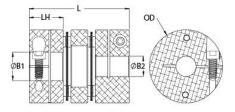




## MDCDE51-25-14-A

Ruland MDCDE51-25-14-A, 25mm x 14mm Double Disc Coupling, Aluminum, Clamp Style, Electrically Isolating, 50.8mm OD, 64.0mm Length





## Description

Ruland MDCDE51-25-14-A is an electrically isolating clamp double disc coupling with 25mm x 14mm bores, 50.8mm OD, and 64.0mm 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. MDCDE51-25-14-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 MDCDE51-25-14-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. MDCDE51-25-14-A is manufactured in our Marlborough, MA factory under strict controls using proprietary processes.

## **Product Specifications**

Length (L)64.0 mmHub Width (LH)20.55 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 Misalignment2.0°Dynamic Torque Non-Reversing19.80 NmParallel Misalignment0.30 mmStatic Torque39.6 NmAxial Motion0.64 mmTorsional Stiffness67.2 Nm/DegMoment of Inertia9.019 x 10' <sup>5</sup> kg·m²Maximum Speed10,000 RPMFull Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW/BT-4C-3/8-Recommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T33Torperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodize II, Class 2 and J Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.531200UPC634529090022Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Note 3Performance ratings for the couplings are based on the physical limitations/failure point of the onormal/typical conditions the hubs are capable of holding up to the rated torque of the dia	roddol opcomodions			
Outer Diameter (OD)50.8 mmBore Tolerance+0.03 mm / -0.03Length (L)64.0 mmHub Width (LH)20.55 mmRecommended Shaft Tolerance+0.000 mm / -0.013 mmForged Clamp ScrewM5Screw MaterialAlloy SteelHex Wrench Size4.0 mmScrew FinishBlack OxideSeating Torque Reversing9.90 NmAngular Misalignment2.0°Dynamic Torque Reversing9.90 NmAngular Misalignment0.30 mmStatic Torque39.6 NmAxial Motion0.64 mmTorsional Stiffness67.2 Nm/DegMoment of Inertia9.019 x 10 <sup>-5</sup> kg-m²Maximum Speed10,000 RPMFull Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/8-Recommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T33 Type 302 Statin Spacer: AcetalTemperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodize II, Class 2 and J Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSA USAWeight (Ibs)0.531200UPC634529090022Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Yes up raings are at maximum misalignment.Note 3Performance ratings are for guidance only. The user must determine suitability for a partNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the onorma/failore and thos	3ore (B1)	25 mm	Small Bore (B2)	14 mm
Length (L)64.0 mmHub Width (LH)20.55 mmRecommended Shaft Tolerance+0.000 mm / -0.013 mmForged Clamp ScrewM5Screw MaterialAlloy SteelHex Wrench Size4.0 mmScrew FinishBlack OxideSetting Torque9.5 NmNumber of Screws2 eaDynamic Torque Reversing9.90 NmAngular Misalignment2.0°Dynamic Torque Non-Reversing19.80 NmParallel Misalignment0.30 mmStatic Torque39.6 NmAxial Motion0.64 mmTorsional Stiffness67.2 Nm/DegMoment of Inertia9.019 x 10*5 kg·m²Maximum Speed10,000 RPMFull Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/8-Recommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T33Temperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric AnodizeII, Class 2 and JBlack AnotizeII, Class 2 and JBlack AnotizeMeight (Ibs)0.531200UPC63452909002231163008Note 1Stainless steel hubs are available upon request.Note 1Stainless are for guidance only. The user must determine suitability for a partNote 3Performance ratings are for guidance only. The user must determine suitability for a partNot e onrmal/typical conditions the hubs are capable of holding up to the rated torque of the dia	31 Max Shaft Penetration	30.3 mm	B2 Max Shaft Penetration	30.3 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       2.0°       Dynamic Torque Non-Reversing       19.80 Nm         Parallel Misalignment       0.30 mm       Static Torque       39.6 Nm         Axial Motion       0.64 mm       Torsional Stiffness       67.2 Nm/Deg         Moment of Inertia       9.019 x 10°5 kg-m²       Maximum Speed       10,000 RPM         Full Bearing Support Required?       Yes       Torque Wrench       TW:BT-4C-3/8-         Recommended Hex Key       Metric Hex Keys       Material Specification       Hubs: 2024-T33         Type 302 Stainl       Spacer: Acetal       Spacer: Acetal       Spacer: Acetal         Temperature       -10°F to 150°F (-23°C to 65°C)       Finish Specification       USA       Black Anodize         Meight (lbs)       0.531200       UPC       634529090022       Tariff Code       8483.60.8000       UNSPC       31163008         Note 1       Stainless steel hubs are available upon request.       Torque rating	Outer 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 Misalignment2.0°Dynamic Torque Non-Reversing19.80 NmParallel Misalignment0.30 mmStatic Torque39.6 NmAxial Motion0.64 mmTorsional Stiffness67.2 Nm/DegMoment of Inertia9.019 x 10°5 kg-m²Maximum Speed10,000 RPMFull Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/8-Recommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T33Type 302 Stain Spacer: AcetalSpacer: AcetalSpacer: AcetalItemperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodize II, Class 2 and J Black AnodizeMaufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.531200UPC634529090022Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Note 1Note 2Torque ratings are at maximum misalignment.Note 3Performance ratings are for guidance only. The user must determine suitability for a partNote 4Torque ratings are capable of holding up to the rated torque of the dia	_ength (L)	64.0 mm	Hub Width (LH)	20.55 mm
Screw FinishBlack OxideSeating Torque9.5 NmNumber of Screws2 eaDynamic Torque Reversing9.90 NmAngular Misalignment2.0°Dynamic Torque Non-Reversing19.80 NmParallel Misalignment0.30 mmStatic Torque39.6 NmAxial Motion0.64 mmTorsional Stiffness67.2 Nm/DegMoment of Inertia9.019 x 10 <sup>-5</sup> kg-m <sup>2</sup> Maximum Speed10,000 RPMFull Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/8-Recommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T33Temperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric AnodizeII, Class 2 and / Black Anodize0.531200UPC634529090022Maiff 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 partiNote 4Note 4Torque ratings for the couplings are based on the physical limitations/failure point of the origin of the dia	Recommended Shaft Tolerance	+0.000 mm / -0.013 mm	Forged Clamp Screw	M5
Number of Screws2 eaDynamic Torque Reversing9.90 NmAngular Misalignment2.0°Dynamic Torque Non-Reversing19.80 NmParallel Misalignment0.30 mmStatic Torque39.6 NmAxial Motion0.64 mmTorsional Stiffness67.2 Nm/DegMoment of Inertia9.019 x 10°5 kg-m²Maximum Speed10,000 RPMFull Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/8-Recommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T33Type 302 Stain Spacer: Acetal-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodize II, Class 2 and A Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.531200UPC634529090022Tariff 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 partitNote 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 dia	Screw Material	Alloy Steel	Hex Wrench Size	4.0 mm
Angular Misalignment2.0°Dynamic Torque Non-Reversing19.80 NmParallel Misalignment0.30 mmStatic Torque39.6 NmAxial Motion0.64 mmTorsional Stiffness67.2 Nm/DegMoment of Inertia9.019 x 10°5 kg-m²Maximum Speed10,000 RPMFull Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/8-Recommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T38Torpe august-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodize Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.531200UPC634529090022Note 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 partiNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the dis	Screw Finish	Black Oxide	Seating Torque	9.5 Nm
Parallel Misalignment0.30 mmStatic Torque39.6 NmAxial Motion0.64 mmTorsional Stiffness67.2 Nm/DegMoment of Inertia9.019 x 10°5 kg-m²Maximum Speed10,000 RPMFull Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/8-Recommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T38Trype 302 Stainl Spacer: AcetalSpacer: AcetalSulfuric AnodizeII. Class 2 and A Black AnodizeSulfuric AnodizeSulfuric AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.531200UPC634529090022Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Note 1Note 3Performance ratings are at maximum misalignment.Note 4Note 4Torque ratings for the couplings are based on the physical limitations/failure point of the dis	Number of Screws	2 ea	Dynamic Torque Reversing	9.90 Nm
Axial Motion0.64 mmTorsional Stiffness67.2 Nm/DegMoment of Inertia9.019 x 10°5 kg-m²Maximum Speed10,000 RPMFull Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/8-Recommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T33Type 302 Staind Spacer: Acetal-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodize II, Class 2 and A Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.531200UPC634529090022Tariff 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 partiNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the dis	Angular Misalignment	2.0°	Dynamic Torque Non-Reversing	19.80 Nm
Moment of Inertia9.019 x 10°5 kg-m²Maximum Speed10,000 RPMFull Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/8-Recommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T36Temperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric AnodizeII, Class 2 and ABlack AnodizeBlack AnodizeBlack AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.531200UPC634529090022Tariff 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 partiNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the dis	Parallel Misalignment	0.30 mm	Static Torque	39.6 Nm
Full Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/8- Torque WrenchHubs: 2024-T38 Type 302 Staind Spacer: AcetalRecommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T38 Type 302 Staind Spacer: AcetalTemperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodize II, Class 2 and J Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.531200UPC634529090022Tariff 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 partitionNote 3Performance ratings are for guidance only. The user must determine suitability for a partitionNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the discord	Axial Motion	0.64 mm	Torsional Stiffness	67.2 Nm/Deg
Balanced DesignYesTorque WrenchTW:BT-4C-3/8-Recommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T36Type 302 Stain Spacer: AcetalType 302 Stain Spacer: AcetalTemperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodize Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.531200UPC634529090022Tariff 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 partiNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the discussion of the discu	Noment of Inertia	9.019 x 10 <sup>-5</sup> kg-m <sup>2</sup>	Maximum Speed	10,000 RPM
Recommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T38 Type 302 Stain Spacer: AcetalTemperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodize II, Class 2 and Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.531200UPC634529090022Tariff 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 partino for the couplings are based on the physical limitations/failure point of the onormal/typical conditions the hubs are capable of holding up to the rated torque of the distance of the	Full Bearing Support Required?	Yes	Zero-Backlash?	Yes
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II, Class 2 and A Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.531200UPC634529090022Tariff 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 partiNote 3Performance ratings are for guidance only. The user must determine suitability for a partiNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the onormal/typical conditions the hubs are capable of holding up to the rated torque of the distance of the distanc	Recommended Hex Key	Metric Hex Keys	Material Specification	Hubs: 2024-T351 Bar, Disc Springs Type 302 Stainless Steel, Center Spacer: Acetal
Weight (lbs)0.531200UPC634529090022Tariff 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 partiNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the onormal/typical conditions the hubs are capable of holding up to the rated torque of the distance of the d	l'emperature	-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 partiNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the onormal/typical conditions the hubs are capable of holding up to the rated torque of the distance of the d	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 parties for the couplings are based on the physical limitations/failure point of the onormal/typical conditions the hubs are capable of holding up to the rated torque of the distance	Neight (Ibs)	0.531200	UPC	634529090022
Note 2         Torque ratings are at maximum misalignment.           Note 3         Performance ratings are for guidance only. The user must determine suitability for a parti           Note 4         Torque ratings for the couplings are based on the physical limitations/failure point of the normal/typical conditions the hubs are capable of holding up to the rated torque of the distance of	Fariff Code	8483.60.8000	UNSPC	31163008
Note 3         Performance ratings are for guidance only. The user must determine suitability for a parti           Note 4         Torque ratings for the couplings are based on the physical limitations/failure point of the onormal/typical conditions the hubs are capable of holding up to the rated torque of the distance of the dis	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 normal/typical conditions the hubs are capable of holding up to the rated torque of the dis	Note 2	Torque ratings are at maximum misalignment.		
normal/typical conditions the hubs are capable of holding up to the rated torque of the dis	Note 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 unders shaft is possible below the rated torque of the disc springs. Keyways are available to pro	Note 4	normal/typical conditions the hubs a 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.			
<b>MARNING</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> .			
<ol> <li>Align the bores of the MDCDE51-25-14-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> 0.64 mm)</li> <li>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.</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 30.3 mm.</li> </ol>			