



▶ HIGH PERFORMANCE: DYNA-LITE SERIES

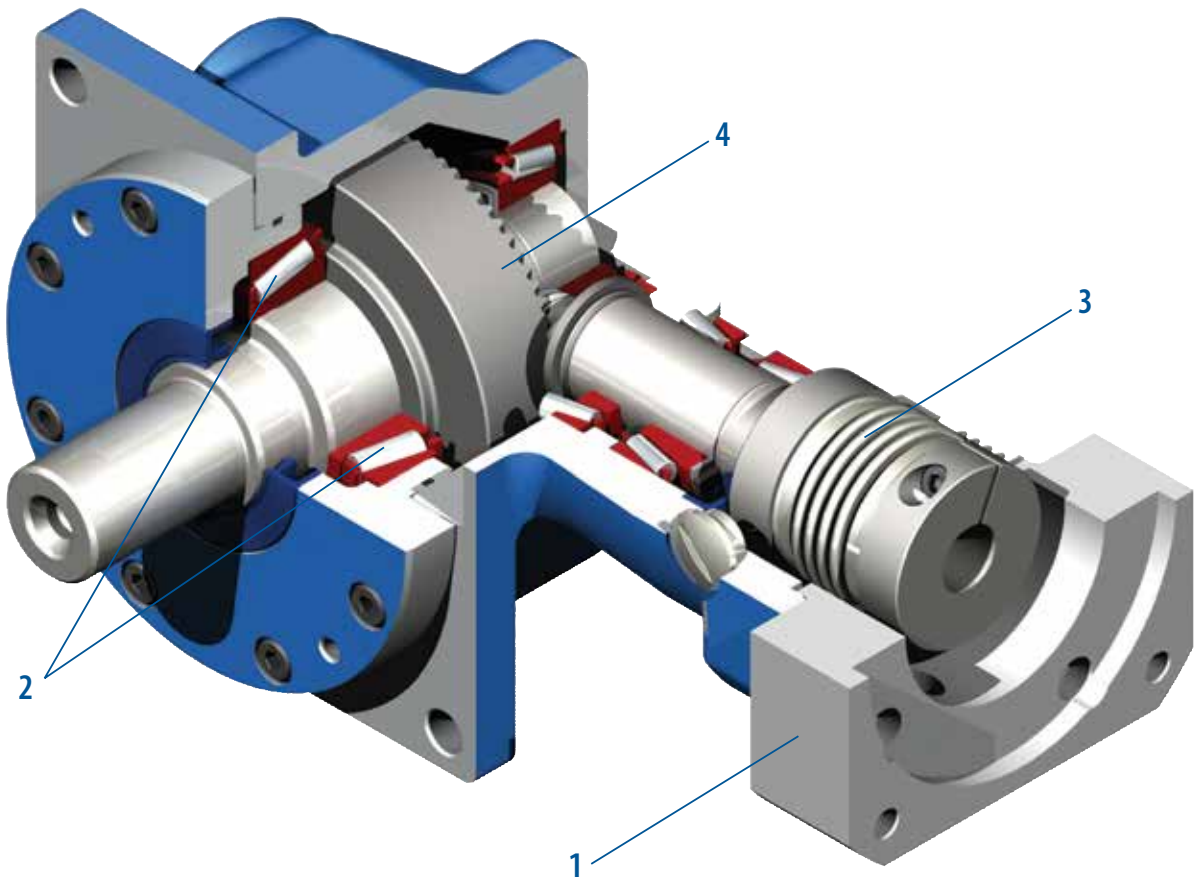
GAM can.

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

Now there's a right-angle gearbox that has the performance and price point of a precision in-line gearbox. Our redesigned Dyna-Lite Series use hypoid gearing that combines the space and configuration advantages of worm gearing with the high efficiency of bevel gearing. It is drop-in replacement for many right-angle and in-line planetary gear reducers.

Dyna-Lite Series benefits include:

- High efficiency – 96%
- Standard backlash < 6 arcmin
- Back drivable
- High radial loading
- Available in shaft output and hollow output

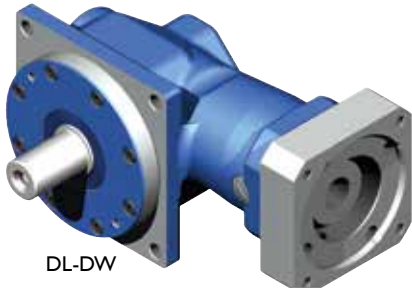


1. Adapter Plate
(Allows for quick and easy motor mounting)
2. Bearings
(Taper roller bearings allows high radial loading of output shaft)

3. Bellows Coupling
(Bellows coupling for quick motor mounting)
4. Hypoid Gearing
(Optimized gearing allows ratios up to 15:1 in a single stage; 150:1 in two stages)

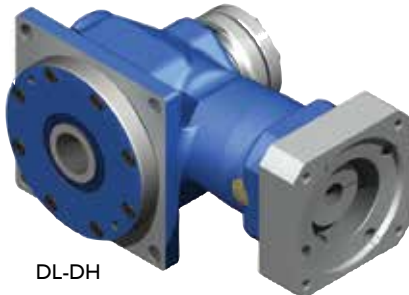


DL-DW 2-Stage Ratio
(2-Stage Ratio available on all versions)



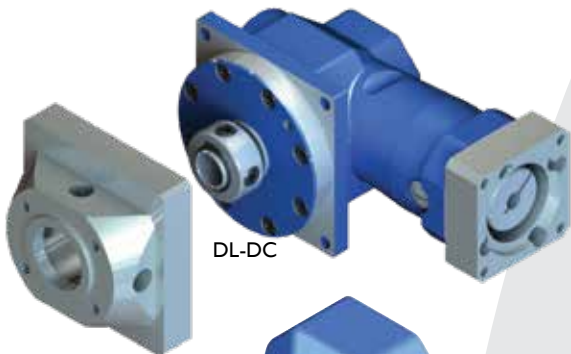
DL-DW

- Single output shaft configuration with our high performance bellow coupling
- Input and housing to mount to any servo motor
- Ratios up to 15:1 in a single stage and 150:1 in two stages
- Frame sizes: 55, 75 and 90 mm
- Drop-in for our highest precision Dyna Series



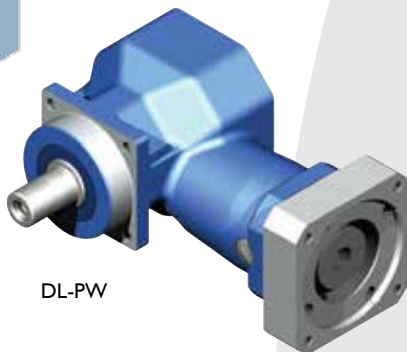
DL-DH

- Smooth hollow output shaft configuration (includes shrink disc)
- Input and housing to mount to any servo motor
- Ratios up to 15:1 in a single stage and 150:1 in two stages
- Frame sizes: 55, 75 and 90 mm
- Drop-in for our highest precision Dyna Series



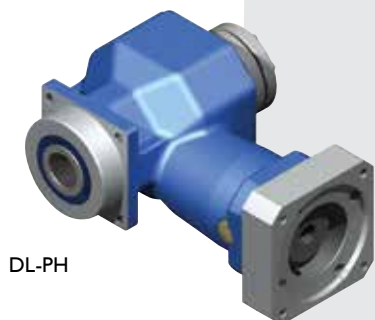
DL-DC

- Right angle hypoid gearbox with unique hollow output and zero-backlash clamping ring
- Mount directly to any linear belt or ball screw module for a compact design
- Ratios from 3:1 up to 150:1
- Frame sizes from 55mm to 90mm



DL-PW

- Single output shaft configuration with our high performance bellow coupling
- Input and housing to mount to any servo motor
- Ratios up to 15:1 in a single stage and 150:1 in two stages
- Frame sizes: 55, 75 and 90 mm
- Drop-in for many right-angle and in-line planetary gear reducers
- Rotation direction is opposite for DW and PW models.



DL-PH

- Smooth hollow output shaft configuration (includes shrink disc)



▶ DYNA-LITE SERIES - DL-D

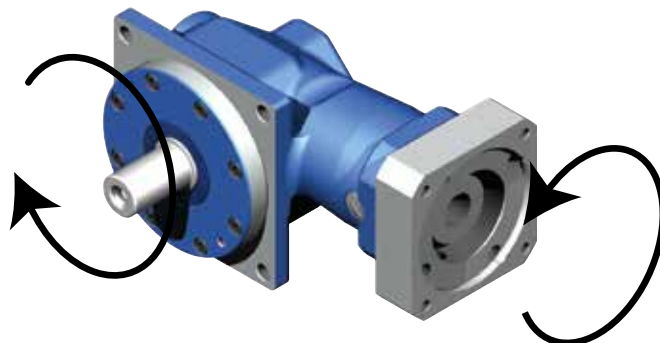


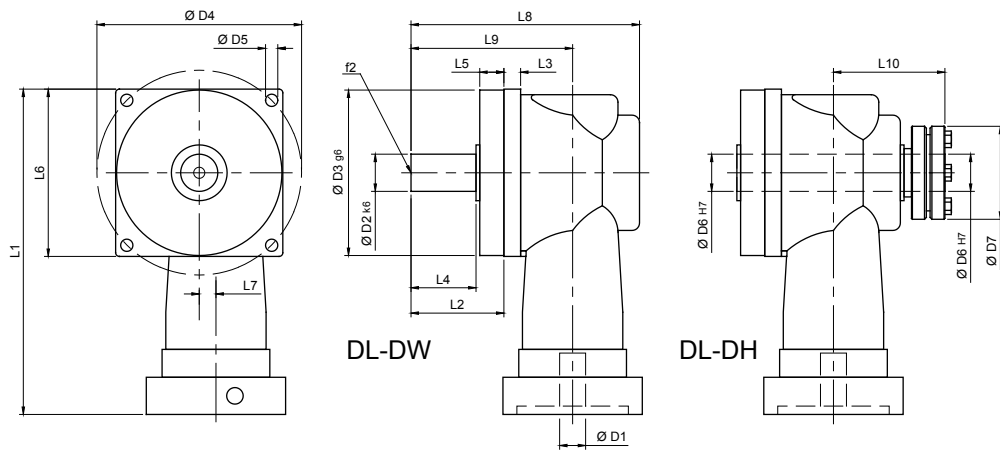
Dyna-Lite Series			55	75	90
Stock Ratios			5, 10, 25, 50, 100		
All Ratios Available*			1-stage: 5, 10, 15** 2-stage: 15**, 25, 50, 100, 150* For other ratios, consult GAM.		
Nominal Output Torque (T_{2n})	Nm (lb-in)	5:1, 10:1, 15:1 ₍₂₎ , 25:1, 50:1, 100:1	35 (310)	70 (620)	140 (1239)
		15:1 ₍₁₎ , 150:1	25 (221)	50 (443)	90 (797)
Max Acceleration Output Torque (T_{2B})	Nm (lb-in)	5:1, 10:1, 15:1 ₍₂₎ , 25:1, 50:1, 100:1	53 (469)	105 (929)	210 (1859)
		15:1 ₍₁₎ , 150:1	38 (336)	75 (664)	143 (1266)
Emergency Output Torque (T_{2not})	Nm (lb-in)	5:1, 10:1, 15:1 ₍₂₎ , 25:1, 50:1, 100:1	70 (620)	140 (1239)	280 (2478)
		15:1 ₍₁₎ , 150:1	50 (443)	100 (885)	190 (1682)
Nominal Input Speed (n_{1n})	RPM	5:1	3700	3100	2700
		10:1, 15:1 ₍₁₎	4200	3500	3000
		2-stage	3500	3000	3000
Max Input Speed (n_{1max})	RPM		6000	6000	5000
Standard Output Backlash (j)	arcmin	1-stage	< 7	< 7	< 6
		2-stage	< 9	< 9	< 8
Allowable Radial Load (F_{rad}) ¹	N (lbs)		3300 (743)	4900 (1103)	7200 (1620)
Allowable Axial Load (F_{axial})	N (lbs)		1650 (371)	2450 (551)	3600 (810)
Torsional Stiffness (C_{t21})	Nm/arcmin		1.5	4.0	10.0
	(lb-in/arcmin)		(13.28)	(35.40)	(88.51)
Weight (m)	kg (lbs)	1-stage	2.6 (5.7)	4.5 (9.9)	9 (19.8)
		2-stage	3.6 (7.9)	6.8 (15)	14.8 (32.6)
Noise Level (L_{pA})	dB(A)	1-stage	< 66	< 66	< 68
		2-stage	< 69	< 70	< 72
Mass Moment of Inertia (J_1)	kg cm ² (lb-in ²)	5:1	0.44 (0.15)	1.06 (0.36)	3.6 (1.224)
		10:1, 15:1 ₍₁₎	0.35 (0.119)	0.84 (0.286)	2.9 (0.986)
		15:1 ₍₂₎ , 25:1	0.17 (0.058)	0.45 (0.153)	1.65 (0.561)
		50:1, 100:1	0.14 (0.048)	0.34 (0.116)	1.1 (0.374)
Efficiency at Load		5,10: 96%	15:1 ₍₁₎ 93%	15 ₍₂₎ , 25, 50, 100, 150 87%	
Service Life		>15000 hours			
Lubrication		Life Time Lubrication			
Protection Rating		IP 64			
Operating Temperature Range		-10°C to 100°C (14°F to 212°F)			

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

* other ratios available

**15:1 ratio available in 1-stage and 2-stage variations





DL - DW and DL - DH		55		75		90	
		mm	(in)	mm	(in)	mm	(in)
D1 _{max (1 stage)*}	motor shaft diameter	16	(0.63)	20	(0.787)	35	(1.378)
D1 _{max (2 stage standard)*}	motor shaft diameter	14	(0.551)	19	(0.748)	19	(0.748)
D1 _{max (2 stage available)*}	motor shaft diameter	16	(0.63)	24	(0.945)	24	(0.945)
D2 k6	output shaft diameter	20	(0.787)	24	(0.945)	32	(1.26)
D3 g6	pilot diameter	89	(3.504)	105	(4.134)	125	(4.921)
D4	bolt circle	110.3	(4.343)	138.6	(5.457)	166.8	(6.567)
D5	mounting holes	6.6	(0.26)	9	(0.354)	11	(0.433)
D6 H7**	hollow bore diameter	20	(0.787)	25	(0.984)	30	(1.181)
D7	shrink disc OD (included)	50	(1.97)	60	(2.36)	72	(2.83)
L1 1-stage***	gearbox length	175	(6.89)	213.5	(8.406)	257	(10.118)
L1 2-stage***		236	(9.291)	304.5	(11.99)	336	(13.23)
L2	shaft length	50.0	(1.969)	55	(2.165)	68	(2.677)
L3	flange thickness	9	(0.354)	11	(0.433)	14	(0.551)
L4	usable shaft length	35	(1.378)	40	(1.575)	50	(1.969)
L5	pilot height	13	(0.512)	13	(0.512)	16	(0.63)
L6	flange size	90	(3.543)	115	(4.528)	140	(5.512)
L7	gear offset	9	(0.354)	14	(0.551)	18	(0.709)
L8	gearbox width	123	(4.843)	142	(5.591)	175	(6.89)
L9	shaft to centerline	87	(3.425)	100	(3.937)	126	(4.961)
L10	shrink disc to centerline	64.5	(2.539)	73.5	(2.894)	87	(3.425)
f2	shaft thread per DIN332/1	M6 x 16		M8 x 19		M12 x 28	

* for larger motor shaft diameters, please contact GAM **mating shaft should have h6 tolerance ***depending on motor, length may vary



Recommended Output Coupling (if necessary)

metal bellows	KLC-50	KLC-125	KM-270
elastomer	EKC-80	EKC-110	EKM-300

TYPE CODES FOR DYNA-LITE SERIES (DL-D)

Example: DL - DW - 075 - 005 H - [090 - 15A] - S111

Gearbox Series

DL = Dyna-Lite

Gearbox Style

DW = shaft output

DH = hollow output

Gearbox Size

055, 075, 090

Ratio

5, 10, 15, 25, 50, 100, 150

Special Options

Assigned by GAM

Motor Mount Kit

Assigned by GAM

Options Available for This Product

G = Keyed output shaft

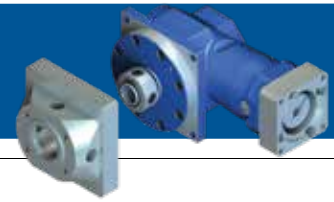
H = Smooth output shaft

Tolerances (mm)

Size	k6	g6	H7
Over 18	+0.015	-0.007	+0.021
Thru 30	+0.002	-0.020	0
Over 30	+0.018	-0.009	+0.025
Thru 50	+0.002	-0.025	0
Over 50	+0.021	-0.010	+0.030
Thru 80	+0.002	-0.029	0
Over 80	+0.025	-0.012	+0.035
Thru 120	+0.003	-0.034	0
Over 120	+0.028	-0.014	+0.040
Thru 180	+0.003	-0.039	0



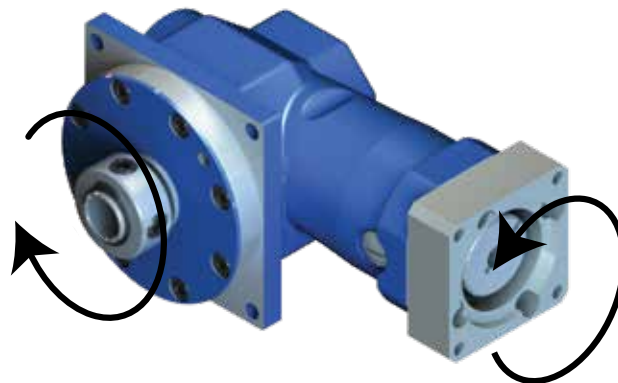
▶ DYNA-LITE SERIES - DL-DC

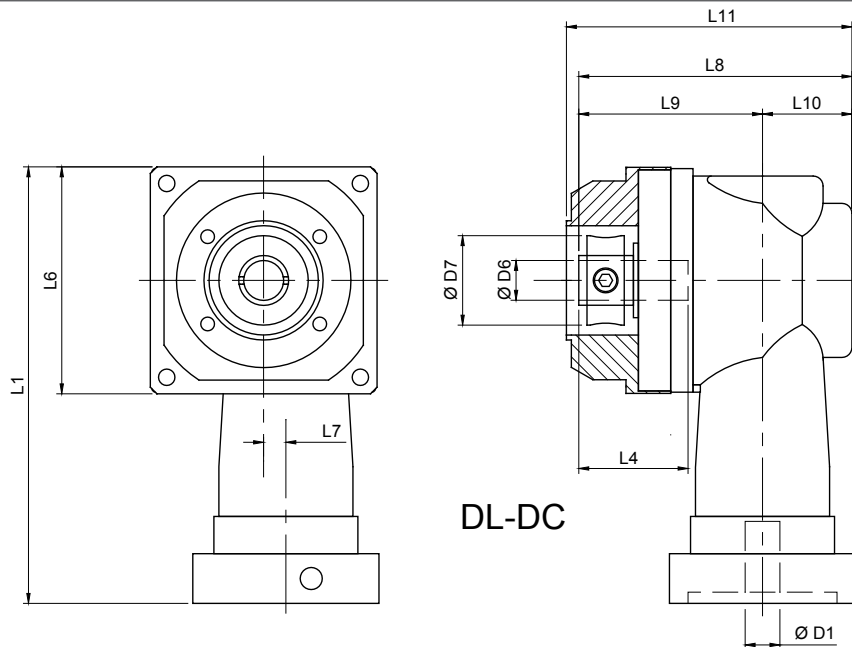


Dyna-Lite Series			55	75	90
Stock Ratios			5, 10, 25, 50, 100		
All Ratios Available*			1-stage: 5, 10, 15** 2-stage: 15**, 25, 50, 100, 150* For other ratios, consult GAM.		
Nominal Output Torque (T_{2n})	Nm (lb-in)	5:1, 10:1, 15:1 ₍₂₎ , 25:1, 50:1, 100:1	35 (310)	70 (620)	140 (1239)
		15:1 ₍₁₎ , 150:1	25 (221)	50 (443)	90 (797)
Max Acceleration Output Torque (T_{2B})	Nm (lb-in)	5:1, 10:1, 15:1 ₍₂₎ , 25:1, 50:1, 100:1	53 (469)	105 (929)	210 (1859)
		15:1 ₍₁₎ , 150:1	38 (336)	75 (664)	143 (1266)
Nominal Input Speed (n_{1n})	RPM	5:1	3700	3100	2700
		10:1, 15:1 ₍₁₎	4200	3500	3000
		2-stage	3500	3000	3000
Max Input Speed (n_{1max})	RPM		6000	6000	5000
Standard Output Backlash (j)	arcmin	1-stage	< 7	< 7	< 6
		2-stage	< 9	< 9	< 8
Torsional Stiffness (C_{t21})	Nm/arcmin		1.5	4.0	10.0
	(lb-in/arcmin)		(13.28)	(35.40)	(88.51)
Weight (m)	kg (lbs)	1-stage	2.6 (5.7)	4.5 (9.9)	9 (19.8)
		2-stage	3.6 (7.9)	6.8 (15)	14.8 (32.6)
Noise Level (L_{pA})	dB(A)	1-stage	< 66	< 66	< 68
		2-stage	< 69	< 70	< 72
Mass Moment of Inertia (J_1)	kg cm ² (lb-in ²)	5:1	0.44 (0.15)	1.06 (0.36)	3.6 (1.224)
		10:1, 15:1 ₍₁₎	0.35 (0.119)	0.84 (0.286)	2.9 (0.986)
		15:1 ₍₂₎ , 25:1	0.17 (0.058)	0.45 (0.153)	1.65 (0.561)
		50:1, 100:1	0.14 (0.048)	0.34 (0.116)	1.1 (0.374)
Efficiency at Load		5,10: 96%	15:1 ₍₁₎ 93%	15 ₍₂₎ , 25, 50, 100, 150 87%	
Service Life		>15000 hours			
Lubrication		Life Time Lubrication			
Protection Rating		IP 64			
Operating Temperature Range		-10°C to 100°C (14°F to 212°F)			

* other ratios available

**15:1 ratio available in 1-stage and 2-stage variations





DL-DC		55		75		90	
		mm	(in)	mm	(in)	mm	(in)
D1 _{max} (1 stage)*	motor shaft diameter	16	(0.63)	20	(0.787)	35	(1.378)
D1 _{max} (2 stage standard)*	motor shaft diameter	14	(0.551)	19	(0.748)	19	(0.748)
D1 _{max} (2 stage available)*	motor shaft diameter	16	(0.63)	24	(0.945)	24	(0.945)
D6 _{max}	hollow bore diameter	16	(0.63)	20	(0.787)	30	(1.181)
D7	clamping ring diameter	36	(1.417)	46	(1.811)	56	(2.205)
L1 1-stage***	gearbox length	175	(6.89)	213.5	(8.406)	257	(10.118)
L1 2-stage***		236	(9.291)	304.5	(11.99)	336	(13.23)
L4	allowable shaft length	44	(1.732)	50	(1.968)	50	(1.968)
L6	flange size	90	(3.543)	115	(4.528)	140	(5.512)
L7	gear offset	9	(0.354)	14	(0.551)	18	(0.709)
L8	gearbox width	109.5	(4.311)	126.2	(4.968)	152	(5.984)
L9	hollow shaft to centerline	73.5	(2.894)	84	(3.307)	100	(3.937)
L10	housing to centerline	36	(1.417)	42.2	(1.661)	52	(2.047)
L11**	overall width w/ adapter	115	(4.528)	131	(5.157)	154	(6.063)

* for larger motor shaft diameters, please contact GAM **depending on actuator, width may vary ***depending on motor, length may vary



TYPE CODES FOR DYNA-LITE SERIES (DL-DC)

Example: DL - DC - 075 - 005 H - [090 - 15A] - S111

Gearbox Series

DL = Dyna-Lite

Gearbox Style

DC = hollow clamp output
(Dyna Series Style Output)

Gearbox Size

055, 075, 090

Ratio

5, 10, 15, 25, 50, 100, 150

Special Options

Assigned by GAM

Motor Mount Kit

Assigned by GAM

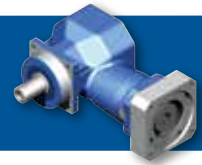
Options Available for This Product

H = Smooth output shaft

Size	Tolerances (mm)		
	k6	g6	H7
Over 18	+0.015	-0.007	+0.021
Thru 30	+0.002	-0.020	0
Over 30	+0.018	-0.009	+0.025
Thru 50	+0.002	-0.025	0
Over 50	+0.021	-0.010	+0.030
Thru 80	+0.002	-0.029	0
Over 80	+0.025	-0.012	+0.035
Thru 120	+0.003	-0.034	0
Over 120	+0.028	-0.014	+0.040
Thru 180	+0.003	-0.039	0



▶ DYNA-LITE SERIES - DL-P

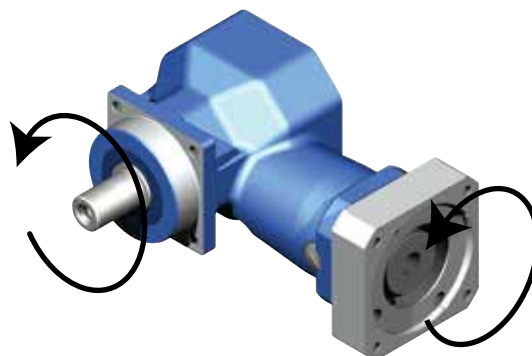


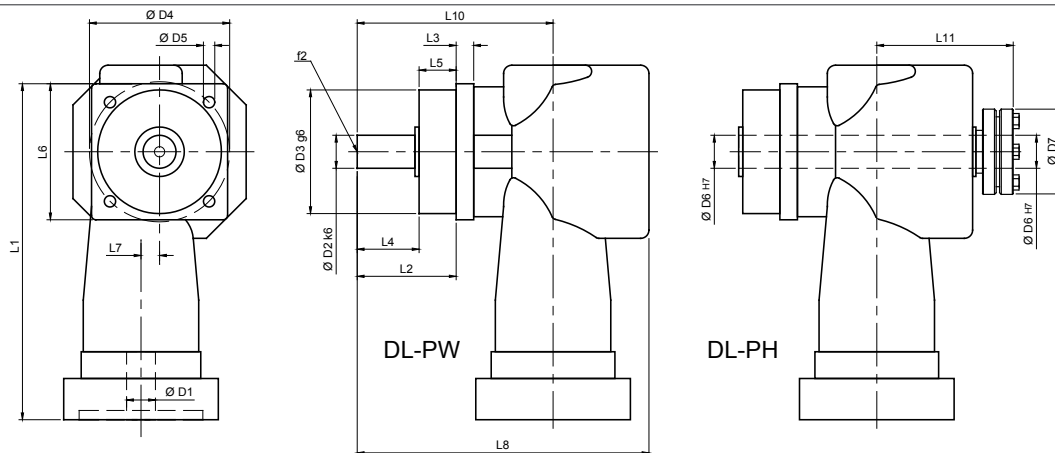
Dyna-Lite Series			55	75	90
Stock Ratios			5, 10, 25, 50, 100		
All Ratios Available*			1-stage: 5, 10, 15** 2-stage: 15**, 25, 50, 100, 150* For other ratios, consult GAM.		
Nominal Output Torque (T_{2n})	Nm (lb-in)	5:1, 10:1, 15:1 ₍₂₎ , 25:1, 50:1, 100:1	35 (310)	70 (620)	140 (1239)
		15:1 ₍₁₎ , 150:1	25 (221)	50 (443)	90 (797)
Max Acceleration Output Torque (T_{2B})	Nm (lb-in)	5:1, 10:1, 15:1 ₍₂₎ , 25:1, 50:1, 100:1	53 (469)	105 (929)	210 (1859)
		15:1 ₍₁₎ , 150:1	38 (336)	75 (664)	143 (1266)
Emergency Output Torque (T_{2not})	Nm (lb-in)	5:1, 10:1, 15:1 ₍₂₎ , 25:1, 50:1, 100:1	70 (620)	140 (1239)	280 (2478)
		15:1 ₍₁₎ , 150:1	50 (443)	100 (885)	190 (1682)
Nominal Input Speed (n_{1n})	RPM	5:1	3700	3100	2700
		10:1, 15:1 ₍₁₎	4200	3500	3000
		2-stage	3500	3000	3000
Max Input Speed (n_{1max})	RPM		6000	6000	5000
Standard Output Backlash (j)	arcmin	1-stage	< 7	< 7	< 6
		2-stage	< 9	< 9	< 8
Allowable Radial Load (F_{rad}) ¹⁾	N (lbs)		2200 (495)	4050 (911)	6200 (1395)
Allowable Axial Load (F_{axial})	N (lbs)		1100 (248)	2025 (456)	3100 (698)
Torsional Stiffness (C_{271})	Nm/arcmin		1.5	4.0	10.0
	(lb-in/arcmin)		(13.28)	(35.40)	(88.51)
Weight (m)	kg (lbs)	1-stage	2.6 (5.7)	4.5 (9.9)	9 (19.8)
		2-stage	3.6 (7.9)	6.8 (15)	14.8 (32.6)
Noise Level (L_{pA})	dB(A)	1-stage	< 66	< 66	< 68
		2-stage	< 69	< 70	< 72
Mass Moment of Inertia (J_1)	kg cm ² (lb-in ²)	5:1	0.44 (0.15)	1.08 (0.37)	3.7 (1.258)
		10:1, 15:1 ₍₁₎	0.35 (0.119)	0.84 (0.286)	2.9 (0.986)
		15:1 ₍₂₎ , 25:1	0.17 (0.058)	0.45 (0.153)	1.65 (0.561)
		50:1, 100:1	0.14 (0.048)	0.34 (0.116)	1.1 (0.374)
Efficiency at Load		5,10: 96%	15:1 ₍₁₎ 93%	15 ₍₂₎ , 25, 50, 100, 150 87%	
Service Life		>15000 hours			
Lubrication		Life Time Lubrication			
Protection Rating		IP 64			
Operating Temperature Range		-10°C to 100°C (14°F to 212°F)			

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

* other ratios available

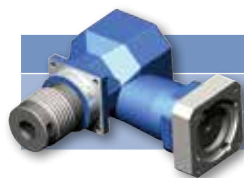
**15:1 ratio available in 1-stage and 2-stage variations





DL - PW and DL - PH		55		75		90	
		mm	(in)	mm	(in)	mm	(in)
D1 _{max} (1 stage)*	motor shaft diameter	16	(0.63)	20	(0.787)	35	(1.378)
D1 _{max} (2 stage standard)*	motor shaft diameter	14	(0.551)	19	(0.748)	19	(0.748)
D1 _{max} (2 stage available)*	motor shaft diameter	16	(0.63)	24	(0.945)	24	(0.945)
D2 k6	output shaft diameter	16	(0.63)	22	(0.866)	32	(1.26)
D3 g6	pilot diameter	60	(2.362)	70	(2.756)	90	(3.543)
D4	bolt circle	68	(2.677)	85	(3.346)	120	(4.724)
D5	mounting holes	5.5	(0.217)	6.6	(0.26)	9	(0.354)
D6 H7**	hollow bore diameter	15	(0.591)	20	(0.787)	30	(1.181)
D7	shrink disc OD (included)	44	(1.732)	50	(1.969)	72	(2.835)
L1 1-stage***	gearbox length	172	(6.772)	206	(8.11)	249.5	(9.823)
L1 2-stage***		236	(9.291)	304.5	(11.99)	336	(13.23)
L2	shaft length	48.0	(1.89)	56	(2.205)	80	(3.15)
L3	flange thickness	8.5	(0.335)	10	(0.394)	13	(0.512)
L4	usable shaft length	28	(1.102)	36	(1.417)	58	(2.283)
L5	pilot height	18	(0.709)	18	(0.709)	20	(0.787)
L6	flange size	66	(2.598)	76	(2.992)	101	(3.976)
L7	gear offset	9	(0.354)	14	(0.551)	18	(0.709)
L8	gearbox width	141.5	(5.571)	166	(6.535)	216	(8.504)
L10	shaft to centerline	95	(3.740)	110	(4.331)	148	(5.827)
L11	shrink disc to centerline	estimated 70	(2.756)	estimated 86	(3.386)	estimated 108	(4.252)
F2	shaft thread per DIN332/1	M6 x 16		M8 x 19		M12x28	

* for larger motor shaft diameters, please contact GAM **mating shaft should have h6 tolerance ***depending on motor, length may vary



Recommended Output Coupling (if necessary)

metal bellows	KLC-50	KLC-125	KM-270
elastomer	EKC-80	EKC-110	EKM-300

TYPE CODES FOR DYNA-LITE SERIES (DL-P)

Example: DL - PW - 075 - 005 H - [090 - 15A] - S111

Gearbox Series

DL = Dyna-Lite

Gearbox Style

PW = shaft output

PH = hollow output

Gearbox Size

055, 075, 090

Ratio

5, 10, 15, 25, 50, 100, 150

Special Options

Assigned by GAM

Motor Mount Kit

Assigned by GAM

Options Available for This Product

G = Keyed output shaft

H = Smooth output shaft

Tolerances (mm)

Size	k6	g6	H7
Over 18	+0.015	-0.007	+0.021
Thru 30	+0.002	-0.020	0
Over 30	+0.018	-0.009	+0.025
Thru 50	+0.002	-0.025	0
Over 50	+0.021	-0.010	+0.030
Thru 80	+0.002	-0.029	0
Over 80	+0.025	-0.012	+0.035
Thru 120	+0.003	-0.034	0
Over 120	+0.028	-0.014	+0.040
Thru 180	+0.003	-0.039	0