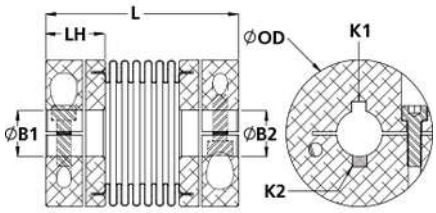
# MBCLK33-16-12-A

Ruland MBCLK33-16-12-A, 16mm x 12mm Bellows Coupling, Aluminum, Clamp Style With Keyway, 33.3mm OD, 49.8mm Length






## Description

Ruland MBCLK33-16-12-A is a clamp bellows coupling with 16mm x 12mm bores, 33.3mm OD, 49.8MM length and 5mm x 4mm keyways. It is zero-backlash and has a balanced design for reduced vibration at high speeds. MBCLK33-16-12-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 MBCLK33-16-12-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. MBCLK33-16-12-A is carefully manufactured in our Marlborough, MA factory under strict controls using proprietary processes.

## Product Specifications

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|---|---|---|---|
| **Bore (B1)** | 16 mm | **Small Bore (B2)** | 12 mm |
| **Keyway (K1)** | 5 mm | **Keyway (K2)** | 4 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 |
| **Key Width (K1)** | 5 mm | **Key Width (K2)** | 4 mm |
| **Key Height (K1)** | 5 mm | **Key Height (K2)** | 4 mm |
| **Keyway 1 Height (T1)** | 18.3 mm | **Keyway 2 Height (T2)** | 13.8 mm |
| **Keyway 1 Width Tolerance** | +0.015 mm / -0.015 mm | **Keyway 1 Height Tolerance** | +0.1 mm / 0 mm |
| **Keyway 2 Width Tolerance** | +0.015 mm / -0.015 mm | **Keyway 2 Height Tolerance** | +0.1 mm / 0 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** | 44.468 x$10^{-6}$ 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<br>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 |

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| **Weight (lbs)** | 0.040513 | **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. | | |