RULAND

1937

Carefully Made Shaft Collars and Couplings

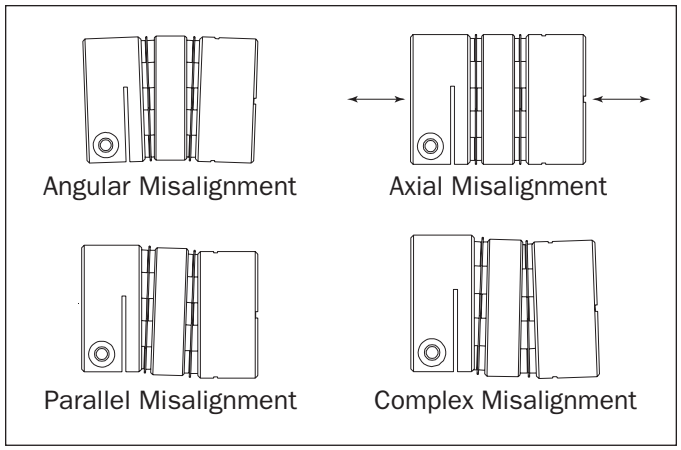
DISC COUPLINGS

Introduction

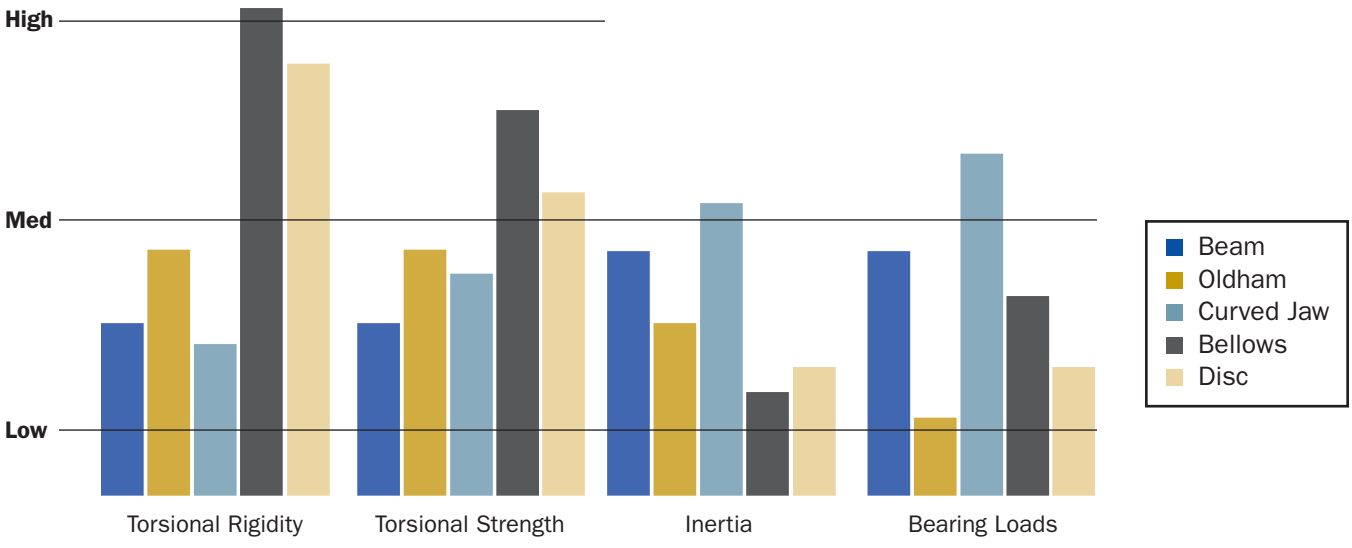
Ruland Manufacturing Co., Inc has been supplying carefully made products since 1937. We have manufactured everything from bicycle pumps to high pressure valves, including the valve that pressurized the spacesuit of the first American to walk in space. In recent years, all of our expertise has been devoted to making the best shaft collars and couplings available. Disc couplings are just one design in the full line of motion control couplings manufactured by Ruland (see back cover).

Ruland disc couplings are an assembly of two anodized aluminum hubs and multiple thin, flat stainless steel disc springs. Single and double disc styles are available with bore sizes ranging from 1/8" to 1 1/4" in the inch series and 3mm to 30mm in the metric series. The double disc styles include a center spacer offered in either anodized aluminum or insulating acetal for electrical isolation. The discs between the hubs allow for a substantial amount of angular and parallel misalignment between shafts, while remaining rigid under high torque loads.

Disc couplings are high performance motion control couplings ideal for high speed applications of up to 10,000 rpm.



In This Catalog



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Installation Instructions

1. Assure that the misalignment between shafts is within the coupling's ratings.
2. Align both hubs of the coupling on the shafts that are to be joined.
3. Fully tighten the screw(s) on one hub to their recommended seating torque (see charts below).
4. Before tightening the screw(s) on the second hub, rotate the coupling by hand to allow it to reach its free length.
5. Tighten the hub on the second shaft such that the misalignment angle remains centered along the length of the coupling and the coupling remains axially relaxed.

Hardware Torque Charts

TORQUE RATINGS—CLAMP SCREW

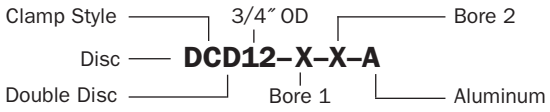
METRIC CLAMP SCREW	SEATING TORQUE (Nm) ALLOY
M2	0.60
M2.5	1.21
M3	2.10
M4	4.60
M5	9.50
M6	16.00

TORQUE RATINGS—SET SCREW

METRIC SET SCREW	SEATING TORQUE (Nm) ALLOY
M3	0.92
M4	2.20
M5	4.00
M6	7.20
M8	17.0

ORDERING INFORMATION

Choose any bore **b1** and any bore **b2** available in a body size. Part numbers are in the following format with numbers representing inches or millimeters:



Materials

Disc Springs: AISI 302 Stainless Steel
Hubs and Center Spacers: 2024 T351 or 7075 T651 Extruded and Drawn Aluminum Bar
Insulating Center Spacers: Acetal

Surface Finish

Hubs and Center Spacers: Sulfuric Anodized MIL-A-8625 Type II, class 2

Hardware

Socket Head Cap Screws: Alloy steel, heat treated. Meet or exceed ASA specifications B18.3.1M and ASTM A574M property class 12.9

Forged Socket Set Screws: Alloy steel, heat treated, cup point. Meet or exceed ASA specification B18.3

Temperature Range

–10° F to 200° F with Aluminum Center Spacer
–10° F to 150° F with Insulating Center Spacer

Bore Tolerance

+.002″/–.000″
+.050 mm/–.000 mm

Maximum Speed

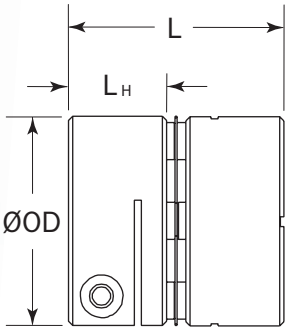
10,000 rpm

WARRANTY / DISCLAIMER OF UNSTATED WARRANTIES / LIMITATION OF LIABILITY

Warranty. Ruland warranties that the products sold hereunder meet Ruland's size and materials specifications as set forth in this catalog. Products not meeting Ruland's size and material specifications will, at Ruland's option, be replaced or the purchase price refunded.

Disclaimer of unstated warranties. THE WARRANTY PRINTED ABOVE IS THE ONLY WARRANTY APPLICABLE TO THESE PRODUCTS. ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. It is the responsibility of the user to determine the suitability of Ruland products for a specific application. No person, including employees of Ruland or agents in the company's channels of distribution is authorized to represent on Ruland's behalf, the suitability of Ruland products for a specific purpose.

Limitation of Liability. IT IS UNDERSTOOD AND AGREED THAT SELLER'S LIABILITY SHALL NOT EXCEED THE AMOUNT OF THE PURCHASE PRICE. SELLER SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES. THE PRICE STATED FOR THE PRODUCT IS A CONSIDERATION IN LIMITING RULAND'S LIABILITY.



- Accommodates angular misalignment and axial motion
- Inch to metric combinations also available
- No maintenance
- High torsional stiffness
- Zero backlash
- Maximum speed: 10,000 RPM

PART NUMBER | **SPECIFICATIONS**

CLAMP STYLE	SET SCREW STYLE	BORE 1 (in)	BORE 2 (in)	ØOD (in)	LENGTH L (in)	CLAMP SCREW	SET SCREW	HUB WIDTH LH (in)	STATIC TORQUE (lb-in)	TORSIONAL STIFFNESS (lb-in/deg)	MISALIGNMENT ANGULAR (deg)	MISALIGNMENT PARALLEL (in)	AXIAL MOTION (in)
DCS10	DSS10	2 (.125) 3 (.188) 4 (.250)	2 (.125) 3 (.188) 4 (.250)	.590	0.719	M2	M3	.328	15	50	0.5	N/A	.002
DCS12	DSS12	3 (.188) 4 (.250) 5 (.313)	3 (.188) 4 (.250) 5 (.313)	.750	0.906	M2.5	M3	.418	25	77	1.0	N/A	.004
DCS16	DSS16	4 (.250) 5 (.313) 6 (.375) 8 (.500)	4 (.250) 5 (.313) 6 (.375) 8 (.500)	1.000	1.031	M3	M4	.467	50	94	1.0	N/A	.006
DCS21	DSS21	5 (.313) 6 (.375) 8 (.500) 10 (.625)	5 (.313) 6 (.375) 8 (.500) 10 (.625)	1.313	1.313	M3	M4	.590	100	313	1.0	N/A	.008
DCS26	DSS26	6 (.375) 8 (.500) 10 (.625) 12 (.750)	6 (.375) 8 (.500) 10 (.625) 12 (.750)	1.625	1.563	M4	M5	.710	180	625	1.0	N/A	.010
DCS32	DSS32	8 (.500) 10 (.625) 12 (.750) 14 (.875) 16 (1.000)	8 (.500) 10 (.625) 12 (.750) 14 (.875) 16 (1.000)	2.000	1.813	M5	M6	.810	350	867	1.0	N/A	.012
DCS36	DSS36	8 (.500) 10 (.625) 12 (.750) 14 (.875) 16 (1.000) 18 (1.125) 20 (1.250)	8 (.500) 10 (.625) 12 (.750) 14 (.875) 16 (1.000) 18 (1.125) 20 (1.250)	2.250	2.313	M6	M8	1.050	450	1000	1.0	N/A	.015

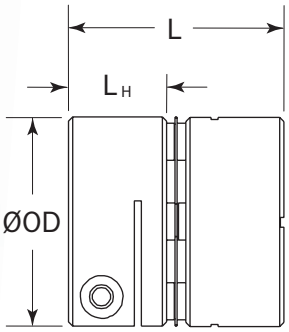
Note 1 Static torque ratings are at maximum misalignment. To obtain dynamic rating, static ratings should be divided by 2 for non-reversing applications and by 4 for reversing applications.

Note 2 Hardware is alloy steel with black oxide finish. Parts DSS10 and DSS12 have one set screw on each end. DSS16, DSS21, DSS26, DSS32 and DSS36 have two set screws 90° apart.

Note 3 Performance ratings are for guidance only. The user must determine suitability for a particular application.

Note 4 Ratings are for standard couplings supplied with black anodized aluminum hubs. Stainless steel hubs available upon request.

FOR WARRANTY/DISCLAIMER OF UNSTATED WARRANTIES/LIMITATION OF LIABILITY SEE PAGES 2-3 OR WWW.RULAND.COM



- Accommodates angular misalignment and axial motion
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- Zero backlash
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PART NUMBER | **SPECIFICATIONS**

CLAMP STYLE	SET SCREW STYLE	BORE 1 (mm)	BORE 2 (mm)	ØOD (mm)	LENGTH L (mm)	CLAMP SCREW	SET SCREW	HUB WIDTH LH (mm)	STATIC TORQUE (Nm)	TORSIONAL STIFFNESS (Nm/deg)	MISALIGNMENT ANGULAR (deg)	MISALIGNMENT PARALLEL (mm)	AXIAL MOTION (mm)
MDCS15	MDSS15	3 4 5 6	3 4 5 6	15.0	18.3	M2	M3	8.3	1.7	5.6	0.5	N/A	0.05
MDCS19	MDSS19	4 5 6 8	4 5 6 8	19.1	23.0	M2.5	M3	10.6	2.8	8.7	1.0	N/A	0.10
MDCS25	MDSS25	6 8 10 12	6 8 10 12	25.4	26.2	M3	M4	11.8	5.6	10.6	1.0	N/A	0.15
MDCS33	MDSS33	8 10 12 14 15 16	8 10 12 14 15 16	33.3	33.3	M3	M4	15.0	11.3	35.4	1.0	N/A	0.20
MDCS41	MDSS41	10 12 14 15 16 20	10 12 14 15 16 20	41.3	39.7	M4	M5	18.0	20.3	70.6	1.0	N/A	0.25
MDCS51	MDSS51	12 14 15 16 20 25	12 14 15 16 20 25	50.8	46.1	M5	M6	20.6	39.6	98.0	1.0	N/A	0.32
MDCS57	MDSS57	14 15 16 20 25 30	14 15 16 20 25 30	57.2	58.8	M6	M8	26.7	50.9	113.0	1.0	N/A	0.38

Note 1 Static torque ratings are at maximum misalignment. To obtain dynamic rating, static ratings should be divided by 2 for non-reversing applications and by 4 for reversing applications.

Note 2 Hardware is alloy steel with black oxide finish. Parts MDSS15 and MDSS19 have one set screw on each end. MDSS25, MDSS33, MDSS41 and MDSS51 have two set screws 90° apart.

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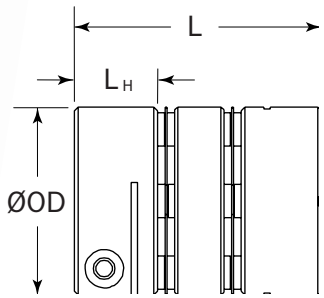

- Accommodates angular and parallel misalignment and axial motion
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CLAMP STYLE	SET SCREW STYLE	BORE 1 (in)	BORE 2 (in)	ØOD (in)	LENGTH L (in)	CLAMP SCREW	SET SCREW	HUB WIDTH LH (in)	STATIC TORQUE (lb-in)	TORSIONAL STIFFNESS (lb-in/deg)	MISALIGNMENT ANGULAR (deg)	MISALIGNMENT PARALLEL (in)	AXIAL MOTION (in)
DCD10	DSD10	2 (.125) 3 (.188) 4 (.250)	2 (.125) 3 (.188) 4 (.250)	.590	0.938	M2	M3	.328	15	27	1.0	.002	.004
DCD12	DSD12	3 (.188) 4 (.250) 5 (.313)	3 (.188) 4 (.250) 5 (.313)	.750	1.188	M2.5	M3	.418	25	51	2.0	.004	.008
DCD16	DSD16	4 (.250) 5 (.313) 6 (.375) 8 (.500)	4 (.250) 5 (.313) 6 (.375) 8 (.500)	1.000	1.375	M3	M4	.467	50	61	2.0	.006	.012
DCD21	DSD21	5 (.313) 6 (.375) 8 (.500) 10 (.625)	5 (.313) 6 (.375) 8 (.500) 10 (.625)	1.313	1.770	M3	M4	.590	100	253	2.0	.008	.016
DCD26	DSD26	6 (.375) 8 (.500) 10 (.625) 12 (.750)	6 (.375) 8 (.500) 10 (.625) 12 (.750)	1.625	2.165	M4	M5	.710	180	375	2.0	.010	.020
DCD32	DSD32	8 (.500) 10 (.625) 12 (.750) 14 (.875) 16 (1.000)	8 (.500) 10 (.625) 12 (.750) 14 (.875) 16 (1.000)	2.000	2.500	M5	M6	.810	350	595	2.0	.012	.025
DCD36	DSD36	8 (.500) 10 (.625) 12 (.750) 14 (.875) 16 (1.000) 18 (1.125) 20 (1.250)	8 (.500) 10 (.625) 12 (.750) 14 (.875) 16 (1.000) 18 (1.125) 20 (1.250)	2.250	3.100	M6	M8	1.050	450	769	2.0	.012	.030

Note 1 Static torque ratings are at maximum misalignment. To obtain dynamic rating, static ratings should be divided by 2 for non-reversing applications and by 4 for reversing applications.

Note 2 Hardware is alloy steel with black oxide finish. Parts DSD10 and DSD12 have one set screw on each end. DSD16, DSD21, DSD26, DSD32 and DSD36 have two set screws 90° apart.

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Note 4 Ratings are for standard couplings supplied with black anodized aluminum hubs and center spacers. Stainless steel hubs and center spacers available upon request. Insulating (Acetal) spacers available with our MDCDE/MDSDE series.

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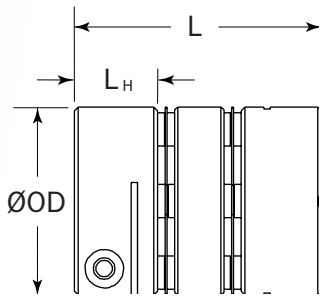

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MDCD15	MDSD15	3 4 5 6	3 4 5 6	15.0	23.8	M2	M3	8.3	1.7	3.0	1.0	0.05	0.10
MDCD19	MDSD19	4 5 6 8	4 5 6 8	19.1	30.2	M2.5	M3	10.6	2.8	5.8	2.0	0.10	0.20
MDCD25	MDSD25	6 8 10 12	6 8 10 12	25.4	35.3	M3	M4	11.8	5.6	6.9	2.0	0.15	0.30
MDCD33	MDSD33	8 10 12 14 15 16	8 10 12 14 15 16	33.3	45.5	M3	M4	15.0	11.3	28.6	2.0	0.20	0.40
MDCD41	MDSD41	10 12 14 15 16 20	10 12 14 15 16 20	41.3	55.8	M4	M5	18.0	20.3	42.4	2.0	0.25	0.51
MDCD51	MDSD51	12 14 15 16 20 25	12 14 15 16 20 25	50.8	63.5	M5	M6	20.6	39.6	67.2	2.0	0.30	0.64
MDCD57	MDSD57	14 15 16 20 25 30	14 15 16 20 25 30	57.2	78.7	M6	M8	26.7	50.9	86.9	2.0	0.30	0.76

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Available from RULAND

We are committed to have the largest variety of sizes and styles in the industry. In addition to the items listed below, we can manufacture an extensive variety of special designs. Please contact us with your custom needs.

OLDHAM COUPLING

Clamp and set screw styles.

BELLOWS COUPLING

Clamp and set screw styles.

BEAM COUPLING

Clamp and set screw styles.

JAW COUPLING

Clamp and set screw styles.

QUICK-CLAMP COLLAR

One-piece integral lever style.

SHAFT COLLAR

One- and two-piece styles.

DISC COUPLING

Clamp and set screw styles.

RIGID COUPLING

One- and two-piece styles.

RULAND Est. 1937

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