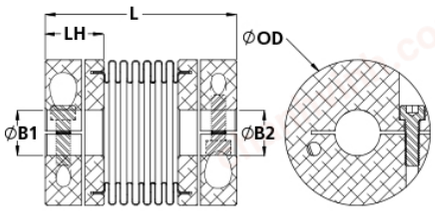
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RULAND
Carefully Made Shaft Collars and Couplings

MBCL33-10-9-A

Ruland MBCL33-10-9-A, 10mm x 9mm Bellows Coupling, Aluminum, Clamp Style, 33.3mm OD, 49.8mm Length





Description

Ruland MBCL33-10-9-A is a clamp bellows coupling with 10mm x 9mm bores, 33.3mm OD, and 49.8MM length. It is zero-backlash and has a balanced design for reduced vibration at high speeds. MBCL33-10-9-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 MBCL33-10-9-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. MBCL33-10-9-A is carefully manufactured in our Marlborough, MA factory under strict controls using proprietary processes.

Product Specifications

Bore (B1)	10 mm	**Small Bore (B2)**	9 mm
B1 Max Shaft Penetration	23.7 mm	**B2 Max Shaft Penetration**	23.7 mm
Outer Diameter (OD)	1.313 in (33.3 mm)	**Bore Tolerance**	+0.03 mm / -0.00 mm
Length (L)	1.962 in (49.8 mm)	**Length Tolerance**	+/- 0.76 mm
Hub Width (LH)	15.00 mm	**Recommended Shaft Tolerance**	+0.000 mm / -0.013 mm
Forged Clamp Screw	M3	**Screw Material**	Alloy Steel
Hex Wrench Size	2.5 mm	**Screw Finish**	Black Oxide
Seating Torque	2.1 Nm	**Number of Screws**	2 ea
Dynamic Torque Reversing	3.40 Nm	**Angular Misalignment**	3.0°
Dynamic Torque Non-Reversing	6.80 Nm	**Parallel Misalignment**	0.30 mm
Static Torque	13.6 Nm	**Axial Motion**	0.81 mm
Torsional Stiffness	33.9 Nm/Deg	**Moment of Inertia**	49.146 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-1R-1/4-18.3	**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)	0.041502	**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		

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	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.