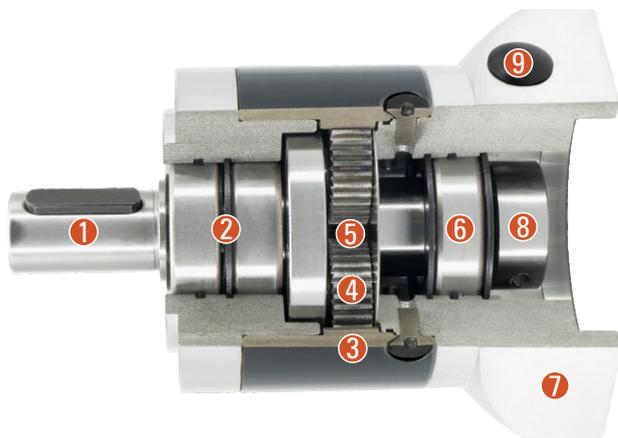




# ECONOMY SERIES PLANETARY GEAR BOX SEP/SEPR/SEPB/SEPRB/PNX



Sectional Drawing



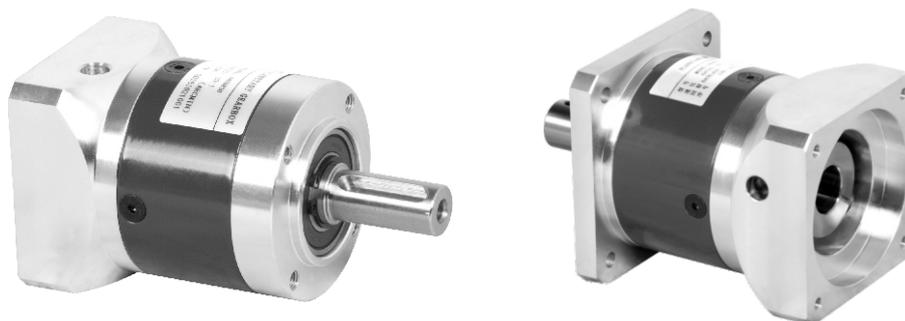
- ① Output shaft
- ② Bearing for the output shaft
- ③ Internal gear
- ④ Planetary gear
- ⑤ Sunwheel
- ⑥ Bearing for the sunwheel
- ⑦ Appropriate motor flange
- ⑧ Precision clamping system
- ⑨ Mounting hole

Type And Model Number

ZD Series Gear Head					Servo Motor
<b>60</b>	<b>SEP</b>	<b>10</b>	<b>( )</b>	<b>(S)</b>	<b>-750</b>
①	②	③	④	⑤	⑥
① Gear head frame size: 60					
② Gear head series code:					
SEP: Inline					
SEPR: Right angle					
SEPB: Inline Large Output Bearing					
SEPRL: Right angle Large Output Bearing					
③ Gear ratio:					
Single stage 3,4,5,8,10					
Two stage 9,12,15,16,20,25,32,40,64					
④ Input Flange: 1(Round), 2(Square)					
⑤ Input shaft type					
S: Over locking (Omission) (Can use it whatever motor shaft has keyway or not)					
S1: Locking with locking ring (Can use it whatever motor shaft has keyway or not)					
S2: Locking with keyway (Input shaft with key)					
K: With keyway					
A: Other type (Please contact with us)					
⑥ Applicable servo motor power (W)					

# SEP SERIES PRECISION PLANETARY GEAR MOTOR

## Product Graph



## Technical Data

Product type		60	80	Reduction ratio	Number of stage
Rated output torque	N.M	28	85	3	1
		38	115	4	
		40	110	5	
		18	50	8	
		15	38	10	
		44	130	9	2
		44	120	12	
		44	110	15	
		44	120	16	
		44	120	20	
		40	110	25	
		44	120	32	
		40	110	40	
		18	50	64	
Life	Hour	20,000			
Instant stop torque	N.M	66	180	3	-
		88	240	4	
		80	220	5	
		80	190	8	
		80	200	10	
		88	260	9	-
		88	240	12	
		88	220	15	
		88	240	16	
		88	240	20	
		80	220	25	
		88	240	32	
		80	220	40	
		80	190	64	

Product type	60	80	Unit	Number of stage
Max radial load	700	1250	N	
Max axial load	800	1600	N	
Full load efficiency	98		%	1
	97			2
Weight	0.9	2.1	Kg	1
	1.1	2.6		2
Operating temperature	-25~+90		°C	
IP	IP54			
Lubrication type	Lifetime lubrication			
Mounting type	Any			

# SEP SERIES PRECISION PLANETARY GEAR MOTOR

## Technical Data

Product type		60	80	Reduction ratio
Moment of inertia	Kgcm <sup>2</sup>	0.065~0.128	0.359~0.654	3
				4
				5
				8
				10
		0.066~0.121	0.365~0.613	9
				12
				15
				16
				20
				25
				32
				40
64				

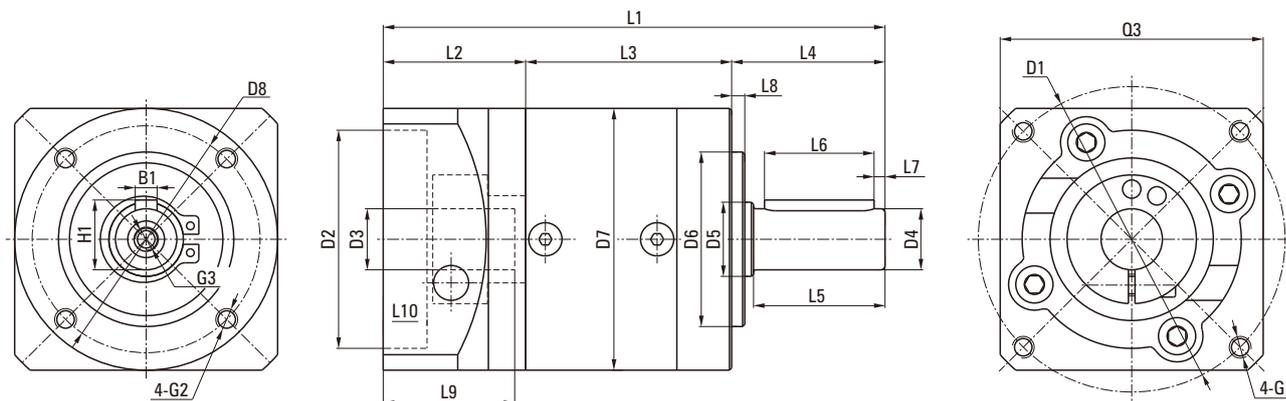
Product type		60	80	Number of stage
Backlash	arcmin	< 10	< 7	1
		< 12	< 9	2

Product type		60		80	
Number of stage		1	2	1	2
Torsional stiffness	N.M/arcmin	2.1-2.8	2.3-2.8	7.2-10.0	7.9-10.4
Noise	dB(A)	58		60	
Max input speed	min <sup>-1</sup>	13000		7000	
Recommend input speed	min <sup>-1</sup>	4500		4000	

1. The moment of inertia is related with input shaft.
2. Noise test standard, distance 1m, measured noload running with an input speed of 3000rpm.
3. The max radial and axial torque work in the location of the center of output shaft when the out speed is 100RPM.
4. The maximum input speed is designed to software.

# SEP SERIES PRECISION PLANETARY GEAR MOTOR

## Dimensions



Unit: mm

PN	60SEP		80SEP			
	1	2	1	2		
Number of stage	1	2	1	2		
L1 overall length	/	/	/	/		
L3 body length	47	59.5	60	78		
<b>Output</b>						
L4 output shaft length	35		40			
L5 output length to the shaft shoulder	30		36			
L6 key length	25		28			
L7 key length to the shaft end	2.5		4			
L8 protruding length	3		3			
D4 output shaft diameter	Φ14h7		Φ20h7			
D5 shaft shoulder diameter	Φ17		Φ25			
D6 protruding diameter	Φ40h7		Φ60h7			
D7 body diameter	Φ60		Φ80			
D8 hole circle	Φ52		Φ70			
B1 key width	5		6			
H1 key height	16		22.5			
G2 mounting screw hole	M5X8		M6X10			
G3 center screw hole	M5X12		M6X16			
<b>Input</b>						
L2 input flange length	For more detailed information, please consult the manufacturer					
L9 motor shaft length						
L10 protruding depth						
D1 mounting hole distribution circle						
D2 protruding diameter						
D3 input shaft diameter						
G1 mounting threads hole x depth						
Q3 input flange					□60	□80

※ Input size made according to motor size.

※ The dimensions of L9, L10, D1, D2, D3, Q3, and G1 are installation dimensions for customer's motor, and the total length of L1 depends on the size of customer's motor.

# SEPR SERIES PRECISION PLANETARY GEAR MOTOR

## Product Graph



## Technical Data

Product type		60	80	Reduction ratio	Number of stage
Rated output torque	N.M	14	40	3	1
		19	53	4	
		24	67	5	
		18	50	8	
		15	38	10	
		44	130	9	2
		44	120	12	
		44	110	15	
		44	120	16	
		44	120	20	
		40	110	25	
		44	120	32	
		40	110	40	
		18	50	64	
Life	Hour	20,000			
Instant stop torque	N.M	66	180	3	-
		86	240	4	
		80	220	5	
		80	190	8	
		70	170	10	
		88	260	9	-
		88	240	12	
		88	220	15	
		88	240	16	
		88	240	20	
		80	220	25	
		88	240	32	
		80	220	40	
		80	190	64	

Product type	60	80	Unit	Number of stage
Max radial load	700	1250	N	
Max axial load	800	1600	N	
Full load efficiency	95		%	1
	94			2
Weight	1.6	3.7	Kg	1
	1.8	4.1~4.2		2
Operating temperature	-25 ~ +90		°C	
IP	IP54			
Lubrication type	Lifetime lubrication			
Mounting type	Any			

# SEPR SERIES PRECISION PLANETARY GEAR MOTOR

## Technical Data

Product type		60	80	Reduction ratio
Moment of inertia	Kgcm <sup>2</sup>	0.221~0.357	0.910~1.273	3
				4
				5
				8
				10
		0.222~0.350	0.916~1.232	9
				12
				15
				16
				20
				25
				32
				40
				64

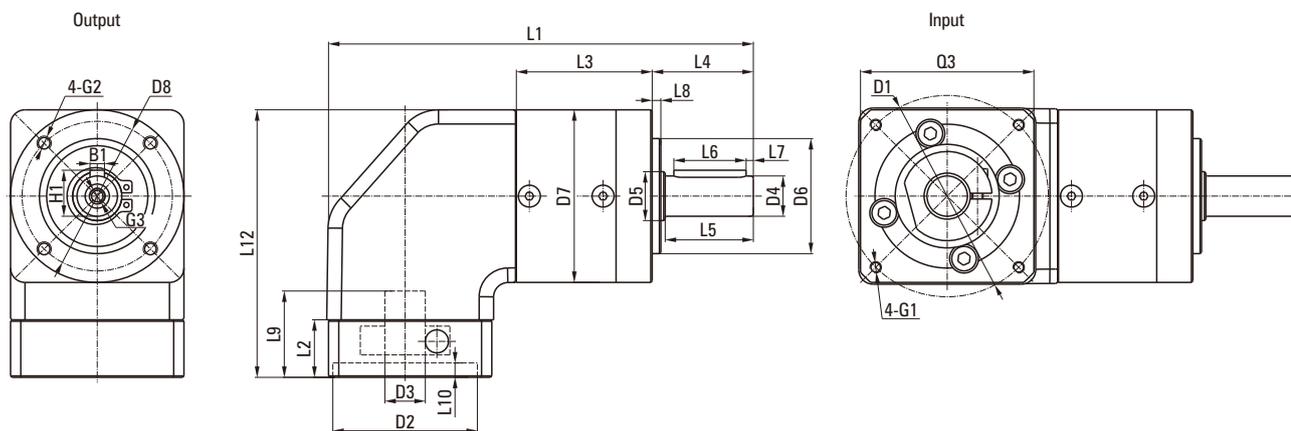
Product type		60	80	Number of stage
Backlash	arcmin	< 16	< 13	1
		< 18	< 15	2

Product type		60		80	
Number of stage		1	2	1	2
Torsional stiffness	N.M/arcmin	1.5-2.3	2.2-2.7	4.0-7.9	6.9-9.6
Noise	dB(A)	70		73	
Max input speed	min <sup>-1</sup>	13000		7000	
Recommend input speed	min <sup>-1</sup>	4500		4000	

1. The moment of inertia is related with input shaft.
2. Noise test standard, distance 1m, measured noload running with an input speed of 3000rpm.
3. The max radial and axial torque work in the location of the center of output shaft when the out speed is 100RPM.
4. The maximum input speed is designed to software.

# SEPR SERIES PRECISION PLANETARY GEAR MOTOR

## Dimensions



Unit: mm

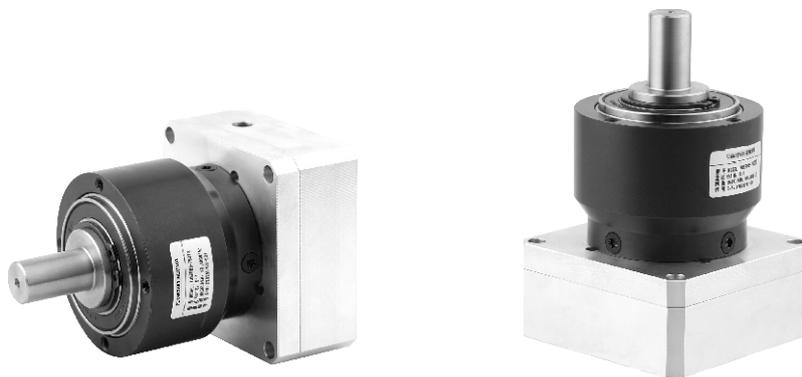
PN	60SEPR		80SEPR	
Number of stage	1	2	1	2
L1 overall length	/	/	/	/
L3 body length	47	59.5	60	78
<b>Output</b>				
L12 overall height	/		/	
L4 output shaft length	35		40	
L5 output length to the shaft shoulder	30.5		36	
L6 key length	25		28	
L7 key length to the shaft end	2.5		4	
L8 protruding length	3		3	
D4 output shaft diameter	Φ14h7		Φ20h7	
D5 shaft shoulder diameter	Φ17		Φ25	
D6 protruding diameter	Φ40h7		Φ60h7	
D7 body diameter	Φ60		Φ80	
D8 hole circle	Φ52		Φ70	
B1 key width	5		6	
H1 key height	16		22.5	
G2 mounting screw hole	M5X8		M6X10	
G3 center screw hole	M5X12		M6X16	
<b>Input</b>				
L2 input flange length	For more detailed information, please consult the manufacturer			
L9 motor shaft length				
L10 protruding depth				
D1 mounting hole distribution circle				
D2 protruding diameter				
D3 input shaft diameter				
G1 mounting threads hole x depth				
Q3 input flange				

※ Input size made according to motor size.

※ The dimensions of L9, L10, D1, D2, D3, Q3, and G1 are installation dimensions for customer's motor, and the total length of L1 depends on the size of customer's motor.

# SEPB SERIES PRECISION PLANETARY GEAR MOTOR

## Product Graph



## Technical Data

Product type		70	90	Reduction ratio	Number of stage
Rated output torque	N.M	28	85	3	1
		33	90	4	
		30	82	5	
		18	50	8	
		15	38	10	
		33	97	9	2
		33	90	12	
		33	82	15	
		33	90	16	
		33	90	20	
		30	82	25	
		33	90	32	
		30	82	40	
		18	50	64	
Life	Hour	20,000			
Instant stop torque	N.M	66	180	3	-
		88	240	4	
		80	220	5	
		80	190	8	
		80	200	10	
		88	260	9	-
		88	240	12	
		88	220	15	
		88	240	16	
		88	240	20	
		80	220	25	
		88	240	32	
		80	220	40	
		80	190	64	
80	200	100			

Product type	70	90	Unit	Number of stage
Max radial load	1650	3100	N	
Max axial load	2100	3800	N	
Full load efficiency	98		%	1
	97			2
Weight	1.4	3.2~3.3	Kg	1
	1.7~1.9	3.9~4.0		2
Operating temperature	-25~+90		°C	
IP	IP54			
Lubrication type	Lifetime lubrication			
Mounting type	Any			

# SEPB SERIES PRECISION PLANETARY GEAR MOTOR

## Technical Data

Product type		70	90	Reduction ratio
Moment of inertia	Kgcm <sup>2</sup>	0.069~0.174	0.374~0.789	3
				4
				5
				8
				10
		0.064~0.126	0.356~0.625	9
				12
				15
				16
				20
				25
				32
				40
64				

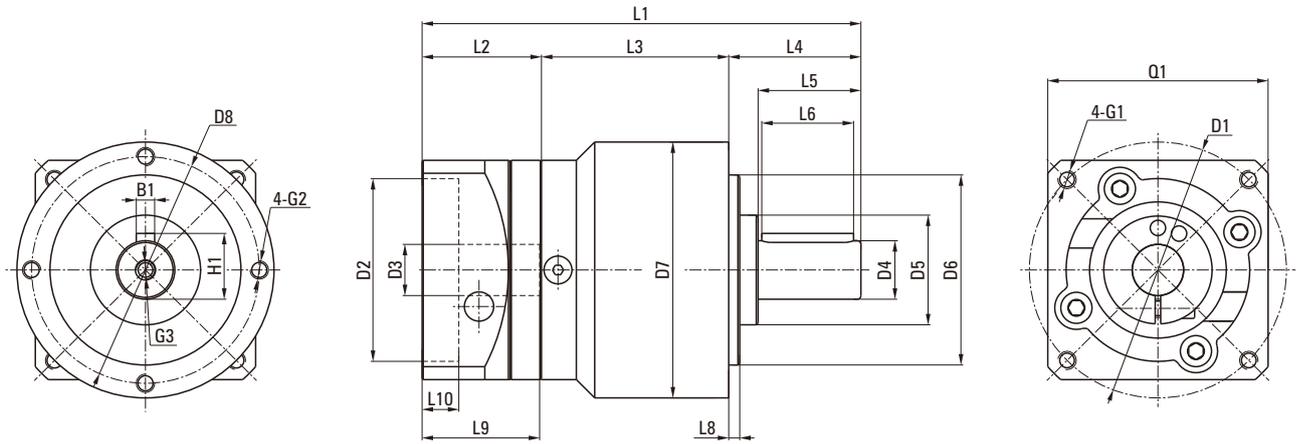
Product type		70	90	Number of stage
Backlash	arcmin	< 10	< 7	1
		< 12	< 9	2

Product type		70		90	
		1	2	1	2
Number of stage					
Torsional stiffness	N.M/arcmin	3.5-5.6	3.3-5.8	9.7-15.0	9.7-16.1
Noise	dB(A)	58		60	
Max input speed	min <sup>-1</sup>	13000		7000	
Recommend input speed	min <sup>-1</sup>	4500		4000	

1. The moment of inertia is related with input shaft.
2. Noise test standard, distance 1m, measured noload running with an input speed of 3000rpm.
3. The max radial and axial torque work in the location of the center of output shaft when the out speed is 100RPM.
4. The maximum input speed is designed to software.

# SEPB SERIES PRECISION PLANETARY GEAR MOTOR

## Dimensions



Unit: mm

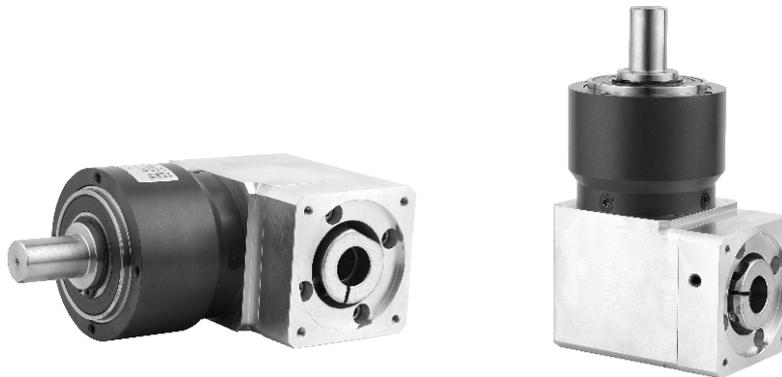
PN	70SEPB		90SEPB	
	1	2	1	2
Number of stage	1	2	1	2
L1 overall length	/	/	/	/
L3 body length	51	64	67	78
<b>Output</b>				
L4 output shaft length	36		46	
L5 output length to the shaft shoulder	28		36	
L6 key length	25		32	
L7 key length to the shaft end	2		2	
L8 protruding length	3		4	
D4 output shaft diameter	Φ16h7		Φ22h7	
D5 shaft shoulder diameter	Φ30		Φ35	
D6 protruding diameter	Φ52h7		Φ68h7	
D7 body diameter	Φ70		Φ90	
D8 hole circle	Φ62		Φ80	
B1 key width	5		6	
H1 key height	18		24.5	
G2 mounting screw hole	M5X8		M6X9	
G3 center screw hole	M5X12		M6X16	
<b>Input</b>				
L2 input flange length	For more detailed information, please consult the manufacturer			
L9 motor shaft length				
L10 protruding depth				
D1 mounting hole distribution circle				
D2 protruding diameter				
D3 input shaft diameter				
G1 mounting threads hole x depth				
Q3 input flange				

※ Input size made according to motor size.

※ The dimensions of L9, L10, D1, D2, D3, Q3, and G1 are installation dimensions for customer's motor, and the total length of L1 depends on the size of customer's motor.

# SEPRB SERIES PRECISION PLANETARY GEAR MOTOR

## Product Graph



## Technical Data

Product type		70	90	Reduction ratio	Number of stage
Rated output torque	N.M	14	40	3	1
		19	53	4	
		24	67	5	
		18	50	8	
		15	38	10	
		33	97	9	2
		33	90	12	
		33	82	15	
		33	90	16	
		33	90	20	
		30	82	25	
		33	90	32	
		30	82	40	
		18	50	64	
		15	38	100	
Life	Hour	20,000			
Instant stop torque	N.M	66	180	3	-
		86	240	4	
		80	220	5	
		80	190	8	
		70	170	10	
		88	260	9	-
		88	240	12	
		88	220	15	
		88	240	16	
		88	240	20	
		80	220	25	
		88	240	32	
		80	220	40	
		80	190	64	
		80	170	100	

Product type	70	90	Unit	Number of stage
Max radial load	1650	3100	N	
Max axial load	2100	3800	N	
Full load efficiency	95		%	1
	94			2
Weight	2.1~2.2	4.8~4.9	Kg	1
	2.4~2.6	5.5~5.6		2
Operating temperature	-25~+90		°C	
IP	IP54			
Lubrication type	Lifetime lubrication			
Mounting type	Any			

The max radial and axial torque work in the location of the center of output shaft when the out speed is 100RPM.

# SEPRB SERIES PRECISION PLANETARY GEAR MOTOR

## Technical Data

Product type		70	90	Reduction ratio
Moment of inertia	Kgcm <sup>2</sup>	0.218~0.329	0.925~1.408	3
				4
				5
				8
				10
		0.218~0.326	0.907~1.245	9
				12
				15
				16
				20
				25
				32
				40
				64

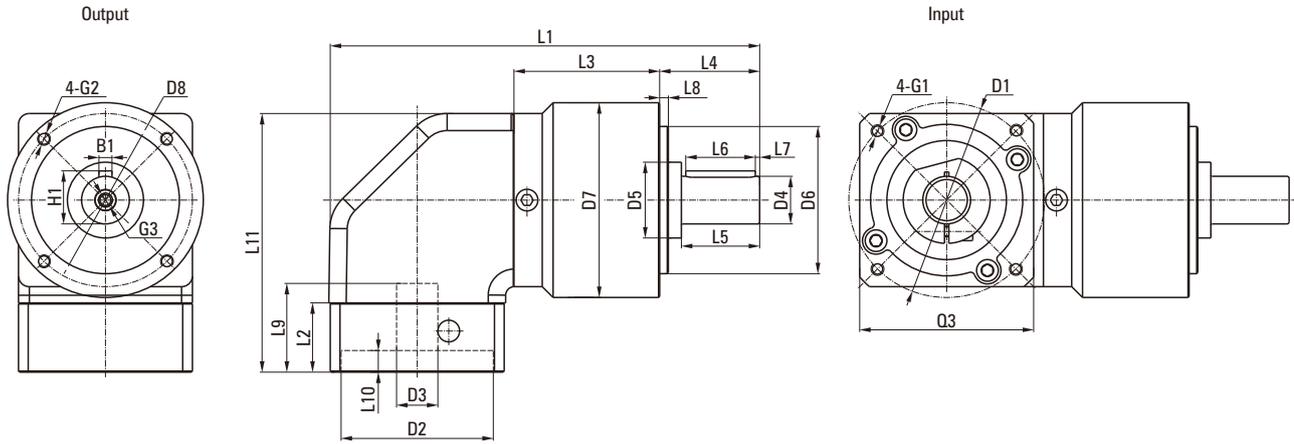
Product type		70	90	Number of stage
Backlash	arcmin	< 16	< 13	1
		< 18	< 15	2

Product type		70		90	
Number of stage		1	2	1	2
Torsional stiffness	N.M/arcmin	2.2 - 4.1	3.3-5.3	4.7 - 10.8	9.0 - 14.1
Noise	dB(A)	70		73	
Max input speed	min <sup>-1</sup>	13000		7000	
Recommend input speed	min <sup>-1</sup>	4500		4000	

1. The moment of inertia is related with input shaft.
2. Noise test standard, distance 1m, measured noload running with an input speed of 3000rpm.
3. The max radial and axial torque work in the location of the center of output shaft when the out speed is 100RPM.
4. The maximum input speed is designed to software.

# SEPRB SERIES PRECISION PLANETARY GEAR MOTOR

## Dimensions



Unit: mm

PN	70SEPRB		90SEPRB	
Number of stage	1	2	1	2
L1 overall length	/	/	/	/
L3 body length	51	64	67	84.5
<b>Output</b>				
L12 overall height	85.5		119.5	
L4 output shaft length	36		46	
L5 output length to the shaft shoulder	28		36	
L6 key length	25		32	
L7 key length to the shaft end	2		2	
L8 protruding length	3		4	
D4 output shaft diameter	Φ16h7		Φ22h7	
D5 shaft shoulder diameter	Φ30		Φ35	
D6 protruding diameter	Φ52h7		Φ68h7	
D7 body diameter	Φ70		Φ90	
D8 hole circle	Φ62		Φ70	
B1 key width	5		6	
H1 key height	18		24.5	
G3 center screw hole	M5X12		M6X16	
<b>Input</b>				
L2 input flange length	For more detailed information, please consult the manufacturer			
L9 motor shaft length				
L10 protruding depth				
D1 mounting hole distribution circle				
D2 protruding diameter				
D3 input shaft diameter				
G1 mounting threads hole x depth				
Q3 input flange				

※ Input size made according to motor size.

※ The dimensions of L9, L10, D1, D2, D3, Q3, and G1 are installation dimensions for customer's motor, and the total length of L1 depends on the size of customer's motor.

# PSX SERIES PRECISION PLANETARY GEAR MOTOR

## Product Graph



## Technical Data

Product type		23	34	Reduction ratio	Number of stage
Rated output torque	N.M	24.5	102	3	1
		28	105	5	
		13	57	10	
		2	24.5	111	15
			23.5	114	25
			24	86	50
			12	57	100
Life	Hour	20,000			
Instant stop torque	N.M	35.8	151	3	1
		41	145	5	
		19	80	10	
		2	35.8	155	15
			47.5	158	25
			33	120	50
			17	80	100

Product type	23	34	Unit	Number of stage
Max radial load	600	950	N	
Max axial load	300	525	N	
Full load efficiency	90		%	1
	85			2
Weight	1	3.15	Kg	1
	1.35	3.65		2
Operating temperature	-10~+90		°C	
IP	IP65			
Lubrication type	Lifetime lubrication			
Mounting type	Any			

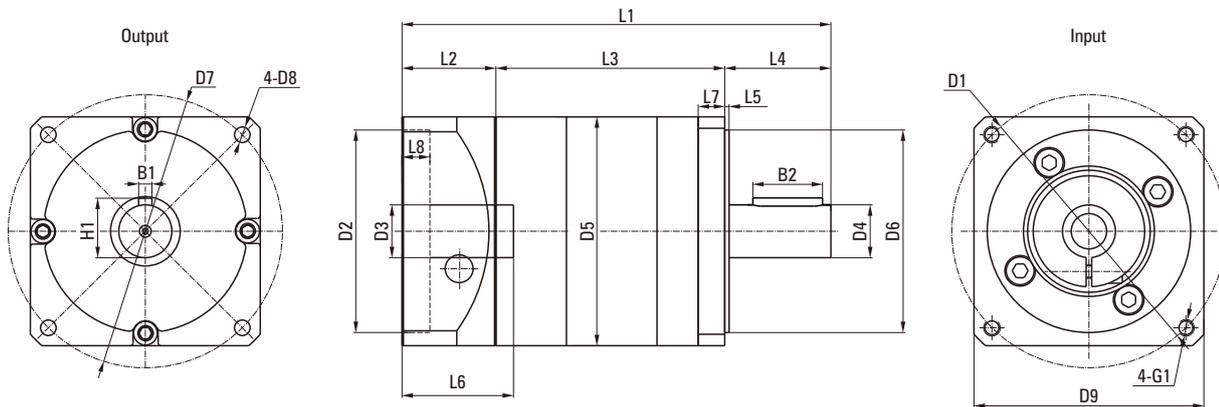
The max radial and axial torque work in the location of the center of output shaft when the out speed is 100RPM.

Product type		23	34	Number of stage
Backlash (P1)	arcmin (P1)	<7	<7	1
		<9	<9	2
Backlash	arcmin	<10	<10	1
		<14	<14	2
Noise	dB(A)	63	65	
Max input speed	min <sup>-1</sup>	5000	5000	
Recommend input speed	min <sup>-1</sup>	3000	3000	

1. The moment of inertia is related with input shaft.
2. Noise test standard, distance 1m, measured noload running with an input speed of 3000rpm.

# PSX SERIES PRECISION PLANETARY GEAR MOTOR

## ■ Dimensions



■ Unit: mm

PN	23PNX		34PNX	
	1	2	1	2
Number of stage	1	2	1	2
L1 overall length	/	/	/	/
L2 overall length	/	/	/	/
L3 body length	59.4	82.8	82.1	114.3
L4 output shaft length	31.75		38.1	
L5 spigot length	1.57		1.57	
L6 motor shaft length	/		/	
L7 key length to the shaft end	6.35		9.52	
L8 spigot depth	/		/	
D1 mounting hole distribution circle	/		/	
D2 spigot diameter	/		/	
D3 input shaft diameter	/		/	
D4 output shaft diameter	Φ12.7h7		Φ19.05h7	
D5 shaft shoulder diameter	Φ57		Φ82.5	
D6 spigot diameter	Φ38.1h7		Φ73.025h7	
D7 hole circle	Φ66.68		Φ98.4	
D8 through hole	Φ5.2		Φ5.6	
D9 input flange	/		/	
B1 key width	5		6	
B2 key length	25		25	
H1 key height	14.7		21.55	
G1 mounting threads x depth	/		/	

※ Input size made according to motor size.

※ The dimensions of L6, L9, D1, D2, D3, D9, Q3, and G1 are installation dimensions for customer's motor, and the total length of L1 depends on the size of customer's motor.

# CATALOGUE



PRECISION HARMONIC REDUCER



CYCLOIDAL PIN WHEEL  
PRECISION REDUCER



TRANSMISSION PLANETARY  
GEAR MOTOR



SERVO DRIVER  
BRUSHLESS DRIVER  
INDUSTRIAL VEHICLE DRIVER  
AC SPEED CONTROLLER



DC BRUSHLESS GEAR MOTOR



MOTOR ROLLER





# SEP/SEPB/SEPR/SEPRB/PNX ECONOMY SERIES PLANETARY GEAR BOX CATALOGUE

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