



Customer Service  
877.963.4966

## Dixon® Terminal Products

Various refined petroleum products are distributed through terminals to tank trucks, barges, or railcars. Dixon products are successfully utilized in many of these transfer applications, from dry disconnects and API couplers, to rack cords and vapor recovery couplers.

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## **Our Commitment to the Terminal Market**

Through innovation, superior product design, and application expertise our objective is to be the easiest company to do business with in the terminal market. We maintain high inventory levels and strive for short lead times while providing training and support before, during, and after the sale. The on-site training at the end-user level will focus on high-quality manufactured products that extend service life and minimize downtime.

### **Safety**

Dixon® couplings and retention devices are designed to work safely for their intended use. The selection of the proper hose, coupling and retention device, and the proper application of the coupling to the hose, are of utmost importance. Users must consider the size, temperature, application, media, pressure, and hose and coupling manufacturer's recommendations when selecting the proper hose assembly components. Dixon recommends that all hose assemblies be tested in accordance with the Association for Rubber Products Manufacturers' (ARPM) recommendations and be inspected regularly (before each use) to ensure that they are not damaged or have become loose. Visit [arpminc.com](http://arpminc.com) for more information.

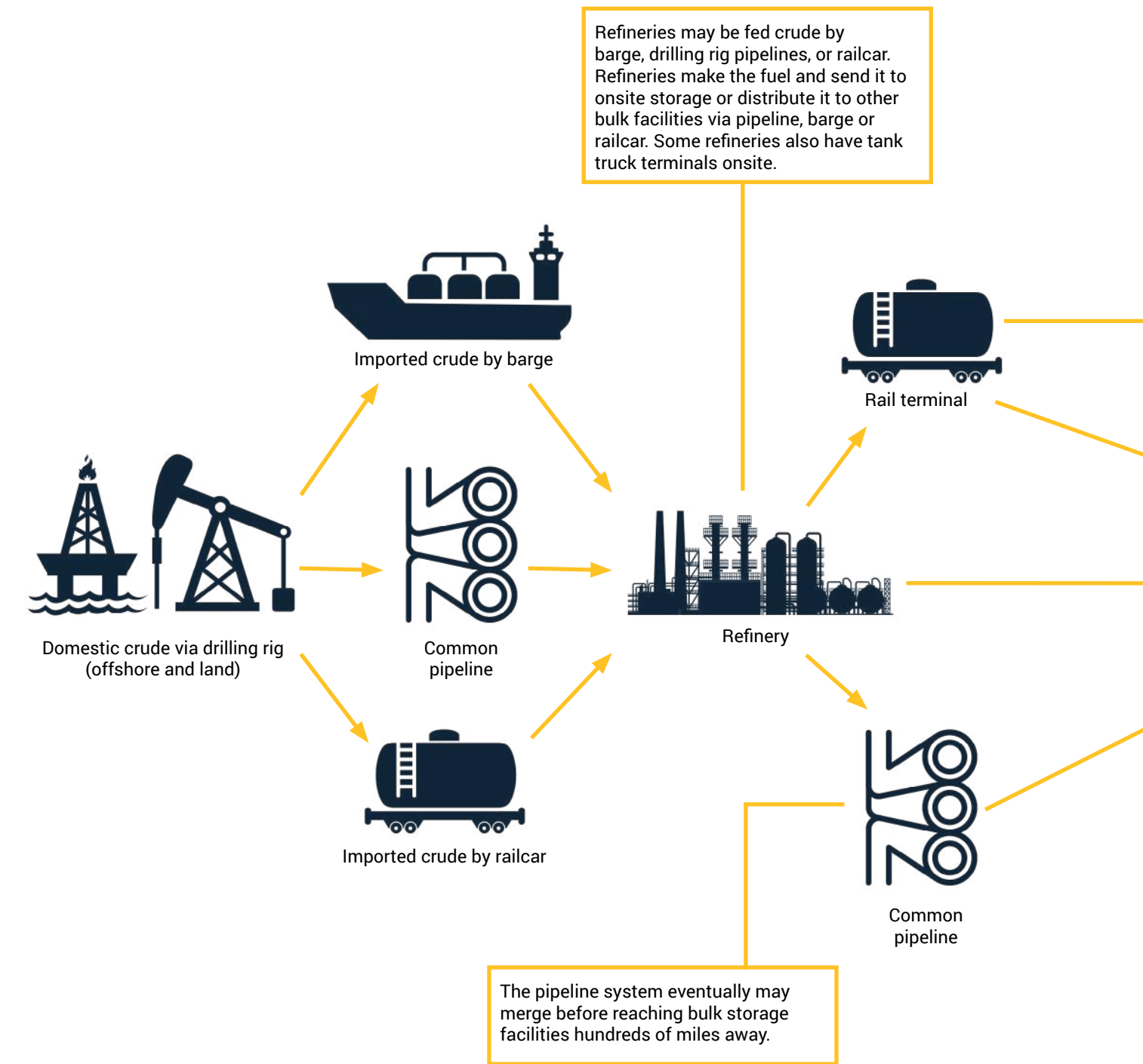
Where safety devices are integral to the coupling, they must be working and utilized. The use of supplementary safety devices such as safety clips or safety cables are recommended.

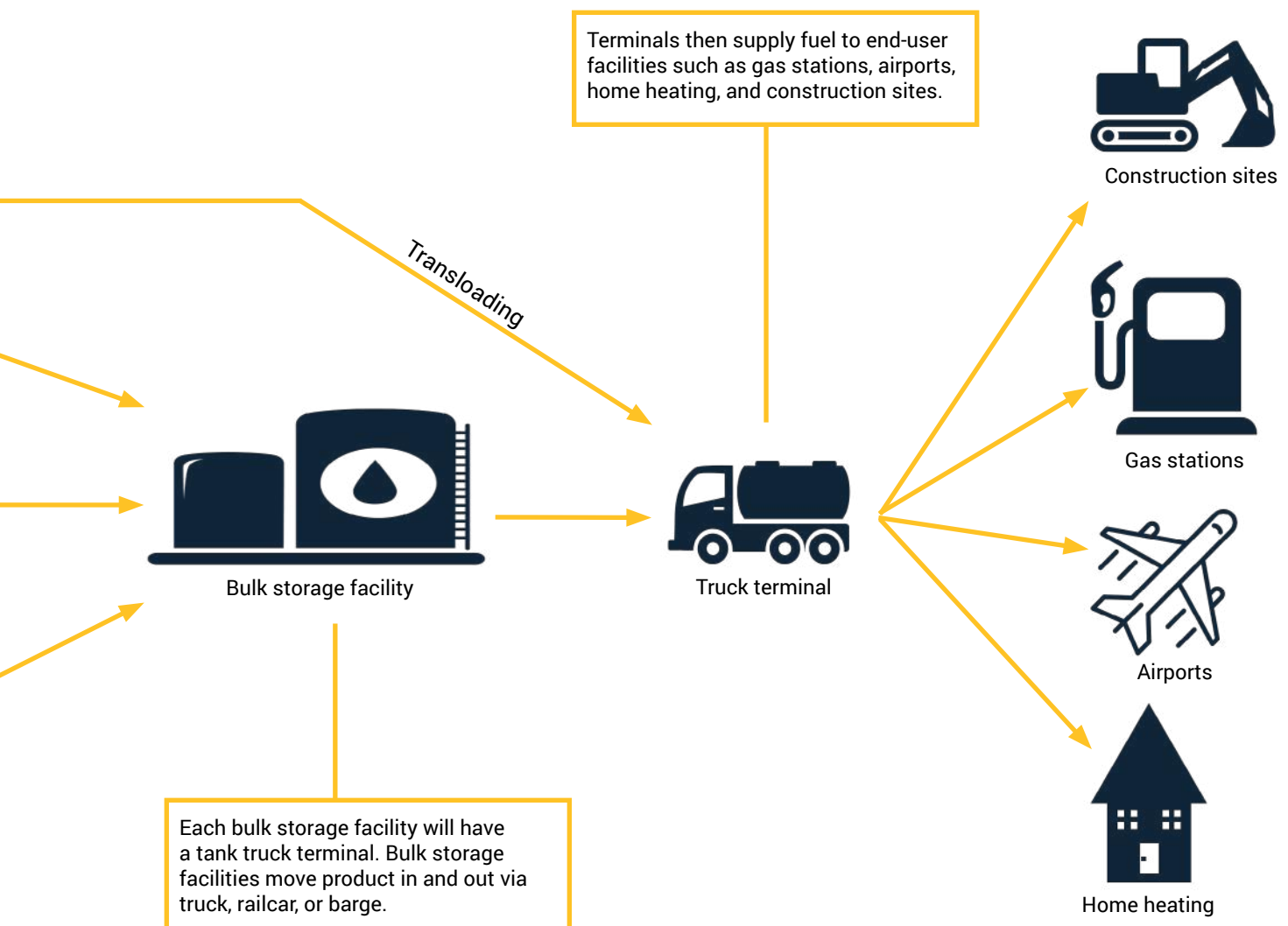
If any problem is detected, couplings must be removed from service immediately.

Dixon is available to consult, train, and recommend the proper selection and application of all fittings we sell. We strongly recommend that distributors and end users make use of Dixon's testing and recommendation services. Call 877.963.4966 or visit [dixonvalve.com](http://dixonvalve.com) to learn more.

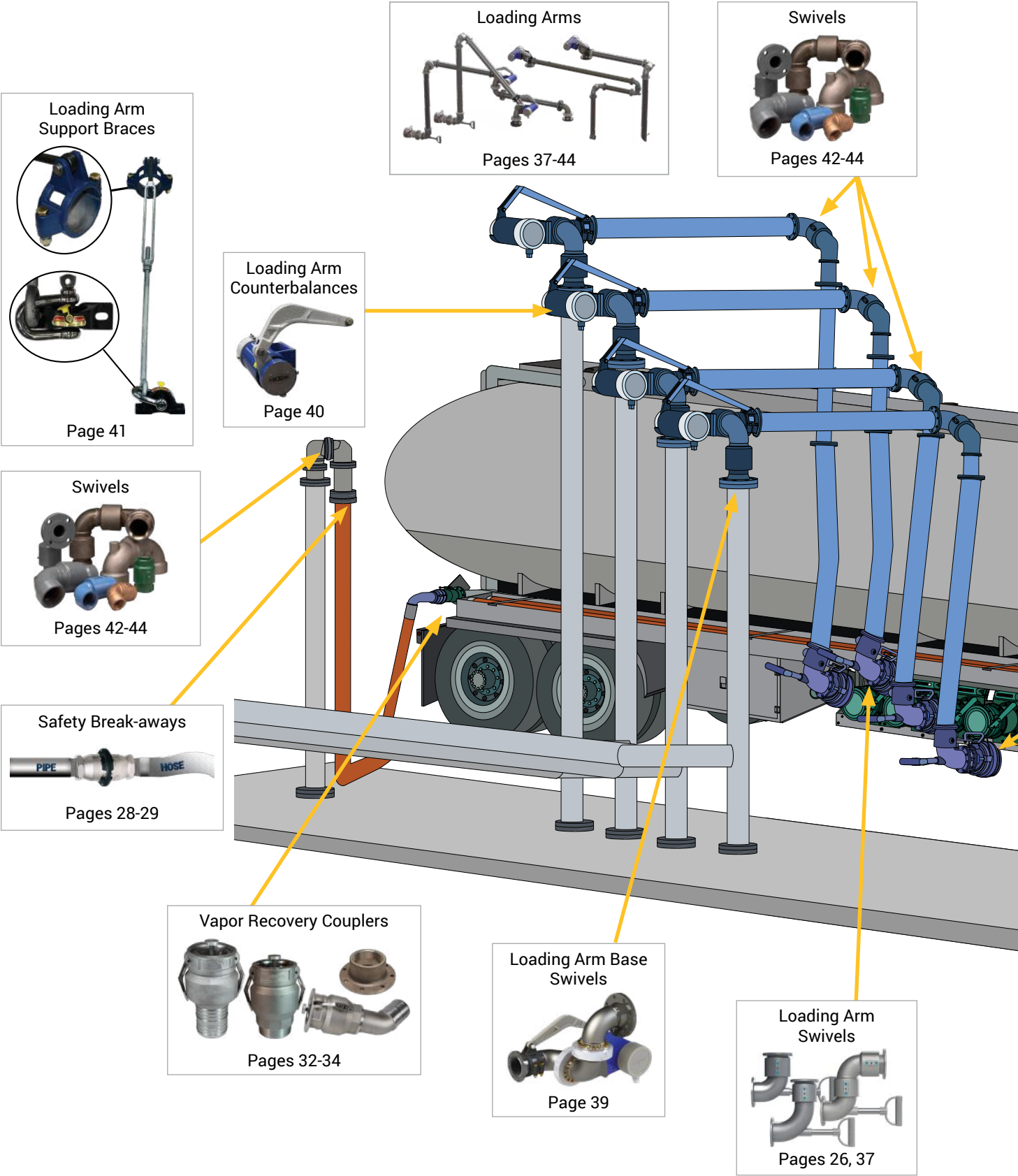
Terminal Process

The illustration below provides a general overview of the terminal process.





Tank Truck: Bottom Loading/Unloading



## Tank Truck: Bottom Loading/Unloading

Sight Flow Indicators



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TTMA Flanged Break-away Couplings



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TTMA Flange Adapters



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TTMA Flange Extensions



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API Couplers

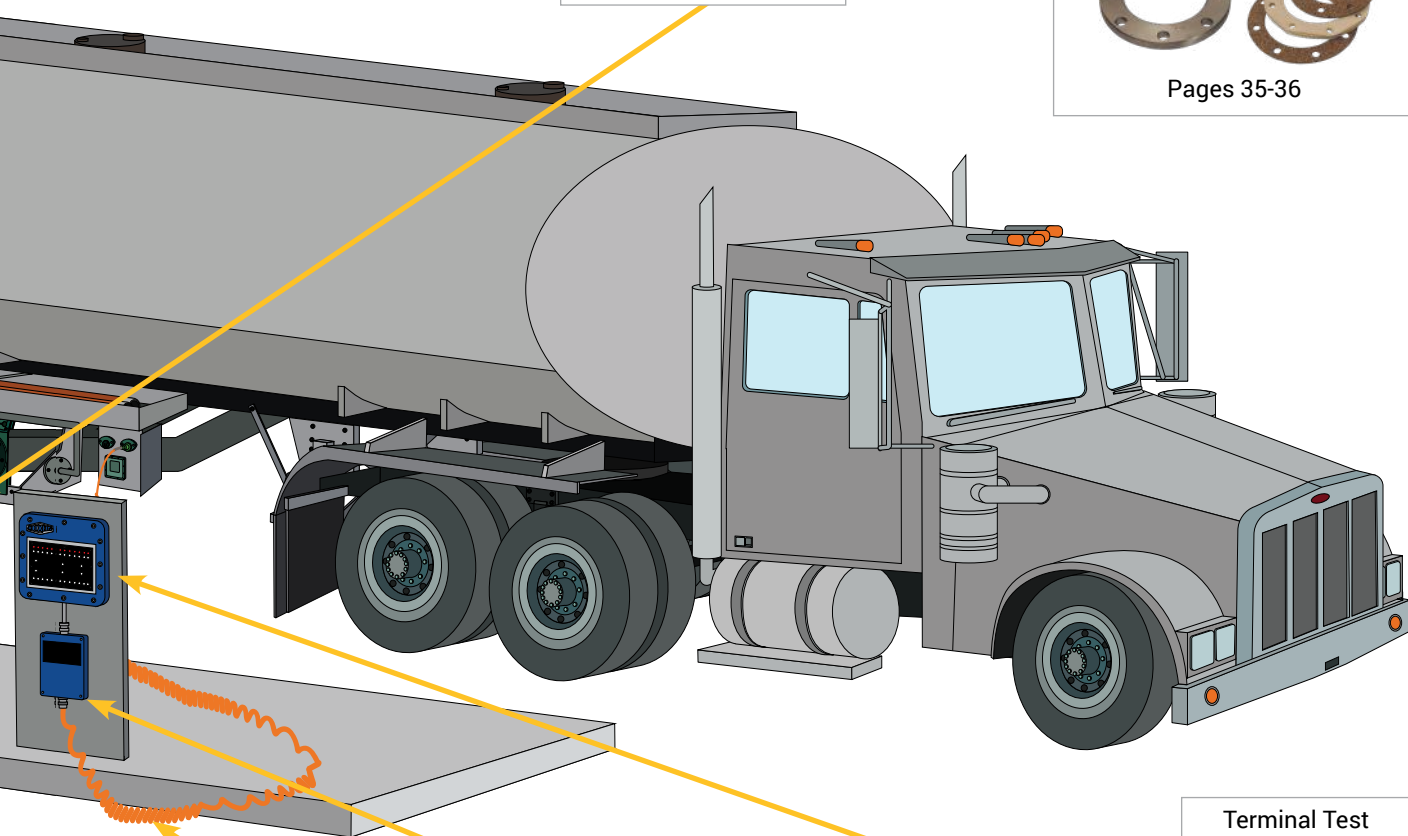


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Flange Spacers and Gaskets



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API Optic and Thermistor Cord Assemblies



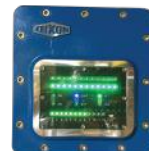
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Junction Boxes



Page 10

Rack Monitors



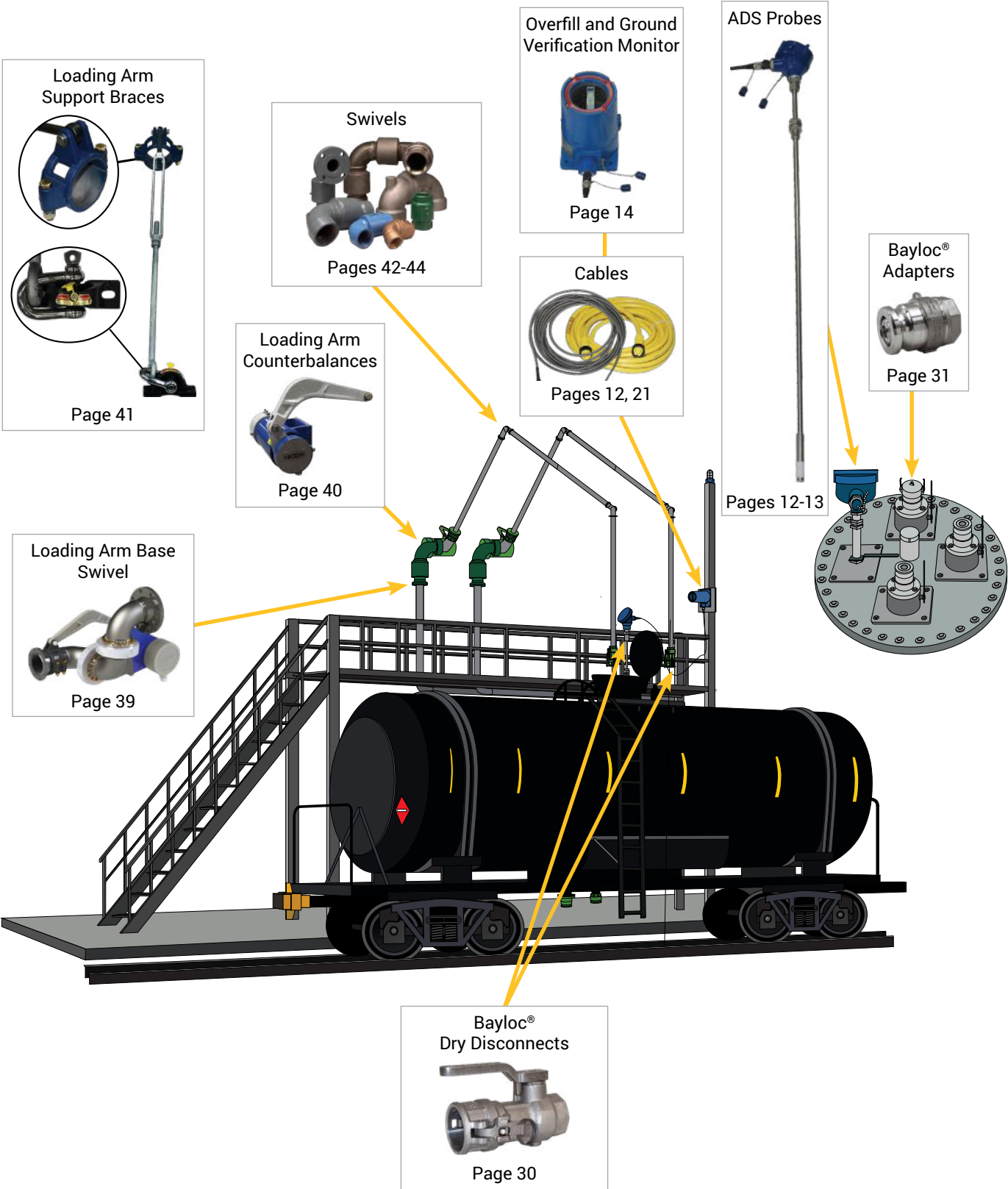
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Terminal Test Equipment

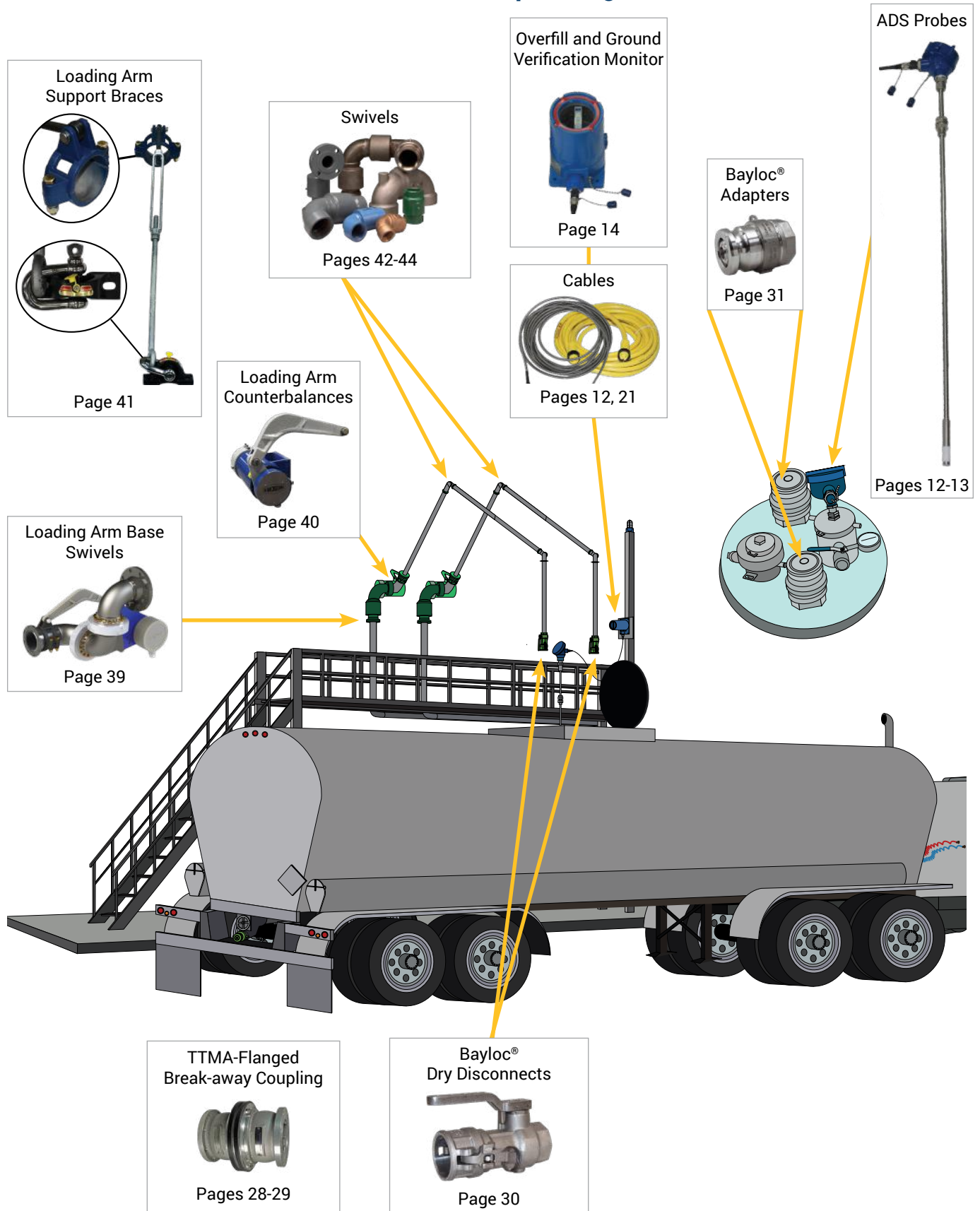


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Railcar: Top Loading



## Tank Truck: Top Loading



Overfill Protection Rack Monitors



Rack Monitor System



Rack Monitor  
(FT7000)

Application

- Installed on the gantry to control the loading process of petroleum fuels or other hazardous liquid into cargo tanks

Features

- Automatically switches between 2-wire or 5-wire type sensors
- Compatible with analog 2-wire thermistor type sensors
- Redundant relay outputs prevent single point failures
- Data management via RS485 port
- Wireless bypass key system
- Ground verification
- Reads trailer identification modules

Approvals

- Meets API RP1004 and EN13922 standards
- Suitable for Class I, Division 1, Group CD and Class I, Zone 1, and Group IIB

FT590 Series Terminal Test Equipment

Applications

- Verifies terminal overfill monitor performance and read the trailer identification modules
- Displays the unique serial number you need to enter into the terminal automation system

Features

- Rack monitor testers and mini trailer overfill system have the same API compatible signals
- When connected to the API plug it will cause the terminal overfill monitor to switch permissive
- Tester contains a liquid level sensor, API compatible socket, ground bolt, and trailer identification module, all wired into one unit
- Flotech® FT530 is a self contained microprocessor capable of reading the serial number embedded into the trailer identification module located in the trailer socket



FT590OG



FT590TG



FT530

| Description                                                               | Part #   |
|---------------------------------------------------------------------------|----------|
| rack tester thermistor with ground bolt                                   | FT590TG  |
| rack tester thermistor with ground bolt and trailer identification module | FT590TGT |
| rack tester optic with ground bolt                                        | FT590OG  |
| rack tester optic with ground bolt and trailer identification module      | FT590OGT |
| trailer identification module reader                                      | FT530    |

## API-Compatible Systems

### Features

- Plug is color-coded (5-wire optic) blue or (2-wire optic / thermistor) green
- Highly visible safety orange jacket to meet trip hazard requirements
- Cord is bonded mechanically and resistant to abrasion and oil
- Cord sets are interchangeable with Scully and Civacon
- All wiring is compatible with standard Scully color codes and wiring number configurations
- The 9-pin conductor is shielded to be compatible with Scully VIP system
- For mating socket, consult Dixon®

### Materials

- Plug body: reinforced nylon
- Button contacts: 316 stainless steel
- All other hardware: stainless steel

### Order Guide

| Part #                                  | Rack Monitor Description                                                                                                                  |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| FT7000                                  | rack monitor, auto switch between 2-wire / 5-wire sensors, ground verification, and trailer identification modules; API RP 1004 / EN13922 |
| Safe-T Connect Junction Box Description |                                                                                                                                           |
| FT7600                                  | 8-pin, 2J, green API plug, and 30' safety orange coiled cable                                                                             |
| FT7600-4                                | 8-pin, 4J, green API plug, and 30' safety orange coiled cable                                                                             |
| FT7600C                                 | 10-pin, 4J, green API plug, and 30' safety orange coiled cable                                                                            |
| FT7600P                                 | 8-pin, 2J, green API plug, 30' safety orange coiled cable, and Plug-n-Play connector                                                      |
| FT7600S                                 | 8-pin, 2J, green API plug, and 20' safety orange straight cable                                                                           |
| FT7620                                  | 6-pin, 3J, blue API plug, and 30' blue coiled cable                                                                                       |
| FT7620P                                 | 6-pin, 3J, blue API plug, 30' blue coiled cable, and Plug-n-Play connector                                                                |
| FT7620S                                 | 6-pin, 3J, blue API plug, and 20' blue straight cable                                                                                     |
| FT7630                                  | 10-pin, 4J, black plug per EN13922, and 30' blue shielded coiled cable                                                                    |
| FT7630D                                 | 10-pin, 4J, black plug per EN13922, and 30' blue shielded coiled cable with Dixon Bayco break-away                                        |
| Junction Box Description                |                                                                                                                                           |
| FT7500                                  | single cord junction box                                                                                                                  |
| FT7501                                  | dual cord junction box                                                                                                                    |
| FT7502                                  | junction box with Cole Hersee yellow 13-pin break-away                                                                                    |
| FT7503                                  | junction box with D-type pigtail break-away                                                                                               |
| Rack Cord Description                   |                                                                                                                                           |
| FT600                                   | 8-pin, 2J, API thermistor plug, and 30' safety orange coiled cable                                                                        |
| FT600-4                                 | 8-pin, 4J, API thermistor plug, and 30' safety orange coiled cable                                                                        |
| FT600C                                  | 10-pin, 4J, API thermistor plug, and 30' safety orange coiled cable                                                                       |
| FT600P                                  | 8-pin, 2J, API thermistor plug, and 30' safety orange coiled cable with 13-pin Plug-n-Play                                                |
| FT600S                                  | 8-pin, 2J, API thermistor plug, and 20' safety orange straight cable                                                                      |
| FT620                                   | 6-pin, 3J, API optic plug, and 30" blue coiled cable                                                                                      |
| FT620P                                  | 6-pin, 3J, API optic plug, 30' blue coiled cable and Plug-n-Play connector                                                                |
| FT620S                                  | 6-pin, 3J, API optic plug, and 20' blue straight cable                                                                                    |
| FT630                                   | 10-pin, 4J, black plug per EN13922, and 30' blue shielded coiled cable                                                                    |
| FT630D                                  | 10-pin, 4J, black plug per EN13922, 30' blue shielded coiled cable, and Dixon Bayco break-away                                            |



FT7500



FT7501



FT7502



FT600

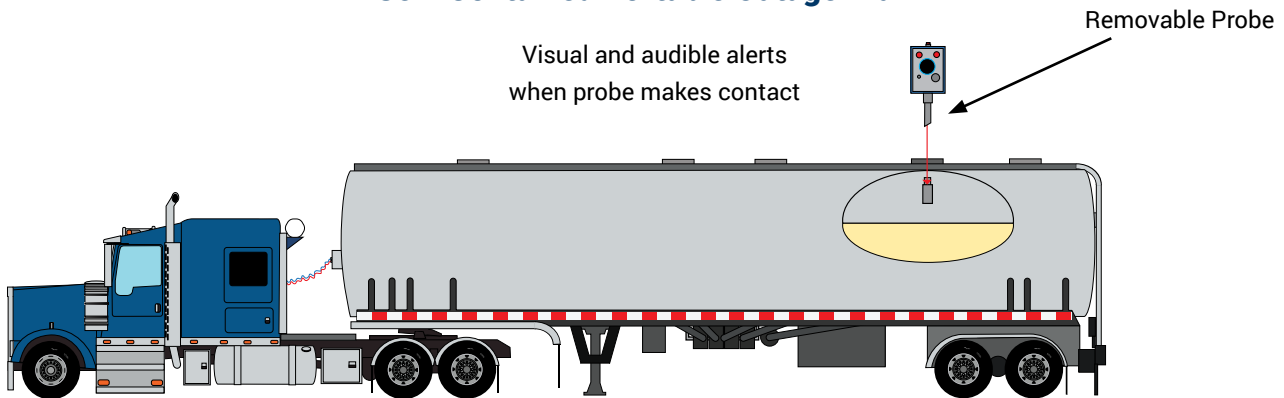


FT620

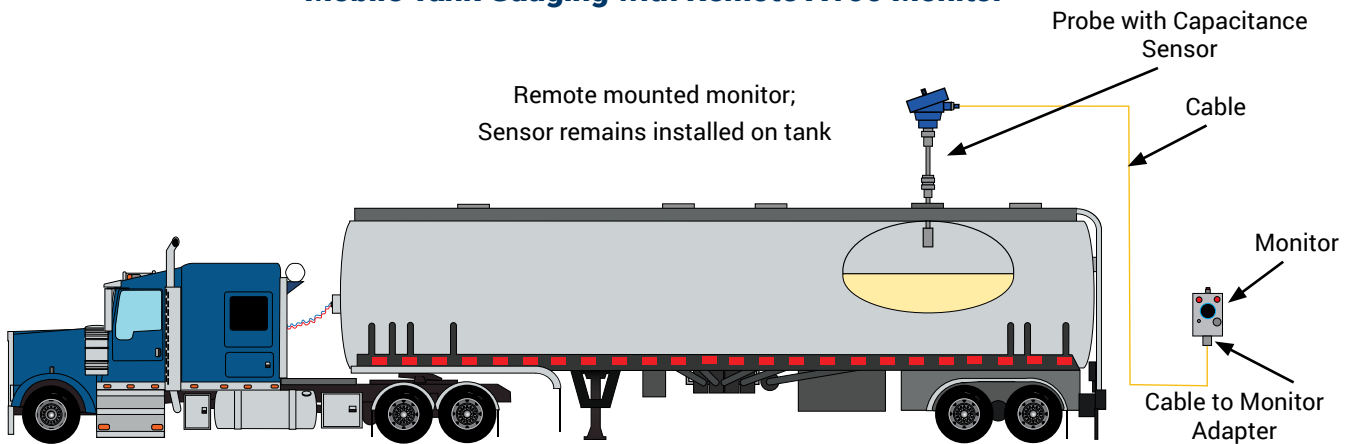

FT600P  
with 13-pin plastic

FT620P  
with J560 aluminum

## A100 Outalarm® Self-Contained Portable Outage Alarm



## Mobile Tank Gauging with Remote A100 Monitor



Cable  
A200CB3P25



Cable to Monitor Adapter  
A100CBLMTR



Monitor  
A100MTR

### Applications

- Petroleum products: gasoline, diesel, kerosene, and jet fuel
- Bio-diesel
- Water-based products
- Water/petroleum waste
- Ether
- Esters
- Surfactants
- Sulfuric acid
- Amines
- Molten sulfur
- Sodium hydroxide
- Methyl diphenyl diisocyanate (MDI)
- Vinyl chloride monomer
- Alcohol and methanol
- Brine

NOTE: Capacitance probes work with all liquids with dielectric constant 1.8 or higher. Visit [dixonvalve.com/ads](http://dixonvalve.com/ads) for a list of dielectric constants for various chemicals.

## A100 Outalarm® with Probe

Dixon® ADS industrial fluid control\* manufactures products specifically designed for liquid terminal operations. Our standard product offering is shown on the following pages. However, there are numerous additional applications, materials, and custom designs available. For technical information or assistance with ordering these products, please call 513.874.8499 or 877.582.3569 or visit [dixonvalve.com/ADS](http://dixonvalve.com/ADS).

\*Formerly Automated Design Service, Inc. (ADS)

### Application

- Specifically designed for liquid terminal operation on batch loading and overfill protection, tank cars, tanks trucks, marine barges; suitable for open and closed domes

### Sizes

- 24", 36", 48", and 60" probe lengths standard, other lengths available

### Features

- Totally self-contained; no wires, tubing, or external power
- Rugged weather- and corrosion-resistant construction
- No moving parts, tip sensitive phase shift digital capacitance sensor for conductive and non-conductive fluid; conductivity sensor available for conductive fluids
- Requires no calibration or adjustment
- Adjustable insertion length through a standard ½" NPT fitting
- High-intensity audible and flashing visual outputs
- Optional opto-isolated solid state contact output
- Full, hard, graduated, laser-engraved rod
- A100 operates up to 2,500 hours on a single 9V alkaline battery in standby mode
- Fail-safe, continuous battery monitor goes to alarm state on low battery
- Battery current drain <0.23 mA during standby; <60 mA in alarm state

### Materials

- Wetted materials: 316 stainless steel, PTFE standard, other materials available

### Specifications

- Minimum dielectric constant: 1.8
- Temperature range:
  - capacitance probe: -14°F to 250°F (-26°C to 121°C)
  - high-temp capacitance probe: -14°F to 325°F (-26°C to 163°C)
  - Outalarm® monitor: -40°F to 150°F (-40°C to 65°C)
- Activation point: ¼" into liquid surface
- Compatible with any liquid or dry bulk material with a dielectric constant of 1.8 or greater
- Horn intensity: 101 dB at 2'
- Light output: three each 3,000 mcd high-intensity red flashing LEDs
- Pressure rating on standard unit: **50 PSI**; consult Dixon for applications up to **300 PSI**

### Approvals

- Intrinsically safe design per ANSI/UL913 for Class I, Div I Groups A, B, C, and D Hazardous Areas



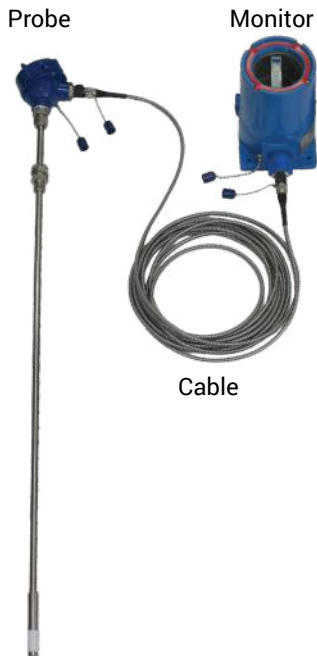
A100  
Capacitance  
Probe

### A100 Probe

| Length | Capacitance<br>250°F (121°C) Max<br>Part # | Hi-temp Capacitance<br>325°F (163°C) Max<br>Part # | Conductivity<br>for Conductive Fluids*<br>Part # |
|--------|--------------------------------------------|----------------------------------------------------|--------------------------------------------------|
| 12"    | A100C12A                                   | A100HC12A                                          | A100CSS12A                                       |
| 24"    | A100C24A                                   | A100HC24A                                          | A100CSS24A                                       |
| 36"    | A100C36A                                   | A100HC36A                                          | A100CSS36A                                       |
| 48"    | A100C48A                                   | A100HC48A                                          | A100CSS48A                                       |
| 60"    | A100C60A                                   | A100HC60A                                          | A100CSS60A                                       |
| 72"    | A100C72A                                   | A100HC72A                                          | A100CSS72A                                       |
| 84"    | A100C84A                                   | A100HC84A                                          | A100CSS84A                                       |

\*Material to be sensed must be specified at time of order.

## A210 ADS Spillguard® System



### Applications

- Shutdown and alarm system for tank cars, tank trucks, barges, and ships
- Suitable for open and closed domes

### Sizes

- Standard cable lengths: 15', 25', and 50', other lengths available
- Insertion lengths: 4" to 60" standard, other lengths available

### Features

- Rugged, explosion-proof, weather-, chemical-, and corrosion-resistant
- LED status lights visible through glass cover
- Inserts into tank through standard ½" NPT fitting
- Probe can be portable or permanently installed in the vessel
- Laser engraved graduated rod with ¼" graduations
- Probe-to-controller cable protected by stainless steel interlocking armor sheath and heavy-duty latching connectors at both ends
- Fail-safe design, unit trips in the event of an open or shorted cable or loss of power
- Choice of capacitance, conductivity, or single-point ultrasonic sensors
- Input power: 120 VAC, 240 VAC, or 24 VDC, 2.5 watts
- Output relay de-energizes on high level, broken or shorted sensor cables, or loss of power
- Sensor excitation open circuit voltage 8 VDC, short circuit current 8 mA with built-in FM-approved barrier
- Optional self-test feature, tilt and ground verification interlocks, and latching circuit available

### Materials

- Wetted materials: 316 stainless steel and PTFE standard, other materials available
- Controller housing: NEMA 4X, NEMA 7, Explosion Proof, Class I, II, Groups B, C, and D

### Specifications

- Minimum dielectric constant: 1.8
- Temperature range:
  - capacitance probe: -14°F to 250°F (-26°C to 121°C)
  - high-temp capacitance probe: -14°F to 325°F (-26°C to 163°C)
  - Probe pressure rating: **50 PSI** with standard fitting; consult Dixon for applications up to **300 PSI**
- Sensor suitable for Class I, II, III, Div 1, Groups A, B, C, and D when used with supplied controller and cable lengths of 10,000' or less
- Output relay dry contacts 2 form C (2PDT) rated 2 amps at 120/240 VAC, 1 form C (SPDT) with optional latching circuit and reset switch

### Approvals

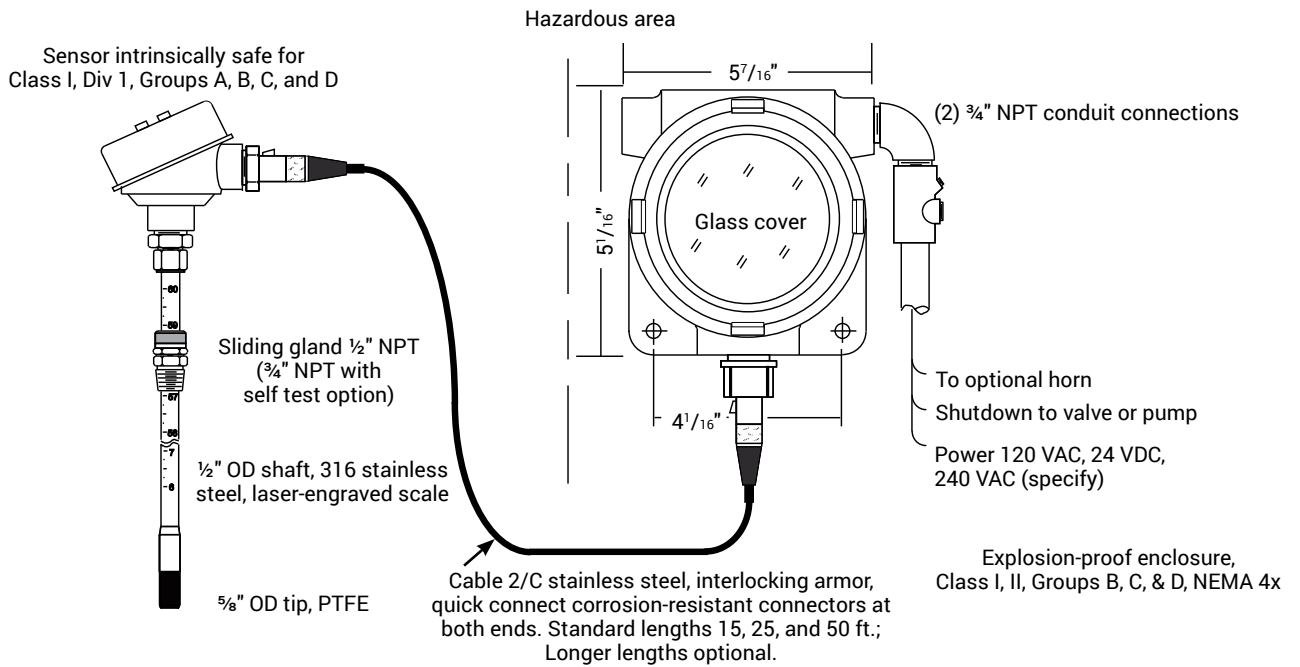
- Cable connectors designed for repeated mating meet IP 65 mechanical and environmental specifications
- FM, CSA HAZ Loc Class I Div I, Groups B, C, and D

## A210 Spillguard® Monitors

| Monitor Options              | 24V DC Part # | 120V DC Part # |
|------------------------------|---------------|----------------|
| A210 Spillguard® monitor     | A210-24       | A210-120       |
| with bypass timer            | A210B-24      | A210B-120      |
| with external reset switch   | A210R-24      | A210R-120      |
| dual channel control monitor | A212-24       | A212-120       |

## A210 ADS Spillguard® System

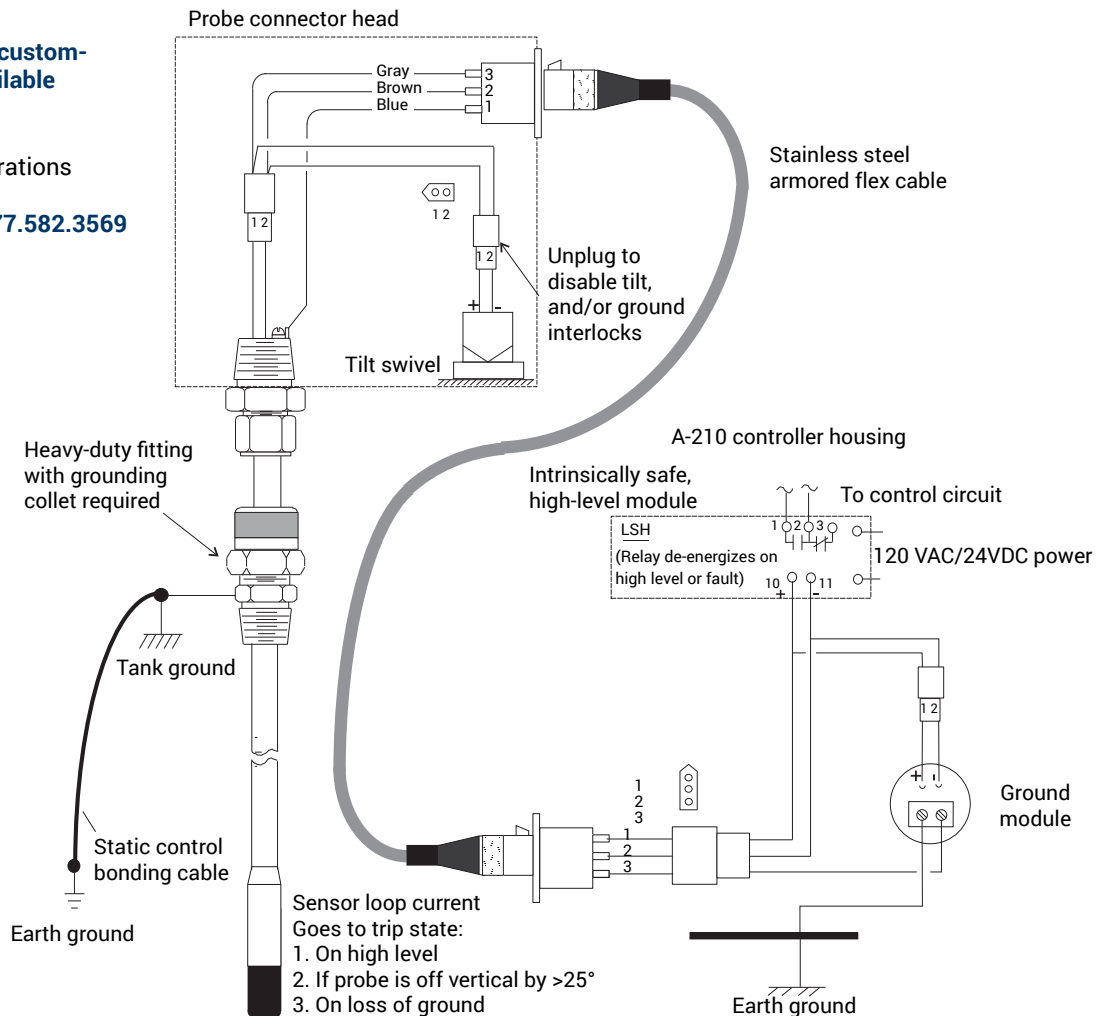
### A210 Spillguard® System Wiring



#### Special applications and custom-engineered solutions available

- Multiple sense points
- Control systems
- Special sensor configurations

Call technical support: 877.582.3569



ADS Multi-Point Ultrasonic Sensors



Application

- For use when multiple detection points are required, such as dribble mode, pump shutoff, and overfill alarm

Features

- Intrinsically safe design class I, Div 1, Groups A, B, C, and D
- Up to five detection points available
- Rugged "tube in tube" ultrasonic sensor welded construction
- Individual level and pressure outputs
- Silicon strain gauge pressure transducer available, welded diaphragm, 0-50 PSIA standard range, single or dual set points, trip Hi, Lo, or outside of gap
- Tilt storage indicator option
- Ground verification option
- Full hard heavy wall probe shaft, laser engraved scale up to 86" long

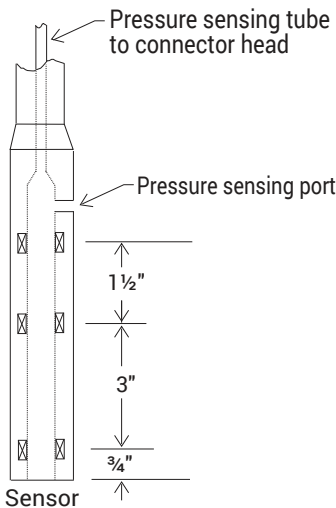
Material

- Wetted material: 316 stainless steel

Specification

- Operating temperature range: -40°F (-40°C) to 250°F (121°C)

Example:  
3-Point Ultrasonic Sensor



Ordering Guide

Part Number Breakdown  
Example: **A330U 36 P T 2 xxxxx**

| Product Line               | Sensor Length                                                                               | Pressure Option | Tilt Option | Liquid Sensor Points*                                                                                                         | Dixon Assigned #                   |
|----------------------------|---------------------------------------------------------------------------------------------|-----------------|-------------|-------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| A330U<br>Ultrasonic sensor | 08 - 8"<br>12 - 12"<br>13 - 13"<br>24 - 24"<br>26 - 26"<br>36 - 36"<br>48 - 48"<br>60 - 60" | P - Pressure    | T - Tilt    | 1 - 1 detection point<br>2 - 2 detection points<br>3 - 3 detection points<br>4 - 4 detection points<br>5 - 5 detection points | Custom assigned<br>number by Dixon |

\*NOTE: Consult Dixon® for distance between sensor points. Probes with three or more detection points require custom monitors.

## Sensor Selection Guidelines

### Capacitance

- Capacitance probes work with all liquids with a dielectric constant minimum of 1.8 or higher
- Temperature does affect the dielectric constant
- Solution and chemical compatibility to be monitored also need to be considered
- Some high-viscosity, sticky material may adhere to the sensor and cause sensor to read wet

### Ultrasonic

- For multi-point applications; up to five sense points
- Ideal for areas where splashing is a problem
- Pressure sensing options available; specify pressure at time of order

### Conductivity

- All conductivity probe orders must include product used and/or specific tuning requested. Standard conductivity tuning is 200K Ohm.
- These two liquids are the most common for conductivity probe use:
  - Alcohol: Low in conductivity, requires 2 megOhm tune
  - HCL: High in conductivity requires 10K Ohm tune 1
- 1 HCL fumes are very invasive. Capacitance sensors not recommended. Use conductivity sensors only 
- Conductivity probes are an alternative to capacitance probes if the liquid is conductive and there is risk of the capacitance probe being falsely tripped from splashing
- Dual electrode conductivity probes are good for liquids that may stick to the electrode. The exposed electrodes can easily be wiped off between loads.
- There are always exceptions to these basic guidelines. Please call technical support at 877.963.4966 if you have any questions regarding your application.

## ADS Spillguard® Probes

### Capacitance Probes

#### Application

- For materials with dielectric constant > 1.8; liquids, powders, slurries

#### Features

- ½" NPT sliding fitting standard, ¾" fitting optional
- Open dome adapter and washout fitting available
- Tilt sensor optional

#### Materials

- Probe: 316 stainless steel
- Housing: NEMA 4X, IP66

#### Specifications:

- Capacitance probe: **250°F (121°C)** maximum
- High temperature capacitance probe: **325°F (163°C)** maximum

| Length | Capacitance        |                  |
|--------|--------------------|------------------|
|        | Capacitance Part # | High-Temp Part # |
| 12"    | A200PC12A          | A200PHC12A       |
| 24"    | A200PC24A          | A200PHC24A       |
| 36"    | A200PC36A          | A200PHC36A       |
| 48"    | A200PC48A          | A200PHC48A       |
| 60"    | A200PC60A          | A200PHC60A       |
| 72"    | A200PC72A          | A200PHC72A       |
| 84"    | A200PC84A          | A200PHC84A       |

### Conductivity Probes

#### Application

- For conductive fluids such as acids and water-based mixtures

#### Features

- ½" NPT sliding fitting standard, ¾" fitting optional, **50 PSIG, 150 PSIG, or 300 PSIG** fittings available
- Open dome adapter and washout fitting available
- Tilt sensor option
- Single electrode protected in housing
- Dual electrodes exposed for easy cleaning

#### Materials

- Probe: 316 stainless steel, Hastelloy available for HCL service
- Housing: NEMA 4X, IP66

| Length | Conductivity            |                       |
|--------|-------------------------|-----------------------|
|        | Single Electrode Part # | Dual Electrode Part # |
| 12"    | A200PCSS12A             | A200PCSSDP12A         |
| 24"    | A200PCSS24A             | A200PCSSDP24A         |
| 36"    | A200PCSS36A             | A200PCSSDP36A         |
| 48"    | A200PCSS48A             | A200PCSSDP48A         |
| 60"    | A200PCSS60A             | A200PCSSDP60A         |
| 72"    | A200PCSS72A             | A200PCSSDP72A         |
| 84"    | A200PCSS84A             | A200PCSSDP84A         |

Material to be sensed must be specified at time of order



## Dielectric Constants for Common Materials

| Fluid                      | Dielectric Constant | Fluid                           | Dielectric Constant |
|----------------------------|---------------------|---------------------------------|---------------------|
| Acetal                     | 3.8                 | Ethylamine                      | 6.3                 |
| Acetaldehyde               | 15                  | Ethylene glycol                 | 37                  |
| Acetamide                  | 59.2                | Fish oil                        | 2.6                 |
| Acetic acid                | 6.2                 | Fluorobenzene                   | 6.4                 |
| Acetone                    | 20.7                | Furan                           | 3                   |
| Acetophenone               | 18                  | Furfural                        | 42                  |
| Acetyl bromid              | 16.2                | Gasoline, gas                   | 2                   |
| Acetyl chloride            | 15.9                | Glycerine                       | 47 - 68             |
| Acetylacetone              | 23                  | Glycerol                        | 42.5                |
| Acetylene dibromide        | 7.2                 | Glycerol water                  | 37                  |
| Acetylene tetrabromide     | 5.6                 | Glycol                          | 37                  |
| Aconite acid ester         | 6.3                 | Heptane                         | 1.9                 |
| Adipic acid                | 1.8                 | Hexane                          | 2                   |
| Aerosile                   | 1                   | Hexanol                         | 13.3                |
| Aether                     | 4                   | Hydrazine                       | 52                  |
| Alcohol, allyl             | 20.6                | Iodine                          | 11.1                |
| Alcohol, cetyl             | 3.6                 | Isopropanol                     | 18                  |
| Alcohol, diacetone         | 18.2                | Jet fuel                        | 1.7                 |
| Alcohol, ethyl (ethanol)   | 24.3                | Kerosene                        | 1.8                 |
| Alcohol, methyl (methanol) | 33.1                | Linoleic acid                   | 2.6 - 2.9           |
| Alcohol, propyl            | 21.8                | Linseed oil                     | 3.2 - 3.5           |
| Allyl chloride             | 8.2                 | Methane                         | 1.7                 |
| Allyl iodide               | 6.1                 | Napthalene                      | 2.5                 |
| Aluminum bromide           | 3.4                 | Octane                          | 2                   |
| Ammonia                    | 15                  | Oil                             | 2                   |
| Ammonia solution 25%       | 31.6                | Olive oil                       | 3.1                 |
| Amyl amine                 | 4.5                 | Oxygen                          | 1.51                |
| Aniline                    | 7.3                 | Palmitic acid                   | 2.3                 |
| Anisole                    | 4.5                 | Palm seed oil                   | 1.8                 |
| Antimony hydride           | 1.8                 | Paraffin                        | 1.6                 |
| Argon                      | 1.5                 | Pentane                         | 1.8                 |
| Arsine                     | 2.1                 | Phenol                          | 4.3                 |
| Arsole                     | 2.3                 | Pentanol                        | 14.8                |
| Azoxybenzene               | 5.2                 | Phosgene                        | 4.7                 |
| Benzene                    | 2.3                 | Phosphorus liquid               | 3.9                 |
| Bromine                    | 3.1                 | Pinene                          | 2.7                 |
| Butane                     | 1.4                 | Propane                         | 1.6                 |
| Butanoic acid              | 3                   | Propanol, propyl alcohol        | 2.2                 |
| Caproic acid               | 2.6                 | Propylene                       | 11.9                |
| Caprylic acid              | 2.5                 | Propylether                     | 3.3                 |
| Carbon disulfide           | 2.64                | Pyridine                        | 1.12                |
| Carbon tetrachloride       | 2.23                | Resorcinol                      | 3.2                 |
| Castor oil                 | 4.7                 | Stearic acid                    | 2.3                 |
| Chlorine, chlor fluid      | 2                   | Styrene                         | 2.4                 |
| Chlor benzene              | 5.7                 | Terpinene                       | 2.7                 |
| Chloroform                 | 4.8                 | Toluene                         | 2.0 - 2.4           |
| Coconut oil, refined       | 2.9                 | Transformer oil                 | 2.1                 |
| Cotton seed oil            | 3.1                 | Turpentine (wood), white spirit | 2.2                 |
| Cresol                     | 10.6                | Vinegar                         | 24                  |
| Cumene                     | 2.4                 | Water                           | 10                  |
| Decane                     | 2                   | Water, demineralized            | 29.3                |
| Diesel oil, fuel           | 2.1                 | Water, heavy                    | 78.3                |
| Dodecane                   | 2                   | Water - oil emulsion            | 24                  |
| Ether                      | 4.3                 | Wine                            | 25                  |

NOTE: A comprehensive list is available on [dixonvalve.com](http://dixonvalve.com).

ADS Outage Gauges



Applications

- Set level fill point for manual/visual fill control
- Measure outage requirements on mobile tanks

Feature

- Open dome bracket

Material

- 316 stainless steel

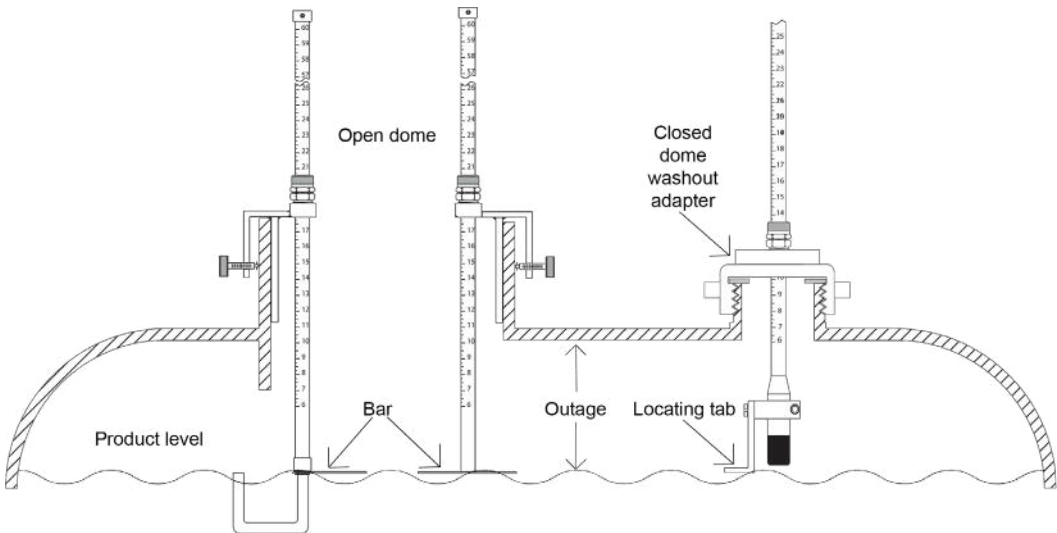
| Length | Standard Outage Gauge Part # | Outage Gauge with J Bar Part # |
|--------|------------------------------|--------------------------------|
| 2'     | A800OG2                      | A8000GJ2                       |
| 3'     | A800OG3                      | A8000GJ3                       |
| 4'     | A800OG4                      | A8000GJ4                       |
| 5'     | A800OG5                      | A8000GJ5                       |

Setting Outage on Closed Dome with A100LT Locating Tab

1. Screw washout adapter onto washout nozzle.
2. Withdraw gauge rod until tab touches inside shell of tank. Note reading on rod.
3. Add desired outage to reading and push down rod to the calculated reading.
4. The probe sensor is now at the desired outage.

Setting Outage on Open Dome Operation

1. Clamp bracket to vertical section of dome.
2. Withdraw gauge rod until bar touches inside shell of tank. Note reading on rod.
3. Add desired outage to reading and push down rod to the calculated reading.
4. The bar is now at the desired outage.
5. For tanks with man-way protruding past shell, use J-bar gauge.



## ADS Gauge Rods

### Application

- Used to gauge liquid levels in any mobile tank

### Size

- ½" x .065 weight

### Features

- Laser engraved scale with ¼" graduations
- Rods come in two sections that screw together at the midpoint
- Foot marks inscribed on rod at 1' intervals below the inch mark
- Heavy-duty plastic handle

### Material

- 316 stainless steel

### Laser Engraving Close-Up



| Description                      | Part #  | Part # w/sliding innage bar |
|----------------------------------|---------|-----------------------------|
| gauge rod, 4' length, one piece  | ADS4GR  | ADS4GR-IB                   |
| gauge rod, 8' length, two piece  | ADS8GR  | ADS8GR-IB                   |
| gauge rod, 12' length, two piece | ADS12GR | ADS12GR-IB                  |

## ADS Spillguard® Cables

### Features

- 3- or 5-pin connector
- 316 stainless steel armoured cable or yellow rubber cable
- Custom lengths available, call 877.582.3569 for more information

### Armored Cables

| Length | 3-Pin Part # | 5-Pin Part # |
|--------|--------------|--------------|
| 15'    | A200CA3P15   | A200CA5P15   |
| 20'    | A200CA3P20   | A200CA5P20   |
| 25'    | A200CA3P25   | A200CA5P25   |
| 50'    | A200CA3P50   | A200CA5P50   |



### Rubber Cable\*

| Length | 3-Pin Part # |
|--------|--------------|
| 25'    | A200CB3P25   |
| 30"    | A200CB3P30   |



\*NOTE: For use with (-M) mini connectors only.

## ADS Open Dome Adapters



A100DA

### Features

- Flexible design fits most domes
- ½" and ¾" NPT port for Outalarm™ probes

### Material

- Stainless steel

| NPT Size | Part # |
|----------|--------|
| ½"       | A100DA |
| ¾"       | A100DB |



A100TTA

## Tank Washout Caps

| Description                            | Part #  |
|----------------------------------------|---------|
| tank truck 3" wash-out adapter, ½" NPT | A100TTA |
| tank truck 3" wash-out adapter, ¾" NPT | A100TTB |
| washout cap with swivel                | A200SA  |
| washout cap with swivel and 2" vent    | A200SVA |



A200SA



A210CR-3

## Cable Junction Boxes

| Description | Part #   |
|-------------|----------|
| 3-Pin       | A210CR-3 |
| 5-Pin       | A210CR-5 |

## A210 Pezio Horn



A210PZH-24

| Description             | Part #      |
|-------------------------|-------------|
| A210 Pezio horn 24V DC  | A210PZH-24  |
| A210 Pezio horn 120V AC | A210PZH-120 |

## Signal Light

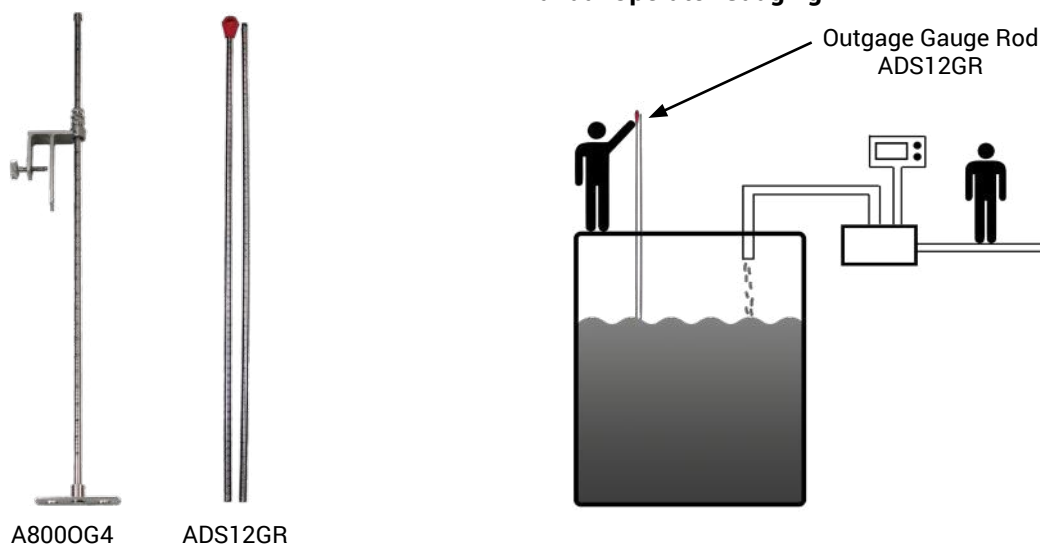


A210-12TC

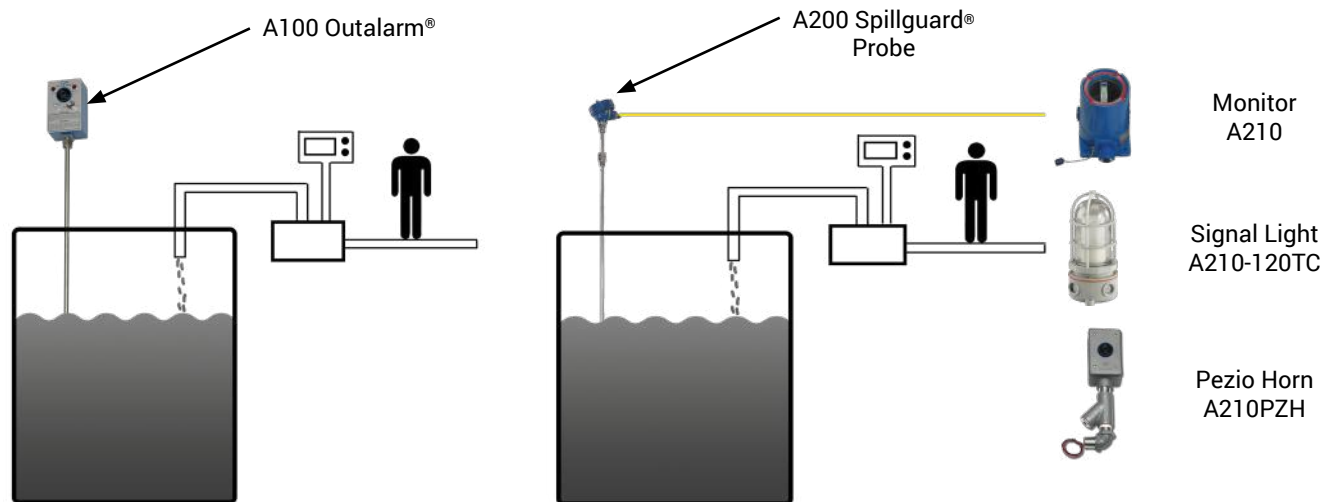
| Description                             | Part #     |
|-----------------------------------------|------------|
| tri-color external signal light 24V DC  | A210-24TC  |
| tri-color external signal light 120V AC | A210-120TC |

## ADS Tank Overfill Prevention Methods

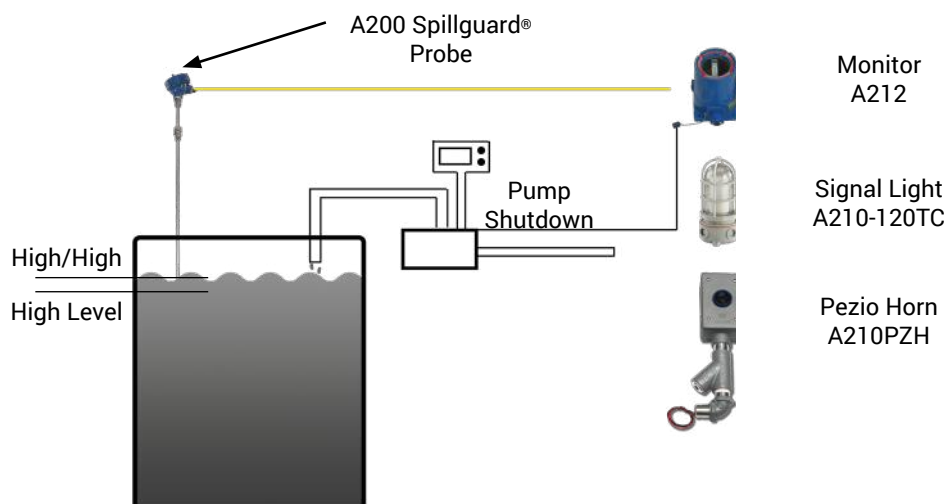
### Manual Operator Gauging



### Overfill Alarm



### Multi-point Overfill with PLC Pump Shutdown



## A100 Monitor Repair Parts

| Description                                 | Part #   | Qty |
|---------------------------------------------|----------|-----|
| assembly, PCB, A100 monitor                 | 30027    | 1   |
| monitor housing                             | 30028AL  | 1   |
| monitor front panel                         | 30029AL  | 1   |
| foam battery retainer                       | 30030    | 1   |
| horn assembly, standard                     | 30031    | 1   |
| horn assembly repair kit                    | 30031RK  | 1   |
| horn retaining ring                         | 30032BLA | 1   |
| lamp holder accessory, includes nut, red    | 30033    | 2   |
| lamp holder accessory, includes nut, clear  | 30054    | 1   |
| lamp holder O-ring                          | 30036BN  | 3   |
| lamp holder back-up washer                  | 30037    | 4   |
| standoff, hex                               | 30038AL  | 4   |
| socket set screw/ 3"-32 x 5/16"             | 30039    | 4   |
| switch guard                                | 30040SS  | 1   |
| circuit board retaining screws 8"-32 x 5/16 | 30041SS  | 4   |
| flanged probe connector                     | 30052SS  | 1   |
| cap screw 4"-40 x 1/2"                      | 30043SS  | 4   |
| serial number instruction label             | 30044AL  | 1   |
| A100 enclosure gasket                       | 30205SA  | 1   |
| flanged connector O-ring                    | 30045BN  | 1   |
| molex connector, 2-position, female         | 30021    | 1   |
| A100 top light assembly, order with 30021   | 30022    | 1   |

## Additional Parts & Accessories



A500

| Description                                                                       | Part #         |
|-----------------------------------------------------------------------------------|----------------|
| capacitance probe tester                                                          | A500           |
| pressure tester                                                                   | A400PSAL10012  |
| cable to A100 adapter kit                                                         | A100CBLMTR     |
| cable to monitor adapter kit, 3-pin mini                                          | A100CBLMTR-002 |
| Stahl repeater parts for A210                                                     | 30092RK        |
| Stahl repeater parts for A211                                                     | 30093RK        |
| replacement timer for A210B series                                                | 30399RK        |
| A100 capacitance probe subassembly                                                | 30077-xxx*     |
| A200 capacitance probe subassembly                                                | 30139-xxx*     |
| 1" cam and groove coupler and ½" NPT bushing, stainless steel                     | A100CA1050     |
| 1" cam and groove coupler with ½" NPT busing and 1" NPT vent tee, stainless steel | A100CA1050V    |
| A100/200 splash guard, with 1½" diameter poly                                     | A100SG-POLY    |
| locating tab for A100/200 probes                                                  | A100LT         |
| replacement A100 monitor only                                                     | A100MTR        |
| cable to monitor adapter                                                          | A100CBLMTR     |

\*xxx = Probe length in inches

## 5500-Series API Couplers

### Application

- Combined with API adapters, these couplers are suitable for railcar and tank truck loading or unloading

### Features

- Locking five-cam design provides easy alignment and tight connection
- Modular design allows various face seal combinations to be compatible with different alternative fuels, performance levels, and applications
- Shaft seals can be changed without removing coupler from the loading arm
- Fully interlocked collar cannot be opened when connected and cannot be disconnected when opened
- Replaceable seal design while coupler is on loading arm
- 4" TTMA inlet mounting flange connection
- Ball-end handle for easy and comfortable operation
- No special tools needed for maintenance
- Reference [dixonvalve.com](http://dixonvalve.com) for bill of materials and a complete list of repair kits

### Materials

- Body: hard coated anodized 356T6 aluminum
- Shroud: hard coated anodized 356T6 aluminum with stainless steel insert
- Link, shaft, pin, and crank: hardened 17-4PH stainless steel
- Cam: CF8M stainless steel
- Poppet and bearing: Bayloy
- Seals: Baylast, EPDM, FFKM, FKM-B, FKM-GFLT, fluorosilicone, and Hifluor

### Specifications

- Seal operating temperature:
  - Baylast™: -20°F to 250°F (-28°C to 121°C)
  - EPDM: -40°F to 250°F (-40°C to 120°C)
  - FFKM: 0°F to 400°F (-18°C to 204°C)
  - FKM-B: -10°F to 400°F (-23°C to 204°C)
  - FKM-GFLT: -20°F to 400°F (-28°C to 204°C)
  - Fluorosilicone: -50°F to 300°F (-40°C to 149°C)
  - Hifluor: 23°F to 350°F (-5°C to 176°C)
- Flow rate: 600 GPM at 3 PSI pressure drop, maximum flow rate: 1,000 GPM
- Fully compliant with API RP1004:2003 specifications
- Burst tested: 450 PSI

| Description    | Seal Material  | Part # | Complete Repair Kit* | Replaceable Nose Seal |
|----------------|----------------|--------|----------------------|-----------------------|
| 4" API coupler | Baylast        | 5500BL | 5500RK2              | 5500RK8               |
|                | EPDM           | 5500E  | 5500RK3              | 5500RK9               |
|                | FFKM           | 5500K  | 5500RK6              | 5500RK12              |
|                | FKM-B          | 5500B  | 5500RK1              | 5500RK7               |
|                | FKM-GFLT       | 5500G  | 5500RK5              | 5500RK11              |
|                | Fluorosilicone | 5500F  | 5500RK4              | 5500RK10              |
|                | Hifluor        | 5500H  | 5500RK19             | 5500RK20              |

\*Complete repair kit contains all the seals, pins, and cotter keys to replace all the seals.



\*Normal wear and tear items (including seals) not covered



5500-Series



Replaceable nose seal:  
Replace without removal  
from the loading arm

## Loading Arm Swivels

### Features

- TTMA-flanged loading arm swivel with heavy-duty D-style shovel handle
- Shovel handle is used to guide the connection of the API load coupler to the adapter on the tank truck
- Long radius elbow improves the flow into the API load coupler and provides spacing between the load arm and the tank truck
- FKM-A swivel seals are compatible with ethanol blended fuel
- Can be used with flange extensions
- TTMA flanges on both ends



style 30, short radius



style 30, long radius



style 50

| Description              | Handle      | Seal  | 3" Part #       | 4" Part #       |
|--------------------------|-------------|-------|-----------------|-----------------|
| style 20                 | no handle   | Buna  | 320TFXTFAL00000 | 420TFXTFAL00000 |
|                          |             | FKM-A | 320TFXTFAL11000 | 420TFXTFAL11000 |
| style 30<br>short radius | D-handle    | Buna  | 33HTFXTFAL00000 | 43HTFXTFAL00000 |
|                          |             | FKM-A | 33HTFXTFAL11000 | 43HTFXTFAL11000 |
|                          | ball handle | Buna  | 33BTFXTFAL00000 | 43BTFXTFAL00000 |
|                          |             | FKM-A | 33BTFXTFAL11000 | 43BTFXTFAL11000 |
|                          | no handle   | Buna  | 330TFXTFAL00000 | 430TFXTFAL00000 |
|                          |             | FKM-A | 330TFXTFAL11000 | 430TFXTFAL11000 |
| style 30<br>long radius  | D-handle    | Buna  | ---             | 43HTFTFLAL00000 |
|                          |             | FKM-A | ---             | 43HTFTFLAL11000 |
|                          | ball handle | Buna  | ---             | 43BTFTFLAL00000 |
|                          |             | FKM-A | ---             | 43BTFTFLAL11000 |
|                          | no handle   | Buna  | ---             | 430TFTFLAL00000 |
|                          |             | FKM-A | ---             | 430TFTFLAL11000 |
| style 40                 | D-handle    | Buna  | 34HTFXTFAL00000 | 44HTFXTFAL00000 |
|                          |             | FKM-A | 34HTFXTFAL11000 | 44HTFXTFAL11000 |
|                          | ball handle | Buna  | 34BTFXTFAL00000 | 44BTFXTFAL00000 |
|                          |             | FKM-A | 34BTFXTFAL11000 | 44BTFXTFAL11000 |
|                          | no handle   | Buna  | 340TFXTFAL00000 | 440TFXTFAL00000 |
|                          |             | FKM-A | 340TFXTFAL11000 | 440TFXTFAL11000 |
| style 50                 | D-handle    | Buna  | 35HTFXTFAL00000 | 45HTFXTFAL00000 |
|                          |             | FKM-A | 35HTFXTFAL11000 | 45HTFXTFAL11000 |
|                          | ball handle | Buna  | 35BTFXTFAL00000 | 45BTFXTFAL00000 |
|                          |             | FKM-A | 35BTFXTFAL11000 | 45BTFXTFAL11000 |
|                          | no handle   | Buna  | 350TFXTFAL00000 | 450TFXTFAL00000 |
|                          |             | FKM-A | 350TFXTFAL11000 | 450TFXTFAL11000 |

## Type 35 Loading Arm Swivel Replacement Parts



| Description                      | Part #     |
|----------------------------------|------------|
| 4" schedule 80 aluminum nipple   | ATN100X7   |
| ball-style handle                | 100BHAN-AL |
| D-Style heavy-duty shovel handle | 100DHAN-AL |
| Buna seal kit                    | 4RKOBUB    |
| FKM-A seal kit                   | 4RKOVIVI   |

## TTMA Flange Extensions

### Applications

- Used to connect an API coupler to a loading arm
- Provides a specified parting point to prevent excessive damage to the loading arm

### Features

- Adds a 6" space to allow for clearance between the loading arm and the tank truck
- Color coded for product identification
- Other colors available upon request. Consult Dixon® for more details

### Materials

- Aluminum, powder coated aluminum



TETF4AL



TETFG4AL



TETF4AL-W



TETF4AL-B



TETF4AL-G



TETF4AL-R



TETF4AL-Y



TETF4AL-G/Y



TETF4AL-R/W/B

| Size | Description                                                         | Part #        |
|------|---------------------------------------------------------------------|---------------|
| 4"   | TTMA flange extension                                               | TETF4AL       |
|      | TTMA flange extension with groove                                   | TETFG4AL      |
|      | TTMA flange extension with ½" female NPT port                       | TETF4ALFP50   |
|      | TTMA flange extension with ¾" female NPT port                       | TETF4ALFP75   |
|      | TTMA flange extension                                               | TETF4AL       |
|      | TTMA flange extension; color-coded white                            | TETF4AL-W     |
|      | TTMA flange extension; color-coded blue                             | TETF4AL-B     |
|      | TTMA flange extension; color-coded green                            | TETF4AL-G     |
|      | TTMA flange extension; color-coded red                              | TETF4AL-R     |
|      | TTMA flange extension; color-coded yellow                           | TETF4AL-Y     |
|      | TTMA flange extension; color-coded orange                           | TETF4AL-O     |
|      | TTMA flange extension; color-coded black                            | TETF4AL-BLK   |
|      | TTMA flange extension; color-coded combination green and yellow     | TETF4AL-G/Y   |
|      | TTMA flange extension; color-coded combination blue and white       | TETF4AL-B/W   |
|      | TTMA flange extension; color-coded combination blue and red         | TETF4AL-B/R   |
|      | TTMA flange extension; color-coded combination white and red        | TETF4AL-W/R   |
|      | TTMA flange extension; color-coded combination red, white, and blue | TETF4AL-R/W/B |

## TTMA Flange Extension Reducing Spools

| Size    | Description                          | Material        | Part #    |
|---------|--------------------------------------|-----------------|-----------|
| 3" x 4" | TTMA flange extension reducing spool | aluminum        | TETF3X4AL |
|         | TTMA flange extension reducing spool | carbon steel    | TETF3X4CS |
|         | TTMA flange extension reducing spool | stainless steel | TETF3X4SS |

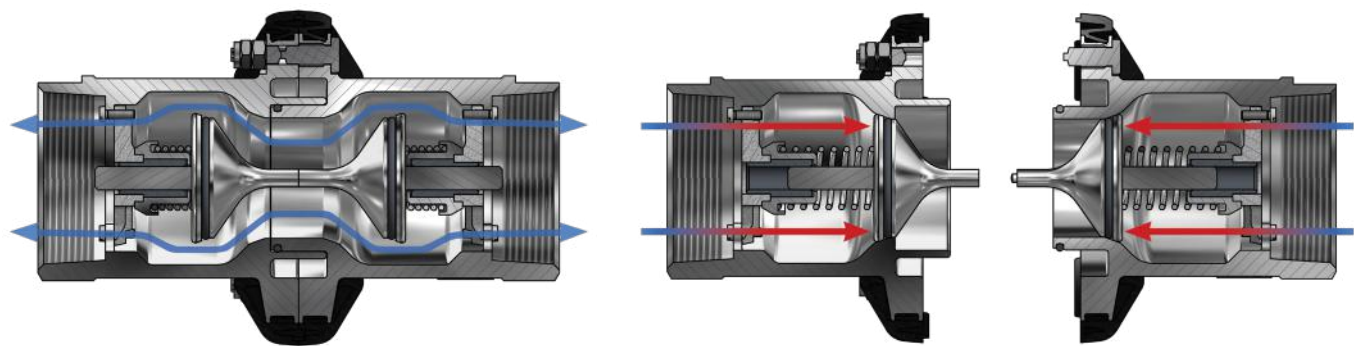


TETF3x4AL

Safety Break-aways

How it Works

Safety break-away couplings have three external break bolts. In the case of axial tension, all of the bolts take up the force corresponding to the break force on the hose with a safety margin. Non-axial forces concentrate the tension force more strongly on one bolt, so that the safety break-away coupling reacts in a natural way to the reduction of the hose break forces.



BEFORE emergency disconnect

The safety break-away valve consists of two halves, each with a valve that has a O-ring seal.

AFTER emergency disconnect

When the safety break-away couplings separate, the valves are able to close. The two valves close rapidly, minimizing exposure to personnel and the environment.

TTMA Flanged Break-Away Coupling



Application

- Installs between an API coupler and loading arm

Features

- Minimizes spillage and damage associated with drive-away and pull-away incidents
- Passive security against situations where a hose or loading arm could be subjected to inadvertent excessive loads
- Coupling automatically senses excessive load, closes the valves and disconnects
- High flow rate/low pressure drop
- FKM/FPM is standard seal

Specification

- 150 PSI at ambient temperature 70°F (21°C)

| Size | Material | Part #       |
|------|----------|--------------|
| 4"   | Aluminum | SBC400ALTTMA |

## Safety Break-aways

### Industrial Version

#### Applications

- Designed to minimize spillage and damage associated with pull-away incidents
- Typical applications: loading rack
- Designed to be installed between a fixed point (pipe, pump, or manifold) and a hose



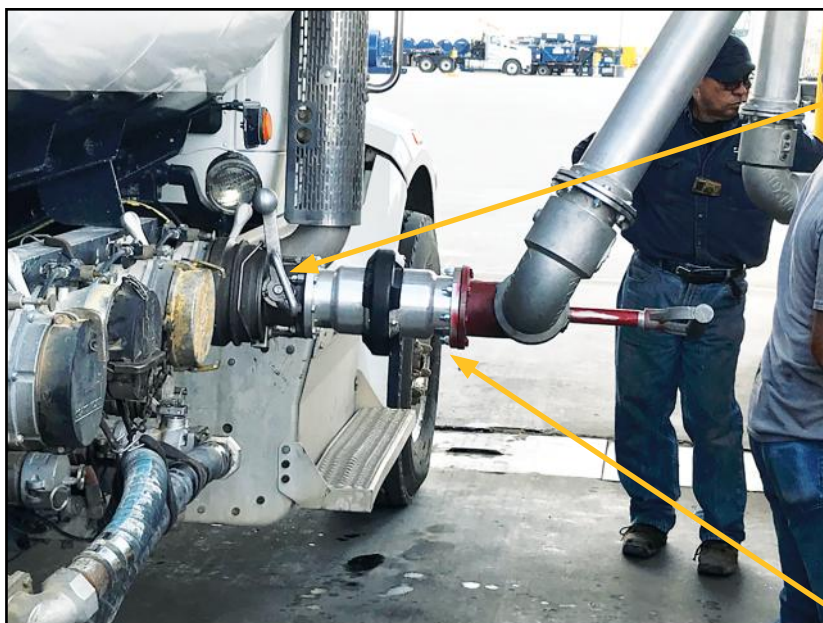
#### Features

- Coupling automatically senses an excessive load, closes the valves, and disconnects
- Passive security against situations where a hose or loading arm could be subjected to inadvertent excessive loads
- High flow rate/low pressure drop
- FKM (FPM) seal standard
- Optional non-disclosure design is available; contact Dixon®

#### Specifications

- Working pressure: stainless steel **360 PSI** and aluminum **230 PSI** at ambient temperature **70°F (21°C)**

| Size | Width | Length | Flow Rate/GPM | Material            | Part #   |
|------|-------|--------|---------------|---------------------|----------|
| 4"   | 8.3"  | 12"    | 800           | aluminum            | SBC400AL |
|      |       |        |               | 316 stainless steel | SBC400SS |



Products in use at a facility

API coupler

Safety break-away coupling

### Bayloc® Cam and Groove Style Dry Disconnects

#### Application

- Helps prevent spillage from normal or accidental disconnects

#### Sizes

- 1½", 2", and 3" female NPT adapters x 2", 2½", and 4" coupler with adapter
- 2", 2½", and 4" couplers/adapters x 2" and 3" flange

#### Features

- Compatible with most cam and groove style dry disconnects
- Spring-loaded sealing device "snaps" closed should the coupling become disconnected with the poppet open
- Two-piece adapter design allows easy rebuilding of adapters
- EZ Boss-Lock cam arms provide security against accidental opening
- Automatic closing poppet assembly
- Stainless steel handle allows product exposure to corrosive chemicals or washdown service
- Fully interchangeable with Kamvalok® style fitting

#### Materials

- Stainless steel or aluminum
- Seals: NBR - Buna/Nitrile, FKM, PTFE, and EPDM
- Contact Dixon for information on chemical compatibility, size, material selection, and special configurations

#### Coupler x Female NPT

| Female NPT | Coupler Size | Seal Material                       | Maximum PSI at 70°F (21°C) | Aluminum Part # | Stainless Steel* Part # |
|------------|--------------|-------------------------------------|----------------------------|-----------------|-------------------------|
| 1½"        | 2"           | Buna                                | 210                        | DBC61-150       | DBC71-150               |
| 2"         | 2½"          |                                     | 150                        | DBC61-200       | DBC71-200               |
| 3"         | 4"           |                                     | 120                        | DBC61-300       | DBC71-300               |
| 1½"        | 2"           | FKM                                 | 210                        | DBC62-150       | DBC72-150               |
| 2"         | 2½"          |                                     | 150                        | DBC62-200       | DBC72-200               |
| 3"         | 4"           |                                     | 120                        | DBC62-300       | DBC72-300               |
| 1½"        | 2"           | PTFE Encapsulated Silicone and FFKM | 210                        | DBC63-150       | DBC73-150               |
| 2"         | 2½"          |                                     | 150                        | DBC63-200       | DBC73-200               |
| 3"         | 4"           |                                     | 120                        | DBC63-300       | DBC73-300               |
| 1½"        | 2"           | EPDM                                | 210                        | DBC64-150       | DBC74-150               |
| 2"         | 2½"          |                                     | 150                        | DBC64-200       | DBC74-200               |
| 3"         | 4"           |                                     | 120                        | DBC64-300       | DBC74-300               |
| 1½"        | 2"           | FFKM and PTFE†                      | 210                        | ---             | DBC76-150               |
| 2"         | 2½"          |                                     | 150                        | DBC66-200       | DBC76-200               |
| 3"         | 4"           |                                     | 120                        | DBC66-300       | DBC76-300               |
| 1½"        | 2"           | PTFE Encapsulated FKM and FFKM      | 210                        | ---             | DBC77-150               |
| 2"         | 2½"          |                                     | 150                        | ---             | DBC77-200               |
| 3"         | 4"           |                                     | 120                        | ---             | DBC77-300               |
| 3"         | 4"           | FKM-B                               | 120                        | DBC69-300       | DBC79-300               |



Straight configuration coupler

#### Greaseless Coupler x Female NPT

| Female NPT | Coupler Size | Seal Material                  | Stainless Steel* Part # |
|------------|--------------|--------------------------------|-------------------------|
| 1½"        | 2"           | PTFE Encapsulated FKM and FFKM | DBC77-150-GL            |
| 2"         | 2½"          |                                | DBC77-200-GL            |



90° configuration coupler

#### Coupler x 90° Swivel Female NPT

| Female NPT | Coupler Size | Seal Material                       | Aluminum Part # |
|------------|--------------|-------------------------------------|-----------------|
| 2"         | 2½"          | Buna                                | DBS61-200       |
| 2"         | 2½"          | FKM                                 | DBS62-200       |
| 2"         | 2½"          | PTFE Encapsulated Silicone and FFKM | DBS63-200       |

\*Stainless steel corrosion resistance is equivalent to 304 stainless steel

†FFKM gasket, main seal O-ring and handle O-ring, PTFE seals on cylinder assembly, stuffing box, and seal under poppet screw

## Bayloc® Cam and Groove Style Dry Disconnects

### Application

- Helps prevent spillage from normal or accidental disconnects

### Sizes

- 1½", 2", and 3" female NPT adapters x 2", 2½", and 4" coupler with adapter
- 2", 2½", and 4" couplers/adapters x 2" and 3" flange

### Features

- Compatible with most cam and groove style dry disconnects
- Spring-loaded sealing device "snaps" closed should the coupling become disconnected with the poppet open
- Two-piece adapter design allows easy rebuilding of adapters
- Automatic closing poppet assembly
- Fully interchangeable with Kamvalok® style fitting

### Materials

- Stainless steel or aluminum
- Seals: NBR - Buna/Nitrile, FKM, PTFE, and EPDM
- Contact Dixon® for information on chemical compatibility, size, material selection, and special configurations

#### Adapter x Female NPT

| Female NPT | Adapter Size | Seal Material              | Maximum PSI at 70°F (21°C) | Aluminum Part # | Stainless Steel Part # |
|------------|--------------|----------------------------|----------------------------|-----------------|------------------------|
| 1½"        | 2"           | Buna                       | 210                        | DBA11-150       | DBA71-150              |
| 2"         | 2½"          |                            | 150                        | DBA11-200       | DBA71-200              |
| 3"         | 4"           |                            | 120                        | DBA11-300       | DBA71-300              |
| 1½"        | 2"           | FKM                        | 210                        | DBA12-150       | DBA72-150              |
| 2"         | 2½"          |                            | 150                        | DBA12-200       | DBA72-200              |
| 3"         | 4"           |                            | 120                        | DBA12-300       | DBA72-300              |
| 1½"        | 2"           | PTFE Encapsulated Silicone | 210                        | DBA63-150       | DBA73-150              |
| 2"         | 2½"          |                            | 150                        | DBA63-200       | DBA73-200              |
| 3"         | 4"           |                            | 120                        | DBA63-300       | DBA73-300              |
| 1½"        | 2"           | EPDM                       | 210                        | DBA64-150       | DBA74-150              |
| 2"         | 2½"          |                            | 150                        | DBA64-200       | DBA74-200              |
| 3"         | 4"           |                            | 120                        | DBA64-300       | DBA74-300              |
| 1½"        | 2"           | FFPM                       | 210                        | DBA66-150       | DBA76-150              |
| 2"         | 2½"          |                            | 150                        | DBA66-200       | DBA76-200              |
| 3"         | 4"           |                            | 120                        | DBA66-300       | DBA76-300              |
| 1½"        | 2"           | PTFE Encapsulated FKM      | 210                        | ---             | DBA77-150              |
| 2"         | 2½"          |                            | 150                        | ---             | DBA77-200              |
| 3"         | 4"           |                            | 120                        | ---             | DBA77-300              |
| 3"         | 4"           | FKM-B                      | 120                        | DBA69-300       | ---                    |



DBA adapter

#### Jump Size Adapter x Female NPT

| Female NPT | Adapter Size | Seal Material | Maximum PSI at 70°F (21°C) | Aluminum Part # |
|------------|--------------|---------------|----------------------------|-----------------|
| 2"         | 2"           | Buna          | 150                        | DBA11-1520      |
| 2"         | 2"           | FKM           | 150                        | DBA12-1520      |



DBA jump size adapter

#### Adapter x 150# ASA Flange

| Flange Size | Adapter Size | Seal Material              | Maximum PSI at 70°F (21°C) | Stainless Steel Part # |
|-------------|--------------|----------------------------|----------------------------|------------------------|
| 2"          | 2"           | FKM                        | 150                        | DBAF72-1520            |
|             |              | PTFE Encapsulated Silicone |                            | DBAF73-1520            |
|             |              | EPDM                       |                            | DBAF74-1520            |
|             |              | FFPM                       |                            | DBAF76-1520            |
| 2"          | 2½"          | FKM                        | 150                        | DBAF72-200             |
|             |              | PTFE Encapsulated Silicone |                            | DBAF73-200             |
|             |              | EPDM                       |                            | DBAF74-200             |
|             |              | FFPM                       |                            | DBAF76-200             |
| 3"          | 4"           | FKM                        | 150                        | DBAF72-300             |
|             |              | PTFE Encapsulated Silicone |                            | DBAF73-300             |
|             |              | EPDM                       |                            | DBAF74-300             |
|             |              | FFPM                       |                            | DBAF76-300             |



DBA flange adapter

Vapor Recovery Couplers



VR4040CS-AL

Features

- "Floating bridge" poppet design allows optimal flow
- Machined hose shank ensures easier insertion into hose and better sealing
- Durable and easy-to-couple
- Big wings ensure contact with air interlock button on tanker, helping prevent drive-offs
- Change poppet seal without removing the coupler from the hose
- Secure to hose with traditional band clamps or built-in crimp collar
- 4" MNPT version allows for either cam and groove or threaded flange option
- 45° angle version relieves stress common to vapor hoses, swivel version also available

Materials

- Coupler: aluminum
- Seal: Buna-N
- Cam arms: stainless steel



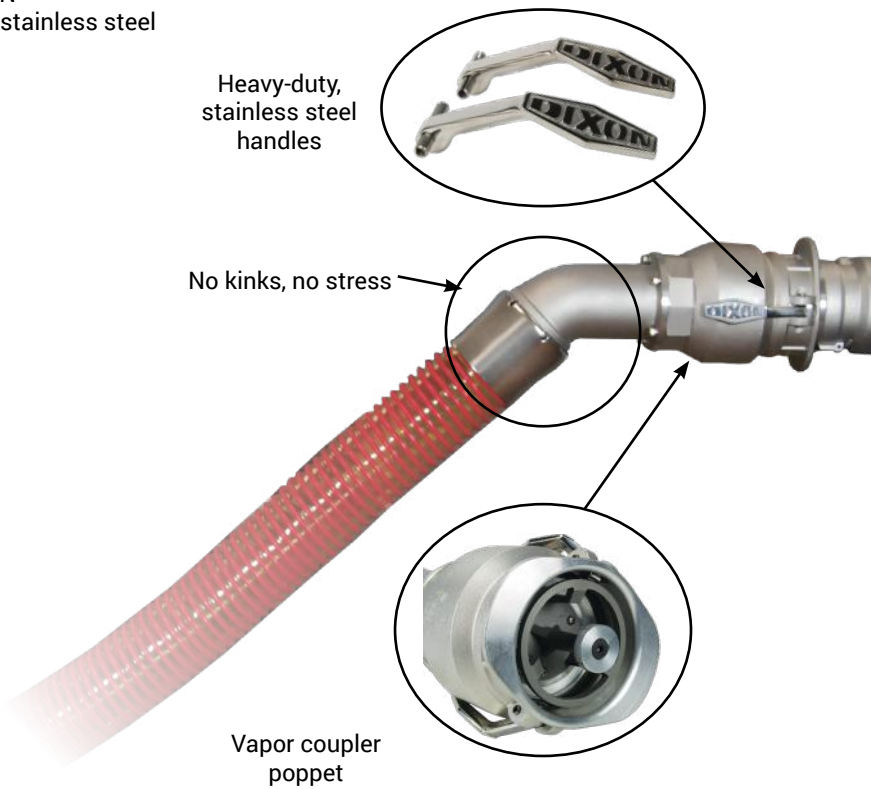
VR4030CS-AL45 &  
VR4040CS-AL45



VR4040CS-ALS45



VR4040CS-4MNPT  
(TTF4AL-4FT sold separately)



| Description                           | Part #         |
|---------------------------------------|----------------|
| 4" coupler x 4" hose shank            | VR4040CS-AL    |
| 4" coupler x 3" 45° hose shank        | VR4030CS-AL45  |
| 4" coupler x 4" 45° hose shank        | VR4040CS-AL45  |
| 4" coupler x 4" 45° hose shank swivel | VR4040CS-ALS45 |
| 4" coupler x 4" MNPT connection       | VR4040CS-4MNPT |
| 4" coupler x 4" female NPT            | VR4040CS-4FNPT |
| 4" coupler x 3" hose shank            | VR4030CS-SH    |
| seal repair kit                       | VR4040CSRK1    |
| cam arm repair kit                    | VR4040CSRK2    |

Handle kit sold separately on page 33.

## Vapor Recovery Coupler Handle Kits

| Description        | Part # |
|--------------------|--------|
| handle kit         | VRHK   |
| compact handle kit | VRHK-C |



VRHK  
(vapor recovery coupler  
handle kit sold separately)



VRHK-C

## Bayloc® Dry Disconnect Vapor Recovery Couplers

### Application

- Bayloc dry disconnect, modified with a seal cylinder device, forms a secondary seal against truck adapter and maintains pressure on seals despite wear resulting from normal use

### Features

- Locking handle
- Designed to meet California Air Resources Board (CARB) vapor emission requirements
- Dual seal against truck adapter provides vapor tight operation

### Materials

- Aluminum
- FKM seals

| Description          | Part #        |
|----------------------|---------------|
| 3" coupler x 4" FNPT | DBC62LVPR-300 |



Vapor Recovery Couplers

Features

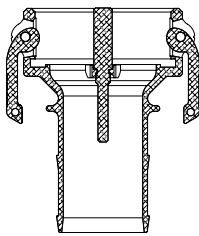
- Not intended for liquid service; for vapor recovery only
- For use with vapor recovery hose
- VR4030CS-AL has an FKM O-ring poppet seal



Materials

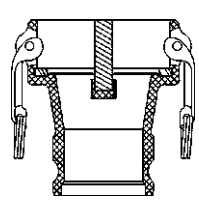
- Coupler: aluminum
- Arms: bronze with stainless steel pins
- Finger rings: plated carbon steel
- Gasket: Buna-N

Coupler With Probe x Hose Shank



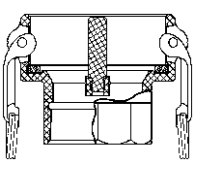
| Coupler Size | Hose Shank Size | Part #      |
|--------------|-----------------|-------------|
| 4"           | 3"              | 4030-CVR-AL |
|              | 4"              | 400-CVR-AL  |

Coupler With Probe x Adapter



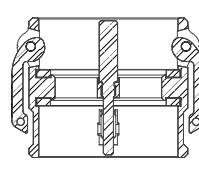
| Coupler Size | Adapter Size | Part #       |
|--------------|--------------|--------------|
| 4"           | 3"           | 4030-DAVR-AL |

Coupler With Probe x Female NPT



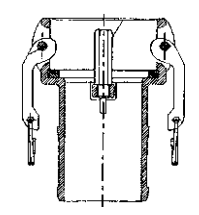
| Coupler Size | Female NPT Size | Part #      |
|--------------|-----------------|-------------|
| 4"           | 3"              | 4030-DVR-AL |
|              | 4"              | 400-DVR-AL  |

Coupler With Probe x Coupler With Probe



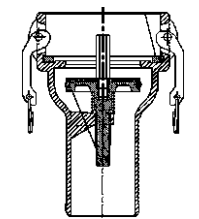
| Coupler Size | Coupler Size | Part #      |
|--------------|--------------|-------------|
| 4"           | 4"           | 400-DDVR-AL |

Coupler With Probe x Hose Shank



| Coupler Size | Hose Shank Size | Part #    |
|--------------|-----------------|-----------|
| 3"           | 3"              | VRC3000AL |

Coupler With Poppet\* And Probe x Hose Shank



| Coupler Size | Hose Shank Size | Part #       |
|--------------|-----------------|--------------|
| 4"           | 3"              | VR4030CS-AL* |

\*Only works with tank trucks that have poppet adapters.



## TTMA Series Flange Adapters

### Features

- Simply and easily converts threaded components to a standard TTMA flange configuration
- Solid cast lightweight aluminum design is more durable than welded fabrications
- Design improves flow through adapter
- Compact size reduces the overall space needed to install

### Material

- Aluminum

#### Male Threaded

| TTMA Flange | Male NPT | Overall Length | Part #     |
|-------------|----------|----------------|------------|
| 3"          | 3"       | 2½"            | TTF3AL-3MT |
| 4"          | 3"       | 2½"            | TTF4AL-3MT |
|             | 4"       | 2½"            | TTF4AL-4MT |

#### Extended Length Male Threaded

| TTMA Flange | Male NPT | Overall Length | Part #      |
|-------------|----------|----------------|-------------|
| 4"          | 3"       | 5½"            | TTF4AL-3EMT |
|             | 4"       | 5½"            | TTF4AL-4EMT |

#### Female Threaded

| TTMA Flange | Female NPT | Overall Length | Part #     |
|-------------|------------|----------------|------------|
| 4"          | 3"         | 2½"            | TTF4AL-3FT |
|             | 4"         | 2½"            | TTF4AL-4FT |

#### Slip-On

| TTMA Flange | Pipe Size | Part #   |
|-------------|-----------|----------|
| 4"          | 4"        | TTF400SP |

## Universal Flange Gaskets

### Features

- Standard drop-ring type, all 1/16" thick
- For flange dimensional information and diagrams, please reference [dixonvalve.com](http://dixonvalve.com)

| Size | Neoprene<br>Part # | Klingsil® C-4401<br>Part # |
|------|--------------------|----------------------------|
| 1"   | NG10               | AG10                       |
| 1¼"  | NG15               | AG15                       |
| 1½"  | NG20               | AG20                       |
| 2"   | NG25               | AG25                       |
| 2½"  | NG30               | AG30                       |
| 3"   | NG35               | AG35                       |
| 4"   | NG40               | AG40                       |
| 5"   | NG50               | ---                        |
| 6"   | NG60               | AG60                       |
| 8"   | NG80               | AG80                       |



TTF4AL-4MT



TTF4AL-4EMT



TTF4AL-4FT



TTF400SP



Neoprene



Klingsil® C-4401

## Round TTMA Flange Gaskets



Cork and PTFE envelope

| Size | OD                | ID                 | THK              | Material                          | Part #    |
|------|-------------------|--------------------|------------------|-----------------------------------|-----------|
| 3"   | 5 $\frac{5}{8}$ " | 3 $\frac{1}{2}$ "  | $\frac{1}{8}$ "  | cork/buna                         | 300GTTFCB |
| 3"   | 5 $\frac{5}{8}$ " | 3 $\frac{1}{2}$ "  | $\frac{1}{16}$ " | PTFE envelope with Klinger filler | 300GTTFTK |
| 3"   | 5 $\frac{5}{8}$ " | 3 $\frac{1}{2}$ "  | $\frac{1}{8}$ "  | Klingsil® C-4401                  | 300GTTFK  |
| 3"   | 5 $\frac{5}{8}$ " | 3 $\frac{5}{8}$ "  | $\frac{1}{8}$ "  | Baylast                           | 300GTTFBL |
| 3"   | 5 $\frac{7}{8}$ " | 3 $\frac{1}{2}$ "  | $\frac{1}{4}$ "  | PTFE with fiber core              | 40321TF   |
| 4"   | 6 $\frac{5}{8}$ " | 4 $\frac{9}{16}$ " | $\frac{1}{8}$ "  | cork/buna                         | 400GTTFCB |
| 4"   | 6 $\frac{5}{8}$ " | 4 $\frac{9}{16}$ " | $\frac{1}{16}$ " | PTFE envelope with Klinger filler | 400GTTFTK |
| 4"   | 6 $\frac{5}{8}$ " | 4 $\frac{9}{16}$ " | $\frac{1}{8}$ "  | Klingsil® C-4401                  | 400GTTFK  |
| 4"   | 6 $\frac{5}{8}$ " | 4 $\frac{5}{8}$ "  | $\frac{1}{8}$ "  | Baylast                           | 400GTTFBL |
| 4"   | 6 $\frac{7}{8}$ " | 4 $\frac{9}{16}$ " | $\frac{1}{4}$ "  | PTFE with fiber core              | 40322TF   |

## Betts Wet-R-Dri Valves

## Application

- Designed for handling liquid, gaseous, or dry products

## Features

- Positive stop in the open and closed position
- Detent spring and ball assist in holding the disc in the open and closed position



WD401ALVB

| Size | Description                                                 | Part #    |
|------|-------------------------------------------------------------|-----------|
| 3"   | TTMA Wet-R-Dri valve with manually-operated detent handle   | WD301ALVB |
| 3"   | TTMA Wet-R-Dri valve with manually-operated metering handle | WD304ALVB |
| 4"   | TTMA Wet-R-Dri valve with manually-operated detent handle   | WD401ALVB |
| 4"   | TTMA Wet-R-Dri valve with manually-operated metering handle | WD404ALVB |

## TTMA Flanged Sight Flow Indicators

## Features

- For use with ethanol
- Tank truck flange gaskets and dimensional information at [dixonvalve.com](http://dixonvalve.com)

## Material

- Acrylic



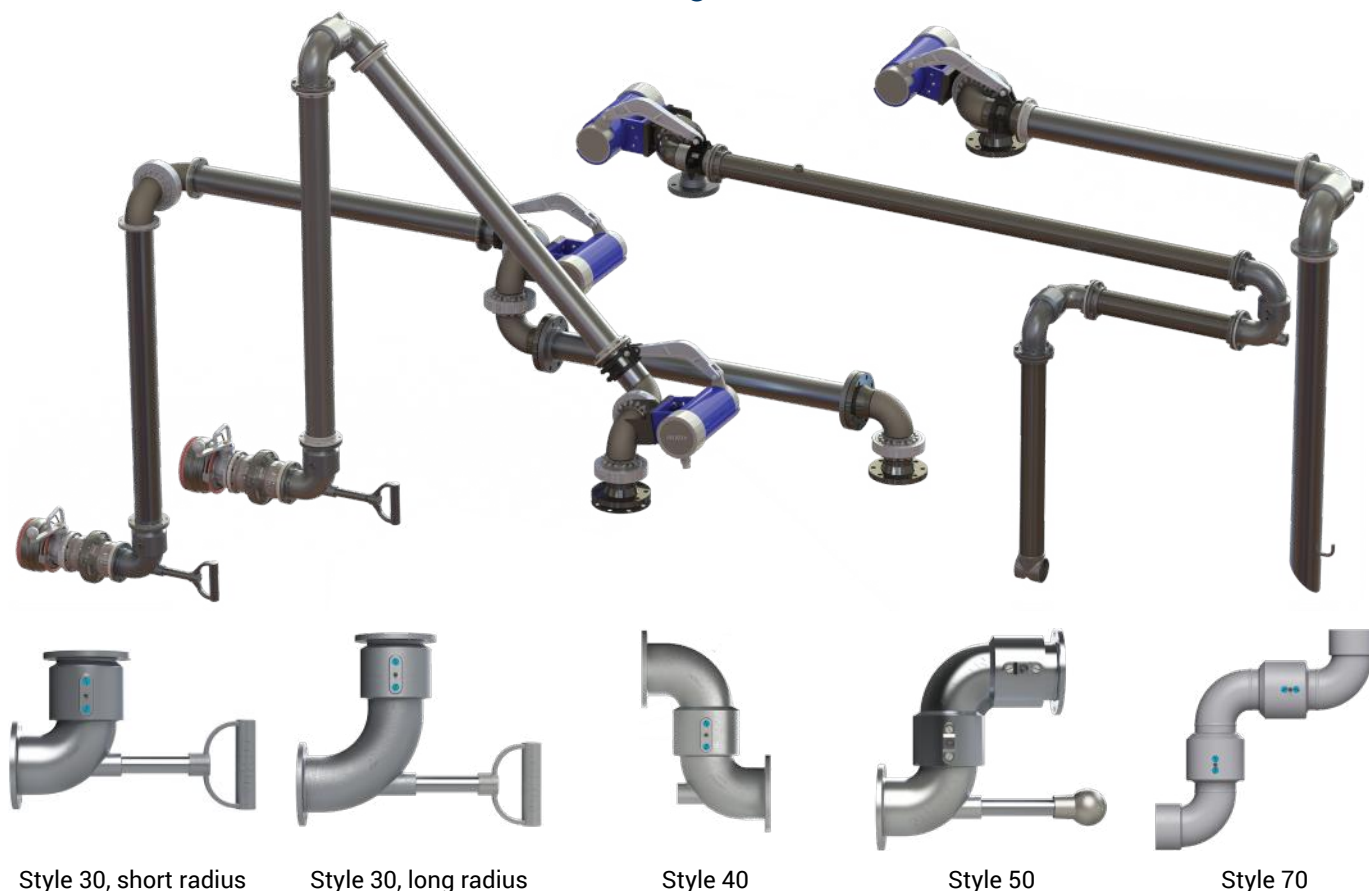
TT4ASG-ETH

## Specifications

- Maximum flange bolt torque is 200 in-lb 
- 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 

| Size | Nominal Width     | Part #     |
|------|-------------------|------------|
| 3"   | 1 $\frac{3}{4}$ " | TT3ASG-ETH |
| 4"   | 1 $\frac{3}{4}$ " | TT4ASG-ETH |

## Loading Arms



### Applications

- Used in the transfer of liquids and dry bulk in refineries, chemical plants, rail terminals, truck terminals, tote/drum filling, and the food industry

### Sizes

- 2", 3", and 4"

### Features

- Three arm swivel options: O-ring, V-ring, or split flange
- Two base swivel options: V-ring or split flange
- Fast delivery for many sizes and styles
- Engineered with easy service in mind
- D-handle/ball handle is used to guide the API load coupler onto the adapter on the tank truck
- Long radius elbow improves the flow into the API load coupler and provides space between the load arm and the tank truck, allowing for clearance
- Torsion spring counterbalance:
  - Ball screw adjustment mechanism for easy and safe adjustment
  - Multiple spring rates available for different load requirements
  - Multiple grease ports for ease of service
- Many different end connections offered as well as accessories; contact Dixon for more information

### Materials

- Arm: carbon steel, aluminum, and 316 stainless steel
- Counterbalance/base swivel: 316 stainless steel and carbon steel
- Seals: Buna-N, FKM-A, NPRN, PTFE, and more upon request
- Hose: 321/316/304 stainless steel or composite

### Available options

- All styles: a-frame, scissor, horizontal, pantograph, supported/unsupported boom, and others.

### Top Loading Arms

#### Sizes

- 2", 3", and 4"

#### Features

- Three arm swivel options: O-ring, V-ring, or split flange
- Two base swivel options: V-ring or split flange
- Left- or right-handed
- Torsion spring counterbalance:
  - Ball screw adjustment mechanism for easy and safe adjustment
  - Multiple spring rates available for different load requirements
  - Multiple grease ports for ease of service
- Fast delivery for many sizes and styles
- Engineered with easy service in mind
- Many different end connections and accessories; contact Dixon® for more information

#### Materials

- Arm: carbon steel, aluminum, or 316 stainless steel
- Counterbalance/base swivel: 316 stainless steel, or carbon steel
- Seals: Buna-N, FKM-A, NPRN, PTFE, and more upon request



### Locking Mechanism

#### Application

- Used in asphalt applications to help reduce sudden arm movement caused by clogged pipes or pressure changes

#### Material

- Carbon steel



LA-LOCKINGASSEM  
Locking mechanism

### Scissor Style Arms

#### Application

- Extended reach for horizontal loading

#### Sizes

- 2", 3", and 4"

#### Features

- Three arm swivel options: O-ring, V-ring, or split flange
- Two base swivel options: V-ring or split flange
- Left- or right-handed
- Fast delivery for many sizes and styles
- Engineered with easy service in mind
- Torsion spring counterbalance:
  - Ball screw adjustment mechanism for easy and safe adjustment
  - Multiple spring rates available for different load requirements
  - Multiple grease ports for ease of service
- Larger range of motion able to hit multiple fill points
- Many different end connections and accessories; contact Dixon for more information

#### Materials

- Arm: carbon steel, aluminum, or 316 stainless steel
- Counterbalance/base swivel: 316 stainless steel, or carbon steel
- Seals: Buna-N, FKM-A, NPRN, PTFE, and more upon request



## Bottom Loading Arms

### Sizes

- 2", 3", and 4"

### Features

- Three arm swivel options: O-ring, V-ring, or split flange
- Two base swivel options: V-ring or split flange
- Left- or right-handed
- Torsion spring counterbalance:
  - Ball screw adjustment mechanism for easy and safe adjustment
  - Multiple spring rates available for different load requirements
  - Multiple grease ports for ease of service
- Fast delivery for many sizes and styles
- Engineered with easy service in mind
- Many different end connections and accessories; contact Dixon® for more information



### Materials

- Arm: carbon steel, aluminum, or 316 stainless steel; optional drop leg with metal or composite hose
- Counterbalance/base swivel: 316 stainless steel, or carbon steel
- Seals: Buna-N, FKM-A, NPRN, PTFE, and more upon request

## Loading Arm Base Swivels

### Sizes

- 2", 3", and 4"

### Features

- Three arm swivel options: O-ring, V-ring, or split flange
- Two base swivel options: V-ring or split flange
- Left- or right-handed
- Torsion spring counterbalance:
  - Ball screw adjustment mechanism for easy and safe adjustment
  - Multiple spring rates available for different load requirements
  - Multiple grease ports for ease of service
- Fast delivery for many sizes and styles
- Engineered with easy service in mind
- Many different end connections and accessories; contact Dixon for more information



### Materials

- Counterbalance/base swivel: 316 stainless steel, or carbon steel
- Seals: Buna-N, FKM-A, NPRN, PTFE, and more upon request

## Loading Arm Legs/Spools

### Sizes

- 2", 3", and 4"

### Features

- Inlet and outlet: TTMA flanged
- Connections: TTMA flanged, 150# flanged, MNPT, FNPT, weld connection, and 300 lb. flange

### Materials

- Arm: carbon steel, aluminum, and 316 stainless steel; optional drop leg with metal or composite hose
- Special piping upon request



### Counterbalances

#### Features

- Includes pivot arm (shown) and spring to help prevent possible pinch point
- Easy-adjust tension bolt, carbon steel housing
- Carbon steel



ESB1/A



ESB-CLAMP-3



ESB1-PGUARD

| Description                                   | Part Number |
|-----------------------------------------------|-------------|
| light-duty white torsion spring, right hand   | ESB1/A      |
| medium-duty yellow torsion spring, right hand | ESB1/B      |
| heavy-duty red torsion spring, right hand     | ESB1/C      |
| light-duty black torsion spring, left hand    | ESB1/E      |
| medium-duty grey torsion spring, left hand    | ESB1/F      |
| heavy-duty orange torsion spring, left hand   | ESB1/G      |

### Counterbalance Arm Accessories

#### Features

- Clamps connect pivot arm bar to the counterbalance
- Pivot arm guard helps eliminate possible pinch point

#### Materials

- Clamp: iron
- Pivot arm guard: nylon-based and fiber-reinforced plastic

| Size | Description     | Part Number |
|------|-----------------|-------------|
| 2"   | clamp           | ESB-CLAMP-2 |
| 3"   | clamp           | ESB-CLAMP-3 |
| 4"   | clamp           | ESB-CLAMP-4 |
| ---  | pivot arm guard | ESB1-PGUARD |

### Top Loading Valves and Accessories

#### Applications

- Manual or remote controlled valve mounts before the loading arm horizontal leg to control flow
- Use in top loading fuels and other low viscosity media

#### Features

- BSP threaded vacuum breaker standard
- Manually operated "deadman" style with spring-loaded handle
- Optional remote-handle available

#### Materials

- Valve: aluminum
- Vacuum breaker body: brass
- Vacuum breaker housing: aluminum
- Seals: FKM



TLV-400TFVBVIAL



TLRVK-300ALX58



VB-050-BSP

| Size | Description                                            | Part Number             |
|------|--------------------------------------------------------|-------------------------|
| 2"   | top loading valve with FNPT and vacuum breaker         | TLV-200FTVBVIAL         |
| 2"   | top loading valve with TTMA flanges and vacuum breaker | TLV-200TFVBVIAL         |
| 3"   | top loading valve with TTMA flanges and vacuum breaker | TLV-300TFVBVIAL         |
| 4"   | top loading valve with TTMA flanges and vacuum breaker | TLV-400TFVBVIAL         |
| 2"   | valve remote, handle, and bracket kit with bar         | TLRVK-200ALX58          |
| 3"   | valve remote, handle, and bracket kit with bar         | TLRVK-300ALX58          |
| 4"   | valve remote, handle, and bracket kit with bar         | TLRVK-400ALX58          |
| 2"   | valve remote, handle, and bracket kit                  | AT1350-2                |
| 3"   | valve remote, handle, and bracket kit                  | AT1350-3                |
| 4"   | valve remote, handle, and bracket kit                  | AT1350-4                |
| ½"   | vacuum breaker, BSP threads                            | VB-050-BSP <sup>1</sup> |
| ½"   | vacuum breaker, NPT threads                            | VB-050-NPT              |

<sup>1</sup>Replacement vacuum breaker for the loading valves

## Top Loading Diffusers/T-Deflectors

### Application

- Installed on drop leg of a top load loading arm to distribute media evenly to help reduce splash

### Features

- Diffusers distribute media evenly 360°
- T-deflectors distribute media to the sides of the tank, railcar, or tote

### Material

- Aluminum

| Size | Description   | Part #    |
|------|---------------|-----------|
| 3"   | 360° diffuser | TLD-300S  |
|      | T-deflector   | TLTD-300S |
| 4"   | 360° diffuser | TLD-400S  |
|      | T-deflector   | TLTD-400S |



TLD-300S



TLTD-400S

## Loading Arm Support Braces

### Application

- Support the load on the arm for applications with a long reach or high moment load

### Features

- Pillow-bearing support with turnbuckle for easy adjusting
- Clamp included for easy loading arm attachment

### Material

- Carbon steel

| Size | Description               | Part #    |
|------|---------------------------|-----------|
| 3"   | loading arm support brace | LA-BRACE3 |
| 4"   | loading arm support brace | LA-BRACE4 |



LA-BRACE3

## Split Flange Swivel Handles and Locks

### Applications

- Locks the loading arm into a horizontal position
- Not to be used vertically

### Feature

- Single or multiple hole design

### Material

- Carbon steel

| Description                                                       | Part Number    |
|-------------------------------------------------------------------|----------------|
| locking single hole T-handle kit for split flange swivel joints   | LA-SFLOCKTHK-S |
| locking multiple hole T-handle kit for split flange swivel joints | LA-SFLOCKTHK-M |
| ball handle for loading arm swivels                               | 100BHAN-AL     |
| D-handle for loading arm swivels                                  | 100DHAN-AL     |
| 1" Schedule 80 nipple 7" OAL                                      | ATN100X7       |



LA-SFLOCKTHK-S



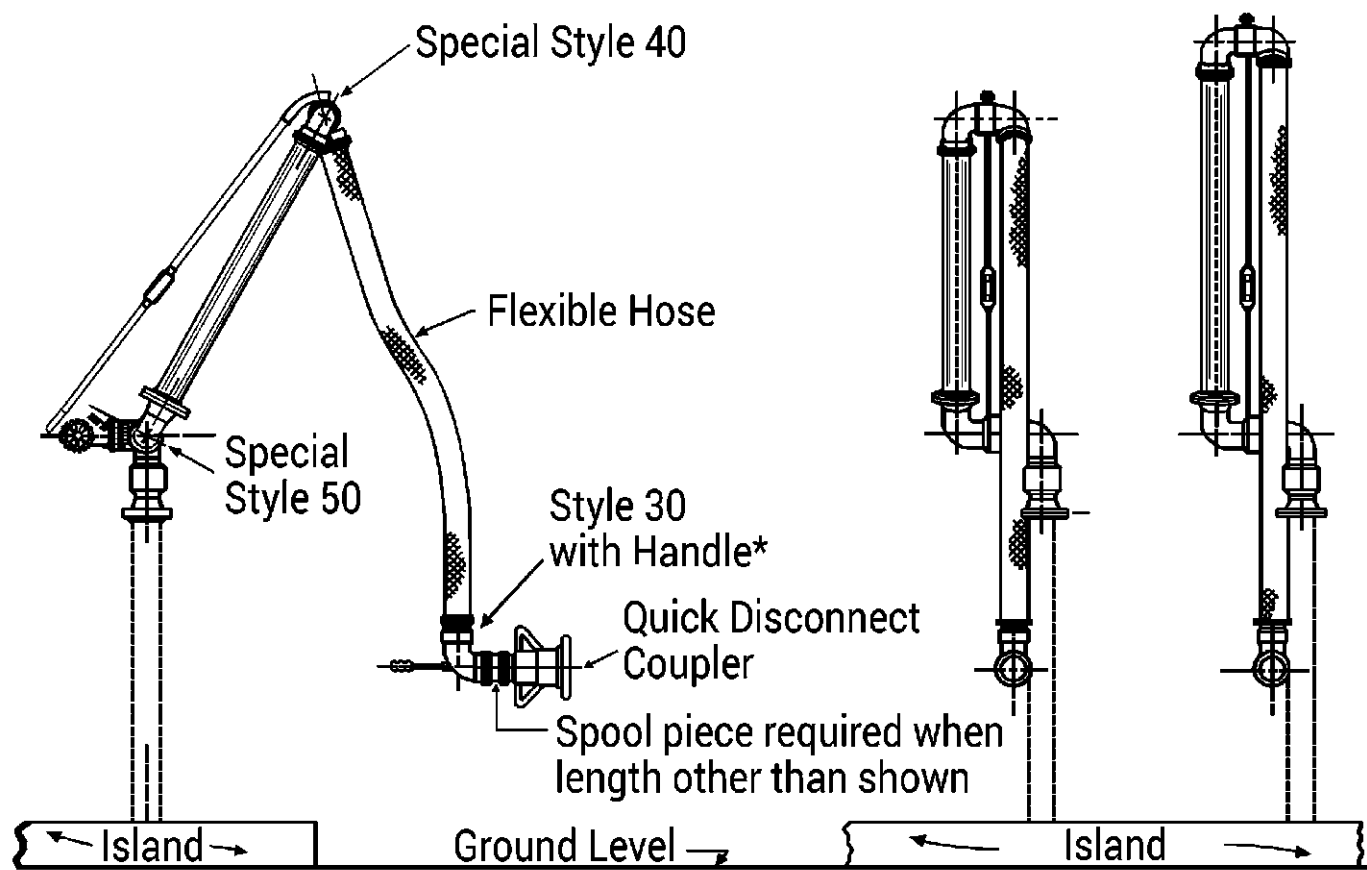
100\*HAN-AL



ATN100X7

Swivels

Typical Applications



## O-Ring Swivel Joints

### Applications

- Commonly used in aluminum loading/unloading arm applications

### Sizes

- 1" - 4"

### Features

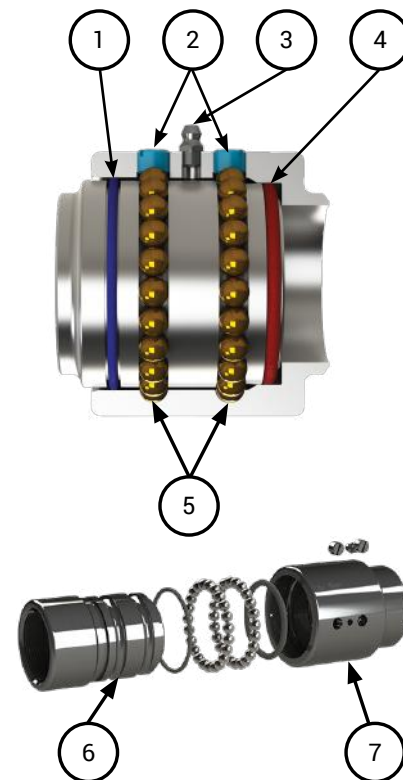
- O-ring pressure seal ensures a leak-proof seal and smooth rotation with lower torque
- Smooth moving seal for high-volume drum and tote loading
- Available working pressure ratings up to 1,000 PSI
- Swivel end configurations: 150 lb. and 300 lb. flanges, FNPT, MNPT, butt weld, TTMA, and others upon request

### Materials

- Available in carbon steel, 316L stainless steel, aluminum, brass, and malleable iron

### Bill of Materials

1. O-ring (dust) seal
2. Ball retainer screw
3. Grease fitting
4. O-ring (pressure) seal
5. Ball bearings
6. Sleeve
7. Body



## V-Ring Swivel Joints

### Applications

- V-ring, also known as chevron packing, is a multiple lip seal known for its reliability and long life
- Designed to seal even under misalignment caused by race wear from years of service

### Sizes

- 2" - 12"

### Features

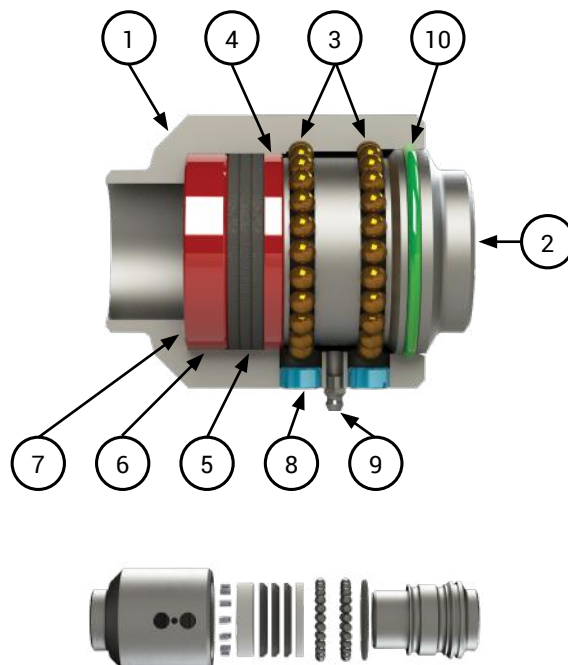
- Three lip seals and the ability to seal even if the unit is in misalignment result in longer time between service periods, increasing up-time efficiencies, and lowering maintenance costs
- Spring-loaded triple v-ring sealing system ensures a leak-proof seal at high or low pressure and extends seal life
- Swivels are shipped standard with the following:
  - Buna-N pressure seals and dust seals
  - Carbon steel ball bearings
  - PTFE retainers in V-ring swivels
- Available working pressure ratings up to **1,000 PSI**

### Materials

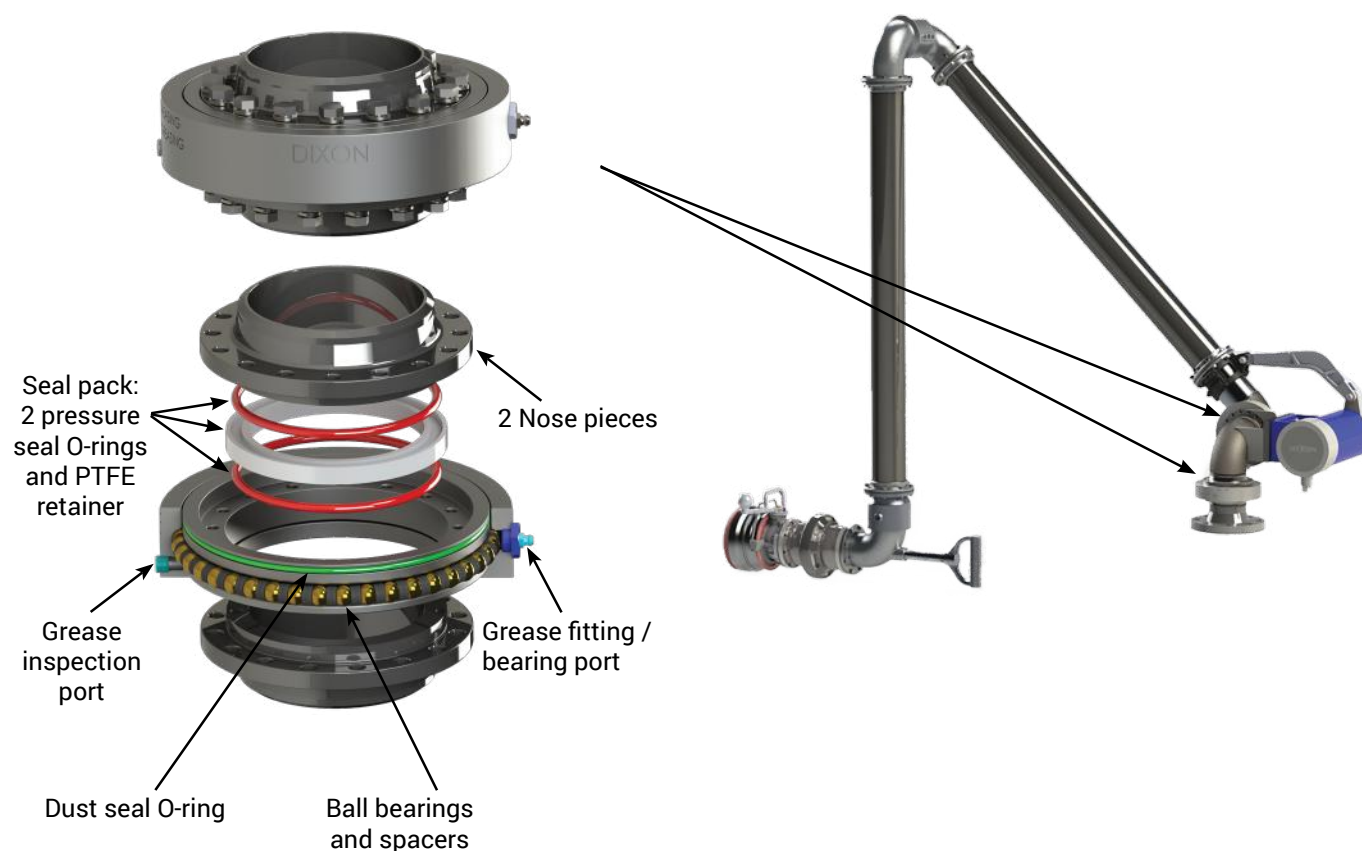
- Carbon steel, 316L stainless steel, and aluminum

### Bill of Materials

- |                           |                        |
|---------------------------|------------------------|
| 1. Body                   | 6. Spring retainer     |
| 2. Sleeve                 | 7. Spring              |
| 3. Ball bearings          | 8. Ball retainer screw |
| 4. Seal retainer          | 9. Grease fitting      |
| 5. V-ring (pressure) seal | 10. O-ring (dust seal) |



### Split Flange Swivels



#### Applications

- For use in industries including petroleum, blending plants, petrochemical, refining, mining, distilling, paint plants, farm irrigation and fertilizing, wastewater treatment, food and beverage process equipment, marine, and many more

#### Sizes

- 2", 3", and 4"

#### Features

- Bearing pack design allows easy seal change without removing the ball bearings
- Simple maintenance: remove one nose piece, replace seal pack, and reinstall with little downtime
- In-stream seal separates the wetted area from the ball bearings, allowing for longer bearing pack life compared to conventional swivels
- Wide-set bearing race for higher moment loads
- Compact design for low-profile applications
- Full penetration weld

#### Materials

- Bearing pack: through-hardened forged high-carbon alloy
- Material contact surfaces: stainless steel or carbon steel nose pieces
- Seals: FKM-A, PTFE, and more upon request

#### Specifications

- Pressure rating: up to **600 PSI**
- Standard temperature range is **-40°F to 250°F (-40° to 121°C)**; other temperature ranges can be met upon request, depending on seal material (with standard Buna-N seals: **250°F [121°C]**)

#### Available options

- Swivel end configurations: 150 lb. and 300 lb. flanges, FNPT, MNPT, butt weld, TTMA, and others upon request



Notes

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