



## ▶ HIGH PERFORMANCE: EPL SERIES

### GAM can.

If you don't see exactly what you need, let us know. We can modify the EPL Series gearboxes to meet your needs. Page 4 provides a list of commonly requested modifications to give you a feel for our capabilities.

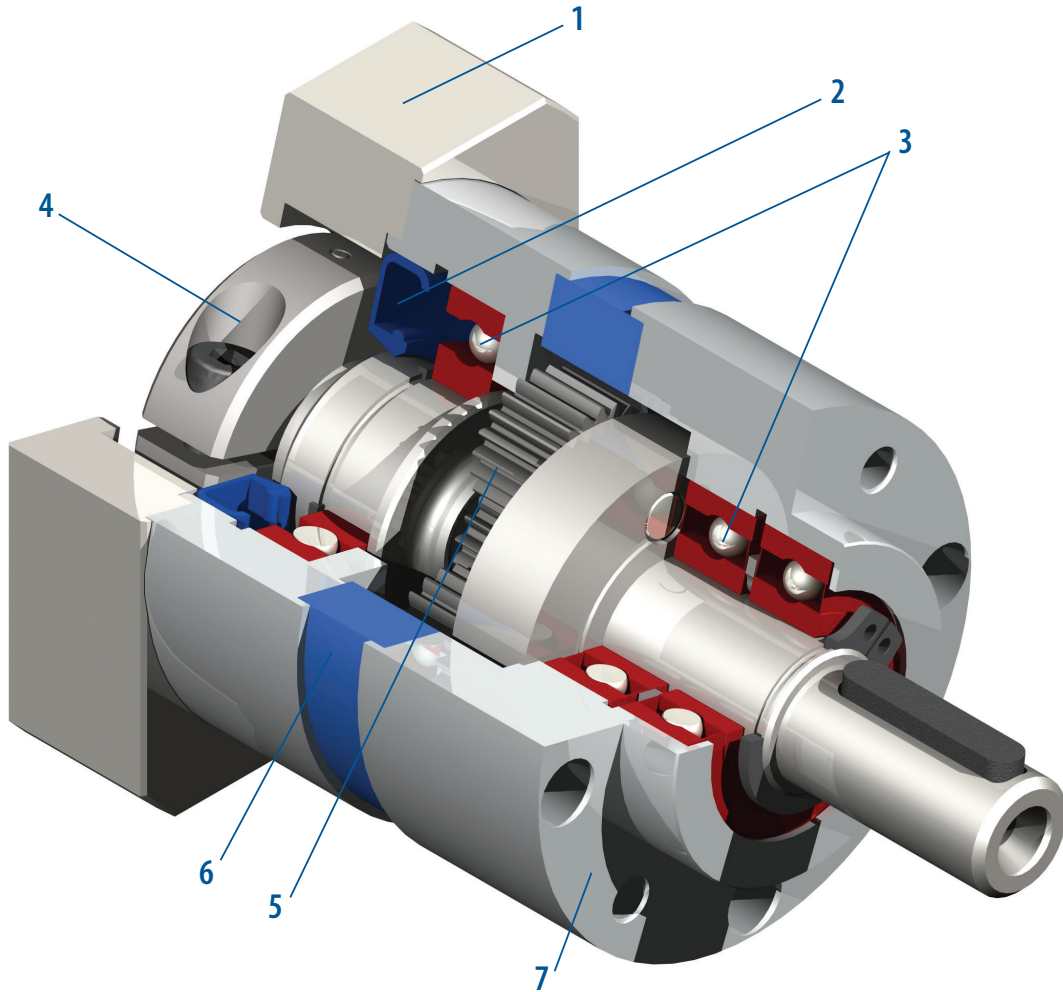
Our EPL Series is widely known as the best value on the market- tens of thousands of EPL's installed since 1998 in North America alone. That's because it offers the best quality available for the price point. We've added some features that make it unequalled in its class and ideal for most servo applications.

### EPL Series enhancements include:

- A 50 mm frame size in our standard shaft version (-W) that is a drop-in for many gearboxes
- NEMA output version with oversized english shaft for improved performance
- Option for larger motor shafts

### New output configurations include:

- EPL-A dimensions that drop in for popular planetary gearboxes on the market.
- EPL-F that features a flange output for a compact design and allows for easy connecting of mechanical elements such as pulleys and pinions.



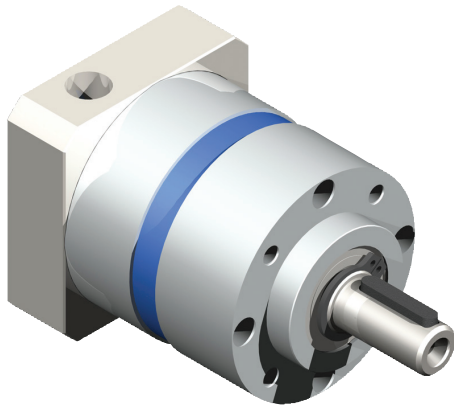
1. Adapter Plate  
(Customized adapter plates for quick and easy motor mounting)
2. Seals  
(Protective seals to isolate the gearbox)

3. Angular Contact Bearings  
(for high radial and axial loading)
4. Input Clamping Element
5. Planet Gears  
(Precision honed gears)

6. Ring Gear  
(Ring gear incorporated into housing)
7. Output Face

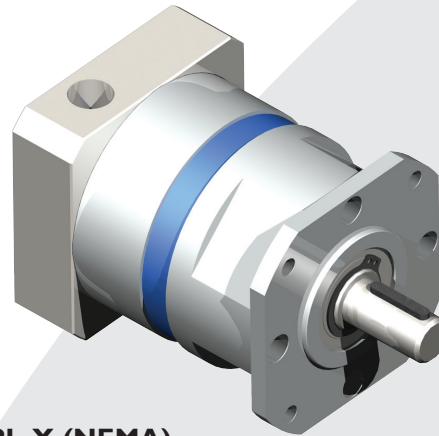
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# ► HIGH PERFORMANCE: EPL SERIES



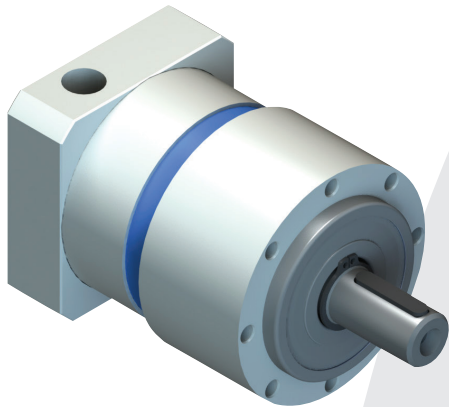
## EPL-W

- GAM Metric Output Face
- Heavy Duty Output Bearings
- Ratios 3:1 to 1000:1
- Frame sizes from 50 mm to 150 mm
- Ready to mount to your motor



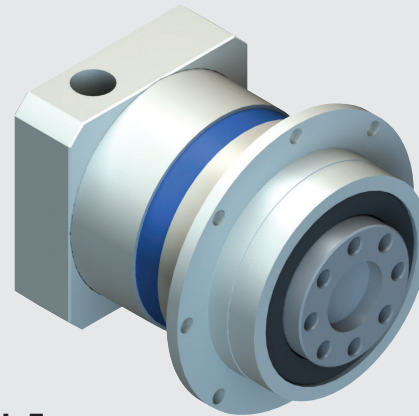
## EPL-X (NEMA)

- NEMA output face with oversized english shaft
- Ratios 3:1 to 1000:1
- Frame sizes from NEMA 17 to 56
- Ready to mount to your motor



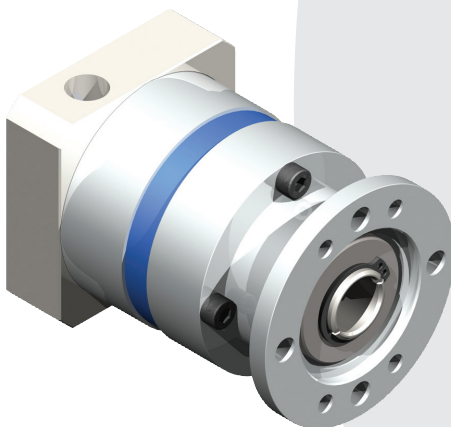
## EPL-A

- Metric output dimensions match many other popular inline planetary gear reducers on the market.
- Ratios 3:1 to 1000:1
- Frame sizes from 50mm to 155mm
- Ready to mount to your motor



## EPL-F

- Flange output
- Compact design
- Ratios 3:1 to 1000:1
- Ready to mount to your motor

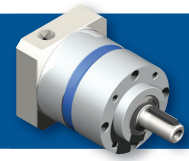


## EPL-H Linear Mount

- Hollow output with zero backlash clamping ring
- A quick, simple, low cost solution used to mount onto any “off the shelf” linear belt or ball screw module.
- Ready to mount to your motor on the input
- Ready to mount to your module on the output
- For more information on Linear Mounts, refer to page 77.



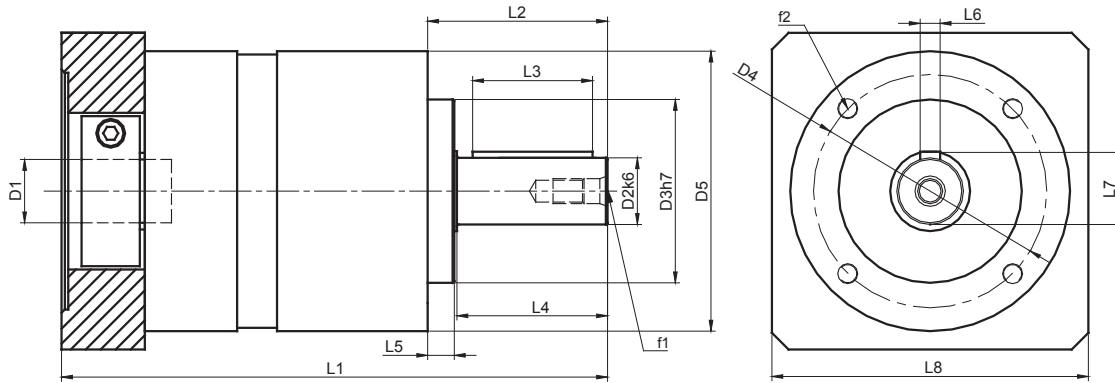
# EPL SERIES - EPL-W



EPL Series		50	64	84	118	150	
Stock Ratios		3, 5, 7, 10, 25, 50, 100 (Standard Input)					N/A
All Ratios Available		1-stage: 3, 4, 5, 7, 10 2-stage: 12, 16, 20, 25, 35, 40, 50, 70, 100 3-stage: 120, 160, 200, 250, 350, 490, 700, 1000 (Consult GAM for other ratios)					
Nominal Output Torque ( $T_{2n}$ )	Nm (lb-in)	3:1	5 (44)	20 (177)	40 (354)	100 (885)	230 (2036)
		4, 5, 7:1	6.5 (58)	26 (230)	54 (478)	120 (1062)	310 (2744)
		10, 100, 1000:1	5 (44)	16 (142)	40 (354)	105 (929)	180 (1593)
		12:1	14 (124)	36 (319)	80 (708)	170 (1505)	272 (2407)
		all other ratios	16 (142)	42 (372)	100 (885)	210 (1859)	340 (3009)
Max Acceleration Output Torque ( $T_{2b}$ )	Nm (lb-in)	3:1	10 (89)	36 (319)	70 (620)	180 (1593)	360 (3186)
		4, 5, 7:1	13 (115)	44 (389)	100 (885)	200 (1770)	460 (4071)
		10, 100, 1000:1	10 (89)	24 (212)	75 (664)	180 (1593)	340 (3009)
		12:1	17.5 (155)	45 (398)	100 (885)	215 (1903)	360 (3186)
		all other ratios	20 (177)	52 (460)	125 (1106)	255 (2257)	460 (4071)
Emergency Output Torque ( $T_{2not}$ )	Nm (lb-in)	3:1	20 (177)	72 (637)	160 (1416)	200 (1770)	860 (7612)
		4, 5, 7:1	26 (230)	84 (743)	216 (1912)	480 (4248)	1000 (8851)
		10, 100, 1000:1	20 (177)	62 (549)	160 (1416)	410 (3629)	800 (7081)
		12:1	28 (248)	72 (637)	160 (1416)	400 (3540)	860 (7612)
		all other ratios	32 (283)	84 (743)	216 (1912)	480 (4248)	1000 (8851)
Nominal Speed ( $n_{1n}$ )	RPM	-	3500	3500	3000	2500	2500
Max Speed ( $n_{1max}$ )		-	6000	6000	6000	5000	4500
Standard Output Backlash (j)	arcmin	1-stage	<16	<10	<10	<8	<8
		2-stage	<20	<14	<14	<12	<12
		3-stage	-	<18	<18	<16	<16
Allowable Radial Load ( $F_{rad}$ ) 1	N (lbs)	-	650 (146)	1900 (428)	2800 (630)	5000 (1125)	7500 (1688)
Allowable Axial Load ( $F_{axial}$ )	N (lbs)	-	700 (158)	1500 (338)	2500 (563)	4500 (1013)	6000 (1350)
Torsional Stiffness ( $C_{t21}$ )	Nm/arcmin (lb-in/arcmin)	10,100,1000	0.60 (5.3)	1.3 (11.5)	3.4 (30.1)	8.3 (73.5)	22 (194.7)
		7,70,700	0.78 (6.9)	1.7 (15)	4.8 (42.5)	13.6 (120.4)	27 (239)
		all other ratios	0.90 (8.0)	2.4 (21.2)	7.1 (62.8)	17.2 (152.2)	33 (292.1)
Weight (m)	kg (lbs)	1-stage	0.4 (0.9)	1.0 (2.2)	2.3 (5.1)	5.8 (12.8)	10.0 (22.1)
		2-stage	0.5 (1.1)	1.3 (2.9)	3.1 (6.8)	7.9 (17.4)	12.5 (27.6)
		3-stage	-	1.6 (3.5)	3.9 (8.6)	10.0 (22.1)	15.0 (33.1)
Noise Level ( $L_{pA}$ )	dB(A)	-	<64	<66	<68	<70	<72
Mass Moment of Inertia ( $J_1$ )	kg cm <sup>2</sup> (lb-in <sup>2</sup> )	3:1	0.06 (0.021)	0.45 (0.154)	1.37 (0.468)	6.54 (2.235)	12.23 (4.179)
		4:1, 12:1, 16:1	0.04 (0.014)	0.38 (0.130)	1.14 (0.390)	4.8 (1.640)	7.65 (2.614)
		5:1, 20:1, 25:1	0.04 (0.014)	0.36 (0.123)	1.05 (0.359)	4.05 (1.384)	6.24 (2.132)
		7:1, 35:1	0.04 (0.014)	0.35 (0.120)	0.97 (0.331)	3.4 (1.162)	4.7 (1.606)
		10:1, 40:1 - 100:1	0.04 (0.014)	0.34 (0.116)	0.93 (0.318)	3.1 (1.059)	3.8 (1.299)
		120:1 - 1000:1	(0.000)	0.34 (0.116)	0.93 (0.318)	3.12 (1.066)	3.9 (1.333)
Efficiency at Load	1-stage: 94% 2-stage: 92% 3-stage: 90%						
Service Life	> 30,000 hours						
Lubrication	Mineral Grease EPO						
Protection Rating	IP 64						
Operating Temperature Range	-20°C to 90°C						

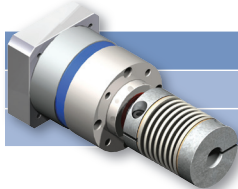
1) Load applied at center of output shaft @100 RPM

# EPL-W



EPL-W Series		50		64		84		118		150	
		mm	(in)	mm	(in)	mm	(in)	mm	(in)	mm	(in)
D1 <sub>max standard</sub> *	motor shaft diameter	11	(0.433)	14	(0.551)	19	(0.748)	24	(0.945)	28	(1.102)
D1 <sub>max available</sub> *	motor shaft diameter	14	(0.551)	16	(0.63)	24	(0.945)	32	(1.26)	38	(1.496)
D2 <sub>k6</sub>	output shaft diameter	12	(0.472)	14	(0.551)	20	(0.787)	25	(0.984)	40	(1.575)
D3 <sub>h7</sub>	pilot diameter	35	(1.378)	40	(1.575)	55	(2.165)	80	(3.15)	110	(4.331)
D4	bolt circle	44	(1.732)	52	(2.047)	70	(2.756)	100	(3.937)	130	(5.118)
D5	housing diameter	50	(1.969)	64	(2.52)	84	(3.307)	118	(4.646)	150	(5.906)
f1	shaft thread	M4x8		M5x12		M6x16		M10x22		M10 x 22	
f2	mounting holes	M4x6		M5x12		M6x14		M8x18		M10x20	
L1 1-STAGE**	gearbox total length	93 (3.661)		117 (4.606)		162 (6.378)		199 (7.835)		265 (10.433)	
L1 2-STAGE**		109 (4.291)		139 (5.472)		195 (7.677)		239 (9.409)		305 (12.008)	
L1 3-STAGE**		-		161 (6.339)		228 (8.976)		280 (11.024)		346 (13.622)	
L2	shaft length	24.5	(0.965)	39	(1.535)	54	(2.126)	61	(2.402)	81	(3.189)
L3	key length	16	(0.63)	25	(0.984)	36	(1.417)	45	(1.772)	60	(2.362)
L4	usable shaft length	18	(0.709)	30	(1.181)	45	(1.772)	50	(1.969)	70	(2.756)
L5	pilot height	4	(0.157)	8	(0.315)	8	(0.315)	10	(0.394)	10	(0.394)
L6	key width	4	(0.157)	5	(0.197)	6	(0.236)	8	(0.315)	12	(0.472)
L7	key height	13.5	(0.531)	16	(0.63)	22.5	(0.886)	28	(1.102)	43	(1.693)
L8**	adapter size	50	(1.969)	70	(2.756)	90	(3.543)	120	(4.724)	150	(5.906)

\* for larger motor shaft diameters, please contact GAM \*\* depending on the motor, value can vary



### Recommended Output Coupling (if necessary)

	metal bellows	KLC-25	KLC-50	KLC-125	KM-270	KM-400
elastomer	EKM-45	EKM-60	EKM-150	EKM-300	EKM-400	EKM-400

### TYPE CODES FOR EPL SERIES (EPL-W)

**Example: EPL - W - 084 - 005 G - [115 - A01] - S111**

**Gearbox Series**  
EPL w/ Metric Output

**Gearbox Style**  
W = Output Shaft

**Gearbox Size**  
050, 064, 084, 118, 150

**Ratio**  
3, 4, 5, 7, 10, 12, 16, 20, 25, 35, 40, 50, 70, 100, 120, 160, 200, 250, 350, 490, 700, 000=1000

**Special Options**  
Assigned by GAM

**Motor Mount Kit**  
Assigned by GAM

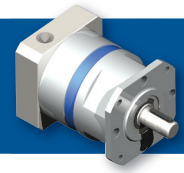
**Options Available for This Product**  
G = Key on output shaft per DIN6885

Tolerances (mm)		
Size	k6	h7
Over 10	+0.012	0
Thru 18	+0.001	-0.018
Over 18	+0.015	0
Thru 30	+0.002	-0.021
Over 30	+0.018	0
Thru 50	+0.002	-0.025
Over 50	+0.021	0
Thru 80	+0.002	-0.030
Over 80	+0.025	0
Thru 120	+0.003	-0.035

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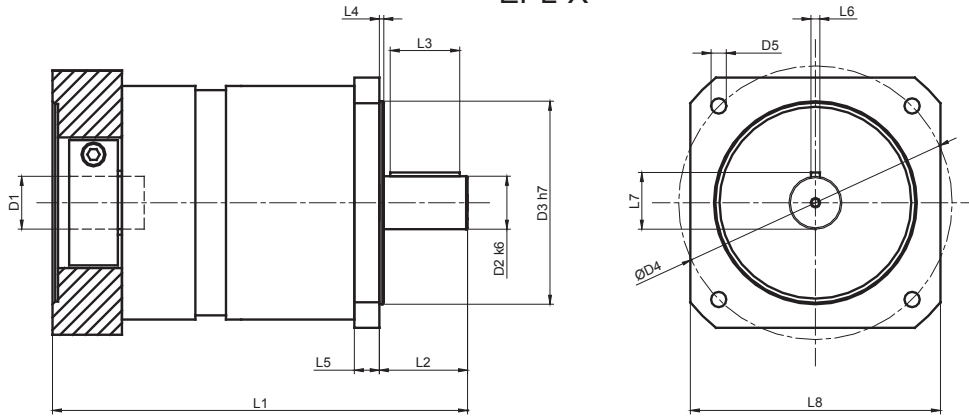
# EPL SERIES - EPL-X (NEMA)



NEMA-X Series		17	23	34	42	56	
Stock Ratios		N/A	3, 5, 7, 10, 25, 50, 100		N/A	N/A	
All Ratios Available		1-stage: 3, 4, 5, 7, 10 2-stage: 12, 16, 20, 25, 35, 40, 50, 70, 100 3-stage: 120, 160, 200, 250, 350, 490, 700, 1000					
Nominal Output Torque (T <sub>2n</sub> )	Nm (lb-in)	3:1	5 (44)	20 (177)	40 (354)	100 (885)	100 (885)
		4, 5, 7:1	6.5 (58)	26 (230)	54 (478)	120 (1062)	120 (1062)
		10, 100, 1000:1	5 (44)	16 (142)	40 (354)	105 (929)	105 (929)
		12:1	14 (124)	36 (319)	80 (708)	170 (1505)	170 (1505)
		all other ratios	16 (142)	42 (372)	100 (885)	210 (1859)	210 (1859)
Max Accel. Torque (T <sub>2B</sub> )	Nm (lb-in)	3:1	10 (89)	36 (319)	70 (620)	180 (1593)	180 (1593)
		4, 5, 7:1	13 (115)	44 (389)	100 (885)	200 (1770)	200 (1770)
		10, 100, 1000:1	10 (89)	24 (212)	75 (664)	180 (1593)	180 (1593)
		12:1	17.5 (155)	45 (398)	100 (885)	215 (1903)	215 (1903)
		all other ratios	20 (177)	52 (460)	125 (1106)	255 (2257)	255 (2257)
Emergency Output Torque (T <sub>2not</sub> )	Nm (lb-in)	3:1	20 (177)	72 (637)	160 (1416)	200 (1770)	200 (1770)
		4, 5, 7:1	26 (230)	84 (743)	216 (1912)	480 (4248)	480 (4248)
		10, 100, 1000:1	20 (177)	62 (549)	160 (1416)	410 (3629)	410 (3629)
		12:1	28 (248)	72 (637)	160 (1416)	400 (3540)	400 (3540)
		all other ratios	32 (283)	84 (743)	216 (1912)	480 (4248)	480 (4248)
Nominal Speed (n <sub>1n</sub> )	RPM	-	3500	3500	3000	2500	2500
Max Input Speed (n <sub>1max</sub> )		6000	6000	6000	5000	5000	
Standard Output Backlash (j)	arcmin	1-stage	< 20	< 10	< 10	< 8	< 8
		2-stage	< 24	< 14	< 14	< 12	< 12
		3-stage	< 30	< 18	< 18	< 16	< 16
Allowable Radial Load (F <sub>rad</sub> ) <sup>1)</sup>	N (lbs)	-	375 (84)	450 (101)	900 (203)	2175 (489)	2175 (489)
Allowable Axial Load (F <sub>axial</sub> )	N (lbs)	-	300 (68)	420 (95)	650 (146)	1375 (309)	1375 (309)
Torsional Stiffness (C <sub>21</sub> )	Nm/arcmin (lb-in/arc-min)	10,100,1000	Contact GAM	1.3 (11.5)	3.4 (30.1)	8.3 (73.5)	8.3 (73.5)
		7,70,700	Contact GAM	1.7 (15)	4.8 (42.5)	13.6 (120.4)	13.6 (120.4)
		all other ratios	Contact GAM	2.4 (21.2)	7.1 (62.8)	17.2 (152.2)	17.2 (152.2)
Weight (m)	kg (lbs)	1-stage	0.4 (0.88)	1.0 (2.2)	2.3 (5.1)	5.8 (12.8)	5.8 (12.8)
		2-stage	0.5 (1.1)	1.3 (2.9)	3.1 (6.8)	7.9 (17.4)	7.9 (17.4)
		3-stage	0.6 (1.32)	1.6 (3.5)	3.9 (8.6)	10.0 (22.1)	10.0 (22.1)
Noise Level (L <sub>pa</sub> )	dB(A)	-	< 60	< 66	< 68	< 70	< 70
Mass Moment of Inertia (J <sub>1</sub> )	kg cm <sup>2</sup> (lb-in <sup>2</sup> )	3:1	0.0144 (0.005)	0.45 (0.154)	1.37 (0.468)	6.54 (2.235)	6.54 (2.235)
		4:1, 12:1, 16:1	0.0096 (0.003)	0.38 (0.130)	1.14 (0.390)	4.8 (1.640)	4.8 (1.640)
		5:1, 20:1, 25:1	0.0096 (0.003)	0.36 (0.123)	1.05 (0.359)	4.05 (1.384)	4.05 (1.384)
		7:1, 35:1	0.0152 (0.005)	0.35 (0.120)	0.97 (0.331)	3.4 (1.162)	3.4 (1.162)
		10:1, 40:1 - 100:1	0.0078 (0.003)	0.34 (0.116)	0.93 (0.318)	3.1 (1.059)	3.1 (1.059)
		120:1 - 1000:1	0.0078 (0.003)	0.34 (0.116)	0.93 (0.318)	3.12 (1.066)	3.12 (1.066)
Efficiency at Load	1-stage: 94% 2-stage: 92% 3-stage: 90%						
Service Life	> 30,000 hours						
Lubrication	Mineral Grease EPO						
Protection Rating	IP 64						
Operating Temperature Range	-20°C to 90°C						

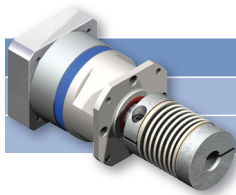
1) Load applied at center of output shaft @100 RPM

# EPL-X



NEMA-X Series		17		23		34		42		56	
		mm	(in)	mm	(in)	mm	(in)	mm	(in)	mm	(in)
D1 <sub>max standard</sub> *	motor shaft diameter	11	(0.433)	14	(0.551)	19	(0.748)	24	(0.945)	24	(0.945)
D1 <sub>max available</sub> *	motor shaft diameter	-	(-)	16	(0.63)	24	(0.945)	32	(1.26)	32	(1.26)
D2 k6	output shaft diameter	9.525	(0.375)	12.7	(0.5)	19.050	(0.75)	25	(0.984)	25	(0.984)
D3 h7	pilot diameter	21.97	(0.865)	38.1	(1.5)	73	(2.874)	55.55	(2.187)	114.300	(4.50)
D4	bolt circle	43.8	(1.724)	66.7	(2.626)	98.400	(3.874)	125.7	(4.949)	177.800	(7.000)
D5	mounting holes	3.25	(0.128)	5	(0.197)	5.5	(0.217)	7.1	(0.28)	10.200	(0.402)
L1 1-STAGE**	gearbox total length	108	(4.252)	111	(4.37)	147	(5.787)	199	(7.835)	199	(7.835)
L1 2-STAGE**		124	(4.882)	133	(5.236)	180	(7.087)	239	(9.409)	239	(9.409)
L1 3-STAGE**		139.5	(5.492)	155	(6.102)	213	(8.386)	280	(11.024)	280	(11.024)
L2	shaft length	25.4	(1.000)	25.4	(1.000)	31.8	(1.252)	42	(1.654)	41	(1.614)
L3	key length	-	(-)	19.05	(0.75)	25.4	(1)	38	(1.496)	32	(1.26)
L4	pilot height	1.6	(0.063)	1.6	(0.063)	1.7	(0.067)	2.4	(0.094)	4	(0.157)
L5	flange thickness	4.9	(0.193)	5	(0.197)	10	(0.394)	19	(0.748)	20	(0.7874)
L6	key width	-	(-)	3.175	(0.125)	4.78	(0.188)	8	(0.315)	8	(0.315)
L7	key height / flat height	9.14	(0.36)	14.22	(0.56)	21.290	(0.838)	28	(1.102)	28	(1.102)
L8	flange size	40	(1.575)	65	(2.559)	90	(3.543)	120	(4.724)	145	(5.709)

\* for larger motor shaft diameters, please contact GAM \*\*depending on the motor, value can vary \*\*\* long motor shafts can be accommodated, but overall gearbox length will grow

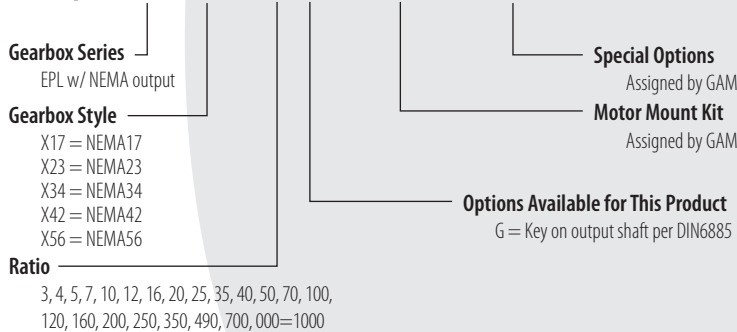


### Recommended Output Coupling (if necessary)

	KLC-25	KLC-50	KLC-125	KM-270	KM-400
metal bellows	KLC-25	KLC-50	KLC-125	KM-270	KM-400
elastomer	EKM-20	EKM-60	EKM-150	EKM-300	EKM-400

### TYPE CODES FOR EPL SERIES (EPL-X (NEMA))

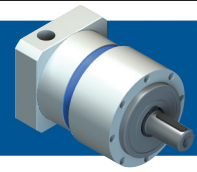
**Example: EPL - X23 - 005 G - [115 - A01] - S111**



Tolerances (mm)		
Size	k6	h7
Over 10	+0.012	0
Thru 18	+0.001	-0.018
Over 18	+0.015	0
Thru 30	+0.002	-0.021
Over 30	+0.018	0
Thru 50	+0.002	-0.025
Over 50	+0.021	0
Thru 80	+0.002	-0.030
Over 80	+0.025	0
Thru 120	+0.005	-0.035

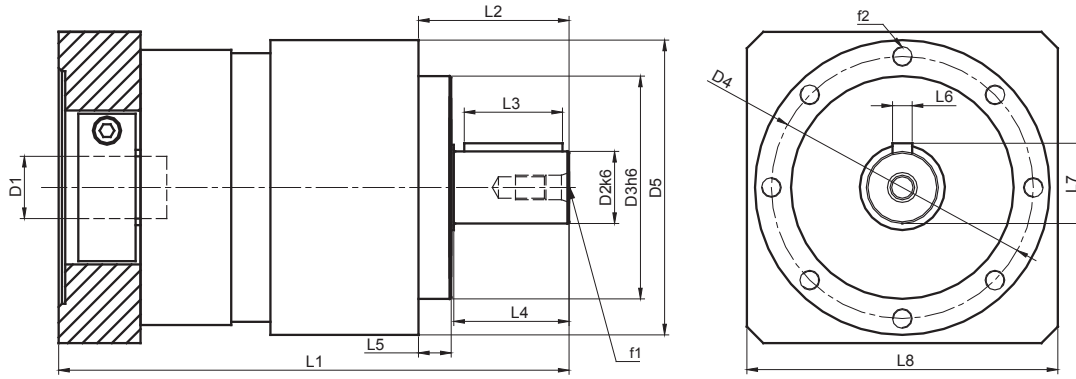


# EPL SERIES - EPL-A



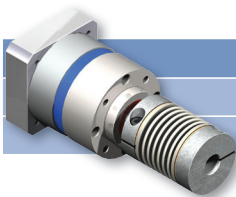
EPL-A Series		50		70		90		120		155		
All Ratios Available		1stage: 3, 4, 5, 7, 10 2stage: 12, 16, 20, 25, 35, 40, 50, 70, 100 3stage: 120, 160, 200, 250, 350, 490, 700, 1000 (Consult GAM for other ratios)										
Nominal Output Torque ( $T_{zn}$ )	Nm (lb-in)	3:1	5 (44)	20 (177)	40 (354)	100 (885)	230 (2036)					
		4, 5, 7:1	6.5 (58)	26 (230)	54 (478)	120 (1062)	310 (2744)					
		10, 100, 1000:1	5 (44)	16 (142)	40 (354)	105 (929)	180 (1593)					
		12:1	14 (124)	36 (319)	80 (708)	170 (1505)	272 (2407)					
		all other ratios	16 (142)	42 (372)	100 (885)	210 (1859)	340 (3009)					
Max Acceleration Output Torque ( $T_{2B}$ )	Nm (lb-in)	3:1	10 (89)	36 (319)	70 (620)	180 (1593)	360 (3186)					
		4, 5, 7:1	13 (115)	44 (389)	100 (885)	200 (1770)	460 (4071)					
		10, 100, 1000:1	10 (89)	24 (212)	75 (664)	180 (1593)	340 (3009)					
		12:1	17.5 (155)	45 (398)	100 (885)	215 (1903)	360 (3186)					
		all other ratios	20 (177)	52 (460)	125 (1106)	255 (2257)	460 (4071)					
Emergency Output Torque ( $T_{2not}$ )	Nm (lb-in)	3:1	20 (177)	72 (637)	160 (1416)	200 (1770)	860 (7612)					
		4, 5, 7:1	26 (230)	84 (743)	216 (1912)	480 (4248)	1000 (8851)					
		10, 100, 1000:1	20 (177)	62 (549)	160 (1416)	410 (3629)	800 (7081)					
		12:1	28 (248)	72 (637)	160 (1416)	400 (3540)	860 (7612)					
		all other ratios	32 (283)	84 (743)	216 (1912)	480 (4248)	1000 (8851)					
Nominal Speed ( $n_{1n}$ )	RPM	-	3500	3500	3000	2500	2500					
Max Speed ( $n_{1max}$ )	RPM	-	6000	6000	6000	5000	4500					
Standard Output Backlash (j)	arcmin	1stage	<16	<10	<10	<8	<8					
		2stage	<20	<14	<14	<12	<12					
		3stage	-	<18	<18	<16	<16					
Allowable Radial Load ( $F_{rad} 1$ )	N (lbs)	-	650 (146)	1550 (348)	2400 (540)	4600 (1034)	7500 (1686)					
Allowable Axial Load ( $F_{axial}$ )	N (lbs)	-	700 (158)	1450 (326)	1900 (427)	4000 (899)	6000 (1349)					
Torsional Stiffness ( $C_{21}$ )	Nm/arcmin (lbin/arcmin)	10,100,1000	0.60 (5.3)	1.3 (11.5)	3.4 (30.1)	8.3 (73.5)	22 (194.7)					
		7,70,700	0.78 (6.9)	1.7 (15)	4.8 (42.5)	13.6 (120.4)	27 (239)					
		all other ratios	0.90 (8.0)	2.4 (21.2)	7.1 (62.8)	17.2 (152.2)	33 (292.1)					
Weight (m)	kg (lbs)	1stage	0.4 (0.9)	1 (2.2)	2.3 (5.1)	5.8 (12.8)	10 (22.1)					
		2stage	0.5 (1.1)	1.3 (2.9)	3.1 (6.8)	7.9 (17.4)	12.5 (27.6)					
		3stage	-	1.6 (3.5)	3.9 (8.6)	10.0 (22.1)	15 (33.1)					
Noise Level ( $L_{pk}$ )	dB(A)	-	<64	<66	<68	<70	<72					
Mass Moment of Inertia ( $J_1$ )	kg cm <sup>2</sup> (lb-in <sup>2</sup> )	3:1	0.06 (0.021)	0.45 (0.154)	1.37 (0.468)	6.54 (2.235)	12.23 (4.179)					
		4:1, 12:1, 16:1	0.04 (0.014)	0.38 (0.13)	1.14 (0.390)	4.8 (1.640)	7.65 (2.614)					
		5:1, 20:1, 25:1	0.04 (0.014)	0.36 (0.123)	1.05 (0.359)	4.05 (1.384)	6.24 (2.132)					
		7:1, 35:1	0.04 (0.014)	0.35 (0.12)	0.97 (0.331)	3.4 (1.162)	4.7 (1.606)					
		10:1, 40:1 - 100:1	0.04 (0.014)	0.34 (0.116)	0.93 (0.318)	3.1 (1.059)	3.8 (1.299)					
		120:1 - 1000:1	0 0	0.34 (0.116)	0.93 (0.318)	3.12 (1.066)	3.9 (1.333)					
Efficiency at Load	1stage: 94% 2stage: 92% 3stage: 90%											
Service Life	> 30,000 hours											
Lubrication	Mineral Grease EPO											
Protection Rating	IP 64											
Operating Temperature Range	-20°C to 90°C											

# EPL-A



EPL-A Series		50		70		90		120		155	
		mm	(in)	mm	(in)	mm	(in)	mm	(in)	mm	(in)
D1 <sub>max standard</sub> *	motor shaft diameter	11	(0.433)	14	(0.551)	19	(0.748)	24	(0.945)	28	(1.102)
D1 <sub>max available</sub> *	motor shaft diameter	14	(0.551)	16	(0.630)	24	(0.945)	32	(1.260)	38	(1.496)
D2 k6	output shaft diameter	12	(0.472)	16	(0.630)	22	(0.866)	32	(1.260)	40	(1.575)
D3h6	pilot diameter	35	(1.378)	52	(2.047)	68	(2.677)	90	(3.543)	120	(4.724)
D4	Bolt Circle	44	(1.732)	62	(2.441)	80	(3.150)	108	(4.252)	140	(5.512)
D5	Housing Diameter	50	(1.968)	70	(2.756)	90	(3.543)	118	(4.646)	155	(6.102)
f1	Shaft Thread	M4x8		M5x17		M8x25		M12x37		M16x45	
f2	Mounting Holes	(8x) M4x6		(8x) M5x12		(8x) M6x14		(8x) M8x18		(8x) M10x24	
L1 1-STAGE**	gearbox total length	93	(3.661)	130	(5.118)	164	(6.457)	222	(8.740)	300	(11.811)
L1 2-STAGE**		109	(4.291)	152	(5.984)	196	(7.717)	263	(10.354)	341	(13.425)
L1 3-STAGE**		-	-	174	(6.850)	229	(9.016)	304	(11.968)	382	(15.039)
L2	Shaft length	24.5	(0.965)	36	(1.417)	46	(1.811)	70	(2.756)	94	(3.701)
L3	Key Length	16	(0.630)	25	(0.984)	30	(1.181)	50	(1.968)	70	(2.756)
L4	Useable Shaft Length	18	(0.709)	28	(1.102)	35	(1.378)	58	(2.283)	82	(3.228)
L5	Pilot Height	4	(0.157)	5.5	(0.217)	9	(0.354)	7	(0.276)	5.5	(0.217)
L6	Key Width	4	(0.157)	5	(0.197)	6	(0.236)	10	(0.394)	12	(0.472)
L7	Key Height	13.5	(0.531)	18	(0.709)	24.5	(0.965)	35	(1.378)	43	(1.693)
L8**	Adapter Size	50	(1.968)	70	(2.756)	90	(3.543)	120	(4.724)	150	(5.905)

\* for larger motor shaft diameters, please contact GAM    \*\*depending on the motor, value can vary    \*\*\* longer motor shafts can be accommodated, but overall gearbox length will grow



### Recommended Output Coupling (if necessary)

	KLC-25	KLC-50	KLC-125	KM-270	KM-400
metal bellows					
elastomer	EKM-20	EKM-60	EKM-150	EKM-300	EKM-400

### TYPE CODES FOR EPL SERIES (EPL-A)

**Example: EPL - A - 090 - 005 G - [115 - A01] - S111**

**Gearbox Series**

EPL w/ Popular Metric Output Dimensions

**Gearbox Style**

A= Output Shaft

**Gearbox Size**

050, 070, 090, 120, 155

**Ratio**

3, 4, 5, 7, 10, 12, 16, 20, 25, 35, 40, 50, 70, 100, 120, 160, 200, 250, 350, 490, 700, 000=1000

**Special Options**

Assigned by GAM

**Motor Mount Kit**

Assigned by GAM

**Options Available for This Product**

G = Key on output shaft per DIN6885

### Tolerances (mm)

Size	k6	h6
Over 10	+0.012	0
Thru 18	+0.001	-0.011
Over 18	+0.015	0
Thru 30	+0.002	-0.013
Over 30	+0.018	0
Thru 50	+0.002	-0.016
Over 50	+0.021	0
Thru 80	+0.002	-0.019
Over 80	+0.025	0
Thru 120	+0.005	-0.022

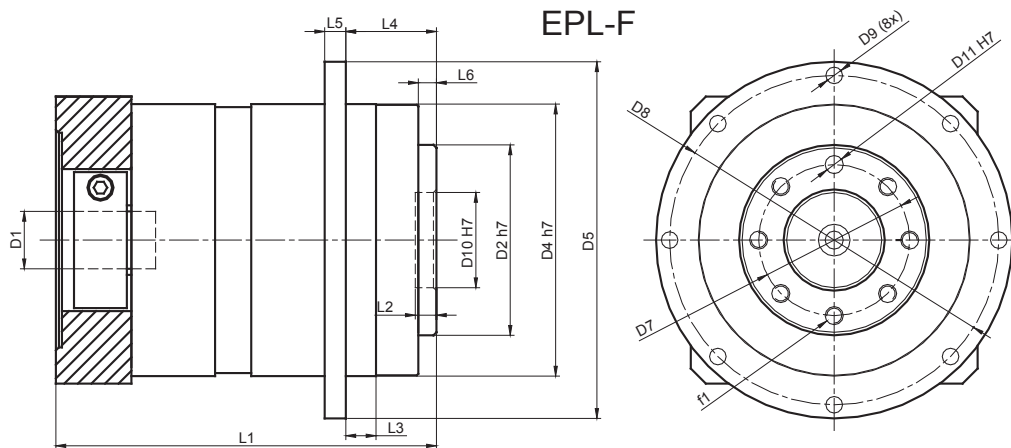




# EPL SERIES - EPL-F

EPL-F Series			64	90	110
All Ratios Available			1-Stage: 3, 4, 5, 7, 10 2-Stage: 12, 16, 20, 25, 35, 40, 50, 70, 100 3-Stage: 120, 160, 200, 250, 350, 490, 700, 1000		
Nominal Output Torque ( $T_{2n}$ )	Nm (lb-in)	3:1	20 (177)	40 (354)	100 (885)
		4, 5, 7:1	26 (230)	54 (478)	120 (1062)
		10, 100, 1000:1	16 (142)	40 (354)	105 (929)
		12:1	36 (319)	80 (708)	170 (1505)
		all other ratios	42 (372)	100 (885)	210 (1859)
Max Acceleration Output Torque ( $T_{2B}$ )	Nm (lb-in)	3:1	36 (319)	70 (620)	180 (1593)
		4, 5, 7:1	44 (389)	100 (885)	200 (1770)
		10, 100, 1000:1	24 (212)	75 (664)	180 (1593)
		12:1	45 (398)	100 (885)	215 (1903)
		all other ratios	52 (460)	125 (1106)	255 (2257)
Emergency Output Torque ( $T_{2not}$ )	Nm (lb-in)	3:1	72 (637)	160 (1416)	200 (1770)
		4, 5, 7:1	84 (743)	216 (1912)	480 (4248)
		10, 100, 1000:1	62 (549)	160 (1416)	410 (3629)
		12:1	72 (637)	160 (1416)	400 (3540)
		all other ratios	84 (743)	216 (1912)	480 (4248)
Nominal Speed ( $n_{1n}$ )	RPM	-	3500	3000	2500
Max Speed ( $n_{1max}$ )	RPM	-	6000	6000	5000
Standard Output Backlash (j)	arcmin	1stage	< 10	< 10	< 8
		2stage	< 14	< 14	< 12
		3stage	< 18	< 18	< 16
Allowable Radial Load ( $F_{rad}$ ) 1	N (lbs)	-	1200 (270)	2000 (450)	2100 (472)
Allowable Axial Load ( $F_{axial}$ )	N (lbs)	-	800 (180)	1000 (225)	1400 (315)
Torsional Stiffness ( $C_{z1}$ )	Nm/arcmin (lbin/arc-min)	10,100,1000	1.3 (11.5)	3.4 (30.1)	8.3 (73.5)
		7,70,700	1.7 (15)	4.8 (42.5)	13.6 (120.4)
		all other ratios	2.4 (21.2)	7.1 (62.8)	17.2 (152.2)
Weight (m)	kg (lbs)	1stage	1 (2.2)	2.3 (5.1)	5.8 (12.8)
		2stage	1.3 (2.9)	3.1 (6.8)	7.9 (17.4)
		3stage	3.5 (3.9)	3.9 (8.6)	10.0 (22.1)
Noise Level ( $L_{pa}$ )	dB(A)	-	<66	<68	<70
Mass Moment of Inertia ( $J_1$ )	kg cm <sup>2</sup> (lb-in <sup>2</sup> )	3:1	0.61 (0.208)	1.79 (0.612)	8.53 (2.915)
		4:1, 12:1, 16:1	0.5 (0.171)	1.47 (0.502)	6.11 (2.088)
		5:1, 20:1, 25:1	0.48 (0.164)	1.23 (0.420)	4.87 (1.664)
		7:1, 35:1	0.39 (0.133)	1.14 (0.390)	3.71 (1.268)
		10:1, 40:1 - 100:1	0.38 (0.130)	1.1 (0.376)	3.38 (1.155)
		120:1 - 1000:1	0.38 (0.130)	1.1 (0.376)	3.39 (1.158)
Efficiency at Load	1stage: 94% 2stage: 92% 3stage: 90%				
Service Life	> 30,000 hours				
Lubrication	Mineral Grease EPO				
Protection Rating	IP 64				
Operating Temperature Range	-20°C to 90°C				

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EPL-F Series		64		90		110	
		mm	(in)	mm	(in)	mm	(in)
D1 <sub>max standard</sub> *	motor shaft diameter	14	(0.551)	19	(0.748)	24	(0.945)
D1 <sub>max available</sub> *	motor shaft diameter	16	(0.630)	24	(0.945)	32	(1.260)
D2 h7	output flange diameter	40	(1.575)	63	(2.480)	80	(3.150)
D4 h7	pilot diameter	64	(2.520)	90	(3.543)	110	(4.331)
D5	flange diameter	86	(3.386)	118	(4.646)	145	(5.709)
D7	inner bolt circle	31.5	(1.240)	50	(1.968)	63	(2.480)
D8	outer bolt circle	79	(3.110)	109	(4.291)	135	(5.315)
D9	mounting hole diameter (8x)	4.5	(0.177)	5.5	(0.217)	5.5	(0.217)
D10 H7	flange pilot	20	(0.787)	31.5	(1.240)	40	(1.575)
D11 H7	dowel diameter	5	(0.197)	6	(0.236)	6	(0.236)
f1	flange tap	(7) M5x7		(7) M6x10		(7) M6x12	
L1 1-STAGE**	gearbox total length	93 (3.661)		126 (4.961)		150 (5.905)	
L1 2-STAGE**		113 (4.490)		158 (6.220)		190 (7.480)	
L1 3-STAGE**		129 (5.08)		191 (7.520)		231 (9.094)	
L2	flange pilot depth	4	(0.157)	6	(0.236)	6	(0.236)
L3	pilot height	7	(0.276)	10	(0.394)	10	(0.394)
L4	output length	19.5	(0.768)	30	(1.181)	29	(1.142)
L5	flange thickness	4	(0.157)	7	(0.276)	8	(0.315)
L6	output flange length	3	(0.118)	6	(0.236)	6	(0.236)

\* for larger motor shaft diameters, please contact GAM    \*\* depending on the motor, value can vary

### TYPE CODES FOR EPL SERIES (EPL-F)

**Example: EPL - F - 090 - 005 H - [115 - A01] - S111**

**Gearbox Series**  
EPL w/ Flange Output

**Gearbox Style**  
F = Flange Output Shaft

**Gearbox Size**  
064, 090, 110

**Ratio**  
3, 4, 5, 7, 10, 12, 16, 20, 25, 35, 40, 50, 70, 100,  
120, 160, 200, 250, 350, 490, 700, 000=1000

**Special Options**  
Assigned by GAM

**Motor Mount Kit**  
Assigned by GAM

**Options Available for This Product**  
H= No Keyways

Size	Tolerances (mm)	
	h7	H7
Over 10	0	0.018
Thru 18	-0.018	0
Over 18	0	0.021
Thru 30	-0.021	0
Over 30	0	+0.025
Thru 50	-0.025	0
Over 50	0	+0.030
Thru 80	-0.030	0
Over 80	0	+0.035
Thru 120	-0.035	0

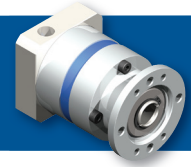
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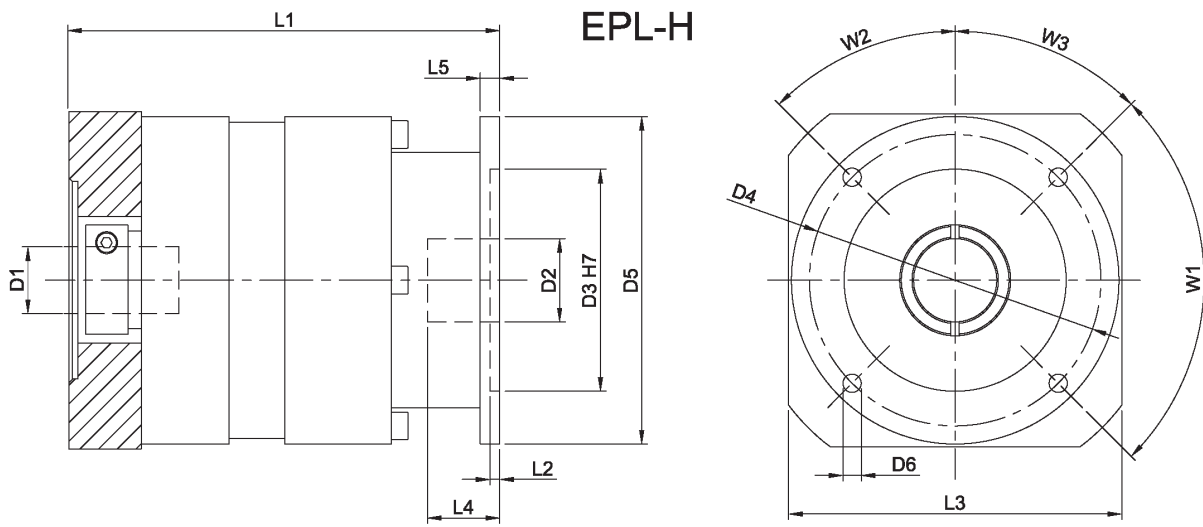
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# EPL SERIES: EPL-H



EPL Series		64	84	118	
Stock Ratios		3, 5, 7, 10, 25, 50, 100 (Standard Input)			
All Ratios Available		1-stage: 3, 4, 5, 7, 10			
		2-stage: 12, 16, 20, 25, 35, 40, 50, 70, 100			
		3-stage: 120, 160, 200, 250, 350, 490, 700, 1000			
Nominal Output Torque ( $T_{2n}$ )	Nm (lb-in)	3:1, 10:1, 100:1, 1000:1	14 (124)	40 (354)	100 (885)
		4:1, 5:1, 7:1	26 (230)	50 (443)	120 (1062)
		all other ratios	36 (319)	64 (566)	165 (1460)
Max Accel Output Torque ( $T_{2B}$ )	Nm (lb-in)	3:1, 10:1, 100:1, 1000:1	25 (221)	60 (531)	150 (1328)
		4:1, 5:1, 7:1	40 (354)	75 (664)	180 (1593)
		all other ratios	44 (389)	75 (664)	180 (1593)
Nominal Input Speed ( $n_{1n}$ )	RPM	-	3500	3000	2500
Max Input Speed ( $n_{1max}$ )	RPM	-	6000	6000	5000
Standard Output Backlash (j)	arcmin	3:1 - 10:1	< 10	< 10	< 8
		12:1 - 100:1	< 14	< 14	< 12
		120:1 - 1000:1	< 18	< 18	< 16
Weight (m)	kg (lb)	1-stage	1.0 (2.2)	2.3 (5.1)	5.8 (12.8)
		2-stage	1.3 (2.9)	3.1 (6.8)	7.9 (17.4)
		3-stage	1.6 (3.5)	3.9 (8.6)	10.0 (22.1)
Noise Level ( $L_{pA}$ )	dB (A)	-	< 66	< 68	< 70
Mass Moment of Inertia ( $J_1$ )	kg cm <sup>2</sup> (lb-in <sup>2</sup> )	3:1	0.45 (0.154)	1.37 (0.468)	6.54 (2.235)
		4:1, 12:1, 16:1	0.38 (0.130)	1.14 (0.390)	4.8 (1.640)
		5:1, 20:1, 25:1	0.36 (0.123)	1.05 (0.359)	4.05 (1.384)
		7:1, 35:1	0.35 (0.120)	0.97 (0.331)	3.4 (1.162)
		10:1, 40:1 - 100:1	0.34 (0.116)	0.93 (0.318)	3.1 (1.059)
		120:1 - 1000:1	0.34 (0.116)	0.93 (0.318)	3.12 (1.066)
Efficiency at Load		1-stage: 92% 2-stage: 90% 3-stage: 88%			
Service Life		> 20,000 hours			
Lubrication		Mineral Grease EPO			
Protection Rating		IP 64			
Operating Temperature Range		-20°C to 90°C			



EPL Series		64		84		118	
		mm	(in)	mm	(in)	mm	(in)
D1 max standard*	motor shaft diameter	14	(0.551)	19	(0.748)	24	(0.945)
D1 max available*	motor shaft diameter	16	(0.63)	24	(0.945)	32	(1.26)
D2 max	output shaft diameter	16	(0.63)	20	(0.787)	30	(1.181)
D3 H7	pilot diameter	44	(1.732)	60	(2.362)	80	(3.15)
D4	bolt circle	55.5	(2.185)	73	(2.874)	105	(4.134)
D5	flange diameter	70	(2.756)	84	(3.307)	118	(4.646)
D6	mounting holes	5.5	(0.217)	5.5	(0.217)	6.6	(0.26)
L1 1-STAGE**	gearbox total length	98.5	(3.878)	122	(4.803)	155.5	(6.122)
L1 2-STAGE**		120.5	(4.744)	155	(6.102)	196	(7.717)
L1 3-STAGE**		142.5	(5.61)	188	(7.402)	236.5	(9.311)
L2	pilot depth	3.5	(0.138)	3.5	(0.138)	3.5	(0.138)
L3	flange size	70	(2.756)	90	(3.543)	120	(4.724)
L4	allowable shaft depth	28	(1.102)	30	(1.181)	27	(1.063)
L5	flange thickness	6	(0.236)	6	(0.236)	10	(0.394)
W1	bolt hole spacing	125°		4x 90°		4x 90°	
W2	hole angle 1	27.5°		67.5°		67.5°	
W3	hole angle 2	27.5°		22.5°		22.5°	

\* for larger motor shaft diameters, please contact GAM \*\* depending on the motor, value can vary

### TYPE CODES FOR EPL SERIES (EPL-H)

**Example: EPL - H - 084 - 005 H - [115 - A01] - S111**

**Gearbox Series**

EPL w/ Linear Mount  
Output

**Gearbox Style**

H = Hollow Output Shaft

**Gearbox Size**

064, 084, 118

**Ratio**

3, 4, 5, 7, 10, 12, 16, 20, 25, 35, 40, 50, 70, 100,  
120, 160, 200, 250, 350, 490, 700, 000 = 1000

**Special Options**

Assigned by GAM

**Motor Mount Kit**

Assigned by GAM

**Options Available for This Product**

H = No Keyways

Tolerances (mm)	
Size	H7
Over 6	+0.015
Thru 10	0
Over 10	+0.018
Thru 18	0
Over 18	+0.021
Thru 30	0
Over 30	+0.025
Thru 50	0
Over 50	+0.030
Thru 80	0

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