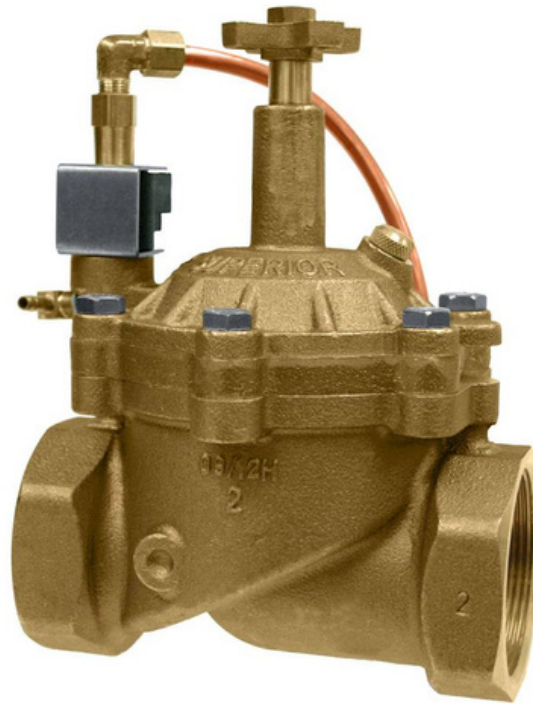




SUPERIOR

# Model 3200

Disassembly instructions and  
Troubleshooting



# Index

**Parts and Sub-Assemblies (13)**

**Solenoid Disassembly Instructions (2-4)**

**Troubleshooting**

- **Continuous leak from barbed fitting below solenoid while valve is open (10)**
- **Continuous leak from vent hole in rear side of chamber plate while valve is closed (10)**
- **Valve will not close (8,9)**
- **Valve will not open (11,12)**

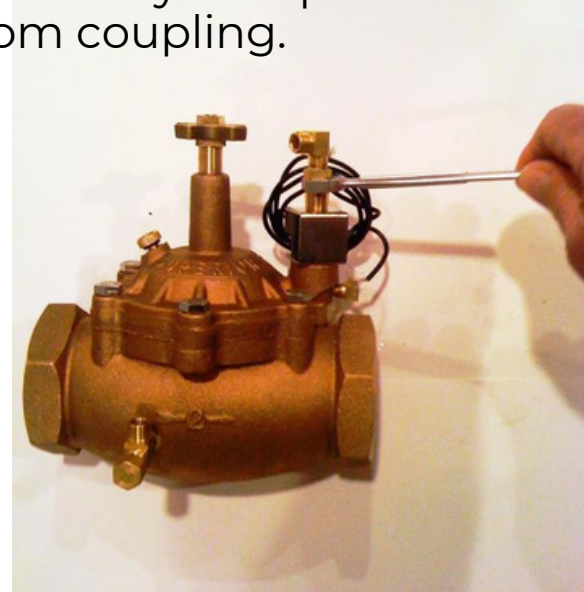
**Valve Disassembly Instructions (5-7)**

# Solenoid Disassembly Instructions

**1.** Remove copper tubing that connects T-filter assembly to L-fitting above solenoid



**2.** Apply ½” wrench to hex portion of coupling that connects solenoid post to L-fitting and unscrew coupling and L-fitting from solenoid post. It is not necessary to separate L-fitting from coupling.



# Solenoid Disassembly Instructions

**3.** After removing coupling and L-fitting, slide solenoid coil and U-frame off of solenoid post.



**4.** Using a flathead screwdriver, unscrew solenoid post from bonnet.



# Solenoid Disassembly Instructions

**5.** Take care as you remove solenoid post as the plunger will drop out of the plunger tube into solenoid cavity.



**6.** Photo of solenoid cavity. The o-ring seal can be seen at bottom of cavity. The port in the center of the cavity is the exhaust port. The other port connects the diaphragm chamber to the solenoid chamber.



# Valve Disassembly Instructions

**1.** Using a ½" wrench, remove copper tubing that connects T-filter assembly to L-fitting above solenoid.

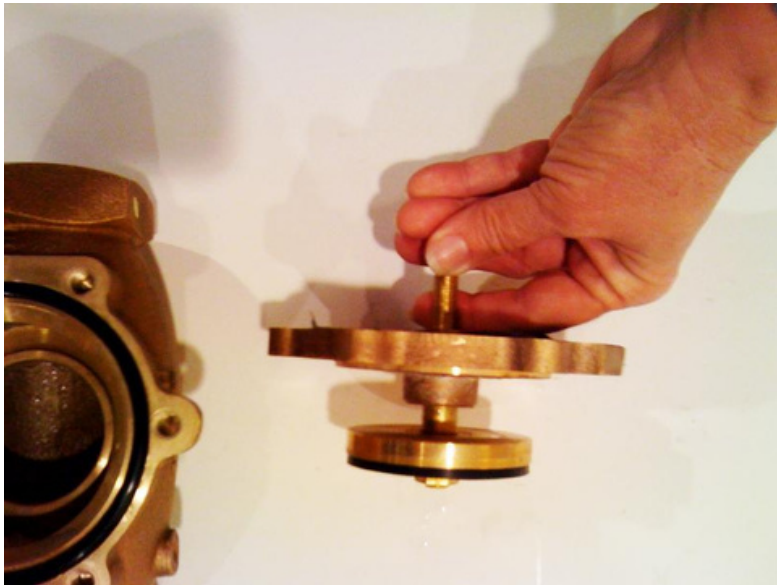


**2.** Unscrew top bolts and lift and remove bonnet from rest of valve.



# Valve Disassembly Instructions

**3.** Remove chamber-plate assembly from valve body.

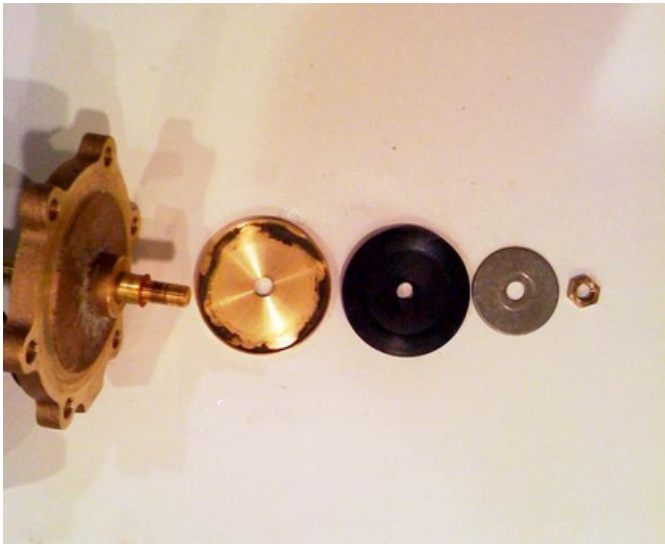


**4.** Photo of valve body, chamber-plate assembly and bonnet.



# Valve Disassembly Instructions

**5.** To replace rubber seat disc, unscrew retaining nut from bottom of diaphragm shaft then remove retaining washer, rubber seat disc, and disc holder.



**6.** To gain access to shaft o-ring, remove diaphragm shaft from chamber-plate after the seat disc and disc holder have been removed from bottom of shaft.





# Troubleshooting

## PROBLEM: Valve will not close.

### CAUSE #1:

Water is not flowing through copper tubing so no water is able to enter upper diaphragm chamber. To verify, loosen compression fitting that connects tubing to L-fitting above solenoid. If no water exhausts from loose fitting, then diagnosis is confirmed.

### SOLUTION:

Shut off water supply to valve, then unscrew and remove T-filter from T-fitting. Clean filter and metering rod or replace T-filter if necessary.



### CAUSE #2:

Malfunctioning solenoid. Either the port at top of plunger tube is clogged, or plunger is stuck in plunger tube and will not drop when solenoid is de-energized.

### SOLUTION:

Disassemble solenoid. If plunger is not stuck in plunger tube, clean port at top of plunger tube with sharp object like a paper clip. If plunger is stuck in plunger tube, attempt to dislodge and clean tube and plunger. Replace stem and plunger assembly if necessary.



# Troubleshooting

**PROBLEM: Valve will not close.**

**CAUSE #3:**

Debris in body of valve or embedded in rubber seat disc.

**SOLUTION:**

Remove bonnet and chamber-plate assembly from valve body. Remove debris from valve body or seat disc. If seat disc is damaged, replace chamber plate assembly or disassemble seat from diaphragm shaft and flip seat disc or replace if necessary.



**PROBLEM:**

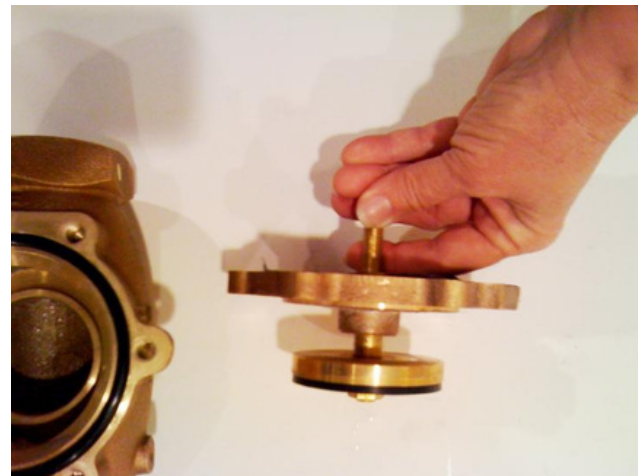
Valve will not close and water constantly exhausts from vent hole in chamber-plate (located on rear side of valve).

**CAUSE:**

Torn diaphragm.

**SOLUTION:**

Replace chamber plate assembly.



# Troubleshooting

## **PROBLEM:**

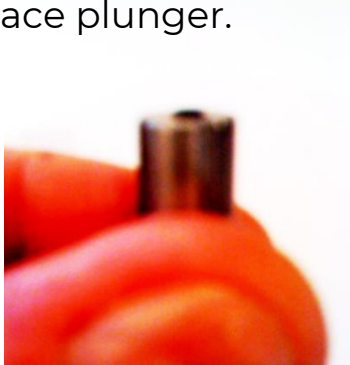
Water continuously exhausts from barbed L-fitting below solenoid while valve is open.

## **CAUSE:**

Solenoid plunger is not sealing 3/16" port at top of plunger tube. This could be due to debris in plunger tube, or the rubber seat on top side of plunger (which is spring loaded) is stuck below the top surface of plunger. It should protrude about 1/32" above the top surface.

## **SOLUTION:**

Disassemble solenoid and check and clean plunger tube as necessary. If seat on top of plunger appears to be stuck below top surface, attempt to dislodge with paper clip or wire. If necessary, replace plunger.



## **PROBLEM:**

While valve is closed, water continuously exhausts out of vent hole in rear side of chamber- plate.

## **CAUSE:**

Damaged shaft o-ring.

## **SOLUTION:**

Replace chamber-plate assembly, or remove damaged o-ring from diaphragm shaft and replace with a new o-ring. Apply silicone grease to o- ring before re-assembling chamber plate assembly.



# Troubleshooting

## **PROBLEM: Valve will not open.**

### **CAUSE #1:**

Solenoid coil is not energized. Place your fingers around the solenoid coil. If the coil is receiving power, you will feel a vibration. If not, problem is due to one of the following: 1) No output from controller, 2) broken or disconnected wire, or 3) bad solenoid coil.

### **SOLUTION:**

With a volt meter, check output at controller. There should be 24 VAC output. If output is verified, then separate solenoid lead wires from valve wires (may need to cut wires) and with an Ohm meter, conduct an Ohm reading. If reading is between 24 and 27 Ohms, the coil is good. If the reading is zero or infinity, replace coil. If the coil is OK then the problem is a broken or disconnected wire between the controller and solenoid coil.



# Troubleshooting

**PROBLEM:**

Valve will not open.

**CAUSE #2:**

Mineral buildup on solenoid plunger or corrosion in plunger tube is preventing plunger from lifting when solenoid is energized.

**SOLUTION:**

Replace solenoid stem and plunger assembly.



# Parts and Sub-Assemblies

**Solenoid Coil (24 VAC):** 16008

**3-Way Solenoid Stem and Plunger Assembly:** 16300B

**24 VAC 3-Way Solenoid Assembly:** 16075-A

**Flow-Control Assembly:** 1 ½"-16209-N, 2"-16210-N, 2 ½" & 3"-16221-N

**Manual Bleed Screw:** 15013

**L-Fitting:** 16500-1

**T-Filter:** 16520-1

**T-Filter and T-Fitting Assembly:** 16520-2

**Diaphragm:** 1 ½" & 2"-16058, 2 ½" & 3"-400028

**Top Assembly:** 1 ½" & 2"-16410, 2 ½" & 3"-16411

**Copper Tubing (includes compression nuts):** 1 ½" & 2"-16511, 2 ½" & 3"-16512

**Diaphragm and Chamber Plate Assembly:** 1 ½"-16404, 2"-16405, 2 ½" & 3"-16406