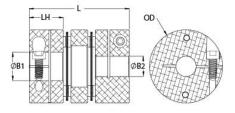




MDCDE51-25-25-A

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





Description

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

Product Specifications

Length (L)64.0 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 Misalignment2.0°Dynamic Torque Non-Reversing19.80 NmParallel Misalignment0.30 mmStatic Torque39.6 NmAxial Motion0.64 mmTorsional Stiffness67.2 Nm/DegMoment of Inertia8.832 x 10.5 kg-m²Maximum Speed10,000 RPMFull Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/ARecommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T Type 302 Sta Spacer: AcetaTemperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anod II, Class 2 and Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.490800UPC63452909006Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Note 2Torque ratings are for guidance only. The user must determine suitability for a paNote 3Performance ratings are for guidance only. The user must determine suitability for a pa	r roudot opcontoutions			
Outer Diameter (OD) 50.8 mm Bore Tolerance +0.03 mm / -0.03 mm / -0.013 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 8.832 x 10 ⁻⁵ kg-m ² Maximum Speed 10,000 RPM Full Bearing Support Required? Yes Torque Wrench TW:BT-4C-3// Recommended Hex Key Metric Hex Keys Material Specification Hubs: 2024-T Type 302 Statis Spacer: Aceta Spacer: Aceta Spacer: Aceta Manufacturer Ruland Manufacturing Country of Origin USA Weight (Ibs) 0.490800 UPC 63452909006 Tariff Code 8483.60.8000	Bore (B1)	25 mm	Small Bore (B2)	25 mm
Length (L)64.0 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 Misalignment2.0°Dynamic Torque Non-Reversing19.80 NmParallel Misalignment0.30 mmStatic Torque39.6 NmAxial Motion0.64 mmTorsional Stiffness67.2 Nm/DegMoment of Inertia8.832 x 10 ⁵ kg-m²Maximum Speed10,000 RPMFull Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3// Type 302 StatRecommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T Type 302 StatTemperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationUSAWeight (Ibs)0.490800UPC63452909006Iariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Note 2Torque ratings are at maximum misalignment.Note 2Torque ratings are to royulance only. The user must determine suitability for a paNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the	B1 Max Shaft Penetration	30.3 mm	B2 Max Shaft Penetration	30.3 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 Misalignment2.0°Dynamic Torque Non-Reversing19.80 NmParallel Misalignment0.30 mmStatic Torque Non-Reversing19.80 NmAxial Motion0.64 mmTorsional Stiffness67.2 Nm/DegMoment of Inertia8.832 x 10 ⁻⁵ kg-m²Maximum Speed10,000 RPMFull Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/ARecommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-TType 302 StateTorque Required?10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric AnodizeManufacturerRuland ManufacturingCountry of OriginUSAUSAWeight (Ibs)0.490800UPC63452909006Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Note 2Torque ratings are at maximum misalignment.Note 3Performance ratings are of guidance only. The user must determine suitability for a paNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the	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 Inertia8.832 x 10 ⁻⁵ kg-m²Maximum Speed10,000 RPMFull Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/ARecommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-TType 302 Sta Spacer: AcetaTorque WrenchSulfuric Anod II, Class 2 and Black AnodizeManufacturer-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anod II, Class 2 and Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.490800UNSPC31163008Note 1Stainless steel hubs are available upon request.Note 3Performance ratings are for guidance only. The user must determine suitability for a paNote 3Performance ratings are for guidance only. The user must determine suitability for a paTorque ratings for the couplings are based on the physical limitations/failure point of the	Length (L)	64.0 mm	Hub Width (LH)	20.6 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 Inertia8.832 x 10° kg-m²Maximum Speed10,000 RPMFull Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/ARecommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T Type 302 Stat Spacer: AcetaTemperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodial Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.490800UPC63452909006Tariff 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 paNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the	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 Inertia8.832 x 10° kg-m²Maximum Speed10,000 RPMFull Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3//Recommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T Type 302 Stai Spacer: AcetaTemperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodi Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.490800UPC63452909006Tariff 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 paNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the	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 Inertia8.832 x 10 ⁵ kg-m ² Maximum Speed10,000 RPMFull Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/ARecommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-TType 302 Stai Spacer: Aceta-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anod II, Class 2 and Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.490800UPC63452909006Tariff Code8483.60.8000UNSPC31163008Note 1Stainless steel hubs are available upon request.Note 2Note 3Performance ratings are for guidance only. The user must determine suitability for a pa Torque ratings for the couplings are based on the physical limitations/failure point of the	Screw Finish	Black Oxide	Seating Torque	9.5 Nm
Parallel Misalignment0.30 mmStatic Torque39.6 NmAxial Motion0.64 mmTorsional Stiffness67.2 Nm/DegMoment of Inertia8.832 x 10 ⁵ kg-m²Maximum Speed10,000 RPMFull Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/ARecommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-TType 302 Stai Spacer: Aceta-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodi II, Class 2 and Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.490800UPC63452909006Tariff 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 paNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the	Number of Screws	2 ea	Dynamic Torque Reversing	9.90 Nm
Axial Motion0.64 mmTorsional Stiffness67.2 Nm/DegMoment of Inertia8.832 x 10°5 kg-m²Maximum Speed10,000 RPMFull Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/ARecommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-TType 302 Stai Spacer: Aceta-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodi II, Class 2 and Black AnodizedManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.490800UPC63452909006Tariff 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 paNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the	Angular Misalignment	2.0°	Dynamic Torque Non-Reversing	19.80 Nm
Moment of Inertia8.832 x 10 ⁻⁵ kg-m²Maximum Speed10,000 RPMFull Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/ARecommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-TType 302 Stai Spacer: AcetaSpacer: AcetaTemperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodi II, Class 2 and Black AnodizedManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.490800UPC63452909006Tariff 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 paNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the	Parallel Misalignment	0.30 mm	Static Torque	39.6 Nm
Full Bearing Support Required?YesZero-Backlash?YesBalanced DesignYesTorque WrenchTW:BT-4C-3/ARecommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-TType 302 Stai Spacer: AcetaTorque YrenchType 302 Stai Spacer: AcetaTemperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodi II, Class 2 and Black AnodizedManufacturerRuland ManufacturingCountry of OriginUSAWeight (lbs)0.490800UPC63452909006Tariff 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 paNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the	Axial Motion	0.64 mm	Torsional Stiffness	67.2 Nm/Deg
Balanced DesignYesTorque WrenchTW:BT-4C-3/ARecommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-TType 302 Stai Spacer: AcetaSpacer: AcetaTemperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodi II, Class 2 and Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.490800UPC63452909006Tariff 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 paNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the	Moment of Inertia	8.832 x 10 ⁻⁵ kg-m ²	Maximum Speed	10,000 RPM
Recommended Hex KeyMetric Hex KeysMaterial SpecificationHubs: 2024-T Type 302 Stai Spacer: AcetaTemperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodi II, Class 2 and Black AnodizedManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.490800UPC63452909006Tariff 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 pa Torque ratings for the couplings are based on the physical limitations/failure point of the	Full Bearing Support Required?	Yes	Zero-Backlash?	Yes
Type 302 Stal Spacer: AcetaTemperature-10°F to 150°F (-23°C to 65°C)Finish SpecificationSulfuric Anodi II, Class 2 and Black AnodizedManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.490800UPC63452909006Tariff 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 paNote 3Performance ratings for the couplings are based on the physical limitations/failure point of the	Balanced Design	Yes	Torque Wrench	TW:BT-4C-3/8-86
II, Class 2 and Black AnodizeManufacturerRuland ManufacturingCountry of OriginUSAWeight (Ibs)0.490800UPC63452909006Tariff 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 paNote 3Performance ratings for the couplings are based on the physical limitations/failure point of the	Recommended Hex Key	Metric Hex Keys	Material Specification	Hubs: 2024-T351 Bar, Disc Springs Type 302 Stainless Steel, Center Spacer: Acetal
Weight (lbs)0.490800UPC63452909006Tariff 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 paNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the	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 paNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the	Manufacturer	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 paNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the	Weight (Ibs)	0.490800	UPC	634529090060
Note 2Torque ratings are at maximum misalignment.Note 3Performance ratings are for guidance only. The user must determine suitability for a paNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the	Tariff Code	8483.60.8000	UNSPC	31163008
Note 3Performance ratings are for guidance only. The user must determine suitability for a paNote 4Torque ratings for the couplings are based on the physical limitations/failure point of the	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	Note 2	Torque ratings are at maximum misalignment.		
	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 unde shaft is possible below the rated torque of the disc springs. Keyways are available to p	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.			
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 MDCDE51-25-25-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) 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 30.3 mm. 			