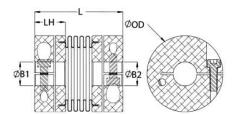




## MBC51-24-16-A

Ruland MBC51-24-16-A, 24mm x 16mm Bellows Coupling, Aluminum, Clamp Style, 50.8mm OD, 61.3mm Length





## **Description**

Ruland MBC51-24-16-A is a clamp bellows coupling with 24mm x 16mm bores, 50.8mm OD, and 61.3mm length. It is zero-backlash and has a balanced design for reduced vibration at high speeds. MBC51-24-16-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 MBC51-24-16-A has four 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. MBC51-24-16-A is carefully manufactured in our Marlborough, MA factory under strict controls using proprietary processes.

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Bore (B1)	24 mm	Small Bore (B2)	16 mm			
B1 Max Shaft Penetration	27.9 mm	B2 Max Shaft Penetration	27.9 mm			
Outer Diameter (OD)	50.8 mm	Bore Tolerance	+0.03 mm / -0.00 mm			
Length (L)	61.3 mm	Length Tolerance	+/- 0.76 mm			
Hub Width (LH)	20.55 mm	Recommended Shaft Tolerance	+0.000 mm / -0.013 mm			
Forged Clamp Screw	M5	Screw Material	Alloy Steel			
Hex Wrench Size	4.0 mm	Screw Finish	Black Oxide			
Seating Torque	9.5 Nm	Number of Screws	2 ea			
Dynamic Torque Reversing	11.30 Nm	Angular Misalignment	2.0°			
<b>Dynamic Torque Non-Reversing</b>	22.60 Nm	Parallel Misalignment	0.25 mm			
Static Torque	45.2 Nm	Axial Motion	0.50 mm			
Torsional Stiffness	108 Nm/Deg	Moment of Inertia	80.063 x10 <sup>-6</sup> kg-m <sup>2</sup>			
Maximum Speed	10,000 RPM	Full Bearing Support Required?	Yes			
Zero-Backlash?	Yes	Balanced Design	Yes			
Torque Wrench	TW:BT-4C-3/8-86	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	Ероху			
Manufacturer	Ruland Manufacturing	Country of Origin	USA			
Weight (lbs)	0.452100	UPC	634529111734			
Tariff Code	8483.60.8000	UNSPC	31163018			
Note 1	Stainless steel hubs are available u	pon 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	normal/typical conditions the hubs a cases, especially when the smallest shaft is possible below the rated tor	are capable of holding up to the rated				

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 Bisphenol A and Ethylene Thiourea, known to the State of California to cause birth defects or other reproductive harm. For more information go to <a href="https://www.P65Warnings.ca.gov">www.P65Warnings.ca.gov</a>.

## **Installation Instructions**

- 1. Align the bores of the MBC51-24-16-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 Misialignment*: 2.0°, *Parallel Misalignment*: 0.25 mm, *Axial Motion*: 0.50 mm)
- 2. Fully tighten the M5 screw on the first hub to the recommended seating torque of 9.5 Nm using a 4.0 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.
- 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 27.9 mm.