INOTEK

Standard Type Planetary Gearbox

PLE

- 1.Quiet operation

  Helical gears are used to achieve smooth and quiet operation.
- 2.High rigidity & torqueThe 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

PLE Type

PLE080 – 10 – S1 – P1 / Motor

Reducer Model

PLE040, PLE060, PLE080, PLE090
PLE120, PLE160

Output Shaft Keyway

S1: Solid Output Shaft No Keyway
S2: Standard (Keyway)
S3: Output for holes

Motor Model

Motor Manufacturer & Model

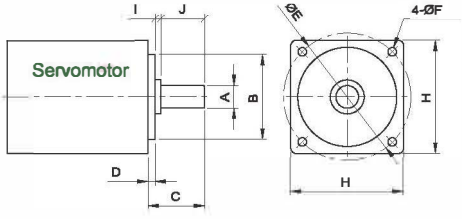
Ratio

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:

Type	Model	Ratio	Output Shaft Keyway	Backlash Class	MOTOR NO.

PLE Reducer Specifications

Specs	Unit	Stage	Ratio	PLE040	PLE060	PLE080	PLE090	PLE120	PLE160
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	15	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 / T_{2NOT}[1]	Nm	1,2	3~100	3Times of Nominal Output Torque					
Rated Input Speed / n_{1N}	rpm	1,2	3~100	3000	3000	3000	3000	3000	2500
Max.Input Speed / n_{1B}	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	≤8	≤8	≤8	≤8	≤8	≤8
		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 / F_{2rB}[2]	N	1,2	3~100	320	460	1300	1300	3200	6520
Max.Axial Force / F_{2aB}[2]	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	2.4	4.98	18.2
		2	15~100	1.05	1.46	3.2	3.6	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	PLE040	PLE060	PLE080	PLE090	PLE120	PLE160
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.

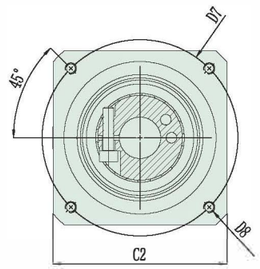
MODEL: PLE

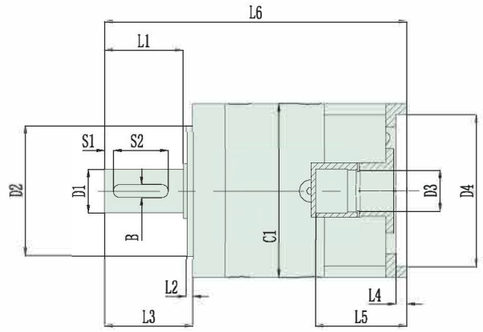
1–Stage

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

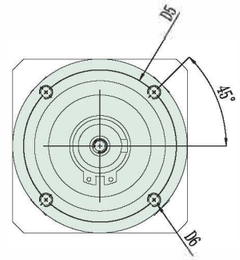
Dimensions:

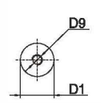
Input



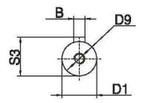


Output

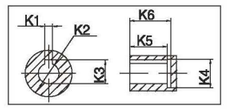




Output shaft type S1



Output shaft type S2



Output hole type S3

Unit:mm

Size	PLE040–L1	PLE060–L1	PLE080–L1	PLE090–L1	PLE120–L1	PLE160–L1
D1	ϕ10	ϕ14	ϕ20	ϕ20	ϕ25	ϕ40
D2	ϕ26	ϕ40	ϕ60	ϕ60	ϕ80	ϕ130
D3	ϕ8 (≤8)	ϕ14 (≤14)	ϕ19 (≤19)	ϕ19 (≤24)	ϕ22 (≤24)	ϕ35 (≤35)
D4	ϕ30 (30–50)	ϕ50 (50–70)	ϕ70 (50–110)	ϕ70 (50–110)	ϕ110 (70–130)	ϕ114.3 (110–150)
D5	ϕ34	ϕ52	ϕ70	ϕ70	ϕ100	ϕ145
D6	(4–M4*8L)	(4–M5*15L)	(4–M6*12L)	(4–M6*20L)	(4–M10*18L)	(4–M12*24L)
D7	ϕ46 (45–70)	ϕ70 (70–130)	ϕ90 (70–145)	ϕ90 (70–145)	ϕ145 (90–165)	ϕ200 (145–220)
D8	(4–M4*12L)	(4–M5*10L)	(4–M6*15L)	(4–M6*15L)	(4–M8*16L)	(4–M12*20L)
D9	M3*9L	M5*16L	M6*18L	M6*18L	M10*25L	M16*30L
L1	23	30	36	36	50	80
L2	2	3	3	3	4	5
L3	26	35	40.5	40.5	55.5	87
L4	(3.5)	(4)	(5)	(6)	(10)	(10)
L5	(27)	(31)	(42)	(47)	(62.5)	(81)
L6	(88)	(115)	(139.0)	(150)	(210)	(276)
C1	ϕ42	ϕ60	ϕ80		ϕ120	ϕ165
C2	(□42)	(□60)	(□80)	(□90)	(□120)	(□176)
S1	2	3	4	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	–	ϕ10	ϕ15	ϕ15	ϕ20	ϕ35
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.

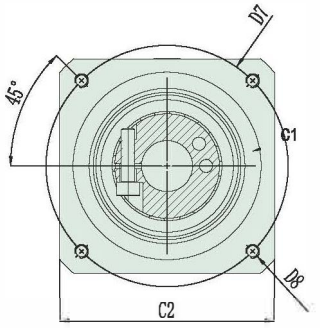
MODEL: PLE

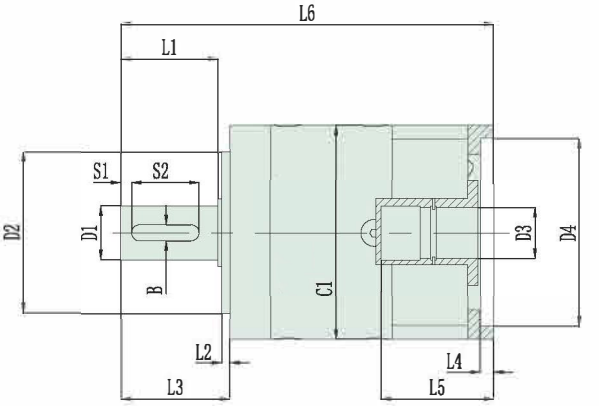
2-Stage

Ratio: 12, 15, 16, 20, 25, 28, 30, 35
40, 50, 70, 80, 100

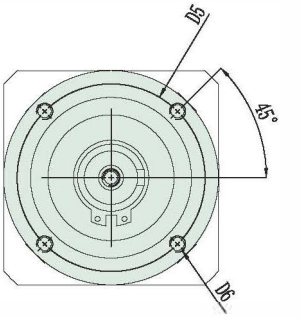
Dimensions:

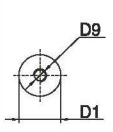
Input



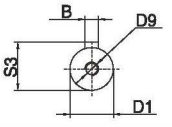


Output

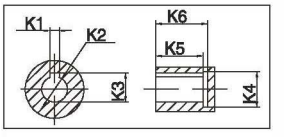




Output shaft type S1



Output shaft type S2



Output hole type S3

Unit:mm

Size	PLE040-L2	PLE060-L2	PLE080-L2	PLE090-L2	PLE120-L2	PLE160-L2
D1	ϕ10	ϕ14	ϕ20	ϕ20	ϕ25	ϕ40
D2	ϕ26	ϕ40	ϕ60	ϕ60	ϕ80	ϕ130
D3	ϕ8 (≤8)	ϕ14 (≤14)	ϕ19 (≤19)	ϕ19 (≤24)	ϕ22 (≤24)	ϕ35 (≤35)
D4	ϕ30 (30-50)	ϕ50 (50-70)	ϕ70 (50-110)	ϕ70 (50-110)	ϕ110 (70-130)	ϕ114.3 (110-150)
D5	ϕ34	ϕ52	ϕ70	ϕ70	ϕ100	ϕ145
D6	(4-M4*8L)	(4-M5*15L)	(4-M6*12L)	(4-M6*20L)	(4-M10*18L)	(4-M12*24L)
D7	ϕ46 (45-70)	ϕ70 (70-130)	ϕ90 (70-145)	ϕ90 (70-145)	ϕ145 (90-165)	ϕ200 (145-220)
D8	(4-M4*12L)	(4-M5*10L)	(4-M6*15L)	(4-M6*15L)	(4-M8*16L)	(4-M12*20L)
D9	M3*9L	M5*16L	M6*18L	M6*18L	M10*25L	M16*30L
L1	23	30	36	36	50	80
L2	2	3	3	3	4	5
L3	26	35	40.5	40.5	55.5	87
L4	(3.5)	(4)	(5)	(6)	(10)	(10)
L5	(27)	(31)	(42)	(47)	(62.5)	(81)
L6	(103)	(133)	(159.0)	(170)	(239.5)	(317)
C1	ϕ42	ϕ60	ϕ80		ϕ120	ϕ165
C2	(□42)	(□60)	(□80)	(□90)	(□120)	(□176)
S1	2	3	4	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	-	ϕ10	ϕ15	ϕ15	ϕ20	ϕ35
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

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