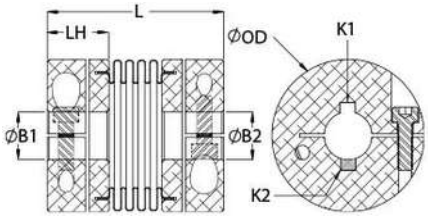
# MBCK70-38-35-A

Ruland MBCK70-38-35-A, 38mm x 35mm Bellows Coupling with Keyways, High Stiffness, Aluminum, 69.9mm, OD 87.4mm Length






## Description

Ruland MBCK70-38-35-A is a high stiffness bellows coupling with 38mm x 35mm bores, 69.9mm OD, 87.4mm length, and 10mm x 10mm keyways. It has fewer convolutions than comparably sized increased misalignment styles allowing for increased torsional stiffness making it the ideal choice for precision positioning applications. MBCK70-38-35-A is comprised of two anodized aluminum hubs and a stainless steel bellows for lightweight and low inertia. It is also engineered with a balanced design for reduced vibration at high speeds up to 10,000 RPM. The thin walls of the bellows are able to flex while remaining rigid under torsional loads allowing for the accommodation of all forms of misalignment. Hardware is metric and tests beyond DIN 912 12.9 standards for maximum torque capabilities. MBCK70-38-35-A is machined from meticulously selected bar stock that is sourced exclusively from North American mills. It is carefully made in our ISO 9001:2015 advanced manufacturing facility in Marlborough, MA under strict controls using proprietary processes. MBCK70-38-35-A is RoHS3, REACH, and Conflict Minerals compliant.

## Product Specifications

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|---|---|---|---|
| **Bore (B1)** | 38 mm | **Small Bore (B2)** | 35 mm |
| **Keyway (K1)** | 10 mm | **Keyway (K2)** | 10 mm |
| **B1 Min Shaft Penetration** | 19.1 mm | **B2 Min Shaft Penetration** | 19.1 mm |
| **B1 Max Shaft Penetration** | 40.2 mm | **B2 Max Shaft Penetration** | 40.2 mm |
| **Outer Diameter (OD)** | 2.750 in (69.9 mm) | **Bore Tolerance** | +0.03 mm / -0.00 mm |
| **Length (L)** | 3.439 in (87.4 mm) | **Length Tolerance** | +/- 0.76 mm |
| **Hub Width (LH)** | 30.48 mm | **Recommended Shaft Tolerance** | +0.000 mm / -0.013 mm |
| **Key Width (K1)** | 10 mm | **Key Width (K2)** | 10 mm |
| **Key Height (K1)** | 8 mm | **Key Height (K2)** | 8 mm |
| **Keyway 1 Height (T1)** | 41.3 mm | **Keyway 2 Height (T2)** | 38.3 mm |
| **Keyway 1 Width Tolerance** | +0.018 mm / -0.018 mm | **Keyway 1 Height Tolerance** | +0.2 mm / 0 mm |
| **Keyway 2 Width Tolerance** | +0.018 mm / -0.018 mm | **Keyway 2 Height Tolerance** | +0.2 mm / 0 mm |
| **Forged Clamp Screw** | M8 | **Screw Material** | Alloy Steel |
| **Hex Wrench Size** | 6.0 mm | **Screw Finish** | Black Oxide |
| **Seating Torque** | 39 Nm | **Number of Screws** | 2 ea |
| **Dynamic Torque Reversing** | 26.13 Nm | **Angular Misalignment** | 2.0° |
| **Dynamic Torque Non-Reversing** | 52.25 Nm | **Parallel Misalignment** | 0.30 mm |
| **Static Torque** | 104.5 Nm | **Axial Motion** | 0.76 mm |
| **Torsional Stiffness** | 237 Nm/Deg | **Moment of Inertia** | $4.059^{-4}$ kg-$m^2$ |
| **Maximum Speed** | 10,000 RPM | **Full Bearing Support Required?** | Yes |
| **Average Load at Max Parallel Offset** | 99.37 N | **Average Slope** | 342.7 N/mm |
| **Zero-Backlash?** | Yes | **Balanced Design** | Yes |
| **Torque Wrench** | TW:BT-4C-3/8-345 | **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 | **Bellows Attachment Method** | Epoxy |

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|---|---|---|---|
| | II, Class 2 and ASTM B580 Type B<br>Black Anodize | | |
| **Manufacturer** | Ruland Manufacturing | **Country of Origin** | USA |
| **Weight (lbs)** | 1.118012 | **UPC** | 65432939708 |
| **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. | | |