



MBC57-20-14-A

Ruland MBC57-20-14-A, 20mm x 14mm Bellows Coupling, Aluminum, Clamp Style, 57.2mm OD, 82.2mm Length



Description

Ruland MBC57-20-14-A is a clamp bellows coupling with 20 mm x 14 mm bores, 57.2 mm OD, and 82.2mm length. It is zero-backlash and has a balanced design for reduced vibration at high speeds. MBC57-20-14-A is comprised of two anodized aluminum hubs and a stainless steel bellows. The bellows are able to flex while remaining rigid under torsional loads allowing for all types of misalignment to be accommodated. This bellows coupling is lightweight and has low inertia making it suitable for applications with speeds up to 10,000 RPM. Hardware is metric and tests beyond DIN 912 12.9 standards for maximum torque capabilities. Ruland MBC57-20-14-A has six convolutions allowing for high torsional rigidity and making it an excellent fit for precise positioning stepper servo applications as well as encoders. It is machined from solid bar stock that is sourced exclusively from North American mills and RoHS3 and REACH compliant. MBC57-20-14-A is carefully manufactured in our Marlborough, MA factory under strict controls using proprietary processes.

Product Specifications

Bore (B1)	20 mm	Small Bore (B2)	14 mm
B1 Max Shaft Penetration	38.0 mm	B2 Max Shaft Penetration	38.0 mm
Outer Diameter (OD)	57.2 mm	Bore Tolerance	+0.03 mm / -0.00 mm
Length (L)	82.2 mm	Length Tolerance	+/- 0.76 mm
Hub Width (LH)	26.7 mm	Recommended Shaft Tolerance	+0.000 mm / -0.013 mm
Forged Clamp Screw	M6	Screw Material	Alloy Steel
Hex Wrench Size	5.0 mm	Screw Finish	Black Oxide
Seating Torque	16 Nm	Number of Screws	2 ea
Dynamic Torque Reversing	15.00 Nm	Angular Misalignment	2.0°
Dynamic Torque Non-Reversing	30.00 Nm	Parallel Misalignment	0.30 mm
Static Torque	60.00 Nm	Axial Motion	0.75 mm
Torsional Stiffness	135 Nm/Deg	Moment of Inertia	170.615 x10 ⁻⁶ kg-m ²
Maximum Speed	10,000 RPM	Full Bearing Support Required?	Yes
Zero-Backlash?	Yes	Balanced Design	Yes
Torque Wrench	TW:BT-4C-3/8-140	Recommended Hex Key	Metric Hex Keys
Material Specification	Hubs: 2024-T351 Aluminum Bar Bellows: Type 321 Stainless Steel	Temperature	-40°F to 200°F (-40°C to 93°C)
Finish Specification	Sulfuric Anodized MIL-A-8625 Type II, Class 2 and ASTM B580 Type B Black Anodize	Bellows Attachment Method	Epoxy
Manufacturer	Ruland Manufacturing	Country of Origin	USA
Weight (lbs)	0.814900	UPC	634529309278
Tariff Code	8483.60.8000	UNSPC	31163018

- Note 1** Stainless steel hubs are available upon request.
- Note 2** Torque ratings are at maximum misalignment.
- Note 3** Performance ratings are for guidance only. The user must determine suitability for a particular application.
- Note 4** Torque ratings for the couplings are based on the physical limitations/failure point of the metal bellows. Under normal/typical conditions the hubs are capable of holding up to the rated torque of the metal bellows. 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 metal bellows. Keyways are available to provide additional torque capacity in the shaft/hub connection when required. Please consult technical support for more assistance.

Installation Instructions

1. Align the bores of the MBC57-20-14-A bellows coupling on the shafts that are to be joined and determine if the misalignment parameters are within the limits of the coupling. (*Angular Misalignment: 2.0 °, Parallel Misalignment: 0.30 mm, Axial Motion: 0.75 mm*)
 2. Fully tighten the M6 screw on the first hub to the recommended seating torque of 16 Nm using a 5.0 mm hex torque wrench.
 3. Before tightening the screw on the second hub, rotate the coupling by hand to allow it to reach its free length.
 4. Tighten the screw 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 38 mm.
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