



## PRECISION: EPL SERIES

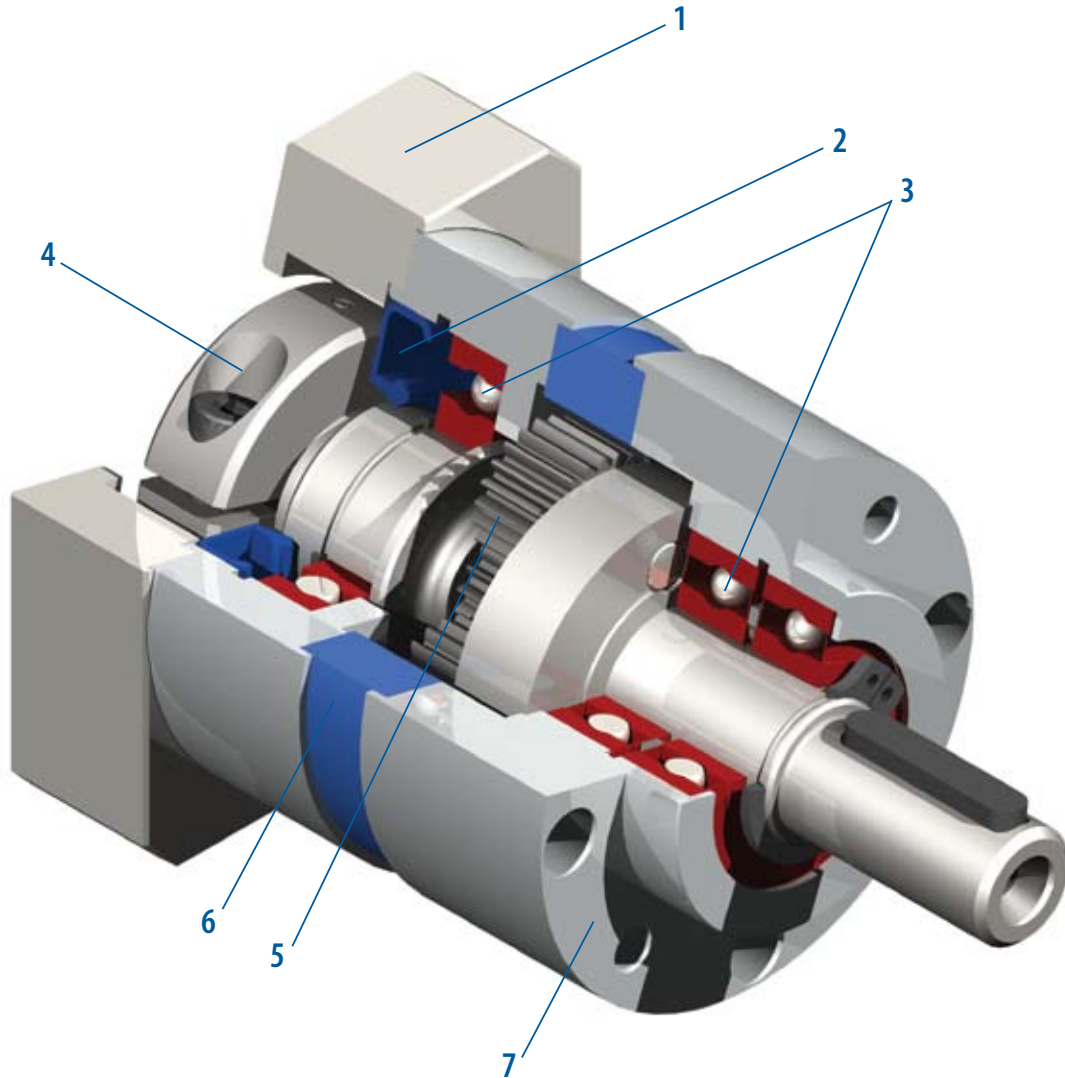
### GAM can. Just ask!

If you don't see exactly what you need, let us know. We can modify the EPL Series gearboxes to meet your needs. Page 3 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. 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 less demanding servo applications.

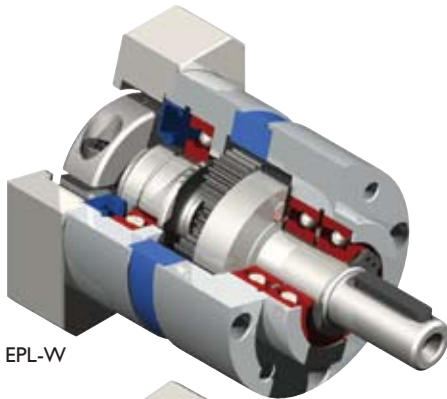
### EPL Series enhancements include:

- A 50 mm frame size in our standard shaft version (-W) that is a drop-in for many gearboxes
- Newly designed NEMA version for improved performance
- New option for larger motor shafts



- |                                                                                                                     |                                                              |
|---------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|
| <b>1. Adapter Plate</b><br>(Customized adapter plates for quick and easy motor mounting)                            | <b>4. Input Clamping Element</b>                             |
| <b>2. Seals</b><br>(Protective seals to isolate the gearbox)                                                        | <b>5. Planet Gears</b><br>(Precision honed gears)            |
| <b>3. Ball Bearings</b><br>(Single ball bearing in the EPL-H-064; dual ball bearings in all other sizes and styles) | <b>6. Ring Gear</b><br>(Ring gear incorporated into housing) |
|                                                                                                                     | <b>7. Output Face</b>                                        |

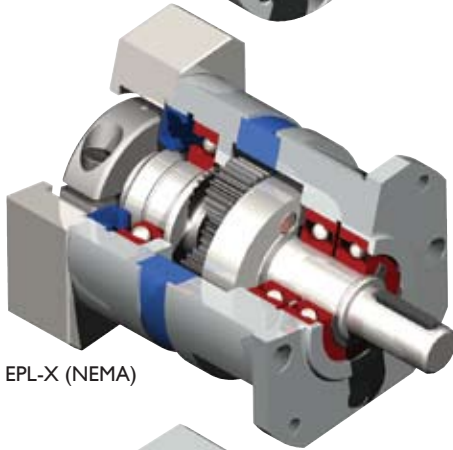
# PRECISION: EPL SERIES



EPL-W

## EPL-W

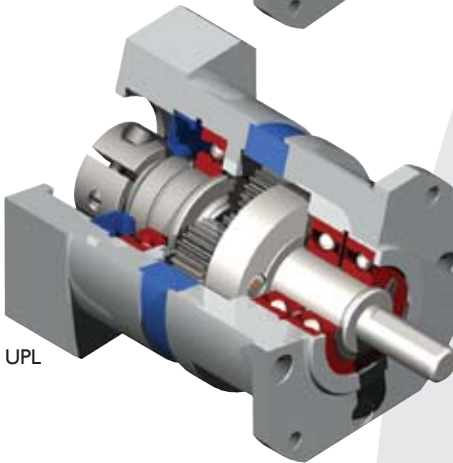
- Metric output face
- Ratios 3:1 to 1000:1
- Frame sizes from 50 mm to 150 mm
- New 50 mm frame size



EPL-X (NEMA)

## EPL-X (NEMA)

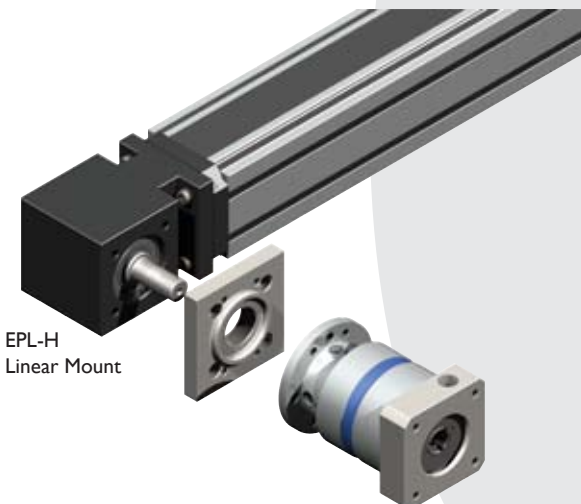
- Metric output face
- Ratios 3:1 to 1000:1
- Frame sizes from NEMA 17 to 56



UPL

## UPL

- Performance of a planetary gearbox for the price of a spur gearbox
- Fixed input for quick and easy mounting to standard NEMA 23, 34 or 42 motors
- Ratios 5:1 to 100:1



EPL-H  
Linear Mount

## 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.
- For more information on Linear Mounts, refer to page 56.



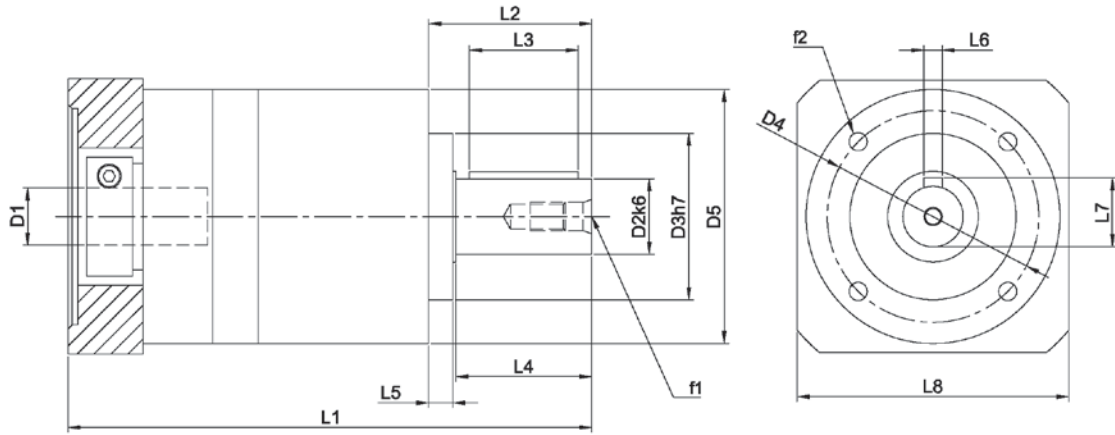
# EPL SERIES - EPL-W



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, 10, 100, 1000:1	5 (44)	3, 10, 100, 1000:1	14 (124)	40 (354)	100 (885)	165 (1460)
		4, 5, 7:1	6.5 (58)	4, 5, 7:1	26 (230)	50 (443)	120 (1062)	210 (1859)
		12:1	14 (124)	all other ratios	36 (319)	64 (566)	165 (1460)	300 (2655)
		16, 25, 35:1	16 (142)	-	-	-	-	-
		20:1	20 (177)	-	-	-	-	-
Max Acceleration Output Torque ( $T_{2B}$ )	Nm (lb-in)	3, 10, 100, 1000:1	10 (89)	3, 10, 100, 1000:1	25 (221)	60 (531)	150 (1328)	310 (2744)
		4, 5, 7:1	13 (115)	4, 5, 7:1	40 (354)	80 (708)	180 (1593)	340 (3009)
		12:1	17.5 (155)	all other ratios	55 (487)	135 (1195)	255 (2257)	410 (3629)
		16, 25, 35:1	20 (177)	-	-	-	-	-
		20:1	25 (221)	-	-	-	-	-
Emergency Output Torque ( $T_{2not}$ )	Nm (lb-in)	3, 10, 100, 1000:1	20 (177)	3, 10, 100, 1000:1	45 (398)	120 (1062)	300 (2655)	610 (5399)
		4, 5, 7:1	26 (230)	4, 5, 7:1	70 (620)	150 (1328)	360 (3186)	700 (6195)
		12:1	28 (248)	all other ratios	75 (664)	185 (1637)	480 (4248)	820 (7257)
		16, 25, 35:1	32 (283)	-	-	-	-	-
		20:1	40 (354)	-	-	-	-	-
Nominal Speed ( $n_{1n}$ )	RPM	-	3500	-	3500	3000	2500	2500
Max Speed ( $n_{1max}$ )		-	6000	-	6000	6000	5000	4000
Standard Output Backlash (j)	arcmin	1-stage	<16	3:1 - 10:1	< 10	< 10	< 8	< 8
		2-stage	<20	12:1 - 100:1	< 15	< 14	< 12	< 12
		3-stage		120:1 - 1000:1	< 20	< 18	< 16	< 16
Allowable Radial Load ( $F_{rad}$ ) <sup>1</sup>	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, 1000:1	1.3 (11.5)	3.4 (30.1)	8.3 (73.5)	22 (194.7)
		-	-	7, 49, 70, 490, 700:1	1.7 (15)	4.8 (42.5)	13.6 (120.4)	27 (239)
		-	-	all other ratios	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-stage	1.0 (2.2)	2.3 (5.1)	5.8 (12.8)	10.0 (22.1)
		2-stage	0.5 (1.1)	2-stage	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 ( $L_{pk}$ )	dB(A)	-	< 70	-	< 66	< 68	< 70	< 72
Mass Moment of Inertia ( $J_r$ )	kg cm <sup>2</sup> (lb-in <sup>2</sup> ) (lb-in <sup>2</sup> )	3, 9:1	0.015 (0.005)	3:1	0.176 (0.06)	0.542 (0.184)	2.54 (0.864)	2.54 (0.864)
		4, 12, 16:1	0.010 (0.003)	4, 12, 16:1	0.173 (0.059)	0.473 (0.161)	1.86 (0.632)	1.86 (0.632)
		5, 20, 25:1	0.080 (0.027)	5, 7, 20, 25, 35:1	0.156 (0.053)	0.407 (0.138)	1.51 (0.513)	1.51 (0.513)
		7, 35, 49:1	0.065 (0.022)	all other ratios	0.137 (0.047)	0.328 (0.112)	1.07 (0.364)	1.07 (0.364)
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							

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

# EPL-W



mm (in)		50	64	84	118	150
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	11 (0.433)	16 (0.63)	24 (0.945)	32 (1.26)	- -
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	-
f2	mounting holes	M4x6	M5x12	M6x14	M8x18	M10x22
L1 1-STAGE**	gearbox total length	93 (3.661)	117 (4.606)	162 (6.378)	199 (7.835)	265 (10.433)
L1 2-STAGE**		96 (3.78)	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	20.5 (0.807)	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

## 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 6	+0.010	0
Thru 10	+0.001	-0.015
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