KAMVALOK® DRY DISCONNECT COUPLINGS

Installation, Operation & Maintenance (IOM) Manual
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Kamvalok® Dry Disconnect Couplings

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.

Benefits
Spill Protection
Helps to reduce the hazards involved in the connection/disconnection process for transferring hazardous materials.

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

Dual Protection
Poppeted seal cylinder with snap-on nose seal provides automatic closure from both directions – the coupler and the adaptor – to prevent accidental spills. Nose seal can be easily replaced without need for new seal cylinder.

AutoLock™ Locking Arms
Provides added protection with an automatic locking mechanism signaled by a positive click. Release requires only an easy tug on the lock release.

SST Locking Lever Assembly
Locks in position to prevent accidental opening or closing of valve.

Ease of Use
Simple connection and disconnection design provides for smooth-and-easy operation.

Ordering Guide

**1711DL - AL15 - GL**

**Type**
17 - Coupler

**Configuration**
1 - Aluminum Body, Stainless-Steel Internals
7 - Stainless-Steel Body, Stainless-Steel Internals

**O-Ring Seal**
1 - Buna-N
2 - Fluorocarbon
3 - PTFE/Silicone
4 - EPDM
6 - FFKM
7 - PTFE/Fluorocarbon

**Construction Material**
AL - Aluminum Body
SS - Stainless-Steel Body

**Size**
15 - 1-1/2" DN40
20 - 2" DN50
30 - 3" DN80

**Style**
A - 150 Lb. Flange
GL - Greaseless
KG - Krytox Grease
KL - Keylok
P - Sanitary Triclamp
T - 300 Lb. Flange

**Design Parameters**

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### Design Parameters

#### Materials

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#### Seal Options/Kits

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**NOTE:** (EW) Replaces A for SST Fittings + Items included in repair kits

*NOTE: Not shown
Installation Preparations

**WARNING:** Read and understand these instructions before starting installation or dismantling:

- Coupler to be used for its designated purpose only
- Local regulations for (un)loading must be followed at all times
- Product flow may result in static electricity; grounding of equipment is required
- OPW instructions must be followed for installation or dismantling at all times
- Make sure to use adequate personal protection at all times during operation
- Secure whatever device coupler will be mounted to (e.g. loading arm, hose, etc.)
- Thread coupler onto pipe (use proper thread sealant)

## Maintenance

**ATTENTION:** The same risks and procedures as initial installation apply.

**Consider the following when servicing the coupler:**

- When coupler is over-pressurized, it must be inspected thoroughly
- After maintenance is performed, it must be tested before the next use (see Testing After Servicing)

- Recommended periodic inspection (every 3 months) for leakages in shaft, gasket and poppet area (especially with toxic or hazardous media)
- Maintenance must be performed by qualified personnel
- Periodic maintenance (once a year) is recommended according to the maintenance instructions
- In case of (parts of) couplers being returned, the initiator must provide information about the media that have been in contact with (parts of) the coupler
- During maintenance, (partial) dismantling could be necessary; the same risks and procedures apply
Detailed Disassembly (for seal replacement)

Recommended Tools: Adaptor body of OPW Kamvalok® Adaptor, Flat Head Screwdriver, 17mm and 1-1/4” Driver and Torque Wrench

Dismantling Warning: Verify what kind of medium is loaded with this coupler (read the manuals provided). When the medium is nuclear, hazardous or toxic, one is obligated to clean parts with the help of specialized personnel, companies or governments.

Step 1:
- Remove coupler from piping or hose
- Install adaptor and close Autolok™ arms
- Depress release latch and rotate lever only part of the way
- Do not rotate the lever into the fully opened position
- The adaptor is only in place to take the pressure off of the poppet

Step 2:
- Remove shaft nut and lock washer from top of lever assembly
- Remove lever assembly from shaft
- Unthread stuffingbox and pull out shaft
- Pull stuffingbox off of shaft and remove the three O-rings and bearing sleeve from it
- Remove spacer from the shaft
- Remove bushing from coupler body

Step 3:
- While pressing the adaptor into the body, release the Autolok™ arms
- Slowly allow the adaptor, poppet and seal cylinder assembly to spring out of the body
- Once all spring pressure is relieved, you can remove the adaptor
- Remove the poppet assembly, followed by the seal cylinder and spring

WARNING: Use caution when performing this next step.

Step 4:
- Remove the seals from the seal cylinder
- Remove the seals from inside the coupler body
- Be careful not to scratch the sealing surfaces of the coupler body

Note: Couplers/Seal Kits purchased after October 2016 will have Nose Seal permanently bonded to Cylinder. Bonded Nose Seal/Cylinder will be included in all Seal Kits.

Disassembly Complete:
- Clean and inspect all sealing surfaces after removing seals
- Install new seals and reassemble coupler

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Detailed Rebuild

**Step 1:**
- Lubricate O-rings with proper grease
- Insert sleeve bearing into stuffingbox
- Lubricate stuffingbox threads
- Fit new O-rings into the grooves in the stuffingbox

**Step 2:**
- Carefully fit nose seal into seal cylinder and slightly expand sleeve bearing and fit into lubricated outer groove on seal cylinder
- Run finger over inside mating surface between nose seal and body to check for any uneven seating. If any raised edges exist, remove nose seal and re-seat more evenly.

**Step 3:**
- Fit O-ring and gasket into body
- Gasket should be compressed slightly and allowed to spring into its groove

**Step 4:**
- With coupler body in a vertical position, insert cylinder spring and seal cylinder using the adaptor body to compress the spring and push all components into the body
- Use caution not to disturb the O-ring already installed in the body when working the seal cylinder into the opening
- Open the Autolok™ arms to allow the adaptor to fully seat in the coupler body
- Once the adaptor is fully seated, lock adaptor into body by closing Autolok™ handles
Detailed Rebuild

Step 5:
• Insert poppet linkage assembly through adaptor with cast "dots" on linkage components facing up toward stuffingbox area of coupler body

Step 6:
• Insert bushing spacer through threaded end of the coupler
• Insert shaft through stuffingbox hole in coupler body
• Insert shaft through shaft link, aligning flats on shaft with flats on shaft link
• Insert shaft through spacer and into bushing in bottom of coupler body
• When installed, the shaft and poppet linkage assembly should be oriented as shown

Step 7:
• Turn the shaft 90 degrees from the closed position to relieve the spring pressure on the linkage
• Install stuffingbox over shaft and thread down with a wrench until it is tight
• Using a torque wrench, tighten the stuffingbox to 960 inch-pounds (108 Newton-meter)
• Remove the adaptor from the coupler

Step 8:
• With the poppet in the outward position, install the handle as shown
• Secure the lever by threading the shaft nut with lock washer on the shaft
• Tighten the shaft nut to a torque of 290 inch-pounds (33 Newton-meter)
**Step 9:**
- Rotate the lever assembly into the closed position
- Assembly complete. Reattach coupler to piping or hose.

**Testing After Servicing:**
- When servicing has occurred and parts have been replaced, it is necessary to test the coupler for safe and secure use.
- Open Autolok™ handles, and bring coupler and adaptor together. Once fully seated, close the Autolok™ handles.

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**Failure to follow these warnings could result in serious personal injury, property damage or product failure.**

1) Do not attempt any maintenance service while the equipment is in operation. System pressure must be relieved and the product drained before attempting any service on the unit. The line must be locked out while service is in progress. Proper thermal relief must be provided at all times while equipment is in service.

2) OPW products do not eliminate possible exposure to hazardous substances. The conditions of handling and use are beyond our control, and we make no guarantee and assume no liability for damages or injuries related to the use of our products. Follow the safety precautions outlined in the Material Safety Data Sheets for the material being used. It is the responsibility of the user to comply with all federal, state and local regulations. Always employ proper safety precautions and handling techniques.

3) Proper seal and wetted material part selection is critical for safe operation. To ensure maximum life for the service intended, use only those materials compatible with the fluids being handled. Please note material being supplied and make certain that it is suited for the intended service.
OPW Global Operations

1. OPW Corporate Headquarters
2. OPW Fuel Management Systems
3. OPW Retail Fueling
4. OPW Engineered Systems
5. Midland Manufacturing
6. Civacon
7. PDQ Manufacturing Inc.
8. OPW Mexico
9. OPW Latin America
10. Poland/Petro Vend of Poland, Inc.
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13. OPW FTG Europe
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15. OPW Asia Pacific
16. OPW Russia
17. Liquip