

Standard Type Planetary Gearbox

PLF



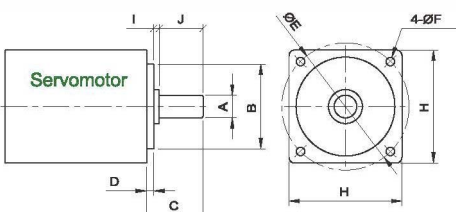
- 1. Quiet operation
Helical gears are used to achieve smooth and quiet operation.
- 2. High rigidity & torque
The use of integral ball bearings greatly improves the rigidity and torque.
- 3. Methods of flange and connector
It can be installed on any motor in the world.
- 4. No grease leakage
The use of grease with high viscosity which is not easy to separate effectively prevents the grease leakage.
- 5. Convenient maintenance
No need to replace the grease in the product life period, and the installation is more convenient.

Model Selection of Speed Reducers

PLF Type

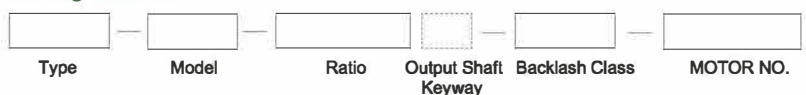
PLF080	-	10	-	S1	-	P1	/	Motor
Reducer Model PLF040, PLF060, PLF080, PLF090 PLF120, PLF160		Output Shaft Keyway S1: Solid Output Shaft No Keyway S2: Standard (Keyway) S3: Output for holes			Motor Model Motor Manufacturer & Model			
Ratio 1-stage: 3, 4, 5, 6, 7, 8, 9, 10 2-stage: 12, 15, 16, 20, 25, 28, 30, 35, 40, 50, 70, 80, 100 3-stage: 60, 64, 72, 80, 90, 100, 120, 144, 150, 160, 180, 200 240, 258, 288, 320, 384, 512, 600, 800, 1000					Backlash Grade P0: High precision backlash P1: Precision backlash P2: Standard backlash			

The gearbox matching motor needs to be confirmed with following dimensions :



A	B	C	D	E	F	H	I	J

Naming Scheme:



PLF Reducer Specifications

Specs	Unit	Stage	Ratio	PLF040	PLF060	PLF080	PLF090	PLF120	PLF160
Rated Output Torque / T2N	Nm	1	3	14	28	105	113	150	323
			4	15	38	108	115	160	364
			5	17	40	112	118	160	423
			7	13	35	105	110	149	358
			10	12	25	100	105	141	293
		2	15	14	28	105	113	150	323
			20	15	38	108	120	160	364
			25	17	40	112	118	160	423
			30	13	28	105	113	150	323
			35	17	35	112	118	160	358
			40	12	38	110	115	146	364
			50	15	40	108	118	160	423
		70	13	35	105	110	149	358	
		100	12	25	100	110	141	293	
Max.Output Torque / T2N0.1	Nm	1,2	3~100	3Times of Nominal Output Torque					
Rated Input Speed / n1N	rpm	1,2	3~100	3000	3000	3000	3000	3000	2500
Max.Input Speed / n1B	rpm	1,2	3~100	5000	5000	5000	5000	5000	3600
Precision Backlash P1	arcmin	1	3~10	≤6	≤6	≤6	≤6	≤6	≤6
		2	12~100	≤8	≤8	≤8	≤8	≤8	≤8
Standard Backlash P2	arcmin	1	3~10	≤7	≤7	≤7	≤7	≤7	≤7
		2	12~100	≤10	≤10	≤10	≤10	≤10	≤10
Torsional Rigidity	Nm/arcmin	1,2	3~100	3	6	12	12	22	50
Max.Radial Force / F2a2	N	1,2	3~100	320	460	1300	1300	3200	6520
Max.Axial Force / F2a1a2	N	1,2	3~100	160	230	660	660	1600	3260
Service Life	hr	1,2	3~100	20000 h					
Efficiency / η	%	1	3~10	≥97%					
		2	15~100	≥94%					
Weight	kg	1	3~10	0.73	0.99	2.1	2.5	4.98	18.2
		2	15~100	1.05	1.46	3.2	3.5	6.92	24.9
Operating Temperature	℃	1,2	3~100	-25℃~+90℃					
Lubrication		1,2	3~100	Synthetic Grease					
Protection Class		1,2	3~100	IP65					
Mounting Position		1,2	3~100	Any Direction					
Noise Level (n1=3000rpm, No load)	dB(A)	1,2	3~100	≤62	≤63	≤65	≤65	≤67	≤68

Reducer Rotary Inertia

Specs	Unit	Stage	Ratio	PLF040	PLF060	PLF080	PLF090	PLF120	PLF160
Moment of Inertia	kg.cm ²	1	3	0.03	0.16	0.61	0.61	3.25	9.21
			4	0.03	0.14	0.48	0.48	2.74	7.54
			5	0.03	0.13	0.47	0.47	2.71	7.42
			7	0.03	0.13	0.45	0.45	2.65	7.25
			10	0.03	0.13	0.45	0.45	2.62	7.14
		2	12~40	0.03	0.13	0.44	0.44	2.58	7.07
			50~100	0.03	0.13	0.44	0.44	2.57	7.04

1. Ratio (i=Nin/Nout) 2. Output revolutions 100rpm, acting on the output shaft center position.
3. *Continuous operation, service life is 10000hrs.

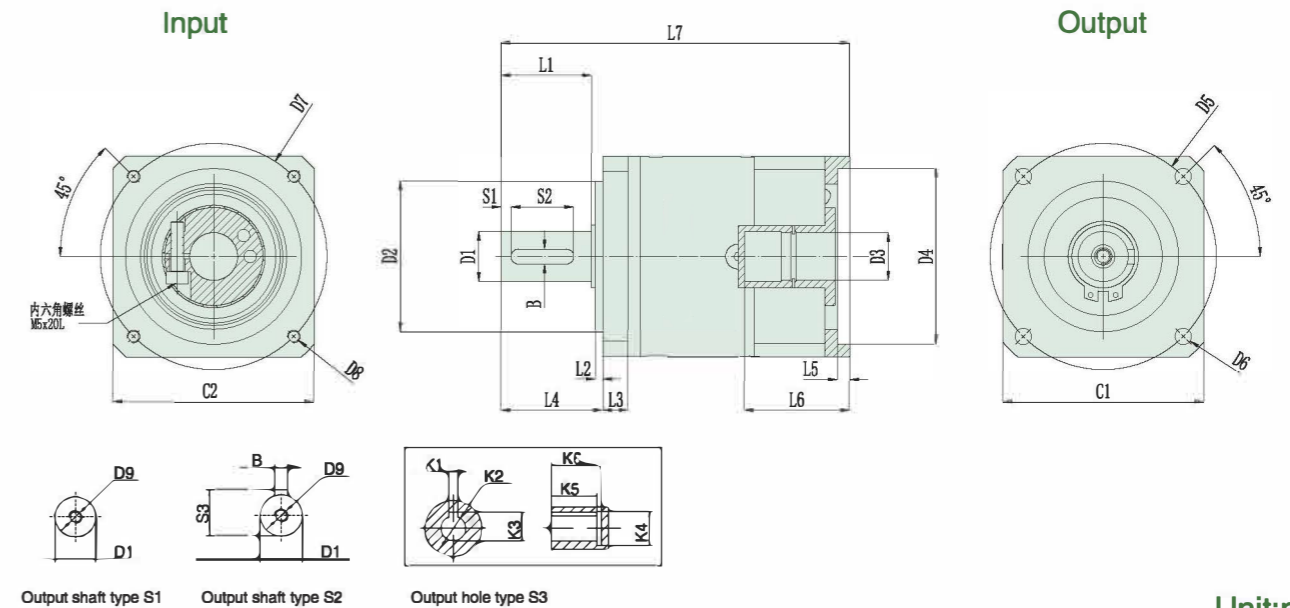
MODEL: PLF

1-Stage

Ratio: 3, 4, 5, 6, 7, 8, 9, 10



Dimensions:



Unit:mm

Size	PLF040-L1	PLF060-L1	PLF080-L1	PLF090-L1	PLF120-L1	PLF160-L1
D1	φ 10	φ 14	φ 20	φ 20	φ 25	φ 40
D2	φ 35	φ 50	φ 80	φ 80	φ 110	φ 130
D3	φ 8 (≤8)	φ 14 (≤19)	φ 19 (≤19)	φ 19 (≤22)	φ 22 (≤24)	φ 35 (≤35)
D4	φ 30 (30-50)	φ 50 (50-70)	φ 70 (50-110)	φ 70 (50-110)	φ 110 (70-130)	φ 114.3 (110-150)
D5	φ 50	φ 70	φ 100	φ 100	φ 130	φ 185
D6	4-φ 3.5	4-φ 5.5	4-φ 6.5	4-φ 6.5	4-φ 8.5	4-φ 11
D7	φ 46 (45-70)	φ 70 (70-130)	φ 90 (70-145)	φ 90 (70-145)	φ 145 (90-165)	φ 200 (145-220)
D8	(4-M4*12L)	(4-M4*8L)	(4-M6*10L)	(4-M6*10L)	(4-M8*16L)	(4-M12*20L)
D9	M3*9L	M5*18L	M6*18L	M6*18L	M10*25L	M16*36L
L1	23	30	36	36	50	80
L2	2	3	3	3	4	5
L3	5	11	10	10	18	20
L4	26	35	40.5	40.5	55.5	87
L5	(3.5)	(4)	(5)	(6)	(10)	(10)
L6	(27)	(31)	(42)	(47)	(62.5)	(81)
L7	(88)	(115)	(139)	(150)	(210)	(276)
C1	□42	□60	□90	□90	□120	□165
C2	(□42)	(□60)	(□80)	(□90)	(□120)	(□176)
S1	2	3	3	3	5	5
S2	16	20	25	25	40	65
S3	11.2	16	22.5	22.5	28	43
B	3	5	6	6	8	12
K1	-	3	5	5	6	10
K2	-	φ 10	φ 15	φ 15	φ 20	φ 35
K3	-	11.4	17.3	17.3	22.8	38.3
K4	-	20	30	30	38	58
K5	-	15	20	20	27	35
K6	-	18	24	24	32	40

Note 1: Inside of () is the optional range of sizes, outside of () is the standard sizes.
Note 2: The reducer output shaft size and length can be customized for customers.
Note 3: The input size can be changed according to the servomotor or stepper motor of each brand.

MODEL: PLF

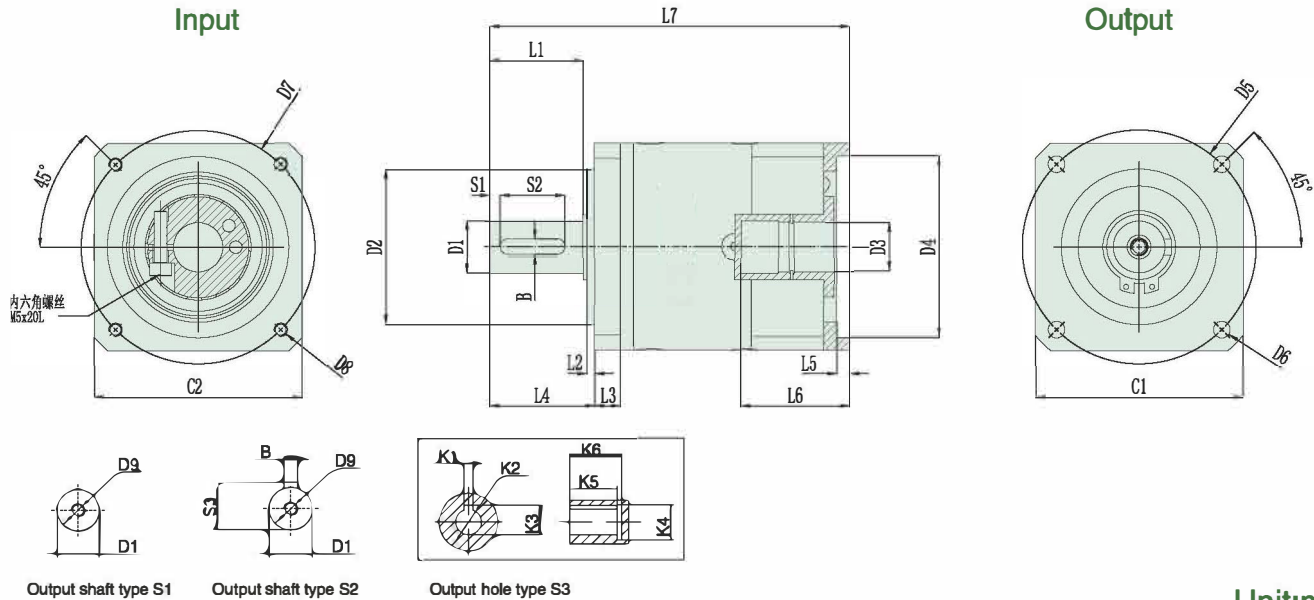
2-Stage

Ratio: 12, 15, 16, 20, 25, 28, 30, 35

40, 50, 70, 80, 100



Dimensions:



Unit:mm

Size	PLF040-L2	PLF060-L2	PLF080-L2	PLF090-L2	PLF120-L2	PLF160-L2
D1	φ 10	φ 14	φ 20	φ 20	φ 25	φ 40
D2	φ 35	φ 50	φ 80	φ 80	φ 110	φ 130
D3	φ 8 (≤ 8)	φ 14 (≤ 19)	φ 19 (≤ 19)	φ 19 (≤ 22)	φ 22 (≤ 24)	φ 35 (≤ 35)
D4	φ 30 (30-50)	φ 50 (50-70)	φ 70 (50-110)	φ 70 (50-110)	φ 110 (70-130)	φ 114.3 (110-150)
D5	φ 50	φ 70	φ 100	φ 100	φ 130	φ 185
D6	4-φ 3.5	4-φ 5.5	4-φ 6.5	4-φ 6.5	4-φ 8.5	4-φ 11
D7	φ 46 (45-70)	φ 70 (70-130)	φ 90 (70-145)	φ 90 (70-145)	φ 145 (90-165)	φ 200 (145-220)
D8	(4-M4*12L)	(4-M4*8L)	(4-M6*10L)	(4-M6*10L)	(4-M8*16L)	(4-M12*20L)
D9	M3*9L	M5*18L	M6*18L	M6*18L	M10*25L	M16*36L
L1	23	30	36	36	50	80
L2	2	3	3	3	4	5
L3	5	11	10	10	18	20
L4	26	35	40.5	40.5	55.5	87
L5	(3.5)	(4)	(5)	(6)	(10)	(10)
L6	(27)	(31)	(42)	(47)	(62.5)	(81)
L7	(103)	(133)	(159)	(170)	(240)	(317)
C1	□42	□60	□90	□90	□120	□165
C2	(□42)	(□60)	(□80)	(□90)	(□120)	(□176)
S1	2	3	3	3	5	5
S2	16	20	25	25	40	65
S3	11.2	16	22.5	22.5	28	43
B	3	5	6	6	8	12
K1	-	3	5	5	6	10
K2	-	φ 10	φ 15	φ 15	φ 20	φ 35
K3	-	11.4	17.3	17.3	22.8	38.3
K4	-	20	30	30	38	58
K5	-	15	20	20	27	35
K6	-	18	24	24	32	40

Note 1: Inside of () is the optional range of sizes, outside of () is the standard sizes.

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Note 3: The input size can be changed according to the servomotor or stepper motor of each brand.