6”– 8” Deringer 20G/30G Maintenance Instructions

READ INSTRUCTIONS IN FULL BEFORE INSTALLATION.

QUESTIONS? CALL 916-760-4524 M-F 8:00 AM – 4:30 PM PST

At Backflow Direct we are committed to making our products as easy to install as possible. We design for most contingencies, but installation may be different based on your regional regulations or system design.

We are continually improving our products and instructions – please help us by providing recommendations as to how we can improve or products or instructions.

If you have any difficulties at all, please give us a call. Thank you for purchasing our product!

IMPORTANT NOTE: We use Stainless Steel Hardware where possible. Therefore, it is best to have Silver Anti-seize available to use on all non-wetted bolts—only a small amount is needed.

WARRANTY INFORMATION: Please visit our website for our official warranty www.backflowdirect.com/warranty

6”- 8” Deringer 20G/30G Maintenance Instructions

Tools Required: This list is the recommended tools for ease of installation. Other versions of the same tool can be used. For example, Allen Wrenches instead of Allen Drive Sockets.

#2 Philips Head Screwdriver

Adjustable Wrench

#2 Flathead Screwdriver

Backflow Direct Test Cock Wrench

Ratchet

Expanding Pipe Pliers

15/16” Socket
1 1/8” Socket

Wood Block - 2” x 4” x 5”
Wood Block – 1” x 2” x 16”

QUESTIONS: Please call us at 916-760-4524 M-F 8:00 AM – 4:30 PM PST or email us at techhelp@backflowdirect.com

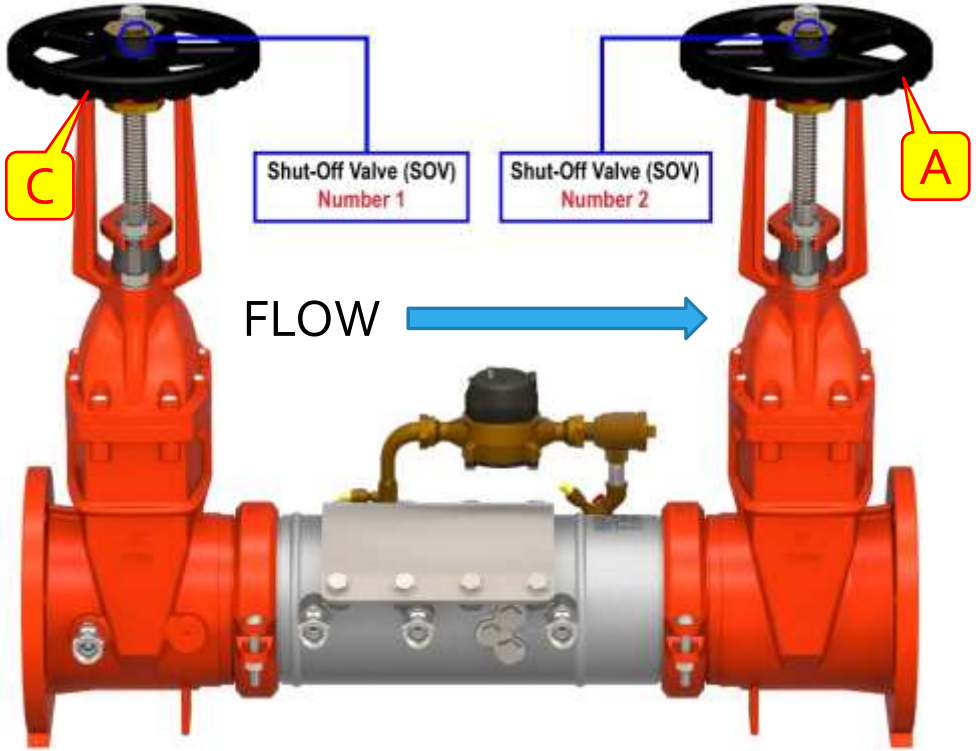
 Copyright 2011 Backflow Direct, LLC

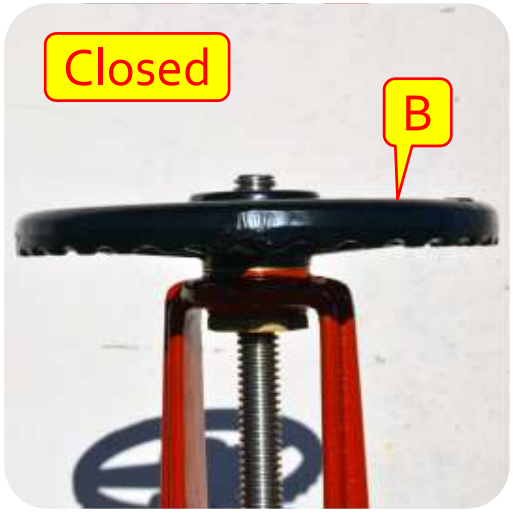
6”- 8” Deringer 20G/30G Maintenance Instructions

Closing Shut-Off Valves Prior to Maintenance

Note: *When the threaded portion of the OS&Y stems are fully exposed above the handwheel the shut-off valves are in the open position. Before doing any maintenance be sure to turn the handwheel towards the closed position until the threaded portion of the OS&Y stems have receded down into the bonnet indicating the shut-off valves are in the closed position (A).*

FLOW





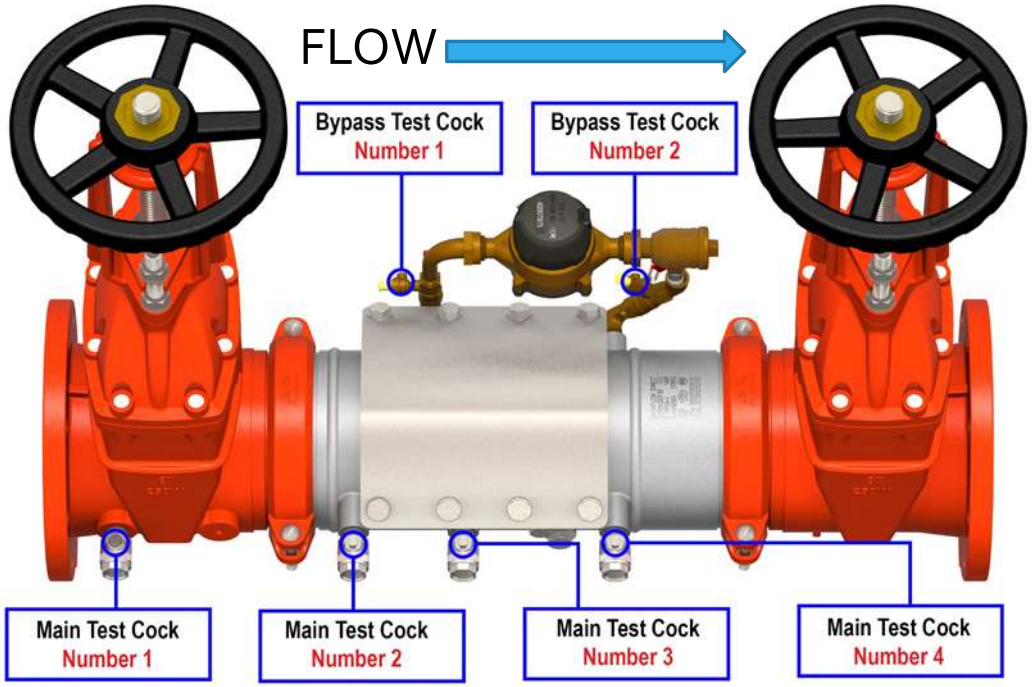
1. Slowly rotate Shut-Off Valve #2 Handle (B) to the closed position. Stem concealed (A).

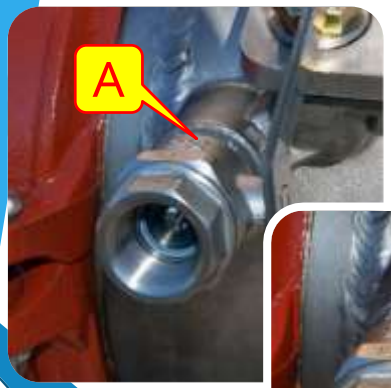
2. Slowly rotate Shut-Off Valve #1 Handle (C) to the closed position. Stem concealed (B).

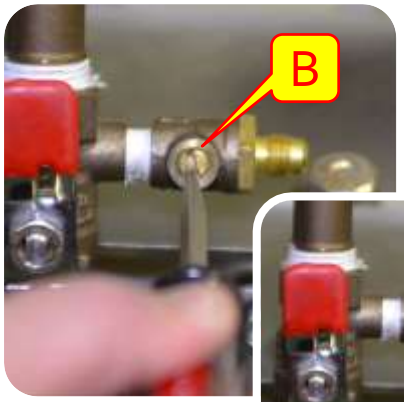
 Copyright 2011 Backflow Direct, LLC

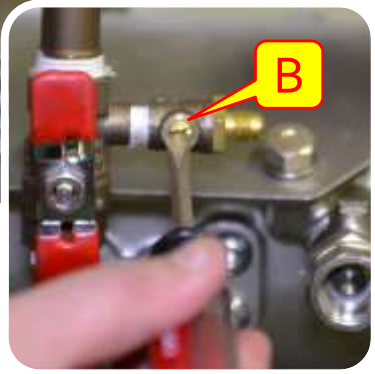
6”- 8” Deringer 20G/30G Maintenance Instructions

Opening Test Cocks and Bleeding All Pressure from the Line Before Maintenance









1. DO NOT OPEN Main Test Cock Number 1, as it is still subject to line pressure.
2. Using the Backflow Direct test cock wrench or a small adjustable wrench open (A) Main Test Cock Number 4. (Test Cock is open when wrench flats are parallel to water flow through test cock)
3. Using a #2 Flathead Screwdriver open Bypass Test Cock Number 2. (Test Cock is open when screwdriver slot is parallel to water flow through test cock (B))
4. Using the Backflow Direct test cock wrench or a small adjustable wrench open Main Test Cock Number 3.
5. Using a #2 Flathead Screwdriver open Bypass Test Cock Number 1.
6. Using the Backflow Direct test cock wrench or a small adjustable wrench open Main Test Cock Number 2.

 Copyright 2011 Backflow Direct, LLC

6”- 8” Deringer 20G/30G Maintenance Instructions

Removing Access Port Cover Plate

1. Using a 15/16” socket wrench loosen all eight bolts on the access port cover plate (A).

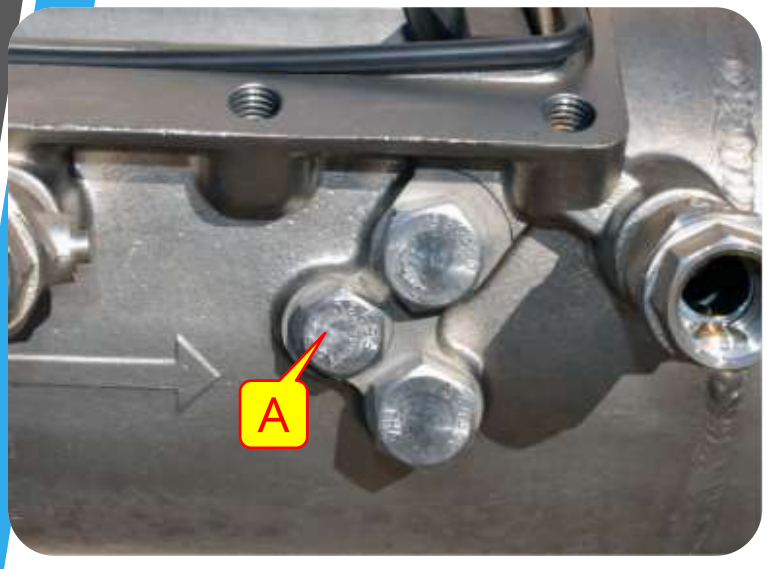
2. Remove bolts and tapered washers (B) and store in a safe place. Be careful not to lose tapered washers as the access cover will not seal properly without the tapered washers.

3. Remove access port cover plate (C). Do not remove Access Port O-ring (D).

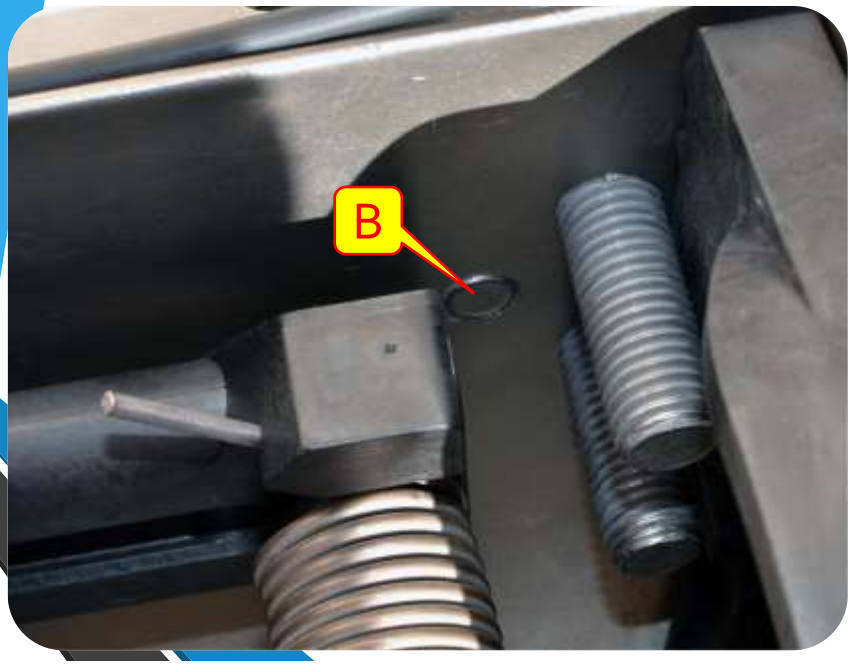
 Copyright 2011 Backflow Direct, LLC

6”- 8” Deringer 20G/30G Maintenance Instructions

Removing the First Dual-Action Check Module

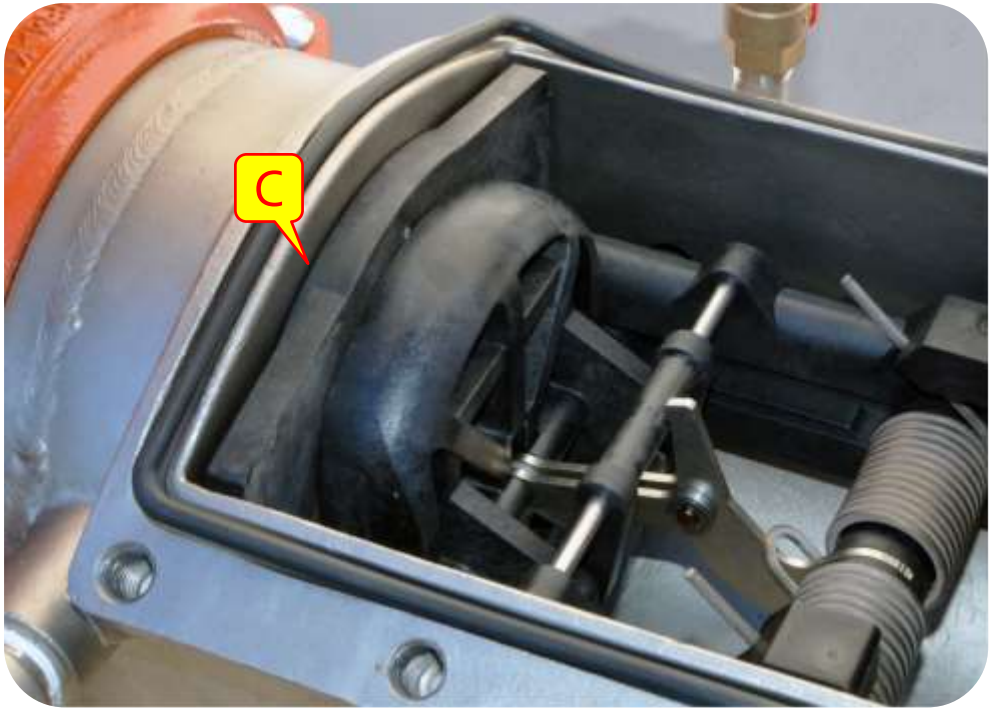


FLOW



1. Use a 15/16” Socket Wrench to loosen the check retainer bolts on both sides of the valve body (A). Do not completely remove check retainer bolts from valve body. Merely loosen the bolts until the ends of the bolts are flush with the inner wall of the valve body(B). Allow easy removal of Check Modules

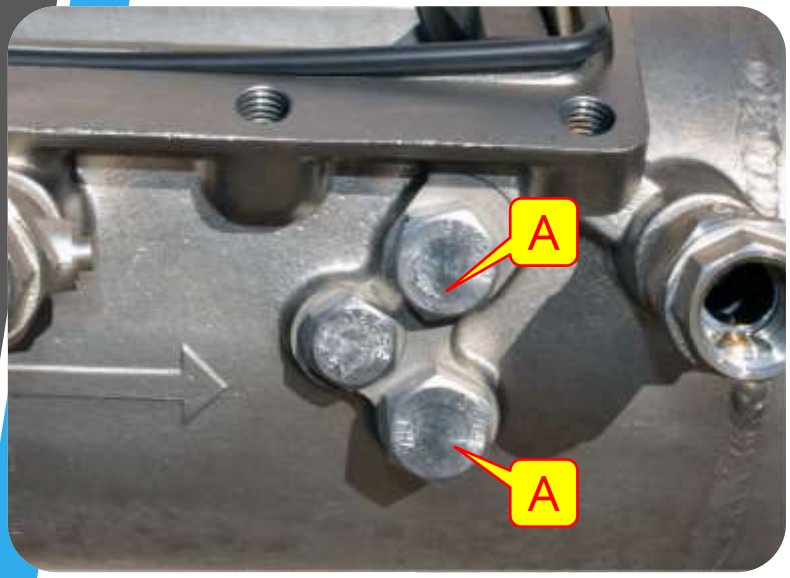
2. Insert a flathead screwdriver between the inner valve body and the First Check Module Flange (C), gently coax the First Check Module in the downstream direction until the First Check Module can easily be removed from the access port by hand.



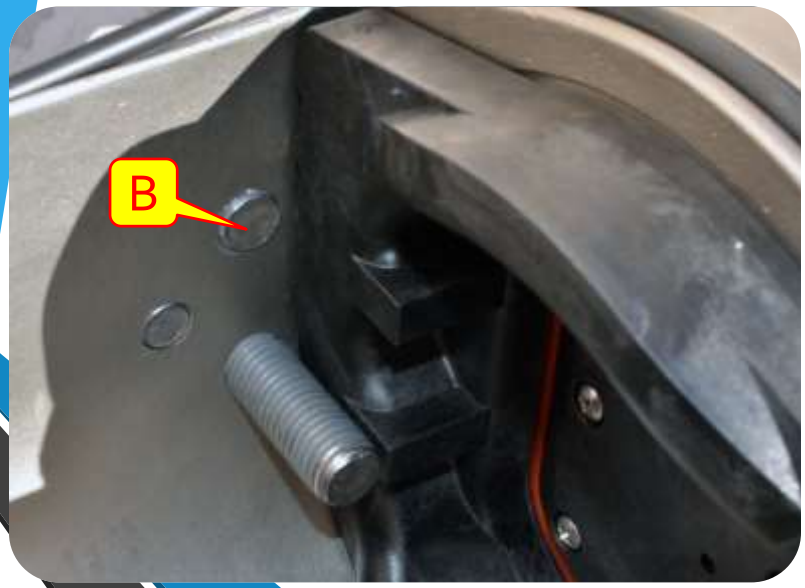
 Copyright 2011 Backflow Direct, LLC

6”- 8” Deringer 20G/30G Maintenance Instructions

Removing the Second Dual-Action Check Module



FLOW



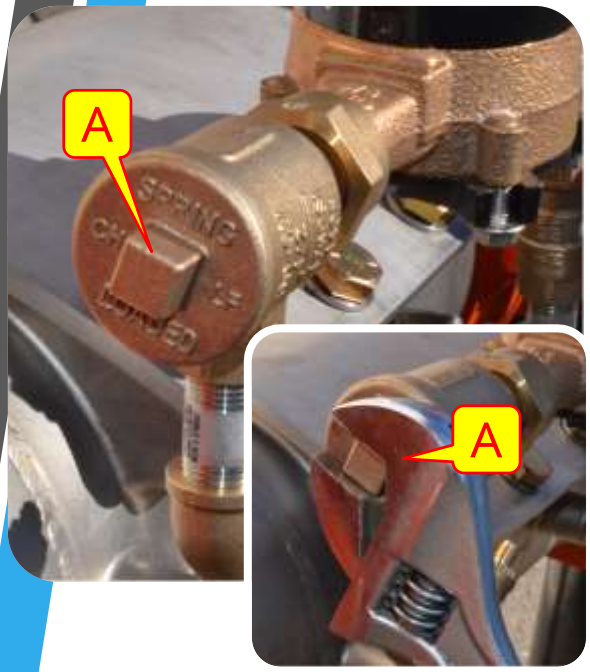
1. Use a 1 1/8” Socket Wrench to loosen the Check Retainer Bolts on each side of the valve body (A). Do not completely remove check retainer bolts from valve body. Merely loosen the bolts until the ends of the bolts are flush with the inner wall of the valve body(B).

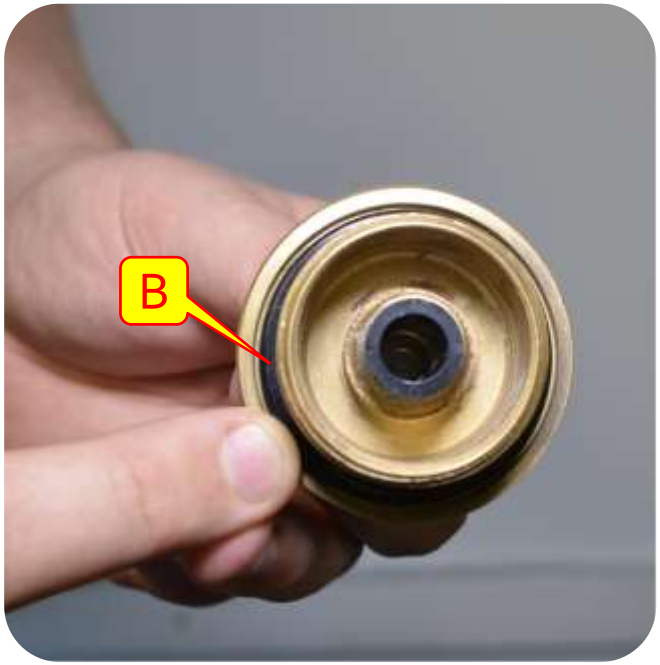
2. Insert a flathead screwdriver between the inner valve body and the Second Check Module Flange (C), gently coax the Second Check Module in the upstream direction until the Second Check Module can easily be removed from the access port by hand.

 Copyright 2011 Backflow Direct, LLC

6”- 8” Deringer 20G/30G Maintenance Instructions

Disassembly and Maintenance of By-Pass Check Valve



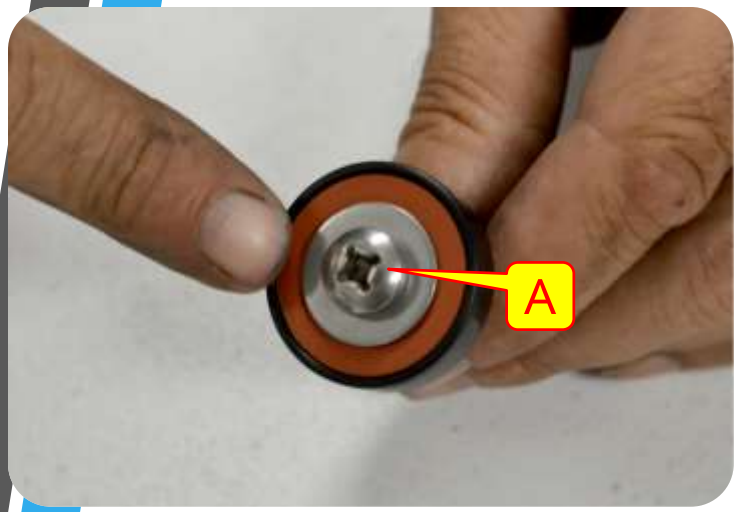


1. Use an adjustable wrench to rotate Check Cover (A) counterclockwise to remove.
2. Examine Cover Plate O-ring (B) for damage or fouling.
3. Remove Spring (C).
4. Remove Check Poppet Assembly (D) and examine for damage or fouling.
5. Examine seat cage for damage or fouling to the Sealing Seat. Do not remove unless the seat cage is being replaced.
6. Reverse the order of above instructions to reassemble By-Pass Check Valve.

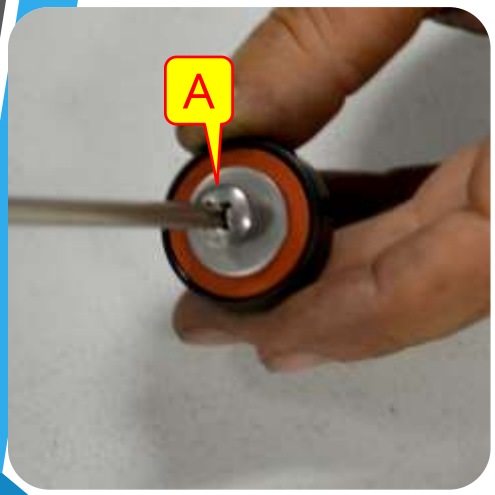
 Copyright 2011 Backflow Direct, LLC

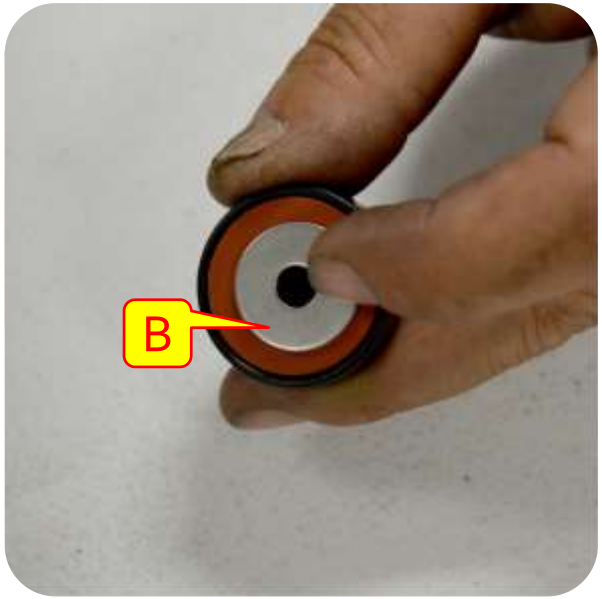
6”- 8” Deringer 20G/30G Maintenance Instructions

Disassembly and Maintenance of By-Pass Check Valve (continued)



1. To replace a damaged Red Silicone Poppet Disk, use a #2 Philips Head Screwdriver to remove the Disk Retaining Screw (A).
2. Remove Disk Retaining Washer (B).
3. Use a Flathead Screwdriver to remove the gasket from Poppet Cavity (C).
4. Install new Red Silicone Poppet Disk (D).
5. Reverse the order of the above instructions to reassemble Check Poppet Assembly.
6. Reverse the order of the instructions on the previous page to reassemble Bypass Check Assembly.

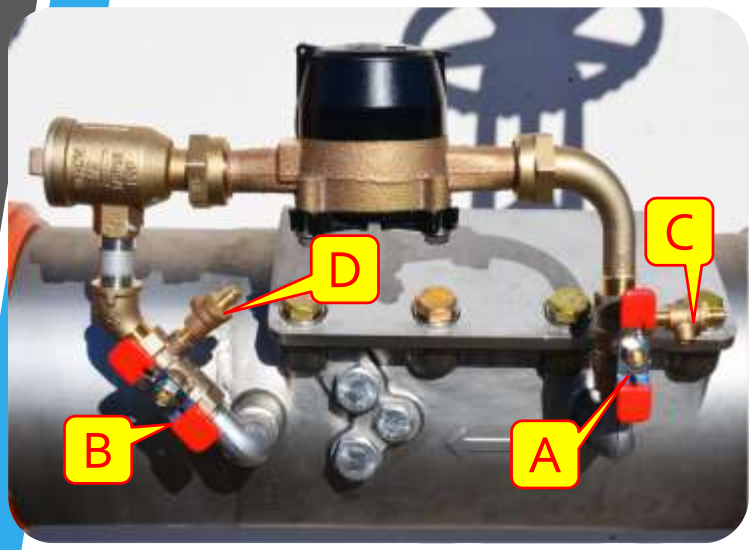




 Copyright 2011 Backflow Direct, LLC

6”- 8” Deringer 20G/30G Maintenance Instructions

Removing Bypass Meter



FLOW

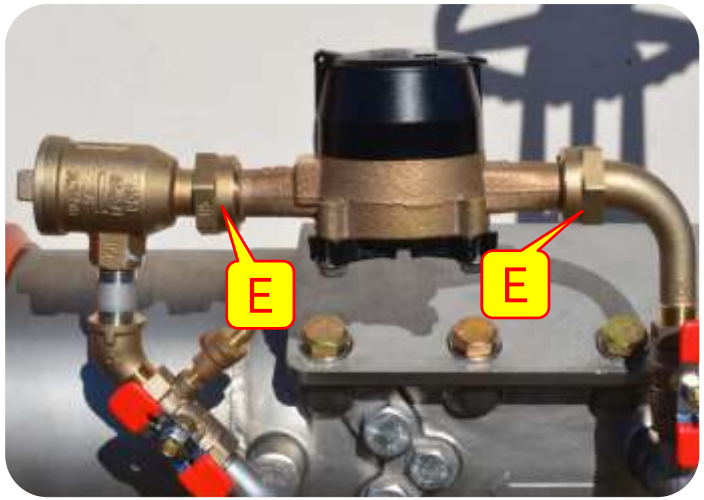
1. Using the Ball Valve Handles close the #2 Bypass Ball Valve (A) and then #1 Bypass Ball Valve (B). (Ball Valve is closed when “T” handle is perpendicular to water flow through Ball Valve).

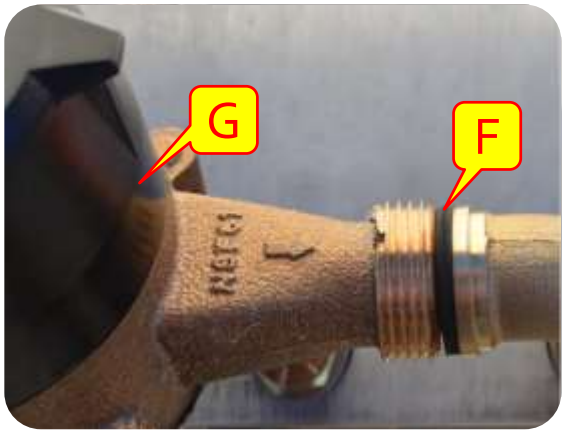
2. Using a #2 Flat Head Screw Driver open Bypass Test Cock #2 (C) and then open Bypass Test Cock #1 (D). (Test Cock is open when screw driver slot is parallel to water flow through Test Cock).

3. Using a large adjustable pliers or wrench unscrew and retract Bypass Meter Coupling Nuts (E) . Remove the Gaskets (F) on both sides of Bypass Meter.

4. Gently remove Bypass Meter (G) from line. It is OK if the bypass fittings move slightly during the removal process.

5. Reverse order of above instructions to reinstall Bypass Meter. Remember install Gaskets (F) before threading Meter Coupling Nuts into place.



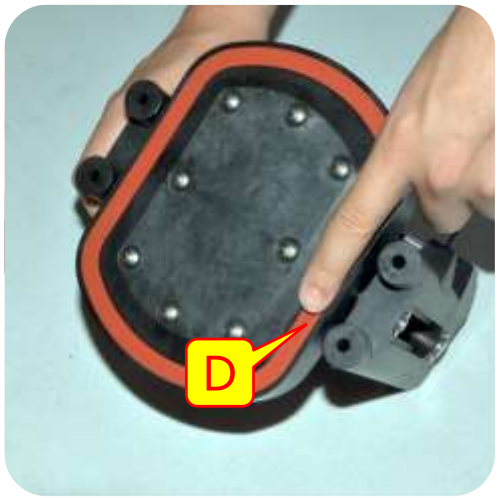


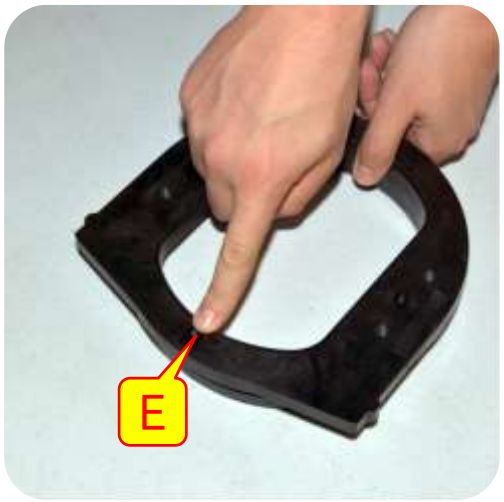
 Copyright 2011 Backflow Direct, LLC

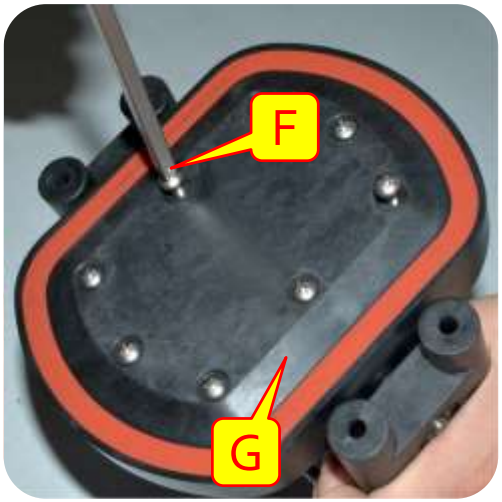
6”- 8” Deringer 20G/30G Maintenance Instructions

Maintenance of First Dual-Action Check Module

1. Use a #2 Philips Head Screwdriver to remove Tower Screws (A) from the First Check Seat (B) The Double Torsion Spring is captured (C) and does not to be retained during maintenance.
2. After removing the Tower Screws (A) Examine the Elastomer Disk (D) and Check Seat (E) for fouling or damage.
3. Should Elastomer Disk (D) need replacement unscrew Disk Retainer Screws (F) and remove Disk Retainer (G). Carefully remove and replace Elastomer Disk (D). When replacing Elastomer Disk (D) be certain that no air, water or debris is trapped in the Clapper (H) cavity behind the Elastomer Disk (D).







4. Reverse the order of the above instructions to reassemble check.
   - Elastomer Disk must be flat in Clapper (H) cavity before tightening Disk Retainer Screws (F).
   - Do not cross thread Disk Retaining Screws (F).

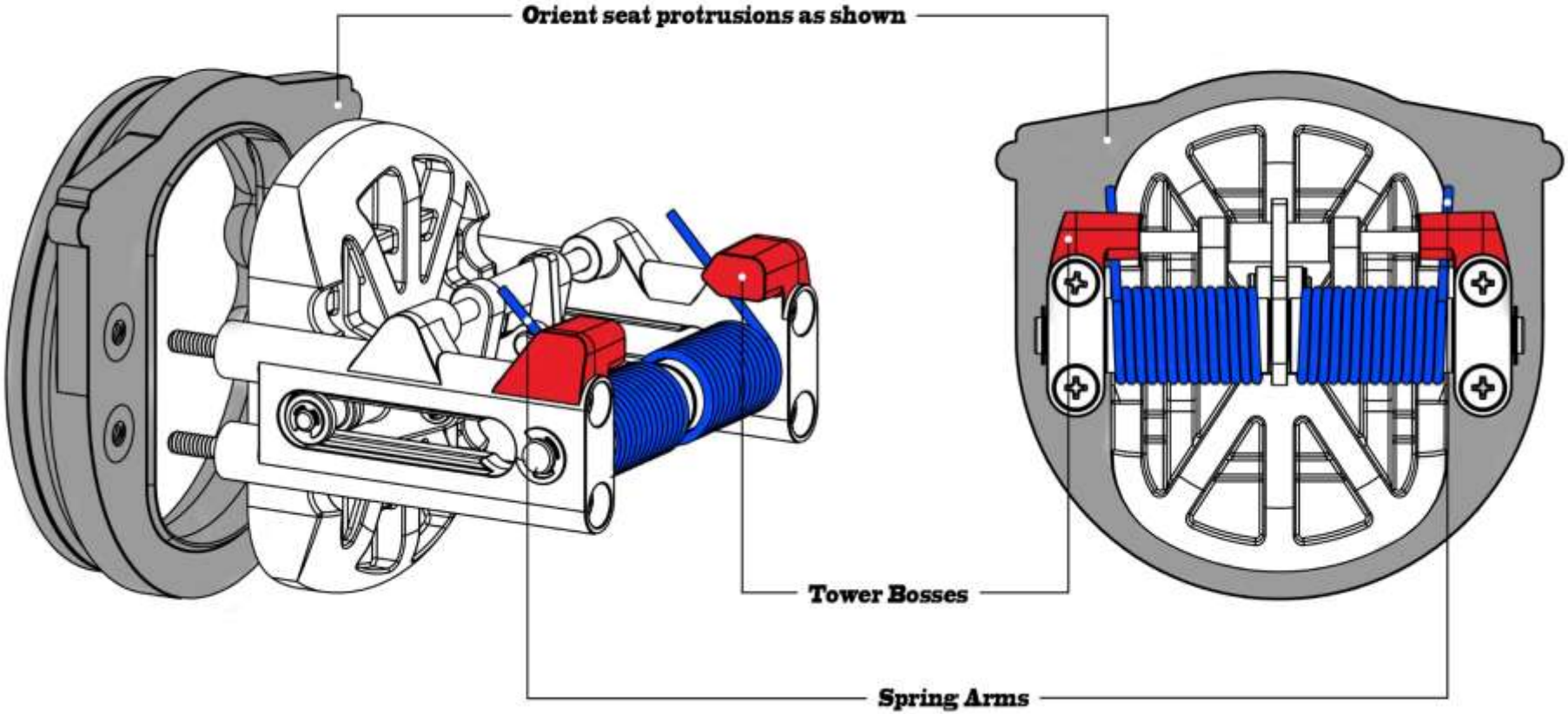
 Copyright 2011 Backflow Direct, LLC

6”- 8” Deringer 20G/30G Maintenance Instructions

Maintenance of First Dual-Action Check Module

Note: The diagram below shows the correct orientation of the First Dual-Action Check Module when being re-attached to the seat. In order to maintain the performance of the valve pay attention to the proper orientation of the check module.

First Check Tower Bosses and Spring Arms Face Up.

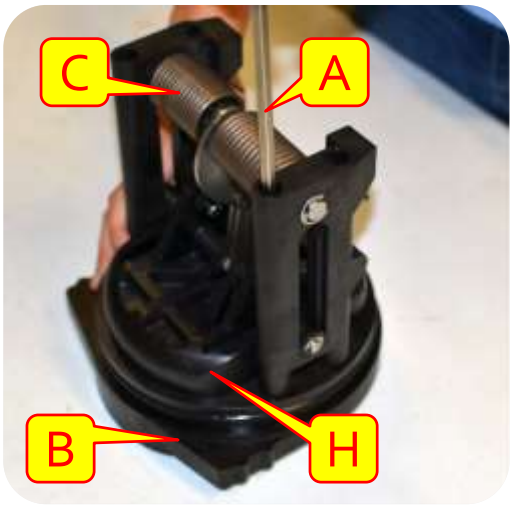


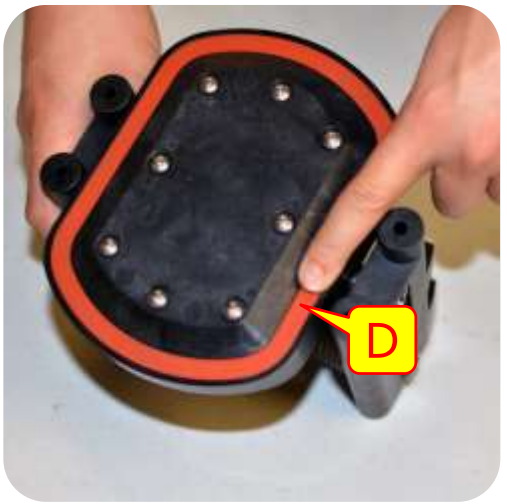
 Copyright 2011 Backflow Direct, LLC

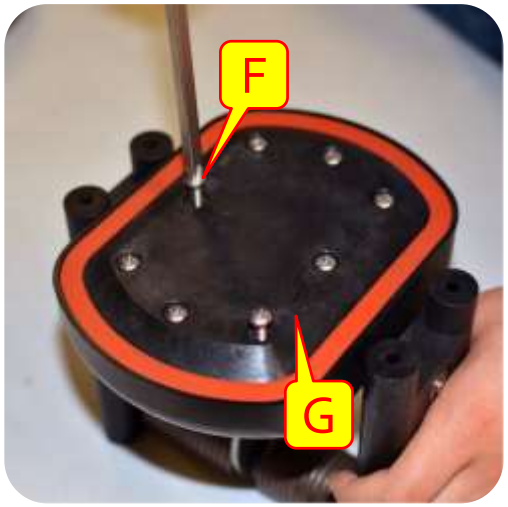
6”- 8” Deringer 20G/30G Maintenance Instructions

Maintenance of Second Dual-Action Check Module

1. Use a #2 Philips Head Screwdriver to remove Tower Screws (A) from the Second Check Seat (B) The Double Torsion Spring is captured (C) and does not to be retained during maintenance.
2. After removing the Tower Screws (A) Examine the Elastomer Disk (D) and Check Seat (E) for fouling or damage.
3. Should Elastomer Disk (D) need replacement unscrew Disk Retainer Screws (F) and remove Disk Retainer (G). Carefully remove and replace Elastomer Disk (D). When replacing Elastomer Disk (D) be certain that no air, water or debris is trapped in the Clapper (H) cavity behind the Elastomer Disk (D).







4. Reverse the order of the above instructions to reassemble check.
   - Elastomer Disk must be flat in Clapper (H) cavity before tightening Disk Retainer Screws (F).
   - Do not cross thread Disk Retaining Screws (F).

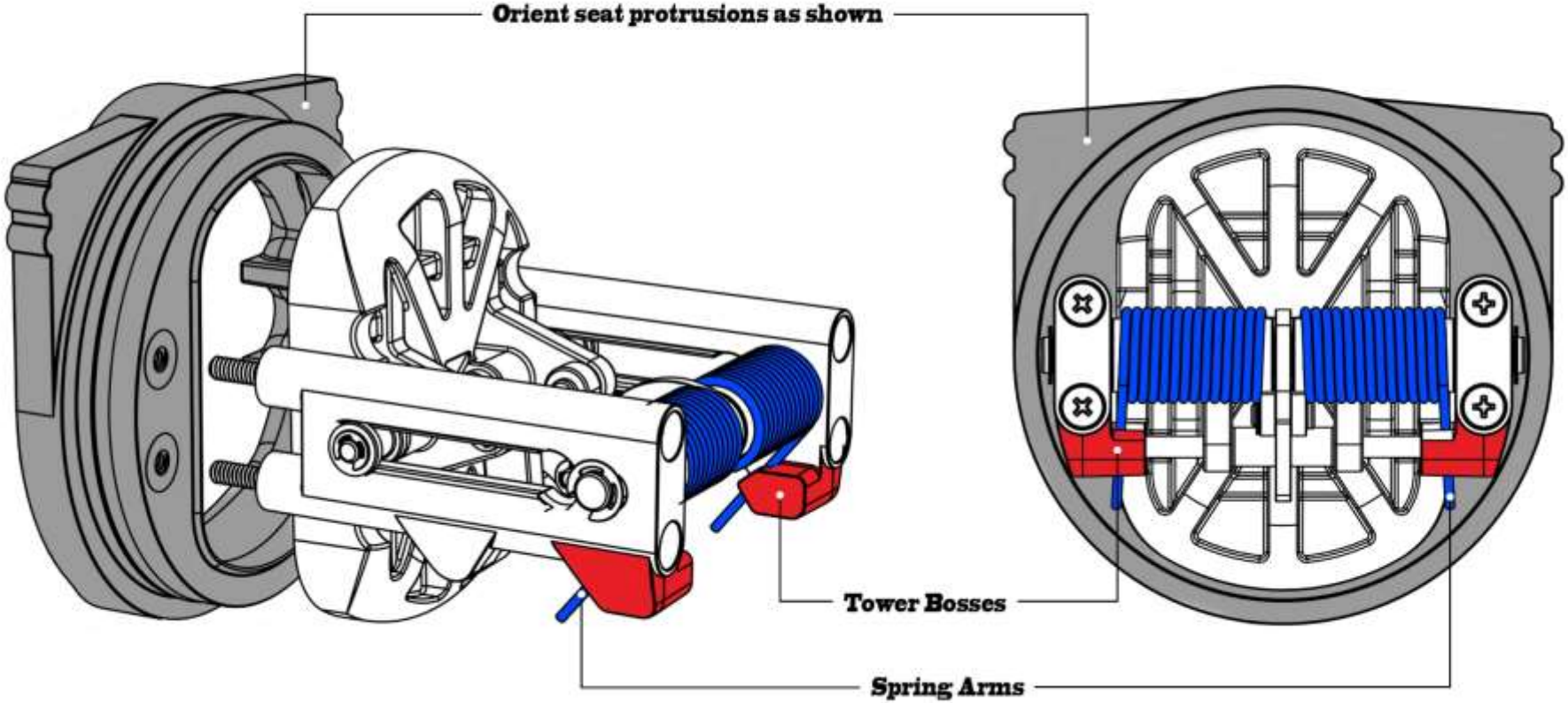
 Copyright 2011 Backflow Direct, LLC

6”- 8” Deringer 20G/30G Maintenance Instructions

Maintenance of Second Dual-Action Check Module

Note: The diagram below shows the correct orientation of the Second Dual-Action Check Module when being re-attached to the seat. In order to maintain the performance of the valve pay attention to the proper orientation of the check module.

Second Check Tower Bosses and Spring Arms Face Down.

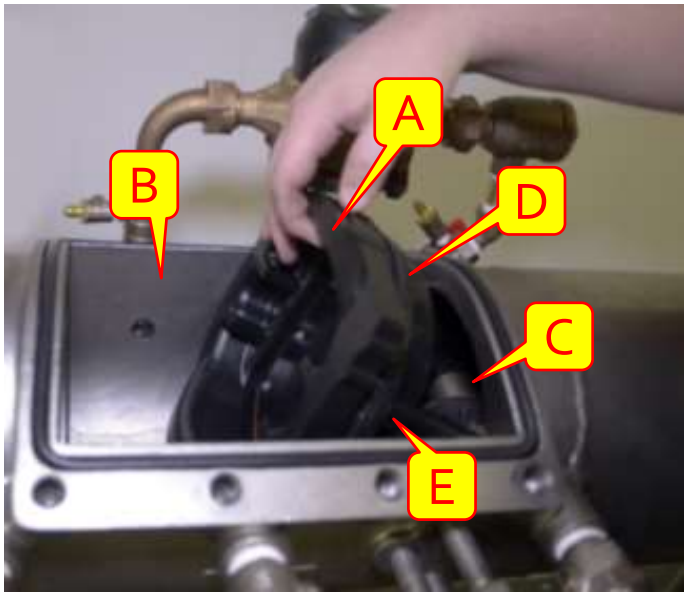


 Copyright 2011 Backflow Direct, LLC

6”- 8” Deringer 20G/30G Maintenance Instructions

Installing Second Dual Action Check Module

1. Insert Second Check Module (A) into Access Port (B) with Second Check Towers (C) pointing downstream. Push Second Check Module (A) downstream into Valve Sealing Ring (D) until Check O-ring (E) rests against Valve Sealing Ring (D). Coax Second Check Module (A) into its fully seated position by hand.
2. Alternatively place 2”x4” piece of wood cut to 5” length (F) against the backside of the Second Check Seat Ring (G). Using a 1”x4” piece of wood cut to 16” length (H) as a lever between Access Port Wall the 2”x4” (F) gently coax the Second Check Module (A) into its fully seated position.
3. Be certain Second Check Module (A) is fully seated and Check O-ring (E) is NOT “fish mouthed” or damaged.
4. Tighten the Second Check Retaining Screws (I) **ONLY AFTER** the First Check Module (A) as been installed.



FLOW →

WARNING: *The Second Check Module must be fully seated to insure Retainer Screws do not bind against Check Seat. Binding Retainer Screws against Check Seat will result in permanent damage to Second Check Modules.*

 Copyright 2011 Backflow Direct, LLC

6”- 8” Deringer 20G/30G Maintenance Instructions

Installing First Dual-Action Check Module

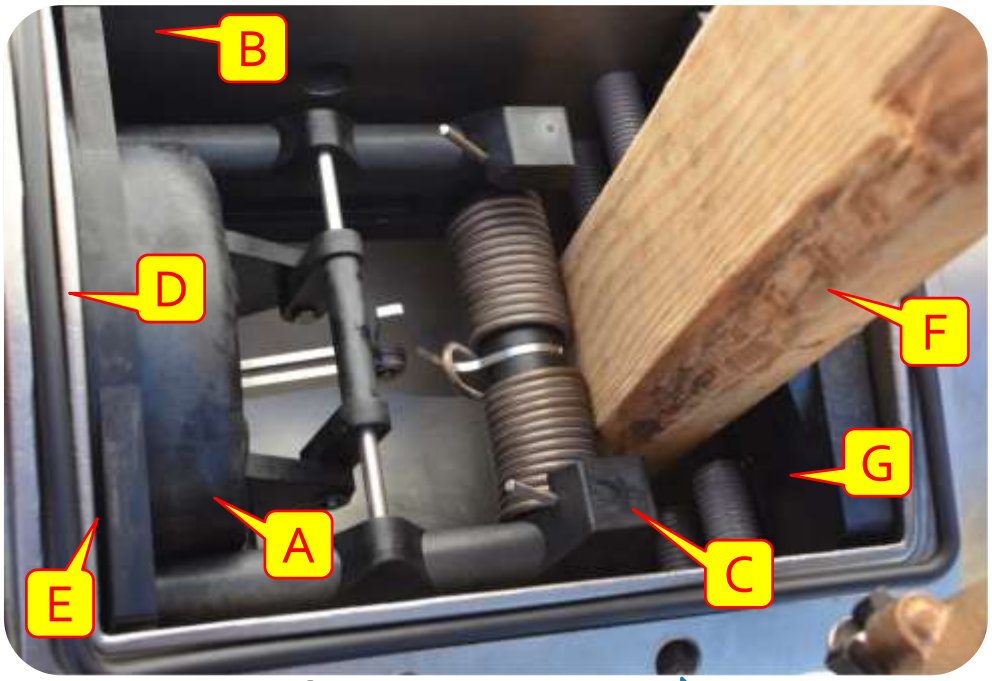
1. Insert First Check Module (A) into Access Port (B) with First Check Towers (C) pointing downstream. Push First Check Module (A) upstream into Valve Sealing Ring (D) until Check O-ring (E) is resting against Valve Sealing Ring (D). Coax First Check Module (A) into its fully seated position by hand.

2. Alternatively, using a piece of 1”x4” wood cut to 16” length (F) as a lever between the Second Check Seat (G) and the First Check Towers (C), coax the First Check Module (A) into its fully seated position.

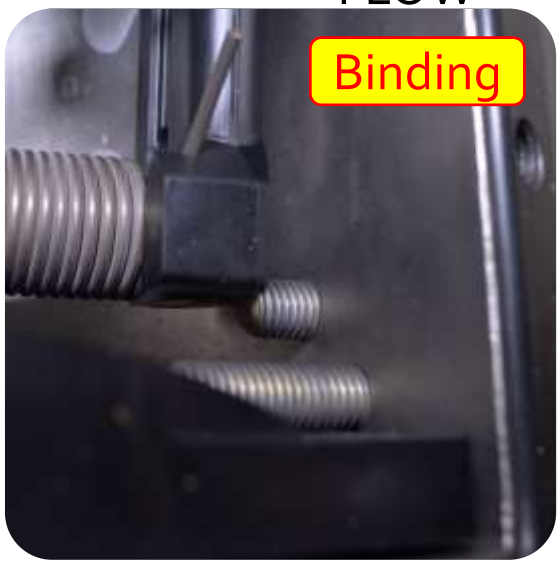
3. Be certain First Check Module (A) is fully seated and Check O-ring (E) is NOT “fish mouthed” or damaged.

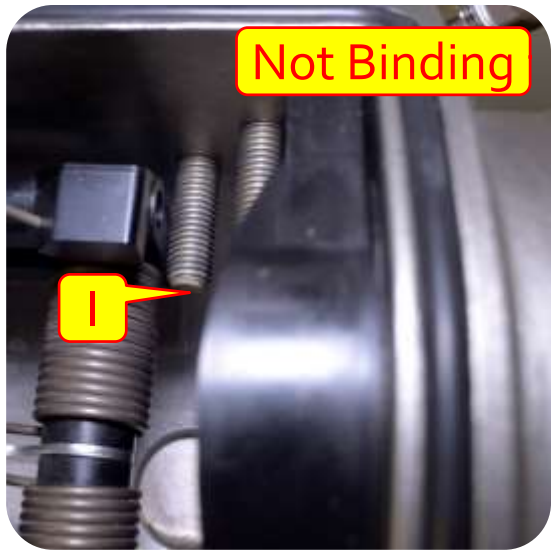
4. Now fully tighten the First and Second Check Retaining Screws (I) .

WARNING: *The First Check Module must be fully seated to insure Retainer Screws do not bind against Check Towers. Binding Retainer Screws against Check Towers will result in permanent damage to First Check Modules.*



FLOW





 Copyright 2011 Backflow Direct, LLC

6”- 8” Deringer 20G/30G Maintenance Instructions

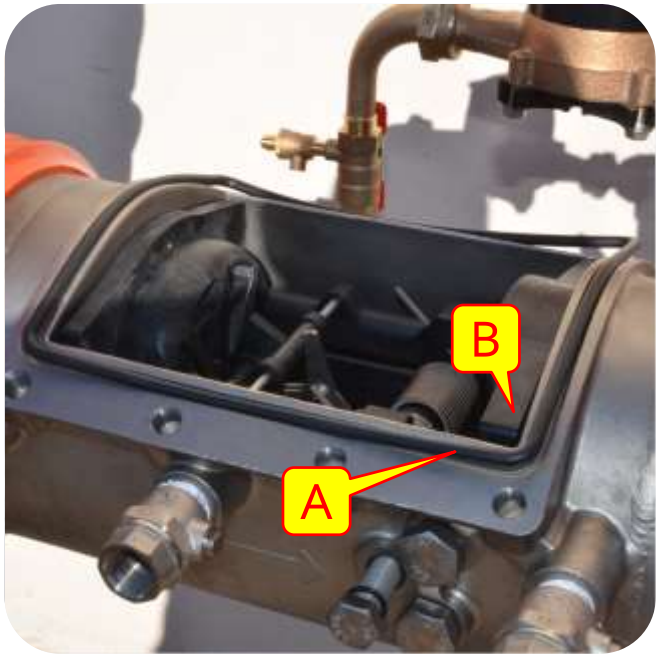
Installing Access Port Cover

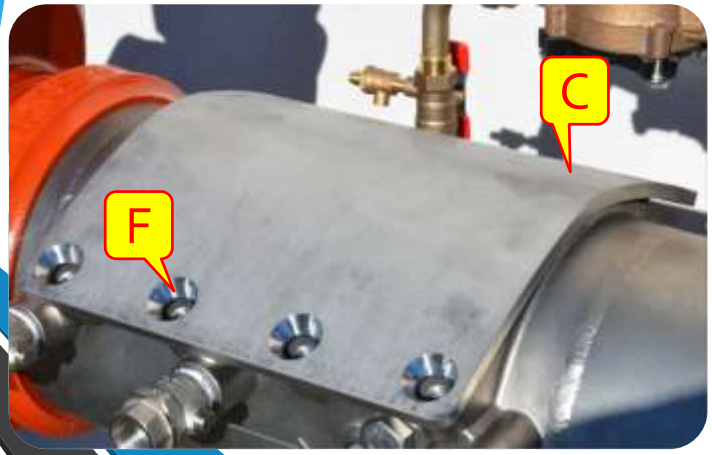
1. It is best to never remove the Access Port O-ring (A). Should the Access Port O-ring (A) become dislodged, simply insert it back into Access Port Groove (B).

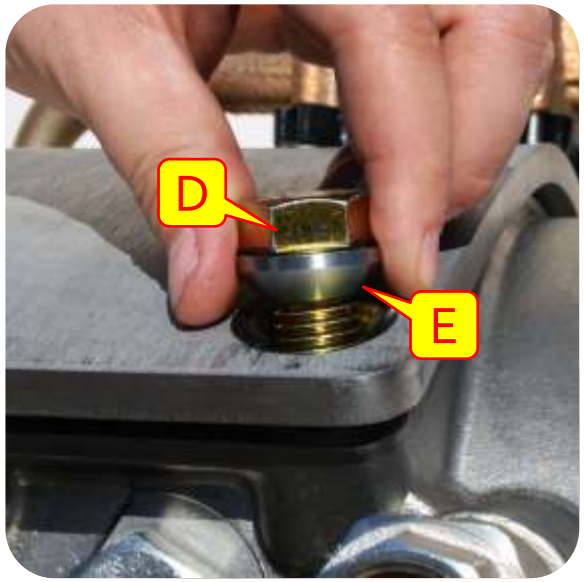
2. Slide the Access Port Cover (C) into place being certain that Access Port O-ring (A) does not become dislodged during the process.

3. Insert Cover Bolts (D) and Tapered Washers (E) into Tapered Cover Holes (F). Tapered Washers (E) must be properly installed or the Access Port Cover (C) will not seal under pressure.

4. Use 15/16” Socket Wrench (G) to tighten the 4 center Cover Bolts (D) alternating from one side of the valve to the other. Then Tighten the four corner bolts alternating from one side of the valve to the other.



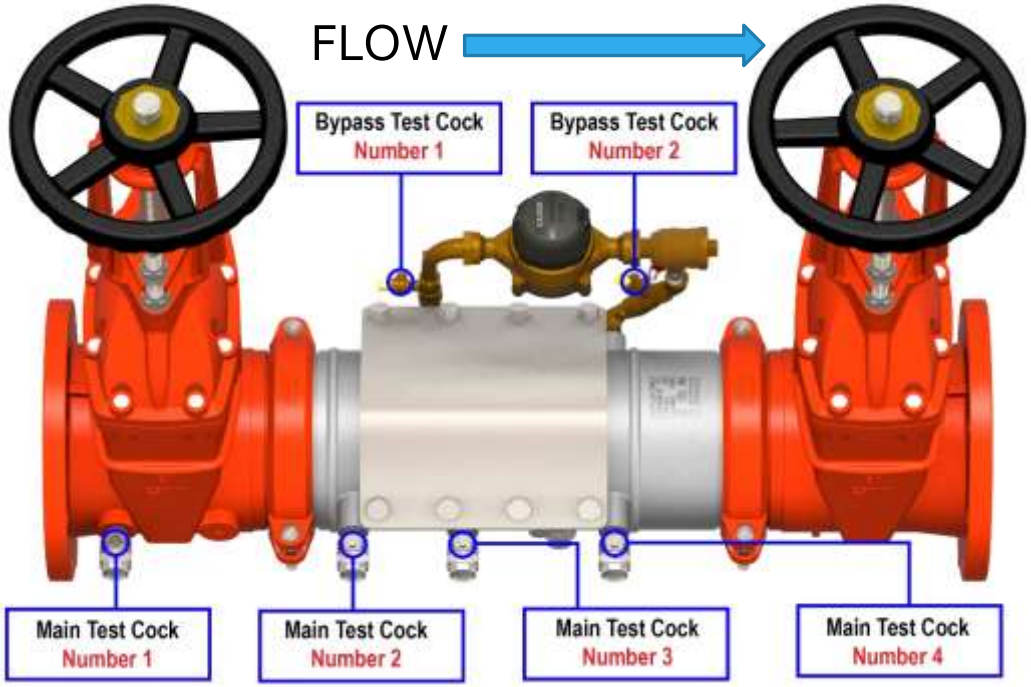




 Copyright 2011 Backflow Direct, LLC

6”- 8” Deringer 20G/30G Maintenance Instructions

Close Test Cocks and Double Check all Closing/Sealing Mechanisms

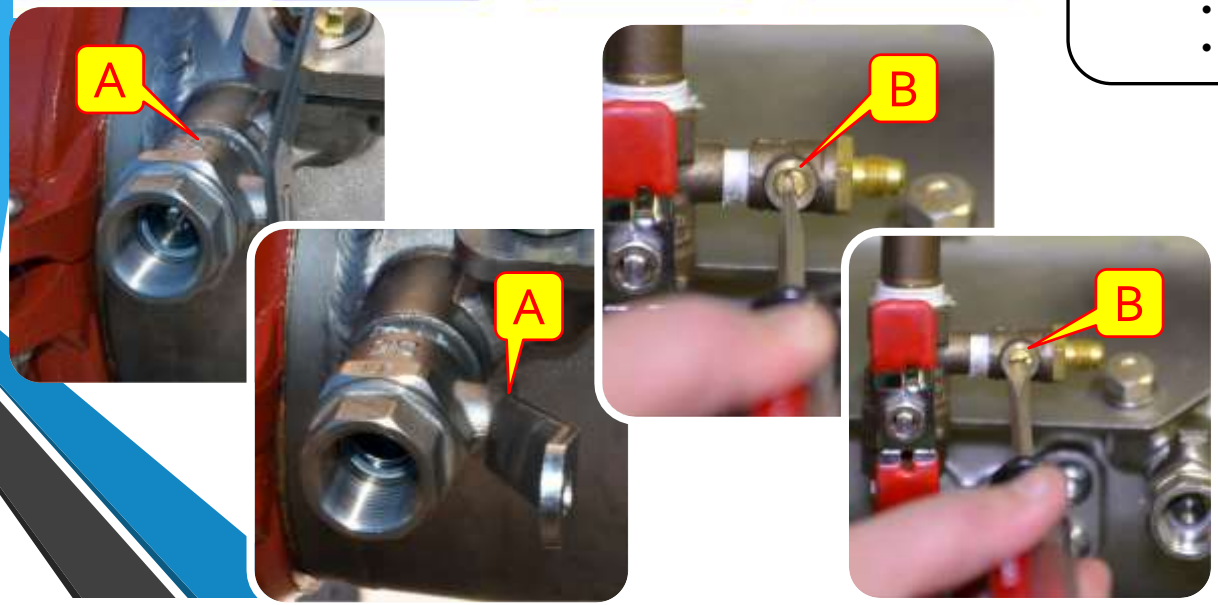


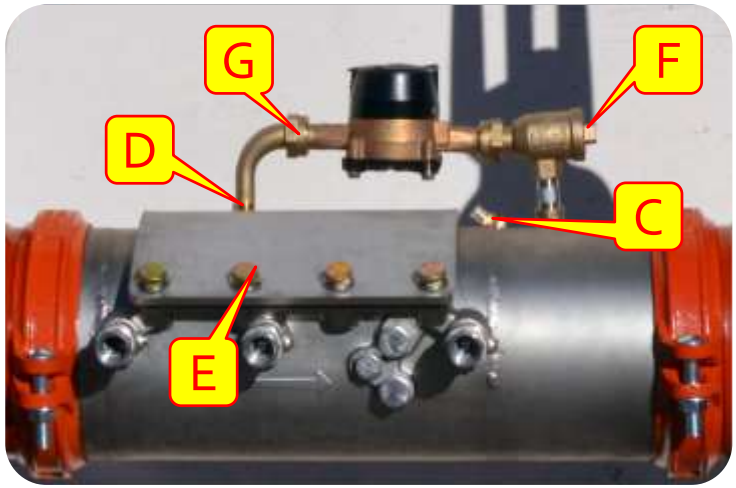
1. Using the Backflow Direct Test Cock Wrench or a small adjustable wrench close Main Test Cocks Number 1, 2 and 3 (A). (Test Cock is closed when wrench flats on stem are perpendicular to water flow through Test Cock)

2. Using a #2 Flathead Screwdriver Close Bypass Test Cock Number 1 and 2 (B). (Test Cock is closed when screwdriver slot on stem is perpendicular to water flow through Test Cock)

3. Use the “T” handles to open bypass Ball Valve Number 1 (C) and then open bypass Ball Valve Number 2 (D). (Ball Valve is open when “T” handle is parallel to water flow through Ball Valve)

4. Double check to be certain of the following:
   - All Cover Bolts are Tightened (E)
   - Bypass Check Valve Cover is Tightened (F)
   - Bypass Meter Coupling Nuts are Tightened (G)



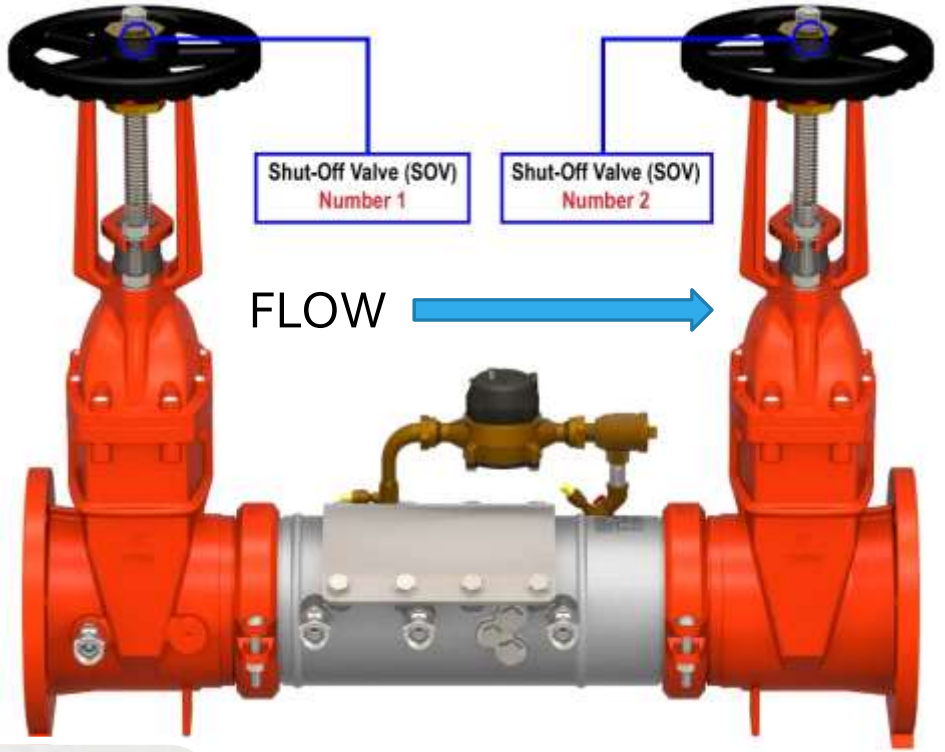


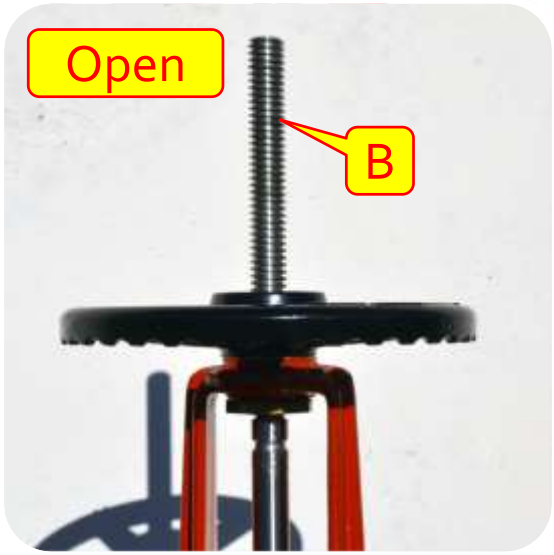
6”- 8” Deringer 20G/30G Maintenance Instructions

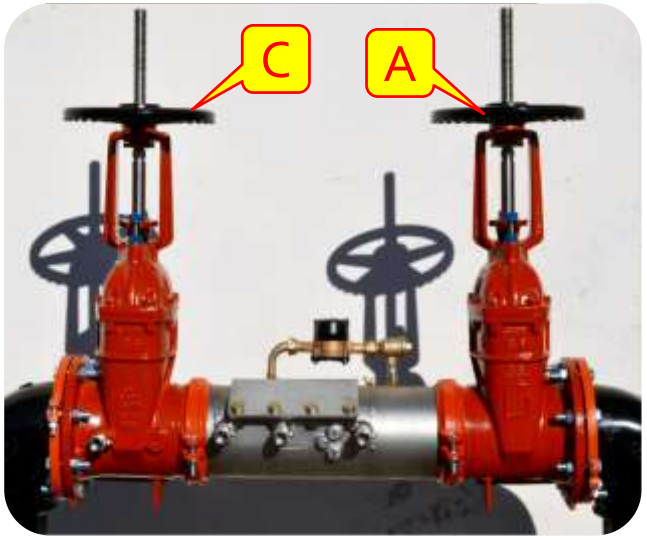
Open Shut-Off Valves to make Backflow Preventer Functional

1. Slowly rotate Shut-Off Valve #2 Handle (A) to the open position. Stem exposed (B).

2. Slowly rotate Shut-Off Valve #1 Handle (C) to the open position. Stem exposed (B).







 Copyright 2011 Backflow Direct, LLC