MDCS33-16-13-A

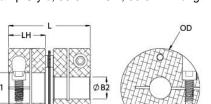
Ruland MDCS33-16-13-A, 16mm x 13mm Single Disc Coupling, Aluminum, Clamp Style, 33.3mm OD, 33.3mm Length

Description

Ruland MDCS33-16-13-A is a clamp single disc coupling with 16mm x 13mm bores, 33.3mm OD, and 33.3mm length. It is zero-backlash and has a balanced design for reduced vibration at high speeds. The single disc design is comprised of two anodized aluminum hubs and two sets of thin stainless steel disc springs which can accommodate angular misalignment and axial motion, however does not allow for any parallel misalignment. MDCS33-16-13-A is lightweight and has low inertia making it well suited 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 manufactures MDCS33-16-13-A to be torisionally rigid and an excellent fit for precise positioning stepper servo applications commonly found in semiconductor, solar, printing, machine tool, and test and measurement systems. It is machined from solid bar stock that is sourced exclusively from North American mills and RoHS3 and REACH compliant. MDCS33-16-13-A is manufactured in our Marlborough, MA factory under strict controls using proprietary processes.

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Product	Specifications

SteelTemperature-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodized MIL-A-8625 Ty II, Class 2 and ASTM B580 Type Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.126800UPC634529210512Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.31163008Note 2Torque ratings are at maximum misalignment.Note 3Note 3Performance ratings are for guidance only. The user must determine suitability for a particular application.Note 4Torque ratings for the couplings are based on the physical limitations/failure point of the disc springs. Under normal/typical conditions the hubs are capable of holding up to the rated torque of the disc springs. In som	r roddet opeeniedtions					
Outer Diameter (OD) 33.3 mm Bore Tolerance +0.03 mm / -0.00 mm Length (L) 33.3 mm Hub Width (LH) 15.0 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 Roversing 5.65 Nm Parallel Misalignment 0.00 mm Static Torque 11.3 Nm Axial Motion 0.20 mm Torsional Stiffness 35.4 Nm/Deg Moment of Inertia 9.444 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 Matric Hex Keys Material Specification Hubs: 2024-T351 Aluminum Bar, Disc Springs: Type 302 Stainless Steel Temperature -40°F to 200°F (-40°C to 93°C) Finish Specification Sulfuric Anodized MIL-A-8625 Typ II, Class 2 and ASTM B580 Type Black Anodize Mauinfacturer <th>Bore (B1)</th> <th>16 mm</th> <th>Small Bore (B2)</th> <th>13 mm</th>	Bore (B1)	16 mm	Small Bore (B2)	13 mm		
Length (L) 33.3 mm Hub Width (LH) 15.0 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 2.83 Nm Angular Misalignment 1.0° Dynamic Torque Non-Reversing 5.65 Nm Parallel Misalignment 0.00 mm Static Torque 11.3 Nm Axial Motion 0.20 mm Torsional Stiffness 35.4 Nm/Deg Moment of Inertia 9.444 x 10° kg-m² Maximum Speed 10,000 RPM Full Bearing Support Required? Yes Zero-Backlash? Yes Balanced Design Yes Torque Wrench TW:E1-1R-1/4-18.3 Recommended Hex Key Metric Hex Keys Material Specification Sulfuric Anodized MIL-A-8625 Ty II, Class 2 and ASTM B580 Type Black Anodize Manufacturer Ruland Manufacturing Country of Origin USA Weight (lbs) 0.126800 UPC 634529210512 Tariff Code 8483.60.8000 UNSPC 3	B1 Max Shaft Penetration	15.0 mm	B2 Max Shaft Penetration	16.1 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 2.83 Nm Angular Misalignment 1.0° Dynamic Torque Non-Reversing 5.65 Nm Parallel Misalignment 0.00 mm Static Torque 11.3 Nm Axial Motion 0.20 mm Torsional Stiffness 35.4 Nm/Deg Moment of Inertia 9.444 x 10° & g.m² 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 Hax Keys Material Specification Hubs: 2024-T351 Aluminum Bar, Disc Springs: Type 302 Stainless Steel Temperature -40°F to 200°F (-40°C to 93°C) Finish Specification Sulfuric Anodized MIL-A-8625 Tyme II, Class 2 and ASTM B580 Type Black Anodize Manufacturer Ruland Manufacturing Country of Origin USA Weight (lbs) 0.126800 UPC 634529210512	Outer Diameter (OD)	33.3 mm	Bore Tolerance	+0.03 mm / -0.00 mm		
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 2.83 Nm Angular Misalignment 1.0° Dynamic Torque Ron-Reversing 5.65 Nm Parallel Misalignment 0.00 mm Static Torque 11.3 Nm Axial Motion 0.20 mm Torsional Stiffness 35.4 Nm/Deg Moment of Inertia 9.444 x 10° kg-m² 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, Disc Springs: Type 302 Stainless Steel Temperature -40°F to 200°F (-40°C to 93°C) Finish Specification Sulfuric Anodized MIL-A-8625 Ty II, Class 2 and ASTM B580 Type Black Anodize Manufacturer Ruland Manufacturing Country of Origin USA Weight (lbs) 0.126800 UPC 634529210512 Tariff Code 8483.60.8000 UNSPC 31163008 Note 1	Length (L)	33.3 mm	Hub Width (LH)	15.0 mm		
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Number of Screws 2 ea Dynamic Torque Reversing 2.83 Nm Angular Misalignment 1.0° Dynamic Torque Non-Reversing 5.65 Nm Parallel Misalignment 0.00 mm Static Torque 11.3 Nm Axial Motion 0.20 mm Torsional Stiffness 35.4 Nm/Deg Moment of Inertia 9.444 x 10° kg-m² 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, Disc Springs: Type 302 Stainless Steel Temperature -40°F to 200°F (-40°C to 93°C) Finish Specification Sulfuric Anodized MIL-A-8625 Typ II, Class 2 and ASTM B580 Type Black Anodize Manufacturer Ruland Manufacturing Country of Origin USA Weight (lbs) 0.126800 UPC 634529210512 Tariff Code 8483.60.8000 UNSPC 31163008 Note 1 Stainless steel hubs are available upon request. Note 3 Note 2 Torque ratings are at maxim	Screw Material	Alloy Steel	Hex Wrench Size	2.5 mm		
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Axial Motion0.20 mmTorsional Stiffness35.4 Nm/DegMoment of Inertia9.444 x 10°6 kg-m²Maximum Speed10,000 RPMFull Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-1R-1/4-18.3Recommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T351 Aluminum Bar, Disc Springs: Type 302 Stainless SteelTemperature-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodized MIL-A-8625 Typ II, Class 2 and ASTM B580 Type Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.126800UPC634529210512Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Note 2Note 3Performance ratings are for guidance only. The user must determine suitability for a particular application.Note 4Torque ratings for the couplings are based on the physical limitations/failure point of the disc springs. Under normal/typical conditions the hubs are capable of holding up to the rated torque of the disc springs. Under normal/typical conditions the hubs are capable of holding up to the rated torque of the disc springs. In som cases, especially when the smallest standard bores are used or where shafts are undersized, slippage on shaft is possible below the rated torque of the disc springs. Keyways are available to provide additional torque capacity in the shaft/hub connection when required. Please consult technical support for more	Angular Misalignment	1.0°	Dynamic Torque Non-Reversing	5.65 Nm		
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WARNING This product can expose you to chemicals including Ethylene Thiourea and Nickel (metallic), known to the State of California to cause cancer, and Ethylene Thiourea known to the State of California to cause birth defects or other reproductive harm. For more information go to <u>www.P65Warnings.ca.gov</u>.

Installation Instructions

- Align the bores of the MDCS33-16-13-A single disc coupling on the shafts that are to be joined and determine if the misalignment parameters are within the limits of the coupling. (*Angular Misialignment:* 1.0°, *Parallel Misalignment:* 0.00 mm, *Axial Motion:* 0.20 mm)
- 2. Fully tighten the M3 screw on the first hub to the recommended seating torque of 2.1 Nm using a 2.5 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 15.0 mm for bore 1 and 16.1 mm for bore 2.