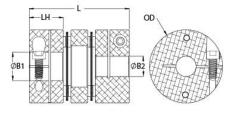




## MDCDE57-20-14-A

Ruland MDCDE57-20-14-A, 20mm x 14mm Double Disc Coupling, Aluminum, Clamp Style, Electrically Isolating, 57.2mm OD, 78.2mm Length





## Description

Ruland MDCDE57-20-14-A is an electrically isolating clamp double disc coupling with 20mm 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. MDCDE57-20-14-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 MDCDE57-20-14-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. MDCDE57-20-14-A is manufactured in our Marlborough, MA factory under strict controls using proprietary processes.

## **Product Specifications**

Length (L)78.2 mmHub Width (LH)26.7 mmRecommended Shaft Tolerance+0.000 mm / -0.013 mmForged Clamp ScrewM6Screw MaterialAlloy SteelHex Wrench Size5.0 mmScrew FinishBlack OxideSeating Torque16 NmNumber of Screws2 eaDynamic Torque Reversing12.73 NmAngular Misalignment2.0°Dynamic Torque Non-Reversing25.45 NmParallel Misalignment0.30 mmStatic Torque50.9 NmAxial Motion0.76 mmTorsional Stiffness86.9 Nm/DegMoment of Inertia1.801 x 10 <sup>-4</sup> kg-m²Maximum Speed10.000 RPMFull Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchHubs: 2024-T351 Type 302 Stainle Spacer: AcetalTemperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodizee Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.872600UPC634529115220Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Torque ratings are at maximum misalignment.	roudot opcomoutions			
Outer Diameter (OD)57.2 mmBore Tolerance+0.03 mm / -0.00Length (L)78.2 mmHub Width (LH)26.7 mmRecommended Shaft Tolerance+0.000 mm / -0.013 mmForged Clamp ScrewM6Screw MaterialAlloy SteelHex Wrench Size5.0 mmScrew FinishBlack OxideSeating Torque Reversing12.73 NmAngular Misalignment2.0°Dynamic Torque Reversing25.45 NmParallel Misalignment0.30 mmStatic Torque50.9 NmAxial Motion0.76 mmTorsional Stiffness86.9 Nm/DegMoment of Inertia1.801 x 10 <sup>-4</sup> kg-m²Maximus Speed10,000 RPMPull Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/8-12Temperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationHubs: 2024-T351 Type 302 Stainle Spacer: AcetalMaufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.872600UPC634529115220Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.31163008Note 2Torque ratings are tor guidance only. The user must determine suitability for a particNote 3Performance ratings are for guidance only. The user must determine suitability for a particNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the dia normal/typical conditions the hubs are capable of holding up to the rated torque of the d	Bore (B1)	20 mm	Small Bore (B2)	14 mm
Length (L)78.2 mmHub Width (LH)26.7 mmRecommended Shaft Tolerance+0.000 mm / -0.013 mmForged Clamp ScrewM6Screw MaterialAlloy SteelHex Wrench Size5.0 mmScrew FinishBlack OxideSeating Torque16 NmNumber of Screws2 eaDynamic Torque Reversing12.73 NmAngular Misalignment2.0°Dynamic Torque Non-Reversing25.45 NmParallel Misalignment0.30 mmStatic Torque50.9 NmAxial Motion0.76 mmTorsional Stiffness86.9 Nm/DegMoment of Inertia1.801 x 10 <sup>-4</sup> kg-m²Maximum Speed10,000 RPMFull Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/8-14Recommended Hex KeyMetric Hex KeysMaterial SpecificationSulfuric Anodizee II, Class 2 and AS Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.872600UPC634529115220Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Note 1Note 2Torque ratings are at maximum misalignment.Note are available upon request.Note 4Performance ratings are for guidance only. The user must determine suitability for a partic	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 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       1.801 x 10 <sup>-4</sup> kg-m <sup>2</sup> Maximum Speed       10,000 RPM         Full Bearing Support Required?       Yes       Zero-Backlash?       Yes         Balanced Design       Yes       Torque Wrench       TW:BT-4C-3/8-12         Recommended Hex Key       Metric Hex Keys       Material Specification       Hubs: 2024-T351         Type 302 Stainle       Spacer: Acetal       Spacer: Acetal       Spacer: Acetal         Recommended Hex Key       Metric Hex Keys       Finish Specification       Sulfuric Anodizec         Manufacturer       Ruland Manufacturing       Country of Origin       USA         Weight (lbs)       0.872600       UPC       63452911522	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       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       1.801 x 10 <sup>-4</sup> kg-m <sup>2</sup> Maximum Speed       10,000 RPM         Full Bearing Support Required?       Yes       Zero-Backlash?       Yes         Balanced Design       Yes       Torque Wrench       TW/BT-4C-3/8-12         Recommended Hex Key       Metric Hex Keys       Material Specification       Hubs: 2024-T351         Type 302 Stainle       Spacer: Acetal       Spacer: Acetal       Spacer: Acetal         Temperature       -10°F to 150°F (-23°C to 65°C)       Finish Specification       Sulfuric Anodizec         Maufacturer       Ruland Manufacturing       Country of Origin       USA         Weight (Ibs)       0.872600       UPC       634529115220         Tariff Code       8483.60.8000       UNSPC       31163008      N	Length (L)	78.2 mm	Hub Width (LH)	26.7 mm
Screw FinishBlack OxideSeating Torque16 NmNumber of Screws2 eaDynamic Torque Reversing12.73 NmAngular Misalignment2.0°Dynamic Torque Non-Reversing25.45 NmParallel Misalignment0.30 mmStatic Torque50.9 NmAxial Motion0.76 mmTorsional Stiffness86.9 Nm/DegMoment of Inertia1.801 x 10°4 kg-m²Maximum Speed10,000 RPMFull Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/8-1/2Recommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T351Type 302 Stainle-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric AnodizeeII, Class 2 and As Black Anodize-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric AnodizeeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.872600UPC634529115220Tariff 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 particNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the disc	Recommended Shaft Tolerance	+0.000 mm / -0.013 mm	Forged Clamp Screw	M6
Number of Screws2 eaDynamic Torque Reversing12.73 NmAngular Misalignment2.0°Dynamic Torque Non-Reversing25.45 NmParallel Misalignment0.30 mmStatic Torque50.9 NmAxial Motion0.76 mmTorsional Stiffness86.9 Nm/DegMoment of Inertia1.801 x 10 <sup>-4</sup> kg-m²Maximum Speed10,000 RPMFull Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/8-1/Recommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T351Temperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric AnodizeeII, Class 2 and As Black Anodize0.872600UPC634529115220Material Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Note 2Torque ratings are ta maximum misalignment.Note 3Performance ratings are for guidance only. The user must determine suitability for a particNote 4Note 4Torque ratings for the couplings are based on the physical limitations/failure point of the disc	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 Inertia1.801 x 10 <sup>-4</sup> kg-m²Maximum Speed10,000 RPMFull Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/8-12Recommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T351Type 302 Stainle Spacer: AcetalSulfuric Anodized Il, Class 2 and AS Black AnodizedSulfuric Anodized Il, Class 2 and AS Black AnodizedManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.872600UPC634529115220Note 1Stainless steel hubs are available upon request.Stainless steel hubs are available upon request.Note 3Performance ratings are at maximum misalignment.Ver orque ratings for the couplings are based on the physical limitations/failure point of the din ormal/typical conditions the hubs are capable of holding up to the rated torque of the disc	Screw Finish	Black Oxide	Seating Torque	16 Nm
Parallel Misalignment0.30 mmStatic Torque50.9 NmAxial Motion0.76 mmTorsional Stiffness86.9 Nm/DegMoment of Inertia1.801 x 10 <sup>-4</sup> kg-m <sup>2</sup> Maximum Speed10,000 RPMFull Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/8-14Recommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T351 Type 302 Stainle Spacer: AcetalTemperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodized Black Anodized II, Class 2 and AS Black AnodizedManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.872600UPC634529115220Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Note 3Performance ratings are for guidance only. The user must determine suitability for a particNote 3Performance ratings are for guidance only. The user must determine suitability for a particTorque ratings for the couplings are based on the physical limitations/failure point of the di normal/typical conditions the hubs are capable of holding up to the rated torque of the disc	Number of Screws	2 ea	Dynamic Torque Reversing	12.73 Nm
Axial Motion0.76 mmTorsional Stiffness86.9 Nm/DegMoment of Inertia1.801 x 10 <sup>-4</sup> kg-m²Maximum Speed10,000 RPMFull Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/8-14Recommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T351Type 302 Stainle Spacer: AcetalSulfuric AnodizedII, Class 2 and AS Black AnodizeTemperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodized Black AnodizedManufacturerRuland ManufacturingCountry of OriginUSA Black AnodizedWeight (lbs)0.872600UPC634529115220Tariff 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 partic normal/typical conditions the hubs are capable of holding up to the rated torque of the disc	Angular Misalignment	2.0°	Dynamic Torque Non-Reversing	25.45 Nm
Moment of Inertia1.801 x 10 <sup>-4</sup> kg-m²Maximum Speed10,000 RPMFull Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/8-12Recommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T354Reperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric AnodizeeII. Class 2 and ASBlack AnodizeBlack AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.872600UPC634529115220Tariff 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 particNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the dia normal/typical conditions the hubs are capable of holding up to the rated torque of the disc	Parallel Misalignment	0.30 mm	Static Torque	50.9 Nm
Full Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/8-14Recommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T351Type 302 Stainle Spacer: AcetalSpacer: AcetalSulfuric AnodizedTemperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodized Black AnodizedManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.872600UPC634529115220Tariff 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 particNote 3Performance ratings are for guidance only. The user must determine suitability for a partic normal/typical conditions the hubs are capable of holding up to the rated torque of the disc	Axial Motion	0.76 mm	Torsional Stiffness	86.9 Nm/Deg
Balanced DesignYesTorque WrenchTW:BT-4C-3/8-14Recommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T351 Type 302 Stainle Spacer: AcetalTemperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodize on the spacer: Acetal Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.872600UPC634529115220Tariff 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 partic normal/typical conditions the hubs are capable of holding up to the rated torque of the discompany for the discompany for the couplings are based on the physical limitations/failure point of the discompany for the couplings are capable of holding up to the rated torque of the discompany for the couplings are capable of holding up to the rated torque of the discompany for the couplings are capable of holding up to the rated torque of the discompany for the couplings are capable of holding up to the rated torque of the discompany for the couplings are capable of holding up to the rated torque of the discompany for the couplings are capable of holding up to the rated torque of the discompany for the couplings are capable of holding up to the rated torque of the discompany for the couplings are capable of holding up to the rated torque of the discompany for the couplings are capable of holding up to the rated torque of the discompany for the couplings are capable of holding up to the rated torque of the discompany for the couplings are capable of holding up to the rated torque of the discompany for the cou	Moment of Inertia	1.801 x 10 <sup>-4</sup> kg-m <sup>2</sup>	Maximum Speed	10,000 RPM
Recommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T351 Type 302 Stainle Spacer: AcetalTemperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodized Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSA Black AnodizeWeight (lbs)0.872600UPC634529115220Tariff 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 particNote 3Performance ratings are for guidance only. The user must determine suitability for a particNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the di normal/typical conditions the hubs are capable of holding up to the rated torque of the disc	Full Bearing Support Required?	Yes	Zero-Backlash?	Yes
Type 302 Stainle Spacer: AcetalTemperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodized Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSA Black AnodizeWeight (Ibs)0.872600UPC634529115220Tariff 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 particNote 3Performance ratings are for guidance only. The user must determine suitability for a particTorque ratings for the couplings are based on the physical limitations/failure point of the di normal/typical conditions the hubs are capable of holding up to the rated torque of the disc	Balanced Design	Yes	Torque Wrench	TW:BT-4C-3/8-140
II, Class 2 and AS Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.872600UPC634529115220Tariff 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 particNote 3Performance ratings are for guidance only. The user must determine suitability for a particNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the dianormal/typical conditions the hubs are capable of holding up to the rated torque of the discommend.	Recommended Hex Key	Metric Hex Keys	Material Specification	Hubs: 2024-T351 Bar, Disc Springs Type 302 Stainless Steel, Center Spacer: Acetal
Weight (lbs)0.872600UPC634529115220Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Torque ratings are at maximum misalignment.Note 2Torque ratings are at maximum misalignment.Note 3Performance ratings are for guidance only. The user must determine suitability for a particNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the dinormal/typical conditions the hubs are capable of holding up to the rated torque of the disconstruction	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 particNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the dinnormal/typical conditions the hubs are capable of holding up to the rated torque of the discomption	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 partic         Note 4       Torque ratings for the couplings are based on the physical limitations/failure point of the dinormal/typical conditions the hubs are capable of holding up to the rated torque of the discommendation	Weight (Ibs)	0.872600	UPC	634529115220
Note 2         Torque ratings are at maximum misalignment.           Note 3         Performance ratings are for guidance only. The user must determine suitability for a partic           Note 4         Torque ratings for the couplings are based on the physical limitations/failure point of the dinormal/typical conditions the hubs are capable of holding up to the rated torque of the disc	Tariff Code	8483.60.8000	UNSPC	31163008
Note 3         Performance ratings are for guidance only. The user must determine suitability for a partic           Note 4         Torque ratings for the couplings are based on the physical limitations/failure point of the dinormal/typical conditions the hubs are capable of holding up to the rated torque of the disc	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 dinormal/typical conditions the hubs are capable of holding up to the rated torque of the disc	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	Note 3	Performance ratings are for guidance only. The user must determine suitability for a particular application.		
shaft is possible below the rated torque of the disc springs. Keyways are available to provi	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.		
Prop 65	<b>MWARNING</b> 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			
	<ol> <li>Align the bores of the MDCDE57-20-14-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)</li> <li>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.</li> <li>Before tightening the screw on the second hub, rotate the coupling by hand to allow it to reach its free length.</li> <li>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.</li> <li>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.</li> </ol>		