Sure motion Drive Couplings

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.

Shaft ends can be misaligned radially or angularly, exhibit axial displacement, or experience a combination of all three. 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.

Design/Selection Factors:

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

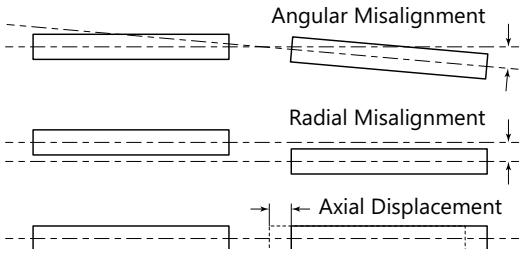
• RPM: For higher rpm applications, choose Jaw/Spider or Beam-Style Servo couplings. For lower rpm, consider Double-Loop or Oldham couplings.

• 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.

For high-precision applications, choose Beam-Style Servo or Oldham couplings. For applications requiring less precision, consider Jaw/Spider or Double-Loop couplings.

• Misalignment: Some degree of angular, axial, or radial misalignment/displacement between shafts is almost unavoidable. Drive couplings can compensate for this misalignment.



Coupling Type Comparisons

Coupling Type	*Jaw / Spider*	*Double Loop*	*Oldham*	*Beam-Style Servo*
Representative Photo				
Purpose	most common	light duty	general purpose	high performance & torque
Hub Material	aluminum	stainless steel	aluminum	416 stainless steel
Center Material	polyurethane	Hytrel™	Delrin™	420 stainless steel
Mounting Method	clamp	set screw	clamp	set screw
Electrical Isolation	yes	yes	yes	no
Backlash	varies	varies	zero	zero
Misalignment Capacity	++ (axial)	+++	++	+
Breakable "Mechanical Fuse"	no (fail safe)	no	yes	no
Relative Price	$$	$$	$	$$$

Sure motion Drive Couplings

Oldham Drive Couplings

Features

- Large radial misalignment capability
- Hubs made of aluminum 2011 T8
- Center discs made of Delrin™
- Mechanical 'fuse' prevents damage to other components in over-torque conditions
- Zero backlash
- Corrosion-resistant
- Non-magnetic
- Operating temperature range: -20 to 60 °C (-4 to 140 °F)
- Electrical isolation
- Absorbs shock and isolates vibration
- Dampens resonance
- Speeds up to 3,000rpm
- Low inertia

Applications

- General-purpose applications
- Medium-speed applications

Oldham Aluminum Clamp-Style Drive Coupling Hubs*

Part Number*	Price	Size	Bore	Max rpm	Torque (lb·in [N·m])		Max Offset			Moment of Inertia	Weight (lb)
					Peak	Static Break	Radial (in [mm])	Axial (in [mm])	Angular (°)	(lb·in·s²x10⁻⁵)	
DC-DAC19-05M		19	5mm	3,000	15 [1.7]	71 [8.0]	0.016 [0.41]	0.004 [0.1]	1.5	0.518	0.032
DC-DAC19-04			1/4 in								0.032
DC-DAC19-08M			8mm								0.033
DC-DAC25-04		25	1/4 in		35 [4.0]	115 [13.0]			3	2.23	0.055
DC-DAC25-08M			8mm								0.054
DC-DAC25-06			3/8 in								0.050
DC-DAC25-10M			10mm								0.050
DC-DAC25-12M			12mm								0.051
DC-DAC33-06		33	3/8 in		80 [9.0]	465 [52.5]		0.006 [0.15]		10.0	0.097
DC-DAC33-10M			10mm								0.095
DC-DAC33-12M			12mm								0.095
DC-DAC33-08			1/2 in								0.093
DC-DAC33-14M			14mm								0.091
DC-DAC33-10			5/8 in								0.088
DC-DAC33-16M			16mm								0.087
DC-DAC41-08		41	1/2 in		150 [16.9]	500 [56.5]	0.020 [0.51]			28.1	0.186
DC-DAC41-14M			14mm								0.181
DC-DAC41-10			5/8 in								0.177
DC-DAC41-16M			16mm								0.172
DC-DAC41-19M			19mm								0.168
DC-DAC41-12			3/4 in								0.163
DC-DAC50-08		50	1/2 in		265 [29.9]	840 [94.9]		0.008 [0.2]		66.7	0.260
DC-DAC50-14M			14mm								0.255
DC-DAC50-10			5/8 in								0.249
DC-DAC50-16M			16mm								0.244
DC-DAC50-19M			19mm								0.238
DC-DAC50-12			3/4 in								0.233
DC-DAC50-16			1in								0.227
DC-DAC57-10		57	5/8 in		390 [44.1]	1325 [149.7]				109.7	0.457
DC-DAC57-16M			16mm								0.439
DC-DAC57-19M			19mm								0.422
DC-DAC57-12			3/4 in								0.404
DC-DAC57-16			1in								0.386

** A complete Oldham coupling assembly consists of two hubs and one torque disc, each of the same "size" and each purchased separately. The two hubs can be of different "bore" diameters, if needed for the application.*

Oldham Drive Couplings

Oldham Aluminum Clamp-Style Drive Coupling Torque Discs*			
Part Number *	***Price***	***Size***	***Color***
DC-DDS19		19	black
DC-DDS25		25	
DC-DDS33		33	
DC-DDS41		41	
DC-DDS50		50	
DC-DDS57		57	

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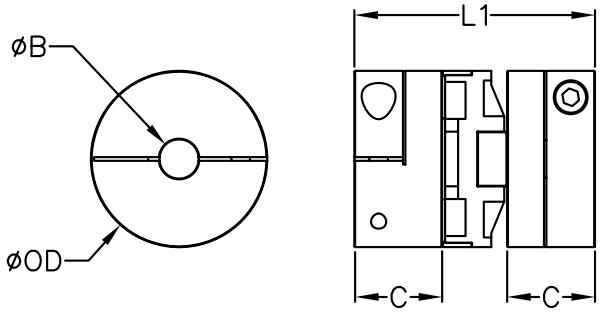
Dimensions (in [mm])



Oldham Aluminum Drive Coupling Hub Bore Dimensions		
Hubs	***Sizes***	***ØB***
DC-DACxx-05M	19	5mm
DC-DACxx-04	19, 25	1/4 in
DC-DACxx-08M	19, 25	8mm
DC-DACxx-06	25, 33	3/8 in
DC-DACxx-10M	25, 33	10mm
DC-DACxx-12M	25, 33	12mm
DC-DACxx-08	33, 41, 50	1/2 in
DC-DACxx-14M	33, 41, 50	14mm
DC-DACxx-10	33, 41, 50, 57	5/8 in
DC-DACxx-16M	33, 41, 50, 57	16mm
DC-DACxx-12	41, 50, 57	3/4 in
DC-DACxx-19M	41, 50, 57	19mm
DC-DACxx-16	50, 57	1in

Oldham Aluminum Clamp-Style Drive Coupling Assembly Dimensions*					
Size	***Components***	***Cap Screw***	***C***	***L1****	***ØOD***
			(in [mm])		
19	(2) DC-DAC19-xxx + (1) DC-DDS19	#4-40	0.37 [9.4]	1.02 [25.9]	0.75 [19.1]
25	(2) DC-DAC25-xxx + (1) DC-DDS25	M3	0.46 [11.7]	1.28 [32.5]	1.00 [25.4]
33**	(2) DC-DAC33-xxx + (1) DC-DDS33	M4	0.59 [15.0]	1.89 [48.0]	1.31 [33.3]
41	(2) DC-DAC41-xxx + (1) DC-DDS41	M4	0.70 [17.8]	2.00 [50.8]	1.63 [41.4]
50	(2) DC-DAC50-xxx + (1) DC-DDS50	M5	0.81 [20.6]	2.35 [59.7]	1.97 [50.0]
57	(2) DC-DAC57-xxx + (1) DC-DDS57	M6	1.12 [28.4]	3.07 [78.0]	2.25 [57.2]

** Assembly dimensions are for any (2) hubs + (1) torque disc of the same "size" as assembled. Among components of the same "size," the only dimension that varies is the hub bore diameter (ØB), which is shown separately.*

*** When DC-DAC33-08 is used with another DC-DAC33-xx bore size, L1 = 45. When 2 DC-DAC33-08 are used together, L1 = 42*

See our website: _____ for complete Engineering drawings.

Drive Couplings

Accessories – Bore Reducers

Features

- For use in all SureMotion drive coupling hubs to reduce bore size
- Split-collar design with 2 set screw flats will not mark shaft
- 25% greater holding power than standard split collar
- Hardened stainless steel

Bore Reducers – Stainless Steel Clamping Type						
Part Number	Price	Outside Diameter		Inside Diameter		Length
		Nominal	Actual	Nominal	Actual	
DC-BRS04-02		1/4 in	0.250 in	1/8 in	0.125 in	0.221 in
DC-BRS04-04M				4mm	4mm	
DC-BRS04-03				3/16 in	0.1875 in	
DC-BRS04-05M				5mm	5mm	
DC-BRS08-06M		1/2 in	0.500 in	6mm	6mm	0.449 in
DC-BRS08-04				1/4 in	0.25 in	
DC-BRS08-05				5/16 in	0.3125 in	
DC-BRS08-08M				8mm	8mm	
DC-BRS08-06				3/8 in	0.375 in	
DC-BRS08-10M				10mm	10mm	
DC-BRS10-10M		5/8 in	0.625 in	10mm	10mm	0.460 in
DC-BRS10-07				7/16 in	0.4375 in	
DC-BRS10-12M				12mm	12mm	
DC-BRS10-08				1/2 in	0.5 in	
DC-BRS10-14M				14mm	14mm	
DC-BRS10-09				9/16 in	0.5625 in	
DC-BRS12-06		3/4 in	0.750 in	3/8 in	0.375 in	0.646 in
DC-BRS12-12M				12mm	12mm	
DC-BRS12-08				1/2 in	0.5 in	
DC-BRS12-10				5/8 in	0.625 in	
DC-BRS12-16M				16mm	16mm	
DC-BRS12-11				11/16 in	0.6875 in	
DC-BRS14-14M		7/8 in	0.875 in	14mm	14mm	0.755 in
DC-BRS14-10				5/8 in	0.625 in	
DC-BRS14-16M				16mm	16mm	
DC-BRS14-11				11/16 in	0.6875 in	
DC-BRS14-18M				18mm	18mm	
DC-BRS14-12				3/4 in	0.75 in	
DC-BRS16-10		1in	1.000 in	5/8 in	0.625 in	0.773 in
DC-BRS16-18M				18mm	18mm	
DC-BRS16-12				3/4 in	0.75 in	
DC-BRS16-20M				20mm	20mm	
DC-BRS16-13				13/16 in	0.8125 in	
DC-BRS16-14				7/8 in	0.875 in	
DC-BRS20-22M		1-1/4 in	1.250 in	22mm	22mm	0.793 in
DC-BRS20-24M				24mm	24mm	
DC-BRS20-25M				25mm	25mm	
DC-BRS20-16				1in	1.0 in	
DC-BRS20-17				1-1/16 in	1.0625 in	
DC-BRS20-18				1-1/8 in	1.125 in	