

VP 658 and VE 339 Three-way Powertop Valves Rebuild/Repack Kit

Product Description

This rebuild/repack kit contains the parts necessary to replace the stem packing and the stem and throttling plug assembly on one Powertop three-way valve. Using this kit will convert previous models of VP 658 to Model 5 and previous models of VE 339 to Model 4.



Contents

Part	Qty.	Part	Qty.
Washer	1	O-ring retainers	2
Large packing O-rings	2	Packing ring	1
Small packing O-rings	2	Teflon® backup rings	2
Repacking tool	1	Lower seat	1
Large O-ring	1		
Stem and throttling plug assembly			1

Product Numbers

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

Warning/Caution Notations

WARNING		Personal injury/loss of life may occur if a procedure is not performed as specified.
CAUTION		Equipment damage, or loss of data may occur if the user does not follow procedure as specified.

Required Tools

- Two 7/16-inch (11 mm) open-end wrenches
- 1/4-inch (6 mm) nut driver or flat-blade screwdriver
- Medium adjustable wrench
- Pick to remove packing

Troubleshooting

Problem	Check For	Recommended Correction
Medium is leaking through valve when closed	Damaged or worn disc	Replace stem and throttling plug assembly
	Foreign material in valve body	Flush or clean out foreign material
	Pressure drop across the valve is larger than expected	Reduce differential pressure Increase control pressure or spring force Replace valve
	Damaged or worn seat	Replace seat or body and seat assembly
Medium is leaking out at stem	Pitted stem	Replace stem and throttling plug assembly
	Worn or damaged packing	Replace packing
Medium is leaking at body or lower seat	Worn or damaged O-ring	Replace O-ring
	Lower seat loose	Tighten lower seat

Prerequisites



WARNING:

Before doing any service work, shut off the medium to the valve. Remove and cap the air line to the valve actuator to prevent personal injury and equipment damage.

Installation

Disassembly

1. With a screwdriver or a 1/4-inch (6 mm) nut driver, loosen the two #8-16 lower housing screws that clamp the actuator to the bonnet. See Figure 1.
2. Using two open-end wrenches, loosen the stem locknuts.

Installation, Continued

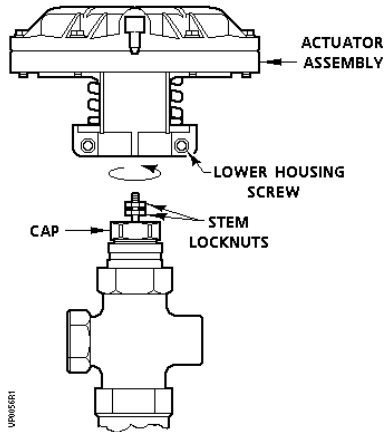


Figure 1. Removing the Actuator Assembly.

3. Unscrew the actuator assembly from the valve stem. Remove the actuator.
4. Remove and retain the stem locknuts.
5. Remove and discard the lower seat from the bottom of the valve body. See *Figure 2*.

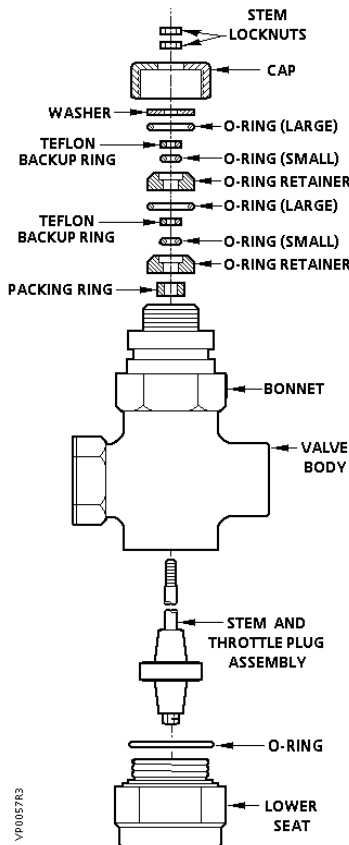


Figure 2. Valve Body Construction.

NOTE: The old lower seat must not be used with the stem assembly provided in this kit.

6. Pull the stem and throttle plug assembly out of this opening.
7. Using an adjustable wrench, remove the cap from the bonnet. Keep the cap.
8. Remove and discard all packing. See *Figure 3* which shows the various packing configurations you will find depending on the model of the valve. Do not reuse any of these components.

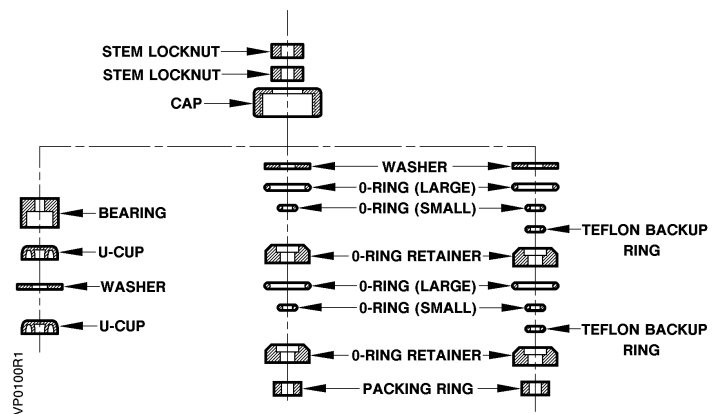


Figure 3. Previous and Current Packing Configurations.

9. The bottom packing ring can be difficult to remove. Use a pick to carefully remove it.



CAUTION:

Be careful not to damage the packing chamber when removing the old packing or cleaning the chamber.

10. Clean the packing chamber. Remove any dirt.

Assembly

1. Slide the new stem and throttle plug assembly into bonnet through the opening in the bottom of the valve body as shown in *Figure 2*.
2. Place the new O-ring and new lower seat on the bottom of valve body and tighten securely.
3. Slide the new packing ring over the stem and push it to the bottom of the packing chamber with the repacking tool (included in the kit). See *Figure 4*.

Installation, Continued

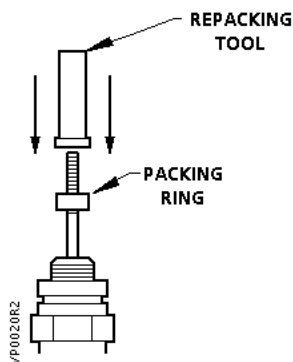


Figure 4. Using the Repacking Tool.

4. Remove the repacking tool from the stem.
5. Slide the O-ring retainer into the bonnet with the tapered surface facing up. Slip the small O-ring and the backup ring over the stem threads onto the smooth portion of the stem. With the repacking tool push both down into the cavity of the O-ring retainer. Slide the large O-ring into the bonnet cavity. See *Figure 5*.

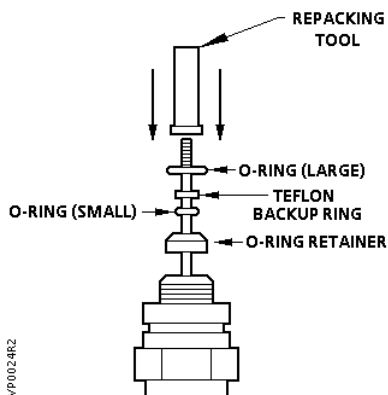


Figure 5. Repacking the O-rings.

6. Place the second O-ring retainer into the bonnet with the tapered surface facing up. Slip the small O-ring and the backup ring over the stem threads onto the smooth portion of the stem. With the repacking tool push both down into the cavity of the O-ring retainer.
7. Slide the large O-ring into the bonnet cavity. Slide the copper washer onto the stem and place the cap over the stem. Thread the cap onto the bonnet. Hand tighten to bring all packing components together. With a wrench, tighten the cap to 10 ft.-lbs.
8. Move the stem up and down to make sure it does not bind.
9. Install the stem locknuts. To ensure proper seating of the valve when the bonnet is attached to the body, there must be at least 1/16-inch (1.6 mm) clearance between the lower locknut and the cap when the stem is all the way down.
10. Pull the stem up and attach it to the actuator assembly by screwing the stem into the piston plate. Tighten the stem locknuts.
11. Tighten the two lower housing screws with a nut driver or flat blade screwdriver.



CAUTION:

Do not overtighten the lower housing screws.

12. Restore the medium to the valve and reconnect the air line to the actuator top.

The installation is now complete.

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