RULAND
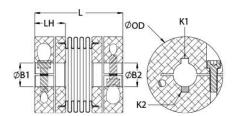**Carefully Made Shaft Collars and Couplings**

MBCK51-25-15-A

Ruland MBCK51-25-15-A, 25mm x 15mm Bellows Coupling, Aluminum, Clamp Style With Keyway, 50.8mm OD, 61.3mm Length

Description

Ruland MBCK51-25-15-A is a clamp bellows coupling with 25mm x 15mm bores, 50.8mm OD, 61.3mm length and 8mm x 5mm keyways. It is zero-backlash and has a balanced design for reduced vibration at high speeds. MBCK51-25-15-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 MBCK51-25-15-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. MBCK51-25-15-A is carefully manufactured in our Marlborough, MA factory under strict controls using proprietary processes.

Product Specifications

Bore (B1)	25 mm	Small Bore (B2)	15 mm
Keyway (K1)	8 mm	Keyway (K2)	5 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°
Dynamic Torque Non-Reversing	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	7.98×10^{-5} kg-m^2
Maximum Speed	10,000 RPM	Full Bearing Support Required?	Yes
Zero-Backlash?	Yes	Balanced Design	Yes
Torque Wrench	TW:BT-4C-3/8-86	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	Epoxy
Manufacturer	Ruland Manufacturing	Country of Origin	USA
Weight (lbs)	0.445500	UPC	634529168202
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. 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 Bisphenol A and Ethylene Thiourea, known to the State		

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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 MBCK51-25-15-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.
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 27.9 mm.