SUNG-IL MACHINERY

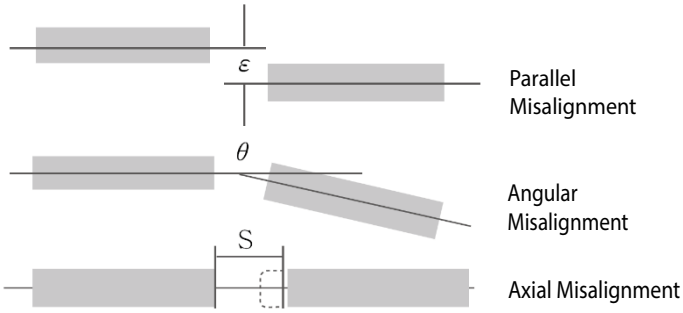
Drive Couplings

Overview

Rotating shaft-driven mechanical components are commonly used in all forms of machinery that perform the various processes and functions of modern industry. Perfect alignment of shafts and rotating components is desired, but it is nearly impossible to build a real-world machine in which adjacent shaft ends align perfectly. Adjacent shafts can be misaligned in 3 orientations, angular, parallel and axial, see figure below. Misalignment will place stresses on shafts and related parts of the assembly such as bearings, which can result in early failure of both.

Drive couplings can be used to compensate for shaft misalignment, whether the misalignment is an intentional or an unintentional part of the design. When designing or modifying a system, there are essential factors to consider for choosing the correct couplings for the application.

Some degree of Parallel, Angular, or Axial misalignment between shafts is almost unavoidable. Compensation for Shaft Misalignment is the most important feature of Couplings.



(Refer to the specification tables herein for the particular specifications of each type of drive coupling.)

- RPM: For higher rpm applications, choose Jaw/Sleeve, High Gain, or Radial Beam-Style Servo couplings. For lower rpm, consider Oldham couplings.
- Torque: Consider the torque requirements of the application, and the torque specifications of the different drive coupling types. peak torque generally occurs at start-up, operating torque at steady-state operation, and reversing or braking torque during rapid acceleration or deceleration or direction changes.
- Backlash: Backlash is a measurement of the positional accuracy of the coupling, which is important for reversing and/or motion control applications. Zero backlash is ultimately desirable, but more expensive than necessary for low-precision applications.
- Precision: for high-precision applications, choose High Gain or Radial Beam- Style Servo. For applications requiring less precision, consider Jaw/Sleeve couplings.

Coupling Type Comparisons

Coupling Type	*SJC Series Jaw / Spider*	*SOH Series Oldham Hub/Disc*	*SRB Series Radial Beam*	*SHR Series High Gain*
Representative Photo				
Mounting Method	Clamp	Clamp	Clamp	Clamp
Blacklash Free	Good	Yes	Yes	Yes
Electrical Isolation	Good	Good	No	No
Vibration Absorption	Good	Good	No	Excellent
Jaw/Hub/Body Material	High Strength Aluminum Alloy with Anodized Finish	High Strength Aluminum Alloy with Anodized Finish	Aluminum 7075-T6 with Anodized Finish	High Strength Aluminum Alloy with Anodized Finish
Spider/Disc/Core Material	TPU (Thermoplastic Polyurethane) or Hytrel ®	POM (Polyacetal)	Aluminum 7075-T6	HNBR (Hydrogenated acrylonitrile butadiene rubber)
Permissible Operating Temperature	-20°C to 120°C	-20°C to 80°C	-30°C to 100°C	-20°C to 80°C

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Drive Couplings

SOH Series Oldham Clamp-Style Coupling

Features

- Clamp Style Hub
- High Parallel misalignment range
- Zero Backlash
- Wide bore selection
- Wide Torque Range
- Electrical Isolation
- Hub material: High Strength Aluminum Alloy
- Disc material: POM (Polyacetal)
- Wide operating temperature range (-20°C to 80°C)

Applications

- General Applications
- Applications with high axial misalignment

To create a coupling to meet your specific needs:

- Select 2 Hubs with desired Bores, of the same SOH Size
- Select 1 Disc, of the same SOH Size
- Verify Actual Torque ratings based on Temperature Correction Factor (TF)
- Coupling assemblies are designed for a press fit to achieve zero backlash. An auger press is recommended for assembly.

SOH Series Coupling Hubs

Part Number*	Price	Size	Bore, B1 or B2	Max RPM	Clamp Screw		Drawing Links
					Type	Fastening Torque(N·m)	
SOH-16C-4	$10.50	16	4mm	13,000	SHCS M2.6-0.45 x 8mm	1.0	PDF
SOH-16C-4.76			3/16in				PDF
SOH-16C-5			5mm				PDF
SOH-16C-6			6mm				PDF
SOH-20C-5	$11.50	20	5mm	11,000	SHCS M2.6-0.45 x 10mm	1.0	PDF
SOH-20C-6			6mm				PDF
SOH-20C-6.35			1/4in				PDF
SOH-20C-7.93			5/16in				PDF
SOH-20C-8			8mm				PDF
SOH-20C-9.525			3/8in				PDF
SOH-20C-10			10mm				PDF

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SOH Series Coupling Hubs							
Part Number*	Price	Size	Bore, B1 or B2	Max RPM	Clamp Screw		Drawing Links
					Type	Fastening Torque(N·m)	
SOH-25C-6	$12.50	25	6mm	10,000	SHCS M3-0.5 x 10mm	1.7	PDF
SOH-25C-6.35			1/4in				PDF
SOH-25C-8			8mm				PDF
SOH-25C-9.525			3/8in				PDF
SOH-25C-10			10mm				PDF
SOH-25C-12			12mm				PDF
SOH-32C-8	$15.50	32	8mm	9,000	SHCS M4-0.7 x 12mm	3.5	PDF
SOH-32C-9.525			3/8in				PDF
SOH-32C-10			10mm				PDF
SOH-32C-12			12mm				PDF
SOH-32C-14			14mm				PDF
SOH-32C-12.7			1/2in				PDF
SOH-43C-12	$25.00	43	12mm	8,000	SHCS M5-0.8 x 16mm	8.0	PDF
SOH-43C-12.7			1/2in				PDF
SOH-43C-14			14mm				PDF
SOH-43C-15.875			5/8in				PDF
SOH-43C-16			16mm				PDF
SOH-43C-19			19mm				PDF
SOH-57C-15.875	$41.50	57	5/8in	6,000	SHCS M6-1.0 x 20mm	13.0	PDF
SOH-57C-16			16mm				PDF
SOH-57C-19			19mm				PDF
SOH-57C-19.05			3/4in				PDF
SOH-57C-22			22mm				PDF
SOH-57C-22.225			7/8in				PDF
SOH-57C-24			24mm				PDF
SOHM-70C-19.05	$52.00	70	3/4in	4,500	SHCS M8-1.25 x 30mm	30.0	PDF
SOHM-70C-20			20mm				PDF
SOHM-70C-22.225			7/8in				PDF
SOHM-70C-25			25mm				PDF
SOHM-70C-25.4			1in				PDF
SOHM-70C-28.575			1-1/8in				PDF
SOHM-70C-30			30mm				PDF
SOHM-70C-31.75			1-1/4in				PDF
SOHM-70C-35			35mm				PDF

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SOH Series Oldham Clamp-Style Coupling

SOH Series Coupling DISC										
Part Number*	Price	Size	Material	Torque (Nm)		Torisonal Stiffness (N·m/rad)	Max Misalignment			Drawing Links
				*Rated	*Max		Parallel (mm)	Axial (mm)	Angular	
SOH-16-DISC	$3.00	16	Polyacetal (black)	1	2	65	1	0.10	1.5 degrees	PDF
SOH-20-DISC	$3.75	20		1.5	3	120	1.5			PDF
SOH-25-DISC		25		2.5	5	200	2			PDF
SOH-32-DISC		32		7	14	620	2.5	0.15		PDF
SOH-43-DISC	$7.25	43		12.5	25	1,200	3			PDF
SOH-57-DISC		57		34	68	2,600	3.5	0.20		PDF
SOH-70-DISC	$17.50	70		60	120	5,000				PDF

*Rated & Max Torques values are based on complete SOH assembly with maximum Bore sizes and Temperature Correction Factor (TF) =1

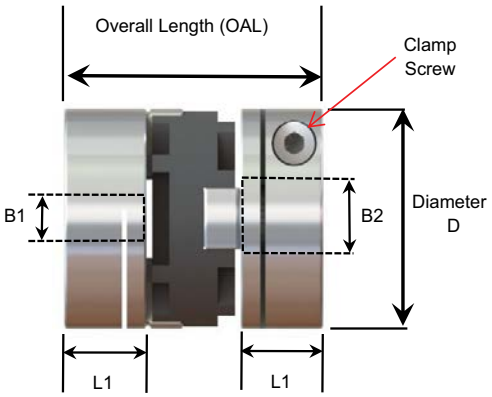
Temperature Correction Factor (TF)

The Rated and Max Torque values are affected by Temperature due to the polymer used in the Disc. Use the Temperature Correction Factor (TF) to the determine the Actual Rated and Max Torques in expected operating conditions.

Actual Disc Rated Torque= Disc Rated Torque x TF

Actual Disc Max Torque= Disc Maximum Torque x TF

Temperature Correction Factor	
Operating Temperature	TF
-20°C to 30°C	1.00
30°C to 40°C	0.80
40°C to 60°C	0.70
60°C to 120°C	0.55



**SOH Series Dimensions and Mass					
Series Size	Diameter, D (mm)	Overall Length, OAL (mm)	***Shaft Mount, L1(mm)	*Mass (g)	*Moment of Inertia (kg-m2)
16	16	23.9	7.7	8.5	3.10E-07
20	20	25.7	8	14.2	8.20E-07
25	25.5	32	10.2	29.3	2.70E-06
32	32	44.7	14.4	59.6	9.20E-06
43	43	52	16.5	127	3.40E-05
57	57	76.2	26.9	329	1.60E-04
70	73	75.5	25	547	4.50E-04

* Mass & Moment of inertia based on complete assembly with max bore B1 & B2.
** B1 & B2 are the Bore sizes for the selected SOH Jaw.
***L1 is the mounting distance from the shaft END.