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**SERVO GEARHEADS  
MOTOR · SPEED REDUCER · PRECISION GEARMOTOR**



Registration Number : 8590921710      Registration Number : 38E08590

# SERVO GEARHEAD SERIES LINEUP

## Program Features & Benefits

- Multiple design configurations and performance levels
- Adapters for all servo motors
- Drop-ins for most industry standards
- Hardened and ground gearing
- One-piece planet carrier/output shaft on most models
- Planets with full needle bearing support
- IP65 protection on most models

### Premium Type

- Backlash as low as 1 arc-minute, ultimate performance
- 3 designs to choose from, up to 7 sizes available
- Capacity from 10-2000 Nm

### Precision Advanced Type

- 3 levels of backlash, for demanding applications
- 3 designs configurations, 7 frame sizes 42-220 mm
- Square or round mounting, ratio from 3-100:1

### Precision Type

- 3 levels of backlash, 4 design configurations
- 7 frame sizes 42-220 mm
- Square or round mounting, ratio from 3-100 : 1
- Stainless steel series available

### Standard Type

- 5 frame sizes 42-115 mm, general purpose applications
- Good backlash values, ratios up to 1000:1
- Reliable operating performance, cost effective integration

### Primary Type

- 5 frame sizes 42-115 mm, general purpose applications
- Good backlash values, ratios up to 1000:1
- Reliable operating performance, cost effective integration

Output Shaft

### In-line Series

- Multiple models and performance levels including stainless steel material ready for most industry applications
- 3 levels of backlash, frame sizes 42-220 mm
- Square or round mounting, ratios up to 1000:1

### Right Angle Series

- 3 models to choose from, saving linear space
- 3 backlash levels, 7 sizes from 42-220 mm
- Premium and precision designs, ratios from 3-200:1

### Output Flange

- Right angle and inline models, ISO mounting dimensions
- 3 levels of backlash, 7 frame sizes available
- High moment and axial load capacity

Output Flange

In-line Series



**PHL Series**  
High Precision



**PGH Series**  
High Performance



**PUL Series**  
High Radial Load



**PUR Series**



**PHF Series**



**PHFR Series**

Right Angle



**PGLH Series**



**PGCH Series**



**PGEH Series**



**PUA Series**



**PGSH Series**



**PGRH Series**



**PGF Series**



**PGFR Series**



**PGL Series**



**PGE Series**



**PGC Series**



**SGC Series**  
Stainless Steel



**SGE Series**  
Stainless Steel



**PGR Series**



**PAC Series**



**PAE Series**



**PGS Series**



**PAN Series (NEMA)**  
High Ratio  
(max. i=1000)



**PNS Series**  
High Ratio  
(max. i=1000)



**PNSR Series**



**PGW Series**

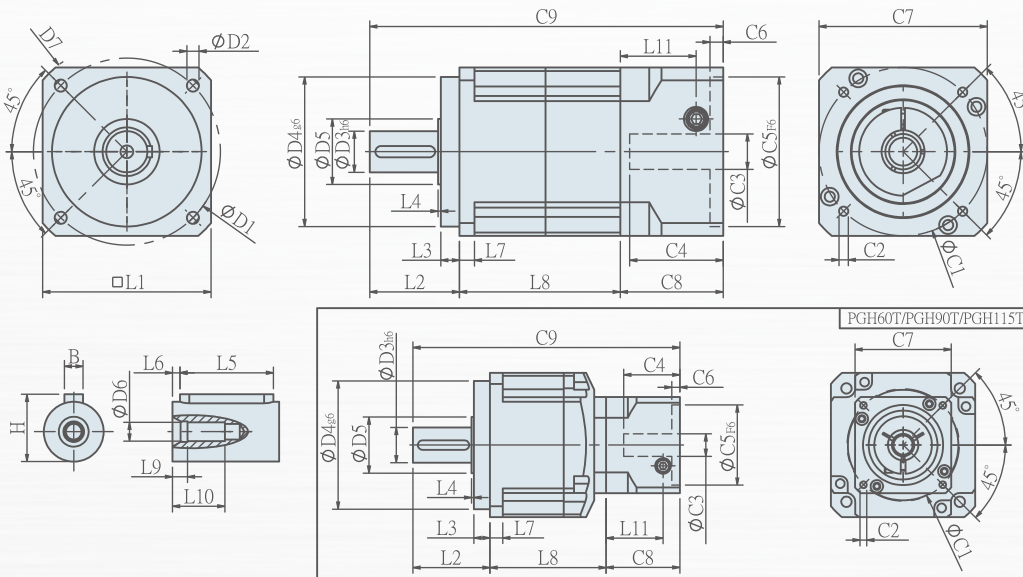


**PBC Series**  
High Ratio (max. i=1000)



**PBE Series**  
High Ratio (max. i=1000)

# PGH Double Stage Dimensions



## Specifications

Unit:mm

Dimensions	PGH42	PGH60	PGH60T	PGH90	PGH90T	PGH115T	PGH142T	PGH180T	PGH220T
D1	50	70		100		130	165	215	250
D2	3.4	5.5		6.5		8.5	10.5	13	17
D3 <sub>h6</sub>	13	16		22		32	40	55	75
D4 <sub>g6</sub>	35	50		80		110	130	160	180
D5	15	25		35		45	50	70	114.4
D6	M4x0.7P	M5x0.8P		M8x1.25P		M12x1.75P	M16x2.0P	M20x2.5P	M20x1.5P
D7	56	80		118		148	186	239	292
L1	42.6	60		90		115	142	182	220
L2	26	37		48		63	91.5	100.5	138
L3	5.5	7		10		10	10	16	30
L4	1	1.5		1.5		3.5	2.5	2.5	3
L5	15	25		32		40	60	70	90
L6	2	2		3		5	5	6	7
L7	4	6		8		11	16	18	20
L8	55.3	70	65.5	86	78.5	99.5	127.5	166	202
L9	4	4		4.5		6	6	8	15
L10	14	16.5		20.5		30	38	48	42
L11	29	35.5	29	40.5	35.5	40.5	42	63	74
C1 <sup>2</sup>	46	70	46	90	70	90	115	145	200
C2 <sup>2</sup>	M4x0.7P	M5x0.8P	M4x0.7P	M6x1.0P	M5x0.8P	M6x1.0P	M8x1.25P	M8x1.25P	M12x1.75P
C3 <sup>2</sup>	≤8/≤11	≤14	≤8/≤11	≤19/≤24	≤14	≤19/≤24	≤24/≤32	≤35/≤38	≤50
C4 <sup>2</sup>	27	37	27	47	37	47	56	66.5	81
C5 <sup>2</sup> <sub>F6</sub>	30	50	30	70	50	70	95	110	114.3
C6 <sup>2</sup>	4	4	4	6	4	6	10	6	6
C7 <sup>2</sup>	42.6	60	42.6	90	60	90	115	140	180
C8 <sup>2</sup>	38.5	46	38.5	55	46	55	63	80	93
C9 <sup>2</sup>	119.8	153	141	189	172.5	217.5	282	346.5	433
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.

# PGH Specifications Table

Specifications		Stage	Ratio	PGH-42	PGH-60	PGH-90	PGH-115	PGH-142	PGH-180	PGH-220	
Nominal Output Torque $T_{2N}$	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
			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 $T_{2NOT}$	N • m		3.0 times of Nominal Output Torque (*Max. Output Torque $T_{2B}$ = 60% of Emergency Stop Torque)								
Nominal Input Speed $n_{1N}$	rpm	1,2	3-100	5000	5000	4000	4000	3000	3000	2000	
Max. Input Speed $n_{1max}$	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	15-100	≤ 4	≤ 4	≤ 4	≤ 3	≤ 3	≤ 3	≤ 3	
Precision Backlash P1	arcmin	1	3-10	≤ 4	≤ 4	≤ 4	≤ 3	≤ 3	≤ 3	≤ 3	
		2	15-100	≤ 6	≤ 6	≤ 6	≤ 5	≤ 5	≤ 5	≤ 5	
Standard Backlash P2	arcmin	1	3-10	≤ 6	≤ 6	≤ 6	≤ 5	≤ 5	≤ 5	≤ 5	
		2	15-100	≤ 8	≤ 8	≤ 8	≤ 7	≤ 7	≤ 7	≤ 7	
Torsional Rigidity	N • m /arcmin	1,2	3-100	2.5	6	12	23	45	75	130	
Max. Radial Load $F_{2rB}^1$	N	1,2	3-100	760	1570	2780	5340	8400	13000	13810	
Max. Axial Load $F_{2aB}^1$	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	15-100	≥ 94%							
Weight	kg	1	3-10	0.6	1.3	3.5	7.8	16.1	27	55	
		2	15-100	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 <sup>2</sup>	dB(A)/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 <sup>2</sup>		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 3000 rpm with no load. These values are measured by gearbox with ratio = 10 (1-stage) or ratio = 100 (2-stage) at nominal input speed or 3000 rpm (if nominal input speed is higher than 3000 rpm) with no load.

※ The above figures/specifications are subject to change without prior notice.



# AC Induction Motors

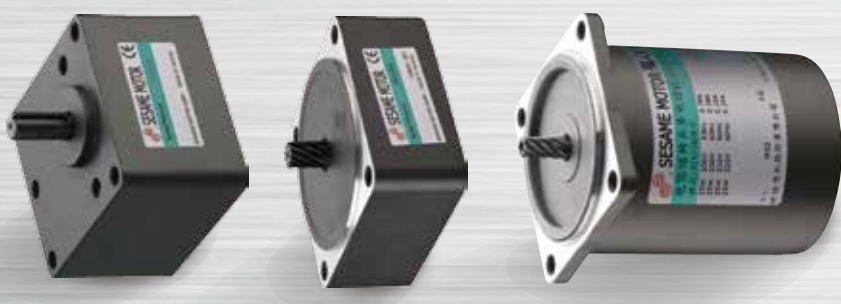


- ### Features & Types
- Uni-directional and continuous operation.
  - Variable AC power input options.
  - Output 6W up to 90W.
  - Wide ranges of model work with magnetic brake, speed reducer and control circuits.
  - Thermo switch available (optional).
  - CE (EMC & LVD) · UL · CCC certified.

Product defect or damage due to human error or over load usage will not be covered under warranty.

# Speed Reducer

SPEED REDUCER      INTERMEDIATE SPEED REDUCER      MOTOR <GEAR SHAFT>



- ### Features & Types
- Integrated gear box contributes precision and efficiency.
  - Ball bearing + closed gear box ensure radial and axial loading capacity.
  - Low noise and long service life.
  - BLDC compatible (GB series).
  - Gear ratio 3~180.

## Assembled Type Variable Speed Motor / Assembled Type Speed Controller



### Features

- Easy wiring and speed control.
- Built-in electronic brake circuits for instant braking.
- Wide range of variable speeds.
- Parallel rotation performance.
- High-responsive and great stability in speed control.
- Connection with other control systems is available.

### Application

Machine Tool Accessories, Cutting Equipment, Bar Feeder, Conveyor Equipment, Packaging Machinery, Food Processing Machinery, Printing Machine, Agricultural Machinery, Medical Equipment...etc.

Circuits, capacitor and variable resistor are assembled in controller, which is attached to motor via extended cable. Ready-to-use once power is supplied.

## Separated Type Speed Controller



### Features

- Easy wiring and speed control.
- Built-in electronic brake circuits for instant braking.
- Wide range of variable speeds.
- Parallel rotation performance.
- High-responsive and great stability in speed control.
- Connection with other control systems is available.

### Application

Machine Tool Accessories, Cutting Equipment, Bar Feeder, Conveyor Equipment, Packaging Machinery, Food Processing Machinery, Printing Machine, Agricultural Machinery, Medical Equipment...etc.

According to different purposes and needs, induction and reversible motors equipped with generators will adopt various wiring methods and controller types.

**NEW**

## High Efficiency IEC Motors



### Features & Types

- Standard IEC metric sizes, variable AC power input options.
- IE3 Premium efficiency, low vibration, low noise.
- Output 750W (1HP) ~ 2200W (3HP). Insulation F class.

**NEW**

## Gear Motor



### Features & Types

- Modular products for the optimum flexibility. Gear ratio 3~180.
- Impact size and structure with precision gear process ensure low vibration and noise.
- Aluminum housing benefits heat diffusion.
- Output 100W (1/8HP) up to 750W (1HP).
- Wide range of application with brake and various AC power supply options.
- Thermo switch available (optional). IP65 enclosure (optional).

### Applications

Machine Tool Accessories, Bar Feeder, Conveyor, Gliding Machine, Elevator, Transporting Equipment, Printing Machinery, Food Process Machinery, Packaging Machinery, Plastic & Rubber Processing Machinery ...etc.

## Precision Gear Motor



### Features & Types

- Impact size and structure with precision gear process ensure low vibration and noise.
- Aluminum housing benefits heat diffusion.
- Output 100W (1/8HP) up to 2200W (3HP).
- Wide range of application with brake and various AC power supply options.
- Thermo switch available (optional).
- CE (EMC & LVD) · UL · CCC certified. IP65 enclosure (optional).

### Applications

Machine Tool Accssories, Bar Feeder, Conveyor, Gliding Machine, Elevator, Transporting Equipment, Printing Machinery, Food Process Machinery, Packaging Machinery, Plastic & Rubber Processing Machinery ...etc.

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**Sesame Motor Corp.,  
A Leading Brand in Power Transmission**



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