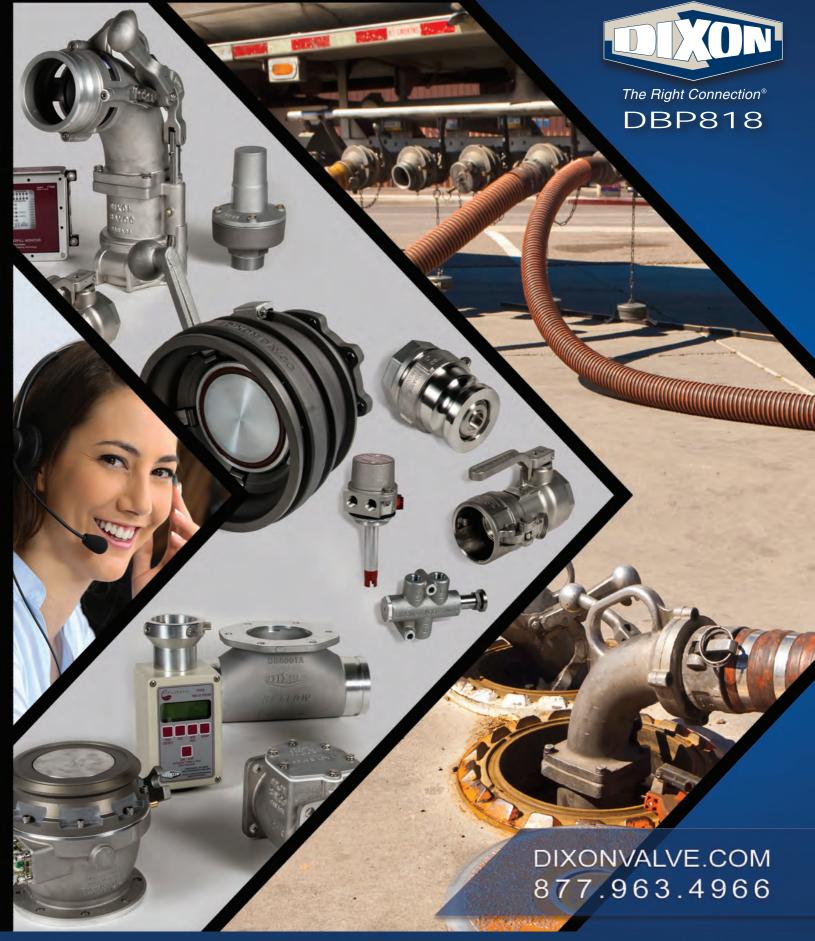
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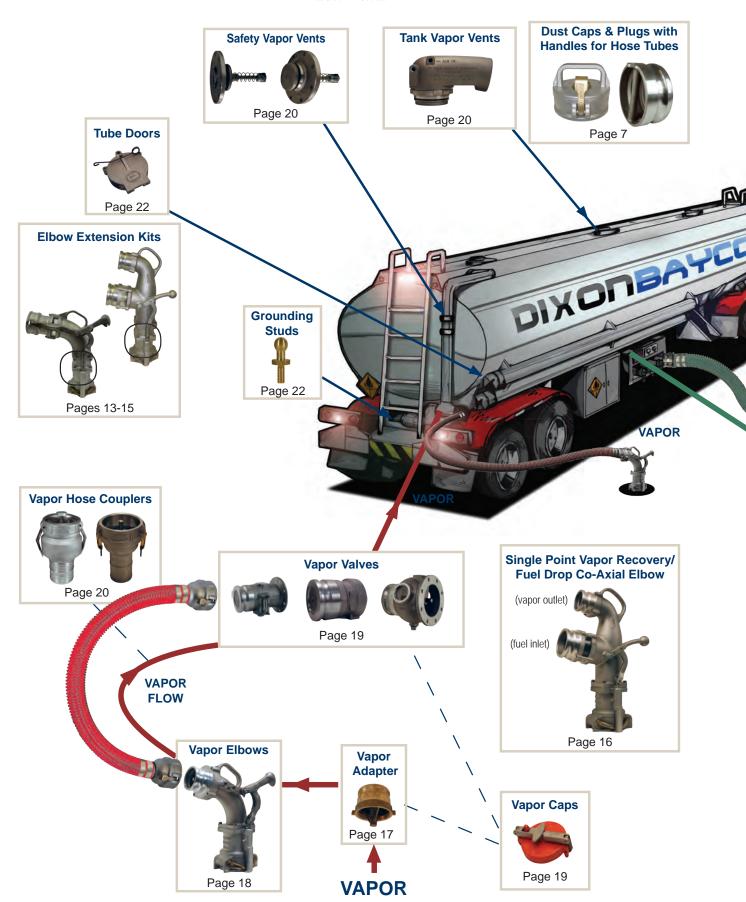
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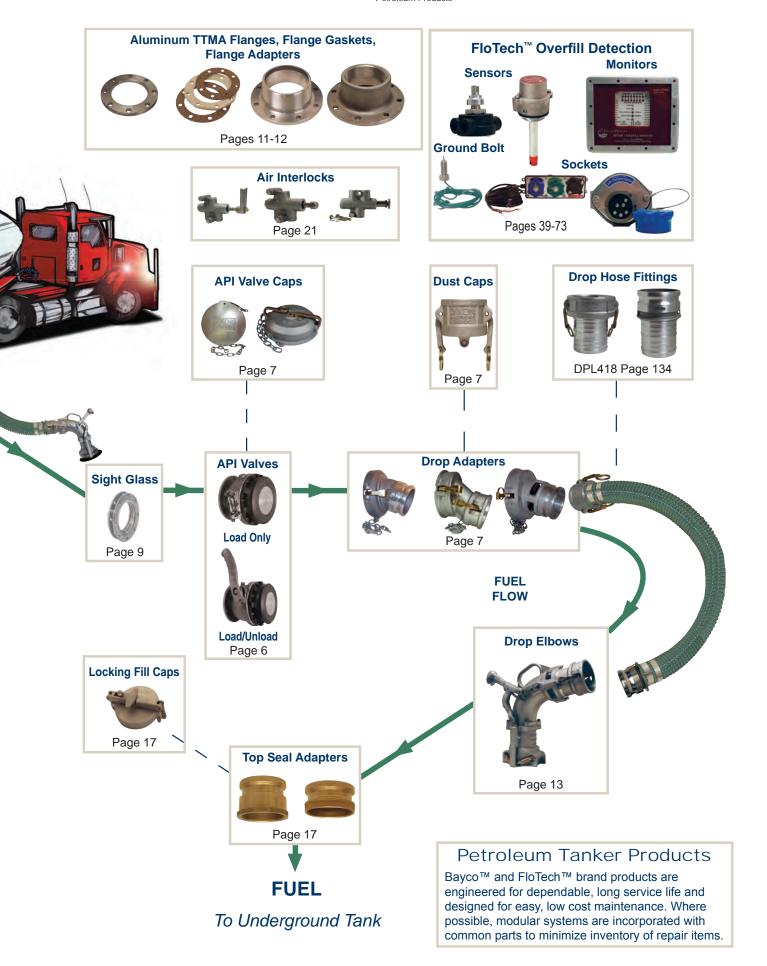
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#### We Commit

- To ensure that internal and external customer needs are identified and that our products and services meet these needs.
- To fully meet and exceed the requirements of the ISO 9001 Quality Program.
- To strive for quality in each and every phase of our business.
- To exceed competitor's quality.
- To provide systems and training for all Dixon® employees.
- To create an environment that will allow each employee to do it right the first time, and accept the responsibility for quality in each and every task they perform.
- That no employee will ever be called on to do anything morally, legally or ethically wrong.



From **Underground Tank** 



# Dixon Bayco Fuel Compatibility Chart

|  |          | Biofuel Compatible  |          |        | Fuel Product <sup>1</sup> |              |     |     |          |          |          |          |          |
|--|----------|---|----------|--------|---------------------------|--------------|-----|-----|----------|----------|----------|----------|----------|
| Dixon Bayco Product  | Page #   | Description   | Gasoline | Diesel | ULSD                      | Crude<br>Oil | E10 | E20 | E85      | E100     | B2       | B20      | B100     |
| 4500 Series  | 7        | wo piece API drop adapter with sight glass, Baylast™ seals  |          | 1      | 1                         | 1            | 1   | 1   | 1        | 1        | 1        | 1        | /        |
| 4500V Series   | 7        | wo piece API drop adapter with sight glass, fkm seals   |          | 1      | 1                         | 1            | NR  | NR  | NR       | NR       | 1        | 1        | 1        |
| 4530 & 4540  | 7        | API drop adapter without sight glass, Baylast™ seals  | 1        | 1      | 1                         | 1            | 1   | 1   | 1        | 1        | 1        | 1        | /        |
| 4530V & 4540V  | 7        | API drop adapter without sight glass, fkm seals   | 1        | 1      | 1                         | 1            | NR  | NR  | NR       | NR       | 1        | 1        | 1        |
| 4530SG & 4540SG  | 7        | one piece API drop adapter with sight glass, Buna seals   | 1        | 1      | 1                         | NR2          | 1   | 1   | 1        | 1        | 1        | 1        | NF       |
| 4530SGV & 4540SGV  | 7        | one piece API drop adapter with sight glass, FKM seals  | 1        | 1      | 1                         | 1            | NR  | NR  | NR       | NR       | 1        | 1        | 1        |
| 5200SFI & 5200SFI-3  | 7        | TTMA flanged sight glass with Baylast™ seals  | 1        | 1      | 1                         | NR2          | 1   | 1   | 1        | 1        | 1        | 1        | 1        |
| 5200SFIV & 5200SFIV-3  | 7        | TTMA flanged sight glass with fkm seals   | 1        | 1      | /                         | NR2          | NR  | NR  | NR       | NR       | 1        | 1        | 1        |
| 5204   | 6        | API valve with sight glass, Baylast™ seals  | 1        | 1      | 1                         | NR2          | 1   | 1   | NR       | NR       | 1        | 1        | 1        |
| 5204C  | 6        | API valve with sight glass & removable handle, Baylast™ seals   | 1        | 1      | 1                         | NR2          | 1   | 1   | NR       | NR       | 1        | 1        | 1        |
| 5204L  | 6        | API load only valve with sight glass, Baylast™ seals  | 1        | 1      | 1                         | NR2          | 1   | 1   | NR       | NR       | 1        | 1        | 1        |
| 5204LNG  | 6        | API load only valve without sight glass, Baylast™ seals   | 1        | 1      | /                         | NR2          | 1   | 1   | 1        | 1        | 1        | 1        | 1        |
| 5204NG   | 6        | API valve without sight glass, Baylast™ seals   | 1        | 1      | /                         | NR2          | 1   | 1   | 1        | 1        | 1        | 1        | 1        |
| 5204NGC  | 6        | API valve without sight glass, removable handle, Baylast™ seals   |          | 1      | 1                         | NR2          | 1   | 1   | 1        | 1        | 1        | 1        | 1        |
| 5204NGV  | 6        | API valve without sight glass, FKM seals  | 1        | 1      | /                         | NR2          | NR  | NR  | NR       | NR       | 1        | 1        | 1        |
| 5204SFI  | 6        | API valve with inline tube sight glass, Baylast™ seals  | 1        | 1      | 1                         | NR2          | 1   | 1   | 1        | 1        | 1        | 1        | 1        |
| 5204SNG  | 6        | API valve without sight glass, Baylast™ seals, stainless spring   | /        | 1      | /                         | 1            | 1   | ./  | 1        | 1        | 1        | 1        | /        |
| 5204TNG  | 6        | APT valve without sight glass, Baylast — seals, stainless spring  APT valve without sight glass, PTFE seals  NR |          | Ť      | NR1                       | _            | NR1 | NR1 | NR1      | •        | -        | NR1      | /        |
| 5300 & 5400  | 27       | API rack coupling Buna seals  | <b>√</b> | 1      | ✓                         | NR           | 1   | 1   | ✓        | 1        | 1        | 1        | NR       |
| 5300B & 5400B  | 27       | API rack coupling FKM-B seals   |          | 1      | <b>√</b>                  | NR           | 1   | 1   | 1        | 1        | <b>✓</b> | <b>√</b> | ✓        |
| 5300G & 5400G  | 27       | API rack coupling FKM gflt seals  |          | 1      | ✓<br>✓                    | NR           | 1   | /   | 1        | 1        | ✓<br>✓   | 1        | 1        |
| 6000, 6200 & 6500 Series Drop Elbows   | 11,12    |   |          |        | ✓<br>✓                    | NA           |     | 1   | 1        | 1        | ✓<br>✓   | 1        | NR       |
| Vapor or Product Hose Couplings  | 17       |   | 1        | 1      |                           |              | 1   |     |          | -        |          | /        | NF       |
|  |          | petroleum vapor hose couplings, Buna seals petroleum vapor hose couplings, fkm seals                            |          | 1      | 1                         | 1            | ND. | ND  | <b>√</b> | <b>√</b> | /        | 1        |          |
| Vapor or Product Hose Couplings  | 17       |   |          | 1      | 1                         | <b>√</b>     | NR  | NR  | NR       | NR       | /        | <b>√</b> | /        |
| /R4000 & VR4100 Series Vapor Valves<br>/R6100, VR6200 & VR6500 Vapor<br>Elbows | 17<br>16 | petroleum vapor valves  petroleum vapor elbows & inlets   |          | 1      | 1                         | NA NA        | 1   | 1   | 1        | NA       | 1        | 1        | NA<br>NA |
| /R6030SQ & VR6035SQ  | 18       | seguential vapor vent valves, Baylast™ seals  | /        | 1      | 1                         | 1            | 1   | 1   | 1        | 1        | 1        | 1        | 1        |
| 300GTTFCB & 400GTTFCB  | 10       | cork Buna TTMA gasket   | 1        | 1      | 1                         | 1            | 1   | NR  | NR       | NR       | 1        | NR       | NF       |
| 300GTTFBL & 400GTTFBL  | 10       | TTMA Baylast™ gasket  | 1        | 1      | 1                         | 1            | 1   | 1   | 1        | 1        | 1        | 1        | /        |
| 400GTTFK   | 10       | Klinger® style TTMA gasket  | 1        | 1      | 1                         | 1            | 1   | 1   | 1        | 1        | 1        | 1        | 1        |
| 10321TF, 40322TF & 40323TF   | 10       | PTFE soft core TTMA gaskets   | /        | 1      | /                         | 1            | 1   | 1   | 1        | 1        | 1        | 1        | /        |
| 1002111, 1002211 & 1002011   | 10       | Baylast™ sump gaskets   | 1        | 1      | 1                         | 1            | 1   | 1   | 1        | 1        | 1        | 1        | /        |
| 10364RI & 40323RI  | 10       | FloTech™ sensors  | <b>✓</b> | 1      | <b>√</b>                  | <b>√</b>     | 1   | /   | 1        | 1        | 1        | <b>√</b> | /        |
| 40364BL & 40323BL<br>FT151,FT202,FT101   | 11 16 10 |   | ~        | · •    | ~                         | ~            | V   | V   | V        | V        | V        | •        | V        |

2% Bio diesel, 98% diesel (normally ULSD as above) 20% Bio diesel, 80% diesel (normally ULSD as above)

100% Bio diesel

<sup>&</sup>lt;sup>1</sup> Petroleum companies often put additives in fuels, additives can affect compatibility with fittings and seals, Please contact Dixon® for more information. FKM GFLT is compatible with all liquids listed above and available from Dixon® by special quotation. Baylast™ is a proprietary seal compound from Dixon®.

# Dixon Bayco Bottom Loading, Gasket and Seal Recommendations For Alternative Fuels

Dixon® has completed several years of testing and engineering evaluation to ensure our products are compatible with all modern motor fuels in use today.

Dixon® uses a proprietary seal compound that we refer to by the trade name Baylast™. Baylast™ has been tested both in the lab and field with excellent results. Baylast™ was developed so we could offer a single seal material compatible with the wide range of alternative fuels used today. Many Dixon Bayco products have been using Baylast™ seals to ensure compatibility with alternate fuels including E100 Ethanol, E85 Ethanol, B2 Bio diesel, B100 Bio diesel, Ultra Low Sulfur Diesel, and standard refined gasoline and diesel products with excellent results. Our tests indicate that Baylast™ performs well down to -40°F (-40°C).

There are mechanical and temperature considerations that must be understood to determine which seal material is suitable for a specific application. A good example is PTFE, it has a very wide chemical compatibility range but is a poor seal material for mechanical reasons. Using FKM-B, or FKM GF is one solution to ensure compatibility, but FKM has limitations regarding mechanical suitability for seal applications with moving joints. One critical and well known limitation to FKM is cold temperature. FKM will become hard at low temperatures and seals with moving parts tend to weep liquid.

On the opposing page is our fuel compatibility chart which outlines our recommendation for each Dixon Bayco product and type of fuel.

Should you have any questions or need additional technical support, please call Dixon<sup>®</sup> at: 877.963.4966.

# Supertanker™ Program



Visit dixonvalve.com/supertanker for more information.

#### API Valves

|                      | AFI Valves  |
|----------------------|---|
| Application:         | Used for bottom loading and unloading of petroleum tankers, API valves are typically mounted to the piping below each tank compartment, using the built in 4" TTMA flange connection.  Two styles are available:  1) Load only (without handle) which permits terminal loading only. Tanker unloading would be achieved through another tank connection.  2) Load/unload (with a handle) which permits both terminal loading, and fuel unloading through the valve.   |
| Standards:           | Manufactured to American Petroleum Institute standard API RP-1004, which allows for positive connection to drop adapters and rack couplers such as the Dixon Bayco 5300/5400 series rack coupler.   |
| Materials:           | Aluminum body, and handle. <sup>1</sup> Anodized Hard Coat Aluminum nose ring. Stainless steel hardware. Baylast <sup>TM 1</sup> , FKM <sup>1</sup> and PTFE seals <sup>1</sup> . Nylon sight glass <sup>1</sup> . Acrylic full body sight glass.   |
| Features & Benefits: | <ul> <li>Unique fluid flow sight level <sup>1</sup></li> <li>Ergonomically curved handle operates on a short 62° degree stroke (removable on some models <sup>1</sup>)</li> <li>Any required maintenance is simplified, Dixon Bayco API Valves can be completely rebuilt without the need to remove the valve from the tanker <sup>1</sup>.</li> <li>Nose ring is anodized hard coat aluminum for years of trouble free service. Nose ring can be rotated to provide a fresh connection surface.</li> <li>Biofuel Compatible, up to E100 (100% Ethanol) <sup>1</sup> and B100 (100% Bio Diesel). For detailed fuel compatibility, please refer to the chart shown on page 4.</li> <li>Maximum working pressure 75 PSI.</li> <li>Units with sight glass max 140°F (60°C).</li> </ul> |



5204



5204SFI

# <sup>1</sup> Dependent upon part #, see part number list below for more details **Load/Unload Valves**

|           | Eoda/Officaa  |                   |   |
|-----------|---|-------------------|---|
| Part #    | Description   | Overall<br>Length | Fuel Compatibility  |
| 5204NG    | fixed handle with Baylast™ seals (no sight glass)                               | 7"                | Gasoline and diesel,  |
| 5204NGC   | Canadian API with Baylast™ seals (no sight glass)                               | 7"                | up to E100 and B100 biofuels                                |
| 5204      | fixed handle, Baylast™ seals and sight glass                                    | 7"                |   |
| 5204P     | fixed handle, Baylast™ seals and sight glass, drilled / tapped boss             | 7"                | Gasoline and diesel,<br>up to E20 and B100 biofuels         |
| 5204C     | Canadian API with Baylast™ seals and sight glass                                | 7"                |   |
| 5204SNG   | fixed handle, Baylast™ seals and stainless steel spring (no sight glass)        | 7"                | Crude oil, gasoline and diesel, up to E20 and B100 biofuels |
| 5204TNG   | fixed handle with PTFE seals (no sight glass)                                   | 7"                | B100 bio diesel   |
| 5204NGV   | fixed handle with FKM seals (no sight glass)                                    | 7"                | Gasoline and diesel, up to B100 bio diesel                  |
| 5204SFI   | fixed handle, Baylast™ seals and inline full body sight glass                   | 8.81" 2           | Casalina and diase!   |
| 5204SFI-P | fixed handle, Baylast™ seals and inline full body sight glass, drilled / tapped | 8.81" 2           | Gasoline and diesel,<br>up to E100 and B100 biofuels        |

Overall length of 5204SFI is the same as a 5204 API valve, gasket and 1¾" sight flow indicator combined
Load Only Valves



5204L

| Part #   | Description   | Overall<br>Length | Fuel Compatibility  |
|----------|---|-------------------|---|
| 5204LNG  | Baylast™ seals (no sight glass)                       | 7"                | Gasoline and diesel, up to E100 and B100 biofuels           |
| 5204LSNG | Baylast™ seals (no sight glass) with stainless spring | 7"                | Crude oil, gasoline and diesel, up to E20 and B100 biofuels |
| 5204L    | Baylast™ seals and sight glass                        | 7"                | Gasoline and diesel, up to E20 and B100 biofuels            |

See page 12 for TTMA flange gaskets. See pages 79 and 80 for bill of materials and repair kits. Biofuel Compatible, see fuel compatibility chart on page 4 for more information.



# **API Dust Caps**









| 5205 | 5000-24 | 5000-25 | 5000-24L |
|------|---------|---------|----------|
|      |         |         |          |

| Part #   | Description  |  |
|--|--|--|
| 5205   | aluminum API cap with flat buna gasket, with nylon quick release lever |  |
| 5000-24 ¹ aluminum API cap with O-ring Baylast™ seal, with brass cam arms              |  |  |
| 5000-25 nylon API cap with flat buna seal, with plated steel padlock-able roller lever |  |  |
| 5000-24L ¹ aluminum API cap with O-ring Baylast™ seal, with brass locking cam arms     |  |  |

<sup>&</sup>lt;sup>1</sup> FKM seal available

See pages 81 and 82 for repair parts.

### **API Drop Adapters**

· Maximum allowable operating pressure 75 PSI.











| The state of the s | Order . |      |       | •        |
|--|---------|------|-------|----------|
| 4540   | 4540SG  | 4502 | 4540F | 4504ASSM |

| Part #   | Description   | Fuel Compatibility                                   |  |
|----------|---|--|--|
| 4530     | API to 3" drop adapter, Baylast™ O-ring seal                                |  |  |
| 4530SG   | API to 3" drop adapter, Baylast™ flat gasket, in line sight glass           | Gasoline and diesel,<br>up to E100 and B100 biofuels |  |
| 4540     | API to 4" drop adapter, Baylast™ O-ring seal                                | ap to 2 700 and 5 700 biolable                       |  |
| 4540V    | API to 4" drop adapter, FKM O-ring seal                                     | Gasoline and diesel, up to B100 bio diesel           |  |
| 4540SG   | API to 4" drop adapter, Baylast™ flat gasket, one piece, inline sight glass | Gasoline and diesel,                                 |  |
| 4502     | API to 4" drop adapter, Buna-N seals, two piece design with sight glass     | up to E100 and B100 biofuels                         |  |
| 4540SGV  | API to 4" drop adapter, FKM flat gasket, inline sight glass                 | Gasoline and diesel, up to B100 bio diesel           |  |
| 4540F    | API to 4" drop coupler, Buna-N gasket                                       |  |  |
| 4502ASSM | API to 4" drop adapter, Baylast™ O-ring w/ sight glass, two piece design    | Gasoline and diesel,<br>up to E100 and B100 biofuels |  |
| 4504ASSM | API to 4" drop coupler, Buna-N gasket w/ sight glass, two piece design      | ap to 2100 and 5100 biolicis                         |  |

Visit dixonvalve.com for replaceable seal part number 2143SEALBU

# **Dust Caps and Dust Plugs with Handle**

| Part #      | Size | Description        |
|-------------|------|--------------------|
| 300-DC-ALPH | 3"   | aluminum dust cap  |
| 300-DP-ALPH | 3"   | aluminum dust plug |
| 400-DC-ALPH | 4"   | aluminum dust cap  |
| 400-DP-ALPH | 4"   | aluminum dust plug |









300-DC-ALPH

400-DC-ALPH

300-DP-ALPH 400-DP-ALPH

### **Gravity Drop Adapters**







41440-225AL

40447ST

| Part #      | Description                                       | Fuel Compatibility                                   |
|-------------|---|--|
| 31440-225AL | 4" API to 3" drop adapter with Buna-N flat gasket |  |
| 41440-225AL | 4" API to 4" drop adapter with Buna-N flat gasket | Gasoline and diesel,<br>up to E100 and B100 biofuels |
| 40447ST     | 17" heavy duty chain                              | up to 2100 and 5100 biolicis                         |

See page 85 for repair parts/kits.







4540DC

4540DC-1200

| Part #      | Description                          |
|-------------|--------------------------------------|
| 4540DC      | 4" nylon light weight cap            |
| 4540DC-1200 | 4" nylon light weight cap with chain |

Not intended to be pressurized.



### **TTMA Flanged Sight Flow Indicators**

#### Features & Benefits:

• Due to the proprietary blending of petroleum products, Dixon® recommends that the thermoplastic tubing and the gaskets be immersion tested in the product to be handled to ensure compatibility (not compatible with crude oil).



- · Durable cast aluminum housing replaces competitions all acrylic sight glass commonly found on tank trucks
- · Allows for visual identification of the fuel grade prior to opening the valve
- · Works with tank truck flanged butterfly valves found on gasoline trucks
- Low cost sight glass tube can be easily replaced
- Rated to 150 PSI







5200-SFI shown mounted on petroleum tank

5200-SFI

5200-SPC

| Part #                   | Description  | Fuel Compatibility   |
|--------------------------|--|--|
| 5200-SFI-3               | 3" TTMA flange sight flow, 13/4" width, 31/2" inside diameter                    | Gasoline and diesel, up to E100 and B100 biofuels            |
| 5200C-SFI-3 <sup>1</sup> | 3" TTMA flange sight flow, 1¾" width, 3½" inside diameter, stainless retain ring | Gasoline and diesel, up to E100 and B100 biofuels, crude oil |
| 5200-SFI                 | 4" TTMA flange sight flow, 13/4" width, 43/6" inside diameter                    | Casalina and dissal  |
| 5200-SFIV                | 4" TTMA flange sight flow, 1¾" width, 4¾" inside diameter, FKM seals             | Gasoline and diesel,<br>up to E100 and B100 biofuels         |
| 5200C-SFI <sup>1</sup>   | 4" TTMA flange sight flow, 1¾" width, 4¾" inside diameter, stainless retain ring | Gasoline and diesel up to E100 and B100 biofuels, crude oil  |
| 5200-SPC                 | 4" aluminum TTMA pattern solid flanged spacer (no sight glass)                   | All fuels  |

<sup>&</sup>lt;sup>1</sup> Compatible with crude oil

Note: Maximum flange bolt torque is 200 in-lb (inch pounds)



See page 87 for sight glass repair kits

### **TTMA Flanged Sight Flow Indicators**

#### Features & Benefits:

• Due to the proprietary blending of petroleum products, Dixon® recommends that the thermoplastic tubing and the gaskets be immersion tested in the product to be handled to ensure compatibility (not compatible with crude oil).

- Allows for visual identification of the fuel grade prior to opening the valve
- Works with tank truck flanged butterfly valves found on gasoline trucks
- Larger ID 4%" flow indicator allows tank truck flanged butterfly valves to connect to either end of the indicator
- Maximum working pressure: 150 PSI, TTMA flanges: 100 PSI



5201-SFI

| Part #     | Description   | Fuel Compatibility           |  |  |
|------------|---|------------------------------|--|--|
| 5201-SFI   | 4" TTMA flange sight flow, 31/4" width, 43/6" inside diameter | Gasoline and diesel,         |  |  |
| 5201-SFI-3 | 3" TTMA flange sight flow, 31/4" width, 31/2" inside diameter | up to E100 and B100 biofuels |  |  |

Note: Maximum flange bolt torque is 200 in-lb (inch pounds)







5201-CA

| Part #   | Description   | Fuel Compatibility                                   |
|----------|---|--|
| 5201CA   | 4" hose inline sight glass with 4" cam & groove adapter x coupler |  |
| 5201CA-3 | 3" sight flow indicator 3" coupler x 3" adapter                   | Gasoline and diesel,<br>up to E100 and B100 biofuels |
| 5201CC   | sight flow indicator 4" coupler x 4" coupler                      | up to E 100 and B 100 biolicis                       |

See page 87 for sight glass repair kits.

#### **Product Indicators**

| Features & Benefits: | <ul> <li>weight: 1½ lbs</li> <li>dimensions: 8" x 3" x 2½" (L x W x H)</li> <li>capable of displaying 8 user selectable product identification labels</li> <li>can be mounted in typical locations near API with standard bolt hole pattern</li> <li>customizable label sheets are sold in packs of 10.</li> </ul> |
|----------------------|--|
| Material:            | polished cast aluminum   |







DBPI080

DBPI080-MINI

| Part #       | Description  |  |  |
|--------------|--|--|--|
| DBPI080      | petroleum product indicator (includes empty, ethanol, diesel, U.L.S.D., reg unleaded, plus unleaded, premium unleaded, jet fuel) |  |  |
| DBPI080L     | petroleum product indicator, left handed, dual knob  |  |  |
| 40462VY      | product indicator base label   |  |  |
| DBPI080-MINI | mini petroleum product indicator, 4.5" x 2.125" x 2.25", wt 10 oz.   |  |  |

# **TTMA Flanges**











TTF4AL-4MT

TTF4AL-4EMT

TTF4AL-4FT

TTF4AL

TTF400SP

| Part #       | Description  | Fuel Compatibility                                   |  |
|--------------|--|--|--|
| TTF3AL-3MT   | 3" TTMA flange x 3" male NPT, 21/2" overall length             |  |  |
| TTF4AL-3MT   | 4" TTMA flange x 3" male NPT, 21/2" overall length             |  |  |
| TTF4ALHC-3MT | 4" TTMA flange x 3" male NPT, 21/2" overall length, hardcoated |  |  |
| TTF4AL-3EMT  | 4" TTMA flange x 3" male NPT, 51/2" overall length             |  |  |
| TTF4AL-3FT   | 4" TTMA flange x 3" female NPT, 21/2" overall length           |  |  |
| TTF4AL-4MT   | 4" TTMA flange x 4" male NPT, 21/2" overall length             | Gasoline and diesel,<br>up to E100 and B100 biofuels |  |
| TTF4ALHC-4MT | 4" TTMA flange x 4" male NPT, 21/2" overall length, hardcoated |  |  |
| TTF4AL-4EMT  | 4" TTMA flange x 4" male NPT, 51/2" overall length             |  |  |
| TTF4AL-4FT   | 4" TTMA flange x 4" female NPT, 21/2" overall length           |  |  |
| TTF3AL       | 3" TTMA butt weld on flange                                    |  |  |
| TTF4AL       | 4" TTMA butt weld on flange                                    |  |  |
| TTF300SP     | 3" TTMA socket weld on flange                                  |  |  |
| TTF400SP     | 4" TTMA socket weld on flange                                  |  |  |

# **Cam and Groove x TTMA Flanges**









400-ALT-AL

4022ALTAL

400-DLT-AL

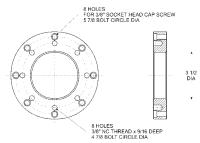
4022DLTAL

| Part #     | Description  | Fuel Compatibility                                   |  |  |
|------------|--|--|--|--|
| 300-ALT-AL | 3" cam and groove adapter (straight) x 3" TTMA flange  |  |  |  |
| 3040ALTAL  | 3" cam and groove adapter (straight) x 4" TTMA flange  |  |  |  |
| 400-ALT-AL | 4" cam and groove adapter (straight) x 4" TTMA flange  | Gasoline and diesel,<br>up to E100 and B100 biofuels |  |  |
| 40022ALTAL | 4" cam and groove adapter (22½°) x 4" TTMA flange      | ap to 2 for and 5 for biolacie                       |  |  |
| 600-ALT-AL | 6" cam and groove adapter (straight) x 6" TTMA flange  |  |  |  |
| 300-DLT-AL | 3" cam and groove coupler (straight) x 3" TTMA flange  |  |  |  |
| 3040DLTAL  | 3" cam and groove coupler x 4" round tank truck flange |  |  |  |
| 400-DLT-AL | 4" cam and groove coupler (straight) x 4" TTMA flange  | Gasoline and diesel,<br>up to E85 and B20 biofuels   |  |  |
| 40022DLTAL | 4" cam and groove coupler (22½°) x 4" TTMA flange      | ap to 200 and 520 bioleolo                           |  |  |
| 600-DLT-AL | 6" cam and groove coupler (straight) x 6" TTMA flange  |  |  |  |

# **TTMA Flange Reducer**





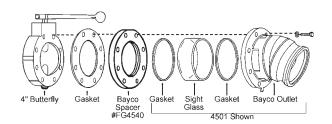


| Part # Description |                                  | Fuel Compatibility                                   |
|--------------------|----------------------------------|--|
| 4443               | 4" TTMA x 3" TTMA reducer flange | Gasoline and diesel,<br>up to E100 and B100 biofuels |

### **TTMA Butterfly Valve Spacer**



FG4540



| Part # | Description           | Fuel Compatibility                                   |
|--------|-----------------------|--|
| FG4540 | 4" TTMA flange spacer | Gasoline and diesel,<br>up to E100 and B100 biofuels |

### **API and TTMA Flange Gaskets**



| Part #    | Size | Description                          | OD       | ID      | Thickness | Bolt<br>Circle | Fuel Compatibility                                   |
|-----------|------|--------------------------------------|----------|---------|-----------|----------------|--|
| 300GTTFCB | 3"   | TTMA - Cork/Buna                     | 5-5/8"   | 3½"     | 1/8"      | 4-7/8"         |  |
| 300GTTFBL | 3"   | TTMA - Baylast™                      | 5-5/8"   | 3-5/8"  | 1/8"      | 4-7/8"         | Gasoline and diesel,<br>up to E10 and B2 biofuels    |
| 300GTTFK  | 3"   | TTMA Klinger nylon                   | 5-5/8"   | 3½"     | 1/8"      | 4-7/8"         | up to 2 to and 32 storagio                           |
| 40321TF   | 3"   | TTMA - PTFE with soft fiber core     | 5-29/32" | 3½"     | 3/32"     | 4-7/8"         | Gasoline and diesel,<br>up to E100 and B100 biofuels |
| 40364TF   | 3"   | API Sump - PTFE with soft fiber core | 71/4"    | 5"      | 5/32"     | 61/4"          |  |
| 40364BL   | 3"   | API Sump - Baylast™                  | 71/4"    | 5"      | 1/8"      | 61/4"          | Gasoline and diesel,<br>up to E10 and B2 biofuels    |
| 400GTTFCB | 4"   | TTMA - Cork/Buna                     | 6-5/8"   | 4-9/16" | 1/8"      | 5-7/8"         |  |
| 400GTTFBL | 4"   | TTMA - Baylast™                      | 6-5/8"   | 4-5/8"  | 1/8"      | 5-7/8"         |  |
| 400GTTFK  | 4"   | TTMA Klinger nylon                   | 6-5/8"   | 4-9/16" | 1/8"      | 5-7/8"         |  |
| 40322TF   | 4"   | TTMA - PTFE with soft fiber core     | 6-7/8"   | 4-5/8"  | 3/32"     | 5-7/8"         | Gasoline and diesel,<br>up to E100 and B100 biofuels |
| 40323TF   | 4"   | API Sump - PTFE with soft fiber core | 8-3/8"   | 5-7/8"  | 5/32"     | 71/4"          |  |
| 40323BL   | 4"   | API Sump - Baylast™                  | 81⁄4"    | 61/8"   | 1/8"      | 71/4"          | Gasoline and diesel,<br>up to E10 and B2 biofuels    |

# Fuel Delivery

### 6200 and 6500 Series- Fuel Delivery Elbows

#### Features & Benefits:

#### 6200 Series:

- · Available in standard or tall heights to accommodate deep fill boxes
- Rugged modular cast aluminum construction
- Most parts are common throughout the Bayco elbow line, making any necessary maintenance a breeze.
- Grease nipple enables the greasing of the lever stem, and acetal bushings help keep everything moving smoothly, even in the harshest of conditions.
- · Bolt on inlets allow the inlet to be changed without having to worry about galling of threaded inlets.
- Ball handle lever enables the operator to easily and positively engage the solid bronze locking arms, onto the underground adapter.
- Biofuel compatible up to E100 (100% Ethanol) and B20 (20% Bio Diesel). For detailed fuel compatibility, please refer to the chart shown on page 4.

#### 6500 Series: Features all of the benefits of the 6200 series plus-

- Heavy duty bolt on arm attachment plate increases the strength of the lever pivot. There are no impact susceptible pivot bolts, or casting bosses to break.
- Arm hinge points use a double yoke design, which increases the arm strength.
- Built in heavy duty, locking mechanism prevents accidental elbow disconnections while the elbow is in service. No need for the operator to engage the locking mechanism, just move the handle to the closed position and the lock automatically engages. Releasing the lock is equally as easy, just gripping the handle and lifting. The locking mechanism has lots of free clearance so will not be affected by dirt, ice or snow. (Elbow disconnections can occur on other elbow designs, from either operators bumping the release mechanism, or from a hydraulic surge when the underground storage tank overfill valve slams shut.)
- Ergonomic handle can be mounted on either side of the elbow.



D ....







| Part #  | Description  | "A"    | "B"    | Fuel Compatibility        |
|---------|--|--------|--------|---------------------------|
| 6200    | standard height elbow only, without inlet connection                           | 173/4" | 101/8" |                           |
| 6200C   | standard height elbow with 3" adapter inlet                                    | 173/4" | 101/8" |                           |
| 6200A   | standard height elbow with 4" adapter inlet                                    | 173/4" | 101/8" |                           |
| 6200B   | standard height elbow with 3" coupler inlet                                    | 173/4" | 101/8" |                           |
| 6200D   | standard height elbow with 4" coupler inlet                                    | 173/4" | 101/8" |                           |
| 6200T   | elbow with anti-spill sleeve without inlet connection                          | 17¾"   | 10%"   |                           |
| 6200AT  | elbow with 4" adapter inlet and anti-spill sleeve                              | 17¾"   | 10%"   |                           |
| 6200X   | tall height elbow only, without inlet connection                               | 21"    | 13¾"   |                           |
| 6200XC  | tall height elbow with 3" adapter inlet  | 21"    | 13¾"   |                           |
| 6200XA  | tall height elbow with 4" adapter inlet  | 21"    | 13¾"   |                           |
| 6200XB  | tall height elbow with 3" coupler inlet  | 21"    | 13¾"   |                           |
| 6200XD  | tall height elbow with 4" coupler inlet  | 21"    | 13¾"   |                           |
| 6200XT  | tall elbow with anti-spill sleeve without inlet connection                     | 21"    | 13¾"   |                           |
| 6200XAT | tall elbow with 4" adapter inlet and anti-spill sleeve                         | 21"    | 13¾"   | Gasoline and diesel,      |
| 6500    | standard height full feature elbow only, without inlet connection              | 17¾"   | 10%"   | up to E100 & B20 biofuels |
| 6500C   | standard height full feature elbow with 3" adapter inlet                       | 17¾"   | 101/8" |                           |
| 6500A   | standard height full feature elbow with 4" adapter inlet                       | 17¾"   | 101/8" |                           |
| 6500B   | standard height full feature elbow with 3" coupler inlet                       | 17¾"   | 101/8" |                           |
| 6500D   | standard height full feature elbow with 4" coupler inlet                       | 17¾"   | 10%"   |                           |
| 6500T   | elbow with locking handle and anti-spill sleeve without inlet connection       | 17¾"   | 10%"   |                           |
| 6500AT  | elbow with locking handle, 4" adapter inlet and anti-spill sleeve              | 17¾"   | 101/8" |                           |
| 6500X   | tall height full feature elbow only, without inlet connection                  | 21"    | 13¾"   |                           |
| 6500XC  | tall height full feature elbow with 3" adapter inlet                           | 21"    | 13¾"   |                           |
| 6500XA  | tall height full feature elbow with 4" adapter inlet                           | 21"    | 13¾"   |                           |
| 6500XB  | tall height full feature elbow with 3" coupler inlet                           | 21"    | 13¾"   |                           |
| 6500XD  | tall height full feature elbow with 4" coupler inlet                           | 21"    | 13¾"   |                           |
| 6500XT  | tall height full feature elbow w/locking handle, no inlet, w/anti-spill sleeve | 21"    | 13¾"   |                           |
| 6500XAT | tall elbow with locking handle, 4" adapter inlet and anti-spill sleeve         | 21"    | 13¾"   |                           |



See page 85 and 88 for repair kits and replacement parts. Product instruction sheets and technical data can be viewed on our website at dixonvalve.com

# Fuel Delivery

# **Fuel Delivery Connectors**

#### **Straight Drop Fuel Delivery Connectors**



6304NPT

| Part #  | Description                        | Overall Height | Fuel Compatibility          |
|---------|------------------------------------|----------------|-----------------------------|
| 6303    | 4" top seal with 3" adapter inlet  | 17-5/8"        |                             |
| 6304    | 4" top seal with 4" adapter inlet  | 16-3/16"       | Gasoline and diesel,        |
| 6303NPT | 4" top seal with 3" male NPT inlet | 19-3/4"        | up to E100 and B20 biofuels |
| 6304NPT | 4" top seal with 4" male NPT inlet | 19-3/16"       |                             |

See page 88 for repair kits and replacement parts.

#### **Fuel Delivery Elbow Inlets and Anti-Spill Tubes**



6000-17



6000-14



6000-20



6200-17

| Part #   | Description                            | Fuel Compatibility          |
|----------|--|-----------------------------|
| 6000-16  | 3" adapter inlet                       |                             |
| 6000-17  | 4" adapter inlet                       |                             |
| 6000-15  | 3" coupler inlet                       |                             |
| 6000-14  | 4" coupler inlet                       | Gasoline and diesel,        |
| 6000-20  | 4" female NPT inlet                    | up to E100 and B20 biofuels |
| 6000F    | inline screen for drop elbows          |                             |
| 6200-17  | anti-spill tube for 6200 and 6500      |                             |
| 6200X-17 | tall anti-spill tube for 6200 and 6500 |                             |

These inlets are for 6000, 6200 and 6500 series fuel delivery elbows only, for the 6400, series coaxial elbow inlets, refer to the inlets shown on page 15.

### **Side Seal Fuel Delivery Elbows**



6000ASC

| Part #   | Description   | Fuel Compatibility                                |
|----------|---|---|
| 6000AS   | side seal elbow without inlet connection                          |   |
| 6000ASC  | side seal elbow with 3" adapter inlet                             |   |
| 6000ASA  | side seal elbow with 4" adapter inlet                             |   |
| 6000ASB  | side seal elbow with 3" coupler inlet                             |   |
| 6000ASD  | side seal elbow with 4" coupler inlet                             |   |
| 6000AST  | side seal elbow without inlet connection, with anti-spill sleeve. | Gasoline and diesel,<br>up to E100 & B20 biofuels |
| 6000ASAT | side seal elbow with 4" adapter inlet, with antispill sleeve.     | '   |
| 6000ASAL | side seal elbow with 4" adapter inlet, with locking ring.         |   |
| 6000ASR  | optional add on locking ring. prevents levers from moving.        |   |

See page 88 for repair kits and replacement parts.

# Fuel Delivery

### **Side Seal to Top Seal Adapter**

| Part #   | Description                              | Fuel Compatibility                               |
|----------|--|--|
| 6000-SSA | top seal to side seal connection adapter | Gasoline and diesel, up to E100 and B20 biofuels |



6000SSA

# **Elbow Height Extensions**







spacer kits shown assembled to elbows

| Part #  | Description  | Fuel Compatibility          |
|---------|--|-----------------------------|
| 6000EXT | 3" height extension kit for 6200, 6500, VR6000 and VR6500 elbows. Kit includes: body and stem extensions, 4 stainless steel nuts and bolts, and stem pin.        | Gasoline and diesel,        |
| 6400EXT | 3" height extension kit for 6400 co-axial elbows. Kit includes: body and stem extensions, 4 stainless steel nuts and bolts, stem pin and replacement vapor tube. | up to E100 and B20 biofuels |

### Tank Cabinet "Dummy" Weld-on Adapters

| Part #      | Description                                       |
|-------------|---|
| AL4051-BORE | 4" fuel delivery - cabinet weld-on adapter blank  |
| 400AWSPAL   | 4" vapor recovery - cabinet weld-on adapter blank |





AL4051-BORE

400AWSPAL

# **Coaxial Elbow-Replacement Fuel Inlets and Vapor Outlets**







6000-17C

6000-26C

6000-14C

| Part #   | Description              | Fuel Compatibility          |
|----------|--------------------------|-----------------------------|
| 6000-16C | 3" adapter fuel inlet    |                             |
| 6000-17C | 4" adapter fuel inlet    |                             |
| 6000-15C | 3" coupler fuel inlet    | Gasoline and diesel,        |
| 6000-14C | 4" coupler fuel inlet    | up to E100 and B20 biofuels |
| 6400-4   | 3" adapter vapor outlet  |                             |
| 6000-26C | 3" male NPT vapor outlet |                             |

These inlets are for 6400 series coaxial elbows only, for 6000, 6200 and 6500 series delivery elbows, refer to the inlets shown on page 14.

# Fuel Delivery / Vapor Recovery

# Single Point Coaxial Delivery / Vapor Recovery Elbows

#### Features & Benefits:

- Available in standard or tall heights to accommodate deep fill boxes
- Rugged modular cast aluminum construction
- Many parts are common throughout the Bayco elbow line, making any necessary maintenance a breeze.
- Grease nipple enables the greasing of the lever stem, and acetal bushings help keep everything moving smoothly, even in the harshest of conditions.
- Bolt on inlets allow the inlet to be changed without having to worry about galling of threaded inlets. See below for replacement inlets (Note: Coaxial inlets are not interchangeable with other Bayco elbow inlets.)
- Ball handle lever enables the operator to easily and positively engage the solid bronze locking arms, onto the underground adapter.
- Top connection is the vapor outlet; lower connection is the fuel delivery inlet.
- Biofuel compatible up to E100 (100% Ethanol) and B20 (20% bio diesel). For detailed fuel compatibility, please refer to the chart shown on page 4.





| 41 | $\cap$ | $\cap V$      |  |
|----|--------|---------------|--|
| 04 | ·U     | $\cup \wedge$ |  |

| Part #    | Description  | "A"<br>Overall<br>Height | "B"<br>Ground<br>Clearance | Fuel Compatibility          |
|-----------|--|--------------------------|----------------------------|-----------------------------|
| 6430      | standard height elbow with 3" adapter fuel inlet, 3" adapter vapor outlet  | 23¾"                     | 11¾"                       |                             |
| 6430F     | standard height elbow with 3" coupler fuel inlet, 3" adapter vapor outlet  | 23¾"                     | 11¾"                       |                             |
| 6400      | standard height elbow with 4" adapter fuel inlet, 3" adapter vapor outlet  | 23¾"                     | 11¾"                       |                             |
| 6400F     | standard height elbow with 4" coupler fuel inlet, 3" adapter vapor outlet  | 23¾"                     | 11¾"                       |                             |
| 6400FNPT  | standard height elbow with 4" coupler fuel inlet, 3" male npt vapor outlet | 23¾"                     | 11¾"                       | Gasoline and diesel,        |
| 6430X     | tall height elbow with 3" adapter fuel inlet, 3" adapter vapor outlet      | 26¾"                     | 14¾"                       | up to E100 and B20 biofuels |
| 6430XF    | tall height elbow with 3" coupler fuel inlet, 3" adapter vapor outlet      | 26¾"                     | 14¾"                       |                             |
| 6400X     | tall height elbow with 4" adapter fuel inlet, 3" adapter vapor outlet      | 26¾"                     | 14¾"                       |                             |
| 6400XF    | tall height elbow with 4" coupler fuel inlet, 3" adapter vapor outlet      | 26¾"                     | 14¾"                       |                             |
| 6400XFNPT | tall height elbow with 4" coupler fuel inlet, 3" male npt vapor outlet     | 26¾"                     | 14¾"                       |                             |

Elbow options are shown on page 15. See page 89 for repair kits and replacement parts.

Biofuel Compatible, see fuel compatibility chart on page 4 for more information.

# Fuel Delivery / Vapor Recovery

# **Fuel Station, In-Ground Tank Adapters and Caps**

|                      | del Station, in-Ordana Tank Adapters and Caps   |
|----------------------|---|
| Application:         | When fuel is delivered to the fuel station, the fuel delivery and vapor recovery elbows, are connected to the in-ground tank adapters. There are two types that do not interchange, 1) is for fuel delivery using either standard or Coaxial delivery elbows. 2) is for the vapor recovery elbows. The delivery adapter is threaded onto the in-ground tank fuel inlet, and the vapor adapter is threaded to the in-ground tank vapor outlet connection. To prevent contamination and fuel evaporation, the tank adapters are capped with T handle caps when not in use.  |
| Standards:           | Manufactured with 4" pipe threads to connect to in-ground fuel station tanks, and then provide an interface to connect the top seal fuel drop or vapor recovery elbows.   |
| Materials:           | Adapters are either produced from bronze¹ or Bayloy™¹. Caps are produced in aluminum¹, bronze¹ or nylon¹, Buna seals  |
| Features & Benefits: | Delivery Adapters (top seal):  Available with 4" NPS or 4" NPT threads, with 3½" or 2-¾" heights  Rugged bronze or Bayloy™ cast construction.  Delivery Adapter Caps  Designed to fit fuel delivery adapters only  Rugged durable construction aluminum or bronze bodies, with bronze push-pull T handle  Protect the delivery adapter, and prevent fuel contamination evaporation and tampering  Pad lockable  Vapor Adapters  Rugged bronze or Bayloy™ cast construction  With outlet poppet valves to prevent fuel vapors from escaping. Poppet opens when vapor elbow is connected  Can be used as vapor valve on a fuel tanker (does not have mount for air interlock)  Vapor Adapter Caps  Designed to fit fuel vapor adapters and truck mounted vapor valves  Colored orange to signify vapor connection.  Durable and light weight construction aluminum or nylon bodies, with push-pull T handle  Protect the vapor adapter, and prevent fuel contamination and tampering.  Pad lockable  Biofuel compatible, up to E100 (100% Ethanol) and B20 (20% Bio Diesel). For detailed fuel compatibility, |

Dependent upon part #, see part number list below for more details

#### **Fuel Delivery**





please refer to the chart shown on page 4.





BZ4051 BZ4051S BSS4051 SA4050AL

| Part #   | Description   |
|----------|---|
| BSS4051  | bronze fuel delivery tank adapter, 4" female NPT, 121/32" height, side seal |
| BZ4051   | bronze fuel delivery tank adapter, 4" female NPT, 3½" height, top seal      |
| BY4051   | Bayloy™ fuel delivery tank adapter, 4" female NPT, 3½" height, top seal     |
| BZ4051S  | bronze fuel delivery tank adapter, 4" female NPS, 2%" height, top seal      |
| SA4050AL | aluminum fuel delivery adapter cap, bronze push-pull T handle, Buna gasket  |
| SA4050BZ | bronze fuel delivery adapter cap, bronze push-pull T handle, Buna gasket    |
| TL4070BZ | bronze fuel delivery adapter cap, bronze twin lever handle                  |







VR4086 VR4050AL

VR4050PL

| Part#         | Description  |  |  |  |
|---------------|--|--|--|--|
| VR4086        | pronze vapor recovery tank adapter, 4" FNPT, 3%" height, with vapor poppet                     |  |  |  |
| VR4086-BY     | ayloy™ vapor recovery tank adapter, 4" FNPT, 3%" height, with vapor poppet                     |  |  |  |
| VR4050AL      | aluminum vapor recovery cap, colored vapor orange, push-pull T handle, buna gasket             |  |  |  |
| VR4050PL      | nylon vapor recovery cap, colored vapor orange, push-pull T handle, Buna gasket                |  |  |  |
| VR4050ALC     | aluminum vapor recovery cap, colored vapor orange, push-pull T handle, Buna gasket, with chain |  |  |  |
| VR4050PL-1200 | nylon vapor recovery cap, colored vapor orange, push-pull T handle, Buna gasket, with chain    |  |  |  |

See page 95 for repair kits and replacement parts.

Product instruction sheets and technical data can be viewed on our website at dixonvalve.com

Biofuel Vapor Compatible.

# Fuel Delivery / Vapor Recovery

# **Dual Point - Vapor Recovery Elbows**

|                      | Dual I offit - vapor Necovery Libows  |
|----------------------|---|
| Application:         | In many areas fuel stations are equipped with dual point tank connections, one connection is for the fuel delivery, and the other connection is for the vapor recovery connection. The vapor elbow bottom connection is connected to the fuel station on a ground tank vapor adapter and the top connection to the vapor hose, which returns the fuel vapors back to the tanker.  |
| Standards:           | Manufactured to connect to in ground fuel station vapor adapters and cam and groove vapor hose connections.   |
| Materials:           | Aluminum body and handle, bronze locking arms ¹, stainless steel hardware, Baylast™ and Buna seals, and acetal bushings.  |
| Features & Benefits: | <ul> <li>Rugged modular cast aluminum construction</li> <li>Many parts are common throughout the Bayco elbow line, making any necessary maintenance a breeze</li> <li>Grease nipple enables the greasing of the lever stem, and acetal bushings help keep everything moving smoothly, even in the harshest of conditions.</li> <li>Inlet probes are standard, and are available with or without outlet poppet valves</li> <li>Bolt on outlets allow the outlet to be changed without having to worry about galling of threads. See below for replacement outlets.</li> <li>VR6100 Series features a simple to connect push on style connection</li> <li>VR6200 and VR6500 series features an ergonomic ball handle lever, which on the 6500 series can be mounted either on the left or right side.</li> <li>VR6500 series features heavy duty bolt on arm attachment plate increases the strength of the lever pivot. There are no impact susceptible pivot bolts, or casting bosses to break.</li> <li>VR6500 series features, arm hinge points use a double yoke design which increases the arm strength</li> <li>Biofuel vapor compatible, up to E85 (85% Ethanol) and B20 (20% bio diesel). For detailed fuel compatibility, please refer to the chart shown on page 4.</li> </ul> |

<sup>&</sup>lt;sup>1</sup> Dependent upon part #, see part number list below for more details









| Part #     | Description   | Outlet<br>Poppet<br>Valve | "A"<br>Overall<br>Height | "B"<br>Ground<br>Clearance | Vapor Compatibility                            |
|------------|---|---------------------------|--------------------------|----------------------------|--|
| VR6000NP   | D-handle, 3" adapter outlet   | No                        | 171/4"                   | 10¾"                       |  |
| VR6100NP   | push-on style, 3" adapter outlet  | No                        | 18¾"                     | 121/2"                     |  |
| VR6200NPBU | ball lever handle, without adapter outlet   | No                        | 171/4"                   | 10¾"                       |  |
| VR6200     | ball lever handle, 3" adapter outlet  | Yes                       | 171/4"                   | 103/4"                     |  |
| VR6200NP   | ball lever handle, 3" adapter outlet  | No                        | 171/4"                   | 10¾"                       |  |
| VR6200PNP  | ball lever handle, 3" adapter outlet with height extension, see page 13 for more info.                    | No                        | 201⁄4"                   | 13¾"                       |  |
| VR6200ANP  | ball lever handle, 4" adapter outlet  | No                        | 171/4"                   | 103/4"                     | Gasoline and diesel,                           |
| VR6200NPB  | ball lever handle, 3" coupler outlet  | No                        | 171/4"                   | 103/4"                     | up to E85 & B20 biofuels                       |
| VR6200NPBP | ball lever handle, 3" coupler outlet with height extension, see page 13 for more info                     | No                        | 201⁄4"                   | 13¾"                       | ·  |
| VR6200NPDP | ball lever handle, 4" coupler outlet with height extension, see page 13 for more info                     | No                        | 201⁄4"                   | 13¾"                       |  |
| VR6500     | heavy duty ball lever handle, 3" adapter outlet   | Yes                       | 171/4"                   | 111/4"                     |  |
| VR6500NP   | heavy duty ball lever handle, 3" adapter outlet   | No                        | 171/4"                   | 111/4"                     |  |
| VR6500LPNP | heavy duty ball lever locking handle, 3" adapter outlet   | No                        | 201/4"                   | 13¾"                       |  |
| VR6000-6   | replacement 3" adapter outlet, for elbows with or without poppets   | -                         | -                        | -                          |  |
| 6000-17    | replacement 4" adapter outlet, for elbows without poppets. requires liquid sealant to seal to elbow body. | -                         | -                        | -                          | 0 " 1" 1                                       |
| 6000-15    | replacement 3" coupler outlet, for elbows without poppets. requires liquid sealant to seal to elbow body. | -                         | -                        | -                          | Gasoline and diesel, up to E100 & B20 biofuels |
| 6000-14    | replacement 4" coupler outlet, for elbows without poppets. requires liquid sealant to seal to elbow body. | -                         | -                        | -                          |  |

See page 93 through 96 for repair kits and replacement parts.

Biofuel Compatible, see fuel compatibility chart on page 4 for more information.



# Fuel Vapor Recovery

# Vapor Return Valves

| Standards:           | Manufactured to connect to vapor hose couplings   |
|----------------------|---|
| Materials:           | Aluminum body and buna seals, nylon 1 or acrylic 1 sight glass if equipped  |
| Features & Benefits: | Rugged cast aluminum construction     Variety of tank connections to suit any application, including 4" TTMA flange, 3" and 4" female NPT and 4" female NPS     Air interlegis mounting and (VPA000 requires 5000AN) other models can use the 5000AN 5000ANS or |
|                      | Air interlock mounting pad. (VR4000 requires 5000AIV, other models can use the 5000AI, 5000AIS or 5000AIST interlock valves)  |
|                      | VR4000 is a bulb design which allows for maximum vapor flow, also features 2 large acrylic sight glasses and a drain plug.  |
|                      | Available with or without poppets. Poppeted versions prevent vapor from escaping from the tanker.   |
|                      | Easy seal replacement while still on the tanker   |
|                      | Biofuel vapor compatible, up to E100 (100% Ethanol) and B20 (20% bio diesel). For detailed fuel   |
|                      | compatibility, please refer to the chart shown on page 4.   |

<sup>1</sup> Dependent upon part #, see part number list below for more details











VR3100

VR4000 VR4100

VR4100F VR4100F-SFI

| Part #       | Adapter<br>Size | Tanker<br>Connection | Inlet Poppet<br>Valve | Sight<br>Glass | Description  | Vapor Compatibility                               |  |  |
|--------------|-----------------|----------------------|-----------------------|----------------|--|---|--|--|
| VR3100       | 4"              | 3" female NPT        | Yes                   | No             |  |   |  |  |
| VR3100NP     | 4"              | 3" female NPT        | No                    | No             |  | Gasoline and diesel,<br>up to E100 & B20 biofuels |  |  |
| VR4100       | 4"              | 4" female NPT        | Yes                   | No             |  |   |  |  |
| VR4100NP     | 4"              | 4" female NPT        | No                    | No             |  |   |  |  |
| VR4100S      | 4"              | 4" female NPS        | Yes                   | No             | Vapor valve,   |   |  |  |
| VR4100NPS    | 4"              | 4" female NPS        | No                    | No             | low profile design   |   |  |  |
| VR4100F      | 4"              | 4" TTMA flange       | Yes                   | Yes            |  | Gasoline and diesel, up to E100                   |  |  |
| VR4100FNG    | 4"              | 4" TTMA flange       | Yes                   | No             |  | & B20 biofuels                                    |  |  |
| VR4100F-SFI  | 4"              | 4" TTMA flange       | Yes                   | Yes            |  |   |  |  |
| VR4100F-NGNP | 4"              | 4" TTMA flange       | No                    | No             |  |   |  |  |
| VR4000       | 4"              | 4" TTMA flange       | Yes                   | Yes            | Bulb design for maximum flow<br>(if required use<br>5000AIV interlock valve) |   |  |  |

See page 98 and 99 for repair kits and replacement parts.

### **Orange Vapor Caps**







VR4050PL

VR4050PLC

VR4050AL

| Part #    | Description   | Vapor Compatibility       |
|-----------|---|---------------------------|
| VR4050ALT | aluminum vapor recovery adapter cap, color orange, push-pull T handle, Buna gasket                |                           |
| VR4050PL  | nylon vapor recovery adapter cap, color orange, push-pull T handle, Buna gasket                   | Gasoline and diesel,      |
| VR4050ALC | aluminum vapor recovery adapter cap, color orange, push-pull T handle,<br>Buna gasket, with chain | up to E100 & B20 biofuels |
| VR4050PLC | nylon vapor recovery adapter cap, color orange, push-pull T handle, Buna gasket, with chain       |                           |

See page 97 for repair kits and replacement parts.

# Fuel Vapor Recovery

# **Vapor Hose Couplings**



VR4030CS-AL



VR4040CS-AL



VR4040CS-AL

|    |                          |                 | _                          |                 |       |                             |
|----|--------------------------|-----------------|----------------------------|-----------------|-------|-----------------------------|
|    | Part#                    | Coupler<br>Size | Connection Type & Size     | Poppet<br>Valve | Probe | Vapor Compatibility         |
|    | VRC3000AL                | 3"              | 3" hose                    | No              | Yes   |                             |
|    | VR4030CS-AL <sup>1</sup> | 4"              | 3" hose                    | Yes             | Yes   |                             |
| EW | VR4040CS-AL              | 4"              | 4" hose                    | Yes             | Yes   |                             |
| EW | VR4030CS-AL45            | 4"              | 3" 45° hose                | Yes             | Yes   |                             |
|    | VR4040CS-AL45            | 4"              | 4" 45° hose                | Yes             | Yes   |                             |
|    | VR4040CS-ALS45           | 4"              | 4" 45° hose swivel         |                 |       |                             |
|    | VR4040CS-4MNPT           | 4"              | 4" male NPT                | Yes             | Yes   |                             |
|    | 4020-CVR-AL              | 4"              | 2" hose                    | No              | Yes   |                             |
|    | 4030-CVR-AL              | 4"              | 3" hose                    | No              | Yes   |                             |
|    | <b>400-CVR-AL</b> 4"     |                 | 4" hose                    | No              | Yes   |                             |
|    | 4030-DVR-AL              | 4"              | 3" female NPT              | No              | Yes   | Gasoline and diesel,        |
|    | 400-DVR-AL               | 4"              | 4" female NPT              | No              | Yes   | up to E100 and B20 biofuels |
|    | 4030-DAVR-AL             | 4"              | 3" cam & groove<br>adapter | No              | Yes   |                             |
|    | 400-DDVR-AL              |                 |                            | No              | Yes   |                             |
|    | VR4030CS-NP              | 4"              | 3" hose                    | No              | Yes   |                             |
|    | VR4030CS-SH              | 4"              | 3" hose                    | Yes             | Yes   |                             |
|    | VR4040CSRK1              |                 | seal repair kit            |                 |       |                             |
|    | VR4040CSRK2              |                 | cam arm repair kit         |                 |       |                             |
|    | VRHK 1                   |                 | handle kit                 |                 |       |                             |
|    | VRHK-C 1                 |                 | compact handle kit         |                 |       |                             |
|    |                          |                 |                            |                 |       |                             |

<sup>&</sup>lt;sup>1</sup> VR4030CS-AL will not work with Civacon 633LVH vapor valve and requires poppet style vapor valve on tank truck to open.

See page 98 thru 100 for repair kits and replacement parts.



VR6030SQ



VR6035SQ



40193AL



| Outbi   | outsi outining and instructining volte               |   |  |  |  |  |  |  |  |
|---------|--|---|--|--|--|--|--|--|--|
| Part #  | Description  | Vapor Compatibility                                   |  |  |  |  |  |  |  |
| VRP3500 | outbreathing, opens at no greater than 1 PSI (MC306) |   |  |  |  |  |  |  |  |
| VRP3600 | outbreathing, opens at no less than 0 PSI (DOT406)   | Gasoline and diesel,<br>up to E100 and vB100 biofuels |  |  |  |  |  |  |  |
| VRV3501 | inbreathing, opens at 1.5" Hg (vacuum)               |   |  |  |  |  |  |  |  |

See page 105 repair kits and replacement parts.

# **Sequential Vapor Vents**

| Features & Benefits: | <ul> <li>Can be installed to open in sequence with another pneumatically controlled device such as the emergency valve, or open independently by simply plugging the lower of the 2 ports (use a ¼" male NPT plug)</li> <li>Flange adapter available to adapt 3" TTMA (VR6035SQ) version to a Parker style vent</li> </ul> |
|----------------------|--|
|                      | Rugged cast aluminum construction  |
|                      |  |

| • | Any necessary maintenance is easy to penorm       |
|---|---|
| • | temperature range: -40°F to 160°F (-40°C to 71°C) |

| • | temperature | range: | -40°F | to | 160°F | (-40°C | to | 71 | °C) | ) |
|---|-------------|--------|-------|----|-------|--------|----|----|-----|---|
|   |             |        |       |    |       |        |    |    |     |   |

| Part #   | Description                                    | Vapor Compatibility                                  |
|----------|--|--|
| VR6030SQ | for 16" manhole, with threaded mounting ring   | Gasoline and diesel,                                 |
| VR6035SQ | for 20" manhole, with 3" TTMA flange           | up to E100 and B100 biofuels                         |
| 40193AL  | VR6035SQ adapter flange for Parker style vents | Gasoline and diesel,<br>up to E100 and B100 biofuels |

See page 103 and 104 for repair kits and replacement parts.



# Fuel Vapor Recovery

#### **Air Interlock Valves**

Feature & Benefit:

- temperature range: -40°F to 158°F (-40°C to 70°C)
- maximum working pressure: 150 PSI

See page 106 - 108 for repair kits and replacement parts.

#### **Standard Air Interlock Valves**













| 5000AI    | 5000AIR   | 5000AIHD  | 5000AIV     | 5000AIRHD | 5000AIVHD |
|-----------|---|---|-------------|-----------|-----------|
| Part #    |   |   | Description |           |           |
| 5000AI    | 1" button plunger p   | 1" button plunger pneumatic interlock, Baylast™ seals |             |           |           |
| 5000AIST  | 1½" button plunger pneumatic interlock, Baylast™ seals  |   |             |           |           |
| 5000AIR   | roller ball plunger pneumatic interlock, ideal for use on cabinet doors, Baylast™ seals   |   |             |           |           |
| 5000AIS   | 1" button plunger pneumatic/electronic interlock, ideal for connecting to lights or the overfill detection system, Baylast™ seals |   |             |           |           |
| 5000AIV   | paddle plunger pneumatic interlock, for use on VR4000 vapor valve, Baylast™ seals   |   |             |           |           |
| 5000AIHD  | heavy duty, high flow air ports, same foot print as 5000Al, Baylast™ seals  |   |             |           |           |
| 5000AIRHD | roller end for various angles, large air ports, Baylast™ seals  |   |             | _         |           |
| 5000AIVHD | heavy duty air interlock with paddle plunger, Baylast™ seals  |   |             |           |           |

#### **Heavy Duty 6-Port Air Interlock Valves**

Feature & Benefit:

• temperature range: -40°F to 158°F (-40°C to 70°C)



5006AIHD





|   | Part #   | Description                                     |  |  |
|---|--|---|--|--|
|   | 5006AIHD   | heavy duty, high flow air ports, Baylast™ seals |  |  |
|   | 5006AIRHD roller end for various angles, large air ports, Baylast™ seals |   |  |  |
| Г | 5006AIVHD heavy duty air interlock with paddle plunger. Baylast™ seals   |   |  |  |

#### **Air Interlock Valve Accessories**





DB300PMB

Part # Description DB300PMB mount 5000Al air interlock on 3" pipe DB400PMB mount 5000Al air interlock on 4" pipe air interlock limit switch kit 5000S 5000AIVS air interlock w/limit 5000AISHD air interlock limit switch heavy duty 5000AISTHD heavy duty air interlock w/1.5" 40048WI cable, air interlock switch

#### **Hose Tube Doors**

| Application:         | When not in use fuel delivery hoses are often stored in tubes that run the length of the tanker, to keep the hoses in the storage tubes they have a welded cap on one end and a hinged tube door welded on the other end.                             |
|----------------------|---|
| Standards:           | Manufactured to weld to 6", 7" or 8" hose tubes   |
| Materials:           | Aluminum body, Buna seals, stainless steel door closure spring and hardware, nylon bushings   |
| Features & Benefits: | <ul> <li>Pad-lockable</li> <li>Keeps fuel delivery hoses neatly and safely stored in the designated storage tubes</li> <li>Helps to protect the expensive delivery hoses and fittings from road dirt, salt and other environmental factors</li> </ul> |





TDF7



TDF8

| Part # | Description       |  |
|--------|-------------------|--|
| TDF6   | 6" hose tube door |  |
| TDF7   | 7" hose tube door |  |
| TDF8   | 8" hose tube door |  |

See page 104 for repair kits and replacement parts.

# **Static Grounding Balls**

| Application:         | To help prevent static electric sparking when loading or unloading tankers containing flammable products, the tanker is grounded using a grounding cable with spring clip attached to a tank mounted static grounding ball. |  |
|----------------------|---|--|
| Standards:           | Manufactured with %" -16UN-3A thread  |  |
| Materials:           | Brass or stainless steel  |  |
| Features & Benefits: | Helps eliminate static electricity sparking   |  |







| Part # Description  |                      |
|---|----------------------|
| GS1   | brass grounding ball |
| <b>GS1-2</b> brass grounding ball with lock washer ar stainless steel nut |                      |
| GS2 stainless steel grounding ball  |                      |

# **Tanker Pipe Caps**



PC30

| Features & | <ul> <li>Includes 12" heavy duty chain with S hook</li> </ul> |
|------------|---|
| Benefits:  | Pin lugs allow easy tightening                                |
|            | <ul> <li>Working pressure of up to 150 PSI</li> </ul>         |

| Part # | Description                               |
|--------|---|
| PC30   | 3" female NPSL pipe threaded aluminum cap |

# One Way Full Flow Ball Valves

| Application:         | One way full flow ball valves are often used to control the flow of products from tanker compartments.  |  |
|----------------------|---|--|
| Standards:           | Manufactured with 2", 3" or 4" female NPT, socket weld to Schedule 40 or grooved ends   |  |
| Materials:           | Aluminum body, aluminum and stainless steel wetted parts, FPM (FKM and PTFE seals)  |  |
| Features & Benefits: | <ul> <li>High flow with low pressure drop</li> <li>Working pressure of 150 PSI at 70°F (21°C)</li> <li>Valve spindle can be disassembled with valve installed.</li> </ul> |  |

| Part #       | Size | Description             |
|--------------|------|-------------------------|
| 1WAYBV200    | 2"   | female NPT              |
| 1WAYBV300    | 3"   | female NPT              |
| 1WAYBV400    | 4"   | female NPT              |
| 1WAYBV200SW  | 2"   | schedule 40 socket weld |
| 1WAYBV300SW  | 3"   | schedule 40 socket weld |
| 1WAYBV200VIC | 2"   | grooved connections     |
| 1WAYBV300VIC | 3"   | grooved connections     |







1WAYBV300

1WAYBV300SW

1WAYBV300VIC

# **Two Way 3 Port Diverting Ball Valves**

| Application:         | Two way diverting ball valves are often used to divert or mix products between tanker compartments.  |
|----------------------|--|
| Standards:           | Manufactured with 2", 3" or 4" female NPT, socket weld to Schedule 40 or grooved ends.   |
| Materials:           | Aluminum body, aluminum and stainless steel wetted parts, FPM (FKM and PTFE seals)   |
| Features & Benefits: | <ul> <li>3 ports allow easy flow diversion between tanker compartments</li> <li>High flow with low pressure drop</li> <li>Working pressure of 150 PSI at 70°F (21°C)</li> <li>Valve spindle can be disassembled with valve installed.</li> </ul> |

| Part #        | Size | Description             |
|---------------|------|-------------------------|
| 2WAYBV200     | 2"   | female NPT              |
| 2WAYBV300     | 3"   | female NPT              |
| 2WAYBV400     | 4"   | female NPT              |
| 2WAYBV200SW   | 2"   | schedule 40 socket weld |
| 2WAYBV300SW   | 3"   | schedule 40 socket weld |
| 2WAYBV200VIC3 | 2"   | grooved connections     |
| 2WAYBV300VIC3 | 3"   | grooved connections     |







2WAYBV300

2WAYBV300SW

2WAYBV300VIC3

Product instruction sheets and technical data can be viewed on our website at dixonvalve.com

### **Cam and Groove Style Dry Disconnect Couplings**

| Application:         | Dry disconnects help prevent spillage from normal or accidental disconnection of the connection. A spring loaded sealing device is designed to snap closed should the valve become disconnected with the poppet open, significantly limiting liquid loss.  |
|----------------------|--|
| Standards:           | Manufactured to interchange with other cam and groove type dry disconnect couplings.  Canadian registration number CRN #OH14044 all provinces, 3" size rated to 80 PSI for CRN required applications.  |
| Materials:           | Zinc, aluminum or stainless steel bodies with buna ¹, FKM¹, FKM-B¹, PTFE encapsulated silicone ¹, EPT (EPDM)¹, FFKM, PTFE encapsulated FKM and PTFE seals, see part number chart for full seal selection. Contact Dixon® at 877-963-4966 for working pressures at temperatures other than 70°F (21°C) and for chemical compatibility, size and material selection. Stainless steel corrosion resistance is equivalent to 304 stainless steel |
| Castinas O Danstita. | Links affects the transferred and the control of the second second   |

#### Features & Benefits:

- · Helps eliminate the possibility of costly spills
- · Compatible with most other brands of cam and groove style dry disconnects
- Special configurations can be designed for your application
- Female NPT or 150# flanged connections

#### **DBA Adapters**

- Two-piece adapter design for easy rebuilding of adapters
- Stainless steel parts have a stainless steel piston.
- Adapters below are used with the DBC or D2C couplers shown on pages 36 and 37.
- Use standard cam and groove dust caps sized one size larger than the dry disconnect size, see chart below for dust cap size selection.

#### **DBC** Couplers

- · Large paddle type locking cam arms standard on 3" fittings, allow for an easy grip
- DBC series have automatic closing poppet assembly.
- Heavy duty stainless steel crank and link provide long service life.
- Stainless steel handle assembly allows exposure to corrosive chemicals or wash down service.
- · Strong handle attachment prevents bending of crank assembly.
- · Aluminum couplers have stainless steel internal parts.
- EZ Boss-Lock™ cam arms standard on all 1½" and 2" fittings, provide high security from accidental opening due to vibration or snagging. Very easy to use, just close the arms and they lock, to open simply lift the lever (possible even with gloves on).

<sup>&</sup>lt;sup>1</sup> Dependent upon part #, see part number list below for more details





DBA71-200

#### Female NPT Adapters

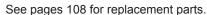
DBA11-300

|                    |              | <u>-</u>                   |                       |                    |                         |                      |                             |                      |
|--------------------|--------------|----------------------------|-----------------------|--------------------|-------------------------|----------------------|-----------------------------|----------------------|
| Female<br>NPT Size | Adapter Size | Seal Material              | Max PSI @ 70°F (21°C) | Aluminum<br>Part # | Zinc/Aluminum<br>Part # | Competitor<br>Part # | Stainless Steel<br>Part # 2 | Competitor<br>Part # |
| 1½"                | 2"           | Buna                       | 210                   |                    | DBA11-150               | 1611AN-AL15          | DBA71-150                   | 1671AN-SS15          |
| 2"                 | 21/2"        | Buna                       | 150                   | DBA61-200          | DBA11-200               | 1611AN-AL20          | DBA71-200                   | 1671AN-SS20          |
| 3"                 | 4"           | Buna                       | 120                   |                    | DBA11-300               | 1611AN-AL30          | DBA71-300                   | 1671AN-SS30          |
| 1½"                | 2"           | FKM                        | 210                   |                    | DBA12-150               | 1612AN-AL15          | DBA72-150                   | 1672AN-SS15          |
| 2"                 | 21/2"        | FKM                        | 150                   | DBA62-200          | DBA12-200               | 1612AN-AL20          | DBA72-200                   | 1672AN-SS20          |
| 3"                 | 4"           | FKM                        | 120                   |                    | DBA12-300               | 1612AN-AL30          | DBA72-300                   | 1672AN-SS30          |
| 1½"                | 2"           | PTFE encapsulated silicone | 210                   | DBA63-150          |                         | 1613AN-AL15          | DBA73-150                   | 1673AN-SS15          |
| 2"                 | 21/2"        | PTFE encapsulated silicone | 150                   | DBA63-200          |                         | 1613AN-AL20          | DBA73-200                   | 1673AN-SS20          |
| 3"                 | 4"           | PTFE encapsulated silicone | 120                   | DBA63-300          |                         | 1613AN-AL30          | DBA73-300                   | 1673AN-SS30          |
| 1½"                | 2"           | EPDM                       | 210                   | DBA64-150          |                         | 1614AN-AL15          | DBA74-150                   | 1674AN-SS15          |
| 2"                 | 21/2"        | EPDM                       | 150                   | DBA64-200          |                         | 1614AN-AL20          | DBA74-200                   | 1674AN-SS20          |
| 3"                 | 4"           | EPDM                       | 120                   | DBA64-300          |                         | 1614AN-AL30          | DBA74-300                   | 1674AN-SS30          |
| 1½"                | 2"           | FFKM                       | 210                   | DBA66-150          |                         | 1616AN-AL15          | DBA76-150                   | 1676AN-SS15          |
| 2"                 | 21/2"        | FFKM                       | 150                   | DBA66-200          |                         | 1616AN-AL20          | DBA76-200                   | 1676AN-SS20          |
| 3"                 | 4"           | FFKM                       | 120                   | DBA66-300          |                         | 1616AN-AL30          | DBA76-300                   | 1676AN-SS30          |
| 1½"                | 2"           | PTFE encapsulated FKM      | 210                   | DBA67-150          |                         | 1617AN-AL15          | DBA77-150                   | 1677AN-SS15          |
| 2"                 | 21/2"        | PTFE encapsulated FKM      | 150                   | DBA67-200          |                         | 1617AN-AL20          | DBA77-200                   | 1677AN-SS20          |
| 3"                 | 4"           | PTFE encapsulated FKM      | 120                   | DBA67-300          |                         | 1617AN-AL30          | DBA77-300                   | 1677AN-SS30          |
| 2"                 | 21/2"        | FKM-GFLT                   | 150                   |                    |                         |                      | DBA78-200                   |                      |
| 3"                 | 4"           | FKM-B                      | 120                   | DBA69-300          |                         | 1619AN-AL30          | DBA79-300                   | 1679AN-SS30          |

<sup>&</sup>lt;sup>2</sup> Stainless steel corrosion resistance is comparable to 304 stainless steel.

### **Jump Size Female NPT Adapters**

| Female<br>NPT Size | Adapter Size | Dry Disconnect<br>Body Size | Seal<br>Material | Max PSI @<br>70°F (21°C) | Zinc/Aluminum<br>Part # | Competitor<br>Part # |
|--------------------|--------------|-----------------------------|------------------|--------------------------|-------------------------|----------------------|
| 2"                 | 2"           | 1½"                         | Buna             | 150                      | DBA11-1520              | -                    |
| 2"                 | 2"           | 1½"                         | FKM              | 150                      | DBA12-1520              | -                    |





DBA12-1520

### **Female NPS Vapor Adapter**

| Female<br>NPSM<br>Size | Adapter Size | Dry Disconnect<br>Body Size | Seal<br>Material | Max PSI @ 70°F (21°C) | Stainless Steel<br>Part # | Competitor<br>Part # |
|------------------------|--------------|-----------------------------|------------------|-----------------------|---------------------------|----------------------|
| 3"                     | 21/2"        | 2"                          | PTFE             | 150                   | DBAV73-2030               | 2173AVN              |

See page 110 for replacement parts.



DBAV73-2030

#### 150# Flange Adapters

| Flange<br>Size | Adapter Size | Dry Disconnect<br>Body Size | Seal Material              | Max PSI @ 70°F (21°C) | Stainless Steel<br>Part # | Competitor<br>Part # |
|----------------|--------------|-----------------------------|----------------------------|-----------------------|---------------------------|----------------------|
| 2"             | 2"           | 1½"                         | Buna                       | 150                   | DBAF71-1520               | 1671ANF-SS15         |
| 2"             | 21/2"        | 2"                          | Buna                       | 150                   | DBAF71-200                | 1671ANF-SS20         |
| 3"             | 4"           | 3"                          | Buna                       | 120                   | DBAF71-300                | 1671ANF-SS30         |
| 2"             | 2"           | 1½"                         | FKM                        | 150                   | DBAF72-1520               | 1672ANF-SS15         |
| 2"             | 21/2"        | 2"                          | FKM                        | 150                   | DBAF72-200                | 1672ANF-SS20         |
| 3"             | 4"           | 3"                          | FKM                        | 120                   | DBAF72-300                | 1672ANF-SS30         |
| 2"             | 2"           | 1½"                         | PTFE encapsulated silicone | 150                   | DBAF73-1520               | 1673ANF-SS15         |
| 2"             | 2½"          | 2"                          | PTFE encapsulated silicone | 150                   | DBAF73-200                | 1673ANF-SS20         |
| 3"             | 4"           | 3"                          | PTFE encapsulated silicone | 120                   | DBAF73-300                | 1673ANF-SS30         |
| 2"             | 2"           | 1½"                         | EPDM                       | 150                   | DBAF74-1520               | 1674ANF-SS15         |
| 2"             | 21/2"        | 2"                          | EPDM                       | 150                   | DBAF74-200                | 1674ANF-SS20         |
| 3"             | 4"           | 3"                          | EPDM                       | 120                   | DBAF74-300                | 1674ANF-SS30         |
| 2"             | 2"           | 1½"                         | FFKM                       | 150                   | DBAF76-1520               | 1676ANF-SS15         |
| 2"             | 2½"          | 2"                          | FFKM                       | 150                   | DBAF76-200                | 1676ANF-SS20         |
| 3"             | 4"           | 3"                          | FFKM                       | 120                   | DBAF76-300                | 1676ANF-SS30         |
| 2"             | 21/2"        | 2"                          | FKM-GFLT                   | 150                   | DBAF78-200                |                      |

Note: Stainless steel corrosion resistance is comparable to 304 stainless steel. See page 109 for replacement parts.



DBAF72-200

Product instruction sheets and technical data can be viewed on our website at dixonvalve.com

### **Cam and Groove Style Dry Disconnect Couplings**





DBC61-150

**Female NPT Couplers** 

DBC61-300

|                       |                 |                            |                             |                    | . Godpioio                    |                           |                               |
|-----------------------|-----------------|----------------------------|-----------------------------|--------------------|-------------------------------|---------------------------|-------------------------------|
| Female<br>NPT<br>Size | Coupler<br>Size | Seal Material              | Max PSI<br>@ 70°F<br>(21°C) | Aluminum<br>Part # | Competitor part # (New & Old) | Stainless<br>Steel Part # | Competitor Part # (New & Old) |
| 11/2"                 | 2"              | Buna                       | 210                         | DBC61-150          | 1711DL-AL15 / 1761D-AL15      | DBC71-150                 | 1771DL-SS15 / 1771D-SS15      |
| 2"                    | 21/2"           | Buna                       | 150                         | DBC61-200          | 1711DL-AL20 / 1761D-AL20      | DBC71-200                 | 1771DL-SS20 / 1771D-SS20      |
| 3"                    | 4"              | Buna                       | 120                         | DBC61-300          | 1711DL-AL30 / 1761D-AL30      | DBC71-300                 | 1771DL-SS30 / 1771D-SS30      |
| 11/2"                 | 2"              | FKM                        | 210                         | DBC62-150          | 1712DL-AL15 / 1762D-AL15      | DBC72-150                 | 1772DL-SS15 / 1772D-SS15      |
| 2"                    | 21/2"           | FKM                        | 150                         | DBC62-200          | 1712DL-AL20 / 1762D-AL20      | DBC72-200                 | 1772DL-SS20 / 1772D-SS20      |
| 3"                    | 4"              | FKM                        | 120                         | DBC62-300          | 1712DL-AL30 / 1762D-AL30      | DBC72-300                 | 1772DL-SS30 / 1772D-SS30      |
| 1½"                   | 2"              | PTFE encapsulated silicone | 210                         | DBC63-150          | 1713DL-AL15 / 1763D-AL15      | DBC73-150                 | 1773DL-SS15 / 1773D-SS15      |
| 2"                    | 21/2"           | PTFE encapsulated silicone | 150                         | DBC63-200          | 1713DL-AL20 / 1763D-AL20      | DBC73-200                 | 1773DL-SS20 / 1773D-SS20      |
| 3"                    | 4"              | PTFE encapsulated silicone | 120                         | DBC63-300          | 1713DL-AL30 / 1763D-AL30      | DBC73-300                 | 1773DL-SS30 / 1773D-SS30      |
| 11/2"                 | 2"              | (EPDM)                     | 210                         | DBC64-150          | 1714DL-AL15 / 1764D-AL15      | DBC74-150                 | 1774DL-SS15 / 1774D-SS15      |
| 2"                    | 21/2"           | (EPDM)                     | 150                         | DBC64-200          | 1714DL-AL20 / 1764D-AL20      | DBC74-200                 | 1774DL-SS20 / 1774D-SS20      |
| 3"                    | 4"              | (EPDM)                     | 120                         | DBC64-300          | 1714DL-AL30 / 1764D-AL30      | DBC74-300                 | 1774DL-SS30 / 1774D-SS30      |
| 1½"                   | 2"              | FFKM                       | 210                         | DBC66-150          | 1716DL-AL15 / 1766D-AL15      | DBC76-150                 | 1776DL-SS15 / 1776D-SS15      |
| 2"                    | 21/2"           | FFKM                       | 150                         | DBC66-200          | 1716DL-AL20 / 1766D-AL20      | DBC76-200                 | 1776DL-SS20 / 1776D-SS20      |
| 3"                    | 4"              | FFKM                       | 120                         | DBC66-300          | 1716DL-AL30 / 1766D-AL30      | DBC76-300                 | 1776DL-SS30 / 1776D-SS30      |
| 1½"                   | 2"              | PTFE encapsulated FKM      | 210                         | DBC67-150          | 1717DL-AL15 / 1767D-AL15      | DBC77-150                 | 1777DL-SS15 / 1777D-SS15      |
| 2"                    | 21/2"           | PTFE encapsulated FKM      | 150                         | DBC67-200          | 1717DL-AL20 / 1767D-AL20      | DBC77-200                 | 1777DL-SS20 / 1777D-SS20      |
| 3"                    | 4"              | PTFE encapsulated FKM      | 120                         | DBC67-300          | 1717DL-AL30 / 1767D-AL30      | DBC77-300                 | 1777DL-SS30 / 1777D-SS30      |
| 2"                    | 21/2"           | FKM-GFLT                   | 150                         | -                  | -                             | DBC78-200                 | -                             |
| 3"                    | 4"              | FKM-B                      | 120                         | DBC69-300          | 1719DL-AL30 / 1769D-AL30      | DBC79-300                 | 1779DL-SS30 / 1779D-SS30      |

#### DB Type Seal Material Handle **Female NPT Size** Grease A - Adapter 1 - Buna 150 - 11/2" Blank - Standard Blank - Standard C - Coupler 2 - FKM L - Locking 200 - 2" L - Greaseless 3 - PTFE Encapsulated Silicone 300 - 3" **Body Material** 4 - EPDM 6 - Aluminum 6 - FFKM 7 - Stainless Steel 7 - PTFE Encapsulated FKM 8 - FKM-GFLT 9 - FKM-B

### **Greaseless Female NPT Couplers**

| Female NPT<br>Size | Coupler Size | Seal Material         | Max PSI @<br>70°F (21°C) | Stainless Steel<br>Part # | Competitor Part # (New and Old) |
|--------------------|--------------|-----------------------|--------------------------|---------------------------|---------------------------------|
| 1½"                | 2"           | PTFE Encapsulated FKM | 210                      | DBC77-150-GL              | 1777DL-SS15-GL / 177D-SS15-GL   |
| 2"                 | 2½"          | PTFE Encapsulated FKM | 150                      | DBC77-200-GL              | 1777DL-SS20-GL / 177D-SS20-GL   |

Note: Stainless steel corrosion resistance is comparable to 304 stainless steel.

#### **Female NPT Swivel Couplers**



| Female NPT<br>Size | Coupler<br>Size | Seal Material              | Max PSI @<br>70°F (21°C) | Aluminum<br>Part # | Competitor Part #<br>(New and Old) |
|--------------------|-----------------|----------------------------|--------------------------|--------------------|------------------------------------|
| 2"                 | 21/2"           | Buna                       | 150                      | DBS61-200          | 1711ESL-AL20 / 1711ES-0200         |
| 2"                 | 21/2"           | FKM                        | 150                      | DBS62-200          | 1712ESL-AL20 / 1712ES-0200         |
| 2"                 | 2½"             | PTFE encapsulated silicone | 150                      | DBS63-200          | -                                  |

See pages 114 - 124 for repair kits and replacement parts
Product instruction sheets and technical data can be viewed on our website at dixonvalve.com

# **Valve Handle Locking Kits**

| Part #   | Description                                      |
|----------|--|
| DBCL-200 | valve handle locking kit for 11/2" & 2" couplers |
| DBCL-300 | valve handle locking kit for 3" couplers         |



DBCL-200

# **Cam and Groove Style Dry Disconnect D2C Couplings**

| Application:         | Dry disconnects help prevent spillage from normal or accidental disconnection of the connection. D2C series couplings are similar to the DBC series as shown on page 23, except the D2C do not have an internal seal cylinder, therefore the couplings do not automatically close. The D2C couplers are suited to vapor recovery, suction pump and applications where it is necessary to easily drain the hose or piping for cleaning. They can also be used when product retention in hose or pipe is desired, but environmental damage from an open coupling is not a threat.  |
|----------------------|--|
| Standards:           | Use with Dixon Bayco DBA series adapters. Manufactured to interchange with other cam and groove type dry disconnect couplings.   |
| Materials:           | 316 Stainless steel bodies with Buna ¹, FKM¹, FKM-B ¹, PTFE encapsulated silicone ¹, EPT (EPDM) ¹, FFKM, PTFE encapsulated FKM seals, see part number chart for full seal selection. Contact Dixon® at 877-963-4966 for working pressures at temperatures other than 70°F (21°C) and for chemical compatibility, size, and material selection.   |
| Features & Benefits: | <ul> <li>Helps eliminate the possibility of costly spills</li> <li>Compatible with most other brands of cam and groove style dry disconnects</li> <li>Special configurations can be designed for your application</li> <li>Female NPT</li> <li>Couplers below are used with the DBA adapters shown on pages 21 and 22.</li> <li>Use standard cam and groove dust plugs, sized one size larger than the dry disconnect size, see chart below for dust plug size selection.</li> <li>Stainless steel valve handle locking kit included on valve handle.</li> <li>EZ Boss-lock™ automatic locking cam arms provide added security from accidental opening due to cam arms getting snagged or vibration. Very easy to use, just close the arms and they lock, to open simply lift the lever (possible even with gloves on).</li> </ul> |

<sup>&</sup>lt;sup>1</sup> Dependent upon part #, see part number list below for more details.

### **Female NPT Couplers**

| Female<br>NPT Size | Coupler Size | Seal Material              | Max PSI @<br>70°F (21°C) | Stainless<br>Steel Part # | Competitor<br>Part # |
|--------------------|--------------|----------------------------|--------------------------|---------------------------|----------------------|
| 11/2"              | 2"           | Buna                       | 210                      | D2C71-150                 | 2271D-SS15           |
| 2"                 | 21/2"        | Buna                       | 150                      | D2C71-200                 | 2271D-SS20           |
| 1½"                | 2"           | FKM                        | 210                      | D2C72-150                 | 2272D-SS15           |
| 2"                 | 21/2"        | FKM                        | 150                      | D2C72-200                 | 2272D-SS20           |
| 11/2"              | 2"           | PTFE encapsulated silicone | 210                      | D2C73-150                 | 2273D-SS15           |
| 2"                 | 2½"          | PTFE encapsulated silicone | 150                      | D2C73-200                 | 2273D-SS20           |
| 11/2"              | 2"           | EPDM                       | 210                      | D2C74-150                 | 2274D-SS15           |
| 2"                 | 21/2"        | EPDM                       | 150                      | D2C74-200                 | 2274D-SS20           |



D2C71-150



D2C71-200

See page 122 for repair kits and replacement parts
Product instruction sheets and technical data can be viewed on our website at dixonvalve.com

# **Bayonet Style Dry Disconnect Couplings**

| Application:         | Bayonet dry disconnect fittings are ideally suited for the spill-less transfer of petroleum products such as fuel oil, lube oil blending, and tank truck delivery. The design of the Bayco bayonet dry disconnect system ensures a spill free connection, fluid cannot flow until couplings are connected together and the valve is opened. The coupling can then not be disconnected until the valve handle is closed.       |
|----------------------|---|
| Standards:           | Manufactured to interchange with other brands of bayonet type dry disconnect couplings. Canadian registration number CRN #OH14055 all provinces.  |
| Materials:           | Adapters have anodized aluminum <sup>1</sup> , brass <sup>1</sup> or stainless steel <sup>1</sup> bodies with either anodized aluminum <sup>1</sup> or brass <sup>1</sup> poppet valves. Couplers are aluminum. Adapters and couplers are available with either buna or FKM seals. <sup>1</sup> Dependent upon part #, see part number list below for more details.   |
| Features & Benefits: | <ul> <li>Helps eliminate the possibility of costly spills</li> <li>Compatible with most other brands of bayonet style dry disconnects</li> <li>Female NPT</li> <li>Rubber dust caps and plugs with stainless steel chains are available to protect the adapters and couplers from contamination and damage</li> <li>Maximum operating pressure: 85 PSI at 75°F, for pressure ratings at other temperatures contact</li> </ul> |





BA32-200

### **Female NPT Adapters**

BA62-300

| Female<br>NPT Size | Seal Material                                       | Description                             | Part #   | Competitors Part #        | Rubber Dust Cap<br>Part # |
|--------------------|---|---|----------|---------------------------|---------------------------|
| 2"                 | " Buna stainless steel body with brass poppet valve |   | BA31-200 | J72A-BBN0-B / J72A-ABN0-B | BAC-200                   |
| 2"                 | " FKM stainless steel body with brass poppet valve  |   | BA32-200 | J72A-BVN0-B / J72A-AVN0-B | BAC-200                   |
| 3"                 | Buna  | brass body and poppet valve             | BA31-300 | J73A-BBN0-B               | BAC-300                   |
| 3"                 | " FKM brass body and poppet valve                   |   | BA32-300 | J73A-BVN0-B               | BAC-300                   |
| 3"                 | Buna  | anodized aluminum body and poppet valve | BA61-300 | J73A-ABNO-B               | BAC-300                   |
| 3"                 | FKM   | anodized aluminum body and poppet valve | BA62-300 | J73A-AVN0-B               | BAC-300                   |

See page 123 for replacement parts.







**Female NPT Couplers** 

BS61-300

| Female<br>NPT Size | Seal<br>Material | Description   | Part #    | Competitors Part # | Rubber Dust<br>Plug Part # |
|--------------------|------------------|---|-----------|--------------------|----------------------------|
| 2"                 | Buna             | anodized aluminum body with straight non-swiveling NPT connection | BC61-200  | J72C-ABNO-B        | BCP-200                    |
| 2"                 | FKM              | anodized aluminum body with straight non-swiveling NPT connection | BC62-200  | J72C-AVNO-B        | BCP-200                    |
| 2"                 | Buna             | aluminum body with straight swiveling NPT connection              | BSS61-200 | J72C-ABN1-B        | BCP-200                    |
| 2"                 | FKM              | aluminum body with straight swiveling NPT connection              | BSS62-200 | J72C-AVN1-B        | BCP-200                    |
| 2"                 | Buna             | aluminum body with 90° swiveling NPT connection                   | BS61-200  | J72C-ABN2-B        | BCP-200                    |
| 2"                 | FKM              | aluminum body with 90° swiveling NPT connection                   | BS62-200  | J72C-AVN2-B        | BCP-200                    |
| 3"                 | Buna             | aluminum body with straight swiveling NPT connection              | BSS61-300 | J73C-ABN1-B        | BCP-300                    |
| 3"                 | FKM              | aluminum body with straight swiveling NPT connection              | BSS62-300 | J73C-AVN1-B        | BCP-300                    |
| 3"                 | Buna             | aluminum body with 90° swiveling NPT connection                   | BS61-300  | J73C-ABN2-B        | BCP-300                    |
| 3"                 | FKM              | aluminum body with 90° swiveling NPT connection                   | BS62-300  | J73C-AVN2-B        | BCP-300                    |

# **Bayonet Style Dry Disconnect Caps and Plugs**

| Application:         | Bayonet dry disconnect caps and plugs keep dirt, debris and water out of couplers preventing build up on the sealing surface that will cause seals to fail prematurely. |
|----------------------|---|
| Materials:           | The caps have a stainless steel chain to secure them to the adapter chain lug. The plugs have a stainless steel chain to secure them to the coupler.                    |
| Features & Benefits: | <ul> <li>Simple to use</li> <li>Low cost</li> <li>Durable and flexible rubber</li> <li>Prevents contamination of product</li> </ul>                                     |





BAC-300

BCP-300

| Size | Description  | Part #  |
|------|--------------|---------|
| 2"   | coupler plug | BCP-200 |
| 3"   | coupler plug | BCP-300 |
| 2"   | adapter cap  | BAC-200 |
| 3"   | adapter cap  | BAC-300 |

# **API Couplers**



<sup>1</sup> Normal wear & tear items (including seals) not covered

| Application:         | API couplers are used at the petroleum loading rack for bottom loading of petroleum tankers. They are mounted to the rack loading arm, using the built in 4" TTMA flange connection. When the empty Petroleum tanker pulls into the loading rack to load, the API couplers are connected to the API valves on the tanker. The connection interface consists of a poppet and a plunger, which ensures a positive spill free connection.  |
|----------------------|---|
| Standards:           | Manufactured to American Petroleum Institute standard API RP-<br>1004, which allows for positive connection to API valves such as<br>the Dixon Bayco 5204 series API valves   |
| Materials:           | 356 T6 aluminum anodized hard coat body, aluminum handle, stainless steel hardware, buna, FKM-B and FKM GFLT seals.   |
| Features & Benefits: | <ul> <li>Modular design, allows various face seal combinations, and very easy no special tools required maintenance</li> <li>Shaft seals can be changed without removing coupler from loading arm</li> <li>Locking 5 cam design for easy alignment and tight connection and safety interlock to help ensure coupler properly attached before valve opens.</li> <li>5300BCL is for use in railcar applications with investment cast stainless steel locking handle.</li> <li>Ball-end handle for easy, comfortable operation</li> <li>Choice of either a bonded nose seal, which offers a long life and cannot be washed out, or replaceable nose seal, which allows quick seal replacement without removal from the loading arm.</li> <li>Link, shaft, pin and crank: hardened 17-4PH stainless steel</li> <li>Maximum working pressure 150 PSI to include 5300, 5300B, 5300BC, 5300BCL. 5300G maximum working pressure 100 PSI. Maximum flow 1000 GPM, (3785 LPM). Pressure drop of only 3 to 4 PSI. 5400 series maximum working pressure 75 PSI</li> <li>FKM-B: -10°F to 400°F (-23°C to 204°C), FKM-GFLT: -20°F to 400°F (-28°C to 204°C), Buna seals: -20°F to 250°F (-28°C to 121°C)</li> <li>Biofuel compatible up to E100 (100% Ethanol) and B100 (100% bio diesel) dependent upon part #, see part number list below for more details For detailed fuel compatibility, refer to page 4.</li> <li>FKM - Brown dot, FKM B - Yellow dot, FKM GFLT - Green dot</li> </ul> |

### **API Coupler with Bonded Nose Seal**



API Coupler

| Part #  | Seal Material | Fuel Compatibility   |  |  |  |
|---------|---------------|--|--|--|--|
| 5300    | Buna seals    | Gasoline and diesel, up to E100 and B20 biofuels           |  |  |  |
| 5300B   | FKM-B         | Casalina and discal up to E400 and D400 historia           |  |  |  |
| 5300G   | FKM GFLT      | Gasoline and diesel, up to E100 and B100 biofuels          |  |  |  |
| 5300GC  | FKM GFLT      |  |  |  |  |
| 5300BC  | FKM-B         | Gasoline and diesel, up to E100 and B100 biofuels, crude o |  |  |  |
| 5300BCL | FKM-B         |  |  |  |  |

# **API Coupler with Replaceable Nose Seal**



5354P1

| Part # | Seal Material              | Fuel Compatibility                                |  |  |  |
|--------|----------------------------|---|--|--|--|
| 5400   | Buna seals                 | Gasoline and diesel, up to E100 and B20 biofuels  |  |  |  |
| 5400B  | FKM-B                      | Casalina and discal, up to E100 and B100 histuals |  |  |  |
| 5400G  | FKM GFLT                   | Gasoline and diesel, up to E100 and B100 biofuels |  |  |  |
| Part # | Description                |   |  |  |  |
| 5354P1 | plug for API rack couplers |   |  |  |  |
| 5204H  | rack coupler hanger        |   |  |  |  |

See pages 78-80 for repair kits and replacement parts See page 12 for TTMA flange gaskets

#### **Aluminum Groove Clamps**

#### Features & Benefits:

- Lightweight yet rugged. Unlike steel groove clamps that secure
  the pipe ends with high clamping force against the
  tubing/piping walls, the Dixon® aluminum bolted clamp takes the
  full bolt force and locks into the groove of the tube/pipe,
  preventing distortion of the tube/pipe diameter.
- Precision forged to provide an exact fit and great appearance
- · Lock nuts prevent loosening in applications with vibration.
- Temperature ratings FKM-B: 20°F to 300°F (-6.7°C to 149°C), Baylast™ and Buna: -20°F to 180°F (-28.9°C to 82.2°C)

| Size | Seal     | Part #    | Max.<br>PSI | Approx.<br>Weight Lbs. | Bolt<br>Torque <sup>1</sup> | Fuel<br>Compatibility                            |
|------|----------|-----------|-------------|------------------------|-----------------------------|--|
| 2"   | Buna     | DBV-BN200 | 400         | 0.8                    | 20 ft lbs                   | Gasoline and diesel only                         |
| 2"   | FKM-B    | DBV-VB200 | 400         | 0.8                    | 20 ft lbs                   | Gasoline and diesel, up to E100 & B100 Biofuels  |
| 2"   | Baylast™ | DBV-BL200 | 400         | 0.8                    | 20 ft lbs                   | Gasoline and diesel, up to £100 & 5100 Bioliteis |
| 3"   | Buna     | DBV-BN300 | 170         | 1.1                    | 20 ft lbs                   | Gasoline and diesel only                         |
| 3"   | FKM-B    | DBV-VB300 | 170         | 1.1                    | 20 ft lbs                   | Gasoline and diesel, up to E100 & B100 Biofuels  |
| 3"   | Baylast™ | DBV-BL300 | 170         | 1.1                    | 20 ft lbs                   | Gasolille and diesel, up to £100 & 5100 Biolueis |
| 4"   | Buna     | DBV-BN400 | 120         | 1.5                    | 20 ft lbs                   | Gasoline and diesel only                         |
| 4"   | FKM-B    | DBV-VB400 | 120         | 1.5                    | 20 ft lbs                   | Casalina and dissal, up to E100 9 B100 Biofuela  |
| 4"   | Baylast™ | DBV-BL400 | 120         | 1.5                    | 20 ft lbs                   | Gasoline and diesel, up to E100 & B100 Biofuels  |



DBV-BN400



<sup>1</sup> Bolts must be tightened evenly to prevent gasket pinching and clamp breaking. DO NOT tighten one side then the other. Over-torquing will not improve sealing and may result in failure of the clamps. DO NOT torque bolts over 30 ft-lbs.

### Groove x Groove Painted Iron Clamps with Baylast™ Gasket

#### **Features and Benefits:**

- Painted red
- Baylast<sup>™</sup> rated for biodiesel, Ethanol, diesel, gas and ULSD
- Groove x groove

| Size | Seal     | Maximum PSI | Part # |
|------|----------|-------------|--------|
| 2"   | Baylast™ | 500         | L02BL  |
| 3"   | Baylast™ | 300         | L03BL  |
| 4"   | Baylast™ | 300         | L04BL  |



L02BL

### **Replacement Clamp Gaskets**

| Clamp<br>Size | Part # | Seal                                    | Fuel Compatibility         |
|---------------|--------|---|----------------------------|
| 2"            | G200T  | Buna (1 orange stripe)                  |                            |
| 3"            | G300T  | Buna (1 orange stripe)                  | Gasoline and diesel only   |
| 4"            | G400T  | Buna (1 orange stripe)                  |                            |
| 2"            | G200VB | FKM-B (2 red stripe)                    |                            |
| 3"            | G300VB | FKM-B (2 red stripe)                    |                            |
| 4"            | G400VB | FKM-B (2 red stripe)                    | Gasoline and diesel,       |
| 2"            | G200BL | Baylast <sup>™</sup> (2 orange stripes) | up to E100 & B100 Biofuels |
| 3"            | G300BL | Baylast <sup>™</sup> (2 orange stripes) |                            |
| 4"            | G400BL | Baylast <sup>™</sup> (2 orange stripes) |                            |



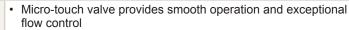
**Biofuel Compatible** 



# Fuel Nozzles

#### **Farm and Consumer Nozzles**

#### Features & Benefits:



- · Pure PTFE stem packing eliminates leaks
- Heavy duty, strong, secure hook makes it easy to hang the nozzle on the pump
- · Roto-matic latch pin provides positive auto shut-off
- · Smartguard snap-on scuff guard
- With trigger hold-open clip
- · Non Underwriters Listed nozzle



gasoline

| Female<br>NPT<br>Inlet | Spout<br>Size | Intended<br>Service | Approximate Flow<br>Rate At 20 PSI<br>(GPM) | Approximate<br>Weight Lbs | Scuff Guard<br>Color | Part #         |
|------------------------|---------------|---------------------|---|---------------------------|----------------------|----------------|
| 3/4"                   | 13/16"        | gasoline            | 18  | 2½                        | black                | <b>DN7UOBF</b> |
| 3/4"                   | 15/16"        | diesel              | 23  | 21/2                      | green                | DN7LOBF        |

#### **Big Mouth™ Diesel Nozzles**

#### Features & Benefits:

- This nozzle is not to be used with gravity flow tanks.
- · Lightweight but strong
- Micro-touch valve provides smooth operation and exceptional flow control
- · Roto-matic latch pin provides positive auto shut-off
- Pure PTFE packing eliminates stem leaks
- Super tough nylon hand guard
- Snap-on handle cover makes changing scuff guards easy
- With trigger hold-open clip
- Non Underwriters Listed nozzle

| Female<br>NPT<br>Inlet | Spout<br>Size | Intended<br>Service | Approximate Flow<br>Rate At 20 PSI<br>(GPM) | Approximate<br>Weight Lbs | Scuff Guard<br>Color | Part # |
|------------------------|---------------|---------------------|---|---------------------------|----------------------|--------|
| 1"                     | 1-1/8"        | diesel              | 27  | 3                         | yellow               | DFN100 |



# DEN100HE



- High flow capacity
- Micro-touch valve provides smooth operation and exceptional flow control
- · Roto-matic latch pin provides positive auto shut-off
- Pure PTFE packing eliminates stem leaks
- · Super tough nylon hand guard
- · Easy to change 'locknut style' spout assembly
- With trigger hold-open clip
- Non Underwriters Listed nozzle

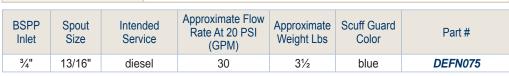


| Female<br>NPT<br>Inlet | Spout<br>Size | Intended<br>Service | Approximate Flow<br>Rate At 20 PSI<br>(GPM) | Approximate<br>Weight Lbs | Scuff Guard<br>Color | Part #   |
|------------------------|---------------|---------------------|---|---------------------------|----------------------|----------|
| 1"                     | 1-3/16"       | diesel              | 35  | 3½                        | green                | DFN100HF |
| 1"                     | 1-3/16"       | diesel              | 45  | 3½                        | green                | DFN100SF |

#### **DEF Automatic Shutoff Nozzles**



- Designed for diesel exhaust fluid, aluminum body double coated inside and out with PTFE baked on at 500°F
- · Spout: stainless steel
- · Wetted parts: stainless, acetal, PTFE
- Seals are FKM-A





# **Fuel Nozzles**

#### **Fueler 100™ Automatic Diesel Nozzles**

#### Features & Benefits:

- Good flow rating of **75 GPM** (at **30 PSI**)
- · Light weight Tenzaloy aluminum casting
- Tough, reliable and easy to operate automatic nozzle for fueling trucks, buses, off-road equipment and fuel oil delivery
- Replaces 1124D and 1144D

| Female<br>NPT Inlet | Spout<br>Size | Intended<br>Service | Approximate Flow<br>Rate At 30 PSI (GPM) | Approximate<br>Weight Lbs     | Part #    |
|---------------------|---------------|---------------------|--|-------------------------------|-----------|
| 11/4"               | 1-3/8"        | diesel              | 75                                       | 61/8                          | DNOG5-NL1 |
| 11/4"               | 1-3/8"        | diesel              | 75                                       | 61/8                          | DNOG5     |
| 1½"                 | 13/8"         | diesel              | 75                                       | 6 <sup>7</sup> / <sub>8</sub> | DNOG6     |

 $<sup>^{\</sup>mbox{\tiny 1}}$  The DNOG5-NL is a  $11\!\!/\!\!4"$  nozzle without the locking handle



#### **Replacement Nozzles**

| Replacement for | Description   | Part #  |
|-----------------|---|---------|
| DNOG6           | spout assembly w/ O-ring for fueler; nut not included | SF1N    |
| DNOG6           | nut for DNOG6   | NUT-106 |

#### **Pressure Nozzles for Bulk Delivery**

|         | _     | _     |        |
|---------|-------|-------|--------|
| Feature | 2 P   | Dan.  | otito  |
| realule | -5 CX | DEIII | eille. |

- High flow design, 1½" nozzle (112D) provides 100 GPM flow at approx 10 PSI
- Easy opening dash pot design with shock-less closing
- Available with or without an aluminum spout (brass spouts optional)
- Detachable and replaceable trigger ratchet

| Female NPT Inlet | Outlet Type          | Part # |
|------------------|----------------------|--------|
| 11/4"            | 11/4" aluminum spout | 114D   |
| 11/4"            | 11/4" female NPT     | 114DNS |
| 1½"              | 1½" aluminum spout   | 112D   |
| 1½"              | 1½" female NPT       | 112DNS |



112D

### **Replacement Spouts**

| Male NPT Size                           | Description                | Part #       |
|---|----------------------------|--------------|
| 11⁄4"                                   | replacement aluminum spout | 1143A        |
| 11/4"                                   | optional brass spout       | 1143B        |
| 1½"                                     | replacement aluminum spout | 1125A        |
| Female NPT inlet: 1½", outlet type: 1¼" | 1½" spout crimped to 1¼"   | 1125A-125NPT |
| 1½"                                     | optional brass spout       | 1125B        |



See page 130-131 for repair kits and replacement parts.

# **Large Capacity Low Pressure Gravity Nozzle**

| Female NPT Inlet | Outlet Type        | Part #  |
|------------------|--------------------|---------|
| 11/4"            | 1¼" aluminum spout | 1250-94 |

See page 133 for repair kits and replacement parts.



# Fuel Nozzles

# **Ball Nozzles for Bulk Delivery**

| Application:         | Ball nozzles have a very high flow rate and low pressure drop and are ideal for bulk oil and fuel deliveries, they are basically a full port ball valve with an inlet swivel and outlet spout.   |
|----------------------|--|
| Standards:           | Manufactured to connect to NPT threaded hose connections   |
| Materials:           | Black anodized aluminum main body, with aluminum spout, polished stainless steel handle and latch, Bayloy inlet swivel, hardened carbon steel swivel ball race, through hardened chrome steel ball bearings, buna and PTFE seals, Acetal valve seat and stainless steel valve ball. Please note: all fuels contain additives, which vary by fuel brand and season. Please contact Dixon® with a list of all additives and we will advise of any known compatibility issues.  |
| Features & Benefits: | <ul> <li>Full 1" flow path through the ball is computer designed and higher than any known competitors, which results with very low pressure drop permitting higher flow rates at lower pressure, reducing foaming or product backups.</li> <li>Unique swivel design permits leak free service, even at temperatures as low as -40°F (-40°C) at 100 PSI</li> <li>Comes standard with 3 PSI check valve, helps ensure residual fuels within the delivery hose and nozzle are contained (optional 5 PSI check valve kit is available, order field replaceable kit BL-RK11 for 1¼ and 1½" ball nozzles, and kit BL-RK112 for 2" Super Ball nozzles)</li> <li>Available with field replaceable outlet spout or quick fill swivel nut.</li> </ul> |









BL072 BL072NS BL062/BL064 BL920

| Female NPT Swivel Inlet | Outlet Type        | Part #  |
|-------------------------|--------------------|---------|
| 11/4"                   | quick fill nut     | BL062   |
| 11/4"                   | 1¼" aluminum spout | BL066   |
| 11/4"                   | 11/4" female NPT   | BL066NS |
| 1½"                     | 1¼" aluminum spout | BL068   |
| 1½"                     | 11/4" female NPT   | BL068NS |
| 1½"                     | quick fill nut     | BL064   |
| 1½"                     | 1½" aluminum spout | BL072   |
| 1½"                     | 1½" female NPT     | BL072NS |
| 1½"                     | 2" aluminum spout  | BL918   |
| 2"                      | 1½" aluminum spout | BL919   |
| 2"                      | 2" aluminum spout  | BL920   |

### **Replacement Spouts and Quick Fill Swivel Nuts**



| Male NPT Size | Description   | Part # |
|---------------|---|--------|
|               | replacement aluminum spout                                    | 1143A  |
| 11/4"         | replacement brass spout                                       | BLS125 |
|               | bronze quick fill nut adapter for BL066NS and BL068NS         | BL002  |
|               | replacement aluminum spout                                    | 1125A  |
| 1½"           | replacement brass spout                                       | BLS150 |
|               | bronze quick fill nut adapter for BL072NS                     | BL001  |
| 2"            | replacement aluminum spout                                    | 391137 |
| 2             | replacement bronze quick fill nut adapter for BL062 and BL064 | BL005  |

See pages 134-137 for repair kits and replacement parts. Product instruction sheets and technical data can be viewed on our website at dixonvalve.com

## Fuel Nozzles

## **Standard Low Pressure Gravity Utility Nozzles**

| Application:         | These delivery nozzles are manual operation (do not have an automatic flow shut off) ideally suited for low pressures (maximum 25 PSI) such as agricultural and 12 volt truck utility pumps, or gravity flow applications.  |  |
|----------------------|---|--|
| Standards:           | Manufactured to connect to NPT threaded hose connections.   |  |
| Materials:           | Die cast zinc body, plated steel trigger and aluminum spout, buna seals Please note all fuels contain additives which can vary by fuel brand and season. Please contact Dixon® with a list of all additives and we will advise of any known compatibility issues. |  |
| Features & Benefits: | <ul> <li>Rugged design</li> <li>Good flow rating, provides 95 GPM flow at approximately 20 PSI</li> <li>Choice of ¾" or 1" inlets, and a variety of outlets and spouts</li> </ul>   |  |

| Female NPT Inlet | Outlet Type                             | Part #  |
|------------------|---|---------|
| 3/4" 1           | 3/4" straight spout                     | 900S34  |
| 3/ <b>"</b> 1    | 3/4" bent spout                         | 900B34  |
| 1"               | 1" UNS female thread (nozzle body only) | 900     |
| 1"               | 3/4" straight spout                     | 900W34S |
| 1"               | 3/4" bent spout                         | 900W34B |
| 1"               | 1" straight spout                       | 900S    |
| 1"               | 1" bent spout                           | 900B    |



<sup>&</sup>lt;sup>1</sup> Nozzles with ¾" female NPT inlet, use a steel bushing to achieve ¾" female NPT inlet.

#### **Replacement Spouts**

| Description                     | Part #   |
|---------------------------------|----------|
| 3/4" replacement straight spout | 234-80-4 |
| 3/4" replacement bent spout     | 234-80-5 |
| 1" replacement straight spout   | 875-4    |
| 1" replacement bent spout       | 875-5    |



## Fuel Nozzles & Swivels

## **Aircraft Over Wing Nozzles**

| Application:         | Aircraft over wing nozzles are manual operation (do not have an automatic flow shut off) they are used for fueling aircraft that have fuel tank access from the top of the wing.  |
|----------------------|---|
| Standards:           | Manufactured to connect to NPT threaded hose connections.   |
| Materials:           | Aluminum body, bronze trigger, aluminum spout, Buna seals, plastic wing guard and spout cap, stainless steel mesh screen.  Please note: all fuels contain additives, which can vary by fuel brand and season. Please contact Dixon® with a list of all additives and we will advise of any known compatibility issues.  |
| Features & Benefits: | <ul> <li>High flow design provides approximately 60 GPM @ 20 PSI</li> <li>Easy opening dash pot design with shock less closing</li> <li>Plastic wing guard protects the aircraft wing during fueling</li> <li>Detachable and replaceable trigger ratchet</li> <li>Aluminum spout has a plastic cap with spring cord, to prevent drips and scratches</li> <li>Nozzle includes a fine mesh stainless steel screen filter</li> <li>Screw attachment for grounding cable</li> </ul> |



114DAV-06ASM

| Female NPT Inlet Outlet type |                      | Part #        |
|------------------------------|----------------------|---------------|
| 11/4"                        | 1" aluminum spout    | 114DAVR       |
| 11/4"                        | 11/4" aluminum spout | 114D-AV       |
| 1½"                          | 11/4" aluminum spout | 114D-AV-06ASM |

See page 130 for repair kits and replacement parts.

#### Male x Female NPT Nozzle Swivels

| Standards:           | Manufactured to connect to NPT threaded hose and nozzle connections   |
|----------------------|---|
| Materials:           | 3/4" and 1" sizes, aluminum body, brass hex nut, FKM / Buna seals, nylon cord retainer. 11/4" - 2" sizes, Bayloy body, hardened carbon steel swivel ball race, through hardened chrome steel ball bearings, buna and PTFE seals Please note all fuels contain additives which can vary by fuel brand and season. Please contact Dixon® with a list of all additives and we will advise of any known compatibility issues. |
| Features & Benefits: | 150 PSI maximum rating  |



SWMF150

| Size                        | Description              | Part #  |
|-----------------------------|--------------------------|---------|
| 3/4" male NPT x female NPT  |                          | DAWS34  |
| 1"                          | 1" male NPT x female NPT |         |
| 11/4" male NPT x female NPT |                          | SWMF125 |
| 1½"                         | ½" male NPT x female NPT |         |
| 2"                          | male NPT x female NPT    | SWMF200 |

#### Male NPT x Hose Shank Swivel



1565U

| Size | Description                        | Part # |
|------|------------------------------------|--------|
| 1½"  | male NPT x hose shank, Buna-N seal | 1565U  |

See page 131 for repair kits and replacement parts.

## Fuel Swivels

## **Breakaways**

| Application:         | Provides breakaway protection for high capacity fueling operations such as truck and bus terminals, mining, off-road fueling and fuel oil delivery.  |
|----------------------|--|
| Materials:           | Aluminum body  |
| Features & Benefits: | <ul> <li>Buna seals</li> <li>Unique ball valves seal both ends when separated</li> <li>Design provides consistent and reliable performance</li> <li>Lightweight</li> <li>Easy to repair</li> <li>¾" is Underwriter's Listed</li> </ul> |

| Size | Number Of Brass Break Rings | Separation Force (Lbs) | Part #  |
|------|-----------------------------|------------------------|---------|
| 3/4" | 2                           | 325                    | DAB34 🕕 |
| 1"   | 2                           | 325                    | DAB1    |



DAB34

| Application:         | Provides breakaway protection for high capacity fueling operations such as truck and bus terminals, mining, off-road fueling and fuel oil delivery. |
|----------------------|---|
| Materials:           | Nickel plated aluminum body   |
| Features & Benefits: | FKM / Buna seals     Check valve - PTFE ball seals both ends when separated   |

| Size  | Number Of Brass Break Rings | Separation Force (Lbs) | Part # |
|-------|-----------------------------|------------------------|--------|
| 11/4" | 4                           | 600                    | DAB14  |
| 1½"   | 4                           | 600                    | DAB15  |
| 2"    | 6                           | 800                    | DAB2   |



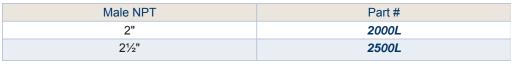
DAB15

## **Fuel Tank Accessories**

#### **Automatic Pressure/Vacuum Relief Caps for Stationary Tanks**

| Application:         | These caps are threaded into the top of stationary (non-mobile) above ground fuel storage tanks, where they serve two purposes: a) they can be used as a thread in and lockable fuel filler cap. b) They protect the tank from expansion or implosion, the internal relief valve is normally closed, but opens to relieve internal pressure or vacuum. |
|----------------------|--|
| Standards:           | Manufactured to thread into both NPS and NPT tank openings   |
| Materials:           | Die cast zinc body, brass screen   |
| Features & Benefits: | <ul> <li>Normally closed vent stops fuel evaporation and airborne contaminants</li> <li>Protects tank from pressure or vacuum build-up. Relieves pressure at 2 PSI and vacuum at 0.7 HG at a rate of 20 SCFM</li> <li>Can be used as a fuel filler cap</li> <li>Pad-lockable to prevent fuel theft and tampering</li> </ul>                            |







2500L

Note: Not intended for use on mobile tanks. To ensure that the cap can properly vent, the vent cap must be kept free of any debris i.e. dirt, snow, ice, rags etc.

## **Standard Vent Caps for Stationary Tanks**



| Features | & E | Benefits: |
|----------|-----|-----------|
|----------|-----|-----------|

- Always open vent
- · Protects tank from pressure or vacuum build-up
- · Can be used as a fuel filler cap



2500SFV

| Male NPS | Part #  |
|----------|---------|
| 2½"      | 2500SFV |

Note: Not intended for use on mobile tanks. To ensure that the cap can properly vent, the vent cap must be kept free of any debris i.e. dirt, snow, ice, rags etc.

## **Automatic Pressure/Vacuum Relief Caps for Mobile Tanks**





200-PV-9

- Features & Benefits:
- Normally closed vent, stops fuel evaporation and airborne contaminants
- Protects tank from pressure or vacuum build-up. Relieves pressure at 7.5-9 PSI and Vacuum at .33 HG
- Can be used as a fuel filler cap
- Pad-lockable to prevent fuel theft and tampering

| Male NPS | Part#    |
|----------|----------|
| 2"       | 200-PV-9 |

Note: To ensure that the cap can properly vent, the vent cap must be kept free of any debris i.e. dirt, snow, ice, rags etc.

## FloTech™ Overfill Detection System



All FloTech™ electronics manufactured after January 1, 2015 are covered by our 5 year warranty.

#### FloTech™ Overfill Detection Products

# Application: The overfill detection system used on petroleum cargo tanks typically consists of a sensor mounted in each tank compartment, an onboard monitor located near the bottom loading valves and an API compatible socket. The overfill system is intended to detect a pending overfill condition inside the cargo tank compartment and signal the loading rack to close the fuel supply control valve, to prevent a spill of product. These systems are required by law as part of the bottom loading system and considered a secondary emergency shut off device. The overfill system is typically triggered when the primary metering system fails to load the cargo tank compartment with the correct volume of product.

#### Standards:

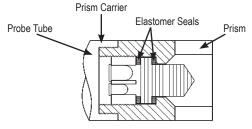
Manufactured to American Petroleum Institute standard API RP-1004, which allows for drop in interchange ability with other brands.

#### Materials:

Dependent upon the component, see each product section for materials.

#### Features & Benefits:

- Knowledge and experienced design: Dixon® electronic staff are seasoned veterans when
  it comes to overfill systems. Our employees have years of experience in electronics,
  manufacturing and most important, with in-the-field trouble shooting of overfill terminal and tanker
  installations. That is why we have focused on easy, drop-in replacement features with improved
  probe life, and why we have included heavy duty hardware made from premium, corrosion
  resistant materials.
- Trouble free probes and sensors: FloTech™ brand probes/sensors do not use epoxy bonded prisms as a means to seal the prism. Therefore, they are not subject to malfunction due to epoxy/ prism interface separation. FloTech™ brand probes/sensors incorporate a double elastomer design which seals and secures the sensitive optic prism tip. The elastomer seals are flexible allowing thermal expansion and resistance to steam cleaning and petroleum chemical attack.



## **Customer Support 877.582.3569**

- "Best in Class" technical support: Our goal is to provide the most reliable overfill components
  and system available on the market today. Over the years the FloTech™ brand has earned a
  reputation for reliable overfill components compatible with other common systems. Don't take our
  word on this; ask one of our many customers!
- Easy Installation: FloTech™ brand items are shipped with easy to follow installation instructions and manuals (also available online at dixonvalve.com under the Resources menu, select Petroleum and Dry bulk products). If you need a little extra help call our North American toll free technical service hot line at 877.582.3569 (or from other parts of the world, dial 001-513-874-8499). In fact, call us with any overfill system questions (regardless of the brand) and we will work with you to help solve the problem. FloTech™ brand components are manufactured to be installed easily, even on other systems. We designed them to be drop-in compatible with API systems being used around the world.
- Products in stock, delivered on time: FloTech™ brand products are stocked at Dixon® locations
  throughout the world. Most orders can be processed and delivered within 24 hours. We know that
  downtime costs you money so we do everything we can to ensure you receive your parts when
  you need them.
- A great product with an unparalleled warranty: FloTech™ brand products are covered by a five year limited warranty. The warranty is part of the total system that makes FloTech™ overfill detection the best choice for your operation. See limited warranty on page 167 for details.
- Biofuel compatible: up to E100 (100% Ethanol) and B100 (100% Bio Diesel). For detailed fuel compatibility, please refer to the chart shown on page 4.
- Probes are rated to 36PSIG per 49 CFR 178.345-5 Temp Range -40°F to 160°F refractive index range 1.37 to 1.60 viscosity less than 1000SSU.

Product instruction sheets and technical data can be viewed on our website at dixonvalve.com

Biofuel Compatible, see fuel compatibility chart on page 4 for more information.

#### FloTech™ Checkmate Overfill/Retain Plug-n-Play System





| Application:         | The reason for many overfill system breakdowns is failed or poor wiring connections. The required amperage within the overfill system is so low that any poorly wired or corroded wiring connections tend to fail (the low current cannot pass through corrosion or poor connections). To remove the possibility of wiring system problems, Dixon® has introduced the FloTech™ Plug-n-Play system, all the wire connections are prewired and tested at the factory using high quality weather proof cables and plugs. Plug-n-Play system installation takes a fraction of the time to install when compared to conventional systems, just mount all the components and simply plug them all together. |
|----------------------|---|
| Standards:           | Manufactured to American Petroleum Institute standard API RP-1004, which allows for interchangeability.   |
| Materials:           | Dependent upon the component, see each product section for materials  |
| Features & Benefits: | <ul> <li>Prewired cables and plugs on sensors, wiring harnesses, onboard monitor and sockets, make it simple to install our Plug-n-Play system in much less time than conventional systems.</li> <li>Secure and weather tight connections all the time remove the possibility of poor wiring connections. Sealed connectors pass IP67 and DIN40050 salt spray tests.</li> <li>Easy installation: literally Plug-n-Play, just mount the components and plug them all together.</li> <li>Biofuel compatible up to E100 (100% Ethanol) and B100 (100% bio diesel)</li> </ul>   |

#### **Monitors with Integrated Dual Sockets**

#### Features & Benefits:

- Integrated Optic and Thermistor dual sockets with onboard monitor all in one aluminum case
- Takes less space than utilizing separate sockets and monitor
- Prewired and factory tested with Plug-n-Play cabling and plugs, eliminates hours of manual crimped wire connections and removes the problems and worries associated with connection problems.
- Includes water-tight integrated fuse holder, all stainless steel hardware and terminal blocks prevent corrosion
- Built-in configurable high current relay output for pump or signal control
- · Color coded display shows well on trailers
- Sockets come standard with Flotech™ unique guaranteed for life stainless steel wear rings.

#### **Available Integrated Options:**

- Top (overfill) only monitoring, or both top (overfill) and bottom (retain) monitoring
- Pre-wired ground bolt
- Pre-wired pressure sensor which can be used to interlock brakes or vapor vents
- · Pre-wired Trailer Identification Module
- Pre-wired dual male pin power cord



|              |                              | n-Play<br>ections             |                | Available Accessories Installed |                      |                               |  | Sockets   |            |
|--------------|------------------------------|-------------------------------|----------------|---------------------------------|----------------------|-------------------------------|--|-----------|------------|
| Part#        | Top<br>Overfill<br>Detection | Bottom<br>Retain<br>Detection | Ground<br>Bolt | Pressure<br>Sensor<br>Switch    | Trailer ID<br>Module | Dual Male<br>Pin - Power Cord | Stainless Steel<br>'Guaranteed for<br>Life' Wear Rings | Optic     | Thermistor |
| FT208-390    |                              |                               |                |                                 |                      |                               | ✓  |           |            |
| FT208-390G   |                              |                               | 1              |                                 |                      |                               | ✓  | 6 contact | 10 contact |
| FT208-390GS  |                              |                               | ✓              | 1                               |                      |                               | ✓  | pins,     | pins,      |
| FT208-390GST |                              |                               | ✓              | ✓                               | 1                    |                               | ✓  | 3 J-slots | 4 J-slots  |
| FT208-390GT  |                              |                               | ✓              |                                 | 1                    |                               | ✓  |           |            |



# FloTech™ Checkmate Overfill/Retain Plug-n-Play System Monitors with Integrated Dual Sockets (continued)



|                 | Plug-n-Play<br>Connections   |                               |                |                              | Available Accessories Installed |                               |  | Soc                             | kets               |
|-----------------|------------------------------|-------------------------------|----------------|------------------------------|---------------------------------|-------------------------------|--|---------------------------------|--------------------|
| Part#           | Top<br>Overfill<br>Detection | Bottom<br>Retain<br>Detection | Ground<br>Bolt | Pressure<br>Sensor<br>Switch | Trailer ID<br>Module            | Dual Male<br>Pin - Power Cord | Stainless Steel<br>'Guaranteed for<br>Life' Wear Rings | Optic                           | Thermistor         |
| FT208-390P      | ✓                            |                               |                |                              |                                 |                               | ✓  |                                 |                    |
| FT208-390PG     | ✓                            |                               | ✓              |                              |                                 |                               | ✓  |                                 |                    |
| FT208-390PGS    | ✓                            |                               | ✓              | ✓                            |                                 |                               | ✓  |                                 |                    |
| FT208-390PGST   | ✓                            |                               | ✓              | ✓                            | ✓                               |                               | ✓  |                                 |                    |
| FT208-390PGT    | ✓                            |                               | ✓              |                              | ✓                               |                               | ✓  |                                 |                    |
| FT208-390PGSO   | ✓                            |                               | ✓              | ✓                            |                                 | 1                             | ✓  |                                 |                    |
| FT208-390PGSTO  | ✓                            |                               | ✓              | ✓                            | 1                               | 1                             | ✓  | 6 contact pins,                 | 10 contact         |
| FT208-390PP     | ✓                            | ✓                             |                |                              |                                 |                               | ✓  | 3 J-slots                       | pins,<br>4 J-slots |
| FT208-390PPG    | 1                            | ✓                             | ✓              |                              |                                 |                               | ✓  |                                 |                    |
| FT208-390PPGS   | 1                            | ✓                             | ✓              | 1                            |                                 |                               | ✓  |                                 |                    |
| FT208-390PPGST  | 1                            | ✓                             | 1              | 1                            | 1                               |                               | ✓  |                                 |                    |
| FT208-390PPGT   | 1                            | ✓                             | 1              |                              | 1                               |                               | ✓  |                                 |                    |
| FT208-390PPGSO  | 1                            | ✓                             | ✓              | 1                            |                                 | 1                             | ✓  |                                 |                    |
| FT208-390PPGSTO | 1                            | ✓                             | ✓              | 1                            | 1                               | 1                             | ✓  |                                 |                    |
| FT208-391P      | ✓                            |                               |                |                              |                                 |                               | ✓  |                                 |                    |
| FT208-391PG     | ✓                            |                               | ✓              |                              |                                 |                               | ✓  |                                 |                    |
| FT208-391PGS    | 1                            |                               | ✓              | 1                            |                                 |                               | ✓  |                                 |                    |
| FT208-391PGST   | 1                            |                               | ✓              | 1                            | 1                               |                               | ✓  |                                 |                    |
| FT208-391PGT    | 1                            |                               | ✓              |                              | 1                               |                               | ✓  | 6 contact<br>pins,<br>4 J-slots | 10 contact         |
| FT208-391PP     | 1                            | ✓                             |                |                              |                                 |                               | ✓  |                                 | pins<br>4 J-slots  |
| FT208-391PPG    | 1                            | ✓                             | ✓              |                              |                                 |                               | 1  |                                 |                    |
| FT208-391PPGS   | 1                            | ✓                             | 1              | 1                            |                                 |                               | ✓  |                                 |                    |
| FT208-391PPGST  | 1                            | ✓                             | ✓              | 1                            | 1                               |                               | ✓  |                                 |                    |
| FT208-391PPGT   | 1                            | ✓                             | ✓              |                              | 1                               |                               | 1  |                                 |                    |

See pages 138 and 139 for repair kits and replacement parts.

#### FloTech™ Checkmate Overfill/Retain Plug-n-Play System Stand Alone Monitors

#### Features & Benefits:

- Prewired and factory tested with Plug-n-Play cabling and plugs, eliminates hours of manual crimped wire connections, and removes the problems and worries associated with connection problems.
- Includes water-tight integrated fuse holder, all stainless steel hardware and terminal block within the aluminum housing.
- · High tech color coded display shows well on trailers
- Monitors include advanced diagnostic capabilities as well as signal translation abilities for all socket types (optic, thermistor or float). The system offers true load at any rack compatibility.

#### **Available Integrated Options:**

 Top (overfill) only monitoring, or both top (overfill) and bottom (retain) monitoring

| Part #   | Checkmate Monitor with Plug-N-Play Connectors                     |
|----------|---|
| FT208P   | top overfill protection only                                      |
| FT208PP  | top overfill and bottom retain detection                          |
| FT208PPC | top overfill and bottom retain detection, for canadian 'b' trains |
| FT208PSS | dual pressure switches  |
| FT208LCM | Checkmate load control monitor                                    |
| FT295    | alarm interface module assembly                                   |





monitor



FT295

#### Stand Alone Socket Assemblies

#### Features & Benefits:

- Pre-wired and factory tested with Plug-n-Play cables and plugs, eliminates hours of manual crimping, and removes the problems and worries associated with connection problems.
- Aluminum housings, with either aluminum hardcoat or stainless steel wear rings, stainless steel contact pins.
- Dual and triple socket assemblies take less space than multiple single sockets.

#### **Available Integrated Options:**

- Pre-wired internal ground wire (dual or triple socket assemblies)
- Pre-wired Trailer Identification Module (dual or triple socket assemblies)
- FT300P and FT301P sockets are available with Flotech™
  unique guaranteed for life stainless steel wear rings as
  options. Plug-n-Play dual and triple sockets come standard
  with guaranteed for life stainless steel wear rings.



FT390PG-20

| Part #                  | Socket  | API Optic                   | Thermistor                   | Optic J560 | Internal Ground<br>Wire |  |  |
|-------------------------|---|-----------------------------|------------------------------|------------|-------------------------|--|--|
| FT300P                  | single socket   | 6 contact pins and 3 J-slot |                              |            |                         |  |  |
| FT300PG                 | single socket   | 6 contact pins and 3 J-slot |                              |            | ✓                       |  |  |
| FT301P                  | single socket   |                             | 8 contact pins and 4 J-slot  |            |                         |  |  |
| FT306P                  | single socket   |                             |                              | 1          |                         |  |  |
| FT390PG-20 1            | dual socket, 20 ft cable  | 6 contact pins and 3 J-slot | 8 contact pins and 4 J-slot  |            | ✓                       |  |  |
| FT394P 1                | triple socket   | 6 contact pins and 3 J-slot | 10 contact pins and 4 J-slot | 1          |                         |  |  |
| FT394PG 1               | triple socket   | 6 contact pins and 3 J-slot | 10 contact pins and 4 J-slot | ✓          | ✓                       |  |  |
| FT394VP 1               | triple socket vertical arrangement  | 6 contact pins and 3 J-slot | 10 contact pins and 4 J-slot | ✓          |                         |  |  |
| FT394VPG 1              | triple socket vertical arrangement  | 6 contact pins and 3 J-slot | 10 contact pins and 4 J-slot | ✓          | ✓                       |  |  |
| FT395P-20 <sup>2</sup>  | triple socket, 20' cable  | 6 contact pins and 4 J-slot | 10 contact pins and 4 J-slot | ✓          |                         |  |  |
| FT395PG-20 <sup>2</sup> | triple socket, 20' cable  | 6 contact pins and 4 J-slot | 10 contact pins and 4 J-slot | ✓          | /                       |  |  |
| FT391P-20               | dual socket, 20 feet of Plug-n-Play cable, 4 J-slot                       |                             |                              |            |                         |  |  |
| FT391PG-20              | dual socket, 20 feet of Plug-n-Play cable, 4 J-slot, internal ground wire |                             |                              |            |                         |  |  |

<sup>&</sup>lt;sup>1, 2</sup> Guaranteed for life stainless steel wear rings included (U.S. <sup>1</sup>, Canada <sup>2</sup>) See pages 141 - 146 for repair kits and replacement parts.

## FloTech™ Checkmate Overfill/Retain Plug-n-Play System Overfill Sensors



#### Features & Benefits:

- Overfill detection sensors are intended to detect a pending overfill condition inside the fuel tank compartment. When they are wetted (come in contact with the fuel) they signal the fuel loading rack to close the fuel supply control valve, to prevent a spill of product.
- Prewired and factory tested with Plug-n-Play cabling and plugs, eliminates hours of manual crimped wire connections, and removes the problems and worries associated with connection problems. Easy to install, just mount the housing into the tank and plug the cables together.
   Trouble free probes: FloTech<sup>TM</sup> brand probes incorporate
- Trouble free probes: FloTech™ brand probes incorporate
  a double elastomer design which seals and secures the
  sensitive glass optic prism tip. The elastomer seals are
  flexible allowing thermal expansion and resistance to steam
  cleaning and petroleum chemical attack.
- Custom lengths available upon request
- The FT151P series sensor housing contains a Plug-n-Play probe in a cast aluminum housing. The sensor housing has a 2" NPT mounting thread, heavy duty stainless steel hardware, and FKM probe seal. Install into either a 2" NPT threaded port or a 2%" diameter tank opening using the gasket and locking nut provided. All screws and rings are heavy duty stainless steel for easy assembly and long life.

| Part #    | Description   | Replacement<br>Probes |
|-----------|---|-----------------------|
| FT151P    | housing with 7" Plug-n-Play overfill detection probe, with Plug-n-Play harness connector  | FT150P                |
| FT151P-12 | housing with 12" Plug-n-Play overfill detection probe, with Plug-n-Play harness connector | FT150P-12             |
| FT151P-18 | housing with 18" Plug-n-Play overfill detection probe, with Plug-n-Play harness connector | FT150P-18             |

See page 147 and 149 for repair kits and replacement parts.

#### **Retain Sensors**

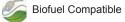


#### Features & Benefits:

- Retain sensors inform the loading terminal if the tank compartments are empty, or if there is product left in the tank prior to
- re-loading the tank (product has been retained).
- Prewired and factory tested with Plug-n-Play cabling and plugs, eliminates hours of manual crimped wire connections, and removes the problems and worries associated with connection problems. Easy to install, just mount the housing into the tank and plug the cables together.
   Trouble Free Probes: FloTech™ brand probes/sensors
- Trouble Free Probes: FloTech™ brand probes/sensors incorporate a double elastomer design which seals and secures the sensitive optic prism tip. The elastomer seals are flexible allowing thermal expansion and resistance to steam cleaning and petroleum chemical attack.
- The FT152 sensor is a bottom retain detection sensor. Sensor is shipped with a ½" NPT weld-on aluminum half coupling for mounting. The main sensor portion is stainless steel to prevent galling in the tank. The wiring box is plastic to prevent corrosion.

| Part # | Description   |
|--------|---|
| FT152P | housing with Plug-n-Play retain probe, with Plug-n-Play harness connector |

See page 148 and 150 for repair kits and replacement parts.



# FloTech™ Checkmate Overfill/Retain Plug-n-Play System Wiring Harnesses

#### Features & Benefits:

- Pre-wired and factory tested with Plug-n-Play cabling and plugs, eliminates hours of manual crimped wire connections, and removes the problems and worries associated with connection problems. Easy to install, just mount all the components (sensors, sockets, monitors) onto the tank and plug them into the pre-configured harness.
- Plug-n-Play cable harnesses come pre-configured for the type of tank (truck mounted tanks or for full length tank trailers) the number of tank compartments, standard harnesses have been designed to fit most standard tank configurations.
- Custom length harnesses are available.
- Secure and weather tight connections all the time, remove the possibility of poor wiring connections. Sealed connectors pass IP67 and DIN40050 salt spray tests.



| Part #          | Description   |
|-----------------|---|
|                 | overfill detection Plug-n-Play cable harnesses for full length tank trailers                              |
| FT20801         | one compartment tank trailer. Overfill detection (top) cable harness with Plug-n-play connections         |
| FT20802         | two compartment tank trailer. Overfill detection (top) cable harness with Plug-n-play connections         |
| FT20803         | three compartment tank trailer. Overfill detection (top) cable harness with Plug-n-play connections       |
| FT20804         | four compartment tank trailer. Overfill detection (top) cable harness with Plug-n-play connections        |
| FT20805         | five compartment tank trailer. Overfill detection (top) cable harness with Plug-n-play connections        |
| FT20806         | six compartment tank trailer. Overfill detection (top) cable harness with Plug-n-play connections         |
|                 | retain detection Plug-n-Play cable harnesses for full length tank trailers                                |
| FT20801S        | one compartment tank trailer. Retain (bottom) cable harness with Plug-n-play connections                  |
| FT20802S        | two compartment tank trailer. Retain (bottom) cable harness with Plug-n-play connections                  |
| FT20803S        | three compartment tank trailer. Retain (bottom) cable harness with Plug-n-play connections                |
| FT20804S        | four compartment tank trailer. Retain (bottom) cable harness with Plug-n-play connections                 |
| FT20805S        | five compartment tank trailer. Retain (bottom) cable harness with Plug-n-play connections                 |
| FT20806S        | six compartment tank trailer. Retain (bottom) cable harness with Plug-n-play connections                  |
|                 | overfill detection Plug-n-Play cable harnesses for truck mounted tanks                                    |
| FT20801TWS      | one compartment truck mounted tank. Overfill detection (top) cable harness with Plug-n-play connections   |
| FT20802TWS      | two compartment truck mounted tank. Overfill detection (top) cable harness with Plug-n-play connections   |
| FT20803TWS      | three compartment truck mounted tank. Overfill detection (top) cable harness with Plug-n-play connections |
| FT20804TWS      | four compartment truck mounted tank. Overfill detection (top) cable harness with Plug-n-play connections  |
| FT20805TWS      | five compartment truck mounted tank. Overfill detection (top) cable harness with Plug-n-play connections  |
| FT20806TWS      | six compartment truck mounted tank. Overfill detection (top) cable harness with Plug-n-play connections   |
|                 | monitor to harness extensions   |
| FT20800-EXT-2FT | 2 ft monitor to harness extension   |
| FT20800-EXT-8   | 8 ft monitor to harness extension   |
| FT20800-EXT-25  | 25 ft monitor to harness extension  |
| FT20800-EXT-36  | 36 ft monitor to harness extension  |

# FloTech™ Checkmate Overfill Detection (Black & White 2 Wire) Systems (Top Detection Only)

Features & Benefits:

- FloTech™ brand overfill system kits provide everything needed to install a new overfill system
  on your tank. One to eight compartment kits are available from our inventory. Systems include:
  1 FT208 monitor, 1 FT151 overfill sensor per compartment, FT404 cable and FT402 strain
  reliefs (cable glands).
- · Other probe lengths are available



| Part #    | Description   |
|-----------|---|
| FT2801    | Checkmate, 1 compartment system (top only) - 7" probes  |
| FT2802    | Checkmate, 2 compartment system (top only) - 7" probes  |
|           |   |
| FT2803    | Checkmate, 3 compartment system (top only) - 7" probes  |
| FT2804    | Checkmate, 4 compartment system (top only) - 7" probes  |
| FT2805    | Checkmate, 5 compartment system (top only) - 7" probes  |
| FT2806    | Checkmate, 6 compartment system (top only) - 7" probes  |
| FT2807    | Checkmate, 7 compartment system (top only) - 7" probes  |
| FT2808    | Checkmate, 8 compartment system (top only) - 7" probes  |
| FT2801-12 | Checkmate, 1 compartment system (top only) - 12" probes |
| FT2802-12 | Checkmate, 2 compartment system (top only) - 12" probes |
| FT2803-12 | Checkmate, 3 compartment system (top only) - 12" probes |
| FT2804-12 | Checkmate, 4 compartment system (top only) - 12" probes |
| FT2805-12 | Checkmate, 5 compartment system (top only) - 12" probes |
| FT2806-12 | Checkmate, 6 compartment system (top only) - 12" probes |
| FT2807-12 | Checkmate, 7 compartment system (top only) - 12" probes |
| FT2808-12 | Checkmate, 8 compartment system (top only) - 12" probes |

Please refer to chart on pages 70 thru 73 for cross references to other manufacturer part numbers.

# FloTech™ Checkmate Overfill Detection (Black & White 2 Wire) Systems (Top and Bottom)

Features & Benefits:

- FloTech™ brand overfill system kits provide everything needed to install a new overfill system
  on your tank. One to eight compartment kits are available from our inventory. Systems include:
  1 FT208 monitor, 1 FT151 overfill sensor and 1 FT152 retain sensor per compartment,
  FT404-150 cable and FT403 strain reliefs (cable glands).
- Other probe lengths are available



| Part #    | Description  |
|-----------|--|
| FT2811    | Checkmate, 1 compartment system (overfill & retain) - 7" probes  |
| FT2812    | Checkmate, 2 compartment system (overfill & retain) - 7" probes  |
| FT2813    | Checkmate, 3 compartment system (overfill & retain) - 7" probes  |
| FT2814    | Checkmate, 4 compartment system (overfill & retain) - 7" probes  |
| FT2815    | Checkmate, 5 compartment system (overfill & retain) - 7" probes  |
| FT2816    | Checkmate, 6 compartment system (overfill & retain) - 7" probes  |
| FT2817    | Checkmate, 7 compartment system (overfill & retain) - 7" probes  |
| FT2818    | Checkmate, 8 compartment system (overfill & retain) - 7" probes  |
| FT2811-12 | Checkmate, 1 compartment system (overfill & retain) - 12" probes |
| FT2812-12 | Checkmate, 2 compartment system (overfill & retain) - 12" probes |
| FT2813-12 | Checkmate, 3 compartment system (overfill & retain) - 12" probes |
| FT2814-12 | Checkmate, 4 compartment system (overfill & retain) - 12" probes |
| FT2815-12 | Checkmate, 5 compartment system (overfill & retain) - 12" probes |
| FT2816-12 | Checkmate, 6 compartment system (overfill & retain) - 12" probes |
| FT2817-12 | Checkmate, 7 compartment system (overfill & retain) - 12" probes |
| FT2818-12 | Checkmate, 8 compartment system (overfill & retain) - 12" probes |

Please refer to chart on pages 70 thru 73 for cross references to other manufacturer part numbers.

#### FloTech™ Checkmate Overfill/Retain (Black & White 2 Wire) System **Replacement Parts**

#### **Checkmate Onboard Monitors**

#### Features & Benefits:

- Easy to follow programming guide for up to eight compartments top only or top and bottom service with the same monitor
- Monitor can be programmed up to 100,000 times without sending it back to the factory
- Stainless steel terminal blocks resist rusting of contacts
- Stainless steel hardware is used on all products
- Powder coated color matched components for exceptional appearance
- Auxiliary input for Hobbs type switches
- Power control relay output
- Drop-in compatibility with competitors products, see compatibility chart on pages 61 64. Wide input power 12-24 VDC
- Monitors include advanced diagnostic capabilities as well as signal translation abilities for all socket types (optic, thermistor or float). The system offers true load at any rack compatibility.

Available integrated options:

Optional FloTech™ feature (patent pending) is only available on Checkmate model onboard monitors. Data Link™ gives maintenance staff the ability to download the performance and diagnostic history of the overfill system. Plug the FloTech™ hand-held diagnostic terminal, into the Checkmate monitor and download to your PC. A time and date stamped report is generated, showing the history of every wetted or failed sensor, rack connection, auxiliary input and load/unload data.

| Part # | Description   |
|--------|---|
| FT208  | Checkmate programable monitor and housing                   |
| FT207  | Checkmate programable replacement monitor only (no housing) |



See page 153 for repair kits and replacement parts.

Please refer to chart on pages 70 thru 73 for cross references to other manufacturer part numbers.

FT208

#### **Overfill Detection Sensors**

#### Features & Benefits:

- The FloTech™ thermo-optic 2 wire probe is electronically and mechanically compatible for drop-in replacement of other commonly used 2-wire probes with black and white wires. Providing the fast response and reliability of optic technology in a thermistor application.
- Custom probe lengths available upon request
- The sensor housing contains a black and white 2 wire probe in a cast aluminum housing. The sensor housing has a 2" NPT mounting thread, heavy duty stainless steel hardware, and FKM probe seal. Install into either a 2" NPT threaded port or 2%" diameter tank opening using the gasket and locking nut provided.

| Part #   | Description  | Replacement<br>Probes |
|----------|--|-----------------------|
| FT151    | housing with 7" black and white 2 wire overfill detection probe  | FT150                 |
| FT151-12 | housing with 12" black and white 2 wire overfill detection probe | FT150-12              |
| FT151-18 | housing with 18" black and white 2 wire overfill detection probe | FT150-18              |



FT151

#### **Retain Sensors**

#### Features & Benefits:

- Retain sensors inform the loading terminal if the tank compartments are empty, or if there is product left in the tank prior to re-loading the tank (product has been retained).
- Sensor is shipped with a ½" NPT weld-on aluminum half coupling for mounting. The main sensor portion is stainless steel to prevent galling in the tank. The wiring box is nylon to prevent corrosion and is removable to facilitate installation. Our three port housing design is compatible with previous inline and parallel dual port housing.

| Part # | Description                                      |
|--------|--|
| FT152  | housing with black and white 2 wire retain probe |

See page 150 and 152 for repair kits and replacement parts.



FT152





# FloTech™ ROM Type Overfill Detection (Red and Black 2 Wire) Systems (Top Detection Only)

#### Features & Benefits:

- FloTech™ brand overfill system kits provide everything needed to install a new overfill system on your tank. One to six compartment kits are available from our inventory. Systems include: 1 FT204P monitor, 1 FT202 overfill sensor per compartment, FT401 (100') cable and FT402 (20 pieces) strain reliefs (cable glands). Sockets, inline fuse and instruction booklet sold separately.
- · Other probe lengths are available



| Part #    | Description  |
|-----------|--|
| FT2101    | ROM type, 1 compartment system (top only) - 7" probes  |
| FT2102    | ROM type, 2 compartment system (top only) - 7" probes  |
| FT2103    | ROM type, 3 compartment system (top only) - 7" probes  |
| FT2104    | ROM type, 4 compartment system (top only) - 7" probes  |
| FT2105    | ROM type, 5 compartment system (top only) - 7" probes  |
| FT2106    | ROM type, 6 compartment system (top only) - 7" probes  |
| FT2101-12 | ROM type, 1 compartment system (top only) - 12" probes |
| FT2102-12 | ROM type, 2 compartment system (top only) - 12" probes |
| FT2103-12 | ROM type, 3 compartment system (top only) - 12" probes |
| FT2104-12 | ROM type, 4 compartment system (top only) - 12" probes |
| FT2105-12 | ROM type, 5 compartment system (top only) - 12" probes |
| FT2106-12 | ROM type, 6 compartment system (top only) - 12" probes |

# FloTech™ ROM Type Overfill/Retain Detection (Red and Black 2 Wire) Systems (Top and Bottom)

#### Features & Benefits:

- FloTech™ brand overfill system kits provide everything needed to install a new overfill system
  on your tank. One to six compartment kits are available from our inventory. Systems include: 1
  FT204P monitor, 1 FT202 overfill sensor and 1 FT206 retain sensor per compartment, FT401
  (100') cable and FT403 (30 pieces) strain reliefs (cable glands). Sockets, inline fuse and
  instruction booklet sold separately.
- · Other probe lengths are available



| Part #    | Description   |
|-----------|---|
| FT2001    | ROM type, 1 compartment system (overfill & retain) - 7" probes  |
| FT2002    | ROM type, 2 compartment system (overfill & retain) - 7" probes  |
| FT2003    | ROM type, 3 compartment system (overfill & retain) - 7" probes  |
| FT2004    | ROM type, 4 compartment system (overfill & retain) - 7" probes  |
| FT2005    | ROM type, 5 compartment system (overfill & retain) - 7" probes  |
| FT2006    | ROM type, 6 compartment system (overfill & retain) - 7" probes  |
| FT2001-12 | ROM type, 1 compartment system (overfill & retain) - 12" probes |
| FT2002-12 | ROM type, 2 compartment system (overfill & retain) - 12" probes |
| FT2003-12 | ROM type, 3 compartment system (overfill & retain) - 12" probes |
| FT2004-12 | ROM type, 4 compartment system (overfill & retain) - 12" probes |
| FT2005-12 | ROM type, 5 compartment system (overfill & retain) - 12" probes |
| FT2006-12 | ROM type, 6 compartment system (overfill & retain) - 12" probes |

# FloTech™ ROM Type Overfill/Retain (Red & Black 2 Wire) System Replacement Parts

#### **ROM Type Onboard Monitors**

#### Features & Benefits:

- Easy to follow programming guide for up to six compartments top only or top and bottom service with the same monitor
- Monitor can be programmed up to 100,000 times without sending it back to the factory.
- As the monitor is programmed for the number of compartments, terminators are not required.
- Stainless steel terminal blocks resist rusting of contacts
- Stainless steel hardware is used on all products
- Powder coated color matched components for exceptional appearance
- Auxiliary input
- Wide input power 12-24 VDC
- Drop-in compatibility with competitors products, see compatibility chart on pages 68 71.
- Monitors include advanced diagnostic capabilities as well as signal translation abilities for all socket types (optic, thermistor or float). The system offers true load at any rack compatibility.

| Part #      | Description  |  |
|-------------|--|--|
| FT204P      | FloTech™ ROM type programmable monitor and housing.  |  |
| FT203P      | FloTech™ ROM type programmable replacement monitor only (no housing)                       |  |
| FT203P-SPEC | FloTech™ ROM type programmable replacement monitor with 8-hole cover (no housing or frame) |  |



See page 152 for repair kits and replacement parts.

FT204P

#### **Overfill Detection Sensors**

#### Features & Benefits:

- Overfill detection sensors are intended to detect a pending overfill condition inside the fuel tank compartment. When they are wetted (come in contact with the fuel) they signal the fuel loading rack to close the fuel supply control valve, to prevent a spill of product.
- The FloTech™ optic 2 wire probe is electronically and mechanically compatible for drop-in replacement of other commonly used 2-wire probes with red and black wires, such as the Civacon ROM system.
- All FloTech™ brand probes are trouble free probes they come with a unique dual elastomer seal for the glass optic prisms. The elastomer seals are flexible allowing thermal expansion and resistance to steam cleaning and temperature changes, along with resistance to petroleum chemical attack. The replacement probes have a smooth tapered tip design for easy replacement installation into the sensor housing without gasket damage.
- Custom probe lengths available upon request
- The sensor housing contains a red and black 2 wire probe, in a cast aluminum housing. The sensor housing has a 2" NPT mounting thread, heavy duty stainless steel hardware, and FKM probe seal. Install into either a 2" NPT threaded port or 2%" diameter tank opening using the gasket and locking nut provided. All screws and rings are heavy duty stainless steel for easy assembly and long life.

| Part #   | Description  | Replacement Probes |
|----------|--|--------------------|
| FT202    | Housing with 7" red and black 2 wire overfill detection probe  | FT201              |
| FT202-12 | Housing with 12" red and black 2 wire overfill detection probe | FT201-12           |
| FT202-18 | Housing with 18" red and black 2 wire overfill detection probe | FT201-18           |



FT202

See page 151 for repair kits and replacement parts.

Please refer to chart on pages 70 thru 73 for cross references to other manufacturer part numbers.

# Overfill Products

## **Fuel Tanker Overfill Detection**

# FloTech™ ROM Type Overfill/Retain (Red & Black 2 Wire) System Replacement Parts

#### **Retain Sensors**



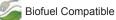
#### Features & Benefits:

- The FT206 is a retain detection sensor shipped with a ½" NPT weld-on aluminum half coupling for mounting. The main portion is stainless steel to prevent galling in the tank. The wiring box is plastic to prevent corrosion and is removable to facilitate installation. The side ports come out of the same side (like the overfill sensors) to make wiring easier. The FT206 is compatible with Civacon model 1000 and the Civacon R/OM System. Our three port housing design is compatible with previous inline and parallel dual port housings.
- Trouble free probes: FloTech™ brand probes/sensors incorporate a double elastomer design
  which seals and secures the sensitive optic prism tip. The elastomer seals are flexible allowing
  thermal expansion and resistance to steam cleaning and petroleum chemical attack.

| Part # | Description                                    |
|--------|--|
| FT206  | housing with red and black 2 wire retain probe |

See page 150 for repair kits and replacement parts.

Please refer to chart on pages 70 thru 73 for cross references to other manufacturer part numbers.



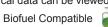
## FIoTech™ FT151RL ROM Link™ **Replacement Parts**

| nply  |
|---|
| T151RL<br>ter and the   |
|   |
|   |
| on which seals owing thermal which narness on's ROM as a 2" NPT into either a nut provided. |
|   |



| Part #             | Description   |  |
|--------------------|---|--|
| FT151RL            | housing with 7" Plug-n-Play overfill detection probe, with Plug-n-Play harness and ROM link jumper cable connector  |  |
| FT151RL-12         | housing with 12" Plug-n-Play overfill detection probe, with Plug-n-Play harness and ROM link jumper cable connector |  |
| FT152RL            | retain sensor with Plug-n-Play harness and ROM link jumper cable  |  |
| Replacement Probes |   |  |
| FT150P             | replacement 7" Plug-n-Play probe for FT151RL only   |  |
| FT150P-12          | replacement 12" Plug-n-Play probe for FT151RL-12 only   |  |
| 10688              | gender adapter  |  |
| 10605PL            | Plug-n-Play harness to monitor connector clip   |  |

Please refer to chart on pages 70 thru 73 for cross references to other manufacturer part numbers.



#### FloTech™ API Optic Overfill Detection (5 Wire) Systems

| Application:         | The FloTech™ API Optic 5 wire system is perfectly suited for both new and existing tank installations. The components have a long list of features which make them more reliable than competitor products; the result is years of trouble free service.  The FloTech™ API Optic 5 wire system is a conventionally wired system, which requires wiring connections to be made using crimp connectors. If a simple plug teacher system is decired places. |
|----------------------|---|
|                      | connections to be made using crimp connectors. If a simple plug together system is desired, please see our Checkmate Plug-n-Play system as shown on pages 39 thru 45.   |
| Materials:           | Dependent upon the component, see each product section for materials  |
| Features & Benefits: | <ul> <li>See the features and benefits of each of the system components</li> <li>Biofuel compatible up to E100 (100% Ethanol) and B100 (100% bio diesel)</li> </ul>   |

# FloTech™ API Optic Overfill Detection (5 Wire) Systems (Top Detection Only)



#### Features & Benefits:

- FloTech™ brand overfill system kits provide everything needed to install a new overfill system on your tank. One to six compartment kits are available from our inventory. System includes: 1 FT103 monitor, 1 FT101 overfill sensor per compartment, FT300 open socket, FT400 cable and FT402 strain reliefs (cable glands).
- · Other probe lengths are available

| Part #    | Description   |
|-----------|---|
| FT1001    | API optic 5 wire, 1 compartment overfill detection system (top only) - 7" probes          |
| FT1002    | API optic 5 wire, 2 compartment overfill detection system (top only) - 7" probes          |
| FT1003    | API optic 5 wire, 3 compartment overfill detection system (top only) - 7" probes          |
| FT1004    | API optic 5 wire, 4 compartment overfill detection system (top only) - 7" probes          |
| FT1005    | API optic 5 wire, 5 compartment overfill detection system (top only) - 7" probes          |
| FT1006    | API optic 5 wire, 6 compartment overfill detection system (top only) - 7" probes          |
| FT1001-12 | API optic 5 wire, 1 compartment overfill detection system (top only) - 12" probes         |
| FT1002-12 | API optic 5 wire, 2 compartment overfill detection system (top only) - 12" probes         |
| FT1003-12 | API optic 5 wire, 3 compartment overfill detection system (top only) - 12" probes         |
| FT1004-12 | API optic 5 wire, 4 compartment overfill detection system (top only) - 12" probes         |
| FT1005-12 | API optic 5 wire, 5 compartment overfill detection system (top only) - 12" probes         |
| FT1006-12 | API optic 5 wire, 6 compartment overfill detection system (top only) - 12" probes         |
|           | Straight systems without monitor- Wire directly to socket                                 |
| FT901     | API optic 5 wire straight, 1 compartment overfill detection system (top only) – 7" probes |
| FT902     | API optic 5 wire straight, 2 compartment overfill detection system (top only) – 7" probes |
| FT903     | API optic 5 wire straight, 3 compartment overfill detection system (top only) – 7" probes |
| FT904     | API optic 5 wire straight, 4 compartment overfill detection system (top only) – 7" probes |
| FT905     | API optic 5 wire straight, 5 compartment overfill detection system (top only) – 7" probes |

Please refer to chart on pages 70 thru 73 for cross references to other manufacturer part numbers.



#### FloTech™ API Optic Overfill Detection (5 Wire) Systems Replacement Parts

#### **Onboard Monitors**

#### Features & Benefits:

- · Stainless steel terminal blocks resist rusting of contacts
- Stainless steel hardware is used on all products
- Powder coated color matched components for exceptional appearance
- Drop-in compatibility with competitors products, see compatibility chart on pages 58 - 62.
- Signal translation ability, allows the connection all socket types (optic, thermistor or float). The system offers true load at any rack compatibility.



FT103

| Part # | Description   |
|--------|---|
| FT102  | FloTech™ API Optic 5 wire replacement monitor only (no housing) |
| FT103  | FloTech™ API Optic 5 wire monitor and housing                   |

See page 153 for repair kits and replacement parts

#### **Overfill Detection Sensors**

#### Features & Benefits:

- The FloTech™ API optic 5 wire probe is electronically and mechanically compatible for drop-in replacement of other commonly used 5 wire probes.
- Custom probe lengths available upon request
- The sensor housing contains a 5 wire probe, in a cast aluminum housing. The sensor housing has a 2" NPT mounting thread, heavy duty stainless steel hardware, and FKM probe seal. Install into either a 2" NPT threaded port or 23/4" diameter tank opening using the gasket and locking nut provided.



FT101

| Part #   | Description  | Replacement Probes |
|----------|--|--------------------|
| FT101    | housing with 7" - 5 wire overfill detection probe  | FT100              |
| FT101-12 | housing with 12" - 5 wire overfill detection probe | FT100-12           |
| FT101-18 | housing with 18" - 5 wire overfill detection probe | FT100-18           |

See page 149 for repair kits and replacement parts.

Please refer to chart on pages 70 thru 73 for cross references to other manufacturer part numbers.



#### **Stainless Steel Probe and Sensor Housings**

#### **Black and White 2 Wire**



Features & Benefits:

- The FloTech™ stainless steel probes and sensor housings are designed to be used with chemicals. All wetted services are 316 stainless or PTFE. These probes are designed to thread onto a DOT 407 tank 3" clean out nipple.
- All FloTech™ brand probes are trouble free probes, they
  come with a unique dual elastomer seal for the glass optic
  prisms. The elastomer seals are flexible allowing thermal
  expansion and resistance to steam cleaning and temperature
  changes, along with resistance to petroleum chemical attack.
  The replacement probes have a smooth tapered tip design
  for easy replacement installation into the sensor housing
  without gasket damage.
- Maximum working pressure 900 PSI at 70°F (21°C)
- Custom probe lengths can be available by using 3/4" pipe nipples upon request.

| Part # | Description  |
|--------|--|
| FT150S | 7" 316 stainless steel-black and white 2 wire, overfill detection probe only (no housing)  |
| FT191S | stainless steel probe housing, 3" female NPS thread (housing only, order probe separately) |

See page 152 for repair kits and replacement parts.

#### 5 Wire



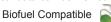
FT191S and FT100S

#### Features & Benefits:

- The FloTech™ stainless steel probes and sensor housings are designed to be used with chemicals. All wetted services are 316 stainless or PTFE. These probes are designed to thread onto a DOT 407 tank 3" clean out nipple. Sensor length can be adjusted using ¾" NPT pipe nipples.
- All FloTech™ brand probes are trouble free probes: they
  come with a unique dual elastomer seal for the glass optic
  prisms. The elastomer seals are flexible allowing thermal
  expansion and resistance to steam cleaning and temperature
  changes, along with resistance to petroleum chemical attack.
  The replacement probes have a smooth tapered tip design
  for easy replacement installation into the sensor housing
  without gasket damage.
- Maximum working pressure 900 PSI at 70°F (21°C)
- Custom probe lengths available upon request.

| Part # | Description  |
|--------|--|
| FT100S | 7" 316 stainless steel 5 wire overfill detection probe only (no housing)                   |
| FT191S | stainless steel probe housing, 3" female NPS thread (housing only, order probe separately) |

See page 152 for repair kits and replacement parts.



#### **Single Sockets with Aluminum Hardcoat J-slot**









FT300

FT300GW

FT301

F1302

#### Features & Benefits:

- Single face plate sockets have hard coated aluminum alloy J-slot wear rings, these ensure a long service life. Single sockets with "guaranteed for life" stainless steel wear rings are also available.
- Stainless steel hardware and contact pins prevent corrosion
- Sockets and caps are color coded with industry standardized colors which allows for easy
  identification of socket type (optic sockets are blue, thermistor sockets are green, and float
  sockets are red, colored caps are included for optic and thermistor models only).

| Part #  | Description  |
|---------|--|
| FT300   | Optic socket API / WOGA, 6 pin and 3 J-slot (US)             |
| FT300GW | Optic socket API / WOGA, 6 pin and 3 J-slot with ground wire |
| FT307   | Optic socket, 6 pin and 4 J-slot (Canada)                    |
| FT306   | Optic socket, J560 pin type                                  |
| FT301   | Thermistor socket, API, 8 pin and 4 J-slot (US)              |
| FT301GW | Thermistor socket, API, 8 pin and 4 J-slot with ground wire  |
| FT304   | Thermistor socket, 10 pin and 4 J-slot (Canada/Europe)       |
| FT305   | Thermistor socket, J560 pin type                             |
| FT302   | Float, API, J560 pin type socket                             |

## **Replacement Face Plates and Dust Caps**

| Part # | Description   |
|--------|---|
| FT310  | API optic face plate assembly, 6 pin, 3 J-slot (US) with dust cap             |
| FT317  | Optic pattern face plate assembly, 6 pin, 4 J-slot (Canada) with dust cap     |
| FT316  | Optic replacement face plate, J560 type with dust cap                         |
| FT311  | API thermistor face plate assembly, 8 pin, 4 J-slot (US) with dust cap        |
| FT314  | Thermistor face plate assembly, 10 pin 4 J-slot (Canada/Europe) with dust cap |
| FT315  | Thermistor replacement face plate, J560 type with dust cap                    |
| FT320  | replacement blue optic dust cap   |
| FT321  | replacement green thermistor dust cap   |

See pages 154 thru 156 for repair kits and replacement parts.

Please refer to chart on pages 70 thru 73 for cross references to other manufacturer part numbers.

Product instruction sheets and technical data can be viewed on our website at dixonvalve.com

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## Single Sockets with GFL (Guaranteed for Life) **Stainless Steel J-slot Wear Rings**





FT300SSGW

FT301SS

#### Features & Benefits:

- Available on any configuration J-slot socket
- Tougher and more corrosion resistant than any other on the market
- · Guaranteed for life against wear
- US patent 6,824,423

| Part #    | Description  |
|-----------|--|
| FT300SSGW | Optic socket API / WOGA, 6 pin and 3 J-slot, GFL stainless J-slot wear ring with ground wire |
| FT307SS   | Optic socket, 6 pin and 4 J-slot, GFL stainless J-slot wear ring (Canada)                    |
| FT301SS   | Thermistor socket, API, 8 pin and 4 J-slot, GFL stainless J-slot wear ring (US)              |
| FT300SS   | Optic socket API / WOGA, 6 pin and 3 J-slot, GFL stainless J-slot wear ring (US)             |
| FT301SSGW | Thermistor socket, API, 8 pin and 4 J-slot, GFL stainless J-slot wear ring with ground wire  |
| FT304SS   | Thermistor socket, 10 pin and 4 J-slot, GFL stainless J-slot wear ring (Canada/Europe)       |

### **Replacement Face Plates and Dust Caps**

| Part #  | Description   |
|---------|---|
| FT310SS | API optic face plate assembly, 6 pin, 3 J-slot, GFL stainless J-slot wear ring (US) with dust cap             |
| FT317SS | Optic pattern face plate assembly,6 pin, 4 J-slot, GFL stainless J-slot wear ring (Canada) with dust cap      |
| FT311SS | API thermistor face plate assembly, 8 pin, 4 J-slot, GFL stainless J-slot wear ring (US) with dust cap        |
| FT314SS | Thermistor face plate assembly 10 pin, 4 J-slot, GFL stainless J-slot wear ring (Canada/Europe) with dust cap |
| FT320   | replacement blue optic dust cap   |
| FT321   | replacement green thermistor dust cap   |

See pages 154 thru 156 for repair kits and replacement parts. Please refer to chart on pages 70 thru 73 for cross references to other manufacturer part numbers.

#### **EZ-Cept Double Sockets**



FT390

#### Features & Benefits:

- Stainless steel hardware and contact pins prevent corrosion.
- Sockets are color coded with industry standardized colors allowing for easy identification of socket type (optic sockets are blue, thermistor sockets are green, and float sockets are red, colored caps are included for optic and thermistor models only).
- Guaranteed for Life J-slot: Our unique stainless steel alloy J-slot ring will probably outlast your trailer.
- Prewired ready for tank installation, no more long hours wiring and troubleshooting your socket connections. Simply bolt to the trailer and connect to the terminal block in the on board monitor.
- Internal ground wire and ID chip ready: Both internal ground wire and ID chip are normally
  mounted inside the EZ-Cept housing to protect from the corrosive elements. Or if desired, the
  bolt can be mounted to the trailer frame and the wire connected to the EZ-Cept internal wire
  terminal.
- Corrosion resistant hard powder coated housing, stainless steel hardware and contacts and our unique keep dry enclosure design keeps your trailer in service and corrosion at bay.
- The EZ-Cept has so many innovative features it is covered by US patent 6,824,423.

| Part #    | Description   |
|-----------|---|
| FT390     | Optic 6 pin, 3 J-slot, and thermistor 10 pin, 4 J-slot, horizontal mount, GFL stainless J-slot wear rings (US)  |
| FT390V    | Optic 6 pin, 3 J-slot, and thermistor 10 pin, 4 J-slot, vertical mount, GFL stainless J-slot wear rings (US)  |
| FT390G    | Optic 6 pin, 3 J-slot, and thermistor 10 pin, 4 J-slot, horizontal mount, GFL stainless J-slot wear rings, internal ground wire (US)                                    |
| FT390GT   | Optic 6 pin, 3 J-slot, and thermistor 10 pin, 4 J-slot, horizontal mount, GFL stainless J-slot wear rings, internal ground wire Trailer Identification Module chip (US) |
| FT390T    | Optic 6 pin, 3 J-slot, and thermistor 10 pin, 4 J-slot, horizontal mount, GFL stainless J-slot wear rings, Trailer Identification Module chip (US)                      |
| FT390-20  | Optic 6 pin, 3 J-slot, and thermistor 10 pin, 4 J-slot, horizontal mount, GFL stainless J-slot wear rings, 20' of cable (US)  |
| FT390G-20 | Optic 6 pin, 3 J-slot, and thermistor 10 pin, 4 J-slot, horizontal mount, GFL stainless J-slot wear rings, internal ground wire, 20' of cable (US)                      |
| FT391     | Optic 6 pin, 4 J-slot, and thermistor 10 pin, 4 J-slot, horizontal mount, GFL stainless J-slot wear rings (Canada)  |
| FT391V    | Optic 6 pin, 4 J-slot, and thermistor 10 pin, 4 J-slot, vertical mount, GFL stainless J-slot wear rings (Canada)  |

See pages 157 and 158 for repair kits and replacement parts.

Please refer to chart on pages 70 thru 73 for cross references to other manufacturer part numbers.

Product instruction sheets and technical data can be viewed on our website at dixonvalve.com

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## Overfill Products

## **Fuel Tanker Overfill Detection**

#### **EZ-Cept Triple Sockets**



#### Features & Benefits:

- Stainless steel hardware and contact pins prevent corrosion.
- Sockets are color coded with industry standardized colors allowing for easy identification of socket type (optic sockets are blue, thermistor sockets are green, and float sockets are red, colored caps are included for optic and thermistor models only).
- · Unique stainless steel alloy J-slot ring is guaranteed for life.
- Pre-wired ready for tank installation, simply bolt to the trailer and connect to the terminal block in the on board monitor.
- Internal ground wire and ID chip ready: Both internal ground wire and ID chip are normally
  mounted inside the EZ-Cept housing to protect from the corrosive elements. Can also be
  mounted to the trailer frame and the wire connected to the EZ-Cept internal wire terminal.
- Corrosion resistant hard powder coated housing, stainless steel hardware and contacts and our unique keep dry enclosure design keeps your trailer in service and corrosion at bay.
- The EZ-Cept has so many innovative features it is covered by US patent 6,824,423.

| Part #   | Description  |
|----------|--|
| FT393    | Optic 6 pin, 3 J-slot, thermistor 10 pin, 4 J-slot, and float J560, horizontal mount, GFL stainless J-slot wear rings (US)                           |
| FT394    | Optic 6 pin, 3 J-slot, thermistor 10 pin, 4 J-slot, and optic J560, horizontal mount, GFL stainless J-slot wear rings (US)                           |
| FT394G   | Optic 6 pin, 3 J-slot, thermistor 10 pin, 4 J-slot, and optic J560, horizontal mount, internal ground wire, GFL stainless J-slot wear rings (US)     |
| FT394V-G | Optic 6 pin, 3 J-slot, thermistor 10 pin, 4 J-slot, and optic J560, vertical mount, internal ground wire, GFL stainless J-slot wear rings (US)       |
| FT395    | Optic 6 pin, 4 J-slot, thermistor 10 pin, 4 J-slot, and optic J560, horizontal mount, GFL stainless J-slot wear rings (Canada)                       |
| FT395G   | Optic 6 pin, 4 J-slot, thermistor 10 pin, 4 J-slot, and optic J560, horizontal mount, internal ground wire, GFL stainless J-slot wear rings (Canada) |
| FT395V   | Optic 6 pin, 4 J-slot, thermistor 10 pin, 4 J-slot, and optic J560, horizontal mount, internal ground wire, GFL stainless J-slot wear rings (Canada) |
| FT395V-G | Optic 6 pin, 4 J-slot, thermistor 10 pin, 4 J-slot, and optic J560, vertical mount, internal ground wire, GFL stainless J-slot wear rings (Canada)   |

See pages 159 thru 160 for repair kits and replacement parts.

Please refer to chart on pages 70 thru 73 for cross references to other manufacturer part numbers.

## Socket Cleaner



| Application: Features & Benefits: |                | <ul> <li>Used to clean dirty or corroded overfill socket contact blocks.</li> </ul>  |  |
|-----------------------------------|----------------|--|--|
|                                   |                | <ul> <li>Improves electrical connection and reduces drop out of permit signal.</li> <li>Simple handheld contact cleaner</li> <li>3M Scotch-Brite™ pad</li> </ul> |  |
| Part # Description                |                |  |  |
| FT406                             | socket cleaner | 2 000, p. 100  |  |

#### **Multi-Wrench**



| Application:         | Used for threading, and unthreading lock nuts.                                |
|----------------------|---|
| Features & Benefits: | <ul><li>Hard coated for corrosion resistance.</li><li>Laser etched.</li></ul> |

| Part #  | Description                                       |
|---------|---|
| 40530AL | multi-sided wrench for installing FT9000/VR6030SQ |



## **Grounding Ball and Bolt**





FT451





FT450

FT452 FT452-002

| Part #    |                                |     | Description |
|-----------|--------------------------------|-----|-------------|
| FT450     | ground verification bolt       |     |             |
| FT451     | ground verification ball       |     |             |
| FT452     | ground wire for single sockets |     |             |
| FT452-002 | ground wire for dual sockets   | NEW |             |
|           |                                | A.  |             |

See page 161 and 162 for repair kits and replacement parts.

Please refer to chart on pages 70 thru 73 for cross references to other manufacturer part numbers.

## FloTech™ Checkmate Overfill/Retain (Black & White 2 Wire) System Sensor Dummy



| Part # | Description  |  |
|--------|--|--|
| FT155  | Thermistor sensor dummy (each dummy adds up to 5 compartments) |  |

#### FloTech™ Trailer Identification Modules

Application:

• Designed as a drop in replacement for the Trailer Identification Module, providing you with longer life and reduced costs.



| Part # | Description                   |
|--------|-------------------------------|
| FT470  | Trailer Identification Module |

#### **Cables and Strain Reliefs**

Features & Benefits:

• FloTech™ cable is specially produced with tin plated wire, which when connected correctly using crimp connections, will provide years of trouble free service.





FT400

FT402

| Part #     | Description  | System Type                                      |  |  |
|------------|--|--|--|--|
| FT400      | 100' of 5 conductor cable  | 5 wire API optic                                 |  |  |
| FT400-500  | 500' of 5 conductor cable  | 5 wire API optic                                 |  |  |
| FT400-1000 | 1000' of 5 conductor cable   | 5 wire API optic                                 |  |  |
| FT401      | 100' of 7 conductor cable  | red and black 2 wire ROM type                    |  |  |
| FT401-150  | 150' of 7 conductor cable  | red and black 2 wire ROM type                    |  |  |
| FT401-1000 | 1000' of 7 conductor cable   | red and black 2 wire ROM type                    |  |  |
| FT404      | 100' of 11 conductor cable   | black and white 2 wire Checkmate/Thermistor type |  |  |
| FT404-150  | 150' of 11 conductor cable   | black and white 2 wire Checkmate/Thermistor type |  |  |
| FT404-1000 | 04-1000 1000' of 11 conductor cable black and white 2 wire Checkmate/Thermistor type |  |  |  |
|            | Cable Strain Reliefs (Glands)  |  |  |  |
| FT402      | 20 pc pack of strain relief fittings, ½" NPT   |  |  |  |
| FT403      | 30 pc pack of strain relief fittings, ½" NPT   |  |  |  |
| FT405-500  | 500 pc pack of strain relief fittings, ½" NPT  |  |  |  |
|            | Cable Tools and Supplies   |  |  |  |
| FT9023     | professional cable stripping tool  |  |  |  |
| FT9024     | professional cable crimping tool   |  |  |  |
| FT9021     | 100 pc pack of crimp connectors  |  |  |  |
| FT9022     | 2.8 oz tube of GE RTV103 silcone for sealing crimped wired connections               |  |  |  |
| FT9025     | terminal pins, 14-16 AWG, 100 pieces   |  |  |  |

Due to the very low current used in overfill systems it's extremely important to use the correct type of cable. The use of other types of cabling often leads to failed overfill systems due mostly to corroded connections.





## **Optic System Testers**

| Application:         | Used to trouble shoot overfill system circuits   |
|----------------------|--|
| Standards:           | Will work with any optic overfill system   |
| Materials:           | Durable plastic case, heavy duty cable connectors and test leads   |
| Features & Benefits: | The FT520 optic test kit includes a tester and test lead set to test 5 wire optic pulse, 5 wire optic probes, two wire optic probes, plug & play optic probes as well as onboard monitor & socket outputs. It uses the same permissive signal verification as an optic rack monitor. Optional FT521, FT522, FT523 optic test plugs are available for an entire trailer Go, No/Go test, 2 9-volt batteries (included) |

| Part #        | Description   |
|---------------|---|
| FT520         | Optic system tester, 5 piece set of test leads, batteries and instructions                    |
| FT520CASE     | optional storage case for FT520   |
| FT520WOGA     | Optic system tester, with FT521 API optic 6 pin and 3 J-slot plug, batteries and instructions |
| FT520WOGACASE | optional storage case for FT520WOGA   |
| FT521         | API optic test plug, 6 pin and 3 J-slot   |
| FT522         | Optic test plug, 6 pins and 2 or 4 J-slot (plug fits both 2 and 4 J-slot sockets)             |
| FT523         | Optic test plug J560 type   |
| 10622         | Plug-n-Play test lead set   |
| FT9037        | replacement test lead set for FT520   |



FT520



FT520WOGA

## **Trailer Identification Module Chip Readers**

| Application:         | Designed to read and test Trailer Identification Modules mounted inside API compatible overfill sockets.  |
|----------------------|---|
| Features & Benefits: | <ul> <li>Designed to read Trailer Identification Module chips</li> <li>Solid aluminum construction</li> <li>Backlit LCD display</li> <li>Interchangeable optic or thermistor J-slot screws</li> <li>Provides long battery life</li> </ul> |

| Part # | Description                               |
|--------|---|
| FT530  | Trailer Identification Module chip reader |



#### FloTech™ Truck Testers



T555



FT555PA

Application: Allows complete testing of ground bolt grounding systems. Tests ground bolt in forward and reverse just like the rack monitor.

## Features & Benefits:

- Reads Trailer Identification Modules and displays the serial number on the screen
- Automatic mode allows all four tests, or any combination, to run for a complete test of the trailer
- LCD screen displays the final test results and a pass/fail indication for easy rapid testing of the overfill system
- One man "Wet Test" feature FT555 signal an audible alarm sounding a number of beeps that match the wetted sensor
- Microprocessor controlled with designed in flexibility to expand into a number of applications
- Requires two D cell flashlight batteries that can be changed through a side battery access door

| Part #  | Description                                  |
|---------|--|
| FT555   | truck tester                                 |
| FT555PA | truck tester with handle and test leads (US) |

# FloTech™ FT590 Series Rack Monitor Testers and Mini Trailer Overfill System



FT590TG

| Part #   | Description  |
|----------|--|
| FT590TG  | rack tester with grounding bolt                                |
| FT590TGT | rack tester thermistor   |
| FT590OG  | rack tester with ground bolt                                   |
| FT590OGT | rack tester with ground bolt and Trailer Identification Module |



## **API Compatible Loading Rack Cords**

| Application:         | API loading rack cords are used to connect the loading rack monitor to the socket on the fuel tanker.  |
|----------------------|--|
| Standards:           | Cord sets are interchangeable with Civacon   |
| Materials:           | Reinforced nylon plugs with stainless steel contact pins and hardware. Heavy duty and highly visible safety orange cord.   |
| Features & Benefits: | <ul> <li>FT600 and FT620 are compatible with API thermistor and optic configurations.</li> <li>Cords available in coiled or straight lengths</li> <li>Cord features a heavy highly visible safety orange jacket to meet trip hazard requirements.</li> <li>Cord is bonded mechanically and has superior abrasion and oil resistance.</li> <li>Plug body is color coded optic blue or thermistor green.</li> <li>Button contacts are made from 316 stainless steel to prevent corrosion or galling</li> </ul> |

## **API Optic Cord Assemblies**

| Part #  | Description   |
|---------|---|
| FT620   | blue plug with 6 contact pins and 3 J-slot, on a 30' coiled blue cable                                      |
| FT620S  | blue plug with 6 contact pins and 3 J-slot, on a 20' straight blue cable                                    |
| FT620P  | blue plug with 6 contact pins and 3 J-slot on a 30' blue coiled cord and 7 pin connector aluminum J560 plug |
| FT620SP | API Optic plug, aluminum J560 plug w/30 Straight Cable  |
| FT621   | replacement blue plug assembly with 6 contact pins and 3 J-slot   |
| FT622   | replacement 30' blue coiled cord, Optic 6 conductor   |
| FT623   | Optic plug storage hanger   |
| FT624   | replacement 20' blue straight cord, Optic 6 conductor   |



FT620

See pages 164 and 165 for repair kits and replacement parts.

Please refer to chart on pages 70 thru 73 for cross references to other manufacturer part numbers.

#### **API Thermistor Cord Assemblies**

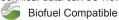
| Part #   | Description  |
|----------|--|
| FT600    | green plug with 8 contact pins and 2 J-slot, on a 30' coiled orange cable                                    |
| FT600-4  | green plug with 8 contact pins and 4 J-slot, on a 30' coiled orange cable                                    |
| FT600P   | green plug with 8 contact pins and 2 J-slot on a 30' orange coiled cord and 13 pin connector nylon J560 plug |
| FT600P-4 | API Thermistor plug, 13 contact pins, J560, 4 J-slot, 8 pin, w/30' coiled cable                              |
| FT600S   | green plug with 8 contact pins and 2 J-slot, on a 20' straight orange cable                                  |
| FT600S-4 | API Thermistor plug, 8 contact pins, 4 J-slot, on a 20' straight cable                                       |
| FT600C   | green plug with 10 contact pins and 4 J-slot, on a 30' coiled orange cable                                   |
| FT600C-2 | API Thermistor plug, 2 J-slot, on a 30' cord   |
| FT600CP  | green plug with 10 contact pins and 4 J-slot, on a 30' coiled orange cord and 13 pin connector nylon         |
| FT600SC  | green plug with 10 contact pins and 4 J-slot, on a 20' straight orange cable                                 |
| FT601    | replacement green plug assembly with 8 contact pins and 2 J-slot   |
| FT601-10 | replacement green plug assembly with 10 contact pins and 4 J-slot  |
| FT602    | replacement 30' orange coiled cord, Thermistor 10 conductor  |
| FT603    | Thermistor plug storage hanger   |
| FT604    | replacement 20' orange straight cord, Thermistor 10 conductor  |
| FT606    | Thermistor 30' coiled replacement cord (8) pin   |
| FT607    | Thermistor 20' straight replacement cord (8) pin   |



FT600

See pages 162 and 163 for repair kits and replacement parts.

Please refer to chart on pages 70 thru 73 for cross references to other manufacturer part numbers.



## Overfill Products

## **Fuel Tanker Overfill Detection**

## FloTech™ Junction Boxes



| Application:         | FT7500 series junction boxes are designed to provide a convenient, safe, and protected point of service for rack cord accessories. When installed correctly, the junction box will protect rack cords from excessive wear and tear, and cord connections from water and corrosion while in harsh environments.  |
|----------------------|---|
| Features & Benefits: | <ul> <li>Water-tight construction helps prevents condensation and moisture from causing corrosion on the with rack connections.</li> <li>Twelve position terminal block for quick replacement of various cord types including optic, thermistor, ground, and deadman cables.</li> <li>Large internal volume allows ample room for wiring and easy installation.</li> <li>Mesh cord grip reduces cable strain and prevent cable pull-out.</li> <li>Integrated cord hook holds the cable while not in use.</li> </ul> |
| Material:            | powder coated weather-resistant aluminum  |

| Part # | Description                            |
|--------|--|
| FT7500 | single cord junction box               |
| FT7501 | dual cord junction box                 |
| FT7502 | junction box with yellow 13 pin socket |

## **Junction Box and Cord Assembly Accessories**

| Dowt #    | Junction | Dook Cond | Townsination       | Longth | Cord   | Cond Tuno | Candustana | API   | Plug    |
|-----------|----------|-----------|--------------------|--------|--------|-----------|------------|-------|---------|
| Part #    | Box      | Rack Cord | Termination        | Length | Color  | Cord Type | Conductors | Color | J Slots |
| FT7600    | FT7500   | FT600     | flying leads       | 30'    | orange | coiled    | 8          | green | 2       |
| FT7600-4  | FT7500   | FT600-4   | flying leads       | 30'    | orange | coiled    | 8          | green | 4       |
| FT7600C   | FT7500   | FT600C    | flying leads       | 30'    | orange | coiled    | 10         | green | 4       |
| FT7600C-2 | FT7500   | FT600C-2  | flying leads       | 30'    | orange | coiled    | 10         | green | 2       |
| FT7600CP  | FT7502   | FT600CP   | yellow 13 pin plug | 30'    | orange | coiled    | 10         | green | 4       |
| FT7600P   | FT7502   | FT600P    | yellow 13 pin plug | 30'    | orange | coiled    | 8          | green | 2       |
| FT7600P-4 | FT7502   | FT600P-4  | yellow 13 pin plug | 30'    | orange | coiled    | 8          | green | 4       |
| FT7600S   | FT7500   | FT600S    | flying leads       | 20'    | orange | straight  | 8          | green | 2       |
| FT7600SC  | FT7500   | FT600SC   | flying leads       | 20'    | orange | straight  | 10         | green | 4       |
| FT7600SP  | FT7502   | FT600SP   | yellow 13 pin plug | 20'    | orange | straight  | 8          | green | 4       |
|           |          |           |                    |        |        |           |            |       |         |
| FT7605C   | FT7500   | FT605C    | flying leads       | 30'    | orange | coiled    | 6          | green | 4       |
|           |          |           |                    |        |        |           |            |       |         |
| FT7620    | FT7500   | FT620     | flying leads       | 30'    | blue   | coiled    | 6          | blue  | 3       |
| FT7620P   | FT7502   | FT620P    | metal J560         | 30'    | blue   | coiled    | 6          | blue  | 3       |
| FT7620S   | FT7500   | FT620S    | flying leads       | 20'    | blue   | straight  | 6          | blue  | 3       |
| FT7620SP  | FT7502   | FT620SP   | metal J560         | 20'    | blue   | straight  | 6          | blue  | 3       |
|           |          |           |                    |        |        |           |            |       |         |
| FT7630    | FT7500   | FT630     | flying leads       | 30'    | blue   | coiled    | 10         | black | 4       |
| FT7630D   | FT7503   | FT630D    | D connector        | 30'    | blue   | coiled    | 10         | black | 4       |
|           |          |           |                    |        |        |           |            |       |         |
| FT7640-3  | FT7500   | FT640-3   | flying leads       | 30'    | blue   | coiled    | 10         | black | 3       |
| FT7640-4  | FT7500   | FT640-4   | flying leads       | 30'    | blue   | coiled    | 10         | black | 4       |

## FloTech™ FT7000 Series Rack Control Monitor





FT7000

| Application:         | Overfill prevention, ground verification, trailer ide Automatic, continuous and self-checking micro be Per NPFA rules, FT7000 FloTech™ RCM provide petroleum or chemical liquids into cargo or rail tate EXd explosion proof enclosure and intrinsically selected international safety approvals and certifications. FloTech™ FT7000 RCM was designed for high relays. Relay operation is monitored to determine redundant communication of monitor status indead digital communication path not dependent on relations. | ased control. es secondary overfi nks. It is designed afe electronics. FT eliability with redun- e proper operation. pendent of relay sta | Il protection for loading of<br>for Hazardous locations using<br>7000 RCM holds US and<br>dant test circuits and output<br>FT7000 RCM has the ability for |  |  |  |  |  |
|----------------------|--|---|---|--|--|--|--|--|
| Standards:           | Certified to the following standards:  CSA C22.2 No. 61010-1-12, No. 30-M1986, No. 60079-11:14  UL 61010-1, UL 1203, UL 913, UL 60079-0, UL IEC 60079-0, IEC 60079-1, IEC 60079-11, IEC EN 60079-0, EN 60079-1, EN 60079-11  | L 60079-1, UL 600   |   |  |  |  |  |  |
| Material:            | Explosion proof IP54 weathertight aluminum pov   | wder coated housin  | g   |  |  |  |  |  |
| Features & Benefits: | FT7000 RCM provides robust communication of identification data and events via RS-485 and M to connect through existing TAS or through FloT.  Overfill, ground, and trailer identification in one Auto Switching between optic and thermistor Compatible with all analog and digital sensors Monitor up to (8) 2 wire or (12) 5 wire sensors Various plug cord and junction box assemblies Visual display of all functions.  | odbus compliant. A<br>ech™ terminal soft<br>e enclosure.<br>(2 wire or 5 wire) se   | All function in one unit with ability ware.   |  |  |  |  |  |
|                      | Sensors  | Identification  | Earthing/Ground Devices   |  |  |  |  |  |
|                      | <ul> <li>5 wire optic sensors; 1-12 sensors</li> <li>2 wire black and white thermistor sensors; 1-8 sensors</li> <li>2 wire grey-grey universal thermistor sensors; 1-8 sensors</li> <li>2 wire analog thermistor sensors; 1-8 sensors</li> <li>onboard monitors</li> </ul>  | trailer<br>Identification<br>modules  | <ul> <li>ground bolt/bolt/wire</li> <li>ground loop/restive bond</li> </ul>   |  |  |  |  |  |
|                      | Note: Not compatible with float type sensors, or 3 wire analog thermistor sensors  |   |   |  |  |  |  |  |

## Overfill Products

## **Fuel Tanker Overfill Detection**

## **API Rack Cord Assemblies**

|                    | 0                |                  | API        |       | Cord            |               | J-Slot |   |   | Pin |   |    | Breakaway Plug         |                                 |
|--------------------|------------------|------------------|------------|-------|-----------------|---------------|--------|---|---|-----|---|----|------------------------|---------------------------------|
| FloTech™<br>Part # | Civacon<br>Part# | Scully<br>Part # | Thermistor | Optic | 20'<br>Straight | 30'<br>Coiled | 2      | 3 | 4 | 6   | 8 | 10 | Optic J560<br>Aluminum | Thermistor<br>13 Pin<br>Plastic |
| FT600              | 7300SR-7300      | 21818            | ✓          |       |                 | 1             | 1      |   |   |     | 1 |    |                        |                                 |
| FT600C             | 7300CSR-7300     | 31090            | ✓          |       |                 | 1             |        |   | 1 |     |   | 1  |                        |                                 |
| FT600C-2           | 7300C-7300       |                  | ✓          |       |                 | 1             | 1      |   |   |     |   | 1  |                        |                                 |
| FT600P             | 7320SR-7320      |                  | ✓          |       |                 | 1             | 1      |   |   |     | 1 |    |                        | ✓                               |
| FT600S             | 7300-STRAIGHT    | 20830            | ✓          |       | ✓               |               | 1      |   |   |     | 1 |    |                        |                                 |
| FT600SC            | 7300C-STRAIGHT   |                  | ✓          |       | ✓               |               |        |   | 1 |     |   | 1  |                        |                                 |
| FT600S-4           |                  |                  | ✓          |       | 1               |               |        |   | 1 |     | 1 |    |                        |                                 |
| FT620              | 7100SR-7100      | 21831            |            | 1     |                 |               |        | 1 |   | 1   |   |    |                        |                                 |
| FT620P             | 7100-J560        |                  |            | 1     |                 |               |        | 1 |   | 1   |   |    | ✓                      |                                 |
| FT620S             | 7100-STRAIGHT    | 21764            |            | 1     | ✓               |               |        | 1 |   | 1   |   |    |                        |                                 |

### **API Rack Cord Parts**

| FloTech™ | Civacon     | Scully | API        |       | Co           |               | J-Slot |   | Pin |   |   |    |
|----------|-------------|--------|------------|-------|--------------|---------------|--------|---|-----|---|---|----|
| Part #   | Part #      | Part # | Thermistor | Optic | 20' Straight | 30'<br>Coiled | 2      | 3 | 4   | 6 | 8 | 10 |
| FT601    | 7310SR-7310 |        | ✓          |       |              |               | 1      |   |     |   | 1 |    |
| FT603    | 7350-7350   |        | ✓          |       |              |               |        |   | 1   |   |   |    |
| FT621    | 7110SR-7110 | 21766  |            | ✓     |              |               |        | 1 |     | ✓ |   |    |
| FT622    | 7220-7220   | 31099  |            | /     |              | ✓             |        | 1 |     |   |   |    |
| FT623    | 7150-7150   |        |            | ✓     |              |               |        | 1 |     |   |   |    |

## Reelcraft® Static Discharge Reels



| Application:         | Used to ground equipment in hazardous atmospheres, such as fuel trucks or carts transferring flammable materials. When properly clamped to ground, the static discharge reel dissipates static electrical buildup, reduces chances of sparking and the potential for explosion. |
|----------------------|---|
| Features & Benefits: | <ul> <li>Supplied with a 3/32" OD steel aircraft cable</li> <li>DC resistance is approximately one ohm per 50' of steel cable</li> </ul>  |

| Part # | Description                                |
|--------|--|
| G3050  | single 7 x 7 stranded steel grounding wire |

## FloTech™ Replacement Parts

| Part #   | Previous           | Description   | Refer to Page         |
|----------|--------------------|---|-----------------------|
|          | Part #             | ·   |                       |
| FT9000   |                    | sensor housing 2" NPT with parallel ports, complete with all hardware             | 151                   |
| FT9000P  |                    | Plug-n-Play sensor housing 2" NPT with parallel ports, complete with all hardware | 149                   |
| FT9001   |                    | complete sensor housing gasket and O-ring kit                                     | 149, 151              |
| FT9002   |                    | complete sensor housing gasket, O-ring and hardware kit                           | 151                   |
| FT9003   |                    | replacement on-board monitor housing  | 153, 154              |
| FT9004   |                    | replacement on-board monitor hardware kit   | 153, 154              |
| 10142    | FT9005             | replacement on-board bezel 5 wire (FT103)   | 153                   |
| 10143    | FT9006             | replacement on-board bezel 2 wire (FT204)   | 153                   |
| 10031    | FT9007             | replacement socket rear housing   | 144, 145, 156,<br>158 |
| FT9008   |                    | replacement socket contact block with pins FT300 Optic series                     | 143, 158              |
| FT9009   |                    | replacement socket contact block with pins FT301 Thermistor series                | 143, 158              |
| FT9010   |                    | replacement socket contact block with 10 pins FT304 Thermistor series             | 158                   |
| FT9011   |                    | replacement sensor housing cap with screws and lock washers                       | 149, 151              |
| 10128    |                    | replacement 2" NPT sensor housing lock nut  | 149, 151              |
| FT9013   |                    | replacement socket faceplate 4 J-slot, no contact block or hardware               | 143, 158              |
| FT9020   |                    | socket pin, screw and crimp lug   | 143, 158              |
| FT9021   |                    | crimp connector 100 pieces per bag  | 60                    |
| FT9022   |                    | GE RTV 103 silicone rubber sealant 2.8 oz. tube                                   | 60                    |
| FT9023   |                    | stripping tool for cable jacket   | 60                    |
| FT9024   |                    | crimp tool for splice connections   | 60                    |
| FT9025   |                    | terminal pin, 14-16 AWG 100 pieces  | 60                    |
| 250-G-BU | FT9026,<br>40090BN | sensor flat gasket for 2" NPT through punched hole in man lid                     | 149, 151              |
| 10125    | FT9027             | sensor housing probe, FKM O-ring  | 149, 151              |
| FT9029   |                    | J560 contact block, 7 way   | 145, 148, 156,<br>162 |
| FT9030   |                    | fuse holder with 1/4 Amp fuse   | 153                   |
| FT9031   |                    | fuse holder with ½ Amp fuse   | 154, 155              |
| 10038    | FT9032             | socket face plate gasket  | 144, 145, 156,<br>158 |

# Products

## Fuel Tanker Overfill Detection

## FloTech™ Replacement Parts (continued)

| Part #      | Previous | Description   | Refer to Page                                    |
|-------------|----------|---|--|
|             | Part #   | · ·   | -  |
| 10183       | FT9033   | sensor housing, lower no hardware   | 151  |
| FT9034      |          | replacement socket face plate 3 J-slot, no contact block or hardware                                | 143, 158   |
| 10459       | FT9035   | program module for FT204P and FT208   | 141, 142, 154,<br>155                            |
| FT9036      |          | FT208 replacement bezel kit   | 142, 155   |
| FT9037      |          | FT520 test lead set   | 61   |
| 10357       | FT9038   | fuse ¼ Amp - for FT103  | 153  |
| 10358       | FT9039   | fuse ½ Amp - for FT208 and FT204  | 142, 154, 155                                    |
| FT9040      |          | Checkmate housing with lid  | 142, 155   |
| 10366HC-002 | FT9041   | replacement 3 J-slot, aluminum socket nose ring   | 144, 158   |
| 10366HC-001 | FT9042   | replacement 4 J-slot, aluminum socket nose ring   | 144, 158   |
| 10366SS-002 | FT9043   | replacement 3 J-slot, stainless socket nose ring  | 141, 144, 146,<br>148, 158, 160,<br>162          |
| 10366SS-001 | FT9044   | replacement 4 J-slot, stainless socket nose ring  | 141, 144, 146,<br>148, 158, 160,<br>162          |
| 10432NP     | FT9045   | replacement gasket for the FT208 series Checkmate lid   | 142, 155, 141                                    |
| FT9046      |          | bag of 10 replacement socket pins   | 143, 158   |
| 10126       | FT9049   | sensor cap O-ring   | 149, 151   |
| 10347       | FT9050   | threaded half coupling ½" for retain probe  | 150, 152   |
| FT9051      |          | replacement short contact block for FT390/393 Optic 6 pin   | 141, 146, 147                                    |
| FT9052      |          | replacement short contact block for FT390/393 Thermistor, 10 pin                                    | 141, 146, 147                                    |
| 10131       | FT9053   | replacement gasket for bezel on monitors FT103/204P   | 153, 154   |
| 10470AL     | FT9054   | replacement lid frame for monitors FT103/204P   | 153, 154   |
| FT9059      |          | replacement face plate and bezel assembly for FT204P  | 154  |
| 10368SS     | FT9061   | replacement contact pin for FT390/393 series socket   | 141, 144, 146,<br>148, 158, 160                  |
| FT9062      |          | nose ring assembly, Thermistor, 4 J-slot, 10 Pin contact block, pin, and hardware for FT390 & FT393 | 141, 146, 147,<br>160                            |
| FT9063      |          | nose ring assembly, optic, 3 J-slot, 6 Pin contact block, pin, and hardware for FT390 & FT393       | 141, 146, 147,<br>160                            |
| FT9064      |          | bezel for FT203P-SPEC   | 154  |
| FT9065      |          | bezel gasket for FT203P-SPEC  | 154  |
| FT9068      |          | replacement contact block attachment screws and washers (4 each)                                    | 141, 143, 146,<br>147, 150, 152,<br>158,160, 162 |

## Competitor Cross Reference Chart Liquid Level Sensors

| EL T. LTM          | 0'                    | 0 "              |   |
|--------------------|-----------------------|------------------|---|
| FloTech™<br>Part # | Civacon Part #        | Scully<br>Part # | Description   |
| FT100              | 1302-007              | 9209             | Replacement probe, optic, 5-wire, 7" long   |
| FT100-12           | 1302-0012             | 9214             | Replacement probe, optic, 5-wire, 12" long  |
| FT100-18           | 1302-0018             |                  | Replacement probe, optic, 5-wire, 18" long  |
| FT100S             | 1410RS-0060           |                  | Replacement stainless steel probe, optic, 5-wire, 7" long                                     |
| FT101              | 1112-007 / 1110-007   | 9208             | Sensor, optic, 5-wire, 2" NPT housing, 7" probe   |
| FT101-12           | 1112-0012 / 1110-0012 | 9213             | Sensor, optic, 5-wire, 2" NPT housing with 12" probe  |
| FT101-18           | 1112-0018 / 1110-0018 |                  | Sensor, optic, 5-wire, 2" NPT housing with 18" probe  |
| FT150              | 1651-007              | 9409             | Replacement probe, thermo-optic, 7" long, 2-wire (black & white)                              |
| FT150-12           | 1651-0012             | 9414             | Replacement probe, thermo-optic, 12" long, 2-wire (black & white)                             |
| FT150-18           | 1651-0018             |                  | Replacement probe, thermo-optic, 18" long, 2-wire (black & white)                             |
| FT151              | 1551-007              | 9408             | Sensor, thermo-optic, 2" NPT housing, 7" probe, 2-wire (black & white)                        |
| FT151-12           | 1551-0012             | 9413             | Sensor, thermo-optic, 2" NPT housing,12" probe, 2-wire (black & white)                        |
| FT151-18           | 1551-0018             |                  | Sensor, thermo-optic, 2" NPT housing,18" probe, 2-wire (black & white)                        |
| FT151RL            | 1554-007              |                  | Sensor, ROM Link™ replacement thermo-optic, 2" NPT housing, 7" probe, 2-wire (black & white)  |
| FT151RL-12         | 1554-012              |                  | Sensor, ROM Link™ replacement thermo-optic, 2" NPT housing, 12" probe, 2-wire (black & white) |
| FT152              |                       | 8819             | Thermo optic retain sensor (black & white)  |
| FT155              | 1920-5                | 08298 & 08542    | Thermistor dummy, 5 compartment   |
| FT201              | 1351-007              |                  | Replacement ROM type, 7" top probe, 2-wire (red & black)                                      |
| FT201-12           | 1351-0012             |                  | Replacement ROM type, 12" top probe, 2-wire (red & black)                                     |
| FT201-18           | 1351-0018             |                  | Replacement ROM type, 18" top probe, 2-wire (red & black)                                     |
| FT202              | 1057-007              |                  | Top sensor ROM type, 2" NPT housing, 7" probe, 2-wire (red & black)                           |
| FT202-12           | 1057-0012             |                  | Top sensor ROM type, 2" NPT housing,12" probe, 2-wire (red & black)                           |
| FT202-18           | 1057-0018             |                  | Top sensor ROM type, 2" NPT housing,18" probe, 2-wire (red & black)                           |
| FT206              | 1000R & 1001R         |                  | Retain sensor ROM type, 1/2" NPT sensor (red & black)   |
| FT9000             | 1355-1355 & 1455-1455 |                  | Probe housing   |
|                    |                       |                  |   |

#### **Onboard Monitors**

| FloTech™<br>Part# | Civacon<br>Part #      | Scully<br>Part#               | Description   |
|-------------------|------------------------|-------------------------------|---|
| FT102             | 3150-3150              | 8563                          | Replacement module API compatible   |
| FT103             | 3100-3100              | 8687                          | API compatible on-board monitor, with housing                             |
| FT203P            | 3252-3252              |                               | Replacement module, ROM type on-board monitor                             |
| FT203PSPEC        | 3250 & 3252            |                               | Replacement module, ROM type on-board monitor with 8 hole cover and frame |
| FT204P            | 3202-3202 & 3202R-3202 |                               | ROM type on-board monitor, with housing                                   |
| FT207             |                        | 09100, 09111, 09584,<br>09585 | Replacement module, Checkmate on-board monitor                            |
| FT208             |                        | 09109, 09107, 09562,<br>09566 | Checkmate programmable monitor for top, or top and bottom sensors         |

# Products

# **Fuel Tanker Overfill Detection**

# Competitor Cross Reference Chart (continued) Sockets

| FloTech™<br>Part # | Civacon<br>Part # | Scully<br>Part # | Description   |
|--------------------|-------------------|------------------|---|
| FT300              | 4103-4103         | 7974             | API compatible optic socket with cap (6 pin, 3 J-slot)                    |
| FT301              | 4400-4400         | 7720             | API compatible thermistor socket with cap (8 pin, 2/4 J-slot)             |
| FT302              | 4600-4600         | 8116             | API compatible float socket   |
| FT303              | 4201-4201         | 7976             | Optic pattern with thermistor J-slot, and cap (6 pin, 2/4 J-slot) (U.S.)  |
| FT304              | 4403-4403         | 7716             | Canadian / European thermistor socket with cap (10 pin, 4 J-slot)         |
| FT305              | 4500-4500         | 7681             | Thermistor socket, J560 type  |
| FT306              | 4300-4300         | 8199             | Optic socket, J560 type   |
| FT307              | 4201-4201         | 7976             | Optic pattern with thermistor J-slot and cap (6 pin, 2/4 J-slot) (Canada) |
| FT310              | 4110-4110         | 21790            | API optic face plate assembly with cap                                    |
| FT311              | 4111-4111         | 20770            | API thermistor face plate assembly with cap                               |
| FT314              |                   | 20768            | Canadian / European thermistor replacement face plate with cap            |
| FT320              | 4150-4150         | 8575             | Blue optic dust cap   |
| FT321              | 4450-4450         | 8474             | Green thermistor dust cap   |
| FT390              | 4820L & 4820R     | 9060             | EZ-Cept dual socket assembly  |
| FT390G             | 4822L & 4822R     |                  | EZ-Cept dual socket assembly with ground bolt                             |

### **Hardware & System Testers**

| FloTech™<br>Part # | Civacon<br>Part # | Scully<br>Part# | Description   |  |
|--------------------|-------------------|-----------------|---|--|
| FT400              | 2100-2100         | 22056           | 5 conductor cable 100'  |  |
| FT400-500          | 2200-2200         |                 | 5 conductor cable 500'  |  |
| FT401              | 2310-2310         | 27382           | 7 conductor cable 100'  |  |
| FT401-1000         | 2401-2401         |                 | 7 conductor cable 1000'   |  |
| FT401-150          | 2300-2300         |                 | 7 conductor cable 150'  |  |
| FT402              | 2510-2510         |                 | 20 strain relief fittings, ½" NPT   |  |
| FT403              | 2530-2530         |                 | 30 strain relief fittings, ½" NPT   |  |
| FT450              | GS1000            | 8560            | Stainless steel grounding bolt  |  |
| FT451              |                   | 8274            | Stainless steel grounding ball  |  |
| FT470              |                   | 08836           | Trailer indentification module  |  |
| FT520              | 1391-1391         |                 | Optic system tester   |  |
| FT521              | 1396-1396         |                 | API optic test plug, 6 pins & 3 J-slot  |  |
| FT522              | 1395-1395         |                 | Optic test plug, 6 pins and 2 or 4 J-slot (plug fits both 2 & 4 J-slot sockets) |  |
| FT523              | 1397-1397         |                 | Optic test plug J560 type   |  |
| FT555              |                   | 08938           | Truck tester  |  |

#### **API Rack Cords**

| All Hadit Goldo    |   |                  |  |  |  |  |  |
|--------------------|---|------------------|--|--|--|--|--|
| FloTech™<br>Part # | Civacon<br>Part #   | Scully<br>Part # | Description  |  |  |  |  |
|                    |   |                  | API Optic Cord Assemblies  |  |  |  |  |
| FT620              | 7100SR-7100   | 21831            | Blue plug with 6 contact pins and 3 J-slot, on a 30' coiled orange cable                     |  |  |  |  |
| FT620S             | 7100-STRAIGHT   | 21764            | Blue plug with 6 contact pins and 3 J-slot, on a 20' straight orange cable                   |  |  |  |  |
| FT620P             | 7100-J560   |                  | Blue plug with 6 contact pins and 3 J-slot on a 30' orange coiled cord and J560 Plug         |  |  |  |  |
| FT621              | 7110SR-7110   | 21766            | Replacement blue plug assembly with 6 contact pins and 3 J-slot                              |  |  |  |  |
| FT622              | 7220-7220   | 31099            | Replacement 30' orange coiled cord, Optic 6 conductor  |  |  |  |  |
| FT623              | 7150-7150   |                  | Optic plug storage hanger  |  |  |  |  |
| FT624              |   | 31098            | Replacement 20' orange straight cord, Optic 6 conductor                                      |  |  |  |  |
|                    |   | AP               | Thermistor Cord Assemblies   |  |  |  |  |
| FT600              | 7300SR-7300   | 21818            | Green plug with 8 contact pins and 2 J-slot, on a 30' coiled orange cable                    |  |  |  |  |
| FT600P             | 7320SR-7320   |                  | Green plug with 8 contact pins and 2 J-slot on a 30' orange coiled cord and 13 pin connector |  |  |  |  |
| FT600S             | 7300-STRAIGHT   | 20830            | Green plug with 8 contact pins and 2 J-slot, on a 20' straight orange cable                  |  |  |  |  |
| FT600C             | 7300CSR-7300  | 31092            | Green plug with 10 contact pins and 4 J-slot, on a 30' coiled orange cable                   |  |  |  |  |
| FT600SC            | 7300C-STRAIGHT  |                  | Green plug with 10 contact pins and 4 J-slot, on a 20' straight orange cable                 |  |  |  |  |
| FT601              | 7310SR-7310   | 20769            | Replacement green plug assembly with 8 contact pins and 2 J-slot                             |  |  |  |  |
| FT601-4            |   |                  | Replacement green plug assembly with 8 contact pins and 4 J-slot                             |  |  |  |  |
| FT601-10           |   | 8959             | Replacement green plug assembly with 10 contact pins and 4 J-slot                            |  |  |  |  |
| FT602              |   | 31097            | Replacement 30' orange coiled cord, Thermistor 10 conductor                                  |  |  |  |  |
| FT603              | 7350-7350   |                  | Thermistor plug storage hanger   |  |  |  |  |
| FT604              |   | 20834            | Replacement 20' orange straight cord, Thermistor 10 conductor                                |  |  |  |  |
|                    | Civacon and ROM Link are registered trademarks of Civacon / Dover Corporation |                  |  |  |  |  |  |

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# Overfill Droduct

# **Fuel Tanker Overfill Detection**

# **Competitor Cross Reference Chart (continued)**

# **Onboard Systems**

| FloTech™<br><b>Part</b> # | Civacon<br>Part # | Scully<br>Part # | Description   |
|---------------------------|-------------------|------------------|---|
| FT1001                    | 2001-2001         | 08328L1          | API compatible 1 compartment system 7" probes                 |
| FT1001-12                 | 2001S-0012        |                  | API compatible 1 compartment system 12" probes                |
| FT1002                    | 2002-2002         |                  | API compatible 2 compartment system 7" probes                 |
| FT1002-12                 | 2002S-0012        |                  | API compatible 2 compartment system 12" probes                |
| FT1003                    | 2003-2003         |                  | API compatible 3 compartment system 7" probes                 |
| FT1003-12                 | 2003S-0012        |                  | API compatible 3 compartment system 12" probes                |
| FT1004                    | 2004-2004         | 8305             | API compatible 4 compartment system 7" probes                 |
| FT1004-12                 | 2004S-0012        |                  | API compatible 4 compartment system 12" probes                |
| FT1005                    | 2005-2005         | 8306             | API compatible 5 compartment system 7" probes                 |
| FT1005-12                 | 2005S-0012        |                  | API compatible 5 compartment system 12" probes                |
| FT1006                    | 2006-2006         |                  | API compatible 6 compartment system 7" probes                 |
| FT1006-12                 | 2006S-0012        |                  | API compatible 6 compartment system 12" probes                |
| FT2001                    | 3021-3021         |                  | ROM type, 1 compartment system, overfill & retain, 7" probes  |
| FT2001-12                 | 3021S-0012        |                  | ROM type, 1 compartment system, overfill & retain, 12" probes |
| FT2002                    | 3022-3022         |                  | ROM type, 2 compartment system, overfill & retain, 7" probes  |
| FT2002-12                 | 3022S-0012        |                  | ROM type, 2 compartment system, overfill & retain, 12" probes |
| FT2003                    | 3023-3023         |                  | ROM type, 3 compartment system, overfill & retain, 7" probes  |
| FT2003-12                 | 3023S-0012        |                  | ROM type, 3 compartment system, overfill & retain, 12" probes |
| FT2004                    | 3024-3024         |                  | ROM type, 4 compartment system, overfill & retain, 7" probes  |
| FT2004-12                 | 3024S-0012        |                  | ROM type, 4 compartment system, overfill & retain, 12" probes |
| FT2005                    | 3025-3025         |                  | ROM type, 5 compartment system, overfill & retain, 7" probes  |
| FT2005-12                 | 3025S-0012        |                  | ROM type, 5 compartment system, overfill & retain, 12" probes |
| FT2006                    | 3026-3026         |                  | ROM type, 6 compartment system, overfill & retain, 7" probes  |
| FT2006-12                 | 3026S-0011        |                  | ROM type, 6 compartment system, overfill & retain, 12" probes |
| FT2101                    | 3031-3031         |                  | ROM type, 1 compartment system, overfill only, 7" probes      |
| FT2101-12                 | 3031S-0012        |                  | ROM type, 1 compartment system, overfill only, 12" probes     |
| FT2102                    | 3032-3032         |                  | ROM type, 2 compartment system, overfill only, 7" probes      |
| FT2102-12                 | 3032S-0012        |                  | ROM type, 2 compartment system, overfill only, 12" probes     |
| FT2103                    | 3033-3033         |                  | ROM type, 3 compartment system, overfill only, 7" probes      |
| FT2103-12                 | 3033S-0012        |                  | ROM type, 3 compartment system, overfill only, 12" probes     |
| FT2104                    | 3034-3034         |                  | ROM type, 4 compartment system, overfill only, 7" probes      |
| FT2104-12                 | 3034S-0012        |                  | ROM type, 4 compartment system, overfill only, 12" probes     |
| FT2105                    | 3035-3035         |                  | ROM type, 5 compartment system, overfill only, 7" probes      |
| FT2105-12                 | 3035S-0012        |                  | ROM type, 5 compartment system, overfill only, 12" probes     |
| FT2106                    | 3036-3036         |                  | ROM type, 6 compartment system, overfill only, 7" probes      |
| FT2106-12                 | 3036S-0012        |                  | ROM type, 6 compartment system, overfill only, 12" probes     |

# **Fuel Tanker Overfill Detection**

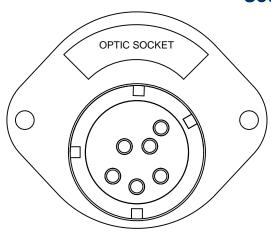
# **Competitor Cross Reference Chart (continued)**

# **Onboard Systems**

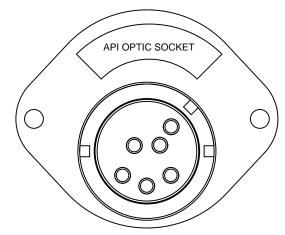
| FloTech™<br>Part # | Civacon<br>Part # | Scully<br>Part # | Description  |
|--------------------|-------------------|------------------|--|
| FT2801             |                   | 08251, 09640     | Checkmate system, 1 compartment system, overfill only, 7" probes     |
| FT2802             |                   | 08352, 09641     | Checkmate system, 2 compartment system, overfill only, 7" probes     |
| FT2803             |                   | 08352,09642      | Checkmate system, 3 compartment system, overfill only, 7" probes     |
| FT2804             |                   | 08354, 09643     | Checkmate system, 4 compartment system, overfill only, 7" probes     |
| FT2805             |                   | 08355, 09644     | Checkmate system, 5 compartment system, overfill only, 7" probes     |
| FT2806             |                   | 08356            | Checkmate system, 6 compartment system, overfill only, 7" probes     |
| FT2807             |                   | 08380            | Checkmate system, 7 compartment system, overfill only, 7" probes     |
| FT2808             |                   | 08381            | Checkmate system, 8 compartment system, overfill only, 7" probes     |
| FT2811             |                   | 08361            | Checkmate system, 1 compartment system, overfill & retain, 7" probes |
| FT2812             |                   | 08362            | Checkmate system, 2 compartment system, overfill & retain, 7" probes |
| FT2813             |                   | 03363            | Checkmate system, 3 compartment system, overfill & retain, 7" probes |
| FT2814             |                   | 08364            | Checkmate system, 4 compartment system, overfill & retain, 7" probes |
| FT2815             |                   | 08365            | Checkmate system, 5 compartment system, overfill & retain, 7" probes |
| FT2816             |                   | 08366            | Checkmate system, 6 compartment system, overfill & retain, 7" probes |
| FT2817             |                   | 08382            | Checkmate system, 7 compartment system, overfill & retain, 7" probes |
| FT2818             |                   | 08383            | Checkmate system, 8 compartment system, overfill & retain, 7" probes |

# **Fuel Tanker Overfill Detection**

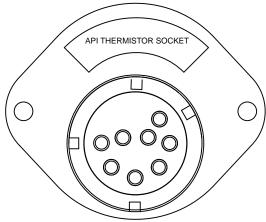
### **Socket Profiles**



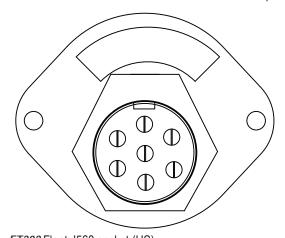
FT303 Optic socket (US)
FT313 Replacement faceplate
FT307 Optic socket (Eastern Canada)
FT317 Replacement faceplate



FT300 API optic socket (US) FT310 Replacement faceplate



FT301 API Thermistor socket (US) FT311 Replacement faceplate assembly

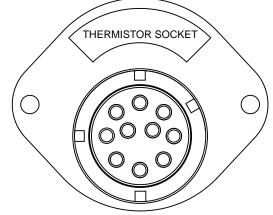


FT302 Float J560 socket (US)
FT312 Replacement faceplate float J560 socket
FT305 Thermistor J560 socket (US)

FT315 Replacement faceplate Thermistor J560 socket

FT306 Optic J560 socket (western Canada)

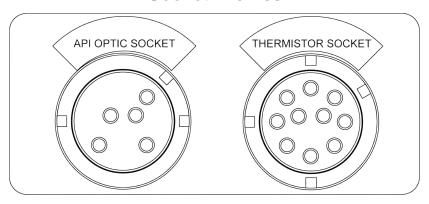
FT316 Replacement faceplate optic J560 socket



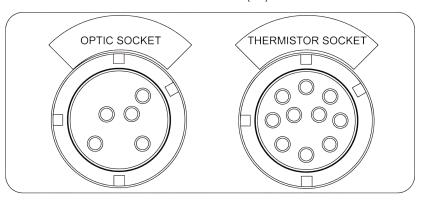
FT304 Thermistor socket (Canada) FT314 Replacement faceplate

# Fuel Tanker Overfill Detection

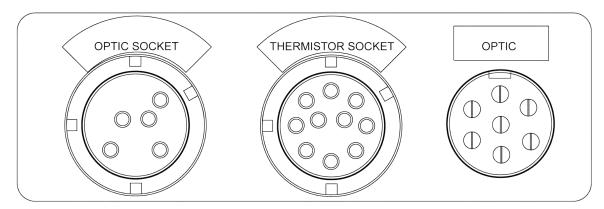
## **Socket Profiles**



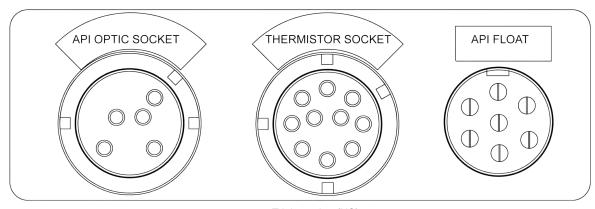
FT390 Dual socket (US)



FT391 Dual socket (Canada)



FT395 Triple socket (Canada)



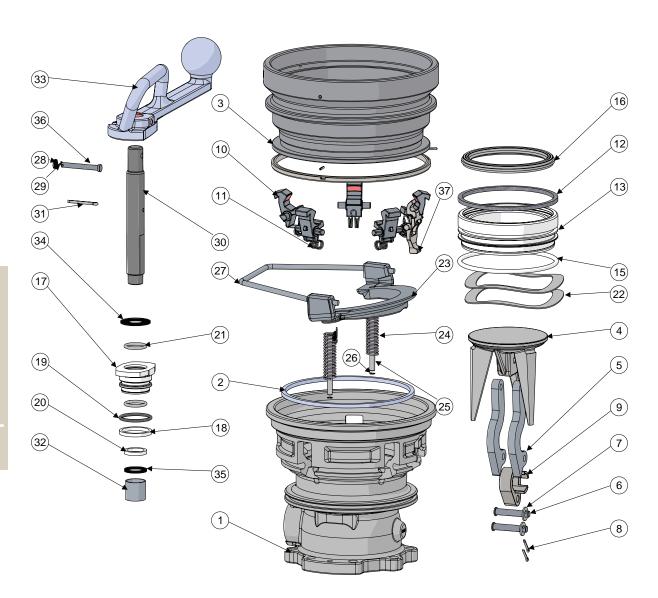
FT393 Triple socket (US)

# Petroleum Replacement Parí

# Fuel Tanker Loading and Unloading

# 5300/5400 Series API Couplers

# **API Bottom Rack Loading Fittings**



# enlacement Pa

# Fuel Tanker Loading and Unloading

|          | Materials                                       |  |      |       |        | Compor  |       |      |       |      |
|----------|---|--|------|-------|--------|---------|-------|------|-------|------|
| em#      | Description                                     | Part #   | 5300 | 5300B | 5300BC | 5300BCL | 5300G | 5400 | 5400B | 5400 |
| 1        | body  |  | 1    | 1     | 1      | 1       | 1     | 1    | 1     | 1    |
| 2        | body dust ring                                  | 112173   | 1    | 1     | 1      | 1       | 1     | 1    | 1     | 1    |
| 3        | sleeve assembly                                 | 400684   | 1    | 1     | 1      | 1       | 1     | 1    | 1     | 1    |
| 4A       | poppet  | Use kit <b>5354K19</b>   | 1    | 1     | 1      | 1       | 1     | 1    | 1     | 1    |
| 4B       | poppet for crude oil                            | Use kit <b>5354K20</b>   | N/A  | N/A   | 1      | 1       | N/A   | N/A  | N/A   | N/A  |
|          |   |  |      |       |        |         |       |      |       |      |
| 5        | bent link                                       | 112151   | 2    | 2     | 2      | 2       | 2     | 2    | 2     | 2    |
| 6        | link pin  | 391141   | 2    | 2     | 2      | 2       | 2     | 2    | 2     | 2    |
| 7        | link washer                                     | 112158   | 2    | 2     | 2      | 2       | 2     | 2    | 2     | 2    |
| 8        | 304SS cotter pin                                | 110721   | 2    | 2     | 2      | 2       | 2     | 2    | 2     | 2    |
| 9        | drive link                                      | 112148   | 1    | 1     | 1      | 1       | 1     | 1    | 1     | 1    |
| 10       | interlocking cam                                | 112147   | 5    | 5     | 5      | 5       | 5     | 5    | 5     | 5    |
| 11       | torsion spring                                  | 112149   | 5    | 5     | 6      | 6       | 5     | 5    | 5     | 5    |
| 12       |   | 112174   | 1    | 1     | 1      | 1       | 1     | 1    | 1     | 1    |
| 12       | nose piece dust ring                            |  | I    | I     | ı      | I       | I     | ı    | ı     |      |
| 13       | nose piece                                      | Use kit <b>5354K7</b> , <b>5354K8</b> , <b>5354K9</b> , <b>5354K10</b> , <b>5354K11</b> , <b>5354K12</b> or <b>5354K20</b> | N/A  | N/A   | N/A    | N/A     | N/A   | 1    | 1     | 1    |
| 14       | PTFE U-Seal 350 (optional) 1                    | 112164   | 1    | 1     | 1      | 1       | 1     | 1    | 1     | 1    |
| 15A      | O-ring 2-350, Buna                              | Use kit <b>5354K7</b> , <b>5354K8</b> , <b>5354K13</b> or <b>5354K14</b>   | 1    | N/A   | N/A    | N/A     | N/A   | 1    | N/A   | N/A  |
| 15B      | O-ring 2-350, FKM B                             | Use kit <b>5354K9</b> , <b>5354K10</b> , <b>5354K15</b> , <b>5354K16</b> or <b>5354K20</b>                                 | N/A  | 1     | 1      | 1       | N/A   | N/A  | 1     | N/A  |
| 15C      | O-ring 2-350, FKM GFLT                          | Use kit <b>5354K11, 5354K12, 5354K17</b> or <b>5354K18</b>   | N/A  | N/A   | N/A    | N/A     | 1     | N/A  | N/A   | 1    |
| 16A      | replaceable nose seal, Buna                     | Use kit <b>5354K13</b> or <b>5354K14</b>   | N/A  | N/A   | N/A    | N/A     | N/A   | 1    | N/A   | N/A  |
| 16B      | replaceable nose seal, FKM B                    | Use kit <b>5354K15</b> or <b>5354K16</b>   | N/A  | N/A   | N/A    | N/A     | N/A   | N/A  | 1     | N/A  |
| 6C       | replaceable nose seal, FKM GFLT                 | Use kit <b>5354K17</b> or <b>5354K18</b>   | N/A  | N/A   | N/A    | N/A     | N/A   | N/A  | N/A   | 1    |
| 16D      | bonded nose seal, Buna                          | Use kit <b>5354K7</b> or <b>5354K8</b>   |      | N/A   | N/A    | N/A     | N/A   | N/A  | N/A   | N//  |
|          | ,   |  | 1    |       |        |         |       |      |       |      |
| 16E      | bonded nose seal, FKM B                         | Use kit <b>5354K9</b> or <b>5354K10</b>  | N/A  | 1     | N/A    | N/A     | N/A   | N/A  | N/A   | N/A  |
| 16 F     | bonded nose seal, FKM GFLT                      | Use kit <b>5354K11</b> or <b>5354K12</b>   | N/A  | N/A   | N/A    | N/A     | 1     | N/A  | N/A   | N/A  |
| 16G      | bonded nose seal for crude oil                  | Use kit <b>5354K20</b>   | N/A  | N/A   | 1      | 1       | N/A   | N/A  | N/A   | N/A  |
| 17A      | bearing   | 341790   | 1    | 1     | N/A    | N/A     | 1     | 1    | 1     | 1    |
| 17B      | bearing for crude oil                           | 400696   | N/A  | N/A   | 1      | N/A     | N/A   | N/A  | N/A   | N/A  |
| 17C      | bearing for crude oil w/lock handle             | 400696   | N/A  | N/A   | NA     | 1       | N/A   | N/A  | N/A   | N/A  |
| 18       | PTFE U-Seal 220 (optional) <sup>1</sup>         | 112163   | 1    | 1     | 1      | 1       | 1     | 1    | 1     | 1    |
| 10       | 1 11 L O-Seal 220 (Optional)                    |  |      |       |        | l       | - 1   | - 1  | - 1   |      |
| 19A      | O-ring 2-220, Buna                              | Use kit <b>5354K1</b> , <b>5354K2</b> or <b>5354K20</b>  | 1    | N/A   | N/A    | N/A     | N/A   | 1    | N/A   | N/A  |
| 19B      | O-ring 2-220, FKM B                             | Use kit <b>5354K3</b> , <b>5354K4</b> or <b>5354K20</b>  | N/A  | 1     | 1      | 1       | N/A   | N/A  | 1     | N/A  |
| 19C      | O-ring 2-220, FKM GFLT                          | Use kit <b>5354K5</b> or <b>5354K6</b>   | N/A  | N/A   | N/A    | N/A     | 1     | N/A  | N/A   | 1    |
| 20       | PTFE U-Seal 212 (optional) 1                    | 112162   | 1    | 1     | 1      | 1       | 1     | 1    | 1     | 1    |
| 21A      | O-ring 2-212, Buna                              | Use kit <b>5354K1</b> or <b>5354K2</b>   | 2    | N/A   | N/A    | N/A     | N/A   | 2    | N/A   | N/A  |
| 21B      | O-ring 2-212, FKM B                             | Use kit <b>5354K3, 5354K4,</b> or <b>5354K20</b>   | N/A  | 2     | 2      | 2       | N/A   | N/A  | 2     | N/A  |
| 21C      | O-ring 2-212, FKM GFLT                          | Use kit <b>5354K5</b> or <b>5354K6</b>   | N/A  | N/A   | N/A    | N/A     | 2     | N/A  | N/A   | 2    |
| 22A      | wave spring washer                              | 112172   | 2    | 2     | N/A    | N/A     | 2     | 2    | 2     | 2    |
| 22B      | wave spring washer<br>wave washer for crude oil | 112282   | N/A  | N/A   | 1      | 1       | N/A   | N/A  | N/A   | N/A  |
|          |   |  |      |       |        |         |       |      |       |      |
| 23       | bail  | 341788   | 1    | 1     | 1      | 1       | 1     | 1    | 1     | 1    |
| 24       | bail spring                                     | 112150   | 2    | 2     | 2      | 2       | 2     | 2    | 2     | 2    |
| 25       | bail pin  | 112175   | 2    | 2     | 2      | 2       | 2     | 2    | 2     | 2    |
| 26       | internal retaining ring                         | 112176   | 2    | 2     | 2      | 2       | 2     | 2    | 2     | 2    |
| 27       | release   | 391139   | 1    | 1     | 1      | 1       | 1     | 1    | 1     | 1    |
| 28       | washer  | 111562   | 3    | 3     | 3      | 3       | 3     | 3    | 3     | 3    |
| 29       | cotter pin                                      | 111563   | 3    | 3     | 3      | 3       | 3     | 3    | 3     | 3    |
| 30       | shaft   | 391140   | 1    | 1     | 1      | 1       | 1     | 1    | 1     | 1    |
| 31       | shaft cotter pin                                | 112307   | 1    | 1     | 1      | 1       | 1     | 1    | 1     | 1    |
|          |   |  |      |       |        |         |       |      | -     |      |
| 32       | spacer  | 391142   | 1    | 1     | 1      | 1       | 1     | 1    | 1     | 1    |
| 33A      | handle (aluminum)                               | 341789   | 1    | 1     | -      | -       | 1     | 1    | 1     | 1    |
| 33B      | handle (stainless steel)                        | 112392   | N/A  | N/A   | 1      | N/A     | N/A   | N/A  | N/A   | N/A  |
| 33C      | handle (stainless steel)                        | 400713   | N/A  | N/A   | N/A    | 1       | N/A   | N/A  | N/A   | N/A  |
| 34       | shaft outside washer                            | 112160   | 1    | 1     | 1      | 1       | 1     | 1    | 1     | 1    |
|          | shaft inside washer                             | 112159   | 1    | 1     | 1      | 1       | 1     | 1    | 1     | 1    |
| .35      |   |  | 1    | 1 1   | 1 1    | 1 1     | 1 1   |      | 1     | 1 1  |
| 35<br>36 | clevis pin                                      | 112500   | 1    | 1     | 1      | 1       | 1     | 1    | 1     | 1    |

<sup>1</sup> Items 14, 18 and 20 are optional PTFE U seals. When the U seals are added to the coupler they isolate the main rubber seals from the liquid being conveyed, thereby increasing the longevity of the rubber seals.

N/A = "Not Applicable"

# Petroleum

# Fuel Tanker Loading and Unloading

# 5300/5400 Series API Couplers

## **API Bottom Rack Loading Fittings**

### **Repair Kits**

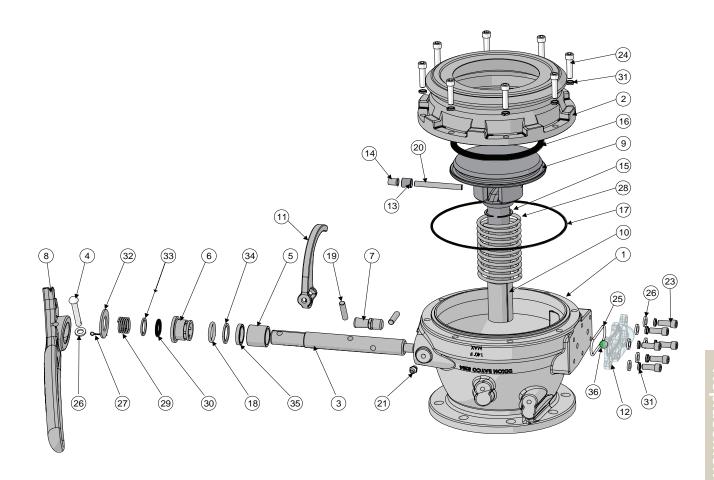
| Part #  | Description   | Include items #  |
|---------|---|--|
| 5354K1  | Buna shaft seal kit: for 5300 and 5400                                  | 19A, 21A, 31, 34, 35                                     |
| 5354K2  | Buna shaft seal kit with optional PTFE U seals: for 5300 and 5400       | 18 <sup>1</sup> , 19A, 20 <sup>1</sup> , 21A, 34, 35     |
| 5354K3  | FKM-B shaft seal kit: for 5300B and 5400B                               | 19B, 21B, 31, 34, 35                                     |
| 5354K4  | FKM-B shaft seal kit with optional PTFE U seals: for 5300B and 5400B    | 18 <sup>1</sup> , 19B, 20 <sup>1</sup> , 21B, 31, 34, 35 |
| 5354K5  | FKM GFLT shaft seal kit: for 5300G and 5400G                            | 19C, 21C, 31, 34, 35                                     |
| 5354K6  | FKM GFLT shaft seal kit with optional PTFE U seals: for 5300G and 5400G | 18 <sup>1</sup> , 19C, 20 <sup>1</sup> , 21C, 34, 35     |
| 5354K7  | Buna bonded nose seal kit: for 5300                                     | 12, 13, 15A, 16D   |
| 5354K8  | Buna bonded nose seal kit with optional PTFE U seal: for 5300           | 12, 13, 14 <sup>1</sup> , 15A, 16D                       |
| 5354K9  | FKM-B bonded nose seal kit: for 5300B                                   | 12, 13, 15B, 16E, 31                                     |
| 5354K10 | FKM-B bonded nose seal kit with optional PTFE U seal: for 5300B         | 12, 13, 14 <sup>1</sup> , 15B, 16E                       |
| 5354K11 | FKM GFLT bonded nose seal kit: for 5300G                                | 12, 13, 15C, 16F, 31                                     |
| 5354K12 | FKM GFLT bonded nose seal kit with optional PTFE U seal: for 5300G      | 12, 13, 14 <sup>1</sup> , 15C, 16F                       |
| 5354K13 | Buna replaceable nose seal kit: for 5400                                | 12, 15A, 16A   |
| 5354K14 | Buna replaceable nose seal kit with optional PTFE U seal: for 5400      | 12, 14 <sup>1</sup> , 15A, 16A                           |
| 5354K15 | FKM-B replaceable nose seal kit: for 5400B                              | 12, 15B, 16B, 31   |
| 5354K16 | FKM-B replaceable nose seal kit with optional PTFE U seal: for 5400B    | 12, 14 <sup>1</sup> , 15B, 16B, 31                       |
| 5354K17 | FKM GFLT replaceable nose seal kit: for 5400G                           | 12, 15C, 16C   |
| 5354K18 | FKM GFLT replaceable nose seal kit with optional PTFE U seal: for 5400G | 12, 14 <sup>1</sup> , 15C, 16C                           |
| 5354K19 | Valve assembly repair kit: for 5300, 5300B, 5300G, 5400, 5400B, 5400G   | 4, 5, 6, 7, 8, 9, 31, 34, 35                             |
| 5354K20 | crude conversion kit  | 4B, 16G, 17C, 22B, 31                                    |
| 5354K21 | locking handle kit  | 17C, 21B, 28, 29, 31, 33C, 34, 36                        |
| 5354K22 | conversion kit for crude 5300, 5400 - GFLT seals                        | 22B, 16F, 15C, 12, 17A, 21C,                             |
|         | i i   | 19C, 31  |
| 5354K23 | poppet assembly replacement kit 5300, 5300BC, 5300BCL                   | 4A, 5, 6, 7, 8, 9, 31, 34, 35                            |
| 5354K25 | aluminum handle kit replacement   | 28, 29, 33A, 34, 36                                      |
| 5354K26 | stainless steel handle kit replacement                                  | 28, 29, 33B, 34, 36                                      |
| 5354K27 | super pack API coupler repair kit                                       | 5354K1, 5354K9, 28, 29, 31, 36                           |

Items 14, 18 and 20 are optional PTFE U seals. When the U seals are added to the coupler they isolate the main rubber seals from the liquid being conveyed, thereby increasing the longevity of the rubber seals.

# Replacement Pari

# Fuel Tanker Loading and Unloading

# 5204 Series, API Bottom Load Valves



### **Repair Kits**

| •       |  |   |  |  |
|---------|--|---|--|--|
| Part #  | Description  | Include items #                               |  |  |
| 5204K2  | complete rebuild kit: Baylast™ O-rings, bearings   | 6, 10, 13, 14, 16A, 17A, 18A, 25A, 30, 32, 35 |  |  |
| 5204KV2 | complete rebuild kit: FKM poppet O-ring, Baylast™ O-rings, bearings                          | 6, 10, 13, 14, 16B, 17A, 18A, 25A, 30, 32, 35 |  |  |
| 5204K3  | anodized nose ring with Baylast™ gasket, screws and lock washers                             | 2, 17A, 24, 31                                |  |  |
| 5204K5  | detachable handle assembly (for 5204C and 5204NGC)   | not illustrated                               |  |  |
| 5204K6  | PTFE encapsulated seal kit, poppet O-ring, nose O-ring, shaft O-ring, and sight glass O-ring | 16C, 17B, 18B, 25B                            |  |  |
| 5204K7  | fixed handle assembly  | 4, 6, 8A, 26, 27, 29, 32                      |  |  |
| 5204K8  | sight glass repair kit   | 12, 25A, 36, 37                               |  |  |
| 5204K9  | sight glass cover kit (to convert units with sight glass to non-sight glass)                 | not illustrated                               |  |  |
| 5204K11 | nose ring replacement 8 hex bolts and 8 washers kit  | 24, 31  |  |  |
| 5204K12 | sight glass replacement hardware, 6 hex bolts, 6 lock washers and 4 washers kit              | 23, 26, 31                                    |  |  |
| 5204K13 | full body sight glass, seals and retainer kit for 5204SFI                                    | 38, 39, 40                                    |  |  |

See 5204 Series Bill of Materials on the following page.

# enlacement Pa

# Fuel Tanker Loading and Unloading

# 5204 Series, API Bottom Load Valves

See 5204 Series explosion diagram on preceding page.

#### **Bill of Materials**

### **Qty of Components per Unit**

|             |                                      |                        |      |        |         | -1-5    |         |       | p        |            |            |
|-------------|--------------------------------------|------------------------|------|--------|---------|---------|---------|-------|----------|------------|------------|
| Iten<br>#   | Description                          | Part #                 | 5204 | 5204NG | 5204TNG | 5204SNG | 5204NGV | 5204C | 5204NGC  | 5204L      | 5204LNG    |
| 1           | body - pipe end                      |                        | 1    | 1      | 1       | 1       | 1       | 1     | 1        | 1          | 1          |
| 2           | nose ring                            | use kit <b>5204K3</b>  | 1    | 1      | 1       | 1       | 1       | 1     | 1        | 1          | 1          |
| 3           | shaft                                | 390812                 | 1    | 1      | 1       | 1       | 1       | 1     | 1        | N/A        | N/A        |
| 4           | handle pin                           | 111559                 | 1    | 1      | 1       | 1       | 1       | N/A   | N/A      | N/A        | N/A        |
| 5           | shaft spacer                         | 390813                 | 1    | 1      | 1       | 1       | 1       | 1     | 1        | N/A        | N/A        |
| 6           | shaft bearing                        | 111557                 | 1    | 1      | 1       | 1       | 1       | 1     | 1        | N/A        | N/A        |
|             |                                      |                        | 1    | 1      | 1       | 1       | 1       | 1     | 1        |            | N/A<br>N/A |
| 7<br>8A     | stop pin                             | 5204-SP                | 1    | 1      | 1       | 1       | 1       | N/A   | N/A      | N/A<br>N/A | N/A<br>N/A |
|             |                                      | use kit <b>5204K7</b>  |      | N/A    | N/A     | N/A     | -       | -     | -        |            | , .        |
| 8B          | removeable handle                    | use kit <b>5204K5</b>  | N/A  |        |         |         | N/A     | 1     | 1        | N/A        | N/A        |
| 9A          | poppet (load/unload versions)        |                        | 1    | 1      | 1       | 1       | 1       | 1     | 1        | N/A        | N/A        |
| 9B          | poppet (load only versions)          | 341756                 | N/A  | N/A    | N/A     | N/A     | N/A     | N/A   | N/A      | 1          | 1          |
| 10          | poppet bearing                       | 341801                 | 1    | 1      | 1       | 1       | 1       | 1     | 1        | 1          | 1          |
| 11          | cam                                  | 111550                 | 1    | 1      | 1       | 1       | 1       | 1     | 1        | N/A        | N/A        |
| 12          | sight glass                          | use kit <b>5204K8</b>  | 1    | N/A    | N/A     | N/A     | N/A     | 1     | N/A      | 1          | N/A        |
| _13         | poppet roller                        | 390815                 | 1    | 1      | 1       | 1       | 1       | 1     | 1        | N/A        | N/A        |
| 14          | poppet roller bearing                | 111556                 | 1    | 1      | 1       | 1       | 1       | 1     | 1        | N/A        | N/A        |
| 15          | retaining ring                       | 111560                 | 1    | 1      | 1       | 1       | 1       | 1     | 1        | 1          | 11         |
| 16 <i>A</i> | A Baylast <sup>™</sup> poppet O-ring | 5204K1                 | 1    | 1      | N/A     | 1       | N/A     | 1     | 1        | 1          | 1          |
| 16E         | FKM poppet O-ring                    | 5204KV1                | N/A  | N/A    | N/A     | N/A     | 1       | N/A   | N/A      | N/A        | N/A        |
| 160         | PTFE encapsulated poppet O-ring      | use kit <b>5204K6</b>  | N/A  | N/A    | 1       | N/A     | N/A     | N/A   | N/A      | N/A        | N/A        |
| 17/         | nose ring O-ring                     | 111554                 | 1    | 1      | N/A     | 1       | 1       | 1     | 1        | 1          | 1          |
| 17E         | PTFE nose O-ring                     | use kit <b>5204K6</b>  | N/A  | N/A    | 1       | N/A     | N/A     | N/A   | N/A      | N/A        | N/A        |
| 18/         | 9                                    | 111552                 | 1    | 1      | N/A     | 1       | 1       | 1     | 1        | N/A        | N/A        |
| 18E         | PTFE shaft O-ring                    | use kit <b>5204K6</b>  | N/A  | N/A    | 1       | N/A     | N/A     | N/A   | N/A      | N/A        | N/A        |
| 19          | shaft and cam roll pin               | 6000-12                | 2    | 2      | 2       | 2       | 2       | 2     | 2        | N/A        | N/A        |
| 20          | pin roller                           | 111566                 | 1    | 1      | 1       | 1       | 1       | 1     | 1        | N/A        | N/A        |
| 21          | grease fitting                       | 111561                 | 1    | 1      | 1       | 1       | 1       | 1     | 1        | N/A        | N/A        |
| 23          | sight glass screw                    | use kit <b>5204K12</b> | 6    | N/A    | N/A     | N/A     | N/A     | 6     | N/A      | 6          | N/A        |
| 24          |                                      | use kit <b>5204K11</b> | 8    | 8      | 8       | 8       | 8       | 8     | 8        | 8          | 8          |
| 25/         | 3                                    | use kit <b>5204K8</b>  | 1    | N/A    | N/A     | N/A     | N/A     | 1     | N/A      | 1          | N/A        |
| 25E         |                                      | use kit <b>5204K6</b>  | N/A  | N/A    | N/A     | N/A     | N/A     | N/A   | N/A      | N/A        | N/A        |
| 26          | 5 5 5                                | 111562                 | 1    | 1      | 1       | 1       | 1       | 6     | N/A      | 6          | N/A        |
| 27          | cotter pin                           | 111563                 | 1    | 1      | 1       | 1       | 1       | N/A   | N/A      | N/A        | N/A        |
| 28/         |                                      | 111564                 | 1    | 1      | N/A     | N/A     | 1       | 1     | 1        | 1          | 1          |
| 28E         | 1 0                                  | 111542                 | N/A  | N/A    | 1       | 1       | N/A     | N/A   | N/A      | N/A        | N/A        |
| 29          | handle spring                        | 111565                 | 1    | 1      | 1       | 1       | 1       | 1     | 1        | N/A        | N/A        |
| 30          | dust seal O-ring                     | 111553                 | 1    | 1      | 1       | 1       | 1       | 1     | 1        | N/A        | N/A        |
| 31          | lock washer 1/4"                     | 111569                 | 14   | 8      | 8       | 8       | 8       | 14    | 8        | 14         | 8          |
| 32          |                                      | 111573                 | 14   | 1      | 1       | 1       | 1       | 14    | 1        | N/A        | N/A        |
| 33          | handle shaft spring washer           |                        | 1    | 1      | 1       | 1       | 1       | 1     | 1        | N/A        | N/A<br>N/A |
| 33          | handle shaft washer                  | 111574                 | 1    | 1      | 1       | 1       | 1       | 1     | 1        | N/A        | N/A<br>N/A |
|             | back-up ring                         | 111579                 | _    | -      | -       | -       | -       | -     | _        |            |            |
| 35          | u-cup seal                           | 111580                 | 1    | 1      | 1       | 1       | 1       | 1     | 1<br>N/A | N/A        | N/A        |
| 36          | flow indicator                       | use kit <b>5204K8</b>  | 1    | N/A    | N/A     | N/A     | N/A     | 1     | N/A      | N/A        | N/A        |
| 38          | 0 0                                  | use kit <b>5204K13</b> |      | N/A    | N/A     | N/A     | N/A     | N/A   | N/A      | N/A        | N/A        |
| 39          |                                      | use kit <b>5204K13</b> | IN/A | N/A    | N/A     | N/A     | N/A     | N/A   | N/A      | N/A        | N/A        |
| 40          | SFI sight glass O-ring (Baylast™)    | use kit <b>5204K13</b> | N/A  | N/A    | N/A     | N/A     | N/A     | N/A   | N/A      | N/A        | N/A        |

Not illustrated, parts for 5204-SFI

N/A = Not Applicable

# Petroleum

# Fuel Tanker Loading and Unloading

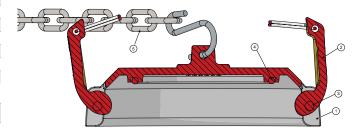
# 5000-24 API Dust Caps

#### **Bill of Materials**

| Item # | Description                | Part #     | Qty |
|--------|----------------------------|------------|-----|
| 1      | body                       |            | 1   |
| 2      | cam arm and ring           | 300-HRP-BR | 2   |
| 3      | cam arm pin                | 5000-24    | 2   |
| 4A     | Baylast™ O-ring (standard) | 4500-5     | 1   |
| 4B     | FKM O-ring (optional)      | 4500-7     | 1   |
| 5      | 18" chain and S hook       | 5205-RK4   | 1   |

#### Repair Kits

| Part #   | Description  | Item #   |
|----------|--|----------|
| 4500RK   | cam arms, pins and Baylast™ O-ring seal (standard) | 2, 3, 4A |
| 4500RK-V | cam arms, pins and FKM O-ring seal (optional)      | 2, 3, 4B |
| 5205-RK4 | 18" chain and S hook                               | 5        |



# 5205 API Dust Caps

#### **Bill of Materials**

| Item # | Description     | Part #                  | Qty |
|--------|-----------------|-------------------------|-----|
| 1      | body            |                         | 1   |
| 2      | slotted pin     | use kit <b>5205-RK3</b> | 1   |
| 3      | roller          | use kit <b>5205-RK3</b> | 1   |
| 4      | gasket          | 5205-RK1                | 1   |
| 5      | S hook          | use kit <b>5205-RK4</b> | 1   |
| 6      | 18" chain       | use kit <b>5205-RK4</b> | 1   |
| 7      | spring pin      | use kit <b>5205-RK2</b> | 1   |
| 8      | plastic cam arm | use kit <b>5205-RK2</b> | 1   |

#### Repair Kits

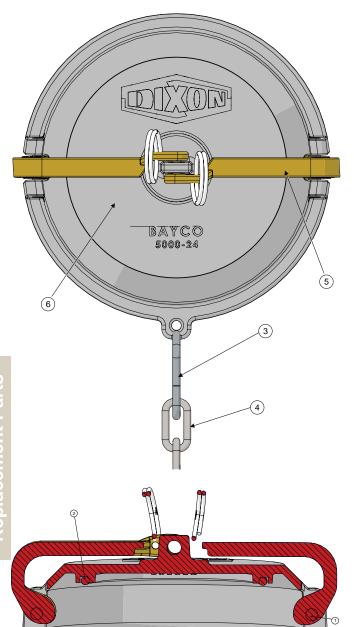
| Part #   | Description      | Item # |
|----------|------------------|--------|
| 5205-RK1 | gasket kit       | 4      |
| 5205-RK2 | cam arm and pin  | 7, 8   |
| 5205-RK3 | roller and pin   | 2, 3   |
| 5205-RK4 | chain and S hook | 5. 6   |



# Petroleum

# Fuel Tanker Loading and Unloading

# 5000-24L Lockable API Caps



### **Bill of Materials**

| Item # | Description            | Part # | Qty |
|--------|------------------------|--------|-----|
| 1      | pin                    | 325-P  | 2   |
| 2      | Buna-N O-ring          | 4500-5 | 1   |
| 3      | S hook                 | 112167 | 1   |
| 4      | chain 18"              | 500-15 | 1   |
| 5      | lockable arm with ring | 341836 | 2   |
| 6      | API dust cap           |        | 1   |

## Repair Kit

| Part # |            | Description             | Item #  |
|--------|------------|-------------------------|---------|
|        | 5000-24LRK | arm and seal repair kit | 1, 2, 5 |

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# Fuel Delivery

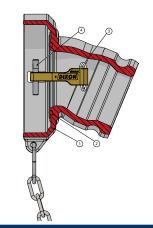
# 4530 and 4540 Series Gravity Drop Adapters

#### **Bill of Materials**

| Item # | Description                | Part #     | Qty |
|--------|----------------------------|------------|-----|
| 1      | body                       |            | 1   |
| 2A     | Baylast™ O-ring (standard) | 4500-5     | 1   |
| 2B     | FKM O-ring (standard)      | 4500-7     | 1   |
| 3      | cam arm and ring           | 300-HRP-BR | 2   |
| 4      | cam pin                    | 300-HRP-BR | 2   |
|        | 18" chain and S hook       | 5205-RK4   | 1   |

#### Repair Kits

| Part #   | Description                               | Item #   |
|----------|---|----------|
| 4500RK   | cam arms, rings, pins and Baylast™ O-ring | 2A, 3, 4 |
| 4500RK-V | cam arms, rings, pins and FKM O-ring      | 2B, 3, 4 |
| 5205-RK4 | 8" security chain and S hook              | -        |



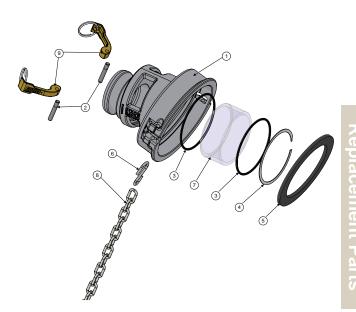
# 4530SG and 4540SG (with Sight Glass) Gravity Drop Adapters

#### **Bill of Materials**

| Item # | Description                      | Part #                    | Qty |
|--------|----------------------------------|---------------------------|-----|
| 1      | body                             |                           | 1   |
| 2      | cam arm pin                      | L519-15                   | 2   |
| 3      | Baylast <sup>™</sup> O-ring      | 112052                    | 2   |
| 4      | retaining ring                   | 112053                    | 1   |
| 5      | Baylast <sup>™</sup> main gasket | 4540SG-RK2                | 1   |
| 6      | S hook                           | use kit <b>5205-RK4</b>   | 1   |
| 7      | sight glass                      | use kit <b>4540SG-RK1</b> | 1   |
| 8      | 18" chain                        | use kit <b>5205-RK4</b>   | 1   |
| 9      | cam arm and ring                 | ACAR34BZ                  | 2   |

### Repair Kits

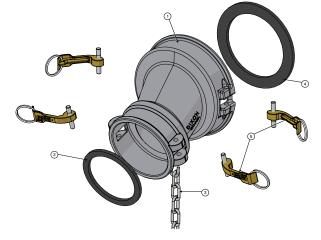
| Part #       | Description                             | Item #  |
|--------------|---|---------|
| 4540SG-RK1   | sight glass repair kit (fits 3" and 4") | 3, 4, 7 |
| 4540SG-RK2   | Baylast™ main gasket (fits 3" and 4")   | 5A      |
| 4540SG-RK2-V | FKM main gasket (fits 3" and 4")        | 5B      |
| 4540SG-RK3   | cam arms and pins (fits 3" and 4")      | 2, 9    |
| 5205-RK4     | chain and S hook                        | 6, 8    |



# 4540F Gravity Drop Adapters

#### **Bill of Materials**

| Item # | Description                              | Part #     | Qty |
|--------|--|------------|-----|
| 1      | body                                     |            | 1   |
| 2      | 4" Buna fuel gasket                      | 400-G-BF   | 1   |
| 3      | 18" chain with S hook                    | 5205-RK4   | 1   |
| 4      | Baylast™ main gasket                     | 4540SG-RK2 | 1   |
| 5      | brass cam arm, pin and finger ring (kit) | 300-HRP-BR | 4   |

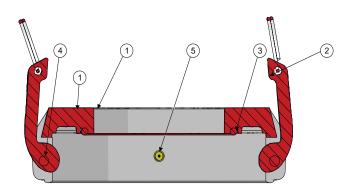


# Petroleum Replacement Part

# Fuel Delivery

# 4500 Drop Adapter Mounting Ring for 2 Piece Gravity Drop Adapters

4500, 4502 and 4504 Main Body Inlet



#### **Bill of Materials**

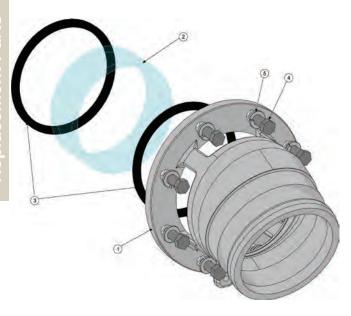
| Item # | Description                | Part #     | Qty |
|--------|----------------------------|------------|-----|
| 1      | body                       |            | 1   |
| 2      | cam arm and ring           | 300-HRP-BR | 2   |
| 3A     | Baylast™ O-ring (standard) | 4500-5     | 1   |
| 3B     | FKM O-ring (optional)      | 4500-7     | 1   |
| 4      | cam arm pin                | 300-HRP-BR | 2   |
| 5      | rivet                      | 390564     | 1   |

#### Repair Kits

| Part #   | Description   | Item #   |
|----------|---|----------|
| 4500RK   | cam arms, rings, pins and Baylast™<br>O-ring (standard) | 2, 3A, 4 |
| 4500RK-V | cam arms, rings, pins and FKM O-ring (optional)         | 2, 3B, 4 |

# 4500 Series Drop Adapter Outlets

4501, 4502, 4503 and 4504



#### **Bill of Materials**

| Item #          | Description                 | Part #        | Qty |
|-----------------|-----------------------------|---------------|-----|
| 1               | body                        |               | 1   |
| 2               |                             | see below     | 2   |
| 3A              | Baylast <sup>™</sup> gasket | 4433          | 2   |
| 3B              | FKM gasket                  | 4426          | 1   |
| 4               | stainless bolt              | 4427          | 8   |
| 5               | stainless washer            | WASHER.375-SS | 8   |
| not illustrated | coupler gasket for 4504     | 400-G-BF      | 1   |
| not illustrated | cam arm and ring for 4504   | ACAR34BZ      | 2   |
| not illustrated | cam arm pin for 4504        | L519-12       | 2   |

#### Repair Kits

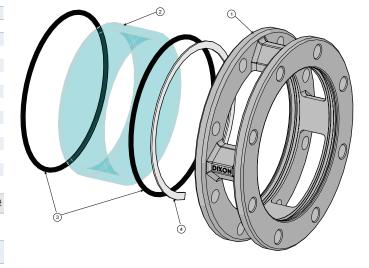
| Part #    | Description  | Item # |
|-----------|--|--------|
| 4400SGK   | sight glass and Baylast™ gaskets for 4501 and 4504 | 2, 3A  |
| 4400SGK-V | sight glass and FKM gaskets for 4501 and 4504      | 2, 3B  |
| 4502SGK   | sight glass and Baylast™ gaskets for 4502 and 4503 | 2, 3A  |
| 4502SGK-V | sight glass and FKM gaskets for 4502 and 4503      | 2, 3B  |

# Petroleum

# 5200-SFI Series, Sight Glass

#### **Bill of Materials**

| Item #   | Description        | Part #  |  |
|----------|--------------------|---------|--|
| 1a       | body 3" - 1 3/4"   | 241667  |  |
| 1b       | body 3" - 3 1/4"   | 242055  |  |
| 1c       | body 4" - 3 3/4"   | 241964  |  |
| 1d       | body 4" - 3 1/4"   | 242028  |  |
| 2a       | sight glass        | 391149  |  |
| 2b       | sight glass        | 391859  |  |
| 2c       | sight glass        | 390843  |  |
| 2d       | sight glass        | 390844  |  |
| 3a       | 3" Baylast™ O-ring | 111692  |  |
| 3b       | 3" FKM O-ring      | 112097  |  |
| 3c       | 4" Baylast™ Ö-ring | 112028  |  |
| 3d       | 4" FKM O-ring      | 112098  |  |
| 4a       | 3" retaining ring  | 112056  |  |
| 4b       | 3" retaining ring  | 40419SS |  |
| 4c       | 4" retaining ring  | 112055  |  |
| 4d       | 4" retaining ring  | 40420SS |  |
| Donair I | Danair Vita        |         |  |



#### **Repair Kits**

| Part #          | Description                 | Includes Item # |
|-----------------|-----------------------------|-----------------|
| 5200-SFI-3-RK1  | sight glass for 5200-SFI-3  | 2c, 3a, 4a      |
| 5200-SFI-RK1    | sight glass for 5200-SFI    | 2d, 3c, 4c      |
| 5200-SFIV-RK1   | sight glass for 5200-SFIV   | 2d, 3d, 4c      |
| 5200-SFI-3V-RK1 | sight glass for 5200-SFI-3V | 2c, 3b, 4a      |
| 5201-SFI-3-RK1  | sight glass for 5201-SFI-3  | 2b, 3a, 4a      |
| 5201-SFI-RK1    | sight glass for 5201-SFI    | 2a, 3c, 4c      |

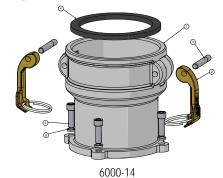
Drop Elbow Inlets Fits 6000, 6200, and 6500 Series Elbows 6000-14 and 6000-15 Female Coupler Inlets

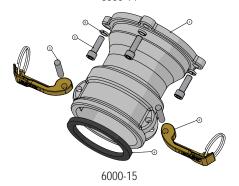
#### **Bill of Materials**

| Item # | Description         | Part #           | Qty |
|--------|---------------------|------------------|-----|
| 1      | body                |                  | 1   |
| 2      | cam arm and ring    | 300-HRP-BR       | 2   |
| 3A     | 4" cam arm pin      | 300-HRP-BR       | 2   |
| 3B     | 3" cam arm pin      | 300-HRP-BR       | 2   |
| 4A     | 4" gasket (6000-14) | 400-G-BF         | 1   |
| 4B     | 3" gasket (6000-15) | 300-G-BF         | 1   |
| 5      | hex screw           | use kit 6000NPHK | 4   |
| 6      | lock washer         | use kit 6000NPHK | 4   |

#### Repair Kit

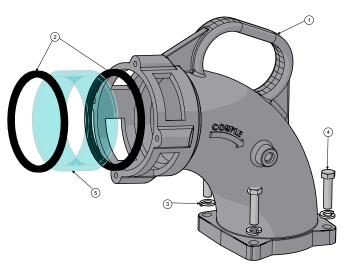
| Part #   | Description   | Includes Item<br># |
|----------|---|--------------------|
| 6000NPHK | adapter kit includes (4) bolts and (4) lock washers | 5, 6               |





# Top "D" Handle Elbows

Fits 6000 Elbow Only



#### **Bill of Materials**

| Item # | Description           | Part #                 | Qty |
|--------|-----------------------|------------------------|-----|
| 1      | body                  | 6200-1                 | 1   |
| 2A     | Baylast™ gasket       | 4433                   | 2   |
| 2B     | FKM gasket (optional) | 4426                   | 2   |
| 3      | lock washer           | use kit 6000EHK        | 4   |
| 4      | bolt                  | use kit 6000EHK        | 4   |
| 5      | sight glass           | use kit <b>6200SGK</b> | 1   |

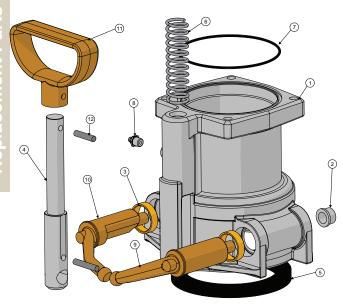
#### Repair Kits

| Part #  | Description                   | Includes Item # |
|---------|-------------------------------|-----------------|
| 6200SGK | sight glass and Baylast™ seal | 2, 5            |
| 6000EHK | bolts and washers             | 3, 4            |

# Bottom Unit, for "D" Handle Elbows

Fits 6000, 6303 and 6304





#### **Bill of Materials**

| Item # | Description   | Part #                | Qty |
|--------|---------------|-----------------------|-----|
| 1      | body          | use kit <b>6030</b>   | 1   |
| 2      | small bushing | use kit <b>6200BK</b> | 2   |
| 3      | large bushing | use kit <b>6200BK</b> | 2   |
| 4      | handle stem   | 6000-7                | 1   |
| 5      | main gasket   | 6000-9                | 1   |
| 6      | spring        | 112012                | 1   |
| 7      | O-ring        | AS156                 | 1   |
| 8      | grease nipple | NIPPLE/1              | 1   |
| 9      | right arm     | use kit 6200ARK       | 1   |
| 10     | left arm      | use kit 6200ARK       | 1   |
| 11     | handle        | 6000-8                | 1   |
| 12     | handle pin    | 6000-13               | 1   |
| 13     | pin           | 6000-12               | 1   |

#### Repair Kits

| Part #  | Description  | Includes Item #   |
|---------|--|-------------------|
| 6030    | complete bottom unit   | all               |
| 6200ARK | L and R arms, main gasket, O-<br>rings, small and large bushings | 2, 3, 5, 7, 9, 10 |
| 6200BK  | (2) small & (2) large bushings                                   | 2, 3              |

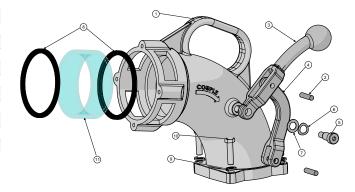
# Top Side Lever Elbows Fits 6200 Elbow Only

#### **Bill of Materials**

| Item #          | Description           | Part #                              | Qty |
|-----------------|-----------------------|-------------------------------------|-----|
| 1               | body                  | 6200-1                              | 1   |
| 2               | pin                   | PIN5/16X 1 1/4P                     | 2   |
| 3               | handle                | use kit <b>6200-15ASSM</b>          | 1   |
| 4               | handle linkage        | use kit <b>6200-15ASSM</b>          | 1   |
| 5 <sup>1</sup>  | shoulder bolt         | use kit <b>6200SBK</b>              | 1   |
| 6 <sup>1</sup>  | wave washer           | use kit <b>6200SBK</b>              | 2   |
| 7 <sup>1</sup>  | SS flat washer        | use kit <b>6200SBK</b>              | 1   |
| 8A              | Baylast™ gasket       | 4433                                | 2   |
| 8B              | FKM gasket (optional) | 4426                                | 2   |
| 9               | lock washer           | use kit 6000EHK                     | 4   |
| 10              | bolt                  | use kit 6000EHK                     | 4   |
| 11              | sight glass           | use kit <b>6200SGK</b>              | 1   |
| 12 <sup>2</sup> | bushing               | use kit 6200SHK                     | 1   |
| 13 <sup>2</sup> | stud                  | use kit <b>6200SHK</b> <sup>2</sup> | 1   |
| 14 <sup>2</sup> | nylon washer          | use kit <b>6200SHK</b> <sup>2</sup> | 2   |
| 15 <sup>2</sup> | nut                   | use kit <b>6200SHK</b> <sup>2</sup> | 1   |

#### Repair Kits

| Part #                      | Description                                      | Includes<br>Item # |
|-----------------------------|--|--------------------|
| 6200-15ASSM                 | handle, linkage                                  | 2, 3, 4            |
| 6200SGK                     | sight glass and Baylast™ seals                   | 8, 11              |
| 6000EHK                     | bolts and lock washers                           | 9, 10              |
| 6200SBK <sup>1</sup>        | shoulder bolt pivot, wave washer and flat washer | 5, 6, 7            |
| <b>6200SHK</b> <sup>2</sup> | stud pivot, nylon washers, bushing and nut       | 12, 13,<br>14, 15  |



# Bottom Unit, for Side Lever Elbows

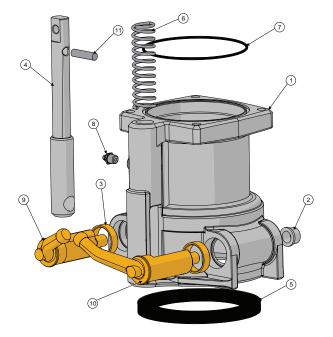
Fits 6200, 6400 and 6500 Standard and Tall Elbows

#### **Bill of Materials**

| Item # | Description            | Part #                       | Qty |
|--------|------------------------|------------------------------|-----|
| 1      | body                   | use kit <b>6230 or 6230X</b> | 1   |
| 2      | small bushing          | use kit <b>6200BK</b>        | 2   |
| 3      | large bushing          | use kit <b>6200BK</b>        | 2   |
| 4A     | handle stem (standard) | 6200-7                       | 1   |
| 4B     | handle stem (tall)     | 6200-7X                      | 1   |
| 5      | main gasket            | 6000-9                       | 1   |
| 6      | spring                 | 112012                       | 1   |
| 7      | O-ring                 | AS156                        | 1   |
| 8      | grease nipple          | NIPPLE/1                     | 1   |
| 9      | right arm              | use kit 6200ARK              | 1   |
| 10     | left arm               | use kit 6200ARK              | 1   |
| 11     | pin                    | PIN5/16X 1 1/4P              | 1   |

### Repair Kits

| Part #                          | Description                         | Includes<br>Item # |
|---------------------------------|-------------------------------------|--------------------|
| 6230                            | complete bottom unit                | all                |
| 6230X                           | complete tall bottom unit           | all                |
| 6200ARK                         | L and R arms, main gasket, O-rings, | 2, 3, 5,           |
| 0200AKK                         | small and large bushings            | 7, 9, 10           |
| 6200BK small and large bushings |                                     | 2, 3               |



<sup>&</sup>lt;sup>1</sup> items 5 through 7 are for newer version with shoulder bolt pivot only

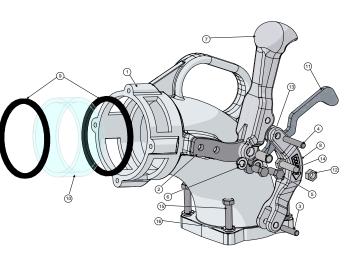
<sup>&</sup>lt;sup>2</sup> for older version with stud and nut pivot use items 12 through 15 instead

# Fuel Delivery

# Top Side Lever Elbows

Fits 6500 Elbow Only

#### **Bill of Materials**



| For bottom end replacement parts, please se | e helow |
|---|---------|

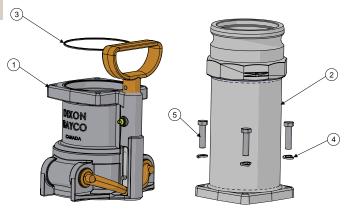
| Item # | Description           | Part #                  | Qty |
|--------|-----------------------|-------------------------|-----|
| 1      | body                  | 341709                  | 1   |
| 2      | mounting plate        | use kit 6500AHK         | 1   |
| 3      | lower lever pin       | 111728                  | 1   |
| 4      | upper lever pin       | 111727                  | 1   |
| 5      | plate screw           | 112242                  | 3   |
| 6      | washer                | WASHER.375-SS           | 3   |
| 7      | handle                | use kit <b>6500-RK1</b> | 1   |
| 8      | linkage               | use kit <b>6500-RK1</b> | 1   |
| 9A     | Baylast™ gasket       | 4433                    | 2   |
| 9B     | FKM gasket (optional) | 4426                    | 2   |
| 10     | sight glass           | use kit <b>6200SGK</b>  | 1   |
| 11     | locking latch         | use kit <b>6500-RK1</b> | 1   |
| 12     | lock nut              | 111730                  | 1   |
| 13     | bushing               | 390841                  | 1   |
| 14     | screw                 | 111729                  | 1   |
| 15     | bolt                  | use kit 6000EHK         | 4   |
| 16     | lock washer           | use kit 6000EHK         | 4   |

#### Repair Kits

| Part #   | Description                                     | Includes<br>Item #                        |
|----------|---|---|
| 6200SGK  | sight glass and Baylast™ seals                  | 9A, 10                                    |
| 6000EHK  | bolts and washers                               | 15, 16                                    |
| 6500-RK1 | handle, linkage, lock latch, nut, bushing, pins | 2, 3, 4, 5,<br>6, 7, 8, 11,<br>12, 13, 14 |
| 6500AHK  | mounting plate, screws and lock washers         | 2, 5, 6, 14                               |

# 6303 and 6304 Series Straight Drop Fittings

6303 (3" inlet), 6304 (4" inlet)



#### **Bill of Materials**

| Item # | Description           | Part #                 | Qty |
|--------|-----------------------|------------------------|-----|
| 1      | complete bottom unit  | 6030                   | 1   |
| 2A     | 4" adapter inlet tube | 6304-1                 | 1   |
| 2B     | 4" MNPT inlet tube    | 400460                 | 1   |
| 2C     | 3" adapter inlet tube | 6300-3                 | 1   |
| 2D     | 3" MNPT inlet tube    | 400588                 | 1   |
| 3      | O-ring                | AS156                  | 1   |
| 4      | lock washer           | use kit 6000EHK        | 4   |
| 5      | bolt                  | use kit <b>6000EHK</b> | 4   |

#### **Elbow Hardware Kit**

| Part #  | Description       | Includes<br>Item # |
|---------|-------------------|--------------------|
| 6000EHK | lock washer, bolt | 4, 5               |

# Fuel Delivery

# 6400 Series Co-axial Drop Elbow with 3" Male Vapor Outlet

6400 (4" male inlet), 6400F (4" female inlet), 6430 (3" male inlet), 6430F (3" female inlet)

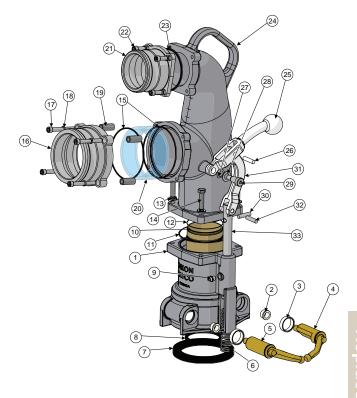
#### **Bill of Materials**

| Item<br># | Description                   | Part #                              | Qty |
|-----------|-------------------------------|-------------------------------------|-----|
| 1         | bottom body                   | use kit 6230 or 6230X               | 1   |
| 2         | small bushing                 | use kit 6400ARK                     | 2   |
| 3         | large bushing                 | use kit <b>6400ARK</b>              | 2   |
| 4         | right arm                     | use kit 6400ARK                     | 1   |
| 5         | left arm                      | use kit <b>6400ARK</b>              | 1   |
| 6         | stem spring                   | 112012                              | 1   |
| 7         | main gasket                   | 6000-9                              | 1   |
| 8         | tube Ü cup seal               | U-CUP-2/75                          | 1   |
| 9         | grease nipple                 | NIPPLE/1                            | 1   |
| 10        | tube                          | use kit 6400-DTK or 6400EXT-3       | 1   |
| 11        | O-ring                        | AS156                               | 1   |
| 12        | tube O-ring                   | O-RING#39                           | 2   |
| 13        | lock washer                   | use kit 6000EHK                     | 4   |
| 14        | bolt                          | use kit 6000EHK                     | 4   |
| 15        | inlet O-ring                  | AS156                               | 2   |
| 16A       | 4" adapter fuel inlet (6400)  | use kit 6000-17C                    | 1   |
| 16B       | 4" coupler fuel inlet (6400F) | use kit 6000-14C                    | 1   |
| 16C       | 3" adapter fuel inlet (6430)  | use kit 6000-16C                    | 1   |
| 16D       | 3" coupler fuel inlet (6430F) | use kit 6000-15C                    | 1   |
| 17        | inlet bolt                    | SC5/16-18X2.5P                      | 4   |
| 18        | inlet bolt lock washer        | 111723                              | 4   |
| 19        | inlet bolt spacer             | 6544CA-1                            | 4   |
| 20        | sight glass                   | use kit <b>6400SGK</b>              | 1   |
| 21A       | 3" adapter vapor outlet       | 6400-4                              | 1   |
| 21B       | 3" male NPT vapor outlet      | 6000-26C                            | 1   |
| 22        | vapor adapter bolt            | 4432                                | 4   |
| 23        | vapor adapter O-ring          | 110601                              | 1   |
| 24        | top co-axial elbow body       | 6400-1                              | 1   |
| 25        | handle                        | use kit <b>6200-15ASSM</b>          | 1   |
| 26        | handle pin                    | PIN5/16X 1 1/4P                     | 1   |
| 27        | wave washer 1                 | use kit <b>6200SBK</b> 1            | 1   |
| 28        | SS flat washer 1              | use kit <b>6200SBK</b> 1            | 1   |
| 29        | shoulder bolt 1               | use kit <b>6200SBK</b> 1            | 1   |
| 30        | set screw                     | SC3/8NCX1/2                         | 1   |
| 31        | linkage                       | use kit <b>6200-15ASSM</b>          | 1   |
| 32        | stem pin                      | PIN5/16X 1 1/4P                     | 1   |
| 33A       | lever stem (standard)         | 6200-7                              | 1   |
| 33B       | lever stem (tall)             | 6200-7X                             | 1   |
| 34        | pivot lock nut <sup>2</sup>   | use kit <b>6200SHK</b> <sup>2</sup> | 1   |
| 35        | washer <sup>2</sup>           | use kit <b>6200SHK</b> <sup>2</sup> | 2   |
| 36        | pivot stud <sup>2</sup>       | use kit <b>6200SHK</b> <sup>2</sup> | 1   |
| 37        | pivot bushing <sup>2</sup>    | use kit <b>6200SHK</b> <sup>2</sup> | 1   |

 $<sup>^{\</sup>rm 1}$  items 27, 28 & 29 are for the newer version with a shoulder bolt pivot only.  $^{\rm 2}$  for the older version with stud and nut pivot, use items 34 through 37

#### **Inlet Adapter and Coupler Kits**

| Part #   | Description              | Includes Item<br># |
|----------|--------------------------|--------------------|
| 6000-14C | 4" coupler inlet kit     | 16B, 17, 18        |
| 6000-15C | 3" coupler inlet kit     | 16D, 17, 18        |
| 6000-16C | 3" adapter inlet kit     | 16C, 17, 18        |
| 6000-17C | 4" adapter inlet kit     | 16A, 17, 18        |
| 6000-26C | 3" male NPT vapor outlet | 21B                |

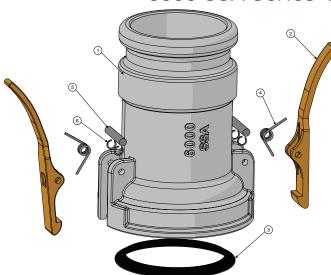


#### Repair Kits

| Part #               | Description  | Includes<br>Item #     |
|----------------------|--|------------------------|
| 6230                 | complete bottom unit                                       | 1-7, 9, 11,<br>32, 33A |
| 6230X                | complete tall bottom unit                                  | 1-7, 9, 11,<br>32, 33B |
| 6400ARK              | L & R arms, main gasket, O-rings, small and large bushings | 2-5, 7, 8,<br>11, 12   |
| 6200BK               | small and large bushings                                   | 2, 3                   |
| 6400SGK              | sight glass and seal                                       | 15, 20                 |
| 6200-15ASSM          | handle, lever and pin                                      | 25, 26, 31             |
| 6000EHK              | bolts and washers  | 13, 14                 |
| 6400-DTK             | tube,O-ring and U cup seal                                 | 8, 10, 12              |
| 6200SHK <sup>2</sup> | pivot stud, bushing, washer and lock nut                   | 34-37                  |
| 6200SBK <sup>1</sup> | shoulder bolt pivot, wave washer and flat washer           | 27-29                  |
| 6400EXT-3            | tall tube, O-ring and U cup seal                           | 8, 10, 12              |

# Fuel Delive

# 6000-SSA Series 4" Side Seal Adapters



#### **Bill of Materials**

| Item # | Description     | Part #           | Qty |
|--------|-----------------|------------------|-----|
| 1      | body            |                  | 1   |
| 2      | coupler arm     | use kit 6000SSHK | 2   |
| 3      | lip seal gasket | L2373            | 1   |
| 4      | spring          | L2312            | 2   |
| 5      | pin             | L2311            | 2   |
| 6      | retaining ring  | TRUARC-5100-25   | 4   |

#### Repair Kit

| Part #   | Description                             | Includes<br>Item # |
|----------|---|--------------------|
| 6000SSHK | arms, springs, pins and retaining rings | 2, 4, 5, 6         |

# 6000AS Series Side Seal Elbows

# Petroleum ep Jacement Parts

#### **Bill of Materials**

| Item # | Description               | Part #                 | Qty |
|--------|---------------------------|------------------------|-----|
| 1      | bottom body               | use kit <b>6030AS</b>  | 1   |
| 2      | top body                  | 6200-1                 | 1   |
| 3      | sight glass               | use kit <i>6200SGK</i> | 1   |
| 4A     | Baylast <sup>™</sup> seal | 4433                   | 2   |
| 4B     | FKM seal                  | 4426                   | 2   |
| 5      | bolt                      | use kit 6000EHK        | 4   |
| 6      | lock washer               | use kit 6000EHK        | 4   |
| 7      | retaining ring            | TRUARC-5100-25         | 4   |
| 8      | pin                       | L2311                  | 2   |
| 9      | spring                    | L2312                  | 2   |
| 10     | lip seal                  | L2373                  | 1   |
| 11     | arm                       | use kit 6000SSHK       | 2   |
| 12     | O-ring                    | AS156                  | 1   |

# 2 5 5 6 6 8

#### Repair Kits

| Part #   | Description                                | Includes<br>Item #        |
|----------|--|---------------------------|
| 6000ASK  | lip seal and body O-ring                   | 10, 12                    |
| 6030AS   | complete replacement bottom unit           | 1, 7, 8, 9,<br>10, 11, 12 |
| 6200SGK  | <b>OSGK</b> sight glass and Baylast™ seals |                           |
| 6000EHK  | lock washers and bolts                     | 5, 6                      |
| 6000SSHK | arms, springs, pins and reining rings      | 7, 8, 9, 11               |
| 6000ASR  | arm lock ring                              | not<br>illustrated        |

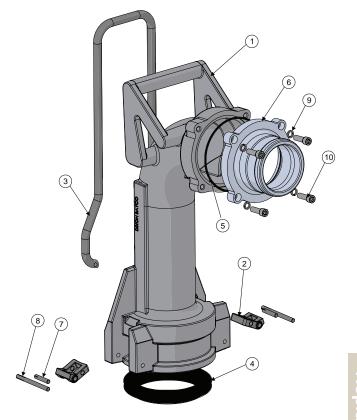
# VR6100 Series Vapor Elbows

#### **Bill of Materials**

| Item # | Description             | Part #                   | Qty |
|--------|-------------------------|--------------------------|-----|
| 1      | body                    |                          | 1   |
| 2      | cam                     | use kit VR6100CAK        | 2   |
| 3      | lift handle             | 112138-L                 | 1   |
| 4      | seal                    | 112245                   | 1   |
| 5      | O-ring                  | use kit <i>VR6000-6</i>  | 1   |
| 6      | adapter 3"              | use kit <i>VR6000-6</i>  | 1   |
| 7      | grooved pin .25X1.25 SS | use kit <i>VR6100CAK</i> | 2   |
| 8      | grooved pin .25X3 SS    | use kit VR6100CAK        | 2   |
| 9      | lock washer             | use kit 6000NPHK         | 4   |

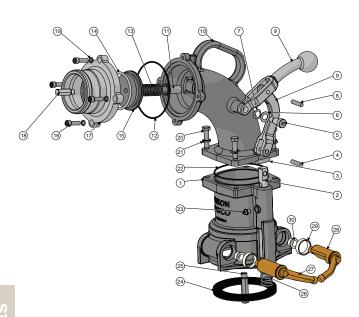
#### Repair Kits

| Part #    | Description   | Includes<br>Item # |
|-----------|---|--------------------|
| VR6100CAK | (2) cam and pin kit                                 | 2, 7, 8            |
| 6000NPHK  | adapter kit includes (4) bolts and (4) lock washers | 9, 10              |
| 112245    | seals   | 4                  |



# VR6200 Series Vapor Elbows





| 1         bottom body         use kit VR6230           2         stem         6200-7           3         stem stop pin         PIN5/16X11/4P           4         stem link pin         PIN5/16X11/4P           5         shoulder bolt pivot         use kit 6200SBK¹           6         SS flat washer         use kit 6200SBK¹           7         wave washer         use kit 6200SBK¹           8         handle pin         PIN5/16X 1 1/4P           9         handle and linkage         use kit 6200-15ASSM           10         top elbow body         VR6000-1           11         poppet bushing         VR6000-3           12         outlet O-Ring only         110319           13         poppet spring         L1110-L2287           14         FKM poppet seal         O-RING-AS-334           15         poppet valve         VR6000-4           16         outlet adapter bolt         use kit 6000NPHK           17         O-ring         VR6000-5           18         poppet valve stand off         VR6000-5           19         lock washer         use kit 6000EHK           20         bolt         use kit 6000EHK           21         lock wa | 1 1 1 |
|--|-------|
| 3         stem stop pin         PIN5/16X11/4P           4         stem link pin         PIN5/16X11/4P           5         shoulder bolt pivot         use kit 6200SBK¹           6         SS flat washer         use kit 6200SBK¹           7         wave washer         use kit 6200SBK¹           8         handle pin         PIN5/16X 1 1/4P           9         handle and linkage         use kit 6200-15ASSM           10         top elbow body         VR6000-1           11         poppet bushing         VR6000-3           12         outlet O-Ring only         110319           13         poppet spring         L1110-L2287           14         FKM poppet seal         O-RING-AS-334           15         poppet valve         VR6000-4           16         outlet adapter bolt         use kit 6000NPHK           17         O-ring         VR6000-5           18         poppet valve stand off         VR6000-5           19         lock washer         use kit 6000EHK           20         bolt         use kit 6000EHK   |       |
| 4 stem link pin PIN5/16X11/4P 5 shoulder bolt pivot use kit 6200SBK¹ 6 SS flat washer use kit 6200SBK¹ 7 wave washer use kit 6200SBK¹ 8 handle pin PIN5/16X 1 1/4P 9 handle and linkage use kit 6200-15ASSM 10 top elbow body VR6000-1 11 poppet bushing VR6000-3 12 outlet O-Ring only 110319 13 poppet spring L1110-L2287 14 FKM poppet seal O-RING-AS-334 15 poppet valve VR6000-4 16 outlet adapter bolt use kit 6000NPHK 17 O-ring VR6000-5 18 poppet valve stand off VR6000-5 19 lock washer use kit 6000NPHK 20 bolt use kit 6000EHK 21 lock washer use kit 6000EHK   | 1     |
| 5 shoulder bolt pivot use kit 6200SBK¹ 6 SS flat washer use kit 6200SBK¹ 7 wave washer use kit 6200SBK¹ 8 handle pin PIN5/16X 1 1/4P 9 handle and linkage use kit 6200-15ASSM 10 top elbow body VR6000-1 11 poppet bushing VR6000-3 12 outlet O-Ring only 110319 13 poppet spring L1110-L2287 14 FKM poppet seal O-RING-AS-334 15 poppet valve VR6000-4 16 outlet adapter bolt use kit 6000NPHK 17 outlet adapter with outlet O-ring VR6000-5 18 poppet valve stand off VR6000-5 19 lock washer use kit 6000NPHK 20 bolt use kit 6000EHK 21 lock washer use kit 6000EHK  |       |
| 6 SS flat washer use kit 6200SBK 1 7 wave washer use kit 6200SBK 1 8 handle pin PIN5/16X 1 1/4P 9 handle and linkage use kit 6200-15ASSM 10 top elbow body VR6000-1 11 poppet bushing VR6000-3 12 outlet O-Ring only 110319 13 poppet spring L1110-L2287 14 FKM poppet seal O-RING-AS-334 15 poppet valve VR6000-4 16 outlet adapter bolt use kit 6000NPHK 17 outlet adapter with outlet O-ring 18 poppet valve stand off VR6000-5 19 lock washer use kit 6000NPHK 20 bolt use kit 6000EHK 21 lock washer use kit 6000EHK  | 1     |
| 7         wave washer         use kit 6200SBK¹           8         handle pin         PIN5/16X 1 1/4P           9         handle and linkage         use kit 6200-15ASSM           10         top elbow body         VR6000-1           11         poppet bushing         VR6000-3           12         outlet O-Ring only         110319           13         poppet spring         L1110-L2287           14         FKM poppet seal         O-RING-AS-334           15         poppet valve         VR6000-4           16         outlet adapter bolt         use kit 6000NPHK           17         outlet adapter with outlet O-ring         VR6000-5           18         poppet valve stand off         VR6000-5           19         lock washer         use kit 6000NPHK           20         bolt         use kit 6000EHK           21         lock washer         use kit 6000EHK   | 1     |
| 8         handle pin         PIN5/16X 1 1/4P           9         handle and linkage         use kit 6200-15ASSM           10         top elbow body         VR6000-1           11         poppet bushing         VR6000-3           12         outlet O-Ring only         110319           13         poppet spring         L1110-L2287           14         FKM poppet seal         O-RING-AS-334           15         poppet valve         VR6000-4           16         outlet adapter bolt         use kit 6000NPHK           17         outlet adapter with outlet O-ring         VR6000-5           18         poppet valve stand off         VR6000-5           19         lock washer         use kit 6000EHK           20         bolt         use kit 6000EHK  | 1     |
| 9 handle and linkage use kit 6200-15ASSM  10 top elbow body VR6000-1  11 poppet bushing VR6000-3  12 outlet O-Ring only 110319  13 poppet spring L1110-L2287  14 FKM poppet seal O-RING-AS-334  15 poppet valve VR6000-4  16 outlet adapter bolt use kit 6000NPHK  17 outlet adapter with outlet O-ring VR6000-5  18 poppet valve stand off VR6000-5  19 lock washer use kit 6000NPHK  20 bolt use kit 6000EHK  21 lock washer use kit 6000EHK   | 1     |
| 10         top elbow body         VR6000-1           11         poppet bushing         VR6000-3           12         outlet O-Ring only         110319           13         poppet spring         L1110-L2287           14         FKM poppet seal         O-RING-AS-334           15         poppet valve         VR6000-4           16         outlet adapter bolt         use kit 6000NPHK           17         O-ring         VR6000-6           18         poppet valve stand off         VR6000-5           19         lock washer         use kit 6000NPHK           20         bolt         use kit 6000EHK           21         lock washer         use kit 6000EHK   | 1     |
| 11         poppet bushing         VR6000-3           12         outlet O-Ring only         110319           13         poppet spring         L1110-L2287           14         FKM poppet seal         O-RING-AS-334           15         poppet valve         VR6000-4           16         outlet adapter bolt         use kit 6000NPHK           17         O-ring         VR6000-6           18         poppet valve stand off         VR6000-5           19         lock washer         use kit 6000NPHK           20         bolt         use kit 6000EHK           21         lock washer         use kit 6000EHK  | 1     |
| 12         outlet O-Ring only         110319           13         poppet spring         L1110-L2287           14         FKM poppet seal         O-RING-AS-334           15         poppet valve         VR6000-4           16         outlet adapter bolt         use kit 6000NPHK           17         O-ring         VR6000-6           18         poppet valve stand off         VR6000-5           19         lock washer         use kit 6000NPHK           20         bolt         use kit 6000EHK           21         lock washer         use kit 6000EHK   | 1     |
| 12         outlet O-Ring only         110319           13         poppet spring         L1110-L2287           14         FKM poppet seal         O-RING-AS-334           15         poppet valve         VR6000-4           16         outlet adapter bolt         use kit 6000NPHK           17         O-ring         VR6000-6           18         poppet valve stand off         VR6000-5           19         lock washer         use kit 6000NPHK           20         bolt         use kit 6000EHK           21         lock washer         use kit 6000EHK   | 1     |
| 14         FKM poppet seal         O-RING-AS-334           15         poppet valve         VR6000-4           16         outlet adapter bolt         use kit 6000NPHK           17         O-ring         VR6000-6           18         poppet valve stand off         VR6000-5           19         lock washer         use kit 6000NPHK           20         bolt         use kit 6000EHK           21         lock washer         use kit 6000EHK   | 1     |
| 15 poppet valve  | 1     |
| 16 outlet adapter bolt use kit 6000NPHK  17 outlet adapter with outlet O-ring  18 poppet valve stand off VR6000-5  19 lock washer use kit 6000NPHK  20 bolt use kit 6000EHK  21 lock washer use kit 6000EHK  | 1     |
| 16 outlet adapter bolt use kit 6000NPHK  17 outlet adapter with outlet O-ring  18 poppet valve stand off VR6000-5  19 lock washer use kit 6000NPHK  20 bolt use kit 6000EHK  21 lock washer use kit 6000EHK  | 1     |
| 17 outlet adapter with outlet O-ring  18 poppet valve stand off 19 lock washer 20 bolt 21 lock washer  VR6000-6  VR6000-5  use kit 6000NPHK  use kit 6000EHK  use kit 6000EHK  | 4     |
| 18poppet valve stand offVR6000-519lock washeruse kit 6000NPHK20boltuse kit 6000EHK21lock washeruse kit 6000EHK   | 1     |
| 19         lock washer         use kit 6000NPHK           20         bolt         use kit 6000EHK           21         lock washer         use kit 6000EHK   | 1     |
| 21 lock washer use kit 6000EHK   | 4     |
|  | 4     |
| 22 hody O ring AC156   | 4     |
| ZZ DUUV U-IIIU AS 130  | 1     |
| 23 grease nipple NIPPLE/1  | 1     |
| 24 main seal gasket 6000-9   | 1     |
| 25 probe <i>VR6000-7</i>   | 1     |
| 26 stem spring <b>112012</b>   | 1     |
| 27 left arm <b>VR6000-9</b>  | 1     |
| 28 right arm <b>VR6000-8</b>   | 1     |
| 29 large bushing use kit <b>6200BK</b>   | 2     |
| 30 small bushing use kit <b>6200BK</b>   | 2     |
| 31 pivot bushing use kit <b>6200SHK</b> <sup>2</sup>   | 1     |
| 32 pivot stud use kit <b>6200SHK</b> <sup>2</sup>  | 1     |
| 33 pivot lock nut use kit <b>6200SHK</b> <sup>2</sup>  | 1     |
| 34 nylon washer use kit <b>6200SHK</b> <sup>2</sup>  | 2     |

#### Repair Kits

| Part #                      | Description   | Includes Item # |
|-----------------------------|---|-----------------|
| VR6230                      | complete bottom unit                                | 1, 2, 3, 22-30  |
| 6200BK                      | small (2) and large (2) bushing kit                 | 29, 30          |
| 6000EHK                     | body lock washers and bolts                         | 20, 21          |
| <b>6200SHK</b> <sup>2</sup> | pivot stud, bushing, washers & lock nut             | 31-34           |
| 6000NPHK                    | adapter kit includes (4) bolts and (4) lock washers | 16, 19          |
| 6200-15ASSM                 |   | 8, 9            |
| 6200SBK <sup>1</sup>        | shoulder pivot bolt, wave washer and flat washer    | 5-7             |
| VR6200ARK                   | arm and seal repair kit                             | 14,22,24,27-30  |

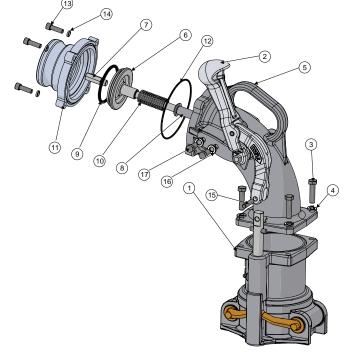
<sup>&</sup>lt;sup>1</sup> items 5 through 7 are for newer version with shoulder bolt pivot only,

<sup>&</sup>lt;sup>2</sup> for older version with stud and nut pivot use items 31 through 34 instead

# VR6500 Series Vapor Elbows

#### **Bill of Materials**

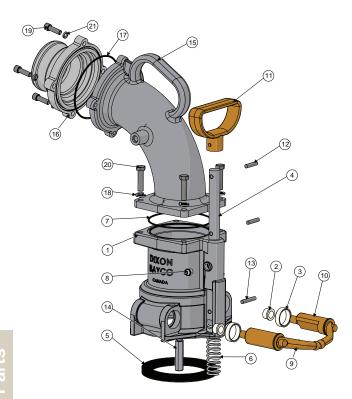
| Item # | Description             | Part #                 | Qty |
|--------|-------------------------|------------------------|-----|
| 1      | complete bottom body    | VR6230                 | 1   |
| 2      | handle assembly         | use kit VR6500RK1      | 1   |
| 3      | body bolt               | use kit <b>6000EHK</b> | 4   |
| 4      | body lock washer        | use kit <b>6000EHK</b> | 4   |
| 5      | elbow body              | 341784                 | 1   |
| 6      | poppet valve            | VR6000-4               | 1   |
| 7      | poppet valve stand off  | VR6000-5               | 1   |
| 8      | poppet bushing          | VR6000-3               | 1   |
| 9      | FKM O-ring              | O-RING-AS-334          | 1   |
| 10     | poppet spring           | L1110-L2287            | 1   |
| 11     | outlet adapter & O-ring | VR6000-6               | 1   |
| 12     | outlet O-ring           | 110319                 | 1   |
| 13     | outlet adapter bolt     | use kit 6000NPHK       | 4   |
| 14     | outlet lock washer      | use kit 6000NPHK       | 4   |
| 15     | lower lever pin         | 111728                 | 1   |
| 16     | side plate lock washer  | WASHER.375-SS          | 2   |
| 17     | side plate bolt         | 112242                 | 2   |



### Repair Kits

| Part #    | Description  | Includes<br>Item # |
|-----------|--|--------------------|
| VR6500RK1 | handle, linkage, mounting plate, bolt, nut, bushing and pins | 2                  |
| 6000EHK   | (4) body bolts and washers                                   | 3, 4               |
| 6000NPHK  | adapter kit includes (4) bolts and (4) lock washers          | 13, 14             |

# VR6000NP Series Vapor Elbows



### Bill of Materials

| Item # | Description                | Part #                 | Qty |
|--------|----------------------------|------------------------|-----|
| 1      | bottom body                | VR6000-2               | 1   |
| 2      | small bushing              | use kit <b>6200BK</b>  | 2   |
| 3      | large bushing              | use kit <b>6200BK</b>  | 2   |
| 4      | handle stem                | 390842                 | 1   |
| 5      | main seal gasket           | 6000-9                 | 1   |
| 6      | spring                     | 112012                 | 1   |
| 7      | O-ring                     | AS156                  | 1   |
| 8      | grease nipple              | NIPPLE/1               | 1   |
| 9      | right arm                  | VR6000-8               | 1   |
| 10     | left arm                   | VR6000-9               | 1   |
| 11     | D-handle                   | 6000-8                 | 1   |
| 12     | D-handle pin               | 6000-13                | 1   |
| 13     | spring pin                 | 6000-12                | 1   |
| 14     | probe                      | VR6000-7               | 1   |
| 15     | elbow body                 | VR6000-1               | 1   |
| 16     | outlet adapter and O-ring  | VR6000-6               | 1   |
| 17     | outlet O-ring (only)       | 110319                 | 1   |
| 18     | body lock washer           | use kit <b>6200EHK</b> | 4   |
| 19     | outlet adapter bolt        | use kit 6000NPHK       | 4   |
| 20     | body hex bolt              | use kit <b>6200EHK</b> | 4   |
| 21     | outlet adapter lock washer | use kit 6000NPHK       | 4   |

### Repair Kits

| Part #   | Description   | Includes Item<br>#                                    |
|----------|---|---|
| 6200BK   | small (2) and large (2) large bushing kit           | 2, 3  |
| 6000EHK  | body lock washers and bolts                         | 18, 20  |
| 6000NPHK | adapter kit includes (4) bolts and (4) lock washers | 19, 21  |
| 400637   | complete bottom unit                                | 1, 2, 3, 4, 5,<br>6, 7, 8, 9,<br>10,11, 12, 13,<br>14 |

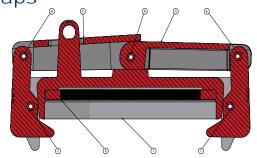
# Petroleum

# Fuel Delivery/Vapor Recovery

SA4050AL Caps

#### **Bill of Materials**

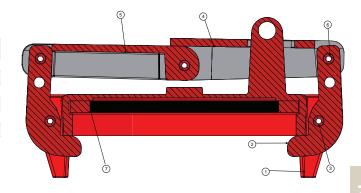
| Item # | Description     | Part #   | Qty |
|--------|-----------------|----------|-----|
| 1      | cap body        |          | 1   |
| 2      | top large lever | 4050AL   | 1   |
| 3      | minor lever     | 4062AL   | 1   |
| 4      | cam arm         | 4063     | 2   |
| 5      | gasket          | 400-G-BU | 1   |
| 6      | lever pin       | 4066     | 3   |
| 7      | cam arm pin     | 4068     | 2   |



# 4" Vapor Caps VR4050AL

#### **Bill of Materials**

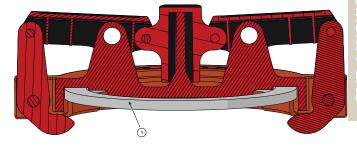
| Item # | Description     | Part #   | Qty |
|--------|-----------------|----------|-----|
| 1      | cap body        |          | 1   |
| 2      | cam arm         | VR4075   | 2   |
| 3      | arm pin         | 4068     | 2   |
| 4      | top large lever | VR4077   | 1   |
| 5      | minor lever     | VR4076   | 1   |
| 6      | lever pin       | 4066     | 3   |
| 7      | Buna gasket     | 400-G-BU | 1   |



# VR4050PL Series 4" Nylon Vapor Caps

#### **Bill of Materials**

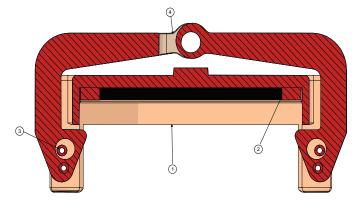
| Item # | Description | Part #      | Qty |
|--------|-------------|-------------|-----|
| 1      | gasket      | VR4050PLRK1 | 1   |



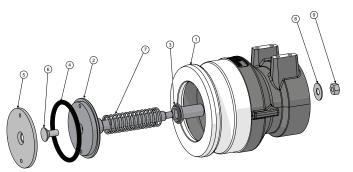
# TL4070BZ Series Bronze Caps

#### **Bill of Materials**

| Item # | Description | Part #   | Qty |
|--------|-------------|----------|-----|
| 1      | cap body    |          | 1   |
| 2      | Buna gasket | 400-G-BU | 1   |
| 3      | arm pin     | 4068     | 4   |
| 4      | arm (lever) | 4071     | 2   |



# VR3100 Series 3" Vapor Hose Valves



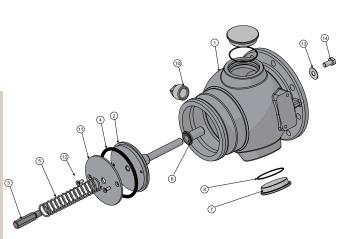
### **Bill of Materials**

| Item # | Description  | Part #          | Qty |
|--------|--------------|-----------------|-----|
| 1      | body         |                 | 1   |
| 2      | valve        | 341827          | 1   |
| 3      | bushing      | VR6000-3        | 1   |
| 4      | FKM O-ring   | O-RING-AS-334   | 1   |
| 5      | valve plate  | VR4100-3        | 1   |
| 6      | screw        | SC5-16NCX.75FSS | 1   |
| 7      | valve spring | SPRING-L5123    | 1   |

#### Repair Kit

| Part #    | Description  | Includes<br>Item #  |
|-----------|--|---------------------|
| VR4100RK1 | valve, bushing, O-ring, valve plate, screw, and spring | 2, 3, 4, 5,<br>6, 7 |

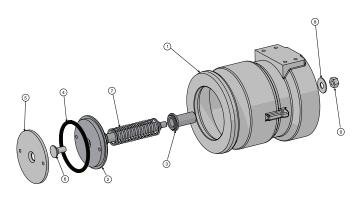
# VR4000 Series 4" Vapor Hose Valves



#### **Bill of Materials**

| Item # | Description        | Part #         | Qty |
|--------|--------------------|----------------|-----|
| 1      | body               |                | 1   |
| 2      | valve              | VR4000-2       | 1   |
| 3      | valve standoff     | VR4000-3       | 1   |
| 4      | valve O-ring       | O-RING-AS339-V | 1   |
| 5      | spring             | SPRG/L4432     | 1   |
| 6      | bushing            | VR6000-3       | 1   |
| 7      | sight glass        | VR4000-4       | 2   |
| 8      | sight glass O-ring | O-RING#132     | 2   |
| 9      | retaining ring     | RING-VH-225    | 2   |
| 10     | plug               | 110748         | 1   |
| 11     | valve plate        | VR4000-5       | 1   |
| 12     | valve plate screws | SC1024375-SS   | 2   |
| 13     | washer             | 112270         | 1   |
| 14     | hex cap screw      | 112269         | 1   |

# VR4100 Series 4" Vapor Hose Valves



#### **Bill of Materials**

| Item # | Description  | Part #          | Qty |
|--------|--------------|-----------------|-----|
| 1      | body         |                 | 1   |
| 2      | valve        | 341827          | 1   |
| 3      | bushing      | VR6000-3        | 1   |
| 4      | FKM O-ring   | O-RING-AS-334   | 1   |
| 5      | valve plate  | VR4100-3        | 1   |
| 6      | screw        | SC5-16NCX.75FSS | 1   |
| 7      | valve spring | SPRING-L5123    | 1   |
| 8      | washer       | 112270          | 1   |
| 9      | nut          | 112271          | 1   |

#### Repair Kit

| Part #    | Description  | Includes<br>Item #  |
|-----------|--|---------------------|
| VR4100RK1 | valve, bushing, O-ring, valve plate, screw, and spring | 2, 3, 4, 5,<br>6, 7 |

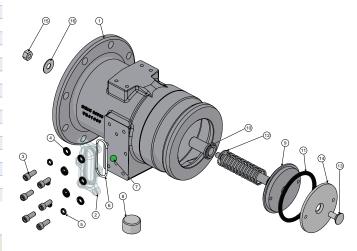
# enlacement Par

# Fuel Delivery/Vapor Recovery

# VR4100F Series Vapor Hose Valves

#### **Bill of Materials**

| Item # | Description             | Part #          | Qty |
|--------|-------------------------|-----------------|-----|
| 1      | body                    |                 | 1   |
| 2      | sight glass             | 111575          | 1   |
| 3      | sight glass bolts       | 111570          | 6   |
| 4      | sight glass washer      | 111562          | 4   |
| 5      | sight glass lock washer | 111569          | 6   |
| 6      | sight glass O-ring      | 111733          | 1   |
| 7      | sight glass float ball  | 111572          | 1   |
| 8      | 3/4" body plug          | 112044          | 1   |
| 9      | valve                   | 341827          | 1   |
| 10     | bushing                 | VR6000-3        | 1   |
| 11     | FKM valve O-ring        | O-RING-AS-334   | 1   |
| 12     | valve spring            | SPRING-L5123    | 1   |
| 13     | screw                   | SC5-16NCX.75FSS | 1   |
| 14     | valve plate             | VR4100-3        | 1   |
| 15     | washer                  | 112271          | 1   |
| 16     | nut                     | 112270          | 1   |



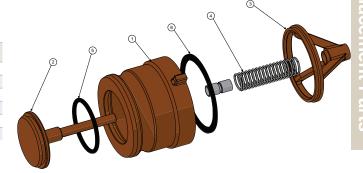
#### Repair Kits

| Part #  | Description                                      | Includes<br>Item # |
|---------|--|--------------------|
| 5204K8  | sight glass, O-ring, float ball                  | 2, 6, 7            |
| 5204K12 | hex bolts (6), lock washers (6), washers (4) kit | 3, 4, 5            |

# VR4086 Series Vapor Adapters

#### **Bill of Materials**

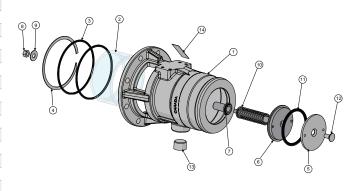
| Item # | Description  | Part #        | Qty |
|--------|--------------|---------------|-----|
| 1      | body         |               | 1   |
| 2      | valve        | 340331        | 1   |
| 3      | valve spider | 340304        | 1   |
| 4      | spring       | 110892        | 1   |
| 5      | FKM O-ring   | O-RING-AS-334 | 1   |
| 6      | body gasket  | G4000AS       | 1   |



# VR4100F-SFI Series Vapor Hose Couplers

#### Bill of Materials

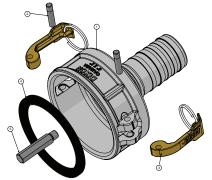
| Item # | Description    | Part # | Qty |
|--------|----------------|--------|-----|
| 1      | body           | 341832 | 1   |
| 2      | sight glass    | 391855 | 1   |
| 3      | O-ring         | 112180 | 2   |
| 4      | retaining ring | 112281 | 1   |
| 5      | plate          | 390663 | 1   |
| 6      | valve          | 341827 | 1   |
| 7      | bushing        | 390146 | 1   |
| 8      | nut            | 112271 | 1   |
| 9      | washer         | 112270 | 1   |
| 10     | spring         | 111197 | 1   |
| 11     | O-ring FKM     | 110691 | 1   |
| 12     | screw          | 110842 | 1   |
| 13     | plug           | 112044 | 1   |
| 14     | warning label  | 112205 | 1   |



# Petroleum Renlacement Parts

# Fuel Delivery/Vapor Recovery

# 4020-CVR-AL Vapor Hose Couplers

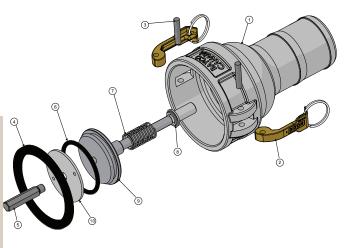


#### **Bill of Materials**

| Item # | Description       | Part #    | Qty |
|--------|-------------------|-----------|-----|
| 1      | body              |           | 1   |
| 2      | pin               | 325-P     | 2   |
| 3      | cam arm with ring | 300-HR-BR | 2   |
| 4      | gasket 4"         | 400-G-BU  | 1   |
| 5      | probe             | VR6000-7  | 1   |

# VR4030CS-AL Vapor Hose Couplers

4" x 3" with poppet



#### **Bill of Materials**

| Item # | Description         | Part #        | Qty |
|--------|---------------------|---------------|-----|
| 1      | body                |               | 1   |
| 2      | cam arm and ring    | 300-HRP-BR    | 2   |
| 3      | cam pin             | 300-HRP-BR    | 2   |
| 4      | Buna coupler gasket | 400-G-BU      | 1   |
| 5      | probe               | VR6000-7      | 1   |
| 6      | FKM valve O-ring    | O-RING-AS-334 | 1   |
| 7      | spring              | SPRG/L4238    | 1   |
| 8      | bushing             | VR6000-3      | 1   |
| 9      | valve               | VR4030CS-1    | 1   |
| 10     | valve plate         | VR4030CS-4    | 1   |

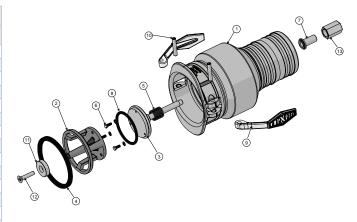
#### Repair Kit

| Part #    | Description  | Includes<br>Item # |
|-----------|--|--------------------|
| VAC4030RK | replacement cam arms, rings, pins, coupler gasket and valve O-ring | 2, 3, 4, 6         |

# VR4040CS-AL & VR4040CS-4MNPT Vapor Hose Couplers

#### **Bill of Materials**

| Item # | Description    | Dort #  | C  | lty  |
|--------|----------------|---------|----|------|
| item#  | Description    | Part #  | AL | MNPT |
| 1      | body           | 341818  | 1  |      |
|        | body           | 341870  |    | 1    |
| 2      | cage           | 341819  | 1  | 1    |
| 3      | poppet         | 341820  | 1  | 1    |
| 4      | gasket Buna -N | 112262  | 1  | 1    |
| 5      | spring         | 112263  | 1  | 1    |
| 6      | machine screw  | 112264  | 3  | 3    |
| 7      | bushing        | 390146  | 1  | 1    |
| 8      | O-ring FKM     | 110691  | 1  | 1    |
| 9      | paddle arm     | 40215SS | 2  | 2    |
| 10     | cam arm pin    | 40218SS | 2  | 2    |
| 11     | button         | 391860  | 1  | 1    |
| 12     | poppet stop    | 391868  | 1  | 1    |
| 13     | screw          | 112416  | 1  | 1    |
| 14     | lock washer    | 111706  | 3  | 3    |



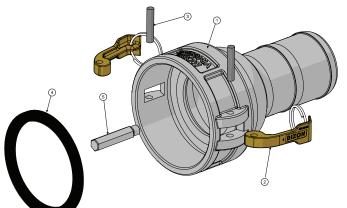
#### Repair Kits

| Part #       | Description                     | Includes<br>Item #                | aJEW  |
|--------------|---------------------------------|-----------------------------------|-------|
| VR4040CSRK1  | seal repair kit                 | 4, 6, 8                           | Marie |
| VR4040CSRK2  | cam arm repair kit              | 9, 10                             |       |
| VR4040CSRK3  | internal repair kit             | 2, 3, 5, 6,<br>7, 8, 11,<br>12,13 |       |
| VR4040CSB    | vapor coupler body complete k   | it                                |       |
| VR4030-AL45  | 3" x 45° hose shank kit         |                                   |       |
| VR4040-AL45  | 4" x 45° hose shank kit         |                                   |       |
| VR4040-ALS45 | 4" x 45° hose shank kit with sw | rivel                             |       |

# uel Delivery/Va

# VR4030CS-NP Vapor Hose Couplers

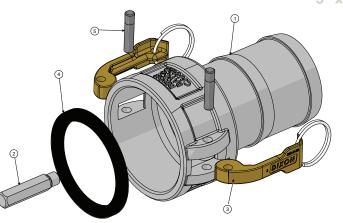
4" x 3" without poppet



### **Bill of Materials**

| Item # | Description         | Part #     | Qty |
|--------|---------------------|------------|-----|
| 1      | body                |            | 1   |
| 2      | cam arm and ring    | 300-HRP-BR | 2   |
| 3      | cam arm pin         | 300-HRP-BR | 2   |
| 4      | Buna coupler gasket | 400-G-BU   | 1   |
| 5      | probe               | VR4030CS-3 | 1   |

# VRC3000AL Vapor Hose Couplers 3" x 3"



#### **Bill of Materials**

| Item # | Description         | Part #     | Qty |
|--------|---------------------|------------|-----|
| 1      | body                |            | 1   |
| 2      | probe               | L4217      | 1   |
| 3      | cam arm and ring    | 300-HRP-BR | 2   |
| 4      | Buna coupler gasket | 300-G-BU   | 1   |
| 5      | cam arm pin         | 300-HRP-BR | 2   |

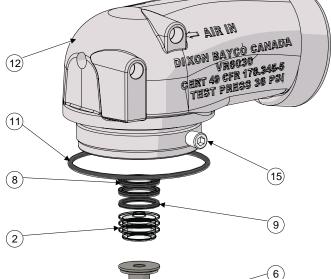
# Petroleum Roniscoment Dari

# Fuel Delivery/Vapor Recovery

# VR6030SQ Series Sequential Vapor Vents

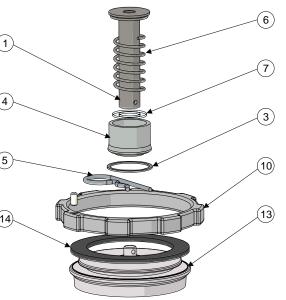
#### **Bill of Materials**

| Item # | Description                        | Part #            | Qty |
|--------|------------------------------------|-------------------|-----|
| 1      | stem                               | 400636            | 1   |
| 2      | piston                             | use kit VR6030RK2 | 1   |
| 3      | retaining ring                     | 111681            | 1   |
| 4      | bearing                            | 390822            | 1   |
| 5      | hitch pin                          | 111680            | 1   |
| 6      | spring                             | 111679            | 1   |
| 7      | bearing seal washer                | 111683            | 1   |
| 8      | top lip seal                       | 111686            | 2   |
| 9      | bottom lip seal                    | 111687            | 1   |
| 10A    | mounting ring                      | 390826            | 1   |
| 10B    | mounting ring set screw            | 111693            | 1   |
| 11     | O-ring                             | 111692            | 1   |
| 12     | body                               |                   | 1   |
| 13     | poppet                             | 341643            | 1   |
| 14A    | Baylast <sup>™</sup> poppet gasket | VR6030RK3         | 1   |
| 14B    | FKM poppet gasket                  | VR6030RKV3        | 1   |
| 15     | pipe plug                          | 111694            | 1   |

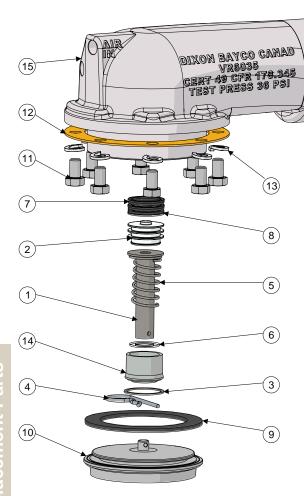


#### VR6030 Repair Kits

| Part #     | Description                        | Includes<br>Item #        |
|------------|------------------------------------|---------------------------|
| VR6030RK1  | seal kit with Baylast™ poppet seal | 2, 3, 5, 8,<br>9, 11, 14A |
| VR6030RKV1 | seal kit with FKM poppet seal      | 2, 3, 5, 8,<br>9, 11, 14B |
| VR6030RK2  | piston assembly                    | 2, 8, 9                   |
| VR6030RK3  | Baylast™ poppet gasket             | 14                        |
| VR6030RKV3 | FKM poppet gasket                  | 14                        |



# VR6035SQ Series Sequential Vapor Vents



#### **Bill of Materials**

| Item # | Description            | Part #                   | Qty |
|--------|------------------------|--------------------------|-----|
| 1      | stem assembly          | 400636                   | 1   |
| 2      | piston                 | use kit VR6030RK2        | 1   |
| 3      | retaining ring         | 111681                   | 1   |
| 4      | cotter pin             | 111680                   | 1   |
| 5      | spring                 | 111679                   | 1   |
| 6      | bearing seal washer    | 111683                   | 1   |
| 7      | lip seal               | 111686                   | 2   |
| 8      | lip seal               | 111687                   | 1   |
| 9A     | Baylast™ poppet gasket | VR6035RK3                | 1   |
| 9B     | FKM poppet gasket      | VR6035RKV3               | 1   |
| 10     | poppet                 | 341641                   | 1   |
| 11     | hex bolt               | use kit <i>VR6035RK4</i> | 8   |
| 12     | body gasket            | 111689                   | 1   |
| 13     | lock washer            | use kit VR6035RK4        | 8   |
| 14     | stem bearing           | 390822                   | 1   |
| 15     | body                   |                          | 1   |

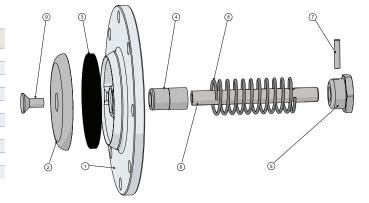
#### VR6035 Repair Kits

| Part #     | Description                         | Includes<br>Item #       |
|------------|-------------------------------------|--------------------------|
| VR6035RK1  | seal kit with Baylast™ poppet seal) | 2, 3, 4, 7, 8,<br>9A, 12 |
| VR6035RKV1 | seal kit with FKM poppet seal       | 2, 3, 4, 7, 8,<br>9B, 12 |
| VR6035RK2  | piston assembly                     | 2, 7, 8                  |
| VR6035RK3  | Baylast™ poppet gasket              | 9A                       |
| VR6035RKV3 | FKM poppet gasket                   | 9B                       |
| VR6035RK4  | (8) bolts & lock washers            | 11, 13                   |

# VRP3500 and VRP3600 Series Outbreathing Vents

#### **Bill of Materials**

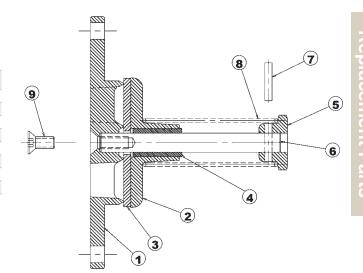
| Item # | Description       | Part #          | Qty |
|--------|-------------------|-----------------|-----|
| 1      | body              |                 | 1   |
| 2      | gasket base       | VRP3500-2       | 1   |
| 3      | gasket            | VRV3501-3       | 1   |
| 4      | bushing           | VRP3500-4       | 1   |
| 5      | spring retainer   | VRV3501-5       | 1   |
| 6A     | shaft for VRP3500 | VRP3501-6       | 1   |
| 6B     | shaft for VRP3600 | 390552          | 1   |
| 7      | shaft pin         | 110717          | 1   |
| 8      | spring            | SPRG-L4506      | 1   |
| 9      | screw             | SC5-16NCx.75FSS | 1   |
|        |                   |                 |     |



# VRV3501 Series Inbreathing Vents

#### **Bill of Materials**

| Item # | Description     | Part #          | Qty |
|--------|-----------------|-----------------|-----|
| 1      | body            |                 | 1   |
| 2      | gasket base     | VRV3501-2       | 1   |
| 3      | gasket          | VRV3501-3       | 1   |
| 4      | bushing         | VRV3501-4       | 1   |
| 5      | spring retainer | VRV3501-5       | 1   |
| 6      | shaft           | VRV3501-6       | 1   |
| 7      | pin             | 110717          | 1   |
| 8      | spring          | SPRG-L4506      | 1   |
| 9      | screw           | SC5-16NCx.75FSS | 1   |



# **Fuel Tanker**

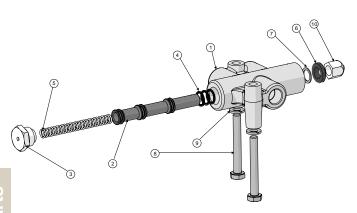
## **TDF Series Tube Doors**



#### Repair Kits

| Part #     | Description  |
|------------|--|
| TDF68RK    | 6" and 8" repair kit, includes stainless steel spring, bushings and pin  |
| TDF7RK     | 7" repair kit, includes stainless steel spring, bushings, pin and washer |
| SPRG-A4630 | stainless steel spring only  |

## 5000AIR Series Roller Ball End Air Interlock Valves



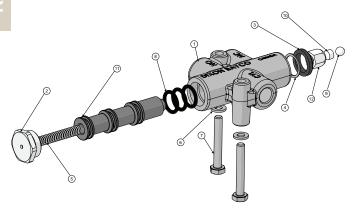
#### **Bill of Materials**

| Item # | Description          | Part #            | Qty |
|--------|----------------------|-------------------|-----|
| 1      | body                 |                   | 1   |
| 2      | piston               | use kit 5000AIRSK | 1   |
| 3      | end plug             | use kit 5000AIRSK | 1   |
| 4      | Buna O-ring          | use kit 5000AIRSK | 3   |
| 5      | spring               | use kit 5000AIRSK | 1   |
| 6      | urethane wiper       | use kit 5000AIRSK | 1   |
| 7      | retaining ring       | 110755            | 1   |
| 8      | mounting bolts       | use kit 5000AIHK  | 2   |
| 9      | lock washer          | use kit 5000AIHK  | 2   |
| 10     | roller ball assembly | 5000AIRRK1        | 1   |

#### Repair Kits

| Part #     | Description                     | Includes<br>Item # |
|------------|---------------------------------|--------------------|
| 5000AIHK   | mounting bolts and lock washers | 8, 9               |
| 5000AIRSK  | piston and seal kit             | 2, 3, 4,<br>5, 6   |
| 5000AIRRK1 | roller ball                     | 10                 |

# 5000AIRHD Series Heavy Duty Roller Ball End Air Interlock Valves



#### **Bill of Materials**

| Description     | Part #  | Qty   |
|-----------------|---|---|
| body            |   | 1   |
| end plug        | 391848  | 1   |
| wiper           | 112260  | 1   |
| retaining ring  | 112261  | 1   |
| spring          | 110897  | 1   |
| lock washer     | 110928  | 2   |
| mounting bolts  | 111196  | 2   |
| O-ring          | 111SS3  | 3   |
| ball            | 100202  | 1   |
| bearing         | 390104  | 1   |
| piston          | 391858  | 1   |
| roller head cap | 390105  | 1   |
|                 | body end plug wiper retaining ring spring lock washer mounting bolts O-ring ball bearing piston | body end plug 391848 wiper 112260 retaining ring 112261 spring 110897 lock washer 110928 mounting bolts 111196 O-ring 111SS3 ball 100202 bearing 390104 piston 391858 |

#### **Repair Kits**

| Part #      | Description                     | Includes<br>Item # |
|-------------|---------------------------------|--------------------|
| 5000AIHK    | mounting bolts and lock washers | 6, 7               |
| 5000AIRHDSK | piston and seal kit             | 2, 3, 5, 8,<br>11  |
| 5000AIRRK1  | roller ball                     | 9                  |

# Petroleum eolacement Pa

### Fuel Tanker

# 5000Al Series Button Plunger End Air Interlock Valves

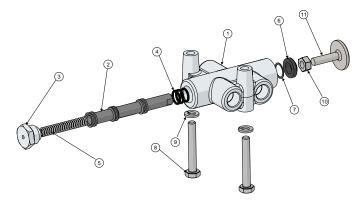
5000AI, 5000AIS and AIST

#### **Bill of Materials**

| Item # | Description  | Part #                | Qty |
|--------|--|-----------------------|-----|
| 1      | body   |                       | 1   |
| 2      | piston   | use kit 5000AISK      | 1   |
| 3A     | end plug (5000AI, 5000AIST)                          | use kit 5000AISK      | 1   |
| 3B     | electronic switch kit (not illustrated, for 5000AIS) | 5000S                 | 1   |
| 4      | Buna O-ring  | use kit 5000AISK      | 3   |
| 5      | spring   | use kit 5000AISK      | 1   |
| 6      | urethane wiper                                       | use kit 5000AISK      | 1   |
| 7      | retaining ring                                       | RING-WH-50            | 1   |
| 8      | mounting bolt  | use kit 5000AIHK      | 2   |
| 9      | lock washer  | use kit 5000AIHK      | 2   |
| 10     | plunger nut  | NUT.25HX-SS           | 1   |
| 11A    | 1" SS plunger button (5000AI)                        | use kit 5000AIRK1     | 1   |
| 11B    | 1½" SS plunger button (5000AIST)                     | use kit <i>5000ST</i> | 1   |

#### Repair Kits

| Part #    | Description                                 | Includes<br>Item # |
|-----------|---|--------------------|
| 5000AIHK  | mounting bolt, lock washer                  | 8, 9               |
| 5000AISK  | piston, end plug, spring, O-ring, rod wiper | 2, 3A, 4,<br>5, 6  |
| 5000AIRK1 | plunger end, nut                            | 10, 11A            |
| 5000ST    | 1½" plunger button and nut                  | 10, 11B            |
| 5000S     | electronic switch attachment kit            | 3B                 |
| 5000AIRK2 | plunger button extension and sleeve kit     |                    |
| 112024    | Buna O-ring                                 | 4                  |



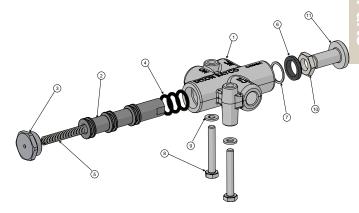
# 5000AIHD Series Heavy Duty Air Interlock Valve

#### **Bill of Materials**

| Item # | Description     | Part #              | Qty |
|--------|-----------------|---------------------|-----|
| 1      | body            |                     | 1   |
| 2      | piston          | use kit 5000AIHDSK  | 1   |
| 3      | end plug        | use kit 5000AIHDSK  | 1   |
| 4      | O-ring          | use kit 5000AIHDSK  | 3   |
| 5      | spring          | use kit 5000AIHDSK  | 1   |
| 6      | wiper           | use kit 5000AIHDSK  | 1   |
| 7      | retaining ring  | 112251              | 1   |
| 8      | mounting bolts  | use kit 5000AIHK    | 2   |
| 9      | lock washer     | use kit 5000AIHK    | 2   |
| 10     | nut             | 390909              | 1   |
| 11A    | 1" plunger end  | use kit 5000AIHDRK1 |     |
| 11B    | 1½" plunger end | use kit 5000STHD    |     |

#### Repair Kits

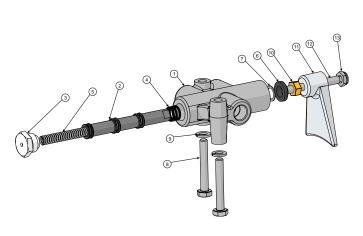
| rtopun rtito |                                 |                    |
|--------------|---------------------------------|--------------------|
| Part #       | Description                     | Includes<br>Item # |
| 5000AIHK     | mounting bolts and lock washers | 8, 9               |
| 5000AIHDSK   | piston and seal kit             | 2, 3, 4,<br>5, 6   |
| 5000AIHDRK1  | 1" plunger assembly             | 10, 11A            |
| 5000STHD     | 1½" plunger assembly            | 10, 11B            |
| 111553       | O-ring                          | 4                  |



# Petroleum

# Fuel Tanker

# 5000AIV Series Paddle End Air Interlock Valves



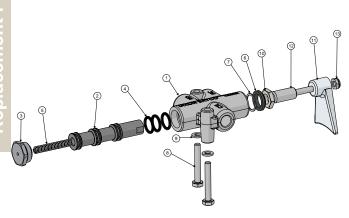
#### **Bill of Materials**

| Item # | Description             | Part #           | Qty |
|--------|-------------------------|------------------|-----|
| 1      | body                    |                  | 1   |
| 2      | piston                  | use kit 5000AISK | 1   |
| 3      | end plug                | use kit 5000AISK | 1   |
| 4      | Buna O-ring             | use kit 5000AISK | 3   |
| 5      | spring                  | use kit 5000AISK | 1   |
| 6      | urethane wiper          | use kit 5000AISK | 1   |
| 7      | retaining ring          | 110755           | 1   |
| 8      | mounting bolt           | use kit 5000AIHK | 2   |
| 9      | lock washer             | use kit 5000AIHK | 2   |
| 10     | paddle nut              | NUT.25HX-SS      | 1   |
| 11     | paddle plunger          | 5000AI-2         | 1   |
| 12     | paddle plunger stud     | 5000AI-5         | 1   |
| 13     | paddle plunger lock nut | 112370           | 1   |

#### Repair Kits

| Part #   | Description                                 | Includes<br>Item # |
|----------|---|--------------------|
| 5000AIHK | mounting bolt, lock washer                  | 8, 9               |
| 5000AISK | piston, end plug, spring, O-ring, rod wiper | 2, 3, 4,<br>5, 6   |

# 5000AIVHD Series Heavy Duty Paddle End Air Interlock Valves



#### **Bill of Materials**

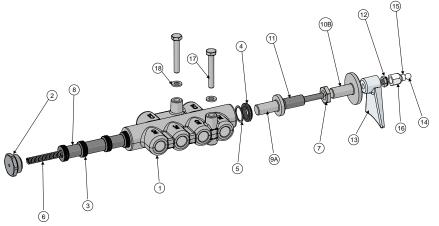
| Item # | Description    | Part #             | Qty |
|--------|----------------|--------------------|-----|
| 1      | body           |                    | 1   |
| 2      | piston         | use kit 5000AIHDSK | 1   |
| 3      | end plug       | use kit 5000AIHDSK | 1   |
| 4      | O-ring         | use kit 5000AIHDSK | 1   |
| 5      | spring         | use kit 5000AIHDSK | 1   |
| 6      | wiper          | use kit 5000AIHDSK | 1   |
| 7      | retaining ring | WH-77              | 1   |
| 8      | mounting bolts | use kit 5000AIHK   | 2   |
| 9      | lock washer    | use kit 5000AIHK   | 2   |
| 10     | nut            | 390909             | 3   |
| 11     | paddle end     | 341142             | 1   |
| 12     | stud           | 390910             | 1   |
| 13     | lock nut       | 112370             | 1   |

#### Repair Kits

| Part #     | Description                | Includes<br>Item # |
|------------|----------------------------|--------------------|
| 5000AIHK   | mounting bolt, lock washer | 8, 9               |
| 5000AIHDSK | piston and seal kit        | 2, 3, 4,<br>5, 6   |

#### Fuel Tanker

#### 5006AIHD Series Heavy Duty Air Interlock Valves



#### **Bill of Materials**

| Item # | Description         | 5006AIHD | 5006AISTHD | 5006AIVHD | 5006AIRHD |
|--------|---------------------|----------|------------|-----------|-----------|
| 1      | body                | 1        | 1          | 1         | 1         |
| 2      | end plug            | 1        | 1          | 1         | 1         |
| 3      | O-ring              | 5        | 5          | 5         | 5         |
| 4      | wiper               | 1        | 1          | 1         | 1         |
| 5      | retaining ring      | 1        | 1          | 1         | 1         |
| 6      | spring              | 1        | 1          | 1         | 1         |
| 7      | hex jam nut         | 1        | 1          | 1         | 1         |
| 8A     | piston              | 1        | 1          | 1         | -         |
| 8B     | piston for air      | -        | -          | -         | 1         |
| 9A     | 1" plunger end      | 1        | -          | -         | -         |
| 10B    | 1½" plunger end     | -        | 1          | -         | -         |
| 11     | paddle plunger stud | -        | -          | 1         | -         |
| 12     | nylon locknut       | -        | -          | 1         | -         |
| 13     | paddle plunger      | -        | -          | 1         | -         |
| 14     | ball                | -        | -          | -         | 1         |
| 15     | bearing             | -        | -          | -         | 1         |
| 16     | roller head cap     | -        | -          | -         | 1         |
| 17     | mounting bolt       | 2        | 2          | 2         | 2         |
| 18     | lock washer         | 2        | 2          | 2         | 2         |

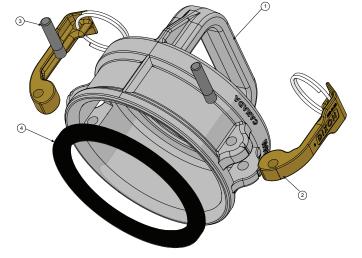
#### **Repair Kits**

| Part #      | Description                                    | Includes Item # |
|-------------|--|-----------------|
| 5006AIHDSK  | piston and seal kit for 5006AIHD and 5006AIVHD | 2, 3, 4, 6, 8A  |
| 5006AIRHDSK | piston and seal kit for 5006AIRHD              | 2, 3, 4, 6, 8B  |

#### 400-DC-ALPH Dust Caps with Handle

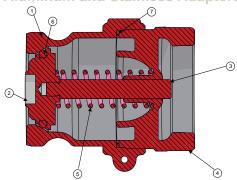
#### **Bill of Materials**

| Item # | Description          | Part #      | Qty |
|--------|----------------------|-------------|-----|
| 1      | dust cap with handle | 400-DC-ALPH | 1   |
| 2      | cam arm with ring    | 300-HR-BR   | 2   |
| 3      | pin                  | 325-P       | 2   |
| 4      | 4" gasket            | 400-G-BU    | 1   |



#### DBA Cam and Groove Dry Disconnects

**Aluminum and Stainless Adapters** 



#### $1 \frac{1}{2}$ " aluminum adapter(DBA6x), zinc adapter (DBA1x) Bill of Materials

DBA1x-150, DBA6x-150 & DBA1x-1520

|   | Item # | Description                                   | Part #   | Qty |
|---|--------|---|--|-----|
|   | 1A     | aluminum adapter body (DBA6x-150)             | 40129AL  | 1   |
|   | 1B     | zinc adapter body<br>(DBA1x-150 & DBA1x-1520) | 40129 <b>Z</b> A   | 1   |
|   | 2      | poppet  | 40130AL  | 1   |
|   | 3A     | stem (DBA1x-150 &<br>DBA1x-1520)              | 40133BR  | 1   |
|   | 3B     | stem (for DBA6x-150)                          | 40133SS-001  | 1   |
|   | 4A     | thread end body                               | 40131AL  | 1   |
|   | 4B     | thread end body (for DBA1x1520)               | 40303AL  | 1   |
|   | 5      | poppet spring                                 | 40132SS  | 1   |
|   | 6A     | poppet O-ring Buna                            | use kit DBAK1-150  | 1   |
|   | 6B     | poppet O-ring FKM                             | use kit <b>DBAK2-150</b>   | 1   |
|   | 6C     | poppet O-ring PTFE/silicone                   | use kit DBAK3-150  | 1   |
| 2 | 6D     | poppet O-ring EPDM                            | use kit <b>DBAK4-150</b>   | 1   |
|   | 6E     | poppet O-ring Kalrez™                         | use kit <b>DBAK6-150</b>   | 1   |
|   | 6F     | poppet O-ring PTFE/FKM                        | use kit <b>DBAK7-150</b>   |     |
| ? | 7A     | body O-ring PTFE                              | use kit <b>DBAK1-150</b>   | 1   |
|   | 7B     | body O-ring FKM                               | use kit <b>DBAK2-150</b>   |     |
|   | 7C     | body O-ring PTFE                              | use kit <b>DBAK3-150,</b><br><b>DBAK6-150</b> or<br><b>DBAK7-150</b> | 1   |
|   | 7D     | body O-ring EPDM                              | use kit <b>DBAK4-150</b>   | 1   |
|   |        |   |  |     |

#### 1½" stainless adapter Bill of Materials DBA7x-150

| DIII OI | Materials DDA7 X-130        |                          |     |
|---------|-----------------------------|--------------------------|-----|
| Item #  | Description                 | Part #                   | Qty |
| 1       | stainless adapter body      | 40129SS                  | 1   |
| 2       | poppet                      | 40130SS                  | 1   |
| 3       | stem                        | 40133SS-002              | 1   |
| 4       | thread end body             | 40131SS                  | 1   |
| 5       | poppet spring               | 40132SS                  | 1   |
| 6A      | poppet O-ring Buna          | use kit DBAK1-150        | 1   |
| 6B      | poppet O-ring FKM           | use kit <b>DBAK2-150</b> | 1   |
| 6C      | poppet O-ring PTFE/silicone | use kit <b>DBAK3-150</b> | 1   |
| 6D      | poppet O-ring EPDM          | use kit <b>DBAK4-150</b> | 1   |
| 6E      | poppet O-ring Kalrez™       | use kit <b>DBAK6-150</b> | 1   |
| 6F      | poppet O-ring PTFE/FKM      | use kit DBAK7-150        | 1   |
| 7A      | body O-ring PTFE            | use kit DBAK1-150        | 1   |
| 7B      | body O-ring FKM             | use kit DBAK2-150        |     |
|         |                             | use kit DBAK3-150,       |     |
| 7C      | body O-ring PTFE            | <b>DBAK6-150</b> or      | 1   |
|         |                             | DBAK7-150                |     |
| 7D      | body O-ring EPDM            | use kit <b>DBAK4-150</b> | 1   |
|         |                             |                          |     |

#### 2" aluminum adapter(DBA6x), zinc adapter (DBA1x) Bill of Materials

DBA1x-200, DBA6x-200

|        | x 200, 22/ tox 200                |  |     |
|--------|-----------------------------------|--|-----|
| Item # | Description                       | Part #   | Qty |
| 1A     | aluminum adapter body (DBA6x-200) | 40001AL  | 1   |
| 1B     | zinc adapter body (DBA1x-200)     | 40001ZA  | 1   |
| 2      | poppet                            | 40002AL  | 1   |
| 3A     | stem (for DBA1x-200)              | 40005BR  | 1   |
| 3B     | stem (for DBA6x-200)              | 40005SS-001                                    | 1   |
| 4      | thread end body                   | 40003AL  | 1   |
| 5      | poppet spring                     | 40004SS  | 1   |
| 6A     | poppet O-ring Buna                | use kit <b>DBAK1-200</b>                       | 1   |
| 6B     | poppet O-ring FKM                 | use kit <b>DBAK2-200</b>                       | 1   |
| 6C     | poppet O-ring PTFE/<br>silicone   | use kit <b>DBAK3-200</b>                       | 1   |
| 6D     | poppet O-ring EPDM                | use kit <b>DBAK4-200</b>                       | 1   |
| 6E     | poppet O-ring Kalrez™             | use kit <b>DBAK6-200</b>                       | 1   |
| 6F     | poppet O-ring PTFE/<br>FKM        | use kit <b>DBAK7-200</b>                       | 1   |
| 7A     | body O-ring PTFE                  | use kit <b>DBAK1-200</b>                       | 1   |
| 7B     | body O-ring FKM                   | use kit <b>DBAK2-200</b>                       | 1   |
| 7C     | body O-ring PTFE                  | use kit <i>DBAK3-200</i> , <i>DBAK6-200</i> or | 1   |
|        | body O mig i ii L                 | DBAK7-200                                      | '   |
| 7D     | body O-ring EPDM                  | use kit <b>DBAK4-200</b>                       | 1   |

#### 2" stainless adapter Bill of Materials DBA7x-200

| Item # | Description                 | Part #                   | Qty |
|--------|-----------------------------|--------------------------|-----|
| 1      | stainless adapter body      | 40001SS                  | 1   |
| 2      | poppet                      | 40002SS                  | 1   |
| 3      | stem                        | 40005SS-002              | 1   |
| 4      | thread end body             | 40003SS                  | 1   |
| 5      | poppet spring               | 40004SS                  | 1   |
| 6A     | poppet O-ring Buna          | use kit <b>DBAK1-200</b> | 1   |
| 6B     | poppet O-ring FKM           | use kit DBAK2-200        | 1   |
| 6C     | poppet O-ring PTFE/silicone | use kit DBAK3-200        | 1   |
| 6D     | poppet O-ring EPDM          | use kit <b>DBAK4-200</b> | 1   |
| 6E     | poppet O-ring Kalrez™       | use kit <b>DBAK6-200</b> | 1   |
| 6F     | poppet O-ring PTFE/FKM      | use kit <b>DBAK7-200</b> | 1   |
| 7A     | body O-ring PTFE            | use kit <b>DBAK1-200</b> | 1   |
| 7B     | body O-ring FKM             | use kit <b>DBAK2-200</b> | 1   |
|        |                             | use kit DBAK3-200,       |     |
| 7C     | body O-ring PTFE            | <b>DBAK6-200</b> or      | 1   |
|        | , ,                         | DBAK7-200                |     |
| 7D     | body O-ring EPDM            | use kit <b>DBAK4-200</b> | 1   |

# eplacement Par

#### Dry Disconnects

#### DBA Cam and Groove Dry Disconnects

**Aluminum and Stainless Adapters** 

#### 3" aluminum adapter(DBA6x), zinc adapter(DBA1x) Bill of Materials DBA1x-300, DBA6x-300

#### Item # Description Part # Qty aluminum adapter body 40180AL 1B zinc adapter body 40180ZA 1 2 poppet 40182AL 3 40183BR stem thread end body 40181AL poppet spring 40184SS poppet O-ring Buna use kit DBAK1-300 6A poppet O-ring FKM use kit DBAK2-300 poppet O-ring PTFE/silicone use kit **DBAK3-300** poppet O-ring EPDM use kit **DBAK4-300** poppet O-ring Kalrez™ 6E use kit **DBAK6-300** poppet O-ring PTFE/FKM 6F use kit **DBAK7-300** poppet O-ring FKM - B body O-ring PTFE 6G use kit **DBAK9-300** 7A use kit **DBAK1-300** body O-ring FKM use kit **DBAK2-300** 7B use kit DBAK3-300, 7C body O-ring PTFE DBAK6-300 or **DBAK7-300** use kit **DBAK4-300** body O-ring EPDM 7E body O-ring FKM-B use kit **DBAK9-300** 1

#### 3" stainless adapter Bill of Materials DBA7x-300

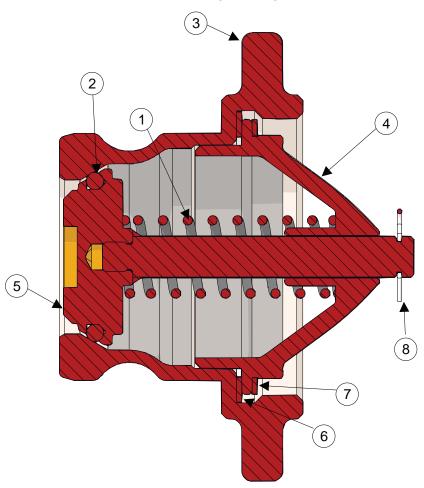
| Item # | Description                     | Part #                   | Qty |
|--------|---------------------------------|--------------------------|-----|
| 1      | stainless adapter body          | 40180SS                  | 1   |
| 2      | poppet                          | 40182SS                  | 1   |
| 3      | stem                            | 40183SS                  | 1   |
| 4      | thread end body                 | 40181SS                  | 1   |
| 5      | poppet spring                   | 40184SS                  | 1   |
| 6A     | poppet O-ring Buna              | use kit <b>DBAK1-300</b> | 1   |
| 6B     | poppet O-ring FKM               | use kit <b>DBAK2-300</b> | 1   |
| 6C     | poppet O-ring PTFE/<br>silicone | use kit <b>DBAK3-300</b> | 1   |
| 6D     | poppet O-ring EPDM              | use kit <b>DBAK4-300</b> | 1   |
| 6E     | poppet O-ring Kalrez™           | use kit <i>DBAK6-300</i> | 1   |
| 6F     | poppet O-ring PTFE/<br>FKM      | use kit <b>DBAK7-300</b> | 1   |
| 6G     | Poppet O-ring FKM-B             | use kit <b>DBAK9-300</b> | 1   |
| 7A     | body O-ring PTFE                | use kit <b>DBAK1-300</b> | 1   |
| 7B     | body O-ring FKM                 | use kit <b>DBAK2-300</b> | 1   |
| 7C     | body O-ring PTFE                | use kit <i>DBAK3-300</i> | 1   |
| 7D     | body O-ring EPDM                | use kit <b>DBAK4-300</b> | 1   |
| 7E     | body O-ring FKM-B               | use kit <b>DBAK9-300</b> | 1   |

#### Repair Kits

| Part #           | Description             | Includes<br>Item # |
|------------------|-------------------------|--------------------|
| DBAK1-150        | 1½" Buna seals          | 6A, 7A             |
| DBAK2-150        | 1½" FKM seals           | 6B, 7B             |
| DBAK3-150        | 1½" PTFE/silicone seals | 6C, 7C             |
| DBAK4-150        | 1½" EPDM seals          | 6D, 7D             |
| DBAK6-150        | 1½" PTFE/Kalrez™ seals  | 6E, 7C             |
| DBAK7-150        | 1½" PTFE/FKM seals      | 6F, 7C             |
| DBAK1-200        | 2" Buna seals           | 6A, 7A             |
| DBAK2-200        | 2" FKM seals            | 6B, 7B             |
| DBAK3-200        | 2" PTFE/silicone seals  | 6C, 7C             |
| DBAK4-200        | 2" EPDM seals           | 6D, 7D             |
| DBAK6-200        | 2" PTFE/Kalrez™ seals   | 6E, 7C             |
| DBAK7-200        | 2" PTFE/FKM seals       | 6F, 7C             |
| DBAK1-300        | 3" PTFE seals           | 6A, 7A             |
| DBAK2-300        | 3" FKM seals            | 6B, 7B             |
| DBAK3-300        | 3" PTFE/silicone seals  | 6C, 7C             |
| DBAK4-300        | 3" EPDM seals           | 6D, 7D             |
| DBAK6-300        | 3" PTFE/Kalrez™ seals   | 6E, 7C             |
| DBAK7-300        | 3" PTFE/FKM seals       | 6F, 7C             |
| <b>DBAK9-300</b> | 3" FKM-B seals          | 6G, 7E             |

#### DBVA Cam and Groove Dry Disconnects

#### **Stainless Vapor Adapter**

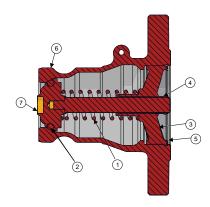


2" x 3" stainless vapor adapter Bill of Materials DBVA73-200

| Item # | Description                 | Part #        | Qty |
|--------|-----------------------------|---------------|-----|
| 1      | spring                      | 40004SS       | 1   |
| 2      | poppet O-ring PTFE/silicone | 40006TS       | 1   |
| 3      | adapter body                | not available |     |
| 4      | bridge                      | 40175SS       | 1   |
| 5      | poppet assembly             | 40187SSS      | 1   |
| 6      | large body gasket           | 40190TF       | 1   |
| 7      | small body gasket           | 40191TF       | 1   |
| 8      | poppet clip                 | 40192SS       | 1   |

#### DBAF Cam and Groove Dry Disconnects

#### **Stainless Flange Adapters**



#### 2" flange x 1½" stainless adapter Bill of Materials DBAF7x-1520

2" flange x 2" stainless adapter Bill of Materials DBAF7x-200

| Item # | Description                 | Part #    | Qty |
|--------|-----------------------------|-----------|-----|
| 1      | spring                      | 40004SS   | 1   |
| 2A     | poppet O-ring Buna          | 40134BN   | 1   |
| 2B     | poppet O-ring FKM           | 40134VI   | 1   |
| 2C     | poppet O-ring PTFE/silicone | 40134TS   | 1   |
| 2D     | poppet O-ring EPDM          | 40134EP   | 1   |
| 2E     | poppet O-ring FFKM          | 40134KR   | 1   |
| 3      | bridge                      | 40341SS   | 1   |
| 4      | bearing                     | 40343TF   | 1   |
| 5      | retaining ring              | 40344SS   | 1   |
| 6      | body                        |           | 1   |
| 7      | poppet assembly             | 40347SSSS | 1   |

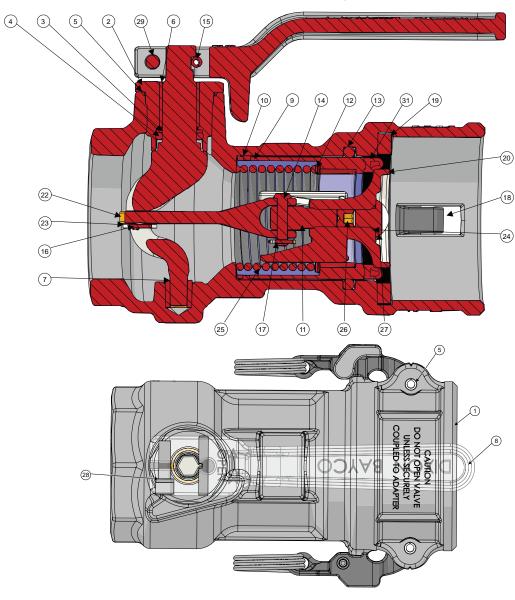
| Item # | Description                 | Part #    | Qty |
|--------|-----------------------------|-----------|-----|
| 1      | spring                      | 40004SS   | 1   |
| 2A     | poppet O-ring Buna          | 40006BN   | 1   |
| 2B     | poppet O-ring FKM           | 40006VI   | 1   |
| 2C     | poppet O-ring PTFE/silicone | 40006TS   | 1   |
| 2D     | poppet O-ring EPDM          | 40006EP   | 1   |
| 2E     | poppet O-ring FFKM          | 40006KR   | 1   |
| 3      | bridge                      | 40341SS   | 1   |
| 4      | bearing                     | 40343TF   | 1   |
| 5      | retaining ring              | 40344SS   | 1   |
| 6      | body                        |           | 1   |
| 7      | poppet assembly             | 40342SSSS | 1   |

#### 3" flange x 3" stainless adapter Bill of Materials DBAF7x-300

| Item # | Description                 | Part #    | Qty |
|--------|-----------------------------|-----------|-----|
| 1      | spring                      | 40184SS   | 1   |
| 2A     | poppet O-ring Buna          | 40185BN   | 1   |
| 2B     | poppet O-ring FKM           | 40185VI   | 1   |
| 2C     | poppet O-ring PTFE/silicone | 40185TS   | 1   |
| 2D     | poppet O-ring EPDM          | 40185EP   | 1   |
| 2E     | poppet O-ring FFKM          | 40185KR   | 1   |
| 3      | bridge                      | 40360SS   | 1   |
| 4      | bearing                     | 40362TF   | 1   |
| 5      | retaining ring              | 40361SS   | 1   |
| 6      | body                        |           | 1   |
| 7      | poppet assembly             | 40359SSSS | 1   |

#### DBC Cam and Groove Dry Disconnects

**Aluminum and Stainless Couplers** 



Bill of materials and repair kits can be found on the following pages:

**DBC6x-150** see page 113 **DBC7x-150** see page 114

**DBC6x-200** see page 115

**DBC7x-200** see page 116

**DBC6x-300** see page 118

**DBC7x-300** see page 119

**DBS6x-200** see page 121

### DBC Cam and Groove Dry Disconnects 1½" Aluminum Couplers

#### 11/2" aluminum coupler **Bill of Materials** DBC6x-150

| Refer to drawing on page 112. |                                  |                      |          |
|-------------------------------|----------------------------------|----------------------|----------|
| Item #                        | Description                      | Part #               | Qty      |
| 1                             | body                             |                      | 1        |
| 2                             | stuffing box                     | 40074SS              | 1        |
| 3                             | back up ring                     | 40075TF              | 1        |
| 4.0                           | crank shaft O-ring Buna          | 40070014             |          |
| 4A                            | (for DBC61-150)                  | 40076BN              | 1        |
|                               | crank shaft O-ring FKM           |                      |          |
| 4B                            | (for DBC62-150)                  | 40076VI              | 1        |
|                               | crank shaft O-ring FFKM          |                      |          |
| 4C                            | (for DBC63-150)                  | 40076KR              | 1        |
|                               | crank shaft O-ring EPDM          |                      |          |
| 4D                            | (for DBC63-150, DBC66-150 &      | 40076EP              | 1        |
|                               | DBC67-150)                       |                      |          |
| 5                             | stuffing box PTFE O-ring         | 40077TF              | 1        |
| 6                             | large crank shaft bearing        | 40078FG              | 1        |
| 7                             | small crank shaft bearing        | 40079SS              | 1        |
| 8                             | lever (handle)                   | 40080SS              | 1        |
| 9A                            | seal cylinder (for DBC61-150)    | 40117ALBN            | 1        |
| 9B                            | seal cylinder (for DBC62-150)    | 40117ALVI            | 1        |
|                               | seal cylinder (for DBC63-150,    |                      |          |
| 9C                            | DBC66-150 & DBC67-150)           | 40169SS              | 1        |
| 9D                            | seal cylinder (for DBC64-150)    | 40117ALEP            | 1        |
| 10                            | PTFE button                      | 40082TF              | 6        |
| 11                            | yoke                             | 40118SS              | 1        |
| 12                            | PTFE bushing                     | 40119TF              | 1        |
| 13A                           | body O-ring Buna (for DBC61-150) | 40120BN              | 1        |
| 13B                           | body O-ring FKM (for DBC62-150)  | 40120VI              | 1        |
|                               | body O-ring PTFE/silicone        |                      |          |
| 13C                           | (for DBC63-150)                  | 40120TS              | 1        |
| 13D                           | body O-ring EPDM (for DBC64-150) | 40120EP              | 1        |
|                               | body O-ring FFKM                 |                      | -        |
| 13E                           | (for DBC66-150)                  | 40120KR              | 1        |
|                               | body O-ring PTFE/FKM             |                      |          |
| 13F                           | (for DBC67-150)                  | 40120TV              | 1        |
| 14                            | link rivet                       | 40086SS              | 1        |
| 15                            | groove pin                       | 40087SS              | 1        |
| 16                            | crank shaft cotter pin           | 40088SS              | 1        |
| 17                            | link cotter pin                  | 40088SS              | 1        |
| 18                            | EZ Boss-Lock™ cam arm            | 40089SS              | 2        |
| 19A                           | cam gasket Buna (for DBC61-150)  | 200-G-BU             | 1        |
| 19B                           | cam gasket FKM (for DBC62-150)   | 200-G-VI             | 1        |
| 400                           | cam gasket PTFE/silicone (for    | 000 O TEO            | 4        |
| 19C                           | DBC63-150)                       | 200-G-TES            | 1        |
| 19D                           | cam gasket EPR (for DBC64-150)   | 200-G-EPR            | 1        |
| 405                           | cam gasket PTFE/FKM (for DBC66-  | 000 O TEV            | 4        |
| 19E                           | 150 & DBC67-150)                 | 200-G-TFVI           | 1        |
| 20                            | poppet                           | 40114SS              | 1        |
| 21                            | crank shaft                      | 40115SS              | 1        |
| 22                            | link arm                         | 40116SS              | 1        |
| 23                            | link washer                      | 40094SS              | 1        |
| 24                            | poppet screw PTFE O-ring         | 40122TF              | 1        |
| 25                            | cylinder spring                  | DBCxx-150RK8         | 1        |
| 26                            | set screw                        | 40124SS              | 1        |
| 27                            | poppet screw (round head)        | 40125SS              | 1        |
| 28                            | lock washer                      | 40099SS              | 1        |
| 29                            | socket head cap screw            | 40100SS              | 1        |
| 30                            | cam arm spring pin               | 40101SS              | 2        |
| 31                            | nose seal (for DBC63-150,        | 40171TF              | 1        |
| 31                            | DBC66-150 & DBC67-150)           | 7011111              | '        |
|                               | B 1 11 11 1                      | ata and table to all | .1 - 1 - |

#### Repair Kits

| Repair Kits                          |   |                              |
|--------------------------------------|---|------------------------------|
| Part #                               | Description   | Includes<br>Item #           |
| <b>DBCx1-150RK1</b> (Buna-N)         | seal kit, Buna crank shaft O-ring, PTFE<br>stuffing box O-ring, Buna body O-ring, Buna<br>cam gasket, PTFE O-ring (for DBC61-150)             | 4A, 5,<br>13A,<br>19A, 24    |
| <b>DBCx2-150RK1</b> (FKM)            | seal kit, FKM crank shaft O-ring, PTFE stuffing box O-ring, FKM body O-ring, FKM cam gasket, PTFE O-ring (for DBC62-150)                      | 4B, 5,<br>13B,<br>19B, 24    |
| DBCx3-150RK1<br>(PTFE and<br>FFKM)   | seal kit, FFKM crank shaft O-ring, PTFE stuffing box O-ring, PTFE/silicone body O-ring, PTFE/silicone cam gasket, PTFE O-ring (for DBC63-150) | 4C, 5,<br>13C,<br>19C, 24    |
| DBCx4-150RK1<br>(EPDM)               | seal kit, EPDM crank shaft O-ring, PTFE stuffing box O-ring, EPDM body O-ring, EPR cam gasket, PTFE, O-ring (for DBC64-150)                   | 4D, 5,<br>13D,<br>19D, 24    |
| DBCx6-150RK1<br>(FFKM &<br>PTFE/FKM) | seal kit, FFKM crank shaft O-ring, PTFE stuffing box O-ring, FFKM body O-ring, PTFE/FKM cam gasket, PTFE O-ring (for DBC66-150)               | 4C, 5,<br>13E,<br>19E, 24    |
| DBCx7-150RK1                         | seal kit, FFKM crank shaft O-ring, PTFE stuffing box O-ring, PTFE/FKM body O-ring, PTFE/FKM cam gasket, PTFE O-ring (for DBC67-150)           | 4C, 5,<br>13F, 19E,<br>24    |
| DBC61-150RK2                         | Buna seal cylinder, PTFE buttons and PTFE bushing (for DBC61-150)   | 9A, 10,<br>12                |
| DBC62-150RK2                         | FKM seal cylinder, PTFE buttons and PTFE bushing (for DBC62-150)  | 9B, 10,<br>12                |
| DBCx3-150RK2                         | PTFE nose seal , PTFE buttons and PTFE bushing (for DBC63-150, DBC66-150 & DBC67-150)   | 10, 12,<br>31                |
| DBC64-150RK2                         | EPDM seal cylinder, PTFE buttons and PTFE bushing (for DBC64-150)   | 9D, 10,<br>12                |
| DBCxx-150RK4                         | link kit, link rivet, cotter pins, link washer, link arm and yoke (for all 1½" aluminum)  | 11, 14,<br>16, 17,<br>22, 23 |
| DBCxx-150RK5                         | aluminum)   | 2, 5, 6                      |
| DBCxx-150RK6                         | 1½" aluminum)   | 8, 15, 28,<br>29             |
| DBCxx-150RK7                         | crank shaft kit, crank shaft, cotter pin and washer (for all 1½" aluminum)  | 16, 21,<br>23                |
| DBCxx-150RK8 DBCxx-150RK9            | main cylinder spring poppet kit, poppet, round head screw, set screw and PTFE washer (for all 1½"aluminum)                                    | 25<br>20, 24,<br>26, 27      |
| DBCL-200                             | optional add on padlock-able lever kit, handle (for all 1½")  | not<br>illustrated           |

#### DBC Cam and Groove Dry Disconnects

1½" Stainless Couplers

#### 11/2" stainless coupler **Bill of Materials** DBC7x-150

| Refer t | o drawing on page 112.                            |            |     |
|---------|---|------------|-----|
| Item #  | Description                                       | Part #     | Qty |
| 1       | body  |            | 1   |
| 2       | stuffing box                                      | 40074SS    | 1   |
| 3       | back up ring                                      | 40075TF    | 1   |
| 4A      | crank shaft O-ring Buna (for DBC71-150)           | 40076BN    | 1   |
| 4B      | crank shaft O-ring FKM (for DBC72-150)            | 40076VI    | 1   |
| 40      | crank shaft O-ring FFKM (for DBC73-150,           |            | 4   |
| 4C      | DBC76-150 and DBC77-150)                          | 40076KR    | 1   |
| 4D      | crank shaft O-ring EPDM (for DBC74-150)           | 40076EP    | 1   |
| 5       | stuffing box PTFE O-ring                          | 40077TF    | 1   |
| 6       | large crank shaft bearing                         | 40078FG    | 1   |
| 7       | small crank shaft bearing                         | 40079SS    | 1   |
| 8       | lever (handle)                                    | 40080SS    | 1   |
| 9A      | seal cylinder (for DBC71-150)                     | 40117SSBN  | 1   |
| 9B      | seal cylinder (for DBC72-150)                     | 40117SSVI  | 1   |
| 9C      | seal cylinder (for DBC73-150,                     | 40169SS    | 1   |
|         | DBC76-150 and DBC77-150)                          |            |     |
| 9D      | seal cylinder (for DBC74-150)                     | 40117SSEP  | 1   |
| 10      | PTFE button                                       | 40082TF    | 6   |
| 11      | yoke  | 40118SS    | 1   |
| 12      | PTFE bushing                                      | 40119TF    | 1   |
| 13A     | body O-ring Buna (for DBC71-150)                  | 40120BN    | 1   |
| 13B     | body O-ring FKM (for DBC72-150)                   | 40120VI    | 1   |
| 13C     | body O-ring PTFE/silicone (for DBC73-150)         | 40120TS    | 1   |
| 13D     | body O-ring EPDM (for DBC74-150)                  | 40120EP    | 1   |
| 13E     | body O-ring FFKM (for DBC76-150)                  | 40120KR    | 1   |
| 13F     | body O-ring PTFE/FKM (for DBC77-150)              | 40120TV    | 1   |
| 14      | link rivet  | 40086SS    | 1   |
| 15      | groove pin  | 40087SS    | 1   |
| 16      | crank shaft cotter pin                            | 40088SS    | 1   |
| 17      | link cotter pin                                   | 40088SS    | 1   |
| 18      | EZ Boss-Lock™ cam arm                             | 40089SS    | 2   |
| 19A     | cam gasket Buna (for DBC71-150)                   | 200-G-BU   | 1   |
| 19B     | cam gasket FKM (for DBC72-150)                    | 200-G-VI   | 1   |
| 19C     | cam gasket PTFE/silicone (for DBC73-150)          | 200-G-TES  | 1   |
| 19D     | cam gasket EPDM (for DBC74-150)                   | 200-G-EPR  | 1   |
| 19E     | cam gasket PTFE/FKM (for DBC76-150 and DBC77-150) | 200-G-TFVI | 1   |
| 20      | poppet  | 40114SS    | 1   |
| 21      | crank shaft                                       | 40115SS    | 1   |
| 22      | link arm  | 40116SS    | 1   |
| 23      | link washer                                       | 40094SS    | 1   |
| 24      | poppet screw PTFE O-ring                          | 40122TF    | 1   |
| 25      | cylinder spring                                   | DBCxx-     | 1   |
| 200     | not normy   | 150RK8     | 4   |
| 26      | set screw   | 40124SS    | 1   |
| 27      | poppet screw (round head)                         | 40125SS    | 1   |
| 28      | lock washer                                       | 40099SS    | 1   |
| 29      | socket head cap screw cam arm spring pin          | 40100SS    | 1   |
| 30      | nose seal (for DBC73-150, DBC76-150               | 40101SS    | 2   |
| 31      | and DBC77-150)                                    | 40171TF    | 1   |

#### Repair Kits

| Repair Kits                                   |  |                              |
|---|--|------------------------------|
| Part #  | Description  | Includes<br>Item #           |
| <b>DBCx1-150RK1</b> (Buna-N)                  | seal kit, Buna crank shaft O-ring, PTFE stuffing box O-ring, Buna body O-ring, Buna cam gasket, PTFE O-ring (for DBC71-150)                  | 4A, 5,<br>13A,<br>19A, 24    |
| <b>DBCx2-150RK1</b> (FKM)                     | seal kit, FKM crank shaft O-ring,PTFE<br>stuffing box O-ring, FKM body O-ring, FKM<br>cam gasket, PTFE O-ring (for DBC72-150)                | 4B, 5,<br>13B,<br>19B, 24    |
| DBCx3-150RK1<br>(PTFE/silicone<br>& Chemrez®) | seal kit, FFKM crank shaft O-ring,PTFE stuffing box O-ring, PTFE/silicone body O-ring, PTFE/silicone cam gasket, PTFE O-ring (for DBC73-150) | 4C, 5,<br>13C,<br>19C, 24    |
| <b>DBCx4-150RK1</b> (EPDM)                    | seal kit, EPDM crank shaft O-ring, PTFE stuffing box O-ring, EPDM body O-ring, EPR cam gasket, PTFE O-ring (for DBC74-150)                   | 4D, 5,<br>13D,<br>19D, 24    |
| DBCx6-150RK1<br>(FFKM & PTFE/<br>FKM)         | seal kit, FFKM crank shaft O-ring, PTFE stuffing box O-ring, FFKM body O-ring, PTFE/FKM cam gasket, PTFE O-ring (for DBC76-150)              | 4C, 5,<br>13E,<br>19E, 24    |
| DBCx7-150RK1                                  | seal kit, FFKM crank shaft O-ring, PTFE stuffing box O-ring, PTFE/FKM body O-ring, PTFE/FKM cam gasket, PTFE O-ring (for DBC77-150)          | 4C, 5,<br>13F, 19E,<br>24    |
| DBC71-150RK2                                  | Buna seal cylinder, PTFE buttons & PTFE bushing (for DBC71-150)  | 9A, 10,<br>12                |
| DBC72-150RK2                                  | FKM seal cylinder, PTFE buttons and PTFE bushing (for DBC72-150)   | 9B, 10,<br>12                |
| DBCx3-150RK2                                  | PTFE nose seal, PTFE buttons & PTFE bushing (for DBC73-150, DBC76-150 & DBC77-150)   | 10, 12,<br>31                |
| DBC74-150RK2                                  | EPDM seal cylinder, PTFE buttons & PTFE bushing (for DBC74-150)  | 9D, 10,<br>12                |
| DBCxx-150RK4                                  | link kit, link rivet, cotter pins, link washer, link arm & yoke (for all 1½" stainless steel)  | 11, 14,<br>16, 17,<br>22, 23 |
| DBCxx-150RK5                                  | stuffing box kit, stuffing box, PTFE O-ring & large crank shaft bearing (for all 1½" stainless steel)  | 2, 5, 6                      |
| DBCxx-150RK6                                  | lever (handle) kit, lever, groove pin, lock<br>washer & socket head cap screw (for all<br>1½" stainless steel)                               | 8, 15, 28,<br>29             |
| DBCxx-150RK7                                  | crank shaft kit, crank shaft, cotter pin & washer (for all 11/2" stainless steel)  | 16, 21,<br>23                |
| DBCxx-150RK8                                  | main cylinder spring   | 25                           |
| DBCxx-150RK9                                  | poppet kit, poppet, round head screw, set screw & PTFE O-ring (for all 1½" stainless steel)  | 20, 24,<br>26, 27            |
| DBCL-200                                      | Optional add on padlockable lever kit (handle) (for all 1½")   | not<br>illustrated           |

### DBC Cam and Groove Dry Disconnects 2" Aluminum Couplers

#### 2" aluminum coupler **Bill of Materials** DBC6x-200

Refer to drawing on page 112

| Refer to drawing on page 112. |   |              |     |
|-------------------------------|---|--------------|-----|
| Item #                        | Description                             | Part #       | Qty |
| 1                             | body                                    |              | 1   |
| 2                             | stuffing box                            | 40074SS      | 1   |
| 3                             | back up ring                            | 40075TF      | 1   |
| 4A                            | crank shaft O-ring Buna (for DBC61-200) | 40076BN      | 1   |
| 4B                            | crank shaft O-ring FKM (for DBC62-200)  | 40076VI      | 1   |
| . —                           | crank shaft O-ring FFKM (for DBC63-     |              |     |
| 4C                            | 200 ,DBC66-200 & DBC67-200)             | 40076KR      | 1   |
| 4D                            | crank shaft O-ring EPDM (for DBC64-200) | 40076EP      | 1   |
| 5                             | stuffing box PTFE O-ring                | 40077TF      | 1   |
| 6                             | large crank shaft bearing               | 40078FG      | 1   |
| 7                             | small crank shaft bearing               | 40079SS      | 1   |
| 8                             | lever (handle)                          | 40080SS      | 1   |
| 9A                            | seal cylinder (for DBC61-200)           | 40081ALBN    | 1   |
| 9B                            | seal cylinder (for DBC62-200)           | 40081ALVI    | 1   |
|                               | seal cylinder (for DBC63-200,           |              |     |
| 9C                            | DBC66-200 & DBC67-200)                  | 40168SS      | 1   |
| 9D                            | seal cylinder (for DBC64-200)           | 40081ALEP    | 1   |
| 10                            | PTFE button                             | 40082TF      | 6   |
| 11                            | yoke                                    | 40083SS      | 1   |
| 12                            | PTFE bushing                            | 40084TF      | 1   |
| 13A                           | body O-ring Buna (for DBC61-200)        | 40085BN      | 1   |
| 13B                           | body O-ring FKM (for DBC62-200)         | 40085VI      | 1   |
|                               | body O-ring PTFE/silicone (for          | 40003 VI     | '   |
| 13C                           | DBC63-200)                              | 40085TS      | 1   |
| 13D                           | body O-ring EPDM (for DBC64-200)        | 40085EP      | 1   |
| 13E                           | body O-ring FFKM(for DBC66-200)         | 40085KR      | 1   |
|                               | body O-ring PTFE/FKM                    |              |     |
| 13F                           | (for DBC67-200)                         | 40085TV      | 1   |
| 14                            | link rivet                              | 40086SS      | 1   |
| 15                            | groove pin                              | 40087SS      | 1   |
| 16                            | crank shaft cotter pin                  | 40088SS      | 1   |
| 17                            | link cotter pin                         | 40088SS      | 1   |
| 18                            | EZ Boss-Lock™ cam arm                   | 40089SS      | 2   |
| 19A                           | cam gasket Buna (for DBC61-200)         | 250-G-BU     | 1   |
| 19B                           | cam gasket FKM (for DBC62-200)          | 250-G-VI     | 1   |
|                               | cam gasket PTFE/silicone                | 250-0-11     | '   |
| 19C                           | (for DBC63-200)                         | 250-G-TES    | 1   |
| 19D                           | cam gasket EPR (for DBC64-200)          | 250-G-EPR    | 1   |
|                               | cam gasket PTFE/FKM                     |              |     |
| 19E                           | (for DBC66-200 & DBC67-200)             | 250-G-TFVI   | 1   |
| 20                            | poppet                                  | 40091SS      | 1   |
| 21                            | crank shaft                             | 40092SS      | 1   |
| 22                            | link arm                                | 40093SS      | 1   |
| 23                            | link washer                             | 40094SS      | 1   |
| 24                            | poppet screw PTFE O-ring                | 40095TF      | 1   |
| 25                            | cylinder spring                         | DBCxx-200RK8 | 1   |
| 26                            | set screw                               | 40097SS      | 1   |
| 27                            | poppet screw (round head)               | 40098SS      | 1   |
| 28                            | lock washer                             | 40090SS      | 1   |
| 29                            | socket head cap screw                   | 40100SS      | 1   |
| 30                            | cam arm spring pin                      | 40100SS      | 2   |
| 50                            | nose seal (for DBC63-200, DBC66-200     | 7010100      |     |
| 31                            |   | 40170TF      | 1   |

#### Renair Kits

| Repair Kits                                 |   |                           |
|---|---|---------------------------|
| Part #                                      | Description   | Includes<br>Item #        |
| DBCx1-200RK1<br>(Buna-N)                    | Buna cam gasket, PTFE O-ring (for DBC61-200)  | 4A, 5,<br>13A, 19A,<br>24 |
| DBCx2-200RK1<br>(FKM)                       | seal kit, FKM crank shaft O-ring, PTFE stuffing box O-ring, FKM body O-ring, FKM cam gasket, PTFE O-ring (for DBC62-200)                      | 4B, 5,<br>13B, 19B,<br>24 |
| DBCx3-200RK1<br>(PTFE/silicone<br>and FFKM) | seal kit, FFKM crank shaft O-ring, PTFE stuffing box O-ring, PTFE/silicone body O-ring, PTFE/silicone cam gasket, PTFE O-ring (for DBC63-200) | 4C, 5,<br>13C, 19C,<br>24 |
| DBCx4-200RK1<br>(EPDM)                      | seal kit, EPDM crank shaft O-ring, PTFE stuffing box O-ring, EPDM body O-ring, EPR cam gasket, PTFE O-ring (for DBC64-200)                    | 4D, 5,<br>13D, 19D,<br>24 |
| DBCx6-200RK1<br>(FFKM & PTFE/<br>FKM)       | seal kit, FFKM crank shaft O-ring, PTFE stuffing box O-ring, FFKM body O-ring, PTFE/FKM cam gasket, PTFE O-ring (for DBC66-200)               | 4C, 5,<br>13E, 19E,<br>24 |
| DBCx7-200RK1<br>(FFKM & PTFE/<br>FKM)       | seal kit, FFKM crank shaft O-ring, PTFE stuffing box O-ring, PTFE/FKM body O-ring, PTFE/FKM cam gasket, PTFE O-ring (for DBC67-200)           | 4C, 5, 13F,<br>19E, 24    |
| DBC61-200RK2                                | Buna seal cylinder, PTFE buttons and PTFE bushing (for DBC61-200)   | 9A, 10, 12                |
| DBC62-200RK2                                | FKM seal cylinder, PTFE buttons and PTFE bushing (for DBC62-200)  | 9B, 10, 12                |
| DBCx3-200RK2                                | (for DBC63-200, DBC66-200 & DBC67-200)  | 10, 12, 31                |
| DBC64-200RK2                                | EPDM seal cylinder, PTFE buttons and PTFE bushing (for DBC64-200)   | 9D, 10, 12                |
| DBCxx-200RK4                                | link kit, link rivet, cotter pins, link washer,<br>link arm and yoke<br>(for all 2" aluminum)   | 11, 14, 16,<br>22, 23     |
| DBCxx-200RK5                                | stuffing box kit, stuffing box, PTFE O-ring & large crank shaft bearing (for all 2" aluminum)   | 2, 5, 6                   |
| DBCxx-200RK6                                | lever (handle) kit, lever, groove pin, lock<br>washer & socket head cap screw<br>(for all 2" aluminum)  | 8, 15, 28,<br>29          |
| DBCxx-200RK7                                | crank shaft kit, crank shaft, cotter pin & washer (for all 2" aluminum)   | 16, 21, 23                |
| DBCxx-200RK8                                | main cylinder spring  | 25                        |
| DBCxx-200RK9                                | (for all 2" aluminum)   | 20, 24, 26,<br>27         |
| DBCL-200                                    | optional add on padlock-able lever kit,<br>handle (for all 2")  | not<br>illustrated        |

#### 2" stainless coupler **Bill of Materials** DBC7x-200

Item #

23

24

25

26

27

28

29

30

31

link washer

cylinder spring

lock washer

poppet screw PTFE O-ring

poppet screw (round head)

nose seal (for DBC73-200, DBC76-200

socket head cap screw

cam arm spring pin

and DBC77-200)

#### Refer to drawing on page 112.

Description

DBC Cam and Groove Dry Disconnects 2" Stainless Couplers

Qty

Part #

|     |   |           | -1-5 |
|-----|---|-----------|------|
| 1   | body  |           | 1    |
| 2   | stuffing box  | 40074SS   | 1    |
| 3   | back up ring  | 40075TF   | 1    |
| 4A  | crank shaft O-ring Buna (for DBC71-200)                       | 40076BN   | 1    |
| 4B  | crank shaft O-ring FKM (for DBC72-200)                        | 40076VI   | 1    |
| 4C  | crank shaft O-ring FFKM (for DBC73-200, DBC77-200, DBC76-200) | 40076KR   | 1    |
| 4D  | crank shaft O-ring EPDM (for DBC74-200)                       | 40076EP   | 1    |
| 5   | stuffing box PTFE O-ring                                      | 40077TF   | 1    |
| 6   | large crank shaft bearing                                     | 40078FG   | 1    |
| 7   | small crank shaft bearing                                     | 40079SS   | 1    |
| 8   | lever (handle)  | 40080SS   | 1    |
| 9A  | seal cylinder (for DBC71-200)                                 | 40081SSBN | 1    |
| 9B  | seal cylinder (for DBC72-200)                                 | 40081SSVI | 1    |
| 9C  | seal cylinder (for DBC73-200, DBC76-200, DBC77-200)           | 40168SS   | 1    |
| 9D  | seal cylinder (for DBC74-200)                                 | 40081SSEP | 6    |
| 10  | PTFE button   | 40082TF   | 1    |
| 11  | yoke  | 40083SS   | 1    |
| 12  | PTFE bushing  | 40084TF   | 1    |
| 13A | body O-ring Buna (for DBC71-200)                              | 40085BN   | 1    |
| 13B | body O-ring FKM (for DBC72-200)                               | 40085VI   | 1    |
| 13C | body O-ring PTFE/silicone (for DBC73-200)                     | 40085TS   | 1    |
| 13D | body O-ring EPDM (for DBC74-200)                              | 40085EP   | 1    |
| 13E | body O-ring FFKM (for DBC76-200)                              | 40085KR   | 1    |
| 13F | body O-ring PTFE/FKM (DBC77-200)                              | 40085TV   | 1    |
| 14  | link rivet  | 40086SS   | 1    |
| 15  | groove pin  | 40087SS   | 1    |
| 16  | crank shaft cotter pin  | 40088SS   | 1    |
| 17  | link cotter pin   | 40088SS   | 2    |
| 18  | EZ Boss-Lock™ cam arm   | 40089SS   | 1    |
| 19A | cam gasket Buna (for DBC71-200)                               | 250-G-BU  | 1    |
| 19B | cam gasket FKM (for DBC72-200)                                | 250-G-VI  | 1    |
| 19C | cam gasket PTFE/silicone (for DBC73-200)                      | 250-G-TES | 1    |
| 19D | cam gasket EPR (for DBC74-200)                                | 250-G-EPR | 1    |
| 19E | cam gasket PTFE/FKM (for DBC76-200, DBC77-200)                | 250-G-TEV | 1    |
| 20  | poppet  | 40091SS   | 1    |
| 21  | crank shaft   | 40092SS   | 1    |
| 22  | link arm  | 40093SS   | 1    |
| 00  | Partitional design  | 4000400   | 4    |

#### Repair Kits

| Repair Kits                                 |   |                           |
|---|---|---------------------------|
| Part #                                      | Description   | Includes<br>Item #        |
| <b>DBCx1-200RK1</b> (Buna-N)                | seal kit, Buna crank shaft O-ring, PTFE stuffing box O-ring, Buna body O-ring, Buna cam gasket, PTFE O-ring (for DBC71-200)                   | 4A, 5,<br>13A, 19A,<br>24 |
| <b>DBCx2-200RK1</b> (FKM)                   | seal kit, FKM crank shaft O-ring, PTFE<br>stuffing box O-ring, FKM body O-ring, FKM<br>cam gasket, PTFE O-ring (for DBC72-200)                | 4B, 5,<br>13B, 19B,<br>24 |
| DBCx3-200RK1<br>(PTFE/silicone<br>and FFKM) | seal kit, FFKM crank shaft O-ring, PTFE stuffing box O-ring, PTFE/silicone body O-ring, PTFE/silicone cam gasket, PTFE O-ring (for DBC73-200) | 4C, 5,13C,<br>19C, 24     |
| DBCx4-200RK1<br>(EPDM)                      | seal kit, EPDM crank shaft O-ring, PTFE<br>stuffing box O-ring, EPDM body O-ring, EPR<br>cam gasket, PTFE O-ring (for DBC74-200)              | 4D, 5,<br>13D, 19D,<br>24 |
| DBCx6-200RK1<br>(FFKM & PTFE/<br>FKM)       | seal kit, FFKM crank shaft O-ring, PTFE stuffing box O-ring, FFKM body O-ring, PTFE/FKM cam gasket, PTFE O-ring (for DBC76-200)               | 4C, 5,<br>13E, 19E,<br>24 |
| DBCx7-200RK1<br>(PTFE/FKM<br>and FFKM)      | seal kit, FFKM crank shaft O-ring, PTFE stuffing box O-ring, PTFE/FKM body O-ring, PTFE/FKM cam gasket, PTFE O-ring (for DBC77-200)           | 4C, 5, 13F,<br>19E, 24    |
| DBC71-200RK2                                | Buna seal cylinder, PTFE buttons and PTFE bushing (for DBC71-200)   | 9A, 10, 12                |
| DBC72-200RK2                                | FKM seal cylinder, PTFE buttons and PTFE bushing (for DBC72-200)  | 9B, 10, 12                |
| DBCx3-200RK2                                | PTFE nose seal, PTFE buttons and PTFE bushing (for DBC73-200, DBC76-200 & DBC77-200)  | 10, 12, 31                |
| DBC74-200RK2                                | EPDM seal cylinder, PTFE buttons & PTFE bushing (for DBC74-200)   | 9D, 10, 12                |
| DBCxx-200RK4                                | link kit, link rivet, cotter pins, link washer, link arm, yoke (for all 2" SS)  | 11, 14, 16,<br>17, 22, 23 |
| DBCxx-200RK5                                | stuffing box kit, stuffing box, PTFE O-ring and large crank shaft bearing (for all 2" SS)   | 2, 5, 6                   |
| DBCxx-200RK6                                | lever (handle) kit, lever, groove pin, lock<br>washer and socket head cap screw<br>(for all 2" SS)  | 8, 15, 28,<br>29          |
| DBCxx-200RK7                                | crank shaft kit, crank shaft, cotter pin and washer (for all 2" SS)   | 16, 21, 23                |
| DBCxx-200RK8                                |   | 25                        |
| DBCxx-200RK9                                | poppet kit, poppet, round head screw, set<br>screw and PTFE O-ring<br>(for all 2" SS)   | 20, 24, 26,<br>27         |
| DBCL-200                                    | optional add on padlockable lever kit (handle) (for all 2")   | not<br>illustrated        |

Product instruction sheets and technical data can be viewed on our website at dixonvalve.com

1

1

1

1

1

1

2

1

40094SS

40095TF

40096SS

40097SS

40098SS

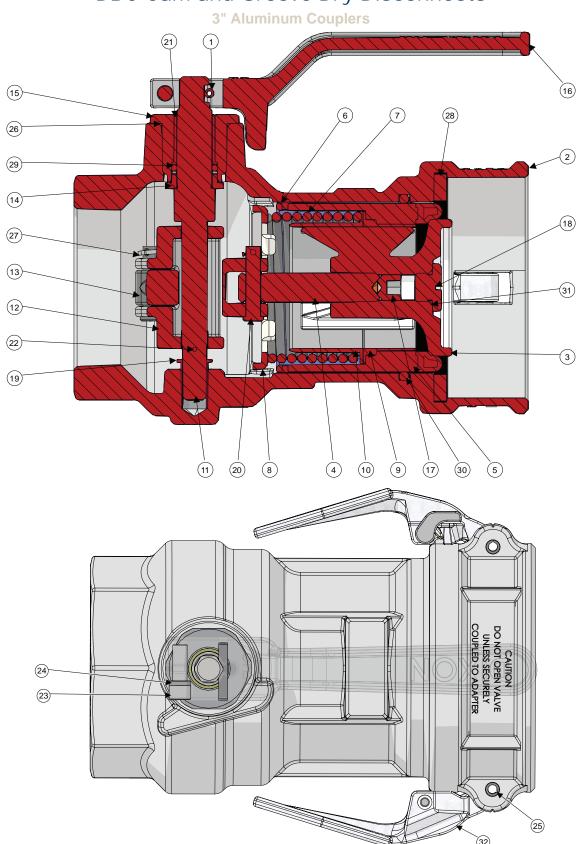
40099SS

40100SS

40101SS

40170TF

#### DBC Cam and Groove Dry Disconnects



### Petroleum eplacement Par

#### Dry Disconnects

#### DBC Cam and Groove Dry Disconnects

3" aluminum coupler Bill of Materials 3" Aluminum Couplers

DBC6x-300

#### Refer to drawing on page 117. Qty Item # Description Part # groove pin 1 40087SS 1 2 body 1 40195SS 3 poppet 1 40196SS 4 stem 1 5A seal cylinder (for DBC61-300) 40197ALBN 1 seal cylinder (for DBC62-300) 40197ALVI 1 5B seal cylinder (for DBC63-300, 5C 1 40304SS DBC66-300 & DBC67-300) 5D seal cylinder (for DBC64-300) 40197SSEP 1 5E seal cylinder (for DBC69-300) 40197SSVB 1 6 PTFE button 40198TF 8 cylinder spring DBCxx-300RK8 1 8 poppet spring seat 40200AL 1 q PTFE bushing 40201TF 1 10 poppet spring guide 40202SS 1 11 shaft 40203SS 1 12 yoke 40204SS 1 13 link 40205SS 1 1 14 shaft retainer 40206SS stuffing box 40207SS 1 15 16 lever (handle) 40208SS 1 17 40209SS 1 set screw 18 poppet screw 40210SS 1 PTFE bearing 40211TF 1 19 2 20 clevis pin 40212SS 21 bearing 40213FG 1 1 22 cotter pin 40214SS 23 lever (handle) screw 40216SS 1 lever (handle) lock washer 24 40217SS 1 25 2 cam arm pin 40218SS PTFE O-ring 26 40219TF 1 27 40221SS 2 cotter pin 28A Buna coupler gasket (for DBC61-300) DBCx1-300RK3 1 28B FKM coupler gasket (for DBC62-300) DBCx2-300RK3 PTFE/silicone coupler gasket (for DBCx3-300RK3 28C DBC63-300) 28D EPDM coupler gasket (for DBC64-300) DBCx4-300RK3 PTFE/FKM coupler gasket 28E 40222TV 1 (for DBC66-300 & DBC67-300) 28F FKM-B coupler gasket (for DBC69-300) DBCx9-300RK3 29A Buna O-ring (for DBC61-300) 40223BN 1 FKM O-ring (for DBC62-300) 40223VI 1 29B FFKM O-ring (for DBC63-300, 29C 40223KR 1 DBC66-300 & DBC67-300) 29D EPDM O-ring (for DBC64-300) 40223EP 1 29E FKM-B O-ring (for DBC69-300) 40223VB 1 30A Buna O-ring (for DBC61-300) 40224BN 1 30B FKM O-ring (for DBC62-300) 40224VI 1 PTFE/silicone O-Ring (for DBC63-300) 30C 40224TS 1 EPDM O-ring (for DBC64-300) 30D 40224EP 1 30E FFKM O-ring (for DBC66-300) 40224KR 1 PTFE/FKM O-ring (for DBC67-300) 30F 40224TV 1 30G FKM-B O-ring (for DBC69-300) 40224VB 1 PTFE O-ring 40235TF 31 1 32 locking paddle arm 40285SSS 2 nose seal (for DBC63-300, DBC66-300 33 40305TF 1 & DBC67-300)

#### **Repair Kits**

| Repair Kits                                  |   |                                 |
|--|---|---------------------------------|
| Part #                                       | Description   | Includes<br>Item #              |
| DBCx1-300RK1<br>(Buna-N)                     | seal kit, Buna stuffing box O-ring, PTFE stuffing box to body O-ring, Buna body O-ring, Buna cam gasket, PTFE Poppet screw O-ring (for DBC61-300)                   | 26, 28A,<br>29A, 30A,<br>31     |
| <b>DBCx2-300RK1</b> (FKM)                    | cam gasket, PTFE Poppet screw O-ring (for DBC62-300)  | 26, 28B,<br>29B, 30B,<br>31     |
| DBCx3-300RK1<br>(PTFE/silicone<br>& FFKM)    | seal kit, FFKM stuffing box O-ring, PTFE stuffing box to body O-ring, PTFE/silicone body O-ring, PTFE/silicone cam gasket, PTFE Poppet screw O-ring (for DBC63-300) | 26, 28C,<br>29C, 30C,<br>31     |
| DBCx4-300RK1<br>(EPDM)                       | seal kit, EPDM stuffing box O-ring, PTFE stuffing box to body O-ring, EPDM body O-ring, EPDM cam gasket, PTFE Poppet screw O-ring (for DBC64-300)                   | 26, 28D<br>29D, 30D,<br>31      |
| DBCx6-300RK1<br>(FFKM and<br>PTFE/FKM)       | seal kit, FFKM stuffing box O-ring, PTFE stuffing box to body O-ring, FFKM body O-ring, PTFE/FKM cam gasket, PTFE poppet screw O-ring (for DBC66-300)               | 26, 28E<br>29C, 30E,<br>31      |
| DBCx7-300RK1<br>(PTFE/FKM<br>and FFKM)       | seal kit, FFKM stuffing box O-ring, PTFE stuffing box to body O-ring, PTFE/FKM body O-ring, PTFE/FKM cam gasket, PTFE Poppet screw O-ring (for DBC67-300)           | 26, 28E<br>29C, 30F,<br>31      |
| <b>DBCx9-300RK1</b> (FKM-B)                  | seal kit, FKM-B stuffing box O-ring, PTFE stuffing box to body O-ring, FKM-B body O-ring, FKM-B cam gasket, PTFE Poppet screw O-ring (for DBC69-300)                | 26, 28F<br>29E, 30G,<br>31      |
| DBC61-300RK2                                 | Buna seal cylinder, PTFE buttons and PTFE bushing (for DBC61-300)   | 5A, 6, 9                        |
| DBC62-300RK2                                 | FKM seal cylinder, PTFE buttons and PTFE bushing (for DBC62-300)  | 5B, 6, 9                        |
| DBCx3-300RK2                                 | PTFE nose seal, PTFE buttons and PTFE bushing (for DBC63-300, DBC66-300 & DBC67-300)  | 6, 9, 33                        |
| DBC64-300RK2                                 | EPDM seal cylinder, PTFE buttons and PTFE bushing (for DBC64-300)   | 5D, 6, 9                        |
| DBC69-300RK2                                 | FKM-B seal cylinder, PTFE buttons and PTFE bushing (for DBC69-300)  | 5E, 6, 9                        |
| DBCx2-300RK3<br>DBCx3-300RK3<br>DBCx4-300RK3 | Buna coupler gasket FKM coupler gasket PTFE/silicone coupler gasket EPDM coupler gasket FKM-B coupler gasket  | 28A<br>28B<br>28C<br>28D<br>28F |
| DBCxx-300RK4                                 | link kit, clevis pin, cotter pin, stem, link and yoke (for all 3" aluminum)   | 4, 12, 13,<br>20, 22, 27        |
| DBCxx-300RK5                                 | stuffing box kit, stuffing box, PTFE O-ring & bearing   | 15, 21, 26                      |
| DBCxx-300RK6                                 | (for all 3" aluminum)   | 1, 16, 23,<br>24                |
| DBCxx-300RK7                                 | shaft kit, shaft, cotter pin, bearing, shaft retainer   | 11, 14, 19,<br>22               |
| DBCxx-300RK8 DBCxx-300RK9                    | main cylinder spring poppet kit, poppet and screw, set screw and PTFE O-ring  | 7<br>3, 17, 18,<br>31           |

### DBC Cam and Groove Dry Disconnects 3" Stainless Couplers

3" stainless coupler **Bill of Materials** DBC7x-300v

| Refer to drawing on page 117. |   |              |   |  |
|-------------------------------|---|--------------|---|--|
| Item #                        | # Description Part #                                      |              |   |  |
| 1                             | groove pin  | 40087SS      | 1 |  |
| 2                             | body  |              | 1 |  |
| 3                             | poppet  | 40195SS      | 1 |  |
| 4                             | stem  | 40196SS      | 1 |  |
| 5A                            | seal cylinder Buna (for DBC71-300)                        | 40197SSBN    | 1 |  |
| 5B                            | seal cylinder FKM (for DBC72-300)                         | 40197SSVI    | 1 |  |
| 5C                            | stainless cylinder (for DBC73-300, DBC76-300 & DBC77-300) | 40304SS      | 1 |  |
| 5D                            | seal cylinder EPDM (for DBC74-300)                        | 40197SSEP    | 1 |  |
| 5E                            | seal cylinder FKM-B (for DBC79-300)                       | 40197SSVB    | 1 |  |
| 6                             | PTFE button   | 40198TF      | 8 |  |
| 7                             | cylinder spring   | DBCxx-300RK8 | 1 |  |
| 8                             | spring seat   | 40200SS      | 1 |  |
| 9                             | PTFE bushing  | 40201TF      | 1 |  |
| 10                            | spring guide  | 40202SS      | 1 |  |
| 11                            | shaft   | 40203SS      | 1 |  |
| 12                            | yoke  | 40204SS      | 1 |  |
| 13                            | link arm  | 40205SS      | 1 |  |
| 14                            | shaft retainer  | 40206SS      | 1 |  |
| 15                            | stuffing box  | 40207SS      | 1 |  |
| 16                            | lever (handle)  | 40208SS      | 1 |  |
| 17                            | set screw   | 40209SS      | 1 |  |
| 18                            | poppet screw  | 40210SS      | 1 |  |
| 19                            | PTFE bearing  | 40211TF      | 1 |  |
| 20                            | clevis pin  | 40212SS      | 2 |  |
| 21                            | bearing   | 40213FG      | 1 |  |
| 22                            | cotter pin  | 40214SS      | 1 |  |
| 23                            | lever (handle) screw                                      | 40216SS      | 1 |  |
| 24                            | lever (handle) lock washer                                | 40217SS      | 1 |  |
| 25                            | cam arm pin   | 40218SS      | 2 |  |
| 26                            | PTFE O-ring   | 40219TF      | 1 |  |
| 27                            | cotter pin  | 40221SS      | 2 |  |
| 28A                           | Buna coupler gasket (for DBC71-300)                       | DBCx1-300RK3 | 1 |  |
| 28B                           | FKM coupler gasket (for DBC72-300)                        | DBCx2-300RK3 | 1 |  |
| 28C                           | PTFE/silicone coupler gasket (for DBC73-300)              | 40222TS      | 1 |  |
| 28D                           | EPDM coupler gasket (for DBC74-300)                       | 40222EP      | 1 |  |
| 205                           | PTFE/FKM coupler gasket                                   | 40000T\      | 4 |  |
| 28E                           | (for DBC76-300 & DBC77-300)                               | 40222TV      | 1 |  |
| 28F                           | FKM-B coupler gasket (for DBC79-300)                      | DBCx9-300RK3 | 1 |  |
| 29A                           | Buna O-ring (for DBC71-300)                               | 40223BN      | 1 |  |
| 29B                           | FKM O-ring (for DBC72-300)                                | 40223VI      | 1 |  |
| 29C                           | FFKM O-ring (for DBC73-300, DBC76-300 and DBC77-300)      | 40223KR      | 1 |  |
| 29D                           | EPDM O-ring (for DBC74-300)                               | 40223EP      | 1 |  |
| 29E                           | FKM-B O-ring (for DBC79-300)                              | 40223LP      | 1 |  |
| 30A                           | Buna O-ring (for DBC71-300)                               | 40224BN      | 1 |  |
| 30B                           | FKM O-ring (for DBC72-300)                                | 40224VI      | 1 |  |
| 30C                           | PTFE/silicone O-ring (for DBC73-300)                      | 40224TS      | 1 |  |
| 30D                           | EPDM O-ring (for DBC74-300)                               | 40224FP      | 1 |  |
| 30E                           | FFKM O-ring (for DBC76-300)                               | 40224KR      | 1 |  |
| 30F                           | PTFE/FKM O-ring (for DBC77-300)                           | 40224TV      | 1 |  |
| 30G                           | FKM-B O-ring (for DBC79-300)                              | 40224VB      | 1 |  |
| 31                            | PTFE O-ring   | 40235TF      | 1 |  |
| 32                            | locking paddle arm  | 40285SSS     | 2 |  |
|                               | PTFE nose seal (for DBC73-300,                            |              |   |  |
| 33                            | DBC76-300 and DBC77-300)                                  | 40305TF      | 1 |  |

#### Donair Kite

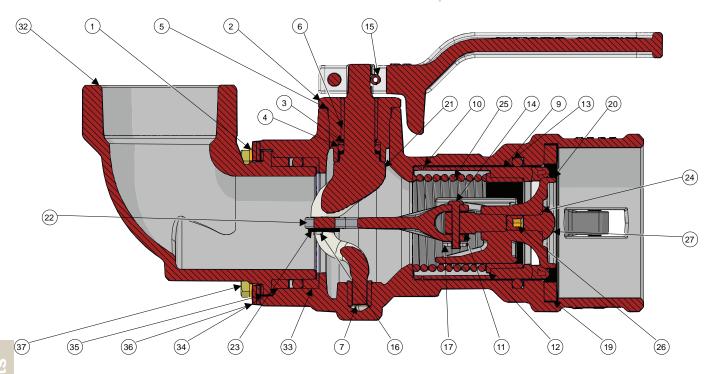
| Repair Kits                               |   |                                 |
|---|---|---------------------------------|
| Part #                                    | Description   | Includes<br>Item #              |
| DBCx1-300RK1<br>(Buna-N)                  | seal kit, Buna stuffing box O-ring, PTFE stuffing box to body O-ring, Buna body O-ring, Buna cam gasket, PTFE poppet screw O-ring (for DBC71-300)                   | 26, 28A,<br>29A, 30A,<br>31     |
| DBCx2-300RK1<br>(FKM)                     | seal kit, FKM stuffing box O-ring, PTFE stuffing box to body O-ring, FKM body O-ring, FKM cam gasket, PTFE poppet screw O-ring (for DBC72-300)                      | 26, 28B,<br>29B, 30B,<br>31     |
| DBCx3-300RK1<br>(PTFE/silicone &<br>FFKM) | seal kit, FFKM stuffing box O-ring, PTFE stuffing box to body O-ring, PTFE/silicone body O-ring, PTFE/silicone cam gasket, PTFE poppet screw O-ring (for DBC73-300) | 26, 28C,<br>29C, 30C,<br>31     |
| DBCx4-300RK1<br>(EPDM)                    | seal kit, EPDM stuffing box O-ring, PTFE stuffing box to body O-ring, EPDM body O-ring, EPDM cam gasket, PTFE poppet screw O-ring (for DBC74-300)                   | 26, 28D,<br>29D, 30D,<br>31     |
| DBCx6-300RK1<br>(FFKM and<br>PTFE/FKM)    | seal kit, FFKM stuffing box O-ring, PTFE stuffing box to body O-ring, FFKM body O-ring, PTFE/FKM cam gasket, PTFE poppet screw O-ring (for DBC76-300)               | 26, 28E,<br>29C, 30E,<br>31     |
| DBCx7-300RK1<br>(PTFE/FKM &<br>FFKM)      | seal kit, FFKM stuffing box O-ring, PTFE stuffing box to body O-ring, PTFE/FKM body O-ring, PTFE/FKM cam gasket, PTFE poppet screw O-ring (for DBC77-300)           | 26, 28E,<br>29C, 30F,<br>31     |
| <b>DBCx9-300RK1</b> (FKM-B)               | seal kit, FKM-B stuffing box O-ring, PTFE stuffing box to body O-ring, FKM-B body O-ring, FKM cam gasket, PTFE poppet screw O-ring (for DBC79-300)                  | 26, 28F,<br>29E, 30G,<br>31     |
| DBC69-300RK2                              | FKM-B seal cylinder, PTFE buttons and PTFE bushing (for DBC79-300)  | 5E, 6, 9                        |
| DBC71-300RK2                              | Buna seal cylinder, PTFE buttons and PTFE bushing (for DBC71-300)   | 5A, 6, 9                        |
| DBC72-300RK2                              | FKM seal cylinder, PTFE buttons and PTFE bushing (for DBC72-300)  | 5B, 6, 9                        |
| DBCx3-300RK2                              | PTFE nose seal, PTFE buttons & PTFE bushing (for DBC73-300, DBC76-300 and DBC77-300)  | 6, 9, 33                        |
| DBC74-300RK2                              | EPDM seal cylinder, PTFE buttons and PTFE bushing (for DBC74-300)   | 5D, 6, 9                        |
| DBCX1-300RK3                              | 1 5   | 28A                             |
| DBCx2-300RK3 DBCxx-300RK4                 | FKM coupler gasket<br>link kit, clevis pin, cotter pin, stem, link arm<br>and yoke (for all 3" SS)  | 28B<br>4, 12, 13,<br>20, 22, 27 |
| DBCxx-300RK5                              | stuffing box kit, stuffing box, PTFE O-ring & bearing (for all 3" SS)   | 15, 21, 26                      |
| DBCxx-300RK6                              | lever (handle) kit, lever, groove pin, lock<br>washer and socket head cap screw (for all 3"<br>SS)  | 1, 16, 23,<br>24                |
| DBCxx-300RK7                              | shaft kit. shaft, cotter pin bearing, shaft retainer, (for all 3" SS)   | 11, 14, 19,<br>22               |
| DBCxx-300RK8 DBCxx-300RK9                 | main cylinder spring<br>poppet kit, poppet, poppet screw, set screw<br>and PTFE O-ring (for all 3" SS)  | 7<br>3, 17, 18,<br>31           |

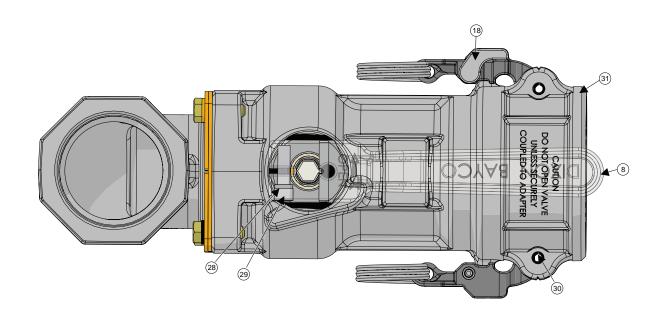
# Petroleum

#### Dry Disconnects

#### DBS 90° Swivel Cam and Groove Dry Disconnects

2" Aluminum 90° Swivel Couplers





Section A - A

# eplacement Pa

#### Dry Disconnects

#### DBS 90° Swivel Cam and Groove Dry Disconnects

2" Aluminum 90° Swivel Couplers

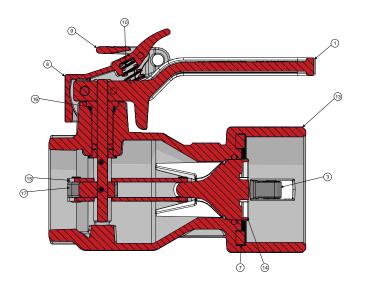
2" aluminum 90° coupler Bill of Materials DBS6x-200

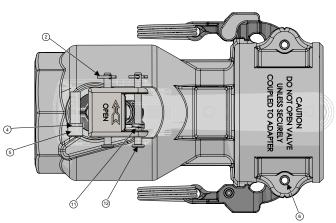
#### **Repair Kits**

| Item #    | Description                             | Part #             | Qty |
|-----------|---|--------------------|-----|
| 1         | lock washer                             | 10111              | 4   |
| 2         | stuffing box                            | 40074SS            | 1   |
| 3         | back up ring                            | 40075TF            | 1   |
| 4A        | crank shaft O-ring Buna (for DBS61-200) | 40076BN            | 1   |
| 4B        | crank shaft O-ring FKM (for DBS62-200)  | 40076VI            | 1   |
| 40        | crank shaft O-ring FFKM                 | 4007CVD            | 4   |
| 4C        | (for DBS63-200)                         | 40076KR            | 1   |
| 5         | stuffing box PTFE O-ring                | 40077TF            | 1   |
| 6         | large crank shaft bearing               | 40078FG            | 1   |
| 7         | small crank shaft bearing               | 40079SS            | 1   |
| 8         | lever (handle)                          | 40080SS            | 1   |
| 9A        | seal cylinder (for DBS61-200)           | 40081ALBN          | 1   |
| 9B        | seal cylinder (for DBS62-200)           | 40081ALVI          | 1   |
| 9C        | seal cylinder (for DBS63-200)           | 40168SS            | 1   |
| 10        | PTFE button                             | 40082TF            | 6   |
| 11        | yoke                                    | 40083SS            | 1   |
| 12        | PTFE bushing                            | 40084TF            | 1   |
|           | body and swivel Buna O-ring             |                    | -   |
| 13A       | (for DBS61-200)                         | 40085BN            | 2   |
|           | body and swivel FKM O-ring              |                    |     |
| 13B       | (for DBS62-200)                         | 40085VI            | 2   |
|           | body and swivel PTFE/silicone O-ring    |                    |     |
| 13C       | (for DBS63-200)                         | 40085TS            | 2   |
| 14        | link rivet                              | 40086SS            | 1   |
| 15        | groove pin                              | 40087SS            | 1   |
| 16        | crank shaft cotter pin                  | 40088SS            | 1   |
| 17        | link cotter pin                         | 40088SS            | 1   |
| 18        | EZ Boss-Lock™ cam arm                   | 40089SS            | 2   |
| 19A       | cam gasket Buna (for DBS61-200)         | 250-G-BU           | 1   |
| 19B       | cam gasket FKM (for DBS62-200)          | 250-G-VI           | 1   |
| -         | cam gasket PTFE/silicone                | 200 0 11           | '   |
| 19C       | (for DBS63-200)                         | 250-G-TES          | 1   |
| 20        | poppet                                  | 40091SS            | 1   |
| 21        | crank shaft                             | 40092SS            | 1   |
| 22        | link arm                                | 40093SS            | 1   |
| 23        | link washer                             | 40094SS            | 1   |
| 24        | poppet screw PTFE O-ring                | 4009433<br>40095TF | 1   |
| 25        | cylinder spring                         | DBCxx-200RK8       | 1   |
| 26        |   | 40097SS            | 1   |
|           | set screw                               |                    | -   |
| 27        | poppet screw (round head)               | 40098SS            | 1   |
| 28        | lock washer                             | 40099SS            | 1   |
| 29        | socket head cap screw                   | 40100SS            | 1   |
| 30        | cam arm spring pin                      | 40101SS            | 2   |
| 31        | main body                               |                    | 1   |
| 32        | elbow body                              | 4040040            | 1   |
| 33        | bottom bearing                          | 40106AC            | 1   |
| 34        | top bearing                             | 40108AC            | 1   |
| 35        | washer                                  | 40109AC            | 1   |
| 36        | flange retainer                         | 40110ST            | 4   |
| 37        | screw                                   | 40111SS            | 4   |
| not       | nose seal (for DBS63-200)               | 40170TF            | 1   |
| lustrated | 11000 3001 (101 0000-200)               | 4011011            |     |

| Part #        | Description   | Includes<br>Item #              |
|---------------|---|---------------------------------|
| DBS61-200RK1  | seal kit, Buna crank shaft O-ring,PTFE<br>stuffing box O-ring, Buna and Swivel body<br>O-rings, Buna cam gasket, PTFE O-ring (for<br>DBS61-200)             | 4A, 5,<br>13A, 19A,<br>24       |
| DBS62-200RK1  | seal kit, FKM crank shaft O-ring,PTFE stuffing box O-ring, FKM body and swivel O-rings, FKM cam gasket, PTFE O-ring (for DBS62-200)                         | 4B, 5,<br>13B, 19B,<br>24       |
| DBS63-200RK1  | seal kit, Kamrez® crank shaft O-ring,PTFE stuffing box O-ring, PTFE/silicone body and swivel O-rings, PTFE/silicone cam gasket, PTFE O-ring (for DBS63-200) | 4C, 5,<br>13C, 19C,<br>24       |
| DBS61-200RK4  | swivel rebuild kit, Buna body O-ring, top and bottom bearings, washer, flange retainers and screws (for DBS61-200)  | 13A, 33,<br>34, 35,<br>36, 37   |
| DBS62-200RK4  | swivel rebuild kit, FKM body O-ring, top and bottom bearings, washer, flange retainers and screws (for DBS62-200)   | 13B, 33,<br>34, 35,<br>36, 37   |
| DBS63-200RK4  | swivel rebuild kit, PTFE/silicone body O-ring, top and bottom bearings, washer, flange retainers and screws (for DBS63-200)                                 | 13C, 33,<br>34, 35,<br>36, 37   |
| DBS61-200RK10 | swivel seal kit, Buna body O-ring, top and bottom bearings (for DBS61-200)  | 13A, 33,<br>34, 35              |
| DBS62-200RK10 | swivel seal kit, FKM body O-ring, top and bottom bearings (for DBS62-200)   | 13B, 33,<br>34, 35              |
| DBS63-200RK10 | swivel seal kit, PTFE/silicone body O-ring,<br>top and bottom bearings<br>(for DBS63-200)   | 13C, 33,<br>34, 35              |
| DBC61-200RK2  | bushing (for DB361-200)   | 9A, 10, 12                      |
| DBC62-200RK2  | FKM seal cylinder, PTFE buttons and PTFE bushing (for DBS62-200)  | 9B, 10, 12                      |
| DBCx3-200RK2  | PTFE nose seal, PTFE buttons and PTFE bushing (for DBS63-200)   | 10, 12, + items not illustrated |
| DBCxx-200RK4  | link kit, link rivet, cotter pins, link washer, link arm and yoke (for all 2")  | 11, 14,<br>16, 17,<br>22, 23    |
| DBCxx-200RK5  | stuffing box kit, stuffing box, PTFE O-ring and large crank shaft bearing (for all 2")  | 2, 5, 6                         |
| DBCxx-200RK6  | lever (handle) kit, lever, groove pin, lock<br>washer and socket head cap screw<br>(for all 2")   | 8, 15, 28,<br>29                |
| DBCxx-200RK7  | crank shaft kit, crank shaft, cotter pin and washer (for all 2")  | 16, 21, 23                      |
| DBCxx-200RK8  | main cylinder spring (for all 2")   | 25                              |
| DBCxx-200RK9  | poppet kit, poppet, round head screw, set screw & PTFE O-ring (for all 2")  | 20, 24,<br>26, 27               |
| DBCL-200      | optional add on padlockable lever kit,<br>handle (for all 2")   | not<br>illustrated              |

### D2C Cam and Groove Actuator Style Dry Disconnects 1½" Stainless Couplers





### 11/2" Stainless Coupler

Bill of Materials D2C7x-150

lever

Item #

21

22

23A

23B

23C

23D

| 2  | lever cotter pin                                   | 40088SS            | 2 |
|----|--|--------------------|---|
| 3  | EZ-Boss lock cam arm                               | 40089SS            | 2 |
| 4  | lock washer  | 40099SS            | 1 |
| 5  | socket head screw                                  | 40100SS            | 1 |
| 6  | cam arm spring pin                                 | 40101SS            | 2 |
| 7A | cam gasket Buna (for D2C71-150)                    | 200-G-BU           | 1 |
| 7B | cam gasket FKM (for D2C72-150)                     | 200-G-VI           | 1 |
| 7C | cam gasket PTFE/silicone                           | 200-G-TES          | 1 |
| 7D | (for D2C73-150)<br>cam gasket EPDM (for D2C74-150) | 200-G-EPDM         | 1 |
| 8  | lever latch  | 40225SS            | 1 |
| 9  | lever lock   | 40226SS            | 1 |
| 10 |  | 40230SS            | 1 |
| 11 | lever lock compression spring                      | 402303S<br>40231SS | 1 |
| 12 | lever lock torsion spring                          | 40237SS            | 2 |
| 13 | lever clevis pin                                   | 4023233            | 1 |
| 14 | body   | 4020700            | 1 |
| 15 | poppet   | 40287SS<br>40288SS |   |
|    | poppet link arm                                    |                    | 2 |
| 16 | bearing  | 40289FG            | 1 |
| 17 | poppet cam   | 40290SS            | 1 |
| 18 | poppet lever shaft                                 | 40291SS            | • |
| 19 | poppet link rivet                                  | 40292SS            | 2 |
| 20 | poppet lever shaft spring pin                      | 40293SS            | 2 |

poppet O-ring PTFE/FKM lever shaft O-ring Buna (for D2C71-150)

lever shaft O-ring FKM (for D2C72-150)

lever shaft O-ring FFKM (for D2C73-150)

lever shaft O-ring EPDM (for D2C74-150)

Description

Part #

40080SS

40294SS

40295TV

40296BN

40296VI

40296KR

40296EP

Qty

1

#### 2" Stainless Coupler **Bill of Materials** D2C7x-200

| Item # | Description                              | Part #     | Qty |
|--------|--|------------|-----|
| 1      | lever                                    | 40080SS    | 1   |
| 2      | lever cotter pin                         | 40088SS    | 2   |
| 3      | EZ-Boss lock cam arm                     | 40089SS    | 2   |
| 4      | lock washer                              | 40099SS    | 1   |
| 5      | socket head screw                        | 40100SS    | 1   |
| 6      | cam arm spring pin                       | 40101SS    | 2   |
| 7A     | cam gasket Buna (for D2C71-200)          | 250-G-BU   | 1   |
| 7B     | cam gasket FKM (for D2C72-200)           | 250-G-VI   | 1   |
| 7C     | cam gasket PTFE/silicone (for D2C73-200) | 250-G-TES  | 1   |
| 7D     | cam gasket EPDM (for D2C74-200)          | 250-G-EPDM | 1   |
| 8      | lever latch                              | 40225SS    | 1   |
| 9      | lever lock                               | 40226SS    | 1   |
| 10     | lever lock compression spring            | 40230SS    | 1   |
| 11     | lever lock torsion spring                | 40231SS    | 1   |
| 12     | lever clevis pin                         | 40232SS    | 2   |
| 13     | body                                     |            | 1   |
| 14     | poppet                                   | 40298SS    | 1   |
| 15     | poppet link arm                          | 40299SS    | 2   |
| 16     | bearing                                  | 40289FG    | 1   |
| 17     | poppet cam                               | 40300SS    | 1   |
| 18     | poppet lever shaft                       | 40291SS    | 1   |
| 19     | poppet link rivet                        | 40292SS    | 2   |
| 20     | poppet lever shaft spring pin            | 40293SS    | 2   |
| 21     | spacer                                   | 40294SS    | 1   |
| 22     | poppet O-ring PTFE/FKM                   | 40301TV    | 1   |
| 23A    | lever shaft O-ring Buna (for D2C71-200)  | 40296BN    | 1   |
| 23B    | lever shaft O-ring FKM (for D2C72-200)   | 40296VI    | 1   |
| 23C    | lever shaft O-ring FFKM (for D2C73-200)  | 40296KR    | 1   |
| 24D    | lever shaft O-ring EPDM (for D2C74-200)  | 40296EP    | 1   |

Product instruction sheets and technical data can be viewed on our website at dixonvalve.com

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# Conjugament Dari

#### **Dry Disconnects**

#### Dry Disconnect Bayonet Style Adapters

2" and 3" Adapters

#### 2" Stainless Adapter Bill of Materials BA3x-200

| Item # | Description                | Part #      | Qty |
|--------|----------------------------|-------------|-----|
| 1      | stainless body             | 40053SS     | 1   |
| 2      | brass poppet               | 40054BR     | 1   |
| 3      | stainless deflector        | 40055SS     | 1   |
| 4      | stainless spring           | 40056SS     | 1   |
| 5A     | Buna O-ring (for BA31-200) | BA31-200RK1 | 1   |
| 5B     | FKM O-ring (for BA32-200)  | BA32-200RK1 | 1   |

#### 3" Aluminum Adapter Bill of Materials BA6x-300

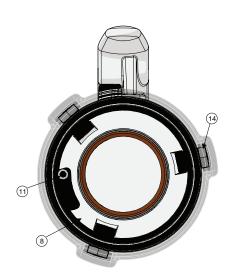
| Item # | Description                | Part #      | Qty |
|--------|----------------------------|-------------|-----|
| 1      | aluminum body              | 40278AL     | 1   |
| 2      | aluminum poppet            | 40279AL     | 1   |
| 3      | aluminum deflector         | 40280AL     | 1   |
| 4      | stainless steel spring     | 40281SS     | 1   |
| 5A     | Buna O-ring (for BA61-300) | BA31-300RK1 | 1   |
| 5B     | FKM O-ring (for BA62-300)  | BA32-300RK1 | 1   |

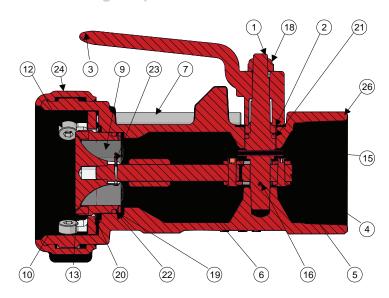
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#### 3" Bronze Adapter Bill of Materials BA3x-300

| Item # | Description                | Part #      | Qty |
|--------|----------------------------|-------------|-----|
| 1      | bronze body                | 40278BR     | 1   |
| 2      | bronze poppet              | 40279BR     | 1   |
| 3      | bronze deflector           | 40280BR     | 1   |
| 4      | stainless steel spring     | 40281SS     | 1   |
| 5A     | Buna O-ring (for BA31-300) | BA31-300RK1 | 1   |
| 5B     | FKM O-ring (for BA32-300)  | BA32-300RK1 | 1   |

### Dry Disconnect Bayonet Style Couplers 2" Straight Non-Swiveling Couplers



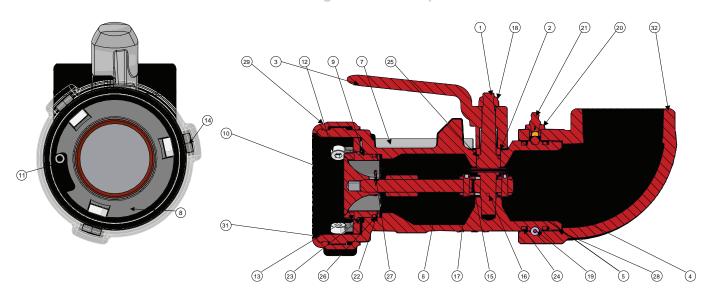


#### 2" Stainless Coupler **Bill of Materials** BC6x-200

| Item # | Description                       | Part #  | Qty |
|--------|-----------------------------------|---------|-----|
| 1      | lever shaft                       | 40138SS | 1   |
| 2      | lever shaft follower              | 40139SS | 1   |
| 3      | lever                             | 40140SS | 1   |
| 4      | poppet link arm                   | 40141SS | 1   |
| 5      | bent link                         | 40142SS | 2   |
| 6      | stem                              | 40143SS | 1   |
| 7      | interlocking pin                  | 40144SS | 1   |
| 8      | lock ring                         | 40145SS | 1   |
| 9      | nose piece                        | 40146HC | 1   |
| 10     | poppet                            | 40147CA | 1   |
| 11     | coiled pin                        | 40148SS | 1   |
| 12     | bayonet stud                      | 40149SS | 3   |
| 13A    | nose seal Buna (for BC61-200)     | 40150BN | 1   |
| 13B    | nose seal FKM (for BC62-200)      | 40150VI | 1   |
| 14     | jam nut                           | 40151SS | 3   |
| 15     | spring pin                        | 40152SS | 1   |
| 16     | coiled pin                        | 40153SS | 1   |
| 17     | rivet                             | 40154SS | 2   |
| 18     | lock nut                          | 40155SS | 1   |
| 19     | wave spring                       | 40159SS | 2   |
| 20     | wave spring washer                | 40160SS | 1   |
| 21A    | shaft O-ring Buna (for BC61-200)  | 40162BN | 1   |
| 21B    | shaft O-ring FKM (for BC62-200)   | 40162VI | 1   |
| 22A    | poppet O-ring Buna (for BC61-200) | 40163BN | 1   |
| 22B    | poppet O-ring FKM (for BC62-200)  | 40163VI | 1   |
| 23     | cotter pin                        | 40164SS | 1   |
| 24     | bumper ring                       | 40166VY | 1   |
| 25     | label                             | 40167AL | 1   |
| 26     | bodv                              |         | 1   |

# Petroleum

### Dry Disconnect Bayonet Style Couplers 2" 90° Straight Swivel Couplers



The 90° swivel coupler (BS series) is illustrated above. The straight swivel coupler (BSS series) uses the same components, except it does not have #21A grease nipple, it utilizes a #21B set screw plug.

#### Bill of Materials BS6x-200 and BSS6x-200

| Item # | Description               | Part #  | Qty |
|--------|---------------------------|---------|-----|
| 1      | lever shaft               | 40138SS | 1   |
| 2      | follower                  | 40139SS | 1   |
| 3      | lever (handle)            | 40140SS | 1   |
| 4      | link                      | 40141SS | 1   |
| 5      | belt link                 | 40142SS | 2   |
| 6      | stem                      | 40143SS | 1   |
| 7      | interlocking pin          | 40144SS | 1   |
| 8      | lock rink                 | 40145SS | 1   |
| 9      | nose piece                | 40146HC | 1   |
| 10     | poppet                    | 40147CA | 1   |
| 11     | coiled pin                | 40148SS | 1   |
| 12     | bayonet stud              | 40149SS | 3   |
| 13A    | Buna nose seal (BS61-200) | 40150BN | 1   |
| 13B    | FKM nose seal (BS62-200)  | 40150VI | 1   |
| 14     | jam nut                   | 40151SS | 3   |
| 15     | spring pin                | 40152SS | 1   |
| 16     | grooved pin               | 40153SS | 1   |
| 17     | rivet                     | 40154SS | 2   |
| 18     | lock nut                  | 40155SS | 1   |
|        |                           |         |     |

#### Bill of Materials, continued

| Item # | Description                         | Part #  | Qty |
|--------|-------------------------------------|---------|-----|
| 19     | ball bearing                        | 40156SS | 32  |
| 20     | ball plug                           | 40157BR | 1   |
| 21A    | grease fitting (BS6x-200)           | 40158ST | 1   |
| 21B    | set screw (BSS6x-200)               | 40178SS | 1   |
| 22     | wave spring                         | 40159SS | 2   |
| 23     | wave spring washer                  | 40160SS | 1   |
| 24A    | Buna swivel O-ring (BS & BSS61-200) | 40161BN | 2   |
| 24B    | FKM swivel O-ring (BS & BSS62-200)  | 40161VI | 2   |
| 25A    | Buna stem O-ring (BS & BSS61-200)   | 40162BN | 1   |
| 25B    | FKM stem O-ring (BS & BSS62-200)    | 40162VI | 1   |
| 26A    | Buna nose O-ring (BS & BSS61-200)   | 40163BN | 1   |
| 26B    | FKM nose O-ring (BS & BSS62-200)    | 40163VI | 1   |
| 27     | cotter pin                          | 40164SS | 1   |
| 28     | front bearing strip                 | 40165NY | 1   |
| 29     | bumper ring                         | 40166VY | 1   |
| 30     | label                               | 40161AL | 1   |
| 31     | main body                           |         | 1   |
| 32     | swivel body                         |         | 1   |

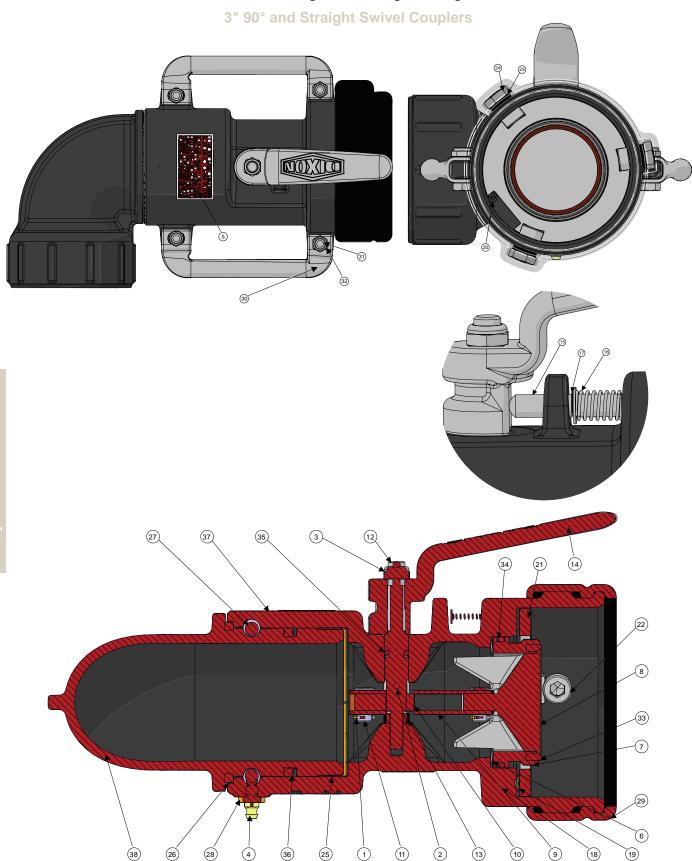
#### **Repair Kits**

| Part #      | Description  | Includes Item #   |
|-------------|--|-------------------|
| DCC4 200DK4 | seal repair kit, Buna nose seal, spring pin, grooved pin, Buna swivel O-rings, Buna stem | 13A, 15, 16, 25A, |
| BS61-200RK1 | O-ring, Buna nose body O-ring, cotter pin, bearing strip & bumper ring                   | 26A, 27, 28, 29   |
| BS62-200RK1 | seal repair kit, FKM nose seal, spring pin, grooved pin, FKM swivel O-rings, FKM stem    | 13B, 15, 16, 25B, |
|             | O-ring, FKM nose body O-ring, cotter pin, bearing strip & bumper ring                    | 26B, 27, 28, 29   |
| BS61-200RK2 | swivel seal repair kit, Buna swivel O-rings & bearing strip                              | 24A, 28           |
| BS62-200RK2 | swivel seal repair kit, FKM swivel O-rings & bearing strip                               | 24B, 28           |

# Petroleum

#### Dry Disconnects

#### BA/BS/BSS Series Bayonet Style Dry Disconnects



# Renlacement Par

#### Dry Disconnects

#### BA/BS/BSS Series Bayonet Style Dry Disconnects

3" 90° and Straight Swivel Couplers

The 90° swivel coupler (BS series) is illustrated on page 126. The straight swivel coupler (BSS series) uses the same components.

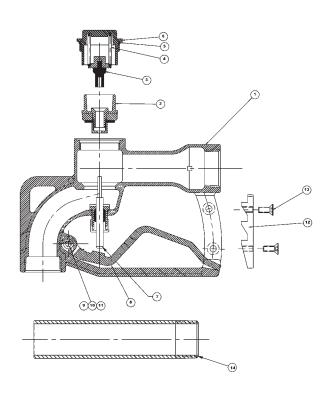
#### 3" swivel aluminum coupler Bill of Materials BS6x-300 and BSS6x-300

| DOUX OU | o and Boook ood       |         |     |
|---------|-----------------------|---------|-----|
| Item #  | Description           | Part #  | Qty |
| 1       | cotter pin            | 40088SS | 2   |
| 2       | spring pin            | 40152SS | 1   |
| 3       | lock nut              | 40155SS | 1   |
| 4       | grease fitting        | 40158ST | 1   |
| 5       | label                 | 40167AL | 1   |
| 6       | wave spring           | 40246SS | 1   |
| 7       | nose piece            | 40247HC | 1   |
| 8       | poppet                | 40248CA | 1   |
| 9       | bent link             | 40249SS | 2   |
| 10      | drive link            | 40250SS | 1   |
| 11      | clevis pin            | 40251SS | 2   |
| 12      | stem                  | 40252SS | 1   |
| 13      | stem spacer           | 40253AL | 1   |
| 14      | lever (handle)        | 40254SS | 1   |
| 15      | interlock pin         | 40255SS | 1   |
| 16      | compression spring    | 40256SS | 1   |
| 17      | retaining ring        | 40257ST | 1   |
| 18      | compression spring    | 40258SS | 3   |
| 19      | eyelet                | 40259BR | 3   |
| 20      | spring pin            | 40260SS | 1   |
| 21      | lock ring             | 40261SS | 1   |
| 22      | bayonet stud          | 40262SS | 3   |
| 23      | lock washer           | 40263SS | 3   |
| 24      | nut                   | 40264SS | 3   |
| 25      | bearing strip         | 40265NY | 1   |
| 26      | dust seal             | 40266FL | 1   |
| 27      | ball bearings         | 40267SS | 27  |
| 28      | ball plug             | 40268BR | 1   |
| 29      | bumper ring           | 40269VY | 1   |
| 30      | grip handle           | 40270SS | 2   |
| 31      | bolt                  | 40271SS | 4   |
| 32      | lock nut              | 40272SS | 4   |
| 33A     | Buna nose seal        | 40273BN | 1   |
| 33B     | FKM nose seal         | 40273VI | 1   |
| 34A     | Buna nose body O-ring | 40274BN | 1   |
| 34B     | FKM nose body O-ring  | 40274VI | 2   |
| 35A     | Buna stem O-ring      | 40275BN | 1   |
| 35B     | FKM stem O-ring       | 40275VI | 1   |
| 36A     | Buna quad ring        | 40276BN | 1   |
| 36B     | FKM quad ring         | 40276VI | 1   |
| 37      | main body             |         | 1   |
| 38      | swivel body           |         | 1   |

#### **Repair Kits**

| Part #      | Description   | Includes Item #                |
|-------------|---|--------------------------------|
| I all #     | •   | includes item #                |
| BS61-300RK1 | seal repair kit, Buna nose<br>seal, spring pin, Buna swivel<br>O-rings, Buna stem O-ring,<br>Buna nose body O-ring, cotter<br>pin, bearing strip and bumper<br>ring | 1, 2, 25, 29,<br>33A, 34A, 35A |
| BS62-300RK1 | seal repair kit, FKM nose seal,<br>spring pin, FKM swivel O-rings,<br>FKM stem O-ring, FKM nose<br>body O-ring, cotter pin, bearing<br>strip and bumper ring        | 1, 2, 25, 29,<br>33B, 34B, 35B |
| BS61-300RK2 | swivel seal repair kit, Buna<br>swivel O-rings and bearing strip  | 25, 26, 36A                    |
| BS62-300RK2 | swivel seal repair kit, FKM swivel O-rings and bearing strip  | 25, 26, 36B                    |

#### 112D and 112DNS (1½") Bulk Delivery Nozzles



#### **Bill of Materials**

| Item # | Description               | Part #            | Qty |
|--------|---------------------------|-------------------|-----|
| 1      | body                      |                   | 1   |
| 2      | main poppet assembly      | use kit 112DSK    | 1   |
| 3      | secondary poppet assembly | use kit 112DSK    | 1   |
| 4      | poppet spring             | SPRG-L368         | 1   |
| 5      | Buna cap O-ring           | O-RING#132        | 1   |
| 6      | bronze cap                | 112DAL-9          | 1   |
| 7      | valve stem assembly       | use kit 112DSK    | 1   |
| 8      | trigger                   | use kit 114/2D-TK | 1   |
| 9      | trigger bushing           | 114DAL-10         | 1   |
| 10     | trigger pin               | PIN-L389-SS       | 1   |
| 11     | trigger cotter pin        | 110746            | 1   |
| 12     | ratchet plate             | 340164            | 1   |
| 13     | ratchet plate screws      | 110798            | 2   |
| 14     | spout                     | 1125A             | 1   |

#### Repair Kits

| Part #  | Description   | Includes Item # |
|---|---|-----------------|
| main poppet, 2nd poppet, cap O-ring, valve stem |   | 2, 3, 5, 7      |
| 1125A   | 1½" aluminum spout  | 14              |
| 1125B   |   |                 |
| 114/2D-TK                                       | trigger, pin, cotter pin, bushing                                       | 8, 9, 10, 11    |
| 114DAL-AV-19                                    | blank plate to replace ratchet plate if ratchet not required (optional) |                 |

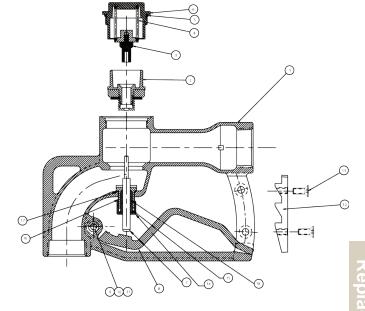
#### 114D and 114DNS (11/4") Bulk Delivery Nozzles

#### **Bill of Materials**

| Item # | Description               | Part #            | Qty |
|--------|---------------------------|-------------------|-----|
| 1      | body                      |                   | 1   |
| 2      | main poppet assembly      | use kit 114DSK    | 1   |
| 3      | secondary poppet assembly | use kit 114DSK    | 1   |
| 4      | poppet spring             | SPRG-L368         | 1   |
| 5      | Buna cap O-ring           | O-RING-AS-129     | 1   |
| 6      | bronze cap                | 114DAL-2          | 1   |
| 7      | valve stem assembly       | use kit 114DSK    | 1   |
| 8      | trigger                   | use kit 114/2D-TK | 1   |
| 9      | trigger bushing           | 114DAL-10         | 1   |
| 10     | trigger pin               | PIN-L389-SS       | 1   |
| 11     | trigger cotter pin        | 110746            | 1   |
| 12     | ratchet plate             | 340164            | 1   |
| 13     | ratchet plate screws      | 110798            | 2   |
| 14     | aluminum spout            | 1143A             | 1   |
| 15     | sleeve stem packing       | SLVL358-1         | 1   |
| 16     | valve stem guide & O-ring | use kit 114DSK    | 1   |
| 17     | valve stem O-ring         | O-RING-AS016      | 1   |
| 18     | valve stem packing        | STEMPACK-L360     | 2   |
| 19     | valve stem nut            | NUTL357-1         | 1   |



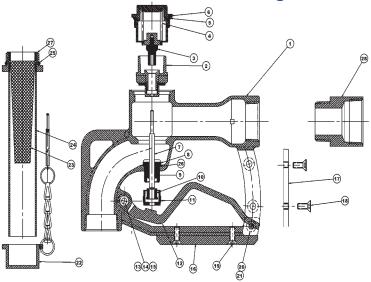
| Part # Description   |   | Includes Item #                   |
|--|---|-----------------------------------|
| main and secondary poppets, cap O-ring, valve stem assembly and packing, sleeve stem packing and nut |   | 2, 3, 5, 7, 15, 16,<br>17, 18, 19 |
| 114/2D-TK  | 114/2D-TK trigger, pin, bushing & cotter pin                          |                                   |
| 1143A  | aluminum spout  | 14                                |
| 1143B  | optional brass spout  | replaces 14                       |
| 114DAL-AV-19   | optional blank plate to replace ratchet plate, if ratchet not desired | replaces 12                       |



### Petroleum Penjagement Part

#### **Fuel Nozzles**

#### 114D-AV Aircraft Over Wing Nozzles



#### **Bill of Materials**

| Item # | Description  | Part #                   | Qty |
|--------|--|--------------------------|-----|
| 1      | body   |                          | 1   |
| 2      | main poppet assembly                               | use kit 114DAV-SK        | 1   |
| 3      | second poppet assembly                             | use kit 114DAV-SK        | 1   |
| 4      | poppet spring                                      | SPRG-L368                | 1   |
| 5      | Buna cap O-ring                                    | O-RING-AS-129            | 1   |
| 6      | bronze cap   | 114DAL-4                 | 1   |
| 7      | valve stem   | 114DAL-3                 | 1   |
| 8      | valve stem guide & O-ring                          | use kit 114DAV-SK        | 1   |
| 9      | valve stem packing                                 | STEMPACK-L360            | 2   |
| 10     | sleeve stem packing                                | SLV358-1                 | 1   |
| 11     | valve stem nut                                     | NUTL357-1                | 1   |
| 12     | trigger  | use kit <b>114/2D-TK</b> | 1   |
| 13     | trigger bushing                                    | 114DAL-10                | 1   |
| 14     | trigger pin  | PIN-L389-SS              | 1   |
| 15     | cotter pin   | 110746                   | 1   |
| 16     | base plate   | 110088                   | 1   |
| 17     | trigger spacer                                     | 114DAL-AV-19             | 1   |
| 18     | trigger spacer screws                              | 110798                   | 2   |
| 19     | base plate screws                                  | 100AV-15                 | 2   |
| 20     | ground screw                                       | 407119                   | 1   |
| 21     | ground screw lock washer                           | 100AV-17                 | 1   |
| 22     | spout cap  | 114DAL-AV-22             | 1   |
| 23A    | 1" spout filter screen (114DAVR)                   | 100AV-12                 | 1   |
| 23B    | 11/4" spout filter screen (114D-AV, 114D-AV-06ASM) | 114DAL-AV-20             | 1   |
| 24A    | 1" spout (114DAVR)                                 | use kit 114DAL-AV-25     | 1   |
| 24B    | 11/4" spout (114D-AV, 114D-AV-06ASM)               | use kit 114DAL-AV-16     | 1   |
| 25A    | 1" spout O-ring (114DAVR)                          | use kit 114DAL-AV-25     | 1   |
| 25B    | 11/4" spout O-ring( 114D-AV, 114D-AV-06ASM)        | use kit 114DAL-AV-16     | 1   |
| 26     | valve stem guide O-ring                            | O-RING-AS016             | 1   |
| 27A    | 1" spout adapter (114DAVR)                         | use kit 114DAL-AV-25     | 1   |
| 27B    | 11/4" spout adapter (114D-AV, 114D-AV-06ASM)       | use kit 114DAL-AV-16     | 1   |
| 28     | 1½" inlet expander (114D-AV-06ASM)                 | 340165                   | 1   |

#### Repair Kits

| Part #       | Description  | Includes Item # |
|--------------|--|-----------------|
| 114/2D-TK    | trigger, bushing, pin and cotter pin                                     | 12, 13, 14, 15  |
| 114DAV-SK    | main and secondary poppet assemblies, cap O-ring and valve stem assembly | 2, 3, 5, 8      |
| 114DAL-AV-25 | 1" spout assembly (114DAVR)  | 24A, 25A, 27A   |
| 114DAL-AV-16 | 11/4" spout assembly (114D-AV, 114D-AV-06ASM)                            | 24B, 25B, 27B   |

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#### Fuel Nozzles

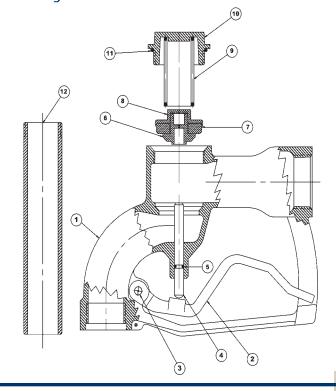
#### 1250-94 Series Gravity Nozzles

#### **Bill of Materials**

| Item # | Description        | Part #                | Qty |
|--------|--------------------|-----------------------|-----|
| 1      | body               |                       | 1   |
| 2      | trigger            | use kit <b>1250TK</b> | 1   |
| 3      | trigger pin        | use kit <b>1250TK</b> | 1   |
| 4      | valve stem plunger | use kit <b>1250SK</b> | 1   |
| 5      | plunger O-ring     | 500-7A2               | 1   |
| 6      | valve base         | use kit <b>1250SK</b> | 1   |
| 7      | valve seal         | use kit <b>1250SK</b> | 1   |
| 8      | valve plate        | use kit <b>1250SK</b> | 1   |
| 9      | valve spring       | SPRG-L368             | 1   |
| 10     | aluminum cap       | 1250-2                | 1   |
| 11     | Buna O-ring cap    | O-RING#132            | 1   |
| 12     | aluminum spout     | 1250-3                | 1   |

#### **Repair Kits**

| Part # | Description   | Includes Item #   |
|--------|---|-------------------|
| 1250TK | trigger, pin  | 2, 3              |
| 1250SK | plunger, O-rings, valve seal, valve base, valve plate | 4, 5, 6, 7, 8, 11 |



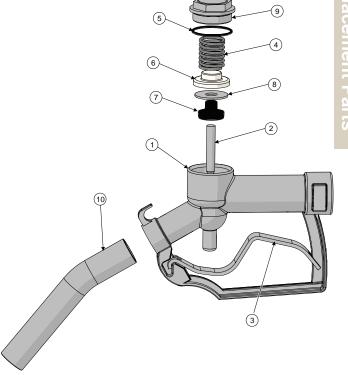
#### 900 Series Utility Nozzles

#### **Bill of Materials**

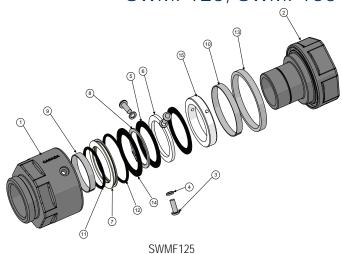
| Item #          | Description             | Part #               | Qty |
|-----------------|-------------------------|----------------------|-----|
| 1               | body                    |                      | 1   |
| 2               | plunger                 | use kit <b>900SK</b> | 1   |
| 3               | trigger                 | 900TK                | 1   |
| 4               | valve spring            | SPRG-972             | 1   |
| 5               | cap O-ring              | 112099               | 1   |
| 6               | holder valve gasket     | use kit 900SK        | 1   |
| 7               | holder button gasket    | use kit <b>900SK</b> | 1   |
| 8               | valve seal              | use kit <b>900SK</b> | 1   |
| 9               | cap                     | 875-3                | 1   |
| 10A             | 1" spout                | 875-4                | 1   |
| 10B             | 3/4" spout              | 234-80-4             | 1   |
| 10C             | 1" bent spout           | 875-5                | 1   |
| 10D             | 3/4" bent spout         | 234-80-5             | 1   |
| not illustrated | 3/4" FNPT inlet reducer | 900RB                | 1   |

#### Repair Kits

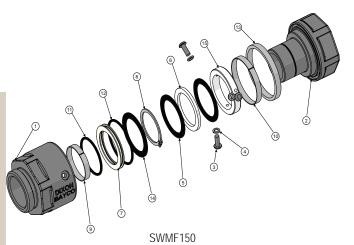
| Part # | Description                                  | Includes Item #        |
|--------|--|------------------------|
| 900TK  | trigger                                      | 3                      |
| 900SK  | plunger assembly, valve assembly, cap O-ring | 2, 4, 5, 6, 7,<br>8, 9 |



#### SWMF125, SWMF150 and SWMF200 Swivels

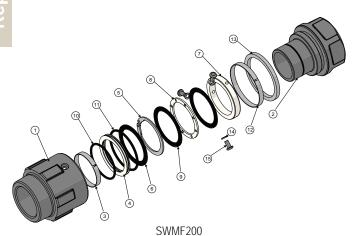


| Bill of | f Materials    | SWMF125 & SWMF150                          |     |
|---------|----------------|--|-----|
| Item #  | Description    | Part #                                     | Qty |
| 1       | female body    |  | 1   |
| 2       | male body      |  | 1   |
| 3       | screw          | use kit <b>SWMF-RK2</b>                    | 3   |
| 4       | lock washer    | use kit <b>SWMF-RK2</b>                    | 3   |
| 5       | thrust bearing | use kit <b>SWMF-RK3</b>                    | 1   |
| 6       | thrust washer  | use kit SWMF-RK3                           | 2   |
| 7       | O-ring holder  | use kit SWMF-RK2 or SWMF-RK3               | 1   |
| 8       | retaining ring | use kit <b>SWMF-RK3</b>                    | 1   |
| 9       | front bearing  | use kit SWMF-RK2 or SWMF-RK3               | 1   |
| 10      | rear bearing   | use kit <b>SWMF-RK2</b> or <b>SWMF-RK3</b> | 1   |
| 11      | O-ring         | use kit SWMF-RK2 or SWMF-RK3               | 1   |
| 12      | O-ring         | use kit SWMF-RK2 or SWMF-RK3               | 1   |
| 13      | felt ring      | use kit SWMF-RK2 or SWMF-RK3               | 1   |
| 14      | support washer | use kit SWMF-RK3                           | 1   |
| 15      | support ring   | use kit <b>SWMF-RK3</b>                    | 1   |



| E  | Bill o | f Materials    | SWMF200                       |     |
|----|--------|----------------|-------------------------------|-----|
| lt | tem #  | Description    | Part #                        | Qty |
|    | 1      | female body    |                               | 1   |
|    | 2      | male body      |                               | 1   |
|    | 3      | front bearing  | use kit SWMF-RK22 or SWMFRK32 | 3   |
|    | 4      | O-ring holder  | use kit SWMF-RK22 or SWMFRK32 | 3   |
|    | 5      | retaining ring | use kit <b>SWMF-RK32</b>      | 1   |
|    | 6      | support washer | use kit <b>SWMF-RK32</b>      | 1   |
|    | 7      | support ring   | use kit <b>SWMF-RK32</b>      | 1   |
|    | 8      | thrust washer  | use kit <b>SWMF-RK32</b>      | 2   |
|    | 9      | thrust bearing | use kit <b>SWMF-RK32</b>      | 1   |
|    | 10     | O-ring         | use kit SWMF-RK22 or SWMFRK32 | 1   |
|    | 11     | large O-ring   | use kit SWMF-RK22 or SWMFRK32 | 1   |
|    | 12     | rear bearing   | use kit SWMF-RK22 or SWMFRK32 | 1   |
|    | 13     | felt ring      | use kit SWMF-RK22 or SWMFRK32 | 1   |
|    | 14     | lock washer    | use kit SWMF-RK32             | 3   |

use kit SWMF-RK32



| Repa |  |  |
|------|--|--|
|      |  |  |
|      |  |  |

screw

15

| Part #    | Description                 | Includes Item #                             |  |  |
|-----------|-----------------------------|---|--|--|
| SWMF-RK1  | swivel grease nipple kit    |   |  |  |
| SWMF-RK2  | swivel seal and wear kit    | 3, 4, 7, 9, 10, 11, 12,13                   |  |  |
| SWMF-RK3  | complete swivel rebuild kit | 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 |  |  |
| SWMF-RK22 | swivel seal and wear kit    | 3, 4, 10, 11, 12, 13                        |  |  |
| SWMF-RK32 | complete rebuild kit        | 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 |  |  |

#### Hose Shank and Check Valve Swivels

#### **Check Valve NPT Swivel**

| Part # | Description         |  |
|--------|---------------------|--|
| 1280   | 1¼" MNPT x 1¼" FNPT |  |
| 1580U  | 1½" MNPT x 1½" FNPT |  |
| 1580R  | 1¼" MNPT x 1½" FNPT |  |

### BAYCO

#### **Hose x MNPT Swivel**

| Part # | Description                   |  |
|--------|-------------------------------|--|
| 1265   | 11/4" MNPT x 11/4" hose shank |  |
| 1565U  | 1½" MNPT x 1½" hose shank     |  |
| 1570   | 1½" MNPT x 1¾" hose shank     |  |

#### **Repair Kits**

| Part #   | Description |  |  |
|--|-------------|--|--|
| <b>1200SK</b> seal kit & retaining ring for 1280, 1265 and 1580R |             |  |  |
| <b>1500SK</b> seal kit & retaining ring for 1565U, 1580U         |             |  |  |
| 1570RK seal kit and retaining ring for 1570                      |             |  |  |



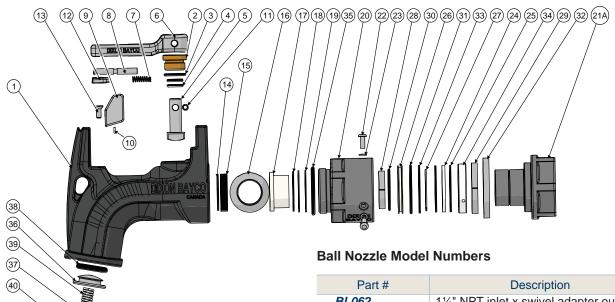
#### 500AV and 525AV Angle Valves

#### Repair Kit

| Part # | Description  |  |
|--------|--|--|
| 500K   | stem guide assembly, plunger assembly, O-ring and cotter pin |  |



#### **BL Ball Nozzles**



| 42    | 1    |
|-------|------|
| 41)   |      |
| 43    | (48) |
| 46    |      |
| 44    |      |
| 45    |      |
| (47)  |      |
| (41)~ |      |
|       |      |
|       |      |
|       |      |
|       |      |

| Part #     | Description                              |
|------------|--|
| BL062      | 11/4" NPT inlet x swivel adapter outlet  |
| BL062-BSPP | 11/4" BSPP inlet x swivel adapter outlet |
| BL064      | 11/2" NPT inlet x swivel adapter outlet  |
| BL064-BSPP | 11/2" BSPP inlet x swivel adapter outlet |
| BL066      | 11/4" NPT inlet x 11/4" spout outlet     |
| BL066-BSPP | 11/4" BSPP inlet x 11/4" spout outlet    |
| BL068      | 1½" NPT inlet x 1¼" spout outlet         |
| BL068-BSPP | 1½" BSPP inlet x 1¼" spout outlet        |
| BL072      | 1½" NPT inlet x 1½" spout outlet         |
| BL072-BSPP | 1½" BSPP inlet x 1½" spout outlet        |
|            | •  |

• all inlet connections are female

#### **Repair Kits**

| Part #   | Description  | Includes Item #  |  |
|----------|--|--|--|
| SWMF-RK1 | inlet swivel grease nipple kit (optional)  | not illustrated  |  |
| SWMF-RK2 | inlet swivel seal and wear kit   | 22, 23, 26, 28, 29, 30, 31, 32   |  |
| SWMF-RK3 | complete inlet swivel rebuild kit  | 22, 23, 24, 25, 26, 27, 28, 29, 30 31, 32, 33, 34                        |  |
| SWMF-RK4 | 1½" FNPT replacement inlet swivel  | 20, 21B, 22(3), 23(3), 24, 25(2), 26, 27, 28, 29, 30, 31, 32, 33, 34, 35 |  |
| SWMF-RK5 | 11/4" FNPT replacement inlet swivel  | 20, 21A, 22(3), 23(3), 24, 25(2), 26, 27, 28, 29, 30, 31, 32, 33, 34, 35 |  |
| SWMF-RK6 | 1½" BSPP replacement inlet swivel  | 20, 21C, 22(3), 23(3), 24, 25(2), 26, 27, 28, 29, 30, 31, 32, 33, 34, 35 |  |
| BL005    | swivel outlet (BL062, BL064)   | 43, 44, 45, 46   |  |
| BL-RK4   | ball valve shaft seal kit  | 2, 3, 4, 5   |  |
| BL-RK10  | complete ball nozzle seal kit  | 3, 4, 14, 15, 17, 35, 38, 43, 44   |  |
| BL-RK11  | optional check valve 5 PSI spring kit  | 39B, 43  |  |
| BL-RK12  | standard check valve 3 PSI cartridge kit   | 36, 37, 38, 39a, 40, 41, 42, 43  |  |
| BL-RK13  | trigger kit  | 6, 7, 8, 9, 10, 11, 12, 13(2)  |  |
| Produ    | Product instruction sheets and technical data can be viewed on our website at dixonvalve.com |  |  |

# Replacement Da

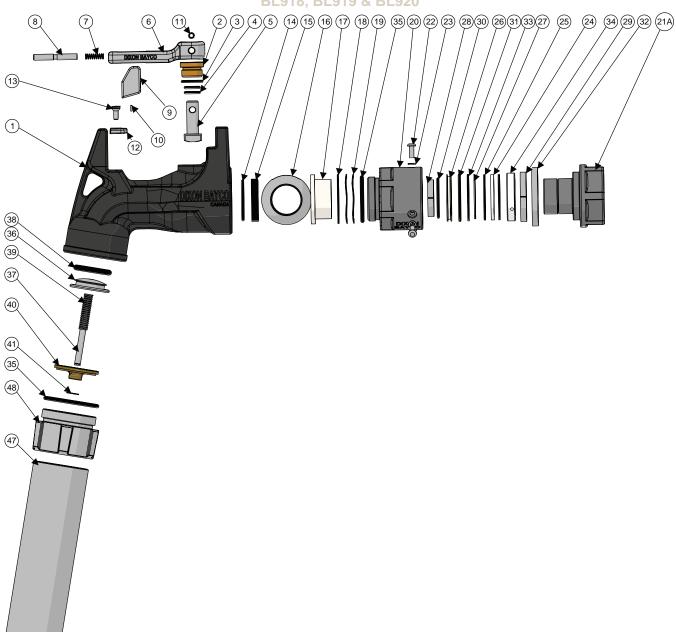
#### Fuel Nozzles

#### **BL Ball Nozzles**

#### **Bill of Materials**

| Item # | Description                 | Part #   | Qty |
|--------|-----------------------------|--|-----|
| 1      | body                        |  | 1   |
| 2      | bronze guide shaft          | use kit <b>BL-RK4</b>                                      | 1   |
| 3      | O-ring                      | use kit <b>BL-RK4</b> or <b>BL-RK10</b>                    | 1   |
| 4      | O-ring                      | use kit BL-RK4 or BL-RK10                                  | 2   |
| 5      | shaft lever                 | use kit <b>BL-RK4</b>                                      | 1   |
| 6      | lever                       | use kit <b>BL-RK13</b>                                     | 1   |
| 7      | compression spring          | use kit BL-RK13  | 1   |
| 8      | shaft latch                 | use kit BL-RK13  | 1   |
| 9      | latch                       | use kit BL-RK13  | 1   |
| 10     | screw                       | use kit <b>BL-RK13</b>                                     | 1   |
| 11     | pin                         | use kit <b>BL-RK13</b>                                     | 1   |
| 12     | lever plate                 | use kit <b>BL-RK13</b>                                     | 1   |
| 13     | screw                       | use kit <b>BL-RK13</b>                                     | 2   |
| 14     | O-ring                      | use kit <i>BL-RK10</i>                                     | 1   |
| 15     | seal                        | use kit BL-RK10  | 1   |
| 16     | ball                        | BL062-2  | 1   |
| 17     | ball seat                   | use kit BL-RK10  | 1   |
| 18     | washer                      | 111719   | 1   |
| 19     | wave spring                 | 110902   | 2   |
| 20     | swivel body                 | use kit SWMF-RK4. SWMF-RK5 or SWMF-RK6                     | 1   |
| 21A    | swivel inlet 1¼" NPT        | use kit SWMF-RK5   | 1   |
| 21B    | swivel inlet 1½" NPT        | use kit SWMF-RK4   | 1   |
| 21C    | swivel inlet 1½" BSPP       | use kit SWMF-RK6   | 1   |
| 22     | SCIEW SCIEW                 | use kit SWMF-RK2, SWMF-RK3, SWMF-RK4, SWMF-RK5 or SWMF-RK6 | 3   |
| 23     | lock washer                 | use kit SWMF-RK2, SWMF-RK3, SWMF-RK4, SWMF-RK5 or SWMF-RK6 | 3   |
| 24     | thrust bearing              | use kit SWMF-RK3, SWMF-RK4, SWMF-RK5 or SWMF-RK6           | 1   |
| 25     | thrust washer               | use kit SWMF-RK3, SWMF-RK4, SWMF-RK5 or SWMF-RK6           | 2   |
| 26     | O-ring holder               | use kit SWMF-RK2, SWMF-RK3, SWMF-RK4, SWMF-RK5 or SWMF-RK6 | 1   |
| 27     |                             | use kit SWMF-RK3, SWMF-RK4, SWMF-RK5 or SWMF-RK6           | 1   |
| 28     | retaining ring font bearing | use kit SWMF-RK2, SWMF-RK3, SWMF-RK4, SWMF-RK5 or SWMF-RK6 | 1   |
| 29     |                             |  | 1   |
|        | rear bearing                | use kit SWMF-RK2, SWMF-RK3, SWMF-RK4, SWMF-RK5 or SWMF-RK6 | 1   |
| 30     | O-ring                      | use kit SWMF-RK2, SWMF-RK3, SWMF-RK4, SWMF-RK5 or SWMF-RK6 | 1   |
| 31     | O-ring                      | use kit SWMF-RK2, SWMF-RK3, SWMF-RK4, SWMF-RK5 or SWMF-RK6 |     |
| 32     | dust seal                   | use kit SWMF-RK2, SWMF-RK3, SWMF-RK4, SWMF-RK5 or SWMF-RK6 | 1   |
| 33     | support washer              | use kit SWMF-RK3, SWMF-RK4, SWMF-RK5 or SWMF-RK6           | 1   |
| 34     | support ring                | use kit SWMF-RK3, SWMF-RK4, SWMF-RK5 or SWMF-RK6           | 1   |
| 35     | O-ring                      | use kit SWMF-RK4, SWMF-RK5 or SWMF-RK6                     | 1   |
| 36     | poppet                      | use kit BL-RK12  | 1   |
| 37     | stem                        | use kit BL-RK12  | 1   |
| 38     | O-ring                      | use kit BL-RK10 or BL-RK12                                 | 1   |
| 39A    | compression spring (3 PSI)  | use kit BL-RK12  | 1   |
| 39B    | compression spring (5 PSI)  | use kit BL-RK11  | 1   |
| 40     | bridge                      | use kit BL-RK12  | 1   |
| 41     | retaining ring              | use kit BL-RK12  | 1   |
| 42     | washer                      | use kit BL005, BL-RK10, BL-RK11 or BL-RK12                 | 1   |
| 43     | O-ring                      | use kit <i>BL005</i> , <i>BL-RK10</i> or <i>BL-RK12</i>    | 1   |
| 44     | O-ring                      | use kit BL005  | 1   |
| 45     | swivel nut                  | use kit <b>BL005</b>                                       | 1   |
| 46     | swivel adapter              | use kit <b>BL005</b>                                       | 1   |
| 47A    | spout 11/4"                 | 1143A  | 1   |
| 47B    | spout 1½"                   | 1125A  | 1   |
| 48A    | spout adapter 11/4" NPT     | 341703   | 1   |
| 48B    | spout adapter 1½" NPT       | BL007  | 1   |

### BL Super Ball Nozzles BL918, BL919 & BL920



#### **Repair Kits**

| Part #    | Description                               | Includes Item #  |
|-----------|---|--|
| SWMF-RK1  | inlet swivel grease nipple kit (optional) | not illustrated  |
| SWMF-RK22 | inlet swivel seal and wear kit            | 22, 23, 26, 28, 29, 30, 31, 32   |
| SWMF-RK32 | complete inlet swivel rebuild kit         | 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34                       |
| SWMF-RK42 | 2 FNP1 replacement inlet swiver           | 20, 21A, 22(3), 23(3), 24, 25(2), 26, 27, 28, 29, 30, 31, 32, 33, 34, 35 |
| SWMF-RK52 | 1½" FNPT replacement inlet swivel         | 20, 21B, 22(3), 23(3), 24, 25(2), 26, 27, 28, 29, 30, 31, 32, 33, 34, 35 |
| BL-RK42   | ball valve shaft seal kit                 | 2, 3, 4, 5   |
| BL-RK102  | complete ball nozzle seal kit             | 3, 4, 14, 15, 17, 35, 38   |
| BL-RK112  | optional check valve 5 PSI spring kit     | 35, 39B  |
| BL-RK122  | standard check valve 3 PSI cartridge kit  | 35, 36, 37, 38, 39a, 40, 41  |
| BL-RK13   | trigger kit                               | 6, 7, 8, 9, 10, 11, 12, 13(2)  |

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#### Fuel Nozzles

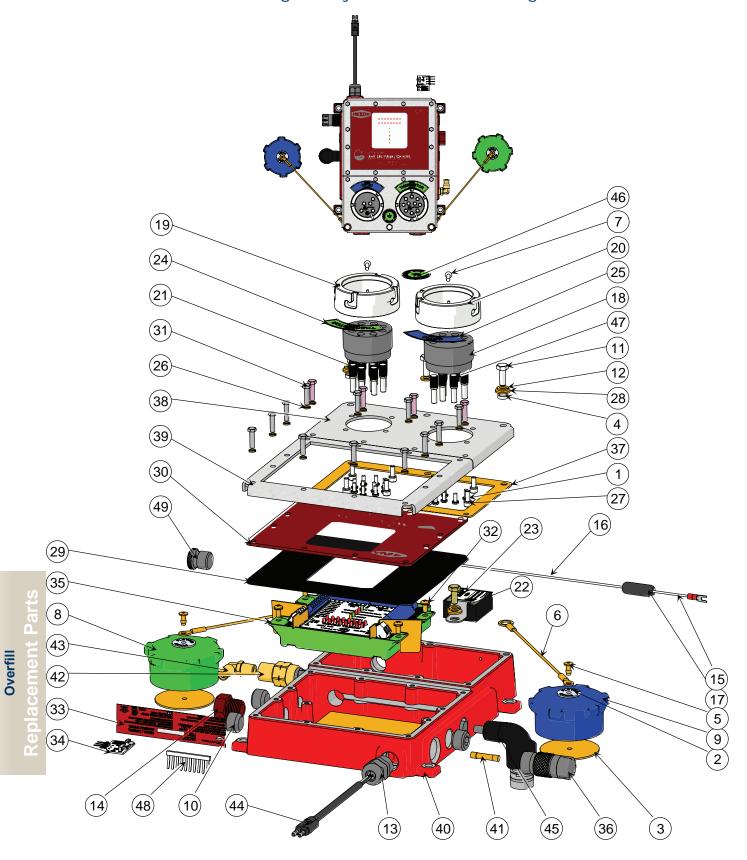
#### **BL Super Ball Nozzles**

#### **Bill of Materials**

| Item #  | Description        | Part #  | Qty |
|---------|--------------------|---|-----|
| 1       | body               |   | 1   |
| 2       | bronze guide shaft | use kit BL-RK42   | 1   |
| 3       | O-ring             | use kit BL-RK42 or BL-RK102 (includes item 35)  | 2   |
| 4       | O-ring             | use kit <b>BL-RK42</b> or <b>BL-RK102</b> (includes item 35)  | 1   |
| 5       | shaft lever        | use kit <b>BL-RK42</b>  | 1   |
| 6       | lever              | use kit BL-RK13   | 1   |
| 7       | compression spring | use kit BL-RK13   | 1   |
| 8       | shaft latch        | use kit BL-RK13   | 1   |
| 9       | latch              | use kit BL-RK13   | 1   |
| 10      | screw              | use kit <b>BL-RK13</b>  | 1   |
| 11      | pin                | use kit <b>BL-RK13</b>  | 1   |
| 12      | lever plate        | use kit <b>BL-RK13</b>  | 1   |
| 13      | screw              | use kit <b>BL-RK13</b>  | 2   |
| 14      | O-ring             | use kit BL-RK102  | 1   |
| 15      | seal               | use kit <b>BL-RK102</b>   | 1   |
| 16      | ball               | 112091  | 1   |
| 17      | ball seat          | use kit <b>BL-RK102</b>   | 1   |
| 18      | washer             | 112092  | 1   |
| 19      | wave spring        | 112090  | 2   |
| 20      | swivel body        | use kit SWMF-RK42 or SWMF-RK52  | 1   |
| 21A/B   | swivel inlet       | use kit SWMF-RK42 or SWMF-RK52  | 1   |
| 22      | screw              | use kit SWMF-RK22, SWMF-RK42 or SWMF-RK52   | 3   |
| 23      | lock washer        | use kit SWMF-RK22, SWMF-RK42 or SWMF-RK52   | 3   |
| 24      | thrust bearing     | use kit SWMF-RK42 or SWMF-RK52  | 1   |
| 25      | thrust washer      | use kit SWMF-RK42 or SWMF-RK52  | 2   |
| 26      | O-ring holder      | use kit SWMF-RK22, SWMF-RK32, SWMF-RK42 or SWMF-RK52  | 1   |
| 27      | retaining ring     | use kit <b>SWMF-RK32</b> (includes items 22,23, 24, 25, 33, 34), <b>SWMF-RK42</b> or <b>SWMF-RK52</b> | 1   |
| 28      | front bearing      | use kit SWMF-RK22, SWMF-RK32, SWMF-RK42 or SWMF-RK52  | 1   |
| 29      | rear bearing       | use kit SWMF-RK22, SWMF-RK32, SWMF-RK42 or SWMF-RK52  | 1   |
| 30      | O-ring             | use kit SWMF-RK22, SWMF-RK32, SWMF-RK42 or SWMF-RK52  | 1   |
| 31      | O-ring             | use kit SWMF-RK22, SWMF-RK32, SWMF-RK42 or SWMF-RK52  | 1   |
| 32      | dust seal          | use kit SWMF-RK22, SWMF-RK32, SWMF-RK42 or SWMF-RK52  | 1   |
| 33      | support washer     | use kit SWMF-RK42 or SWMF-RK52  | 1   |
| 34      | support ring       | use kit SWMF-RK42 or SWMF-RK52  | 1   |
| 35      | O-ring             | use kit SWMF-RK42 or SWMF-RK52  | 1   |
| 36      | poppet             | use kit <i>BL-RK122</i>   | 1   |
| 37      | stem               | use kit BL-RK122  | 1   |
| 38      | O-ring             | use kit BL-RK102 (includes item 35) or BL-RK122   | 1   |
| 39A/B   | compression spring | use kit BL-RK112 or BL-RK122  | 1   |
| 40      | bridge             | use kit <i>BL-RK122</i>   | 1   |
| 41      | retaining ring     | use kit BL-RK122  | 1   |
| 47A/47B | spout              | 391137 (2") / 1125A (1½")   | 1   |
| 48A/48B | spout adapter      | 341780 (NPT) / 341781 (BSPP)  | 1   |

#### **Fuel Tanker Overfill Detection**

FT208 - 39xP Series Plug-n-Play Monitors with Integrated Dual Sockets



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#### **Fuel Tanker Overfill Detection**

#### Plug-n-Play Monitors with Integrated Dual Sockets

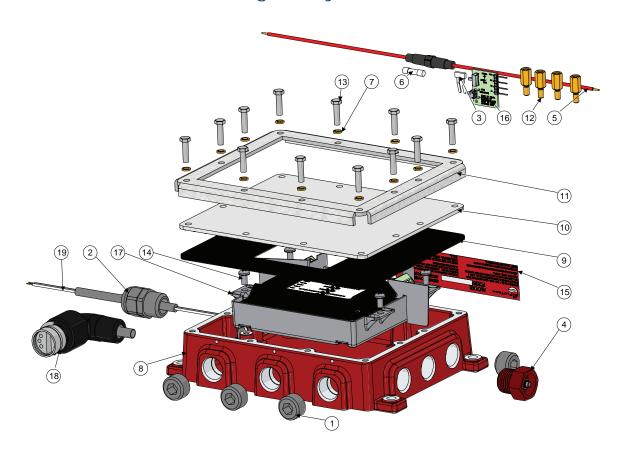
| Bill o | of Materials                          |                          | Quantity of Components Per Unit |             |              |               |               |                |              |             |              |               |                |                |                 |               |            |             |              |               |              |             |              |               |                |               |
|--------|---------------------------------------|--------------------------|---------------------------------|-------------|--------------|---------------|---------------|----------------|--------------|-------------|--------------|---------------|----------------|----------------|-----------------|---------------|------------|-------------|--------------|---------------|--------------|-------------|--------------|---------------|----------------|---------------|
| Item # | Description                           | Part #                   | FT208-390P                      | FT208-390PG | FT208-390PGS | FT208-390PGSO | FT208-390PGST | FT208-390PGSTO | FT208-390PGT | FT208-390PP | FT208-390PPG | FT208-390PPGS | FT208-390PPGSO | FT208-390PPGST | FT208-390PPGSTO | FT208-390PPGT | FT208-391P | FT208-391PG | FT208-391PGS | FT208-391PGST | FT208-391PGT | FT208-391PP | FT208-391PPG | FT208-391PPGS | FT208-391PPGST | FT208-391PPGT |
| 1      | stainless steel screw                 | 10086                    | 16                              | 16          | 16           | 16            | 16            | 16             | 16           | 16          | 16           | 16            | 16             | 16             | 16              | 16            | 16         | 16          | 16           | 16            | 16           | 16          | 16           | 16            | 16             | 16            |
| 2      | aluminum name plate - socket washer   | use kit FT320 or FT321   | 2                               | 2           | 2            | 2             | 2             | 2              | 2            | 2           | 2            | 2             | 2              | 2              | 2               | 2             | 2          | 2           | 2            | 2             | 2            | 2           | 2            | 2             | 2              | 2             |
| 3      | aluminum washer 2.500 x .0625         | use kit FT320 or FT321   | 2                               | 2           | 2            | 2             | 2             | 2              | 2            | 2           | 2            | 2             | 2              | 2              | 2               | 2             | 2          | 2           | 2            | 2             | 2            | 2           | 2            | 2             | 2              | 2             |
| 4      | stainless steel spacer                | 10089                    | 2                               | 2           | 2            | 2             | 2             | 2              | 2            | 2           | 2            | 2             | 2              | 2              | 2               | 2             | 2          | 2           | 2            | 2             | 2            | 2           | 2            | 2             | 2              | 2             |
| 5      | aluminum rivet .1875                  | use kit FT320 or FT321   | 2                               | 2           | 2            | 2             | 2             | 2              | 2            | 2           | 2            | 2             | 2              | 2              | 2               | 2             | 2          | 2           | 2            | 2             | 2            | 2           | 2            | 2             | 2              | 2             |
| 6      | stainless steel cable - socket 8"     | use kit FT320 or FT321   | 2                               | 2           | 2            | 2             | 2             | 2              | 2            | 2           | 2            | 2             | 2              | 2              | 2               | 2             | 2          | 2           | 2            | 2             | 2            | 2           | 2            | 2             | 2              | 2             |
| 7      | stainless steel screw - contact block | 10094                    | 2                               | 2           | 2            | 2             | 2             | 2              | 2            | 2           | 2            | 2             | 2              | 2              | 2               | 2             | 2          | 2           | 2            | 2             | 2            | 2           | 2            | 2             | 2              | 2             |
| 8      | vinyl dust cap - thermistor (green)   | use kit FT321            | 1                               | 1           | 1            | 1             | 1             | 1              | 1            | 1           | 1            | 1             | 1              | 1              | 1               | 1             | 1          | 1           | 1            | 1             | 1            | 1           | 1            | 1             | 1              | 1             |
| 9      | vinyl dust cap - optic (blue)         | use kit FT320            | 1                               | 1           | 1            | 1             | 1             | 1              | 1            | 1           | 1            | 1             | 1              | 1              | 1               | 1             | 1          | 1           | 1            | 1             | 1            | 1           | 1            | 1             | 1              | 1             |
| 10     | polypropylene pipe plug               | 10103                    | 4                               | 4           | 4            | 4             | 4             | 4              | 4            | 3           | 3            | 3             | 3              | 3              | 3               | 3             | 4          | 4           | 4            | 4             | 4            | 3           | 3            | 3             | 3              | 3             |
| 11     | stainless steel screw                 | 10110                    | 4                               | 4           | 4            | 4             | 4             | 4              | 4            | 4           | 4            | 4             | 4              | 4              | 4               | 4             | 4          | 4           | 4            | 4             | 4            | 4           | 4            | 4             | 4              | 4             |
|        | stainless steel lock washer           | 10111                    | 4                               | 4           | 4            | 4             | 4             | 4              | 4            | 4           | 4            | 4             | 4              | 4              | 4               | 4             | 4          | 4           | 4            | 4             | 4            | 4           | 4            | 4             | 4              | 4             |
| 13     | polyamide strain relief               | 10139                    |                                 | n/a         | n/a          | 1             | n/a           | 1              |              | n/a         |              | n/a           |                | n/a            | 1               |               | n/a        |             |              |               | n/a          | n/a         | n/a          |               | _              | _             |
|        | reset switch assy                     | 10200A                   | 1                               | 1           | 1            | 1             | 1             | 1              | 1            | 1           | 1            | 1             | 1              | 1              | 1               | 1             | 1          | 1           | 1            | 1             | 1            | 1           | 1            | 1             | 1              | 1             |
|        | ground wire assembly                  | 10735-002                | n/a                             | 1           | 1            | 1             | 1             | 1              | 1            | n/a         | 1            | 1             | n/a            | 1              | 1               | 1             | n/a        | 1           | 1            | 1             | 1            | n/a         | 1            | 1             | 1              | 1             |
| 16     | ground wire assembly                  | 10735-002                | n/a                             | 1           | 1            | 1             | 1             | 1              | 1            | n/a         | 1            | 1             | n/a            | 1              | 1               | 1             | n/a        | 1           | 1            | 1             | 1            | n/a         | 1            | 1             | 1              | 1             |
|        | ground wire assembly                  | 10735-002                | n/a                             | 1           | 1            | 1             | 1             | 1              | 1            | n/a         | 1            | 1             | n/a            | 1              | 1               | 1             | n/a        | 1           | 1            | 1             | 1            | n/a         | 1            | 1             | 1              | 1             |
|        | plastic contact block - socket short  | 10254                    | 2                               | 2           | 2            | 2             | 2             | 2              | 2            | 2           | 2            | 2             | 2              | 2              | 2               | 2             | 2          | 2           | 2            | 2             | 2            | 2           | 2            | 2             | 2              | 2             |
|        | stainless steel ring 4 J-slot         | 10366SS-001 (was FT9044) | 1                               | 1           | 1            | 1             | 1             | 1              | 1            | 1           | 1            | 1             | 1              | 1              | 1               | 1             | 2          | 2           | 2            | 2             | 2            | 2           | 2            | 2             | 2              | 2             |
|        | stainless steel ring 3 J-slot         | 10366SS-002 (was FT9043) | 1                               | 1           | 1            | 1             | 1             | 1              | 1            | 1           | 1            | 1             | 1              | 1              | 1               | 1             |            | n/a         |              |               |              |             |              |               |                | n/a           |
|        | stainless steel socket pin - short    | 10368SS (was FT9061)     | 16                              | 16          | 16           | 16            | 16            | 16             | 16           | 16          | 16           | 16            | 16             | 16             | 16              | 16            | 16         | 16          | 16           | 16            | 16           | 16          | 16           | 16            | 16             | 16            |
|        | ground wire assembly                  | 10735-002                | n/a                             | 1           | 1            | 1             | 1             | 1              | 1            | n/a         | 1            | 1             | n/a            | 1              | 1               | 1             | n/a        | 1           | 1            | 1             | 1            | n/a         | 1            | 1             | 1              | 1             |
|        | Trailer Identification Module         | 10372                    |                                 |             |              | n/a           | 1             | 1              | 1            |             | n/a          | n/a           | n/a            | 1              | 1               | 1             |            | n/a         |              | 1             | 1            | n/a         |              | n/a           | 1              | 1             |
| 24     | aluminum name plate - thermistor      | 10373AL                  | 1                               | 1           | 1            | 1             | 1             | 1              | 1            | 1           | 1            | 1             | 1              | 1              | 1               | 1             | 1          | 1           | 1            | 1             | 1            | 1           | 1            | 1             | 1              | 1             |
|        | aluminum name plate - optic           | 10374AL                  | 1                               | 1           | 1            | 1             | 1             | 1              | 1            | 1           | 1            | 1             | 1              | 1              | 1               | 1             | 1          | 1           | 1            | 1             | 1            | 1           | 1            | 1             | 1              | 1             |
| 26     | stainless steel lock washer           | 10375SS                  | 24                              | 24          | 24           | 24            | 24            | 24             | 24           | 24          | 24           | 24            | 24             | 24             | 24              | 24            | 24         | 24          | 24           | 24            | 24           | 24          | 24           | 24            | 24             | 24            |
| 27     | stainless steel screw                 | 10376SS                  | 8                               | 8           | 8            | 8             | 8             | 8              | 8            | 8           | 8            | 8             | 8              | 8              | 8               | 8             | 8          | 8           | 8            | 8             | 8            | 8           | 8            | 8             | 8              | 8             |
|        | stainless steel washer                | 10382SS                  | 2                               | 2           | 2            | 2             | 2             | 2              | 2            | 2           | 2            | 2             | 2              | 2              | 2               | 2             | 2          | 2           | 2            | 2             | 2            | 2           | 2            | 2             | 2              | 2             |
|        | neoprene gasket                       | 10432NP (was FT9045)     | 1                               | 1           | 1            | 1             | 1             | 1              | 1            | 1           | 1            | 1             | 1              | 1              | 1               | 1             | 1          | 1           | 1            | 1             | 1            | 1           | 1            | 1             | 1              | 1             |
|        | acrylic bezel                         | 10433PL                  | 1                               | 1           | 1            | 1             | 1             | 1              | 1            | 1           | 1            | 1             | 1              | 1              | 1               | 1             | 1          | 1           | 1            | 1             | 1            | 1           | 1            | 1             | 1              | 1             |
| 31     | stainless steel screw                 | 10436SS                  | 16                              | 16          | 16           | 16            | 16            | 16             | 16           | 16          | 16           | 16            | 16             | 16             | 16              | 16            | 16         | 16          | 16           | 16            | 16           | 16          | 16           | 16            | 16             | 16            |
| 32     | stainless steel screw - sems          | 10437SS                  | 4                               | 4           | 4            | 4             | 4             | 4              | 4            | 4           | 4            | 4             | 4              | 4              | 4               | 4             | 4          | 4           | 4            | 4             | 4            | 4           | 4            | 4             | 4              | 4             |
| 33     | chrome mylar label                    | 10438A                   | 1                               | 1           | 1            | 1             | 1             | 1              | 1            | 1           | 1            | 1             | 1              | 1              | 1               | 1             | 1          | 1           | 1            | 1             | 1            | 1           | 1            | 1             | 1              | 1             |
| 34     | programming board assembly            | 10459 (was FT9035)       | 1                               | 1           | 1            | 1             | 1             | 1              | 1            | 1           | 1            | 1             | 1              | 1              | 1               | 1             | 1          | 1           | 1            | 1             | 1            | 1           | 1            | 1             | 1              | 1             |
| 35     | potted OBM                            | 10465                    | 1                               | 1           | 1            | 1             | 1             | 1              | 1            | 1           | 1            | 1             | 1              | 1              | 1               | 1             | 1          | 1           | 1            | 1             | 1            | 1           | 1            | 1             | 1              | 1             |
|        | fuse holder assembly                  | 10596PLAC                | 1                               | 1           | 1            | 1             | 1             | 1              | 1            | 1           | 1            | 1             | 1              | 1              | 1               | 1             | 1          | 1           | 1            | 1             | 1            | 1           | 1            | 1             | 1              | 1             |
|        | cork gasket - lid                     | 10597CK                  | 1                               | 1           | 1            | 1             | 1             | 1              | 1            | 1           | 1            | 1             | 1              | 1              | 1               | 1             | 1          | 1           | 1            | 1             | 1            | 1           | 1            | 1             | 1              | 1             |
|        | aluminum faceplate                    | 10598AL                  | 1                               | 1           | 1            | 1             | 1             | 1              | 1            | 1           | 1            | 1             | 1              | 1              | 1               | 1             | 1          | 1           | 1            | 1             | 1            | 1           | 1            | 1             | 1              | 1             |
| 39     | aluminum frame                        | 10599AL                  | 1                               | 1           | 1            | 1             | 1             | 1              | 1            | 1           | 1            | 1             | 1              | 1              | 1               | 1             | 1          | 1           | 1            | 1             | 1            | 1           | 1            | 1             | 1              | 1             |
|        | aluminum housing                      | 10600AL                  | 1                               | 1           | 1            | 1             | 1             | 1              | 1            | 1           | 1            | 1             | 1              | 1              | 1               | 1             | 1          | 1           | 1            | 1             | 1            | 1           | 1            | 1             | 1              | 1             |
|        | glass fuse .5 amp                     | 10601                    | 1                               |             | 1            | 1             | 1             | 1              | 1            | 1           | 1            | _             | 1              | 1              | 1               | 1             | 1          | 1           | 1            |               | 1            | 1           |              | -             | 1              | 1             |
| 42     | brass pressure switch                 | 10602BR                  | n/a                             |             |              | 1             | 1             |                |              | n/a         |              |               | 1              | 1              |                 |               | n/a        |             |              |               |              | n/a         | 1            | 1             | -              | n/a           |
|        | brass dot air brake swivel fitting    | 10603BR                  | n/a                             |             |              | 1             | 1             |                |              | n/a         |              |               | 1              | 1              | 1               |               | n/a        |             |              |               |              | n/a         |              | 1             |                | n/a           |
|        | power wire Plug-n-Play                | 10612                    |                                 |             | n/a          |               | n/a           |                |              | n/a         |              |               |                | n/a            |                 |               |            |             |              |               |              |             |              | n/a           |                |               |
|        |                                       | 10616PLBN                | 11/1                            | 11/1        | 11/1         | 1             | 11/1          | 1              | 11/1         | 2           | 2            | 2             | 2              | 2              | 2               | 2             | 11/1       | 11/1        | 11/1         | 11/1          | 11/1         | 2           | 2            | 2             | 2              | 2             |
|        | aluminum label - ground bolt          | 10621AL                  | 1                               | 1           | 1            | 1             | 1             |                | 1            | 1           | 1            | 1             | 1              |                |                 | 1             | 1          | 1           | 1            | 1             | 1            | 1           | 1            | 1             | 1              | 1             |
|        | plastic black button insert           | BLACK BUTTON             | 6                               | 6           | 6            | 6             | 6             | 6              | 6            | 6           | 6            | 6             | 6              | 6              | 6               | 6             | 6          | 6           | 6            | 6             | 6            | 6           | 6            | 6             | 6              | 6             |
|        |                                       | INSERT                   |                                 |             |              |               |               |                |              |             |              |               |                |                |                 |               |            | 1           |              |               |              |             | 1            | - 1 -         |                | 1             |
|        | jumper cross connector acetal plug    | 10196<br>10606AC-002     | 1                               | 1           | n/a<br>n/a   |               |               |                | 1            | 1           |              |               | n/a<br>n/a     |                |                 |               | 1          | 1           |              | n/a<br>n/a    |              | 1           | 1            | n/a<br>n/a    |                | _             |

#### Repair Kits

| Part # | Description   | Includes Item #  |
|--------|---|------------------|
| FT320  | blue (optic) vinyl cap assembly                       | 2, 3, 5, 6, 9    |
| FT321  | green (thermistor) vinyl cap assembly                 | 2, 3, 5, 6, 8    |
| FT9051 | contact assembly for FT390/393 optic 6 pin            | 1, 7, 18, 21     |
| FT9052 | contact assembly for FT390/393 thermistor 10 pin      | 1, 7, 18, 21     |
| FT9062 | nose ring contact assbly, thermistor 4 J-slot, 10 pin | 1, 7, 18, 19, 21 |
| FT9063 | nose ring contact assembly, optic 3 J-slot, 6 pin     | 1, 7, 18, 20, 21 |
| FT9068 | contact block attachment screws & washers (4 ea)      | 26, 27           |

#### Fuel Tanker Overfill Detection

#### FT 208P Series Plug-n-Play Stand Alone Monitors



#### **Bill of Materials**

|        | Item # | Description                         | Part #                      | FT208P | FT208PP | FT208PPC |
|--------|--------|-------------------------------------|-----------------------------|--------|---------|----------|
|        | 1      | polypropylene pipe plug             | 10103                       | 6      | 4       | 3        |
|        | 2      | polyamide strain relief             | 10139                       | 1      | 1       | 2        |
|        | 3      | jumper - cross connector            | 10196                       | 1      | 1       | 1        |
|        | 4      | reset switch assembly               | 10200A                      | 1      | 1       | 1        |
|        | 5      | plastic fuse holder                 | 10356                       | 1      | 1       | 1        |
|        | 6      | brass/glass fuse - 1/2 amp          | <b>10358</b> (was FT9039)   | 1      | 1       | 1        |
| n      | 7      | stainless steel lock washer         | 10375SS                     | 12     | 12      | 12       |
|        | 8      | aluminum box                        | 10430AL                     | 1      | 1       | 1        |
| 5      | 9      | neoprene gasket                     | <b>10432NP</b> (was FT9045) | 1      | 1       | 1        |
|        | 10     | acrylic bezel                       | 10433PL                     | 1      | 1       | 1        |
|        | 11     | aluminum frame                      | 10434AL                     | 1      | 1       | 1        |
|        | 12     | aluminum standoff (old style boxes) | 10435AL                     | 4      | 4       | n/a      |
|        | 13     | stainless steel screw               | 10436SS                     | 12     | 12      | 12       |
|        | 14     | stainless steel screw - stems       | 10437SS                     | 4      | 4       | 4        |
| י<br>י | 15     | chrome mylar label                  | 10438A                      | 1      | 1       | 1        |
| 6      | 16     | programming board assembly          | <b>10459</b> (was FT9035)   | 1      | 1       | 1        |
| Ĭ      | 17     | potted OBM                          | 10465                       | 1      | 1       | 1        |
| 5      | 18     | OBM plug elbow assy (Plug-n-Play)   | 10616PLBN                   | 1      | 3       | 3        |
|        | 19     | power cable                         | 10639                       | 1      | 1       | n/a      |

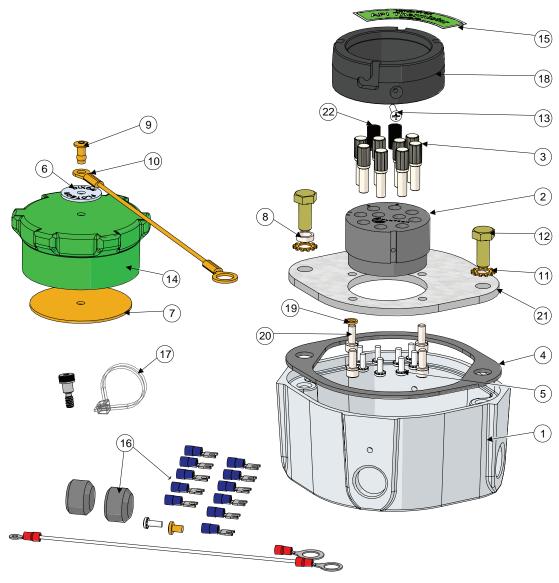
#### Repair Kits

| Part # | Description                        | Includes Item #  |
|--------|------------------------------------|------------------|
| FT9036 | lid, bezel, screws and lockwashers | 7, 9, 10, 11, 13 |
| FT9040 | checkmate housing with lid         | 1, 7-14          |

# lacement Pa

#### **Fuel Tanker Overfill Detection**

#### Plug-n-Play Stand Alone Sockets FT300P & FT301P



#### Repair Kits

| •                       |   |                             |
|-------------------------|---|-----------------------------|
| Part #                  | Description   | Includes Item #             |
| FT320                   | blue (optic) vinyl cap assembly   | 6, 7, 9, 10, 14B            |
| FT321                   | green (thermistor) vinyl cap assembly                                     | 6, 7, 9, 10, 14A            |
| FT310                   | face plate assembly - API optic ALH wear ring 6 pin 3 J-slot (US)         | 2 - 16, 18 - 22             |
| FT310SS                 | face plate assembly - API optic SS GFL wear ring 6 pin 3 J-slot (US)      | 2 - 16, 18 - 22             |
| FT311                   | face plate assembly - API Thermistor ALH wear ring 8 pin 4 J-slot (US)    | 2 - 22                      |
| FT311SS                 | face plate assembly - API Thermistor SS GFL wear ring 8 pin 4 J-slot (US) | 2 - 22                      |
| FT9008                  | contact block for FT300 Optic   | 2, 3, 5, 13                 |
| FT9009                  | contact block for FT301 Thermistor  | 2, 3, 5, 13                 |
| FT9013                  | faceplate 4 J-slot (without contact block or hardware)                    | 4, 15B, 18A, 19-21          |
| FT9020                  | socket pin, screw & crimp lug   | 3, 5                        |
| FT9034                  | 3 J-slot (without contact block and hardware)                             | 4, 15A, 18B, 19-21          |
| FT9046                  | socket contact pins and screws  | 3, 5                        |
| FT9068                  | contact block attachment screws and washers (4 each)                      | 19, 20                      |
| 0387P-OP &<br>10387P-TH | wiring harness (Plug-n-Play) 20'  | Refer to page 132 for image |
| 10605PL                 | plastic clip  | Refer to page 132 for image |

### Overfill Replacement Parts

#### **Fuel Tanker Overfill Detection**

#### Plug-n-Play Stand Alone Sockets FT300P & FT301P

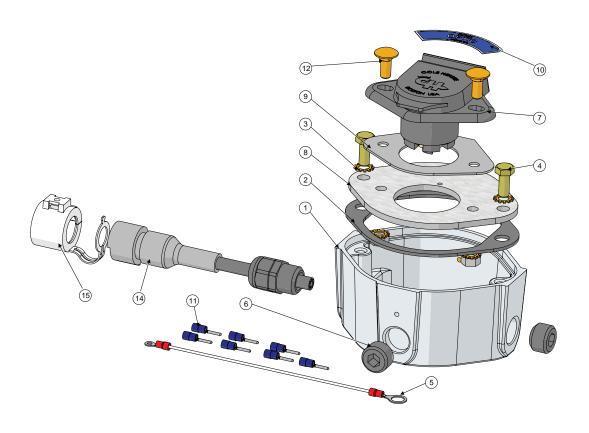
#### **Bill of Materials**

| Item # | Description                           | Part #                            | FT300P | FT301P |     | FT310SS | FT311 | FT311SS |
|--------|---------------------------------------|-----------------------------------|--------|--------|-----|---------|-------|---------|
| 1      | aluminum housing                      | 10031 (was FT9007)                | 1      | 1      | n/a | n/a     | n/a   | n/a     |
| 2      | plastic contact block                 | 10690PL-001                       | 1      | 1      | 1   | 1       | 1     | 1       |
| 3      | stainless steel socket pin            | 10368SS                           | 6      | 8      | 6   | 6       | 8     | 8       |
| 4      | neoprene gasket                       | 10038 (was FT9032)                | 1      | 1      | 1   | 1       | 1     | 1       |
| 5      | stainless steel screw                 | 10086                             | 6      | 8      | 6   | 6       | 8     | 8       |
| 6      | aluminum name plate - socket washer   | FT321                             | 1      | 1      | 1   | 1       | 1     | 1       |
| 7      | aluminum washer 2.500 x .0625         | Use cap kit <b>FT320 or FT321</b> | 1      | 1      | 1   | 1       | 1     | 1       |
| 8      | stainless steel spacer                | 10089                             | 1      | 1      | 1   | 1       | 1     | 1       |
| 9      | aluminum rivet .1875                  | Use cap kit FT320 or FT321        | 1      | 1      | 1   | 1       | 1     | 1       |
| 10     | stainless steel cable - socket 8"     | Use cap kit FT320 or FT321        | 1      | 1      | 1   | 1       | 1     | 1       |
| 11     | stainless steel lock washer           | 10092                             | 2      | 2      | 2   | 2       | 2     | 2       |
| 12     | stainless steel screw                 | 10093                             | 2      | 2      | 2   | 2       | 2     | 2       |
| 13     | stainless steel screw - contact block | 10094                             | 1      | 1      | 1   | 1       | 1     | 1       |
| 14A    | vinyl dust cap - thermistor (green)   | Use cap kit FT321                 | n/a    | 1      | n/a | n/a     | 1     | 1       |
| 14B    | vinyl dust cap - optic (blue)         | Use cap kit FT320                 | 1      | n/a    | 1   | 1       | n/a   | n/a     |
| 15A    | aluminum name plate - FT300           | 10099                             | 1      | n/a    | 1   | 1       | n/a   | n/a     |
| 15B    | aluminum name plate - FT301           | 10100                             | n/a    | 1      | n/a | n/a     | 1     | 11      |
| 16     | assembly hardware                     | 10106                             | 1      | 1      | 1   | 1       | 1     | 1       |
| 17     | nylon clamp assembly                  | 10264                             | n/a    | 1      | n/a | n/a     | 1     | 1       |
| 18A    | ALH wear ring - 4 J-slot              | 10366HC-001 (was FT9042)          | n/a    | 1      | n/a | n/a     | 1     | n/a     |
| 18B    | ALH wear ring - 3 J-slot              | <b>10366HC-002</b> (was FT9041)   | 1      | n/a    | 1   | n/a     | n/a   | n/a     |
| 18C    | stainless steel wear ring - 4 J-slot  | 10366SS-001 (was FT9044)          | n/a    | n/a    | n/a | n/a     | n/a   | 1       |
| 18D    | stainless steel wear ring - 3 J-slot  | 10366SS-002 (was FT9043)          | n/a    | n/a    | n/a | 1       | n/a   | n/a     |
| 19     | stainless steel lock washer           | 10375SS                           | 4      | 4      | 4   | 4       | 4     | 4       |
| 20     | stainless steel screw                 | 10376SS                           | 4      | 4      | 4   | 4       | 4     | 4       |
| 21     | aluminum socket plate                 | 10431AL                           | 1      | 1      | 1   | 1       | 1     | 1       |
| 22     | plastic black button insert           | BLACK BUTTON INSERT               | 6      | 6      | 6   | 6       | 6     | 6       |
| 23     | wiring harness (Plug-n-Play) 20'      | 10387P-20                         | 1      | 1      | n/a | n/a     | n/a   | n/a     |
| 24     | plastic clip                          | 10605PL                           | 1      | 1      | n/a | n/a     | n/a   | n/a     |

# eplacement Par

#### **Fuel Tanker Overfill Detection**

#### Plug-n-Play Stand Alone Sockets FT306P-5



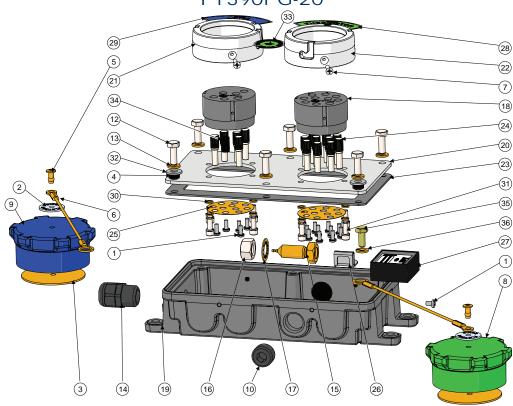
#### **Bill of Materials**

| Item # | Description                      | Part #                | FT208P | FT208PPC |
|--------|----------------------------------|-----------------------|--------|----------|
| 1      | aluminum housing                 | 10031<br>(was FT9007) | 1      | n/a      |
| 2      | neoprene gasket                  | 10038<br>(was FT9032) | 1      | 1        |
| 3      | stainless steel lock washer      | 10092                 | 4      | 4        |
| 4      | stainless steel screw            | 10093                 | 2      | 2        |
| 5      | wire, assembly, socket           | 10095                 | 1      | 1        |
| 6      | polypropylene pipe plug          | 10103                 | 2      | 2        |
| 7      | J560 type socket                 | 10119<br>(was FT9029) | 1      | 1        |
| 8      | aluminum face plate              | 10120                 | 1      | 1        |
| 9      | neoprene gasket                  | 10121                 | 1      | 1        |
| 10     | aluminum name plate - optic      | 10235                 | 1      | 1        |
| 11     | terminal pin                     | 10123                 | 7      | 7        |
| 12     | stainless steel carriage bolt    | 10507SS               | 2      | 2        |
| 13     | stainless steel nut              | 10508SS               | 2      | 2        |
| 14     | wiring harness (Plug-n-Play) 20' | 10387P-20             | 1      | n/a      |
| 15     | plastic clip                     | 10605PL               | 1      | n/a      |

#### Repair Kit

| Part # | Description                             | Includes<br>Item # |
|--------|---|--------------------|
| FT316  | face plate assembly - Optic J560 socket | 2 - 13             |

#### Plug-n-Play Stand Alone Sockets FT390PG-20



#### **Bill of Materials**

|          | Item # | Description                                     | Part #                        | Qty   |
|----------|--------|---|-------------------------------|-------|
|          | 1      | stainless steel screw                           | 10086                         | 16    |
|          | 2      | aluminum name plate - socket washer             | use kit <b>FT320 or FT321</b> | 2     |
|          | 3      | aluminum washer 2.500 x .0625                   | use kit <i>FT320 or FT321</i> | 2     |
|          | 4      | stainless steel spacer                          | 10089                         | 2 2 2 |
|          | 5      | aluminum rivet .1875                            | use kit <i>FT320 or FT321</i> | 2     |
|          | 6      | stainless steel cable - socket 8"               | use kit <i>FT320 or FT321</i> | 2     |
|          | 7      | stainless steel screw - contact block           | 10094                         | 2     |
|          | 8      | vinyl dust cap - green                          | use kit <b>FT321</b>          | 1     |
|          | 9      | vinyl dust cap - blue                           | use kit <b>FT320</b>          | 1     |
| 3        | 10     | polypropylene pipe plug                         | 10103                         | 2     |
|          | 11     | steel screw - plug                              | 10105                         | 3     |
|          | 12     | stainless steel screw                           | 10110                         | 6     |
| 3        | 13     | stainless steel lock washer - 1/4"              | 10111                         | 7     |
| 2        | 14     | stainless steel ground bolt                     | 10223                         | 1     |
|          | 15     | stainless steel nut - ground bolt ½"-13         | 10224                         | 1     |
|          | 16     | stainless steel lock washer inter-<br>nal tooth | 10225                         | 1     |
| <u>'</u> | 17     | plastic contact block - socket short            | 10254                         | 2     |
|          | 18     | aluminum box - dual socket                      | 10364AL-001                   | 1     |
|          | 19     | aluminum faceplate - dual socket                | 10365AL                       | 1     |
|          | 20     | stainless steel socket - thermistor             | 10366SS-001                   | 1     |
|          | 21     | stainless steel socket - optic                  | 10366SS-002                   | 1     |
|          | 22     | cork gasket - lid                               | 10367CK                       | 1     |
|          | 23     | stainless steel socket pin - short              | 10368SS (was FT9061)          | 16    |
|          | 24     | vinyl label - socket contact                    | 10369VY                       | 2     |
|          | 25     | stainless steel bracket - ground bolt           | 10370SS                       | 1     |
|          |        |   |                               |       |

| Item # | Description                      | Part #                 | Qty |
|--------|----------------------------------|------------------------|-----|
| 26     | aluminum name plate - thermistor | 10373AL                | 1   |
| 27     | aluminum name plate - optic      | 10374AL                | 1   |
| 28     | stainless steel lock washer      | 10375SS                | 8   |
| 29     | stainless steel screw            | 10376SS                | 8   |
| 30     | stainless steel screw            | 10377SS                | 1   |
| 31     | stainless steel washer           | 10382SS                | 2   |
| 32     | wiring harness (Plug-n-Play) 20' | 10387P-20              | 1   |
| 33     | plastic clip                     | 10605PL                | 1   |
| 34     | aluminum label - ground bolt     | 10621AL                | 1   |
| 35     | plastic black button insert      | BLACK BUTTON<br>INSERT | 6   |

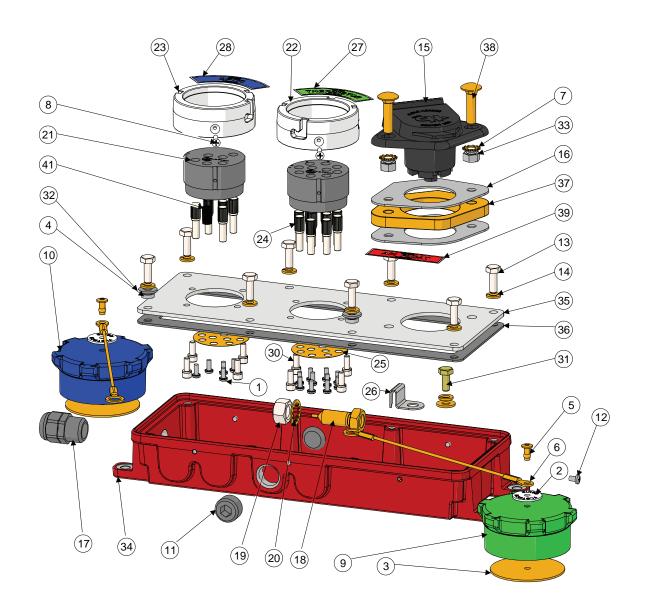
#### Repair Kits

| Part # | Description   | Includes<br>Item #      |
|--------|---|-------------------------|
| FT320  | blue (optic) vinyl cap assembly                             | 2, 3, 5, 6, 9           |
| FT321  | green (thermistor) vinyl cap assembly                       | 2, 3, 5, 6, 8           |
| FT9051 | contact block assembly for FT390/FT393 Optic 6 pin          | 1,7, 17, 23,<br>24      |
| FT9052 | contact block assembly for FT390/FT393<br>Thermistor 10 pin | 1,7, 17, 23,<br>24      |
| FT9062 | nose ring,contact assembly, Thermistor 4 J-slot, 10 pin     | 1, 7, 17, 20,<br>23, 24 |
| FT9063 | nose ring, contact assembly, Optic 3 J-slot, 6 pin          | 1, 7, 17, 21,<br>23, 24 |
| FT9068 | contact block attachment screws and washers (4 each)        | 28, 29                  |

# eplacement Pa

#### **Fuel Tanker Overfill Detection**

#### Plug-n-Play Stand Alone Sockets FT394P & FT395P Series



#### **Repair Kits**

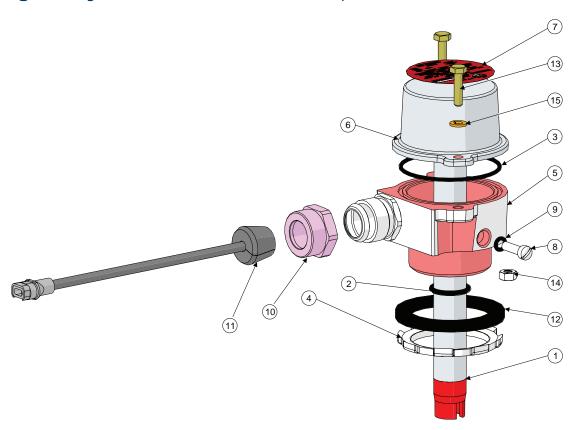
| Part # | Description  | Includes Item #      |
|--------|--|----------------------|
| FT320  | blue (optic) vinyl cap assembly                          | 2, 3, 5, 6, 10       |
| FT321  | green (thermistor) vinyl cap assembly                    | 2, 3, 5, 6, 9        |
| FT9051 | contact block assembly for FT390/FT393 Optic 6 pin       | 1,8, 21, 24, 25      |
| FT9052 | contact block assembly for FT390/FT393 Thermistor 10 pin | 1,8, 21, 24, 25      |
| FT9062 | nose ring contact assembly, Thermistor 4 J-slot, 10 pin  | 1, 8, 21, 22, 24, 25 |
| FT9063 | nose ring contact assembly, Optic 3 J-slot, 6 pin        | 1,8, 21, 23, 24, 25  |
| FT9068 | contact block attachment screws and washers (4 each)     | 29, 30               |

#### Plug-n-Play Stand Alone Sockets FT394P & FT395P Series

#### **Bill of Materials**

| ŀ        | tem #    | Description  | Part #                                  | FT394P | FT394VP | FT394PG | FT394VPG | FT395PG-20 |
|----------|----------|--|---|--------|---------|---------|----------|------------|
|          | 1        | stainless steel screw                                | 10086                                   | 16     | 16      | 16      | 16       | 16         |
|          | 2        | aluminum name plate - socket washer                  | 10087                                   | 2      | 2       | 2       | 2        | 2          |
|          | 3        | aluminum washer 2.500 x .0625                        | use kit<br>FT320 or FT321               | 2      | 2       | 2       | 2        | 2          |
|          | 4        | stainless steel spacer                               | use kit<br>FT320 or FT321               | 2      | 2       | 2       | 2        | 2          |
|          | 5        | aluminum rivet .1875                                 | use kit<br><i>FT320</i> or <i>FT321</i> | 2      | 2       | 2       | 2        | 2          |
|          | 6        | stainless steel cable - socket 8"                    | use kit <b>FT320</b> or <b>FT321</b>    | 2      | 2       | 2       | 2        | 2          |
|          | 7        | stainless steel lock washer                          | 10092                                   | 2      | 2       | 2       | 2        | 2          |
|          | 8        | stainless steel screw - contact block                | 10094                                   | 2      | 2       | 2       | 2        | 2          |
|          | 9        | vinyl dust cap - thermistor (green)                  | use kit FT321                           | 1      | 1       | 1       | 1        | 1          |
|          | 10       | vinyl dust cap - optic (blue)                        | use kit <i>FT320</i>                    | 1      | 1       | 1       | 1        | 1          |
|          | 11       | polypropylene pipe plug                              | 10103                                   | 2      | 2       | 2       | 2        | 2          |
|          | 12       | steel screw - plug                                   | 10105                                   | 4      | 4       | 4       | 4        | 4          |
|          | 13       | stainless steel screw                                | 10110                                   | 8      | 8       | 8       | 8        | 8          |
|          | 14       | stainless steel lock washer - 1/4"                   | 10111                                   | 9      | 9       | 9       | 9        | 9          |
|          | 15       | J560 socket  | 10119<br>(was FT9029)                   | 1      | 1       | 1       | 1        | 1          |
|          | 16       | neoprene gasket, float socket                        | 10121                                   | 2      | 2       | 2       | 2        | 2          |
|          | 17       | polyamide strain relief                              | 10139                                   | 1      | 1       | 1       | 1        | 1          |
|          | 18       | stainless steel ground bolt                          | 10223                                   | N/A    | N/A     | 1       | 1        | N/A        |
|          | 19       | stainless steel nut - ground bolt ½"- 13             | 10224                                   | N/A    | N/A     | 1       | 1        | N/A        |
|          | 20       | stainless steel lock washer internal tooth           | 10225                                   | N/A    | N/A     | 1       | 1        | N/A        |
|          | 21       | plastic contact block - socket short                 | 10254                                   | 2      | 2       | 2       | 2        | 2          |
|          | 22       | stainless steel wear ring - 4 J-slot                 | <b>10366SS-001</b> (was FT9044)         | 1      | 1       | 1       | 1        | 2          |
|          | 23       | stainless steel wear ring - 3 J-slot                 | 10366SS-002<br>(was FT9043)             | 1      | 1       | 1       | 1        | n/a        |
|          | 24       | stainless steel socket pin - short                   | 10368SS                                 | 16     | 16      | 16      | 16       | 16         |
|          | 25       | view lebel seekst seekset                            | (was FT9061)                            | 2      | 2       | 0       | 0        | 2          |
|          | 25       | vinyl label - socket contact                         | 10369VY                                 | 1      | 2       | 2       | 2        | 2          |
|          | 26       | stainless steel bracket - ground bolt                | 10370SS                                 | -      | -       | 1       | 1        | 1          |
|          | 27       | aluminum name plate - thermistor                     | 10373AL                                 | 1      | 1       | 1       | 1        | 1          |
|          | 28<br>29 | aluminum name plate - optic                          | 10374AL                                 | 1      | 1       | 1       | 8        | 1          |
|          |          | stainless steel lock washer<br>stainless steel screw | 10375SS                                 | 8      | 8       | 8       | 8        | 8          |
| 2        | 30       | stainless steel screw                                | 10376SS<br>10377SS                      | 8      | 8       | 8       | 1        | 8          |
|          | 32       | stainless steel washer                               | 1037733<br>10382SS                      | 2      | 2       | 2       | 2        | 2          |
| 3 -      |          |  |   |        |         |         |          |            |
|          | 33<br>34 | stainless steel nut                                  | 10508SS                                 | 1      | 2       | 2       | 2        | 2          |
| -        | _        | aluminum box - 3 socket                              | 10525AL                                 | -      | -       |         | 1        |            |
|          | 35       | aluminum faceplate - 3 socket                        | 10526AL                                 | 1      | 1       | 1       | 1        | 1          |
|          | 36       | cork gasket - lid                                    | 10527CK<br>10529AC                      | 1      | 1       | 1       | 1        | 1          |
|          | 37<br>38 | acetal spacer<br>stainless steel carriage bolt       | 10529AC<br>10530SS                      | 1 2    | 1 2     | 1 2     | 2        | 2          |
| ? -      | 39       | aluminum name plate - optic (blue)                   | 10558AL                                 | 1      | 1       | 1       | 1        | 1          |
| 5        | 40       | aluminum label - ground bolt                         | 10621AL                                 | N/A    | N/A     | 1       | 1        | N/A        |
| <u> </u> | 41       | plastic black button insert                          | BLACK BUTTON                            | 6      | 6       | 6       | 6        | 6          |
|          | 40       | univine a horacco (Diverse Diese) 001                | INSERT                                  |        |         |         |          |            |
|          | 42       | wiring harness (Plug-n-Play) 20'                     | 10387P-20                               | 1      | 1       | 1       | 1        | 1          |
|          | 43       | plastic clip   | 10605PL                                 | 1      | 1       | 1       | 1        | 1          |

#### Plug-n-Play Sensors FT151P Series, Overfill Sensor Housings



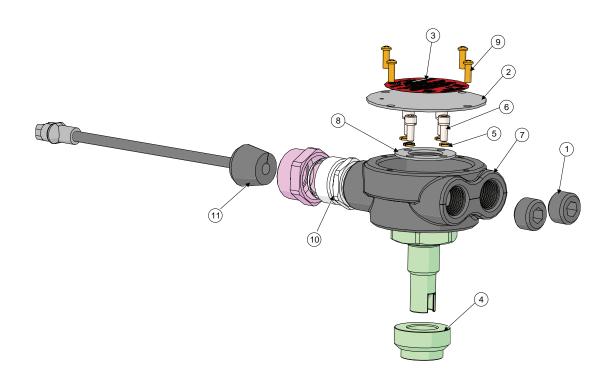
#### **Bill of Materials**

| Item # | Description                       | Part #    | Qt |
|--------|-----------------------------------|-----------|----|
| 1      | assembly sensor, Thermistor-Optic | 10109-PP  | 1  |
| 2      | O-ring                            | 10125     | 1  |
| 3      | O-ring                            | 10126     | 1  |
| 4      | lock nut                          | 10128     | 1  |
| 5      | sensor housing                    | 10183-P&P | 1  |
| 6      | sensor housing cap                | 10185     | 1  |
| 7      | label                             | 10204     | 1  |
| 8      | screw with nylon insert           | 10212     | 1  |
| 9      | O-ring                            | 10213     | 1  |
| 10     | cord grip assembly                | 10248     | 1  |
| 11     | bushing                           | 10638     | 1  |
| 12     | gasket                            | 40090BN   | 1  |
| 13     | screw                             | 10841SS   | 2  |
| 14     | nut                               | 10124     | 2  |
| 15     | lock washer - 1/4"                | 10111     | 2  |

#### **Repair Kits**

| Part #    | Description   | Includes Item # |
|-----------|---|-----------------|
| FT150P    | Plug-n-Play overfill detection probe 7"             | 1               |
| FT150-12P | Plug-n-Play overfill detection probe 12"            | 1               |
| FT150-18P | Plug-n-Play overfill detection probe 18"            | 1               |
| FT9000P   | complete Plug-n-Play sensor housing (without probe) | 2-14            |
| FT9001    | sensor housing gasket and O-ring kit                | 5, 6, 7, 13     |
| FT9011    | sensor housing cap with screws & lock washers       | 3, 9, 13, 14    |

#### Plug-n-Play Sensors FT152P Retain Sensor Housings



#### **Bill of Materials**

| Item # | Description                 | Part #             | Qty |
|--------|-----------------------------|--------------------|-----|
| 1      | polypropylene pipe plug     | 10103              | 2   |
| 2      | aluminum retain sensor lid  | 10134              | 1   |
| 3      | mylar label - retain sensor | 10343              | 1   |
| 4      | aluminum threaded collar    | 10347 (was FT9050) | 1   |
| 5      | stainless steel lock washer | 10375SS            | 4   |
| 6      | stainless steel screw       | 10376SS            | 4   |
| 7      | nylon retain sensor housing | 10471NY-P&P        | 1   |
| 8      | aluminum back-up plate      | 10476AL            | 1   |
| 9      | stainless steel screw       | 10477SS            | 4   |
| 10     | aluminum cord grip assembly | 10248              | 1   |
| 11     | rubber bushing              | 10638              | 1   |

#### Repair Kit

| Part # | Description  | Includes Item # |
|--------|--|-----------------|
| FT9068 | contact block attachment screws and washers (4 each) | 5,6             |

Note: probe is not replaceable, if probe needs replacing, a complete FT152P needs to be ordered.

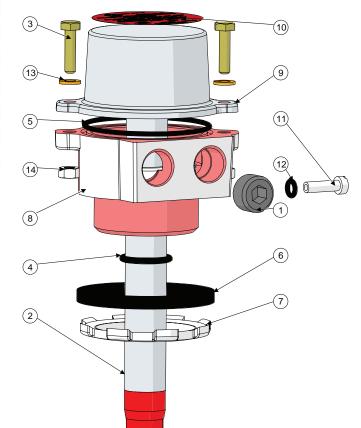
# Replacement Par

#### **Fuel Tanker Overfill Detection**

#### FT101, FT151 & FT202 Series Overfill Sensor Housings

#### **Bill of Materials**

| Description             | Part #  | Qty   |
|-------------------------|---|---|
| pipe plug               | 10103   | 1   |
| assembly, sensor 5 wire | 10107A  | 1   |
| screw                   | 10841SS   | 2   |
| O-ring                  | 10125   | 1   |
| O-ring                  | 10126   | 1   |
| gasket                  | 40090BN   | 1   |
| lock nut                | 10128   | 1   |
| sensor housing          | 10183   | 1   |
| sensor housing cap      | 10185   | 1   |
| label - retain sensor   | 10203   | 1   |
| screw with nylon insert | 10212   | 1   |
| O-ring                  | 10213   | 1   |
| lock washer - 1/4"      | 10111   | 2   |
| nut                     | 10124   | 2   |
|                         | pipe plug assembly, sensor 5 wire screw O-ring O-ring gasket lock nut sensor housing sensor housing cap label - retain sensor screw with nylon insert O-ring lock washer - 1/4" | pipe plug assembly, sensor 5 wire screw 10841SS O-ring 10125 O-ring 10126 gasket lock nut sensor housing sensor housing cap label - retain sensor screw with nylon insert 10213 lock washer - ½" 10107A 10107A 10107A 1010125 1010125 10125 10126 10126 10128 10183 10185 10203 10203 10213 10213 |



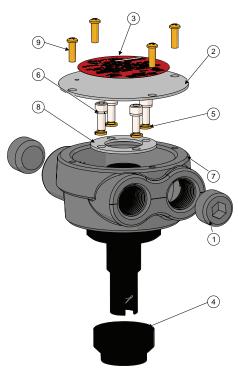
#### **Repair Kits**

| Part #                                      | Description  | Includes<br>Item # |  |
|---|--|--------------------|--|
| FT100                                       | 5 wire overfill detection probe, 7"                | 2                  |  |
| FT100-12                                    | 5 wire overfill detection probe, 12"               | 2                  |  |
| FT100-18                                    | 5 wire overfill detection probe, 18"               | 2                  |  |
| FT150                                       | black & white 2 wire overfill detection probe, 7"  | 2                  |  |
| FT150-12                                    | black & white 2 wire overfill detection probe, 12" | 2                  |  |
| FT150-18                                    | 2  |                    |  |
| FT201                                       | red & black 2 wire overfill detection probe, 7"    |                    |  |
| FT201-12                                    | red & black 2 wire overfill detection              |                    |  |
| FT201-18                                    | red & black 2 wire overfill detection probe, 18"   | 2                  |  |
| FT9000                                      | complete sensor housing (without probe)            | 1, 3 -13           |  |
| FT9001 sensor housing gasket and O-ring kit |  | 5-7, 13            |  |
| FT9002                                      | sensor housing gasket, O-ring and                  | 1, 3-8,            |  |
| F1900Z                                      | hardware kit                                       | 12, 13             |  |
| FT9011                                      | sensor housing cap with screws & lock              | 3, 9, 13,          |  |
| FISUII                                      | washers  | 14                 |  |

## Overfill Renlacement Parts

#### **Fuel Tanker Overfill Detection**

#### FT152 & FT206 Retain Sensor Housings



#### **Bill of Materials**

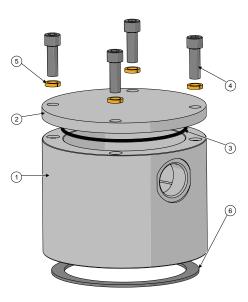
| Item # | Description                 | Part #                | Qty |
|--------|-----------------------------|-----------------------|-----|
| 1      | polypropylene pipe plug     | 10103                 | 2   |
| 2      | aluminum retain sensor lid  | 10134                 | 1   |
| 3      | mylar label - retain sensor | 10343                 | 1   |
| 4      | aluminum threaded collar    | 10347<br>(was FT9050) | 1   |
| 5      | stainless steel lockwasher  | 10375SS               | 4   |
| 6      | stainless steel screw       | 10376SS               | 4   |
| 7      | nylon retain sensor housing | 10471NY               | 1   |
| 8      | aluminum back-up plate      | 10476AL               | 1   |
| 9      | stainless steel screw       | 10477SS               | 4   |

#### Repair Kits

| Part # | Description  | Includes<br>Item # |
|--------|--|--------------------|
| FT9055 | hardware kit   | 2, 3               |
| FT9068 | contact block attachment screws and washers (4 each) | 5, 6               |

Note: probe is not replaceable.

#### FT191S Overfill Sensor Housings



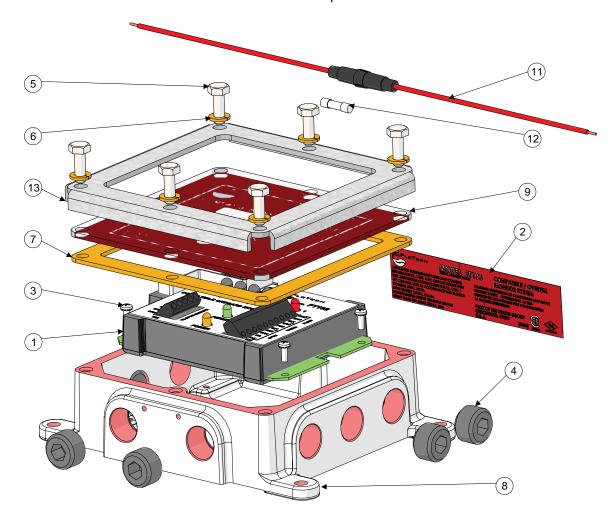
#### **Bill of Materials**

| Item # | Description                     | Part #  | Qty |
|--------|---------------------------------|---------|-----|
| 1      | 3" stainless steel NPSM housing | 10540SS | 1   |
| 2      | aluminum housing lid            | 10541AL | 1   |
| 3      | Buna-N O-ring                   | 10542BN | 1   |
| 4      | stainless steel screw           | 10554SS | 4   |
| 5      | stainless steel lock washer     | 40099SS | 4   |
| 6      | PTFE gasket                     | 40190TF | 1   |

#### **Stainless Steel Probes**

| Part # | Description   |
|--------|---|
| FT100S | 5 wire overfill detection, 316 stainless steel probe only, 7"               |
| FT150S | black & white 2 wire overfill detection, 316 stainless steel probe only, 7" |

#### FT102/FT103 5 Wire, API Optic Onboard Monitors



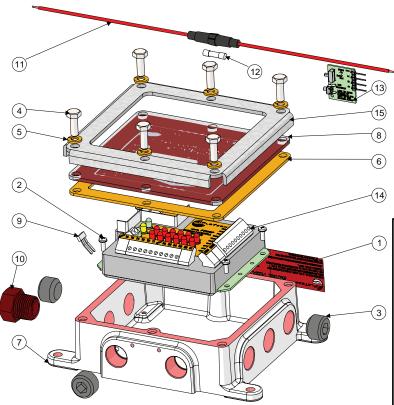
#### **Bill of Materials**

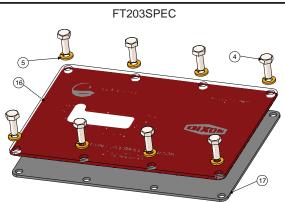
| Item # | Description                       | Part #                    | FT102 | FT103 |
|--------|-----------------------------------|---------------------------|-------|-------|
| 1      | 5 wire onboard monitor assembly   | 10077                     | 1     | 1     |
| 2      | chrome mylar label                | 10079                     | n/a   | 1     |
| 3      | stainless steel screw             | 10086                     | 4     | 4     |
| 4      | polypropylene pipe plug           | 10103                     | n/a   | 5     |
| 5      | stainless steel screw             | 10110                     | 6     | 6     |
| 6      | stainless steel lockwasher - 1/4" | 10111                     | 6     | 6     |
| 7      | neoprene gasket                   | 10131 (was FT9053)        | 1     | 1     |
| 8      | aluminum onboard monitor housing  | 10136                     | n/a   | 1     |
| 9      | acrylic bezel                     | <b>10142</b> (was FT9005) | 1     | 1     |
| 10     | PVC L.E.D. cover                  | 10207                     | 5     | 5     |
| 11     | plastic fuse holder               | 10356                     | 1     | 1     |
| 12     | brass/glass fuse - 1/4 amp        | 10357 (was FT9039)        | 1     | 1     |
| 13     | aluminum frame lid                | 10470ÅL                   | 1     | 1     |

#### **Repair Kits**

| Part # | Description                   | Includes Item # |
|--------|-------------------------------|-----------------|
| FT9003 | monitor housing               | 3-10, 13        |
| FT9004 | monitor hardware kit          | 5, 6, 7, 9, 13  |
| FT9030 | fuse holder with 1/4 amp fuse | 11, 12          |

#### FT203/FT204 Series ROM Type Red & Black 2 Wire, Onboard Monitor





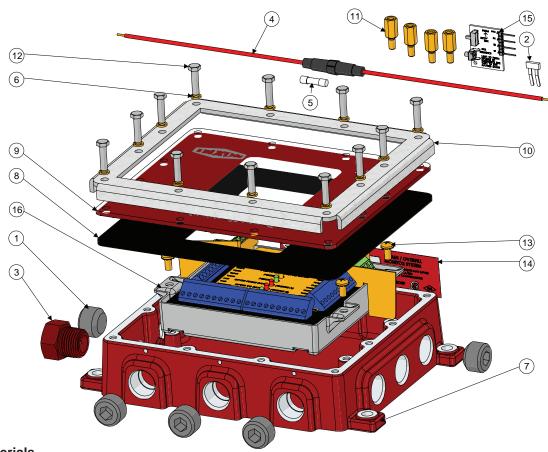
#### **Bill of Materials**

| Item # | Description                         | Part #                      | FT203P | FT203SPEC | FT204P |
|--------|-------------------------------------|-----------------------------|--------|-----------|--------|
| 1      | chrome mylar label                  | 10078                       | n/a    | n/a       | 1      |
| 2      | stainless steel screw               | 10086                       | 4      | 4         | 4      |
| 3      | polypropylene pipe plug             | 10103                       | n/a    | n/a       | 3      |
| 4      | stainless steel screw               | 10110                       | 6      | 8         | 6      |
| 5      | stainless steel lock washer - 1/4"  | 10111                       | 6      | 8         | 6      |
| 6      | neoprene gasket                     | 10131 (was FT9053)          | 1      | n/a       | 1      |
| 7      | aluminum onboard monitor housing    | 10136                       | n/a    | n/a       | 1      |
| 8      | acrylic bezel                       | <b>10143</b> (was FT9006)   | 1      | n/a       | 1      |
| 9      | jumper - cross connector            | 10196                       | 1      | 1         | 1      |
| 10     | reset switch assembly               | 10200A                      | n/a    | n/a       | 1      |
| 11     | plastic fuse holder                 | 10356                       | 1      | 1         | 1      |
| 12     | brass/glass fuse - 1/2 amp          | <b>10358</b> (was FT9039)   | 1      | 1         | 1      |
| 13     | programming board assembly          | <b>10459</b> (was FT9035)   | 1      | 1         | 1      |
| 14     | OBM assy potted                     | 10460                       | 1      | 1         | 1      |
| 15     | aluminum frame lid                  | <b>10470AL</b> (was FT9054) | 1      | n/a       | 1      |
| 16     | bezel for Civacon 3250 & 3252 boxes | 10520PL                     | n/a    | 1         | n/a    |
| 17     | neoprene gasket for 10520PL         | <b>10521NP</b> (was FT9065) | n/a    | 1         | n/a    |

#### Repair Kits

| Part # | Description                     | Includes Item # |
|--------|---------------------------------|-----------------|
| FT9003 | monitor housing                 | 2-8, 15         |
| FT9004 | monitor hardware kit            | 4-6, 8, 15      |
| FT9031 | fuse holder with 1/2 amp fuse   | 11, 12          |
| FT9059 | faceplate and bezel for FT204P  | 4, 5, 6, 8, 15  |
| FT9064 | gasket and bezel for FT203 SPEC | 16, 17          |

#### FT207/FT208 Series Checkmate Black & White 2 Wire, Programmable Onboard Monitor



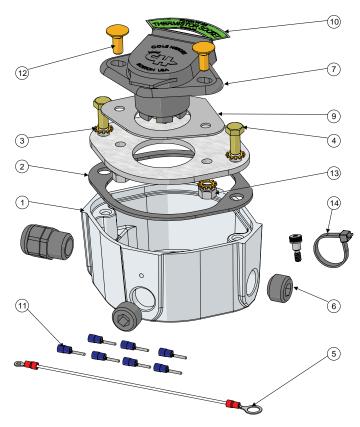
#### **Bill of Materials**

| Item # | Description                                  | Part #                      | FT207 | FT208 |
|--------|--|-----------------------------|-------|-------|
| 1      | polypropylene pipe plug                      | 10103                       | n/a   | 5     |
| 2      | jumper - cross connector                     | 10196                       | 1     | 1     |
| 3      | reset switch assembly                        | 10200A                      | n/a   | 1     |
| 4      | plastic fuse holder                          | 10356                       | 1     | 1     |
| 5      | brass/glass fuse - 1/2 amp                   | 10358 (was FT9039)          | 1     | 5     |
| 6      | stainless steel lock washer                  | 10375SS                     | 12    | 12    |
| 7      | aluminum box                                 | 10430AL                     | n/a   | 1     |
| 8      | neoprene gasket                              | <b>10432NP</b> (was FT9045) | 1     | 1     |
| 9      | acrylic bezel                                | <b>10433PL</b> (was FT9036) | 1     | 1     |
| 10     | aluminum frame                               | 10434AL                     | 1     | 1     |
| 11     | aluminum standoff (only used in older units) | 10435AL                     | n/a   | 4     |
| 12     | stainless steel screw                        | 10436SS                     | 12    | 12    |
| 13     | stainless steel screw - stems                | 10437SS                     | 4     | 4     |
| 14     | chrome mylar label                           | 10438A                      | n/a   | 1     |
| 15     | programming board assembly                   | 10459 (was FT9035)          | 1     | 1     |
| 16     | potted OBM                                   | 10465                       | 1     | 1     |

#### Repair Kits

| Part # | Description                      | Includes Item # |
|--------|----------------------------------|-----------------|
| FT9031 | fuse holder with 1/2 amp fuse    | 11, 12          |
| FT9036 | lid, bezel, screws & lockwashers | 6, 8, 9, 10, 12 |
| FT9040 | Checkmate housing with lid       | 1, 6-13         |

#### Single J560 Sockets



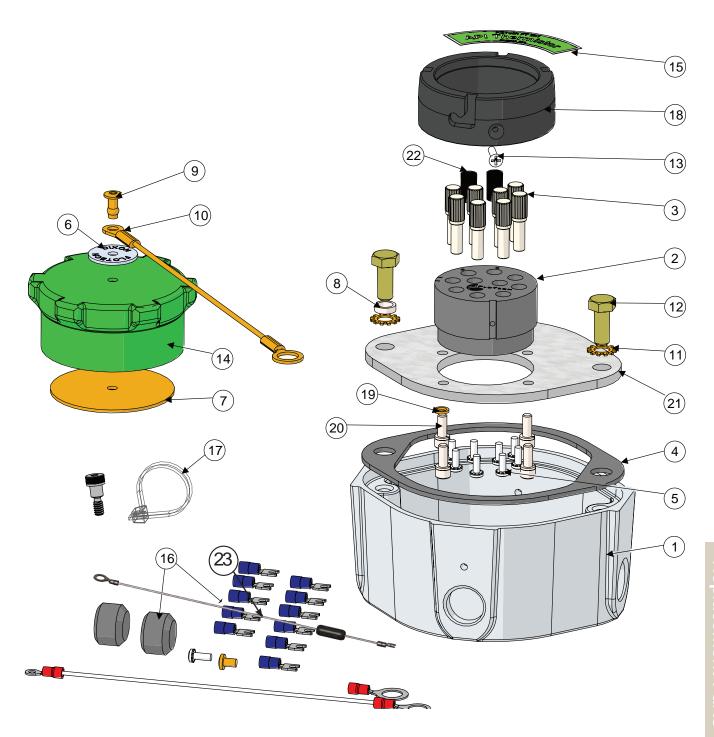
#### **Bill of Materials**

| Item # | Description                      | Part #                    | FT302 | FT305 | FT306 | FT312 | FT315 | FT316 |
|--------|----------------------------------|---------------------------|-------|-------|-------|-------|-------|-------|
| 1      | aluminum housing                 | 10031 (was FT9007)        | 1     | 1     | 1     | n/a   | n/a   | n/a   |
| 2      | neoprene gasket                  | <b>10038</b> (was FT9032) | 1     | 1     | 1     | 1     | 1     | 1     |
| 3      | stainless steel lock washer      | 10092                     | 4     | 4     | 4     | 4     | 4     | 4     |
| 4      | stainless steel screw            | 10093                     | 2     | 2     | 2     | 2     | 2     | 2     |
| 5      | wire, assembly, socket           | 10095                     | 1     | 1     | 1     | 1     | 1     | 1     |
| 6      | polypropylene pipe plug          | 10103                     | 2     | 2     | 2     | 2     | 2     | 2     |
| 7      | J560 type socket                 | <b>10119</b> (was FT9029) | 1     | 1     | 1     | 1     | 1     | 1     |
| 8      | aluminum face plate              | 10120                     | 1     | 1     | 1     | 1     | 1     | 1     |
| 9      | neoprene gasket                  | 10121                     | 1     | 1     | 1     | 1     | 1     | 1     |
| 10A    | aluminum name plate - float      | 10122                     | 1     | n/a   | n/a   | n/a   | n/a   | n/a   |
| 10B    | aluminum name plate - optic      | 10235                     | n/a   | n/a   | 1     | n/a   | 1     | 1     |
| 10C    | aluminum name plate - thermistor | 10244                     | n/a   | 1     | n/a   | n/a   | n/a   | n/a   |
| 11     | terminal pin                     | 10123                     | 7     | 7     | 7     | 7     | 7     | 7     |
| 12     | stainless steel carriage bolt    | 10507SS                   | 2     | 2     | 2     | 2     | 2     | 2     |
| 13     | stainless steel nut              | 10508SS                   | 2     | 2     | 2     | 2     | 2     | 2     |
| 14     | nylon clamp assembly             | 10264                     | n/a   | 1     | n/a   | n/a   | 1     | n/a   |

#### Repair Kits

| Part # | Description                                 | Includes Item # |
|--------|---|-----------------|
| FT312  | face plate assembly- API float J560 socket  | 2 - 14          |
| FT315  | face plate assembly- Thermistor J560 socket | 2 - 14          |
| FT316  | face plate assembly- Optic J560 socket      | 2 - 14          |

#### FT30x Series Single J-slot Sockets



### Overnii enlacement Pa

FT9013

FT9020

FT9034 FT9046

FT9068

**Bill of Materials** 

#### **Fuel Tanker Overfill Detection**

FT30x Series Single J-slot Sockets

| יווו כ    | Ji Wateriais   |                      |  |       |                 | J       | 1     |                |       |         |       |         |       |         |       |         |       |         |       |         |       |         |       |         |
|-----------|--|----------------------|--|-------|-----------------|---------|-------|----------------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|
| Item<br># | Des  | scription            | Part #   | FT300 | FT300SS         | FT300GW | FT301 | FT301SS        | FT303 | FT303SS | FT304 | FT304SS | FT307 | FT307SS | FT310 | FT310SS | FT311 | FT311SS | FT313 | FT313SS | FT314 | FT314SS | FT317 | FT317SS |
| 1         | aluminum hous  | ing                  | 10031 (was FT9007)   | 1     | 1               | 1       | 1     | 1              | 1     | 1       | 1     | 1       | 1     | 1       | n/a   | n/a     | n/a   | n/a     | n/a   |         |       | n/a     |       | n/a     |
| 2         | plastic contact l  |                      | 10690PL-001  | 1     | 1               | 1       | 1     | 1              | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       |
| 3         | stainless steel s  | socket pin           | 10368SS  | 6     | 6               | 6       | 8     | 8              | 6     | 6       | 10    | 10      | 6     | 6       | 6     | 6       | 8     | 8       | 6     | 6       | 10    | 10      | 6     | 6       |
| 4         | neoprene gask  |                      | 10038 (was FT9032)   | 1     | 1               | 1       | 1     | 1              | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       |
| 5         | stainless steel s  |                      | 10086  | 6     | 6               | 6       | 8     | 8              | 6     | 6       | 10    | 10      | 6     | 6       | 6     | 6       | 8     | 8       | 6     | 6       | 10    | 10      | 6     | 6       |
| 6         | aluminum name<br>washer  | e plate - socket     | Use cap kit <b>FT320</b> or <b>FT321</b>                               | 1     | 1               | 1       | 1     | 1              | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       |
| 7         | aluminum was   | her 2.500 x .0625    | Use cap kit <b>FT320</b> or <b>FT321</b>                               | 1     | 1               | 1       | 1     | 1              | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       |
| 8         | stainless steel  | spacer               | 10089  | 1     | 1               | 1       | 1     | 1              | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       |
| 9         | aluminum rivet   | .1875                | Use cap kit<br><i>FT320</i> or <i>FT321</i>                            | 1     | 1               | 1       | 1     | 1              | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       |
| 10        | stainless steel  | cable - socket 8"    | Use cap kit <b>FT320</b> or <b>FT321</b>                               | 1     | 1               | 1       | 1     | 1              | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       |
| 11        | stainless steel  | lock washer          | 10092  | 2     | 2               | 2       | 2     | 2              | 2     | 2       | 2     | 2       | 2     | 2       | 2     | 2       | 2     | 2       | 2     | 2       | 2     | 2       | 2     | 2       |
| 12        | stainless steel  | screw                | 10093  | 2     | 2               | 2       | 2     | 2              | 2     | 2       | 2     | 2       | 2     | 2       | 2     | 2       | 2     | 2       | 2     | 2       | 2     | 2       | 2     | 2       |
| 13        | stainless steel<br>block   | screw - contact      | 10094  | 1     | 1               | 1       | 1     | 1              | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       |
| 14A       | vinyl dust cap   | - thermistor (green) | Use cap kit FT321  | n/a   | n/a             | n/a     | 1     | 1              | n/a   | n/a     | 1     | 1       | n/a   | n/a     | n/a   | n/a     | 1     | 1       | n/a   | n/a     | 1     | 1       | n/a   | n/a     |
| 14B       | vinyl dust cap   | - optic (blue)       | Use cap kit FT320  | 1     | 1               | 1       |       | n/a            | 1     | 1       | n/a   |         | 1     | 1       | 1     | 1       |       | n/a     | 1     | 1       |       | n/a     | 1     | 1       |
| 15A       |  | e plate - FT300      | 10099  | 1     | 1               | n/a     | n/a   | n/a            | n/a   | n/a     | n/a   | n/a     | n/a   | n/a     | 1     | 1       | n/a   |         | n/a   | n/a     | n/a   | n/a     | n/a   | n/a     |
| 15B       |  | e plate - FT301      | 10100  | _     | _               | n/a     | _     | 1              |       | n/a     | n/a   | n/a     | n/a   | n/a     | n/a   | n/a     | 1     | 1       | n/a   | n/a     | n/a   | n/a     | n/a   | n/a     |
| 15C       | aluminum nam   | e plate - FT303      | 10228  | n/a   | n/a             | n/a     | n/a   | n/a            | 1     | 1       | n/a   | n/a     | n/a   | n/a     | n/a   | n/a     | n/a   | n/a     | 1     | 1       | n/a   | n/a     | n/a   | n/a     |
| 15D       | aluminum nam   | e plate - FT304      | 10101  | n/a   | n/a             | n/a     | n/a   | n/a            | n/a   | n/a     | 1     | 1       | n/a   | n/a     | n/a   | n/a     | n/a   | n/a     | n/a   | n/a     | 1     | 1       | n/a   | n/a     |
| 15E       | aluminum nam   | e plate - FT307      | 10283  | n/a   | n/a             | n/a     | n/a   | n/a            | n/a   | n/a     | n/a   | n/a     | 1     | 1       | n/a   | n/a     | n/a   | n/a     | n/a   | n/a     | n/a   | n/a     | 1     | 1       |
| 15F       | aluminum nam   | e plate-FT300GW      | 10099-002  | n/a   | n/a             | 1       | n/a   | n/a            | n/a   | n/a     | n/a   | n/a     | n/a   | n/a     | n/a   | n/a     | n/a   | n/a     | n/a   | n/a     | n/a   | n/a     | n/a   | n/a     |
| 16        | assembly hard  |                      | 10106  | 1     | 1               | 1       | 1     | 1              | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       |
| 17        | nylon clamp as   | 10264                | n/a  | n/a   | n/a             | 1       | 1     | n/a            | n/a   | 1       | 1     | n/a     | n/a   | n/a     | n/a   | 1       | 1     | n/a     | n/a   | 1       | 1     | n/a     | n/a   |         |
| 18A       | 18A ALH wear ring - 4 J-slot   |                      | <b>10366HC-001</b> (was FT9042)  | n/a   | n/a             | n/a     | 1     | n/a            | 1     | n/a     | 1     | n/a     | 1     | n/a     | n/a   | n/a     | 1     | n/a     | 1     | n/a     | 1     | n/a     | 1     | n/a     |
| 18B       | ALH wear ring  | - 3 J-slot           | <b>10366HC-002</b> (was FT9041)  | 1     | n/a             | 1       | n/a   | n/a            | n/a   | n/a     | n/a   | n/a     | n/a   | n/a     | 1     | n/a     | n/a   | n/a     | n/a   | n/a     | n/a   | n/a     | n/a   | n/a     |
| 18C       | stainless steel  | wear ring - 4 J-slot | <b>10366SS-001</b> (was FT9043)  | n/a   | n/a             | n/a     | n/a   | 1              | n/a   | 1       | n/a   | 1       | n/a   | 1       | n/a   | n/a     | n/a   | 1       | n/a   | 1       | n/a   | 1       | n/a   | 1       |
| 18D       |  | wear ring - 3 J-slot | (was F19044)   | n/a   |                 |         | n/a   |                |       |         |       |         |       |         |       | 1       |       |         |       |         |       | n/a     |       |         |
| 19        | stainless steel  |                      | 10375SS  | 4     | 4               | 4       | 4     | 4              | 4     | 4       | 4     | 4       | 4     | 4       | 4     | 4       | 4     | 4       | 4     | 4       | 4     | 4       | 4     | 4       |
| 20        | stainless steel  |                      | 10376SS  | 4     | 4               | 4       | 4     | 4              | 4     | 4       | 4     | 4       | 4     | 4       | 4     | 4       | 4     | 4       | 4     | 4       | 4     | 4       | 4     | 4       |
| 21        | aluminum sock  | cet plate            | 10431AL  | 1     | 1               | 1       | 1     | 1              | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       | 1     | 1       |
| 22        | plastic black b  | utton insert         | BLACK BUTTON<br>INSERT   | 6     | 6               | 6       | 6     | 6              | 6     | 6       | 6     | 6       | 6     | 6       | 6     | 6       | 6     | 6       | 6     | 6       | 6     | 6       | 6     | 6       |
| 23        | ground wire as   | sembly               | 10735  | n/a   | n/a             | 1       | n/a   | n/a            | n/a   | n/a     | n/a   | n/a     | n/a   | n/a     | n/a   | n/a     | n/a   | n/a     | n/a   | n/a     | n/a   | n/a     | n/a   | n/a     |
| Repa      | air Kits   |                      |  | _     |                 |         |       |                |       |         |       |         |       |         |       |         |       |         | _     |         |       |         |       |         |
|           | Part #   |                      |  | Des   | crip            | otior   | า     |                |       |         |       |         |       |         |       |         |       |         | Inc   | lude    | es It | em      | #     |         |
|           | FT320  | blue (optic) vinyl   |  |       |                 |         |       |                |       |         |       |         |       |         |       |         |       |         | 6, 7  | 7, 9,   | 10    | , 14    | В     |         |
|           | FT321  |                      | ) vinyl cap assem  |       |                 |         |       |                |       |         |       |         |       |         |       |         |       |         |       |         |       | , 14    |       |         |
|           | FT310  |                      | bly - API optic ALI  |       |                 |         |       |                |       |         |       |         |       |         |       |         |       |         |       |         |       | - 22    |       |         |
|           | FT310SS  | face plate assem     |  |       |                 |         |       |                |       |         |       |         |       |         |       |         |       |         | 2 -   |         |       | - 22    | 2     |         |
|           | FT311  |                      | face plate assembly - API Thermistor ALH wear ring 8 pin 4 J-slot (US) |       |                 |         |       |                |       |         |       |         |       |         |       | - 22    |       |         |       |         |       |         |       |         |
|           | FT311SS  |                      | bly - API Thermist   |       |                 |         |       |                |       |         |       | J-s     | slot  | (US     | 3)    |         |       |         |       |         | - 22  |         |       |         |
|           | FT313  | face plate assem     | bly - optic ALH we   | earı  | ring            | 6 p     | oin 4 | <del>ا</del> ا | slot  | (US     | 3)    |         |       |         |       |         |       |         |       |         |       | - 22    |       |         |
|           | FT313SS  | face plate assem     |  |       |                 |         |       |                |       |         |       |         |       |         |       |         |       |         |       |         |       | - 22    |       |         |
|           | <b>FT314</b> face plate assembly - Thermistor ALH wear ring 10 pin 4 J-slot (Canada) |                      |  |       |                 |         |       |                |       |         | - 22  |         |       |         |       |         |       |         |       |         |       |         |       |         |
|           | FT314SS face plate assembly - Thermistor SS GFL wear ring 10 pin 4 J-slot (Canada)   |                      |  |       |                 |         |       |                | 2     | - 22    | )     |         |       |         |       |         |       |         |       |         |       |         |       |         |
|           | FT317 face plate assembly - optic ALH wear ring 6 pin 4 J-slot (Canada)              |                      |  |       |                 |         | 2 -   | 16.            | , 18  | - 22    | 2     |         |       |         |       |         |       |         |       |         |       |         |       |         |
|           | FT317SS face plate assembly - optic SS GFL wear ring 6 pin 4 J-slot (Canada)         |                      |  |       | 2 - 16, 18 - 22 |         |       |                |       |         |       |         |       |         |       |         |       |         |       |         |       |         |       |         |
|           | FT9008   | contact block for    |  |       |                 |         |       |                |       |         |       |         |       |         |       |         |       |         |       | 2, 3    | , 5,  | 13      |       |         |
|           | FT9009   |                      | FT301 Thermistor   | r     |                 |         |       |                |       |         |       |         |       |         |       |         |       |         |       | 2, 3    |       |         |       |         |
|           | FT9010   | contact block for    | FT304 10 pin The   | rmi   | stor            |         |       |                |       |         |       |         |       |         |       |         |       |         |       | 2, 3    |       |         |       |         |
|           | ET0012   |                      | (no contact block  |       |                 |         | ro)   |                |       |         |       |         |       |         |       |         |       |         |       |         |       | 101     | 21    |         |

4,15B,18A,1921

3, 5 4, 15A,18B, 1921 3, 5

19, 20

faceplate 4 J-slot (no contact block or hardware)

faceplate 3 J-slot, (without contact block and hardware)

contact block attachment screws and washers (4 each)

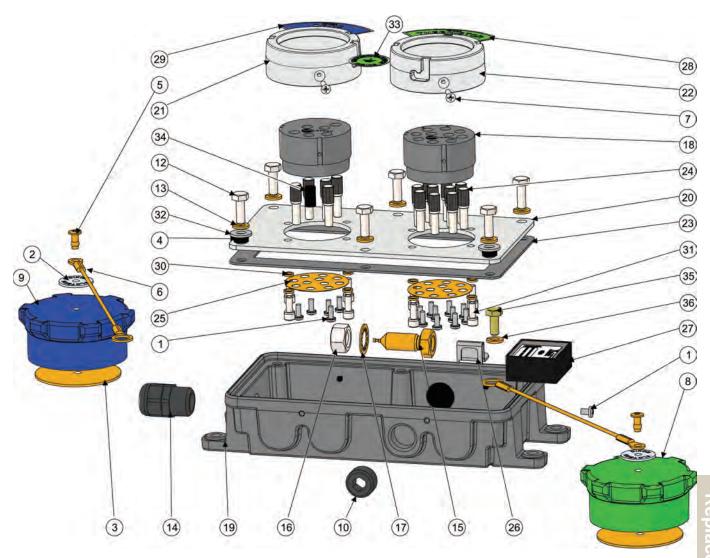
socket pin, screw and crimp lug

socket contact pins, and screws

## lacement Da

#### **Fuel Tanker Overfill Detection**

#### FT390/FT391 Series EZ-Cept Double Sockets



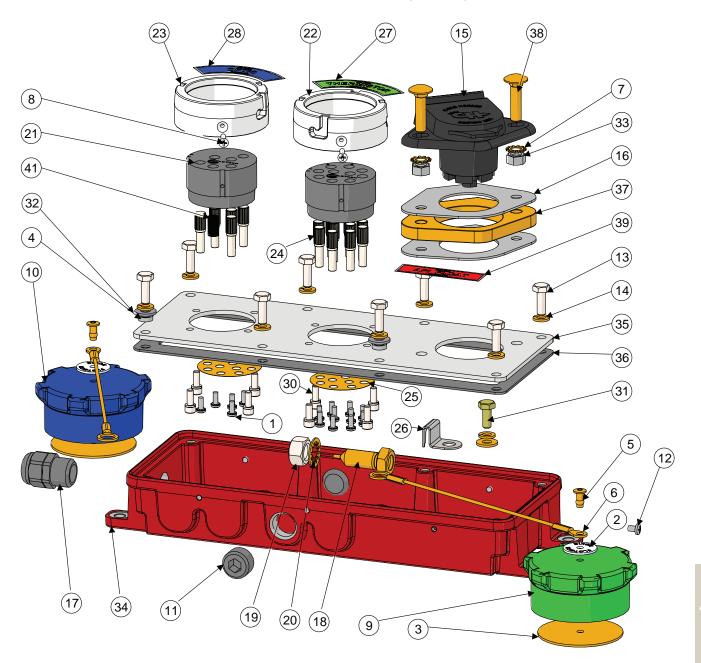
#### FT390/FT391 Series EZ-Cept Double Sockets

#### **Bill of Materials**

| Item #             | Description                                | Part #                        | FT390 | FT390V | FT390G | FT390GT | FT390T | FT390-20 | FT390G-20 | FT391 | FT391V |
|--------------------|--|-------------------------------|-------|--------|--------|---------|--------|----------|-----------|-------|--------|
| 1                  | stainless steel screw                      | 10086                         | 16    | 16     | 16     | 16      | 16     | 16       | 16        | 16    | 16     |
| 2                  | aluminum name plate - socket washer        | use kit <b>FT320 or FT321</b> | 2     | 2      | 2      | 2       | 2      | 2        | 2         | 2     | 2      |
| 3                  | aluminum washer 2,500 x ,0625              | use kit <b>FT320 or FT321</b> | 2     | 2      | 2      | 2       | 2      | 2        | 2         | 2     | 2      |
| 4                  | stainless steel spacer                     | 10089                         | 2     | 2      | 2      | 2       | 2      | 2        | 2         | 2     | 2      |
| 5                  | aluminum rivet .1875                       | use kit <b>FT320 or FT321</b> | 2     | 2      | 2      | 2       | 2      | 2        | 2         | 2     | 2      |
| 6                  | stainless steel cable - socket 8"          | use kit <b>FT320 or FT321</b> | 2     | 2      | 2      | 2       | 2      | 2        | 2         | 2     | 2      |
| 7                  | stainless steel screw - contact block      | 10094                         | 2     | 2      | 2      | 2       | 2      | 2        | 2         | 2     | 2      |
| 8                  | vinyl dust cap - thermistor (green)        | use kit <b>FT321</b>          | 1     | 1      | 1      | 1       | 1      | 1        | 1         | 1     | 1      |
| 9                  | vinyl dust cap - optic (blue)              | use kit <i>FT320</i>          | 1     | 1      | 1      | 1       | 1      | 1        | 1         | 1     | 1      |
| 10                 | polypropylene pipe plug                    | 10103                         | 2     | 2      | 2      | 2       | 2      | 2        | 2         | 2     | 2      |
| 11                 | steel screw - plug                         | 10105                         | 3     | 3      | 3      | 3       | 3      | 3        | 3         | 3     | 3      |
| 12                 | stainless steel screw                      | 10110                         | 6     | 6      | 6      | 6       | 6      | 6        | 6         | 6     | 6      |
| 13                 | stainless steel lock washer - 1/4"         | 10111                         | 6     | 6      | 6      | 6       | 6      | 6        | 6         | 6     | 6      |
| 14                 | polyamide strain relief                    | 10139                         | 1     | 1      | 1      | 1       | 1      | 1        | 1         | 1     | 1      |
| 15                 | stainless steel ground bolt                | 10223                         | n/a   |        | 1      | 1       |        | n/a      | 1         | n/a   |        |
| 16                 | stainless steel nut - ground bolt 1/2"-13  | 10224                         |       | n/a    | 1      | 1       | n/a    |          | 1         | n/a   |        |
| 17                 | stainless steel lock washer internal tooth | 10225                         |       | n/a    | 1      | 1       |        | n/a      | 1         | n/a   |        |
| 18                 | plastic contact block - socket short       | 10254                         | 2     | 2      | 2      | 2       | 2      | 2        | 2         | 2     | 2      |
| 19                 | aluminum box - dual socket                 | 10364AL-001                   | 1     | 1      | 1      | 1       | 1      | 1        | 1         | 1     | 1      |
| 20                 | aluminum faceplate - dual socket           | 10365AL                       | 1     | 1      | 1      | 1       | 1      | 1        | 1         | 1     | 1      |
| 21                 | stainless steel wear ring - 3 J-slot       | 10366SS-002                   | 1     | 1      | 1      | 1       | 1      | 1        | 1         | n/a   | n/a    |
| 22                 | stainless steel wear ring - 4 J-slot       | 10366SS-001                   | 1     | 1      | 1      | 1       | 1      | 1        | 1         | 2     | 2      |
| 23                 | cork gasket - lid                          | 10367CK                       | 1     | 1      | 1      | 1       | 1      | 1        | 1         | 1     | 1      |
| 24                 | stainless steel socket pin - short         | <b>10368SS</b> (was FT9061)   | 16    | 16     | 16     | 16      | 16     | 16       | 16        | 16    | 16     |
| 25                 | vinyl label - socket contact               | 10369VY                       | 2     | 2      | 2      | 2       | 2      | 2        | 2         | 2     | 2      |
| 26                 | stainless steel bracket - ground bolt      | 10370SS                       | 1     | 1      | 1      | 1       | 1      | 1        | 1         | 1     | 1      |
| 27                 | trailer identification module              | 10372                         | n/a   | n/a    | n/a    | 1       | 1      | n/a      | n/a       | n/a   | n/a    |
| 28                 | aluminum name plate - thermistor           | 10373AL                       | 1     | 1      | 1      | 1       | 1      | 1        | 1         | 1     | 1      |
| 29                 | aluminum name plate - optic                | 10374AL                       | 1     | 1      | 1      | 1       | 1      | 1        | 1         | 1     | 1      |
| 30                 | stainless steel lock washer                | 10375SS                       | 8     | 8      | 8      | 8       | 8      | 8        | 8         | 8     | 8      |
| 31                 | stainless steel screw                      | 10376SS                       | 8     | 8      | 8      | 8       | 8      | 8        | 8         | 8     | 8      |
| 32                 | stainless steel washer                     | 10382SS                       | 2     | 2      | 2      | 2       | 2      | 2        | 2         | 2     | 2      |
| 33                 | ground bolt label                          | 10621AL                       | n/a   |        | 1      | 1       | n/a    |          | 1         | n/a   | n/a    |
| 34                 | plastic black button insert                | BLACK BUTTON INSERT           | 6     | 6      | 6      | 6       | 6      | 6        | 6         | 6     | 6      |
| 35A                | stainless steel screw                      | 10110                         |       | n/a    |        | 1       | 1      | _        |           | n/a   | _      |
| 35B                | stainless steel screw                      | 10377SS                       | 1     | 1      | 1      |         | N/a    |          | 1         | 1     | 1      |
| 36                 | stainless steel lock washer - 1/4"         | 10111                         | 1     | 1      | 1      | 1       | 1      | 1        | 1         | 1     | 1      |
| not<br>illustrated | 20' cable, factory wired to sockets        | 10387-20                      |       | n/a    |        | n/a     |        | 1        | 1         |       | n/a    |

|          | 36              | stainless | s steel lock washer - 1/4"                             | 10111   | 1   | 1   | 1             | 1             | 1     | 1               | 1      | 1      | 1   |  |  |
|----------|-----------------|-----------|--|---|-----|-----|---------------|---------------|-------|-----------------|--------|--------|-----|--|--|
| T.       | not illustrated | 20' cable | e, factory wired to sockets                            | 10387-20  | n/a | n/a | n/a           | n/a           | n/a   | 1               | 1      | n/a    | n/a |  |  |
|          |                 |           |  |   |     |     |               |               |       |                 |        |        |     |  |  |
| E tu     | Repair K        | Cits      |  |   |     |     |               |               |       |                 |        |        |     |  |  |
| /erfill  | Par             | rt #      |  | Description   |     |     |               |               |       | Includes Item # |        |        |     |  |  |
| ó d      | FT3             | 20        | blue (optic) vinyl cap assembly                        |   |     |     |               | 2, 3, 5, 6, 9 |       |                 |        |        |     |  |  |
| ٢        | FT3             | 21        | green (thermistor) vinyl cap assemb                    | oly   |     |     | 2, 3, 5, 6, 8 |               |       |                 |        | 8      |     |  |  |
| <u>u</u> | FT9             | 051       | contact block assembly for FT390/F                     | ontact block assembly for FT390/FT393 Optic 6 pin       |     |     |               |               | 1,    | 7, 18           | , 24,  | 25     |     |  |  |
| 9        |                 | 052       | contact block assembly for FT390/F                     | ontact block assembly for FT390/FT393 Thermistor 10 pin |     |     |               |               | 1,7   | 7, 18           | , 24,  | 25     |     |  |  |
| OY<br>OY | FT9             | 062       | ose ring,contact assembly, Thermistor 4 J-slot, 10 pin |   |     |     |               | 1, 7,         | 18,   | 22, 2           | 24, 25 | 5      |     |  |  |
| 17       | FT9             | 063       | nose ring, contact assembly, Optic 3 J-slot, 6 pin     |   |     |     |               |               | 1, 7, | 18,             | 21, 2  | 24, 25 | 5   |  |  |
|          | FT9             | 068       | contact block attachment screws and washers (4 each)   |   |     |     |               |               |       | 30              | 31     |        |     |  |  |

#### FT393/394/395 Series EZ-Cept Triple Sockets



#### FT393/394/395 Series EZ-Cept Triple Sockets

#### **Bill of Materials**

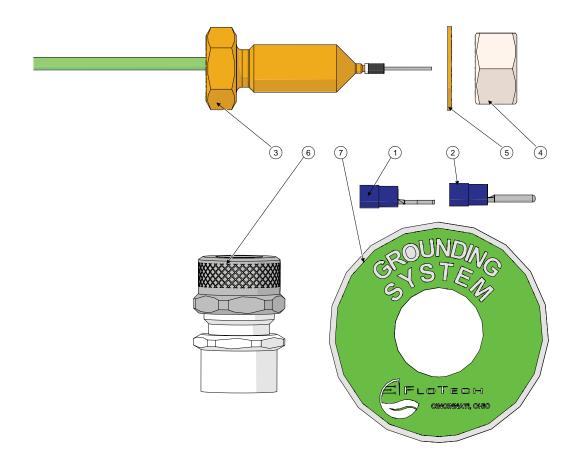
| Item # | Description                                | Part #                        | , FT393 | FT394 | , FT394G | , FT394V-G | , FT395 | , FT395V | , FT395G | , FT395V-G |
|--------|--|-------------------------------|---------|-------|----------|------------|---------|----------|----------|------------|
| 1      | stainless steel screw                      | 10086                         | 16      | 16    | 16       | 16         | 16      | 16       | 16       | 16         |
| 2      | aluminum name plate - socket washer        | 10087                         | 2       | 2     | 2        | 2          | 2       | 2        | 2        | 2          |
| 3      | aluminum washer 2.500 x .0625              | use kit <i>FT320 or FT321</i> | 2       | 2     | 2        | 2          | 2       | 2        | 2        | 2          |
| 4      | stainless steel spacer                     | use kit <i>FT320 or FT321</i> | 2       | 2     | 2        | 2          | 2       | 2        | 2        | 2          |
| 5      | aluminum rivet .1875                       | use kit <i>FT320 or FT321</i> | 2       | 2     | 2        | 2          | 2       | 2        | 2        | 2          |
| 6      | stainless steel cable - socket 8"          | use kit <i>FT320 or FT321</i> | 2       | 2     | 2        | 2          | 2       | 2        | 2        | 2          |
| 7      | stainless steel lock washer                | 10092                         | 2       | 2     | 2        | 2          | 2       | 2        | 2        | 2          |
| 8      | stainless steel screw - contact block      | 10094                         | 2       | 2     | 2        | 2          | 2       | 2        | 2        | 2          |
| 9      | vinyl dust cap - thermistor (green)        | use kit <b>FT321</b>          | 1       | 1     | 1        | 1          | 1       | 1        | 1        | 11         |
| 10     | vinyl dust cap - optic (blue)              | use kit <i>FT320</i>          | 1       | 1     | 1        | 1          | 1       | 1        | 1        | 1          |
| 11     | polypropylene pipe plug                    | 10103                         | 2       | 2     | 2        | 2          | 2       | 2        | 2        | 2          |
| 12     | steel screw - plug                         | 10105                         | 4       | 4     | 4        | 4          | 4       | 4        | 4        | 4          |
| 13     | stainless steel screw                      | 10110                         | 8       | 8     | 8        | 8          | 8       | 8        | 8        | 8          |
| 14     | stainless steel lock washer - 1/4"         | 10111                         | 9       | 9     | 9        | 9          | 9       | 9        | 9        | 9          |
| 15     | J560 socket                                | 10119 (was FT9029)            | 1       | 1     | 1        | 1          | 1       | 1        | 1        | 1          |
| 16     | neoprene gasket, float socket              | 10121                         | 2       | 2     | 2        | 2          | 2       | 2        | 2        | 2          |
| 17     | polyamide strain relief                    | 10139                         | 1       | 1     | 1        | 1          | 1       | 1        | 1        | 1          |
| 18     | stainless steel ground bolt                | 10223                         | n/a     | n/a   | 1        | 1          | n/a     | n/a      | 1        | 1          |
| 19     | stainless steel nut - ground bolt ½"- 13   | 10224                         | n/a     | n/a   | 1        | 1          | n/a     | n/a      | 1        | 1          |
| 20     | stainless steel lock washer internal tooth | 10225                         | n/a     | n/a   | 1        | 1          | n/a     | n/a      | 1        | 1          |
| 21     | plastic contact block - socket short       | 10254                         | 2       | 2     | 2        | 2          | 2       | 2        | 2        | 2          |
| 22     | stainless steel wear ring - 4 J-slot       | 10366SS-001 (was FT9044)      | 1       | 1     | 1        | 1          | 2       | 2        | 2        | 2          |
| 23     | stainless steel wear ring - 3 J-slot       | 10366SS-002 (was FT9043)      | 1       | 1     | 1        | 1          | n/a     | n/a      | n/a      | n/a        |
| 24     | stainless steel socket pin - short         | <b>10368SS</b> (was FT9061)   | 16      | 16    | 16       | 16         | 16      | 16       | 16       | 16         |
| 25     | vinyl label - socket contact               | 10369VY                       | 2       | 2     | 2        | 2          | 2       | 2        | 2        | 2          |
| 26     | stainless steel bracket - ground bolt      | 10370SS                       | 1       | 1     | 1        | 1          | 1       | 1        | 1        | 1          |
| 27     | aluminum name plate - thermistor           | 10373AL                       | 1       | 1     | 1        | 1          | 1       | 1        | 1        | 1          |
| 28     | aluminum name plate - optic                | 10374AL                       | 1       | 1     | 1        | 1          | 1       | 1        | 1        | 1          |
| 30     | stainless steel screw                      | 10376SS                       | 8       | 8     | 8        | 8          | 8       | 8        | 8        | 8          |
| 31     | stainless steel screw                      | 10377SS                       | 1       | 1     | 1        | 1          | 1       | 1        | 1        | 1          |
| 32     | stainless steel washer                     | 10382SS                       | 2       | 2     | 2        | 2          | 2       | 2        | 2        | 2          |
| 33     | stainless steel nut                        | 10508SS                       | 2       | 2     | 2        | 2          | 2       | 2        | 2        | 2          |
| 34     | aluminum box - 3 socket                    | 10525AL                       | 1       | 1     | 1        | 1          | 1       | 1        | 1        | 1          |
| 35     | aluminum faceplate - 3 socket              | 10526AL                       | 1       | 1     | 1        | 1          | 1       | 1        | 1        | 1          |
| 36     | cork gasket - lid                          | 10527CK                       | 1       | 1     | 1        | 1          | 1       | 1        | 1        | 1          |
| 37     | acetal spacer                              | 10529AC                       | 1       | 1     | 1        | 1          | 1       | 1        | 1        | 1          |
| 38     | stainless steel carriage bolt              | 10530SS                       | 2       | 2     | 2        | 2          | 2       | 2        | 2        | 2          |
| 39A    | aluminum name plate - optic (blue)         | 10558AL                       | n/a     | 1     | 1        | 1          | 1       | 1        | 1        | 1          |
| 39B    | aluminum name plate - float (red)          | 10531AL                       | 1       | n/a   | n/a      | n/a        | n/a     | n/a      | n/a      | n/a        |
| 40     | aluminum label - ground bolt               | 10621AL                       | n/a     | n/a   | 1        | 1          | n/a     | n/a      | 1        | 1          |
| 41     | plastic black button insert                | BLACK BUTTON INSERT           | 6       | 6     | 6        | 6          | 6       | 6        | 6        | 6          |

|          | - 01  | acciai   | pacci  | 1002370  |     |     |     |                      |                 |        |     |     |  |  |  |
|----------|---|----------|--|--|-----|-----|-----|----------------------|-----------------|--------|-----|-----|--|--|--|
|          | 38  | stainles | s steel carriage bolt                                | 10530SS  | 2   | 2   | 2   | 2                    | 2               | 2      | 2   | 2   |  |  |  |
| S        | 39A   | aluminu  | ım name plate - optic (blue)                         | 10558AL  | n/a | 1   | 1   | 1                    | 1               | 1      | 1   | 1   |  |  |  |
| <b>.</b> | 39B   | aluminu  | ım name plate - float (red)                          | 10531AL  | 1   | n/a | n/a | n/a                  | n/a             | n/a    | n/a | n/a |  |  |  |
| Ра       | 40  |          | ım label - ground bolt                               | 10621AL  | n/a | n/a | 1   | 1                    | n/a             | n/a    | 1   | 1   |  |  |  |
|          | 41  | plastic  | olack button insert                                  | BLACK BUTTON INSERT                                    | 6   | 6   | 6   | 6                    | 6               | 6      | 6   | 6   |  |  |  |
| Overfill | Repair Kits   |          |  |  |     |     |     |                      |                 |        |     |     |  |  |  |
| 0 8      | Part  | :#       |  | Description  |     |     |     |                      | Includes Item # |        |     |     |  |  |  |
| <u>0</u> | FT32  | 0        | blue (optic) vinyl cap assembly                      |  |     |     |     | 2, 3, 5, 6, 9        |                 |        |     |     |  |  |  |
| Rep      | FT32  | 1        | green (thermistor) vinyl cap asse                    | embly  |     |     |     | 2, 3, 5, 6, 10       |                 |        |     |     |  |  |  |
| <b>O</b> | FT9051 contact block assembly for FT390/FT393 Optic 6 pin       |          |  |  |     |     |     | 1,8                  | , 21, 2         | 24, 25 |     |     |  |  |  |
|          | FT9052 contact block assembly for FT390/FT393 Thermistor 10 pin |          |  |  |     |     |     |                      | , 21, 2         |        |     |     |  |  |  |
|          | FT90  |          |  | ose ring,contact assembly, Thermistor 4 J-slot, 10 pin |     |     |     | 1, 8, 21, 22, 24, 25 |                 |        |     |     |  |  |  |
|          | FT90  |          | nose ring, contact assembly, Optic 3 J-slot, 6 pin   |  |     |     |     | 1, 8, 2              | •               |        | 25  |     |  |  |  |
|          | FT90  | 68       | contact block attachment screws and washers (4 each) |  |     |     |     | 29, 30               |                 |        |     |     |  |  |  |

## nlacement Dar

#### **Fuel Tanker Overfill Detection**

#### FT450 Ground Bolt



#### **Bill of Materials**

| Item # | Description                                 | Part # | Qty |
|--------|---|--------|-----|
| 1      | locking spade                               | 10102  | 1   |
| 2      | terminal pin                                | 10123  | 1   |
| 3      | stainless steel ground bolt                 | 10223  | 1   |
| 4      | stainless steel nut - ground bolt 1/2" - 13 | 10224  | 1   |
| 5      | stainless steel lock washer internal tooth  | 10225  | 1   |
| 6      | strain relief ½" NPT                        | 10229  | 1   |
| 7      | aluminum label - ground bolt                | 10562  | 1   |

# Rack Cords-FT620P

Wire Color

red

white blue

green

orange

orange w/blk

J560

Connection

BL W

G

R

BK

Rack Plug

Connection

pin 8 pin 10

pin 4

pin 5

pin 6

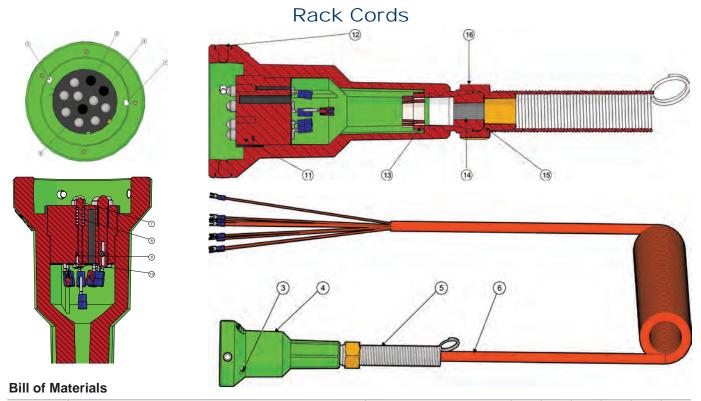
pin 9

#### Bill of Materials

| Item # | Description               | Part #              | Qty | Material            |
|--------|---------------------------|---------------------|-----|---------------------|
| 1      | strain relief nut         | 10249               | 1   | aluminum            |
| 2      | spring                    | 10250               | 1   | stainless steel     |
| 3      | retaining ring            | 10252               | 6   | steel               |
| 4      | spring                    | 10253               | 6   | stainless steel     |
| 5      | set screw                 | 10260               | 6   | stainless steel     |
| 6      | body                      | 10523NY-003         | 1   | nylon               |
| 7      | contact block-long        | 10524PL-001         | 1   | plastic             |
| 8      | plug pin                  | 10550SS             | 6   | stainless steel     |
| 9      | cord grip bushing         | 10715NP             | 1   | neoprene            |
| 10     | cord grip washer          | 10716ST             | 1   | plated steel        |
| 11     | screw                     | 10717SS             | 1   | stainless steel     |
| 13     | pinch-on double ear clamp | 1518R               | 1   | stainless steel     |
| 14     | black button insert       | BLACK BUTTON INSERT | 5   | plastic             |
| 15     | assembly 30' coil         | 10290-002           | 1   | 316 stainless steel |
| 16     | J560 plug                 | 10285-003           | 1   | reinforced nylon    |

## lacement Par

#### Fuel Tanker Overfill Detection



| Item # | Description   | Part #              | FT600 | FT600C | FT600S | FT600SC | FT620 | FT620S |
|--------|---|---------------------|-------|--------|--------|---------|-------|--------|
| 1      | bayonet stud  | 10718SS             | 2     | 4      | 2      | 4       | 3     | 3      |
| 2      | plastic black pin insert                            | BLACK BUTTON INSERT | 3     | 1      | 3      | 1       | 5     | 5      |
| 3      | stainless screw                                     | 10717SS             | 1     | 1      | 1      | 1       | 5     | 11     |
| 4A     | green "thermistor" glass reinforced nylon plug body | 10523NY-004         | 1     | 1      | 1      | 1       | n/a   | n/a    |
| 4B     | blue "optic" glass reinforced nylon plug body       | 10523NY-003         | n/a   | n/a    | n/a    | n/a     | 1     | 1      |
| 5      | stainless, cable bend restrictor spring             | 10250               | 1     | 1      | 1      | 1       | 1     | 1      |
| 6A     | thermistor cable assembly 30' coiled (US)           | 10259               | 1     | n/a    | n/a    | n/a     | n/a   | n/a    |
| 6B     | thermistor cable assembly 30' coiled (Canada)       | 10259-C             | n/a   | 1      | n/a    | n/a     | n/a   | n/a    |
| 6C     | thermistor cable assembly 20' straight (US)         | 10259-S             | n/a   | n/a    | 1      | n/a     | n/a   | n/a    |
| 6D     | thermistor cable assembly 20' straight (Canada)     | 10259-CS            | n/a   | n/a    | n/a    | 1       | n/a   | n/a    |
| 6E     | optic cable assembly 30' coiled (US)                | 10290               | n/a   | n/a    | n/a    | n/a     | 1     | n/a    |
| 6F     | optic cable assembly 30' straight (US)              | 10290-S             | n/a   | n/a    | n/a    | n/a     | n/a   | 1      |
| 7      | plug pin  | 10550SS             | 8     | 10     | 8      | 10      | 6     | 6      |
| 8      | stainless plug spring                               | 10253               | 8     | 10     | 8      | 10      | 6     | 6      |
| 9      | set screw   | 10260               | 8     | 10     | 8      | 10      | 6     | 6      |
| 10     | retaining ring                                      | 10252               | 8     | 10     | 8      | 10      | 6     | 6      |
| 11     | long plastic contact block                          | 10524PL-001         | 1     | 1      | 1      | 1       | 1     | 1      |
| 12     | aluminum bayonet pin plug                           | 10718PLUG           | 2     | 4      | 2      | 4       | n/a   | n/a    |
| 13     | stainless double ear pinch on clamp                 | SINGLE1518R         | 1     | 1      | 1      | 1       | 1     | 1      |
| 14     | cord grip bushing                                   | 10715NP             | 1     | 1      | 1      | 1       | 1     | 1      |
| 15     | cord grip washer                                    | 10716ST             | 1     | 1      | 1      | 1       | 1     | 1      |
| 16     | aluminum strain relief nut                          | 10249               | 1     | 1      | 1      | 1       | 1     | 1      |

#### Repair Kits

| Part #   | Description  | Includes Item #    |
|----------|--|--------------------|
| FT601    | thermistor plug assembly, 8 pin 2 J-slot (US)        | 1-4A,5, 7-11,14-16 |
| FT601-4  | green plug assembly with 8 contact pins and 4 J-slot | 1-4A,5, 7-11,14-16 |
| FT601-10 | thermistor plug assembly, 10 pin 4 J-slot (Canada)   | 1-4A,5, 7-11,14-16 |
| FT602    | 30' orange coiled cord, Thermistor 10 conductor      | 6B, 13             |
| FT604    | 20' orange straight cord, Thermistor 10 conductor    | 6D, 13             |
| FT621    | optic plug assembly, 6 pin 3 J-slot (US)             | 1-4B,5,7-11,14-16  |
| FT622    | 30' orange coiled cord, Optic 6 conductor            | 6E, 13             |
| FT624    | 20' orange straight cord, Optic 6 conductor          | 6F, 13             |

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