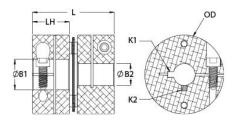




MDCSK51-17-13-A

Ruland MDCSK51-17-13-A, 17mm x 13mm Single Disc Coupling, Aluminum, Clamp Style With Keyway, 50.8mm OD, 46.1mm Length





Description

Ruland MDCSK51-17-13-A is a clamp single disc coupling with 17mm x 13mm bores, 50.8mm OD, 46.1mm 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. MDCSK51-17-13-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 MDCSK51-17-13-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. MDCSK51-17-13-A is manufactured in our Marlborough, MA factory under strict controls using proprietary processes.

Product Specifications

Length (L)46.1 mmHub Width (LH)20.6 mmRecommended Shaft Tolerance+0.000 mm / -0.013 mmForged Clamp ScrewM5Screw MaterialAlloy SteelHex Wrench Size4.0 mmScrew FinishBlack OxideSeating Torque9.5 NmNumber of Screws2 eaDynamic Torque Reversing9.90 NmAngular Misalignment1.0°Dynamic Torque Non-Reversing19.80 NmParallel Misalignment0.00 mmStatic Torque Non-Reversing98.0 Nm/DegMoment of Inertia7.468 x 10°5 kg-m²Maximum Speed10,000 RPMZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/8-86Recommended Hex KeyMetric Hex KeysFull Bearing Support Required?YesMaterial SpecificationHubs: 2024-T351 Disc Springs: Typ SteelTemperature-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodized II, Class 2 and AS Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSA UPCWeight (Ibs)0.467900UPC634529204061Tariff 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 particuPerformance	roduct specifications			
B1 Max Shaft Penetration 22.2 mm B2 Max Shaft Penetration 22.2 mm Outer Diameter (OD) 50.8 mm Bore Tolerance +0.03 mm / -0.00 Length (L) 46.1 mm Hub Width (LH) 20.6 mm Recommended Shaft Tolerance +0.000 mm / -0.013 mm Forged Clamp Screw M5 Screw Material Alloy Steel Hex Wrench Size 4.0 mm Screw Finish Black Oxide Seating Torque 9.5 Nm Number of Screws 2 ea Dynamic Torque Reversing 9.90 Nm Angular Misalignment 1.0° Dynamic Torque Non-Reversing 19.80 Nm Parallel Misalignment 0.00 mm Static Torque 39.6 Nm Axial Motion 0.32 mm Torsional Stiffness 98.0 Nm/Deg Moment of Inertia 7.468 x 10° kg·m² Maximum Speed 10.000 RPM Zero-Backlash? Yes Balanced Design Yes Torque Wrench TW:BT-4C-3/8-86 Recommended Hex Key Metric Hex Keys Full Bearing Support Required? Yes Material Specification Hubs: 2024-T351 Disc Springs: Typ Steel Torque Protono'F (-40°C to 93°C) Finish Specification<	ore (B1)	17 mm	Small Bore (B2)	13 mm
Outer Diameter (OD)50.8 mmBore Tolerance+0.03 mm / -0.00Length (L)46.1 mmHub Width (LH)20.6 mmRecommended Shaft Tolerance+0.000 mm / -0.013 mmForged Clamp ScrewM5Screw MaterialAlloy SteelHex Wrench Size4.0 mmScrew FinishBlack OxideSeating Torque9.5 NmNumber of Screws2 eaDynamic Torque Reversing9.90 NmAngular Misalignment1.0°Dynamic Torque Non-Reversing19.80 NmParallel Misalignment0.00 mmStatic Torque39.6 NmAxial Motion0.32 mmTorsional Stiffness98.0 Nm/DegMoment of Inertia7.468 x 10°5 kg-m²Maximum Speed10,000 RPMZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/8-86Recommended Hex KeyMetric Hex KeysFull Bearing Support Required?YesMaterial SpecificationHubs: 2024-T351 Disc Springs: TypTemperature-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodized II, Class 2 and AS Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.467900UPC634529204061Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Note 3Performance ratings are for guidance only. The user must determine suitability for a particuNote 3Performance ratings are for guidance only. The user must determine suitability for a particu <td>∍yway (K1)</td> <td>5 mm</td> <td>Keyway (K2)</td> <td>5 mm</td>	∍yway (K1)	5 mm	Keyway (K2)	5 mm
Length (L)46.1 mmHub Width (LH)20.6 mmRecommended Shaft Tolerance+0.000 mm / -0.013 mmForged Clamp ScrewM5Screw MaterialAlloy SteelHex Wrench Size4.0 mmScrew FinishBlack OxideSeating Torque9.5 NmNumber of Screws2 eaDynamic Torque Reversing9.90 NmAngular Misalignment1.0°Dynamic Torque Non-Reversing19.80 NmParallel Misalignment0.00 mmStatic Torque Non-Reversing98.0 Nm/DegMoment of Inertia7.468 x 10 ⁵ kg-m²Maximum Speed10,000 RPMZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/8-86Recommended Hex KeyMetric Hex KeysFull Bearing Support Required?YesMaterial SpecificationHubs: 2024-T351Temperature-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodized II, Class 2 and AS Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.467900UPC634529204061Tariff Code8483.60.8000UNSPC31163008Note 1Statinless steel hubs are available upon request.Note 91163008Note 3Performance ratings are for guidance only. The user must determine suitability for a particu	I Max Shaft Penetration	22.2 mm	B2 Max Shaft Penetration	22.2 mm
Recommended Shaft Tolerance+0.000 mm / -0.013 mmForged Clamp ScrewM5Screw MaterialAlloy SteelHex Wrench Size4.0 mmScrew FinishBlack OxideSeating Torque9.5 NmNumber of Screws2 eaDynamic Torque Reversing9.90 NmAngular Misalignment1.0°Dynamic Torque Non-Reversing19.80 NmParallel Misalignment0.00 mmStatic Torque39.6 NmAxial Motion0.32 mmTorsional Stiffness98.0 Nm/DegMoment of Inertia7.468 x 10 ⁻⁵ kg-m ² Maximum Speed10,000 RPMZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/8-86Recommended Hex KeyMetric Hex KeysFull Bearing Support Required?YesMaterial SpecificationSulfuric Anodized II, Class 2 and AS Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.467900UPC3116308Note 1Stainless steel hubs are available upon request.3116308Note 3Performance ratings are for guidance only. The user must determine suitability for a particu	uter Diameter (OD)	50.8 mm	Bore Tolerance	+0.03 mm / -0.00 mm
Screw MaterialAlloy SteelHex Wrench Size4.0 mmScrew FinishBlack OxideSeating Torque9.5 NmNumber of Screws2 eaDynamic Torque Reversing9.90 NmAngular Misalignment1.0°Dynamic Torque Non-Reversing19.80 NmParallel Misalignment0.00 mmStatic Torque39.6 NmAxial Motion0.32 mmTorsional Stiffness98.0 Nm/DegMoment of Inertia7.468 x 10 ⁵ kg-m²Maximum Speed10,000 RPMZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/8-86Recommended Hex KeyMetric Hex KeysFull Bearing Support Required?YesMaterial SpecificationHubs: 2024-T351 Disc Springs: Typ SteelTemperature-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodized Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.467900UPC634529204061Tariff 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 particularAtternation	ngth (L)	46.1 mm	Hub Width (LH)	20.6 mm
Screw FinishBlack OxideSeating Torque9.5 NmNumber of Screws2 eaDynamic Torque Reversing9.90 NmAngular Misalignment1.0°Dynamic Torque Non-Reversing19.80 NmParallel Misalignment0.00 mmStatic Torque39.6 NmAxial Motion0.32 mmTorsional Stiffness98.0 Nm/DegMoment of Inertia7.468 x 10°5 kg-m²Maximum Speed10.000 RPMZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/8-86Recommended Hex KeyMetric Hex KeysFull Bearing Support Required?YesMaterial SpecificationHubs: 2024-T351 Disc Springs: Typ <steel< td="">Temperature-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodized Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.467900UPC634529204061Tariff 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</steel<>	ecommended Shaft Tolerance	+0.000 mm / -0.013 mm	Forged Clamp Screw	M5
Number of Screws2 eaDynamic Torque Reversing9.90 NmAngular Misalignment1.0°Dynamic Torque Non-Reversing19.80 NmParallel Misalignment0.00 mmStatic Torque39.6 NmAxial Motion0.32 mmTorsional Stiffness98.0 Nm/DegMoment of Inertia7.468 x 10 ⁻⁵ kg-m ² Maximum Speed10,000 RPMZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/8-86Recommended Hex KeyMetric Hex KeysFull Bearing Support Required?YesMaterial SpecificationHubs: 2024-T351Disc Springs: Typ Steel-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodized Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.467900UPC634529204061Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Note 3Performance ratings are for guidance only. The user must determine suitability for a particut	rew Material	Alloy Steel	Hex Wrench Size	4.0 mm
Angular Misalignment1.0°Dynamic Torque Non-Reversing19.80 NmParallel Misalignment0.00 mmStatic Torque39.6 NmAxial Motion0.32 mmTorsional Stiffness98.0 Nm/DegMoment of Inertia7.468 x 10°5 kg-m²Maximum Speed10,000 RPMZero-Backlash?YesBalanced DesignYesTorque WrenchTWV:BT-4C-3/8-86Recommended Hex KeyMetric Hex KeysFull Bearing Support Required?YesMaterial SpecificationHubs: 2024-T351Disc Springs: Typ SteelDisc Springs: Typ SteelSulfuric Anodized II, Class 2 and AS Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.467900UPC634529204061Tariff 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 particutNote 3	rew Finish	Black Oxide	Seating Torque	9.5 Nm
Parallel Misalignment0.00 mmStatic Torque39.6 NmAxial Motion0.32 mmTorsional Stiffness98.0 Nm/DegMoment of Inertia7.468 x 10° kg-m²Maximum Speed10,000 RPMZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/8-86Recommended Hex KeyMetric Hex KeysFull Bearing Support Required?YesMaterial SpecificationHubs: 2024-T351Temperature-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodized II, Class 2 and AS Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.467900UPC634529204061Tariff 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	umber of Screws	2 ea	Dynamic Torque Reversing	9.90 Nm
Axial Motion0.32 mmTorsional Stiffness98.0 Nm/DegMoment of Inertia7.468 x 10°5 kg-m²Maximum Speed10,000 RPMZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/8-86Recommended Hex KeyMetric Hex KeysFull Bearing Support Required?YesMaterial SpecificationHubs: 2024-T351Disc Springs: Typ SteelDisc Springs: Typ SteelSulfuric Anodized II, Class 2 and AS Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.467900UPC634529204061Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Note 1Note 2Torque ratings are at maximum misalignment.Performance ratings are for guidance only. The user must determine suitability for a particular	ngular Misalignment	1.0°	Dynamic Torque Non-Reversing	19.80 Nm
Moment of Inertia7.468 x 10°5 kg-m²Maximum Speed10,000 RPMZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/8-86Recommended Hex KeyMetric Hex KeysFull Bearing Support Required?YesMaterial SpecificationHubs: 2024-T351 Disc Springs: Typ SteelTemperature-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodized II, Class 2 and AS Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.467900UPC634529204061 31163008Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.31163008Note 2Torque ratings are at maximum misalignment.Note 3Performance ratings are for guidance only. The user must determine suitability for a particular	arallel Misalignment	0.00 mm	Static Torque	39.6 Nm
Zero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/8-86Recommended Hex KeyMetric Hex KeysFull Bearing Support Required?YesMaterial SpecificationHubs: 2024-T351 Disc Springs: Typ SteelTemperature-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodized II, Class 2 and AS Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.467900UPC634529204061Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.31163008Note 2Torque ratings are at maximum misalignment.Performance ratings are for guidance only. The user must determine suitability for a particut	cial Motion	0.32 mm	Torsional Stiffness	98.0 Nm/Deg
Torque WrenchTW:BT-4C-3/8-86Recommended Hex KeyMetric Hex KeysFull Bearing Support Required?YesMaterial SpecificationHubs: 2024-T351 Disc Springs: Typ SteelTemperature-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodized II, Class 2 and AS Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.467900UPC634529204061Tariff 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	oment of Inertia	7.468 x 10 ⁻⁵ kg-m ²	Maximum Speed	10,000 RPM
Full Bearing Support Required?YesMaterial SpecificationHubs: 2024-T351 Disc Springs: Typ SteelTemperature-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodized II, Class 2 and AS Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.467900UPC634529204061Tariff 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 particut	ro-Backlash?	Yes	Balanced Design	Yes
Disc Springs: Typ SteelTemperature-40°F to 200°F (-40°C to 93°C)Finish SpecificationSulfuric Anodized II, Class 2 and AS Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.467900UPC634529204061Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.31163008Note 2Torque ratings are at maximum misalignment.Verformance ratings are for guidance only. The user must determine suitability for a particular	orque Wrench	TW:BT-4C-3/8-86	Recommended Hex Key	Metric Hex Keys
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Weight (lbs)0.467900UPC634529204061Tariff 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	mperature	-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	anufacturer	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	eight (Ibs)	0.467900	UPC	634529204061
Note 2Torque ratings are at maximum misalignment.Note 3Performance ratings are for guidance only. The user must determine suitability for a particular	riff Code	8483.60.8000	UNSPC	31163008
Note 3 Performance ratings are for guidance only. The user must determine suitability for a particu	ote 1	Stainless steel hubs are available upon request.		
	ote 2	Torque ratings are at maximum misalignment.		
Note 4 Torque ratings for the couplings are based on the physical limitations/failure point of the dis	ote 3	Performance ratings are for guidance only. The user must determine suitability for a particular application.		
cases, especially when the smallest standard bores are used or where shafts are undersize		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	MARNING 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 MDCSK51-17-13-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> 0.32 mm) Fully tighten the M5 screw on the first hub to the recommended seating torque of 9.5 Nm using a 4.0 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 22.2 mm. 		