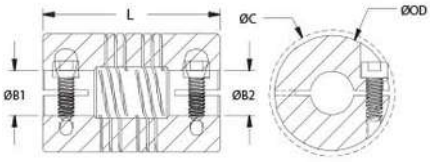
RULAND
Carefully Made Shaft Collars and Couplings

FCMR38-20-20-A

Ruland FCMR38-20-20-A, 20mm x 20mm Six Beam Coupling, Aluminum, Clamp Style, 38.1mm OD, 57.2mm Length





Description

Ruland FCMR38-20-20-A is a clamp style six beam coupling with 20mm x 20mm 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. FCMR38-20-20-A 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. FCMR38-20-20-A is made from 7075 aluminum for lightweight and low inertia. It is machined from bar stock that is sourced exclusively from North American mills and RoHS3 and REACH compliant. FCMR38-20-20-A is manufactured in our Marlborough, MA factory under strict controls using proprietary processes.

Product Specifications

Bore (B1)	20 mm	**Small Bore (B2)**	20 mm
Shaft Penetration B1	27.3 mm	**Shaft Penetration B2**	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
Cap Screw	M5	**Screw Material**	Alloy Steel with Nypatch®
Hex Wrench Size	4.0 mm	**Screw Finish**	Black Oxide
Seating Torque	9.5 Nm	**Number of Screws**	2 ea
Static Torque	11.75 Nm	**Angular Misalignment**	3°
Dynamic Torque Non-Reversing	5.88 Nm	**Parallel Misalignment**	0.76 mm
Dynamic Torque Reversing	2.94 Nm	**Axial Motion**	0.38 mm
Torsional Stiffness	0.77 Deg/Nm	**Moment of Inertia**	30.032 x10^{-6} kg-m^2
Maximum Speed	6,000 RPM	**Material Specification**	7075-T651 Extruded and Drawn Aluminum Bar
Temperature	-40°F to 225°F (-40°C to 107°C)	**Finish Specification**	Bright
Manufacturer	Ruland Manufacturing	**Country of Origin**	USA
Weight (lbs.)	0.2500	**Recommended Shaft Tolerance**	+0.000 mm / -0.013 mm
UPC	63452913480	**Tariff Code**	8483.60.8000
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 the chemical Ethylene Thiourea, known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.		

Installation Instructions

1. Align the bores of the FCMR38-20-20-A 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 M5 screw on one hub to the recommended seating torque of 9.5 Nm using a 4.0 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.