ServoClass® Couplings

ZERO-MAX®

Patent Pending

RoHS COMPLIANT

ZERO-MAX SERVO**CLASS** COUPLINGS

- For high performance servo motor and demanding motion control applications
- High torsional stiffness for precision positioning
- Eco-Friendly, Adapted to RoHS Directive with no banned substances
- Low inertia for high speed applications
- Zero backlash and low hysteresis ensures repeatable precise positioning
- Clean Room Applications

Today's servo motor applications are more demanding than ever. The precision positioning requirements and high reverse load characteristics of AC and DC servomotor applications necessitate a coupling design that specifically addresses the needs of these sophisticated systems.

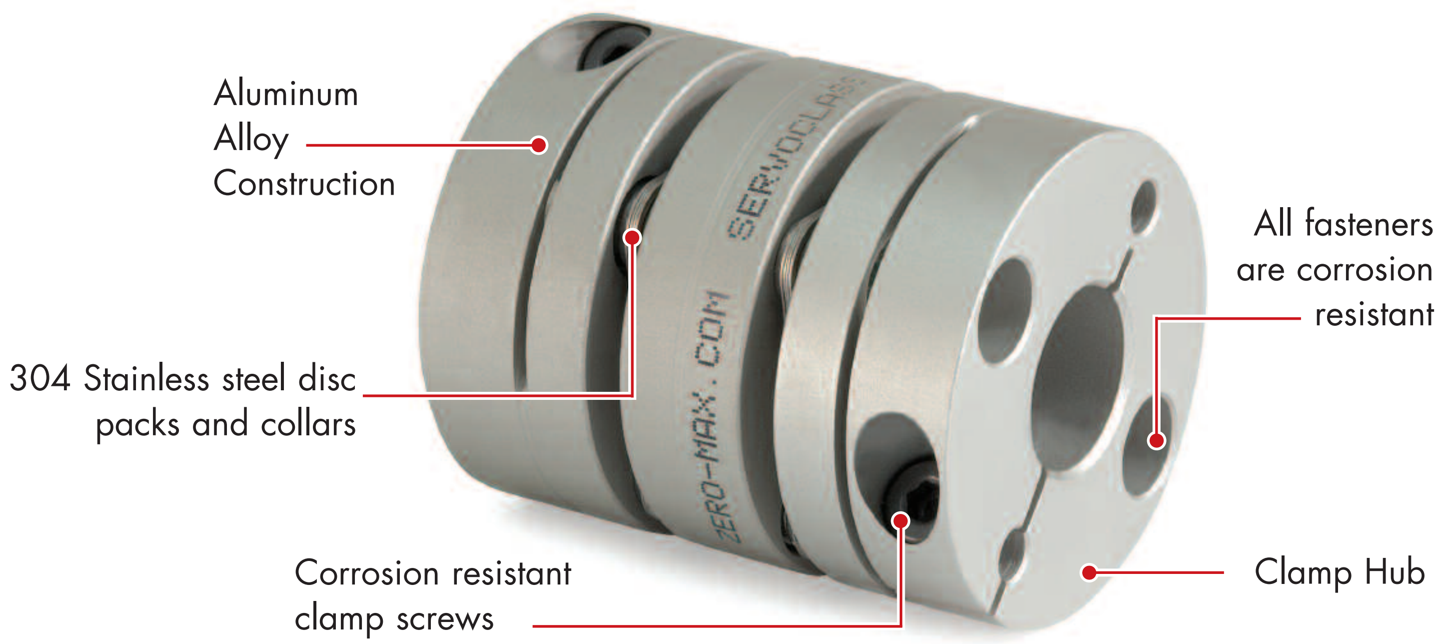
Inertia and torsional stiffness are critical features of a superior servo coupling. The inertia should be low so as not to add significantly to overall inertia of the servo system. The lower the inertia, the less energy required by the motor to move the system and therefore, higher acceleration is possible. The torsional stiffness should be high enough to prevent the coupling from winding up during acceleration, deceleration or reversing conditions. The torsional stiffness of the Zero-Max ServoClass coupling leads to a higher system resonant frequency, which in most cases, is far above the operating range.

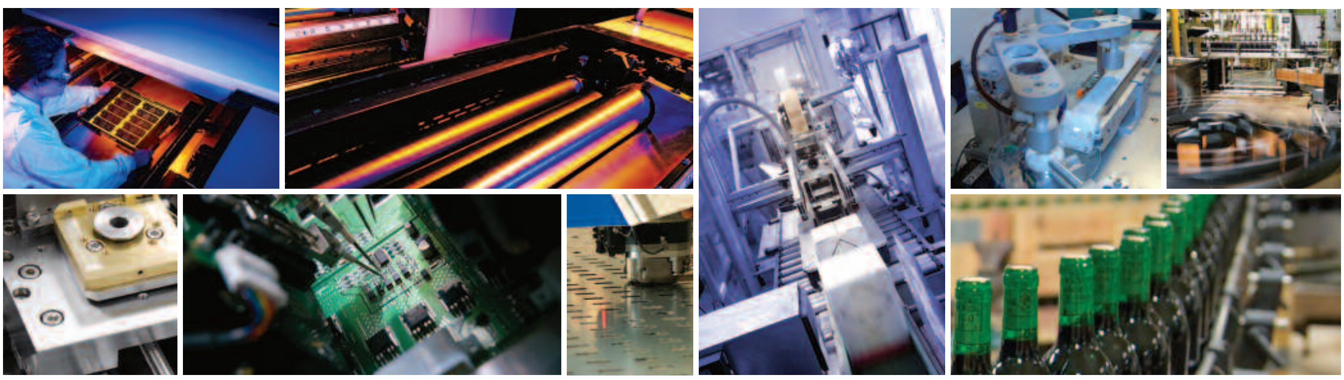
Zero backlash is another key requirement of a high performance servo coupling. A coupling may be considered zero backlash and still have a large amount of windup. Zero backlash is the ability of the coupling to maintain the same relative relationship between the input and output shaft without lost motion. The windup of the coupling can be detrimental to the servo system. A coupling with a high amount of windup will cause positioning errors to the servo system. The Zero-Max ServoClass coupling is a zero backlash coupling and it exhibits a very low amount of windup.

Misalignment capability of a coupling is also important in a motion control system. Usually, the alignment of a well manufactured servo system will be very good. Over time and under high load conditions, this alignment may deteriorate. The coupling should be capable of handling this change. Also, the coupling should accommodate any lack of concentricity in the connected shafts as well as the stack up of tolerances in the motion assembly. Another important benefit of a high misalignment capability is the dispersion of reaction loads on the bearings and bushings in the system. The Zero-Max ServoClass coupling utilizes a design that provides adequate amounts of flexibility but does not sacrifice any of the torque capability or the torsional stiffness capability and therefore minimizes the reaction loads to the servo motor bearings.

SERVO**CLASS** COUPLINGS
FOR EVERY SERVO SYSTEM REQUIREMENT

- Available in 11 sizes in single and double disc models.
- Double disc models provide highest misalignment capability.
- Operating temperature range is -22° to +212°F (-30° to +100C)
- Torque ratings range from 0.5 to 250Nm.
- Hubs and center members manufactured of aluminum alloy for strength and durability. Both are treated to prevent oxidation and to preserve appearance.
- Disc members are made of 304 stainless steel.
- Couplings are precisely assembled using high strength, corrosion resistant fasteners.
- Integral clamp style hubs provide fast, easy mounting.
- RoHS compliant – manufactured of RoHS compliant materials and contain no banned substances.



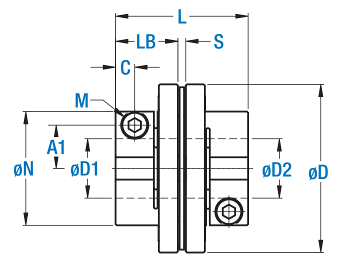


SD Series ServoClass Single Disc Specifications

Model	Operating Torque	Maximum RPM	Torsional Stiffness	Axial Stiffness	Misalignment Capacity			Moment of Inertia	Weight	Style
					Parallel	Angular	Axial			
	in.lb. (Nm)	r/min	in.lb./deg. (Nm/rad)	lb./in. (N/mm)	inch (mm)	degree	± inch ± (mm)	lb.in.² kgm²(x10⁻⁶)	Oz. (gm)	
SD005R	4.4 (0.5)	10,000	77 (500)	799 (140)	0.001 (0.02)	0.5	0.002 (0.05)	0.0009 (0.26)	0.25 (7)	C
SD010R	7 (0.8)	10,000	216 (1,400)	799 (140)	0.001 (0.02)	1	0.004 (0.10)	0.0019 (0.57)	0.39 (11)	C
SD020R	13 (1.5)	10,000	572 (3,700)	365 (64)	0.001 (0.02)	1	0.006 (0.15)	0.008 (2.39)	0.9 (25)	C
SD030R	35 (4.0)	10,000	1,236 (8,000)	365 (64)	0.001 (0.02)	1	0.008 (0.2)	0.014 (4.00)	1.2 (33)	A
								0.021 (6.06)	1.4 (41)	B
								0.028 (8.12)	1.7 (49)	C
SD035R	53 (6.0)	10,000	2,780 (18,000)	640 (112)	0.001 (0.02)	1	0.010 (0.25)	0.063 (18.4)	3.0 (84)	C
SD040R	89 (10)	10,000	3,089 (20,000)	457 (80)	0.001 (0.02)	1	0.012 (0.3)	0.056 (16.4)	2.7 (76)	A
								0.078 (23.0)	3.2 (90)	B
								0.101 (29.5)	3.7 (105)	C
SD050R	221 (25)	10,000	4,943 (32,000)	274 (48)	0.001 (0.02)	1	0.016 (0.4)	0.188 (54.9)	5.5 (156)	A
								0.263 (77.1)	6.5 (185)	B
								0.339 (99.3)	7.5 (214)	C
SD060R	531 (60)	10,000	10,812 (70,000)	436 (76.4)	0.001 (0.02)	1	0.018 (0.45)	0.491 (144)	9.8 (279)	A
								0.704 (206)	11.9 (337)	B
								0.918 (268)	14 (396)	C
SD080R	885 (100)	10,000	21,625 (140,000)	731 (128)	0.001 (0.02)	1	0.02 (0.55)	2.43 (709.3)	25.6 (727)	C
SD090R	1,593 (180)	10,000	15,446 (100,000)	616 (108)	0.001 (0.02)	1	0.03 (0.65)	4.20 (1,227)	33.8 (959)	C
SD100R	2,213 (250)	10,000	18,535 (120,000)	664 (111)	0.001 (0.02)	1	0.03 (0.74)	6.36 (1,858)	41.6 (1,181)	C

• Moment of Inertia and Weight are measured with the maximum bore diameters
• Tolerance of mounted shaft should be h7

Style A



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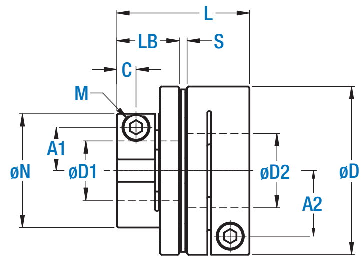

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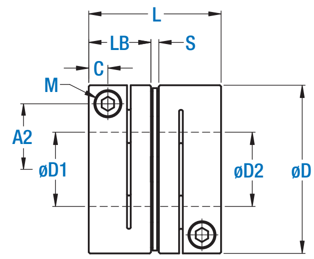
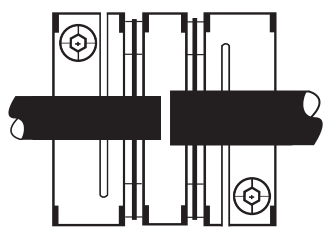


SD Series ServoClass Single Disc Dimensions

Model	Bore D1*1		Bore D2*1		Outside Diameter D	N	Overall Length L	Hub Length LB	Spacer Gap S	A1	A2	C	Clamp Screw Size	Tightening Torque	Style
	Min	Max	Min	Max											
	Inch (mm)	Inch (mm)	Inch (mm)	Inch (mm)	Inch (mm)	Inch (mm)	Inch (mm)	Inch (mm)	Inch (mm)	Inch (mm)	Inch (mm)	Inch (mm)	M	in. lb. (Nm)	
SD005R	0.157 (4)	0.236 (6)	0.157 (4)	0.236 (6)	0.630 (16.0)	–	0.657 (16.7)	0.309 (7.85)	0.039 (1.0)	–	0.189 (4.8)	0.098 (2.5)	2-M2.0	3.5 (0.4)	C
SD010R	0.157 (4)	0.3125 (8)	0.157 (4)	0.3125 (8)	0.748 (19.0)	–	0.762 (19.35)	0.360 (9.15)	0.041 (1.05)	–	0.228 (5.8)*2	0.124 (3.15)	2-M2.0*4	3.5 (0.4)*4	C
													2-M2.5*3	9 (1)*3	
SD020R	0.1875 (5)	0.375 (10)	0.1875 (5)	0.375 (10)	1.024 (26.0)	–	0.911 (23.15)	0.423 (10.75)	0.065 (1.65)	–	0.374 (9.5)	0.130 (3.3)	2-M2.5	9 (1)	C
SD030R	0.1875 (5)	0.375 (10)	0.1875 (5)	0.375 (10)	1.339 (34.0)	0.850 (21.6)	1.075 (27.3)	0.488 (12.4)	0.098 (2.5)	0.315 (8)	–	0.148 (3.75)	2-M3	13 (1.5)	A
	0.1875 (5)	0.375 (10)	Over 0.375 (Over 10)	0.5625 (14)						0.315 (8)	0.492 (12.5)				B
	Over 0.375 (Over 10)	0.5625 (14)	Over 0.375 (Over 10)	0.5625 (14)		–				–	0.492 (12.5)				C
SD035R	0.3125 (8)	0.625 (16)	0.3125 (8)	0.625 (16)	1.535 (39.0)	–	1.339 (34.0)	0.610 (15.5)	0.118 (3.0)	–	0.551 (14)	0.177 (4.5)	2-M4	30 (3.4)	C
SD040R	0.3125 (8)	0.5625 (15)	0.3125 (8)	0.5625 (15)	1.732 (44.0)	1.165 (29.6)	1.339 (34.0)	0.610 (15.5)	0.118 (3.0)	0.433 (11)	–	0.177 (4.5)	2-M4	30 (3.4)	A
	0.3125 (8)	0.5625 (15)	Over 0.5625 (Over 15)	0.750 (19)						0.433 (11)	0.669 (17)				B
	Over 0.5625 (Over 15)	0.750 (19)	Over 0.5625 (Over 15)	0.750 (19)		–				–	0.669 (17)				C
SD050R	0.375 (10)	0.750 (19)	0.375 (10)	0.750 (19)	2.205 (56.0)	1.496 (38)	1.709 (43.4)	0.807 (20.5)	0.094 (2.4)	0.571 (14.5)	–	0.236 (6)	2-M5	62 (7)	A
	0.375 (10)	0.750 (19)	Over 0.750 (Over 19)	1.000 (25)						0.571 (14.5)	0.866 (22)				B
	Over 0.750 (Over 19)	1.000 (25)	Over 0.750 (Over 19)	1.000 (25)		–				–	0.866 (22)				C
SD060R	0.500 (12)	0.9375 (24)	0.500 (12)	0.9375 (24)	2.677 (68.0)	1.811 (46)	2.110 (53.6)	0.992 (25.2)	0.126 (3.2)	0.689 (17.5)	–	0.305 (7.75)	2-M6	124 (14)	A
	0.500 (12)	0.9375 (24)	Over 0.9375 (Over 24)	1.1875 (30)						0.689 (17.5)	1.043 (26.5)				B
	Over 0.9375 (Over 24)	1.1875 (30)	Over 0.9375 (Over 24)	1.1875 (30)		–				–	1.043 (26.5)				C
SD080R	0.875 (20)	1.375 (35)	0.875 (20)	1.375 (35)	3.228 (82.0)	–	2.677 (68)	1.181 (30)	0.315 (8)	–	1.102 (28)	0.354 (9)	2-M8	266 (30)	C
SD090R	1.000 (25)	1.5 (40)	1.000 (25)	1.5 (40)	3.622 (92.0)	–	2.689 (68.3)	1.181 (30)	0.327 (8.3)	–	1.339 (34)	0.354 (9)	2-M8	266 (30)	C
SD100R	1.438 (35)	1.75 (45)	1.438 (35)	1.75 (45)	4.095 (104.0)	–	2.748 (69.8)	1.181 (30)	0.386 (9.8)	–	1.535 (39)	0.354 (9)	2-M8	266 (30)	C



*1: Bore size affects and limits the operating torque of the coupling.
See the table "Bore Size and Operating Torque Term" on Page 6.
*2: The Dimension for 4mm-7mm bores. For 8mm bore, the dimension is 0.236 inch (6mm).
*3: The screw size and tightening torque for 4mm-7mm bores.
*4: The screw size and tightening torque for 8mm bore.

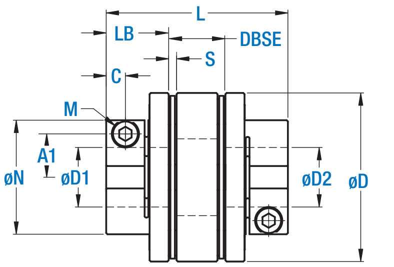
SC SERIES

SC Series ServoClass Double Disc Specifications

Model	Operating Torque	Maximum RPM	Torsional Stiffness	Axial Stiffness	Misalignment Capacity: Parallel	Misalignment Capacity: Angular	Misalignment Capacity: Axial	Moment of Inertia	Weight	Style
	in.lb. (Nm)	r/min	in.lb./deg. (Nm/rad)	lb./in. (N/mm)	inch (mm)	degree	± inch ± (mm)	lb.in.² kgm²(x10⁻⁶)	Oz. (gm)	
SC005R	4.4 (0.5)	10,000	39 (250)	400 (70)	0.002 (0.05)	0.5	0.004 (0.10)	0.0012 (0.36)	0.35 (10)	C
SC010R	7 (0.8)	10,000	108 (700)	400 (70)	0.004 (0.11)	1	0.008 (0.20)	0.0027 (0.78)	0.53 (15)	C
SC020R	13 (1.5)	10,000	286 (1,850)	183 (32)	0.006 (0.15)	1	0.013 (0.33)	0.012 (3.43)	1.3 (36)	C
SC030R	35 (4.0)	10,000	618 (4,000)	183 (32)	0.007 (0.18)	1	0.016 (0.4)	0.025 (7.33)	1.9 (53)	A
								0.032 (9.39)	2.2 (61)	B
								0.039 (11.5)	2.4 (69)	C
SC035R	53 (6.0)	10,000	1,390 (9,000)	320 (56)	0.009 (0.24)	1	0.020 (0.5)	0.092 (26.8)	4.3 (123)	C
SC040R	89 (10)	10,000	1,545 (10,000)	228 (40)	0.009 (0.24)	1	0.024 (0.6)	0.101 (29.5)	4.3 (122)	A
								0.123 (36.1)	4.8 (136)	B
								0.146 (42.6)	5.3 (151)	C
SC050R	221 (25)	10,000	2,471 (16,000)	137 (24)	0.011 (0.28)	1	0.031 (0.8)	0.331 (96.9)	8.7 (246)	A
								0.407 (119)	9.7 (275)	B
								0.483 (141)	10.7 (304)	C
SC060R	531 (60)	10,000	5,406 (35,000)	218 (38)	0.013 (0.34)	1	0.035 (0.9)	0.862 (252)	15.5 (440)	A
								1.08 (315)	17.6 (498)	B
								1.29 (377)	19.5 (556)	C
SC080R	885 (100)	10,000	10,812 (70,000)	366 (64)	0.02 (0.52)	1	0.04 (1.10)	3.54 (1,034)	37.0 (1,051)	C
SC090R	1,593 (180)	10,000	7,723 (50,000)	308 (54)	0.02 (0.52)	1	0.05 (1.30)	6.08 (1,776)	48.4 (1,373)	C
SC100R	2,213 (250)	10,000	9,268 (60,000)	317 (55)	0.02 (0.52)	1	0.06 (1.48)	9.26 (2,704)	60.2 (1,707)	C

• Moment of Inertia and Weight are measured with the maximum bore diameters
• Tolerance of mounted shaft should be h7

Style A



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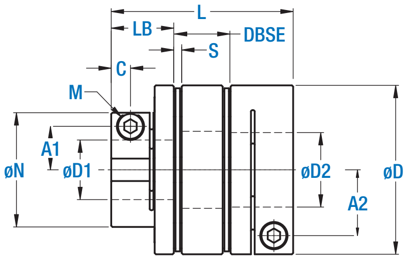

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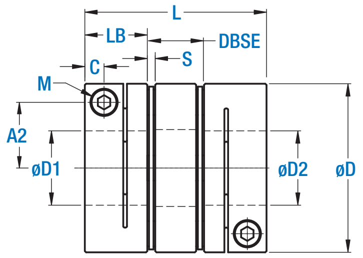


SC Series ServoClass Double Disc Dimensions

Model	Bore D1*1 Min	Bore D1*1 Max	Bore D2*1 Min	Bore D2*1 Max	Outside Diameter D	N	Overall Length L	Hub Length LB	DBSE	Spacer Gap S	A1	A2	C	Clamp Screw Size	Tightening Torque	Style
	Inch (mm)	Inch (mm)	Inch (mm)	Inch (mm)	Inch (mm)	Inch (mm)	Inch (mm)	Inch (mm)	Inch (mm)	Inch (mm)	Inch (mm)	Inch (mm)	Inch (mm)	M	in. lb. (Nm)	
SC005R	0.157 (4)	0.236 (6)	0.157 (4)	0.236 (6)	0.630 (16.0)	–	0.913 (23.2)	0.309 (7.85)	0.100 (7.5)	0.039 (1)	–	0.189 (4.8)	0.098 (2.5)	2-M2.0	3.5 (0.4)	C
SC010R	0.157 (4)	0.3125 (8)	0.157 (4)	0.3125 (8)	0.748 (19.0)	–	1.020 (25.9)	0.360 (9.15)	0.104 (7.6)	0.041 (1.05)	–	0.228 (5.8)*2	0.124 (3.15)	2-M2.0*4	3.5 (0.4)*4	C
														2-M2.5*3	9 (1)*3	
SC020R	0.1875 (5)	0.375 (10)	0.1875 (5)	0.375 (10)	1.024 (26.0)	–	1.272 (32.3)	0.423 (10.75)	0.425 (10.8)	0.065 (1.65)	–	0.374 (9.5)	0.130 (3.3)	2-M2.5	9 (1)	C
SC030R	0.1875 (5)	0.375 (10)	0.1875 (5)	0.375 (10)	1.339 (34.0)	0.850 (21.6)	1.488 (37.8)	0.488 (12.4)	0.511 (13.0)	0.098 (2.5)	0.315 (8)	–	0.148 (3.75)	2-M3	13 (1.5)	A
	0.1875 (5)	0.375 (10)	Over 0.375 (Over 10)	0.5625 (14)							0.315 (8)	0.492 (12.5)				B
	Over 0.375 (Over 10)	0.5625 (14)	Over 0.375 (Over 10)	0.5625 (14)		–					–	0.492 (12.5)				C
SC035R	0.3125 (8)	0.625 (16)	0.3125 (8)	0.625 (16)	1.535 (39.0)	–	1.890 (48)	0.610 (15.5)	0.669 (17.0)	0.118 (3.0)	–	0.551 (14)	0.177 (4.5)	2-M4	30 (3.4)	C
SC040R	0.3125 (8)	0.5625 (15)	0.3125 (8)	0.5625 (15)	1.732 (44.0)	1.165 (29.6)	1.890 (48)	0.610 (15.5)	0.669 (17.0)	0.118 (3.0)	0.433 (11)	–	0.177 (4.5)	2-M4	30 (3.4)	A
	0.3125 (8)	0.5625 (15)	Over 0.5625 (Over 15)	0.750 (19)							0.433 (11)	0.669 (17)				B
	Over 0.5625 (Over 15)	0.750 (19)	Over 0.5625 (Over 15)	0.750 (19)		–					–	0.669 (17)				C
SC050R	0.375 (10)	0.750 (19)	0.375 (10)	0.750 (19)	2.205 (56.0)	1.496 (38)	2.354 (59.8)	0.807 (20.5)	0.739 (18.8)	0.094 (2.4)	0.571 (14.5)	–	0.236 (6)	2-M5	62 (7)	A
	0.375 (10)	0.750 (19)	Over 0.750 (Over 19)	1.000 (25)							0.571 (14.5)	0.866 (22)				B
	Over 0.750 (Over 19)	1.000 (25)	Over 0.750 (Over 19)	1.000 (25)		–					–	0.866 (22)				C
SC060R	0.500 (12)	0.9375 (24)	0.500 (12)	0.9375 (24)	2.677 (68.0)	1.811 (46)	2.886 (73.3)	0.992 (25.2)	0.902 (22.9)	0.126 (3.2)	0.689 (17.5)	–	0.305 (7.75)	2-M6	124 (14)	A
	0.500 (12)	0.9375 (24)	Over 0.9375 (Over 24)	1.1875 (30)							0.689 (17.5)	1.043 (26.5)				B
	Over 0.9375 (Over 24)	1.1875 (30)	Over 0.9375 (Over 24)	1.1875 (30)		–					–	1.043 (26.5)				C
SC080R	0.875 (20)	1.375 (35)	0.875 (20)	1.375 (35)	3.228 (82.0)	–	3.858 (98)	1.181 (30)	1.496 (38.0)	0.315 (8)	–	1.102 (28)	0.354 (9)	2-M8	266 (30)	C
SC090R	1.000 (25)	1.5 (40)	1.000 (25)	1.5 (40)	3.622 (92.0)	–	3.882 (98.6)	1.181 (30)	1.520 (38.6)	0.327 (8.3)	–	1.339 (34)	0.354 (9)	2-M8	266 (30)	C
SC100R	1.438 (35)	1.75 (45)	1.438 (35)	1.75 (45)	4.095 (104.0)	–	4.000 (101.6)	1.181 (30)	1.638 (41.6)	0.386 (9.8)	–	1.535 (39)	0.354 (9)	2-M8	266 (30)	C

The shafts of the equipment (up to the maximum bore size of the coupling) may be extended into the interior of the coupling without any modification to the ServoClass coupling. However, the ends of the shafts must never touch each other.

*1: Bore size affects and limits the operating torque of the coupling.
See the table "Bore Size and Operating Torque Term" on Page 6.
*2: The Dimension for 4mm-7mm bores. For 8mm bore, the dimension is 0.236 inch (6mm).
*3: The screw size and tightening torque for 4mm-7mm bores.
*4: The screw size and tightening torque for 8mm bore.

Bore Size

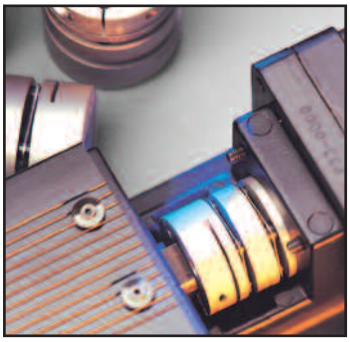
●: Standard Bore Size – Full Rated Torque.
❍: Standard Bore, See the operating torque in the Bore Size and Operating Torque table above right

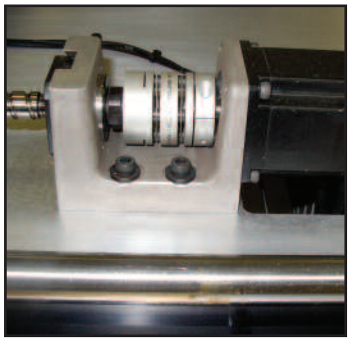
Bore Size D1 D2 mm												
		Model										
Inch	mm	SD/SC005R	SD/SC010R	SD/SC020R	SD/SC030R	SD/SC035R	SD/SC040R	SD/SC050R	SD/SC060R	SD/SC080R	SD/SC090R	SD/SC100R
0.157	4	●	●									
0.1875	5	●	●	❍	❍							
0.236	6	●	●	●	❍							
0.250	6.35		●	●	●							
0.275	7		●	●	●							
0.3125	8		●	●	●	●	❍					
0.354	9			●	●	●	●					
0.375	9.525			●	●	●	●					
0.375	10			●	●	●	●					
0.433	11				●	●	●					
0.500	12				●	●	●	❍				
0.563	14				●	●	●	●				
0.563	15					●	●	●	❍			
0.625	16					●	●	●	●			
0.708	18						●	●	●			
0.750	19						●	●	●			
0.813	20							●	●	●		
0.875	22							●	●	●		
0.938	24							●	●	●		
1.00	25							●	●	●	●	
1.10	28							●	●	●	●	
1.188	30							●	●	●	●	
1.250	32								●	●	●	
1.375	35								●	●	●	●
1.500	38										●	●
1.563	40										●	●
1.625	42											●
1.750	45											●

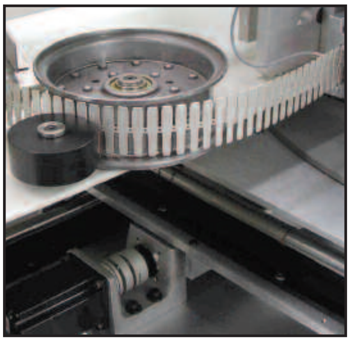
Bore Size and Operating Torque

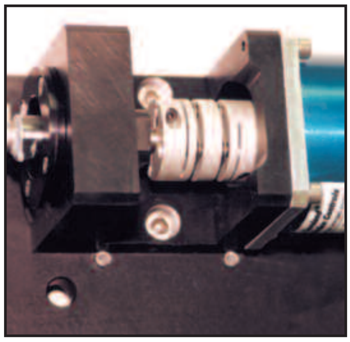
Bore size affects and limits the operating torque of the coupling

Model	Bore		Coupling Operating Torque	
	Inch	mm	in-lbs	Nm
SD/SC020R	0.1875	5	11	1.2
SD/SC030R	0.1875	5	25	2.8
	0.236	6	30	3.4
SD/SC040R	0.3125	8	80	9
SD/SC050R	0.375	10	195	22
SD/SC060R	0.500	12	451	51









Style A

Style B

Style C

Standard Motor Application

1. Determine the speed-revolutions per minute (RPM) and horsepower (HP). Then calculate the torque (T), in inch-pounds, to be transmitted:

$$T = \frac{HP \times 63{,}025}{RPM}$$

2. Select the service factor (K) according to the characteristics of the load or application. See chart below for load characteristics and service factor. Calculate the coupling selection torque (TD) based on the appropriate service factor:

$$TD = T \times K$$

3. Select a coupling with a torque rating equal or greater than TD.

4. Check the dimensions and bore range of the coupling selected with the application requirements.

Servomotor Application

Although servomotors have different torque values relative to RPM, and torque values change relative to continuous or intermittent duty, it is suggested to use the peak torque rating of the servomotor multiplied by a service factor in determining the coupling selection:

$$TS = TM \times KS$$

TS is the torque used to select the coupling; TM is the peak torque of the servomotor; KS is the servo service factor of the application. Generally, KS is a value within the range of 1.3 to 1.5 for ServoClass coupling applications. 1.3 is a factor applied to typical reverse-load, continuous-duty applications. 1.5 is a factor applied to the most demanding high reverse-load, rapid-acceleration applications. Example:

Servomotor Peak Torque:	7.59 inch-pounds
Rated Torque:	2.53 inch-pounds
Shaft Diameter:	0.375 inch

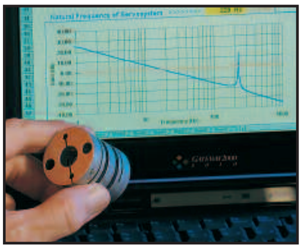
TS = 7.59 x 1.5
TS = 11.39 inch-pounds of torque

Coupling selection: SC020R, rated at 13 inch-pounds of torque. 0.375 bore is OK.

Additional ServoClass Coupling Applications

The ServoClass coupling was designed specifically for the servo motor market. Other applications include stepper motors and encoders. Typically these motors are used in applications that involve positioning devices such as linear ball screws, actuators, and positioning systems (X, Y and Z-axis). The ServoClass is ideal for use in machine tools, printing machines, pick and place machines and many other high precision applications. If there's is a servomotor in the system, a ServoClass coupling should be used!

Natural Frequency & Resonance



In servomotor systems, torsional vibration can be caused by acceleration, deceleration, driver characteristics and other factors. While torsional vibration is inherent in power transmission systems, it is important that its frequency and amplitude be minimized. Torsional vibration can cause component failure or poor system performance. By selecting the proper coupling that places the natural frequency outside the range of 150-400 Hz, the effects of torsional vibration or resonance can be reduced. The calculated natural frequency of the system should be 1.3 to 1.5 times greater than this range.

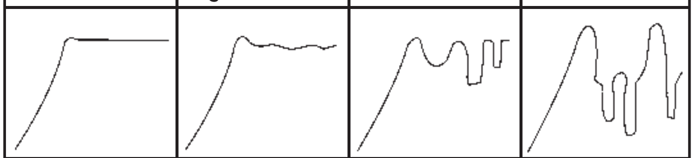
The natural torsional frequency can be calculated from a 2 mass system approximation using the following equation.

$$F = \frac{1}{2\pi} \times \frac{\sqrt{K \times (J_1 + J_2)}}{J_1 \times J_2}$$

Where:
F = Natural Frequency in Hz
J_1 = Inertia of the Motor
J_2 = Inertia of the load
K = Torsional Stiffness of the Coupling

Other factors such as system gain, elasticity of the system and dampening can also be included in the equation. Please call us for a natural frequency analysis of your servo system.

Load Characteristics			
Constant	Slight fluctuation	Medium fluctuation	Great fluctuation
1.0	1.25	1.75	2.25



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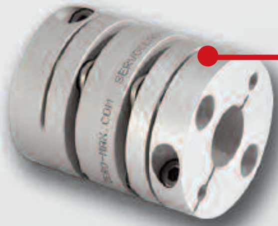

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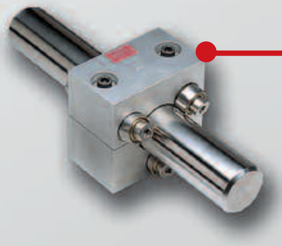

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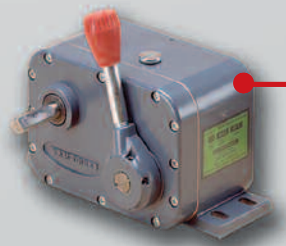

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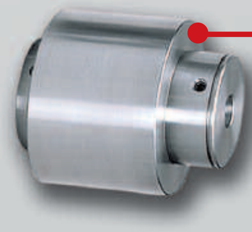

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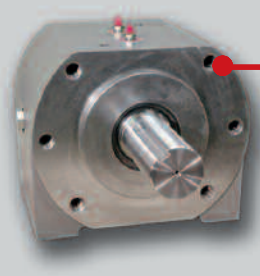

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