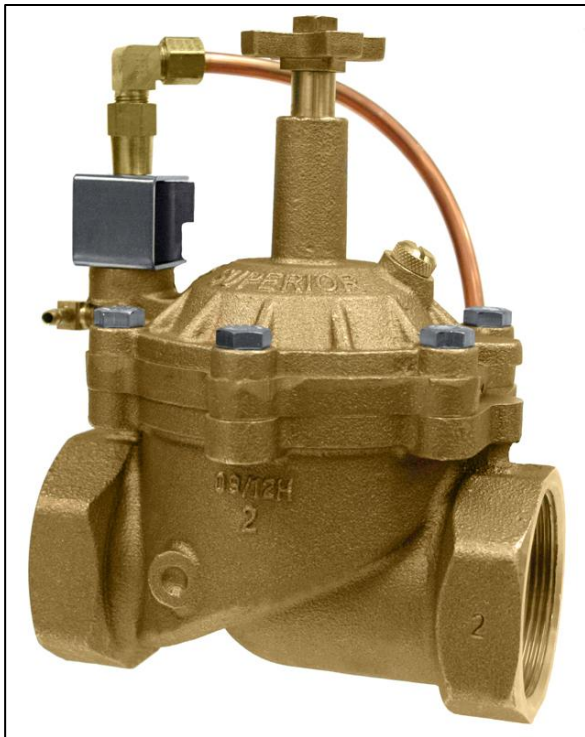


Model 3300

Disassembly instructions and Troubleshooting

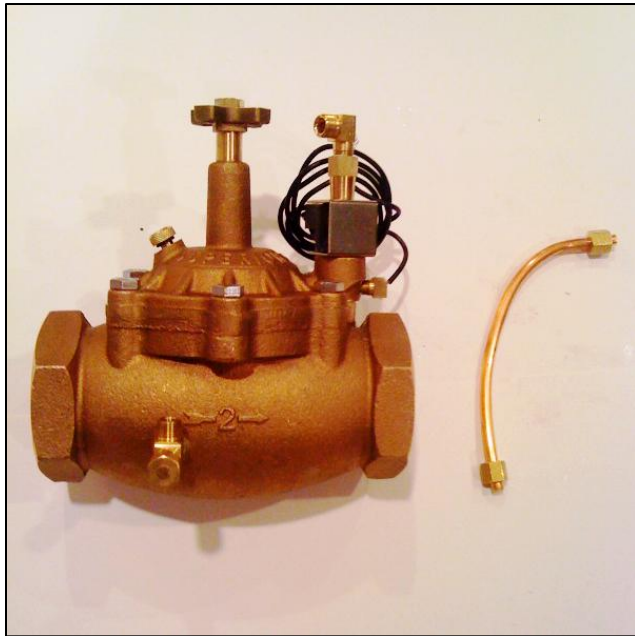


Index

	Page
Solenoid Disassembly Instructions	2-4
Valve Disassembly Instructions	5-8
Troubleshooting	
• Valve will not close.	9-11
• Valve remains closed when not energized.	12-14
• Valve opens only part way.	14
• Valve closes whenever controller energizes a station.	15
Parts and Sub-Assemblies	16

Solenoid Disassembly Instructions

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



2. Apply ½” wrench to coupling that connects solenoid post to L-fitting and unscrew coupling and L-fitting from solenoid post. It is not necessary to remove L fitting from coupling.



Solenoid Disassembly Instructions

3. Slide solenoid coil and U-frame off of solenoid post.



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



Solenoid Disassembly Instructions

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

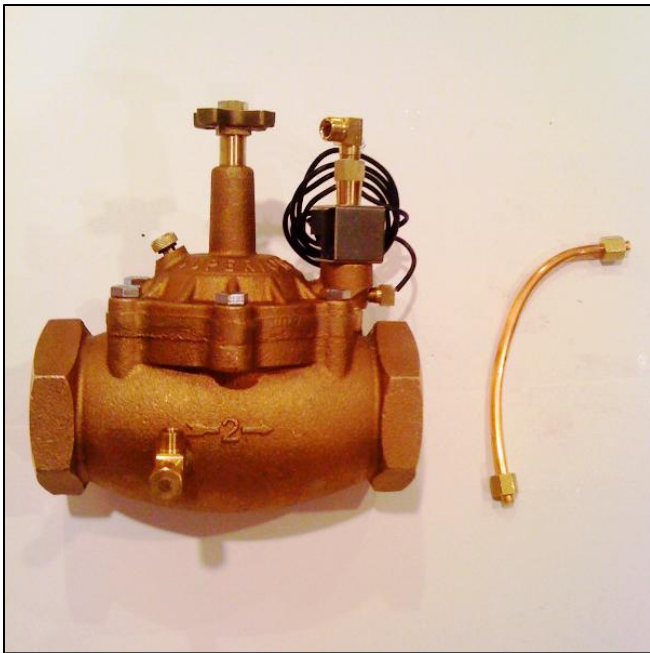


6. The photo shows the solenoid cavity of the model 3300. The port directly to the right of the exhaust port (center port) serves no function. The port directly above the exhaust port in this photo leads to the lower diaphragm chamber. The exhaust port leads to the barbed L-fitting where water in lower diaphragm chamber exhausts to atmosphere when solenoid is energized.

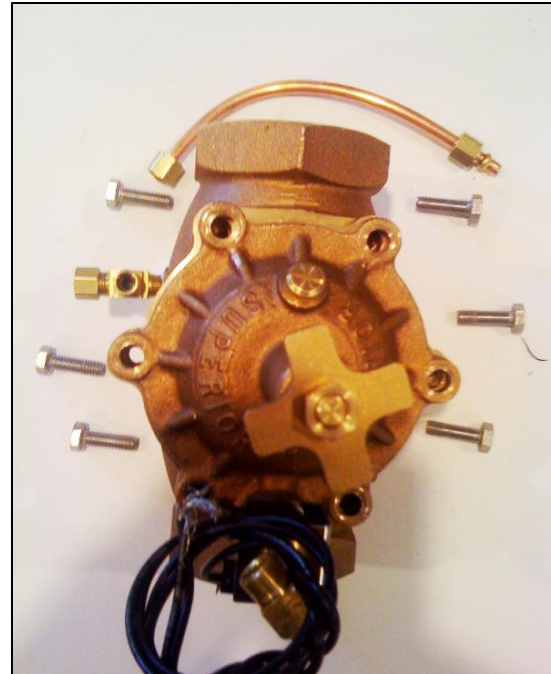


Valve Disassembly Instructions

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

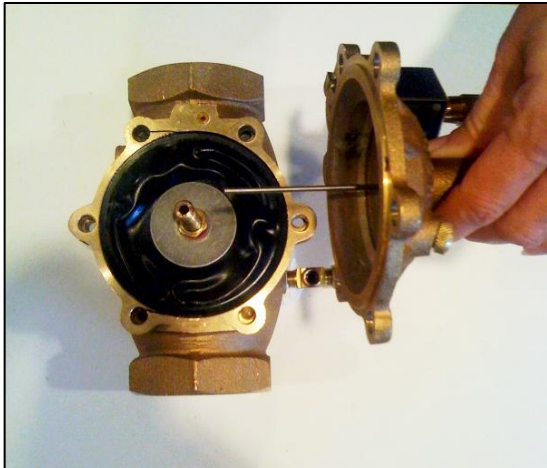


2. Remove bolts that fasten top to body and chamber-plate assembly.



Valve Disassembly Instructions

3. Lift top straight up and off of body and chamber-plate assembly taking care that metering rod clears the top of the diaphragm shaft.

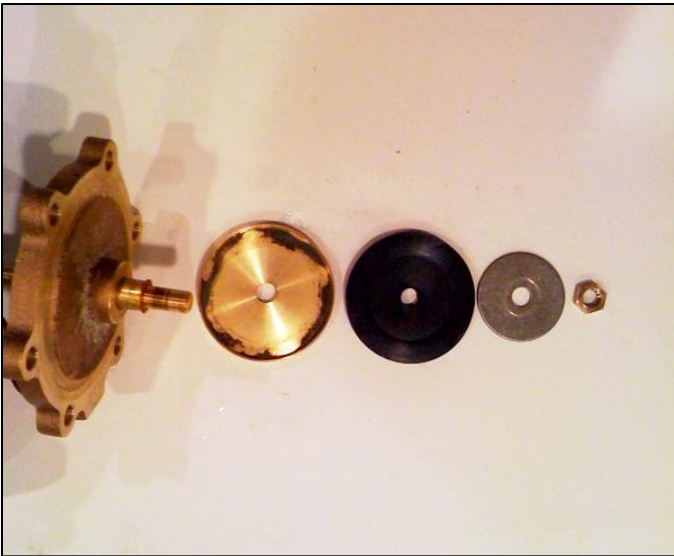


4. Remove chamber-plate assembly from valve body.



Valve Disassembly Instructions

5. To remove rubber seat disc from chamber-plate assembly, use a 9/16" wrench to remove nut at bottom of diaphragm shaft and remove retaining washer, rubber seat disc, and disc holder.



6. To access shaft o-ring, first follow step 5 instructions then remove diaphragm shaft from chamber-plate.



Valve Disassembly Instructions

6. To remove T-filter from T-fitting, apply ½" wrench to cap and unscrew from T-fitting.

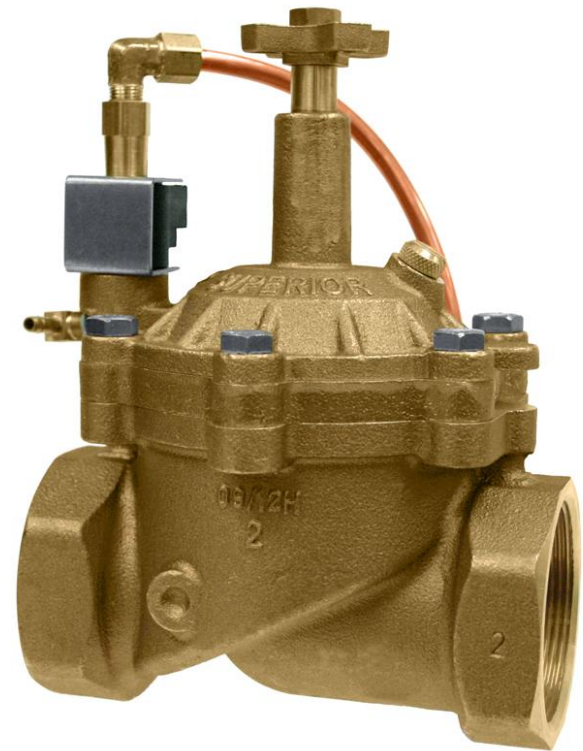


Troubleshooting

PROBLEM: Valve will not close when controller energizes master valve circuit.

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 close when solenoid is energized.

CAUSE #2: Debris in valve body 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.



Troubleshooting

PROBLEM: Valve will not close when energized and water exhausts continuously from the barbed L-fitting (but stops when solenoid is de-energized).

CAUSE #1: Torn diaphragm.

SOLUTION: Replace chamber-plate assembly.



PROBLEM: Valve will not close when energized and water exhausts continuously from the barbed L-fitting (but stops when solenoid is de-energized).

CAUSE #2: Solenoid plunger is not sealing 3/16" port at top of plunger tube. This could be due to debris in plunger tube, or rubber seat on top side of plunger (which is spring loaded) is stuck below top surface of plunger. It should protrude about 1/32" above top surface.

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



Troubleshooting

PROBLEM: Valve remains closed when solenoid is not energized.

CAUSE #1: Water is not flowing through copper tubing to solenoid. To verify, while valve is pressurized, use a $\frac{1}{2}$ " wrench to loosen compression fitting that connects copper tubing to L-fitting above solenoid. If no water exhausts out around loosened compression fitting, diagnosis is confirmed.

SOLUTION: Unscrew and remove T-filter from T-fitting. Clean filter and metering rod or replace T-filter assembly if necessary.



Troubleshooting

PROBLEM: Valve remains closed when solenoid is not energized.

CAUSE #2: Malfunctioning solenoid. Either port at top of solenoid plunger tube is clogged or mineral buildup in solenoid tube is preventing water from entering lower diaphragm chamber. To verify, while valve is pressurized, loosen compression fitting that connects copper tubing to L-fitting above solenoid. If water exhausts out around the compression fitting, diagnosis is confirmed.

SOLUTION: Disassemble solenoid. If 3/16" port at top of plunger tube is clogged, use a sharp object like a paper clip to unclog port. If mineral buildup or corrosion is evident in plunger tube, replace stem and plunger assembly.



TROUBLESHOOTING

PROBLEM: Valve remains closed when solenoid is not energized and water continuously flows out of barbed L-fitting below solenoid.

CAUSE: Debris in solenoid cavity is preventing solenoid plunger from sealing exhaust port.

SOLUTION: Disassemble solenoid and remove debris from solenoid cavity.



PROBLEM: Valve does not fully open when solenoid is not energized.

CAUSE: Damaged o-ring on shaft of chamber-plate assembly.

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

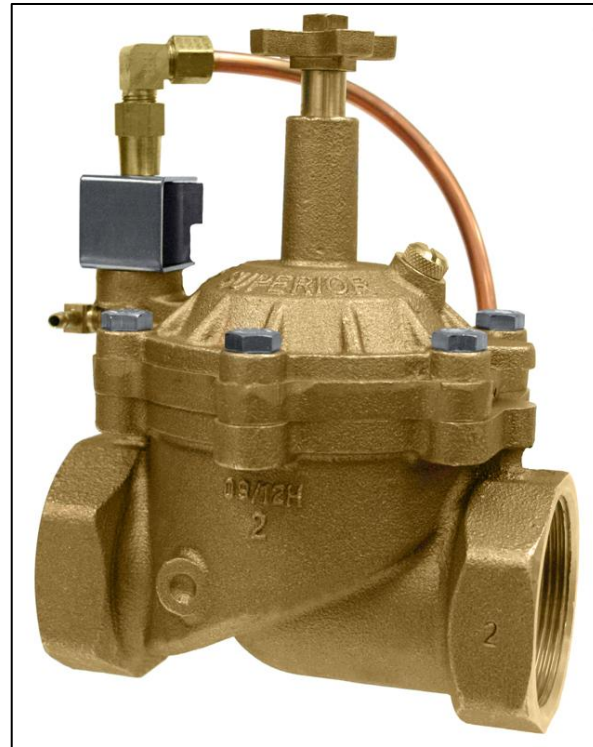


TROUBLESHOOTING

PROBLEM: Valve closes whenever controller energizes a station.

CAUSE: Master valve circuit is also energized causing normally open master valve to close.

SOLUTION: Follow wiring and/or programming instructions included with controller for connecting to and operating a normally open master valve.



Parts and Sub-Assemblies

Solenoid Coil: 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

L-Fitting: 16500-1

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

T-Filter: 16520

T-Filter and T-Fitting: 16520

Diaphragm: 1 ½" & 2"-16508, 2 ½" & 3"-400028

Top Assembly: 1 ½"-16407, 2"-16408, 2 ½" & 3"-16409

Diaphragm and Chamber Plate Assembly: 1 ½"-16401, 2"-16402, 2 ½" & 3"-16403