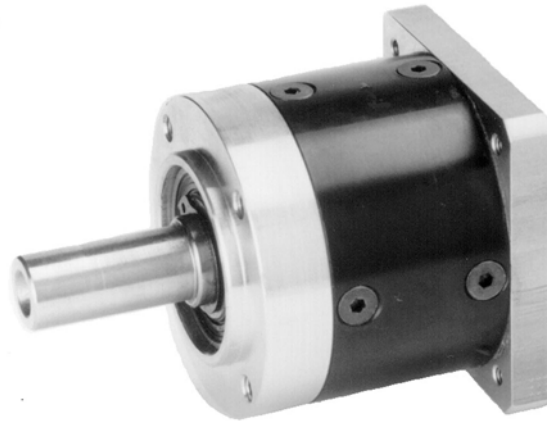


Planetary Gearboxes

Type: PLE 40, 60 and 80



The low-backlash planetary gearboxes of the **PLE** series have been developed and manufactured with the latest state-of-the-art components to the high quality standard DIN ISO 9001. The **PLE** series are designed to be used with motors of NEMA 17, 23 and 34 size. By minimization, modularity and standardisation of the transmission parts in connection with our 'SB' series stepping motors an efficient low-cost transmission is at the disposal of the technical designer, the which offers following advantages:

- high output torque
- high stiffness
- high shaft loading
- low running noise
- low backlash
- lower inertia (as reflected back to the stepping motor output shaft) due to the design of the gear pinion assembly

Available Gearbox sizes:

Motor type	Single-stage				Two-stage					Three-stage		
	Gearbox ratio i=	3	4	5	8	12	20	32	40	64	100	160
PLE40X												
NEMA 17	Torque output in Nm	4.5	6	6	5	20	20	20	18	7.5	20	20
	Inertia in kgcm ²	0.031	0.022	0.019	0.017	0.029	0.019	0.017	0.016	0.016	0.019	0.016
PLE60X												
NEMA 23	Torque output in Nm	12	16	16	15	44	44	44	40	18	44	44
	Inertia in kgcm ²	0.135	0.093	0.078	0.065	0.127	0.075	0.064	0.064	0.064	0.075	0.064
PLE80X												
NEMA 34	Torque output in Nm	40	50	50	50	130	120	120	110	50	120	120
	Inertia in kgcm ²	0.77	0.52	0.45	0.39	0.72	0.44	0.39	0.39	0.39	0.44	0.39

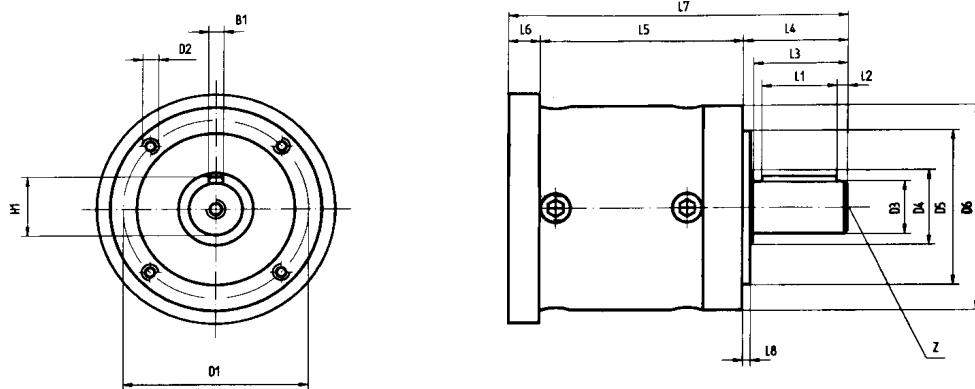
Also we can deliver the following necessary accessories:

'SB' series stepping motors; Star2000 APS stepping motor drives; Star2000 software; absolute encoders (ABS4096 & ABS4096P); GOYA100 CNC multi-axis controllers; holding brakes (87-24 & 87-24/36); and cable.

Technical characteristics

Gearbox type			PLE 40X	PLE 60X	PLE 80X
		units			
Maximum shaft loading (wave centre at 100 r.p.m. speed)	radial	N	200	500	950
	axial	N	200	600	1200
Weight	Single-stage	kg	0.35	0.9	2.1
	Two-stage	kg	0.45	1.1	2.6
	Three-stage	kg	0.55	1.3	3.1
Efficiency at nominal speed	Single-stage	%	96	96	96
	Two-stage	%	94	94	94
	Three-stage	%	90	90	90
Backlash – motor shaft/gearbox output shaft	Single-stage	Arc. min	<30'	<20'	<12'
	Two-stage	Arc. min	<35'	<25'	<17'
	Three-stage	Arc. min	<40'	<30'	<22'
Operating temperature range			-25 to 90°C		
Protection class			IP 43		
Lubrication			Grease (Life long lubrication)		
Mounting position			Any		
Average lifetime			Gearing duration, bearing minimum 10.000 hours		

Dimensions:



Gearbox type	PLE 40X			PLE 60X			PLE 80X			
	1	2	3	1	2	3	1	2	3	
D1	Flange holes circle	34	34	34	52	52	52	70	70	70
D2	Mounting thread 4 x	M4x6	M4x6	M4x6	M5x8	M5x8	M5x8	M6x10	M6x10	M6x10
D3	Shaft diameter h7	10	10	10	14	14	14	20	20	20
D4	Shaft root	12	12	12	17	17	17	25	25	25
D5	Centring h7	26	26	26	40	40	40	60	60	60
D6	Body diameter	40	40	40	60	60	60	80	80	80
L1	Key length	18	18	18	25	25	25	28	28	28
L2	Distance from shaft end	2.5	2.5	2.5	2.5	2.5	2.5	4	4	4
L3	Shaft length from spigot	23	23	23	30	30	30	36	36	36
L4	Shaft length from output	26	26	26	35	35	35	40	40	40
L5	Body length	39	52	64	47	59	72	60.5	77.5	95
L6	Motor flange length	28.5	28.5	28.5	25.5	25.5	25.5	33.5	33.5	33.5
L7	Overall length	93.5	106.5	118.5	106.5	118	131.5	134	151	168.5
L8	Spigot depth	2	2	2	3	3	3	3	3	3
Key DIN 6885 T1										
B1		3	3	3	5	5	5	6	6	6
H1		11.2	11.2	11.2	16	16	16	22.5	22.5	22.5
Centre bore										
Z	DIN 332, page 2, form DS	M3x9	M3x9	M3x9	M5x12	M5x12	M5x12	M6x16	M6x16	M6x16

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