GS Series - Curved Jaw Style Coupling

The GS Series curved jaw coupling offers zero backlash capability in a 3-piece design. The coupling is provided assembled under prestress. The GS Series can be used in a variety of different applications requiring precision and accuracy.

The GS Series spider features a straight center of the spider tooth, providing higher stiffness due to coupling prestress. The crowning of the ends of the spider legs allows for misalignment, while the curved jaws and solid spider center provide high-speed capability.

The jaws of the hubs and the spider legs are chamfered to provide easy assembly. The GS Series coupling design also allows the blind assembly in tight spaces. Raised spider dots on the legs of the spider ensure proper spacing of hubs and spider.

The GS Series coupling has spiders available in four different shore hardnesses. Each spider offers benefits for different vibratory, environmental, and torque transmission requirements.

The GS Curved Jaw coupling consists of two hubs and one spider.

Features

- Simple 3 piece jaw design
- Aluminum and steel material hubs
- Clamping and locking device hubs available
- Four different types of urethane shores to chose from

Typical Applications

Measurement And Control Systems

The torsional stiffness of the GS Series coupling provides zero backlash needed for the accuracy for measurement and control systems. The low torques of these applications gives the GS Series the ability to provide zero backlash due to the elastomer pre-stress.

Servo And Positioning Drives

The GS Series provides a zero backlash, flexible connection for servo and positioning drives. An added benefit of the GS Series is its damping capabilities. For applications that have vibrations at critical speeds, the GS Series coupling can provide a zero backlash solution for vibration problems.

Main Spindle Drives

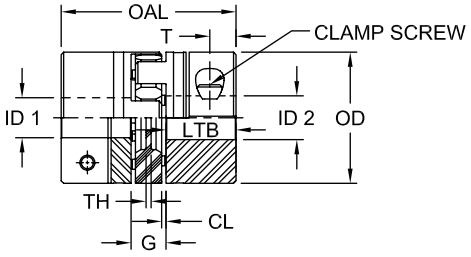
The GS Series coupling is used in main spindle drives for machine tools. Torque spikes and cyclical loading are handled by the GS Series by damping or by shifting the vibratory frequency range to a non-critical speed range.

Elastomer Performance Data

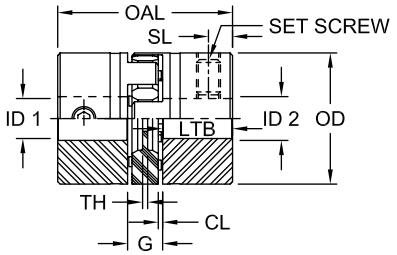
Spider Type	Color	Metal	Temperature Range Normal	Temperature Range Maximum	Sizes Available	Typical Applications
80 Shore A GS	Blue	Urethane	-50° to 176° F	-80° to 248° F	14 - 24	Electric measuring systems
92 Shore A GS	Yellow	Urethane	-40° to 194° F	-50° to 248° F	14 - 55	Electric measuring systems and control systems
95/98 Shore A GS	Red	Urethane	-30° to 194° F	-40° to 248° F	14 - 55	Positioning drives, main spindle drives, high load applications
64 Shore D GS	Green	Urethane	-20° to 230° F	-30° to 248° F	14 - 55	High load applications torsionally stiff spider material

GS Series Performance Data

Size	Spider Durometer	Maximum Speed for Clamping Styles: Clamping Hub RPM	Set Screw Hub RPM	Locking Device Hub RPM	Torque: Tkn in-lbs	Tkmax in-lbs	Static Torsional Stiffness lb-in/rad	Dynamic Torsional Stiffness lb-in/rad	Radial Stiffness b/in	Complete Coupling Max Bore w/o Keyway: Weight lb	Polar Moment of Inertia J (lb-in2) (x10-6)
14	80 Sh A	12,700	15,900	25,400	35.4	70.8	532.8	1,593	874	0.098	57
	92 Sh A				66.4	132.8	1,014.0	3,044	1,920		
	98 Sh A				110.6	221.3	1,521.0	4,540	3,452		
	64 Sh D				141.6	283.2	2,072.0	6,212	4,892		
19/24	80 Sh A	9,550	11,900	19,000	43.4	86.7	3,042.0	9,115	3,326	0.306	374
	92 Sh A				88.5	177.0	5,071.0	15,222	6,401		
	98 Sh A				150.5	300.9	7,606.0	22,833	11,487		
	64 Sh D				185.9	371.7	10,976.0	32,922	16,745		
24/32	92 Sh A	6,950	8,850	13,800	309.8	619.5	12,673.0	38,019	8,458	0.621	965
	98 Sh A				531.0	1,062.0	18,257.0	54,772	14,630		
	64 Sh D				663.8	1,327.0	26,355.0	79,065	21,123		
28/38	92 Sh A	5,850	7,350	11,700	840.8	1,681.0	20,284.0	60,852	10,173	1.178	3,691
	98 Sh A				1,415.0	2,832.0	30,426.0	91,278	18,288		
	64 Sh D				1,770.0	3,540.0	38,497.0	115,492	24,849		
38/45	92 Sh A	4,750	5,950	9,550	1,681.0	3,363.0	40,586.0	121,705	12,430	2.112	7,485
	98 Sh A				2,876.0	5,752.0	63,366.0	190,151	25,146		
	64 Sh D				3,584.0	7,168.0	93,279.0	279,837	36,999		
42/55	92 Sh A	4,000	5,000	8,050	2,345.0	4,690.0	55,755.0	128,236	13,887	8.324	40,639
	98 Sh A				3,982.0	7,965.0	169,920.0	424,800	31,833		
	64 Sh D				4,956.0	9,912.0	244,083.0	610,207	41,548		
48/60	92 Sh A	3,600	4,550	7,200	2,743.0	5,487.0	69,472.0	159,786	14,745	11.317	68,782
	98 Sh A				4,646.0	9,292.0	197,974.0	494,936	33,890		
	64 Sh D				5,796.0	11,593.0	320,370.0	800,925	47,286		
55/70	92 Sh A	3,150	3,950	6,350	3,628.0	7,257.0	84,075.0	193,372	17,031	16.993	135,334
	98 Sh A				6,062.0	12,124.0	210,630.0	526,575	38,210		
	64 Sh D				7,301.0	14,602.0	366,921.0	917,302	52,852		



Clamping Type



Set Screw Type

GS Series Dimensional Data

Size	Material	OAL in	OAL mm	LTB in	LTB mm	ID1 - ID2 Min Bore in	ID1 - ID2 Min Bore mm	ID1 - ID2 Max Bore in	ID1 - ID2 Max Bore mm	OD in	OD mm	Set Screw / Clamp Screw Size mm
14	Aluminum	1.378	35	0.433	11	0.197	5	0.551	14	1.181	30	M3
19/24	Aluminum	2.598	66	0.984	25	0.315	8	0.945	24	1.575	40	M2.6
24/32	Aluminum	3.071	78	1.181	30	0.472	12	1.260	32	2.165	55	M4
28/38	Aluminum	3.543	90	1.378	35	0.709	18	1.496	38	2.559	65	M2.6
38/45	Aluminum	4.488	114	1.772	45	0.709	18	1.772	45	3.150	80	M5
42/55	Steel	4.961	126	1.969	50	0.709	18	2.165	55	3.740	95	M3
48/60	Steel	5.512	140	2.205	56	0.709	18	2.362	60	4.134	105	M6
55/70	Steel	6.299	160	2.559	65	1.024	26	2.756	70	4.724	120	M4

Notes: ■ Specify keyway size if needed when ordering.
■ Specify bore sizes ID1 and ID2 when ordering.

GS Series Dimensional Data *Continued*

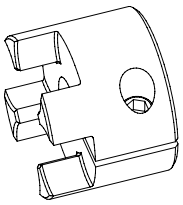
Size	Material	T in	Clamp Screw Size mm	SL in	Set Screw Size in	TH in	TH mm	CL in	CL mm	G in	G mm
14	Aluminum	0.20	M3	0.20	8-32	0.079	2.0	0.039	1.0	0.512	13
19/24	Aluminum	0.47	M2.6	0.39	10-24	0.118	3.0	0.079	2.0	0.630	16
24/32	Aluminum	0.55	M4	0.39	10-24	0.118	3.0	0.079	2.0	0.709	18
28/38	Aluminum	0.59	M2.6	0.59	5/16-18	0.157	4.0	0.098	2.5	0.787	20
38/45	Aluminum	0.79	M5	0.59	5/16-8	0.157	4.0	0.118	3.0	0.945	24
42/55	Steel	0.79	M3	0.79	5/16-8	0.157	4.0	0.118	3.0	1.024	26
48/60	Steel	0.87	M6	0.79	5/16-8	0.157	4.0	0.138	3.5	1.102	28
55/70	Steel	0.98	M4	0.79	3/8-16	0.177	4.5	0.157	4.0	1.181	30

GS Series Hub Design Descriptions

The GS Series coupling features different hub designs for different application situations. Each type offers specific benefits for different types of applications. The clamping styles offer the benefit of minimal to zero backlash.

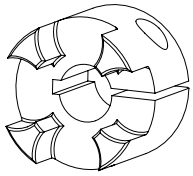
Clamping Hub With Single Slot Without Keyway (C)

Zero backlash, clamping style for torque transmission. Torque capacity of hub depends on bore size. Available standard for sizes GS 14-19.



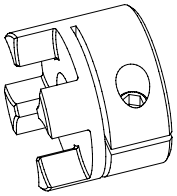
Clamping Hub With Single Slot With Keyway (CWK)

Zero backlash, clamping style with keyway for torque transmission. Usable in applications featuring reversing loads. Available standard for sizes GS 14-19.



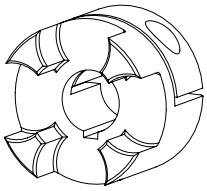
Clamping Hub With Double Slot Without Keyway (DSC)

Transmits torque utilizing a double split clamp to attach hub to shaft. Zero or minimum backlash. Torque capacity of coupling determined by bore size. Available standard for sizes GS 24-55.



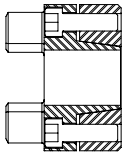
Clamping Hub With Double Slot With Keyway (DSCK)

Transmits torque utilizing a double split clamp to attach hub to shaft. Zero or minimum backlash. Available standard for sizes GS 24-55.



Hub With Frictional Locking (LD)

This hub utilizes a shaft locking device to allow for shaft engagement. This design features bolts tightened on the jaw side of the hub. Available for sizes GS 14-55.



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