

Powers™ Controls

Valve Disc Replacement VP 656, VP 658, VE 399

Description

This Technical Bulletin describes the recommended method of replacing the shut-off disc on the VP 656, VP 658, and VE 339 Valves.

The procedure assumes the valve assembly is at the job. With the exception of normally open valves, the valve assembly will probably have to be taken out of the line because the disc will have to be removed from the bottom of the valve body.



Product Numbers

Table 1.

Description	Qty.	Kit Number
1/2-inch valve disc for VP 656 Powermite NC and WM VP 658 NO, NC VE 339 2-way	10	657-800
1/2-inch valve disc for VP 656 Powermite NO and 656-0006 (WM)	10	656-740
1/2-inch (Cv 0.5) valve disc for VP 656 Powermite NO	10	656-742
1/2-inch upper and lower disc assembly for VP 658 Powertop Changeover Valve	1	657-813
3/4-inch valve disc for VP 656 Powermite NO	10	656-741
3/4-inch valve disc for VP 658 Powertop NO, NC VE 339 Electronic 2-way	10	657-801
1-inch valve disc for VP 658 Powertop NO, NC VE 339 Electronic 2-way	10	657-802

NOTE: All of the above kits contain O-rings for bottom seals.

Warning/Caution Notations

WARNING:		Personal injury/loss of life may occur if you do not perform a procedure as specified.
CAUTION:		Equipment damage may occur if you do not perform a procedure as specified.

Disc Replacement



WARNING:

Shut off medium and remove the valve from the line before beginning the disc replacement.

Normally Open Valves (Figure 1)

1. Loosen and unscrew the bonnet from the valve body.
2. Holding the disc holder securely with pliers, use a hex Allen wrench to unscrew the throttling nut from the stem assembly.
3. Remove the disc from the stem assembly and replace with new disc.
4. Return the throttling nut to the stem assembly.
5. Remove and replace the O-ring, if present. Apply silicone grease to the O-ring.
6. Thread bonnet onto the valve body and tighten it.

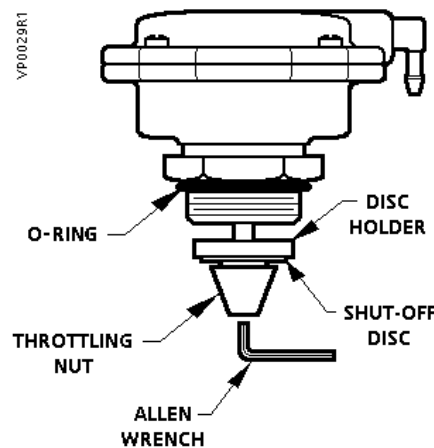


Figure 1. Normally Open Valve Disc Replacement.

VE 339 Two-way Valves (Figures 2 and 3)

1. Open actuator cover and disconnect wires from the J2 plug.



WARNING:

Label and tape wire ends to prevent personal injury or short circuiting the controller.

2. Remove conduit.
3. Using an open-end wrench, loosen and remove the entire top assembly from the valve body. See Figure 2.
4. Remove the throttle plug with an Allen wrench. Use a wrench on the stem locknuts, to keep the stem from moving, as shown in Figure 3.
5. Remove and replace the disc. Remove and replace the O-ring.
6. Reassemble the top assembly and the valve body.
7. Replace the conduit connection, connect wiring to the screw terminals of the J2 plug, and close the cover.

**VE 339 Two-way Valves
 (Figures 2 and 3),
 Continued**

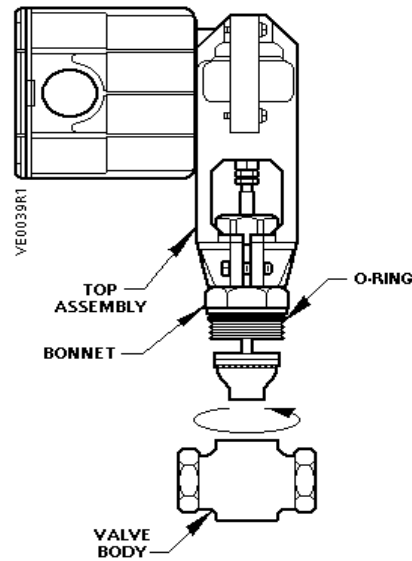


Figure 2. Loosening Top Assembly on VE 339 Valve.

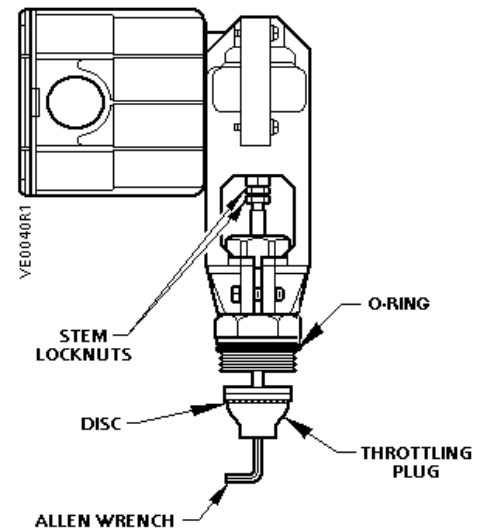


Figure 3. Removing the Throttle Plug on VE 339 Two-way Valve.

**Normally Closed Valves
 VP 656 Valves Model 1
 (Figure 4)**

1. Unscrew the valve cap from the bottom of the valve body. Remove the valve spring and throttling nut assembly.
2. With a 7/16-inch wrench, hold the disc holder guide. With a wide blade screwdriver in the throttling nut slot, separate these parts and remove the disc.
3. Replace disc in the disc holder. Tighten throttling nut while holding the disc holder guide.
4. Place throttling plug assembly into the valve body and tighten the valve cap.

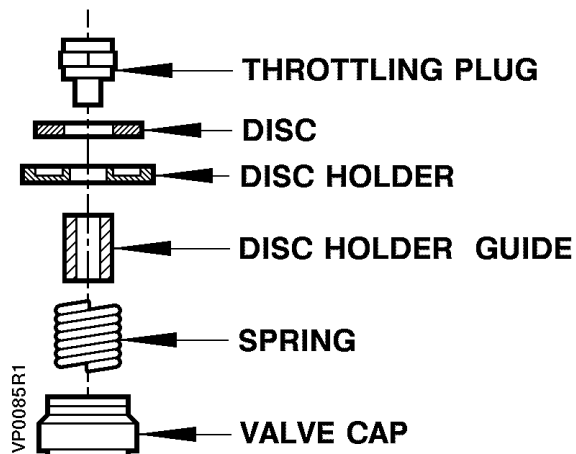


Figure 4. Normally Closed VP 656 Model 1 Valve Disc Replacement.

**VP 656 Model 3, and
VP 658 Valves
(Figure 5)**

1. Loosen and unscrew the cap from the bottom of the valve body.
2. If the stem is not easily accessible, put 20 psi (138 kPa) air pressure on the valve actuator.
3. Use a hex Allen wrench in the bottom of the valve stem to prevent it from turning while using an open-end wrench to loosen and unscrew the retaining nut from the stem assembly.
4. Remove the washer, the disc holder, and the disc.
5. Replace the disc in the disc holder. Replace the washer and tighten the retaining nut onto the stem assembly.
6. Replace the O-ring if present. Apply a small amount of silicone grease to the O-ring.
7. Tighten the valve cap onto the valve body.

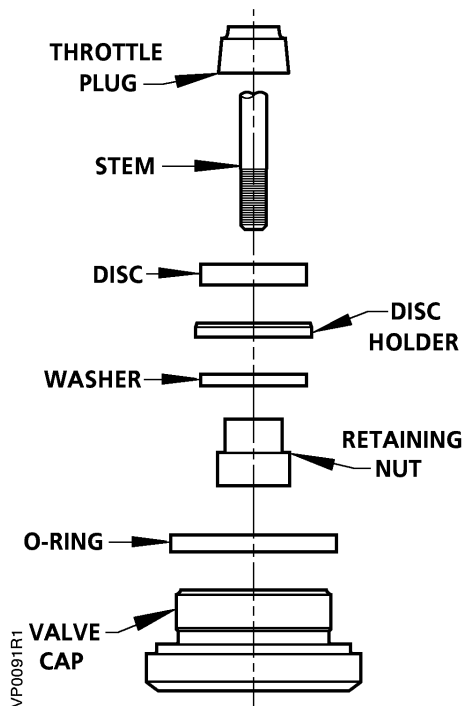


Figure 5. Normally Closed Valve Disc Replacement Model 3.

**Water Mix Screwed End Valve
 VP 656 Powermite Valve
 (Figure 6)**

1. Loosen and unscrew the valve seat (bottom port) from the valve body. If the stem assembly is not easily accessible, apply 20 psi (138 kPa) air pressure on the valve actuator.
2. Use a 3/32-inch (VP 656 valve) hex Allen wrench in the bottom of the valve stem to prevent it from turning while using a 3/8-inch wrench to loosen and unscrew the disc retaining nut from the stem assembly.
3. Separate the stem collar and disc holder and both discs from the stem assembly.
4. Remove and replace the discs.
5. Slide the disc holder with the new discs, and stem collar over the stem.
6. Tighten the disc retaining nut to the stem assembly.
7. Replace the O-ring if damaged. Apply a small amount of silicone grease to the O-ring.
8. Tighten the valve bottom port to the valve body.

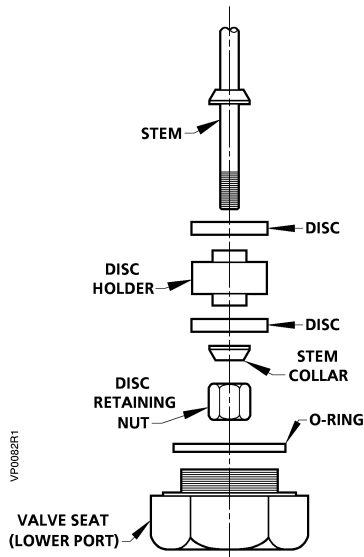


Figure 6. Valve Disc Replacement for VP 656 Powermite Water Screwed End Valve.

**VP 658 Powertop and
 VE 339 Three-way Valves**

The disc cannot be replaced individually. The entire stem, throttling plug assembly, and lower seat must be replaced. These parts are included in the rebuild/repack kits listed below. Using this kit will convert previous models of VP 658 to Model 5 and previous models of VE 339 to Model 4. Instructions to replace the stem and throttling plug are included in the kits.

Table 2. Rebuild/Repack Kits for VP 658 and VE 339 Three-way Valves.

Valve Size in Inches	Rebuild/Repack Kit Number
1/2	658-405
3/4	658-406
1	658-407
1-1/4	658-408

Water Mix Flared End Valves

VP 656 Powermite is the only water mix flared end valve.

They do not have a disc. They have a throttling nut which is soldered to the stem. The valve must be completely disassembled to change the stem and throttling nut assembly. See *TB 233 (155-240P25)*.

Sequence or Changeover Valves (Figure 7)

The VP 658 Powertop valve is the only sequence and changeover valve.

1. Loosen and unscrew the lower body with a wench. Put 20 psi air pressure in the actuator.
2. Place a 1/2-inch wrench on the lower disc assembly and compress the disc spring.



CAUTION:

Be careful. The disc spring has a lot of force.

3. Push the C-ring with long nosed pliers. Remove the lower disc assembly and disc spring.
4. Use a small screwdriver to free the small O-ring from the groove. Remove upper disc assembly with long nose pliers.
5. Replace upper disc assembly. Return the small O-ring and the disc spring.
6. Replace lower disc assembly. Using the 1/2-inch open-end wrench press on the disc assembly to compress the disc spring. Clip the C-ring onto the valve stem.
7. Replace large O-ring, if present. Tighten the lower body to the valve with a wrench.

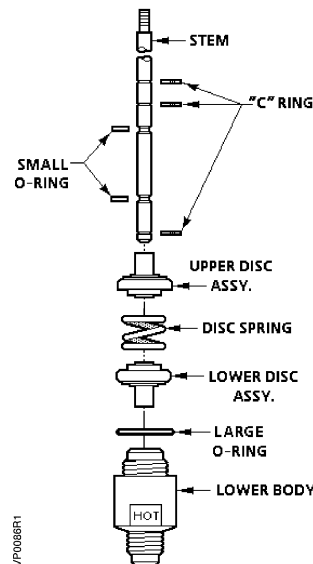


Figure 7. Sequence or Changeover Valve Disc Replacement.

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