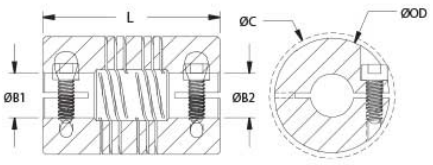
# FCR12-5/16"-7MM-SS

Ruland FCR12-5/16"-7MM-SS, 5/16" x 7mm Six Beam Coupling, Stainless Steel, Clamp Style, 0.750" (19.1mm) OD, 1.250" (31.8mm) Length






## Description

Ruland FCR12-5/16"-7MM-SS is a clamp style six beam coupling with 0.3125" x 7mm bores, 0.750" (19.1mm) OD, and 1.250" (31.8mm) length. It is machined from a single piece of material and features two sets of three spiral cuts. This gives it higher torque capacity, lower windup, and larger body sizes than single or four beam couplings and allows for use in light duty power transmission applications such as coupling a servo motor to a lead screw. FCR12-5/16"-7MM-SS is zero-backlash and has a balanced design for reduced vibration at high speeds of up to 6,000 RPM. Ruland supplies this spiral coupling with Nypatch® anti-vibration hardware that allows for even seating of the screw, repeated screw installations, prevents galling, and maintains high holding power. All hardware is metric and tests beyond DIN 912 12.9 standards for maximum torque capabilities. FCR12-5/16"-7MM-SS is made from 303 stainless steel for increased torque capacity. It is machined from bar stock that is sourced exclusively from North American mills and RoHS3 and REACH compliant. FCR12-5/16"-7MM-SS is manufactured in our Marlborough, MA factory under strict controls using proprietary processes.

## Product Specifications

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|---|---|---|---|
| **Bore (B1)** | 0.3125 in | **Small Bore (B2)** | 7 mm |
| **B1 Max Shaft Penetration** | 0.607 in (15.4 mm) | **B2 Max Shaft Penetration** | 0.607 in (15.4 mm) |
| **Outer Diameter (OD)** | 0.750 in (19.1 mm) | **Bore Tolerance** | +0.001 in / -0.000 in (+0.025 mm / -0.000 mm) |
| **Length (L)** | 1.250 in (31.8 mm) | **Clearance Diameter (C) MAX** | 0.879 in (22.33 mm) |
| **Recommended Shaft Tolerance** | +0.0000 / -0.0005 " (+0.000 / -0.013 mm) | **Cap Screw** | M3 |
| **Screw Material** | Alloy Steel with Nypatch® | **Hex Wrench Size** | 2.5 mm |
| **Screw Finish** | Black Oxide | **Seating Torque** | 2.1 Nm |
| **Number of Screws** | 2 ea | **Dynamic Torque Reversing** | 7.75 lb-in (0.88 Nm) |
| **Angular Misalignment** | 3.0° | **Dynamic Torque Non-Reversing** | 15.5 lb-in (1.76 Nm) |
| **Parallel Misalignment** | 0.008 in (0.20 mm) | **Static Torque** | 31 lb-in (3.50 Nm) |
| **Axial Motion** | 0.005 in (0.13 mm) | **Torsional Stiffness** | 0.096 Deg/lb-in (0.85 Deg/Nm) |
| **Moment of Inertia** | 0.0100 lb-in$^2$, 2.964 x10$^{-6}$ kg-m$^2$ | **Maximum Speed** | 6,000 RPM |
| **Full Bearing Support Required?** | Yes | **Nypatch® Anti-Vibration Hardware?** | Yes |
| **Zero-Backlash?** | Yes | **Balanced Design** | Yes |
| **Torque Wrench** | TW:BT-1R-1/4-18.3 | **Recommended Hex Key** | Metric Hex Keys |
| **Material Specification** | Type 303 Austenitic, Non-Magnetic Bar | **Temperature** | -40°F to 350°F (-40°C to 176°C) |
| **Finish Specification** | Bright, No Plating | **Manufacturer** | Ruland Manufacturing |
| **Country of Origin** | USA | **Weight (lbs)** | 0.110400 |
| **UPC** | 634529192702 | **Tariff Code** | 8483.60.8000 |
| **UNSPC** | 31163003 | | |
| **Note 1** | Torque ratings are at maximum misalignment. | | |
| **Note 2** | Performance ratings are for guidance only. The user must determine suitability for a particular application. | | |
| **Note 3** | Torque ratings for the couplings are based on the physical limitations/failure point of the machined beams. Under normal/typical conditions the hubs are capable of holding up to the rated torque of the machined beams. In some cases, especially when the smallest standard bores are used or where shafts are undersized, slippage on the shaft is possible below the rated torque of the machined beams. Keyways are available to provide additional torque capacity in the shaft/hub connection when required. Please consult | | |

technical support for more assistance.

**Prop 65**

⚠**WARNING** This product can expose you to chemicals including Ethylene Thiourea and Nickel (metallic), known to the State of California to cause cancer, and Ethylene Thiourea known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

**Installation Instructions**

1. Align the bores of the FCR12-5/16"-7MM-SS six beam coupling on the shafts that are to be joined and determine if the misalignment parameters are within the limits of the coupling. (*Angular Misialignment:* 3°, *Parallel Misalignment*: 0.008 in (0.20 mm), *Axial Motion*: 0.005 in (0.13 mm))
2. Fully tighten the M3 screw on one hub to the recommended seating torque of 2.1 Nm using a 2.5 mm hex torque wrench.
3. Before tightening the screws on the second hub, rotate the coupling by hand to allow it to reach its free length.
4. Tighten the screws on the second hub to the recommended seating torque. Make sure the coupling remains axially relaxed and the misalignment angle remains centered along the length of the coupling.
5. The shafts may extend into the relieved portion of the bore as long as it does not exceed the shaft penetration length of 0.607 in (15.4 mm).