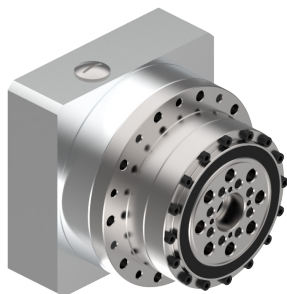


▶ GSL-CM: STRAIN WAVE GEARBOX WITH INTEGRATED MOTOR MOUNT



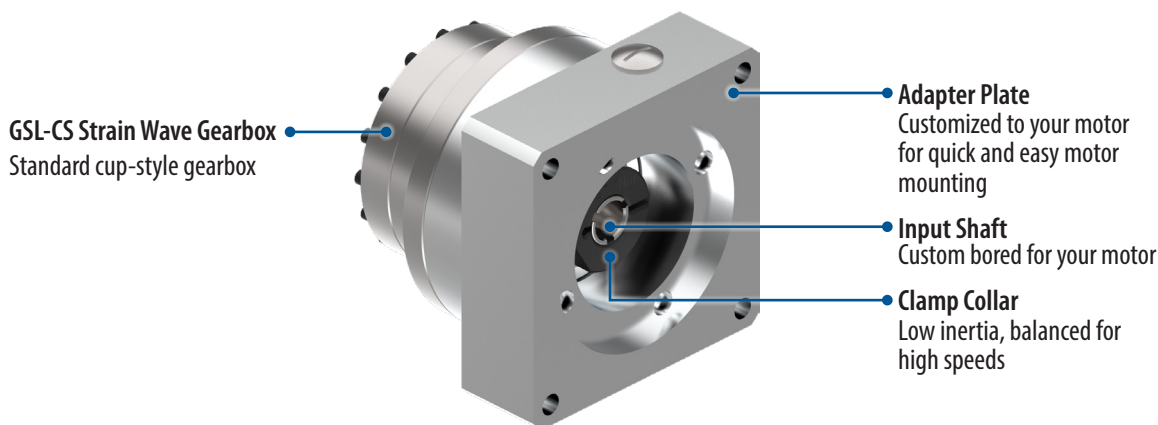
GSL-CM Series

Strain Wave Gearbox with Integrated Motor Mount

GAM's GSL Series Robotic Strain Wave Gearboxes employ harmonic gearing for zero-backlash and high torque in a small, lightweight gearbox.

The GSL-CM combines the features of the cup-style strain wave gearbox with GAM's integrated motor mount designed for your specific motor. The package includes the gearbox, adapter plate, custom bored input, and clamp collar.

The GSL-CM is available in frame sizes 014 to 032 and ratios 50:1 to 160:1.



Robotic Strain Wave Gearboxes

GAM's GSL Series Robotic Strain Wave Gearboxes employ harmonic gearing for zero-backlash and high torque in a small, lightweight gearbox.

With a simple design and multiple configurations, the GSL is easily integrated into precision robotic and motion control applications.

- Backlash of ≤ 0.5 arcmin (≤ 30 arcsec)
- Harmonic-type gearing
- High repeatability and positional accuracy for fine positioning
- High reduction ratios in a single stage: 50:1 to 160:1
- High torque density with low inertia
- Drops in for popular competitor gearboxes



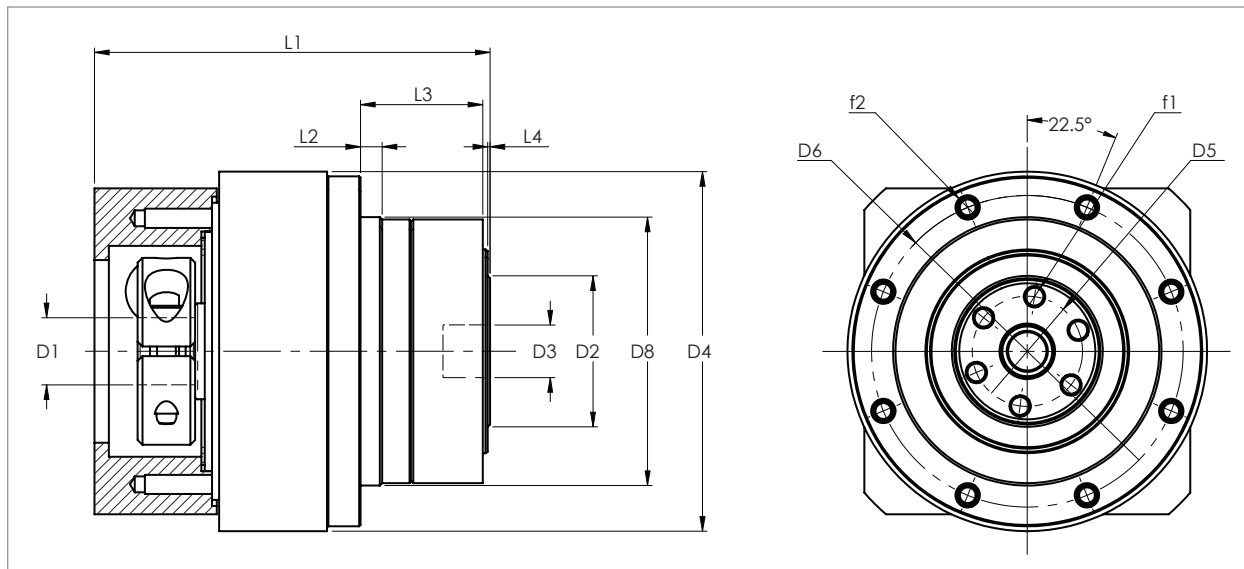
► GSL-CM TECHNICAL SPECIFICATIONS

GSL-CM Technical Specifications

Gearbox Style		GSL-CM (with Integrated Motor Mount)					
Frame Size	Input	014	017	020	025	032	
Overall Diameter (D)*	mm	75	82	93	107	138	
Overall Length (L)*	mm	82.8	83	85	90	100.5	
Weight *		1.1	1.3	1.7	2.3	4.3	
Nominal Torque	Nm	50:1	6.9	26	34	55	108
		80:1	11	27	47	87	167
		100:1	11	39	49	108	216
		120:1	-	39	49	108	216
		160:1	-	-	49	108	261
Acceleration Torque	Nm	50:1	18	34	56	98	216
		80:1	23	43	74	137	304
		100:1	28	54	82	157	333
		120:1	-	54	87	167	353
		160:1	-	-	92	176	372
Emergency Stopping Torque	Nm	50:1	35	70	98	186	382
		80:1	47	87	127	255	568
		100:1	54	108	147	284	647
		120:1	-	86	147	304	686
		160:1	-	-	147	314	686
Rated Torque at 2000 rpm Input Speed	Nm	50:1	5.4	16	25	39	76
		80:1	7.8	22	34	63	118
		100:1	7.8	24	40	67	137
		120:1	-	24	40	67	137
		160:1	-	-	40	67	137
Average Allowable Input Speed		RPM	3500	3500	3500	3500	3500
Maximum Input Speed		RPM	8500	7300	6500	5600	4800
Allowable Static Moment		Nm	41	64	91	156	313
Bending Moment		Nm	20	30	42	80	220
Radial Load		N	180	230	270	440	900
Axial Load		N	180	230	270	440	900
Backlash		arcsec	≤20				
Efficiency			65% -75%				
Life		hours	10,000 (50:1) / 15,000 (all other ratios)				
Protection Rating			IP64				
Operating Temperature Range			-20°C to 130°C				

* Depending on motor, the diameter, length, and weight may vary

GSL-CM



GSL-CM		014		017		020		025		032	
		mm	(in)	mm	(in)	mm	(in)	mm	(in)	mm	(in)
D1 max*	motor shaft diameter	14	(0.552)	14	(0.552)	14	(0.552)	14	(0.552)	14	(0.551)
D2	output flange diameter	31.5	(1.241)	38	(1.497)	45	(1.772)	58	(2.283)	78	(3.071)
D3 H7	shaft pilot diameter	11	(0.434)	10	(0.394)	14	(0.552)	20	(0.787)	26	(1.024)
D4	gearbox diameter	75	(2.953)	82	(3.229)	93	(3.662)	107	(4.213)	138	(5.433)
D5	inner bolt circle	23	(0.906)	27	(1.063)	32	(1.26)	42	(1.654)	55	(2.165)
D6	outer bolt circle	65	(2.56)	71	(2.796)	82	(3.229)	96	(3.78)	125	(4.921)
D8 h7	flange pilot	56	(2.205)	63	(2.481)	72	(2.835)	86	(3.386)	113	(4.449)
f1	output flange mounting holes	(6) M4x12		(6) M5		(6) M6		(8) M8		(8) M8	
f2	flange mounting holes	(8) M4x15		(8) M4x15		(8) M6		(10) M5		(12) M6	
L1**	gearbox length	82.5	(3.249)	83	(3.268)	85	(3.347)	90	(3.543)	100.5	(3.957)
L2	Flange pilot depth	4.5	(0.178)	4.5	(0.178)	6.5	(0.256)	6	(0.236)	6	(0.236)
L3	pilot high	22.5	(0.886)	24.5	(0.965)	21.5	(0.847)	30.0	(1.181)	39	(1.535)
L4	output length	0.5	(0.02)	0.5	(0.02)	0.5	(0.02)	0.5	(0.02)	1	(0.039)
dowel hole diameter (on D6 B.C.)		-		-		-		-		(6) 5	(6) (0.197)

* Maximum Motor Shaft Diameter

** Dimension varies depending on motor

TYPE CODE FOR GSL-CM SERIES

Example: **GSL - CM - 025 - 050A - M0000 - H0000 - C0000**

Gearbox Series	GSL = With Housing
Gearbox Style	C = Cup
Gearbox Profile	M = Integrated Motor Mount
Gearbox Size	014, 017, 020, 025, 032
Ratio	050, 080, 100, 120, 160 [-1]
Input Design	A = Keyed/Set Screw
Motor Code	(Assigned by GAM)
Output Code	(Assigned by GAM)
Configuration Code	(Assigned by GAM)

Available Sizes and Ratios

Series	CM				
Size	14	17	20	25	32
Ratio (X:1)	50	50	50	50	50
	80	80	80	80	80
	100	100	100	100	100
		120	120	120	120
			160	160	160