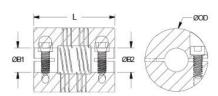




## PCMR16-4-3-SS

Ruland PCMR16-4-3-SS, 4mm x 3mm Four Beam Coupling, Stainless Steel, Clamp Style, 15.9mm OD, 20.3mm Length





## **Description**

Ruland PCMR16-4-3-SS is a clamp style four beam coupling with 4mm x 3mm bores, 15.9mm OD, and 20.3mm length. It is machined from a single piece of material and feature two sets of two spiral cuts. This gives it higher torque capacity, lower windup, and larger body sizes than single beam couplings. PCMR16-4-3-SS is zero-backlash and has a balanced design for reduced vibration at high speeds of up to 6,000 RPM. This four beam spiral coupling is zero-backlash and has a balanced design for reduced vibration at high speeds of up to 6,000 RPM. All hardware is metric and tests beyond DIN 912 12.9 standards for maximum torque capabilities. PCMR16-4-3-SS is made from 303 stainless steel for increased torque capacity. It is machined from bar stock that is sourced exclusively from North American mills and RoHS3 and REACH compliant. PCMR16-4-3-SS is manufactured in our Marlborough, MA factory under strict controls using proprietary processes.

**Product Specifications** 

Max Shaft Penetration   9.6 mm   B2 Max Shaft Penetration   9.6 mm	i rodact opecineations			
uter Diameter (OD)  15.9 mm  Bore Tolerance  +0.025 mm / -0.000 mm  ength (L)  20.3 mm  Recommended Shaft Tolerance  40.000 mm / -0.013 mm  ap Screw  M2  Screw Material  Alloy Steel  kex Wrench Size  1.5 mm  Screw Finish  Black Oxide  eating Torque  0.6 Nm  Number of Screws  2 ea  ynamic Torque Reversing  0.45 Nm  Angular Misalignment  3°  ynamic Torque Non-Reversing  0.91 Nm  Parallel Misalignment  0.20 mm  tatic Torque  1.81 Nm  Axial Motion  0.13 mm  orsional Stiffness  2.53 Deg/Nm  Moment of Inertia  0.878 x 10-6 kg-m²  laximum Speed  6,000 RPM  Full Bearing Support Required?  Yes  ero-Backlash?  Yes  Balanced Design  Yes  orque Wrench  TW.BT-1R-1/4-5.3  Recommended Hex Key  Metric Hex Keys  laterial Specification  Bright, No Plating  Manufacturer  Ruland Manufacturing  ountry of Origin  USA  Weight (lbs)  0.051000  PCC  634529048696  Tariff Code  3483.60.8000  NSPC  31163003  Torque ratings are at maximum misalignment.  ote 2  Performance ratings are for guidance only. The user must determine suitability for a particular application.  Torque ratings are for guidance only. The user must determine suitability for a particular application.  Torque ratings are for guidance only. The user must determine suitability for a particular application.  Torque ratings are for guidance only. The user must determine suitability for a particular application.  Torque ratings for the couplings are based on the physical limitations/failure point of the machined beams.  Under normal/typical conditions the hubs are capable of holding up to the rated torque of the machined beams. 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 machined beams. Please const technical support for more assistance.	Bore (B1)	4 mm	Small Bore (B2)	3 mm
ap Screw M2 Screw Material Alloy Steel  ex Wrench Size 1.5 mm Screw Finish Black Oxide  eating Torque 0.6 Nm Number of Screws 2 ea  eating Torque Reversing 0.45 Nm Angular Misalignment 3°  lynamic Torque Non-Reversing 0.91 Nm Parallel Misalignment 0.20 mm  tatic Torque 1.81 Nm Axial Motion 0.13 mm  orsional Stiffness 2.53 Deg/Nm Moment of Inertia 0.878 x10 6 kg-m²  laximum Speed 6,000 RPM Full Bearing Support Required? Yes  ero-Backlash? Yes Balanced Design Yes  orque Wrench TW:BT-1R-1/4-5.3 Recommended Hex Key Metric Hex Keys  laterial Specification Bright, No Plating Manufacturer A0°F to 350°F (-40°C to 176°C)  inish Specification Bright, No Plating Weight (lbs) 0.051000  PC 634529048696 Tariff Code 8483.60.8000  NSPC 31163003  ote 1 Torque ratings are at maximum misalignment.  ote 2 Performance ratings are for guidance only. The user must determine suitability for a particular application.  ote 3 Torque ratings are for guidance only. The user must determine suitability for a particular application.  ote 2 Performance ratings for the couplings are based on the physical limitations/failure point of the machined beams. Under normal/typical conditions the hubs are capable of holding up to the rated torque of the machined beams. 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 machined beams. Please const technical support for more assistance.	B1 Max Shaft Penetration	9.6 mm	B2 Max Shaft Penetration	9.6 mm
ap Screw M2 Screw Material Alloy Steel lex Wrench Size 1.5 mm Screw Finish Black Oxide eating Torque 0.6 Nm Number of Screws 2 ea ynamic Torque Reversing 0.45 Nm Angular Misalignment 3° ynamic Torque Non-Reversing 0.91 Nm Parallel Misalignment 0.20 mm tatic Torque 1.81 Nm Axial Motion 0.13 mm orsional Stiffness 2.53 Deg/Nm Moment of Inertia 0.878 x10° kg-m² laximum Speed 6,000 RPM Full Bearing Support Required? Yes ero-Backlash? Yes Balanced Design Yes orque Wrench TW:BT-1R-1/4-5.3 Recommended Hex Key Metric Hex Keys laterial Specification Type 303 Austenitic, Non-Magnetic Bar inish Specification Bright, No Plating Manufacturer Ruland Manufacturing fountry of Origin USA Weight (Ibs) 0.051000 PC 634529048696 Tariff Code 8483.60.8000 NSPC 31163003 Torque ratings are at maximum misalignment. Iote 1 Torque ratings are for guidance only. The user must determine suitability for a particular application. Torque ratings for the couplings are based on the physical limitations/failure point of the machined beams. Under normal/typical conditions the hubs are capable of holding up to the rated torque of the machined beams. Under normal/typical conditions the hubs are capable of holding up to the rated torque of the machined beams. 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 machined beams. Please consistency.  ★WARNING This product can expose you to chemicals including Ethylene Thiourea and Nickel (metallic	Outer Diameter (OD)	15.9 mm	Bore Tolerance	+0.025 mm / -0.000 mm
ext Wrench Size eating Torque 0.6 Nm Number of Screws 2 ea  ynamic Torque Reversing 0.45 Nm Angular Misalignment 3°  ynamic Torque Non-Reversing 0.91 Nm Parallel Misalignment 0.20 mm tatic Torque 1.81 Nm Axial Motion 0.13 mm Onsional Stiffness 2.53 Deg/Nm Moment of Inertia 0.878 x10 <sup>-6</sup> kg-m²  laximum Speed 6,000 RPM Full Bearing Support Required? Yes  ero-Backlash? Yes Balanced Design Yes  orque Wrench TW-BT-1R-1/4-5.3 Recommended Hex Key Metric Hex Keys laterial Specification Type 303 Austenitic, Non-Magnetic Bar  inish Specification Bright, No Plating Manufacturer Ruland Manufacturing  ountry of Origin USA Weight (lbs) 0.051000  PC 634529048696 Tariff Code NSPC 31163003  Torque ratings are at maximum misalignment.  lote 2 Performance ratings are for guidance only. The user must determine suitability for a particular application. Torque ratings for the couplings are based on the physical limitations/failure point of the machined beams. Under normal/typical conditions the hubs are capable of holding up to the rated torque of the machined beams. Under normal/typical conditions the hubs are capable of holding up to the rated torque of the machined beams. 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 machined beams. Please considerations.  ★WARNING This product can expose you to chemicals including Ethylene Thiourea and Nickel (metallic	Length (L)	20.3 mm	Recommended Shaft Tolerance	+0.000 mm / -0.013 mm
eating Torque  0.6 Nm  Number of Screws  2 ea  ynamic Torque Reversing  0.45 Nm  Angular Misalignment  3°  ynamic Torque Non-Reversing  0.91 Nm  Parallel Misalignment  0.20 mm  tatic Torque  1.81 Nm  Axial Motion  0.13 mm  orsional Stiffness  2.53 Deg/Nm  Moment of Inertia  0.878 x10 <sup>-6</sup> kg-m²  laximum Speed  6,000 RPM  Full Bearing Support Required?  Yes  ero-Backlash?  Yes  Balanced Design  Yes  orque Wrench  TW:BT-1R-1/4-5.3  Recommended Hex Key  Metric Hex Keys  laterial Specification  Type 303 Austenitic, Non-Magnetic  Bar  Manufacturer  Weight (lbs)  0.051000  PC  634529048696  Tariff Code  8483.60.8000  NSPC  31163003  ote 1  Torque ratings are at maximum misalignment.  Torque ratings are at maximum misalignment.  Torque ratings for the couplings are based on the physical limitations/failure point of the machined beams. Under normal/typical conditions the hubs are capable of holding up to the rated torque of the machined beams. Under normal/typical conditions the hubs are capable of holding up to the rated torque of the machined beams. 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 machined beams. Please consistenchnical support for more assistance.  Torque Thiourea and Nickel (metallic	Cap Screw	M2	Screw Material	Alloy Steel
ynamic Torque Reversing  0.45 Nm  Angular Misalignment  3°  ynamic Torque Non-Reversing  0.91 Nm  Parallel Misalignment  0.20 mm  tatic Torque  1.81 Nm  Axial Motion  0.13 mm  orsional Stiffness  2.53 Deg/Nm  Moment of Inertia  0.878 x10 6 kg-m²  Yes  ero-Backlash?  Yes  Balanced Design  Yes  orque Wrench  TW.BT-1R-1/4-5.3  Recommended Hex Key  Metric Hex Keys  laterial Specification  Type 303 Austenitic, Non-Magnetic  Bar  inish Specification  Bright, No Plating  Manufacturer  Bar  Weight (Ibs)  0.051000  PC  634529048696  Tariff Code  8483.60.8000  NSPC  31163003  lote 1  Torque ratings are at maximum misalignment.  Torque ratings are at maximum misalignment.  Torque ratings are for guidance only. The user must determine suitability for a particular application.  Torque ratings for the couplings are based on the physical limitations/failure point of the machined beams. Under normal/typical conditions the hubs are capable of holding up to the rated torque of the machined beams. Under normal/typical conditions the hubs are capable of holding up to the rated torque of the machined beams. 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 machined beams. Please const technical support for more assistance.	Hex Wrench Size	1.5 mm	Screw Finish	Black Oxide
ynamic Torque Non-Reversing 0.91 Nm Parallel Misalignment 0.20 mm tatic Torque 1.81 Nm Axial Motion 0.13 mm orsional Stiffness 2.53 Deg/Nm Moment of Inertia 0.878 x10 <sup>-6</sup> kg·m² laximum Speed 6,000 RPM Full Bearing Support Required? Yes ero-Backlash? Yes Balanced Design Yes orque Wrench TW:BT-1R-1/4-5.3 Recommended Hex Key Metric Hex Keys laterial Specification Type 303 Austenitic, Non-Magnetic Temperature -40°F to 350°F (-40°C to 176°C) Bar sinish Specification Bright, No Plating Manufacturer Ruland Manufacturing country of Origin USA Weight (lbs) 0.051000 PC 634529048696 Tariff Code 8483.60.8000 NSPC 31163003 lote 1 Torque ratings are at maximum misalignment. lote 2 Performance ratings are for guidance only. The user must determine suitability for a particular application. lote 3 Torque ratings for the couplings are based on the physical limitations/failure point of the machined beams. Under normal/typical conditions the hubs are capable of holding up to the rated torque of the machined beams. 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 machined beams. Please const technical support for more assistance.  ■ WARNING This product can expose you to chemicals including Ethylene Thiourea and Nickel (metallic	Seating Torque	0.6 Nm	Number of Screws	2 ea
tatic Torque  1.81 Nm Axial Motion 0.13 mm orsional Stiffness 2.53 Deg/Nm Moment of Inertia 0.878 x10⁻⁶ kg-m² laximum Speed 6,000 RPM Full Bearing Support Required? Yes ero-Backlash? Yes Balanced Design Yes orque Wrench TW:BT-1R-1/4-5.3 Recommended Hex Key Metric Hex Keys laterial Specification Type 303 Austenitic, Non-Magnetic Bar  Temperature -40° F to 350° F (-40°C to 176°C) Bar  Bright, No Plating Manufacturer Ruland Manufacturing country of Origin USA Weight (lbs) 0.051000 PC 634529048696 Tariff Code 8483.60.8000  NSPC 31163003  Torque ratings are at maximum misalignment.  Torque ratings are for guidance only. The user must determine suitability for a particular application.  Torque ratings for the couplings are based on the physical limitations/failure point of the machined beams. Under normal/typical conditions the hubs are capable of holding up to the rated torque of the machined beams. 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 machined beams. Please const technical support for more assistance.  TMARNING This product can expose you to chemicals including Ethylene Thiourea and Nickel (metallic	Dynamic Torque Reversing	0.45 Nm	Angular Misalignment	3°
orsional Stiffness 2.53 Deg/Nm Moment of Inertia 0.878 x10 <sup>-6</sup> kg-m <sup>2</sup> laximum Speed 6,000 RPM Full Bearing Support Required? Yes  ero-Backlash? Yes Balanced Design Yes  orque Wrench TW:BT-1R-1/4-5.3 Recommended Hex Key Metric Hex Keys laterial Specification Type 303 Austenitic, Non-Magnetic Bar  inish Specification Bright, No Plating Manufacturer Ruland Manufacturing  ountry of Origin USA Weight (lbs) 0.051000  PC 634529048696 Tariff Code 8483.60.8000  NSPC 31163003  ote 1 Torque ratings are at maximum misalignment.  ote 2 Performance ratings are for guidance only. The user must determine suitability for a particular application. Under normal/typical conditions the hubs are capable of holding up to the rated torque of the machined beams. Under normal/typical conditions the hubs are capable of holding up to the rated torque of the machined beams. 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 machined beams. Please const technical support for more assistance.  FOR 65	Dynamic Torque Non-Reversing	0.91 Nm	Parallel Misalignment	0.20 mm
laximum Speed 6,000 RPM Full Bearing Support Required? Yes ero-Backlash? Yes Balanced Design Yes orque Wrench TW:BT-1R-1/4-5.3 Recommended Hex Key Metric Hex Keys laterial Specification Type 303 Austenitic, Non-Magnetic Bar Temperature -40°F to 350°F (-40°C to 176°C) Bar Ruland Manufacturing Ruland Manufacturing Ountry of Origin USA Weight (lbs) 0.051000 PC 634529048696 Tariff Code 8483.60.8000 NSPC 31163003 Torque ratings are at maximum misalignment. Once 2 Performance ratings are for guidance only. The user must determine suitability for a particular application. Torque ratings for the couplings are based on the physical limitations/failure point of the machined beams. 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 machined beams. Please const technical support for more assistance.	Static Torque	1.81 Nm	Axial Motion	0.13 mm
rorque Wrench TW:BT-1R-1/4-5.3 Recommended Hex Key Metric Hex Keys laterial Specification Type 303 Austenitic, Non-Magnetic Bar  Inish Specification Bright, No Plating Manufacturer Weight (Ibs) D.051000 RC 634529048696 Tariff Code NSPC 31163003  Torque ratings are at maximum misalignment.  Torque ratings are for guidance only. The user must determine suitability for a particular application.  Torque ratings are for guidance only. The user must determine suitability for a particular application.  Torque ratings for the couplings are based on the physical limitations/failure point of the machined beams. Under normal/typical conditions the hubs are capable of holding up to the rated torque of the machined beams. 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 machined beams. Please const technical support for more assistance.  Top 65  WARNING This product can expose you to chemicals including Ethylene Thiourea and Nickel (metallic	Torsional Stiffness	2.53 Deg/Nm	Moment of Inertia	0.878 x10 <sup>-6</sup> kg-m <sup>2</sup>
orque Wrench  TW:BT-1R-1/4-5.3  Recommended Hex Key  Metric Hex Keys  -40°F to 350°F (-40°C to 176°C)  Bar  Inish Specification  Bright, No Plating  Weight (lbs)  Dusa  Weight (lbs)  Manufacturer  Nuland Manufacturing  Manufacturer  Ruland Manufacturing  Manufacturer  Ruland Manufacturing  Manufacturer  Ruland Manufacturing  Toust 1000  PC  634529048696  Tariff Code  8483.60.8000  Torque ratings are at maximum misalignment.  Torque ratings are for guidance only. The user must determine suitability for a particular application.  Torque ratings for the couplings are based on the physical limitations/failure point of the machined beams. Under normal/typical conditions the hubs are capable of holding up to the rated torque of the machined beams. 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 machined beams. Please const technical support for more assistance.  TOP 65	Maximum Speed	6,000 RPM	Full Bearing Support Required?	Yes
Inish Specification  Type 303 Austenitic, Non-Magnetic Temperature Bar  Inish Specification  Bright, No Plating  Manufacturer  Ruland Manufacturing  O.051000  PC  634529048696  Tariff Code  8483.60.8000  NSPC  31163003  Interesting are at maximum misalignment.  Interesting are at maximum misalignment.  Interesting are based on the physical limitations/failure point of the machined beams. Under normal/typical conditions the hubs are capable of holding up to the rated torque of the machined beams. 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 machined beams. Please const technical support for more assistance.  ■ WARNING This product can expose you to chemicals including Ethylene Thiourea and Nickel (metallice)	Zero-Backlash?	Yes	Balanced Design	Yes
Bar  inish Specification Bright, No Plating Manufacturer Ruland Manufacturing  country of Origin USA Weight (Ibs) 0.051000  PC 634529048696 Tariff Code 8483.60.8000  NSPC 31163003  Torque ratings are at maximum misalignment.  ote 2 Performance ratings are for guidance only. The user must determine suitability for a particular application.  ote 3 Torque ratings for the couplings are based on the physical limitations/failure point of the machined beams. Under normal/typical conditions the hubs are capable of holding up to the rated torque of the machined beams. 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 machined beams. Please const technical support for more assistance.  Top 65	Torque Wrench	TW:BT-1R-1/4-5.3	Recommended Hex Key	Metric Hex Keys
Torque ratings are at maximum misalignment.  Torque ratings are at maximum misalignment.  Torque ratings are for guidance only. The user must determine suitability for a particular application.  Torque ratings for the couplings are based on the physical limitations/failure point of the machined beams. Under normal/typical conditions the hubs are capable of holding up to the rated torque of the machined beams. 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 machined beams. Please considering the holding up to the machined beams. Please considering the holding support for more assistance.  Top 65	Material Specification	•	Temperature	-40°F to 350°F (-40°C to 176°C)
PC 634529048696 Tariff Code 8483.60.8000  NSPC 31163003  lote 1 Torque ratings are at maximum misalignment.  lote 2 Performance ratings are for guidance only. The user must determine suitability for a particular application.  lote 3 Torque ratings for the couplings are based on the physical limitations/failure point of the machined beams. Under normal/typical conditions the hubs are capable of holding up to the rated torque of the machined beams. 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 machined beams. Please considerable technical support for more assistance.  Top 65	Finish Specification	Bright, No Plating	Manufacturer	Ruland Manufacturing
tote 1  Torque ratings are at maximum misalignment.  Performance ratings are for guidance only. The user must determine suitability for a particular application.  Torque ratings for the couplings are based on the physical limitations/failure point of the machined beams. Under normal/typical conditions the hubs are capable of holding up to the rated torque of the machined beams. 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 machined beams. Please consistencial support for more assistance.  ▼MARNING This product can expose you to chemicals including Ethylene Thiourea and Nickel (metallic	Country of Origin	USA	Weight (lbs)	0.051000
Torque ratings are at maximum misalignment.  Performance ratings are for guidance only. The user must determine suitability for a particular application.  Torque ratings for the couplings are based on the physical limitations/failure point of the machined beams. Under normal/typical conditions the hubs are capable of holding up to the rated torque of the machined beams. 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 machined beams. Please const technical support for more assistance.  TOP 65	UPC	634529048696	Tariff Code	8483.60.8000
Performance ratings are for guidance only. The user must determine suitability for a particular application.  Torque ratings for the couplings are based on the physical limitations/failure point of the machined beams. Under normal/typical conditions the hubs are capable of holding up to the rated torque of the machined beams. 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 machined beams. Please const technical support for more assistance.  TOP 65	UNSPC	31163003		
Torque ratings for the couplings are based on the physical limitations/failure point of the machined beams. Under normal/typical conditions the hubs are capable of holding up to the rated torque of the machined beams. 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 machined beams. Please consistencial support for more assistance.  Top 65  **WARNING** This product can expose you to chemicals including Ethylene Thiourea and Nickel (metallic	Note 1	Torque ratings are at maximum misalignment.		
Under normal/typical conditions the hubs are capable of holding up to the rated torque of the machined beams. 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 machined beams. Please consistencial support for more assistance.  Top 65  WARNING This product can expose you to chemicals including Ethylene Thiourea and Nickel (metallic	Note 2	Performance ratings are for guidance only. The user must determine suitability for a particular application.		
rop 65	Note 3	Under normal/typical conditions the hubs are capable of holding up to the rated torque of the machined beams. 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 machined beams. Please consult		
	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		

## Installation Instructions

1. Align the bores of the PCMR16-4-3-SS four beam coupling on the shafts that are to be joined and determine if the misalignment parameters are within the limits of the coupling. (*Angular* 

- Misialignment: 3°, Parallel Misalignment: 0.20 mm, Axial Motion: 0.13 mm)
- 2. Fully tighten the M2 screw on one hub to the recommended seating torque of 0.6 Nm using a 1.5 mm hex torque wrench.
- 3. Before tightening the screws on the second hub, rotate the coupling by hand to allow it to reach its free length.
- 4. Tighten the screws 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.
- 5. The shafts may extend into the relieved portion of the bore as long as it does not exceed the shaft penetration length of 9.6 mm.