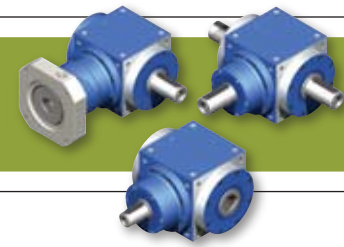




# ▶ HPS SERIES: HPS-W, HPS-T/R, HPS-H



High Power Series		54	75	90	110	140	170	
Ratios Available		1, 1.5, 2, 3, 4, 5						
Thermal limit (N)	kW	2.8	5.5	7.4	10.8	16.1	23.4	
Nominal Output Torque ( $T_{2n}$ ) <sup>1)</sup>	Nm (lb-in)	1:1 X	17 (150)	87 (770)	135 (1195)	290 (2567)	625 (5531)	1020 (9027)
		1:1	12 (106)	45 (398)	78 (690)	150 (1328)	360 (3186)	585 (5177)
		1.5:1	12 (106)	48 (425)	82 (726)	186 (1646)	411 (3637)	666 (5894)
		2:1	12 (106)	42 (372)	68 (602)	150 (1328)	330 (2921)	544 (4814)
		3:1	12 (106)	33 (292)	54 (478)	120 (1062)	270 (2390)	450 (3983)
		4:1, 5:1	- -	25 (221)	40 (354)	85 (752)	196 (1735)	320 (2832)
Max Acceleration Output Torque ( $T_{2B}$ )	Nm (lb-in)	1:1 X	- -	131 (1159)	203 (1797)	435 (3850)	938 (8301)	1530 (13541)
		1:1	- -	68 (602)	117 (1035)	225 (1991)	540 (4779)	878 (7770)
		1.5:1	- -	72 (637)	123 (1089)	279 (2469)	617 (5460)	999 (8841)
		2:1	- -	63 (558)	102 (903)	225 (1991)	495 (4381)	816 (7222)
		3:1	- -	50 (443)	81 (717)	180 (1593)	405 (3584)	675 (5974)
		4:1, 5:1	- -	38 (336)	60 (531)	128 (1133)	294 (2602)	480 (4248)
Max Input Speed ( $n_{1max}$ )	RPM	1:1 X	-	3000	2500	2000	2000	1500
		all other ratios	8000	6500	5500	4500	3500	3000
Standard Backlash (j)	arcmin	-	<16	<15	<14	<13	<13	<12
Reduced Backlash (j)	arcmin	-	<8	<6	<6	<6	<6	<6
Allowable Radial Load ( $F_{rad}$ ) <sup>2)</sup>	N (lbs)	1:1 X	- -	2000 (450)	2700 (608)	4500 (1013)	7500 (1688)	11000 (2475)
		all other ratios	375 (84)	1100 (248)	1600 (360)	2500 (563)	4500 (1013)	6000 (1350)
Allowable Axial Load ( $F_{axial}$ )	N (lbs)	1:1 X	- -	1000 (225)	1350 (304)	2250 (506)	3750 (844)	5500 (1238)
		all other ratios	185 (42)	550 (124)	800 (180)	1250 (281)	2250 (506)	3000 (675)
Weight (m) <sup>3)</sup>	kg (lbs)	-	2 (4)	4.5 (10)	8 (18)	13 (29)	22 (49)	38.5 (85)
Noise Level ( $L_{pk}$ )	dB	-	--	70	74	76	77	78
Efficiency at Load	> 98%							
Service Life	> 15,000 hours							
Lubrication	Synthetic ISO VG 150							
Protection Rating	IP 64							
Maximum Temperature	100°C							

1) Nominal torque value calculated from fatigue life of gears. Verify the thermal limit.

Thermal limit > Output Torque(Nm) \* Output Speed / 9549 or Output Torque(lb-in) \* Output Speed / 84509

The thermal limit may be increased through the use of several options. Please consult GAM for more information.

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

3) Weights listed are without motor mount assembly.

# ▶ HPS SERIES: HPS-W, HPS-T/R, HPS-H



High Power Series		210	240	280	360	450
Ratios Available		1, 1.5, 2, 3, 4, 5				
Thermal limit (N)	kW	28.6	45.3	60.3	83	127
Nominal Output Torque ( $T_{2n}$ ) <sup>1)</sup>	Nm (lb-in)	2050 (18143)	3350 (29648)	5200 (46020)	5800 (51330)	10400 (92040)
		1300 (11505)	2150 (19028)	3200 (28320)	3750 (33188)	6600 (58410)
		1530 (13541)	2430 (21506)	3900 (34515)	3550 (31418)	7000 (61950)
		1220 (10797)	2010 (17789)	3050 (26993)	3500 (30975)	7000 (61950)
		1020 (9027)	1650 (14603)	2850 (25223)	3350 (29648)	7000 (61950)
		740 (6549)	1210 (10709)	2000 (17700)	- -	- -
Max Acceleration Output Torque ( $T_{2a}$ )	Nm (lb-in)	3075 (27214)	5025 (44471)	7800 (69030)	- -	- -
		1950 (17258)	3225 (28541)	4800 (42480)	- -	- -
		2295 (20311)	3645 (32258)	5850 (51773)	- -	- -
		1760 (15576)	3015 (26683)	4575 (40489)	- -	- -
		1530 (13541)	2475 (21904)	4275 (37834)	- -	- -
		1110 (9824)	1815 (16063)	3000 (26550)	- -	- -
Max Input Speed ( $n_{1max}$ )	RPM	1200	1200	1000	-	-
		2200	2000	1700	1500	-
Standard Backlash (j)	arcmin	< 12	< 12	< 11	<11	<10
Reduced Backlash (j)	arcmin	< 6	< 6	< 6	<7	<6
Allowable Radial Load ( $F_{rad}$ ) <sup>2)</sup>	N (lbs)	16000 (3600)	21000 (4725)	30000 (6750)	- -	- -
		10500 (2363)	15000 (3375)	18000 (4050)	25000 (5625)	35000 (7875)
Allowable Axial Load ( $F_{axial}$ )	N (lbs)	8000 (1800)	10500 (2363)	15000 (3375)	- -	- -
		5250 (1181)	7500 (1688)	9000 (2025)	12500 (2813)	17500 (3938)
Weight (m) <sup>3)</sup>	kg (lbs)	71 (157)	103.5 (228)	155 (342)	- -	- -
Noise Level ( $L_{pk}$ )	dB	80	82	83	-	-
Efficiency at Load		> 98%				
Service Life		> 15,000 hours				
Lubrication		Synthetic ISO VG 150				
Protection Rating		IP 64				
Maximum Temperature		100°C				

1) Nominal torque value calculated from fatigue life of gears. Verify the thermal limit.

Thermal limit > Output Torque(Nm) \* Output Speed / 9549 or Output Torque(lb-in) \* Output Speed / 84509

The thermal limit may be increased through the use of several options. Please consult GAM for more information.

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

3) Weights listed are without motor mount assembly.



# ▶ HPS SERIES: HPS-W, HPS-T/R, HPS-H

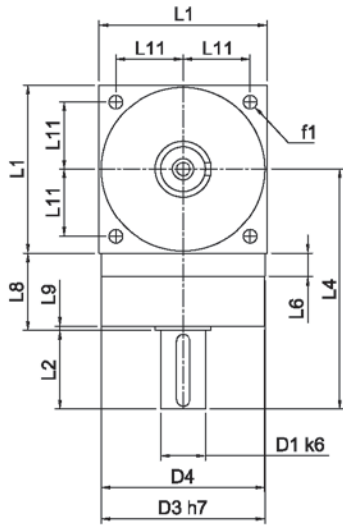
mm (in)		54	75	90	110	140	170
D1 & D2 k6	shaft diameter	11 (0.433)	16 (0.63)	18 (0.709)	22 (0.866)	32 (1.26)	40 (1.575)
	shaft key size	-	5 x 5 x 25	6 x 6 x 28	6 x 6 x 32	10 x 8 x 45	12 x 8 x 50
D1 & D2 k6 *	shaft diameter (HPX)	-	20 (0.787)	25 (0.984)	35 (1.378)	40 (1.575)	50 (1.969)
D3 h7	pilot diameter	53 (2.087)	73 (2.874)	88 (3.465)	108 (4.252)	135 (5.315)	165 (6.496)
D4	housing diameter	52.8 (2.079)	72 (2.835)	86 (3.386)	106 (4.173)	104 (4.094)	128 (5.039)
D5 H7 **	hollow diameter	-	14 (0.551)	18 (0.709)	22 (0.866)	32 (1.26)	40 (1.575)
	hollow key size	-	5 x 5	6 x 6	6 x 6	8 x 7	12 x 8
f1	mounting holes	M5	M6	M6	M8	M10	M12
f2	shaft thread	-	M5	M6	M8	M12	M16
L1	housing size	54 (2.126)	75 (2.953)	90 (3.543)	110 (4.331)	140 (5.512)	170 (6.693)
L2	input shaft length	23 (0.906)	30 (1.181)	35 (1.378)	40 (1.575)	50 (1.969)	60 (2.362)
L3	output shaft length	23 (0.906)	30 (1.181)	35 (1.378)	40 (1.575)	50 (1.969)	60 (2.362)
L4	input length	95 (3.74)	120 (4.724)	135 (5.315)	155 (6.102)	180 (7.087)	215 (8.465)
L5	output length	60 (2.362)	84 (3.307)	97 (3.819)	112 (4.409)	167 (6.575)	162 (6.378)
L6	input pilot height	10 (0.394)	15 (0.591)	15 (0.591)	15 (0.591)	15 (0.591)	15 (0.591)
L7	output pilot height	8.0 (0.315)	14.5 (0.571)	15 (0.591)	15 (0.591)	15 (0.591)	15 (0.591)
L8	input housing length	43.0 (1.693)	52.5 (2.067)	55 (2.165)	60 (2.362)	60 (2.362)	70 (2.756)
L9/L10	shoulder thickness	2 (0.079)	2 (0.079)	2 (0.079)	2 (0.079)	2 (0.079)	2 (0.079)
L11	hole location	22 (0.866)	30 (1.181)	36 (1.417)	44 (1.732)	55 (2.165)	67 (2.638)
L12 ***	input mounting length	-	155 (6.102)	167 (6.575)	198 (7.795)	238 (9.37)	279 (10.984)

\* HPX dimensions vary slightly from HPS. Consult GAM for exact dimensions. \*\* Mating shaft should have g6 tolerance \*\*\*Depending on motor, length may change

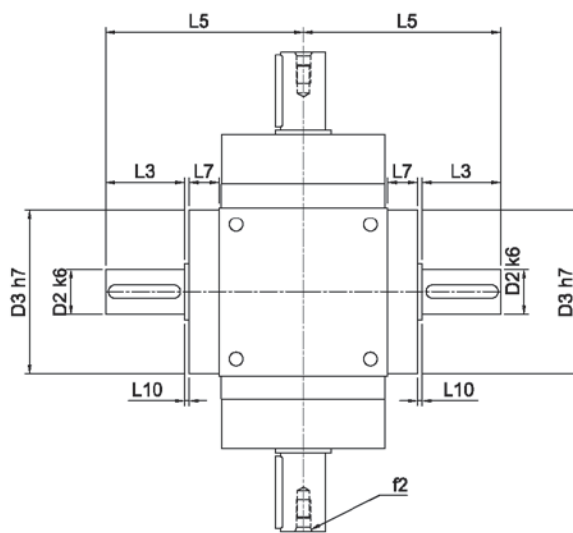
mm (in)		210	240	280	360	450 (1:1 - 2:1)	450 (3:1+)
D1 & D2 k6	shaft diameter	50 (1.969)	55 (2.165)	60 (2.362)	75 (2.953)	90 (3.543)	75 (2.953)
	shaft key size	14 x 9 x 70	16 x 10 x 80	18 x 11 x 100	-	-	-
D1 & D2 k6 *	shaft diameter (HPX)	60 (2.362)	70 (2.756)	80 (3.15)	-	-	-
D3 h7	pilot diameter	205 (8.071)	235 (9.252)	275 (10.827)	350 (13.78)	440 (17.323)	440 (17.323)
D4	housing diameter	160 (6.299)	180 (7.087)	200 (7.874)	210 (8.268)	250 (9.843)	210 (8.268)
D5 H7 **	hollow diameter	50 (1.969)	55 (2.165)	60 (2.362)	-	-	-
	hollow key size	14 x 9	16 x 10	18 x 11	-	-	-
f1	mounting holes	M16	M16	M16	M20	M20	M20
f2	shaft thread	M16	M20	M20	-	-	-
L1	housing size	210 (8.268)	240 (9.449)	280 (11.024)	360 (14.173)	450 (17.717)	450 (17.717)
L2	input shaft length	75 (2.953)	85 (3.346)	110 (4.331)	120 (4.724)	160 (6.299)	120 (4.724)
L3	output shaft length	75 (2.953)	85 (3.346)	110 (4.331)	120 (4.724)	160 (6.299)	160 (6.299)
L4	input length	265 (10.433)	300 (11.811)	360 (14.173)	445 (17.52)	570 (22.441)	530 (20.866)
L5	output length	202 (7.953)	231 (9.094)	276 (10.866)	325 (12.795)	410 (16.142)	410 (16.142)
L6	input pilot height	20 (0.787)	25 (0.984)	25 (0.984)	22 (0.866)	22 (0.866)	22 (0.866)
L7	output pilot height	20 (0.787)	25 (0.984)	25 (0.984)	22 (0.866)	22 (0.866)	22 (0.866)
L8	input housing length	85 (3.346)	95 (3.74)	110 (4.331)	145 (5.709)	185 (7.283)	185 (7.283)
L9/L10	shoulder thickness	2 (0.079)	2 (0.079)	2 (0.079)	3 (0.118)	3 (0.118)	3 (0.118)
L11	hole location	85 (3.346)	95 (3.74)	110 (4.331)	140 (5.512)	175 (6.89)	175 (6.89)
L12 ***	input mounting length	347 (13.661)	382 (15.039)	442 (17.402)	-	-	-

\* HPX dimensions vary slightly from HPS. Consult GAM for exact dimensions. \*\* Mating shaft should have g6 tolerance \*\*\*Depending on motor, length may change

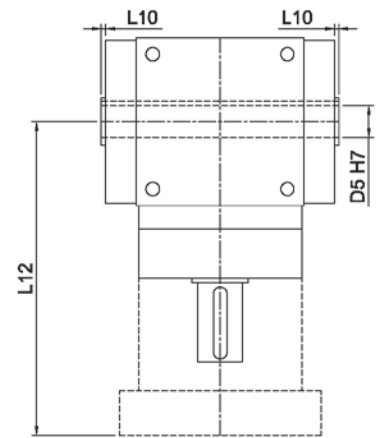
## HPS-W



## HPS-T/R



## HPS-H



### Recommended Output Coupling (HPS models only)

metal bellows	KM-12	KLC-50	KLC-125	KM-270	KM-550	KM-900	Consult GAM for couplings
elastomer	EKM-15	EKM-60	EKM-150	EKM-150	EKM-500	EKM-1000	

### TYPE CODES FOR HPS SERIES

**Example: HPS - WB - 090 - 002 G - [115 - 2AA] - S111**

#### Gearbox Series

High Power Series

#### Gearbox Style

H = Hollow output shaft  
 W = Single output shaft  
 T = Dual output shaft  
 R = Dual input, dual output shaft

#### Input Type

B = Bellows coupling input  
 E = Elastomer coupling input  
 L = Shaft input

#### Gearbox Size

054, 075, 090, 110, 140, 170, 210, 240, 280, 360, 450

#### Ratio

1, 1.5, 2, 3, 4, 5

#### Special Options

Assigned by GAM

#### Motor Mount Kit

Assigned by GAM

#### Options Available for This Product

	LOW	OUTPUT
OPTION	BACKLASH	KEYWAY
C=	Y	Y
G=	N	Y

#### Tolerances (mm)

Size	k6	h7	H7	g6
Over 6	+0.010	0	+0.015	-0.005
Thru 10	+0.001	-0.015	0	-0.014
Over 10	+0.012	0	+0.018	-0.006
Thru 18	+0.001	-0.018	0	-0.017
Over 18	+0.015	0	+0.021	-0.007
Thru 30	+0.002	-0.021	0	-0.020
Over 30	+0.018	0	+0.025	-0.009
Thru 50	+0.002	-0.025	0	-0.025
Over 50	+0.021	0	+0.030	-0.010
Thru 80	+0.002	-0.030	0	-0.029