Quick & Dry Disconnect
Fittings Catalog

OPW
ENGINEERED SYSTEMS
a DOVER company

opw-es.com
OPW Engineered Systems specializes in engineering, designing and manufacturing of systems for the safe and efficient loading and unloading of critical hazardous fluid materials. Highly dedicated to listening closely to the needs of customers and to providing high-value solutions that deliver safer, cleaner, faster methods of fluid handling. Simply put, we make your connections safer.

Table of Contents

Quick Disconnect Fittings & Couplings ............... 4
Kamlok® Twin-Kam™ Series .......................... 5
Autolok® Series ........................................ 7
Miscellaneous Couplers & Adaptors ................. 10
Kits & Accessories .................................. 11
Performance Specifications .......................... 12
Ordering Chart ....................................... 13
Gaskets Options ..................................... 13

Dry Disconnect Couplings

Overview .............................................. 14
Kamvalok® ............................................ 15
Applications ......................................... 16
Operation ............................................. 17
1700DL Coupler ...................................... 18
Kamvalok® Flat-Face ................................ 19
1700ESL Coupler .................................... 21
1700ES Coupler ...................................... 22
Performance Specifications ......................... 23
2173AVN Series ..................................... 24
Adaptors – 1600 Series ................................ 25

Drylok™

Operation ............................................. 27
Drylok™ Series ...................................... 28
Performance Specifications ......................... 29

Epsilon® Coupling System

Overview ............................................. 30
Applications ......................................... 31
Performance Specifications ......................... 34
Dimensions .......................................... 35

Twist-Lok

Overview ............................................. 37
Ordering Chart ...................................... 38

Hiltap™ Family Of Products

Overview ............................................. 39
3TL Series ........................................... 40
3IU Series ........................................... 41
3U Series ............................................ 41
HGJ Ground Joint ................................... 42
LQC Series ........................................... 43
415, 425 and 450 Series Couplings ............... 44
SaVD™ Lite Gate Valves ......................... 44
Ordering Chart ..................................... 45

Safety Breakaway Devices

NTS-PU .............................................. 49
SZ Series .......................................... 50

Autolok®, Drylok™, Twin-Kam™, and Spring Ring™ are trademarks, and OPW®, Kamvalok® and Kamlok® are registered trademarks of OPW Engineered Systems. Hastelloy® is a registered trademark owned by Haynes International, Inc. Kalrez® is a trademark of DuPont Dow Elastomers. Chemraz® is a registered trademark of Green Tweed. Scully® and BICLOPS® are registered trademarks of Sculley Signal Co.
Overview

The realities faced by today’s chemical and petroleum industries demand innovative, carefully engineered products that are built to handle a wide range of applications. These are often extreme applications with hazardous fluids under high pressures or temperatures. It is imperative that the connections designed for fluid transfer be able to safely withstand these demands. Responsible business practices (as well as regulatory and environmental regulations) mandate secure connections with regard to the handling of hazardous or toxic fluids and vapors. Secure connections are, of course, important for business efficiencies as well as for environmental reasons. But more importantly, it is imperative for the safety of the people handling the materials. That’s why we promise that our products are: SAFER. CLEANER. FASTER.

OPW Engineered Systems is a world-class manufacturer of quick and dry disconnect fittings to meet any fluid handling need. For more than 60 years, our products have been used the world over in a wide range of applications including:

- Petroleum Products
- Fatty Acids
- Liquefied Gases
- Asphalt
- Solvents
- Hazardous and Corrosive Chemicals

We are the experts in reducing the hazards involved with handling fluid products for a multitude of industries.

A Complete Line of connections are available, including quick disconnect products from Kamlok® and Autolok®, featuring the exclusive Twin-Kam™ arm design. For more hazardous fluids that require a dry disconnect, OPW’s comprehensive line includes Kamvalok®, Drylok® and Epsilon®, all suitable for a broad range of hazardous liquid applications. For extreme pressure and temperature sealing applications, the Hiltp® brand offers innovative, high-performance couplings and connectors.

Innovative Products Designed For Safety.

It’s what OPW Engineered Systems stands for. OPW products help keep employees out of harm’s way, as well as contain fugitive emissions, transfer VOCs without product or vapor loss, and provide industries with solutions that further the efforts of responsive environmental management.

Quality Control For Dependable Operation.

OPW quick and dry disconnect couplings and fittings are manufactured in compliance with the highest standards of design, materials and construction. All manufacturing and testing procedures meet or exceed industry standards. Products are rigorously tested to ensure high quality. CNC equipment is used to machine all critical dimensions within precise tolerances to ensure that each product adheres to rigid engineering specifications.

Service and Support Beyond Compare.

OPW Engineered Systems is a time-tested industry leader with dedicated, experienced resources to provide technical assistance. From the initial design phase through installation and beyond, internal and external sales teams are knowledgeable about OPW products, and are trained to provide skilled solutions. Highly personalized professional service, site evaluations, design and applications engineering expertise and meticulously engineered, exceptionally built products ensure your complete satisfaction.
Quick Disconnects Overview

OPW Engineered Systems offers a comprehensive line of quick disconnect products in a wide variety of sizes and configurations.

- **Kamlok®** is the world’s most popular cam and groove. The name is synonymous with quick disconnects and has set the industry standard for safety and ease of use.

- **Autolok®** quick disconnects utilize a self-locking system to provide an added level of safety.

Kamlok® and Autolok® offer the exclusive Twin-Kam™, a patented system that holds the adaptor more securely for increased protection against accidental release. These popular couplers and adapters are the industry’s safest, sturdiest, quickest coupler systems on the market.
Kamlok® Series

The World’s Most Popular Cam and Groove Quick Disconnect

OPW Engineered Systems’ Kamlok® Quick Disconnects are the industry standard in cam and groove couplers for safety and ease of use. All OPW Kamloks® feature the exclusive Twin-Kam™ arm design to help prevent accidental release, and Spring-Ring™ to ensure proper position of finger rings for ease of operation.

Spring-Ring™ Finger Rings prevent rings from getting trapped under arms.

Detent position of Twin-Kam™ arms help prevent unintentional arm release.
Kamlok® Series

Benefits

- **Long-Life Reliability** – Specially designed and manufactured with 316 stainless steel and gasket materials to endure the harshest environments.
- **Added Protection** – Exclusive features, such as Twin-Kam™ arms with special detent to secure arms in position to help prevent accidental uncoupling.
- **Ease-of-Use** – Cam and groove design means smooth coupling and uncoupling while the patented Spring-Ring™ feature ensures that the finger rings do not get trapped under the coupling arms.
- **Best Value** – Built to the highest quality standards with special ease-of-use design features at the price point of other standard cam and groove couplers makes OPW Kamloks® the best overall value in the industry.

Features

- **Cam and Groove Design** – Provides for reliable, smooth operation in 360° orientation.
- **Exclusive Twin-Kam™ Arms** – Provides detent position that helps prevent unintentional arm release beyond 45°. Guaranteed For Life (GFL™) – if an arm breaks, it is replaced FREE.
- **Spring-Ring™ Finger Rings** – Rings won’t get trapped under the arms with this patented feature, so opening/closing is quick and easy every time.
- **Available in 316 SST steel in a wide variety of sizes/styles**

### 633 B Coupler* – Male NPT

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>633B-SS07</td>
<td>3/4”</td>
</tr>
<tr>
<td>633B-SS10</td>
<td>1”</td>
</tr>
<tr>
<td>633B-SS15</td>
<td>1-1/2”</td>
</tr>
<tr>
<td>633B-SS20</td>
<td>2”</td>
</tr>
<tr>
<td>633B-SS30</td>
<td>3”</td>
</tr>
<tr>
<td>633B-SS40</td>
<td>4”</td>
</tr>
</tbody>
</table>

*Designed for non-compressable liquids

### 633 C Coupler* – Hose Shank

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>633C-SS07</td>
<td>3/4”</td>
</tr>
<tr>
<td>633C-SS10</td>
<td>1”</td>
</tr>
<tr>
<td>633C-SS15</td>
<td>1-1/2”</td>
</tr>
<tr>
<td>633C-SS20</td>
<td>2”</td>
</tr>
<tr>
<td>633C-SS30</td>
<td>3”</td>
</tr>
<tr>
<td>633C-SS40</td>
<td>4”</td>
</tr>
</tbody>
</table>

*Designed for non-compressable liquids

### 633 D Coupler* – Female NPT

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>633D-SS05</td>
<td>3/4” Coupler x 1/2” FNPT</td>
</tr>
<tr>
<td>633D-SS07</td>
<td>3/4”</td>
</tr>
<tr>
<td>633D-SS10</td>
<td>1”</td>
</tr>
<tr>
<td>633D-SS12</td>
<td>1-1/4”</td>
</tr>
<tr>
<td>633D-SS15</td>
<td>1-1/2”</td>
</tr>
<tr>
<td>633D-SS20</td>
<td>2”</td>
</tr>
<tr>
<td>633D-SS30</td>
<td>3”</td>
</tr>
<tr>
<td>633D-SS40</td>
<td>4”</td>
</tr>
</tbody>
</table>

*Designed for non-compressable liquids

### 634 B Dust Cap**

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>634B-SS07</td>
<td>3/4”</td>
</tr>
<tr>
<td>634B-SS10</td>
<td>1”</td>
</tr>
<tr>
<td>634B-SS15</td>
<td>1-1/2”</td>
</tr>
<tr>
<td>634B-SS20</td>
<td>2”</td>
</tr>
<tr>
<td>634B-SS25</td>
<td>2-1/2”</td>
</tr>
<tr>
<td>634B-SS30</td>
<td>3”</td>
</tr>
<tr>
<td>634B-SS40</td>
<td>4”</td>
</tr>
</tbody>
</table>

**Dust caps and plugs are NOT to be used in pressure applications.
**Autolok® Series**

**Self-Locking Couplers for an Added Level of Safety**

OPW Autolok® quick disconnects are self-locking couplers that provide an added level of safety and convenience at the fluid connection. Autolok’s® patented locking mechanism, built into the coupling arm, means you simply snap the locking arms shut with one smooth motion and the coupler stays secure and shut until you unlock it. No clips, pins or buttons. Autolok® uses the patented Twin-Kam™ to hold the adaptor more securely to the coupler to provide added protection against accidental release.
Autolok® Series

Benefits

• **Extra Protection** – Self-locking arms, featuring exclusive Twin-Kam™ design provides extra protection against accidental release or uncoupling.

• **Easy Operation** – Arms lock automatically with a positive click. Release requires only an easy tug on the patented lock release mechanism. No clips to insert or remove. No spring-loaded button to push.

• **Durable and Efficient** – Designed to ensure optimum flow rates. The heavy-duty, 316 stainless steel construction adds extra durability in harsh environments.

Features

• **Autolok® Patented Arms** – Close just like a regular quick coupler but then lock themselves automatically.

• **Spring-Ring™ Finger Rings** – Patented design keeps rings from getting trapped under the arms, making secure closing a snap. An easy tug on the rings release and open the coupling.

• **Heavy-Duty Construction** – Available in 316 stainless steel.

• **Guaranteed For Life (GFL™) Arms** – If our exclusive Twin-Kam™ arms ever break, they are replaced FREE.

---

**733 BL Coupler* – Male NPT**

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>733BL-05SB</td>
<td>3/4&quot; Coupler x 1/2&quot; FNPT</td>
</tr>
<tr>
<td>733BL-07SB</td>
<td>3/4&quot;</td>
</tr>
<tr>
<td>733BL-10SB</td>
<td>1&quot;</td>
</tr>
<tr>
<td>733BL-15SB</td>
<td>1-1/2&quot;</td>
</tr>
<tr>
<td>733BL-20SB</td>
<td>2&quot;</td>
</tr>
<tr>
<td>733BL-30SB</td>
<td>3&quot;</td>
</tr>
<tr>
<td>733BL-40SB</td>
<td>4&quot;</td>
</tr>
</tbody>
</table>

*Designed for non-compressable liquids

**733 DL Coupler* – Female NPT**

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>733DL-05SB</td>
<td>3/4&quot; Coupler x 1/2&quot; FNPT</td>
</tr>
<tr>
<td>733DL-07SB</td>
<td>3/4&quot;</td>
</tr>
<tr>
<td>733DL-10SB</td>
<td>1&quot;</td>
</tr>
<tr>
<td>733DL-12SB</td>
<td>1-1/4&quot;</td>
</tr>
<tr>
<td>733DL-15SB</td>
<td>1-1/2&quot;</td>
</tr>
<tr>
<td>733DL-20SB</td>
<td>2&quot;</td>
</tr>
<tr>
<td>733DL-25SB</td>
<td>2-1/2&quot;</td>
</tr>
<tr>
<td>733DL-30SB</td>
<td>3&quot;</td>
</tr>
<tr>
<td>733DL-40SB</td>
<td>4&quot;</td>
</tr>
</tbody>
</table>

*Designed for non-compressable liquids

**733 CL Coupler* – Hose Shank**

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>733CL-07SB</td>
<td>3/4&quot;</td>
</tr>
<tr>
<td>733CL-10SB</td>
<td>1&quot;</td>
</tr>
<tr>
<td>733CL-12SB</td>
<td>1-1/4&quot;</td>
</tr>
<tr>
<td>733CL-15SB</td>
<td>1-1/2&quot;</td>
</tr>
<tr>
<td>733CL-20SB</td>
<td>2&quot;</td>
</tr>
<tr>
<td>733CL-30SB</td>
<td>3&quot;</td>
</tr>
<tr>
<td>733CL-40SB</td>
<td>4&quot;</td>
</tr>
</tbody>
</table>

*Designed for non-compressable liquids

**733 DCL Dust Cap**

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>733DCL-07SB</td>
<td>3/4&quot;</td>
</tr>
<tr>
<td>733DCL-10SB</td>
<td>1&quot;</td>
</tr>
<tr>
<td>733DCL-12SB</td>
<td>1-1/4&quot;</td>
</tr>
<tr>
<td>733DCL-15SB</td>
<td>1-1/2&quot;</td>
</tr>
<tr>
<td>733DCL-20SB</td>
<td>2&quot;</td>
</tr>
<tr>
<td>733DCL-25SB</td>
<td>2-1/2&quot;</td>
</tr>
<tr>
<td>733DCL-30SB</td>
<td>3&quot;</td>
</tr>
<tr>
<td>733DCL-40SB</td>
<td>4&quot;</td>
</tr>
</tbody>
</table>

**Dust caps and plugs are NOT to be used in pressure applications.**
Adaptors

OPW Engineered Systems offers a broad range of adaptors for Autolok® and Kamlok® couplers, in a variety of sizes and configurations, including double couplers, reducing couplers, ANSI flanges, spool adaptors, socket weld and butt weld couplers/adaptors.

633 A Adaptor* – Female NPT

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>633A-SS05</td>
<td>3/4&quot; Adaptor x 1/2&quot; FNPT</td>
</tr>
<tr>
<td>633A-SS07</td>
<td>3/4&quot;</td>
</tr>
<tr>
<td>633A-SS10</td>
<td>1&quot;</td>
</tr>
<tr>
<td>633A-SS12</td>
<td>1-1/4&quot;</td>
</tr>
<tr>
<td>633A-SS15</td>
<td>1-1/2&quot;</td>
</tr>
<tr>
<td>633A-SS20</td>
<td>2&quot;</td>
</tr>
<tr>
<td>633A-SS25</td>
<td>2-1/2&quot;</td>
</tr>
<tr>
<td>633A-SS30</td>
<td>3&quot;</td>
</tr>
<tr>
<td>633A-SS40</td>
<td>4&quot;</td>
</tr>
</tbody>
</table>

*Designed for non-compressable liquids

633 E Adaptor*– Hose Shank

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>633E-SS07</td>
<td>3/4&quot;</td>
</tr>
<tr>
<td>633E-SS10</td>
<td>1&quot;</td>
</tr>
<tr>
<td>633E-SS12</td>
<td>1-1/4&quot;</td>
</tr>
<tr>
<td>633E-SS15</td>
<td>1-1/2&quot;</td>
</tr>
<tr>
<td>633E-SS20</td>
<td>2&quot;</td>
</tr>
<tr>
<td>633E-SS30</td>
<td>3&quot;</td>
</tr>
<tr>
<td>633E-SS40</td>
<td>4&quot;</td>
</tr>
</tbody>
</table>

*Designed for non-compressable liquids

633 F Adaptor*– Male NPT

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>633F-SS05</td>
<td>3/4&quot; Adaptor x 1/2&quot; MNPT</td>
</tr>
<tr>
<td>633F-SS07</td>
<td>3/4&quot;</td>
</tr>
<tr>
<td>633F-SS10</td>
<td>1&quot;</td>
</tr>
<tr>
<td>633F-SS12</td>
<td>1-1/4&quot;</td>
</tr>
<tr>
<td>633F-SS15</td>
<td>1-1/2&quot;</td>
</tr>
<tr>
<td>633F-SS20</td>
<td>2&quot;</td>
</tr>
<tr>
<td>633F-SS25</td>
<td>2-1/2&quot;</td>
</tr>
<tr>
<td>633F-SS30</td>
<td>3&quot;</td>
</tr>
<tr>
<td>633F-SS40</td>
<td>4&quot;</td>
</tr>
</tbody>
</table>

*Designed for non-compressable liquids

634 A Dust Plug**

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>634A-SS07</td>
<td>3/4&quot;</td>
</tr>
<tr>
<td>634A-SS10</td>
<td>1&quot;</td>
</tr>
<tr>
<td>634A-SS12</td>
<td>1-1/4&quot;</td>
</tr>
<tr>
<td>634A-SS15</td>
<td>1-1/2&quot;</td>
</tr>
<tr>
<td>634A-SS20</td>
<td>2&quot;</td>
</tr>
<tr>
<td>634A-SS25</td>
<td>2-1/2&quot;</td>
</tr>
<tr>
<td>634A-SS30</td>
<td>3&quot;</td>
</tr>
<tr>
<td>634A-SS40</td>
<td>4&quot;</td>
</tr>
</tbody>
</table>

**Dust caps and plugs are NOT to be used in pressure applications

Reducing Couplers & Adaptors

633 CH Coupler 3” x 2-1/2” Hose Shank* (non locking)

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>633CH-SS3025</td>
<td>3” Coupler x 2-1/2” Hose Shank</td>
</tr>
</tbody>
</table>

*Designed for non-compressable liquids

633 EH Adapter 3” x 2-1/2” Hose Shank*

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>633EH-SS3025</td>
<td>3” Adaptor x 2-1/2” Hose Shank</td>
</tr>
</tbody>
</table>

*Designed for non-compressable liquids

633 DA Coupler/Adaptor* (non locking)

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>633DA-SS2030</td>
<td>2” Coupler x 3” Adaptor</td>
</tr>
<tr>
<td>633DA-SS3020</td>
<td>3” Coupler x 2” Adaptor</td>
</tr>
<tr>
<td>633DA-SS4030</td>
<td>4” Coupler x 3” Adaptor</td>
</tr>
<tr>
<td>633DA-SS3020V</td>
<td>3” Coupler x 2” Adaptor w/ blow-down valve</td>
</tr>
<tr>
<td>633DA-SS3030V</td>
<td>3” Coupler x 3” Adaptor w/ blow-down valve</td>
</tr>
</tbody>
</table>

*Designed for non-compressable liquids

633 DD Double Coupler* (non locking)

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>633DD-SS3020</td>
<td>2” x 2”</td>
</tr>
<tr>
<td>633DD-SS3030</td>
<td>3” x 3”</td>
</tr>
</tbody>
</table>

*Designed for non-compressable liquids

633 AA Spool Adaptor*

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>633AA-SS2020</td>
<td>2” x 2”</td>
</tr>
<tr>
<td>633AA-SS2030</td>
<td>2” x 3”</td>
</tr>
<tr>
<td>633AA-SS3030</td>
<td>3” x 3”</td>
</tr>
</tbody>
</table>

*Designed for non-compressable liquids

IMPORTANT: OPW products should be used in compliance with applicable federal, state, provincial, and local laws and regulations. Product selection should be based on physical specifications and limitations and compatibility with the environment and materials to be handled. OPW MAKES NO WARRANTY OF FITNESS FOR A PARTICULAR USE. All illustrations and specifications in this literature are based on the latest product information available at the time of publication. OPW reserves the right to make changes at any time in prices, materials, specifications and models and to discontinue models without notice or obligation.
## Miscellaneous Couplers & Adaptors

### 633 AW Adaptor* (Socket Weld) Schedule 40

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>633AW-SS05</td>
<td>3/4&quot; Adaptor x 1/2&quot; SW</td>
</tr>
<tr>
<td>633AW-SS07</td>
<td>3/4&quot;</td>
</tr>
<tr>
<td>633AW-SS10</td>
<td>1&quot;</td>
</tr>
<tr>
<td>633AW-SS12</td>
<td>1-1/4&quot;</td>
</tr>
<tr>
<td>633AW-SS15</td>
<td>1-1/2&quot;</td>
</tr>
<tr>
<td>633AW-SS20</td>
<td>2&quot;</td>
</tr>
<tr>
<td>633AW-SS25</td>
<td>2-1/2&quot;</td>
</tr>
<tr>
<td>633AW-SS30</td>
<td>3&quot;</td>
</tr>
<tr>
<td>633AW-SS40</td>
<td>4&quot;</td>
</tr>
</tbody>
</table>

Note: Weld fittings designed for Sched. 40 only

### 633 FW Adaptor* (Butt Weld) Schedule 40

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>633FW-SS05</td>
<td>3/4&quot; Adaptor x 1/2&quot; BW</td>
</tr>
<tr>
<td>633FW-SS07</td>
<td>3/4&quot;</td>
</tr>
<tr>
<td>633FW-SS10</td>
<td>1&quot;</td>
</tr>
<tr>
<td>633FW-SS12</td>
<td>1-1/4&quot;</td>
</tr>
<tr>
<td>633FW-SS15</td>
<td>1-1/2&quot;</td>
</tr>
<tr>
<td>633FW-SS20</td>
<td>2&quot;</td>
</tr>
<tr>
<td>633FW-SS25</td>
<td>2-1/2&quot;</td>
</tr>
<tr>
<td>633FW-SS30</td>
<td>3&quot;</td>
</tr>
<tr>
<td>633FW-SS40</td>
<td>4&quot;</td>
</tr>
</tbody>
</table>

Note: Weld fittings designed for Sched. 40 only

### 633 LAS Adaptor* (150 lb. ANSI Flange)

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>633LAS-SS05</td>
<td>3/4&quot; Adaptor x 1/2&quot; Flange</td>
</tr>
<tr>
<td>633LAS-SS07</td>
<td>3/4&quot;</td>
</tr>
<tr>
<td>633LAS-SS10</td>
<td>1&quot;</td>
</tr>
<tr>
<td>633LAS-SS12</td>
<td>1-1/4&quot;</td>
</tr>
<tr>
<td>633LAS-SS15</td>
<td>1-1/2&quot;</td>
</tr>
<tr>
<td>633LAS-SS20</td>
<td>2&quot;</td>
</tr>
<tr>
<td>633LAS-SS25</td>
<td>2-1/2&quot;</td>
</tr>
<tr>
<td>633LAS-SS30</td>
<td>3&quot;</td>
</tr>
<tr>
<td>633LAS-SS40</td>
<td>4&quot;</td>
</tr>
</tbody>
</table>

*Designed for non-compressable liquids

### 733 DLW Coupler* (Socket Weld) Schedule 40

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>733DLW-05SB</td>
<td>3/4&quot; x 1/2&quot; SW</td>
</tr>
<tr>
<td>733DLW-07SB</td>
<td>3/4&quot;</td>
</tr>
<tr>
<td>733DLW-10SB</td>
<td>1&quot;</td>
</tr>
<tr>
<td>733DLW-12SB</td>
<td>1-1/4&quot;</td>
</tr>
<tr>
<td>733DLW-15SB</td>
<td>1-1/2&quot;</td>
</tr>
<tr>
<td>733DLW-20SB</td>
<td>2&quot;</td>
</tr>
<tr>
<td>733DLW-25SB</td>
<td>2-1/2&quot;</td>
</tr>
<tr>
<td>733DLW-30SB</td>
<td>3&quot;</td>
</tr>
<tr>
<td>733DLW-40SB</td>
<td>4&quot;</td>
</tr>
</tbody>
</table>

Note: Weld fittings designed for Sched. 40 only

### 733 BLW Coupler* (Butt Weld) Schedule 40

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>733BLW-05SB</td>
<td>3/4&quot; x 1/2&quot; BW</td>
</tr>
<tr>
<td>733BLW-07SB</td>
<td>3/4&quot;</td>
</tr>
<tr>
<td>733BLW-10SB</td>
<td>1&quot;</td>
</tr>
<tr>
<td>733BLW-15SB</td>
<td>1-1/2&quot;</td>
</tr>
<tr>
<td>733BLW-20SB</td>
<td>2&quot;</td>
</tr>
<tr>
<td>733BLW-30SB</td>
<td>3&quot;</td>
</tr>
<tr>
<td>733BLW-40SB</td>
<td>4&quot;</td>
</tr>
</tbody>
</table>

Note: Weld fittings designed for Sched. 40 only

### 733 LDS Coupler* (150 lb. ANSI Flange)

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>733LDS-05SB</td>
<td>3/4&quot; Coupler x 1/2&quot; Flange</td>
</tr>
<tr>
<td>733LDS-07SB</td>
<td>3/4&quot;</td>
</tr>
<tr>
<td>733LDS-10SB</td>
<td>1&quot;</td>
</tr>
<tr>
<td>733LDS-12SB</td>
<td>1-1/4&quot;</td>
</tr>
<tr>
<td>733LDS-15SB</td>
<td>1-1/2&quot;</td>
</tr>
<tr>
<td>733LDS-20SB</td>
<td>2&quot;</td>
</tr>
<tr>
<td>733LDS-25SB</td>
<td>2-1/2&quot;</td>
</tr>
<tr>
<td>733LDS-30SB</td>
<td>3&quot;</td>
</tr>
<tr>
<td>733LDS-40SB</td>
<td>4&quot;</td>
</tr>
</tbody>
</table>

*Designed for non-compressable liquids

### Accessories

<table>
<thead>
<tr>
<th>Style</th>
<th>Size</th>
<th>Part #</th>
</tr>
</thead>
<tbody>
<tr>
<td>SST Chain with Hooks</td>
<td>12&quot; Long</td>
<td>H31119M</td>
</tr>
<tr>
<td></td>
<td>18&quot; Long</td>
<td>H31120M</td>
</tr>
<tr>
<td>Brass Chain with “S” Hooks</td>
<td>6&quot; Long</td>
<td>H06682M</td>
</tr>
<tr>
<td></td>
<td>12&quot; Long</td>
<td>H06683M</td>
</tr>
<tr>
<td>Spring Finger Ring</td>
<td>1&quot; – 6&quot;</td>
<td>H20550M</td>
</tr>
</tbody>
</table>
**Twin-Kam™ Kamlok® Cam Arm Kits**

with Guaranteed For Life (GFL™) Twin-Kam™ Arms

**CAUTION:** We do not recommend the use of Twin-Kam™ arms on couplers not manufactured by OPW. Dimensional differences do exist and proper performance cannot be assured.

![Image of Twin-Kam™ Kamlok® Cam Arm Kits](image)

### Parts Kit
- 2 Cam Arms
- 2 Pins
- 2 Finger Rings
- Instructions

*Note: Finger Rings are not included with 1/2" and 3/4" Kit.

### Kit # Size
- 633ARK-SS07* 1/2" & 3/4"
- 633ARK-SS10 1"
- 633ARK-SS20 1-1/4" – 2-1/2"
- 633ARK-SS30 3", 4" & 5"

**Autolok® Cam Arm Kits**

### Kits for Autolok® Couplers and Dust Caps

<table>
<thead>
<tr>
<th>Kit #</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>733ARK-SS07</td>
<td>1/2&quot; &amp; 3/4&quot;</td>
</tr>
<tr>
<td>733ARK-SS10</td>
<td>1&quot;</td>
</tr>
<tr>
<td>733ARK-SS20</td>
<td>1-1/4&quot; – 2-1/2&quot;</td>
</tr>
<tr>
<td>733ARK-SS30</td>
<td>3&quot; &amp; 4&quot;</td>
</tr>
</tbody>
</table>

**Original Locking Design Repair Kits**

<table>
<thead>
<tr>
<th>Kit #</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>733WARK-SS07</td>
<td>3/4&quot;</td>
</tr>
<tr>
<td>733WARK-SS10</td>
<td>1&quot;</td>
</tr>
<tr>
<td>733WARK-SS20</td>
<td>1-1/4&quot; – 2-1/2&quot;</td>
</tr>
<tr>
<td>733WARK-SS30</td>
<td>3&quot; &amp; 4&quot;</td>
</tr>
</tbody>
</table>

**634 CLK Cliplok™ Kits** Provides locking mechanism for standard units

<table>
<thead>
<tr>
<th>Kit #</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>634CLK-1020</td>
<td>1-1/4&quot; - 2-1/2&quot;</td>
</tr>
<tr>
<td>634CLK-1070</td>
<td>3&quot; &amp; 4&quot;</td>
</tr>
</tbody>
</table>

**IMPORTANT:** OPW products should be used in compliance with applicable federal, state, provincial, and local laws and regulations. Product selection should be based on physical specifications and limitations and compatibility with the environment and materials to be handled. OPW makes no warranty of fitness for a particular use. All illustrations and specifications in this literature are based on the latest product information available at the time of publication. OPW reserves the right to make changes at any time in prices, materials, specifications and models and to discontinue models without notice or obligation.
Ordering Specifications

**733CL - 20SB**

**AUTOLOK®**

**733CL - 20SB**

**SIZES**
- 05 - 1/2"
- 07 - 3/4"
- 10 - 1"
- 12 - 1-1/4"
- 15 - 1-1/2"

**MATERIALS**
- 316 SST

**GASKETS**
- B - Buna-N (Standard)
- E - EPDM
- N - Neoprene
- W - White Neoprene
- T - PTFE
- V - Fluorocarbon
- X - PTFE Envelope-Buna-N
- F - PTFE Envelope-Fluorocarbon
- U - PTFE Encap-Fluorocarbon
- S - PTFE Encap-Silicon

*Call for other available gasket compounds

---

**633D - SS10**

**KAMLOK®**

**633D - SS10**

**SIZES**
- 05 - 1/2"
- 07 - 3/4"
- 10 - 1"
- 12 - 1-1/4"
- 15 - 1-1/2"

**MATERIALS**
- 316 SST

---

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4&quot;</td>
<td>H06595M</td>
<td>H05215M</td>
<td>H01881M</td>
<td>**</td>
<td>H00966M</td>
</tr>
<tr>
<td>1&quot;</td>
<td>H06480M</td>
<td>H05216M</td>
<td>H01884M</td>
<td>H04196M</td>
<td>H00967M</td>
</tr>
<tr>
<td>1-1/4&quot;</td>
<td>H06477M</td>
<td>H20534M</td>
<td>H01887M</td>
<td>**</td>
<td>H00968M</td>
</tr>
<tr>
<td>1-1/2&quot;</td>
<td>H06430M</td>
<td>H20535M</td>
<td>H01890M</td>
<td>H04200M</td>
<td>H00972M</td>
</tr>
<tr>
<td>2&quot;</td>
<td>H20544M</td>
<td>H20536M</td>
<td>H01893M</td>
<td>H04201M</td>
<td>H00973M</td>
</tr>
<tr>
<td>2-1/2&quot;</td>
<td>H20545M</td>
<td>H20537M</td>
<td>H01896M</td>
<td>H01189M</td>
<td>H00974M</td>
</tr>
<tr>
<td>3&quot;</td>
<td>H20546M</td>
<td>H20538M</td>
<td>H01899M</td>
<td>H01190M</td>
<td>H00975M</td>
</tr>
<tr>
<td>4&quot;</td>
<td>H20547M</td>
<td>H05225M</td>
<td>H01902M</td>
<td>H04208M</td>
<td>H00976M</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Size (in.)</th>
<th>PTFE* Part No.</th>
<th>PTFE Envelope Buna Part No.</th>
<th>PTFE Envelope Fluorocarbon Part No.</th>
<th>PTFE Encapsulated Fluorocarbon Part No.</th>
<th>PTFE Encapsulated Silicone Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4&quot;</td>
<td>H01979M</td>
<td>H03304</td>
<td>H03401</td>
<td>H20887M</td>
<td>H20888M</td>
</tr>
<tr>
<td>1&quot;</td>
<td>H01980M</td>
<td>H03307</td>
<td>H03402</td>
<td>H20899M</td>
<td>H20890M</td>
</tr>
<tr>
<td>1-1/4&quot;</td>
<td>H01981M</td>
<td>H03310</td>
<td>H03405</td>
<td>H20891M</td>
<td>H20892M</td>
</tr>
<tr>
<td>1-1/2&quot;</td>
<td>H01982M</td>
<td>H03317</td>
<td>H03407</td>
<td>H20893M</td>
<td>H20894M</td>
</tr>
<tr>
<td>2&quot;</td>
<td>H01983M</td>
<td>H03325</td>
<td>H03408</td>
<td>H31168M</td>
<td>H07904M</td>
</tr>
<tr>
<td>2-1/2&quot;</td>
<td>H02172M</td>
<td>H03330</td>
<td>H03410</td>
<td>H31188M</td>
<td>H07905M</td>
</tr>
<tr>
<td>3&quot;</td>
<td>H02173M</td>
<td>H03333</td>
<td>H03411</td>
<td>H20895M</td>
<td>H20896M</td>
</tr>
<tr>
<td>4&quot;</td>
<td>H02174M</td>
<td>H03336</td>
<td>H03412</td>
<td>H20845M</td>
<td>H31562M</td>
</tr>
</tbody>
</table>

*Solid PTFE gaskets recommended for use with viscous fluids

**Consult Factory**

---

**IMPORTANT:** OPW products should be used in compliance with applicable federal, state, provincial, and local laws and regulations. Product selection should be based on physical specifications and limitations and compatibility with the environment and materials to be handled. OPW makes no warranty of fitness for a particular use. All illustrations and specifications in this literature are based on the latest product information available at the time of publication. OPW reserves the right to make changes at any time in prices, materials, specifications and models and to discontinue models without notice or obligation.
OPW Engineered Systems offers the most comprehensive line of dry disconnect products in the industry. OPW’s line of dry disconnects include Drylok™, Kamvalok® and Epsilon®, all suitable for a broad range of hazardous liquid applications.

Dry Disconnect coupling devices have been proven as successful technology to help protect workers and the environment in the transfer of hazardous materials. If your product is corrosive, toxic, caustic or otherwise harmful, OPW Engineered System’s family of high-performance dry disconnect couplings reduces the hazard associated with the transfer of these products.

- **Kamvalok**® couplings can be used at any transfer point where product loss is unacceptable.
- **Drylok™** coupling systems are designed to safely transfer hazardous, corrosive, volatile liquids such as acids, solvents and petrochemicals.
- **Epsilon**® couplers are designed with a double ball valve system to prevent chemical spills and reduce fugitive emissions of VOCs.
- **Twist-Lok** is an industry-leading range of user-friendly Dry Disconnect Couplers that provides a quick, easy connection with minimal product loss.
Kamvalok® Overview

The Industry Standard in Dry Disconnect Couplings

The OPW Engineered Systems’ Kamvalok® dry disconnect is designed to automatically shut off in the event of an accidental disconnection of the coupler and adaptor. Should the Kamvalok® be accidentally disconnected due to operator error or accident while the handle is in the open position and product flow is in progress, the poppet in the adaptor will automatically close and the seal cylinder will immediately stop flow through the coupler.

After the Kamvalok® adaptor and coupler are firmly coupled together, the coupler handle is turned to the OPEN position. This action moves the coupler poppet toward the adaptor poppet until the two mating poppets make contact. By completely turning the handle to the full open position the coupler poppet is extended beyond the end of the coupler, depressing the adaptor poppet back into the adaptor body. This creates clearance for the liquid flow around both the coupler and adaptor poppets. Guiding fins in the coupler and deflectors in the adaptor ensure even flow characteristics. When the handle is returned to the CLOSED position, the poppets are closed and the disconnection can be made. With the exception of the minimal amount of liquid captured between the two poppets, spillage upon disconnect is prevented.
Kamvalok® Applications

Because of its unique poppet action, the OPW Kamvalok® Dry Disconnect virtually eliminates spillage of any residual liquid contained within the line after disconnection. Kamvaloks® are used at transfer points where product loss is unacceptable. Common applications include: paint, lacquers, inks, adhesives, fatty acids, pharmaceuticals, liquid soaps, petroleum products, solvents, ag-chemicals, vegetable oils, detergents, and many acids and caustics.

OPW Engineered Systems’ Kamvalok® Couplings and Adaptors Provide for Total Closed-Loop Loading Capabilities.

- Kamvalok® Dry Disconnect Couplings and Adaptors
- D2000™ Vapor Recovery Couplers
- Tank Trailer, Tank Car and IBC Dry Disconnect Adaptors
- Autolok®/Kamlock® Quick Couplings

The benefit of closed-loop loading is that it protects people and property from dangerous and costly exposure by keeping hazardous liquids and vapors in-line and out of the environment. Closed-loop loading can help you meet the guidelines of responsible product stewardship and be in compliance with the Clean Air Act, SARA TITLE III, OSHA and other regulations.

OPW Kamvalok® components allow you to create closed-loop configurations on railcars.

Genuine OPW Kamvalok® Dry Disconnect Couplings help prevent product loss from routine and accidental uncouplings.

Through OPW’s global distribution network, producers can create closed-loop systems using authentic OPW Kamvalok® products.

Major shippers of hazardous liquids choose specially designed fittings from OPW when converting tank car fleets.
Why Use Kamvaloks®

- If your product is corrosive, toxic, caustic or otherwise harmful, Kamvaloks® will reduce the hazard associated with the transfer of these products.
- If your product is a VOC (volatile organic compound) that has a high vapor pressure and tends to evaporate quickly, Kamvaloks® will keep the product in-line and out of the air.
- Kamvaloks® will contain fugitive emissions, transfer VOCs without vapor loss, help keep employees out of harm’s way and help promote responsible environmental management.

Kamvalok® Operation

OPW Engineered Systems’ Kamvalok® Dry Disconnects are easy to operate. Connections and disconnections are accomplished by simply closing and opening two cam arms which lock into the machined groove around the circumference of the mating adaptor. The adaptor contains a spring-loaded poppet assembly that is actuated by the handle-action on the coupler.
1700DL Series Couplers

OPW Kamvalok® Dry Disconnect Couplings are considered the standard of the industry. Used at liquid transfer points where product loss could occur, OPW Kamvaloks® provide a reliable solution to prevent spillage during connection or disconnection. OPW Kamvalok® Dry Disconnect Couplings are used by manufacturers of paint, lacquers, inks, adhesives, fatty acids, pharmaceuticals, liquid soaps, and many other liquid products. They are particularly well suited for handling petroleum products, solvents, ag-chemicals, vegetable oils, detergents and many acids and caustics.

Features & Benefits

• Poppeted Seal Cylinder with Snap-on Nose Seal
  - Keeps hazardous liquids in-line and out of the environment
  - Nose seal can be easily replaced without need for new seal cylinder
  - AUTOMATIC CLOSURE

• Autolok® Locking Arms
  - Provide added protection with an automatic locking mechanism
  - Uncoupling requires only an easy tug on the lock release

• SST Locking Handle
  - Handle locks in both the opened and closed positions to prevent accidental opening or closing of valve

• Refer to page 24 for Performance Specifications

Ordering Specifications

<table>
<thead>
<tr>
<th>TYPE</th>
<th>CONFIGURATION</th>
<th>SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>17 - Coupler</td>
<td>1 - Aluminum Body, Duplex Stainless Steel Internals</td>
<td>15 - 1-1/2&quot; DN40</td>
</tr>
<tr>
<td></td>
<td>7 - Stainless Steel Body, Duplex Stainless Steel Internals</td>
<td>20 - 2&quot; DN50</td>
</tr>
<tr>
<td></td>
<td>1711DL - AL</td>
<td>30 - 3&quot; DN80</td>
</tr>
</tbody>
</table>

O-RING SEAL

1 - Buna-N
2 - Fluorocarbon
3 - PTFE / Silicone
4 - EPDM
6 - Chemraz®

CONSTRUCTION MATERIAL

AL - Aluminum Body (ASTM A356-T6 B-26)
SS - Stainless Steel Body (ASTM A351 CF3M 316L)
DL - FNPT
DBL - FBSPT

Dimensions

<table>
<thead>
<tr>
<th>SIZES IN INCHES (Approximate)</th>
<th>1 1/2&quot;</th>
<th>2&quot;</th>
<th>3&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Length of Body</td>
<td>8&quot;</td>
<td>8.81&quot;</td>
<td>10.03&quot;</td>
</tr>
<tr>
<td>B Diameter of Body</td>
<td>3.12&quot;</td>
<td>3.52&quot;</td>
<td>5.50&quot;</td>
</tr>
<tr>
<td>C Distance across Cam Arms – closed</td>
<td>4.75&quot;</td>
<td>5.22&quot;</td>
<td>7.34&quot;</td>
</tr>
<tr>
<td>C1 Distance across Cam Arms – open</td>
<td>8.94&quot;</td>
<td>9.41&quot;</td>
<td>14.78&quot;</td>
</tr>
<tr>
<td>D Centerline of Shaft to end of Handle</td>
<td>6.06&quot;</td>
<td>6.06&quot;</td>
<td>6.06&quot;</td>
</tr>
<tr>
<td>E Diameter of Coupler End</td>
<td>3.12&quot;</td>
<td>3.52&quot;</td>
<td>5.50&quot;</td>
</tr>
<tr>
<td>F Length from Pipe End to end of Handle</td>
<td>7.98&quot;</td>
<td>8.03&quot;</td>
<td>8.56&quot;</td>
</tr>
<tr>
<td>G Centerline of Coupler to top of Handle</td>
<td>3.56&quot;</td>
<td>3.75&quot;</td>
<td>4.53&quot;</td>
</tr>
<tr>
<td>H Pipe Thread (NPT)</td>
<td>1.50&quot; (DN40)</td>
<td>2&quot; (DN50)</td>
<td>3&quot; (DN80)</td>
</tr>
</tbody>
</table>
Kamvalok® Flat-Face Coupler and Adaptor

The new Kamvalok® Flat-Face is the next generation of OPW dry-disconnect couplings. We've taken our proven, best-in-class Kamvalok and flattened the connection points. This effectively eliminates all cavities where liquid can pool and subsequently spill upon disconnection.

Features & Benefits

- Reduce product loss at disconnect by up to 85%
- New patent-pending smooth, flat-face poppets
- Industry-standard locking handle
- Easy to close Autolok™ locking arms
- Automatic locking arms, no pins or buttons
- Vibration-resistant Twin-Kam™ arms

Kamvalok® Flat-Face Dry-Disconnect Couplings

The new Kamvalok® Flat-Face is the next generation of OPW dry-disconnect couplings. We’ve taken our proven, best-in-class Kamvalok and flattened the connection points. This effectively eliminates all cavities where liquid can pool and subsequently spill upon disconnection.

Features & Benefits

- Reduce product loss at disconnect by up to 85%
- New patent-pending smooth, flat-face poppets
- Industry-standard locking handle
- Easy to close Autolok™ locking arms
- Automatic locking arms, no pins or buttons
- Vibration-resistant Twin-Kam™ arms

![Dimensions Table]

<table>
<thead>
<tr>
<th>Sizes in Inches (Approximate)</th>
<th>1 1/2&quot;</th>
<th>2&quot;</th>
<th>3&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Length of Body</td>
<td>8&quot;</td>
<td>8.81&quot;</td>
<td>10.03&quot;</td>
</tr>
<tr>
<td>B Diameter of Body</td>
<td>3.12&quot;</td>
<td>3.52&quot;</td>
<td>5.50&quot;</td>
</tr>
<tr>
<td>C Distance across Cam Arms - closed</td>
<td>4.75&quot;</td>
<td>5.22&quot;</td>
<td>7.34&quot;</td>
</tr>
<tr>
<td>C1 Distance across Cam Arms - open</td>
<td>8.94&quot;</td>
<td>9.41&quot;</td>
<td>14.78&quot;</td>
</tr>
<tr>
<td>D Centerline of Shaft to end of Handle</td>
<td>6.06&quot;</td>
<td>6.06&quot;</td>
<td>6.06&quot;</td>
</tr>
<tr>
<td>E Diameter of Coupler End</td>
<td>3.12&quot;</td>
<td>3.52&quot;</td>
<td>5.50&quot;</td>
</tr>
<tr>
<td>F Length from Pipe End to end of Handle</td>
<td>7.98&quot;</td>
<td>8.03&quot;</td>
<td>8.56&quot;</td>
</tr>
<tr>
<td>G Centerline of Coupler to top of Handle</td>
<td>3.56&quot;</td>
<td>3.75&quot;</td>
<td>4.53&quot;</td>
</tr>
<tr>
<td>H Pipe Thread (NPT)</td>
<td>1.50&quot; (DN40)</td>
<td>2&quot; (DN50)</td>
<td>3&quot; (DN80)</td>
</tr>
</tbody>
</table>

Kamvalok® Flat-Face Dry-Disconnect Coupling Design

Kamvalok Flat-Face reduces product loss at disconnect by up to 85% compared to our already high-performing standard Kamvalok.

*Percentage of fluid loss at disconnect varies depending on the size of the Kamvalok and if it is vertically or horizontally positioned.
Coupler Ordering Specifications

<table>
<thead>
<tr>
<th>Type</th>
<th>Configuration</th>
<th>Size</th>
<th>Style</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>1 - Aluminum Body, Duplex Stainless-Steel Internals</td>
<td>15 - 1-1/2&quot; DN40</td>
<td>Fenblank for FNPT</td>
</tr>
<tr>
<td></td>
<td>7 - Stainless-Steel Body, Duplex Stainless-Steel Internals</td>
<td>20 - 2&quot; DN50</td>
<td>A - 150-lb. Flange</td>
</tr>
<tr>
<td></td>
<td></td>
<td>30 - 3&quot; DN80</td>
<td>GL - Greaseless</td>
</tr>
</tbody>
</table>

1711DL - AL15 - GL - FLAT*  
O-Ring Seal  
1 - Buna-N  
2 - Fluorocarbon  
3 - PTFE / Silicone  
4 - EPDM  
6 - Chemraz*  
Construction Material  
AL - Aluminum Body (ASTM A356-T6 B-26)  
SS - Stainless-Steel Body (ASTM A351 CF3M 316L)  

* Simply add “FLAT” to the end of any standard Kamvalok Coupler Order

Adaptor Ordering Specifications

<table>
<thead>
<tr>
<th>Type</th>
<th>Configuration</th>
<th>Size</th>
<th>Style</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>1 - Aluminum Body, Stainless-Steel Internals</td>
<td>15 - 1-1/2&quot; FNPT</td>
<td>GL - Greaseless</td>
</tr>
<tr>
<td></td>
<td>7 - Stainless-Steel Body, Stainless-Steel Internals</td>
<td>20 - 2&quot; FNPT</td>
<td>KG - Krytox Grease</td>
</tr>
</tbody>
</table>

1611AN - AL15 - GL - FLAT*  
O-Ring Seal  
1 - Buna-N  
2 - Fluorocarbon (GFLT)  
3 - PTFE / Silicone  
4 - EPDM  
6 - Chemraz*  
7 - PTFE / Fluorocarbon  
Connection  
ANF - 150 lb. Flange  
AN - Female NPT  
ANFT - 300 lb. Flange  
ABN - Female BSPT  
Construction Material  
AL - Aluminum Body  
SS - Stainless-Steel Body

* Simply add “FLAT” to the end of any standard Kamvalok Adaptor Order

Design Parameters

<table>
<thead>
<tr>
<th>Max Design Pressure</th>
<th>1-1/2&quot; Size - 210 psig (15 bar)</th>
<th>2&quot; Size - 150 psig (10.5 bar)</th>
<th>3&quot; Size - 120 psig (8.5 bar)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature Range</td>
<td>* Buna-N -20°F – 212°F (-29°C – 100°C)</td>
<td>* Fluorocarbon -20°F – 400°F (-29°C – 204°C)</td>
<td>* PTFE Encapsulated Silicone -15°F – 400°F (-26°C – 204°C)</td>
</tr>
<tr>
<td></td>
<td>* EPDM -50°F – 250°F (-46°C – 121°C)</td>
<td>* Chemraz* -15°F – 400°F (-26°C – 204°C)</td>
<td></td>
</tr>
</tbody>
</table>

* Chemraz is a registered trademark of Greene-Tweed

Materials

<table>
<thead>
<tr>
<th>Body, Poppet, Seal Cylinder</th>
<th>Aluminum, Stainless Steel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shaft Link, Cam Arms, Poppet Link</td>
<td>Stainless Steel</td>
</tr>
</tbody>
</table>

Materials
1700ESL Kamvalok® Coupler

OPW Transport Series Dry Disconnect Couplings are considered the standard of the industry. For use on multi-compartment petroleum, solvent and chemical product delivery trucks with an on-board pumping unit.

Features & Benefits

- **Spill Protection** – Helps to reduce the hazards involved in the connection/disconnection process of transferring hazardous liquids.
- **Provides for Total Closed-Loop Loading Capabilities** – Keeps hazardous liquids and vapors in-line and out of the environment.
- **Dual Protection** – Poppeted seal cylinder design provides automatic closure from both directions – the coupler and the adaptor – to avoid accidental spills.
- **Autolok® Locking Arms** – Provide added protection with an automatic locking mechanism signaled by a positive click. Uncoupling requires only an easy tug on the lock release.
- **SST Locking Handle** – Locks in position to prevent accidental opening or closing of valve.
- **Ease of Use** – Built-in elbow swivel and simple connection and disconnection design provides freedom of movement and smooth operation.

### Design Parameters

<table>
<thead>
<tr>
<th>Design Standard</th>
<th>ASME B31.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. Design Temp</td>
<td>200° F (93° C)</td>
</tr>
<tr>
<td>Min. Design Temp</td>
<td>-20° F (-29° C)</td>
</tr>
<tr>
<td>Max. Design Pressure</td>
<td>150 PSI (10.5 BAR)</td>
</tr>
</tbody>
</table>

### Ordering Specifications

**90° Elbow/Swivel Coupler**

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Size/Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1711ESL-AL20</td>
<td>2&quot; KVL Coupler/Elbow Swivel, Locking Arms, Buna-N</td>
</tr>
<tr>
<td>1712ESL-AL20</td>
<td>2&quot; KVL Coupler/Elbow Swivel, Locking Arms, Fluorocarbon</td>
</tr>
<tr>
<td>1714ESL-AL20</td>
<td>2&quot; KVL Coupler/Elbow Swivel, Locking Arms, EPDM</td>
</tr>
</tbody>
</table>

**IMPORTANT:** OPW products should be used in compliance with applicable federal, state, provincial, and local laws and regulations. Product selection should be based on physical specifications and limitations and compatibility with the environment and materials to be handled. OPW makes no warranty of fitness for a particular use. All illustrations and specifications in this literature are based on the latest product information available at the time of publication. OPW reserves the right to make changes at any time in prices, materials, specifications and models and to discontinue models without notice or obligation.
1700ES Series Couplers

OPW Transport Series Dry Disconnect Couplings are used on multi-compartment petroleum, solvent and chemical product delivery trucks with an on-board pumping unit when clearance is an issue.

Features & Benefits

• **Spill Protection** – Helps to reduce the hazards involved in the connection/disconnection process of transferring hazardous liquids.

• **Provides for Total Closed-Loop Loading Capabilities** – Keeps hazardous liquids and vapors in-line and out of the environment.

• **Dual Protection** – Poppeted seal cylinder design provides automatic closure from both directions – the coupler and the adaptor – to avoid accidental spills.

• **Ease of Use** – Built-in elbow swivel and simple connection and disconnection design provides freedom of movement and smooth operation.

### Ordering Specifications

**90° Elbow/Swivel Coupler**

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Size/Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1711ES-0200</td>
<td>2&quot; Aluminum, Acetal, Buna-N Seals</td>
</tr>
<tr>
<td>1712ES-0200</td>
<td>2&quot; Aluminum, Acetal, Fluorocarbon Seals</td>
</tr>
<tr>
<td>1714ES-0020</td>
<td>2&quot; EPDM Aluminum, Acetal, EPDM</td>
</tr>
</tbody>
</table>

### Dimensions

<table>
<thead>
<tr>
<th>SIZE IN INCHES (Nominal)</th>
<th>2&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>9-9/16&quot;</td>
</tr>
<tr>
<td>B</td>
<td>2-3/4&quot;</td>
</tr>
<tr>
<td>C</td>
<td>4-3/8&quot;</td>
</tr>
<tr>
<td>C1</td>
<td>8&quot;</td>
</tr>
<tr>
<td>D</td>
<td>4-5/8&quot;</td>
</tr>
<tr>
<td>E</td>
<td>3-33/64&quot;</td>
</tr>
<tr>
<td>F</td>
<td>11-3/16&quot;</td>
</tr>
<tr>
<td>G</td>
<td>3-5/8&quot;</td>
</tr>
<tr>
<td>H</td>
<td>2&quot;</td>
</tr>
<tr>
<td>J</td>
<td>3&quot;</td>
</tr>
</tbody>
</table>
1700DL Series
Temperature/Pressure Characteristics

Temperature Characteristics

Flow Characteristics

LEGEND:
- Forward Flow From Coupler Through Adaptor
- Backward Flow From Adaptor Through Coupler

NOTE: For flow information on specific chemicals or liquid products, contact your OPW Representative or Factory Technical Customer Service.

IMPORTANT: OPW products should be used in compliance with applicable federal, state, provincial, and local laws and regulations. Product selection should be based on physical specifications and limitations and compatibility with the environment and materials to be handled. OPW MAKES NO WARRANTY OF FITNESS FOR A PARTICULAR USE. All illustrations and specifications in this literature are based on the latest product information available at the time of publication. OPW reserves the right to make changes at any time in prices, materials, specifications and models and to discontinue models without notice or obligation.
OPW 2173AVN

The OPW 2173AVN Vapor Recovery Dry Disconnect Coupling provides for easy access in recovering vapors for either top or bottom loading/unloading tank truck operations.

The OPW 2173AVN installs onto the QRB valve on tank trailers and can provide a dry disconnect connection for emergency evacuation of hazardous liquids in the case of roll-over.

Benefits

• Closed-Loop Protection – Helps protect people and the environment by providing a vapor and liquid tight seal during the connection/disconnection process specifically designed to contain VOC (volatile organic compounds) products that have high vapor pressure and evaporate quickly. Contains fugitive emissions and transfers VOCs without vapor loss.

• Roll-Over Safety – Its low profile design keeps the fitting below roll-over plane to minimize damage in the event of a roll-over. Meets IMO profile dimensions.

• Easy Emergency Evacuation – Provides a dry disconnect connection for emergency evacuation of hazardous liquids in case of roll-over

• Quick and Easy Cleaning – Designed for easy disassembly for routine cleaning

Features

• Vapor Hose Connection – 2" Kamvalok® Dry Disconnect or D2000™ Actuating Couplers

• No Trailer Modifications Required – Easy attachment to existing MC307, DOT407, MC312, and DOT412 trailers

• 3” Straight Thread Mounting with 2” Kamvalok® dry disconnect cam and groove connection makes the ideal 3” x 2” adaptor for QRB valves

• Can Replace Existing Clean-Out Caps for Closed Loop System

OPW’s 2173AVN Dry Disconnect Coupling installs on the QRB valve on the truck
1600AN

The 1600AN Series Adaptor is specifically designed to mate with OPW Kamvalok® Couplings to help prevent liquid spillage during the connection/disconnection process. The adaptor contains a spring-loaded poppet to assure fast closing and tight seal.

Benefits

• Single Piece Design – Eliminates a possible leak path.
• Spill Prevention – Poppet-actuated design can only be opened with a Kamvalok® coupling; designed to provide a tight seal when closed.
• Reliability of Operation – The simple spring-loaded poppet design and heavy-duty construction provide for reliable, long-life operation.
• Optimum Flow Rate – Even flow and low pressure drop are achieved by a built-in deflector that reduces turbulence.

Features

• Heavy-Duty Construction – Available in aluminum, and stainless steel construction. Stainless steel corrosion resistance comparable to 316 stainless steel.
• Female Threads – Can be fitted to either a male pipe end or to a hose fitting.
• Spring-Loaded Poppet Design – Assures fast closing and tight seal.
• Wide Range of Seals – Available in Buna-N, Fluorocarbon, PTFE, EPDM, Chemraz®

Ordering Specifications

<table>
<thead>
<tr>
<th>TYPE</th>
<th>CONFIGURATION</th>
<th>CONNECTION</th>
<th>CONSTRUCTION MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 - Adaptor</td>
<td>1 - Aluminum Body, Stainless Steel Internals</td>
<td>AN - FNPT</td>
<td>AL - Aluminum Body</td>
</tr>
<tr>
<td></td>
<td>7 - Stainless Steel Body, Stainless Steel Internals</td>
<td>ABN - FBSPT</td>
<td>SS - Stainless Steel Body</td>
</tr>
</tbody>
</table>

1611AN - AL15 - GL

O-RING SEAL

1 - Buna-N
2 - Fluorocarbon (GFLT)
3 - PTFE / Silicone
4 - EPDM
6 - Chemraz®
7 - PTFE / Fluorocarbon

Dimensions

<table>
<thead>
<tr>
<th>SIZE IN INCHES (Nominal)</th>
<th>1 1/2&quot;</th>
<th>2&quot;</th>
<th>3&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4-3/4&quot;</td>
<td>4-15/16&quot;</td>
<td>6-17/32&quot;</td>
</tr>
<tr>
<td>B</td>
<td>2-1/2&quot;</td>
<td>3-1/4&quot;</td>
<td>4-1/2&quot;</td>
</tr>
<tr>
<td>C</td>
<td>1-1/2&quot;</td>
<td>2&quot;</td>
<td>3&quot;</td>
</tr>
<tr>
<td>D</td>
<td>2-21/32&quot;</td>
<td>3-1/4&quot;</td>
<td>4-7/8&quot;</td>
</tr>
</tbody>
</table>

O-RING SEAL

1 - Buna-N
2 - Fluorocarbon (GFLT)
3 - PTFE / Silicone
4 - EPDM
6 - Chemraz®
7 - PTFE / Fluorocarbon

CONNECTION

AN - FNPT
ABN - FBSPT
ANF - 150 lb. Flange
ANFT - 300 lb. Flange

SIZE

15 - 1-1/2" FNPT
20 - 2" FNPT
30 - 3" FNPT

STYLE

* Leave blank for FNPT
A - 150 lb. Flange
GL - Greaseless
KL - Keylok
T - 300 lb. Flange

IMPORTANT: OPW products should be used in compliance with applicable federal, state, provincial, and local laws and regulations. Product selection should be based on physical specifications and limitations and compatibility with the environment and materials to be handled. OPW MAKES NO WARRANTY OF FITNESS FOR A PARTICULAR USE. All illustrations and specifications in this literature are based on the latest product information available at the time of publication. OPW reserves the right to make changes at any time in prices, materials, specifications and models and to discontinue models without notice or obligation.
1600ANF

The OPW 1600ANF Series Adaptors are designed specifically for applications using an ANSI flange.

The OPW 1673ANF, 1674ANF and 1676ANF Dry Disconnect Adaptors keep hazardous chemicals and vapors in-line and out of the environment.

Rugged, yet quick and easy to install, the 1600ANF Series is ideal for closed-loop loading conversions.

Benefits

• Eliminates Threads - One less leak point

• Spill Prevention – The poppet-actuated design can only be opened with a Kamvalok® coupling; designed to provide a tight seal when closed.

• Easy Access Connection – Provides easy connection access for tank cars, tank trucks, intermodal tanks and in-process operations.

• Connects with D2000™ Actuating Coupler or Kamvalok® 1700 Series Dry Disconnect Couplings

• Easy Cleaning – Can be quickly disassembled

• Specifically designed for applications using ANSI flanges

Features

• Heavy-Duty Construction – Stainless steel corrosion resistance, comparable to 316 stainless steel

• Available with 150# raised face flange or 300# tongue and groove design

• Spring-Loaded Poppet Design – Assures fast closing and tight seal

• Available in a Range of Seals – PTFE, EPDM, Chemraz®, Buna-N and Fluorocarbon.

• Available in 1-1/2", 2" and 3" sizes

<table>
<thead>
<tr>
<th>SIZE IN INCHES (1670ANF)</th>
<th>1/2&quot; x 2&quot;</th>
<th>2&quot;</th>
<th>3&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Overall Length</td>
<td>4-47/64&quot;</td>
<td>6-9/16&quot;</td>
<td></td>
</tr>
<tr>
<td>B Length of Body</td>
<td>4-13/32&quot;</td>
<td>6-1/8&quot;</td>
<td></td>
</tr>
<tr>
<td>C Length of Cap</td>
<td>2-5/64&quot;</td>
<td>2-5/16&quot;</td>
<td></td>
</tr>
<tr>
<td>D Diameter of Flange</td>
<td>6&quot;</td>
<td>7-1/2&quot;</td>
<td></td>
</tr>
<tr>
<td>E Diameter of Body</td>
<td>2-1/2&quot;</td>
<td>4-45/64&quot;</td>
<td></td>
</tr>
<tr>
<td>F Width of Cap</td>
<td>3-9/16&quot;</td>
<td>5-33/64&quot;</td>
<td></td>
</tr>
<tr>
<td>G Height of Chain Lug</td>
<td>1/2&quot;</td>
<td>1/2&quot;</td>
<td></td>
</tr>
<tr>
<td>H Length with Arms</td>
<td>6-1/32&quot;</td>
<td>8-1/8&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3/4&quot;</td>
<td>3/4&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4-3/4&quot;</td>
<td>6&quot;</td>
<td></td>
</tr>
<tr>
<td>J Max width of Arms</td>
<td>7-1/8&quot;</td>
<td>11-3/32&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8&quot;</td>
<td>8&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3/4&quot;</td>
<td>7/8&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6&quot;</td>
<td>6-58&quot;</td>
<td></td>
</tr>
<tr>
<td>J Maximum width of Arms</td>
<td>8-9/32&quot;</td>
<td>11-3/32&quot;</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SIZE IN INCHES (1670ANFT)</th>
<th>2&quot;</th>
<th>3&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Overall Length</td>
<td>5-5/32&quot;</td>
<td>6-13/16&quot;</td>
</tr>
<tr>
<td>B Length of Body</td>
<td>4-47/64&quot;</td>
<td>6-6/8&quot;</td>
</tr>
<tr>
<td>C Length of Cap</td>
<td>2-1/4&quot;</td>
<td>2-5/16&quot;</td>
</tr>
<tr>
<td>D Dia. of Flange</td>
<td>6-1/2&quot;</td>
<td>8-1/4&quot;</td>
</tr>
<tr>
<td>E Dia. of Body</td>
<td>2-63/64&quot;</td>
<td>4-45/64&quot;</td>
</tr>
<tr>
<td>F Width of Cap</td>
<td>4-1/16&quot;</td>
<td>5-33/64&quot;</td>
</tr>
<tr>
<td>G Height of Chain Lug</td>
<td>7/16&quot;</td>
<td>1/2&quot;</td>
</tr>
<tr>
<td>H Length with Arms</td>
<td>6-21/64&quot;</td>
<td>8-3/8&quot;</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>34&quot;</td>
<td>7/8&quot;</td>
</tr>
<tr>
<td></td>
<td>6-58&quot;</td>
<td></td>
</tr>
<tr>
<td>J Maximum width of Arms</td>
<td>8-9/32&quot;</td>
<td>11-3/32&quot;</td>
</tr>
</tbody>
</table>
Drylok™ Overview

One of the Driest Disconnect Couplings for the Transfer of Hazardous Liquids

OPW’s Drylok™ Dry Disconnect Coupling provides unprecedented safety in the transfer of hazardous liquids. With less than 1-cc of fluid loss from a 3-inch unit, Drylok™ is one of the driest disconnects in the industry. It meets or exceeds all of today’s stringent emission and worker safety requirements set by EPA, OSHA and others.

Drylok™ Operation Is Easy and Foolproof.

1. Push coupler onto adaptor by first engaging lower jaw of coupler under lip of adaptor and tilting the coupler upward to engage top jaw.

2. Turn handle counter-clockwise until lock engages. Coupler and adaptor are locked together but valve is closed.

3. Press button on coupler down and turn handle counter-clockwise until it locks. Valve is now open and product will flow.

4. To disconnect - press button on coupler and rotate handle clockwise until it locks. Valve is now closed.

5. Press button on coupler down and turn handle clockwise to the “In-Line” position. Press tab on opposite side of coupler to release the upper jaw and move coupler away.

IMPORTANT: OPW products should be used in compliance with applicable federal, state, provincial, and local laws and regulations. Product selection should be based on physical specifications and limitations and compatibility with the environment and materials to be handled. OPW MAKES NO WARRANTY OF FITNESS FOR A PARTICULAR USE. All illustrations and specifications in this literature are based on the latest product information available at the time of publication. OPW reserves the right to make changes at any time in prices, materials, specifications and models and to discontinue models without notice or obligation.
Drylok™

Drylok™ is designed to safely transfer hazardous corrosive, volatile liquids such as acids, solvents and petrochemicals. An interlocking handle averts accidental spills by preventing uncoupling while the valve is open. And, the unit’s flat face minimizes fluid loss, further reducing exposure to risk during operation. Drylok™ is ideal for all kinds of hazardous fluids where product loss is a problem, such as high-pressure lines, high flow rates, slurries and gases.

Benefits

• **One of the driest disconnects in the industry** – less than 1/2 ml (less than .10 teaspoon) of fluid loss from a 2” unit.

• **Unprecedented safety** – meets or exceeds all of today’s stringent emission and worker safety requirements set by EPA, OSHA and others. Drylok™ cannot be uncoupled while the valve is open.

• **Optimum flow rate** – less obstruction in easy-flow interior optimizes the flow rate in high-pressure or high-viscosity applications.

• **Ease of use** – simple handle action connects valve to coupler and opens and closes the flow. 360° orientation ensures proper seating and alignment. No clamps, clips, loops or tabs that can cause operator error.

Features

• Available in 1”, 2” and 3” sizes

• Standard O-Ring seals for longevity, low cost and ease of maintenance

• Super-Pak Adjustable Packing with V-type material provides a continuous compression, emission-free seal on handle shaft. (2” & 3” only)

• Available in 316 stainless steel, Alloy 20® or Hastelloy® C with NPT, BSP, ANSI Flanged, BW, and SW end connections

• **AAR Approved**

• **CRN Approved**

Dimensions

<table>
<thead>
<tr>
<th>Size</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>Connected</th>
</tr>
</thead>
<tbody>
<tr>
<td>1”</td>
<td>3-21/64”</td>
<td>2-15/32”</td>
<td>5-3/8”</td>
<td>1-7/8”</td>
<td>6-3/4”</td>
<td>4-37/64”</td>
<td>3-33/64”</td>
<td>2-5/32”</td>
<td>3-3/16”</td>
<td>3-3/4”</td>
<td>6-1/16”</td>
</tr>
<tr>
<td>2”</td>
<td>6-3/16”</td>
<td>5”</td>
<td>6”</td>
<td>2-3/4”</td>
<td>8-3/8”</td>
<td>7-1/4”</td>
<td>7-7/32”</td>
<td>5”</td>
<td>4-15/16”</td>
<td>5-5/16”</td>
<td>10-1/6”</td>
</tr>
<tr>
<td>3”</td>
<td>7-3/4”</td>
<td>6-3/16”</td>
<td>8-3/4”</td>
<td>4”</td>
<td>12”</td>
<td>8-31/32”</td>
<td>8-49/64”</td>
<td>5-1/2”</td>
<td>6-7/8”</td>
<td>7-17/64”</td>
<td>13-3/8”</td>
</tr>
</tbody>
</table>

Size indicates NPT Pipe Thread
**Flow Characteristics**

![Flow Characteristics Diagram]

**Pressure Rating**

When connected to the adaptor, the Drylok™ Coupler can be opened and closed against a maximum of 150 psi head pressure.

**Ordering Specifications**

To assure that your order is processed promptly, please specify quantity, product number, size, construction materials and give a brief description of the product. Use the convenient product numbering system (below) to simplify your selections. Please consult factory for any design or special requirement you may need or desire.

```
O-RING SEAL
B - Fluorocarbon-B
C - Fluorocarbon-E
E - EPDM
F - PTFE Encapsulated Fluorocarbon
N - Buna-N
T - PTFE Encapsulated Silicone
V - Fluorocarbon-A
W - White Nitrile
Y - Kalrez® (4079)
Z - Kalrez® (6375)

CONSTRUCTION MATERIAL
7 - 316 Stainless Steel
8 - Alloy 20®

STYLE
A - ANSI Flange 150 Lbs.
B - Female BSPT
C - Cutaway
D - Din Flange
N - Female NPT
P - Sanitary Triclamp
T - ANSI Flange 300 Lbs.
W - Butt Weld
X - Parking Adaptor

5670 - V720N

TYPE
56 - Adaptor
57 - Coupler

SIZE
10 - 1”
20 - 2”
30 - 3”
```

How to Order - Use this example as your guide to determine the part number of the Drylok™ coupling you need. Part numbers indicate coupling type, O-Ring seal material, construction material and size.
EPSILON® Overview

Prevent Chemical Spills and Reduce Fugitive Emissions of VOCs

The EPSILON® Coupling System is designed to prevent chemical spills and reduce fugitive emissions of volatile organic compounds (VOCs), particularly in the process facility and during transfer to and from tank trucks and tank cars. During in-plant chemical transfers, the EPSILON® Chemical Containment System will provide your plant with process flexibility while improving operator safety, enhancing environmental compliance and reducing overall capital expenditures and operating costs.

EPSILON® is a low spill coupling, based on a double ball valve system integrating a sophisticated safety design in sizes of ¾", 1", 1½", 2" and 3". The design is constructed to handle a pressure of 435 psi (30 bar) and temperature up to 450°F (230°C) and is available with end connections complying to ANSI and DIN standards.

All wetted materials are 316/316L stainless steel (1.4401/1.4404) with TFM or PFA seals. Hastelloy® C is also available for use with more aggressive fluids.

Beyond the common advantages of a ball valve design, EPSILON® provides for flow through an unrestricted flowpath and double shut off reliability in the coupling connection.

Superior Flow:
Unrestricted flow path provides less than 1psi pressure drop at 150 GPM.

Safety:
EPSILON® coupling is equipped with safety interlocks, which force the valves to open and close only with a deliberate action, preventing accidental opening of the valve.

Environment:
EPSILON® is a low spill system, specified to less than .40 ml spillage for the 2" coupling (2000 cycles test average 0.6 ml) and less than 1/10th of a teaspoon (half an eyedropper).

Maintenance:
EPSILON® was not only engineered for easy operations, but also for quick replacement of the transfer seal without any lockout. No special tools are required for replacement of seals.
IMPORTANT: OPW products should be used in compliance with applicable federal, state, provincial, and local laws and regulations. Product selection should be based on physical specifications and limitations and compatibility with the environment and materials to be handled. OPW MAKES NO WARRANTY OF FITNESS FOR A PARTICULAR USE. All illustrations and specifications in this literature are based on the latest product information available at the time of publication. OPW reserves the right to make changes at any time in prices, materials, specifications and models and to discontinue models without notice or obligation.

EPSILON® Applications
- Bulk Storage
- In-plant Processing
- Reactor Units
- Filtration Units
- Tank Car
- Railcar

Features
- Spring-energized TFM or PFA U-cup sealing
- Male and female lug and flange connection interfaces
- Independent and multi-level safety interlocks
- Polyurethane dust cap or stainless steel pressure cap
- Available in ¾”, 1”, 1½”, 2” and 3”
- Available in stainless steel and Hastelloy®*
- FDA-compliant seal materials

Benefits
- Dry Disconnect Reliability – Low spill face seal reduces amount of loss upon disconnect.
- Enhanced Environmental Compliance – Positive shut-off of coupling halves eliminates line contamination and accidental release of potentially hazardous fluids into the environment during connection and disconnection.
- Full Flow – Straight-through flow path provides unrestricted flow in either direction, minimizing pressure drop.
- Unparalleled Safety – Multiple safety interlocks eliminate unintentional spills and catastrophic chemical releases that threaten worker safety and the environment.
- Prevents Cross-Contamination – Optional keyed couplings mechanically lock out and isolate transfer lines.

* Hastelloy® is a registered trademark of Haynes International, Inc.
**Male and Female Lug and Flange Connection Interfaces**

Ramped lug and flange interfaces are first aligned and then connected with a push, followed by a quarter (90°) turn. This “instant” connection method is done by hand without tools in order to create compression on the critical interface seal.

**Concave/Convex Full-Flow Shut-Off Valve**

A convex ball nests in a concave ball to virtually eliminate any cavity between the mating halves. The positive shut-off ball valves, and the absence of a cavity between them, minimize chemical loss when the coupling is disconnected. Each half is an independently operated, positive shut-off ball valve that is controlled by manually rotating the valve handles. The straight-through EPSILON® valve design also provides unrestricted, high flow in either direction and low pressure drop. All metal wetted components are 316 stainless steel or Hastelloy®.

**Independent and Redundant Safety Interlocks**

EPSILON® technology involves five independent and redundant mechanical interlocks. They require deliberate sequential action by users, thereby eliminating unintentional spills and catastrophic chemical releases that threaten worker safety and the environment.

**Spring-Energized and Spring-Loaded PTFE U-Cup Sealing**

A spring-energized stem and face and flange seal provide initial sealing. The spring supplies all the load required for sealing when the media pressure is too low to fully actuate the lips of the seal. Testing confirms the low spillage and emission specifications are still achieved after 2,000 cycles.

**Ultra Low Spill Face Seal (Optional)**

This seal reduces the amount of spillage at disconnect to .38 ml. This seal is not pressure assisted and should only be used for applications lower than 100 psi.

**Cavity Filled (Optional)**

Designed to reduce the possibility of contamination by entrapment of process fluid in the void normally found behind the ball and the valve body. Ideal for applications where cross-contamination and cleanliness is a concern. Back side of the valve balls are bored for efficient cleaning.

**Polyurethane Dust Cap**

Used to protect the ball from damage and debris when coupling is closed and disconnected.
Stainless Steel/Hastelloy Pressure Cap
Used to increase the level of safety when coupling is closed, disconnected and under operating pressure.

**National Emission Standards for Hazardous Air Pollutants

Keyed Couplings
For extremely critical operations, EPSILON® offers the unique keyed interface which locks out and isolates transfer lines, preventing cross-contamination.

Designed for Maintainability
OPW Engineered Systems’ EPSILON® design allows for easy maintenance. Seals, stems and bearings can be replaced easily to keep the connections performing like new.

Approvals
EPSILON® couplings are approved/listed for pressure service through a comprehensive set of international agencies.

Consult factory for specific details for your application.

TFM - Standard Seal
Next generation PTFE with best combination of temperature ranging from -22°F (-30°C) to 450°F (230°C), sealing, and sliding characteristics.

PFA - Available Consult Factory
*Below limit of analytical detection.

Transportation Coupling System (TCS)
Specially designed for railcar, truck, iso-tainer or tote equipment used in transporting chemicals safely. Contact OPW Engineered Systems for more information.

Dual Ball Race (Optional)
Radial swivel seal
- Replaces dynamic face seal
- Lower leak rate
- Lower seal mortality rate caused by over-compressing seal to install bearings

Dual ball races with hardened stainless bearings
- Replaces PTFE sleeve bearing that may become overloaded and allow greater axial misalignment causing the dynamic face seal to leak
- Provides additional support for applications with long hose drops or high load requirements.

Spring energized dust seal
WARNING: Due to the variety of chemicals that these couplings may be used to transfer, the user is responsible to verify the compatibility of the coupling body and the seal materials with the chemical being conveyed.

Performance Characteristics

<table>
<thead>
<tr>
<th>Valve Size</th>
<th>Port Size</th>
<th>Spillage</th>
<th>Maximum Emissions</th>
<th>Flow Rate GPM (l/min)</th>
<th>Cv</th>
<th>Max Working Pressure psi (bar)</th>
<th>Weight - lbs (kg)</th>
<th>Temp = °F (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-inch</td>
<td>3/4&quot;, 1&quot;, DN 20 or DN 25 Port</td>
<td>&lt;0.7 ml</td>
<td>&lt;25 ppm</td>
<td>50 (189)</td>
<td>42</td>
<td>435 (30)</td>
<td>2.7 (1.2)</td>
<td>3.0 (1.4)</td>
</tr>
<tr>
<td>2-inch</td>
<td>1-1/2&quot;, 2&quot;, DN 40 or DN 50 Port</td>
<td>&lt;0.6 ml</td>
<td>&lt;25 ppm</td>
<td>150 (568)</td>
<td>160</td>
<td>435 (30)</td>
<td>4.0 (1.8)</td>
<td>6.0 (2.7)</td>
</tr>
<tr>
<td>3-inch</td>
<td>3&quot; or DN 80 Port</td>
<td>&lt;2 ml</td>
<td>&lt;25 ppm</td>
<td>300 (1135)</td>
<td>240</td>
<td>360 (25)</td>
<td>16.0 (7.3)</td>
<td>19.0 (8.6)</td>
</tr>
</tbody>
</table>

The features of the EPSILON® dry disconnect coupling are extensive. The “How To Order” chart below provides the specifics of these features.

Flow rates from 50 GPM for the 1” to 300 GPM for the 3” product line. This coupling will keep up with demand, whatever your application.

Flow coefficient (Cv) for valves. Flow rate shown in gallons per minute of 70°F water with 1.0 psi, pressure drop across the valve, 2” coupling features (Cv) of 160.

Fugitive emissions of less than 25 ppm, is standard. In most cases, it is below the limit of analytical detection.

Valve Size

EPSILON® couplings can be attached to hose or pipe sizes ranging from 3/4" to 3" or DN 20 to DN 80. There are three different valve body sizes that are machined to accept the different sizes and different connection types.

The “Performance Characteristics” chart above indicates the valve body size that would be used with a given port size.

Ordering Specifications
IMPORTANT: OPW products should be used in compliance with applicable federal, state, provincial, and local laws and regulations. Product selection should be based on physical specifications and limitations and compatibility with the environment and materials to be handled. OPW MAKES NO WARRANTY OF FITNESS FOR A PARTICULAR USE. All illustrations and specifications in this literature are based on the latest product information available at the time of publication. OPW reserves the right to make changes at any time in prices, materials, specifications and models and to discontinue models without notice or obligation.

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Type</th>
<th>Size</th>
<th>End Connection</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>COUPLER HALF, NPT</td>
<td>1&quot;</td>
<td>3/4&quot;</td>
<td>4.7</td>
<td>3.6</td>
<td>4.2</td>
<td>4.5</td>
<td>2.7</td>
<td>3.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1&quot;</td>
<td>1&quot;</td>
<td>4.7</td>
<td>3.6</td>
<td>4.2</td>
<td>4.5</td>
<td>2.7</td>
<td>3.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2&quot;</td>
<td>1 1/2&quot;</td>
<td>7.0</td>
<td>5.6</td>
<td>5.3</td>
<td>5.2</td>
<td>2.9</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2&quot;</td>
<td>2&quot;</td>
<td>7.0</td>
<td>5.6</td>
<td>5.3</td>
<td>5.2</td>
<td>2.9</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3&quot;</td>
<td>3&quot;</td>
<td>9.6</td>
<td>7.5</td>
<td>8.1</td>
<td>7.4</td>
<td>4.4</td>
<td>5.9</td>
</tr>
<tr>
<td>2</td>
<td>ADAPTOR HALF, NPT</td>
<td>1&quot;</td>
<td>3/4&quot;</td>
<td>4.5</td>
<td>3.6</td>
<td>3.3</td>
<td>4.3</td>
<td>2.7</td>
<td>2.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1&quot;</td>
<td>1&quot;</td>
<td>4.5</td>
<td>3.6</td>
<td>3.3</td>
<td>4.3</td>
<td>2.7</td>
<td>2.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2&quot;</td>
<td>1 1/2&quot;</td>
<td>4.8</td>
<td>3.6</td>
<td>3.8</td>
<td>4.6</td>
<td>2.9</td>
<td>3.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2&quot;</td>
<td>2&quot;</td>
<td>4.8</td>
<td>3.6</td>
<td>3.8</td>
<td>4.6</td>
<td>2.9</td>
<td>3.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3&quot;</td>
<td>3&quot;</td>
<td>9.5</td>
<td>7.5</td>
<td>5.5</td>
<td>7.2</td>
<td>4.4</td>
<td>4.8</td>
</tr>
<tr>
<td>3</td>
<td>COUPLER HALF, FLANGED 150 LBS ANSI</td>
<td>1&quot;</td>
<td>3/4&quot;</td>
<td>4.7</td>
<td>3.6</td>
<td>5.8</td>
<td>4.8</td>
<td>2.7</td>
<td>2.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1&quot;</td>
<td>1&quot;</td>
<td>4.7</td>
<td>3.6</td>
<td>5.8</td>
<td>4.8</td>
<td>2.7</td>
<td>2.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2&quot;</td>
<td>1 1/2&quot;</td>
<td>7.0</td>
<td>5.6</td>
<td>6.8</td>
<td>7.2</td>
<td>4.7</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2&quot;</td>
<td>2&quot;</td>
<td>7.0</td>
<td>5.6</td>
<td>6.8</td>
<td>7.7</td>
<td>4.7</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3&quot;</td>
<td>3&quot;</td>
<td>9.6</td>
<td>7.5</td>
<td>10.8</td>
<td>8.2</td>
<td>4.4</td>
<td>5.9</td>
</tr>
<tr>
<td>4</td>
<td>ADAPTOR HALF, FLANGED 150 LBS ANSI</td>
<td>1&quot;</td>
<td>3/4&quot;</td>
<td>4.5</td>
<td>3.6</td>
<td>5.4</td>
<td>4.6</td>
<td>2.7</td>
<td>3.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1&quot;</td>
<td>1&quot;</td>
<td>4.5</td>
<td>3.6</td>
<td>5.4</td>
<td>4.6</td>
<td>2.7</td>
<td>3.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2&quot;</td>
<td>1 1/2&quot;</td>
<td>4.8</td>
<td>3.6</td>
<td>6.3</td>
<td>5.4</td>
<td>2.9</td>
<td>3.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2&quot;</td>
<td>2&quot;</td>
<td>4.8</td>
<td>3.6</td>
<td>6.3</td>
<td>6.0</td>
<td>2.9</td>
<td>3.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3&quot;</td>
<td>3&quot;</td>
<td>9.5</td>
<td>7.5</td>
<td>8.2</td>
<td>8.9</td>
<td>5.2</td>
<td>4.8</td>
</tr>
<tr>
<td>5</td>
<td>COUPLER HALF, BUTT WELD SCHEDULE 40</td>
<td>1&quot;</td>
<td>3/4&quot;</td>
<td>4.5</td>
<td>3.6</td>
<td>6.3</td>
<td>4.3</td>
<td>2.7</td>
<td>3.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1&quot;</td>
<td>1&quot;</td>
<td>4.5</td>
<td>3.6</td>
<td>6.3</td>
<td>4.3</td>
<td>2.7</td>
<td>3.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2&quot;</td>
<td>1 1/2&quot;</td>
<td>4.8</td>
<td>3.6</td>
<td>6.8</td>
<td>4.6</td>
<td>2.9</td>
<td>3.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2&quot;</td>
<td>2&quot;</td>
<td>4.8</td>
<td>3.6</td>
<td>6.8</td>
<td>4.6</td>
<td>2.9</td>
<td>3.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3&quot;</td>
<td>3&quot;</td>
<td>9.5</td>
<td>7.5</td>
<td>8.5</td>
<td>8.5</td>
<td>4.4</td>
<td>4.8</td>
</tr>
<tr>
<td>6</td>
<td>ADAPTOR HALF, BUTT WELD SCHEDULE 40</td>
<td>1&quot;</td>
<td>3/4&quot;</td>
<td>4.5</td>
<td>3.6</td>
<td>6.3</td>
<td>4.3</td>
<td>2.7</td>
<td>3.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1&quot;</td>
<td>1&quot;</td>
<td>4.5</td>
<td>3.6</td>
<td>6.3</td>
<td>4.3</td>
<td>2.7</td>
<td>3.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2&quot;</td>
<td>1 1/2&quot;</td>
<td>4.8</td>
<td>3.6</td>
<td>6.8</td>
<td>4.6</td>
<td>2.9</td>
<td>3.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2&quot;</td>
<td>2&quot;</td>
<td>4.8</td>
<td>3.6</td>
<td>6.8</td>
<td>4.6</td>
<td>2.9</td>
<td>3.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3&quot;</td>
<td>3&quot;</td>
<td>9.5</td>
<td>7.5</td>
<td>8.5</td>
<td>8.5</td>
<td>4.4</td>
<td>4.8</td>
</tr>
<tr>
<td>Sl. No.</td>
<td>Type</td>
<td>Size</td>
<td>Connection</td>
<td>Dimensional Data - mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>-------------------------------------------</td>
<td>------</td>
<td>------------</td>
<td>-----------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1&quot;</td>
<td>G 1&quot;</td>
<td>A: 119, B: 91, C: 107, D: 114, E: 69, F: 86</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2&quot;</td>
<td>G 1 1/2&quot;</td>
<td>A: 178, B: 142, C: 135, D: 132, E: 74, F: 102</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3&quot;</td>
<td>G 3&quot;</td>
<td>A: 244, B: 191, C: 206, D: 188, E: 112, F: 150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>ADAPTOR HALF, BSP</td>
<td>1&quot;</td>
<td>G 3/4&quot;</td>
<td>A: 114, B: 91, C: 84, D: 109, E: 69, F: 69</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1&quot;</td>
<td>G 1&quot;</td>
<td>A: 114, B: 91, C: 84, D: 109, E: 69, F: 69</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2&quot;</td>
<td>G 1 1/2&quot;</td>
<td>A: 122, B: 91, C: 97, D: 117, E: 74, F: 81</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2&quot;</td>
<td>G 2&quot;</td>
<td>A: 122, B: 91, C: 97, D: 117, E: 74, F: 81</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>COUPLER HALF, FLANGED DIN PN40</td>
<td>1&quot;</td>
<td>DN20</td>
<td>A: 142, B: 115, C: 131, D: 152, E: 95, F: 86</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1&quot;</td>
<td>DN25</td>
<td>A: 142, B: 115, C: 131, D: 152, E: 95, F: 86</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2&quot;</td>
<td>DN40</td>
<td>A: 180, B: 144, C: 155, D: 202, E: 120, F: 102</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2&quot;</td>
<td>DN50</td>
<td>A: 180, B: 144, C: 155, D: 202, E: 120, F: 102</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3&quot;</td>
<td>DN80</td>
<td>A: 244, B: 191, C: 274, D: 208, E: 112, F: 122</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>ADAPTOR HALF, FLANGED DIN PN40</td>
<td>1&quot;</td>
<td>DN20</td>
<td>A: 137, B: 115, C: 121, D: 152, E: 95, F: 69</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1&quot;</td>
<td>DN25</td>
<td>A: 137, B: 115, C: 121, D: 152, E: 95, F: 69</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2&quot;</td>
<td>DN40</td>
<td>A: 176, B: 144, C: 141, D: 202, E: 120, F: 81</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2&quot;</td>
<td>DN50</td>
<td>A: 176, B: 144, C: 141, D: 202, E: 120, F: 81</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3&quot;</td>
<td>DN80</td>
<td>A: 241, B: 191, C: 208, D: 226, E: 132, F: 122</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>COUPLER HALF, WELD END DIN 2559</td>
<td>1&quot;</td>
<td>20</td>
<td>A: 114, B: 91, C: 160, D: 109, E: 69, F: 69</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1&quot;</td>
<td>25</td>
<td>A: 114, B: 91, C: 160, D: 109, E: 69, F: 69</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2&quot;</td>
<td>40</td>
<td>A: 122, B: 91, C: 173, D: 117, E: 74, F: 81</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2&quot;</td>
<td>50</td>
<td>A: 122, B: 91, C: 173, D: 117, E: 74, F: 81</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>ADAPTOR HALF, WELD END DIN 2559</td>
<td>1&quot;</td>
<td>DN20</td>
<td>A: 114, B: 91, C: 160, D: 109, E: 69, F: 69</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1&quot;</td>
<td>DN25</td>
<td>A: 114, B: 91, C: 160, D: 109, E: 69, F: 69</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2&quot;</td>
<td>DN40</td>
<td>A: 122, B: 91, C: 173, D: 117, E: 74, F: 81</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2&quot;</td>
<td>DN50</td>
<td>A: 122, B: 91, C: 173, D: 117, E: 74, F: 81</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Twist-Lok™
Dry Disconnect Coupler

Minimize fluid loss with the quick and easy connection of the new Twist-Lok Dry Disconnect Couplings

Twist-Lok™ represents the latest addition to OPW’s industry leading range of Dry Disconnect Couplings. With its user-friendly operation and simple handling, the Twist-Lok™ provides a quick, easy connection with minimal product loss.

Features & Benefits
- Fully Interchangeable with other manufacturers, such as TODO-MATIC, Mann Tek, etc. Manufactured in accordance with NATO STANAG 3756.
- Pressure Ratings up to 360 PSI; ideal for LPG and other higher pressure applications.
- 316 Stainless Steel Construction
- Available in 1”, 2”, 3” & 4” Sizes. Larger sizes available upon request.
- Integral Heavy-duty Swivel to aid connection and minimize hose wear.
- Double Safety: Fully Interlocked plus locking mechanism in open position
- Product Selectivity available via mechanical keying – minimize risk of cross contamination
- Suitable for Vacuum Service

Technical Data - Adaptor (Male)

<table>
<thead>
<tr>
<th>Type</th>
<th>Connection</th>
<th>Pressure Rating (lbs)</th>
<th>D</th>
<th>Ø D2 (in)</th>
<th>A (in)</th>
<th>B (in)</th>
<th>C (in)</th>
<th>E* (in)</th>
<th>Ø D3 (in)</th>
<th>Weight (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Twist-Lok NPS 1” Male</td>
<td>Female Thread</td>
<td>360</td>
<td>NPT 1”</td>
<td>–</td>
<td>0.68</td>
<td>–</td>
<td>3.54</td>
<td>0.94</td>
<td>2.18</td>
<td>1.8</td>
</tr>
<tr>
<td></td>
<td>1” Flange</td>
<td>300</td>
<td>–</td>
<td>4.88</td>
<td>–</td>
<td>0.69</td>
<td>3.14</td>
<td>0.94</td>
<td>2.18</td>
<td>3.9</td>
</tr>
<tr>
<td>Twist-Lok NPS 2” Male</td>
<td>Female Thread</td>
<td>360</td>
<td>NPT 1-1/2”</td>
<td>–</td>
<td>0.70</td>
<td>–</td>
<td>4.17</td>
<td>1.33</td>
<td>2.73</td>
<td>3.9</td>
</tr>
<tr>
<td></td>
<td>Female Thread</td>
<td>360</td>
<td>NPT 2”</td>
<td>–</td>
<td>0.75</td>
<td>–</td>
<td>3.77</td>
<td>1.33</td>
<td>2.73</td>
<td>3.9</td>
</tr>
<tr>
<td></td>
<td>2” Flange</td>
<td>300</td>
<td>–</td>
<td>6.5</td>
<td>–</td>
<td>0.88</td>
<td>3.74</td>
<td>1.33</td>
<td>2.73</td>
<td>10.1</td>
</tr>
<tr>
<td>Twist-Lok NPS 3” Male</td>
<td>Female Thread</td>
<td>360</td>
<td>NPT 3”</td>
<td>–</td>
<td>1.20</td>
<td>–</td>
<td>5.83</td>
<td>1.63</td>
<td>4.69</td>
<td>8.6</td>
</tr>
<tr>
<td></td>
<td>3” Flange</td>
<td>300</td>
<td>–</td>
<td>8.25</td>
<td>–</td>
<td>1.12</td>
<td>5.04</td>
<td>1.63</td>
<td>4.69</td>
<td>21.1</td>
</tr>
<tr>
<td>Twist-Lok NPS 4” Male</td>
<td>Female Thread</td>
<td>225</td>
<td>NPT 4”</td>
<td>–</td>
<td>1.30</td>
<td>–</td>
<td>5.90</td>
<td>1.41</td>
<td>5.31</td>
<td>14.3</td>
</tr>
<tr>
<td></td>
<td>4” Flange</td>
<td>150</td>
<td>–</td>
<td>9.0</td>
<td>–</td>
<td>0.94</td>
<td>4.92</td>
<td>1.41</td>
<td>5.31</td>
<td>23.1</td>
</tr>
</tbody>
</table>
**Twist-Lok™ Dry Disconnect Coupling**

**Technical Data - Coupler (Female)**

<table>
<thead>
<tr>
<th>Type</th>
<th>Connection</th>
<th>Pressure Rating (lbs)</th>
<th>D</th>
<th>Ø D2 (In)</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>Ø D3 (In)</th>
<th>Ø D4 (In)</th>
<th>Weight (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Twist-Lok NPS 1&quot; Female</td>
<td>Female Thread</td>
<td>360</td>
<td>NPT 1&quot;</td>
<td>-</td>
<td>0.68</td>
<td>-</td>
<td>4.92</td>
<td>2.16</td>
<td>3.74</td>
<td>4.5</td>
</tr>
<tr>
<td></td>
<td>1&quot; Flange</td>
<td>300</td>
<td>-</td>
<td>4.88</td>
<td>-</td>
<td>0.69</td>
<td>4.52</td>
<td>2.16</td>
<td>3.74</td>
<td>6.5</td>
</tr>
<tr>
<td>Twist-Lok NPS 2&quot; Female</td>
<td>Female Thread</td>
<td>360</td>
<td>NPT 1-1/2&quot;</td>
<td>-</td>
<td>0.70</td>
<td>-</td>
<td>5.40</td>
<td>3.30</td>
<td>9.44</td>
<td>7.7</td>
</tr>
<tr>
<td></td>
<td>2&quot; Flange</td>
<td>300</td>
<td>-</td>
<td>6.5</td>
<td>-</td>
<td>0.88</td>
<td>5.12</td>
<td>3.30</td>
<td>9.44</td>
<td>13.8</td>
</tr>
<tr>
<td>Twist-Lok NPS 3&quot; Female</td>
<td>Female Thread</td>
<td>360</td>
<td>NPT 3&quot;</td>
<td>-</td>
<td>1.20</td>
<td>-</td>
<td>8.74</td>
<td>5.70</td>
<td>11.02</td>
<td>22.0</td>
</tr>
<tr>
<td></td>
<td>3&quot; Flange</td>
<td>300</td>
<td>-</td>
<td>8.25</td>
<td>-</td>
<td>1.12</td>
<td>7.87</td>
<td>5.70</td>
<td>11.02</td>
<td>34.1</td>
</tr>
<tr>
<td>Twist-Lok NPS 4&quot; Female</td>
<td>Female Thread</td>
<td>225</td>
<td>NPT 4&quot;</td>
<td>-</td>
<td>1.30</td>
<td>-</td>
<td>9.05</td>
<td>5.90</td>
<td>14.56</td>
<td>25.3</td>
</tr>
<tr>
<td></td>
<td>4&quot; Flange</td>
<td>150</td>
<td>-</td>
<td>9.0</td>
<td>-</td>
<td>0.94</td>
<td>8.07</td>
<td>5.90</td>
<td>14.56</td>
<td>36.4</td>
</tr>
</tbody>
</table>

**Materials of Construction**

- Stainless Steel (316Ti)- standard, Hastelloy, Brass & aluminum upon request.
- Fluorocarbon Seals (standard), EPDM, FFKM
- FNPT, ANSI Flanges; others upon request
- 1”, 2”, 3”, 4”; larger sizes upon request
- European & American Rail Car Approvals
- AAR Approval No. E989073-A

**Ordering Specifications**

**Couplers & Adaptors**

- Type 6 = Adaptor
- Type 7 = Coupler

**Material**

- 7 = Stainless Steel
- 1 = FNPT
- 2 = 150 ANSI
- 3 = 300 ANSI

**End Connection**

- Size 01 = 1"
- Size 02 = 2"
- Size 03 = 3"
- Size 04 = 4"

**Seal**

- 02 = Fluorocarbon
- 04 = EPDM
- 06 = FFKM/Chemraz

**Seal Kits**

- Type 6 = Adaptor
- Type 7 = Coupler

**TL = Twist-Lok**

**Size**

- 01 = 1"
- 02 = 2"
- 03 = 3"
- 04 = 4"

**Seal**

- 02 = Fluorocarbon
- 04 = EPDM
- 06 = FFKM/Chemraz

**Dust Caps & Plugs**

- Type DC = Dust Cap
- Type DP = Dust Plug (for Couplers)

**TL = Twist-Lok**

**Size**

- 01 = 1"
- 02 = 2"
- 03 = 3"
- 04 = 4"

**Seal**

- 02 = Fluorocarbon
- 04 = EPDM
- 06 = FFKM/Chemraz

*PE construction with stainless steel chain*
Hiltap™ RapidLOK™ Family of Products

For the Toughest High and Low Temperature and Pressure Applications

The Hiltap™ Series features innovative high and low pressure and temperature sealing couplings, connectors and product recovery/pipeline cleaning technologies. For over a decade, Hiltap™ and the RapidLOK® family of products have served global industries, providing safe transfer solutions for some of the most difficult and demanding liquid applications.

Benefits of the Hiltap™ RapidLOK™ Family:

- Safely vents residual pressure
- Metal-to-metal wedge seal design for repeated use
- Leak-proof operation
- Operates through wide temperature/pressure ranges
- No variation in pipe diameter for most sizes
- Quality assurance to ISO 9001-2000
- Material traceability exists
- Canadian Registration Numbers (CRN)

This all-purpose, high-performance quick coupling offers a non-restrictive flow with no variation in pipe diameter when required and conditions allow. The reusable sealing components are made of different metals that have their own unique hardness and thermal properties so as to further enhance the seal as temperature changes are encountered. The sleeve retaining ring ensures safe venting at any residual pressure. The Hiltap™ brand offers front line solutions and allows design engineers to specify safe and environmentally responsible connections.
3TL Series – Transfer Loading Safety Quick Coupling

The 3TL Transfer Loading Series is an all purpose high performance quick coupling designed for leak proof sealing through a wide range of temperatures. The design offers a non-restrictive flow with no variation in pipe diameter. The reusable metal-to-metal wedge sealing components further enhance the seal as temperature changes are encountered. The retaining ring ensures safe venting of any residual pressure.

Features & Benefits

- Designed to replace hammer unions and conventional CAM locking couplings
- Repeatedly reusable metal-to-metal wedge seal with secondary enviro O-Ring seal
- Non-restrictive flow characteristics for faster hook-ups
- Unique automatic safety feature vents residual pressure
- Only light torque required when tightening to contain rated pressure
- Designed and tested to ASME B31.3
- Available in 3/4” to 6” sizes
- Materials: 316 stainless steel and carbon steel
- Compact and available in any combination, of threaded, butt welded or socket welded ends
- Variety of sleeve handle options available

2” 3TL - 20 - 11 (Internal NPT threads)

FEMALE COUPLING HALF (PLAIN END/SLEEVE ASSEMBLY)
PART NR. HT3TL - 20 - 1X(F)

XW - WIDE GROOVE FOR SAFETY RING

STAINLESS SAFETY RING HEAVY DUTY

SECONDARY ENVIRO "O"RING SEAL

STANDARD THREAD IS ACME G2 6 TPI

4.420 ASSEMBLED

MALE COUPLING HALF (THREADED END)
PART NR. HT3TL - 20 - X1 (M)

DUST CAP
PART NR. HT3TH - 20 - DP

DUST PLUG
PART NR. HT3TH - 20 - DC

Note: Other materials, sizes and pressure ratings are available. End caps/Plugs and dust caps are available.

Please contact Hiltap for detailed specifications.
3IU Series High Performance Quality Impact Unions

The Hiltap™ 3IU impact union does what a conventional hammer union does, only better.

OPW's “impact union” is designed for leak proof operation over a wide range of temperatures and pressures. The reusable sealing components offer a metal-to-metal wedge seal, as well as an additional O-Ring seal, targeting full compliance to the latest environmental laws.

Applications include: next to sensitive electronic equipment, e.g., most flow meters, modular skid “tie-ins,” high pressure gas/soil, meter/production flow production, gas distribution “tie-ins,” high axial load stresses, sour gas, unconventionally high pressures and high erosion/corrosion applications.

Features & Benefits

- Contains fugitive emissions
- Easier installation, skid fabrication and maintenance
- Low profile
- Light weight
- Low impact/torque required to engage
- Repeatedly reusable metal-to-metal wedge seals
- Secondary O-Ring seal
- Available in butt weld end configurations only
- Available in 2", 3" and 4" sizes
- Carbon steel materials

Model: 3IU

Specification Example: 3IU - 20 - 33 (2" IMPACT UNION Both Ends Butt Weld, Carbon Steel)

<table>
<thead>
<tr>
<th>Pipe Size</th>
<th>Approx. Overall Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>2&quot;</td>
<td>6.0&quot;</td>
</tr>
<tr>
<td>3&quot;</td>
<td>7.2&quot;</td>
</tr>
<tr>
<td>4&quot;</td>
<td>9.5&quot;</td>
</tr>
</tbody>
</table>

3U Series – Medium Pressure and Temperate Quality Unions

The 3U Series is an all-purpose light weight quality union designed for leak proof operation as it cycles through a wide range of temperatures. The design offers a non-restrictive flow with no variation in pipe diameter in most sizes. The reusable metal-to-metal sealing components further enhance the seal as temperature and pressure changes are encountered. The safety ring ensures safe venting of residual pressure.
3U Series – Continued

Features & Benefits
- Contains fugitive emissions
- Designed to replace conventional medium pressure unions/couplings
- Easier installation and maintenance
- Fully interchangeable with each other
- Low profile/light weight
- Reduced chance of galling
- Repeatedly reusable metal-to-metal wedge seal
- Unique automatic safety feature vents residual pressure during uncoupling should residual pressure remain

- Only light torque required when tightening to rated pressure
- Designed and tested to ASME B31.3
- Available in 1/4" to 2" sizes
- Materials: 316 stainless steel and carbon steel
- Compact and available in any combination of threaded, butt welded or socket welded ends

HJG Ground Joint Utility Union – Safer Hose Connections

The HJG series utility union is a high-quality coupling for most steam, water and standard utility applications. The outer scalloped knurled sleeve is ergonomic and made out of a non-galling material, ensuring easy and repeatable connectability.

The HJG series uses a commercially available O-Ring seal and is fully interchangeable with conventional ground joint unions.

Features and Benefits
- Contains fugitive emissions
- Designed to replace conventional boss-type ground joint style unions/couplings
- Low profile/light weight, easier installation and maintenance
- Reduced chance of galling
- Elastomeric O-Ring seal
- Only light torque required when tightening
- Designed and tested to ASME B31.3
- Available in 3/4" only
- Materials: 316 stainless steel

Ordering Specifications

Note: For other materials, sizes and pressure ratings, consult Engineered Systems. Seal caps/plugs and dust caps are available

HGJ - 07 - 1 N 1 N - A - 3 0 4 1 - V 7

HJG SERIES SIZE FEMALE MALE SST HILTAP O-RING
07 - 3/4" HALF HALF SST DRAWING PACKAGE Fluorocarbon only
X - None X - Female Half Only 3 - Socket Weld SC - Seal Cap
I - FNPT 1 - FNPT 3 - Socket Weld SC - Seal Cap
SC - Seal Cap
LQC Series - “Twister®”
Locking Quick Connect

The Twister® LQC is the next generation of quick couplings designed as an option to replace conventional cam & groove couplings that are used in critical service applications. The Twister® LQC is engineered to be used in conjunction with hoses and loading arms.

Features & Benefits
- Rapid engagement, 1/4 twist on/off
- Low pressure or vacuum locking
- Coupling locks during uncoupling should residual or line pressure be present
- Smooth bore, ideal for pigging applications
- Commercially available O-Ring seals
- Optional snap-in customized handles for tight spots
- Built to B31.3 specifications to ISO 9001-2000 Quality Standards
- Pressure ratings equivalent to ANSI 150/300
- Available in ¾", 1", 2", 3", 4" and 6" nominal sizes
- Materials: 316 stainless steel, cold temperature carbon steel and aluminum
- Surpasses Occupational Health & Safety Section 188 (October 2003)

LQC Railcar Unloading Adaptor
- Ergonomic connection to railcar
- Features LQC Adaptor for safe, easy connection
- Can be provided with other end connections
415 Series, 425 Series, 450 Series
Pipe Connecting: Safety Quick Couplings

The 415/425/490 RapidLOK® Series Connector is an all-purpose lightweight quick coupling designed for leakproof operation at a wide range of temperatures. The metal-to-metal seal further enhances the seal as temperature changes are encountered. The safety ring ensures safe venting of any residual pressure.

Features

- The RapidLOK™ 415/425/490 series couplings can perform equal to the respective pipe schedules
- Repeatedly reusable metal-to-metal seal with an optional secondary enviro O-Ring seal
- No bolts, or hub clamps for faster hook-ups
- Unique automatic safety feature vents residual pressure
- No special heat treatment of seal rings required
- Only light torque required when tightening to rated pressure
- Compact and available in any combination, of threaded, butt welded or male socket welded ends
- Designed and tested to ASME B31.1 & B31.3
- Available in 3/4” - 2” sizes
- Materials: 316 stainless steel and carbon steel

SaVD™ Lite Gate Valve 390 Series - Safe Vent & Drain Safety Seal Cap/Hose Half

“Lite” Series Safety Seal Cap
ANSI 800 and below

Lite Series Hose Half
Assembly 390 Series

Features & Benefits

- The SaVD™ Safety Seal Cap is designed to replace high pressure bull plugs used in venting and draining SAGD steam and heavy oil piping.
- Safety Seal Cap (with chain) can be retightened to seal
- Outer seal and locking threads are located OUTSIDE the wetted surfaces
- Valve mounted couplings halves can be safely rodded, steam cleaned, pressure purged with specially designed and CRN registered adapters.
- NACE materials of construction: Carbon Steel
- Solid Material Wedge, NO overlays
- Available in 3/4”, 1”, 1-1/2” and 2” sizes
- Available with butt weld, MNPT, or seal cap
- Safe and tight stem seal by means of positive back seat and long life leak proof stuffing box design.
- The T-head connect of stem and disc assuring easy seating operation.
- Solid fully guided wedge reducing wear on seating surfaces.
- Gland eyebolts facilitating packing maintenance.
- Leak proof Body-Bonnet Joint Cavity to eliminate the unwinding of the SS spiral metal.
- Rolled-in seat to assure tight and effective seating.
**Ordering Specifications (Complete Coupling, Female Half)**

**FITTING DESIGNATION**
- 3TL - 3 pc. Transfer Loading
- H3U - 3 pc. Medium Pressure Union
- 3IU - 3 pc. Impact Union
- 3LB - 3 pc. Lube Blending
- 390 - 3 pc. SCH 80 for SAVDL

**Nominal Size**
- 02 - 1/4"
- 03 - 3/8"
- 05 - 1/2"
- 07 - 3/4"
- 10 - 1"
- 12 - 1 1/4"
- 15 - 1 1/2"
- 20 - 2"
- 25 - 2 1/2"
- 30 - 3"
- 40 - 4"
- 60 - 6"

**Plain End Connection Type**
- 1 - Female NPT
- 2 - Male NPT
- 3 - Butt Weld
- 4 - Male Socket Weld
- 5 - Female Socket Weld
- 6 - Female BSP
- 8 - Hose Barb
- SC - Seal Cap

**Plain End Coating**
- N - None
- A - Electroless Ni (High Phos)
- Z - Zinc
- E - Anodized Red
- F - Anodized Blue

**Threaded End Style**
- X - None (Female Half Only)
- 1 - Female NPT
- 2 - Male NPT
- 3 - Butt Weld
- 4 - Male Socket Weld
- 5 - Female Socket Weld
- 6 - Female BSP
- 8 - Hose Barb
- SP - Seal Plug

**Threaded End Coating**
- Blank if Female Half Only
- N - None
- A - Electroless Ni (High Phos)
- Z - Zinc
- E - Anodized Red
- F - Anodized Blue

**Material**
- A - Stainless Steel A479-316/316L (SA)
- D - Carbon Steel A350 Gr. LF2 Cl.1
- NACE
- H - Aluminum 6061-T6

**Hiltap Drawing Package Code**
- 3102 - 1/4" Couplings
- 3103 - 3/8" Coupling
- 3105 - 1/2" Coupling
- 3107 - 3/4" SCH10 Coupling
- 3158 - 3/4" SCH10 to 80 Coupling
- 3001 - 1" SCH10 Coupling
- 3310 - 1" SCH80 Coupling
- 3002 - 1" SCH40 Coupling
- 3015 - 1 1/2" SCH10 Coupling
- 3113 - 1 1/2" 3P SCH80 Coupling
- 3000 - 2" 3TL and 3U SCH40 and 80 Couplings
- 3136 - 2" SCHXXS Impact Union with Hiltap Seal
- 3010 - 3" 3TL and LB SCH40 Couplings
- 2146 - 4" 3LB and 3TL SCH40 Coupling
- 0554 - 4" 3LB SCH10 Coupling
- 0536 - 6" 3TL SCH40 Coupling
- 0058 - 2" SCH160 Impact Union with Hiltap Seal
- 0057 - 2" SCH80 Impact Union with Hiltap Seal
- 0070 - 2" SCH160 Impact Union with Flat Face Seal
- 2034 - 3" SCHXXS Impact Union with Hiltap Seal
- 3189 - 3" SCH80 Impact Union with Hiltap Seal
- 0168 - 4" SCHXXS Impact Union with Hiltap Seal

**Sleeve Style**
- A - Loop Handle Sleeve
- B - Wrench Flats Sleeve
- C - Stick Handle
- D - Paddle Sleeve
- E - Aluminum Loop Handle for 3" Coupling (Except if Wetted Parts are Aluminum then as Above)
- F - Lug Sleeve (Star Style)
- IU - Impact Union Style Sleeve for 3TL
- RK - Raised Knurled Sleeve
- BH - Bar Handle Articulating Sleeve
- HX - Hexagonal Sleeve
- SW - Spanner Wrench Sleeve

**Sleeve Coating Code**
- N - None
- A* - Electroless Nickle (High Phos)
- Z** - Zinc
- E - Anodized Red
- S - Anodized Clear
- F - Anodized Blue

**Plain End Style**
- For 3010 Package Only
- N - Standard 3"
- T - Single Groove Tubing
- S - Single Groove
- D - Double Groove
- C - Compoflex Hose Barb
- E - 2 1/2" Single Groove

**Threaded End Style**
- For 3010 Package Only
- N - Standard 3"
- S - Sanitary
- 1 - 1 1/2"
- 2 - 2"
- 3 - 2 1/2"
- 4 - 4"

**O-Ring Material**
- Blank for None. Only Metal to Metal Seal
- V7 - Fluorocarbon 75D

* All stainless steel sleeves are electroless nickel plated to prevent galling
** Zinc coating standard on all carbon steel products

**Important:** OPW products should be used in compliance with applicable federal, state, provincial, and local laws and regulations. Product selection should be based on physical specifications and limitations and compatibility with the environment and materials to be handled. OPW makes no warranty of fitness for a particular use. All illustrations and specifications in this literature are based on the latest product information available at the time of publication. OPW reserves the right to make changes at any time in prices, materials, specifications and models and to discontinue models without notice or obligation.
Ordering Specifications (Male Half Only)

**HT3 - 30 - X1 - D - 3010 - 25 - ZNC**

**FITTING DESIGNATION**
- HT3 - 3 pc. Union and Transfer Loading
- HT3IU - 3 pc. Impact Union Male

**NOMINAL SIZE**
- 02 - 1/4"
- 03 - 3/8"
- 05 - 1/2"
- 06 - 5/8"
- 07 - 3/4"
- 10 - 1"
- 12 - 1 1/4"
- 15 - 1 1/2"
- 20 - 2"
- 25 - 2 1/2"
- 30 - 3"
- 40 - 4"
- 60 - 6"

**THREADED END STYLE**
- X1 - Female NPT
- X2 - Male NPT
- X3 - Butt Weld
- X4 - Male Socket Weld
- X5 - Female Socket Weld
- X6 - Female BSP
- X8 - Hose Barb
- SP - Seal Plug

**MATERIAL**
- A - Stainless Steel A479-316/316L (SA)
- D - Carbon Steel A350 Gr. LF2 Cl.1
- NACE
- H - Aluminum 6061-T6

**SPECIAL CUSTOMIZED DESIGNATION**
- Standard 3"
- S - Sanitary
- 20 - With Special 2" NPT on 3"
- 25 - With Special 2 1/2" NPT on 3"
- BAY - With Special Bayonet

**THREADED END COATING**
- Blank if No Coating Required
- EN1 - Electroless Nickle Plating (High Phos)
- ZNC* - Zinc

**HILTAP DRAWING PACKAGE CODE**
- 3102 - 1/4" Couplings
- 3103 - 3/8" Coupling
- 3105 - 1/2" Coupling
- 3107 - 3/4" SCH10 Coupling
- 3158 - 3/4" SCH10 to 80 Coupling
- 3001 - 1" SCH10 Coupling
- 3310 - 1" SCH80 Coupling
- 3002 - 1" SCH40 Coupling
- 3015 - 1 1/2" SCH10 Coupling
- 3113 - 1 1/2" 3P SCH80 Coupling
- 3000 - 2" 3TL and 3U SCH40 and 80 Couplings
- 3136 - 2" SCHXXS Impact Union with Hiltap Seal
- 3010 - 3" 3TL and LB SCH40 Couplings
- 2146 - 4" 3LB and 3TL SCH40 Coupling
- 0554 - 4" 3LB SCH10 Coupling
- 0536 - 6" 3TL SCH40 Coupling
- 0058 - 2" SCH160 Impact Union with Hiltap Seal
- 0057 - 2" SCH80 Impact Union with Hiltap Seal
- 0070 - 2" SCH160 Impact Union with Flat Face Seal
- 2034 - 3" SCHXXS Impact Union with Hiltap Seal
- 3189 - 3" SCH80 Impact Union with Hiltap Seal

* Zinc coating standard on all carbon steel products
Ordering Specifications (Complete Coupling, Female Half)

**LQC - 30 - 1 N 1 N - A - 3124 - A N - H - V7**

**Fitting Designation**
LQC - Locking Quick Connect

**Nominal Size**
- 10 - 1"
- 20 - 2"
- 30 - 3"
- 40 - 4"
- 60 - 6"

**Plain End Connection Type**
- 1 - Female NPT
- 3 - Butt Weld
- 5 - Female Socket Weld
- SP - Seal Plug

**Plain End Coating**
- N - None
- A - Electroless Ni (High Phos)
- Z* - Zinc
- E - Anodized Red
- F - Anodized Blue

**Male End Connection Type**
- X - None (Female Half Only)
- 1 - Female NPT
- 3 - Butt Weld
- 5 - Female Socket Weld
- SP - Seal Plug

**Male End Coating**
- Blank if Female Half Only
- N - None
- A - Electroless Ni (High Phos)
- Z* - Zinc
- E - Anodized Red
- F - Anodized Blue

**Material**
- A - Stainless Steel A479-316/316L (SA)
- D - Carbon Steel A350 Gr. LF2 Cl.1 NACE
- H - Aluminum 6061-T6

**Hiltap Drawing Package Code**
- 3124 - 1", 2", 3", 4" Couplings
- 3122 - 6" Coupling
- 3109 - 4" LQC Closure for PIG Launcher
- 3098 - 2" and 3" LQC Closure for PIG Launcher
- 3095 - 2" LQC Closure for PIG Launcher
- 3216 - 3" LQC Closure for PIG Launcher
- 3075 - 6" LQC Closure for PIG Launcher

**Sleeve Style**
- A - Standard Wagon Wheel Sleeve with Plunger
- HND - Wagon Wheel with Crank Handle Sleeve
- LH - Loop Handle Sleeve (No Standard)

**Sleeve Coating Code**
- N - None
- A - Electroless Ni (High Phos)
- Z* - Zinc
- E - Anodized Red
- S - Anodized Clear
- F - Anodized Blue

**Sleeve Material if Different from Wetted Parts**
- A - Stainless Steel A479-316/316L (SA)
- D - Carbon Steel A350 Gr. LF2 Cl.1 NACE
- H - Aluminum 6061-T6

**O-Ring Material**
- V7 - Fluorocarbon 75D

* Zinc coating standard on all carbon steel products
**Ordering Specifications (Male Half Only)** Consult factory for ordering specifications.

**HTLQC - 30 - X1 - D - 3124 - 25 - ZNC**

<table>
<thead>
<tr>
<th>Fitting Designation</th>
<th>HTLQC - Locking Quick Connect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Size</td>
<td>10 - 1”</td>
</tr>
<tr>
<td></td>
<td>20 - 2”</td>
</tr>
<tr>
<td></td>
<td>30 - 3”</td>
</tr>
<tr>
<td></td>
<td>40 - 4”</td>
</tr>
<tr>
<td></td>
<td>60 - 6”</td>
</tr>
<tr>
<td>Male End Connection Type</td>
<td>X1 - Female NPT</td>
</tr>
<tr>
<td></td>
<td>X3 - Butt Weld</td>
</tr>
<tr>
<td></td>
<td>X5 - Female Socket Weld</td>
</tr>
<tr>
<td></td>
<td>SP - Seal Plug</td>
</tr>
<tr>
<td>Material</td>
<td>A - Stainless Steel A479-316/316L (SA)</td>
</tr>
<tr>
<td></td>
<td>D - Carbon Steel A350 Gr. LF2 Cl.1</td>
</tr>
<tr>
<td></td>
<td>NACE</td>
</tr>
<tr>
<td></td>
<td>H - Aluminum 6061-T6</td>
</tr>
</tbody>
</table>

**Special Customized Designation**
- Standard
- S - Sanitary
- HO - Tapper Down Connection
- 25 - With Special 2 1/2” NPT on 3”

**Threaded End Coating**
- Blank if no coating required
- EN1 - Electroless Nickle Plating (High Phos)
- ZNC* - Zinc
- IP4 - IPC System 4

**Hiltap Drawing Package Code**
- 3124 - 1”, 2”, 3”, 4” Couplings
- 3122 - 6” Coupling
- 3109 - 4” LQC Closure for PIG Launcher
- 3098 - 2” and 3” LQC Closure for PIG Launcher
- 3095 - 2” LQC Closure for PIG Launcher
- 3216 - 3” LQC Closure for PIG Launcher
- 3075 - 6” LQC Closure for PIG Launcher

* Zinc coating standard on all carbon steel products
Safety Breakaway Devices

NTS-PU Series (Pull-Away)
Breakaway Coupling

Areas of Application
The OPW Engineered Systems’ NTS-PU Series Breakaway protects loading facilities, hoses and prevents spills at the same time. Separation occurs by a simple pulling force on the hose line. It finds its application in fluid and gas transfer. The OPW Engineered Systems’ NTS-PU is axially built into hose lines (see example design at right).

Construction of the NTS-PU Series
The NTS-PU consists of two halves (Adaptor and In-line), each equipped with spring-loaded valves. A straight or angular pulling force on the hose triggers the separation. To protect the hose line from damage, the separation force of the NTS-PU can be individually adjusted.

Function
While coupled, the valves of the Emergency Release System NTS-PU are open. Upon a pre-determined pulling force, the separation occurs. Both valves close, thus preventing spills and protecting the loading station at the same time. The NTS-PU allows for a spare-part-free, non-destructive separation – no shear pins involved and no destruction. After depressurizing and emptying the hose, the NTS-PU can be reassembled easily, without tools or spare parts.

Ordering Specifications

Material: Stainless Steel (316), Anodized Aluminum. Others available upon request
Seals: Fluorocarbon, EPDM, Chemraz®
Pressure Ratings: 360 psi for all sizes (Alu 232 psi)
Connections: FNPT or Flange (TTMA/150/300 ANSI)
1", 2", 3", 4"

Safety Breakaway

NTS* - SZ - T - A - 02 02

Series
SZ = Cable Release
PU = Pull-Away

Connection
T = FNPT x FNPT
F = 150 lb RF x 150 lb RF
F3 = 300 lb RF x 300 lb RF

Material
A = Anodized Aluminum
S = 316 Stainless Steel

Seals
02 = Fluorocarbon
04 = EPDM
06 = Chemraz®

Size
01 = 1"
02 = 2"
03 = 3"
04 = 4"

* Other materials and seals upon request. Specifications and conditions may vary.
Safety Breakaway Devices

SZ Series (Cable Release) Breakaway Coupling

Areas of Application
The SZ Series Emergency Breakaway Coupling with cable control is designed to protect against unintended pull-aways of tank trucks, railcars, barges or ships. Loading arms and hose lines, conveying gases or liquid media, can be either newly equipped or retrofitted with the SZ Series.

Structure
Two non-return valves prevent product loss in case of emergency separation. Both coupler halves are held together with segments and a slide ring. A cable pull triggers the separation by flipping the levers out of their locked position. The NTS also is available with the proactive remote or hand separation.

Function
In a pull-off, the tensile force travels along the cable, leaving the hose or loading arm tension-free at all times. The levers are released, two non-return valves positively shut both ends, enabling the separation to occur. In contrast to most existing products, the SZ Series breakaways work independently from the working pressure and allow for a protective approach without the need to wait for an impact. With a proven track record of more than 25 years, the SZ Series Breakaway has earned an outstanding reputation of reliability in the industry.

Benefits
- Protection of loading-arm components
- Protection of loading facility
- Spill prevention
- Reconnectable

Materials: Stainless Steel (316). Others available upon request
Seals: EPDM, Fluorocarbon, Chemraz®
Pressure Ratings: 150 to 600 psi
Available in 1", 2", 3", 4" and 6" (other sizes up to 12" available upon request)

SZ Series Breakaway Coupling
Installation Example
When the line system is subjected to an unprecedented load, the levers swing out by the cable. The slide ring is displaced and the segments are released. Then the two body halves separate and the two spring-loaded valves immediately shut both hose ends.

NTS Emergency Separation Device
Triggered by cable (self-disconnected)

SZ Loading Arm Marine
Installation Example
Note: The length of the SZ cable must be shorter than the maximum movement of the loading arm hose in order to trigger the separation.