



# Production Control Units, Inc.

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Phone (937) 299-5594 FAX: (937) 299-4843

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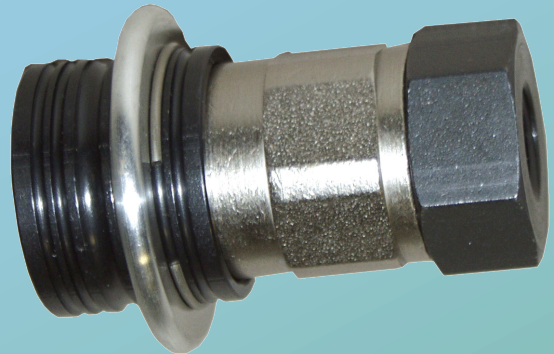
## SERVICE BULLETIN

for

Series HFC-134a

BalLoc Coupler

Model 87 (High Side)



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# Production Control Units, Inc.-Coupler Products

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PCU Web Site: www.pcuinc.com - E-mail: couplers@pcuinc.com

## Coupler Application Data Inquiry

Company \_\_\_\_\_ Phone # \_\_\_\_\_

Contact \_\_\_\_\_ Fax # \_\_\_\_\_

Address \_\_\_\_\_ E-mail \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Country \_\_\_\_\_ Zip \_\_\_\_\_

Type & brand name for current coupler \_\_\_\_\_

Customer product manufactured \_\_\_\_\_

### Type of coupler required

Size and type of tube or port to be sealed \_\_\_\_\_

Straight  Swaged  Expanded  Other \_\_\_\_\_

Length of tube or port available for coupler \_\_\_\_\_

Quantity required \_\_\_\_\_

Delivery due date \_\_\_\_\_

### How will the coupler be used?

Refrigerant processing

What type of refrigerant? (HFC-134a, HP62, R-22, etc.) \_\_\_\_\_

Oil processing

What type of oil (Mineral, Polyol Ester, PAG, etc.) \_\_\_\_\_ (Attach MSDS)

Leak Burst testing

Maximum pressure & type of test media? (Air, Helium, etc.) \_\_\_\_\_

Vacuum

What level of vacuum needs to be achieved? \_\_\_\_\_

What Oil be present during vacuum pump down? \_\_\_\_\_

If "yes", what type of oil? \_\_\_\_\_

### Additional process information

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Along with your request for quote, please provide (1) copy of print showing area to be sealed, and (3) quality sample parts.

NOTE: The Data Inquiry form is available in pdf format on our web site at  
[www.PCUInc.com](http://www.PCUInc.com)



## GENERAL DESCRIPTION

The Production Control Units Series HFC-134a BalLoc Coupler, Model 87, is designed for easy installation onto the SAE J639 high side process fitting. Use the Model 87 Coupler for evacuation or refrigerant charging with de minimus refrigerant loss to atmosphere from the Coupler.

These tough, compact, lightweight PCU couplers utilize heat-treated parts for interchangeability and long life oxide and nickel finishes resist corrosion. They provide a large, unrestricted flow rate for a variety of production uses while minimizing process material loss during coupling/uncoupling.

A six (6) ball detent lock provides instant positive coupling. Simply pull back the grooved locking ring on the coupler, slide the coupler over the high-side fitting and push together until the lock ring snaps to it's "lock position".

Because of the unique design of the Series HFC-134a BalLoc Couplers, they are able to be built using inexpensive O-ring seals which provide positive leak-tight shutoff. They will hold pressure from vacuum to 500 psig.

## COUPLER FEATURES & SPECIFICATIONS

**SAFE:** Positive ball-lock action prevents blow-off or premature loss of sealed connection.

**STRONG:** Holds pressures from 25 microns up to 500 psig, minimum proof pressure 4000 psig.

The standard Series HFC-134a Coupler incorporates Buna-N seals for HFC-134a with lubricants.

## MAINTENANCE INSTRUCTIONS

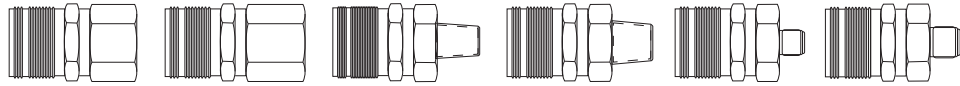
Coupler life is dependent upon a regular scheduled maintenance program. The application and its risk potential should determine frequency. PCU cannot determine a maintenance schedule due to the many factors involved: temperature, proper size selection, fluid compatibility, pressure, mechanical loads, user responsibility. User must establish a maintenance program based on previous service life. There are several factors that must be included when setting up a maintenance program: visual inspection for cracked, defective parts and excessively worn components; dirt or particle buildup in seal and clamping areas; thorough cleaning and proper lubrication; replace worn out and defective seals.

## SERIES HFC-134A COUPLERS

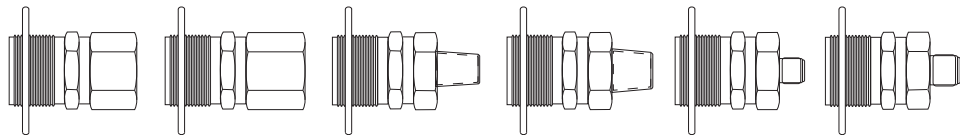
The basic Series HFC-134a coupler, less end cap adapter, consists of eleven parts, which must be assembled in correct order to assure proper functioning of the unit. Although all units are tested in our plant at 500 psig air and less than 50 microns vacuum, Production Control Units, Inc. cannot be responsible for any malfunction of the Series HFC-134a Coupler due to faulty servicing of the unit in the field by people other than PCU filed engineers.

**HFC-134a REFRIGERANT SEALS**

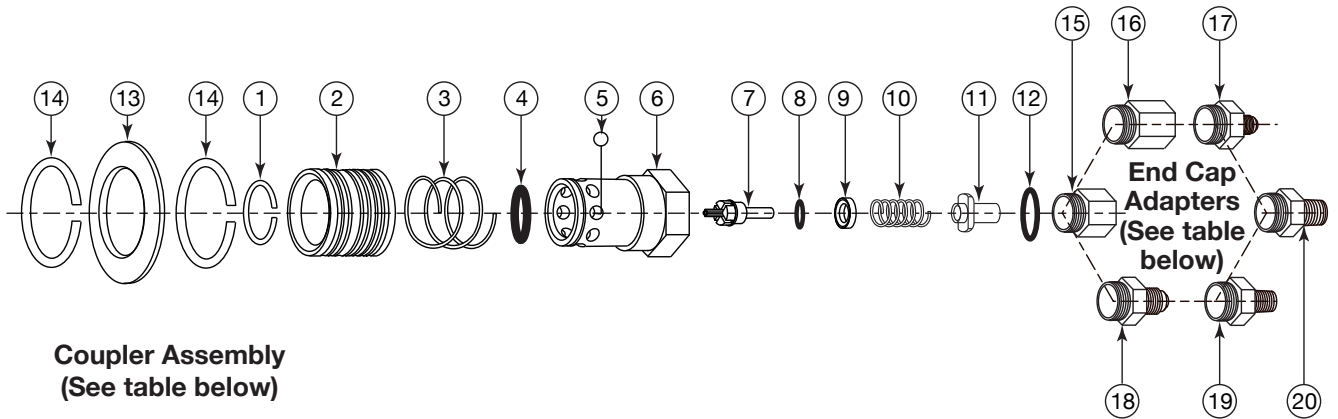
1/4" FPT ADAPTER	3/8" FPT ADAPTER	1/4" MPT ADAPTER	3/8" MPT ADAPTER	1/4" SAE FL ADAPTER	3/8" SAE FL ADAPTER
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COUPLER ASSEMBLY WITHOUT FLANGE	<b>87211</b>	<b>87311</b>	<b>87231</b>	<b>87331</b>	<b>87221</b>	<b>87321</b>
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COUPLER ASSEMBLY WITH FLANGE	<b>87211FL</b>	<b>87311FL</b>	<b>87231FL</b>	<b>87331FL</b>	<b>87221FL</b>	<b>87321FL</b>
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**Coupler Assembly**  
(See table below)

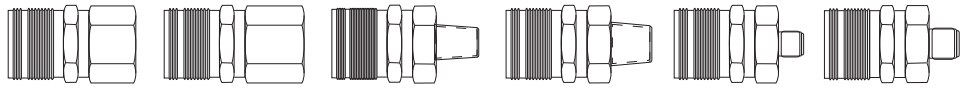
<b>End Cap Adapters</b>			
15.	86014 - 1/4" FPT	18.	86018 - 3/8" SAE FL
16.	86017 - 3/8" FPT	19.	86016 - 1/4" MPT
17.	86015 - 1/4" SAE FL	20.	86019 - 3/8" MPT

**REPLACEMENT PARTS LIST**

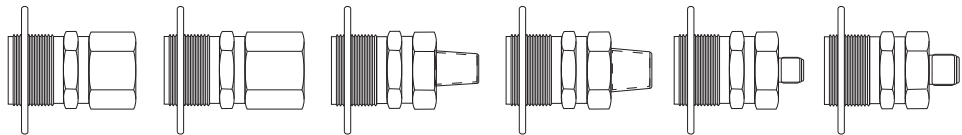
<b>Coupler Assembly</b>			
<b>HFC-134a REFRIGERANT SEALS</b>			
1.	Retaining Ring	87004	8. Valve O-Ring
2.	Sleeve	87002	9. O-Ring Retainer
3.	Coupler Sleeve Spring	87001	10. Coupler Valve Spring
4.	Seal O-Ring	87011	11. Perch
5.	Ball (6) Req'd	87003	12. End Cap O-Ring
6.	Coupler Body	87006	13. Flange
7.	Coupler Valve Stem	87009	14. Retaining Ring
			66814

**BUNA-N (NITRILE) SEALS**

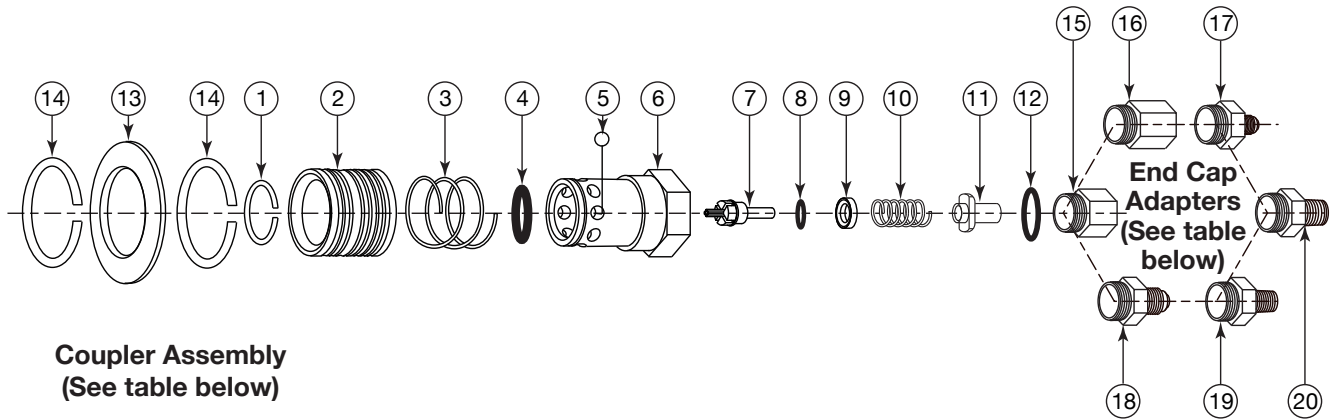
1/4" FPT ADAPTER	3/8" FPT ADAPTER	1/4" MPT ADAPTER	3/8" MPT ADAPTER	1/4" SAE FL ADAPTER	3/8" SAE FL ADAPTER
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COUPLER ASSEMBLY WITHOUT FLANGE	<b>87212</b>	<b>87312</b>	<b>87232</b>	<b>87332</b>	<b>87222</b>	<b>87322</b>
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COUPLER ASSEMBLY WITH FLANGE	<b>87212FL</b>	<b>87312FL</b>	<b>87232FL</b>	<b>87332FL</b>	<b>87222FL</b>	<b>87322FL</b>
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**Coupler Assembly**  
(See table below)

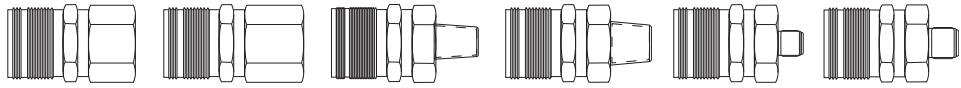
End Cap Adapters			
15.	86014 - 1/4" FPT	18.	86018 - 3/8" SAE FL
16.	86017 - 3/8" FPT	19.	86016 - 1/4" MPT
17.	86015 - 1/4" SAE FL	20.	86019 - 3/8" MPT

**REPLACEMENT PARTS LIST**

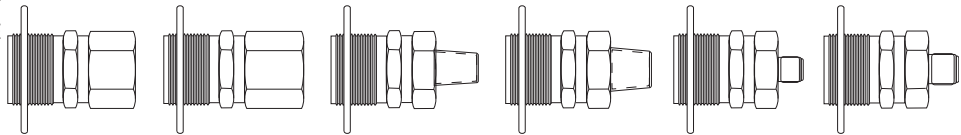
Coupler Assembly <b>BUNA-N (NITRILE) SEALS</b>				
1.	Retaining Ring	87004	8. Valve O-Ring	86012
2.	Sleeve	87002	9. O-Ring Retainer	86010
3.	Coupler Sleeve Spring	87001	10. Coupler Valve Spring	86007
4.	Seal O-Ring	87011	11. Perch	86008
5.	Ball (6) Req'd	87003	12. End Cap O-Ring	86013
6.	Coupler Body	87006	13. Flange	47921
7.	Coupler Valve Stem	87009	14. Retaining Ring	66814

**FLUOROCARBON SEALS**

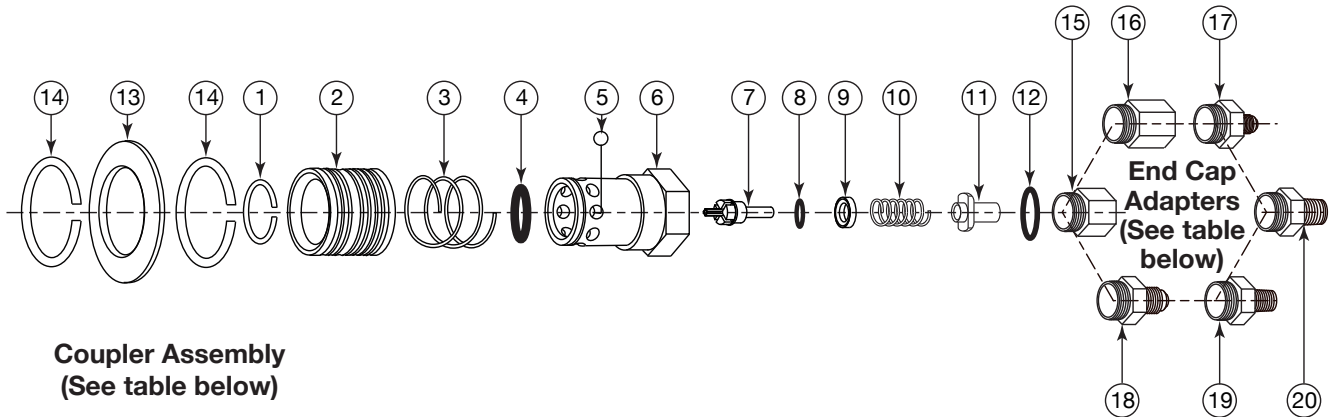
1/4" FPT ADAPTER	3/8" FPT ADAPTER	1/4" MPT ADAPTER	3/8" MPT ADAPTER	1/4" SAE FL ADAPTER	3/8" SAE FL ADAPTER
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COUPLER ASSEMBLY WITHOUT FLANGE	<b>87213</b>	<b>87313</b>	<b>87233</b>	<b>87333</b>	<b>87223</b>	<b>87323</b>
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COUPLER ASSEMBLY WITH FLANGE	<b>87213FL</b>	<b>87313FL</b>	<b>87233FL</b>	<b>87333FL</b>	<b>87223FL</b>	<b>87323FL</b>
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**Coupler Assembly**  
(See table below)

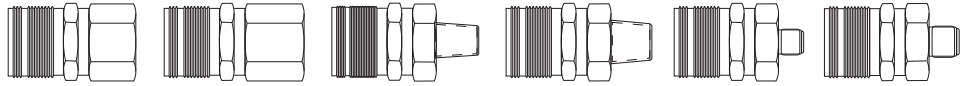
<b>End Cap Adapters</b>			
15.	86014 - 1/4" FPT	18.	86018 - 3/8" SAE FL
16.	86017 - 3/8" FPT	19.	86016 - 1/4" MPT
17.	86015 - 1/4" SAE FL	20.	86019 - 3/8" MPT

**REPLACEMENT PARTS LIST**

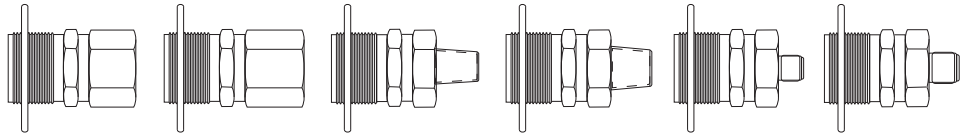
<b>Coupler Assembly</b> <b>FLUOROCARBON SEALS</b>			
1.	Retaining Ring	87004	8. Valve O-Ring
2.	Sleeve	87002	9. O-Ring Retainer
3.	Coupler Sleeve Spring	87001	10. Coupler Valve Spring
4.	Seal O-Ring	87030	11. Perch
5.	Ball (6) Req'd	87003	12. End Cap O-Ring
6.	Coupler Body	87006	13. Flange
7.	Coupler Valve Stem	87009	14. Retaining Ring
			55014
			86010
			86007
			86008
			61852
			47921
			66814

**EPDM SEALS**

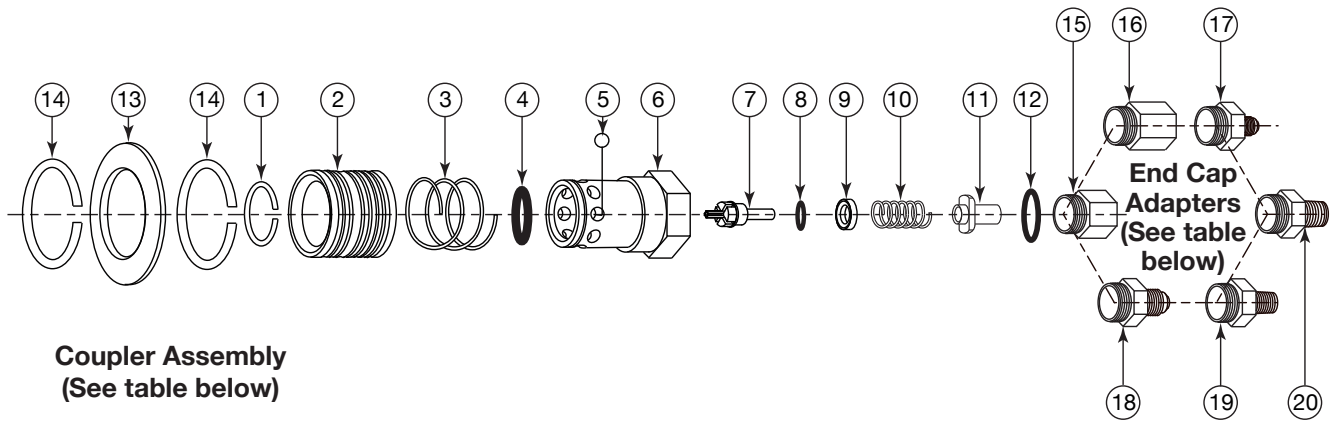
1/4" FPT ADAPTER	3/8" FPT ADAPTER	1/4" MPT ADAPTER	3/8" MPT ADAPTER	1/4" SAE FL ADAPTER	3/8" SAE FL ADAPTER
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COUPLER ASSEMBLY WITHOUT FLANGE	<b>87216</b>	<b>87316</b>	<b>87236</b>	<b>87336</b>	<b>87226</b>	<b>87326</b>
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COUPLER ASSEMBLY WITH FLANGE	<b>87216FL</b>	<b>87316FL</b>	<b>87236FL</b>	<b>87336FL</b>	<b>87226FL</b>	<b>87326FL</b>
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**Coupler Assembly**  
(See table below)

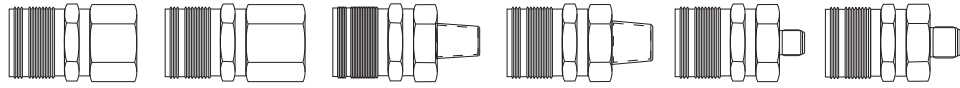
<b>End Cap Adapters</b>			
15.	86014 - 1/4" FPT	18.	86018 - 3/8" SAE FL
16.	86017 - 3/8" FPT	19.	86016 - 1/4" MPT
17.	86015 - 1/4" SAE FL	20.	86019 - 3/8" MPT

**REPLACEMENT PARTS LIST**

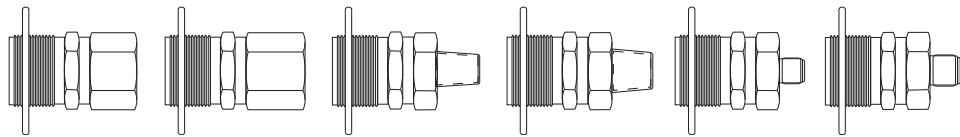
<b>Coupler Assembly</b>			
<b>EPDM SEALS</b>			
1.	Retaining Ring	87004	8. Valve O-Ring
2.	Sleeve	87002	9. O-Ring Retainer
3.	Coupler Sleeve Spring	87001	10. Coupler Valve Spring
4.	Seal O-Ring	87031	11. Perch
5.	Ball (6) Req'd	87003	12. End Cap O-Ring
6.	Coupler Body	87006	13. Flange
7.	Coupler Valve Stem	87009	14. Retaining Ring
			55016
			86010
			86007
			86008
			61871
			47921
			66814

### NEOPRENE SEALS

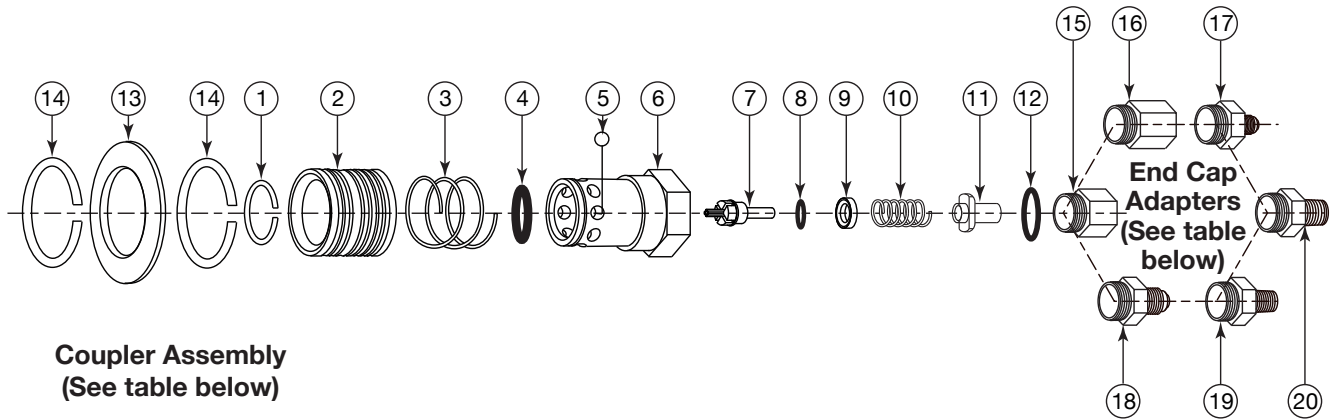
1/4" FPT ADAPTER	3/8" FPT ADAPTER	1/4" MPT ADAPTER	3/8" MPT ADAPTER	1/4" SAE FL ADAPTER	3/8" SAE FL ADAPTER
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COUPLER ASSEMBLY WITHOUT FLANGE	<b>87219</b>	<b>87319</b>	<b>87239</b>	<b>87339</b>	<b>87229</b>	<b>87329</b>
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COUPLER ASSEMBLY WITH FLANGE	<b>87219FL</b>	<b>87319FL</b>	<b>87239FL</b>	<b>87339FL</b>	<b>87229FL</b>	<b>87329FL</b>
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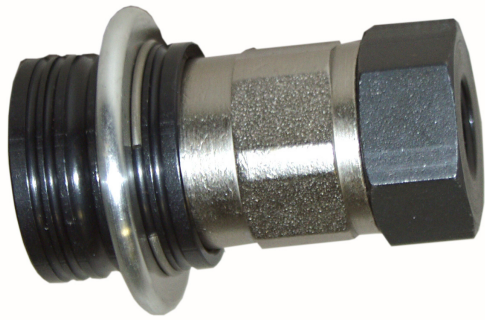


**Coupler Assembly**  
(See table below)

End Cap Adapters			
15.	86014 - 1/4" FPT	18.	86018 - 3/8" SAE FL
16.	86017 - 3/8" FPT	19.	86016 - 1/4" MPT
17.	86015 - 1/4" SAE FL	20.	86019 - 3/8" MPT

### REPLACEMENT PARTS LIST

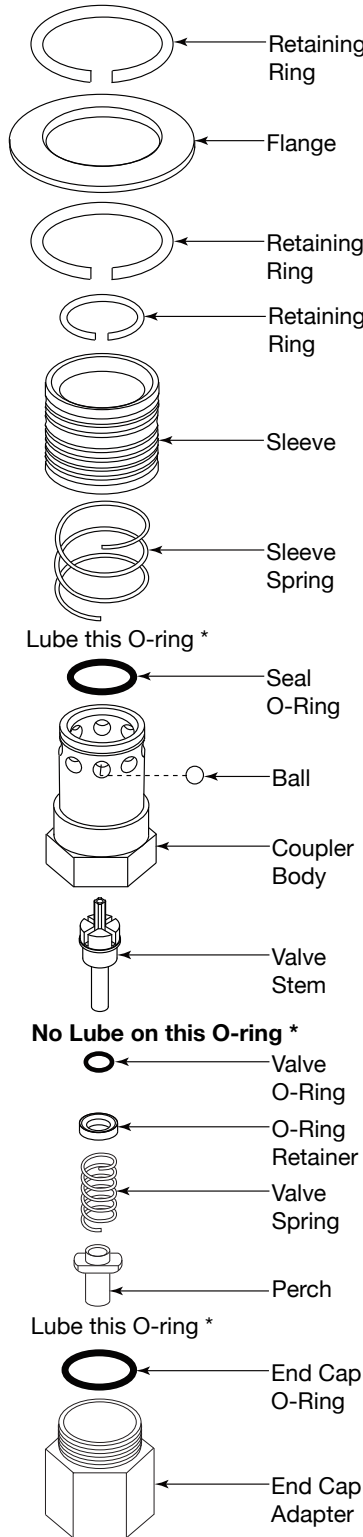
Coupler Assembly NEOPRENE SEALS			
1.	Retaining Ring	87004	8. Valve O-Ring
2.	Sleeve	87002	9. O-Ring Retainer
3.	Coupler Sleeve Spring	87001	10. Coupler Valve Spring
4.	Seal O-Ring	87032	11. Perch
5.	Ball (6) Req'd	87003	12. End Cap O-Ring
6.	Coupler Body	87006	13. Flange
7.	Coupler Valve Stem	87009	14. Retaining Ring
			55012
			86010
			86007
			86008
			61822
			47921
			66814



**SERIES 250 COUPLER ASSEMBLY**

**DISASSEMBLY - COUPLER**

Holding the coupler assembly in one hand, pull the sleeve back with thumb and forefinger of same hand to expose the end of the coupler body. Using retaining ring pliers (PCU Part # A-21599) or a pointed tool, pry the retaining ring from the groove on the coupler body. Set aside. Remove coupler sleeve and spring over a shop rag or towel to keep balls from rolling away. Remove balls and set aside. Place coupler body in a vise clamping on the hex. Use a 1" open-end wrench (or equivalent) on end cap adapter. Loosen until the end cap adapter can be removed by hand. Remove the coupler assembly from the vise. Tilt the coupler body down and slide out the valve assembly. (Note: Tap valve assembly loose if stuck.) Check and remove perch, spring, O-ring retainer, and valve O-ring from valve stem. Discard all O-rings. With a pointed tool, pry seal O-ring from inside coupler body, being careful not to scratch O-ring groove.



\* Use PCU O-ring lubricant 490-00134

**REASSEMBLY - COUPLER**

Lubricate O-ring with PCU Lubricant #490-00134 before inserting seal O-ring in groove inside coupler body. Press firmly against inner diameter to ensure proper placement of seal. The Ring Insertion Tool (PCU Part # A-21585) is helpful in accomplishing this. After parts have all been inspected, pick up valve stem and slide new valve O-ring over stem and upon shouldered portion of the valve stem. **(Do not lube this O-ring.)** Next, position the O-ring retainer behind the O-ring, making certain the cupped portion of the O-ring retainer is next to the O-ring. Slide the valve spring over the valve stem until it comes in contact with the flat side of the O-ring retainer. Slide the perch onto the valve stem, short end first, pushing it under the spring. Pick up the coupler body, holding it threaded end down, and slide the valve assembly up into the coupler body, valve stem first. Tilt the coupler body until the threaded end is pointing up, allowing the valve assembly to drop into place. Pick up the end cap adapter and screw the adapter to the coupler assembly. Set torque wrench, using approximately 35 to 40 foot lbs. torque. Turn assembly over. Insert the balls (6) into the holes in the coupler body. Use O-ring grease or petroleum jelly in ball holes to hold balls in place. Slide sleeve spring over end of coupler body; place sleeve over spring, large diameter first. Push retaining ring into groove in coupler body using fingers or you may use the small diameter of the Ball Assembly Tool and push down on the retaining ring until the retaining ring snaps into the groove on the coupler body. Remove assembly tool, if used; this completes assembly.

<b>250 Coupler Service Tool Kit #460-00250</b>	
625-00810	O-Ring Insertion Tool
A-21591	Snap Ring Pusher Tool
A-21599	Retaining Ring Pliers



# WE SPECIALIZE IN CUSTOM COUPLERS & TOOLING TO SUIT YOUR APPLICATION.

 <p>Series 25</p>	 <p>Series 86</p>	 <p>Series 87</p>	 <p>Series 91</p>
 <p>Series 93</p>	 <p>Series 98</p>	 <p>Series 100 &amp; 101</p>	 <p>Series 109</p>
 <p>Series 250</p>	 <p>Series 410</p>	 <p>Series 500</p>	 <p>Series 250 Evac &amp; Charge</p>
 <p>Series 13000</p>	 <p>Series 104</p>	 <p>Series 106</p>	 <p>Series 106 Adapter</p>

Call our Coupler & Specialty Tooling Team for more information.

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Web Site: [www.PCUInc.com](http://www.PCUInc.com)    Email: [couplers@PCUInc.com](mailto:couplers@PCUInc.com)