SUPERIOR

Model 600

Disassembly Instructions and Troubleshooting

Index

Solenoid Disassembly Instructions

1. Remove retaining nut (or yellow retaining cap on earlier models) from solenoid post and slide coil and U-frame off of solenoid post.

2. Using a flathead screwdriver, unscrew and remove solenoid post from top of adaptor.

Solenoid Disassembly Instructions

3. Solenoid plunger will drop out of plunger tube as post id removed from solenoid cavity.

Solenoid cavity: The center port is the exhaust port. The other port connects the solenoid cavity to the diaphragm chamber.

Removing Adaptor from the Anti-siphon Body

1. After shutting off water supply to the adaptor, remove solenoid retainer nut, coil, and U-frame from solenoid post.

2. Using channel locks, remove anti-siphon cap from valve body.

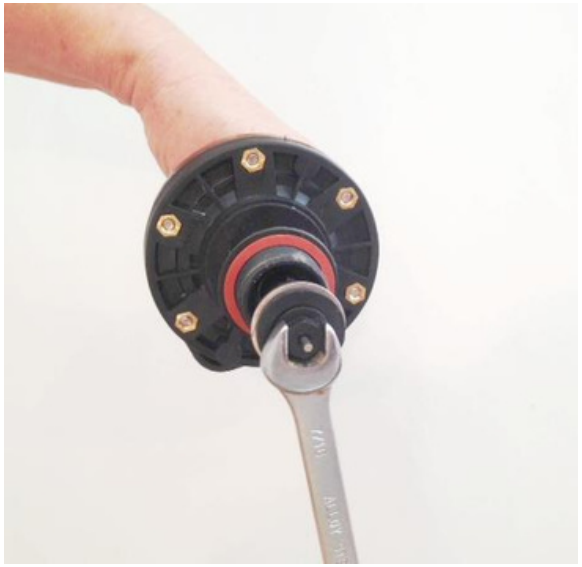
Removing Adaptor from the Anti-siphon Body

3. Unscrew manual bleeder a few turns to relieve pressure from the top of the diaphragm.

4. Apply a wrench to hex portion (neck) of adaptor and unscrew it from the valve body.

Adaptor Disassembly Instructions

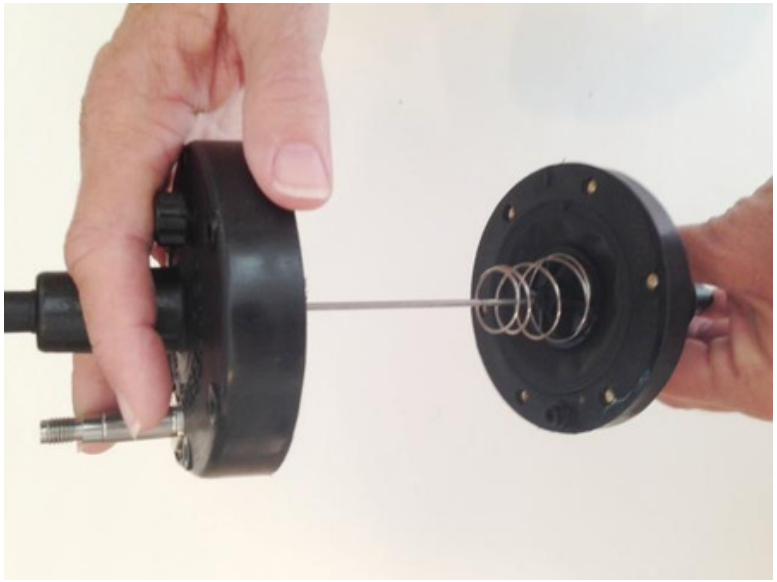
1. Using a 7/16” wrench, unscrew orifice screw from bottom of diaphragm shaft.



2. Remove disc holder and rubber seat disc from diaphragm shaft.

Adaptor Disassembly Instructions

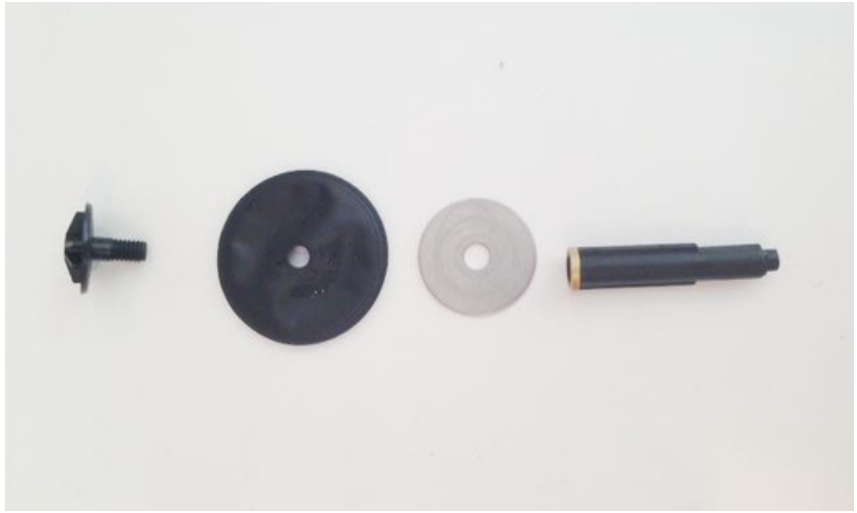
3. Unscrew and remove screws that fasten bonnet to lower section. Next, lift bonnet straight up taking care that metering rod clears top of diaphragm assembly and spring.



4. Remove spring and lift diaphragm assembly out of lower diaphragm housing.

Adaptor Disassembly Instructions

5. To disassemble the diaphragm assembly, unscrew upper diaphragm plate from diaphragm shaft and remove the diaphragm and lower diaphragm plate from shaft



6. To remove flow-control from bonnet, first rotate flow-control handle clockwise as many turns as possible, then remove nut and handle from top of flow-control stem. Next, unscrew flow-control stem from underside of bonnet.

Troubleshooting

PROBLEM: Valve will not close

CAUSE #1: Malfunctioning solenoid.
Solenoid plunger is unable to seal exhaust port due to debris in the solenoid chamber or plunger stuck in plunger tube and will not drop when solenoid is de-energized.

SOLUTION:
Remove debris from solenoid cavity and/or clean solenoid plunger and plunger tube. Replace stem and plunger assembly if necessary.

CAUSE #2:
Debris in valve body or debris embedded in rubber seat disc is preventing seat disc from seating onto brass seat in valve body.

SOLUTION:
Remove adaptor from valve body and remove debris. If seat disc is pitted, disassemble from shaft and flip it over or replace if necessary.

Troubleshooting

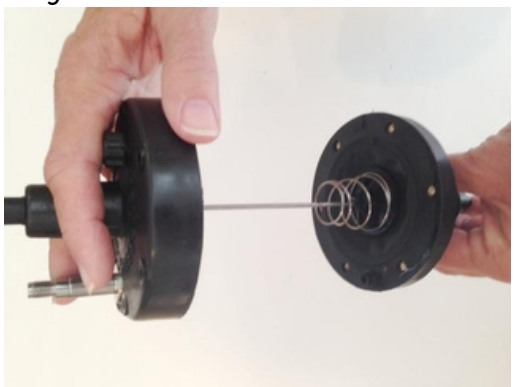
PROBLEM: Valve will not close

CAUSE #3:

Clogged inlet orifice is preventing water from entering upper diaphragm chamber. To check, open manual bleeder. If no water exhausts from manual bleeder, then cause is confirmed. Most likely cause is a buildup of minerals on cleaning rod.

SOLUTION:

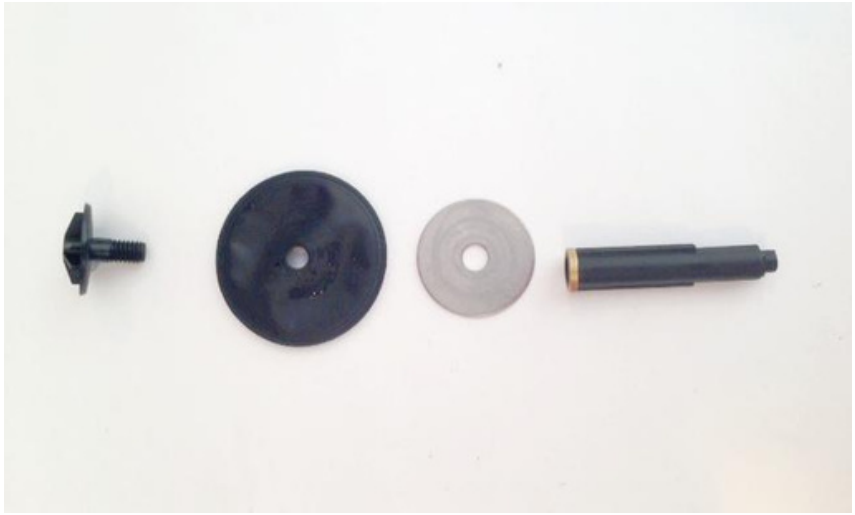
Remove bonnet and clean metering rod using emery cloth.



CAUSE #4: Torn diaphragm.

SOLUTION:

Replace diaphragm.



Troubleshooting

PROBLEM: Valve will not close

CAUSE #5:
Insufficient flow. Irrigation valves and adaptors have a minimum flow requirement in order to close. The larger the valve size, the greater the minimum flow requirement . A ¾" 600 adaptor has a minimum flow requirement of about 5 GPM.

SOLUTION:
Sometimes, reducing the flow by turning the flow control handle clockwise as much as possible without adversely affecting coverage will enable the valve to close. If it works, do not readjust the flow control. If it does not work, then increase flow by adding sprinkler heads or emitters to the system. If that is not possible, then it is recommended that a model 850-DI be used in place of the model 800. This will necessitate replacing the anti-siphon valve body as well. The model 850-DI, shown is photo at right, has no minimum flow requirement. It was designed to be used in low flow drip irrigation systems.

Troubleshooting

PROBLEM: Valve will not open when energized

CAUSE #1:

Solenoid is not receiving power.

SOLUTION:

Place your fingers around the solenoid coil to see if it is receiving power. There should be a slight vibration and humming. If not, verify that there is output at the controller by using a volt meter. If there is electrical output (24 VAC) then the problem is either a bad coil or broken wire. Check the coil by disconnecting solenoid lead wires from valve wires and measure ohms with an ohm meter. A reading of 24 to 27 ohms means the coil is OK. If reading is 0 or infinity, replace coil.

CAUSE #2:

Flow-control handle is turned all the way closed (clockwise).

SOLUTION:

While solenoid is energized, turn flow-control handle counter-clockwise a half turn at a time until sufficient coverage is observed.

Troubleshooting

PROBLEM:
When valve is closed, water is weeping past the valve and coming out the lowest head.

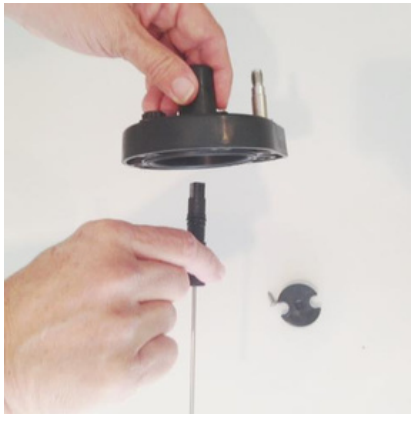
CAUSE:
Small debris in seat disc, or pitted seat disc that is allowing water to seep by.

SOLUTION:
Remove adaptor from valve body and clean debris. If seat disc is pitted, remove seat disc, flip it over and reassemble onto shaft or replace seat disc.

PROBLEM:
Water leaks out of top of adaptor where flow control stem protrudes from top housing.

CAUSE:
Damaged flow-control o-ring.

SOLUTION:
Turn flow-control handle clockwise as many turns as possible. Next, remove nut and flow-control handle then unscrew flow-control stem from underside of bonnet. Replace flow-control o-ring. Apply silicone grease to o-ring before reassembling it to bonnet.



Troubleshooting

PROBLEM: Water leaks out between adaptor and anti-siphon body

CAUSE: Damaged fiber body washer

SOLUTION:

Replace fiber body washer.

Parts, Sub-Assemblies, and Repair Kits

Solenoid Coil: 16008
Stem and Plunger Assembly: 16010-2A
Solenoid Assembly: 16200
Diaphragm: ¾” & 1”-16056A
Fiber Body Washer: ¾”-15053, 1”-15054
Repair Kits (includes all rubber and fiber parts): ¾”-14029, 1”-14030
Diaphragm Assembly: ¾”-14025, 1”-14026