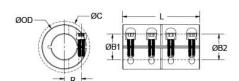




## CLX-16-16-F

Ruland CLX-16-16-F, 1" x 1" Rigid Coupling, Black Oxide Steel, One-Piece Clamp Style, 1 3/4" OD, 3" Length





## **Description**

Ruland CLX-16-16-F is a one-piece rigid coupling with 1.0000" x 1.0000" bores, 1 3/4" OD, and 3" length. It has precision honed bores to ensure they are collinear and do not introduce misalignment or vibration into the system making it suitable for high precision servo applications as well as shaft to shaft connections. Proprietary Nypatch® anti-vibration coating on hardware allows for even seating of the screw, repeated screw installations, prevents galling, and maintains high holding power. It eliminates the need to treat screws upon receipt greatly reducing installation time. Forged screws test beyond ANSI standards to ensure maximum holding power. Tightly controlled bore tolerance of +.002"/+.0005" is maintained. CLX-16-16-F is made from 1215 lead-free steel with a proprietary black oxide finish that produces a fine glossy finish while increasing holding power and resisting corrosion. It is machined from solid bar stock that is sourced exclusively from North American mills and is RoHS3 and REACH compliant. CLX-16-16-F is manufactured in our Marlborough, MA factory under strict controls using proprietary processes.

**Product Specifications** 

B1 Max Shaft Penetration   1.500 in   B2 Max Shaft Penetration   1.500 in   Duter Diameter (OD)   1 3/4 in   Bore Tolerance   +0.0020 in / +0.0005 in   2.049 in   Ength (L)   3 in   Clearance Diameter (C) MAX   2.049 in   Ength (L)   3 in   Clearance Diameter (C) MAX   2.049 in   Ength (L)   2.049 in   Ength (L)   3 in   Clearance Diameter (C) MAX   2.049 in   Ength (L)   2.049 in   2.049 in   Ength (L)   2.049 in   2.049 in   Ength (L)   2.049 in   Eng	Product Specifications			
Duter Diameter (OD) 1 3/4 in Bore Tolerance +0.0020 in / +0.0005 in Length (L) 3 in Clearance Diameter (C) MAX 2.049 in Recommended Shaft Tolerance +0.0000 in / -0.0005 in Forged Clamp Screw 1/4-28 Screw Material Alloy Steel with Nypatch® Hex Wrench Size 3/16 in Screw Finish Black Oxide Seating Torque 170 lb-in Screw Location (R) 0.670 in Number of Screws 4 ea Rated Torque 4,000 lb-in Moment of Inertia 0.6628 lb-in² Maximum Speed 4,000 RPM Full Bearing Support Required? No Nypatch® Anti-Vibration Yes Precision Honed Bores?  Zero-Backlash? Yes Material Specification 1215 Carbon Steel Bar Hot Process Black Oxide, Impregnated with Naphthenic O Centrifugally Dried  Wanufacturer Ruland Manufacturing Country of Origin USA Neight (Ibs) 1.300500 UPC Sate Of Sate O	Bore (B1)	1.0000 in	Small Bore (B2)	1.0000 in
Length (L)  3 in  Clearance Diameter (C) MAX  2.049 in  Recommended Shaft Tolerance +0.0000 in / -0.0005 in  Forged Clamp Screw 1/4-28  Screw Material  Alloy Steel with Nypatch® Black Oxide Seating Torque 170 lb-in  Screw Location (R) 0.670 in Number of Screws 4 ea  Rated Torque 4,000 lb-in Moment of Inertia 0.6628 lb-in²  Waximum Speed 4,000 RPM Full Bearing Support Required? No Nypatch® Anti-Vibration Hardware?  Zero-Backlash? Yes Material Specification Finish Spec	B1 Max Shaft Penetration	1.500 in	B2 Max Shaft Penetration	1.500 in
Recommended Shaft Tolerance +0.0000 in / -0.0005 in Forged Clamp Screw 1/4-28 Screw Material Alloy Steel with Nypatch® Hex Wrench Size 3/16 in Screw Finish Black Oxide Seating Torque 170 lb-in Screw Location (R) 0.670 in Number of Screws 4 ea Rated Torque 4,000 lb-in Moment of Inertia 0.6628 lb-in² Maximum Speed 4,000 RPM Full Bearing Support Required? No Nypatch® Anti-Vibration Yes Precision Honed Bores? Yes  Temperature -40°F to 350°F (-40°C to 176°C) Finish Specification 1215 Carbon Steel Bar Femperature Ruland Manufacturing Country of Origin USA  Weight (lbs) 1.300500 UPC 634529004005 Fariff Code 8483.60.8000 UNSPC 31163009  Note 1 Performance ratings are for guidance only. The user must determine suitability for a particular application  AMARNING This product can expose you to the chemical Ethylene Thiourea, known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to	Outer Diameter (OD)	1 3/4 in	Bore Tolerance	+0.0020 in / +0.0005 in
Alloy Steel with Nypatch® Hex Wrench Size 3/16 in Screw Finish Black Oxide Seating Torque 170 lb-in Screw Location (R) 0.670 in Number of Screws 4 ea Rated Torque 4,000 lb-in Moment of Inertia 0.6628 lb-in² Maximum Speed 4,000 RPM Full Bearing Support Required? No Nypatch® Anti-Vibration Yes Precision Honed Bores? Yes  Zero-Backlash? Yes Material Specification 1215 Carbon Steel Bar  Temperature -40°F to 350°F (-40°C to 176°C) Finish Specification Hot Process Black Oxide, Impregnated with Naphthenic O Centrifugally Dried  Manufacturer Ruland Manufacturing Country of Origin USA  Neight (lbs) 1.300500 UPC 634529004005  Tariff Code 8483.60.8000 UNSPC 31163009  Note 1 Performance ratings are for guidance only. The user must determine suitability for a particular application  California to cause cancer and birth defects or other reproductive harm. For more information go to	Length (L)	3 in	Clearance Diameter (C) MAX	2.049 in
Black Oxide Seating Torque 170 lb-in Screw Location (R) 0.670 in Number of Screws 4 ea  Rated Torque 4,000 lb-in Moment of Inertia 0.6628 lb-in² Maximum Speed 4,000 RPM Full Bearing Support Required? No Nypatch® Anti-Vibration Hardware?  Zero-Backlash? Yes Material Specification Finish Specification Finish Specification Hot Process Black Oxide, Impregnated with Naphthenic O Centrifugally Dried  Manufacturer Ruland Manufacturing Country of Origin Weight (lbs) Fariff Code 8483.60.8000 UNSPC State of Aparticular application Perop 65  WARNING This product can expose you to the chemical Ethylene Thiourea, known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to	Recommended Shaft Tolerance	+0.0000 in / -0.0005 in	Forged Clamp Screw	1/4-28
Rated Torque 4,000 lb-in Moment of Inertia 0.6628 lb-in²  Maximum Speed 4,000 RPM Full Bearing Support Required? No Nypatch® Anti-Vibration Hardware?  Zero-Backlash? Yes Material Specification 1215 Carbon Steel Bar  Temperature -40°F to 350°F (-40°C to 176°C) Finish Specification Hot Process Black Oxide, Impregnated with Naphthenic O Centrifugally Dried  Manufacturer Ruland Manufacturing Country of Origin USA  Weight (Ibs) 1.300500 UPC 634529004005  Tariff Code 8483.60.8000 UNSPC 31163009  Note 1 Performance ratings are for guidance only. The user must determine suitability for a particular application California to cause cancer and birth defects or other reproductive harm. For more information go to	Screw Material	Alloy Steel with Nypatch®	Hex Wrench Size	3/16 in
Rated Torque 4,000 lb-in Moment of Inertia 0.6628 lb-in²  4,000 RPM Full Bearing Support Required? No Nypatch® Anti-Vibration Hardware?  Zero-Backlash? Yes Material Specification Finish Specification Hot Process Black Oxide, Impregnated with Naphthenic O Centrifugally Dried  Manufacturer Ruland Manufacturing Country of Origin USA  Weight (lbs) 1.300500 UPC 634529004005  Tariff Code 8483.60.8000 UNSPC Note 1 Performance ratings are for guidance only. The user must determine suitability for a particular application  WaRNING This product can expose you to the chemical Ethylene Thiourea, known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to	Screw Finish	Black Oxide	Seating Torque	170 lb-in
Maximum Speed 4,000 RPM Full Bearing Support Required? No Nypatch® Anti-Vibration Hardware?  Zero-Backlash? Yes Material Specification 1215 Carbon Steel Bar Temperature -40°F to 350°F (-40°C to 176°C) Finish Specification Hot Process Black Oxide, Impregnated with Naphthenic Ocentrifugally Dried  Manufacturer Ruland Manufacturing Country of Origin USA  Weight (lbs) 1.300500 UPC 634529004005  Tariff Code 8483.60.8000 UNSPC 31163009  Note 1 Performance ratings are for guidance only. The user must determine suitability for a particular application  Prop 65 ANARNING This product can expose you to the chemical Ethylene Thiourea, known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to	Screw Location (R)	0.670 in	Number of Screws	4 ea
Nypatch® Anti-Vibration Hardware?       Yes       Precision Honed Bores?       Yes         Zero-Backlash?       Yes       Material Specification       1215 Carbon Steel Bar         Temperature       -40°F to 350°F (-40°C to 176°C)       Finish Specification       Hot Process Black Oxide, Impregnated with Naphthenic O Centrifugally Dried         Manufacturer       Ruland Manufacturing       Country of Origin       USA         Neight (lbs)       1.300500       UPC       634529004005         Tariff Code       8483.60.8000       UNSPC       31163009         Note 1       Performance ratings are for guidance only. The user must determine suitability for a particular application         Prop 65       MARNING This product can expose you to the chemical Ethylene Thiourea, known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to	Rated Torque	4,000 lb-in	Moment of Inertia	0.6628 lb-in <sup>2</sup>
Alardware?  Zero-Backlash? Yes Material Specification 1215 Carbon Steel Bar  Temperature -40°F to 350°F (-40°C to 176°C) Finish Specification Hot Process Black Oxide, Impregnated with Naphthenic O Centrifugally Dried  Manufacturer Ruland Manufacturing Country of Origin USA  Neight (Ibs) 1.300500 UPC 634529004005  Tariff Code 8483.60.8000 UNSPC 31163009  Note 1 Performance ratings are for guidance only. The user must determine suitability for a particular application California to cause cancer and birth defects or other reproductive harm. For more information go to	Maximum Speed	4,000 RPM	Full Bearing Support Required?	No
Femperature  -40°F to 350°F (-40°C to 176°C)  Finish Specification  Hot Process Black Oxide, Impregnated with Naphthenic O Centrifugally Dried  Manufacturer  Ruland Manufacturing  Country of Origin  USA  Weight (Ibs)  1.300500  UPC  634529004005  Tariff Code  8483.60.8000  UNSPC  31163009  Performance ratings are for guidance only. The user must determine suitability for a particular application  Prop 65  WARNING This product can expose you to the chemical Ethylene Thiourea, known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to	Nypatch® Anti-Vibration Hardware?	Yes	Precision Honed Bores?	Yes
Impregnated with Naphthenic O Centrifugally Dried  Manufacturer Ruland Manufacturing Country of Origin USA  Weight (lbs) 1.300500 UPC 634529004005  Tariff Code 8483.60.8000 UNSPC 31163009  Note 1 Performance ratings are for guidance only. The user must determine suitability for a particular application  Prop 65  WARNING This product can expose you to the chemical Ethylene Thiourea, known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to	Zero-Backlash?	Yes	Material Specification	1215 Carbon Steel Bar
Weight (lbs)  1.300500  UPC 634529004005  Tariff Code 8483.60.8000  UNSPC 31163009  Note 1  Performance ratings are for guidance only. The user must determine suitability for a particular application  Prop 65  WARNING This product can expose you to the chemical Ethylene Thiourea, known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to	Temperature	-40°F to 350°F (-40°C to 176°C)	Finish Specification	Impregnated with Naphthenic Oil,
Tariff Code  8483.60.8000  UNSPC  31163009  Note 1  Performance ratings are for guidance only. The user must determine suitability for a particular application  Prop 65  WARNING This product can expose you to the chemical Ethylene Thiourea, known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to	Manufacturer	Ruland Manufacturing	Country of Origin	USA
Performance ratings are for guidance only. The user must determine suitability for a particular application  Prop 65  WARNING This product can expose you to the chemical Ethylene Thiourea, known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to	Weight (lbs)	1.300500	UPC	634529004005
Prop 65  WARNING This product can expose you to the chemical Ethylene Thiourea, known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to	Tariff Code	8483.60.8000	UNSPC	31163009
California to cause cancer and birth defects or other reproductive harm. For more information go to	Note 1	Performance ratings are for guidance only. The user must determine suitability for a particular application.		
	Prop 65	California to cause cancer and birth defects or other reproductive harm. For more information go to		

## **Installation Instructions**

- 1. Align the CLX-16-16-F one-piece rigid coupling on the two shafts to be connected. There should be no misalignment.
- 2. Tighten the Nypatch® screws in two stages, starting with the inside screws. Using a 3/16 in torque wrench, tighten the inside screws to 85 lb-in which is half the recommended seating torque. Repeat for the outside screws, again tightening to half of the recommended seating torque.
- Tighten the screws to the full recommended seating torque of 170 lb-in following the same pattern, starting with the inside screws first.