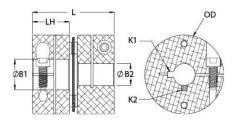




MDCSK41-17-13-A

Ruland MDCSK41-17-13-A, 17mm x 13mm Single Disc Coupling, Aluminum, Clamp Style With Keyway, 41.3mm OD, 39.7mm Length





Description

Ruland MDCSK41-17-13-A is a clamp single disc coupling with 17mm x 13mm bores, 41.3mm OD, 39.7mm length, and 5mm x 5mm 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. MDCSK41-17-13-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 MDCSK41-17-13-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. MDCSK41-17-13-A is manufactured in our Marlborough, MA factory under strict controls using proprietary processes.

Product Specifications

Screw Finish Black Oxide Seating Torque 4.6 Nm Number of Screws 2 ea Dynamic Torque Reversing 5.08 Nm Angular Misalignment 1.0° Dynamic Torque Non-Reversing 10.15 Nm Parallel Misalignment 0.00 mm Static Torque 20.3 Nm Axial Motion 0.25 mm Torsional Stiffness 70.6 Nm/Deg Moment of Inertia 2.806 x 10°5 kg-m² Maximum Speed 10,000 RPM Zero-Backlash? Yes Balanced Design Yes Torque Wrench TW:BT-1R-1/4-41.0 Recommended Hex Key Metric Hex Keys Full Bearing Support Required? Yes Material Specification Hubs: 2024-T351 Alumin Disc Springs: Type 302 S Steel Temperature -40°F to 200°F (-40°C to 93°C) Finish Specification Sulfuric Anodized MIL-A-II, Class 2 and ASTM BSB Black Anodize Manufacturer Ruland Manufacturing Country of Origin USA Weight (lbs) 0.254300 UPC 634529202791 Tariff Code 8483.60.8000 UNSPC 31163008 Note 1 Stainless steel hubs are available upon request. Note 2 Torque ratings are at maximum misalignment. <tr< th=""><th>Froduct Specifications</th><th></th><th></th><th></th></tr<>	Froduct Specifications			
B1 Max Shaft Penetration 19.2 mm B2 Max Shaft Penetration 19.2 mm Outer Diameter (OD) 41.3 mm Bore Tolerance +0.03 mm / -0.00 mm Length (L) 39.7 mm Hub Width (LH) 18.05 mm Recommended Shaft Tolerance +0.000 mm / -0.013 mm Forged Clamp Screw M4 Screw Material Alloy Steel Hex Wrench Size 3.0 mm Screw Finish Black Oxide Seating Torque 4.6 Nm Number of Screws 2 ea Dynamic Torque Reversing 5.08 Nm Angular Misalignment 1.0° Dynamic Torque Non-Reversing 10.15 Nm Parallel Misalignment 0.00 mm Static Torque 20.3 Nm Axial Motion 0.25 mm Torsional Stiffness 70.6 Nm/Deg Moment of Inertia 2.806 x 10.5 kg-m² Maximum Speed 10,000 RPM Zero-Backlash? Yes Balanced Design Yes Full Bearing Support Required? Yes Material Specification Hubs: 2024-7351 Alumin Disc Springs: Type 302 S Steel Temperature -40°F to 200°F (-40°C to 93°C) Finish Specification Sulfuric Anodized MIL-A-II, Class 2 and ASTM 653 Manufacturer	Bore (B1)	17 mm	Small Bore (B2)	13 mm
Outer Diameter (OD) 41.3 mm Bore Tolerance +0.03 mm / -0.00 mm Length (L) 39.7 mm Hub Width (LH) 18.05 mm Recommended Shaft Tolerance +0.000 mm / -0.013 mm Forged Clamp Screw M4 Screw Material Alloy Steel Hex Wrench Size 3.0 mm Screw Finish Black Oxide Seating Torque Reversing 5.08 Nm Angular Misalignment 1.0° Dynamic Torque Reversing 5.08 Nm Axial Motion 0.25 mm Torsional Stiffness 70.6 Nm/Deg Moment of Inertia 2.806 x 10 ⁻⁵ kg-m ² Maxium Speed 10,000 RPM Zero-Backlash? Yes Balanced Design Yes Torque Wrench TW:BT-1R-1/4-41.0 Recommended Hex Key Metric Hex Keys Full Bearing Support Required? Yes Material Specification Hubs: 2024-T351 Alumin Disc Springs: Type 302 S Steel Temperature -40°F to 200°F (-40°C to 93°C) Finish Specification Suffuric Anodized MIL-A-II, Class 2 and ASTM BSi Black Anodize Weight (Ibs) 0.254300 UPC 634529202791 Stainess steel hubs are available upon request. Note 1 Stainless steel hubs are available upon request.	Keyway (K1)	5 mm	Keyway (K2)	5 mm
Length (L) 39.7 mm Hub Width (LH) 18.05 mm Recommended Shaft Tolerance +0.000 mm / -0.013 mm Forged Clamp Screw M4 Screw Material Alloy Steel Hex Wrench Size 3.0 mm Screw Finish Black Oxide Seating Torque 4.6 Nm Number of Screws 2 ea Dynamic Torque Reversing 5.08 Nm Angular Misalignment 1.0° Dynamic Torque Non-Reversing 10.15 Nm Parallel Misalignment 0.00 mm Static Torque 20.3 Nm Axial Motion 0.25 mm Torsional Stiffness 70.6 Nm/Deg Moment of Inertia 2.806 x 10 ⁻⁵ kg-m ² Maximum Speed 10,000 RPM Zero-Backlash? Yes Balanced Design Yes Full Bearing Support Required? Yes Material Specification Hubs: 2024-T351 Alumin Disc Springs: Type 302 S Steel Temperature -40°F to 200°F (-40°C to 93°C) Finish Specification Suffuric Anodized MIL-A-II, Class 2 and ASTM BSi Black Anodize Manufacturer Ruland Manufacturing Country of Origin USA Weight (lbs) 0.254300 UPC 634528202791 Tariff Code 8483.60	B1 Max Shaft Penetration	19.2 mm	B2 Max Shaft Penetration	19.2 mm
Recommended Shaft Tolerance +0.000 mm / -0.013 mm Forged Clamp Screw M4 Screw Material Alloy Steel Hex Wrench Size 3.0 mm Screw Finish Black Oxide Seating Torque 4.6 Nm Number of Screws 2 ea Dynamic Torque Reversing 5.08 Nm Angular Misalignment 1.0° Dynamic Torque Non-Reversing 10.15 Nm Parallel Misalignment 0.00 mm Static Torque 20.3 Nm Axial Motion 0.25 mm Torsional Stiffness 70.6 Nm/Deg Moment of Inertia 2.806 x 10° kg·m² Maximum Speed 10,000 RPM Zero-Backlash? Yes Balanced Design Yes Torque Wrench TW:BT-1R-1/4-41.0 Recommended Hex Key Metric Hex Keys Full Bearing Support Required? Yes Material Specification Sulfuric Anodized MIL-A-II, Class 2 and ASTM B5: Black Anodize Manufacturer Ruland Manufacturing Country of Origin USA Weight (lbs) 0.254300 UPC 634529202791 Tariff Code 8483.60.8000 UNSPC 31163008 Note 1 Stainless steel hubs are available upon request. Note 2	Outer Diameter (OD)	41.3 mm	Bore Tolerance	+0.03 mm / -0.00 mm
Screw Material Alloy Steel Hex Wrench Size 3.0 mm Screw Finish Black Oxide Seating Torque 4.6 Nm Number of Screws 2 ea Dynamic Torque Reversing 5.08 Nm Angular Misalignment 1.0° Dynamic Torque Non-Reversing 10.15 Nm Parallel Misalignment 0.00 mm Static Torque 20.3 Nm Axial Motion 0.25 mm Torsional Stiffness 70.6 Nm/Deg Moment of Inertia 2.806 x 10° kg-m² Maximum Speed 10,000 RPM Zero-Backlash? Yes Balanced Design Yes Torque Wrench TW:BT-1R-1/4-41.0 Recommended Hex Key Metric Hex Keys Full Bearing Support Required? Yes Material Specification Hubs: 2024-T351 Alumin Disc Springs: Type 302 S Steel Temperature -40°F to 200°F (-40°C to 93°C) Finish Specification Sulfuric Anodized MIL-A-II, Class 2 and ASTM B5i Black Anodize Manufacturer Ruland Manufacturing Country of Origin USA Weight (lbs) 0.254300 UPC 634529202791 Tariff Code 8483.60.8000 UNSPC 31163008 Note 1 Stainless steel hubs are	Length (L)	39.7 mm	Hub Width (LH)	18.05 mm
Screw Finish Black Oxide Seating Torque 4.6 Nm Number of Screws 2 ea Dynamic Torque Reversing 5.08 Nm Angular Misalignment 1.0° Dynamic Torque Reversing 10.15 Nm Parallel Misalignment 0.00 mm Static Torque 20.3 Nm Axial Motion 0.25 mm Torsional Stiffness 70.6 Nm/Deg Moment of Inertia 2.806 x 10°5 kg-m² Maximum Speed 10,000 RPM Zero-Backlash? Yes Balanced Design Yes Torque Wrench TW.BT-1R-1/4-41.0 Recommended Hex Key Metric Hex Keys Full Bearing Support Required? Yes Material Specification Hubs: 2024-T351 Alumin Disc Springs: Type 302 S Steel Temperature -40°F to 200°F (-40°C to 93°C) Finish Specification Sulfuric Anodized MIL-A-II, Class 2 and ASTM BSI Black Anodize Manufacturer Ruland Manufacturing Country of Origin USA Weight (lbs) 0.254300 UPC 634529202791 Tariff Code 8483.60.8000 UNSPC 31163008 Note 1 Stainless steel hubs are available upon request. Note 2 Note 3 Performance ratings are at ma	Recommended Shaft Tolerance	+0.000 mm / -0.013 mm	Forged Clamp Screw	M4
Number of Screws2 eaDynamic Torque Reversing5.08 NmAngular Misalignment1.0°Dynamic Torque Non-Reversing10.15 NmParallel Misalignment0.00 mmStatic Torque20.3 NmAxial Motion0.25 mmTorsional Stiffness70.6 Nm/DegMoment of Inertia2.806 x 10 ⁻⁵ kg-m²Maximum Speed10,000 RPMZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-1R-1/4-41.0Recommended Hex KeyMetric Hex KeysFull Bearing Support Required?YesMaterial SpecificationHubs: 2024-T351 Alumin Disc Springs: Type 302 S SteelTemperature-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodized MIL-A-II, Class 2 and ASTM B53 Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.254300UPC634529202791Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Note 3Note 3Performance ratings are at maximum misalignment.Note 4Note 4Torque ratings for the couplings are based on the physical limitations/failure point of the disc springs	Screw Material	Alloy Steel	Hex Wrench Size	3.0 mm
Angular Misalignment 1.0° Dynamic Torque Non-Reversing 10.15 Nm Parallel Misalignment 0.00 mm Static Torque 20.3 Nm Axial Motion 0.25 mm Torsional Stiffness 70.6 Nm/Deg Moment of Inertia 2.806 x 10 ⁵ kg·m ² Maximum Speed 10,000 RPM Zero-Backlash? Yes Balanced Design Yes Torque Wrench TW:BT-1R-1/4-41.0 Recommended Hex Key Metric Hex Keys Full Bearing Support Required? Yes Material Specification Hubs: 2024-T351 Alumin Disc Springs: Type 302 Sisteel Temperature -40°F to 200°F (-40°C to 93°C) Finish Specification Sulfuric Anodized MIL-A-II, Class 2 and ASTM B50 Black Anodize Manufacturer Ruland Manufacturing Country of Origin USA Weight (lbs) 0.254300 UPC 634529202791 Tariff Code 8483.60.8000 UNSPC 31163008 Note 1 Stainless steel hubs are available upon request. Note 3 Note 3 Performance ratings are at maximum misalignment. Note 4 Note 4 Torque ratings for the couplings are based on the physical limitations/railure point of the disc spring.	Screw Finish	Black Oxide	Seating Torque	4.6 Nm
Parallel Misalignment0.00 mmStatic Torque20.3 NmAxial Motion0.25 mmTorsional Stiffness70.6 Nm/DegMoment of Inertia2.806 x 10.5 kg-m2Maximum Speed10,000 RPMZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-1R-1/4-41.0Recommended Hex KeyMetric Hex KeysFull Bearing Support Required?YesMaterial SpecificationHubs: 2024-T351 Alumin Disc Springs: Type 302 S SteelTemperature-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodized MIL-A- II, Class 2 and ASTM B5i Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.254300UPC634529202791Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Note 2Note 2Torque ratings are at maximum misalignment.Note 4Note 4Torque ratings for the couplings are based on the physical limitations/failure point of the disc springs	Number of Screws	2 ea	Dynamic Torque Reversing	5.08 Nm
Axial Motion0.25 mmTorsional Stiffness70.6 Nm/DegMoment of Inertia2.806 x 10 ⁻⁵ kg-m²Maximum Speed10,000 RPMZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-1R-1/4-41.0Recommended Hex KeyMetric Hex KeysFull Bearing Support Required?YesMaterial SpecificationHubs: 2024-T351 Alumin Disc Springs: Type 302 S SteelTemperature-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodized MIL-A- II, Class 2 and ASTM B56 Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.254300UPC634529202791Tariff 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 spring normal/typical conditions the hubs are capable of holding up to the rated torque of the disc spring	Angular Misalignment	1.0°	Dynamic Torque Non-Reversing	10.15 Nm
Moment of Inertia2.806 x 10°5 kg-m²Maximum Speed10,000 RPMZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-1R-1/4-41.0Recommended Hex KeyMetric Hex KeysFull Bearing Support Required?YesMaterial SpecificationHubs: 2024-T351 Alumin Disc Springs: Type 302 S SteelTemperature-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodized MIL-A- II, Class 2 and ASTM B5i Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.254300UPC634529202791Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Note 1Note 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	Parallel Misalignment	0.00 mm	Static Torque	20.3 Nm
Zero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-1R-1/4-41.0Recommended Hex KeyMetric Hex KeysFull Bearing Support Required?YesMaterial SpecificationHubs: 2024-T351 Alumin Disc Springs: Type 302 S SteelTemperature-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodized MIL-A- II, Class 2 and ASTM B56 Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.254300UPC634529202791Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Vote 2Note 3Performance ratings are at maximum misalignment.Note 3Note 4Torque ratings for the couplings are based on the physical limitations/failure point of the disc springs	Axial Motion	0.25 mm	Torsional Stiffness	70.6 Nm/Deg
Torque WrenchTW:BT-1R-1/4-41.0Recommended Hex KeyMetric Hex KeysFull Bearing Support Required?YesMaterial SpecificationHubs: 2024-T351 Alumin Disc Springs: Type 302 S SteelTemperature-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodized MIL-A- II, Class 2 and ASTM B5i Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.254300UPC634529202791Tariff 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 appNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the disc spring normal/typical conditions the hubs are capable of holding up to the rated torque of the disc spring	Moment of Inertia	2.806 x 10 ⁻⁵ kg-m ²	Maximum Speed	10,000 RPM
Full Bearing Support Required?YesMaterial SpecificationHubs: 2024-T351 Alumin Disc Springs: Type 302 S SteelTemperature-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodized MIL-A- II, Class 2 and ASTM B52 Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.254300UPC634529202791Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Vote 1Note 2Torque ratings are at maximum misalignment.Torque 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	Zero-Backlash?	Yes	Balanced Design	Yes
Disc Springs: Type 302 S SteelTemperature-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodized MIL-A- II, Class 2 and ASTM B50 Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.254300UPC634529202791Tariff 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 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	Torque Wrench	TW:BT-1R-1/4-41.0	Recommended Hex Key	<u>Metric Hex Keys</u>
II, Class 2 and ASTM B5 Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.254300UPC634529202791Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Stainless steel hubs are at maximum misalignment.Note 2Torque ratings are at maximum misalignment.Torque ratings are for guidance only. The user must determine suitability for a particular appNote 3Performance ratings are for guidance 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	Full Bearing Support Required?	Yes	Material Specification	Hubs: 2024-T351 Aluminum Bar, Disc Springs: Type 302 Stainless Steel
Weight (lbs)0.254300UPC634529202791Tariff 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 normal/typical conditions the hubs are capable of holding up to the rated torque of the disc springs	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
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	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	Weight (Ibs)	0.254300	UPC	634529202791
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	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	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 spring normal/typical conditions the hubs are capable of holding up to the rated torque of the disc springs	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	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 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 MDCSK41-17-13-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. (<i>Angular Misialignment:</i> 1.0°, <i>Parallel Misalignment:</i> 0.00 mm, <i>Axial Motion:</i> 0.25 mm) Fully tighten the M4 screw on the first hub to the recommended seating torque of 4.6 Nm using a 3.0 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 19.2 mm. 		