

Swagelok® DP Series Springless Diaphragm Valve (1.125 in.)

Service Instructions

Models



Pneumatically
actuated
valve



Manual valve
(shown in closed,
lockout position)

Diaphragm Kit

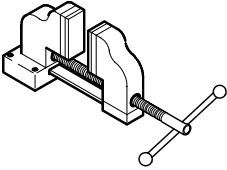


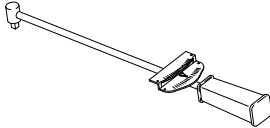
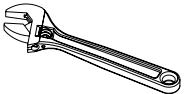


solid diaphragm (1)



vented diaphragm (1)

Tools Required

Part	Tool		Size
Body	Bench vise		—
	Open-end wrench (backup wrench)		1 1/8 in.
Bonnet nut	Open-ended hex extension		1 1/16 in.
	Torque wrench		Capable of 500 in.-lb (56.5 N·m, 577 cm·kg)
Handle	Adjustable wrench		—

Symbol



Discard

Valve Disassembly

⚠ WARNING

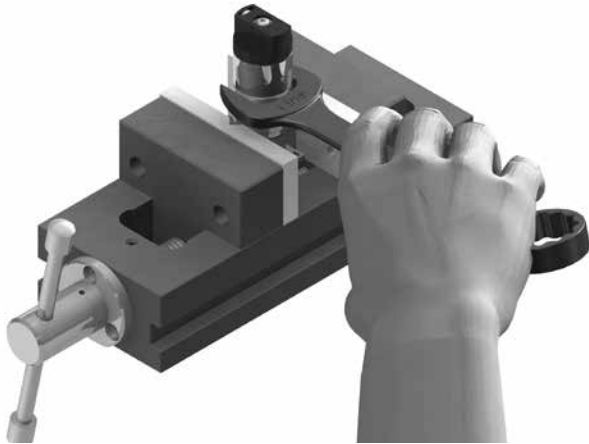
Before removing a valve from the system for service, you must

- depressurize system
- cycle the valve

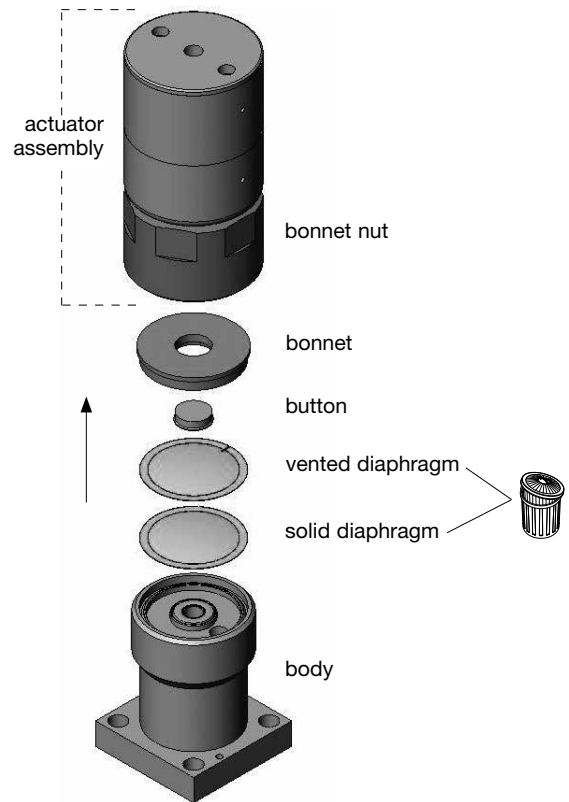
⚠ WARNING

Residual system media may be left in the valve.

1. Remove the valve from the system, if possible.
2. Actuate the valve to the OPEN position.
 - Normally closed valves: apply 65 to 120 psig (4.5 to 8.2 bar) to the actuator.
 - Normally open valves: relieve the pressure to the actuator.
 - Manual valves: turn handle to fully open position.
Note handle-to-body orientation for reassembly.
3. Loosen the **bonnet nut** with a 1 1/16 in. open-ended wrench. Use a backup wrench or vise to keep the body stationary.



4. Remove the **actuator assembly, bonnet, button, and both diaphragms**.

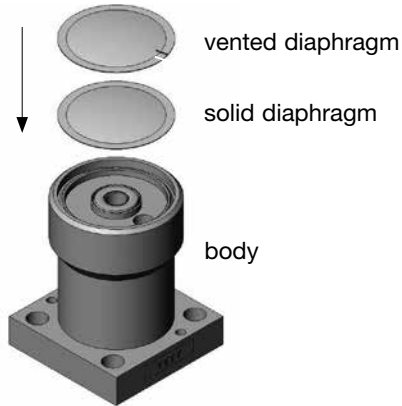


Valve Reassembly

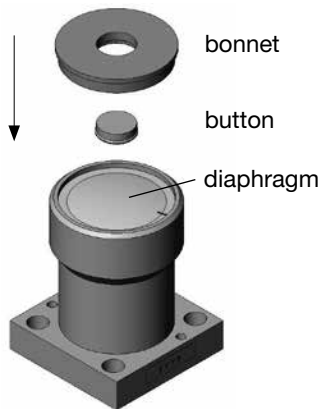
⚠ Caution

Sealing surfaces on the body and diaphragms must be clean before reassembly. Particles can damage the seat and diaphragm sealing surfaces.

1. Place the **solid diaphragm** on the **body** with the *domed side* of the diaphragm facing UP. Place the **vented diaphragm** on top of the solid diaphragm with the *domed side* of the diaphragm facing UP.

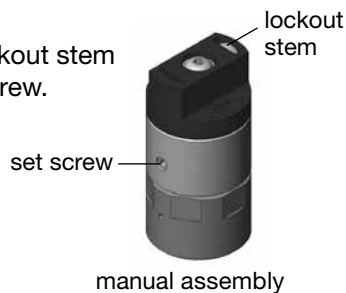


2. Center the **button** with the flange side DOWN on top of the **diaphragm**. Place the **bonnet** over the button with the flat side UP.

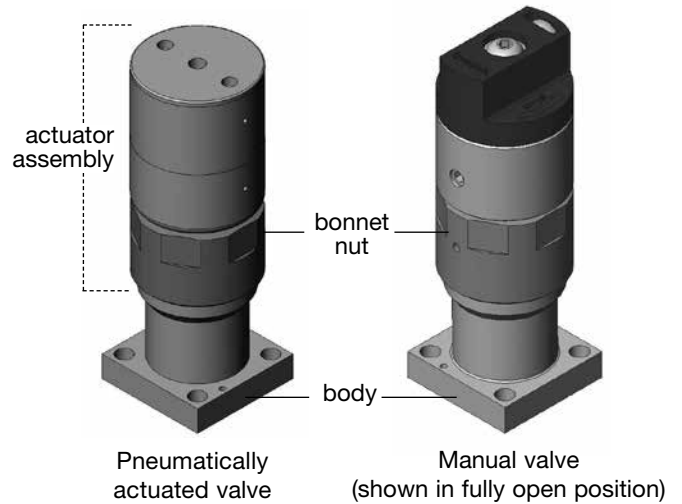


3. Confirm the actuator assembly is in the OPEN position.

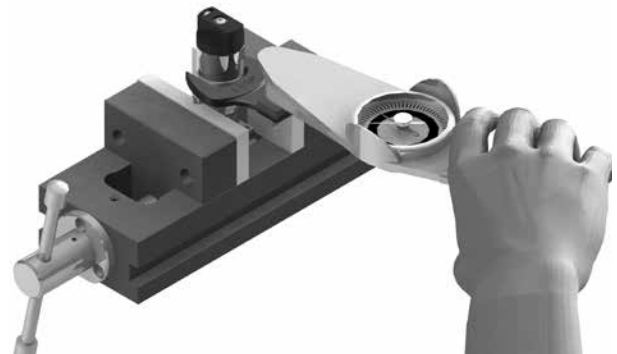
- Normally closed assembly: apply 65 to 120 psig (4.5 to 8.2 bar) to the actuator.
- Normally open assembly: relieve the pressure to the actuator.
- Manual assembly: lockout stem is 180° from the set screw.



4. Place the **actuator assembly** on the **body**. Be sure to maintain component alignment and orientation.



5. Hold the **actuator assembly** firmly against the body, and thread the **bonnet nut** onto the body hand tight. For manual valves, hold **handle** in the position noted in step 2 of Valve Disassembly with an adjustable wrench while turning **bonnet nut**.
6. Torque the **bonnet nut** to 500 in.·lb (56.5 N·m) (577 cm·kg). Keep the **body** stationary using a backup wrench or vise.



7. Test valve for leak-tight integrity and proper operation. See Testing.

Testing

1. With the valve in the OPEN position, verify that flow passes through the valve.
2. With the valve in the CLOSED position, verify that no flow passes through the valve.
3. Test the diaphragm seal and seat seal for leakage by performing a standard inboard helium leak test to a rate of 1×10^{-9} std cm³/s.
4. Test valve for proper operation.

⚠ WARNING

Do not mix/interchange Swagelok products or components not governed by industrial design standards, including Swagelok tube fitting end connections, with those of other manufacturers.