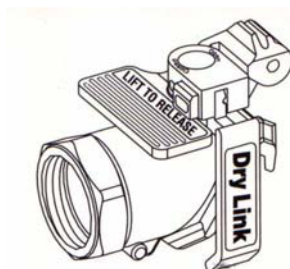
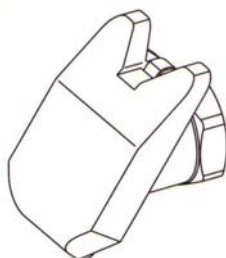


Maintenance Manual

for 2", 3" & 4" sizes
SS316 Couplings



WARNING

Proper seal and wetted metal parts material selection is critical for safe operation. To assure 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.

Failure to do so could result in serious personal injury, property damage, or leakage.



WARNING

The Dry Link coupling assembly does not eliminate possible exposure to hazardous substances. Likewise, some product residue may appear on the disc faces. 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 this coupling assembly. It is the responsibility of the user to comply with all applicable federal, state, and local laws and regulations.

Always employ proper safety precautions and handling techniques.

Failure to do so could result in serious personal injury, property damage, or leakage.

INDEX

Operator Safety Instructions	2	Flow Control Handle	
Introduction.....	3	Replacement - Kit G.....	9
Main Seal Ring Replacements-		Coupler Disc Replacement - Kit H.....	10
Kits AA, BB, & C	4	Disc Lock Plunger Replacement -Kit I	12
O-Ring Replacement - Kit D.....	6	Adapter Disc Replacement - Kit J.....	13
Swivel Seal Replacement - Kit E	6	Adapter Cover and Locking Bar	
Locking Arm Replacement - Kit F.....	8	Replacement - Kit K.....	15



We offer couplings with many **options** which must be specified when ordering replacement parts. Please pay special attention to any optional requirements for **Sanitary** couplings, such as FDA or USP grade seals; polished (20 RA mirror finish) discs, etc.

- ▶ Body materials: SS316, Alloy 20, and Hastelloy C
- ▶ Seals materials: PTFE, Viton (FKM), EPDM, & Kalrez (FFKM)
- ▶ **Optional** Seal Grade: Standard, FDA, or USP grade seals
- ▶ **Optional** finish on wetted internal components (discs):
 Standard (unpolished), or Polished (20 RA micro-inch finish)

OPERATOR SAFETY INSTRUCTIONS

Always read and understand the operation sheet included with each unit and the individual operations detailed in this manual.

Although this hose coupling assembly is manufactured for dependable operation, it is impossible to anticipate that combination of circumstances which could result in an accident. The following instructions are recommended for proper maintenance of the coupling assembly. The operator is cautioned to always practice "Safety First" during each phase of use, including setup and maintenance of this unit.

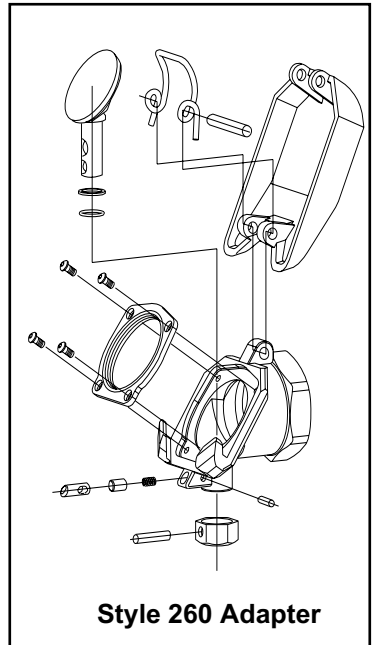
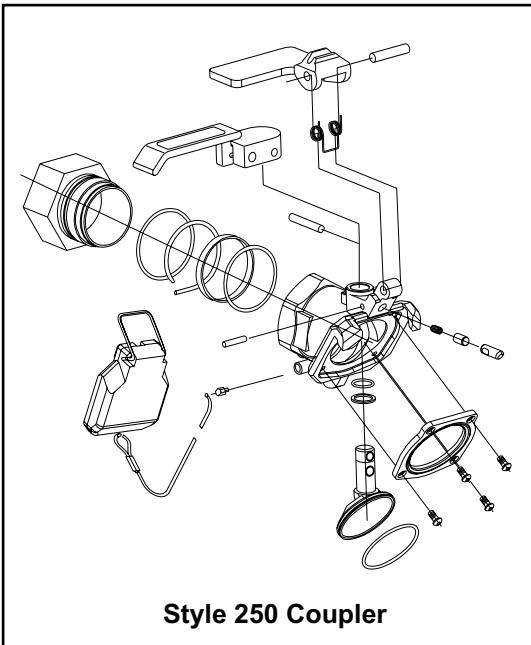
1. **Read and understand this operating manual before performing maintenance on this coupling assembly.** Become familiar with the unit's operation, applications and limitations. Be particularly aware of its specific hazards. Store this manual in a clean area and always at a readily available location. Additional copies at no charge can be obtained through written requests to Dry Link Inc.
2. **Depressurize the system.** Always depressurize the system before beginning any maintenance work on the hose coupling assembly. Failure to do so could result in serious personal injury, property damage or joint leakage.
3. **Use recommended accessories.** Consult the Maintenance Manual. Use of improper accessories may be hazardous.
4. **Maintain unit in top condition.** Regular inspection is recommended to detect any worn or damaged parts that could possibly cause a dangerous condition. Scheduled preventative maintenance should be done at regular intervals as determined by the application and frequency of use.
5. **Wear proper apparel.** Always wear necessary safety attire before performing any maintenance on the hose coupling assembly.

DRY LINK® DRY DISCONNECT HOSE COUPLING ASSEMBLY

The Dry Link hose coupling assembly consists of coupler and adapter halves. When the coupler and adapter are joined the disc halves in each come together and act in unison. A mechanical interlock prevents accidental opening. When separated the disc halves provide instantaneous shut-off for the coupler and adapter providing virtually leak-free service.

When replacing the seals on Dry Link couplers and adapters the chart below provides general service recommendations. Please be sure that the materials being supplied for replacement are suited for the intended service.

Seal Material	General Service Recommendations
Viton	Can be used for many oxidizing acids, petroleum oils, halogenated hydrocarbons, lubricants, hydraulic fluids or organic liquids.
EPDM	Can be used for a variety of industrial chemicals such as dilute acids, and most ketones and alcohols. EPDM is not recommended for use with petroleum products.
PTFE	Has outstanding resistance to chemical attack by most chemicals and solvents.
CHEMRAZ 505	Similar to PTFE material. However, it has more resiliency.



MAINTENANCE

Main Seal Retainer Replacement (For coupler and adapter units)

Kits AA, BB & C

Note: To replace the main seal you will need an allen wrench, a standard wrench & a special Tool from Dry Link.

REMOVING SEAL



1. After the system has been depressurized and drained, remove the cap screws using an allen wrench.



2. Open the disc by turning the nut (or coupler handle) while keeping the plunger button depressed.



3. Remove the seal by pulling it out of the body.

INSTALLING SEAL REPLACEMENT



1. Clean the disc and body by wiping all seal surfaces with a clean cloth. Be sure that no residue remains on the disc faces.

STOP! You must read Pages 16-20 for additional instructions to change the Main Seal Retainer.



2. Open the disc to about a 45° angle. Place the seal ring over the partially opened disc so that the seal fits into the seal cavity on the disc face. Install the four screws finger tight to allow the seal to center itself when the disc closes.



3. For 3" & 4" coupler: Move the seal in the direction shown (see arrow). This will provide the clearance necessary for closing the disc.



4. Close the disc. If installed properly the seal should be flush with the disc face.

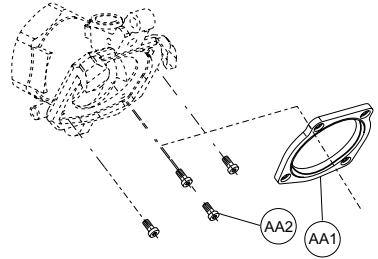


5. Using an allen wrench tighten the screws. **For 3" & 4" coupler:** Loosen the two screws after closing the disc so that the seal will center itself. Install and tighten all screws. If the seal projects above the face of the coupler, couple it with an adapter to properly seat the seal.

Teflon/Chemraz Main Seal Replacement Kit (For Coupler Only)

Kit AA

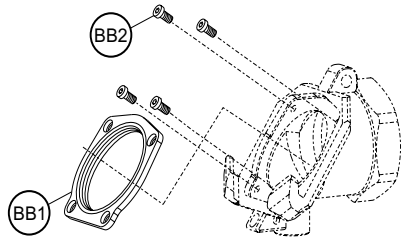
Kit Item No.	No. Per Kit	Part Description
AA1	1	Teflon/Chemraz Main Seal Assembly
AA2	4	Socket Head Cap Screws



Teflon Main Seal Replacement Kit (For Adapter Only)

Kit BB

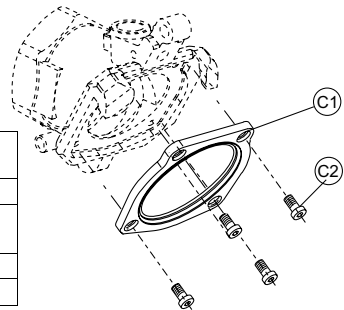
Kit Item No.	No. Per Kit	Part Description
BB1	1	Teflon Adapter
BB2	4	Socket Head Cap Screws



Molded Elastomer Main Seal Replacement (Viton, EPDM, or FFKM)

Kit C

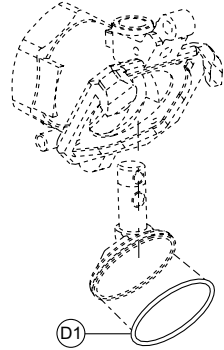
Kit Item No.	No. Per Kit	Part Description
C1 – EPDM	1	Molded Main Seal – EPDM
or C1 – Viton	1	Molded Main Seal – Viton
C1 – FFKM	1	Molded Main Seal – FFKM
C2	4	Socket Head Cap Screws



MAINTENANCE

O-Ring Replacement For Teflon, EPDM or Viton O-Rings (For Coupler only)

Kit D



Kit Item No.	No. Per Kit	Part Description
D1-T	1	O-Ring – Teflon encapsulated Viton
D1-V	1	O-Ring – Viton
D1-E	1	O-Ring - EPDM

REMOVAL



1. Remove the O-ring by piercing the O-ring with a pointed tool then lifting it from the groove. Prying the O-ring out of the groove may cause permanent damage to the sealing surfaces of the disc. After removal discard the old O-ring.

INSTALLATION

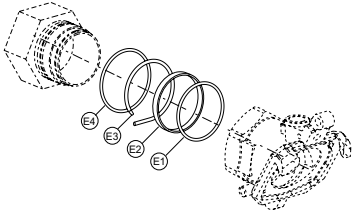


1. Press the new O-ring into the groove, beginning at one point and slowly working the O-ring into the seating area. Working around the groove in both directions, press the remainder of the O-ring into the groove. A properly installed O-ring will extend about $\frac{1}{32}$ " above the disc face.

See page 10 for coupler disc replacement.

Swivel Seal Replacement (For Coupler & Adapter units)

Kit E



Kit Item No.	No. Per Kit	Part Description
E1	1	Internal Swivel Seal
E2	1	Swivel Bearing Ring
E3	1	Swivel Spline
E4	1	Ex. Swivel Seal

REMOVAL



1. Remove the swivel spline plug with a 3/8" wrench.



2. Secure the coupler. Next using pliers grab the end of the spline. As you turn the swivel, pull the spline out.



3. Remove the remaining swivel body seals and wipe clean.

INSTALLATION



1. Lubricate the swivel sealing surfaces of the coupler and swivel.



2. Slide the swivel bearing ring over the tapered end of the swivel body.



3. Place the external swivel seal over the swivel body, with the spring facing the hex end of the body.



4. Place the internal swivel seal into the coupler body with the seal spring facing into the body.



5. Insert the swivel into the coupler body until it is fully seated.

MAINTENANCE



6. Install the swivel spline by pushing the spline in while turning the swivel body. Insert the spline slowly to avoid “kinking”.

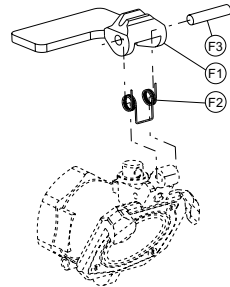


7. Insert the spline plug and tighten with a $\frac{3}{8}$ " wrench. If installed properly the swivel will turn freely.

Locking Arm Replacement

Kit F

Kit Item No.	No. Per Kit	Part Description
F1	1	Cam Handle
F2	1	Cam Handle Spring
F3	1	Cam Handle Pin



REMOVAL



1. Hold the coupler face down as shown above. Drive the cam handle pin out. Be sure to catch the cam handle spring.

INSTALLATION



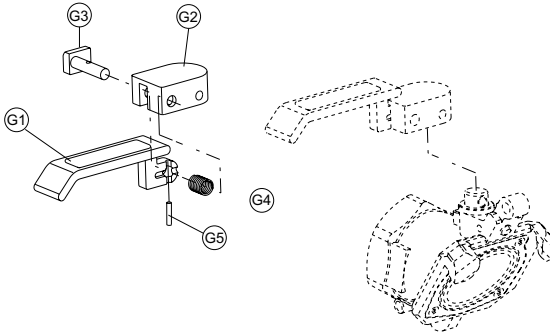
1. Place the cam handle spring into the new handle. Slip the cam handle pin through the hole and one set of spring coils as shown.



2. Place the cam handle and spring over the cam handle arm as shown. For proper installation the rectangular loop of the spring must go over the cam handle arm. The spring should protrude slightly from the cam handle.

Flow Control Handle Replacement

Kit G



Kit Item No.	No. Per Kit	Part Description
G1	1	Coupler Handle
G2	1	Coupler Cap
G3	1	Push Pin
G4	1	Push Pin Spring
G5	1	Coupler Handle Spring Pin

REMOVAL



1. Following directions described for seal removal remove main seal (see kits A, B, or C). Open the handle while pressing the plunger.



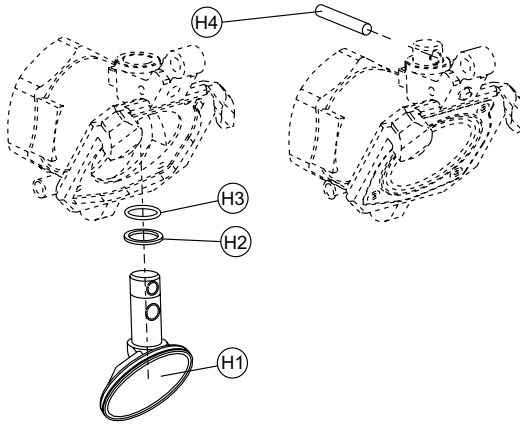
2. Drive the exposed portion of the coupler cap pin from the coupler cap.

INSTALLATION



1. Align the disc face with the body . Place the coupler handle over the end of the disc stem so that the push button of the handle faces the swivel end of the coupler. Using a ball peen hammer drive the pin through the coupler cap and stem until the pin is flush with the cap. To ensure proper installation press in the disc lock plunger and turn the handle. The disc should turn a full 90°.

Coupler Disc Replacement Kit H



Kit Item No.	No. Per Kit	Part Description
H1	1	Coupler Disc
H2	1	Disc Space Washer
H3	1	Stem Seal
H4	1	Coupler Cap Pin

See page 6 for replacing the disc face seal.

REMOVAL



1. Begin by removing the main seal and coupler handle (see previous instructions for those items). Once the main seal and handle are removed, rotate the disc until its face points into the coupler body.



2. Pull the disc out of the body . When you reach the halfway point the spring cup and spring will come off the stem. Be prepared to catch and save these pieces.



3. Remove the washer and seal from the stem.



4. Remove the disc lock plunger.

INSTALLATION

1. Make sure that the disc lock plunger is removed.



2. Brush a thin coating of lubricant onto the stem.



3. Place the disc spacer washer and the stem seal over the stem. The spring side of the seal must face the washer or leakage will occur.

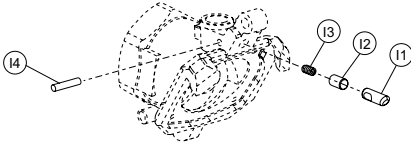


4. Carefully insert the disc into the body. Push the disc in until the stem seal is fully seated. Rotate the disc until the face aligns with the body. Replace handle and disc lock plunger.

MAINTENANCE

Disc Lock Plunger Replacement (For coupler or adapter units)

Kit I



Kit Item No.	No. Per Kit	Part Description
11	1	Disc Lock Plunger
12	1	Disc Lock Spring Cup
13	1	Spring Cup Spring
14	1	Disc Lock Plunger Pin

REMOVAL



1. Drive out the disc lock plunger pin. Be sure to drive the pin from the side **opposite** the end of the pin with the grooves.



2. Remove the disc lock plunger.

INSTALLATION



1. Reinstall disc as per instructions (Kit H for coupler; Kit J for adapter).



2. Grease the end of the spring and insert the greased end into the spring cup.



3. Insert the spring cup (spring first) into the disc lock plunger hole.

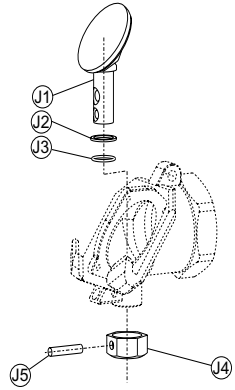


4. Insert the disc lock plunger into the hole, lining up its angled face with the face of the adapter. Press the plunger down and insert the pin.



5. Drive the new disc lock plunger pin into position. If installed properly the pin will be flush with the disc lock plunger.

Adapter Disc Replacement (For adapter only) Kit J



Kit Item No.	No. Per Kit	Part Description
J1	1	Adapter Disc
J2	1	Disc Space Washer
J3	1	Stem Seal
J4	1	Adapter Nut
J5	1	Adapter Nut Pin

REMOVAL

1. Remove the main seal (see main seal removal instructions).



2. Secure the adapter unit in a vise. Drive out the adapter nut pin.



3. Rotate the disc 180° so that the face is turned into the adapter body.



4. Begin pulling the disc out of the body. When you reach the halfway point the spring cup and spring will come off the stem. Be prepared to catch and save these pieces.



5. Remove the washer and seal from the stem.



6. Remove the disc lock plunger.

MAINTENANCE

INSTALLATION



1. Make sure that the disc lock plunger is removed.



2. Brush a thin coating of lubricant onto the stem.



3. Place the disc spacer washer and the stem seal over the stem. The spring side of the seal must face the washer or leakage will occur.



4. Carefully insert the disc into the body. Push the disc in until the stem seal is fully seated. Rotate the disc until the face aligns with the body.



5. Grease the end of the spring and insert the greased end into the spring cup.



6. Insert the spring cup (spring first) into the disc lock plunger hole.



7. Insert the disc lock plunger into the hole, lining up its angled face with the face of the adapter. Press the plunger down and insert the $\frac{3}{16}$ " pin.



8. Drive the pin flush with the body. If installed properly the plunger should move freely when pressed.

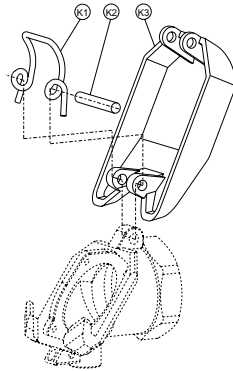


9. Install new nut.

Adapter Cover and Locking Bar Replacement

Kit K

Kit Item No.	No. Per Kit	Part Description
K1	1	Locking Bar
K2	1	Dust Cover Pin
K3	1	Adapter Dust Cover



REMOVAL



1. Drive the pin out as shown and remove the cover.

INSTALLATION



1. Place locking bar in the cover. Position the cover and locking bar over the boss on the adapter body. Insert the pin through the cover, locking bar and boss. Drive the pin in until it is centered.

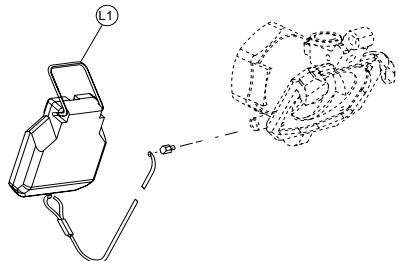
Coupler Cover

Kit L

COUPLER COVER REPLACEMENT

NOTE: The coupler cover kit is provided as a completely assembled unit attached to the swivel spline plug. To replace the coupler cover, simply unscrew the swivel spline plug with a $\frac{3}{8}$ " wrench and replace with the plug attached to the new cover assembly.

Kit Item No.	No. Per Kit	Part Description
L1	1	Coupler Cover Kit



A Video demo showing changing the Main Seal is available on our website www.drylink.com

Supplement to the 2", 3" & 4" Maintenance Manual

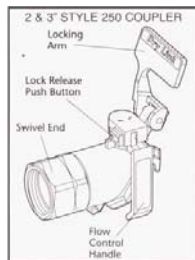
Additional Instructions for Procedure for Changing Main Seal Kit on 2", 3" & 4" Dry Link^R Couplings



In normal operation, Dry Link^R couplings will require very little maintenance. In use, the life of the Dry Link^R coupling will be extended if the disc faces are wiped when connecting and disconnecting the unit to ensure that no dirt has accumulated in this area.

It is also advisable to carry out periodic checks on the couplings such as:

- Inspecting the main seals to ensure no damage has occurred
- Checking the rim of the discs to ensure there are no dents or nicks
- Rotating the locking arm and flow control handle on the coupler to see that they are working correctly and that the mechanical interlock is operating, preventing the disc from opening when the coupling is disconnected.



Before carrying out any such checks or subsequent maintenance ensure that the system is depressurised, the line empty and no harmful material is present on the coupling which might cause injury. Suitable protective clothing should be worn.

If any damage to the main seals is detected, these can easily be replaced on site providing the area is clean and no dirt is allowed to collect on the parts.

You will need the relevant Main Seal Replacement kit with the correct seal material – PTFE, Viton, or EPDM. The Viton and EPDM Kits are the same whether they are for the coupler or adapter but on PTFE units there is a specific replacement kit for each half of the coupling.

The Main Seal Replacement Kit includes:

- The replacement plate and seal
- 4 screws
- Allen key



You will need a wrench if changing the adapter seal.

For proper Seal alignment, we strongly recommend using a special Main Seal Replacement Tool available from Dry Link^R or your local distributor.



To change the seal:

- Remove the 4 socket head cap screws using the Allen Key provided



- Open the disc by 45° by depressing the override plunger and turning the spindle nut on the bottom of the adapter or the flow handle in the case of the coupler.



- Gently ease the seal assembly out of the body.



- Clean the disc and body with a clean cloth and close the disc so that it is locked in position.



- Take the PTFE section of the replacement tool and put a small amount of silicone grease on the outside of the smaller end making sure no dirt is present.



- Push the replacement seal assembly over the narrow end of the tool with the counterbore face up so that when fitted the screw heads will be flush.
- Using the aluminium tube provided, push the plate down until it is flush (Fig.1) with the bottom of the tool. In the case of the 3"&4" Dry Link^R, this is done by fitting the aluminium cap over the seal plate (Fig. 2) and tightening the nut on the top.



Fig 1

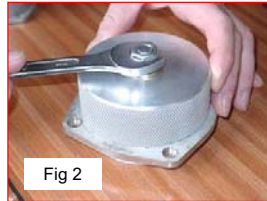


Fig 2

- Place the assembly onto the Dry Link^R aligning the plate with the disc.



- Push down sharply on the tube to locate the plate into its correct position.



- Refit the cap screws tightening across the corners to maintain equal loading.



- Open and close the disc to check for correct operation. Make sure the locking button clicks out as the disc is closed and wipe the disc and seal surfaces clean.

We have several instructional maintenance videos available on our website www.drylink.com



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- ▶ Body materials: SS316, Alloy 20, and Hastelloy C
- ▶ Seals materials: PTFE, Viton (FKM), EPDM, & Kalrez (FFKM)
- ▶ **Optional** Seal Grade: Standard, FDA, or USP grade seals
- ▶ **Optional** finish on wetted internal components (discs): Standard (unpolished), or Polished (20 RA micro-inch finish)

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