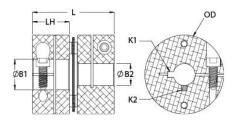




MDCSK33-15-12-A

Ruland MDCSK33-15-12-A, 15mm x 12mm Single Disc Coupling, Aluminum, Clamp Style With Keyway, 33.3mm OD, 33.3mm Length





Description

Ruland MDCSK33-15-12-A is a clamp single disc coupling with 15mm x 12mm bores, 33.3mm OD, 33.3mm length, and 5mm x 4mm keyways. 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. MDCSK33-15-12-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 MDCSK33-15-12-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. MDCSK33-15-12-A is manufactured in our Marlborough, MA factory under strict controls using proprietary processes.

Product Specifications

Length (L)33.3 mmHub Width (LH)15.00 mmRecommended Shaft Tolerance+0.000 mm / -0.013 mmForged Clamp ScrewM3Screw MaterialAlloy SteelHex Wrench Size2.5 mmScrew FinishBlack OxideSeating Torque2.1 NmNumber of Screws2 eaDynamic Torque Reversing2.83 NmAngular Misalignment1.0°Dynamic Torque Non-Reversing5.65 NmParallel Misalignment0.00 mmStatic Torque11.3 NmAxial Motion0.20 mmTorsional Stiffness35.4 Nm/DegMoment of Inertia9.482 x 10° kg-m²Maximum Speed10,000 RPMZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-1R-1/4-18.3Recommended Hex KeyMetric Hex KeysFull Bearing Support Required?YesMaterial SpecificationHubs: 2024-T351 All Disc Springs: Type 3 SteelTemperature-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodized MI III, Class 2 and ASTM Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.129400UPC634529201800Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Torque ratings are for guidance only. The user must determine suitability for a particularNote 3Performance ratings are for guidance only. The user must determine suitability for a particular	-Touter Specifications			
B1 Max Shaft Penetration 16.1 mm B2 Max Shaft Penetration 16.1 mm Outer Diameter (OD) 33.3 mm Bore Tolerance +0.03 mm / -0.00 mm Length (L) 33.3 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 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 9.482 x 10° ⁶ kg·m ² Maximum Speed 10.000 RPM Zero-Backlash? Yes Balanced Design Yes Full Bearing Support Required? Yes Material Specification Hubs: 2024-T351 All Disc Springs: Type 3 Steel Temperature -40°F to 200°F (-40°C to 93°C) Finish Specification Hubs: 2024-T351 All Disc Springs: Type 3 Steel Manufact	3ore (B1)	15 mm	Small Bore (B2)	12 mm
Outer Diameter (OD) 33.3 mm Bore Tolerance +0.03 mm / -0.00 mm Length (L) 33.3 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 1.0° Dynamic Torque Non-Reversing 5.65 Nm Parallel Misalignment 0.00 mm Torsional Stiffness 35.4 Nm/Deg Moment of Inertia 9.482 x 10 ⁻⁶ kg-m ² Maximum Speed 10,000 RPM Zero-Backlash? Yes Balanced Design Yes Torque Wrench TW:BT-1R-1/4-18.3 Recommended Hex Key Metric Hex Keys Full Bearing Support Required? Yes Material Specification Hubs: 2024-1351 Alto Disc Springs: Type 3 Steel Temperature -40°F to 200°F (-40°C to 93°C) Finish Specification Hubs: 2024-1351 Alto Disc Springs: Type 3 Steel Manufacturier Ruland Manufacturing Country of Origin USA Materi	(eyway (K1)	5 mm	Keyway (K2)	4 mm
Length (L)33.3 mmHub Width (LH)15.00 mmRecommended Shaft Tolerance+0.000 mm / -0.013 mmForged Clamp ScrewM3Screw MaterialAlloy SteelHex Wrench Size2.5 mmScrew FinishBlack OxideSeating Torque2.1 NmNumber of Screws2 eaDynamic Torque Reversing2.83 NmAngular Misalignment1.0°Dynamic Torque Non-Reversing5.65 NmParallel Misalignment0.00 mmStatic Torque11.3 NmAxial Motion0.20 mmTorsional Stiffness35.4 Nm/DegMoment of Inertia9.482 x 10° kg-m²Maximum Speed10,000 RPMZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-1R-1/4-18.3Recommended Hex KeyMetric Hex KeysFull Bearing Support Required?YesMaterial SpecificationHubs: 2024-T351 All Disc Springs: Type 3 SteelTemperature-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodized MI II, Class 2 and ASTM Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.129400UPC634529201800Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Torque ratings are for guidance only. The user must determine suitability for a particularNote 3Performance ratings are for guidance only. The user must determine suitability for a particular	31 Max Shaft Penetration	16.1 mm	B2 Max Shaft Penetration	16.1 mm
Recommended Shaft Tolerance+0.000 mm / -0.013 mmForged Clamp ScrewM3Screw MaterialAlloy SteelHex Wrench Size2.5 mmScrew FinishBlack OxideSeating Torque2.1 NmNumber of Screws2 eaDynamic Torque Reversing2.83 NmAngular Misalignment1.0°Dynamic Torque Non-Reversing5.65 NmParallel Misalignment0.00 mmStatic Torque Non-Reversing5.65 NmParallel Misalignment0.00 mmStatic Torque Non-Reversing5.65 NmParallel Misalignment0.20 mmTorsional Stiffness35.4 Nm/DegMoment of Inertia9.482 x 10 ⁻⁶ kg-m²Maximum Speed10.000 RPMZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-1R-1/4-18.3Recommended Hex KeyMetric Hex KeysFull Bearing Support Required?YesMaterial SpecificationHubs: 2024-T351 All Disc Springs: Type 3 SteelTemperature-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodized MI II, Class 2 and ASTN Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.129400UPC634529201800Tariff 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	Duter Diameter (OD)	33.3 mm	Bore Tolerance	+0.03 mm / -0.00 mm
Screw MaterialAlloy SteelHex Wrench Size2.5 mmScrew FinishBlack OxideSeating Torque2.1 NmNumber of Screws2 eaDynamic Torque Reversing2.83 NmAngular Misalignment1.0°Dynamic Torque Non-Reversing5.65 NmParallel Misalignment0.00 mmStatic Torque11.3 NmAxial Motion0.20 mmTorsional Stiffness35.4 Nm/DegMoment of Inertia9.482 x 10° kg-m²Maximum Speed10,000 RPMZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-1R-1/4-18.3Recommended Hex KeyMetric Hex KeysFull Bearing Support Required?YesMaterial SpecificationSteelTemperature-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodized MIII, Class 2 and ASTN Black Anodize0.129400UPC634529201800Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.3163008Note 3Performance ratings are for guidance only. The user must determine suitability for a particular	_ength (L)	33.3 mm	Hub Width (LH)	15.00 mm
Screw FinishBlack OxideSeating Torque2.1 NmNumber of Screws2 eaDynamic Torque Reversing2.83 NmAngular Misalignment1.0°Dynamic Torque Non-Reversing5.65 NmParallel Misalignment0.00 mmStatic Torque11.3 NmAxial Motion0.20 mmTorsional Stiffness35.4 Nm/DegMoment of Inertia9.482 x 10° kg-m²Maximum Speed10,000 RPMZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-1R-1/4-18.3Recommended Hex KeyMetric Hex KeysFull Bearing Support Required?YesMaterial SpecificationHubs: 2024-T351 Alt Disc Springs: Type 3 SteelTemperature-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodize MI II, Class 2 and ASTN Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.129400UPC634529201800Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Note 2Torque ratings are for guidance only. The user must determine suitability for a particularNote 3Performance ratings are for guidance only. The user must determine suitability for a particular	Recommended Shaft Tolerance	+0.000 mm / -0.013 mm	Forged Clamp Screw	M3
Number of Screws2 eaDynamic Torque Reversing2.83 NmAngular Misalignment1.0°Dynamic Torque Non-Reversing5.65 NmParallel Misalignment0.00 mmStatic Torque11.3 NmAxial Motion0.20 mmTorsional Stiffness35.4 Nm/DegMoment of Inertia9.482 x 10° kg·m²Maximum Speed10,000 RPMZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-1R-1/4-18.3Recommended Hex KeyMetric Hex KeysFull Bearing Support Required?YesMaterial SpecificationHubs: 2024-T351 Alt Disc Springs: Type 3 SteelTemperature-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodized MI II, Class 2 and ASTN Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.129400UPC634529201800Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Note 1Torque ratings are at maximum misalignment.Note 3Performance ratings are for guidance only. The user must determine suitability for a particular	Screw Material	Alloy Steel	Hex Wrench Size	2.5 mm
Angular Misalignment1.0°Dynamic Torque Non-Reversing5.65 NmParallel Misalignment0.00 mmStatic Torque11.3 NmAxial Motion0.20 mmTorsional Stiffness35.4 Nm/DegMoment of Inertia9.482 x 10° kg-m²Maximum Speed10,000 RPMZero-Backlash?YesBalanced DesignYesTorque WrenchTWY.BT-1R-1/4-18.3Recommended Hex KeyMetric Hex KeysFull Bearing Support Required?YesMaterial SpecificationHubs: 2024-T351 Alt Disc Springs: Type 3 SteelTemperature-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodized MI II, Class 2 and ASTN Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.129400UPC634529201800Tariff 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	Screw Finish	Black Oxide	Seating Torque	2.1 Nm
Parallel Misalignment0.00 mmStatic Torque11.3 NmAxial Motion0.20 mmTorsional Stiffness35.4 Nm/DegMoment of Inertia9.482 x 10° kg-m²Maximum Speed10,000 RPMZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-1R-1/4-18.3Recommended Hex KeyMetric Hex KeysFull Bearing Support Required?YesMaterial SpecificationHubs: 2024-T351 Alt Disc Springs: Type 3 SteelTemperature-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodized MI II, Class 2 and ASTN Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.129400UPC634529201800Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.31163008Note 2Torque ratings are at maximum misalignment.Net efformance ratings are for guidance only. The user must determine suitability for a particular	lumber of Screws	2 ea	Dynamic Torque Reversing	2.83 Nm
Axial Motion0.20 mmTorsional Stiffness35.4 Nm/DegMoment of Inertia9.482 x 10 ⁻⁶ kg-m²Maximum Speed10,000 RPMZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-1R-1/4-18.3Recommended Hex KeyMetric Hex KeysFull Bearing Support Required?YesMaterial SpecificationHubs: 2024-T351 Alt Disc Springs: Type 3 SteelTemperature-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodized MI II, Class 2 and ASTN Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.129400UPC634529201800Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Stainless 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	Angular Misalignment	1.0°	Dynamic Torque Non-Reversing	5.65 Nm
Moment of Inertia9.482 x 10 ⁻⁶ kg-m²Maximum Speed10,000 RPMZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-1R-1/4-18.3Recommended Hex KeyMetric Hex KeysFull Bearing Support Required?YesMaterial SpecificationHubs: 2024-T351 Alt Disc Springs: Type 3 SteelTemperature-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodized MI II, Class 2 and ASTN Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.129400UPC634529201800Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Torque ratings are at maximum misalignment.YesNote 3Performance ratings are for guidance only. The user must determine suitability for a particularSuitability for a particular	Parallel Misalignment	0.00 mm	Static Torque	11.3 Nm
Zero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-1R-1/4-18.3Recommended Hex KeyMetric Hex KeysFull Bearing Support Required?YesMaterial SpecificationHubs: 2024-T351 Alt Disc Springs: Type 3 SteelTemperature-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodized MI II, Class 2 and ASTN Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.129400UPC634529201800Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Stainless steel hubs are at maximum misalignment.Note 3Performance ratings are for guidance only. The user must determine suitability for a particular	Axial Motion	0.20 mm	Torsional Stiffness	35.4 Nm/Deg
Torque WrenchTW:BT-1R-1/4-18.3Recommended Hex KeyMetric Hex KeysFull Bearing Support Required?YesMaterial SpecificationHubs: 2024-T351 Alt Disc Springs: Type 3 SteelTemperature-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodized MI II, Class 2 and ASTN Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.129400UPC634529201800Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Vote 2Note 2Torque ratings are at maximum misalignment.Veight country of origin of a particularNote 3Performance ratings are for guidance only. The user must determine suitability for a particular	Noment of Inertia	9.482 x 10 ⁻⁶ kg-m ²	Maximum Speed	10,000 RPM
Full Bearing Support Required?YesMaterial SpecificationHubs: 2024-T351 Alt Disc Springs: Type 3 SteelTemperature-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodized MI II, Class 2 and ASTM Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.129400UPC634529201800Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.31163008Note 2Torque ratings are at maximum misalignment.Versement.Note 3Performance ratings are for guidance only. The user must determine suitability for a particular	Zero-Backlash?	Yes	Balanced Design	Yes
Temperature -40°F to 200°F (-40°C to 93°C) Finish Specification Sulfuric Anodized MI II, Class 2 and ASTM Black Anodize Manufacturer Ruland Manufacturing Country of Origin USA Weight (lbs) 0.129400 UPC 634529201800 Tariff Code 8483.60.8000 UNSPC 31163008 Note 1 Stainless steel hubs are available upon request. 31163008 Note 2 Torque ratings are at maximum misalignment. Performance ratings are for guidance only. The user must determine suitability for a particular	Forque Wrench	<u>TW:BT-1R-1/4-18.3</u>	Recommended Hex Key	Metric Hex Keys
II, Class 2 and ASTM Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.129400UPC634529201800Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Torque ratings are at maximum misalignment.Note 2Performance ratings are for guidance only. The user must determine suitability for a particular	⁻ ull Bearing Support Required?	Yes	Material Specification	Hubs: 2024-T351 Aluminum Bar, Disc Springs: Type 302 Stainless Steel
Weight (lbs)0.129400UPC634529201800Tariff 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	emperature	-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
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	Manufacturer	Ruland Manufacturing	Country of Origin	USA
Note 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	Veight (lbs)	0.129400	UPC	634529201800
Note 2Torque ratings are at maximum misalignment.Note 3Performance ratings are for guidance only. The user must determine suitability for a particular	ariff Code	8483.60.8000	UNSPC	31163008
Note 3 Performance ratings are for guidance only. The user must determine suitability for a particular	Note 1	Stainless steel hubs are available upon request.		
	Note 2	Torque ratings are at maximum misalignment.		
Nets 4	Note 3	Performance ratings are for guidance only. The user must determine suitability for a particular application.		
normal/typical conditions the hubs are capable of holding up to the rated torque of the disc sp cases, especially when the smallest standard bores are used or where shafts are undersized,	Note 4	Torque 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 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 disc springs. Keyways are available to provide additional		

	torque capacity in the shaft/hub connection when required. 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 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 MDCSK33-15-12-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. (<i>Angular Misialignment:</i> 1.0°, <i>Parallel Misalignment:</i> 0.00 mm, <i>Axial Motion:</i> 0.20 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 16.1 mm. 			