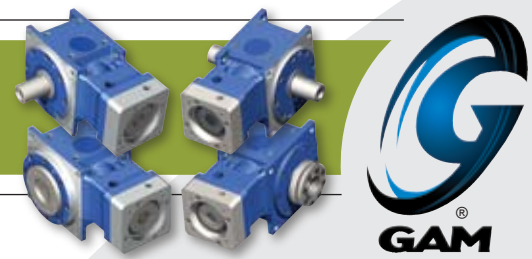
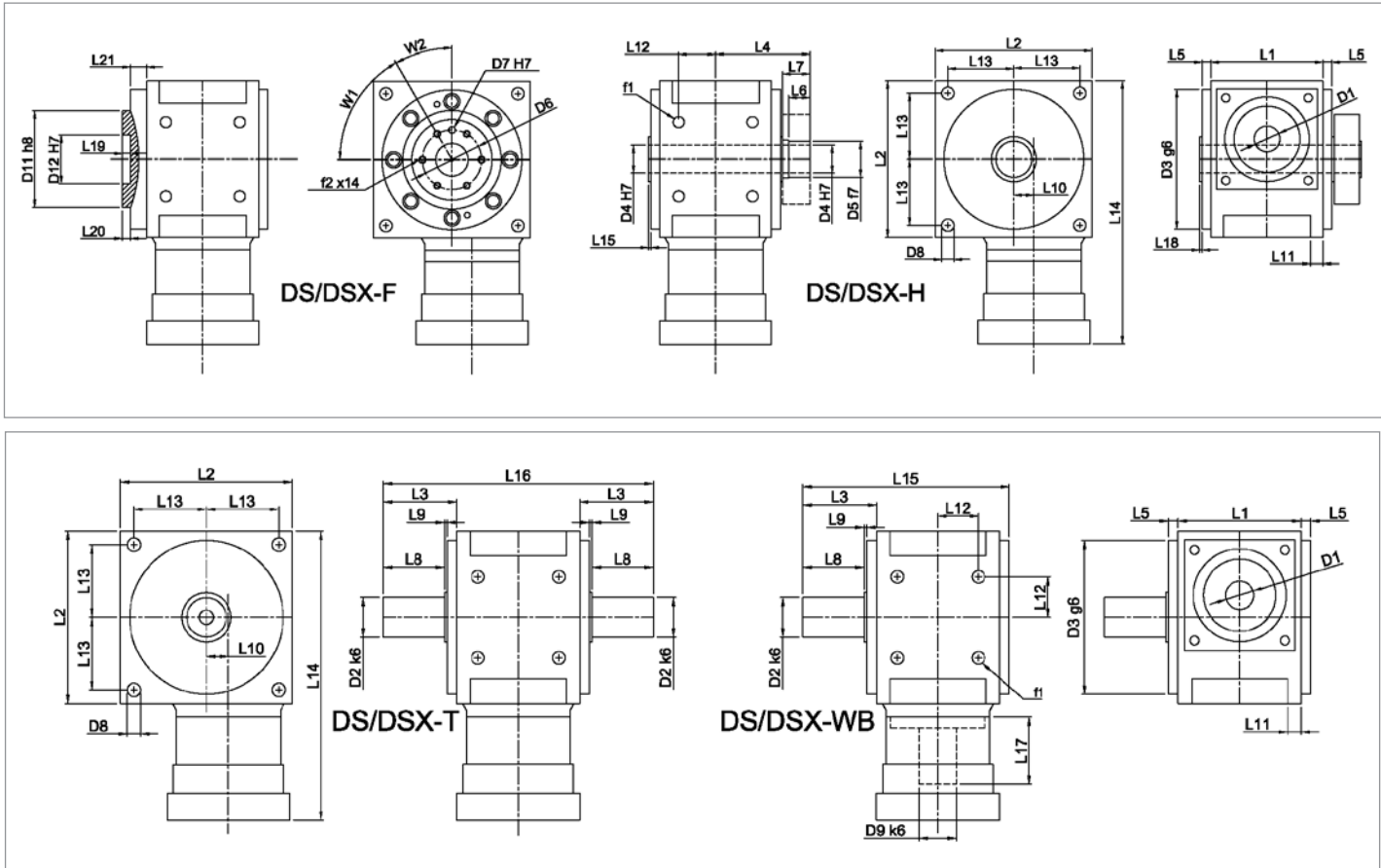


# ▶ HIGHEST PRECISION: DYNA SERIES



Dyna Series		55	75	90	115	130	140	160	190	
Stock Ratios <sup>1)</sup>		3, 5, 10, 15, 30, 50, 100			3, 5, 10, 15				N/A	
All Ratios Available		1-stage: 3, 4, 5, 6, 8, 10, 12, 15			2-stage: 30, 40, 50, 70, 100		3-stage: consult GAM			
Thermal Limit <sup>2)</sup> (N)	kW	3:1, 4:1	2.4	3.8	5.1	7.4	-	11.5	-	17.5
		5:1, 6:1, 8:1	1.9	3.0	4.1	5.9	-	9.1	-	14.1
		10:1	1.6	2.5	3.4	4.9	-	7.7	-	11.6
		12:1	1.3	2.2	2.9	4.2	-	6.6	-	10.1
		15:1	1.0	1.7	2.2	3.3	-	5.1	-	7.8
Nominal Output Torque (T <sub>2n</sub> )	Nm (lb-in)	12:1, 15:1	20 (177)	40 (354)	75 (664)	145 (1283)	300 (2655)	410 (3629)	815 (7213)	810 (7169)
		all other ratios	35 (310)	70 (620)	140 (1239)	260 (2301)	430 (3806)	720 (6372)	1100 (9735)	1440 (12744)
Max Acceleration Output Torque (T <sub>2B</sub> )	Nm (lb-in)	12:1, 15:1	32 (283)	60 (531)	115 (1018)	220 (1947)	450 (3983)	615 (5443)	1223 (10824)	1230 (10886)
		all other ratios	53 (469)	105 (929)	210 (1859)	390 (3452)	645 (5708)	1080 (9558)	1650 (14603)	2160 (19116)
Emergency Output Torque (T <sub>2not</sub> )	Nm (lb-in)	12:1, 15:1	50 (443)	100 (885)	190 (1682)	360 (3186)	600 (5310)	1020 (9027)	1630 (14426)	2040 (18054)
		all other ratios	70 (620)	140 (1239)	280 (2478)	520 (4602)	860 (7611)	1440 (12744)	2200 (19470)	2880 (25488)
Nominal Input Speed (n <sub>i</sub> )	RPM	3:1 - 15:1	6000	6000	5000	4000	3000	3000	2500	2500
		30:1 - 100:1	3000	3000	3200	3200	2900	2800	2600	2500
Max Input Speed (n <sub>imax</sub> )	RPM	3:1 - 15:1	8000	8000	7000	6000	5000	5000	4500	4500
		30:1 - 100:1	6000	6000	6000	6000	6000	6000	5000	4500
Standard Output Backlash (j)	arcmin	3:1 - 15:1	<5	<5	<4	<4	<4	<4	<4	<4
		30:1 - 100:1	<7	<7	<6	<6	<6	<6	<6	<6
Reduced Output Backlash (j)	arcmin	3:1 - 15:1	<3	<3	<2	<2	<2	<2	<2	<2
		30:1 - 100:1	<4	<4	<3	<3	<3	<3	<3	<3
DSX Precision Output Backlash <sup>3)</sup> (j)	arcmin	3:1 - 15:1	<1	<1	<1	<1	<1	<1	<1	<1
		30:1 - 100:1	<3	<3	<2	<2	<2	<2	<2	<2
DSX Noise Level	dB	-	<64	<64	<66	<66	<67	<67	<69	<69
Noise Level (L <sub>PA</sub> )	dB	-	<66	<66	<68	<68	<70	<70	<72	<72
Allowable Radial Load <sup>4)</sup> (F <sub>rad</sub> )	N (lb)	-	3300 (743)	4900 (1103)	7200 (1620)	10000 (2250)	12000 (2700)	15000 (3375)	20000 (4500)	22500 (5063)
Allowable Axial Load (F <sub>axial</sub> )	N (lb)	-	1650 (371)	2450 (551)	3600 (810)	5000 (1125)	6000 (1350)	7500 (1688)	9000 (2025)	11250 (2531)
Torsional Stiffness (C <sub>21</sub> ) <sup>5)</sup>	Nm/arcmin (lb-in/arcmin)	-	3.5 (31)	7 (62)	17.5 (155)	39 (345)	70 (620)	103 (912)	155 (1372)	210 (1859)
Weight (m)	kg (lbs)	3:1 - 15:1	3.5 (7.7)	5.5 (12.1)	9.5 (20.9)	15.5 (34.2)	23.5 (51.8)	32.5 (71.7)	46.5 (102.5)	60 (132.3)
		30:1 - 100:1	3.5 (7.7)	6 (13.2)	9.9 (21.8)	16.4 (36.2)	-	30.2 (66.6)	-	52.5 (115.8)
Mass Moment of Inertia (J <sub>r</sub> )	kg cm <sup>2</sup>	3:1, 4:1	0.39 (0.13)	0.98 (0.33)	2.42 (0.83)	7.12 (2.43)	14.03 (4.79)	26.96 (9.2)	52.32 (17.86)	91.47 (31.22)
		5:1, 6:1	0.23 (0.08)	0.58 (0.2)	1.41 (0.48)	4 (1.37)	7.12 (2.43)	13.53 (4.62)	24.76 (8.45)	44.29 (15.12)
	(lb-in <sup>2</sup> )	8:1 - 15:1	0.17 (0.06)	0.43 (0.15)	1.12 (0.38)	2.85 (0.97)	5.09 (1.74)	8.95 (3.05)	15.67 (5.35)	27.07 (9.24)
		30:1 - 100:1	0.16 (0.05)	0.18 (0.06)	0.41 (0.14)	0.49 (0.17)	-	0.97 (0.33)	-	3.78 (1.29)
Efficiency at Load	3:1 - 10:1 > 96%    12:1, 15:1 > 93%    30:1 - 100:1 > 92%									
Service Life	>30,000 hours									
Lubrication	Synthetic Oil: ISO VG 100									
Protection Rating	IP 64									
Operating Temperature Range	-10°C to 90°C									

1) Stock ratios listed are available in Standard AND Reduced Backlash. 2) Nominal torque and speed values listed are for gear tooth ratings. Use thermal limit for continuous operation. 3) DSX Precision ground gearing for quieter and smoother operation, improved accuracy, and repeatability. 4) Load applied at center of output shaft @ 100 RPM. 5) Stiffness values relate to DS-W version only. Stiffness for DS-H,F may vary slightly- contact GAM for values.



Dyna Series		55		75		90		115		130		140		160		190	
		mm	(in)	mm	(in)	mm	(in)	mm	(in)	mm	(in)	mm	(in)	mm	(in)	mm	(in)
D1 <sub>max 1-stage*</sub>	input shaft diameter	21	(0.827)	21	(0.827)	30	(1.181)	43	(1.693)	54	(2.126)	54	(2.126)	54	(2.126)	54	(2.126)
D1 <sub>max 2-stage*</sub>		14	(0.551)	14	(0.551)	24	(0.945)	24	(0.945)	-	-	30	(1.181)	-	-	35	(1.378)
D3 g6	pilot diameter	89	(3.504)	105	(4.134)	125	(4.921)	150	(5.906)	173	(6.811)	195	(7.677)	225	(8.858)	245	(9.646)
D8	mounting hole diameter	6.6	(0.26)	9	(0.354)	11	(0.433)	14	(0.551)	14	(0.551)	17.5	(0.689)	17.5	(0.689)	17.5	(0.689)
D9 k6	gearbox input shaft dia	14	(0.551)	18	(0.709)	22	(0.866)	28	(1.102)	30	(1.181)	32	(1.26)	36	(1.417)	40	(1.575)
f1	mounting hole thread	M6		M8		M10		M12		M12		M16		M16		M16	
L1	housing width	60	(2.362)	80	(3.15)	100	(3.937)	120	(4.724)	138	(5.433)	146	(5.748)	166	(6.535)	196	(7.717)
L2	housing size	90	(3.543)	115	(4.528)	140	(5.512)	170	(6.693)	192	(7.559)	215	(8.465)	240	(9.449)	260	(10.236)
L5	pilot height	13.5	(0.531)	8.5	(0.335)	8	(0.315)	8	(0.315)	10	(0.394)	10	(0.394)	10	(0.394)	10	(0.394)
L10	hypoid offset	9	(0.354)	14	(0.551)	18	(0.709)	23	(0.906)	27	(1.063)	32	(1.26)	38	(1.496)	42	(1.654)
L11	flange thickness	8	(0.315)	10	(0.394)	11	(0.433)	13	(0.512)	14	(0.551)	15	(0.591)	16	(0.63)	17	(0.669)
L12	hole location	22	(0.866)	27	(1.063)	33	(1.299)	40	(1.575)	48	(1.89)	52	(2.047)	60	(2.362)	70	(2.756)
L13	hole location	39	(1.535)	49	(1.929)	59	(2.323)	72	(2.835)	82	(3.228)	91	(3.583)	103	(4.055)	112	(4.409)
L14 <sub>1-stage**</sub>	input length	181	(7.126)	219	(8.622)	250.5	(9.862)	286.5	(11.28)	356	(14.016)	363.5	(14.311)	428	(16.85)	439	(17.283)
L14 <sub>2-stage**</sub>		229.5	(9.035)	262	(10.315)	247.5	(9.744)	280	(11.024)	-	-	372	(14.646)	-	-	591	(23.268)
L17	input shaft length	20	(0.787)	26	(1.024)	43	(1.693)	48	(1.89)	51	(2.008)	55	(2.165)	59	(2.323)	62	(2.441)

\* for larger shaft diameters consult GAM \*\* depending on motor, length may vary

DS/DSX-F, DS/DSX-H		55		75		90		115		130		140		160		190	
		mm	(in)	mm	(in)	mm	(in)	mm	(in)	mm	(in)	mm	(in)	mm	(in)	mm	(in)
D4 H7 **	hollow bore	20	(0.787)	25	(0.984)	30	(1.181)	40	(1.575)	48	(1.89)	55	(2.165)	60	(2.362)	70	(2.756)
D5 f7	hollow outer diameter	24	(0.945)	30	(1.181)	36	(1.417)	50	(1.969)	55	(2.165)	68	(2.677)	75	(2.953)	80	(3.15)
D6	flange bolt circle	40	(1.575)	50	(1.969)	63	(2.48)	80	(3.15)	80	(3.15)	100	(3.937)	100	(3.937)	125	(4.921)
D7 H7	locating hole diameter	6	(0.236)	6	(0.236)	6	(0.236)	8	(0.315)	8	(0.315)	8	(0.315)	8	(0.315)	10	(0.394)
D11 h8	flange pilot (OD)	50	(1.969)	63	(2.48)	80	(3.15)	100	(3.937)	100	(3.937)	125	(4.921)	125	(4.921)	160	(6.299)
D12 H7	flange pilot (ID)	25	(0.984)	31.5	(1.24)	40	(1.575)	50	(1.969)	50	(1.969)	63	(2.48)	63	(2.48)	80	(3.15)
f2	flange tapped holes	7 x M6		7 x M6		7 x M6		11 x M8		11 x M8		11 x M8		11 x M8		11 x M10	
L4	hollow hub length	73	(2.874)	81	(3.189)	95	(3.74)	109	(4.291)	121	(4.764)	129	(5.079)	139	(5.472)	161	(6.339)
L6	hub length	20	(0.787)	22	(0.866)	26	(1.024)	29	(1.142)	32	(1.26)	32	(1.26)	34	(1.339)	34	(1.339)
L7	shoulder + hub length	23	(0.906)	25	(0.984)	29	(1.142)	33	(1.299)	37	(1.457)	37	(1.457)	40	(1.575)	40	(1.575)
L18	shoulder height	1.5	(0.059)	1.5	(0.059)	2	(0.079)	2	(0.079)	2	(0.079)	2	(0.079)	2	(0.079)	2	(0.079)
L19	inner flange pilot depth	6.5	(0.256)	6.5	(0.256)	6.5	(0.256)	8.5	(0.335)	8.5	(0.335)	8.5	(0.335)	8.5	(0.335)	10.5	(0.413)
L20	outer flange pilot height	6.5	(0.256)	6.5	(0.256)	6.5	(0.256)	8.5	(0.335)	8.5	(0.335)	8.5	(0.335)	8.5	(0.335)	8.5	(0.335)
L21	pilot height	20	(0.787)	15.5	(0.61)	17	(0.669)	20	(0.787)	20	(0.787)	17.5	(0.689)	17.5	(0.689)	22.5	(0.886)
W1	hole angle 1	45°		45°		45°		30°		30°		30°		30°		30°	
W2	hole angle 2	45°		45°		45°		30°		30°		30°		30°		30°	

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

DS/DSX-W, DS/DSX-T		55		75		90		115		130		140		160		190	
		mm	(in)	mm	(in)	mm	(in)	mm	(in)	mm	(in)	mm	(in)	mm	(in)	mm	(in)
D2 k6	output shaft diameter	20	(0.787)	24	(0.945)	32	(1.26)	40	(1.575)	48	(1.89)	55	(2.165)	60	(2.362)	70	(2.756)
L3	output shaft length	50	(1.969)	50	(1.969)	60	(2.362)	70	(2.756)	87	(3.425)	102	(4.016)	112	(4.409)	122	(4.803)
L8	usable shaft length	35	(1.378)	40	(1.575)	50	(1.969)	60	(2.362)	75	(2.953)	90	(3.543)	100	(3.937)	110	(4.331)
L9	shoulder height	1.5	(0.059)	1.5	(0.059)	2	(0.079)	2	(0.079)	2	(0.079)	2	(0.079)	2	(0.079)	2	(0.079)
L15	gearbox width	123.5	(4.862)	138.5	(5.453)	168	(6.614)	198	(7.795)	235	(9.252)	258	(10.157)	288	(11.339)	328	(12.913)
L16	gearbox width	160	(6.299)	180	(7.087)	220	(8.661)	260	(10.236)	312	(12.283)	350	(13.78)	390	(15.354)	440	(17.323)

\* for larger shaft diameters consult GAM \*\* depending on motor, length may vary

Recommended Output Coupling (if necessary)								
metal bellows	KM-60	KM-170	KM-270	KM-400	KM-900	KM-1300	KSD-2500	KSD-2500
elastomer	EKM-60	EKM-150	EKM-300	EKM-500	EKM-700	EKM-1000	-	-

### TYPE CODES FOR DYNA SERIES

Example: DS - W B - 090 - 005 G - [115-201] - S111

**Gearbox Series**  
DS = Dyna Series  
DSX = Dyna Series Extreme

**Gearbox Style**  
W = Single output shaft  
T = Dual output shaft  
H = Hollow output shaft  
F = Flange output

**Input Type**  
B = Bellows coupling input  
E = Elastomer coupling input  
L = Shaft input

**Gearbox Size**  
055, 075, 090, 115, 130, 140, 160, 190

**Ratio**  
003, 004, 005, 006, 008, 010,  
012, 015, 030, 040, 050, 070, 100

**Special Options**  
Assigned by GAM

**Motor Mount Kit**  
Assigned by GAM

Options Available for This Product

OPTION	LOW	OUTPUT
A=	Y	N
C=	Y	Y
G=	N	Y
H=	N	N

Options C and G N/A for DS-F/H models.

Size	Tolerances (mm)					
	k6	g6	h8	f7	H7	h6
Over 6	+0.010	-0.005	0	-0.013	+0.015	0
Thru 10	+0.001	-0.014	-0.022	-0.028	0	-0.009
Over 10	+0.012	-0.006	0	-0.016	+0.018	0
Thru 18	+0.001	-0.017	-0.027	-0.034	0	-0.011
Over 18	+0.015	-0.007	0	-0.02	+0.021	0
Thru 30	+0.002	-0.020	-0.033	-0.041	0	-0.013
Over 30	+0.018	-0.009	0	-0.025	+0.025	0
Thru 50	+0.002	-0.025	-0.039	-0.05	0	-0.016
Over 50	+0.021	-0.010	0	-0.03	+0.030	0
Thru 80	+0.002	-0.029	-0.046	-0.06	0	-0.019