

# PE/PP – planetary gear boxes



Cycloidal gear boxes



Planetary gear boxes



Bevel gear boxes



Planetary bevel gear boxes



Hypoid gear boxes



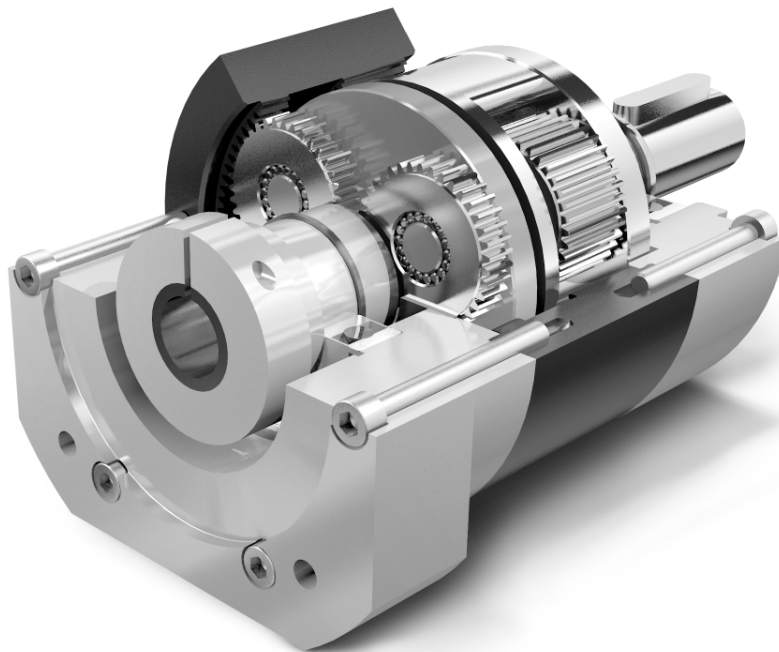
Gear technology

# EPPINGER planetary gear boxes

The planetary range of gear boxes is of modular design and is developed and designed to specifically meet the multiple requirements of our customers. The combination of ground gears and precision gear components ensures performance efficiency and high uptime. The present range of planetary gear boxes includes five sizes, each as single, dual or triple stage design. This allows overall

transmission ratios from  $i = 3 : 1$  to  $i = 512 : 1$  to be realized. Each gear box variant is also available as precision design (PP) with reduced backlash.

Innovative solutions for all applications and numerous options - often special customized solutions - are integral parts in the portfolio of Eppinger Getriebe Technologie GmbH.



## FEATURES AND BENEFITS OF THE PE/PP PLANETARY GEAR BOX SERIES

- minimal backlash
- ground gears
- high power density
- convincing transmission quality and smooth running
- considerable output torque
- optional installation position
- easy mounting of a wide array of motors
- high level of energy efficiency

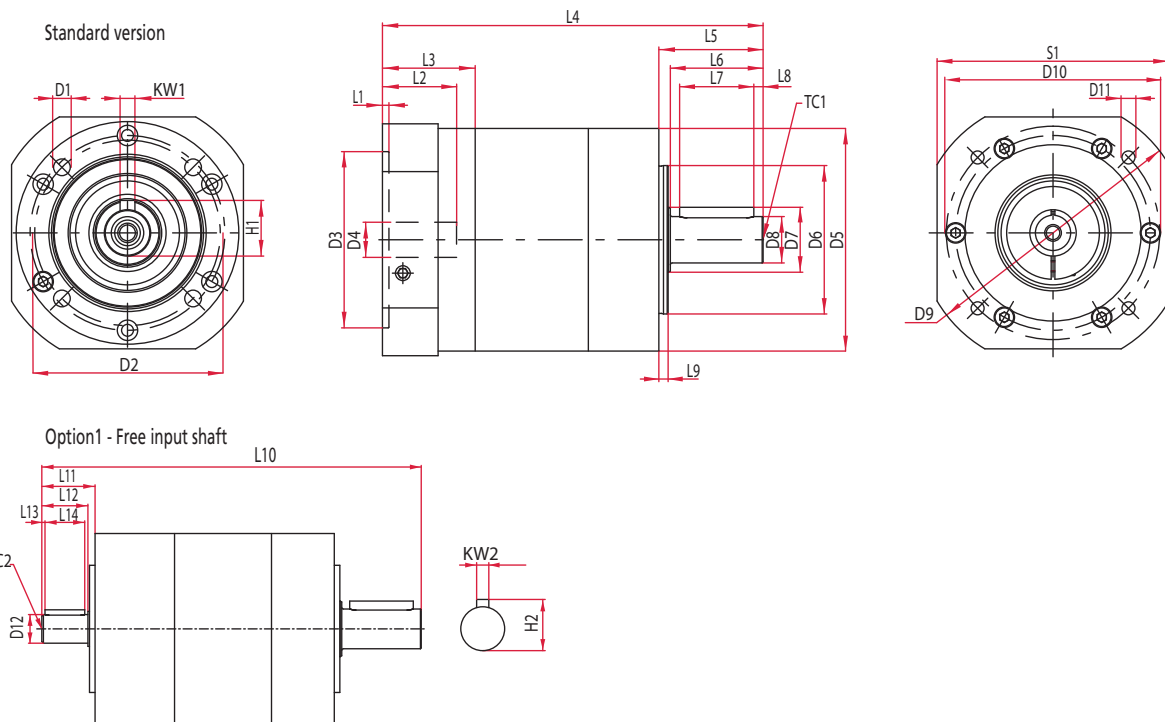
### Ordering code

	Type of gear box	Size	Ratio
Example for ordering: PP080 40:1	PE	045	$i = 3 : 1$
	PP	065	to
		080	$i = 512 : 1$
		120	(see table
		160	performance data column i)

Upon request: motor flange, different shaft dimensions, customized solutions, fittings,...

Subject to change in design. We recommend technical clarification prior to ordering.

Our product range includes besides **bevel-, hypoid-, planetary- and cycloidal gear boxes** also **special customized gear boxes and high precision gear technology**. With our **gear motors and integrated combinations of our gear box series** we extended our portfolio. The **compact and the mono-bloc design** as well as our maximum **gear quality** makes our solutions **unique**.



## Dimensions (dimensions in mm)

	PE045 PP045	PE065 PP065	PE080 PP080	PE120 PP120	PE160 PP160	Number of stages
D1 - Mounting thread output side	M4x6	M5x8	M6x10	M10x16	M12x20	for all stages
D2 - Pitch circle diameter output side	34	52	70	100	145	
D3 - Centering diameter	30 H7	40 H7	80 H7	95 H7	130 H7	
D4 - Bore diameter drive shaft	6 H7	9 H7	14 H7	19 H7	24 H7	
D5 - outer diameter	45	65	85	120	160	
D6 - Centering diameter output side	26 h7	40 h7	60 h7	80 h7	130 h7	
D7 - Shaft shoulder diameter	12	17	25	35	55	
D8 - shaft diameter	10 h7	14 h7	20 h7	25 h7	40 h7	
D9 - Width across corners of the drive flange	54	80	116	145	185	
D10 - Pitch circle diameter drive side	46	63	100	115	165	
D11 - Mounting thread drive side	M4x10	M5x12	M6x15	M8x20	M10x25	
D12 - drive shaft diameter	8 j6	10 j6	16 j6	20 j6	35 j6	
H1 - Key height output drive shaft	11.2	16	22.5	28	43	
H2 - Key height drive shaft	8.8	11.2	18	22.5	38	
KW1 - Key width output drive shaft	3	5	6	8	12	
KW2 - Key width drive shaft	2	3	5	6	10	
L1 - Depth of centering collar drive side	3	3	3.5	3.5	4	
L2 - Bore depth drive	25	25	30	40	50	
L3 - length of drive flange	28	28	41	50	66	
L4 - overall length with hollow drive shaft	95 108 121	107 120 133	134 154 170	177 205 232	256 306 -	1 2 3
L5 - length of drive shaft in relation to housing	26	35	40	56	87	for all stages
L6 - length of drive shaft	23	30	36	50	80	
L7 - Key length output drive shaft	18	25	28	40	65	
L8 - Key position in relation to shaft end	2.5	3	4	5	7	
L9 - Centering length	2	3	3	5	5	
L10 - overall length with solid drive shaft	104 117 130	125 138 151	152 172 188	206 234 261	315 355 -	1 2 3
L11 - length of drive shaft in relation to housing	20	28	30	45	65	for all stages
L12 - length of drive shaft	17	23	26	40	58	
L13 - Key position in relation to shaft end	2.5	2.5	3	4	7	
L14 - Key length output drive shaft	12	18	20	32	45	
S1 - Square dimension of flange	45	65	90	120	160	
TC1 -thread in drive shaft acc. to DIN332	M3x9	M5x12	M6x16	M10x22	M16x36	
TC2 -thread in drive shaft acc. to DIN332	M3x9	M3x9	M5x12	M6x16	M12X28	

## Performance data

	Abbreviation	Unit	Ratio	PE045 PP045	PE065 PP065	PE080 PP080	PE120 PP120	PE160 PP160	Number of stages
Nominal output torque [At an output speed of 100 rpm, motor-driven, continuous operation S1 and ambient temperature of 30°C]	T2N	Nm	i = 3 : 1	18	40	95	160	425	1
			i = 4 : 1	16	40	125	160	470	
			i = 5 : 1	16	40	105	240	470	
			i = 8 : 1	-	20	55	140	-	
			i = 9 : 1	18	46	125	230	850	2
			i = 12 : 1	18	46	125	270	850	
			i = 15 : 1	18	46	105	270	850	
			i = 16 : 1	21	46	125	270	850	
			i = 20 : 1	21	46	125	270	850	
			i = 25 : 1	21	46	105	270	750	
			i = 32 : 1	21	46	125	270	850	3
			i = 40 : 1	21	46	105	240	750	
			i = 64 : 1	-	20	55	140	-	
			i = 60 : 1	21	46	105	270	-	
			i = 80 : 1	21	46	125	270	-	
			i = 100 : 1	21	46	125	270	-	
i = 120 : 1	21	46	125	270	-				
i = 160 : 1	21	46	125	270	-				
i = 200 : 1	21	46	105	270	-				
i = 256 : 1	21	46	125	240	-				
i = 320 : 1	21	46	105	240	-				
i = 512 : 1	-	20	55	140	-				
Max. output torque [approved for 30000 load cycles under the same operating conditions as for T2N]	T2max	Nm	1.5 x T2N					All ratios	
Emergency stop torque [1000 times permissible during service life of gear boxes]	T2Not	Nm	2 x T2N						
Max. input speed	n1	rpm	6500	6500	6500	6500	6000		
Backlash for standard design		arcmin	<22	<15	<8	<7	<5	1 2 3	
			<26	<19	<12	<12	<8		
			<28	<20	<14	<12	-		
Backlash for precision design		arcmin	<4	<3	<3	<3	<3	1 2	
			<6	<5	<5	<5	<5		
Max. radial load (at centre of output shaft, approved for 30000 load cycles under the same operating conditions as for T2N)	FRmax	N	165	350	670	1600	4300		
Max. axial load (at centre of output shaft, approved for 30000 load cycles under the same operating conditions as for T2N)	FAmx	N	165	450	950	2200	6200		
Efficiency at full load	η	%	96%					1 2 3	
			94%						
			90%						
Noise level (measured at a distance of 1m at n1 = 1500 rpm and i=5)	Lpa	dB(A)	60	60	65	68	70	all i	
Weight	m	kg	Upon request					1 2 3	
			30000						
			Grease						
Min. operating temperature	θmin	°C	-25					All ratios	
Max. operating temperature	θmax	°C	90						
Protection class	IP 54								
Installation position	arbitrary								
Motor flange	optional								

