

Flomatic backflow preventers can be serviced in the field with common household tools. All assemblies have a consistent design with all parts being located in the same locations and valves serviced in the same way.

1. First closed inlet and outlet shut-off valves and bleed any pressure by opening the #4 testcock, then the #3 and #2.
2. Next use a wrench or socket to take the bolts out of top cover. After taking the cover off carefully inspect diaphragms, seals and seating surfaces for debris or damage. (RPZ Fig. 1 DCV Fig. 1a)
3. After taking the cover off either check valve can be removed by simply using pliers to grasp the spring clip (RPZ figure 2, DCV figure 2a).
4. Refer to parts list and figures for detailed parts. Do not use any petroleum based oils, grease, solvent or pipe dope on any of the parts unless instructed to do so. Use only lubricants that comply with FDA PORTABLE WATER requirements for use in drinkable water systems or lubricants supplied by the manufacturer.
5. Next use a medium straight blade screw driver to carefully pry the check valve out.
6. After check valve is out of the body, check for any build up of calcium or other mineral deposits. If this condition exists then carefully remove any build-up with a straight blade screw driver. Also check the O-ring on the check valve for any cuts if it is cut or has any deposits remove and replace or clean.
7. When check valve is out of the body grasp check valve disc holder and use a wrench or socket to unscrew the check valve stem from the disc holder. (Figure 3).
8. When check valve is disassembled inspect the check valve seat for any cuts along the seat ring diameter. If seat is cut it is a sign of high back pressure from thermal water expansion, water hammer or other causes of excessive water hammer. If seat is cut or damaged it should be replaced, or turn used disc over if new seat disc is not available.

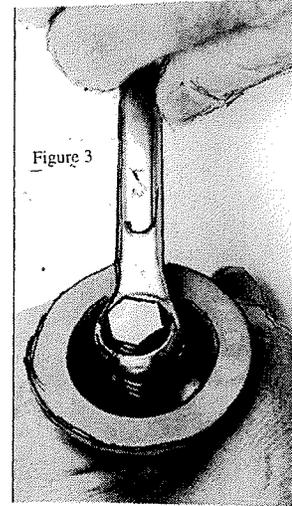


Figure 1

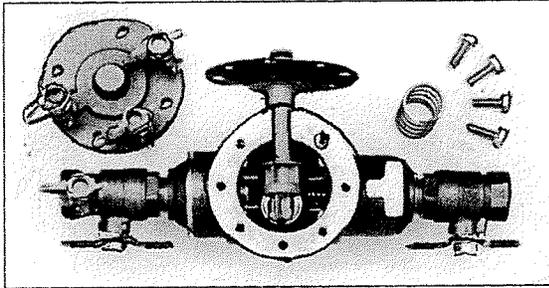


Figure 1a

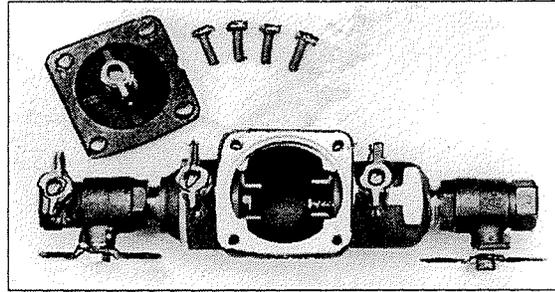


Figure 2a

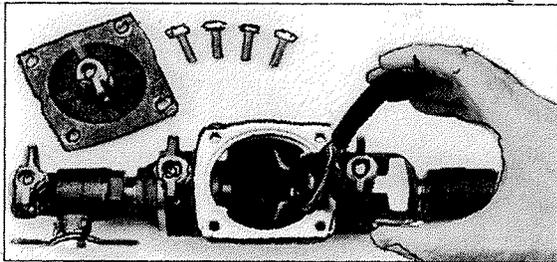
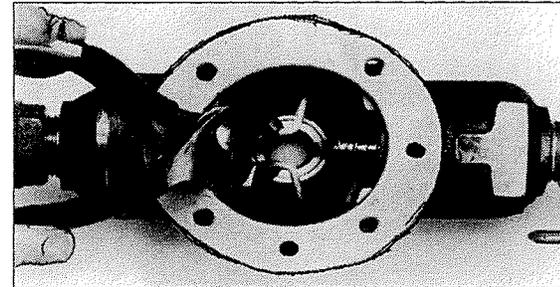


Figure 2



### SERVICE PROCEDURES FOR RPZ/DCV CHECK VALVE

#### Necessary components

- Adjustable Wrench • Pliers • Flat head screw driver • Socket wrench set • Loctite 242 (blue)

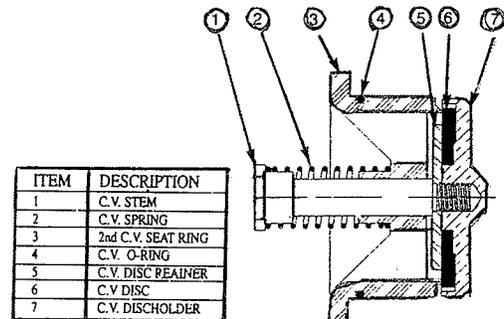
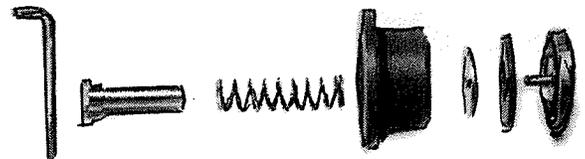
Visually inspect the rubber discs, springs and bolts for defects

If check valve disc is damaged then call a service center or factory for a rubber kit. If the check valve seat ring or spring is damaged call for a complete replacement check valve.

### SUB-ASSEMBLIES: 1ST AND 2ND CHECK VALVES

1. Place check valve disc into check valve disc holder then place check valve disc retainer washer (with shiny side down and dull side up) over the check valve disc.
2. Place the 1st or 2nd check valve seat ring on top of the disc retainer and place O-ring around the slot in the seat ring. Then align these items with threaded hole in check valve disc holder.
3. Apply Loctite on the threads of the check valve disc holder.
4. Slide the spring down the shaft of the 1st or 2nd check valve seat ring. (Use heavy spring for 1st check in RPZ units)
5. Thread the check valve stem through the assembly and tighten the stem into threads on the check valve disc holder.

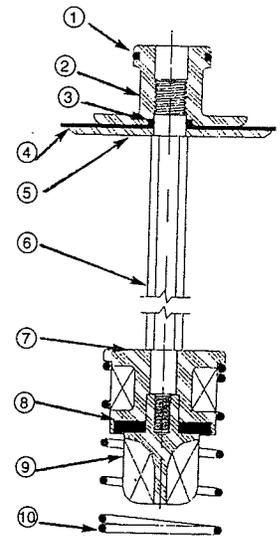
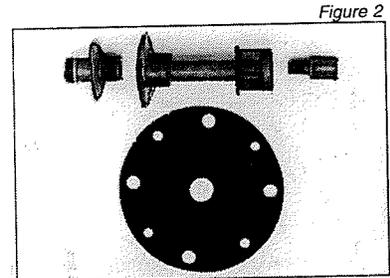
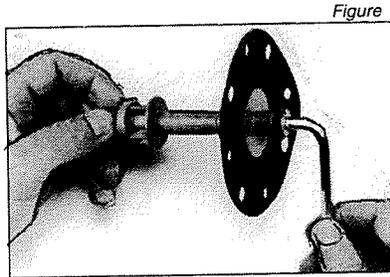
NOTE: DCV and RPZ check valve assemblies are identical with the exception of the 1st check valve spring.



ITEM	DESCRIPTION
1	C.V. STEM
2	C.V. SPRING
3	2nd C.V. SEAT RING
4	C.V. O-RING
5	C.V. DISC RETAINER
6	C.V. DISC
7	C.V. DISCHOLDER

Necessary components • Adjustable Wrench • Pliers • Flat head screw driver • Socket wrench set-Loctite 242 (blue) Relief Valve Assembly

1. After removing the cover of the backflow preventer then remove the relief valve assembly, from body. Inspect the assembly for debris or damage.
2. Grasp the bottom disc retainer and use a Allen wrench to take the assembly apart. Turn the Allen wrench coupter clockwise until the assembly is apart. (figure 1)
3. If the relief valve disc/rubber has dirt or debris on it then rinse in clean water. If the disc/rubber is cut or damage beyond repair contact service center or factory and request a rubber kit for the relief valve assembly.
4. Put relief valve diaphragm plate down the stem then place relief valve diaphragm on top of plate and screw piston onto stem.
5. Put the O-ring onto the relief valve piston.
6. Then place relief valve disc holder on the bottom of the shaft and put the relief valve disc/rubber into disc holder, then screw relief valve retainer on to threads.



ITEM	DESCRIPTION
1	PISTON O-RING
2	R.V. PISTON
3	R.V. STEM O-RING
4	R.V. DIAPHRAGM
5	R.V. DIAPHRAGM PLATE
6	R.V. STEM
7	R.V. DISCHOLDER
8	R.V. DISC
9	R.V. DISC RETAINER
10	R.V. SPRING

RELIEF VALVE ASS'Y

**RPZ/DCV BACKFLOW REASSEMBLY**

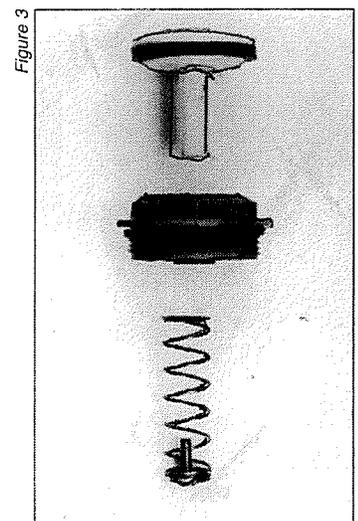
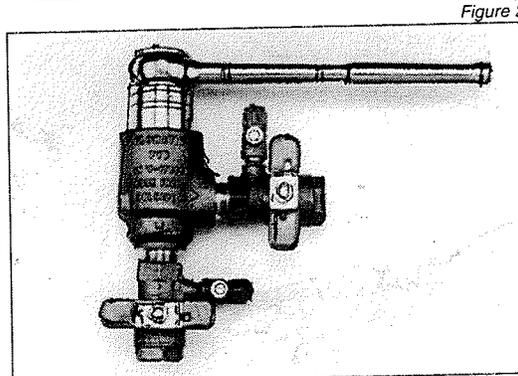
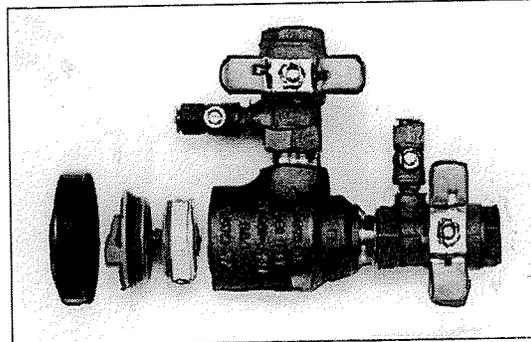
Visually inspect the valve body, springs and bolts for defects. Carefully remove any debris or foreign material with a flat head screwdriver.

Directions for assembly

1. Put lubricant on the 1st and 2nd check valve O-rings.
2. Put the 1st check valve into the body and secure with clamp.
3. Do the same for the 2nd check valve.
4. Lubricate relief valve O-ring with Silicone Lubricant.
5. For the RPZ UNITS Lubricate the relief valve seat into body and put spring over the seat then a-line relief valve assembly with hole in seat and the holes in the diaphragm.
6. Place the RPZ/DCV cover over the body and secure with bolts (on the RPZ units the 2 small slits on the diaphragm should face the inlet side).

**GENERAL SERVICE INSTRUCTIONS  
PRESSURE VACUUM BREAKER 3/4"-1" (20mm - 25mm)**

1. Removal of bonnet/poppet
  - a. Close outlet ball valve then close inlet ball valve. Bleed residual pressure by opening No. 2 testcock.
  - b. Remove canopy screws and canopy.
  - c. Unscrew bonnet assembly from valve body by hand (If necessary, use appropriate size wrench on the outside diameter of bonnet).
  - d. Remove poppet/seal for any cracks or debris if it is dirty then clean with warm water.
2. Removal of check valve
  - a. After removing the bonnet/poppet inspect the check valve.
  - b. Use a 12 point 1-3/8" socket to unscrew check valve out from the body (see figure 2).
  - c. Clean and inspect all components thoroughly prior to reassemble.
  - d. Vent and check valve discs are reversible.
  - e. Use flat head screw driver to disassemble the check valve (see figure 3)



# FLOMATIC VALVES Model DCV Sizes 2 1/2 - 10"

## MAINTENANCE INSTRUCTIONS

### 1. GENERAL

- A. Clean all parts thoroughly with water after disassembly.
- B. Carefully inspect silicone discs, and o-rings for damage.
- C. Test unit after reassembly for proper operation.

### 2. SERVICING CHECK VALVES

- A. Close inlet and outlet shut-off valves.
- B. Open No. 2, 3, and 4 test cocks to release pressure from valve.
- C. Remove the cover bolts valve cover.
- D. Remove check valve spring pin and check valve assembly.
- E. Inspect check valve seat and o-ring for debris and damage.
- F. To remove silicone disc, unscrew check valve stem from disc holder.

G. Remove disc retainer and disc from the discholder and inspect for cuts or embedded debris.

H. The silicone disc may be inverted if the reverse side is undamaged.

I. Inspect the valve cavity and seat area for damage and debris.

J. Reverse the above procedures to reinstall the check valve assemblies. **NOTE: Check valves can only be installed in one configuration, they are not reversible.**

## Model RPZ 2 1/2 - 10"

### Maintenance Instructions

#### 1. GENERAL

- A. Clean all parts thoroughly with water after disassembly.
- B. Carefully inspect silicone discs, diaphragms and o-rings for damage.
- C. Test unit after reassembly for proper operation.

#### 2. SERVICING CHECK VALVES

- A. Close inlet and outlet shut-off valves.
- B. Open # 2, 3 and 4 test cocks to release pressure from valve.
- C. Remove the bolts from the relief valve cover.

#### **CAUTION: COVER IS SPRING LOADED.**

To avoid injury, hold cover down firmly with one hand while loosening bolts.

- D. Remove relief valve cover and assembly.
- E. Remove the check valve spring clips.
- F. Remove the 1st check valve assembly.
- G. Remove the 2nd check valve assembly.

H. Inspect check valve seat and o-ring for debris and damage.



I. To remove silicone disc, unscrew check valve stem from disc holder.

J. Remove disc retainer and disc from the disc holder and inspect for cuts or embedded debris.

K. The silicone disc may be inverted if the reverse side is undamaged.

L. Inspect the valve cavity and seat area for damage and debris.

M. Reverse the above procedures to reinstall the check valve assemblies.

**NOTE: Check valves can only be installed in one configuration, they are not reversible.**

#### 3. SERVICING RELIEF VALVE

- A. Remove relief valve cover bolts.

#### **CAUTION: COVER IS SPRING LOADED.**

Hold cover firmly with one hand while removing bolts.

B. Remove cover, piston assembly and spring.

C. Inspect o-ring and diaphragm for cuts or embedded debris.

D. Remove diaphragm by unscrewing the relief valve piston from the stem.

E. Inspect relief valve disc for damage and debris.

F. To remove disc, unscrew disc retainer from relief valve stem.

**NOTE: Relief valve disc is also reversible.**

G. Remove stainless steel relief valve seat and inspect for damage and debris. Also inspect seat o-ring for damage.

H. Reverse the above procedures to reinstall the relief valve.

**DO NOT REMOVE THE SPRING RETAINER FROM THE STEM ASSEMBLY.**

Remove the disc holder from the stem assembly.

