



# Quick Couplings

Pioneer has been “The Farmer’s Choice” for more than 60 years, and it is the world leader in quick coupling products for the agricultural industry.

These products are manufactured in state-of-the-art manufacturing plants using the latest technologies to provide you with products of the highest quality and durability.

Pioneer offers the widest range of quick couplings on the market, and has a product for nearly every agricultural application.

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The 8010 Series is the standard male tip of the agricultural industry, developed and proven by Pioneer in over 60 years of farm service. These nipples will connect with all 1/2" body size 4000, 4200, 5000, 6600, 8200, 8450, and 9200 series couplers. Tips are offered in three valve styles; ball, poppet, and DC (connect under pressure) poppet. The DC version allows connection under system pressure on the coupler side and residual pressure (up to 3000 psi) on the nipple side.

### Features:

- Conforms to ISO 5675 requirements
- DC poppet style offers connect under pressure option
- Poppet style valve prevents uncoupled leakage of hydraulic fluid
- Hardened locking ball groove prevents Brinelling
- Shielded valve and positive valve stop eliminates flow checking
- Protective zinc plating with clear trivalent chromate finish

### Applications include:

- Tractors
- Implements
- Agricultural attachments

8010 Series Universal Nipple							
Body Size	Nipple Part Number	Port End	Valve Type	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/2	8010-4	1/2-14 NPTF	Ball	1.95	1.23	1.06	0.20
1/2	8010-4P	1/2-14 NPTF	Poppet	1.95	1.23	1.06	0.20
1/2	8010-5	3/4-14 NPTF	Ball	2.14	1.44	1.25	0.25
1/2	8010-5P	3/4-14 NPTF	Poppet	2.14	1.44	1.25	0.25
1/2	8010-15	3/4-16 ORB	Ball	1.95	1.23	1.06	0.20
1/2	8010-15P	3/4-16 ORB	Poppet	1.95	1.23	1.06	0.20
1/2	8010-16	7/8-14 ORB	Ball	1.95	1.23	1.06	0.25
1/2	8010-16P	7/8-14 ORB	Poppet	1.95	1.23	1.06	0.25
1/2	8010-20PM	M22 X 1.5	Poppet	2.14	1.23	1.06	0.25
1/2	8010-29BSPP	1/2-14 BSPP	Ball	1.95	1.18	1.06	0.25

8010 Series Connect-Under-Pressure Nipple*							
Body Size	Nipple Part Number	Port End	Valve Type	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/2	8010-4P-DC	1/2-14 NPTF	Poppet	1.95	1.23	1.06	0.20
1/2	8010-15P-DC	3/4-16 O-Ring Boss	Poppet	1.95	1.23	1.06	0.25

\* Not for use with 9200 Series Couplers

8010 Series Specifications				
Body Size	Rated Flow	Rated Pressure	Temperature	Poppet Seal Material
1/2	12 gpm	3000 psi	-40° F to +250° F	Nitrile

8010 Series Dust Cap			
Body Size	Dust Cap	Color/Material	Weight (lbs.)
1/2	5205-4M	Black Rubber	.04
1/2	5205-4M-BU	Blue Rubber	.04
1/2	5205-4M-GR	Green Rubber	.04
1/2	5205-4M-RE	Red Rubber	.04
1/2	5205-4M-YE	Yellow Rubber	.04





The 4000 Series brings to the industry a proven design for use on agricultural machinery and other rugged applications.

**Features:**

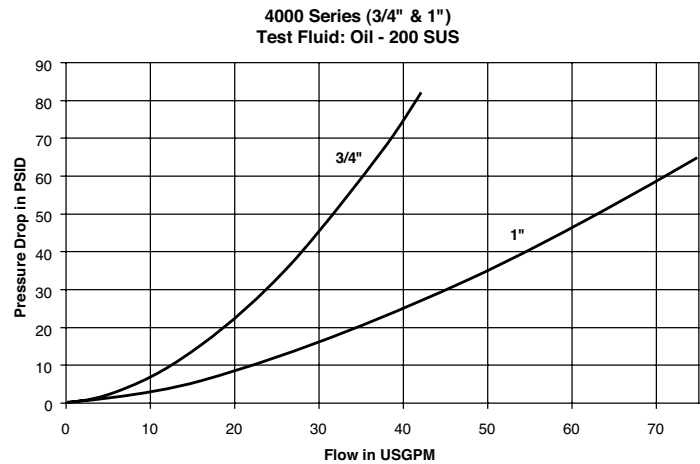
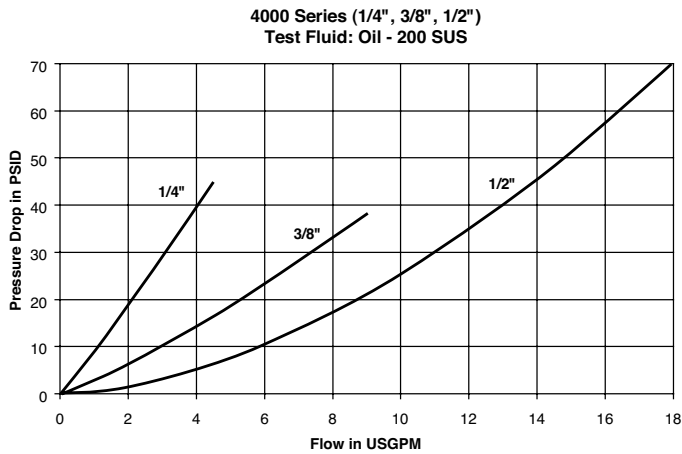
- Accepts ISO 5675 universal tips
- Basic operation where coupler sleeve is manually retracted to allow connection with male tip
- Critical parts are induction hardened
- Ball and poppet valve options
- Protective zinc plating with clear trivalent chromate finish

**Applications include:**

- Hydraulic Loaders
- Add-on hydraulic circuits
- Hydraulic tools

4000 Series Specifications:						
Body Size	Rated Flow (gpm)	Rated Pressure (psi)	Temperature	Body Material	Sleeve Type	Seal Material
1/4	3	3000	-40° F to +250° F	Steel	Manual Connect	Nitrile
3/8	6					
1/2	12					
3/4	28					
1	50					

**Performance:**





### 4000 Series Couplers



Body Size	Coupler Part Number	Port End	Valve Type	Length	Largest Diameter	Wrench Flats	Weight (lbs.)	Complete Coupling Part Number
1/4	4050-2P	1/4-18 NPTF	Poppet	2.18	1.06	0.88	0.24	4000-2P
1/4	4050-2P-T8M	3/4-16 ORB (Male)	Poppet	1.80	1.06	0.88	0.21	-
1/4	4050-T6	9/16-18 ORB	Poppet	2.18	1.06	0.88	0.27	-
1/4	4050P-T6*	9/16-18 ORB	Poppet	2.43	1.33	0.88	0.33	-
3/8	4050-3P	3/8-18 NPTF	Poppet	2.31	1.33	0.94	0.51	4000-3P
1/2	4050-4	1/2-14 NPTF	Ball	2.60	1.50	1.06	0.58	4000-4
1/2	4050-4P	1/2-14 NPTF	Poppet	2.60	1.50	1.06	0.58	4000-4P
1/2	4050-5	3/4-14 NPTF	Ball	2.69	1.50	1.13	0.71	4000-5
1/2	4050-5P	3/4-14 NPTF	Poppet	2.69	1.50	1.13	0.71	4000-5P
1/2	4050-15	3/4-16 ORB	Ball	2.81	1.50	1.06	0.64	4000-15
1/2	4050-15P	3/4-16 ORB	Poppet	2.81	1.50	1.06	0.64	4000-15P
1/2	4050-16	7/8-14 ORB	Ball	2.75	1.50	1.06	0.59	4000-16
1/2	4050-16P	7/8-14 ORB	Poppet	2.75	1.50	1.06	0.59	4000-16P
1/2	4050-29BSPP	1/2-14 BSPP	Ball	2.68	1.50	1.06	0.59	-
3/4	4150-5	3/4-14 NPTF	Ball	3.06	1.87	1.38	1.00	4100-5
1	4050-6P	1-11 1/2 NPTF	Poppet	3.84	2.08	1.63	1.89	4000-6P

\* Special Push/Pull Sleeve

### 8010 Series Nipples



Poppet Ball Valve



See page A-2 for additional ISO 5675 tip options.

Body Size	Nipple Part Number	Port End	Valve Type	Length	Largest Diameter	Wrench Flats	Weight (lbs.)	Complete Coupling Part Number
1/4	4010-2P	1/4-18 NPTF	Poppet	1.48	0.87	0.75	0.08	4000-2P
1/4	4010-T6	9/16-18 ORB	Poppet	1.60	0.87	0.75	0.09	-
3/8	4010-3P	3/8-18 NPTF	Poppet	1.60	1.08	0.94	0.16	4000-3P
1/2	8010-4	1/2-14 NPTF	Ball	1.95	1.23	1.06	0.20	4000-4
1/2	8010-4P	1/2-14 NPTF	Poppet	1.95	1.23	1.06	0.20	4000-4P
1/2	8010-5	3/4-14 NPTF	Ball	2.14	1.44	1.25	0.25	4000-5
1/2	8010-5P	3/4-14 NPTF	Poppet	2.14	1.44	1.25	0.25	4000-5P
1/2	8010-15	3/4-16 ORB	Ball	1.95	1.23	1.06	0.20	4000-15
1/2	8010-15P	3/4-16 ORB	Poppet	1.95	1.23	1.06	0.20	4000-15P
1/2	8010-16	7/8-14 ORB	Ball	1.95	1.23	1.06	0.25	4000-16
1/2	8010-16P	7/8-14 ORB	Poppet	1.95	1.23	1.06	0.25	4000-16P
1/2	8010-29BSPP	1/2-14 BSPP	Ball	1.95	1.18	1.06	0.25	-
3/4	4110-5	3/4-14 NPTF	Ball	1.81	1.52	1.31	0.50	4100-5
1	4010-6P	1-11 1/2 NPTF	Poppet	2.79	1.88	1.63	0.62	4000-6P

1/8"

1/4"

3/8"

1/2"

5/8"

3/4"

1"

1-1/4"

1-1/2"



4050 Series Replacement O-Rings

Body Size	Material	Part Number	Durometer
1/4	Nitrile	50001-113-0260	90
3/8	Nitrile	50001-116-0260	90
1/2	Nitrile	50001-211-0260	90
3/4	Nitrile	50001-215-0010	70
1	Nitrile	50001-218-0260	90

4000 Series Dust Caps and Plugs



Body Size	Dust Cap	Color/Material	Dust Plug	Weight (lbs.)
1/4	5205-2M	Black Rubber	5209-4M	.02
3/8	5205-3M	Black Rubber	5209-3M	.03
1/2	5205-4M	Black Rubber	5209-4M	.04
1/2	5205-4M-BU	Blue Rubber	5209-4M-BU	.04
1/2	5205-4M-GR	Green Rubber	5209-4M-GR	.04
1/2	5205-4M-RE	Red Rubber	5209-4M-RE	.04
1/2	5205-4M-YE	Yellow Rubber	5205-4M-YE	.04
1/2	5005-4	Steel w/Chain	5009-4	.21
3/4	5205-5M	Black Rubber	5209-4M	.05
1	5205-6M	Black Rubber	5209-6M	.06

Quick Couplings





The 4200 Series brings to the industry a proven design for use on agricultural machinery and other rugged applications where a breakaway feature is desirable.

### Features:

- Accepts ISO 5675 universal tips
- Grooves in sleeve to accommodate retaining rings for bulkhead mounting
- One-handed push-to-connect operation when coupler is clamp mounted
- 1/2" body size couplers are compatible with 5001-4 and 5006-4 breakaway clamps
- Critical parts are induction hardened
- Ball and poppet valve options
- Protective zinc plating with clear trivalent chromate finish

### Applications include:

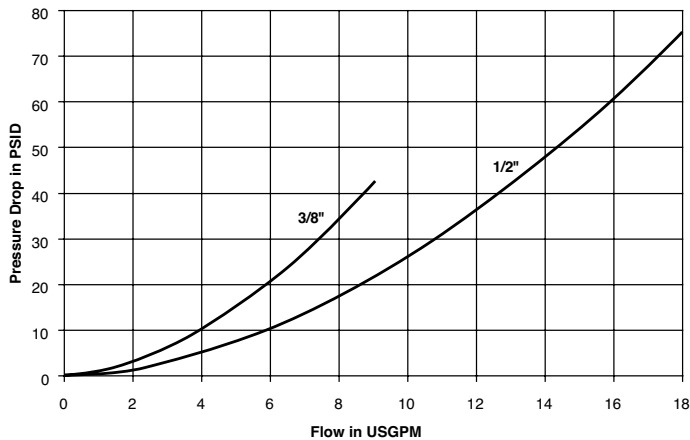
- Hydraulic Loaders
- Add-on hydraulic circuits
- Implement breakaway
- Hydraulic tools



4200 Series Specifications:						
Body Size	Rated Flow (gpm)	Rated Pressure (psi)	Temperature	Body Material	Sleeve Type	Seal Material
3/8	6	3000	-40° F to +250° F	Steel	Push/Pull/ Breakaway	Nitrile
1/2	12					

### Performance:

4200 Series (3/8" & 1/2")  
Test Fluid: Oil - 200 SUS





4200 Series Couplers



Body Size	Coupler Part Number	Port End	Valve Type	Length	Largest Diameter	Wrench Flats	Weight (lbs.)	Complete Coupling Part Number
3/8	4250-3P	3/8-18 NPTF	Poppet	2.31	1.31	0.81	0.39	4200-3P
1/2	4250-4	1/2-14 NPTF	Ball	2.68	1.50	1.06	0.55	4200-4
1/2	4250-4P	1/2-14 NPTF	Poppet	2.68	1.50	1.06	0.55	4200-4P
1/2	4250-15	3/4-16 ORB	Ball	2.68	1.50	1.06	0.55	4200-15
1/2	4250-15P	3/4-16 ORB	Poppet	2.68	1.50	1.06	0.55	4200-15P

8010 Series Nipples



Poppet Ball Valve



See page A-2 for additional ISO 5675 tip options.

Body Size	Nipple Part Number	Port End	Valve Type	Length	Largest Diameter	Wrench Flats	Weight (lbs.)	Complete Coupling Part Number
3/8	4010-3P	3/8-18 NPTF	Poppet	1.60	1.08	0.94	0.16	4200-3P
1/2	8010-4	1/2-14 NPTF	Ball	1.95	1.23	1.06	0.20	4200-4
1/2	8010-4P	1/2-14 NPTF	Poppet	1.95	1.23	1.06	0.20	4200-4P
1/2	8010-15	3/4-16 ORB	Ball	1.95	1.23	1.06	0.20	4200-15
1/2	8010-15P	3/4-16 ORB	Poppet	1.95	1.23	1.06	0.20	4200-15P

4200 Series Accessories



Body Size	Part Number	Clamp Type	Weight (lbs.)
1/2	5001-4	Single	.66
1/2	5006-4	Double	.81

4250 Series Replacement O-Rings

Body Size	Material	Part Number	Durometer
3/8	Nitrile	50001-116-0260	90
1/2	Nitrile	50001-211-0260	90

4200 Series Dust Caps and Plugs



Body Size	Dust Cap	Color/Material	Dust Plug	Weight (lbs.)
3/8	5205-3M	Black Rubber	5209-3M	.03
1/2	5205-4M	Black Rubber	5209-4M	.04
1/2	5205-4M-BU	Blue Rubber	5209-4M-BU	.04
1/2	5205-4M-GR	Green Rubber	5209-4M-GR	.04
1/2	5205-4M-RE	Red Rubber	5209-4M-RE	.04
1/2	5205-4M-YE	Yellow Rubber	5205-4M-YE	.04
1/2	5005-4	Steel w/Chain	5009-4	.21



The 6600 Series are versatile for use in a wide range of hydraulic applications where fluid lines require connection and disconnection for equipment operation or maintenance

### Features:

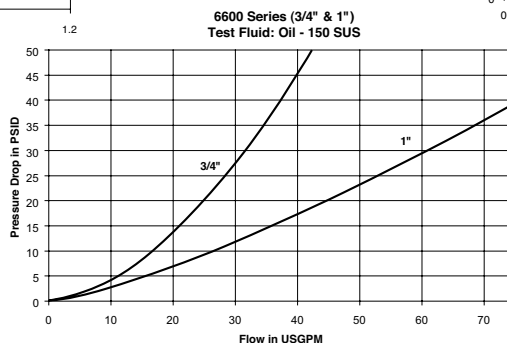
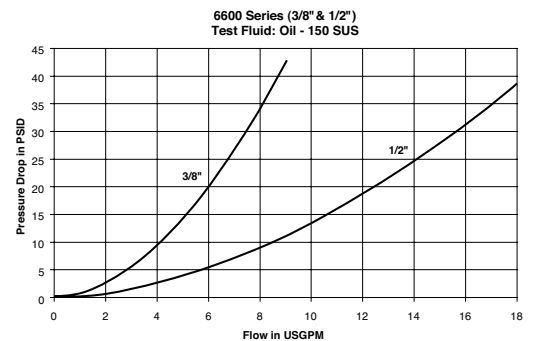
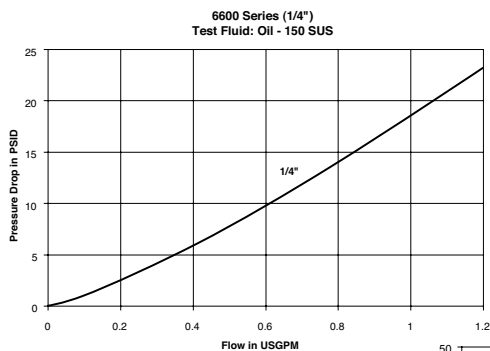
- Accepts ISO 7241-1, Series A compliant nipples
- Poppet valves and a metal perch to maintain valve alignment and prevent flow checking
- Coupler sleeve and nipple body are hardened to be damage resistant
- Standard end configurations include female pipe and straight thread ORB
- Protective zinc plating with clear trivalent chromate finish

### Applications include:

- Snow plows
- Truck trailer connections
- Mobile applications
- Attachments

6600 Series Specifications:						
Body Size	Rated Flow (gpm)	Rated Pressure (psi)	Temperature	Body Material	Sleeve Type	Seal Material
1/4	0.8	5000	-40° F to +250° F	Steel	Manual Connect	Nitrile
3/8	6	4000				
1/2	12	4000				
3/4	28	4000				
1	50	4000				

### Performance:







6600 Series Couplers



Body Size	Coupler Part Number	Port End	Valve Type	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	6601-2-4	1/8 -27 NPTF	Poppet	1.85	1.08	0.88	0.27
1/4	6601-4-4	1/4 -18 NPTF	Poppet	1.85	1.08	0.88	0.26
3/8	6601-6-6	3/8 -18 NPTF	Poppet	2.18	1.27	1.06	0.39
3/8	6608-6-6	9/16 -18 ORB	Poppet	2.18	1.27	1.06	0.38
1/2	6601-8-10	1/2 -14 NPTF	Poppet	2.75	1.52	1.25	0.67
1/2	6601-12-10	3/4 -14 NPTF	Poppet	2.88	1.52	1.38	0.71
1/2	6608-8-10	1 1/16 -12 ORB	Poppet	2.74	1.52	1.25	0.67
1/2	6608-10-10	1 1/16 -12 ORB	Poppet	2.79	1.52	1.25	0.64
1/2	6608-12-10	1 1/16 -12 ORB	Poppet	3.01	1.52	1.38	0.77
3/4	6601-12-12	3/4 -14 NPTF	Poppet	3.36	1.90	1.62	1.31
3/4	6608-12-12	1 1/16 -12 ORB	Poppet	3.35	1.90	1.62	1.31
1	6601-16-16	1-11 1/2 NPTF	Poppet	4.11	2.14	1.88	1.93
1	6608-16-16	1 1/16 - 12 ORB	Poppet	4.11	2.14	1.88	1.75

6600 Series Nipples



Body Size	Nipple Part Number	Port End	Valve Type	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	6602-2-4	1/8 -27 NPTF	Poppet	1.41	0.65	0.56	0.05
1/4	6602-4-4	1/4 -18 NPTF	Poppet	1.41	0.87	0.75	0.07
3/8	6602-6-6	3/8 -18 NPTF	Poppet	1.63	1.01	0.88	0.11
3/8	6610-6-6	9/16 -18 ORB	Poppet	1.63	1.01	0.88	0.13
1/2	6602-8-10	1/2 -14 NPTF	Poppet	2.08	1.23	1.06	0.21
1/2	6602-12-10	3/4 -14 NPTF	Poppet	2.30	1.59	1.38	0.33
1/2	6610-8-10	1 1/16 -12 ORB	Poppet	2.08	1.23	1.06	0.22
1/2	6610-10-10	1 1/16 -12 ORB	Poppet	2.08	1.3	1.12	0.21
1/2	6610-12-10	1 1/16 -12 ORB	Poppet	2.30	1.59	1.38	0.33
3/4	6601-12-12	3/4 -14 NPTF	Poppet	2.55	1.59	1.38	0.49
3/4	6608-12-12	1 1/16 -12 ORB	Poppet	2.55	1.59	1.38	0.47
1	6601-16-16	1-11 1/2 NPTF	Poppet	3.10	1.88	1.62	0.75
1	6608-16-16	1 1/16 - 12 ORB	Poppet	3.10	2.17	1.62	0.72

6600 Series Replacement Parts

	1/4	3/8	1/2	3/4	1
O-Rings - Nitrile	50001-112-0010	50001-115-0010	50001-211-0010	50001-123-0010	50001-126-0010
Back-up Rings	4118006	4118005	50-140-4	4138001	4148002



6600 Series Dust Caps and Plugs



Body Size	Dust Cap	Color/Material	Dust Plug	Weight (lbs.)
1/4	H1-65M	Black Rubber	H1-66M	.02
3/8	TR-37	Black Rubber	TR-37	.04
1/2	5205-4M	Black Rubber	5209-4M	.04
3/4	6659-12M	Black Rubber	6657-12M	.06
1	6659-16M	Black Rubber	6657-16M	.08





Pioneer's 8200 Series unique valve design allows connection while either or both the coupler and nipple are under pressure. Valves in both halves remain closed, opening only when system pressure has been relieved on the female body and then reapplied. This pressure sequence may be done with either an open center or a closed center hydraulic system that has a control valve.

### Features:

- Accepts ISO 5675 universal tips
- Connect under system pressure on the coupler side and residual pressure on the nipple side
- Sleeve designed to accommodate bracket mounting
- One-handed push-to-connect operation when coupler is clamp mounted
- 1/2" body size couplers are compatible with 5001-4 and 5006-4 breakaway clamps
- Critical parts are induction hardened
- Protective zinc plating with clear trivalent chromate finish

### Applications include:

- Tractors
- Mid-sized agricultural equipment
- Agricultural attachments requiring breakaway

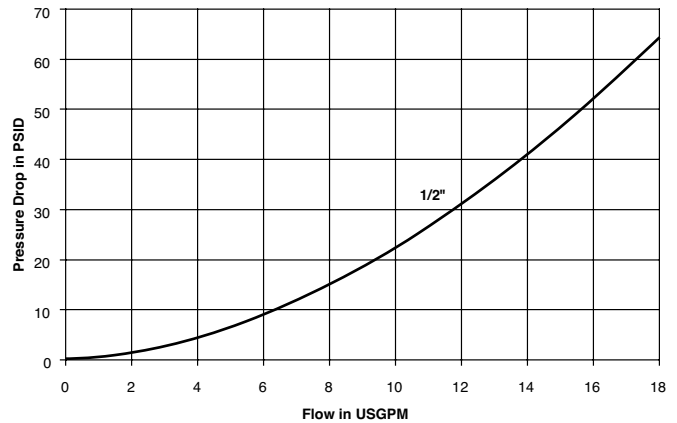
### 8200 Series Specifications

Body Size	Rated Flow	Rated Pressure	Temperature	Body Material	Sleeve Type	Seal Material
1/2	12 gpm	3000 psi	-40° F to +250° F	Steel	Push-pull/break away	Nitrile



### Performance

8200 Series (1/2")  
Test Fluid: Oil - 200 SUS





### 8200 Series Couplers - Female Thread



Body Size	Coupler Part Number	Port End	Valve Type	Length	Largest Diameter	Wrench Flats	Weight (lbs.)	Complete Coupling Part Number
1/2	8250-4	1/2-14 NPSF	Poppet	3.29	1.50	0.87	0.63	8200-4
1/2	8250-15	3/4-16 ORB	Poppet	3.29	1.50	0.87	0.63	8200-15
1/2	8250-16	7/8-14 ORB	Poppet	3.29	1.50	0.87	0.63	8200-16

### 8010 Series Nipples - Female Thread



See page A-2 for additional ISO 5675 tip options.

Body Size	Coupler Part Number	Port End	Valve Type	Length	Largest Diameter	Wrench Flats	Weight (lbs.)	Complete Coupling Part Number
1/2	8010-4	1/2-14 NPTF	Ball	1.95	1.23	1.06	0.20	8200-4
1/2	8010-4P	1/2-14 NPTF	Poppet	1.95	1.23	1.06	0.20	-
1/2	8010-15	3/4-16 ORB	Ball	1.95	1.23	1.06	0.20	8200-15
1/2	8010-15P	3/4-16 ORB	Poppet	1.95	1.23	1.06	0.20	-
1/2	8010-16	7/8-14 ORB	Ball	1.95	1.23	1.06	0.25	8200-16
1/2	8010-16P	7/8-14 ORB	Poppet	1.95	1.23	1.06	0.25	-

### 8200 Series Replacement Parts

Body Size	Part Number	Description	Material
1/2	50005-211-0200	O-Ring	Nitrile

### 8200 Series Dust Caps and Plugs



Body Size	Dust Cap	Color/Material	Dust Plug	Weight (lbs.)
1/2	5205-4M	Black Rubber	5209-4M	.04
1/2	5205-4M-BU	Blue Rubber	5209-4M-BU	.04
1/2	5205-4M-GR	Green Rubber	5209-4M-GR	.04
1/2	5205-4M-RE	Red Rubber	5209-4M-RE	.04
1/2	5205-4M-YE	Yellow Rubber	5205-4M-YE	.04
1/2	5005-4	Steel w/Chain	5009-4	.21





reapplied. This pressure sequence may be done with either an open center or a closed center hydraulic system that has a control valve. The enclosed outer housing allows all connecting motion to be internal thereby preventing dust and dirt build-up around the sleeve mechanism. Suitable for rigid mount or use with a breakaway clamp.

### Features:

- Accepts ISO 5675 universal tips
- Straight thread ORB fitting end allows direct mounting to a control valve or rigid tubing
- Outer housing keeps dust and dirt away from the sleeve mechanism
- Connect under system pressure on the coupler side and on the nipple side
- One-handed push-to-connect operation when coupler is clamp or rigid mounted
- Couplers are compatible with 5006-4 breakaway clamps
- Protective zinc plating with clear trivalent chromate finish

Pioneer's 8450 Series unique valve design allows connection while either or both the coupler and nipple are under pressure. Valves in both halves remain closed, opening only when system pressure has been relieved on the female body and then

### Applications include:

- Tractors
- Mid-sized agricultural equipment

### 8450 Series Specifications

Body Size	Rated Flow	Rated Pressure	Temperature	Body Material	Sleeve Type	Seal Material
1/2"	25 gpm	3000 psi	-40° F to +250° F	Steel	Rigid Mount	Nitrile
<b>Connect Force</b>			<b>Disconnect Force</b>			
70 lbs. max at 0 psi		100 lbs. max at 3000 psi	40 lbs. min at 0 psi		165 lbs. max at 3000 psi	

### 8450 Series Couplers



Body Size	Coupler Part Number	Port End	Valve Type	Flats	Sleeve Diameter	Clamp to Use	Dust Plug
1/2	8450-16	7/8-14 ORB (Female)	Poppet	1.38	1.50	5006-4	8405-4 or 8407-4
1/2	8450-16M	7/8-14 ORB (Male)	Poppet	1.38	1.50	5006-4	8405-4 or 8407-4

### 8010 Series Nipples



Poppet



Ball Valve

[See page A-2 for additional ISO 5675 tip options.](#)

Body Size	Coupler Part Number	Port End	Valve Type	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/2	8010-16	7/8-14 ORB (Female)	Ball	1.95	1.23	1.06	0.25
1/2	8010-16P	7/8-14 ORB (Female)	Poppet	1.95	1.23	1.06	0.25

### 8450 Series Dust Caps and Plugs



Dust Cap for Nipple	5209-4M
Dust Cover for Coupler	8407-4 Automatic
Dust Plug for Coupler	8405-4 Standard



The 9200 Series coupler allows zero pressure connection and disconnection while either or both the coupler and nipple are under pressure. A lever operated cam locks both coupler and nipple valves in the open or closed position. "Closed", the flow is shut off at the coupler, allowing easy, zero pressure connect and disconnect. Valves in the "Open" position are locked in place and unaffected by hydraulic surges. Valves will automatically close if the coupling is accidentally disconnected.



### Features:

- Accepts ISO 5675 universal tips
- Premier connect under pressure coupling
- Locked valves prevent flow checking
- Color coded levers to identify raise and lower lines
- Couplers are compatible with 9006-4 double breakaway clamp
- Protective zinc plating with clear trivalent chromate finish

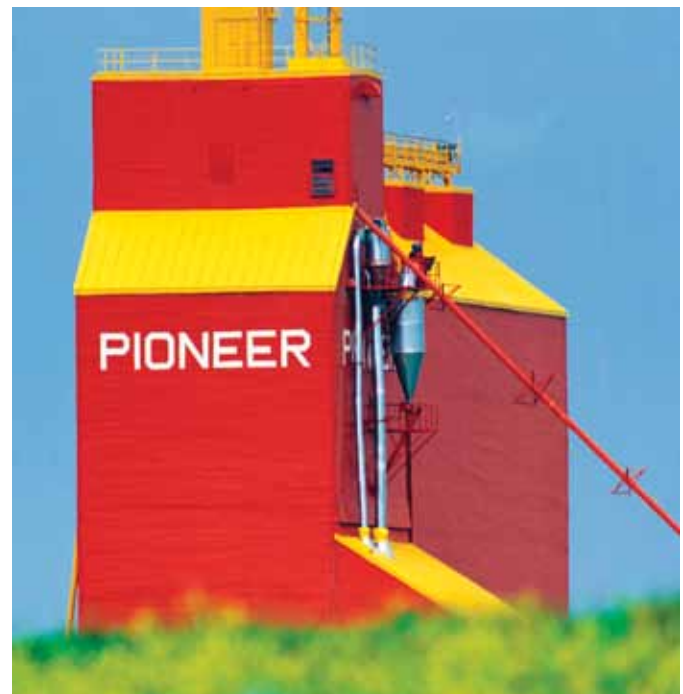
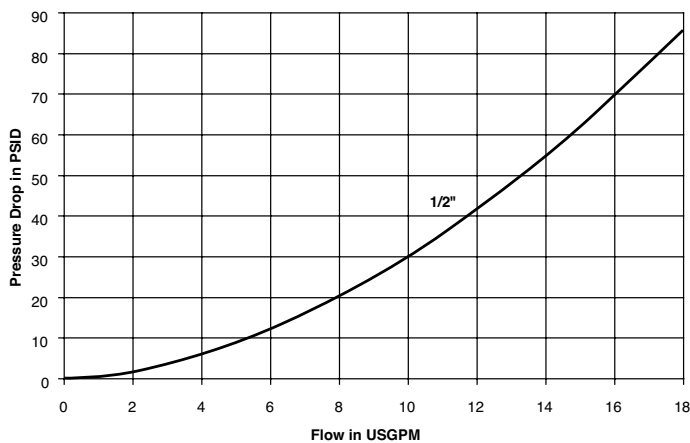
### Applications include:

- Tractors
- Implements
- Agricultural attachments requiring breakaway

9200 Series Specifications:						
Body Size	Rated Flow	Rated Pressure	Temperature	Body Material	Sleeve Type	Seal Material
1/2	12 gpm	3000 psi	-40° F to +250° F	Steel	Double Acting	Nitrile

### Performance:

9200 Series (1/2")  
Test Fluid: Oil - 200 SUS





9200 Series Couplers



Body Size	Coupler Part Number	Port End	Valve Type	Orientation	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/2	9250-4L	1/2-14 NPTF	Poppet	Left hand – yellow grip	5.37	1.50	1.13	2.02
1/2	9250-4L-UPC (bar coded for retail)	1/2-14 NPTF	Poppet	Left hand – yellow grip	5.37	1.50	1.13	1.92
1/2	9250-4R	1/2-14 NPTF	Poppet	Right hand – red grip	5.37	1.50	1.13	1.92
1/2	9250-4R-UPC (bar coded for retail)	1/2-14 NPTF	Poppet	Right hand – red grip	5.37	1.50	1.13	1.95
1/2	9250-4-320*	1/2-14 NPTF	Poppet	Left hand – yellow grip	5.37	1.50	1.13	1.98
1/2	9250-6-320*	9/16-18 UNF	Poppet	Left hand – yellow grip	5.37	1.50	1.13	2.06
1/2	9250-15L	3/4-16 UNF	Poppet	Left hand – yellow grip	5.37	1.50	1.13	1.92
1/2	9250-15R	3/4-16 UNF	Poppet	Right hand – red grip	5.37	1.50	1.13	1.92
1/2	9250-15-320*	3/4-16 UNF	Poppet	Left hand – yellow grip	5.37	1.50	1.13	2.06
1/2	9250-16L	7/8-14 UNF	Poppet	Left hand – no grip	5.37	1.50	1.13	1.88
1/2	9250-16L-YE	7/8-14 UNF	Poppet	Left hand – yellow grip	5.37	1.50	1.13	1.89
1/2	9250-16R	7/8-14 UNF	Poppet	Right hand – no grip	5.37	1.50	1.13	1.88
1/2	9250-16R-RE	7/8-14 UNF	Poppet	Right hand – red grip	5.37	1.50	1.13	1.89
1/2	9250-16-320*	7/8-14 UNF	Poppet	Left hand – yellow grip	5.37	1.50	1.13	2.06
1/2	9250-334**	9/16-18 UNF	Poppet	Left hand – yellow grip	5.37	1.50	1.13	2.15

\* -320 indicates lower sleeve spring force for easier connection when coupler is not mounted in a clamp.

\*\* -334 couplers connect with 1/4" ISO 7241-B series nipples.

8010 Series Nipples



See page A-2 for additional ISO 5675 tip options.

Body Size	Coupler Part Number	Port End	Valve Type	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	H2-63-T6*	9/16-18 ORB	Poppet	1.54	1.01	0.88	0.10
1/2	8010-4	1/2-14 NPTF	Ball	1.95	1.23	1.06	0.20
1/2	8010-4P	1/2-14 NPTF	Poppet	1.95	1.23	1.06	0.20
1/2	8010-15	3/4-16 ORB	Ball	1.95	1.23	1.06	0.20
1/2	8010-15P	3/4-16 ORB	Poppet	1.95	1.23	1.06	0.20
1/2	8010-16	7/8-14 ORB	Ball	1.95	1.23	1.06	0.25
1/2	8010-16P	7/8-14 ORB	Poppet	1.95	1.23	1.06	0.25

\* Connects with 9250-334 couplers



### 9200 Series Replacement Parts

Body Size	Part Number	Description	Weight (lbs.)
1/2	50001-211-0260	Interface O-Ring	.01
1/2	92-805-L4	Replacement Lever (Left hand)	.23
1/2	92-805-R4	Replacement Lever (Right hand)	.23
1/2	92-806-4	Replacement Yellow Grip (Left hand)	.01
1/2	92-807-4	Replacement Red Grip (Right hand)	.01
1/2	92-813-4	Replacement Black Grip (Right hand)	.01
1/2	92-814-L4	Replacement Cam Stop (Left hand)	.01
1/2	92-814-R4	Replacement Cam Stop (Right hand)	.01
1/2	92-906-4A	Wave Washer	.01

### 9200 Series Accessories

Body Size	Part Number	Clamp Type
1/2	9006-4	Breakaway - double
1/2	9507-4-1H	Automatic Dust Cover

NOTE: 9507-4-1H automatic dust cover cannot be used without the 9006-4 clamp.

### 9200 Series Dust Caps and Plugs

Body Size	Dust Cover	Color/Material	Nipple Dust Cap	Weight (lbs.)
1/2	9507-4-1	Black Rubber	5209-4M	.04

NOTE: 9507-4-1 rubber dust cover can be used with or without the 9006-4 clamp.







9500 Series Kits combines two color coded 9250 couplers with a 9006-4 clamp and dust protection. The dust covers automatically close when the male tip is removed and are color coordinated with the coupler lever handles to easily identify raise and lower lines. The 9502 Series Kits are preassembled and ready for use. 9250 couplers accept 8010 (ISO 5675) tips and are not included with the kit.

**Kit contents:**

- (1) 9250 Coupler (right hand orientation)
- (1) 9250 Coupler (left hand orientation)
- (1) 9006-4 Clamp Assembly
- (1) 9507-4-1H Automatic Dust Cover Assembly



Quick Couplings

**Open Position**



9250 Series

By turning the rugged, color-coded lever to "Open" you lock open the valves in both the female body and the male tip, so they are unaffected by rapid variations in fluid flow.

Turning the lever to Open without a male tip in place will not result in oil flow. The 9250 Series design prevents this from happening.

Valves will close automatically in the case of a breakaway.

**Closed Position**



9250 Series

In the Closed position the 9250 shuts off oil flow at the remote outlet. This allows for easy, sprayless, zero-pressure connecting or disconnecting and for additional safety when working on an implement.

Levers are color-coded to identify Raise and Lower lines.

Body Size	Part Number	Port End	Description	Rated Pressure (psi)	Sleeve Diameter	Flats	Clamp	Dust Cover
1/2	9500-4	1/2-14 NPTF	Kit	3000	1.50	1.13	9006-4	9507-4-1H
1/2	9500-16	7/8-14 ORB	Kit	3000	1.50	1.13	9006-4	9507-4-1H
1/2	9502-4	1/2-14 NPTF	Kit (assembled)	3000	1.50	1.13	9006-4	9507-4-1H





The 5000 Series is an economical coupling that can be connected under pressure where tools can be used to make the connection. The coupler and nipple are connected and then the valves are opened from tightening the threaded union on the back of the coupler body. Unscrewing the body threads will permit the valves to close and the coupler sleeve can be retracted to release the nipple.

### Features:

- Accepts ISO 5675 universal tips
- Manual, threaded actuation, connect under pressure coupling
- Protective zinc plating with clear trivalent chromate finish

### Applications include:

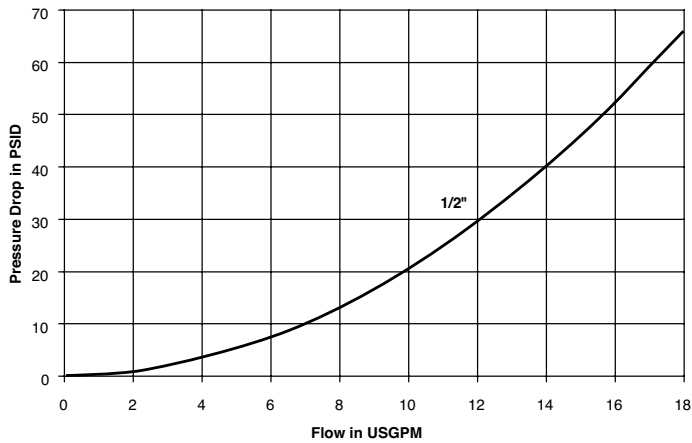
- Lubrication systems
- Hydraulic tools
- Attachments

### 5000 Series Specifications

Body Size	Rated Flow	Rated Pressure	Temperature	Body Material	Sleeve Type	Seal Material
1/2	12 gpm	2500 psi	-40° F to +250° F	Steel	Single Acting	Nitrile

### Performance:

5000 Series (1/2")  
Test Fluid: Oil - 200 SUS





**5000 Series Couplers**



Body Size	Coupler Part Number	Port End	Valve Type	Length	Largest Diameter	Wrench Flats	Weight (lbs.)	Complete Coupling Part Number
1/2	5050-4	1/2-14 NPTF	Ball	2.88	1.52	1.25	2.58	5000-4

**8010 Series Nipples**



Ball Valve

See page A-2 for additional ISO 5675 tip options.

Body Size	Coupler Part Number	Port End	Valve Type	Length	Largest Diameter	Wrench Flats	Weight (lbs.)	Complete Coupling Part Number
1/2	8010-4	1/2-14 NPTF	Ball	1.95	1.23	1.06	0.20	5000-4
1/2	8010-15	3/4-16 ORB	Ball	1.95	1.23	1.06	0.20	-
1/2	8010-16	7/8-14 ORB	Ball	1.95	1.23	1.06	0.25	-

**5000 Replacement Parts** 1/2

<b>O-Rings - Nitrile</b>	50001-211-0260
--------------------------	----------------

**5000 Series Dust Caps and Plugs**



Body Size	Dust Cap	Color/Material	Dust Plug	Weight (lbs.)
3/8	5205-3M	Black Rubber	5209-3M	.03
1/2	5205-4M	Black Rubber	5209-4M	.04
1/2	5205-4M-BU	Blue Rubber	5209-4M-BU	.04
1/2	5205-4M-GR	Green Rubber	5209-4M-GR	.04
1/2	5205-4M-RE	Red Rubber	5209-4M-RE	.04
1/2	5205-4M-YE	Yellow Rubber	5205-4M-YE	.04
1/2	5005-4	Steel w/Chain	5009-4	.21

# Catalog 3900 - Agricultural Coupling Clamps

<b>5001-4 Single breakaway clamp</b>	
	<p>Designed for use with all Pioneer couplers having a 1-1/2" diameter sleeve (1/2" body size). Yokes and braces are heavy duty metal stampings.</p>
<b>5006-4 Double breakaway clamp</b>	
	<p>Designed for use with all Pioneer couplers having a 1-1/2" diameter sleeve (1/2" body size). Yokes and braces are heavy duty metal stampings.</p>
<b>9006-4 Double breakaway clamp</b>	
	<p>Designed for use with 9250 lever couplers. Steel material bar with heavy duty diecast yoke.</p>



# Catalog 3900 - Agricultural Quick Coupling Adapters

Pioneer adapters shown here provide the most reliable and exacting interchange in the industry.

## How To Connect Using An Adapter

**Step 1** Relieve trapped pressure in the implement line.

**Step 2** Connect male tip on the implement line into the adapter.

**Step 3** Connect the Adapter into the female body.

**To Disconnect:** Reverse the above procedure: first disengage adapter from female body, then male tip from adapter.



	Part Number	Adapts This Style Of Male Tip	To This Female Body
	4060-4	Pioneer Style	John Deere Old Style
	4065-4	John Deere Old Style	Pioneer Style
	4065-4L	John Deere Old Style	John Deere 50 Series Ford/ISO Pioneer 9250
	4067-4	John Deere Old Style	International Harvester Old Style
	4068-4	John Deere Old Style	J I Case Old Style
	4070-4	Pioneer Style	International Harvester Old Style
	4075-4	International Harvester Old Style	Pioneer Style
	4075-4L	International Harvester Old Style	John Deere 50 Series Ford/ISO Pioneer 9250
	4076-4	International Harvester Old Style	John Deere Old Style
	4080-4	Pioneer Style	J I Case Old Style
	4085-4	J I Case Old Style	Pioneer Style

# Catalog 3900 - Agricultural Quick Coupling Adapters

## To select the proper Pioneer adapter:

Locate your tractor coupler along the left vertical column. Then locate your implement nipple along the top horizontal column. Now follow these two rows inward until they intersect at the correct adapter. For example: The proper adapter to connect a tractor with a Pioneer coupler to an implement with a J.I. Case nipple would be a 4085-4.

Male Tips Female Bodies	John Deere 	Pioneer ISO Tip 	International Harvester 	J.I. Case (old) 	FE / FEM Series Bobcat, John Deere, Gehl, New Holland 
John Deere (old) 	NO ADAPTER REQUIRED	4060-4 	4076-4 	N/A	N/A
John Deere (new) 	4065-4L 	NO ADAPTER REQUIRED	4075-4L 	N/A	N/A
International Harvester (old) 	4067-4 	4070-4 	NO ADAPTER REQUIRED	N/A	N/A
J.I. Case (old) 	4068-4 	4080-4 	N/A	NO ADAPTER REQUIRED	N/A
J.I. Case (new) 	4065-4L 	NO ADAPTER REQUIRED	4075-4L 	N/A	N/A
Pioneer* 	4065-4 	NO ADAPTER REQUIRED	4075-4 	4085-4 	EAS-500 
FE / FEM Series Bobcat, John Deere, Gehl, New Holland 	N/A	SAE-500 	N/A	N/A	N/A
Parker/Pioneer 60 Series 	N/A	4069-4 	N/A	N/A	N/A

\* Pioneer Couplers include: 4000, 4200, 6600, 8200, 8450, 9200, and 5000 Series

Pioneer offers the most complete line of products in the industry.

## Interchangeable Products For:

Quick Couplings



**SM-502-8FP, Male Tip - replaces 4610-4.** Connects with Allis-Chalmers 255018 and similar couplers. Has positive sealing poppet valve. Case hardened for wear resistance, zinc plated for corrosion protection.



**5080-4, Male Tip.** Connects with J I Case A28542 and similar couplers. Has positive sealing poppet valve and shielded valve retainer to prevent flow checking. Case hardened and zinc plated for long service.



**8010-4P, Male Tip.** Connects with Ford and similar couplers. Has positive sealing poppet valve.



**\* 5060-4, Male Tip.** Fits John Deere AR47331 sleeve-type female bodies. Has durable chrome alloy precision ball valve. Induction hardened at the locking groove to minimize brinelling, and zinc plated for corrosion protection.



**\* 5060-15, Male Tip.** Also fits John Deere AR47331 (See 5060-4), but has 3/4-16 O-ring boss thread.



**4056-4.** Connects with John Deere AR30210 and Pioneer 5060-4 male tips. Interchange for John Deere AR47331. Has a single acting sleeve and will connect only after trapped pressure has been released.



**4056-15.** Connects with John Deere AR30210 and Pioneer 5060-15 male tips. Inter-change for John Deere AR47331 coupler. Has single-acting sleeve.

Allis-Chalmers				
Product Description	Pioneer Part Number	O.E.M. Part Number	Port End	Rated (psi) Pressure
Allis-Chalmers Old Style Male Tip	SM-502-8FP	247336	1/2 NPTF	3000

J I Case				
Product Description	Pioneer Part Number	O.E.M. Part Number	Port End	Rated (psi) Pressure
J I Case Old Style Male Tip	5080-4	A160884	1/2 NPTF	3000

Ford				
Product Description	Pioneer Part Number	O.E.M. Part Number	Port End	Rated (psi) Pressure
Ford	8010-4P	D-3NN-B964A	1/2 NPTF	3000

John Deere				
Product Description	Pioneer Part Number	O.E.M. Part Number	Port End	Rated (psi) Pressure
John Deere Male Tip	5060-4	RE-11447	1/2 NPTF	3000
John Deere Male Tip	5060-15	AR30210 (old) AR93819 (new)	3/4 O-Ring Boss	3000
John Deere Female Tip	4056-4	N.A.	1/2 NPTF	3000
John Deere Female Tip	4056-15	AR47331 (old) RE15361 (new)	3/4 O-Ring Boss	3000



**5070-4, Male Tip.** Fits I-H 544788R1 and Pioneer 4057-4 female bodies. Ball style valving. Heat treated and zinc plated for resistance to wear and corrosion.



**5070-16, Male Tip.** Also fits I-H 544788R1 (See 5070-4), but has 7/8 -14 O-ring boss thread.



**5077-4, Male Tip.** Fits I-H 395150-R1 (gold style) coupler. Positive sealing poppet valve. Heat treated and zinc plated for resistance to wear and corrosion.



**5077-16, Male Tip.** Also fits I-H 395150-R1 (See 5077-4), but has 7/8 -14 O-ring boss thread. Notched hex for easy identification.



**4057-4, coupler.** Connects with I-H 544787R91 and Pioneer 5070-4 male tips. Interchange for I-H 544788R1. Has single-acting sleeve; trapped pressure must be released to make connection. Precision ball-check valving. Zinc plated.



**8010 Series Universal Male Tip.** The standard male tip of the agricultural industry, Rugged, reliable ball valve and induction-hardened locking ball groove. Shielded valve plus valve stop eliminates flow checking when used with connect-under-pressure type couplers. Tapered hex design for easy identification.

International Harvester (currently Case New Holland)				
Product Description	Pioneer Part Number	O.E.M. Part Number	Port End	Rated (psi) Pressure
I H Male Tip	5070-4	1272770	1/2 NPTF	3000
I H Male Tip	5070-16	544787R91	7/8 O-Ring Boss	3000
I H Male Tip	5077-4	395151R1	1/2 NPTF	3000
I H Male Tip	5077-16	395149R1	7/8 O-Ring Boss	3000
I H Female Body	4057-4	544787R1	1/2 NPTF	3000

Other Tractor Manufacturer Specifications				
Product Description	Pioneer Part Number	O.E.M. Part Number	Port End	Rated (psi) Pressure
Massey-Ferguson Male Tip	8010-4	242678M91	1/2 NPTF	3000
Massey-Ferguson Male Tip	8010-4	242678M91	1/2 NPTF	3000
Massey-Ferguson Male Tip	8010-15	1026700M91	3/4-16 O-Ring Boss	3000





## State-of-the-Art Coupler Features Rigid Mounting and Connect/Disconnect Under Pressure



The Pioneer 0312-001 rigid mount coupler features a patented design that permits connection while both the coupler and male tip are under pressure.

These couplers can be mounted directly to a valve or rigid tubing, eliminating the need for hose assemblies and break-away clamps.

- Easy push/pull connection and disconnection under system pressure.
- Enclosed outer housing prevents dust and dirt build up.
- This coupler accepts all Pioneer 8010 Series or ISO 5675 male tips.
- Environmentally friendly Chromium 6 Free plating for excellent corrosion resistance

### Ordering Information

The 0312-001 is available in two packaging formats. Available in packages of five, or individually in the Valu-Pak clam shell for retail displays.

This coupler is the same product as **Kubota 3A111-82011**.

### Specifications

Body Size	Part Number	Thread	Pressure Rating (psi)
1/2	0312-001	7/8-14UNF-2B	3000 PSI
1/2	VP0312-001-CS	7/8-14UNF-2B	3000 PSI



## ISO 5675 Universal Male Tip for John Deere Equipment



The Pioneer tip has been the standard of the agriculture industry for over 60 years

The DR10008 male tip is manufactured to meet the original John Deere dimensional specifications, and has a slightly smaller hex size than a standard Pioneer tip.

- Meets all ISO 5675 dimensional specifications.
- Induction hardened ball locking groove to prevent brinelling and increase life.
- Shielded valve and valve stop eliminates flow checking.
- Leak-free poppet valve design
- Environmentally friendly Chromium 6 Free plating

### Ordering Information

The DR10008 is available in two packaging formats. Available in bulk packages of 25, or individually in the Valu-Pak clam shell.

This male tip is the same product as **John Deere AR94522**.

### Specifications

Body Size	Part Number	Thread	Pressure Rating (psi)
1/2"	DR10008	3/4-16 Female ORB	3000 PSI
1/2"	VPDR10008-CS	3/4-16 Female ORB	3000 PSI



## Eliminate the need for adapters for your 4000 Series John Deere tractors

The Pioneer DR10010 cartridge conversion kit is designed to convert John Deere 4000 Series tractors for use with ISO 5675 Pioneer style tips.

Upgrading your tractor with this conversion kit will eliminate the need for adapters. You will no longer need to adapt implements using the ISO male tips to the old style John Deere coupling interface.

- Easy push/pull operation
- Reduced pressure drop for longer system life
- Simple and fast installation
- Chromium 6 Free plating on all steel components for excellent corrosion resistance.

### Ordering Information

This kit contains the components to convert two original John Deere couplings. (All of the components pictured above are included in the kit.)

This kit is the same product as **John Deere RE206778**.



Specifications			
Body Size	Part Number	Thread	Pressure Rating (psi)
1/2	DR10010	Kit	3000 PSI



Pioneer's Merchandising Boxes provide an effective point of purchase display for our products. Pioneer's most common products are shipped and displayed in the same convenient packaging. Simply fold the top of the box and you have an instant display card - complete with product description and part number.



**Heavy Duty Water Hose Couplings**

Part No.	Description	Qty
1163MB	Complete Coupling	10

**Male Tips**

8010-4MB	1/2" Male Tip 1/2" NPTF	10
8010-4PMB	1/2" Male Tip (Poppet Valve) 1/2" NPTF	10
5060-4MB	1/2" John Deere Male Tip 1/2" NPTF	10
5060-15MB	1/2" John Deere Male Tip 3/4" ORB	10
5070-4MB	1/2" Inter. Harvester Male Tip 1/2" NPTF	10
5070-16MB	1/2" Inter. Harvester Male Tip 7/8" ORB	10
5077-4MB	1/2" Old Style Inter. Harvester Male Tip 1/2" NPTF	10
5077-16MB	1/2" Old Style Inter. Harvester Male Tip 7/8" ORB	10
5080-4MB	1/2" Old Style J.I. Case Male Tip 1/2" NPTF	10

**Quick Coupling Adapters**

4060-4MB	Pioneer Male Tip to John Deere Female Body	5
4065-4MB	John Deere Male Tip to Pioneer Female Body	5
4067-4MB	John Deere Male Tip to Inter. Harvester Female Body	5
4068-4MB	John Deere Male Tip to Old Style J. I. Case Female Body	5
4070-4MB	Pioneer Male Tip to Inter. Harvester Female Body	5
4075-4MB	Inter. Harvester Male Tip to Pioneer Female Body	5
4080-4MB	Pioneer Male Tip to Old Style J. I. Case Female Body	5
4085-4MB	Old Style J. I. Case Male Tip to Pioneer Female Body	5

**Quick Coupling Sets/ Quick Couplers**

4000-4MB	1/2" Complete Coupling 1/2" NPTF	5
4000-4PMB	1/2" Complete Coupling (Poppet Valve) 1/2" NPTF	5
4050-4MB	1/2" Female Body 1/2" NPTF	5
4050-4PMB	1/2" Female Body (Poppet Valve) 1/2" NPTF	5
4056-4MB	1/2" John Deere Female Body 1/2" NPTF	5
4056-15MB	1/2" John Deere Female Body 3/4" ORB	5
4057-4MB	1/2" International Harvester Female Body 1/2" NPTF	5
4200-4MB	1/2" Complete Coupling 1/2" NPTF	5
4200-4PMB	1/2" Complete Coupling (Poppet Valve) 1/2" NPTF	5
4250-4MB	1/2" Female Body 1/2" NPTF	5
4250-4PMB	1/2" Female Body (Poppet Valve) 1/2" NPTF	5
8200-4MB	1/2" Complete Coupling (Poppet Valve) 1/2" NPTF	5
8250-4MB	1/2" Female Body 1/2" NPTF	5
9250-4MB	1/2" One Right and one Left Coupler	2



**8500 Kit**

Contains 8200 Series couplings and accessories.

For connections having pressure on either tractor side or implement lines, or both.

**8500 kit contains:**

- (2) 8250-4 female bodies
- (2) 5205-4M dust plugs
- (2) 8010-4 male tips
- (2) 5209-4M dust caps
- (1) 5006-4 clamp



**8700 Series ISO Conversion Kit**

Upgrade International Harvester tractors to accept ISO male tips models 1971 to 1983.

- Converts lever style tractors to accept ISO interchange male tips
- Easy push/pull connect and disconnection
- Reduced pressure drop – longer system life
- Simple, fast installation
- Dust cap keeps dust and dirt out

OEM Kit



8700 Kit



**9500 Kit**

Contains 9200 Series couplers and accessories.

For connect and disconnect at zero pressure, even with pressurized lines.

**9500 kit contains:**

- (2) 9250 female bodies
- (1) 9507-4-1H automatic dust cover
- (1) 9006-4 double breakaway clamp



Dimensions:  
22 1/2" x 26 3/4" x 14"



Color Coded  
Dust Caps and Plugs  
K404-CDP

Color coded dust caps and plugs are perfect for preventing mismatched connections. They also prevent contamination and protect couplers and nipples from damage. Simply match the color to the original equipment manufacturer.

K404-CDP kit contains:			
Part No.	Color	Description	Qty
5205-4M	Black	Dust Plug	16
5209-4M	Black	Dust Cap	16
5205-4M-BU	Blue	Dust Plug	8
5209-4M-BU	Blue	Dust Cap	8
5205-4M-GR	Green	Dust Plug	16
5209-4M-GR	Green	Dust Cap	16
5205-4M-RE	Red	Dust Plug	8
5209-4M-RE	Red	Dust Cap	8
5205-4M-YE	Yellow	Dust Plug	8
5209-4M-YE	Yellow	Dust Cap	8
K404-EX	Black	Overhead Extension	1

NOTE: The Orange and Purple dust caps that were offered in the original display have been discontinued.

NOTE: If you have an existing K404 display rack, you can order part number K404-UPGRADE. This will include the above items (individual quantities may vary) and the new decal. You will not receive the Gravity Display Wire Rack.

### Maximize Your Profits and Increase Sales

For nearly 20 years the K404 gravity feed display has been a favorite marketing tool for the Pioneer retail segment, allowing you to maximize profits from a minimal amount of space.

As the hydraulic market continues to evolve, so do the coupling requirements of the agricultural customer. This attractive full color merchandising display will put today's most popular coupling products in front of your customer.

The new colorful decal will assist you in making the correct product choice for your customer's application.

### Gravity Feed Counter Display Features:

- Thirteen merchandise slots for increased visibility of Pioneer's most active and profitable products
- Full color laminated decal with specifications, photos and the features and benefits of each product.
- Expandable to include the K404-CDP color coded dust caps and plugs for maintaining proper connections.
- Expanded product offering that includes the popular FEM Series skid loader couplings.



K404 Gravity Feed Display  
K404-STK

The Pioneer K404 Gravity Feed Display has been upgraded to include today's most popular products. This time proven sales tool will help you maximize your profits from counter sales. This is a great opportunity to put a product in your customer's hand. Quality and durability make these products 'The Farmers Choice'.

K404-STK kit contains:		
Part No.	Description	Qty
8010-4	ISO Tip, 1/2" NPT, Ball Valve	10
8010-4P	ISO Tip, 1/2" NPT, Poppet Valve	10
8010-4P-DC	ISO Tip, 1/2" NPT, Pressure Release	10
DR10008	John Deere Style ISO Tip	10
5060-4	John Deere Old Style Tip, 1/2" NPT	10
5060-15	John Deere Old Style Tip, 3/4" ORB	10
4050-4	ISO Coupler, Single Acting Sleeve	5
4250-4	ISO Coupler, Double Acting Sleeve	5
8250-4	ISO Coupler, Connect-Under-Pressure	5
FEM-501-8FP-NL	Skid Steer/Construction Coupler, 1/2" NPT	5
FEM-502-8FP	Skid Steer/Construction Nipple, 1/2" NPT	5
4060-4	Pioneer to John Deere Old Style Adapter	5
4065-4	John Deere Old Style to Pioneer Adapter	5
K404	Gravity Display Wire Rack	1
K404-DECAL	Decal	1

**Packaging That's Better Than Ever**

**Look at these advantages:**

- Valu-Pak is compact – takes less room. Hangs easily from peg board.
- Clear blister-pac reveals enclosed product and protects it from dust, dirt and thread damage.
- Valu-Pak is environmentally friendly. Package is reusable and recyclable.
- Products displayed in Valu-Pak provide a well organized stock, better inventory control and less opportunity for theft.
- Package includes product part number, description, and bar code.



Valu-Pak Male Tips		
Part No.	Description	Qty
VP4010-2P-CS	1/4" Male Tip (Poppet Valve) 1/4" NPTF	1
VP4010-3P-CS	3/8" Male Tip (Poppet Valve) 3/8" NPTF	1
VP8010-4-CS	1/2" Male Tip 1/2" NPTF	1
VP8010-4P-CS	1/2" Male Tip (Poppet Valve) 1/2" NPTF	1
VP8010-4P-DC-CS	1/2" Decompression Nipple 1/2" NPTF	1
VP8010-5-CS	1/2" Male Tip 3/4" NPTF	1
VP8010-15-CS	1/2" Male Tip 3/4" ORB	1
VP8010-15P-CS	1/2" Male Tip (Poppet Valve) 3/4" ORB	1
VP8010-16-CS	1/2" Male Tip 7/8" ORB	1
VP8010-16P-CS	1/2" Male Tip (Poppet Valve) 7/8" ORB	1
VP5060-4-CS	1/2" John Deere Male Tip 1/2" NPTF	1
VP5060-15-CS	1/2" John Deere Male Tip 3/4" ORB	1
VP5070-4-CS	1/2" Inter. Harvester Male Tip 1/2" NPTF	1
VP5070-16-CS	1/2" Inter. Harvester Male Tip 7/8" ORB	1
VP5077-4-CS	1/2" Old Style Inter. Harvester Male Tip 1/2" NPTF	1
VP5077-16-CS	1/2" Old Style Inter. Harvester Male Tip 7/8" ORB	1
VP5080-4-CS	1/2" Old Style J. I. Case Male Tip 1/2" NPTF	1
VP8010-15P-DC-CS	1/2" Decompression Nipple 3/4" ORB	1
Valu-Pak Heavy Duty Water Hose Couplings		
VP1163-CS	Complete Coupling	1
VP1163-60-CS	Female Half	1
VP1163-61-CS	Male Half	1
VP6-4730001-CS	Washer (package of six)	1
Valu-Pak High Pressure Water Couplings		
VPST-N2M-CS	1/4" Steel Nipple 1/4" Male Thread	1
VPST-N3M-CS	3/8" Steel Nipple 3/8" Male Thread	1
VPST-N2-CS	1/4" Steel Nipple 1/4" Female Thread	1
VPST-N3-CS	3/8" Steel Nipple 3/8" Female Thread	1
VPBST-2MSL-CS	1/4" Brass Coupler 1/4" Male Thread	1
VPBST-3MSL-CS	3/8" Brass Coupler 3/8" Male Thread	1
VPBST-2SL-CS	1/4" Brass Coupler 1/4" Female Thread	1
VPBST-3SL-CS	3/8" Brass Coupler 3/8" Female Thread	1



Valu-Pak Quick Coupling Adapters		
Part No.	Description	Qty
VP4060-4-CS	Pioneer Male Tip to John Deere Female Body	1
VP4065-4-CS	John Deere Male Tip to Pioneer Female Body	1
VP4065-4L-CS	John Deere Male Tip to New John Deere Female Body	1
VP4067-4-CS	John Deere Male Tip to Inter. Harvester Female Body	1
VP4070-4-CS	Pioneer Male Tip to Inter. Harvester Female Body	1
VP4075-4-CS	Inter. Harvester Male Tip to Pioneer Female Body	1
VP4075-4L-CS	Inter. Harvester Male Tip to New John Deere Female Body	1
VP4076-4-CS	Inter. Harvester Male Tip to John Deere Female Body	1
VP4080-4-CS	Pioneer Male Tip to Old Style J. I. Case Female Body	1
VP5060-15-CS	1/2" John Deere Male Tip 3/4" ORB	1
VP5070-4-CS	1/2" Inter. Harvester Male Tip 1/2" NPTF	1
VP5070-16-CS	1/2" Inter. Harvester Male Tip 7/8" ORB	1
VP5077-4-CS	1/2" Old Style Inter. Harvester Male Tip 1/2" NPTF	1
VP5077-16-CS	1/2" Old Style Inter. Harvester Male Tip 7/8" ORB	1
VP5080-4-CS	1/2" Old Style J. I. Case Male Tip 1/2" NPTF	1

Valu-Pak Dust Caps and Plugs		
VP5205-2M-CS	Black Dust Plug 1/4" (package of 2)	1
VP5205-3M-CS	Black Dust Plug 3/8" (package of 2)	1
VP5205-4M-CS	Black Dust Plug 1/2" (package of 2)	1
VP5205-4M-GR-CS	Green Dust Plug 1/2" (package of 2)	1
VP5205-4M-RE-CS	Red Dust Plug 1/2" (package of 2)	1
VP5205-4M-BU-CS	Blue Dust Plug 1/2" (package of 2)	1
VP5205-4M-YE-CS	Yellow Dust Plug 1/2" (package of 2)	1
VP5205-5M-CS	Black Dust Plug 3/4" (package of 2)	1
VP5209-2M-CS	Black Dust Cap 1/4" (package of 2)	1
VP5209-3M-CS	Black Dust Cap 3/8" (package of 2)	1
VP5209-4M-CS	Black Dust Cap 1/2" (package of 2)	1
VP5209-4M-GR-CS	Green Dust Cap 1/2" (package of 2)	1
VP5209-4M-RE -CS	Red Dust Cap 1/2" (package of 2)	1
VP5209-4M-BU -CS	Blue Dust Cap 1/2" (package of 2)	1
VP5209-4M-YE -CS	Yellow Dust Cap 1/2" (package of 2)	1
VP5209-5M-CS	Black Dust Cap 3/4" (package of 2)	1







**Valu-Pak Hydraulic Quick Couplings, Adapters and O-rings**

Part No.	Description	Qty
VP4050-2P-CS	1/4" Female Body (Poppet Valve) 1/4" NPTF	1
VP4000-2P-CS	1/4" Complete Coupling (Poppet Valve) 1/4" NPTF	1
VP4000-3P-CS	3/8" Complete Coupling (Poppet Valve) 3/8" NPTF	1
VP4000-4-CS	1/2" Complete Coupling 1/2" NPTF	1
VP4000-4P-CS	1/2" Complete Coupling (Poppet Valve) 1/2" NPTF	1
VP4000-16-CS	1/2" Complete Coupling 7/8" ORB	1
VP4050-4-CS	1/2" Female Body 1/2" NPTF	1
VP4050-4P-CS	1/2" Female Body (Poppet Valve) 1/2" NPTF	1
VP4056-4-CS	1/2" John Deere Female Body 1/2" NPTF	1
VP4056-15-CS	1/2" John Deere Female Body 3/4" ORB	1
VP4057-4-CS	1/2" International Harvester Female Body 1/2" NPTF	1
VP4200-3P-CS	3/8" Complete Coupling (Poppet Valve) 3/8" NPTF	1
VP4200-4-CS	1/2" Complete Coupling 1/2" NPTF	1
VP4200-4P-CS	1/2" Complete Coupling (Poppet Valve) 1/2" NPTF	1
VP4250-4-CS	1/2" Female Body 1/2" NPTF	1
VP4250-4P-CS	1/2" Female Body (Poppet Valve) 1/2" NPTF	1
VP8200-4-CS	1/2" Complete Coupling (Poppet Valve) 1/2" NPTF	1
VP8250-4-CS	1/2" Female Body 1/2" NPTF	1
VPEAS-500-CS	Non-Spill Adapter	1
VPFEM-501-10BMF-NL-CS	Non-Spill Coupler	1
VPFEM-501-10BMS-NL-CS	Non-Spill Coupler	1
VPFEM-501-10FO-NL-CS	Non-Spill Coupler	1
VPFEM-501-8FP-NL-CS	Non-Spill Coupler	1
VPFEM-501-12FO-NL-CS	Non-Spill Coupler	1
VPFEM-502-10BMF-CS	Non-Spill Nipple	1
VPFEM-502-10BMS-CS	Non-Spill Nipple	1
VPFEM-502-10FO-CS	Non-Spill Nipple	1
VPFEM-502-8FP-CS	Non-Spill Nipple	1
VPFEM-502-12FO-CS	Non-Spill Nipple	1
VPFEC-502-12FO-CS	Connect-Under-Pressure Nipple	1
VPSAE-500-CS	Non-Spill Adapter	1
VP2-211N0552-90-CS	O-Rings 1/2" Body Size (5 pack)	1

**Blister Pak Pneumatic Quick Couplings**

Part No.	Description	Qty
DP-PKR-2004-01	(1) B23 Manual Connect 20 Series Coupler	1
DP-PKR-2004-02	(1) H2C Manual Connect 20 Series Nipple	1
DP-PKR-2004-03	(1) B22 Manual Connect 20 Series Coupler	1
DP-PKR-2004-04	(1) H3C Manual Connect 20 Series Nipple	1
DP-PKR-2004-05	(1) B23 & (1) H2C Manual Connect 20 Series Complete Coupling	1
DP-PKR-2006-08	(1) 25 & (1) H2E Manual Connect 20 Series Complete Coupling	1
SPUC304F-4	(1) UC304F-4 Push-to-Connect UC, "Universal" coupler	12
SPUC304M-4	(1) UC304M-4 Push-to-Connect UC, "Universal" coupler	12
SPUCN304F-4	(1) UC304F-4 (1) H2C Push-to-Connect UC, "Universal" nipple	12



The 3000 Series coupling are designed for high pressure applications. The coupler sleeve and nipple body must be manually threaded together to make the connection.

**Features:**

- Manual threaded connection and actuation
- Hard, chrome alloy ball valves
- Polyurethane interface seal resists high pressure extrusion
- Threaded retainer provides a positive valve stop
- Protective zinc plating with clear trivalent chromate finish

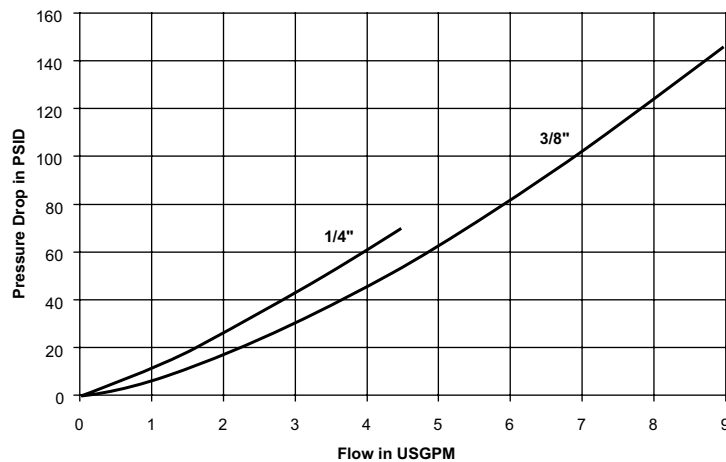
**Applications include:**

- Hydraulic rams
- Portable hydraulic tools
- Crimping equipment

3000 Series Specifications						
Body Size	Rated Flow (gpm)	Rated Pressure (psi)	Temperature	Body Material	Sleeve Type	Seal Material
1/4	3	10,000	-22° F to +230° F	Steel	Thread to connect	Polyurethane
3/8	6			Steel	Thread to connect	Polyurethane

**Performance:**

3000 Series (1/4", 3/8")  
Test Fluid: Oil - 200 SUS





3000 Series Couplers



Body Size	Coupler Part Number	Port End	Valve Type	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	3050-2	1/4-18 NPTF (Male)	Ball	2.38	1.13	0.81	0.25
3/8	3050-3	3/8-18 NPTF (Male)	Ball	2.38	1.38	1.00	0.49
3/8	3050-3-231	3/8-18 NPTF (Female)	Ball	2.38	1.38	1.00	0.49

3000 Series Nipples



Body Size	Coupler Part Number	Port End	Valve Type	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	3010-2	1/4-18 NPTF (Female)	Ball	1.29	1.13	0.88	0.14
3/8	3010-3	3/8-18 NPTF (Female)	Ball	1.58	1.25	0.94	0.23
3/8	3010-3-230	3/8-18 NPTF (Male)	Ball	2.31	1.25	1.00	0.30

3000 Series Replacement O-Rings

Body Size	Material	Part Number	Durometer
1/4	Polyurethane	50001-114-0296	90
3/8	Polyurethane	50001-210-0296	90

3000 Series Dust Caps and Plugs



Body Size	Dust Cap	Color/Material	Dust Plug	Weight (lbs.)
1/4	3009-2	Steel	3005-2	.02
3/8	3009-3	Steel	3005-3	.04





FF Series couplings eliminate spillage and air inclusion when connecting and disconnecting. The sleeve locking mechanism prevents accidental disconnection. 3/8" body size complies with Hydraulic Tool Manufacturers Association standards. FC nipples provide a connect-under-pressure option for trapped pressures up to 3000 psi on the nipple side.

### Features

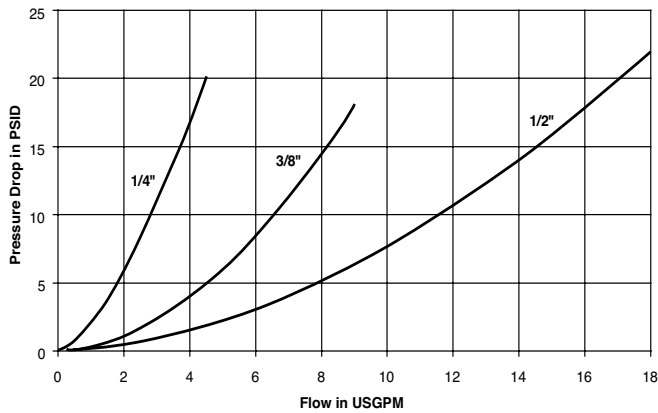
- Flush, non-spill valving
- Hardened steel sleeves and nipple bodies
- Locking sleeve
- Blow-out resistant seal
- Connect-under-pressure nipple option
- Protective zinc plating with clear trivalent chromate finish

### Applications include:

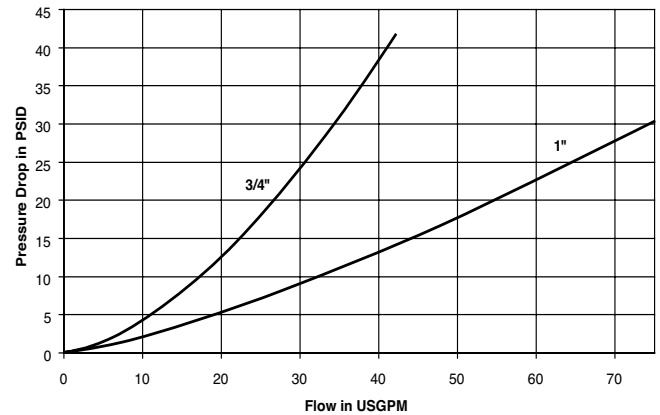
- Hydraulic tools

### Performance

FF Series (1/4", 3/8", 1/2")  
Test Fluid: Oil - 200 SUS



FF Series (3/4" & 1")  
Test Fluid: Oil - 200 SUS



### FF Series Specifications

Body Size	Rated Pressure (psi)	Rated Flow (gpm)	Temperature Range	Spillage (ml) max. per disconnect	Air Inclusion (ml) max. per connect	Body Material	Sleeve Type	Seal Material
1/4	5000	3	-40° to +250°F	.015	.020	Steel	Push to Connect	Nitrile
3/8	3000	6		.015	.020			
1/2	3000	12		.020	.070			
3/4	3000	28		.150	.100			
1	3000	50		.200	.150			





FF Series Couplers



Body Size	Coupler Part Number	Port End	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	FF-251-4FP	1/4-18 NPSF	1.79	1.06	1.00	0.23
1/4	FF-251-4MP	1/4-18 NPTF	1.84	1.06	1.00	0.24
1/4	FF-251-6FO	9/16-18 UNF	1.91	1.06	1.00	0.23
3/8	FF-371-6FP	3/8-18 NPSF	2.39	1.20	1.06	0.44
3/8	FF-371-8FP	1/2-14 NPSF	2.8	1.20	1.06	0.5
3/8	FF-371-6FB	G3/8 BSPP	2.45	1.20	1.06	0.45
3/8	FF-371-8FB	G1/2 BSPP	2.80	1.20	1.06	0.48
3/8	FF-371-8FO	3/4-16 UNF	2.82	1.20	1.06	0.52
1/2	FF-501-8FP	1/2-14 NPSF	2.67	1.58	1.37	0.88
1/2	FF-501-10FO	7/8-14 UNF	2.89	1.58	1.37	1.05
3/4	FF-751-12FP	3/4-14 NPSF	3.50	1.94	1.75	1.84
3/4	FF-751-12FO	1 1/16-12 UNF	3.75	1.94	1.75	1.93
1	FF-1001-16FP	1-11 1/2 NPSF	4.14	2.25	1.87	2.64
1	FF-1001-16FO	1 5/16-12UNF	4.24	2.25	1.87	2.68

FF Series Nipples



Body Size	Coupler Part Number	Port End	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	FF-252-4FP	1/4-18 NPSF	1.66	1.06	1.00	0.16
1/4	FF-252-4MP	1/4-18 NPTF	1.72	1.06	1.00	0.26
1/4	FF-252-6FO	9/16-18 UNF	1.66	1.06	1.00	0.16
3/8	FF-372-6FP	3/8-18 NPSF	2.31	1.08	0.94	0.26
3/8	FF-372-8FP	1/2-14 NPSF	2.64	1.19	1.06	0.32
3/8	FF-372-6FB	G3/8 BSPP	2.45	1.08	0.94	0.28
3/8	FF-372-8FB	G1/2 BSPP	2.70	1.19	1.06	0.32
3/8	FF-372-8FO	3/4-16 UNF	2.70	1.19	1.06	0.3
1/2	FF-502-8FP	1/2-14 NPSF	2.75	1.30	1.12	0.42
1/2	FF-502-10FO	7/8-14 UNF	2.97	1.30	1.12	0.44
3/4	FF-752-12FP	3/4-14 NPSF	3.38	1.73	1.50	1.00
3/4	FF-752-12FO	1 1/16-12 UNF	3.58	1.73	1.50	1.02
1	FF-1002-16FP	1-11 1/2 NPSF	3.85	2.17	1.87	1.60
1	FF-1002-16FO	1 5/16-12UNF	3.85	2.17	1.87	1.70


Standard Port Configurations: **FP** - Female Pipe Thread    **FO** - Female Straight Thread  
**MP** - Male Pipe Thread    **FB** - Female British Standard Pipe Parallel



Optional Seals Suffix	
<b>E4</b>	Fluorocarbon
<b>E5</b>	Ethylene Propylene (EPR)
<b>E35</b>	Perfluoroelastomer (Contact Factory for Seal Options).

\* Optional seals include O-ring & Back-Up Ring, not Anti-Blow Out bonded seal.

FF Series Repair Kits				
<b>1/4" Nipple</b>	FF-252-KIT	FF-252-KIT-E4	FF-252-KIT-E5	-
<b>1/4" Coupler</b>	FF-251-KIT	FF-251-KIT-E4	FF-251-KIT-E5	FF/FS-251-TOOL
<b>3/8" Nipple</b>	FF-372-KIT	FF-372-KIT-E4	FF-372-KIT-E5	-
<b>3/8" Coupler</b>	N/A	N/A	N/A	N/A
<b>3/4" Nipple</b>	FF-752-KIT	FF-752-KIT-E4	FF-752-KIT-E5	-
<b>3/4" Coupler</b>	FF-751-KIT	FF-751-KIT-E4	FF-751-KIT-E5	FF/FS-751-TOOL
<b>1" Nipple</b>	FF-1002-KIT	FF-1002-KIT-E4	FF-1002-KIT-E5	-
<b>1" Coupler</b>	FF-1001-KIT	FF-1001-KIT-E4	FF-1001-KIT-E5	FF/FS-1001-TOOL

Dust Caps - FF Series			
	Body Size	Dust Plug Part No. Rubber	Dust Cap Part No. Rubber
	<b>1/4</b>	FR-25	FR-25
<b>3/8</b>	NR-50	NR-37	
<b>1/2</b>	FR-501	FR-502	
<b>3/4</b>	FR-751	FR-752	
<b>1</b>	FR-1001	FR-1002	





### Connect Under Pressure Operation

FC Series products operate slightly different from traditional non-spill couplings. With no pressure in the coupler and up to 3000 PSI of trapped pressure in the nipple, begin to couple the mating halves. Delay momentarily during connection to allow trapped pressure to equalize with the mating half before completing the connection.

FC Series nipples provide a connect-under-pressure option for trapped pressures up to 3000 psi on the nipple side.

### Features:

- Connect-under-pressure nipple
- Flush, non-spill valving
- Hardened locking surface
- Blow-out resistant seal
- Protective zinc plating with clear trivalent chromate finish

### Applications include:

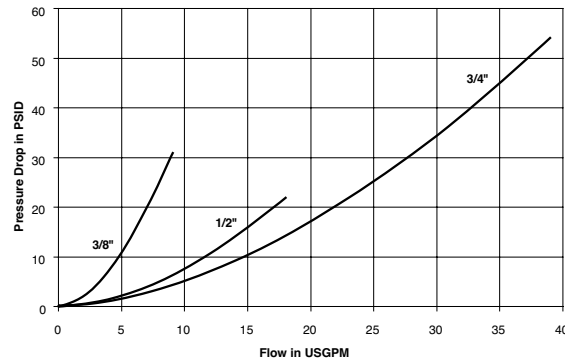
- Hydraulic tools

### FC Series Specifications

Body Size	Rated Pressure (PSI)	Rated Connect-Under-Pressure Capability	Rated Flow (GPM)	Spillage (ML) max. per disconnect	Air Inclusion (ML) max. per connect
3/8	3000	3000	6	.015	.020
1/2	3000	3000	12	.020	.070
3/4	3000	3000	26	.150	.100

### Performance

FC Series (3/8", 1/2", 3/4")  
Test Fluid: Oil - 200 SUS



### FC Series Connect Under Pressure Nipples



Body Size	Part Number	Mating Half	Port End	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
3/8	FC-372-6FP	FF-371	3/8-18 NPSF	3.30	1.16	1.062	0.45
3/8	FC-372-8FO	FF-371	3/4-16 UNF	3.30	1.16	1.062	0.42
3/8	FC-372-8FP	FF-371	1/2-14 NPSF	3.30	1.16	1.062	0.42
1/2	FC-502-8FP	FF-501	1/2-14 NPSF	3.46	1.22	1.125	0.53
1/2	FC-502-10FO	FF-501	7/8-14 UNF	3.46	1.22	1.125	0.52
3/4	FC-752-12FO	FF-751	1 1/16-12 UNF	4.81	1.65	1.500	1.32
3/4	FC-752-12FP	FF-751	3/4-14 NPSF	4.81	1.65	1.500	1.34

Standard Port Configurations: **FP** - Female Pipe Thread **FO** - Female Straight Thread



FEM Series couplings meet or exceed ISO 16028 design and performance requirements. The flush valves eliminate spillage and air inclusion when connecting and disconnecting. Coupler and nipple bodies have a modular design with increased flexibility for end port options. FEC nipples provide a connect-under-pressure option for trapped residual pressure.

### Features

- Flush, non-spill valving
- Global interchangeability with other ISO 16028 compliant couplings
- Hardened steel sleeves and nipple bodies
- Optional locking sleeve
- Blow-out resistant seal
- Connect-under-pressure nipple option
- Protective zinc plating with clear trivalent chromate finish

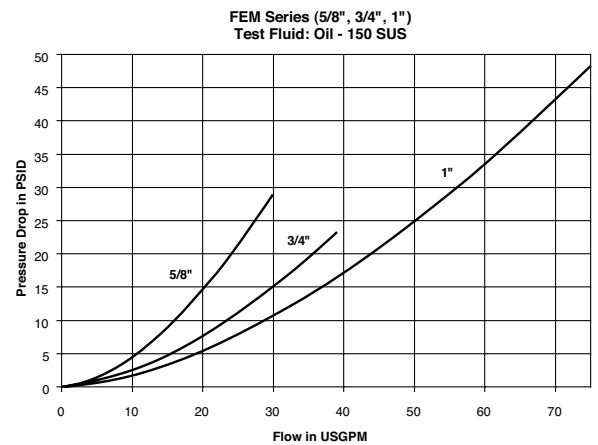
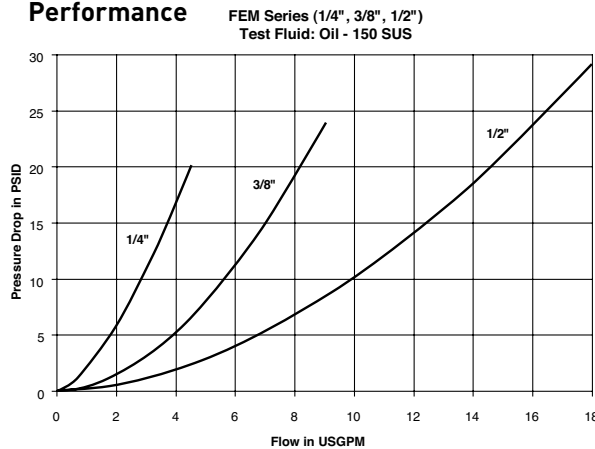
### Applications include:

- Skid loader attachments
- Hydraulic tools

### Materials of Construction

- Body:** Steel  
**Finish:** Chromium-6 Free plating  
**Valve:** Flush face valving  
**Seal:** Polyurethane or Nitrite; size dependant

### Performance



### FEM Series Specifications

Body Size	Rated Pressure (psi)	Rated Flow (gpm)	Temperature Range	Spillage (ml) max. per disconnect	Air Inclusion (ml) max. per connect	Body Material	Sleeve Type	Seal Material
1/4	4568	3	-40° to +250°F	.015	.020	Steel	Push to Connect	Nitrile
3/8	3625	6		.015	.020			
1/2	3625	12		.020	.070			
5/8	3625	20		.030	.070			
3/4	3625	28		.150	.100			
1	2900	50		.200	.150			







FEM Series Couplers



Body Size	Coupler Part Number	Port End	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	FEM-251-4FP-NL	1/4-18 NPSF	1.96	1.06	1.00	0.25
1/4	FEM-251-6FO-NL	9/16-18 UNF	2.08	1.06	1.00	0.25
3/8	FEM-371-6FP-NL	3/8-18 NPSF	2.89	1.19	1.06	0.51
3/8	FEM-371-8FO-NL	3/4-16 UNF	2.89	1.19	1.06	0.51
1/2	FEM-501-8FP-NL	1/2-14 NPSF	3.04	1.58	1.06	0.93
1/2	FEM-501-8FO-NL	3/4-16 UNF	2.96	1.58	1.25	0.93
1/2	FEM-501-10FO-NL	7/8-14 UNF	3.04	1.58	1.25	0.93
1/2	FEM-501-12FO-NL	1 1/16-12 UNF	3.24	1.58	1.38	0.93
5/8	FEM-621-12FO-NL	1 1/16-12 UNF	3.70	1.70	1.50	1.40
3/4	FEM-751-12FP-NL	3/4-14 NPSF	3.95	1.95	1.75	2.04
3/4	FEM-751-12FO-NL	1 1/16-12 UNF	3.95	1.95	1.75	2.04
1	FEM-1001-16FP-NL	1-11 1/2-NPSF	4.21	2.25	2.00	2.70
1	FEM-1001-16FO-NL	1 5/16-12 UNF	4.21	2.25	2.00	2.70

FEM Series Couplers (Bulkhead)



Body Size	Coupler Part Number	Port End	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/2	FEM-501-10BMF-NL	7/8-14 UNF	4.03	1.58	1.38	0.93
1/2	FEM-501-10BMS-NL	1-14 UNS	4.02	1.58	1.38	0.95





### FEM Series Nipples



Body Size	Nipple Part Number	Port End	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	FEM-252-4FP	1/4-18 NPSF	1.71	1.06	1.00	0.17
3/8	FEM-372-6FP	3/8-18 NPSF	2.48	1.16	1.06	0.32
3/8	FEM-372-8FO	3/4-16 UNF	2.48	1.16	1.06	0.32
1/2	FEM-502-8FP	1/2-14 NPSF	2.85	1.50	1.38	0.54
1/2	FEM-502-10FO	7/8-14 UNF	2.85	1.50	1.38	0.54
1/2	FEM-502-12FO	1 1/16-12 UN	3.05	1.50	1.38	0.54
5/8	FEM-622-12FO	1 1/16-12 UN	3.09	1.65	1.50	0.76
3/4	FEM-752-12FP	3/4-14 NPSF	3.38	1.94	1.75	1.12
3/4	FEM-752-12FO	1-1/16 12 UN	3.38	1.94	1.75	1.12
1	FEM-1002-16FP	1-11 1/2 NPSF	3.85	2.25	2.00	1.72
1	FEM-1002-16FO	1-5/16 12 UN	3.85	2.25	2.00	1.72

### FEM Series Nipples (Bulkhead)



Body Size	Nipple Part Number	Port End	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/2	FEM-502-10BMF	7/8-14 UNF	3.85	1.50	1.38	0.54
1/2	FEM-502-10BMS	1-14 UNS	3.84	1.50	1.38	0.56

**Standard Port Configurations:** FP - Female Pipe Thread FO - Female Straight Thread BMF - Bulkhead Flare BMS - Bulkhead Face Seal

Other Fitting Port Configurations available upon request.

### Dust Caps - FEM Series



Body Size	Dust Plug Part No. Rubber	Dust Cap Part No. Rubber
1/4	FR-25	FR-25
3/8	NR-50	NR-37
1/2	FR-501	FR-502
3/4	FR-751	FR-752
1	FR-1001	FR-1002





### Applications

Parker FEC Series nipple provide connect-under-pressure capability with up to 3000 PSI of trapped pressure in the nipple and are ideal for applications where residual pressure makes reconnect difficult. Utilized primarily in the construction equipment market, FEC Series products are commonly found on hydraulic attachments used in skid steer applications. The FEC Series mates with the FEM Series interface ISO 16028 couplers.

### Features:

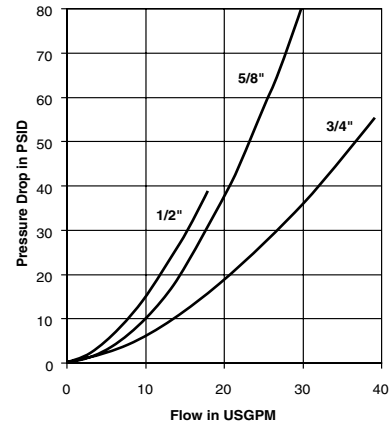
- Connect-Under-Pressure nipple
- Hardened locking surface
- Steel construction, Chromium-6 Free plating for corrosion resistance
- Anti blowout Nitrile/PTFE bonded nipple seal
- Flush face valving

### Connect Under Pressure Operation

FEC Series products operate slightly different from traditional non-spill couplings. With no pressure in the coupler and up to 3000 PSI of trapped pressure in the nipple, begin to couple the mating halves. Delay momentarily during connection to allow trapped pressure to equalize with the mating half before completing the connection.

### Performance

FEC Series (1/2", 5/8", 3/4")  
Test Fluid: Oil - 200 SUS



FEC Series Specifications					
Body Size	Rate Pressure (psi)	Rated Connect-Under-Pressure Capability	Rated Flow (gpm)	Spillage (ml) max. per disconnect	Air Inclusion (ml) max. per connect
1/2	3625	3000	12	.020	.070
5/8	3625	1700	20	.003	.070
3/4	3625	1500	26	.150	.100

### FEC Series Connect Under Pressure Nipples



Body Size	Part Number	Mating Half	Port End	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/2	FEC-502-8FP	FEM-501	1/2-14 NPSF	3.50	1.22	1.125	-
1/2	FEC-502-10FO	FEM-501	7/8-14 UNF	3.50	1.22	1.125	-
1/2	FEC-502-12FO	FEM-501	1 1/16-12 UNF	3.79	1.65	1.500	-
5/8	FEC-622-12FO	FEM-621	1 1/16-12 UN	4.19	1.65	1.500	-
3/4	FEC-752-12FO	FEM-751	1 1/16-12 UN	4.84	1.65	1.500	-

Standard Port Configurations: **FP** - Female Pipe Thread **FO** - Female Straight Thread



Pioneer Non-Spill Adapters were designed to accommodate the widespread use of several coupling types in mobile equipment. These adapters allow the user to adapt between poppet style, (ISO 7241-A), 6600 series couplings and non-spill type, (ISO 16028), FEM/FF series couplings. They are useful where multiple hydraulic attachments are being utilized.

### Features:

- Adapts flush, non-spill valving to / from poppet style
- Global interchangeability with other ISO 16028 and ISO 7241-A compliant couplings
- Protective zinc plating with clear trivalent chromate finish

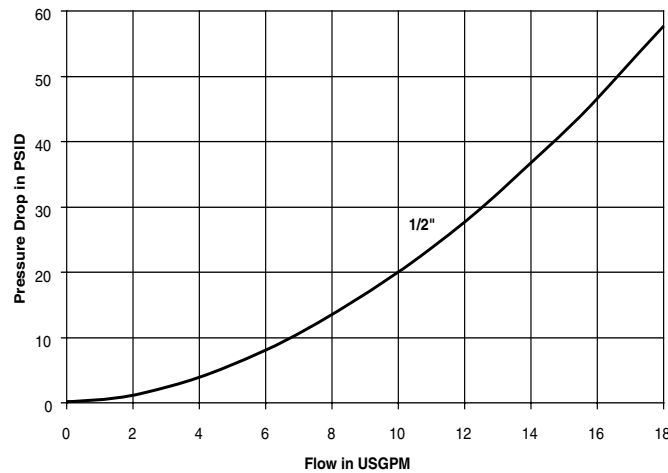
### Applications include:

- Skid loader attachments

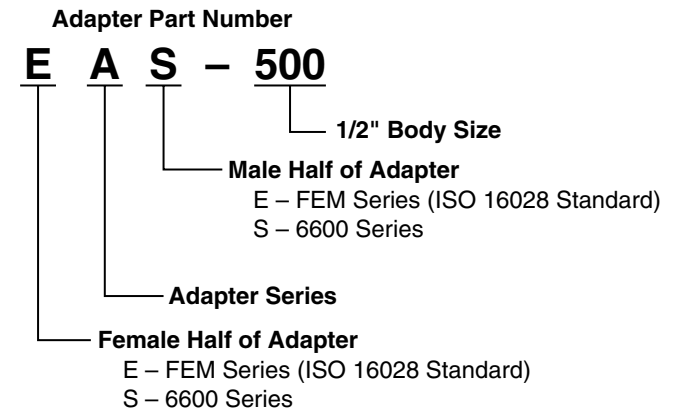


### Performance

FEM/FF to 6600 Adapter (1/2")  
Test Fluid: Oil - 200 SUS



### How To Order



### Specifications

Body Size	Rate Pressure (psi)	Rated Flow (gpm)	Temperature Range	Spillage (ml) max. per disconnect	Air Inclusion (ml) max. per connect
1/2	3625	12	-40° to +250° F	.020	.070

### Adapters



Body Size	Part Number	Thread Size	Length	Wrench Flats	Largest Diameter
1/2	EAS-500	N/A	3.36	1.38	1.50
1/2	SAE-500	N/A	3.00	1.25	1.48





FS Series dry disconnect couplings are ideal for closed system transfer and dispensing of chemicals and other fluids. The flush valves eliminate spillage and air inclusion when connecting and disconnecting to result in minimal environmental contamination.

### Features:

- Flush, non-spill valves enable ease of cleaning
- 316 stainless steel material for chemical compatibility
- Push to connect operation
- Fluorocarbon standard seal material with options available

### Applications include:

- Chemical dispensing systems
- Chemical processing
- Food processing
- Corrosive media transfer

### Materials of Construction

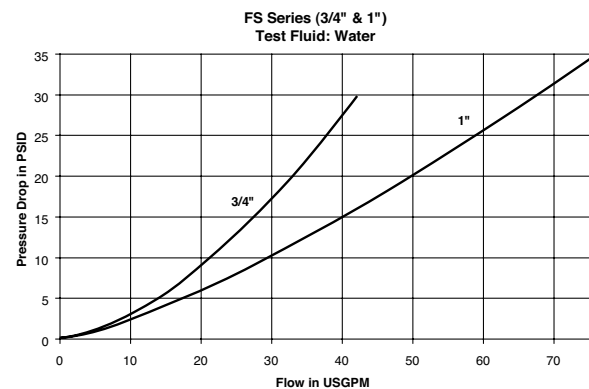
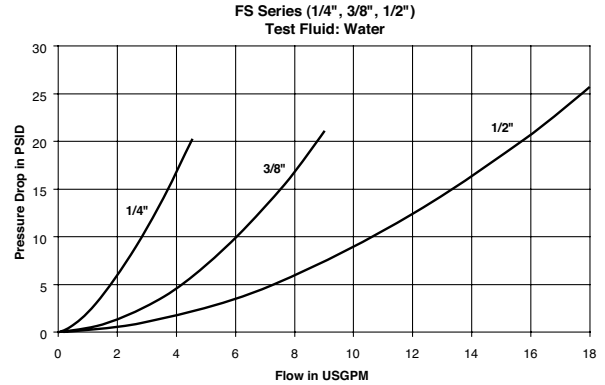
- Machined Parts:** Stainless Steel, AISI type 316  
**Springs:** Stainless Steel, AISI type 316.  
**Locking Balls:** 1/4" - 302 SS;  
 3/8" - 1" - Tungsten Carbide  
**Backup Washers:** PTFE  
**Elastomer Seals:** Fluorocarbon is standard.  
 Wide range is available.

Specifications					
Body Size	Rated Pressure (psi)	Rated Flow (gpm)	Spillage (ml) max. per disconnect	Air Inclusion (ml) max. per connect	CV
1/4	2000	3	.015	.010	0.90
3/8	2000	6	.015	.020	1.80
1/2	2000	12	.020	.070	3.00
3/4	2000	28	.150	.100	7.00
1	2000	50	.250	.182	10.1

Temperature Range (continuous)		
Part No. Seal Suffix	Seal Compound	Temp° F Rating
None*	Fluorocarbon	-15 to 400
E5	Ethylene Propylene (EPR)	-65 to 300
E1	Nitrile	-40 to 250
E35	Perfluoroelastomer (Contact Factory)	-20 to 600

\*Fluorocarbon is standard seal.

### Performance Flow Data





### FS Series Couplers - Female Pipe Thread



Body Size	Coupler Part Number	Port End	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	FS-251-4FP	1/4-18 NPT	1.79	1.06	1.00	0.25
1/4	FS-251-4MP	1/4-18 NPTF	2.00	1.06	1.00	0.25
1/4	FS-251-6FO	9/16-18UNF	1.92	1.06	1.00	0.24
3/8	FS-371-6FP	3/8-18 NPT	2.52	1.30	1.06	0.58
3/8	FS-371-8FO	3/4-16 UNF	2.83	1.30	1.12	0.63
1/2	FS-501-8FP	1/2-14 NPT	2.74	1.58	1.38	0.92
1/2	FS-501-10FO	7/8-14 UNF	2.86	1.58	1.38	0.96
3/4	FS-751-12FP	3/4-14 NPT	3.63	1.99	1.75	2.00
3/4	FS-751-12FO	1-1/16-12 UNF	3.73	1.99	1.75	2.12
1	FS-1001-16FP	1-11 1/2 NPT	4.14	2.25	1.87	2.76
1	FS-1001-16FO	1-15/16-12 UNF	4.24	2.25	1.87	2.80

### FS Series Nipples - Female Pipe Thread



Body Size	Coupler Part Number	Port End	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	FS-252-4FP	1/4-18 NPT	1.66	1.06	1.00	0.18
1/4	FS-252-4MP	1/4-18 NPT	1.87	1.06	1.00	0.18
1/4	FS-252-6FO	9/16-18 UNF	1.66	1.06	1.00	0.17
3/8	FS-372-6FP	3/8-18 NPT	2.31	1.08	0.94	0.26
3/8	FS-372-8FO	3/4-16 UNF	2.45	1.30	1.06	0.30
1/2	FS-502-8FP	1/2-14 NPT	2.75	1.58	1.12	0.44
1/2	FS-502-10FO	7/8-14 UNF	2.85	1.58	1.12	0.48
3/4	FS-752-12FP	3/4-14 NPT	3.38	1.99	1.50	1.02
3/4	FS-752-12FO	1-1/16-12 UNF	3.38	1.99	1.50	1.14
1	FS-1002-16FP	1-11 1/2 NPT	3.89	2.25	1.87	1.60
1	FS-1002-16FO	1-5/16 12 UNF	3.89	2.25	1.87	1.64

Standard Port Configurations: **FP** - Female Pipe Thread **MP** - Male Pipe Thread **FO** - Female Straight Thread

### Dust Caps - FS Series



Body Size	Dust Plug Part No. Rubber	Dust Cap Part No. Rubber
1/4	FR-25	FR-25
3/8	NR-50	NR-37
1/2	FR-501	FR-502
3/4	FR-751	FR-752
1	FR-1001	FR-1002



**FS Series Repair Kits**

Repair kits are available for both coupler and nipple half of FS coupling. Kits include replacement elastomer seals, valve assembly and instructions to perform rebuild. Spline tool must be ordered separately to accomplish coupler half repair. Other tools required: Vise, Allen Wrench and Open End Wrench.

FS Repair Kits		
<b>TOOL Spline tool for Coupler Repair</b>	Replacement Seals	
	No Suffix	Fluorocarbon Seals
	<b>E5</b>	Ethylene Propylene (EPR)
	<b>E35</b>	Perfluoroelastomer (Contact Factory for Seal Options).

Nipple Repair Kits			
<b>1/4</b>	FS-252-KIT	FS-252-KIT-E5	-
<b>3/8</b>	FS-372-KIT	FS-372-KIT-E5	-
<b>1/2</b>	FS-502-KIT	FS-502-KIT-E5	-
<b>3/4</b>	FS-752-KIT	FS-752-KIT-E5	-
<b>1</b>	FS-1002-KIT	FS-1002-KIT-E5	-

Coupler Repair Kits			
<b>1/4</b>	N/A	N/A	N/A
<b>3/8</b>	FS 371-KIT	FS 371-ES	FF/FS 371-TOOL
<b>1/2</b>	FS-501-KIT	FS-501-KIT-E5	FS-501-TOOL
<b>3/4</b>	FS-751-KIT	FS-751-KIT-E5	FF/FS-751-TOOL
<b>1</b>	FS-1001-KIT	FS-1001-KIT-E5	FF/FS-751-TOOL





PF Series dry disconnect couplings are ideal for closed system transfer and dispensing of chemicals and other fluids. The flush valves eliminate spillage and air inclusion when connecting and disconnecting to result in minimal environmental contamination.

### Features:

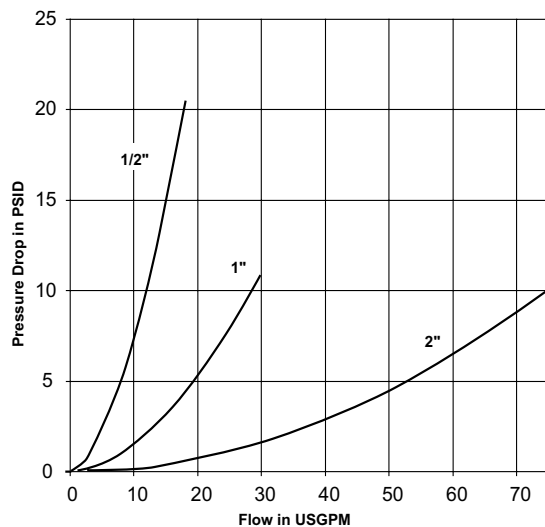
- Flush, non-spill valves enable ease of cleaning
- Rugged glass filled polypropylene construction for chemical compatibility
- Fluorocarbon seals
- Push to connect operation
- 1" coupler has non-wetted springs

### Applications include:

- Chemical dispensing systems
- Spray application equipment
- Mini bulk tanks
- Replacement for banjo style camlok fittings & ball valves
- Bulk transfer barrels

### Performance

PF (1/2", 1", 2")  
Test Fluid: Water



FC Series Specifications											
Body Size (in.)	Materials:			Rated Pressure (psi at 68°)	Rated Flow (gpm)	Pressure Drop at Rated Flow	Maximum Force to Connect	Maximum Force Disconnect	Operating Temperature/ Storage Temperature	Spillage max. per disconnect	Vacuum Rating
	Body	Springs	Seals								
1/2	Polypropylene	316 Stainless Steel	Fluorocarbon	100	12	11.3 PSI	32 lbs.	12 lbs.	+40° to +140° -20° to +140° F	0.14 ml .01 cu. in.	27.4 Hg
1				60	20	3.4 PSI	41 lbs.	17 lbs.		1 ml .06 cu. in. (1cc)	N/A
2				100	50	4 PSI	54	17 lbs.		9 ml .5 cu. in.	N/A







PF Series Couplers



Body Size	Coupler Part Number	Port End	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/2	PF-501-8FP	1/2" NPT	3.02	1.88	1.38	0.17
1	PF-1001-16FP	1" NPT	3.59	3.0	1.99	0.53
2	PF-2001-32FP	2" NPT	6.63	5.00	-	1.75

PF Series Nipples



Body Size	Coupler Part Number	Port End	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/2	PF-502-8FP	1/2" NPT	2.96	1.33	1.24	0.08
1	PF-1002-16FP	1" NPT	3.92	2.20	1.87	0.26
2	PF-2002-32FP	2" NPT	5.71	3.55	-	0.75

PF Series Nipples - Tank Mount



Body Size	Coupler Part Number	Port End	Tank Mount Thread	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1	PF-1002-32MB	1" NPT	Modified Buttress	3.92	2.75	1.87	0.33
1	PF-1002-32MP	1" NPT	Modified NPS	3.92	2.75	1.87	0.31

Dust Caps - PF Series



Body Size	Nipple
1/2	PFR-502
1	PFR-1002
1	PFR-1002 -NS (for Tank Mount)



ST Series non-valved couplings provide maximum flow and low pressure drop. The smooth, open bore allows easy cleaning in applications where the same lines are used for more than one media.

### Features

- Steel nipples are case hardened for resistance to Brinelling
- Functionally interchanges with similar straight-through design couplings
- Standard Nitrile seals
- Material options available

### Applications:

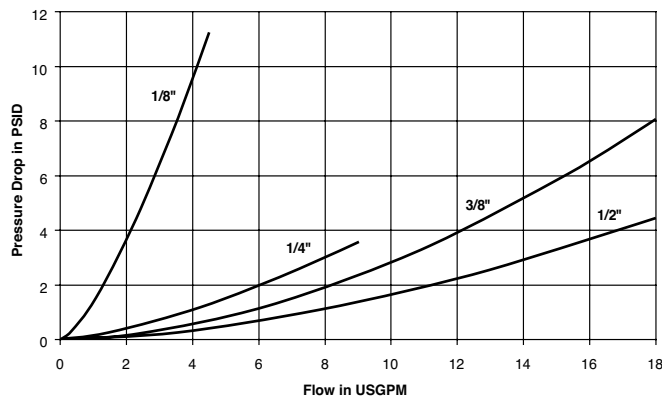
- High pressure water
- Steam washers
- Carpet cleaners



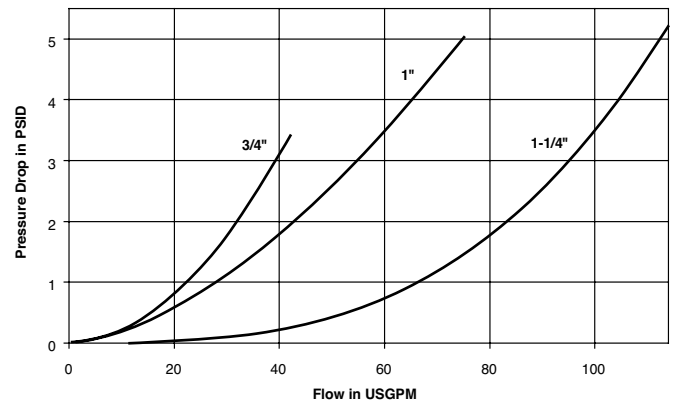
Specifications					
Body Size	Rated Pressure (psi) Brass Coupler/Nipple	Rated Pressure (psi) Brass Coupler/Steel Nipple	Rated Pressure (psi) SS Coupler/Nipple	Temperature Range (standard seals)	Rated Flow
1/8"	2500	2600	4200	-40° to +250° F	3
1/4"	5200	5500	6700		6
3/8"	2700	3500	5500		12
1/2"	2200	2700	3000		12
3/4"	1700	2700	3000		28
1"	1200	2000	1700		50
1-1/4"	1700	-	-		76
1-1/2"	1400	-	-		100

### Performance

ST Series (1/8", 1/4", 3/8", 1/2")  
Test Fluid: Oil - 150 SUS



ST Series (3/4", 1", 1-1/4")  
Test Fluid: Oil - 150 SUS





ST Series Couplers - Female Pipe Thread



Body Size	Brass Part Number	Stainless Part Number	Port End	Length	Largest Diameter	Wrench Flats	Brass Weight (lbs.)	Stainless Weight (lbs.)
1/8	BST-1	SST-1	1/8-27 NPTF	1.06	0.69	0.56	0.06	0.05
1/4	BST-2	SST-2	1/4-18 NPTF	1.54	0.94	0.81	0.17	0.15
3/8	BST-3	SST-3	3/8-18 NPTF	1.59	1.16	1.00	0.26	0.24
1/2	BST-4	SST-4	1/2-14 NPTF	1.98	1.30	1.13	0.59	0.37
3/4	BST-6	SST-6	3/4-14 NPTF	2.15	1.66	1.44	0.62	0.57
1	BST-8	SST-8	1-11 1/2 NPTF	2.43	2.02	1.75	0.99	0.93
1-1/4	BST-10	-	1 1/4-11 1/2 NPTF	2.44	2.51	2.00	1.38	-
1-1/2	BST-12	-	1 1/2-11 1/2 NPTF	2.88	3.00	2.50	1.42	-

ST Series Couplers - Male Pipe Thread



Body Size	Brass Part Number	Stainless Part Number	Port End	Length	Largest Diameter	Wrench Flats	Brass Weight (lbs.)	Stainless Weight (lbs.)
1/8	BST-1M	SST-1M	1/8-27 NPTF	1.06	0.69	0.56	0.05	0.69
1/4	BST-2M	SST-2M	1/4-18 NPTF	1.69	0.94	0.81	0.13	0.81
3/8	BST-3M	SST-3M	3/8-18 NPTF	1.75	1.16	1.00	0.25	1.16
1/2	BST-4M	SST-4M	1/2-14 NPTF	1.94	1.30	1.13	0.34	1.30
3/4	BST-6M	SST-6M	3/4-14 NPTF	2.17	1.66	1.44	-	1.66
1	BST-8M	SST-8M	1-11 1/2 NPTF	2.53	2.02	1.75	0.85	2.02



**ST Series Nipples- Female Pipe Thread**



Body Size	Brass Part Number	Weight. (lbs.)	Steel Part Number	Weight. (lbs.)	Stainless Part Number	Weight. (lbs.)	Length	Largest Diameter	Wrench Flats
1/8	BST-N1	0.03	ST-N1	0.03	SST-N1	0.02	0.98	0.65	0.56
1/4	BST-N2	0.07	ST-N2	0.07	SST-N2	0.07	1.46	0.87	0.75
3/8	BST-N3	0.12	ST-N3	0.11	SST-N3	0.11	1.62	1.59	0.08
1/2	BST-N4	0.23	ST-N4	0.21	SST-N4	0.21	1.85	1.30	1.13
3/4	BST-N6	0.33	ST-N6	0.32	SST-N6	0.32	2.15	1.59	1.38
1	BST-N8	0.52	ST-N8	0.49	SST-N8	0.48	2.35	1.88	1.63
1-1/4	BST-N10	0.85	-	-	-	-	2.38	2.31	2.00
1-1/2	BST-N12	1.45	-	-	-	-	2.81	2.74	2.38

**ST Series Nipples- Male Pipe Thread**



Body Size	Brass Part Number	Weight. (lbs.)	Steel Part Number	Weight. (lbs.)	Stainless Part Number	Weight. (lbs.)	Length	Largest Diameter	Wrench Flats
1/8	BST-N1M	0.02	ST-N1	0.02	SST-N1	0.02	1.04	0.51	0.44
1/4	BST-N2M	0.06	ST-N2	0.05	SST-N2	0.05	1.53	0.65	0.56
3/8	BST-N3M	0.08	ST-N3	0.07	SST-N3	0.08	1.69	0.79	0.69
1/2	BST-N4M	0.15	ST-N4	0.13	SST-N4	0.13	1.94	1.01	0.88
3/4	BST-N6M	0.23	ST-N6	0.21	SST-N6	0.22	2.19	1.23	1.06
1	BST-N8M	0.46	ST-N8	0.43	SST-N8	0.43	2.51	1.59	1.38
1-1/4	BST-N10M	0.96	-	-	-	-	2.85	2.17	1.88
1-1/2	BST-N12M	1.46	-	-	-	-	3.25	2.45	2.13





Pioneer Water Service Quick Couplings add convenience and efficiency wherever water hoses are frequently connected and disconnected. The durable 4-ball locking mechanism provides a secure connection.

**Features:**

- Brass and stainless steel construction
- Nitrile seals

**Applications include:**

- Garden hoses
- Wash down systems
- Mobile water tank lines

Specifications			
Body Size	Rated Pressure (psi)	Rated Flow (gpm)	Temperature Range (std seals)
3/4	200	28	-40° to +250° F

Coupler					
Body Size	Coupler Part Number	Port End	Length	Largest Diameter	Weight (lbs.)
3/4	1163-60	3/4-11 1/2 NH	1.16	1.21	0.12

Nipple					
Body Size	Coupler Part Number	Port End	Overall Length	Exposed Length	Weight (lbs.)
3/4	1163-61	3/4-11 1/2 NH	1.25	0.50	0.08



Pioneer Industrial Interchange Nipples are compatible for use with 20 Series, HF Series, Universal or E-z-mate couplers. The standard male tip of the pneumatic industry, these nipples are interchangeable with similar nipples manufactured to the same requirements.

**Features:**

- Conforms to A-A-59439 (MIL-C-4109F, ISO 6150-B) requirements for global interchangeability
- Hardened wear points and load-bearing areas
- Unvalved style nipple mates with valved couplers

**Applications include:**

- Air compressors
- Pneumatic tools
- Drop-down air lines

**Nipples- Female Pipe Thread**



Body Size	Part Number Brass	Part Number Steel	Port End	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	-	H1C	1/8-27 NPTF	1.48	0.58	0.50	0.03
1/4	BH3C	H3C	1/4-18 NPTF	1.56	0.72	0.62	0.05
1/4	-	H3C-E	3/8-18 NPTF	1.60	0.94	0.81	0.08
3/8	-	H1E	1/4-18 NPTF	1.60	0.72	0.62	0.06
3/8	BH3E	H3E	3/8-18 NPTF	1.69	0.94	0.81	0.10
3/8	-	H3E-F	1/2-14 NPTF	1.84	1.16	1.00	0.13
1/2	-	H1F	3/8-18 NPTF	2.03	0.94	0.81	0.12
1/2	BH3F	H3F	1/2-14 NPTF	2.20	1.16	1.00	0.19
1/2	-	H3F-G	3/4-14 NPTF	2.30	1.44	1.25	0.26
3/4	-	H3G-F	1/2-14 NPTF	2.22	1.16	1.00	0.23
3/4	-	H3G	3/4-14 NPTF	2.18	1.44	1.25	0.34
3/4	-	H3G-J	1-11 1/2 NPTF	2.41	1.80	1.63	0.47





**Nipples- Male Pipe Thread**



Body Size	Part Number Brass	Part Number Steel	Port End	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	-	H0C	1/8-27 NPTF	1.68	0.58	0.50	0.05
1/4	BH2C	H2C	1/4-18 NPTF	1.66	0.65	0.56	0.06
1/4	-	H2C-E	3/8-18 NPTF	1.90	0.80	0.69	0.07
3/8	-	H00E	1/8-27 NPTF	1.68	0.72	0.62	0.08
3/8	-	H0E	1/4-18 NPTF	1.90	0.72	0.62	0.08
3/8	BH2E	H2E	3/8-18 NPTF	1.90	0.80	0.69	0.09
3/8	-	H2E-F	1/2-14 NPTF	2.03	1.02	0.88	0.15
1/2	-	H0F	3/8-18 NPTF	2.20	0.79	0.69	0.16
1/2	BH2F	H2F	1/2-14 NPTF	2.35	1.01	0.88	0.18
1/2	-	H2F-G	3/4-14 NPTF	2.40	1.22	1.06	0.24
3/4	-	H2G-F	1/2-14 NPTF	2.32	1.16	1.00	0.22
3/4	BH2G	H2G	3/4-14 NPTF	2.28	1.22	1.06	0.28
3/4	-	H2G-J	1-11 1/2 NPTF	2.56	1.52	1.31	0.36

**Nipples- Standard Hose Barb**



Body Size	Part Number Steel	Hose I.D.	Length	Largest Diameter	Weight (lbs.)
1/4	H8C	1/4	1.72	0.46	0.04
1/4	H8C-D	5/16	1.96	0.50	0.04
1/4	H9C	3/8	1.96	0.50	0.05
3/8	H5E	3/8	1.85	0.59	0.07
3/8	H6E	1/2	2.09	0.68	0.08
1/2	H4F	3/8	2.36	0.66	0.10
1/2	H5F	1/2	2.36	0.66	0.11
1/2	H5F-G	3/4	2.95	0.87	0.18
3/4	H5G-F	1/2	2.47	0.93	0.19
3/4	H5G	3/4	3.00	0.93	0.25
3/4	H5G-J	1	3.24	1.24	0.36



**Nipples- Push-Lok Hose Barb\***



Body Size	Part Number Steel	Hose I.D.	Length	Largest Diameter	Weight (lbs.)
1/4	H8CP	1/4	1.74	0.69	0.04
1/4	H9CP	3/8	1.96	0.86	0.05
3/8	H4EP	1/4	1.87	0.69	0.06
3/8	H5EP	3/8	2.02	0.86	0.07
3/8	H6EP	1/2	2.21	0.97	0.09
1/2	H4FP	3/8	2.36	0.86	0.11
1/2	H5FP	1/2	2.48	0.97	0.11
1/2	H6FP	5/8	2.95	1.14	0.14

\* Push-Lok hose barbs are designed for use with Parker Push-Lok hose and do not require clamps.







20 Series Pneumatic Couplers mate with Industrial Interchange nipples, the standard male tip of the pneumatic industry. Available options include Sleeve-Lok, stainless steel locking balls and springs, and grip-ring sleeve.

### Features:

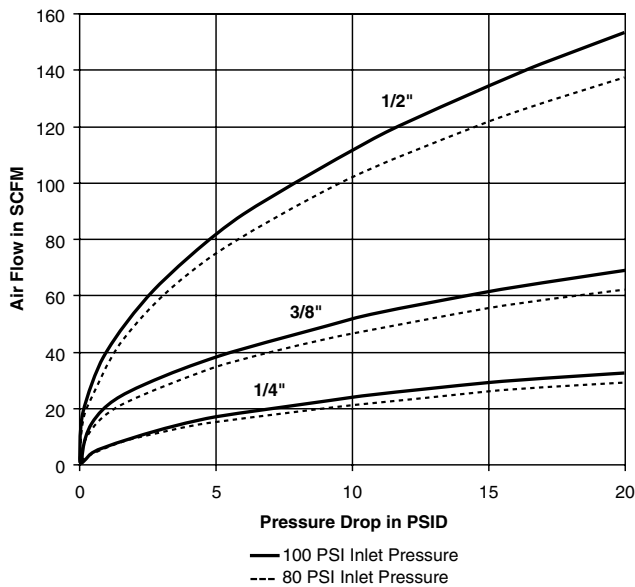
- Mates with Industrial Interchange nipples manufactured to A-A-59439 (MIL-C-4109F, ISO 6150-B) global standards
- 1/4" body size has a brass body and steel valve, 3/8" body size has all steel construction
- Standard seal is Nitrile

### Applications:

- Air compressors
- Pneumatic tools
- Water
- Grease
- Paint



### Performance 20 Series (1/4", 3/8", 1/2" sizes)



### 20 Series Specifications

Body Size	Rate Pressure (psi)	Temperature Range (standard seals)	Locking Device	Vacuum Data (in. HG)	Disconnected (coupler only)	Connected
1/4	300	-40° to +250° F	4 balls	-	<b>Not Recommended</b>	27.4
3/8	300		8 balls	-		27.4
1-2	300		8 balls	-		27.4



**Couplers- Female Pipe Thread**



Body Size	Part Number Brass	Part Number Steel	Port End	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	B23A	-	1/8-27 NPTF	1.83	0.90	0.75	0.20
1/4	B23	-	1/4-18 NPTF	1.83	0.90	0.75	0.19
1/4	B23E	-	3/8-18 NPTF	1.95	0.94	0.81	0.20
3/8	-	25C	1/4-18 NPTF	2.22	1.06	0.88	0.30
3/8	B25	25	3/8-18 NPTF	2.28	1.06	0.88	0.32
3/8	-	25F	1/2-14 NPTF	2.55	1.16	1.00	0.34
1/2	-	17E	3/8-18 NPTF	2.74	1.19	1.00	0.46
1/2	B17	17	1/2-14 NPTF	2.96	1.19	1.00	0.50
1/2	-	17G	3/4-14 NPTF	3.19	1.44	1.25	0.56

**Couplers- Male Pipe Thread**



Body Size	Part Number Brass	Part Number Steel	Port End	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	B22A	-	1/8-27 NPTF	1.89	0.90	0.75	0.20
1/4	B22	-	1/4-18 NPTF	2.05	0.90	0.75	0.19
1/4	B22E	-	3/8-18 NPTF	2.08	0.94	0.75	0.20
3/8	-	24C	1/4-18 NPTF	2.36	1.06	0.88	0.30
3/8	B24	24	3/8-18 NPTF	2.39	1.06	0.88	0.32
3/8	-	24F	1/2-14 NPTF	2.55	1.16	0.88	0.34
1/2	-	16E	3/8-18 NPTF	2.93	1.19	1.00	0.46
1/2	B16	16	1/2-14 NPTF	3.08	1.19	1.00	0.50
1/2	-	16G	3/4-14 NPTF	3.21	1.30	1.13	0.56





**Couplers- Standard Hose Barb**



Body Size	Part No. Brass	Part No. Steel	Hose I.D.	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	B20-3B	-	1/4	2.49	0.90	0.75	0.18
1/4	B20-4B	-	5/16	2.49	0.90	0.75	0.18
1/4	B20-5B	-	3/8	2.49	0.90	0.75	0.18
3/8	-	24-5B	3/8	2.86	1.06	0.88	0.27
3/8	-	24-6B	1/2	3.08	1.06	0.88	0.28
1/2	-	16-5B	3/8	3.37	1.19	1.00	0.41
1/2	-	16-6B	1/2	3.62	1.19	1.00	0.43
1/2	-	16-7B	3/4	3.96	1.19	1.00	0.48

**Couplers- Push-Lok Hose Barb**



Body Size	Part No. Brass	Part No. Steel	Hose I.D.	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	B20-3BP	-	1/4	2.32	0.90	0.75	0.18
1/4	B20-4BP	-	3/8	2.47	0.90	0.75	0.19
3/8	-	24-5BP	3/8	2.86	1.06	0.88	0.27
1/2	-	16-5BP	3/8	3.37	1.19	1.00	0.41
1/2	-	16-6BP	1/2	3.62	1.19	1.00	0.43

\* Push-Lok hose barbs are designed for use with Parker Push-Lok hose and do not require clamps.

NOTE: See Table of Contents for pneumatic Industrial Interchange nipples used with 20 Series couplers.





RF Series Pneumatic Couplers are designed to increase flow and reduce pressure drop through the coupling. RF nipples have up to 2-1/2 times larger flow area than standard industrial interchange nipples. The increased flow results in greater tool efficiency and decreased air costs.

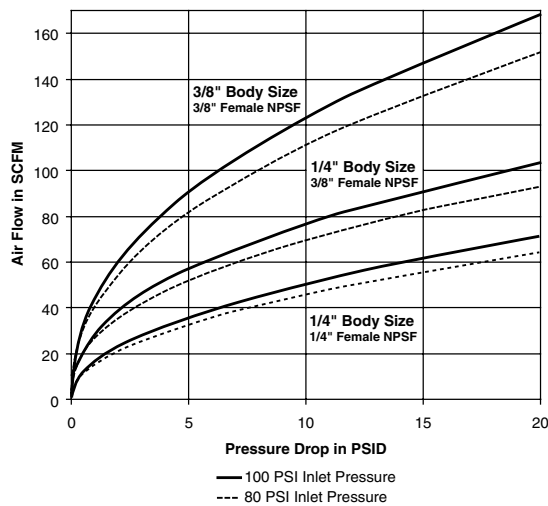
### Features:

- Aerodynamic valve design.
- Flow rates on 1/4" is greater than many 3/8" body size couplers.
- Flow rates on 1/4" greater than many 3/8" body size couplers.
- Flow rates on 3/8" greater than many 1/2" body size couplers.
- Integral sleeve guard protects against accidental disconnection
- Functionally interchanges with a common high-flow European design

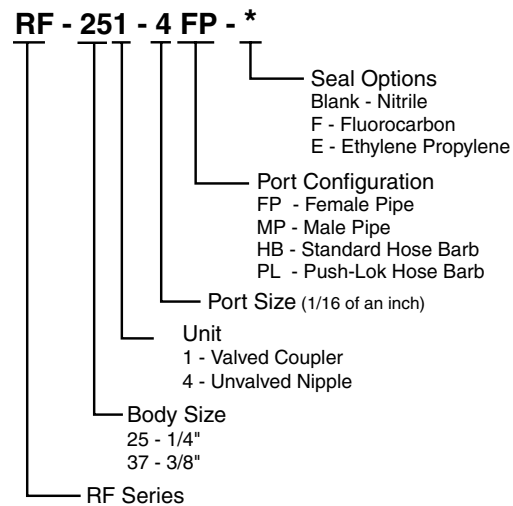
### Applications include:

- Air compressors
- Pneumatic tools
- Drop-down air lines

**Performance** RF Series (1/4" & 3/8" body size)  
with 1/4" & 3/8" Female NPSF



### How To Order



RF Series Specifications						
Body Size	Rate Pressure (psi)	Temperature Range (standard seals)	Locking Device)	Vacuum Data (in. HG)	Disconnected (coupler only)	Connected
1/4	300	-40° to +250° F	4 balls	-	<b>Not Recommended</b>	<b>Not Recommended</b>
3/8			8 balls	-		





**Couplers- Female Pipe Thread**



Body Size	Part No.	Port End	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	RF-251-4FP	1/4-18 NPSF	2.19	0.99	0.81	0.26
1/4	RF-251-6FP	3/8-18 NPSF	2.34	0.99	0.81	0.27
3/8	RF-371-6FP	3/8-18 NPSF	2.33	1.07	0.94	0.31
3/8	RF-371-8FP	1/2-14 NPSF	2.49	1.07	1.00	0.35

**Couplers- Male Pipe Thread**



Body Size	Part No.	Port End	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	RF-251-4MP	1/4-18 NPTF	2.34	0.99	0.81	0.24
1/4	RF-251-6MP	3/8-18 NPTF	2.37	0.99	0.81	0.25
1/4	RF-251-8MP	1/2-14 NPTF	2.56	0.99	0.88	0.29
3/8	RF-371-6MP	3/8-18 NPTF	2.52	1.07	0.94	0.30
3/8	RF-371-8MP	1/2-14 NPTF	2.68	1.07	0.94	0.33

**Couplers- Standard Hose Barb**



Body Size	Part No.	Hose I.D.	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	RF-251-4HB	1/4	2.81	0.99	0.81	0.26
1/4	RF-251-6HB	3/8	2.81	0.99	0.81	0.27
3/8	RF-371-6HB	3/8	3.02	1.07	0.94	0.31
3/8	RF-371-8HB	1/2	3.02	1.07	0.94	0.34

**Couplers- Push-Lok Hose Barb**



Body Size	Part No.	Hose I.D.	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	RF-251-4PL	1/4	2.64	0.99	0.81	0.26
1/4	RF-251-6PL	3/8	2.78	0.99	0.81	0.27
1/4	RF-251-8PL	1/2	2.93	0.99	0.81	0.28
3/8	RF-371-6PL	3/8	3.02	1.07	0.94	0.33
3/8	RF-371-8PL	1/2	3.02	1.07	0.94	0.33



**Nipples- Female Pipe Thread**



Body Size	Part No.	Port End	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	RF-254-4FP	1/4-18 NPTF	1.45	0.72	0.62	0.06
1/4	RF-254-6FP	3/8-18 NPTF	1.50	0.94	0.81	0.09
3/8	RF-374-6FP	3/8-18 NPTF	1.53	0.94	0.81	0.10
3/8	RF-374-8FP	1/2-14 NPTF	1.62	1.16	1.00	0.13

**Nipples- Male Pipe Thread**



Body Size	Part No.	Port End	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	RF-254-4MP	1/4-18 NPTF	1.60	0.65	0.56	0.05
1/4	RF-254-6MP	3/8-18 NPTF	1.67	0.75	0.69	0.08
1/4	RF-374-6MP	3/8-18 NPTF	1.70	0.75	0.69	0.09
3/8	RF-374-8MP	1/2-14 NPTF	1.85	1.01	0.88	0.15

**Nipples- Standard Hose Barb**



Body Size	Part No.	Hose I.D.	Length	Largest Diameter	Weight (lbs.)
1/4	RF-254-4HB	1/4	1.66	0.50	0.04
1/4	RF-254-6HB	3/8	1.66	0.50	0.05
3/8	RF-374-6HB	3/8	1.63	0.59	0.07
3/8	RF-374-8HB	1/2	1.97	0.68	0.08

**Nipples- Push-Lok Hose Barb**



Body Size	Part No.	Hose I.D.	Length	Largest Diameter	Weight (lbs.)
1/4	RF-254-4PL	1/4	1.69	0.50	0.04
1/4	RF-254-6PL	3/8	1.83	0.50	0.05
1/4	RF-374-6PL	3/8	1.80	0.59	0.07
3/8	RF-374-8PL	1/2	2.09	0.897	0.09





HF Series Pneumatic Quick Couplers connect with Industrial Interchange nipples, the standard male tip of the pneumatic industry. Couplers have brass construction, a corrosion resistant valve, stainless steel locking balls and a stainless valve spring.

### Features:

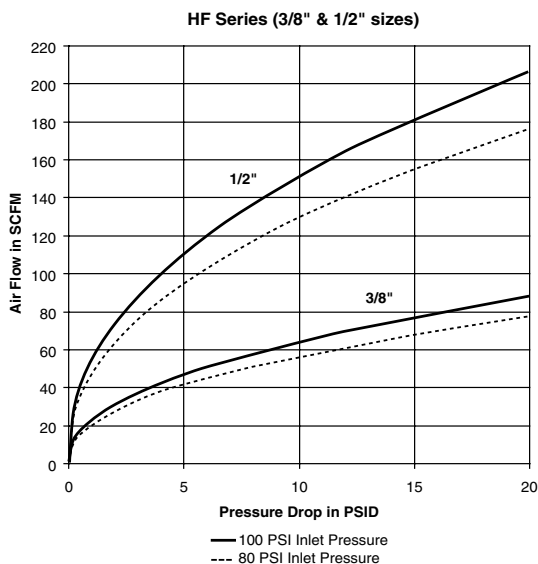
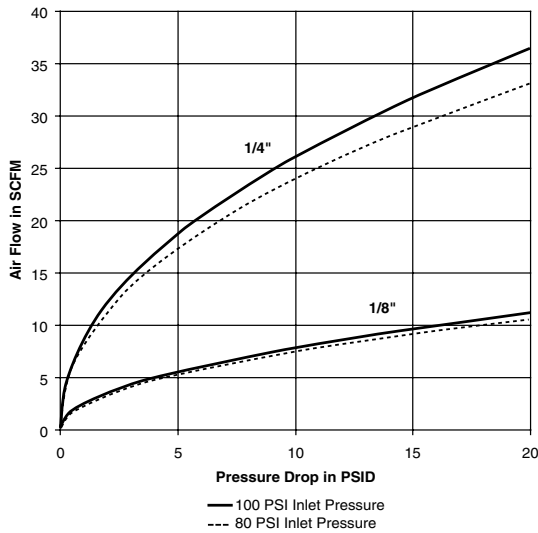
- Sleeve guard protects against accidental disconnection
- Push-to-connect operation
- Slim profile
- Optional heavy duty version in solid steel

### Applications include:

- Air compressors
- Pneumatic tools
- Drop-down air lines

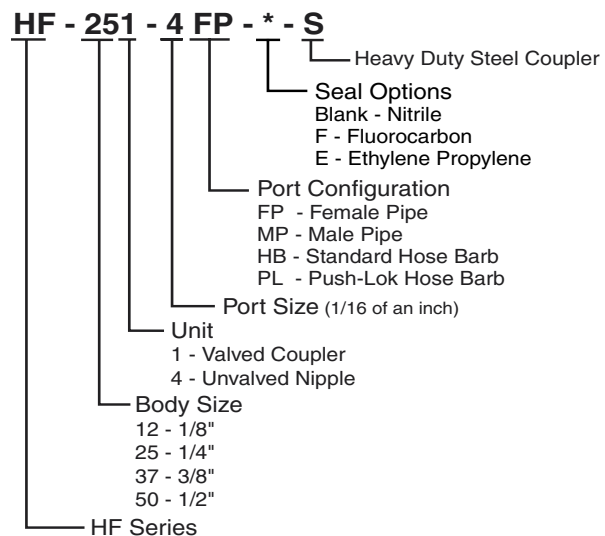
### Performance

HF Series (1/8" & 1/4" sizes)



HF Series Specifications				
Body Size	1/4	3/8	1/2	3/4
Rated Pressure (psi)	250	300	300	300
Temperature Range (std seals)	-40° to +250° F			
Locking Device	5 balls	4 balls	6 balls	8 balls
Force required to connect (lbs.)	Less than 10			
Vacuum Data (in. Hg.)				
Disconnected (coupler only)	Not Recommended			
Connected	—	27.4	27.4	27.4

### How To Order





**1/8" Body Size Couplers - Female Pipe Thread**



Body Size	Part No. Brass	Port End	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/8	HF-121-2FP	1/8-27 NPTF	1.42	0.63	0.55	0.06
1/8	HF-121-4FP	1/4-18 NPTF	1.81	0.63	0.67	0.10

**1/8" Body Size Couplers - Male Pipe Thread**



Body Size	Part No. Brass	Port End	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/8	HF-121-2MP	1/8-27 NPTF	1.50	0.63	0.55	0.06
1/8	HF-121-4MP	1/4-18 NPTF	1.61	0.63	0.55	0.07

**1/8" Body Size Nipples - Female Pipe Thread**



Body Size	Part No. Brass	Port End	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/8	HF-124-2FP	1/8-27 NPTF	1.08	0.58	0.50	0.03
1/8	HF-124-4FP	1/4-18 NPTF	1.34	0.78	0.67	0.07

**1/8" Body Size Nipples - Male Pipe Thread**



Body Size	Part No. Brass	Port End	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/8	HF-124-2MP	1/8-27 NPTF	1.06	0.51	0.44	0.03
1/8	HF-124-4MP	1/4-18 NPTF	1.25	0.63	0.56	0.05







1/4, 3/8, 1/2" Body Size Couplers - Female Pipe Thread



Body Size	Part No. Brass	Port End	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	HF-251-4FP	1/4-18 NPSF	2.19	0.99	0.81	0.26
1/4	HF-251-6FP	3/8-18 NPSF	2.34	0.99	0.81	0.27
3/8	HF-371-4FP	1/4-18 NPSF	2.33	1.07	0.94	0.33
3/8	HF-371-6FP	3/8-18 NPSF	2.33	1.07	0.94	0.31
3/8	HF-371-8FP	1/2-14 NPSF	2.49	1.07	1.00	0.35
1/2	HF-501-8FP	1/2-14 NPSF	3.35	1.19	1.06	0.60

1/4, 3/8, 1/2" Body Size Couplers - Male Pipe Thread



Body Size	Part No. Brass	Port End	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	HF-251-4MP	1/4-18 NPTF	2.34	0.99	0.81	0.25
1/4	HF-251-6MP	3/8-18 NPTF	2.37	0.99	0.81	0.26
3/8	HF-371-4MP	1/4-18 NPTF	2.49	1.07	0.94	0.32
3/8	HF-371-6MP	3/8-18 NPTF	2.52	1.07	0.94	0.3
3/8	HF-371-8MP	1/2-14 NPTF	2.68	1.07	0.94	0.33
1/2	HF-501-8MP	1/2-14 NPTF	3.48	1.19	1.06	0.57

1/4, 3/8, 1/2" Body Size Couplers - Standard Hose Barb



Body Size	Part No. Brass	Hose I.D.	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	HF-251-4HB	1/4	2.81	0.99	0.81	0.26
1/4	HF-251-6HB	3/8	2.81	0.99	0.81	0.27
3/8	HF-371-6HB	3/8	3.02	1.07	0.94	0.31
3/8	HF-371-8HB	1/2	3.02	1.07	0.94	0.34

1/4, 3/8, 1/2" Body Size Couplers - Push-Lok Hose Barb



Body Size	Part No. Brass	Hose I.D.	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	HF-251-4PL	1/4	2.64	0.99	0.81	0.26
1/4	HF-251-6PL	3/8	2.78	0.99	0.81	0.27
3/8	HF-371-6PL	3/8	3.02	1.07	0.94	0.33
3/8	HF-371-8PL	1/2	3.07	1.07	0.94	0.31



**Heavy Duty Couplers - Female Pipe Thread**



Body Size	Part No. Steel	Port End	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	HF-251-4FP-S	1/4-18 NPTF	2.19	0.99	0.81	0.26
1/4	HF-251-6FP-S	3/8-18 NPTF	2.34	0.99	0.81	0.27
3/8	HF-371-4FP-S	1/4-18 NPTF	2.33	1.07	0.94	0.33
3/8	HF-371-6FP-S	3/8-18 NPTF	2.33	1.07	0.94	0.31
3/8	HF-371-8FP-S	1/2-14 NPTF	2.49	1.07	1.00	0.35

**Heavy Duty Couplers - Male Pipe Thread**



Body Size	Part No. Steel	Port End	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	HF-251-4MP-S	1/4-18 NPTF	2.34	0.99	0.81	0.25
1/4	HF-251-6MP-S	3/8-18 NPTF	2.37	0.99	0.81	0.26
3/8	HF-371-4MP-S	1/4-18 NPTF	2.49	1.07	0.94	0.32
3/8	HF-371-6MP-S	3/8-18 NPTF	2.52	1.07	0.94	0.30
3/8	HF-371-8MP-S	1/2-14 NPTF	2.68	1.07	0.94	0.33

**Heavy Duty Couplers - Standard Hose Barb**



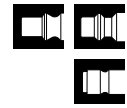
Body Size	Part No. Steel	Hose I.D.	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	HF-251-4HB-S	1/4	2.81	0.99	0.81	0.26
1/4	HF-251-6HB-S	3/8	2.81	0.99	0.81	0.27
3/8	HF-371-6HB-S	3/8	3.02	1.07	0.94	0.31
3/8	HF-371-8HB-S	1/2	3.02	1.07	0.94	0.34

**Heavy Duty Couplers - Push-Lok Hose Barb**



Body Size	Part No. Steel	Hose I.D.	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	HF-251-4PL-S	1/4	2.64	0.99	0.81	0.26
1/4	HF-251-6PL-S	3/8	2.78	0.99	0.81	0.27
3/8	HF-371-6PL-S	3/8	3.02	1.07	0.94	0.33
3/8	HF-371-8PL-S	1/2	3.07	1.07	0.94	0.31





UC Series Pneumatic Quick Couplers connect with Industrial Interchange, 10 series (Tru-Flate), and 50 series (ARO 210) style nipples. While the best performance is obtained by matching like series couplers and nipples, the Universal Coupler permits multiple series nipples to mate with one coupler.

### Features:

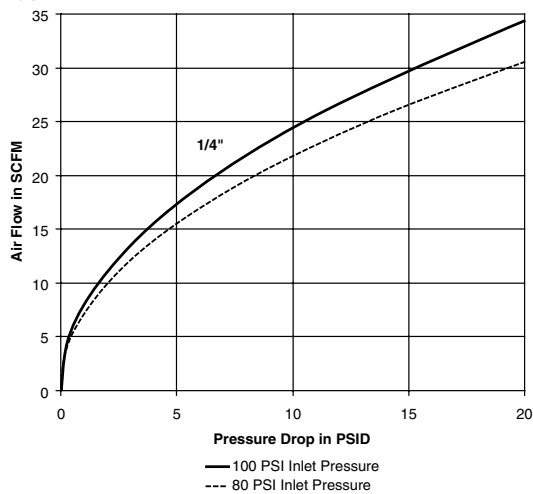
- Sleeve guard protects against accidental disconnection
- Push-to-connect operation
- Brass construction
- One coupler connects with three nipple styles

### Applications include:

- Air compressors
- Pneumatic tools
- Drop-down air lines

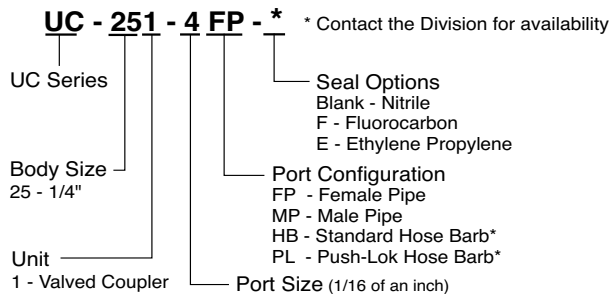
### Performance

UC Series Coupler (1/4" size)



### UC Series Specifications

Body Size	Rated Pressure (psi)	Temperature Range (Nitrile seals)	Locking Device	Vacuum Service
1/4	150	-40° to +250° F	4 balls	<b>Not Recommended</b>



### Couplers - Female Pipe Thread



Body Size	Part No. Brass	Port End	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	UC-251-4FP	1/4-18 NPSF	2.06	0.98	0.81	0.23
1/4	UC-251-6FP	3/8-18 NPSF	2.21	0.98	0.81	0.23

### Couplers - Male Pipe Thread

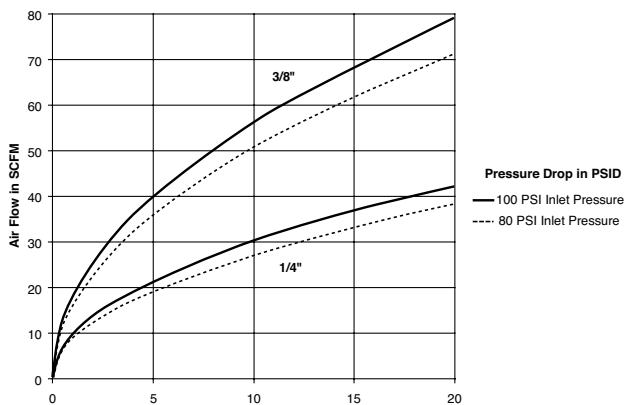


Body Size	Part No. Brass	Port End	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	UC-251-4MP	1/4-18 NPTF	2.21	0.81	0.98	0.22
1/4	UC-251-6MP	3/8-18 NPTF	2.24	0.81	0.9	0.23

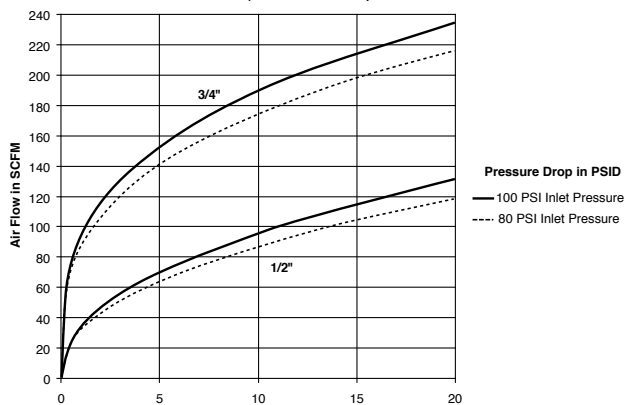


### Performance

E-z-mate Series (1/4" & 3/8" sizes)



E-z-mate Series (1/2" & 3/4" sizes)



E-z mate Series Specifications				
Body Size	1/4	3/8	1/2	3/4
Rated Pressure (psi)	300			
Temperature Range (std seals)	-40° to +250° F			
Locking Device	4 balls	4 balls	6 balls	8 balls
Force required to connect (lbs.)	Less than 10			
Vacuum Service	Not Recommended			

E-z-mate Series are exhaust type quick couplers that are designed to safely relieve air pressure prior to disconnection. When the locking sleeve is moved to shut off air flow, it automatically vents downstream allowing for disconnection at zero pressure and eliminating the risk of "hose whip".

### Features:

- Self- locking valve sleeve protects against accidental disconnection
- Push-to-connect operation
- Meets ISO 4414 requirements for a controlled pressure release system

### Applications include:

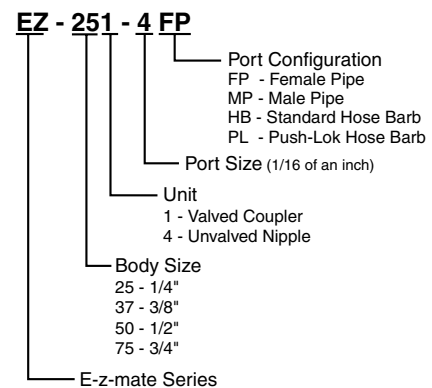
- Pneumatic tools
- Drop-down air lines

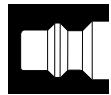
### Operation

Parker E-z-mate couplings combine push-to-connect, exhaust-style action with a self-locking valve sleeve to guard against accidental disconnection. Simply follow the direction of the On-Off arrow stamped on the valve sleeve. It's that easy.

To connect, push the nipple into the coupler. The black locking sleeve automatically slides forward securely locking the nipple in place. No air is allowed to flow through the coupling at this point. The valve sleeve is then rotated clockwise (when viewed from the coupler port end) to open flow and automatically engage the sleeve-lock mechanism.

To disconnect, rotate the valve sleeve counter clockwise (when viewed from the coupler end). The flow of air through the coupling will be shut off and all downstream air is vented to the atmosphere. The locking sleeve may now be retracted and the nipple removed. Lubricate sleeve as part of periodic maintenance to coupler.





**Couplers - Female Pipe Thread**



Body Size	Part No. Steel	Port End	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	EZ-251-4FP	1/4-18 NPTF	2.25	1.00	0.75	0.25
1/4	EZ-251-6FP	3/8-18 NPTF	2.68	1.01	0.88	0.29
3/8	EZ-371-6FP	3/8-18 NPTF	2.53	1.18	0.88	0.38
3/8	EZ-371-8FP	1/2-14 NPTF	3.00	1.30	1.12	0.50
1/2	EZ-501-8FP	1/2-14 NPTF	3.01	1.38	1.12	0.65
1/2	EZ-501-12FP	3/4-14 NPTF	3.44	1.59	1.38	0.7
3/4	EZ-751-12FP	3/4-14 NPTF	3.01	1.57	1.38	0.76
3/4	EZ-751-16FP	1-11 1/2 NPTF	3.52	1.80	1.56	0.92

**Couplers - Male Pipe Thread**



Body Size	Part No. Steel	Port End	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	EZ-251-4MP	1/4-18 NPTF	2.85	1.00	0.75	0.30
1/4	EZ-251-6MP	3/8-18 NPTF	2.87	1.00	0.75	0.31
3/8	EZ-371-6MP	3/8-18 NPTF	3.10	1.18	0.88	0.44
1/2	EZ-501-8MP	1/2-14 NPTF	3.62	1.38	1.12	0.73
3/4	EZ-751-12MP	3/4-14 NPTF	4.04	1.57	1.38	0.90

**Couplers - Standard Hose Barb**



Body Size	Part No. Steel	Hose I.D.	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	EZ-251-4HB	1/4	3.20	1.00	0.75	0.28
1/4	EZ-251-6HB	3/8	3.20	1.00	0.75	0.29
3/8	EZ-371-6HB	3/8	3.43	1.18	0.88	0.42
1/2	EZ-501-8HB	1/2	4.06	1.40	1.12	0.70

**Couplers - Push-Lok Hose Barb\***



Body Size	Part No. Steel	Hose I.D.	Length	Largest Diameter	Wrench Flats	Weight (lbs.)
1/4	EZ-251-4PL	1/4	3.03	1.00	0.75	0.28
1/4	EZ-251-6PL	3/8	3.18	1.00	0.75	0.29
3/8	EZ-371-6PL	3/8	3.38	1.18	0.88	0.42
1/2	EZ-501-8PL	1/2	3.91	1.38	1.12	0.70

\* Push-Lok hose barbs are designed for use with Parker Push-Lok hose and do not require clamps.

# Offer of Sale

The items described in this document and other documents and descriptions provided by Parker Hannifin Corporation, its subsidiaries and its authorized distributors ("Seller") are hereby offered for sale at prices to be established by Seller. This offer and its acceptance by any customer ("Buyer") shall be governed by all of the following Terms and Conditions. Buyer's order for any item described in its document, when communicated to Seller verbally, or in writing, shall constitute acceptance of this offer. All goods or work described will be referred to as "Products".

- 1. Terms and Conditions.** Seller's willingness to offer Products, or accept an order for Products, to or from Buyer is expressly conditioned on Buyer's assent to these Terms and Conditions and to the terms and conditions found on-line at [www.parker.com/saleterms/](http://www.parker.com/saleterms/). Seller objects to any contrary or additional term or condition of Buyer's order or any other document issued by Buyer.
- 2. Price Adjustments; Payments.** Prices stated on the reverse side or preceding pages of this document are valid for 30 days. After 30 days, Seller may change prices to reflect any increase in its costs resulting from state, federal or local legislation, price increases from its suppliers, or any change in the rate, charge, or classification of any carrier. The prices stated on the reverse or preceding pages of this document do not include any sales, use, or other taxes unless so stated specifically. Unless otherwise specified by Seller, all prices are F.O.B. Seller's facility, and payment is due 30 days from the date of invoice. After 30 days, Buyer shall pay interest on any unpaid invoices at the rate of 1.5% per month or the maximum allowable rate under applicable law.
- 3. Delivery Dates; Title and Risk; Shipment.** All delivery dates are approximate and Seller shall not be responsible for any damages resulting from any delay. Regardless of the manner of shipment, title to any products and risk of loss or damage shall pass to Buyer upon tender to the carrier at Seller's facility (i.e., when it's on the truck, it's yours). Unless otherwise stated, Seller may exercise its judgment in choosing the carrier and means of delivery. No deferment of shipment at Buyers' request beyond the respective dates indicated will be made except on terms that will indemnify, defend and hold Seller harmless against all loss and additional expense. Buyer shall be responsible for any additional shipping charges incurred by Seller due to Buyer's changes in shipping, product specifications or in accordance with Section 13, herein.
- 4. Warranty.** Seller warrants that the Products sold hereunder shall be free from defects in material or workmanship for a period of twelve months from the date of delivery to Buyer or 2,000 hours of normal use, whichever occurs first. This warranty is made only to Buyer and does not extend to anyone to whom Products are sold after purchased from Seller. The prices charged for Seller's products are based upon the exclusive limited warranty stated above, and upon the following disclaimer: **DISCLAIMER OF WARRANTY: THIS WARRANTY COMPRISES THE SOLE AND ENTIRE WARRANTY PERTAINING TO PRODUCTS PROVIDED HEREUNDER. SELLER DISCLAIMS ALL OTHER WARRANTIES, EXPRESS AND IMPLIED, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.**
- 5. Claims; Commencement of Actions.** Buyer shall promptly inspect all Products upon delivery. No claims for shortages will be allowed unless reported to the Seller within 10 days of delivery. No other claims against Seller will be allowed unless asserted in writing within 60 days after delivery or, in the case of an alleged breach of warranty, within 30 days after the date within the warranty period on which the defect is or should have been discovered by Buyer. Any action based upon breach of this agreement or upon any other claim arising out of this sale (other than an action by Seller for any amount due to Seller from Buyer) must be commenced within thirteen months from the date of tender of delivery by Seller or, for a cause of action based upon an alleged breach of warranty, within thirteen months from the date within the warranty period on which the defect is or should have been discovered by Buyer.
- 6. LIMITATION OF LIABILITY.** UPON NOTIFICATION, SELLER WILL, AT ITS OPTION, REPAIR OR REPLACE A DEFECTIVE PRODUCT, OR REFUND THE PURCHASE PRICE. IN NO EVENT SHALL SELLER BE LIABLE TO BUYER FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF, OR AS THE RESULT OF, THE SALE, DELIVERY, NON-DELIVERY, SERVICING, USE OR LOSS OF USE OF THE PRODUCTS OR ANY PART THEREOF, OR FOR ANY CHARGES OR EXPENSES OF ANY NATURE INCURRED WITHOUT SELLER'S WRITTEN CONSENT, EVEN IF SELLER HAS BEEN NEGLIGENT, WHETHER IN CONTRACT, TORT OR OTHER LEGAL THEORY. IN NO EVENT SHALL SELLER'S LIABILITY UNDER ANY CLAIM MADE BY BUYER EXCEED THE PURCHASE PRICE OF THE PRODUCTS.
- 7. Contingencies.** Seller shall not be liable for any default or delay in performance if caused by circumstances beyond the reasonable control of Seller.
- 8. User Responsibility.** The user, through its own analysis and testing, is solely responsible for making the final selection of the system and Product and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application and follow applicable industry standards and Product information. If Seller provides Product or system options, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the Products or systems.
- 9. Loss to Buyer's Property.** Any designs, tools, patterns, materials, drawings, confidential information or equipment furnished by Buyer or any other items which become Buyer's property, may be considered obsolete and may be destroyed by Seller after two consecutive years have elapsed without Buyer placing an order for the items which are manufactured using such property. Seller shall not be responsible for any loss or damage to such property while it is in Seller's possession or control.
- 10. Special Tooling.** A tooling charge may be imposed for any special tooling, including without limitation, dies, fixtures, molds and patterns, acquired to manufacture Products. Such special tooling shall be and remain Seller's property notwithstanding payment of any charges by Buyer. In no event will Buyer acquire any interest in apparatus belonging to Seller which is utilized in the manufacture of the Products, even if such apparatus has been specially converted or adapted for such manufacture and notwithstanding any charges paid by Buyer. Unless otherwise agreed, Seller shall have the right to alter, discard or otherwise dispose of any special tooling or other property in its sole discretion at any time.
- 11. Buyer's Obligation; Rights of Seller.** To secure payment of all sums due or otherwise, Seller shall retain a security interest in the goods delivered and this agreement shall be deemed a Security Agreement under the Uniform Commercial Code. Buyer authorizes Seller as its attorney to execute and file on Buyer's behalf all documents Seller deems necessary to perfect its security interest. Seller shall have a security interest in, and lien upon, any property of Buyer in Seller's possession as security for the payment of any amounts owed to Seller by Buyer.
- 12. Improper use and Indemnity.** Buyer shall indemnify, defend, and hold Seller harmless from any claim, liability, damages, lawsuits, and costs (including attorney fees), whether for personal injury, property damage, patent, trademark or copyright infringement or any other claim, brought by or incurred by Buyer, Buyer's employees, or any other person, arising out of: (a) improper selection, improper application or other misuse of Products purchased by Buyer from Seller; (b) any act or omission, negligent or otherwise, of Buyer; (c) Seller's use of patterns, plans, drawings, or specifications furnished by Buyer to manufacture Product; or (d) Buyer's failure to comply with these terms and conditions. Seller shall not indemnify Buyer under any circumstance except as otherwise provided.
- 13. Cancellations and Changes.** Orders shall not be subject to cancellation or change by Buyer for any reason, except with Seller's written consent and upon terms that will indemnify, defend and hold Seller harmless against all direct, incidental and consequential loss or damage. Seller may change product features, specifications, designs and availability with notice to Buyer.
- 14. Limitation on Assignment.** Buyer may not assign its rights or obligations under this agreement without the prior written consent of Seller.
- 15. Entire Agreement.** This agreement contains the entire agreement between the Buyer and Seller and constitutes the final, complete and exclusive expression of the terms of the agreement. All prior or contemporaneous written or oral agreements or negotiations with respect to the subject matter are herein merged.
- 16. Waiver and Severability.** Failure to enforce any provision of this agreement will not waive that provision nor will any such failure prejudice Seller's right to enforce that provision in the future. Invalidation of any provision of this agreement by legislation or other rule of law shall not invalidate any other provision herein. The remaining provisions of this agreement will remain in full force and effect.
- 17. Termination.** This agreement may be terminated by Seller for any reason and at any time by giving Buyer thirty (30) days written notice of termination. In addition, Seller may by written notice immediately terminate this agreement for the following: (a) Buyer commits a breach of any provision of this agreement (b) the appointment of a trustee, receiver or custodian for all or any part of Buyer's property (c) the filing of a petition for relief in bankruptcy of the other Party on its own behalf, or by a third party (d) an assignment for the benefit of creditors, or (e) the dissolution or liquidation of the Buyer.
- 18. Governing Law.** This agreement and the sale and delivery of all Products hereunder shall be deemed to have taken place in and shall be governed and construed in accordance with the laws of the State of Ohio, as applicable to contracts executed and wholly performed therein and without regard to conflicts of laws principles. Buyer irrevocably agrees and consents to the exclusive jurisdiction and venue of the courts of Cuyahoga County, Ohio with respect to any dispute, controversy or claim arising out of or relating to this agreement. Disputes between the parties shall not be settled by arbitration unless, after a dispute has arisen, both parties expressly agree in writing to arbitrate the dispute.
- 19. Indemnity for Infringement of Intellectual Property Rights.** Seller shall have no liability for infringement of any patents, trademarks, copyrights, trade dress, trade secrets or similar rights except as provided in this Section. Seller will defend and indemnify Buyer against allegations of infringement of U.S. patents, U.S. trademarks, copyrights, trade dress and trade secrets ("Intellectual Property Rights"). Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought against Buyer based on an allegation that a Product sold pursuant to this Agreement infringes the Intellectual Property Rights of a third party. Seller's obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of such allegations of infringement, and Seller having sole control over the defense of any allegations or actions including all negotiations for settlement or compromise. If a Product is subject to a claim that it infringes the Intellectual Property Rights of a third party, Seller may, at its sole expense and option, procure for Buyer the right to continue using the Product, replace or modify the Product so as to make it noninfringing, or offer to accept return of the Product and return the purchase price less a reasonable allowance for depreciation. Notwithstanding the foregoing, Seller shall have no liability for claims of infringement based on information provided by Buyer, or directed to Products delivered hereunder for which the designs are specified in whole or part by Buyer, or infringements resulting from the modification, combination or use in a system of any Product sold hereunder. The foregoing provisions of this Section shall constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for infringement of Intellectual Property Rights.
- 20. Taxes.** Unless otherwise indicated, all prices and charges are exclusive of excise, sales, use, property, occupational or like taxes which may be imposed by any taxing authority upon the manufacture, sale or delivery of Products.
- 21. Equal Opportunity Clause.** For the performance of government contracts and where dollar value of the Products exceed \$10,000, the equal employment opportunity clauses in Executive Order 11246, VEVRAA, and 41 C.F.R. §§ 60-1.4(a), 60-741.5(a), and 60-250.4, are hereby incorporated.