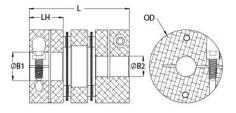




MDCDE57-16-14-A

Ruland MDCDE57-16-14-A, 16mm x 14mm Double Disc Coupling, Aluminum, Clamp Style, Electrically Isolating, 57.2mm OD, 78.2mm Length





Description

Ruland MDCDE57-16-14-A is an electrically isolating clamp double disc coupling with 16mm x 14mm bores, 57.2mm OD, and 78.2mm 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. MDCDE57-16-14-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 MDCDE57-16-14-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. MDCDE57-16-14-A is manufactured in our Marlborough, MA factory under strict controls using proprietary processes.

Product Specifications

Temperature -10°F to 150°F (-23°C to 65°C) Finish Specification Sulfuric Anodized MIL-A-II, Class 2 and ASTM B5 Black Anodize Manufacturer Ruland Manufacturing Country of Origin USA Weight (lbs) 0.889800 UPC 634529115190 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) 57.2 mm Bore Tolerance +0.03 mm / -0.00 mm Length (L) 78.2 mm Hub Width (LH) 26.67 mm Recommended Shaft Tolerance +0.000 mm / -0.013 mm Forged Clamp Screw M6 Screw Kinish Alloy Steel Hex Wrench Size 5.0 mm Screw Finish Black Oxide Seating Torque 16 Nm Number of Screws 2 ea Dynamic Torque Reversing 12.73 Nm Angular Misalignment 2.0° Dynamic Torque Reversing 25.45 Nm Parallel Misalignment 0.30 mm Static Torque 50.9 Nm Axial Motion 0.76 mm Torsional Stiffness 86.9 Nm/Deg Moment of Inertia 1.808 x 10 ⁻⁴ kg-m ² Maximum Speed 10,000 RPM Full Bearing Support Required? Yes Zero-Backlash? Yes Balanced Design Yes Torque Wrench TW/BT-4C-3/8-140 Recommended Hex Key Metric Hex Keys Material Specification Sulfuric Anodized MIL-A- II, Class 2 and ASTM B5 Manufacturer Ruland Manufacturing Country of Origin USA Weight (Ibs) 0.889800 UPC 634529115190 Tariff Code 8483.60.8000 UNSPC 31163008 Note 1 Stainless steel hubs are avail	Bore (B1)	16 mm	Small Bore (B2)	14 mm
Length (L) 78.2 mm Hub Width (LH) 26.67 mm Recommended Shaft Tolerance +0.000 mm / -0.013 mm Forged Clamp Screw M6 Screw Material Alloy Steel Hex Wrench Size 5.0 mm Screw Finish Black Oxide Seating Torque 16 Nm Number of Screws 2 ea Dynamic Torque Reversing 12.73 Nm Angular Misalignment 2.0° Dynamic Torque Non-Reversing 25.45 Nm Parallel Misalignment 0.30 mm Static Torque 50.9 Nm Axial Motion 0.76 mm Torsional Stiffness 86.9 Nm/Deg Moment of Inertia 1.808 x 10 ⁻⁴ kg-m ² Maximum Speed 10,000 RPM Full Bearing Support Required? Yes Zero-Backlash? Yes Balanced Design Yes Torque Wrench TW:BT-4C-3/8-140 Recommended Hex Key Metric Hex Keys Material Specification Hubs: 2024-T351 Bar, D Type 302 Stainless Stee Spacer: Acetal Staince Anodize Staince MIL-A- Itemperature -10°F to 150°F (-23°C to 65°C) Finish Specification II, Class 2 and ASTM B5 Black Anodize UNSPC 31163008 <td>B1 Max Shaft Penetration</td> <td>37.0 mm</td> <td>B2 Max Shaft Penetration</td> <td>37.0 mm</td>	B1 Max Shaft Penetration	37.0 mm	B2 Max Shaft Penetration	37.0 mm
Recommended Shaft Tolerance +0.000 mm / -0.013 mm Forged Clamp Screw M6 Screw Material Alloy Steel Hex Wrench Size 5.0 mm Screw Finish Black Oxide Seating Torque 16 Nm Number of Screws 2 ea Dynamic Torque Reversing 12.73 Nm Angular Misalignment 2.0° Dynamic Torque Non-Reversing 25.45 Nm Parallel Misalignment 0.30 mm Static Torque 50.9 Nm Axial Motion 0.76 mm Torsional Stiffness 86.9 Nm/Deg Moment of Inertia 1.808 x 10 ⁻⁴ kg-m ² Maximum Speed 10,000 RPM Full Bearing Support Required? Yes Zero-Backlash? Yes Balanced Design Yes Torque Wrench TW:BT-4C-3/8-140 Recommended Hex Key Metric Hex Keys Material Specification Hubs: 2024-T351 Bar, D Type 302 Stainless Stee Spacer: Acetal Spacer: Acetal Spacer: Acetal Temperature -10°F to 150°F (-23°C to 65°C) Finish Specification II, Class 2 and ASTM B5 Maufacturer Ruland Manufacturing Country of Origin USA Weight (Ibs) 0.889800 <td< td=""><td>Outer Diameter (OD)</td><td>57.2 mm</td><td>Bore Tolerance</td><td>+0.03 mm / -0.00 mm</td></td<>	Outer Diameter (OD)	57.2 mm	Bore Tolerance	+0.03 mm / -0.00 mm
Screw Material Alloy Steel Hex Wrench Size 5.0 mm Screw Finish Black Oxide Seating Torque 16 Nm Number of Screws 2 ea Dynamic Torque Reversing 12.73 Nm Angular Misalignment 0.0° Dynamic Torque Non-Reversing 25.45 Nm Parallel Misalignment 0.30 mm Static Torque 50.9 Nm Axial Motion 0.76 mm Torsional Stiffness 86.9 Nm/Deg Moment of Inertia 1.808 x 10 ⁻⁴ kg-m ² Maximum Speed 10,000 RPM Full Bearing Support Required? Yes Zero-Backlash? Yes Balanced Design Yes Torque Wrench TW:BT-4C-3/8-140 Recommended Hex Key Metric Hex Keys Material Specification Hubs: 2024-T351 Bar, D Type 302 Stainless Stee Temperature -10°F to 150°F (-23°C to 65°C) Finish Specification Sulfuric Anodized MIL-A- II, Class 2 and ASTM B5 Black Anodize Maufacturer Ruland Manufacturing Country of Origin USA Weight (lbs) 0.889800 UPC 634529115190 Tariff Code 843.60.8000 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	Length (L)	78.2 mm	Hub Width (LH)	26.67 mm
Screw Finish Black Oxide Seating Torque 16 Nm Number of Screws 2 ea Dynamic Torque Reversing 12.73 Nm Angular Misalignment 2.0° Dynamic Torque Reversing 25.45 Nm Parallel Misalignment 0.30 mm Static Torque 50.9 Nm Axial Motion 0.76 mm Torsional Stiffness 86.9 Nm/Deg Moment of Inertia 1.808 x 10 ⁻⁴ kg-m ² Maximum Speed 10,000 RPM Full Bearing Support Required? Yes Zero-Backlash? Yes Balanced Design Yes Torque Wrench TW:BT-4C-3/8-140 Recommended Hex Key Metric Hex Keys Material Specification Hubs: 2024-T351 Bar, D Type 302 Stainless Stee Spacer: Acetal Suffuric Anodized MIL-A-II, Class 2 and ASTM B5 Black Anodize Ves Finish Specification Sulfuric Anodized MIL-A-II, Class 2 and ASTM B5 Manufacturer Ruland Manufacturing Country of Origin USA Weight (lbs) 0.889800 UPC 634529115190 Tariff Code 8483.60.8000 UNSPC 31163008 Note 1 Stainless steel hubs are available upon request. Note 3 <td>Recommended Shaft Tolerance</td> <td>+0.000 mm / -0.013 mm</td> <td>Forged Clamp Screw</td> <td>M6</td>	Recommended Shaft Tolerance	+0.000 mm / -0.013 mm	Forged Clamp Screw	M6
Number of Screws 2 ea Dynamic Torque Reversing 12.73 Nm Angular Misalignment 2.0° Dynamic Torque Non-Reversing 25.45 Nm Parallel Misalignment 0.30 mm Static Torque 50.9 Nm Axial Motion 0.76 mm Torsional Stiffness 86.9 Nm/Deg Moment of Inertia 1.808 x 10 ⁻⁴ kg-m ² Maximum Speed 10,000 RPM Full Bearing Support Required? Yes Zero-Backlash? Yes Balanced Design Yes Torque Wrench TW:BT-4C-3/8-140 Recommended Hex Key Metric Hex Keys Material Specification Hubs: 2024-T351 Bar, D Type 302 Stainless Stee Spacer: Acetal Type 302 Stainless Stee Spacer: Acetal Temperature -10°F to 150°F (-23°C to 65°C) Finish Specification Sulfuric Anodized MIL-A-II, Class 2 and ASTM B5 Black Anodize Balack Anodize Black Anodize Black Anodize Maufacturer Ruland Manufacturing Country of Origin USA Weight (lbs) 0.889800 UPC 634529115190 Tariff Code 8483.60.8000 UNSPC 31163008 Note 1 Stainless steel hubs are ava	Screw Material	Alloy Steel	Hex Wrench Size	5.0 mm
Angular Misalignment2.0°Dynamic Torque Non-Reversing25.45 NmParallel Misalignment0.30 mmStatic Torque50.9 NmAxial Motion0.76 mmTorsional Stiffness86.9 Nm/DegMoment of Inertia1.808 x 10 ⁻⁴ kg-m²Maximum Speed10,000 RPMFull Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/8-140Recommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T351 Bar, DTemperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodized MIL-A-II, Class 2 and ASTM B5 Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.889800UPC634529115190Tariff 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 appNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the disc spring cases, especially when the smallest standard bores are used or where shafts are undersized, slip	Screw Finish	Black Oxide	Seating Torque	16 Nm
Parallel Misalignment 0.30 mm Static Torque 50.9 Nm Axial Motion 0.76 mm Torsional Stiffness 86.9 Nm/Deg Moment of Inertia 1.808 x 10 ⁻⁴ kg-m ² Maximum Speed 10,000 RPM Full Bearing Support Required? Yes Zero-Backlash? Yes Balanced Design Yes Torque Wrench TW:BT-4C-3/8-140 Recommended Hex Key Metric Hex Keys Material Specification Hubs: 2024-T351 Bar, D Type 302 Stainless Stee Spacer: Acetal Sulfuric Anodized MIL-A- Temperature -10°F to 150°F (-23°C to 65°C) Finish Specification USA Maufacturer Ruland Manufacturing Country of Origin USA Weight (Ibs) 0.889800 UPC 634529115190 Tariff Code 8483.60.8000 UNSPC 31163008 Note 1 Stainless steel hubs are available upon request. Note 2 Torque ratings are tor guidance only. The user must determine suitability for a particular app 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 spring normal/typical con	Number of Screws	2 ea	Dynamic Torque Reversing	12.73 Nm
Axial Motion0.76 mmTorsional Stiffness86.9 Nm/DegMoment of Inertia1.808 x 10 ⁻⁴ kg-m²Maximum Speed10,000 RPMFull Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/8-140Recommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T351 Bar, DType 302 Stainless SteeSpacer: AcetalType 302 Stainless SteeTemperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodized MIL-A- II, Class 2 and ASTM B5 Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.889800UPC634529115190Tariff 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 app 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 holding up to the rated torque of the disc spring 	Angular Misalignment	2.0°	Dynamic Torque Non-Reversing	25.45 Nm
Moment of Inertia 1.808 × 10 ⁻⁴ kg-m ² Maximum Speed 10,000 RPM Full Bearing Support Required? Yes Zero-Backlash? Yes Balanced Design Yes Torque Wrench TW:BT-4C-3/8-140 Recommended Hex Key Metric Hex Keys Material Specification Hubs: 2024-T351 Bar, D Temperature -10°F to 150°F (-23°C to 65°C) Finish Specification Sulfuric Anodized MIL-A-II, Class 2 and ASTM B5 Manufacturer Ruland Manufacturing Country of Origin USA Weight (lbs) 0.889800 UPC 634529115190 Tariff Code 8483.60.8000 UNSPC 31163008 Note 1 Stainless steel hubs are available upon request. Torque ratings are at maximum misalignment. Note 3 Performance 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 spring normal/typical conditions the hubs are capable of holding up to the rated torque of the disc spring cases, especially when the smallest standard bores are used or where shafts are undersized, slip	Parallel Misalignment	0.30 mm	Static Torque	50.9 Nm
Full Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/8-140Recommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T351 Bar, D Type 302 Stainless Stee Spacer: AcetalTemperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodized MIL-A- II, Class 2 and ASTM B5 Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.889800UPC634529115190Tariff 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 spring cases, especially when the smallest standard bores are used or where shafts are undersized, slip	Axial Motion	0.76 mm	Torsional Stiffness	86.9 Nm/Deg
Balanced DesignYesTorque WrenchTW:BT-4C-3/8-140Recommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T351 Bar, D Type 302 Stainless Stee Spacer: AcetalTemperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodized MIL-A- II, Class 2 and ASTM B5 Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.889800UPC634529115190Tariff 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 Note 4Torque ratings for the couplings are based on the physical limitations/failure point of the disc spring cases, especially when the smallest standard bores are used or where shafts are undersized, slip	Moment of Inertia	1.808 x 10 ⁻⁴ kg-m ²	Maximum Speed	10,000 RPM
Recommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T351 Bar, D Type 302 Stainless Stee Spacer: AcetalTemperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodized MIL-A- II, Class 2 and ASTM B5 Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.889800UPC634529115190Tariff 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 spring cases, 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 Stee Spacer: AcetalTemperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodized MIL-A- II, Class 2 and ASTM B5 Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.889800UPC634529115190Tariff 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 spring cases, especially when the smallest standard bores are used or where shafts are undersized, slipp	Balanced Design	Yes	Torque Wrench	TW:BT-4C-3/8-140
II, Class 2 and ASTM B5 Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.889800UPC634529115190Tariff 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 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	Recommended Hex Key	Metric Hex Keys	Material Specification	Hubs: 2024-T351 Bar, Disc Springs Type 302 Stainless Steel, Center Spacer: Acetal
Weight (lbs)0.889800UPC634529115190Tariff 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 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 spring normal/typical conditions the hubs are capable of holding up to the rated torque of the disc spring 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 spring 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, slip	Weight (Ibs)	0.889800	UPC	634529115190
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 spring 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, slip	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 spring normal/typical conditions the hubs are capable of holding up to the rated torque of the disc spring cases, especially when the smallest standard bores are used or where shafts are undersized, slip	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 sprin 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, slip	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, slip	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 st standard bores are used or where s	torque of the disc springs. In some shafts are undersized, slippage on the

	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 MDCDE57-16-14-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> 0.30 mm, <i>Axial Motion:</i> 0.76 mm) Fully tighten the M6 screw on the first hub to the recommended seating torque of 16 Nm using a 5.0 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 37.0 mm. 		