# Technical Information

**Materials**
Torque Disks: Acetal or Nylon 11
Hubs: 2024 T351 or 7075 T651 Extruded and Drawn Aluminum Bar

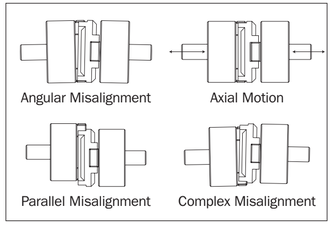
**Surface Finish**
Hubs: Type II Sulfuric Anodized

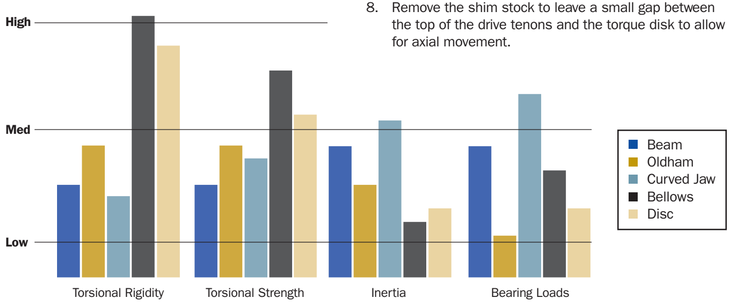
**Hardware**
Socket Head Cap Screws: Alloy steel, heat treated. Meet or exceed ASA specification B18.3. Metric hardware meets or exceeds ASA specifications B18.3.1M and ASTM A574M property class 12.9

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

**Temperature Range**
–10° F to 150° F with Acetal disk
–10° F to 130° F with Nylon 11 disk

**Maximum Speed**
4,500 rpm




**Hardware Torque Charts**

**Torque Ratings—Clamp Screw**

| INCH Clamp Screw | Seating Torque (lb-in) ALLOY | STAINLESS STEEL | METRIC Clamp Screw | Seating Torque (Nm) ALLOY | STAINLESS STEEL |
|---|---|---|---|---|---|
| #2-56 | 6 | 3.8 | M2 | 0.60 | 0.36 |
| #4-40 | 15 | 8 | M2.5 | 1.21 | 0.73 |
| #6-32 | 28 | 15 | M3 | 2.10 | 1.10 |
| #8-32 | 49 | 28 | M4 | 4.60 | 2.50 |
| #10-32 | 76 | 45 | M5 | 9.50 | 5.40 |
| 1/4-28 | 170 | 110 | M6 | 16.00 | 9.60 |

**Torque Ratings—Set Screw**

| INCH Set Screw | Seating Torque (lb-in) ALLOY | STAINLESS STEEL | METRIC Set Screw | Seating Torque (Nm) ALLOY | STAINLESS STEEL |
|---|---|---|---|---|---|
| #1-72 | 0.8 | 0.48 | M2.5 | 0.57 | 0.44 |
| #2-56 | 1.8 | 1.08 | M3 | 0.92 | 0.73 |
| #4-40 | 5.0 | 3.00 | M4 | 2.20 | 1.76 |
| #6-32 | 10.0 | 6.00 | M5 | 4.00 | 3.20 |
| #8-32 | 15.0 | 12.00 | M6 | 7.20 | 5.76 |
| #10-32 | 25.0 | 18.00 | | | |
| 1/4-20 | 87.0 | 70.00 | | | |

**Installation Instructions**

1. Assure that the misalignment between shafts is within the coupling's ratings.
2. Slide a hub onto each shaft to be joined with the drive tenons facing each other.
3. Rotate the hubs on the shaft so the drive tenons are located 90° from each other.
4. Place a torque disk so one groove fits over the drive tenons of a hub and center the disk by hand.
5. Insert a shim with the thickness of the coupling's axial motion rating into the groove of the torque disk.
6. Slide the tenons of the second hub into the mating groove in the disk until it touches the shim stock.
7. Fully tighten the screw(s) on each hub to their recommended seating torque (see charts above).
8. Remove the shim stock to leave a small gap between the top of the drive tenons and the torque disk to allow for axial movement.



# 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 COUPLINGS**
Paradrive™ oldham coupling. Clamp and set screw styles.

**BELLOWS COUPLINGS**
Belflex™ bellows coupling. Clamp and set screw styles.

**BEAM COUPLINGS**
Flexbeam™ flexible coupling. Clamp and set screw styles.

**JAW COUPLINGS**
Jawflex™ jaw coupling. Clamp and set screw styles.

**CLAMPING DEVICES**
Hublok™ clamping device. Single and dual taper styles.

**SHAFT COLLARS**
Nomar® shaft collar. One- and two-piece styles.

**DISC COUPLINGS**
Discflex™ disc coupling. Clamp and set screw styles.

**RIGID COUPLINGS**
Nomar® rigid coupling. One- and two-piece styles.

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**www.ruland.com • sales@ruland.com**

Est. 1937



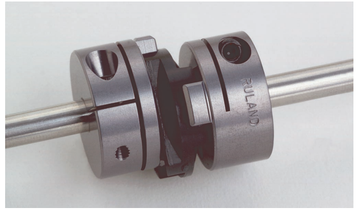
# RULAND

## Carefully Made Products Since 1937


## PARADRIVE™ 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. Paradrive™ oldham couplings are a new addition to our expanding line of motion control coupling products.



Paradrive™ oldham couplings are three piece couplings comprised of two hubs and a center member. The center disk, which is available in a choice of acetal for high torsional stiffness or nylon for vibration and shock absorption, is the torque transmitting element. Torque transmission is accomplished by mating slots in the center disk, located on opposite sides of the disk and oriented 90 degrees apart, with the drive tenons on the hubs. The slots of the disk fit on the tenons of the hub with a slight press fit. This press fit allows the coupling (with an acetal disk) to operate with zero backlash. While over time the sliding of the disk over the tenons will create wear and the coupling will cease to be zero backlash, the disk can be easily replaced and the coupling's original performance restored. In operation, the center disk slides on the tenon of the hub to accommodate misalignment. This design is particularly well suited for handling relatively large amounts of parallel misalignment. The disks are also electrically isolating and can act as a mechanical fuse. When the plastic insert fails, it breaks cleanly and does not allow any transmission of power, preventing other damage from occurring to more expensive machinery components.

## 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.





## HUBS

| PART NUMBER | | SPECIFICATIONS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CLAMP STYLE | SET SCREW STYLE | BORE (in) | OUTER DIAM. OD (in) | HUB LENGTH LH (in) (OCT) | HUB LENGTH LH (in) (OST) | COUPLING LENGTH L (in) (OCT) | COUPLING LENGTH L (in) (OST) | SHAFT PENETRATION (in) (OCT) | SHAFT PENETRATION (in) (OST) | CLAMP SCREW | SET SCREW |
| | OST8-2-A | .1250 | 0.500 | | 0.222 | | 0.625 | | 0.222 | | #4-40 |
| | OST8-3-A | .1875 | | | | | | | | | |
| | OST8-4-A | .2500 | | | | | | | | | |
| OCT12-3-A | OST12-3-A | .1875 | 0.750 | 0.380 | 0.300 | 1.000 | 0.875 | 0.380 | 0.300 | #2-56 | #6-32 |
| OCT12-4-A | OST12-4-A | .2500 | | | | | | | | | |
| OCT12-5-A | OST12-5-A | .3125 | | | | | | | | | |
| OCT16-4-A | OST16-4-A | .2500 | 1.000 | 0.467 | 0.390 | 1.250 | 1.125 | 0.467 | 0.390 | #4-40 | #8-32 |
| OCT16-5-A | OST16-5-A | .3125 | | | | | | | | | |
| OCT16-6-A | OST16-6-A | .3750 | | | | | | | | | |
| OCT16-8-A | OST16-8-A | .5000 | | | | | | | | | |
| OCT21-5-A | OST21-5-A | .3125 | 1.313 | 0.590 | 0.590 | 1.875 | 1.875 | 0.590 | 0.590 | #6-32 | #8-32 |
| OCT21-6-A | OST21-6-A | .3750 | | | | | | | | | |
| OCT21-8-A | OST21-8-A | .5000 | | | | | | | | | |
| OCT21-10-A | OST21-10-A | .6250 | | | | | | | | | |
| OCT26-6-A | OST26-6-A | .3750 | 1.625 | 0.710 | 0.710 | 2.000 | 2.000 | 0.710 | 0.710 | #8-32 | #10-32 |
| OCT26-8-A | OST26-8-A | .5000 | | | | | | | | | |
| OCT26-10-A | OST26-10-A | .6250 | | | | | | | | | |
| OCT26-12-A | OST26-12-A | .7500 | | | | | | | | | |
| OCT32-8-A | | .5000 | 2.000 | 0.820 | | 2.350 | | 0.820 | | #10-32 | |
| OCT32-10-A | | .6250 | | | | | | | | | |
| OCT32-12-A | | .7500 | | | | | | | | | |
| OCT32-14-A | | .8750 | | | | | | | | | |
| OCT32-16-A | | 1.0000 | | | | | | | | | |
| OCT36-8-A | | .5000 | 2.250 | 1.130 | | 3.100 | | 1.130 | | 1/4-28 | |
| OCT36-10-A | | .6250 | | | | | | | | | |
| OCT36-12-A | | .7500 | | | | | | | | | |
| OCT36-14-A | | .8750 | | | | | | | | | |
| OCT36-16-A | | 1.0000 | | | | | | | | | |

**ORDERING INFORMATION**

**For a complete coupling, order two hubs and one disk.**

For example: order OCT16-4-A, OCT16-6-A, and OD16/25-AT to form a complete coupling with a 1" OD, .250" and .375" bores and a zero backlash disk.

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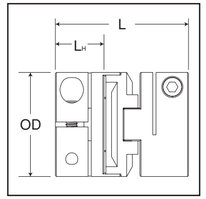
## HUBS

| PART NUMBER | | SPECIFICATIONS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CLAMP STYLE | SET SCREW STYLE | BORE (mm) | OUTER DIAM. OD (mm) | HUB LENGTH LH (mm) (MOCT) | HUB LENGTH LH (mm) (MOST) | COUPLING LENGTH L (mm) (MOCT) | COUPLING LENGTH L (mm) (MOST) | SHAFT PENETRATION (mm) (MOCT) | SHAFT PENETRATION (mm) (MOST) | CLAMP SCREW | SET SCREW |
| | MOST13-3-A | 3 | 12.7 | | 5.6 | | 15.9 | | 5.6 | | M3 |
| | MOST13-4-A | 4 | | | | | | | | | |
| | MOST13-5-A | 5 | | | | | | | | | |
| | MOST13-6-A | 6 | | | | | | | | | |
| MOCT19-4-A | MOST19-4-A | 4 | 19.1 | 9.7 | 7.6 | 25.4 | 22.2 | 9.7 | 7.6 | M2.5 | M3 |
| MOCT19-5-A | MOST19-5-A | 5 | | | | | | | | | |
| MOCT19-6-A | MOST19-6-A | 6 | | | | | | | | | |
| MOCT19-8-A | MOST19-8-A | 8 | | | | | | | | | |
| MOCT25-6-A | MOST25-6-A | 6 | 25.4 | 11.9 | 9.9 | 31.8 | 28.6 | 11.9 | 9.9 | M3 | M4 |
| MOCT25-8-A | MOST25-8-A | 8 | | | | | | | | | |
| MOCT25-10-A | MOST25-10-A | 10 | | | | | | | | | |
| MOCT25-12-A | MOST25-12-A | 12 | | | | | | | | | |
| MOCT33-8-A | MOST33-8-A | 8 | 33.3 | 15.0 | 15.0 | 47.6 | 47.6 | 15.0 | 15.0 | M3 | M4 |
| MOCT33-10-A | MOST33-10-A | 10 | | | | | | | | | |
| MOCT33-12-A | MOST33-12-A | 12 | | | | | | | | | |
| MOCT33-14-A | MOST33-14-A | 14 | | | | | | | | | |
| MOCT33-16-A | MOST33-16-A | 16 | | | | | | | | | |
| MOCT41-10-A | MOST41-10-A | 10 | 41.3 | 18.0 | 18.0 | 50.8 | 50.8 | 18.0 | 18.0 | M4 | M5 |
| MOCT41-12-A | MOST41-12-A | 12 | | | | | | | | | |
| MOCT41-14-A | MOST41-14-A | 14 | | | | | | | | | |
| MOCT41-16-A | MOST41-16-A | 16 | | | | | | | | | |
| MOCT41-20-A | MOST41-20-A | 20 | | | | | | | | | |
| MOCT51-12-A | | 12 | 50.8 | 20.8 | | 59.7 | | 20.8 | | M5 | |
| MOCT51-14-A | | 14 | | | | | | | | | |
| MOCT51-16-A | | 16 | | | | | | | | | |
| MOCT51-20-A | | 20 | | | | | | | | | |
| MOCT51-25-A | | 25 | | | | | | | | | |
| MOCT57-14-A | | 14 | 57.2 | 28.7 | | 78.7 | | 28.7 | | M6 | |
| MOCT57-16-A | | 16 | | | | | | | | | |
| MOCT57-20-A | | 20 | | | | | | | | | |
| MOCT57-25-A | | 25 | | | | | | | | | |
| MOCT57-30-A | | 30 | | | | | | | | | |

## DISKS

| PART NUMBER | MATERIAL | OUTER DIAM. OD (in) | OUTER DIAM. OD (mm) | TORSIONAL STIFFNESS (Deg/lb-in) | TORSIONAL STIFFNESS (Deg/Nm) | RATED TORQUE (lb-in) | RATED TORQUE (Nm) | BREAK TORQUE (lb-in) | BREAK TORQUE (Nm) | PARALLEL MISALIGNMENT (in) | PARALLEL MISALIGNMENT (mm) | AXIAL MOTION (in) | AXIAL MOTION (mm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OD8/13-AT | Acetal | 0.500 | 12.7 | .072 | 0.636 | 6.0 | 0.68 | 34 | 3.9 | 0.004 | 0.10 | 0.002 | 0.05 |
| OD12/19-AT | Acetal | 0.750 | 19.1 | .043 | 0.380 | 20.0 | 2.25 | 93 | 10.5 | 0.008 | 0.20 | 0.004 | 0.10 |
| OD16/25-AT | Acetal | 1.000 | 25.4 | .033 | 0.291 | 42.0 | 4.75 | 168 | 19.0 | 0.008 | 0.20 | 0.004 | 0.10 |
| OD21/33-AT | Acetal | 1.313 | 33.3 | .009 | 0.079 | 70.0 | 8.00 | 350 | 39.5 | 0.008 | 0.20 | 0.006 | 0.15 |
| OD26/41-AT | Acetal | 1.625 | 41.3 | .008 | 0.068 | 130.0 | 14.75 | 480 | 54.5 | 0.010 | 0.25 | 0.006 | 0.15 |
| OD32/51-AT | Acetal | 2.000 | 50.8 | .005 | 0.044 | 250.0 | 28.50 | 750 | 85.0 | 0.010 | 0.25 | 0.008 | 0.20 |
| OD36/57-AT | Acetal | 2.250 | 57.2 | .003 | 0.027 | 375.0 | 42.50 | 1100 | 125.0 | 0.010 | 0.25 | 0.008 | 0.20 |
| OD8/13-NL | Nylon 11 | 0.500 | 12.7 | .290 | 2.560 | 1.5 | 0.17 | 25 | 2.8 | 0.004 | 0.10 | 0.002 | 0.05 |
| OD12/19-NL | Nylon 11 | 0.750 | 19.1 | .140 | 1.240 | 5.0 | 0.57 | 85 | 9.6 | 0.008 | 0.20 | 0.004 | 0.10 |
| OD16/25-NL | Nylon 11 | 1.000 | 25.4 | .126 | 1.110 | 10.0 | 1.13 | 140 | 15.9 | 0.008 | 0.20 | 0.004 | 0.10 |
| OD21/33-NL | Nylon 11 | 1.313 | 33.3 | .052 | 0.460 | 18.0 | 2.05 | 300 | 34.0 | 0.008 | 0.20 | 0.006 | 0.15 |
| OD26/41-NL | Nylon 11 | 1.625 | 41.3 | .037 | 0.330 | 32.0 | 3.65 | 400 | 45.3 | 0.010 | 0.25 | 0.006 | 0.15 |




**For engineering information, see page 5.**
**For warranty information, see page 2.**

**Note 1** Couplings can accommodate angular misalignment up to 0.5°.

**Note 2** Hardware is alloy steel with black oxide finish. Parts OST8, OST12, MOST13 and MOST19 have one set screw on each end. OST16, OST21, OST26, MOST25, MOST33 and MOST41 have two set screws 90° apart.

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

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