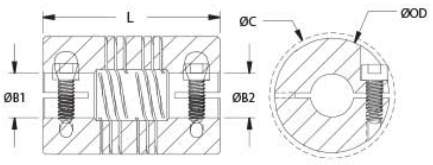
FCMR38-20-12-SS

Ruland FCMR38-20-12-SS, 20mm x 12mm Six Beam Coupling, Stainless Steel, Clamp Style, 38.1mm OD, 57.2mm Length





Description

Ruland FCMR38-20-12-SS is a clamp style six beam coupling with 20mm x 12mm bores, 38.1mm OD, and 57.2mm 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. FCMR38-20-12-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. FCMR38-20-12-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. FCMR38-20-12-SS is manufactured in our Marlborough, MA factory under strict controls using proprietary processes.

Product Specifications

Bore (B1)	20 mm	**Small Bore (B2)**	12 mm
B1 Max Shaft Penetration	27.3 mm	**B2 Max Shaft Penetration**	27.3 mm
Outer Diameter (OD)	38.1 mm	**Bore Tolerance**	+0.025 mm / -0.000 mm
Length (L)	57.2 mm	**Clearance Diameter (C) MAX**	41.71 mm
Recommended Shaft Tolerance	+0.000 mm / -0.013 mm	**Cap Screw**	M6
Screw Material	Alloy Steel with Nypatch®	**Hex Wrench Size**	5.0 mm
Screw Finish	Black Oxide	**Seating Torque**	16 Nm
Number of Screws	2 ea	**Dynamic Torque Reversing**	2.37 Nm
Angular Misalignment	3.0°	**Dynamic Torque Non-Reversing**	4.75 Nm
Parallel Misalignment	0.76 mm	**Static Torque**	9.49 Nm
Axial Motion	0.38 mm	**Torsional Stiffness**	0.28 Deg/Nm
Moment of Inertia	83.407 $x10^{-6}$ $kg-m^2$	**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-4C-3/8-140	**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)**	0.721400
UPC	634529210048	**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. 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 FCMR38-20-12-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*: 0.76 mm, *Axial Motion*: 0.38 mm)
2. Fully tighten the M6 screw on one hub to the recommended seating torque of 16 Nm using a 5.0 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 27.3 mm.