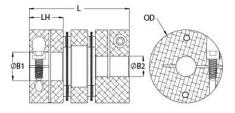




MDCDE33-10-10-A

Ruland MDCDE33-10-10-A, 10mm x 10mm Double Disc Coupling, Aluminum, Clamp Style, Electrically Isolating, 33.3mm OD, 45.0mm Length





Description

Ruland MDCDE33-10-10-A is an electrically isolating clamp double disc coupling with 10mm x 10mm bores, 33.3mm OD, and 45.0mm length. It is zero-backlash and has a balanced design for reduced vibration at high speeds. The double disc design is comprised of two anodized aluminum hubs, two sets of thin stainless steel disc springs, and an acetal center spacer allowing each disc to bend individually and accommodate all types of misalignment. The acetal center spacer isolates the two hubs preventing the incidental transfer of current from the motor to the driven component or vice versa. MDCDE33-10-10-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 MDCDE33-10-10-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. MDCDE33-10-10-A is manufactured in our Marlborough, MA factory under strict controls using proprietary processes.

Product Specifications

Type 302 Stainless Steel Spacer: Acetal Temperature -10°F to 150°F (-23°C to 65°C) Finish Specification Sulfuric Anodized MIL-A-II, Class 2 and ASTM B58 Black Anodize Manufacturer Ruland Manufacturing Country of Origin USA Weight (lbs) 0.167600 UPC 634529089446 Tariff Code 8483.60.8000 UNSPC 31163008 Note 1 Stainless steel hubs are available upon request. Torque ratings are at maximum misalignment.	r roddor opconnoationis			
Outer Diameter (OD) 33.3 mm Bore Tolerance +0.03 mm / -0.00 mm Length (L) 45.0 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 2.83 Nm Angular Misalignment 2.0° Dynamic Torque Non-Reversing 5.65 Nm Parallel Misalignment 0.20 mm Static Torque 11.3 Nm Axial Motion 0.40 mm Torsional Stiffness 28.6 Nm/Deg Moment of Inertia 1.172 x 10.5 kg-m² Maximum Speed 10,000 RPM Full Bearing Support Required? Yes Zero-Backlash? Yes Balanced Design Yes Torque Wrench TV/ET-1R-1/4-18.3 Recommended Hex Key Metric Hex Keys Material Specification Sulfuric Anodized MIL-A-A-II, II, Class 2 and ASTM B50 Manufacturer Ruland Manufacturing Country of Origin USA Weight (Ibs) 0.167600 UPC 63	Bore (B1)	10 mm	Small Bore (B2)	10 mm
Length (L) 45.0 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 2.83 Nm Angular Misalignment 2.0° Dynamic Torque Non-Reversing 5.65 Nm Parallel Misalignment 0.20 mm Static Torque 11.3 Nm Axial Motion 0.40 mm Torsional Stiffness 28.6 Nm/Deg Moment of Inertia 1.172 x 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-1R-1/4-18.3 Recommended Hex Key Metric Hex Keys Material Specification Hubs: 2024-T351 Bar, Dir Manufacturer -10°F to 150°F (-23°C to 65°C) Finish Specification II, Class 2 and ASTM B56 Black 0.167600 UPC 634529089446 Tariff Code Note 1 Stainless steel hubs are available upon request.	B1 Max Shaft Penetration	21.4 mm	B2 Max Shaft Penetration	21.4 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 2.0° Dynamic Torque Non-Reversing 5.65 Nm Parallel Misalignment 0.20 mm Static Torque 11.3 Nm Axial Motion 0.40 mm Torsional Stiffness 28.6 Nm/Deg Moment of Inertia 1.172 x 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-IR-1/4-18.3 Recommended Hex Key Metric Hex Keys Material Specification Hubs: 2024-T351 Bar, Dir Type 302 Stainless Steel Spacer: Acetal Spacer: Acetal Spacer: Acetal Temperature -10°F to 150°F (-23°C to 65°C) Finish Specification II, Class 2 and ASTM B56 Black Anodize UPC 634529089446 Stainless steel hubs are available upon request. Note 1 S	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 2.0° Dynamic Torque Non-Reversing 5.65 Nm Parallel Misalignment 0.20 mm Static Torque 11.3 Nm Axial Motion 0.40 mm Torsional Stiffness 28.6 Nm/Deg Moment of Inertia 1.172 x 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-1R-1/4-18.3 Recommended Hex Key Metric Hex Keys Material Specification Hubs: 2024-T351 Bar, Dir Type 302 Stainless Steel Spacer: Acetal Temperature -10°F to 150°F (-23°C to 65°C) Finish Specification Sulfuric Anodized MIL-AII, Class 2 and ASTM B50 Black Anodize Meight (lbs) 0.167600 UPC 634529089446 Black Anodize Note 1 Stainless steel hubs are available upon request. Note 2 Torque ratings are at maximum misalignment. Note 2 Torque ratings are at maximum misalignment.	Length (L)	45.0 mm	Hub Width (LH)	15.00 mm
Screw Finish Black Oxide Seating Torque 2.1 Nm Number of Screws 2 ea Dynamic Torque Reversing 2.83 Nm Angular Misalignment 2.0° Dynamic Torque Non-Reversing 5.65 Nm Parallel Misalignment 0.20 mm Static Torque 11.3 Nm Axial Motion 0.40 mm Torsional Stiffness 28.6 Nm/Deg Moment of Inertia 1.172 x 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-1R-1/4-18.3 Recommended Hex Key Metric Hex Keys Material Specification Hubs: 2024-T351 Bar, Dir Type 302 Stainless Steel Temperature -10°F to 150°F (-23°C to 65°C) Finish Specification Sulfuric Anodized MIL-A- II, Class 2 and ASTM B56 Black Anodize Manufacturer Ruland Manufacturing Country of Origin USA Weight (Ibs) 0.167600 UPC 634529089446 Tariff Code 8483.60.8000 UNSPC 31163008 Note 2 Torque ratings are at maximum misalignment. Note 3 Performance ratings are for guidance only. The user must determine suit	Recommended Shaft Tolerance	+0.000 mm / -0.013 mm	Forged Clamp Screw	M3
Number of Screws2 eaDynamic Torque Reversing2.83 NmAngular Misalignment2.0°Dynamic Torque Non-Reversing5.65 NmParallel Misalignment0.20 mmStatic Torque11.3 NmAxial Motion0.40 mmTorsional Stiffness28.6 Nm/DegMoment of Inertia1.172 x 10 ⁵ 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 Bar, Di Type 302 Stainless Steel Spacer: AcetalTemperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodized MIL-A- Black Anodized Black AnodizedMaufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.167600UPC634529089446Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Note 2Note 3Performance ratings are at maximum misalignment.Note apperdict of the disc spring normal/typical conditions the hubs are capable of holding up to the rated torque of the disc spring normal/typical conditions the hubs are capable of holding up to the rated torque of the disc spring normal/typical conditions the hubs are capable of holding up to the rated torque of the disc spring normal/typical conditions the hubs are capable of nololing up to the rated torque of the disc spring normal/typical conditions the hubs are capable of nololing up to the rated torque of the disc spring normal/typical conditions	Screw Material	Alloy Steel	Hex Wrench Size	2.5 mm
Angular Misalignment2.0°Dynamic Torque Non-Reversing5.65 NmParallel Misalignment0.20 mmStatic Torque11.3 NmAxial Motion0.40 mmTorsional Stiffness28.6 Nm/DegMoment of Inertia1.172 x 10 ⁻⁵ kg-m ² Maximum Speed10,000 RPMFull Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-1R-1/4-18.3Recommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T351 Bar, Di Type 302 Stainless Steel Spacer: AcetalTemperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodized MIL-A- II, Class 2 and ASTM B56 Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.167600UPC634529089446Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Stainless steel hubs are available upon request.Note 3Performance ratings are for guidance only. The user must determine suitability for a particular appNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the disc springs cases, especially when the smallest standard bores are used or where shafts are undersized, slipg	Screw Finish	Black Oxide	Seating Torque	2.1 Nm
Parallel Misalignment 0.20 mm Static Torque 11.3 Nm Axial Motion 0.40 mm Torsional Stiffness 28.6 Nm/Deg Moment of Inertia 1.172 x 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-1R-1/4-18.3 Recommended Hex Key Metric Hex Keys Material Specification Hubs: 2024-T351 Bar, Dir Type 302 Stainless Steel Spacer: Acetal Temperature -10°F to 150°F (-23°C to 65°C) Finish Specification Sulfuric Anodized MIL-A- II, Class 2 and ASTM B56 Black Anodize Manufacturer Ruland Manufacturing Country of Origin USA Weight (Ibs) 0.167600 UPC 634529089446 Tariff Code 8483.60.8000 UNSPC 31163008 Note 1 Stainless steel hubs are available upon request. Note 3 Performance ratings are for guidance only. The user must determine suitability for a particular appinormal/typical conditions the hubs are capable of holding up to the rated torque of the disc springs cases, especially when the smallest standard bores are used or where shafts are undersized, slipp	Number of Screws	2 ea	Dynamic Torque Reversing	2.83 Nm
Axial Motion0.40 mmTorsional Stiffness28.6 Nm/DegMoment of Inertia1.172 x 10 ⁻⁵ kg-m ² Maximum Speed10,000 RPMFull Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-1R-1/4-18.3Recommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T351 Bar, Dir Type 302 Stainless Steel Spacer: AcetalTemperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodized MIL-A- II, Class 2 and ASTM B56 Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.167600UPC634529089446Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Note 3Note 3Performance ratings are for guidance only. The user must determine suitability for a particular appNote 4Torque ratings for the couplings are capable of holding up to the rated torque of the disc spring normal/typical conditions the hubs are capable of holding up to the rated torque of the disc spring scases, especially when the smallest standard bores are used or where shafts are undersized, slipp	Angular Misalignment	2.0°	Dynamic Torque Non-Reversing	5.65 Nm
Moment of Inertia 1.172 × 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-1R-1/4-18.3 Recommended Hex Key Metric Hex Keys Material Specification Hubs: 2024-T351 Bar, Dir Type 302 Stainless Steel Spacer: Acetal Spacer: Acetal Sulfuric Anodized MIL-A-II, Class 2 and ASTM B56 Temperature -10°F to 150°F (-23°C to 65°C) Finish Specification USA Maufacturer Ruland Manufacturing Country of Origin USA Weight (lbs) 0.167600 UPC 634529089446 Tariff Code 8483.60.8000 UNSPC 31163008 Note 1 Stainless steel hubs are available upon request. Note 2 Note 3 Performance ratings are for guidance only. The user must determine suitability for a particular app Note 4 Torque ratings for the couplings are based on the physical limitations/failure point of the disc springs cases, especially when the smallest standard bores are used or where shafts are undersized, slipp	Parallel Misalignment	0.20 mm	Static Torque	11.3 Nm
Full Bearing Support Required?YesBalanced DesignYesBalanced DesignYesRecommended Hex KeyMetric Hex KeysMaterial SpecificationTW:BT-1R-1/4-18.3Recommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T351 Bar, DirTemperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodized MIL-A-II, Class 2 and ASTM B56 Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.167600UPC634529089446Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Torque ratings are at maximum misalignment.Note 3Performance ratings are for guidance only. The user must determine suitability for a particular app normal/typical conditions the hubs are capable of holding up to the rated torque of the disc springs cases, especially when the smallest standard bores are used or where shafts are undersized, slipp	Axial Motion	0.40 mm	Torsional Stiffness	28.6 Nm/Deg
Balanced DesignYesTorque WrenchTW:BT-1R-1/4-18.3Recommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T351 Bar, Dir Type 302 Stainless Steel Spacer: AcetalTemperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodized MIL-A II, Class 2 and ASTM B56 Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.167600UPC634529089446Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Torque ratings are at maximum misalignment.Note 3Performance ratings are for guidance only. The user must determine suitability for a particular app normal/typical conditions the hubs are capable of holding up to the rated torque of the disc springs cases, especially when the smallest standard bores are used or where shafts are undersized, slipp	Moment of Inertia	1.172 x 10 ⁻⁵ kg-m ²	Maximum Speed	10,000 RPM
Recommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T351 Bar, DiatronTemperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodized MIL-A-II, Class 2 and ASTM B58 Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.167600UPC634529089446Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Torque ratings are at maximum misalignment.Note 2Torque ratings are for guidance only. The user must determine suitability for a particular appNote 3Performance ratings for the couplings are based on the physical limitations/failure point of the disc springs orases, especially when the smallest standard bores are used or where shafts are undersized, slipp	Full Bearing Support Required?	Yes	Zero-Backlash?	Yes
Type 302 Stainless Steel Spacer: AcetalTemperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodized MIL-A- II, Class 2 and ASTM B58 Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.167600UPC634529089446Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Torque ratings are at maximum misalignment.Note 2Torque ratings are for guidance only. The user must determine suitability for a particular appNote 3Performance ratings are for guidance only. The user must determine suitability for a particular app normal/typical conditions the hubs are capable of holding up to the rated torque of the disc springs cases, especially when the smallest standard bores are used or where shafts are undersized, slipp	Balanced Design	Yes	Torque Wrench	<u>TW:BT-1R-1/4-18.3</u>
II, Class 2 and ASTM B58 Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.167600UPC634529089446Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Torque ratings are at maximum misalignment.Note 2Torque ratings are for guidance only. The user must determine suitability for a particular appNote 3Performance ratings are for guidance only. The user must determine suitability for a particular appNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the disc springs normal/typical conditions the hubs are capable of holding up to the rated torque of the disc springs cases, especially when the smallest standard bores are used or where shafts are undersized, slipp	Recommended Hex Key	Metric Hex Keys	Material Specification	Hubs: 2024-T351 Bar, Disc Springs Type 302 Stainless Steel, Center Spacer: Acetal
Weight (lbs) 0.167600 UPC 634529089446 Tariff Code 8483.60.8000 UNSPC 31163008 Note 1 Stainless steel hubs are available upon request. Torque ratings are at maximum misalignment. Note 2 Torque ratings are for guidance only. The user must determine suitability for a particular app Note 3 Performance ratings for the couplings are based on the physical limitations/failure point of the disc springs normal/typical conditions the hubs are capable of holding up to the rated torque of the disc springs cases, especially when the smallest standard bores are used or where shafts are undersized, slipp	Temperature	-10°F to 150°F (-23°C to 65°C)	Finish Specification	Sulfuric Anodized MIL-A-8625 Type II, Class 2 and ASTM B580 Type B Black Anodize
Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Note 2Torque ratings are at maximum misalignment.Note 3Performance ratings are for guidance only. The user must determine suitability for a particular appNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the disc springs normal/typical conditions the hubs are capable of holding up to the rated torque of the disc springs cases, especially when the smallest standard bores are used or where shafts are undersized, slipp	Manufacturer	Ruland Manufacturing	Country of Origin	USA
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 app Note 4 Torque ratings for the couplings are based on the physical limitations/failure point of the disc springs normal/typical conditions the hubs are capable of holding up to the rated torque of the disc springs cases, especially when the smallest standard bores are used or where shafts are undersized, slipp	Weight (Ibs)	0.167600	UPC	634529089446
Note 2 Torque ratings are at maximum misalignment. Note 3 Performance ratings are for guidance only. The user must determine suitability for a particular app Note 4 Torque ratings for the couplings are based on the physical limitations/failure point of the disc springs normal/typical conditions the hubs are capable of holding up to the rated torque of the disc springs cases, especially when the smallest standard bores are used or where shafts are undersized, slipp	Tariff Code	8483.60.8000	UNSPC	31163008
Note 3 Performance ratings are for guidance only. The user must determine suitability for a particular app Note 4 Torque ratings for the couplings are based on the physical limitations/failure point of the disc springs normal/typical conditions the hubs are capable of holding up to the rated torque of the disc springs cases, especially when the smallest standard bores are used or where shafts are undersized, slipp	Note 1	Stainless steel hubs are available upon request.		
Note 4 Torque ratings for the couplings are based on the physical limitations/failure point of the disc springs normal/typical conditions the hubs are capable of holding up to the rated torque of the disc springs cases, especially when the smallest standard bores are used or where shafts are undersized, slipp	Note 2	Torque ratings are at maximum misalignment.		
normal/typical conditions the hubs are capable of holding up to the rated torque of the disc springs cases, especially when the smallest standard bores are used or where shafts are undersized, slipp	Note 3	Performance ratings are for guidance only. The user must determine suitability for a particular application.		
	Note 4	normal/typical conditions the hubs cases, especially when the smalles	are capable of holding up to the rated at standard bores are used or where s	torque of the disc springs. In some shafts are undersized, slippage on th

	torque capacity in the shaft/hub connection when required. Please consult technical support for more assistance.		
Ргор 65	AWARNING 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 www.P65Warnings.ca.gov.		
Installation Instructions			
	 Align the bores of the MDCDE33-10-10-A double disc coupling on the shafts that are to be joined and determine if the misalignment parameters are within the limits of the coupling. (<i>Angular</i> <i>Misialignment:</i> 2.0°, <i>Parallel Misalignment:</i> 0.20 mm, <i>Axial Motion:</i> 0.40 mm) 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. 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. The shafts may extend into the relieved portion of the bore as long as it does not exceed the shaft penetration length of 21.4 mm. 		