-
L5	15	25	32	40	60	-	-
L6	2	2	3	5	5	-	-
L7	4	6	8	12	18	-	-
L8	103.6	148.7	204	244.5	330	-	-
L9	4	4	4.5	6	6	-	-
L10	14	16.5	20.5	30	38	-	-
L11	13.5	21.5	22	32	44.7	-	-
C1 [2]	46	70	90	115	145	-	-
C2 [2]	M4x0.7P	M5x0.8P	M6x1.0P	M8x1.25P	M8x1.25P	-	-
C3 [2]	≦8	≦14	≦19/≦24	≦24	≦35	-	-
C4 [2]	29	34	44	53	75	-	-
C5 [2] F6	30	50	70	95	110	-	-
C6 [2]	6	5	5	6	9	-	-
C7 [2]	42.6	60	90	115	140	-	-
C8 [2]	25	33	35	48	65	-	-
C9 [2]	70.8	107.8	135	174.5	207	-	-
B	5	5	6	10	12	-	-
H	15	18	24.5	35	43	-	-

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

★ Specification subject to change without notice.

PGR Double Stage Dimensions-1



Specifications

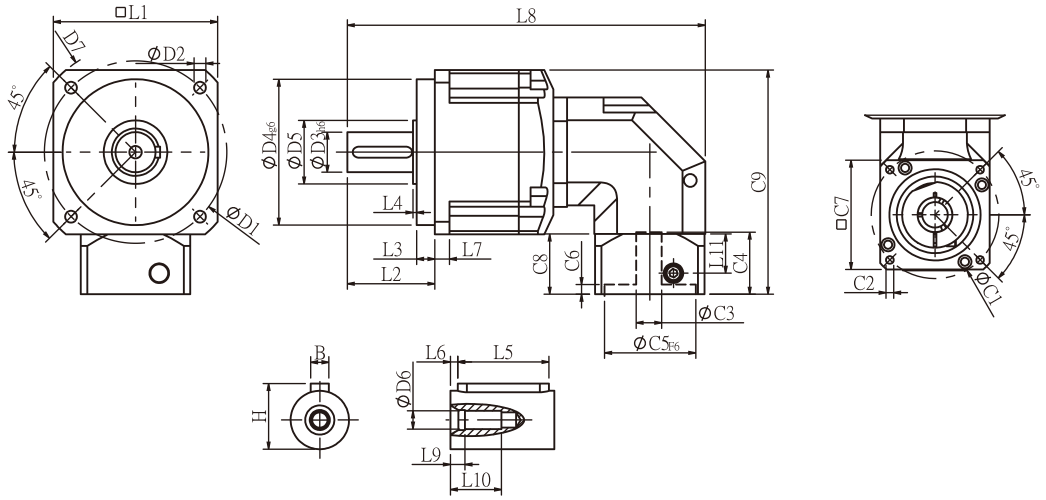
Unit:mm

Dimensions	PGR42	PGR60	PGR90	PGR115	PGR142
D1	50	70	100	130	165
D2	3.4	5.5	6.5	8.5	10.5
D3 h6	13	16	22	32	40
D4 g6	35	50	80	110	130
D5	15	25	35	45	50
D6	M4x0.7P	M5x0.8P	M8x1.25P	M12x1.75P	M16x2.0P
D7	56	80	118	148	186
L1	42.6	60	90	115	142
L2	26	37	48	62	93
L3	5.5	7	10	8	8
L4	1.5	1.5	1.5	3	6
L5	15	25	32	40	60
L6	2	2	3	5	5
L7	4	6	8	12	18
L8	129.6	176.7	244	292.5	391
L9	4	4	4.5	6	6
L10	14	16.5	20.5	30	38
L11	13.5	21.5	22	32	44.7
C1 [2]	46	70	90	115	145
C2 [2]	M4x0.7P	M5x0.8P	M6x1.0P	M8x1.25P	M8x1.25P
C3 [2]	≦8	≦14	≦19/≦24	≦24	≦35
C4 [2]	29	34	44	53	75
C5 [2] F6	30	50	70	95	110
C6 [2]	6	5	5	6	9
C7 [2]	42.6	60	90	115	140
C8 [2]	25	33	35	48	65
C9 [2]	70.8	107.8	135	174.5	207
B	5	5	6	10	12
H	15	18	24.5	35	43

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

★ Specification subject to change without notice.

PGR Double Stage Dimensions-2



Specifications

Unit:mm

Dimensions	PGR60T	PGR90T	PGR115T	PGR142T	PGR180T	PGR220T
D1	70	100	130	165	215	-
D2	5.5	6.5	8.5	10.5	13	-
D3h6	16	22	32	40	55	-
D4g6	50	80	110	130	160	-
D5	25	35	45	50	70	-
D6	M5x0.8P	M8x1.25P	M12x1.75P	M16x2.0P	M20x2.5P	-
D7	80	118	148	186	239	-
L1	60	90	115	142	182	-
L2	37	48	62	93	104.5	-
L3	7	10	8	8	20	-
L4	1.5	1.5	3	6	2.5	-
L5	25	32	40	60	70	-
L6	2	3	5	5	6	-
L7	6	8	12	18	16	-
L8	145.1	196.2	269.4	343.5	419.5	-
L9	4	4.5	6	6	8	-
L10	16.5	20.5	30	38	48	-
L11	13.5	21.5	22	32	44.7	-
C1 [2]	46	70	90	115	145	-
C2 [2]	M4x0.7P	M5x0.8P	M6x1.0P	M8x1.25P	M8x1.25P	-
C3 [2]	≦8	≦14	≦19/≦24	≦24	≦35	-
C4 [2]	29	34	44	53	75	-
C5 [2]F6	30	50	70	95	110	-
C6 [2]	6	5	5	6	9	-
C7 [2]	42.6	60	90	115	140	-
C8 [2]	25	33	35	48	65	-
C9 [2]	79.5	122.8	147.5	188	207	-
B	5	6	10	12	16	-
H	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.

PGR Specifications Table

Specifications		Stage	Ratio	PGR-42	PGR-60	PGR-90	PGR-115	PGR-142	PGR-180	PGR-220
Nominal Output Torque	N • m	1	3	13.8	44.3	95.2	283	482	1510	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	PGR-42	PGR-60 (T)	PGR-90(T)	PGR-115(T)	PGR-142(T)	PGR-180T	PGR-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
			45	13.8	43.0	95.2	283	473	1151	1670
			50	13.8	43.0	95.2	283	473	1151	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	N • m		3.0 times of Nominal Output Torque (* Max. Output Torque T2B =60% of Emergency Stop Torque)							
Nominal Input Speed	rpm	1,2	3-100	3000	3000	3000	2500	2000	2000	2000
Max. Input Speed	rpm	1,2	3-100	6000	6000	6000	5000	4000	4000	4000
Micro Backlash P0	arcmin	1	3-10	-	-	-	≦4	≦4	≦4	≦4
		2	12-100	-	-	-	≦6	≦6	≦6	≦6
Precision Backlash P1	arcmin	1	3-10	-	-	≦6	≦6	≦6	≦6	≦6
		2	12-100	-	-	≦9	≦8	≦8	≦8	≦8
Standard Backlash P2	arcmin	1	3-10	≦12	≦9	≦9	≦9	≦9	≦9	≦9
		2	12-100	≦15	≦12	≦12	≦11	≦11	≦11	≦11
Torsional Rigidity	N • m /arcmin	1,2	3-100	1.0	2.8	7.5	15.5	30	57	110
Max. Radial Load	N	1,2	3-100	350	960	1630	3380	6150	7260	11120
Max. Axial Load	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	≧94%						
		2	12-100	≧90%						
Weight	kg	1	3-10	1.0	2.5	6.5	13.2	24.6	49	81
		2	12-100	1.3	3.2/2.8	8.6/6.9	17.7/14.5	29.7/26.2	53	87
Mounting Position	-	1,2	3-100	Any direction						
Noise Level [2]	dBA/1m	1,2	3-100	65	67	70	70	75	75	80
Protection Class	-	1,2	3-100	IP65						
Lubrication	-	1,2	3-100	Synthetic Lubricant						

Inertia(J1)

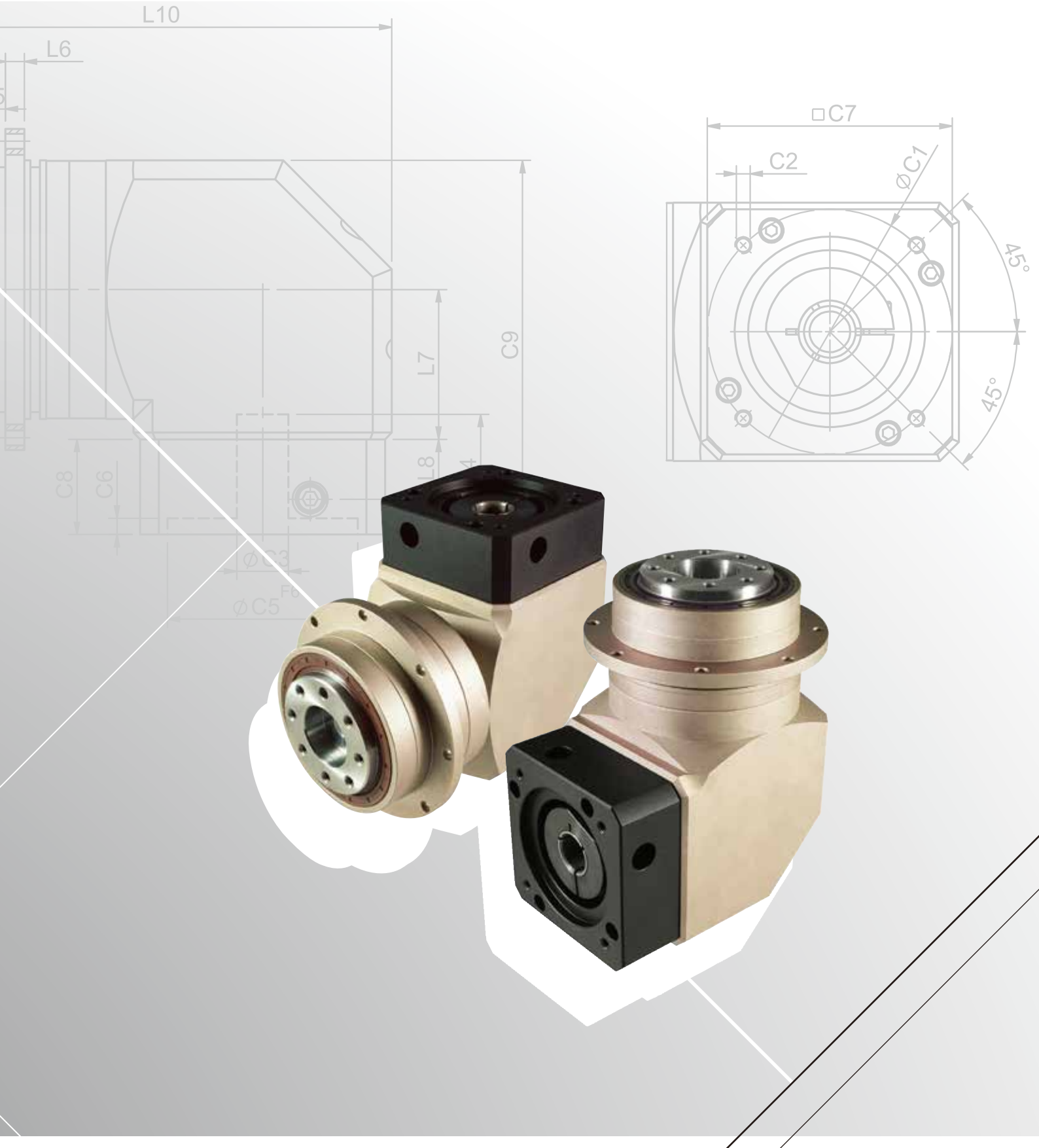
Stage	Ratio	unit	PGR-42	PGR-60	PGR-90	PGR-115	PGR-142	PGR-180	PGR-220
1	3/4/5/7/9	Kg • cm^2	0.06	0.40	2.28	6.87	24.2	69.8	138.2
	6/8/10		0.05	0.30	1.45	4.76	14.5	50.3	103.6
Stage	Ratio		PGR-42	PGR-60(T)	PGR-90(T)	PGR-115(T)	PGR-142(T)	PGR-180T	PGR-220T
2	15/20/25/35/45		0.06	0.40(0.08)	2.28(0.72)	6.87(3.02)	24.2(7.83)	27.7	80.3
	others		0.05	0.30(0.06)	1.45(0.38)	4.76(1.64)	14.5(5.00)	15.9	55.3

* 1. Applied to the output shaft center @100rpm.
* 2. Measured at 3000rpm with no load. * 3. PGR115T - □□ - P0 is not applicable.
※ The above figures/specifications are subject to change without prior notice.

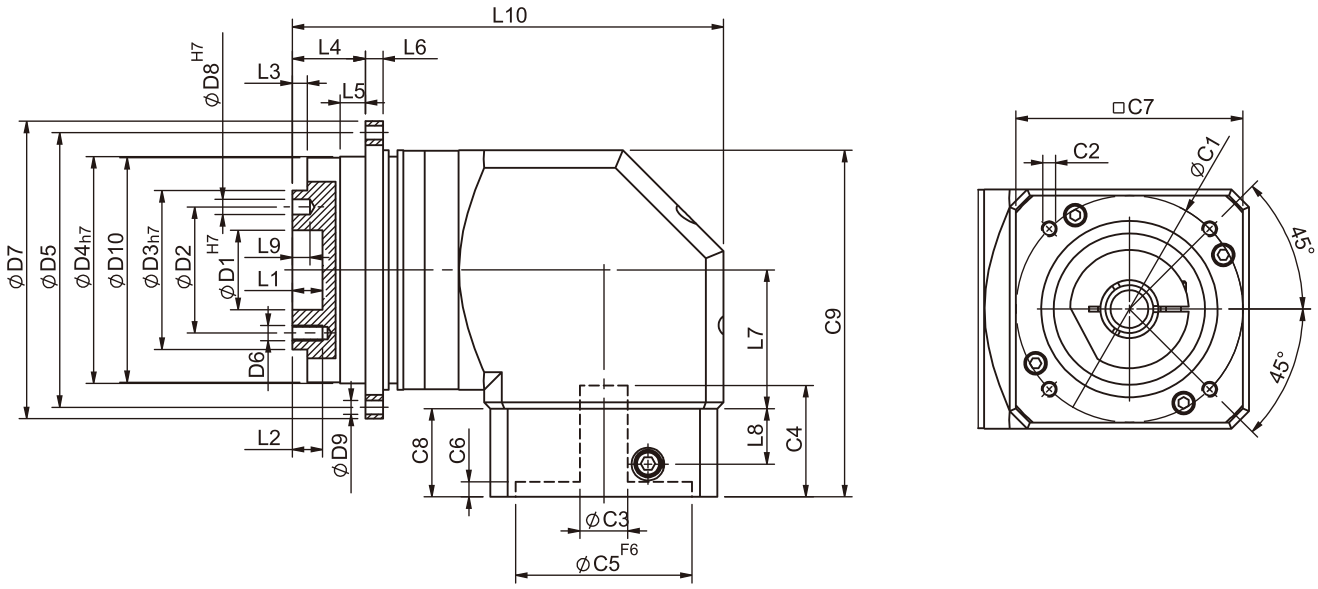
Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty.

PGFR SERIES


L4
L3
L9
L1
L2
L
H7
ØD8
ØD5
ØD4h7
ØD3h7
ØD2
ØD1
D6
D9
1xD8H7
ØD2
7xD6
ØD5
8xD9
ØD4h7
ØD1H7
ØD3h7
1xD8H7
ØD2
4xD6
ØD4h7
ØD1H7
ØD3h7
22.5°
1xD8H7
11-D6
ØD5
8xD9
ØD4h7
ØD2
ØD1H7
ØD3h7


L10
L6
C9
L7
C8
C6
L8
ØC3
ØC5
□C7
C2
ØC1
45°
45°

PGFR Single Stage Dimensions



Specifications

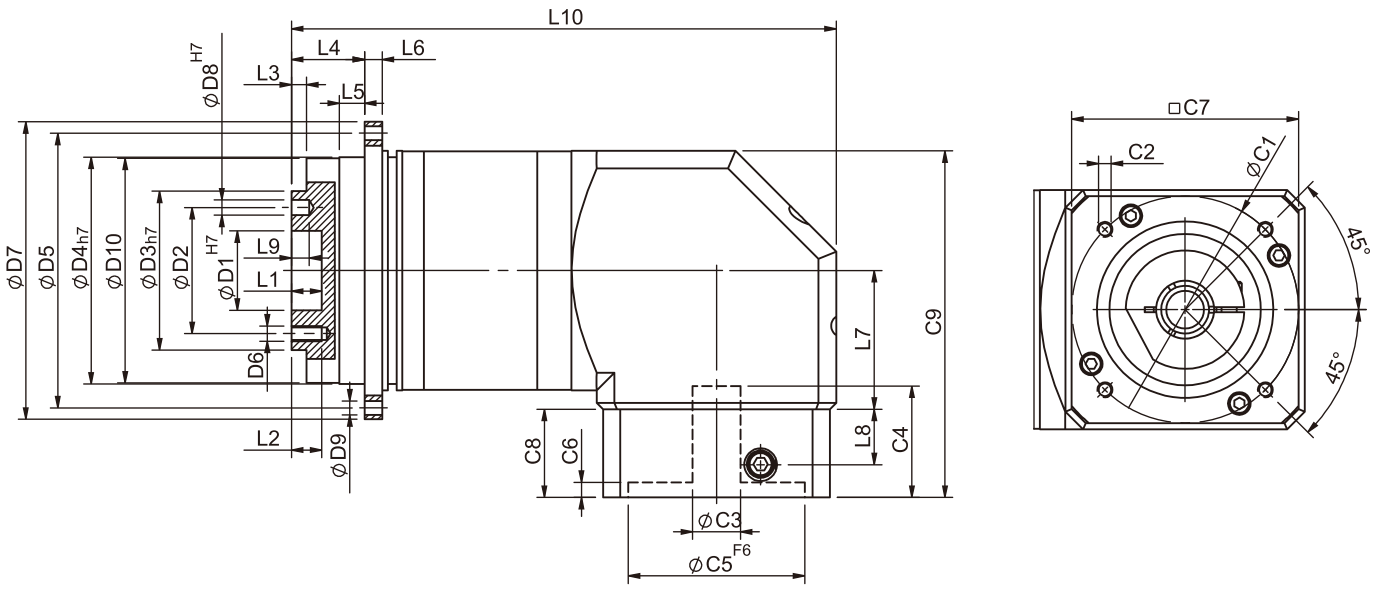
Unit:mm

Dimensions	PGFR42	PGFR60	PGFR90	PGFR115
D1 H7	-	-	31.5	-
D2	-	-	50	-
D3 h7	-	-	63	-
D4 h7	-	-	90	-
D5	-	-	109	-
D6	-	-	M6x1.0P	-
D7	-	-	118	-
D8 H7	-	-	6	-
D9	-	-	5.5	-
D10	-	-	89.2	-
L1	-	-	12	-
L2	-	-	12	-
L3	-	-	6	-
L4	-	-	29	-
L5	-	-	10	-
L6	-	-	7	-
L7	-	-	55	-
L8	-	-	22	-
L9	-	-	7	-
L10	-	-	171.1	-
C1 [2]	-	-	90	-
C2 [2]	-	-	M6x1.0P	-
C3 [2]	-	-	≤19/≤24	-
C4 [2]	-	-	44	-
C5 [2] F6	-	-	70	-
C6 [2]	-	-	5	-
C7 [2]	-	-	90	-
C8 [2]	-	-	35	-
C9 [2]	-	-	137.5	-

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

★ Specification subject to change without notice.

PGFR Double Stage Dimensions-1



Specifications

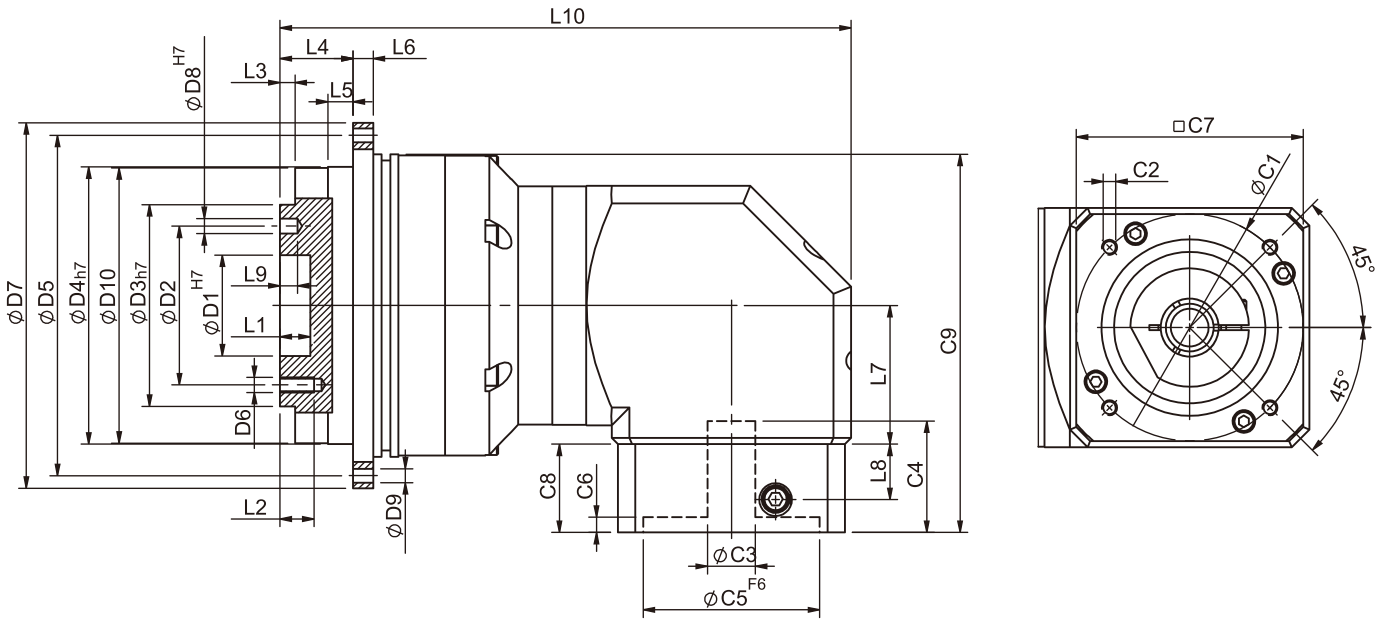
Unit:mm

Dimensions	PGFR42	PGFR60	PGFR90	PGFR115
D1 H7	-	-	31.5	-
D2	-	-	50	-
D3 h7	-	-	63	-
D4 h7	-	-	90	-
D5	-	-	109	-
D6	-	-	M6x1.0P	-
D7	-	-	118	-
D8 H7	-	-	6	-
D9	-	-	5.5	-
D10	-	-	89.2	-
L1	-	-	12	-
L2	-	-	12	-
L3	-	-	6	-
L4	-	-	29	-
L5	-	-	10	-
L6	-	-	7	-
L7	-	-	55	-
L8	-	-	22	-
L9	-	-	7	-
L10	-	-	216.1	-
C1 [2]	-	-	90	-
C2 [2]	-	-	M6x1.0P	-
C3 [2]	-	-	≦19/≦24	-
C4 [2]	-	-	44	-
C5 [2] F6	-	-	70	-
C6 [2]	-	-	5	-
C7 [2]	-	-	90	-
C8 [2]	-	-	35	-
C9 [2]	-	-	137.5	-

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

★ Specification subject to change without notice.

PGFR Double Stage Dimensions-2



Specifications

Unit:mm

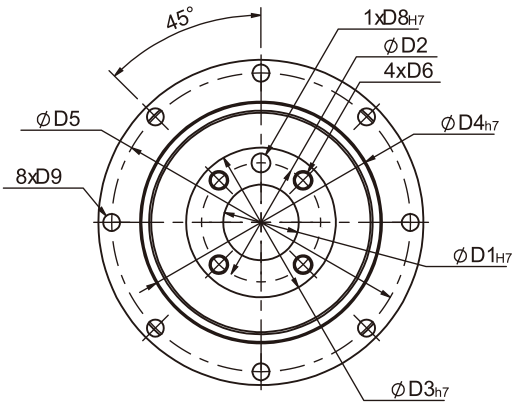
Dimensions	PGFR60T	PGFR90T	PGFR115T
D1 H7	-	-	40
D2	-	-	63
D3 h7	-	-	80
D4 h7	-	-	110
D5	-	-	135
D6	-	-	M6x1.0P
D7	-	-	145
D8 H7	-	-	6
D9	-	-	5.5
D10	-	-	109.2
L1	-	-	12
L2	-	-	13.5
L3	-	-	6
L4	-	-	29
L5	-	-	10
L6	-	-	8
L7	-	-	55
L8	-	-	22
L9	-	-	7
L10	-	-	226.6
C1 [2]	-	-	90
C2 [2]	-	-	M6x1.0P
C3 [2]	-	-	≦19/≦24
C4 [2]	-	-	44
C5 [2] F6	-	-	70
C6 [2]	-	-	5
C7 [2]	-	-	90
C8 [2]	-	-	35
C9 [2]	-	-	150

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

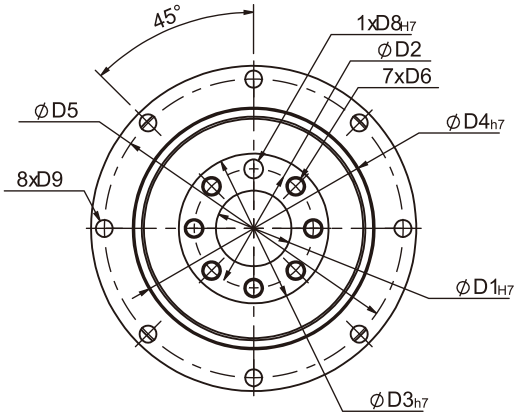
★ Specification subject to change without notice.

PGFR Flange Dimensions

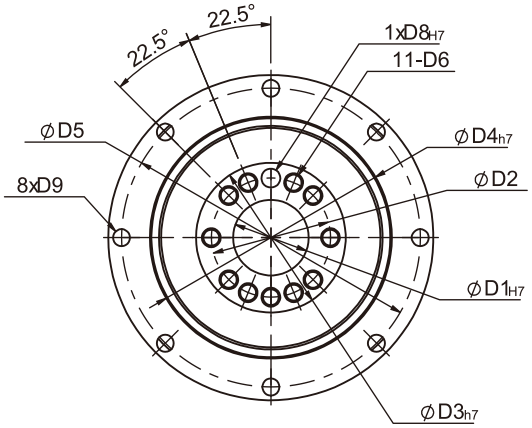
PGFR42



PGFR60
PGFR90



PGFR115



Specifications

Unit:mm

Dimensions	PGFR42	PGFR60	PGFR90	PGFR115	PGFR142
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.

PGFR Specifications Table

Specifications		Stage	Ratio	PGFR-42	PGFR-60	PGFR-90	PGFR-115
Nominal Output Torque	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
			14	14	44	125	270
			20	11	37	95	220
		Stage	Ratio	PGFR-42	PGFR-60(T)	PGFR-90(T)	PGFR-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
			140	14	44	125	270
			200	11	37	95	220
Emergency Stop Torque	N • m		3.0 times of Nominal Output Torque (* Max. Output Torque T2B =60% of Emergency Stop Torque)				
Nominal Input Speed	rpm	1,2	3-100	5000	5000	4000	4000
Max. Input Speed	rpm	1,2	3-100	10000	10000	8000	8000
Micro Backlash P0	arcmin	1	3-10	-	-	≦4	≦2
		2	12-100	-	-	≦6	≦4
Precision Backlash P1	arcmin	1	3-10	≦6	≦6	≦6	≦4
		2	12-100	≦8	≦8	≦8	≦7
Standard Backlash P2	arcmin	1	3-10	≦8	≦8	≦8	≦6
		2	12-100	≦10	≦10	≦10	≦9
Torsional Rigidity	N • m /arcmin	1,2	3-100	6	12	28	75
Max. Bending Moment	N • m	1,2	3-100	18	29	61	111
Max. Axial Load	N	1,2	3-100	372	508	849	1260
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	2.3	6.3	13.5
		2	12-100	1.4	3.0/2.6	8.3/6.7	14.8
Mounting Position	-	1,2	3-100	Any direction			
Noise Level [2]	dBA/1m	1,2	3-100	62	64	66	68
Protection Class	-	1,2	3-100	IP65			
Lubrication	-	1,2	3-100	Synthetic Lubricant			

Inertia(J1)

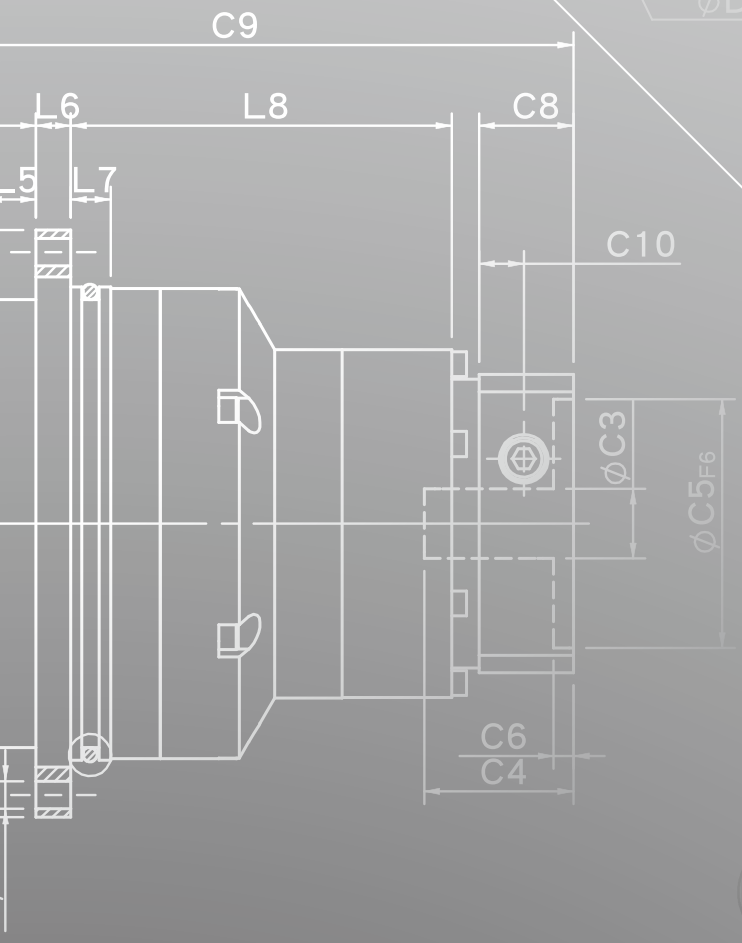
Stage	Ratio	unit	PGFR-42	PGFR-60	PGFR-90	PGFR-115
1	3/4/5/7/9	Kg • cm^2	0.06	0.40	2.28	6.87
	10/14/20		0.05	0.30	1.45	4.76
Stage	Ratio		PGFR-42	PGFR-60(T)	PGFR-90(T)	PGFR-115T
2	15/20/25/35		0.06	0.40(0.08)	2.28(0.72)	3.02
	others		0.05	0.30(0.06)	1.45(0.38)	1.64

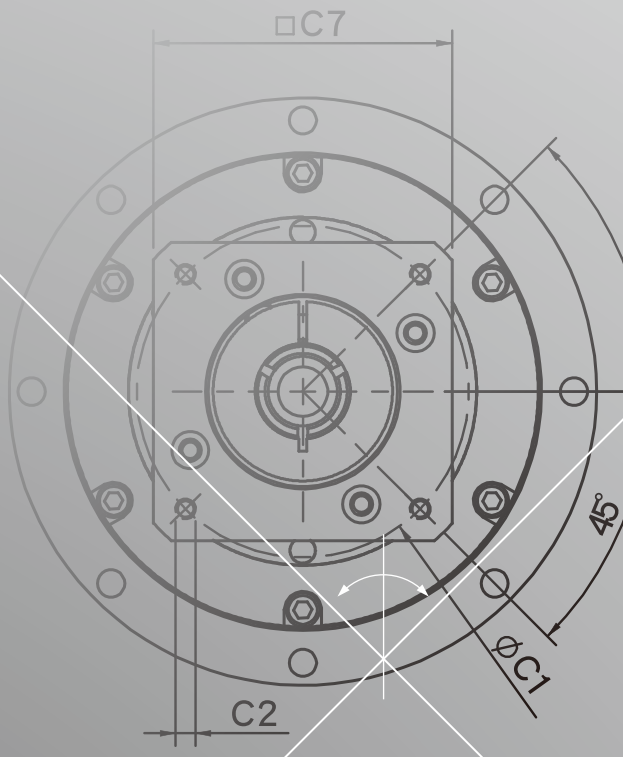
* 1. Applied to the output shaft center @100rpm.
* 2. Measured at 3000rpm with no load
※ The above figures/specifications are subject to change without prior notice.

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


SESAME MOTOR
SESAME MOTOR

PGF SERIES

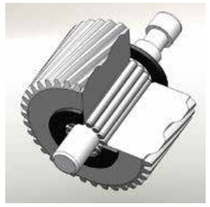




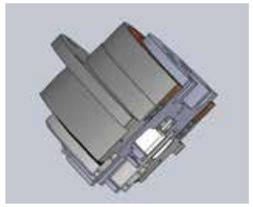

C9
L4
L6
L8
C8
L3
L5
L7
C10
L9
L1
C3
C5
C6
C4
L2
C7
45°
C1
C2
D10
OD
O-Ring
SESAME MOTOR
Armin P2

PGF 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.

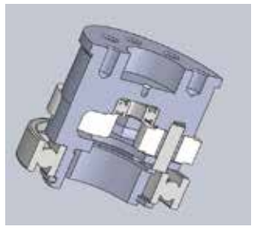


Planet gear transmission interface equipped with needle bearings, full needle roller bearing aligned without retainer achieve maximum exposure but smallest gap tolerances. Enhance over-all gear structure rigid and output torque.

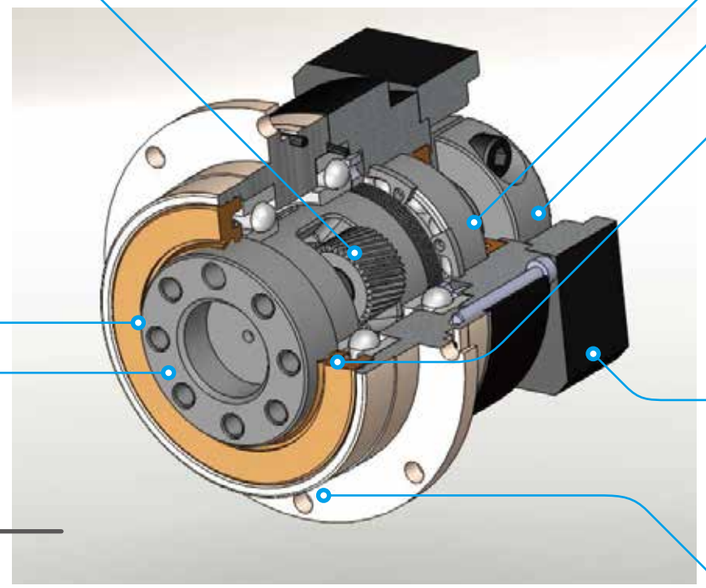


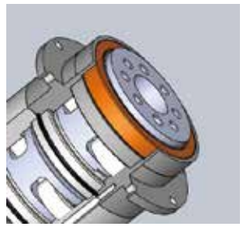
The sun gear bearing is placed directly into the planetary arm bracket, the overall mechanical structure designed to ensure concentricity of the transmission components.

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.

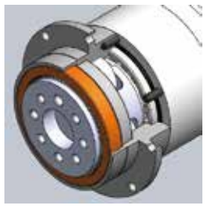


Planetary arm bracket and output shaft are one-piece constructed, setting bearing apart for larger span to reach the largest reverse rigid and contribute high axis radial load capacity.



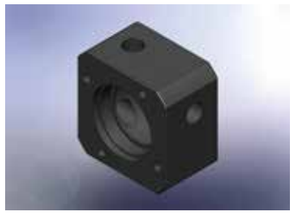


High-tech oil seal design on the upper lip guard against dust intruder, lower lip guard against oil leak. Protection grade IP65 safeguards fully avoid leaking problem, and given it maintenance free.

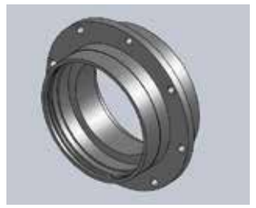


Grinding process to smooth surface of output shaft, and with oil seal to minimum friction coefficient and reducing start up load; result in the best seal-ability and extended lifespan. Hollow output shaft connect perfectly with circular flange drastically reducing the installation space.

PGF series overall design suitable for combination operation with servo motor high speed input and achieves maximum torque output. Hollow output shaft connect 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.

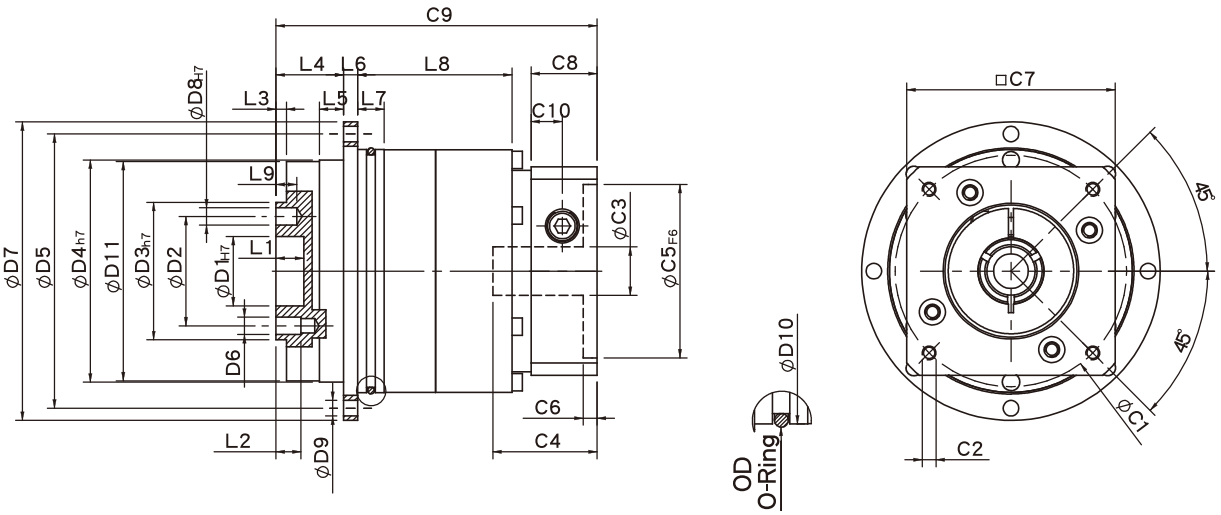


Advanced motor bracket design coupled with the input shaft bushing is easy to mount to any servo or stepper motor.



Advanced electroless nickel plating surface treatment resists scratch and corrosion. Suitable for stringent require of high-tech equipment.
The gearbox 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.

PGF Single Stage Dimensions



Specifications

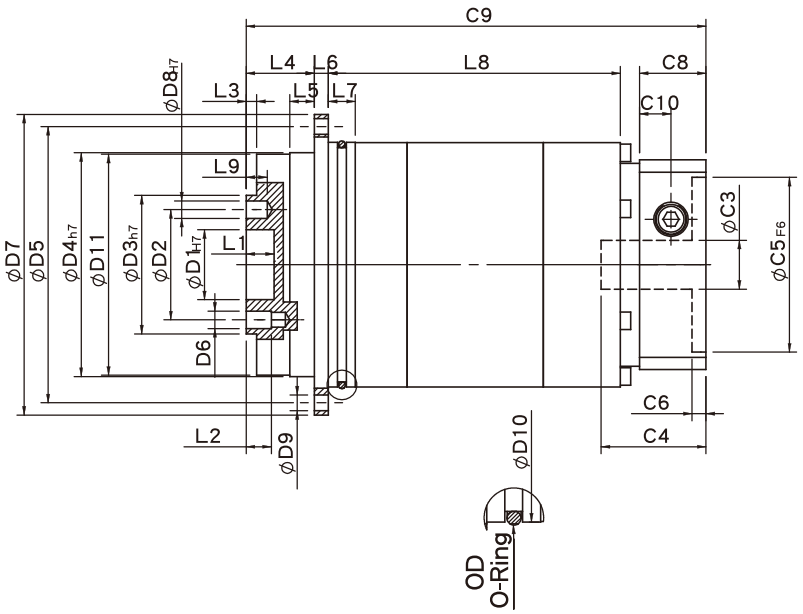
Unit:mm

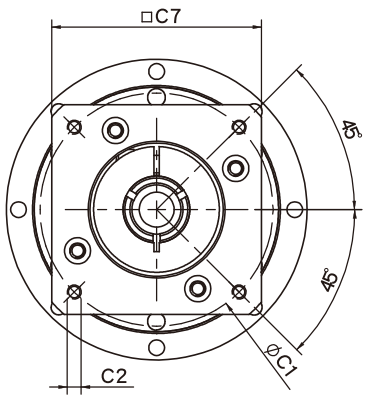
Dimensions	PGF42	PGF60	PGF90	PGF115
D1 H7	12	20	31.5	40
D2	20	31.5	50	63
D3 h7	28	40	63	80
D4 h7	47	64	90	110
D5	67	79	109	135
D6	M3x0.5P	M5x0.8P	M6x1.0P	M6x1.0P
D7	72	86	118	145
D8 H7	3	5	6	6
D9	3.4	4.5	5.5	5.5
D10	60	70	95	120
D11	46.2	63.2	89.2	109.2
L1	4	8	12	12
L2	6	7.2	12	13.5
L3	3	3	6	6
L4	19.5	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

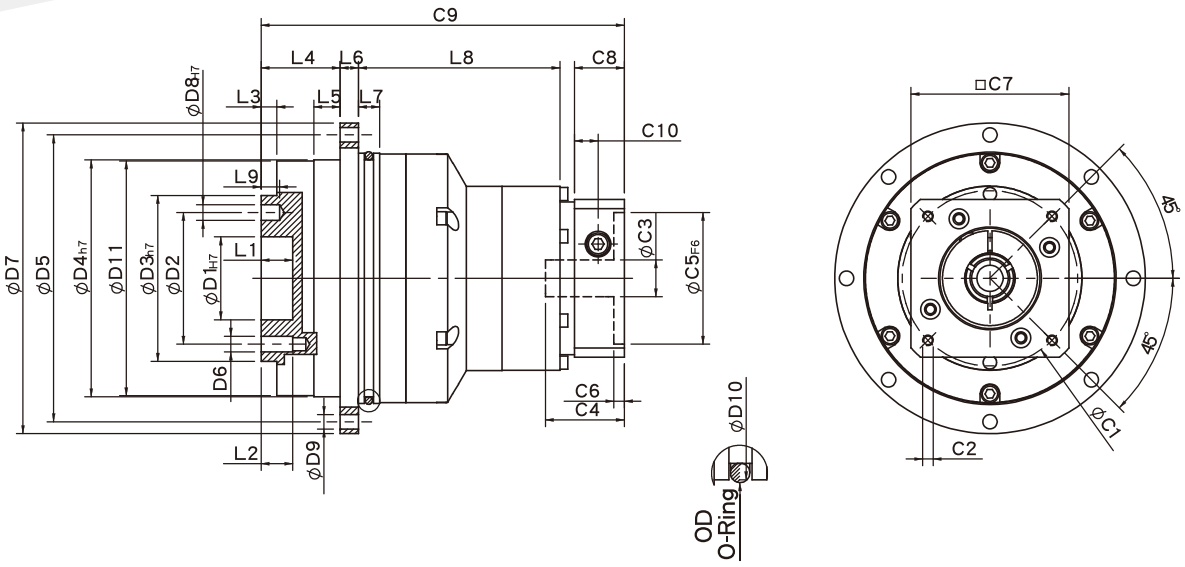
Unit:mm

Dimensions	PGF42	PGF60	PGF90
D1H7	12	20	31.5
D2	20	31.5	50
D3h7	28	40	63
D4h7	47	64	90
D5	67	79	109
D6	M3x0.5P	M5x0.8P	M6x1.0P
D7	72	86	118
D8H7	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	≦19
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 Double Stage Dimensions-2



Specifications

Unit:mm

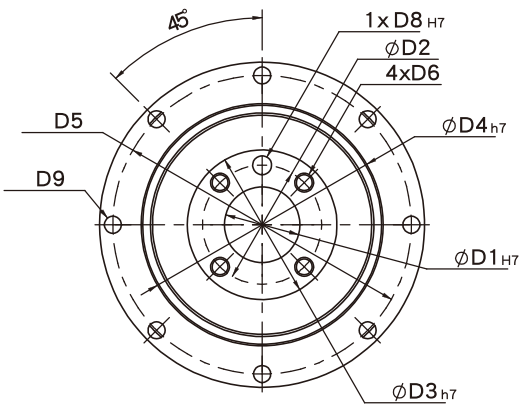
Dimensions	PGF60T	PGF90T	PGF115T
D1 H7	20	31.5	40
D2	31.5	50	63
D3 h7	40	63	80
D4 h7	64	90	110
D5	79	109	135
D6	M5x0.8P	M6x1.0P	M6x1.0P
D7	86	118	145
D8 H7	5	6	6
D9	4.5	5.5	5.5
D10	70	95	120
D11	63.2	89.2	109.2
L1	8	12	12
L2	7.2	12	13.5
L3	3	6	6
L4	19.5	29	29
L5	7	10	10
L6	4	7	8
L7	7.7	8	10
L8	61.2	68	89.5
L9	6	7	7
C1 [2]	46	70	90
C2 [2]	M4x0.7P	M5x0.8P	M6x1.0P
C3 [2]	≦8/≦11	≦14	≦19/≦24
C4 [2]	28.1	36.5	41.7
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]	109.2	135.5	159.1
C10 [2]	7.4	9	11.3
OD	66x2	90x3	110x3

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

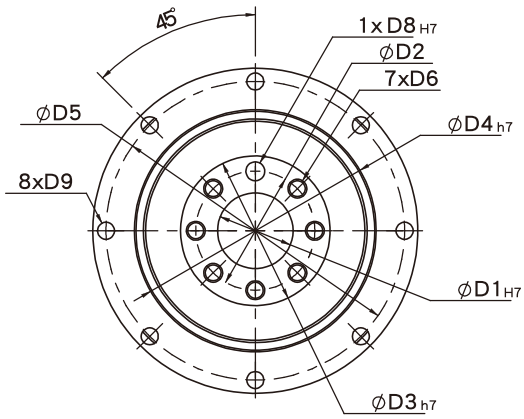
★ Specification subject to change without notice.

PGF Flange Dimensions

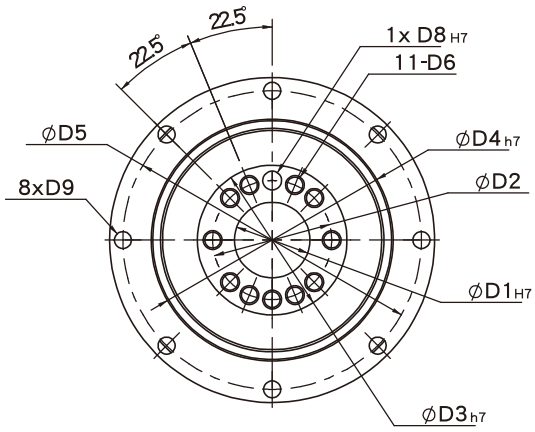
PGF42



PGF60
PGF90



PGF115



Specifications

Unit:mm

Dimensions	PGF42	PGF60	PGF90	PGF115	PGF142
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

規格 Specifications		Stage	Ratio	PGF-42	PGF-60	PGF-90	PGF-115
Nominal Output Torque	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	N • m		3.0 times of Nominal Output Torque (* Max. Output Torque T2B =60% of Emergency Stop Torque)				
Nominal Input Speed	rpm	1,2	3-100	5000	5000	4000	4000
Max. Input Speed	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	N • m	1,2	3-100	22.5	36	76	140
Max. Axial Load	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)

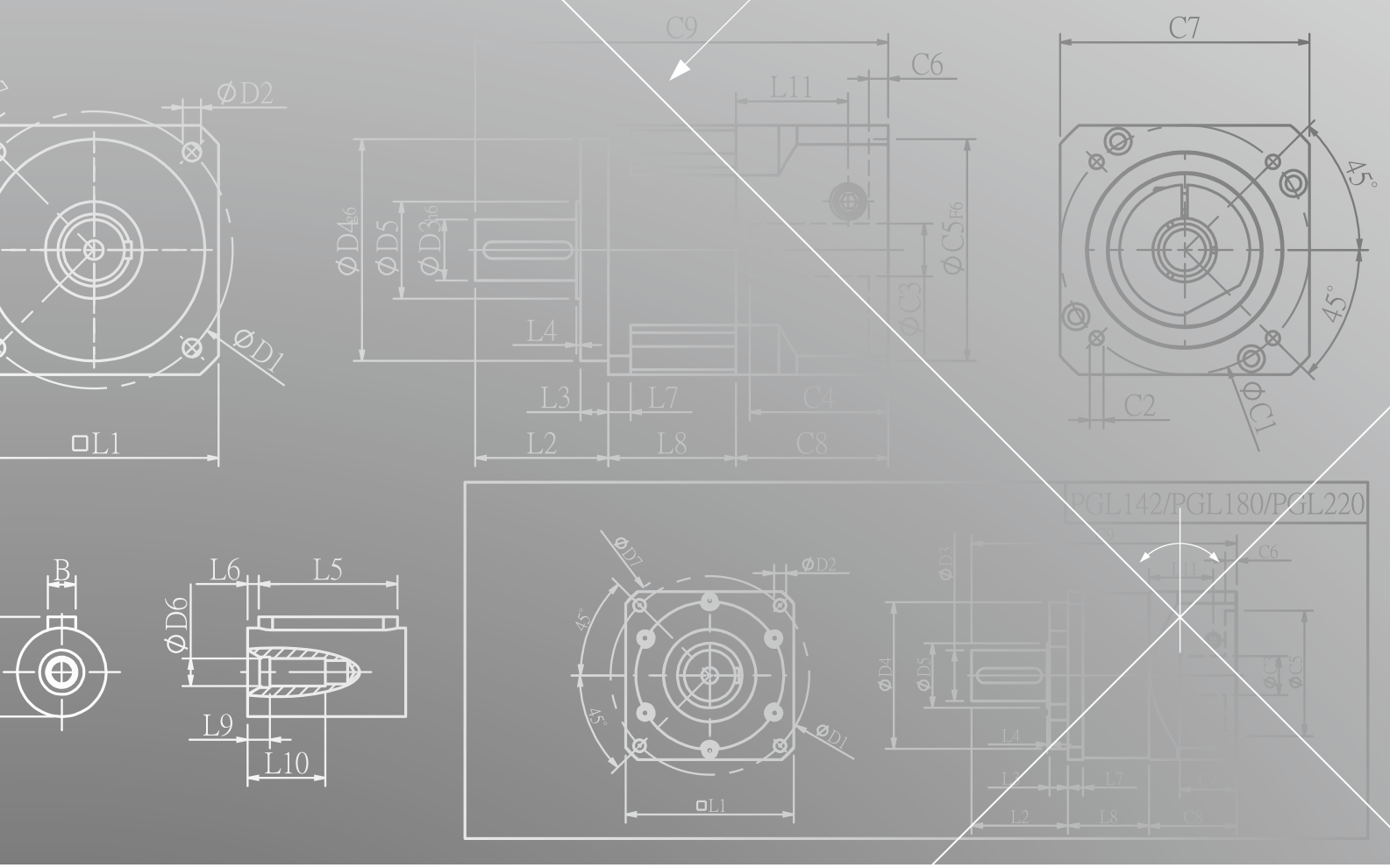
Stage	Ratio	unit	PGF-42	PGF-60	PGF-90	PGF-115
1	3	Kg • cm^2	-	0.19	0.72	2.35
	4		0.02	0.18	0.67	1.66
	5		0.02	0.17	0.65	1.50
	7		0.02	0.14	0.60	1.45
	10		0.02	0.14	0.58	1.41
Stage	Ratio		PGF-42	PGF-60(T)	PGF-90(T)	PGF-115T
2	15/20/25		0.02	0.17(0.02)	0.65(0.17)	0.65
	30/35/40		0.02	0.14(0.02)	0.60(0.14)	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.

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

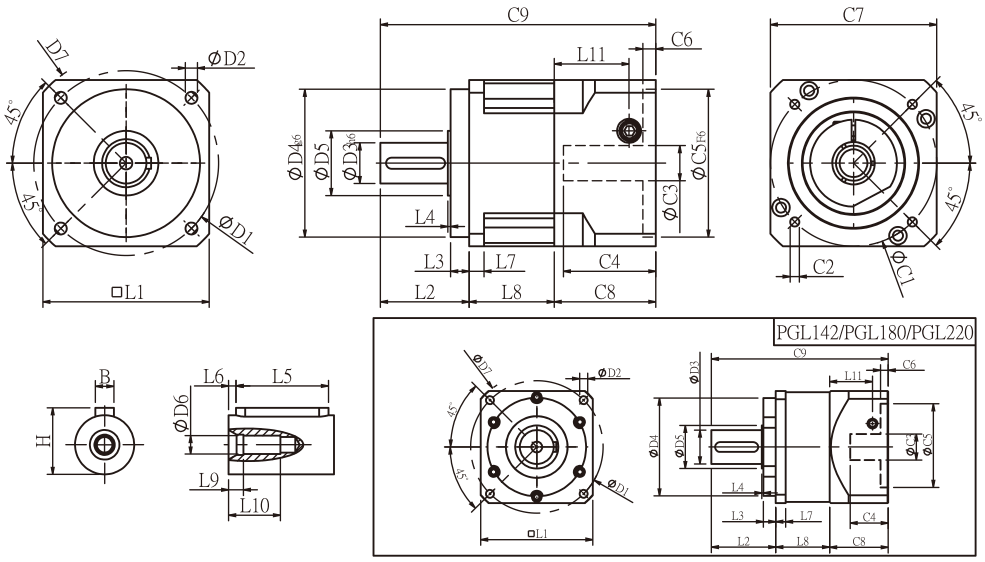

SESAME MOTOR
SESAME MOTOR

PEL SERIES


C9
C6
L11
C7
45°
ØD2
ØD4
ØD5
ØD3
ØC5
C3
L4
ØD1
L3
L7
C4
L1
L2
L8
C8
C2
ØC1
B
L6
L5
ØD6
L9
L10
ØD7
PGL142/PGL180/PGL220


C9
C6
L11
C7
D1
ØD2
45°
ØD4g6
ØD5
ØD3h6
ØC5F6
ØC3
L4
L3
L7
C4
L2
L8
C8
□L1
C2
ØC1
PGL142/PGL180/PGL220
B
L6
L5
ØD6
H
L9
L10
SESAME MOTOR
PEL60-10
SESAME
PEL
PSL

PEL Single Stage Dimensions



Specifications

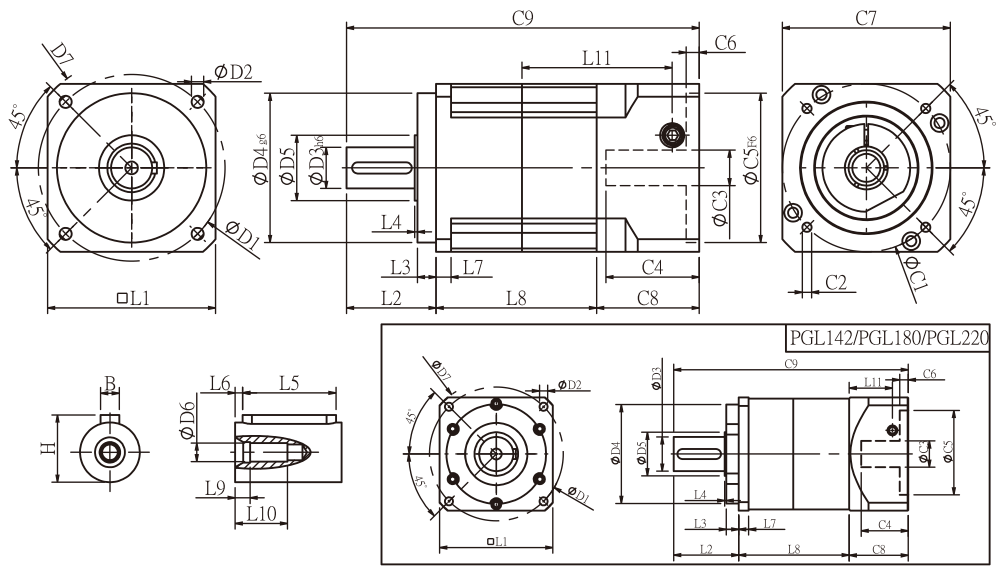
Unit:mm

Dimensions	PEL42	PEL60	PEL90	PEL115	PEL142	PEL180	PEL220
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 [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	37	47	58	66	82	98
C5 [2] F6	30	50	70	95	110	114.3	200
C6 [2]	4	4	6	10	6	13	12
C7 [2]	42.6	60	90	115	140	182	220
C8 [2]	38.5	46	55	63	80	95	130
C9 [2]	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.

PEL Double Stage Dimensions-1



Specifications

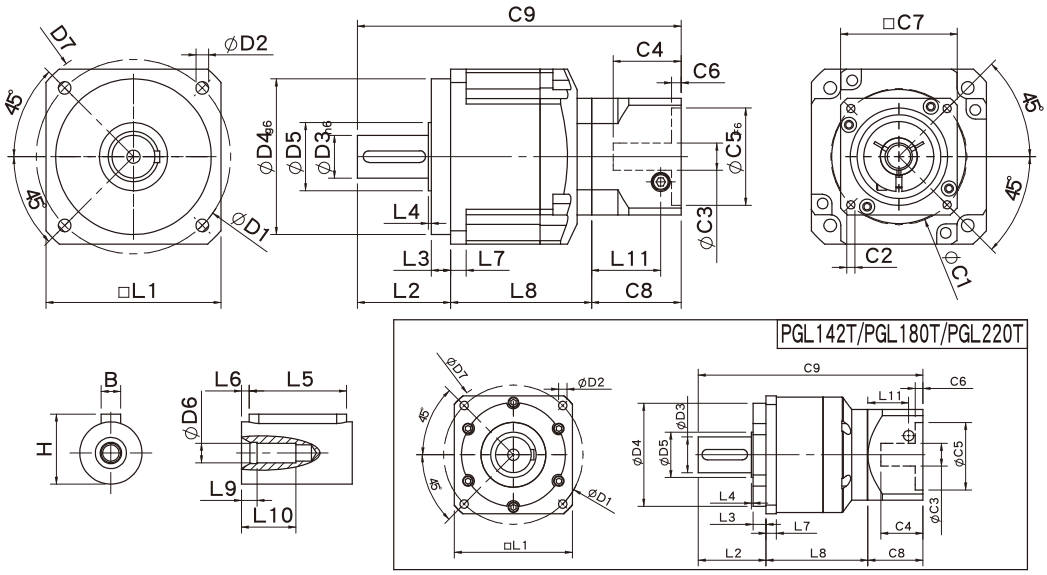
Unit:mm

Dimensions	PEL42	PEL60	PEL90	PEL115	PEL142	PEL180	PEL220
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	54.3	64	86	107	140	177.5	232
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 [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	37	47	58	66	82	98
C5 [2] F6	30	50	70	95	110	114.3	200
C6 [2]	4	4	6	10	6	13	12
C7 [2]	42.6	60	90	115	140	182	220
C8 [2]	38.5	46	55	63	80	95	130
C9 [2]	118.8	147	189	232	313	377	500
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.

PEL Double Stage Dimensions-2



Specifications

Unit:mm

Dimensions	PEL60T	PEL90T	PEL115T	PEL142T	PEL180T	PEL220T
D1	70	100	130	165	215	250
D2	5.5	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	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 [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	37	47	58	66	82
C5 [2] $_{F6}$	30	50	70	95	110	114.3
C6 [2]	4	4	6	10	6	13
C7 [2]	42.6	60	90	115	140	182
C8 [2]	38.5	46	55	63	80	95
C9 [2]	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.

PEL Specifications Table

Specifications		Stage	Ratio	PEL-42	PEL-60	PEL-90	PEL-115	PEL-142	PEL-180	PEL-220
Nominal Output Torque	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	PEL-42	PEL-60 (T)	PEL-90(T)	PEL-115(T)	PEL-142(T)	PEL-180(T)	PEL-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	N • m		3.0 times of Nominal Output Torque (* Max. Output Torque T2B =60% of Emergency Stop Torque)							
Nominal Input Speed	rpm	1,2	3-100	3000	3000	3000	2500	2000	2000	2000
Max. Input Speed	rpm	1,2	3-100	6000	6000	6000	5000	4000	4000	4000
Backlash	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	N	1,2	3-100	350	960	1630	3380	6150	7260	11120
Max. Axial Load	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	≧95%						
		2	12-100	≧90%						
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 [2]	dBA/1m	1,2	3-100	≦65	≦67	≦70	≦70	≦75	≦75	≦80
Protection Class	-	1,2	3-100	IP65						
Lubrication	-	1,2	3-100	Urea derivatives						

Inertia(J1)

Stage	Ratio	unit	PEL-42	PEL-60	PEL-90	PEL-115	PEL-142	PEL-180	PEL-220
1	3	Kg • cm^2	0.03	0.20	0.81	2.20	7.89	25.2	77.9
	4		0.03	0.16	0.65	1.80	5.83	19.8	56.5
	5		0.03	0.15	0.62	1.61	5.38	18.3	53.3
	6/7/8		0.03	0.14	0.60	1.55	5.22	17.8	53.0
	9/10		0.03	0.14	0.60	1.53	5.20	17.6	52.9
Stage	Ratio		PEL-42	PEL-60(T)	PEL-90(T)	PEL-115(T)	PEL-142(T)	PEL-180(T)	PEL-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)

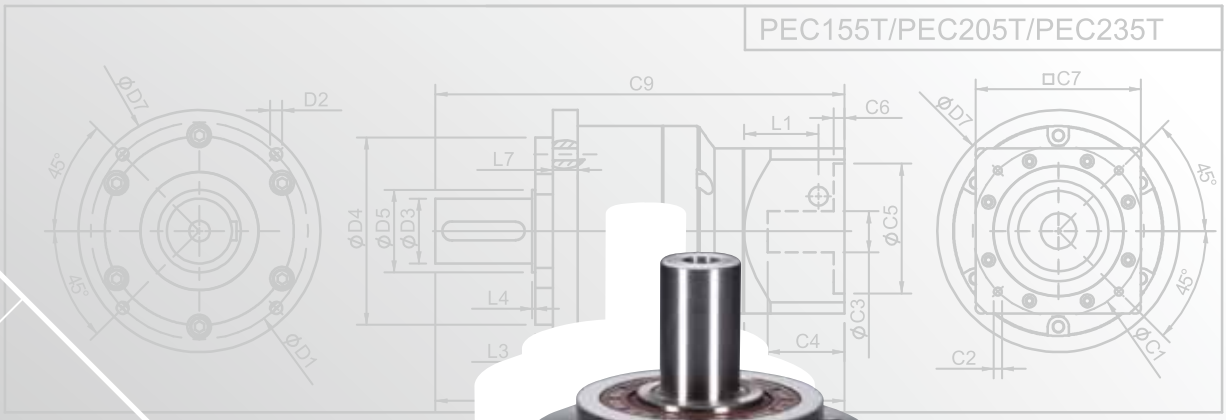
* 1. Applied to the output shaft center @100rpm.
* 2. Measured at 3000rpm with no load
※ The above figures/specifications are subject to change without prior notice.

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

PEC SERIES

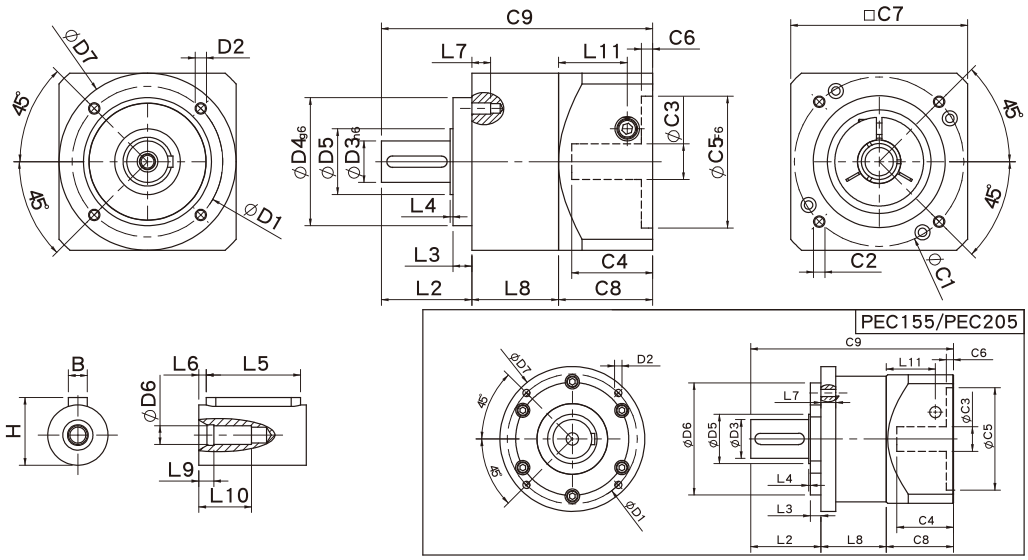

ØD7
45°
45°
B
C9
C6
L7
L11
□C7
D2
ØD4g6
ØD5
ØD3H6
ØC3
45°
45°
ØD1
L4
L3
L2
L8
C4
C8
C2
ØC1
PEC155/PEC205/PEC235
L6
L5
ØD6
L9
L10
ØD7
45°
D2
45°
ØD1
C9
C6
L11
L7
ØD6
ØD5
ØD3
ØC3
ØC5
L4
L3
L2
L8
C4
C8

C9
C6
L7
L11
D2
□C7
45°
45°
ØD4g6
ØD5
ØD3h6
ØC5F6
L4
C4
ØC3
ØD1
L3
C2
ØC1
L2
L8
C8


PEC155T/PEC205T/PEC235T
L6
L5
ØD6
L9
L10
ØD7
D2
C9
C6
L1
L7
□C7
ØD7
45°
ØD4
ØD5
ØD3
ØC5
L4
ØC3
C4
L3
ØD1
C2
ØC1


SESAME
PEC
SESAME MOTOR
Armin P2
SESAME MOTOR
PEC090-4
Armin P2
SESAME
PEC

PEC Single Stage Dimensions



Specifications

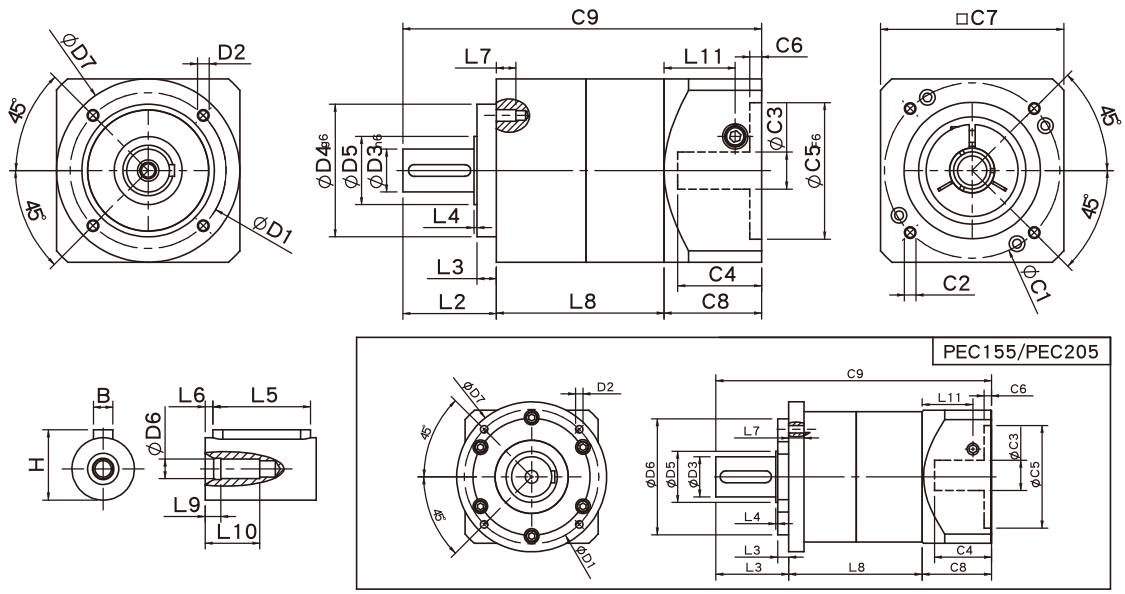
Unit:mm

Dimensions	PEC50	PEC70	PEC90	PEC120	PEC155	PEC205
D1	44	62	80	108	140	184
D2	M4x0.7P	M5x0.8P	M6x1.0P	M8x1.25P	M10x1.5P	M12x1.75P
D3 h6	13	16	22	32	40	55
D4 g6	35	52	68	90	120	160
D5	15	25	35	45	50	70
D6	M4x0.7P	M5x0.8P	M8x1.25P	M12x1.75P	M16x2.0P	M20x2.5P
D7	50	70	94	120	155	205
L2	24.5	35	48	60	93	99.5
L3	4	5	10	6	8	15
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	8	10	10	15	18	21
L8	30	38	46	61	79	92.5
L9	4	4	4.5	6	6	8
L10	14	16.5	20.5	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]	34	44	50	63	80	95
C9 [2]	88.5	117	144	184	252	287
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.

PEC Double Stage Dimensions-1



Specifications

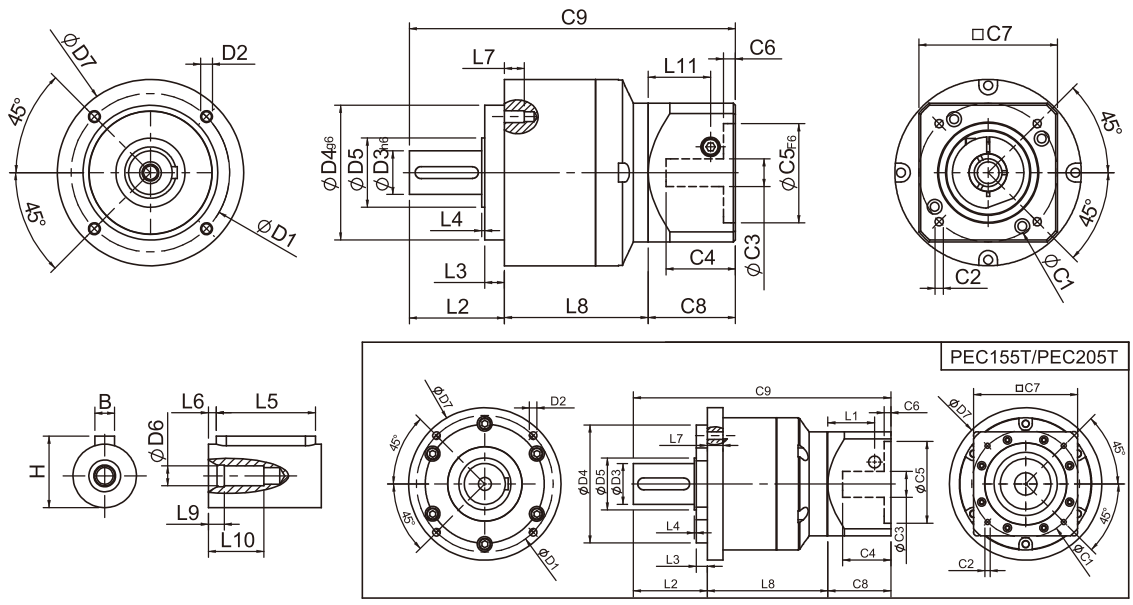
Unit:mm

Dimensions	PEC50	PEC70	PEC90	PEC120	PEC155	PEC205
D1	44	62	80	108	140	184
D2	M4x0.7P	M5x0.8P	M6x1.0P	M8x1.25P	M10x1.5P	M12x1.75P
D3 $_{h6}$	13	16	22	32	40	55
D4 $_{g6}$	35	52	68	90	120	160
D5	15	25	35	45	50	70
D6	M4x0.7P	M5x0.8P	M8x1.25P	M12x1.75P	M16x2.0P	M20x2.5P
D7	50	70	94	120	155	205
L2	24.5	35	48	60	93	99.5
L3	4	5	10	6	8	15
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	8	10	10	15	18	21
L8	56	66	86	109	140	182.5
L9	4	4	4.5	6	6	8
L10	14	16.5	20.5	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]	34	44	50	63	80	95
C9 [2]	114.5	145	184	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.

PEC Double Stage Dimensions-2



Specifications

Unit:mm

Dimensions	PEC70T	PEC90T	PEC120T	PEC155T	PEC205T
D1	62	80	108	140	184
D2	M5x0.8P	M6x1.0P	M8x1.25P	M10x1.5P	M12x1.75P
D3 $_{h6}$	16	22	32	40	55
D4 $_{g6}$	52	68	90	120	160
D5	25	35	45	50	70
D6	M5x0.8P	M8x1.25P	M12x1.75P	M16x2.0P	M20x2.5P
D7	70	94	120	155	205
L2	35	48	60	93	99.5
L3	5	10	6	8	15
L4	1.5	1.5	3	6	2.5
L5	25	32	40	60	70
L6	2	3	5	5	6
L7	10	10	15	18	21
L8	60.8	70.5	99.4	127	162
L9	4	4.5	6	6	8
L10	16.5	20.5	30	38	48
L11	29	35.5	40.5	42	63
C1 [2]	46	70	90	115	145
C2 [2]	M4x0.7P	M5x0.8P	M6x1.0P	M8x1.25P	M8x1.25P
C3 [2]	≦8	≦14	≦19/≦24	≦24/≦28	≦35
C4 [2]	28.5	41	47.75	58	66
C5 [2] $_{F6}$	30	50	70	95	110
C6 [2]	5.5	8	6	8	6
C7 [2]	50	70	94	120	140
C8 [2]	40	50	55	63	80
C9 [2]	135.8	170.5	214.4	283	341.5
B	5	6	10	12	16
H	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.

PEC Specifications Table

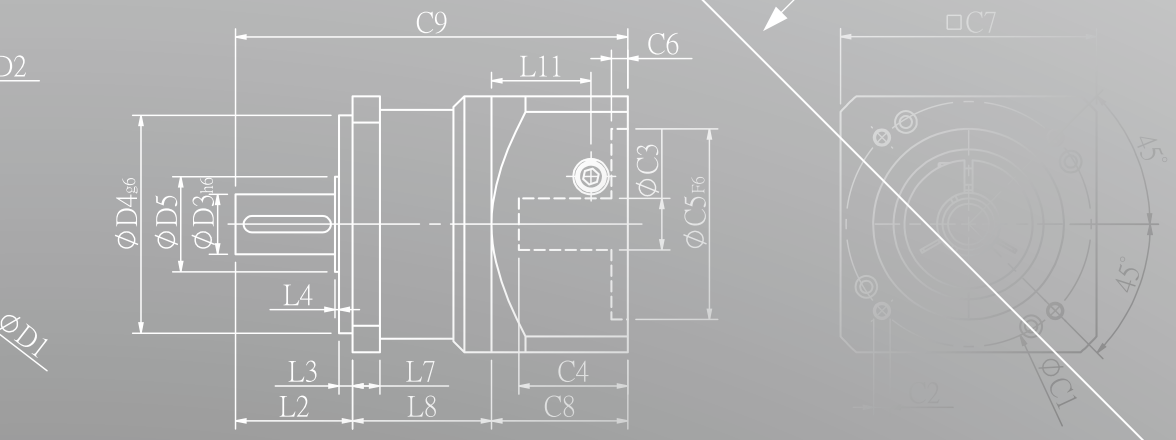
Specifications		Stage	Ratio	PEC-50	PEC-70	PEC-90	PEC-120	PEC-155	PEC-205
Nominal Output Torque	N • m	1	3	13.8	44.2	95.2	283	482	1151
			4	11.9	35.9	74.6	249	490	1055
			5	13.8	43.0	95.2	283	473	1151
			7	11.9	36.0	85.6	219	400	1055
			10	10.1	25.0	75.0	210	320	763
		Stage	Ratio	PEC-50	PEC-70(T)	PEC-90(T)	PEC-120(T)	PEC-155(T)	PEC-205(T)
		2	15	13.8	44.2	95.2	283	482	1151
			20	11.9	35.9	74.6	249	490	1055
			25	13.8	43.0	95.2	283	473	1151
			30	13.8	43.0	95.2	283	473	1151
			35	13.8	43.0	95.2	283	473	1151
			40	13.8	43.0	95.2	283	473	1151
			50	13.8	43.0	95.2	283	473	1151
			70	11.9	36.0	85.6	219	400	1055
			100	10.1	25.0	75.0	210	320	763
Emergency Stop Torque	N • m		3.0 times of Nominal Output Torque (* Max. Output Torque T2B =60% of Emergency Stop Torque)						
Nominal Input Speed	rpm	1,2	3-100	3000	3000	3000	2500	2000	2000
Max. Input Speed	rpm	1,2	3-100	6000	6000	6000	5000	4000	4000
Backlash	arcmin	1	3-10	≦12	≦9	≦9	≦7	≦7	≦7
		2	12-100	≦15	≦12	≦12	≦9	≦9	≦9
Torsional Rigidity	N • m /arcmin	1,2	3-100	1.0	2.8	7.5	15.5	30	57
Max. Radial Load	N	1,2	3-100	350	960	1630	3380	6150	7260
Max. Axial Load	N	1,2	3-100	320	900	1420	2930	5510	5550
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	≧90%					
Weight	kg	1	3-10	0.7	1.4	3.0	7.3	15.6	26
		2	12-100	0.9	2.2/1.7	5.0/3.4	11.5/8.5	20.7/17.2	36/31
Mounting Position	-	1,2	3-100	Any direction					
Noise Level [2]	dBA/1m	1,2	3-100	≦65	≦67	≦70	≦70	≦75	≦75
Protection Class	-	1,2	3-100	IP65					
Lubrication	-	1,2	3-100	Urea derivatives					

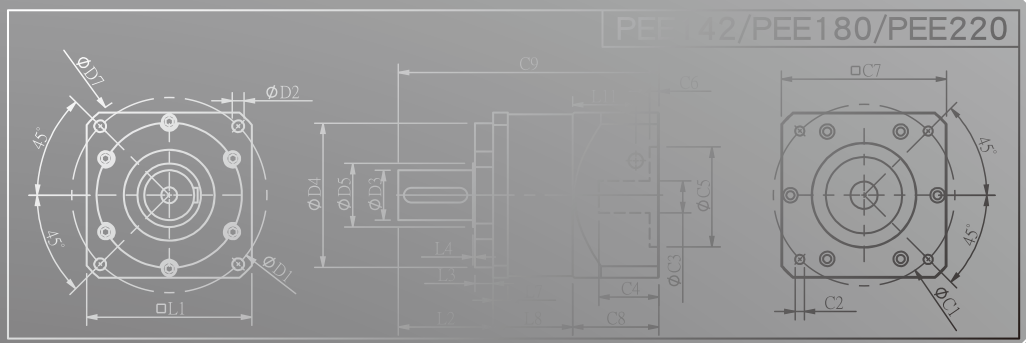
Inertia(J1)								
Stage	Ratio	unit	PEC-50	PEC-70	PEC-90	PEC-120	PEC-155	PEC-205
1	3	Kg • cm^2	0.03	0.20	0.81	2.20	7.89	25.2
	4		0.03	0.16	0.65	1.80	5.83	19.8
	5		0.03	0.15	0.62	1.61	5.38	18.3
	7		0.03	0.14	0.60	1.55	5.22	17.8
	10		0.03	0.14	0.60	1.53	5.20	17.6
Stage	Ratio		PEC-50	PEC-70(T)	PEC-90(T)	PEC-120(T)	PEC-155(T)	PEC-205(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)
	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)
	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)

* 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.

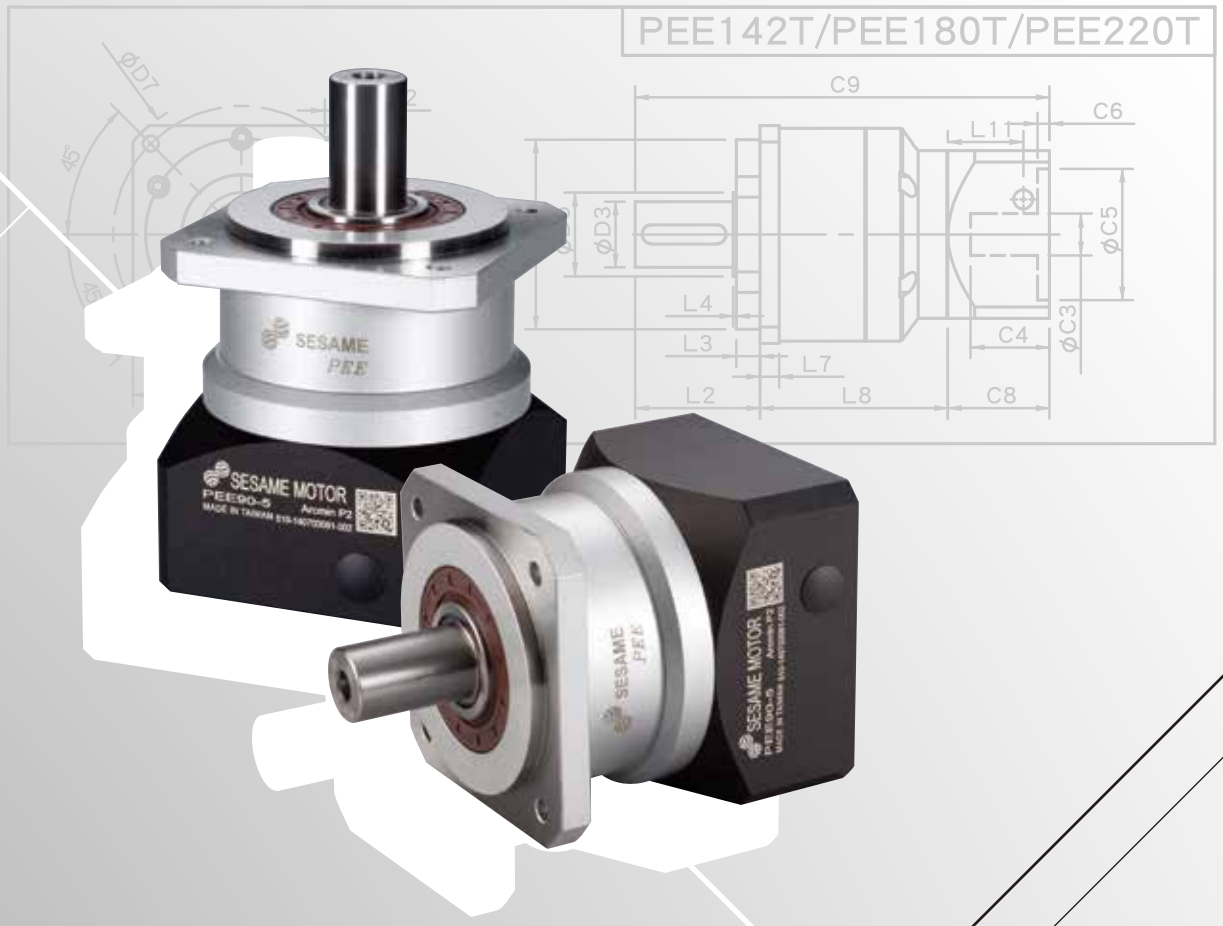
Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty.

PEE SERIES

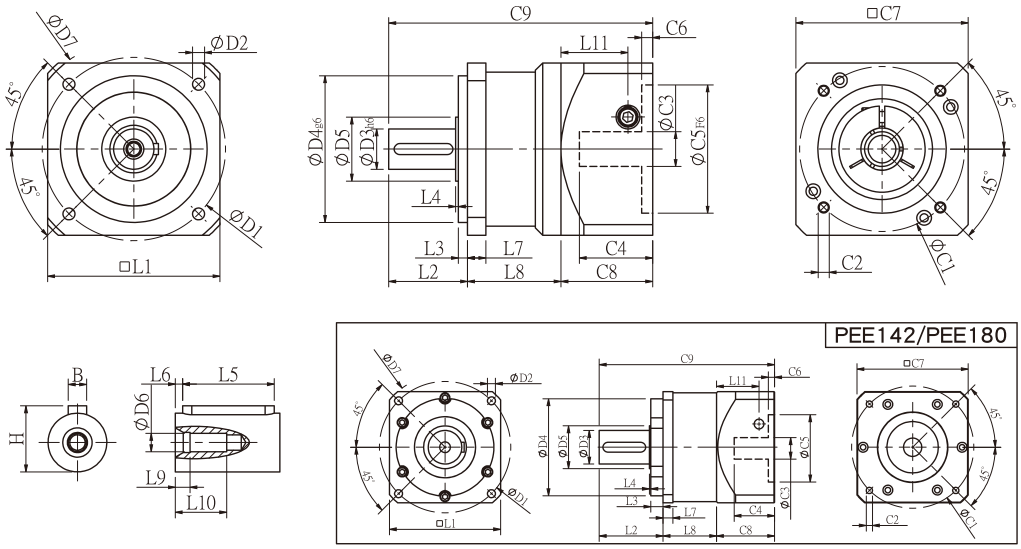

C9
C6
L11
ØD4g6
ØD5
ØD3h6
ØC3
ØC5F6
L4
L3
L7
C4
L2
L8
C8
□C7
45°
45°
ØC1
C2


PEE42/PEE180/PEE220
ØD7
ØD2
45°
45°
ØD1
□L1
C9
C6
L11
ØD4
ØD5
ØD3
ØC3
ØC5
L4
L3
C4
L2
L8
C8
□C7
45°
45°
45°
ØC1
C2

C9
C6
L11
□C7
45°
ØD4
ØD5
ØD3
ØC5
L4
ØD1
ØC3
C4
L3
L7
C2
ØC1
L2
L8
C8
45°


PEE142T/PEE180T/PEE220T
ØD7
C9
C6
L11
ØD3
ØC5
L4
L3
L7
C4
ØC3
L2
L8
C8
SESAME
PEE
SESAME MOTOR
PEE90-S

PEE Single Stage Dimensions



Specifications

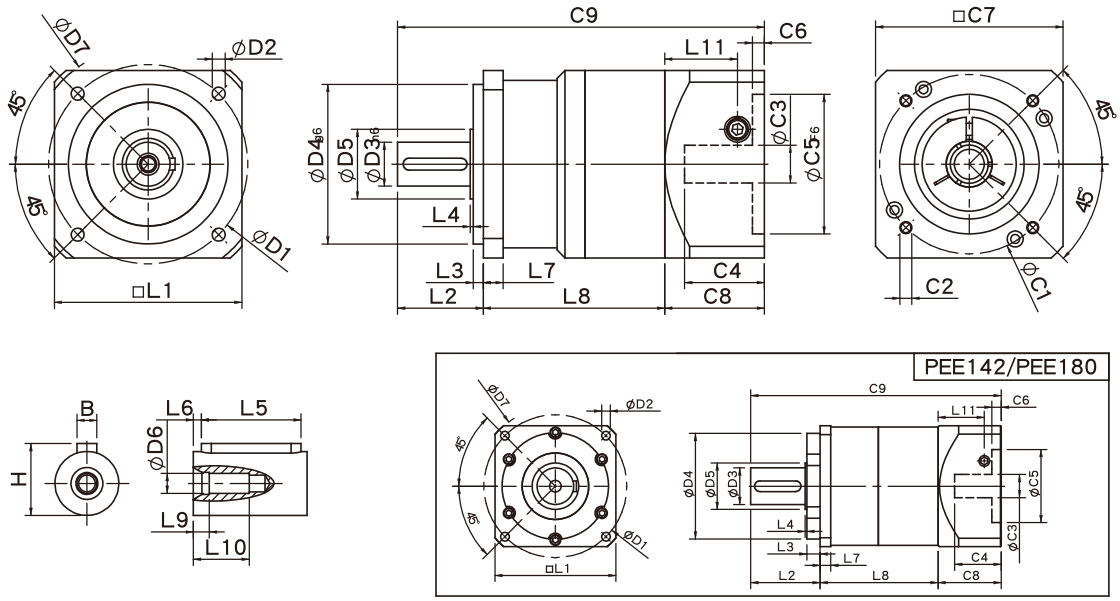
Unit:mm

Dimensions	PEE50	PEE70	PEE90	PEE120	PEE142	PEE180
D1	50	70	100	130	165	215
D2	3.4	6	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	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	30	36	51	61	79	87.5
L9	4	4	4.5	6	6	8
L10	14	16.5	20.5	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]	34	44	50	63	80	95
C9 [2]	88.5	117	144	184	252	287
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.

PEE Double Stage Dimensions-1



Specifications

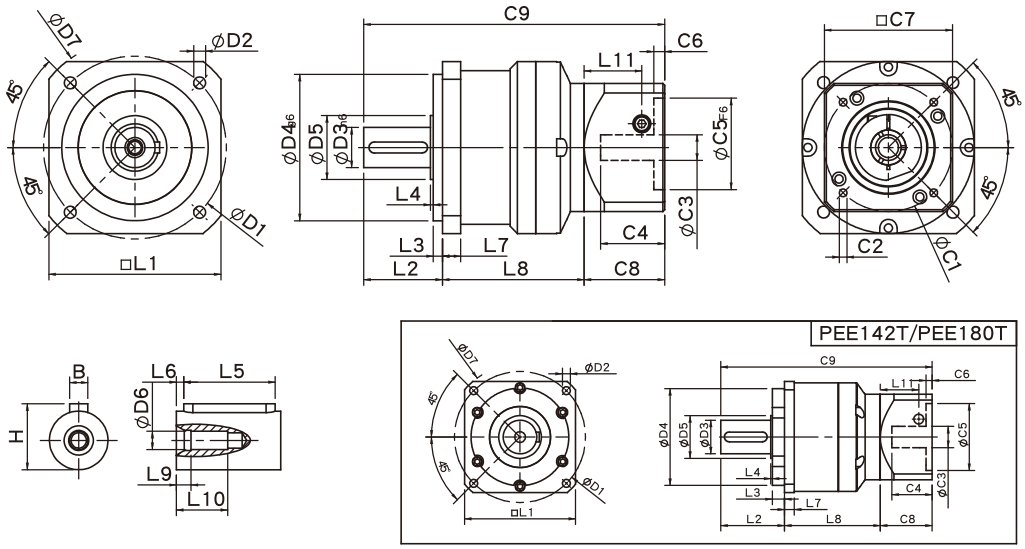
Unit:mm

Dimensions	PEE50	PEE70	PEE90	PEE120	PEE142	PEE180
D1	50	70	100	130	165	215
D2	3.4	6	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	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	20.5	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]	34	44	50	63	80	95
C9 [2]	114.5	145	184	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.

PEE Double Stage Dimensions-2



Specifications

Unit:mm

Dimensions	PEE70T	PEE90T	PEE120T	PEE142T	PEE180T
D1	70	100	130	165	215
D2	6	6.5	8.5	10.5	13
D3 $_{h6}$	16	22	32	40	55
D4 $_{g6}$	50	80	110	130	160
D5	25	35	45	50	70
D6	M5x0.8P	M8x1.25P	M12x1.75P	M16x2.0P	M20x2.5P
D7	90	120	152	186	239
L1	70	94	120	142	182
L2	37	43	60	93	104.5
L3	7	5	6	8	20
L4	1.5	1.5	3	6	2.5
L5	25	32	40	60	70
L6	2	3	5	5	6
L7	6	10	12	18	16
L8	58.8	77.5	99.4	127	157
L9	4	4.5	6	6	8
L10	16.5	20.5	30	38	48
L11	29	35.5	40.5	42	63
C1 [2]	46	70	90	115	145
C2 [2]	M4x0.7P	M5x0.8P	M6x1.0P	M8x1.25P	M8x1.25P
C3 [2]	≦8	≦14	≦19/≦24	≦24/≦28	≦35
C4 [2]	28.5	41	47.75	58	66
C5 [2] $_{F6}$	30	50	70	95	110
C6 [2]	5.5	8	6	8	6
C7 [2]	50	70	94	120	140
C8 [2]	40	50	55	63	80
C9 [2]	135.8	170.5	214.4	283	341.5
B	5	6	10	12	16
H	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.

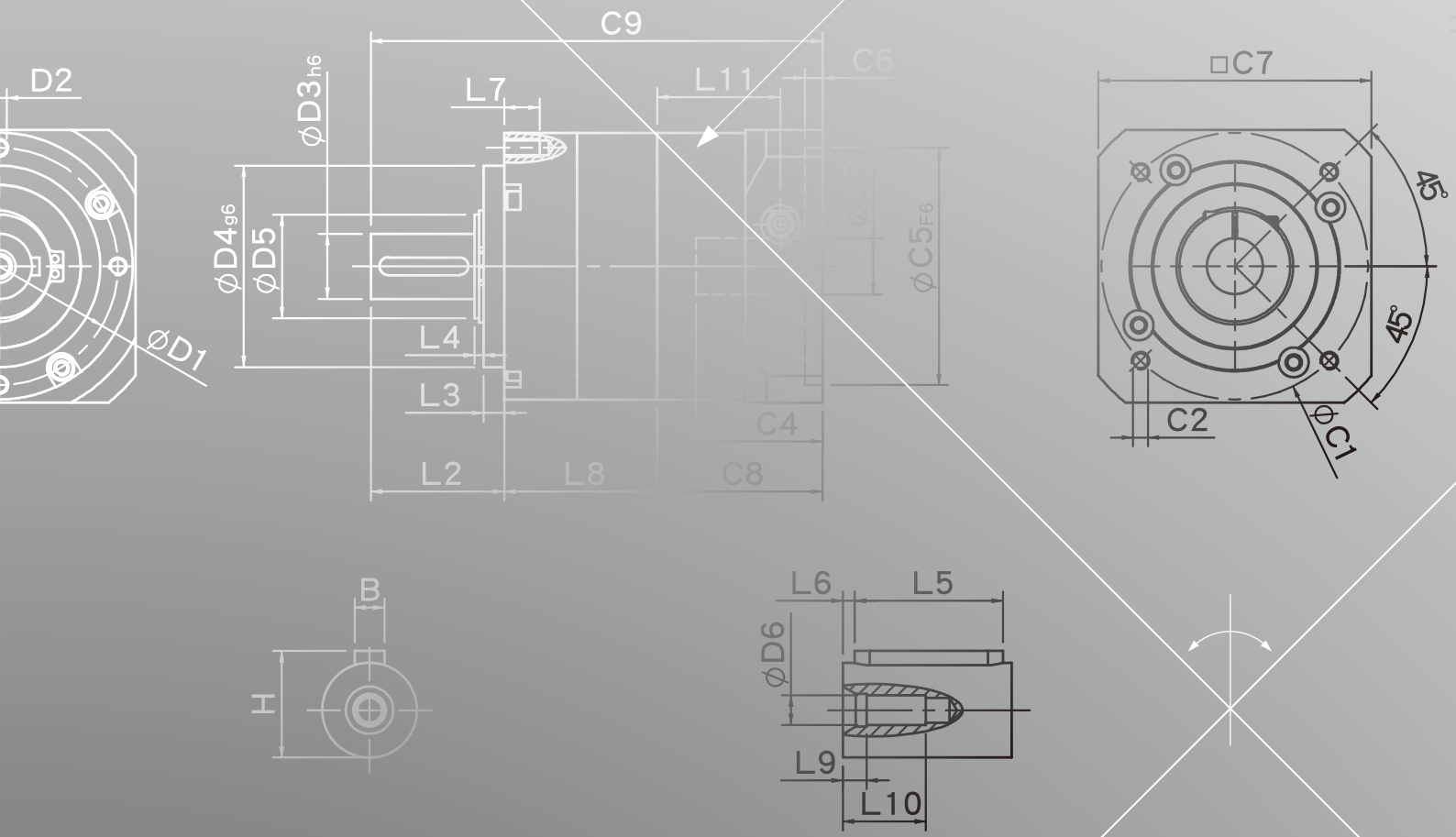
PEE Specifications Table

Specifications		Stage	Ratio	PEE-50	PEE-70	PEE-90	PEE-120	PEE-142	PEE-180
Nominal Output Torque	N • m	1	3	13.8	44.2	95.2	283	482	1151
			4	11.9	35.9	74.6	249	490	1055
			5	13.8	43.0	95.2	283	473	1151
			7	11.9	36.0	85.6	219	400	1055
			10	10.1	25.0	75.0	210	320	763
		Stage	Ratio	PEE-50	PEE-70(T)	PEE-90(T)	PEE-120(T)	PEE-142(T)	PEE-180(T)
		2	15	13.8	44.2	95.2	283	482	1151
			20	11.9	35.9	74.6	249	490	1055
			25	13.8	43.0	95.2	283	473	1151
			30	13.8	43.0	95.2	283	473	1151
			35	13.8	43.0	95.2	283	473	1151
			40	13.8	43.0	95.2	283	473	1151
			50	13.8	43.0	95.2	283	473	1151
			70	11.9	36.0	85.6	219	400	1055
			100	10.1	25.0	75.0	210	320	763
Emergency Stop Torque	N • m		3.0 times of Nominal Output Torque (* Max. Output Torque T2B =60% of Emergency Stop Torque)						
Nominal Input Speed	rpm	1,2	3-100	3000	3000	3000	2500	2000	2000
Max. Input Speed	rpm	1,2	3-100	6000	6000	6000	5000	4000	4000
Backlash	arcmin	1	3-10	≦12	≦9	≦9	≦7	≦7	≦7
		2	12-100	≦15	≦12	≦12	≦9	≦9	≦9
Torsional Rigidity	N • m /arcmin	1,2	3-100	1.0	2.8	7.5	15.5	30	57
Max. Radial Load	N	1,2	3-100	350	960	1630	3380	6150	7260
Max. Axial Load	N	1,2	3-100	320	900	1420	2930	5510	5550
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	≧90%					
Weight	kg	1	3-10	0.7	1.4	3.0	7.3	15.6	26
		2	12-100	0.9	2.2/1.7	5.0/3.4	11.5/8.5	20.7/17.2	36/31
Mounting Position	-	1,2	3-100	Any direction					
Noise Level [2]	dBA/1m	1,2	3-100	≦65	≦67	≦70	≦70	≦75	≦75
Protection Class	-	1,2	3-100	IP65					
Lubrication	-	1,2	3-100	Urea derivatives					

Inertia(J1)								
Stage	Ratio	unit	PEE-50	PEE-70	PEE-90	PEE-120	PEE-142	PEE-180
1	3	Kg • cm^2	0.03	0.20	0.81	2.20	7.89	25.2
	4		0.03	0.16	0.65	1.80	5.83	19.8
	5		0.03	0.15	0.62	1.61	5.38	18.3
	7		0.03	0.14	0.60	1.55	5.22	17.8
	10		0.03	0.14	0.60	1.53	5.20	17.6
Stage	Ratio		PEE-50	PEE-70(T)	PEE-90(T)	PEE-120(T)	PEE-142(T)	PEE-180(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)
	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)
	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)

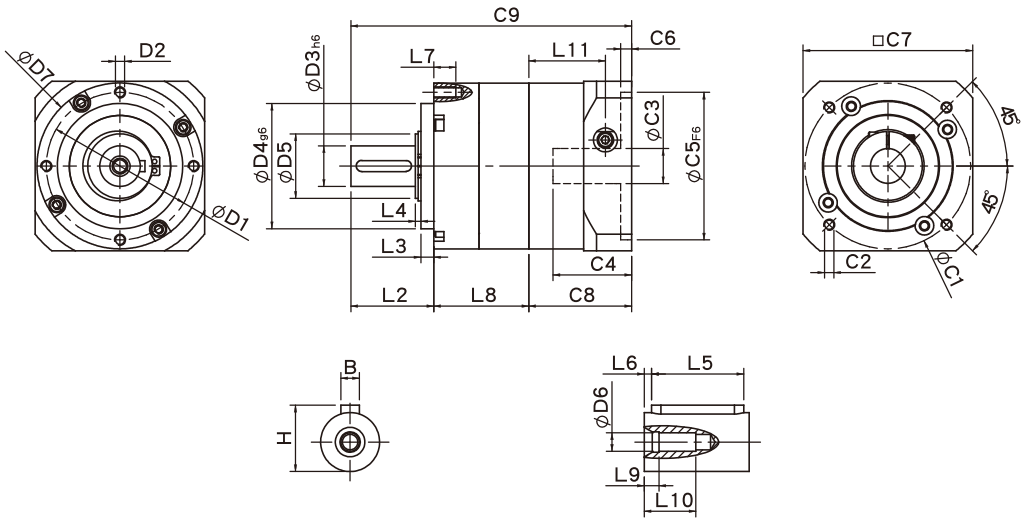
* 1. Applied to the output shaft center @100rpm.
* 2. Measured at 3000rpm with no load
※ The above figures/specifications are subject to change without prior notice.

PBC SERIES


C9
D2
ØD3h6
L7
L11
C6
□C7
45°
ØD4g6
ØD5
ØC5F6
ØD1
L4
L3
C4
C2
ØC1
45°
L2
L8
C8
B
H
L6
L5
ØD6
L9
L10


C9
C6
L11
L7
ØD3h6
ØD4g6
ØD5
ØC3
ØC5F6
L4
L3
C4
L2
L8
C8
□C7
45°
45°
ØC1
C2
ØD7
D2
ØD1
PBC60T/PBC90T
B
L6
L5
ØD6
L9
L10
SESAME
PBC
SESAME MOTOR

PBC Single Stage Dimensions



Specifications

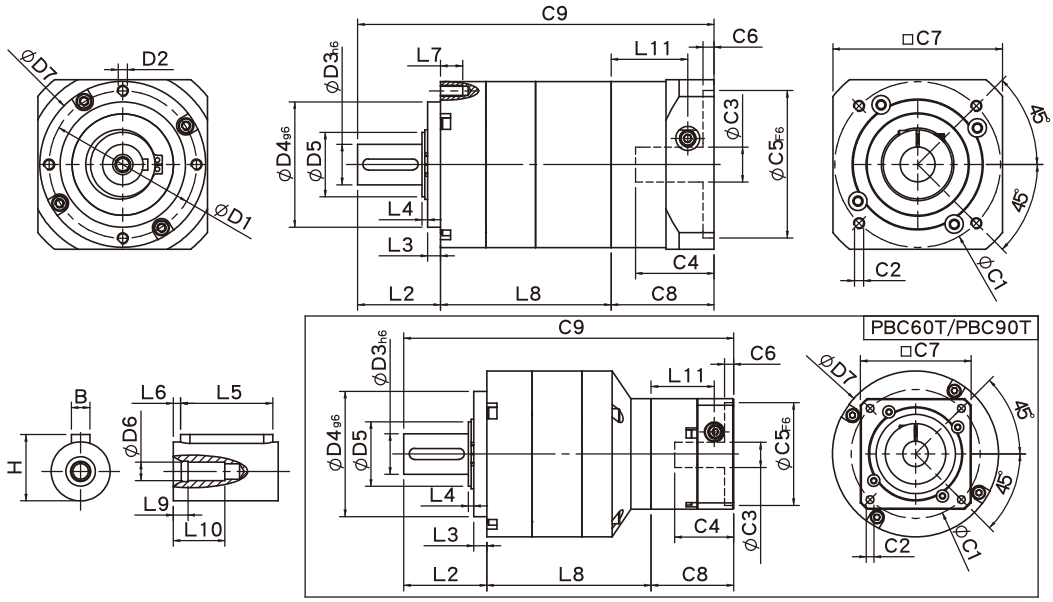
Unit:mm

Dimensions	PBC50	PBC70	PBC90
D1	44	62	80
D2	M4x0.7P	M5x0.8P	M6x1.0P
D3 h6	12	16	22
D4 g6	35	52	68
D5	15	20	35
D6	M4x0.7P	M5x0.8P	M8x1.25P
D7	50	70	90
L2	26	36	45
L3	5.5	5	7
L4	2.6	2.7	3
L5	15	25	30
L6	2	2	3
L7	8	10	12
L8	32.4	49.6	54.4
L9	4	4	4.5
L10	14	16.5	20.5
L11	26.9	34.3	41.55
C1 [2]	46	70	90
C2 [2]	M4x0.7P	M5x0.8P	M6x1.0P
C3 [2]	≦8/≦11	≦14/≦19	≦19/≦24/≦28
C4 [2]	26.5	33.5	41
C5 [2] F6	30	50	70
C6 [2]	4	4	6
C7 [2]	42.6	60	92
C8 [2]	36.4	44.8	55.8
C9 [2]	94.8	130.4	155.2
B	5	5	6
H	15	18	24.5

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

★ Specification subject to change without notice.

PBC Double Stage Dimensions



Specifications

Unit:mm

Dimensions	PBC50	PBC70	PBC70T	PBC90	PBC90T
D1	44	62		80	
D2	M4x0.7P	M5x0.8P		M6x1.0P	
D3 h6	13	16		22	
D4 g6	35	52		68	
D5	15	20		35	
D6	M4x0.7P	M5x0.8P		M8x1.25P	
D7	50	70		90	
L2	26	36		45	
L3	5.5	5		7	
L4	2.6	2.7		3	
L5	15	25		30	
L6	2	2		3	
L7	8	10		12	
L8	57.3	80.3	75.9	95.4	92
L9	4	4		4.5	
L10	14	16.5		20.5	
L11	26.9	34.3	26.9	41.55	34.3
C1 [2]	46	70	46	90	70
C2 [2]	M4x0.7P	M5x0.8P	M4x0.7P	M6x1.0P	M5x0.8P
C3 [2]	≦8/≦11	≦14/≦19	≦8/≦11	≦19/≦24/≦28	≦14/≦19
C4 [2]	26.5	33.5	26.5	41	33.5
C5 [2] F6	30	50	30	70	50
C6 [2]	4	4	4	6	4
C7 [2]	42.6	60	42.6	92	60
C8 [2]	36.4	44.8	36.4	55.8	44.8
C9 [2]	119.7	161.1	148.3	196.2	181.8
B	5	5		6	
H	15	18		24.5	

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

★ Specification subject to change without notice.

PBC Specifications Table

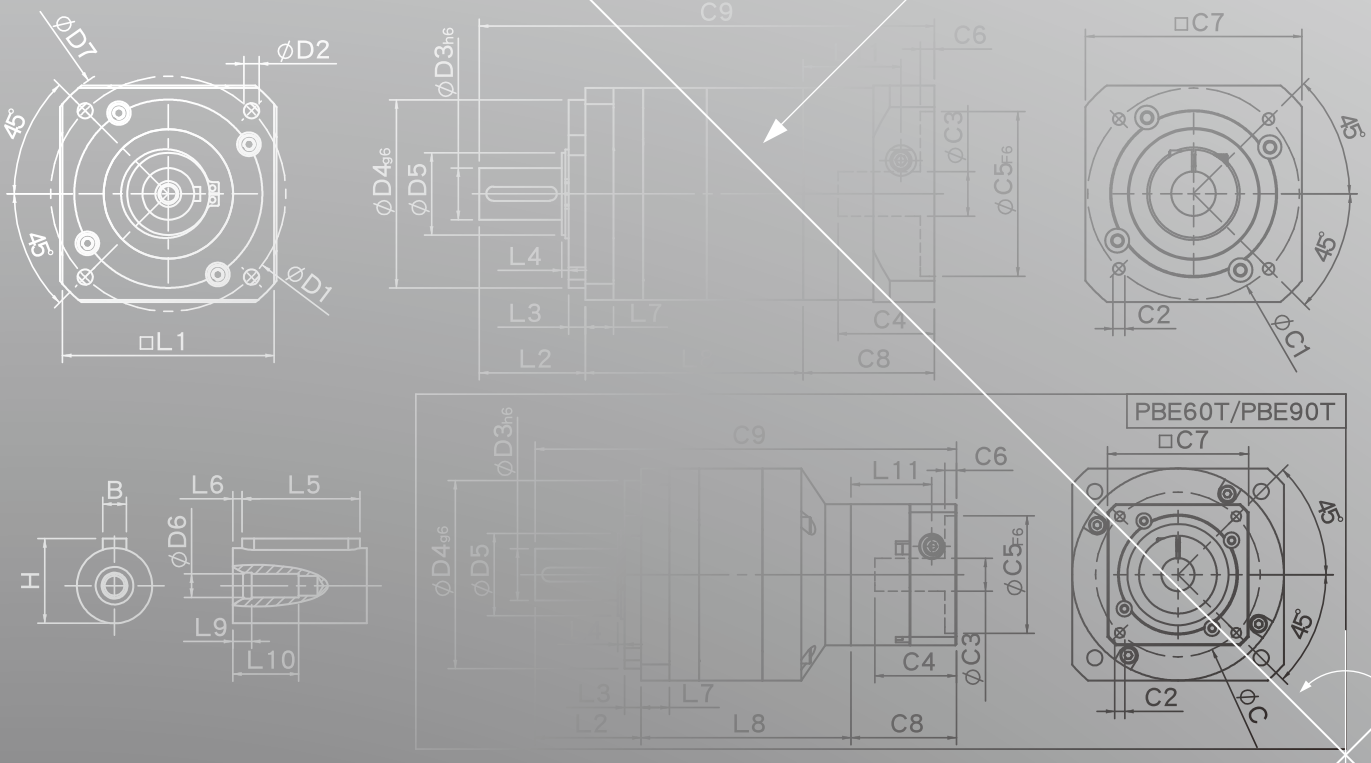
Specifications		Stage	Ratio	PBC-50	PBC-70	PBC-90
Nominal Output Torque	N • m	1	3	4.8	13.6	33.5
			4	6.3	21.6	58.6
			5	6.0	20.5	55.1
			7	5.6	19.2	51.8
			9	5.4	18.5	50.0
		Stage	Ratio	PBC-50	PBC-70(T)	PBC-90(T)
		2	15	4.8	13.6	33.5
			20	6.3	21.6	58.6
			25	6.0	20.5	55.1
			35	6.0	20.5	55.1
			45	6.0	20.5	55.1
			49	5.6	19.2	51.8
			63	5.6	19.2	51.8
			81	5.4	18.5	50.0
		Stage	Ratio	PBC-50	PBC-70T	PBC-90T
		3	125	6.0	20.5	55.1
			175	6.0	20.5	55.1
			225	6.0	20.5	55.1
			245	6.0	20.5	55.1
			315	6.0	20.5	55.1
			405	6.0	20.5	55.1
			567	5.6	19.2	51.8
			729	5.4	18.5	50.0
Emergency Stop Torque	N • m		3.0 times of Nominal Output Torque (* Max. Output Torque T2B =60% of Emergency Stop Torque)			
Nominal Input Speed	rpm	1,2,3	3-729	4000	4000	3000
Max. Input Speed	rpm	1,2,3	3-729	8000	6000	6000
Backlash	arcmin	1 2 3	3-9 15-81 125-729	≦9 ≦12 ≦15	≦8 ≦10 ≦12	≦7 ≦9 ≦12
Torsional Rigidity	N • m /arcmin	1,2,3	3-729	0.8	2.0	7.0
Max. Radial Load	N	1,2,3	3-729	540	1040	1700
Max. Axial Load	N	1,2,3	3-729	360	720	735
Operating Temp.	°C	1,2,3	3-729	-10 °C ~+90 °C		
Service Life	hr	1,2,3	3-729	20,000 (10,000/ Continuous operation)		
Efficiency	%	1 2 3	3-9 15-81 125-729	≧95% ≧90% ≧85%		
Weight	kg	1 2 3	3-9 15-81 125-729	0.5 0.7 0.9	1.2 1.7/1.5 2.0/1.8	3.1 4.7/3.6 5.3/4.0
Mounting Position	-	1,2,3	3-729	Any direction		
Noise Level [2]	dBA/1m	1,2,3	3-729	≦62	≦64	≦67
Protection Class	-	1,2,3	3-729	IP64		
Lubrication	-	1,2,3	3-729	Synthetic Lubricant		

* 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.


SESAME
PBC
SESAME MOTOR
SESAME
PBC
SESAME MOTOR

PBE SERIES

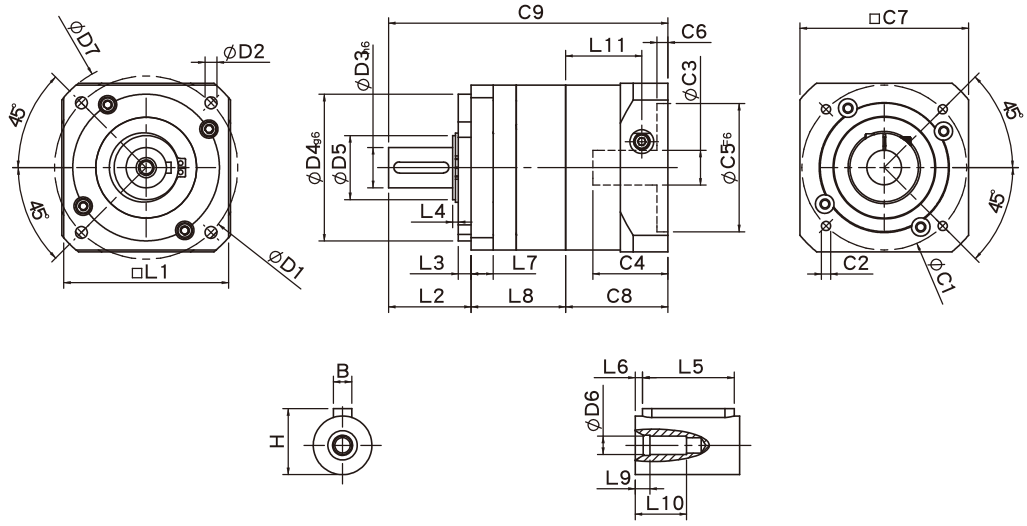

ØD7
ØD2
45°
ØD1
□L1
C9
C6
ØD3h6
ØD4g6
ØD5
ØC3
ØC5F6
L4
L3
L7
L2
C4
C8
□C7
C2
ØC1
PBE60T/PBE90T
L11
ØC
B
L6
L5
ØD6
H
L9
L10
L8

C9
C6
L11
ϕD3h6
ϕC3
ϕD4g6
ϕD5
ϕC5F6
L4
L3
L7
C4
L2
L8
C8

□C7
45°
45°
C2
ϕC1


L6
L5
ϕD6
SESAME
PBE
SESAME MOTOR

PBE Single Stage Dimensions



Specifications

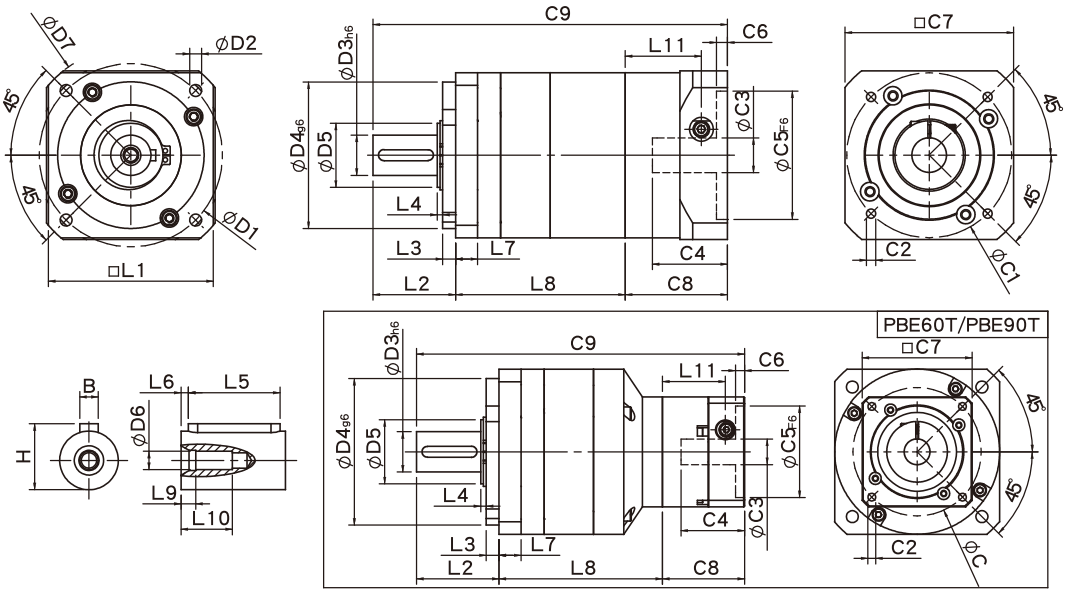
Unit:mm

Dimensions	PBE42	PBE60	PBE90
D1	50	70	100
D2	3.4	5.5	6.5
D3 h6	13	16	22
D4 g6	35	50	80
D5	15	20	35
D6	M4x0.7P	M5x0.8P	M8x1.25P
D7	56	80	118
L1	42.6	60	90
L2	26	36	45
L3	5.5	5	7
L4	2.6	2.7	3
L5	15	25	30
L6	2	2	3
L7	8	10	12
L8	32.4	49.6	54.4
L9	4	4	4.5
L10	14	16.5	20.5
L11	26.9	34.3	41.5
C1 [2]	46	70	90
C2 [2]	M4x0.7P	M5x0.8P	M6x1.0P
C3 [2]	≦8/≦11	≦14/≦19	≦19/≦24/≦28
C4 [2]	26.5	33.5	41
C5 [2] F6	30	50	70
C6 [2]	4	4	6
C7 [2]	42.6	60	92
C8 [2]	36.4	44.8	55.8
C9 [2]	94.8	130.4	155.2
B	5	5	6
H	15	18	24.5

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

★ Specification subject to change without notice.

PBE Double Stage Dimensions



Specifications

Unit:mm

Dimensions	PBE42	PBE60/PBE60T		PBE90/PBE 90T	
D1	50	70		100	
D2	3.4	5.5		6.5	
D3 h6	13	16		22	
D4 g6	35	50		80	
D5	15	20		35	
D6	M4x0.7P	M5x0.8P		M8x1.25P	
D7	56	80		118	
L1	42.6	60		90	
L2	26	36		45	
L3	5.5	5		7	
L4	2.6	2.7		3	
L5	15	25		30	
L6	2	2		3	
L7	8	10		12	
L8	57.3	80.3	75.9	95.4	92
L9	4	4		4.5	
L10	14	16.5		20.5	
L11	26.9	34.3	26.9	41.55	34.3
C1 [2]	46	70	46	90	70
C2 [2]	M4x0.7P	M5x0.8P	M4x0.7P	M6x1.0P	M5x0.8P
C3 [2]	≤8/≤11	≤14/≤19	≤8/≤11	≤19/≤24/≤28	≤14/≤19
C4 [2]	26.5	33.5	26.5	41	33.5
C5 [2] F6	30	50	30	70	50
C6 [2]	4	4	4	6	4
C7 [2]	42.6	60	42.6	92	60
C8 [2]	36.4	44.8	36.4	55.8	44.8
C9 [2]	119.7	161.1	148.3	196.2	181.8
B	5	5		6	
H	15	18		24.5	

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

★ Specification subject to change without notice.

PBE Specifications Table

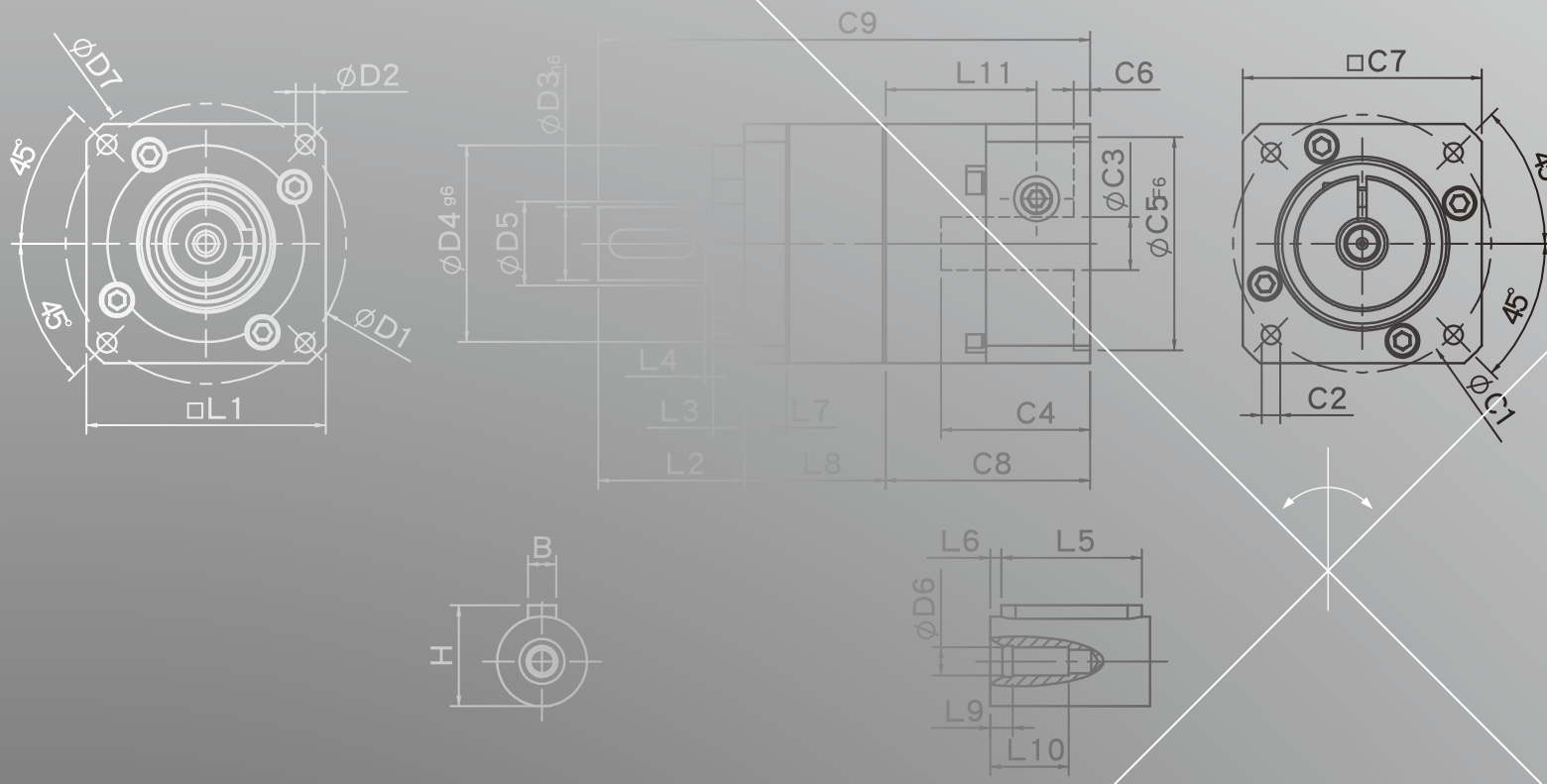
Specifications		Stage	Ratio	PBE-42	PBE-60	PBE-90
Nominal Output Torque	N • m	1	3	4.8	13.6	33.5
			4	6.3	21.6	58.6
			5	6.0	20.5	55.1
			7	5.6	19.2	51.8
			9	5.4	18.5	50.0
		Stage	Ratio	PBE-42	PBE-60(T)	PBE-90(T)
		2	15	4.8	13.6	33.5
			20	6.3	21.6	58.6
			25	6.0	20.5	55.1
			35	6.0	20.5	55.1
			45	6.0	20.5	55.1
			49	5.6	19.2	51.8
			63	5.6	19.2	51.8
			81	5.4	18.5	50.0
		Stage	Ratio	PBE-42	PBE-60T	PBE-90T
		3	125	6.0	20.5	55.1
			175	6.0	20.5	55.1
			225	6.0	20.5	55.1
			245	6.0	20.5	55.1
			315	6.0	20.5	55.1
			405	6.0	20.5	55.1
			567	5.6	19.2	51.8
			729	5.4	18.5	50.0
Emergency Stop Torque	N • m		3.0 times of Nominal Output Torque (* Max. Output Torque T2B =60% of Emergency Stop Torque)			
Nominal Input Speed	rpm	1,2,3	3-729	4000	4000	3000
Max. Input Speed	rpm	1,2,3	3-729	8000	6000	6000
Backlash	arcmin	1 2 3	3-9 15-81 125-729	≦9 ≦12 ≦15	≦8 ≦10 ≦12	≦7 ≦9 ≦12
Torsional Rigidity	N • m /arcmin	1,2,3	3-729	0.8	2.0	7
Max. Radial Load	N	1,2,3	3-729	540	1040	1700
Max. Axial Load	N	1,2,3	3-729	360	720	735
Operating Temp.	°C	1,2,3	3-729	-10 °C ~+90 °C		
Service Life	hr	1,2,3	3-729	20,000 (10,000/ Continuous operation)		
Efficiency	%	1 2 3	3-9 15-81 125-729	≧95% ≧90% ≧85%		
Weight	kg	1 2 3	3-9 15-81 125-729	0.5 0.7 0.9	1.2 1.7/1.5 2.0/1.8	3.1 4.7/3.6 5.3/4.0
Mounting Position	-	1,2,3	3-729	Any direction		
Noise Level [2]	dBA/1m	1,2,3	3-729	≦62	≦64	≦67
Protection Class	-	1,2,3	3-729	IP64		
Lubrication	-	1,2,3	3-729	Synthetic Lubricant		

* 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.

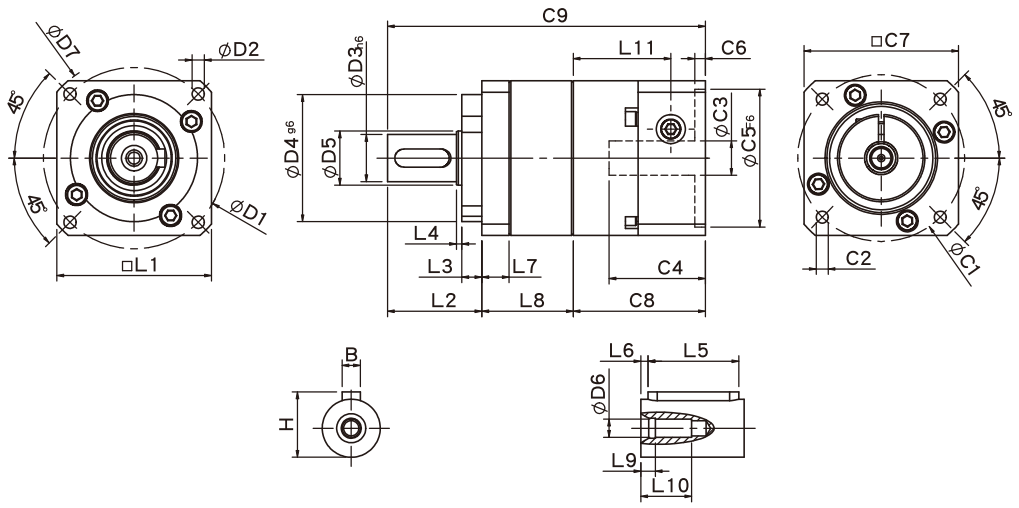

SESAME
PBE
SESAME MOTOR
SESAME
PBE
SESAME MOTOR

PAE SERIES


ØD7
ØD2
45°
45°
ØD1
□L1
C9
L11
C6
ØD3H6
ØD4g6
ØD5
ØC3
ØC5F6
L4
L3
L7
C4
L2
L8
C8
□C7
45°
45°
C2
ØC1
B
H
L6
L5
ØD6
L9
L10


C9
L11
C6
C2
ØC1
ØD7
ØD2
ØD3h6
ØD4g6
ØD5
ØC3
ØC5F6
45°
L4
L3
L7
C4
L2
L8
C8
ØD1
□L1
□C7
PAE60T/PAE90T
L6
L5
D6
L9
L10
SESAME
PAE
SESAME MOTOR

PAE Single Stage Dimensions



Specifications

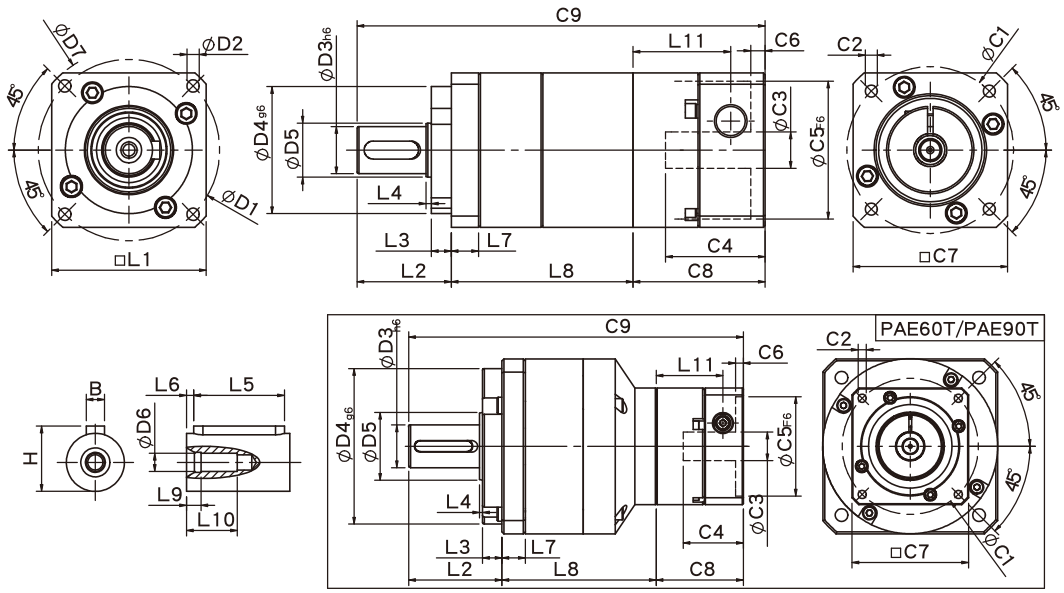
Unit:mm

Dimensions	PAE42	PAE60	PAE90	PAE115
D1	50	70	100	-
D2	3.4	5.5	6.5	-
D3 h6	13	16	22	-
D4 g6	35	50	80	-
D5	15	20	35	-
D6	M4x0.7P	M5x0.8P	M8x1.25P	-
D7	56	80	118	-
L1	42.6	60	90	-
L2	26	37	48	-
L3	5.5	7	10	-
L4	1.5	1.5	1.5	-
L5	15	25	32	-
L6	2	2	3	-
L7	7.5	10	12	-
L8	25.2	36.3	41.8	-
L9	4	4	4.5	-
L10	14	16.5	20.5	-
L11	26.9	34.3	41.5	-
C1 [2]	46	70	90	-
C2 [2]	M4x0.7P	M5x0.8P	M6x1.0P	-
C3 [2]	≦8/≦11	≦14/≦19	≦19/≦24/≦28	-
C4 [2]	26.5	33.5	41	-
C5 [2] F6	30	50	70	-
C6 [2]	4	4	6	-
C7 [2]	42.6	60	92	-
C8 [2]	36.4	44.8	55.8	-
C9 [2]	87.6	118.1	145.6	-
B	5	5	6	-
H	15	18	24.5	-

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

★ Specification subject to change without notice.

PAE Double Stage Dimensions



Specifications

Unit:mm

Dimensions	PAE42	PAE60/PAE60T		PAE90/PAE 90T		PAE115T
D1	50	70		100		-
D2	3.4	5.5		6.5		-
D3 h6	13	16		22		-
D4 g6	35	50		80		-
D5	15	20		35		-
D6	M4x0.7P	M5x0.8P		M8x1.25P		-
D7	56	80		118		-
L1	42.6	60		90		-
L2	26	37		48		-
L3	5.5	7		10		-
L4	1.5	1.5		1.5		-
L5	15	25		32		-
L6	2	2		3		-
L7	7.5	10		12		-
L8	50.1	67	62.6	82.8	79.4	-
L9	4	4		4.5		-
L10	14	16.5		20.5		-
L11	26.9	34.3	26.9	41.5	34.3	-
C1 [2]	46	70	46	90	70	-
C2 [2]	M4x0.7P	M5x0.8P	M4x0.7P	M6x1.0P	M5x0.8P	-
C3 [2]	≤8/≤11	≤14/≤19	≤8/≤11	≤19/≤24/≤28	≤14/≤19	-
C4 [2]	26.5	33.5	26.5	41	33.5	-
C5 [2] F6	30	50	30	70	50	-
C6 [2]	4	4	4	6	4	-
C7 [2]	42.6	60	42.6	92	60	-
C8 [2]	36.4	44.8	36.4	55.8	44.8	-
C9 [2]	112.5	148.8	136	186.6	172.2	-
B	5	5		6		-
H	15	18		24.5		-

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

★ Specification subject to change without notice.

PAE Specifications Table

Specifications		Stage	Ratio	PAE-42	PAE-60	PAE-90	PAE-115
Nominal Output Torque	N • m	1	3	11	34	90	250
			4	10	32	80	240
			5	11	35	95	270
			7	10	28	85	220
			9	8	23	75	210
			10	8	21	65	190
		Stage	Ratio	PAE-42	PAE-60(T)	PAE-90(T)	PAE-115T
		2	15	11	34	90	250
			20	10	32	80	240
			25	11	35	95	270
			35	11	35	95	270
			45	11	35	95	270
			49	10	28	85	220
			63	10	28	85	220
			81	8	23	75	210
			100	8	21	65	190
Emergency Stop Torque	N • m		3.0 times of Nominal Output Torque (* Max. Output Torque T2B =60% of Emergency Stop Torque)				
Nominal Input Speed	rpm	1,2	3-100	4000	4000	3000	2500
Max. Input Speed	rpm	1,2	3-100	8000	6000	6000	5000
Standard Backlash P2	arcmin	1 2	3-10 12-100	≦9 ≦12	≦8 ≦10	≦7 ≦9	≦6 ≦8
Torsional Rigidity	N • m /arcmin	1,2	3-100	1.5	4	8.5	17
Max. Radial Load	N	1,2	3-100	760	1250	2030	4200
Max. Axial Load	N	1,2	3-100	410	700	1200	2600
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	≧95% ≧90%			
Weight	kg	1 2	3-10 12-100	0.6 0.8	1.3 1.8/1.6	3.2 4.8/3.7	7.5 9.2
Mounting Position	-	1,2	3-100	Any direction			
Noise Level [2]	dBA/1m	1,2	3-100	61	63	66	67
Protection Class	-	1,2	3-100	IP65			
Lubrication	-	1,2	3-100	Synthetic Lubricant			

Inertia(J1)

Stage	Ratio	unit	PAE-42	PAE-60	PAE-90	PAE-115
1	3	Kg • cm^2	0.04	0.23	0.77	2.30
	4		0.03	0.21	0.67	1.92
	5		0.03	0.21	0.61	1.71
	7		0.03	0.21	0.60	1.65
	9		0.03	0.21	0.60	1.63
Stage	Ratio		PAE-42	PAE-60(T)	PAE-90(T)	PAE-115T
2	15/20/25		0.03	0.21(0.03)	0.61(0.21)	0.61
	35/49		0.03	0.21(0.03)	0.60(0.21)	0.60
	45/63/81		0.03	0.21(0.03)	0.60(0.21)	0.60

* 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.


SESAME
PAE
SESAME MOTOR

Tightening Torque Table

Tightening Torque Recommended for Motor Mounting Bolt

Bolt Size	Width Across Flats	Strength 12.9 Tightening Torque	
	mm	N-m	In-lbs
M3*0.5P	2.5	2.1	19
M4*0.7P	3	4.9	44
M5*0.8P	4	9.8	87
M6*1P	5	17	151
M8*1.25P	6	41	364
M10*1.5P	8	80	709
M12*1.75P	10	139	1232
M14*2P	12	223	1976
M16*2P	14	343	3038

SESAME

SESAME MOTOR CORP.

599, Sec 1, Hemu Rd., Shengang, Taichung,
42953, Taiwan
TEL : +886-4-2561-0011
FAX : +886-4-2562-7766
www.sesamemotor.com
info@sesamemotor.com.tw
Skype Phone : sesame_motor

PLANETARY GEARHEADS

AGENT

V.3.0.02