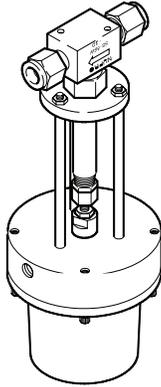
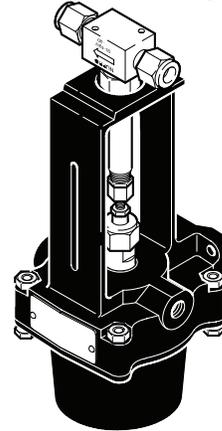


This document describes how to replace a Swagelok® 4 Series actuator with a Swagelok 6 Series actuator. These instructions apply to Double Acting (D), Normally Open (O), and Normally Closed (C) models. The illustrations below show the assemblies before and after replacement.

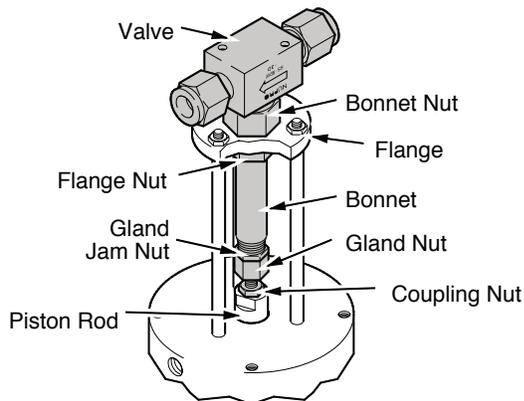
**4 Series Assembly**



**6 Series Assembly**

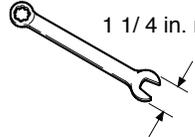
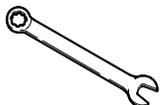


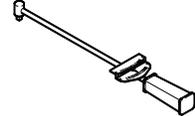
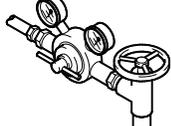
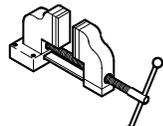
### Component Identification



**Note:** The 4 Series and 6 Series actuators are designed to fit any UK, UG, or UW Series bellows valve. The valve shown in this procedure is for reference only. The procedure remains the same regardless of valve used.

### Tool and Equipment Requirements

- 7/16 in. wrench 
- 7/8 in. wrench (modified)  1 1/4 in. maximum
- 3/4 in. wrench 
- scale 

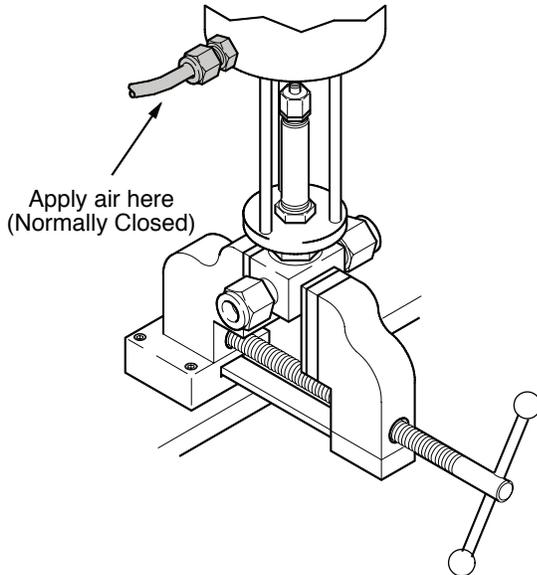
- 7/8 in., 3/4 in. open end extensions 
- torque wrench 
- regulated air supply 
- vise 



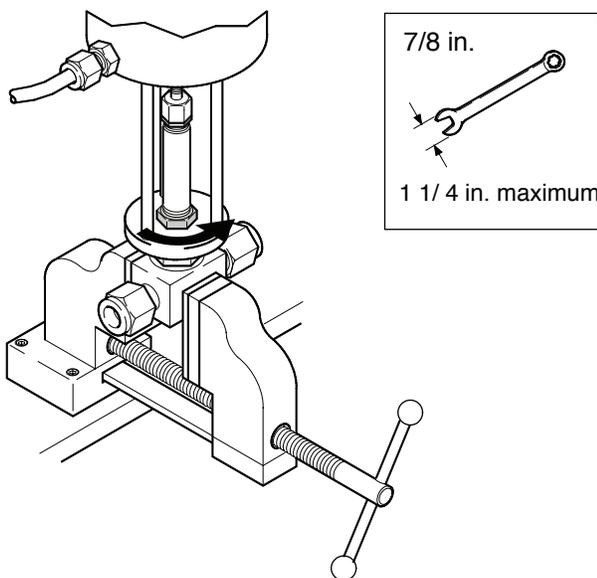
## Disassembly Instructions (4 Series)

1. Place the assembly in a vise.
2. **Normally Closed:** Connect a regulated air supply to the actuator air connection. Apply and maintain approximately 100 psig (6.8 bar) to relieve the pressure on the flange nut.

**Double Acting or Normally Open:** Air supply not required.

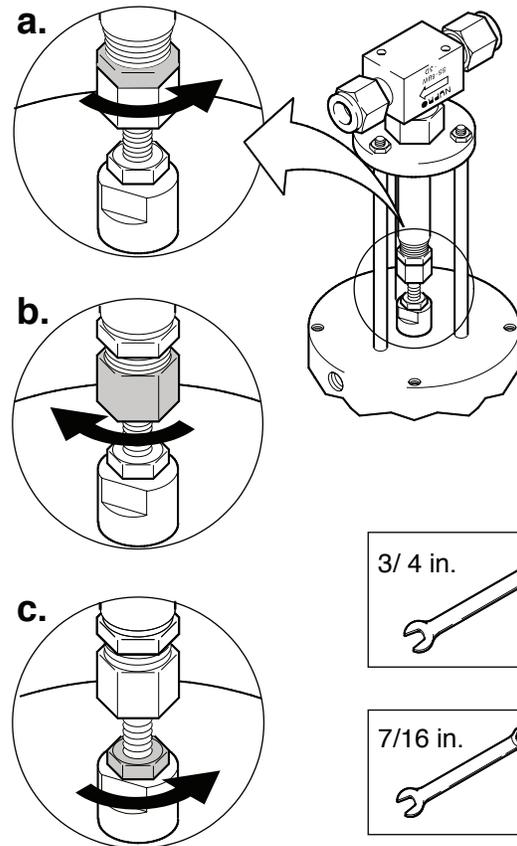


3. Unscrew the flange nut.



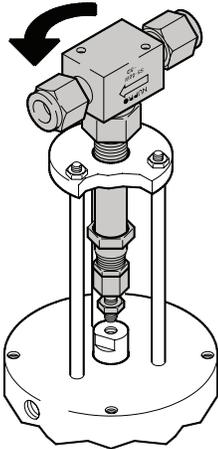
**CAUTION:**  
Relieve air pressure before disconnecting any air supply lines from the assembly.

4. **Normally Closed:** Disconnect the air supply.
5. Remove the assembly from the vise and place it on a flat surface.
6. Loosen the gland jam nut (a), gland nut (b), and coupling nut (c).

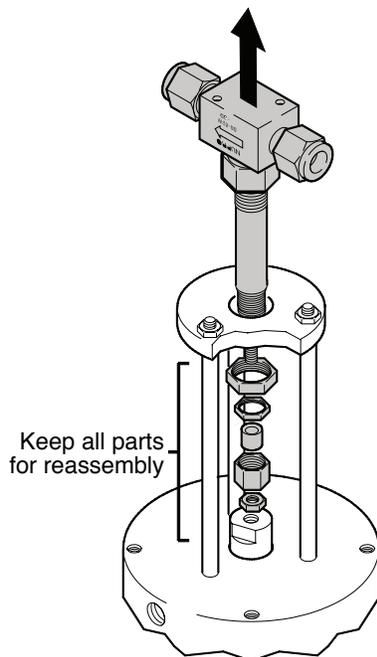


## Disassembly Instructions (continued)

7. Unscrew the valve from the piston rod and remove the valve from the actuator.



8. Remove the nuts, gland, and valve.



## Assembly Instructions (6 Series)

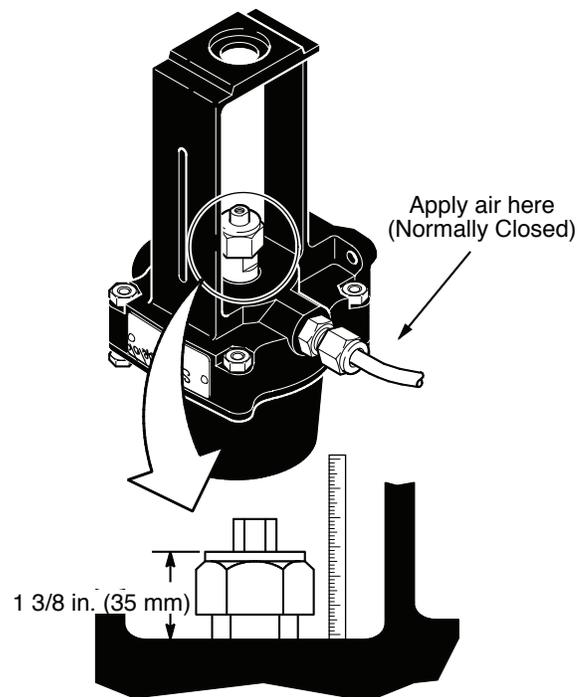
1. Prepare the actuator to accept the valve by adjusting the height of the piston rod.

### Normally Closed or Normally Open:

- Connect a regulated air supply to the actuator air connection.
- Apply air pressure to move the piston rod to the dimension shown in the figure below. Once set, maintain the-pressure.

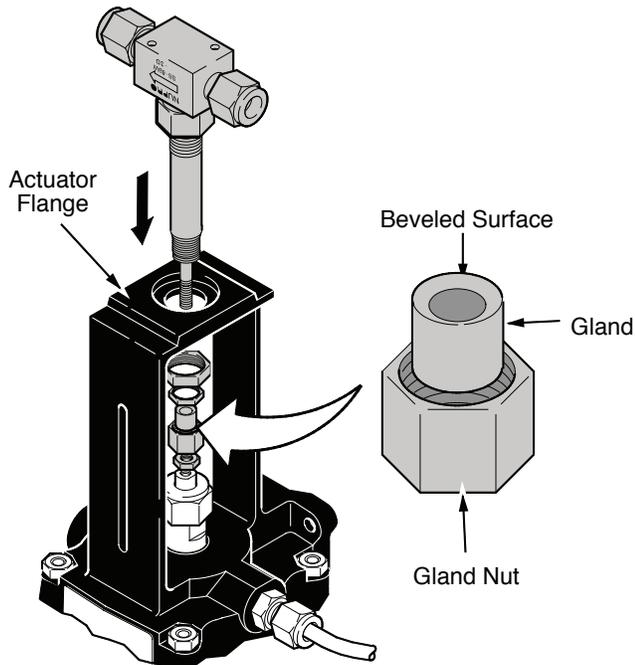
### Double Acting:

- Push or pull the piston rod to the dimension shown in the figure below,



## Assembly Instructions (continued)

For steps 2 through 7, refer to the drawing below:



2. Insert the gland in the gland nut.

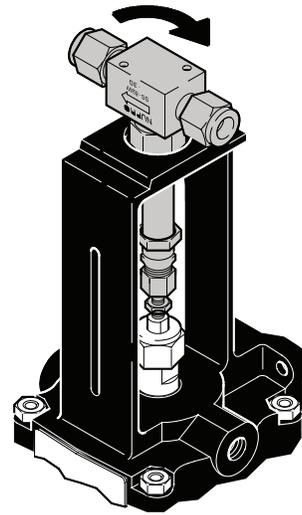


### CAUTION:

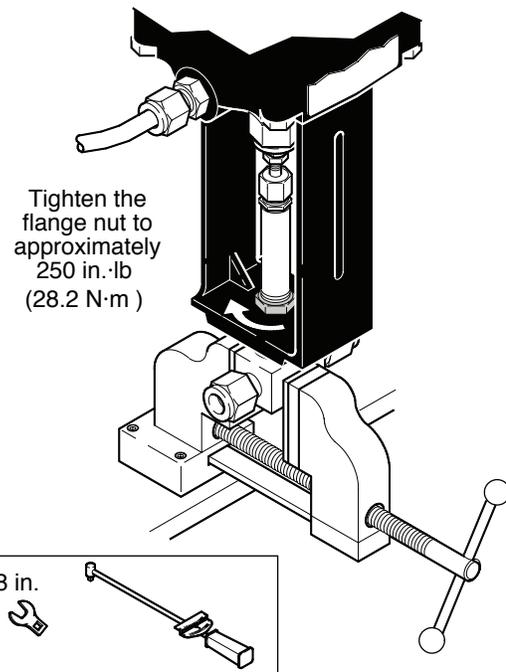
The beveled surface of the gland must be visible when the gland is placed inside the nut.

3. Lower the valve through the actuator flange and flange nut.
4. Thread the flange nut on the valve bonnet.
5. Thread the gland jam nut on the valve bonnet as far as possible.
6. Thread the gland nut on the valve bonnet.
7. Thread the coupling nut onto the valve stem as far as-possible.

8. Screw the valve assembly into the piston rod until the bonnet nut contacts the flange.

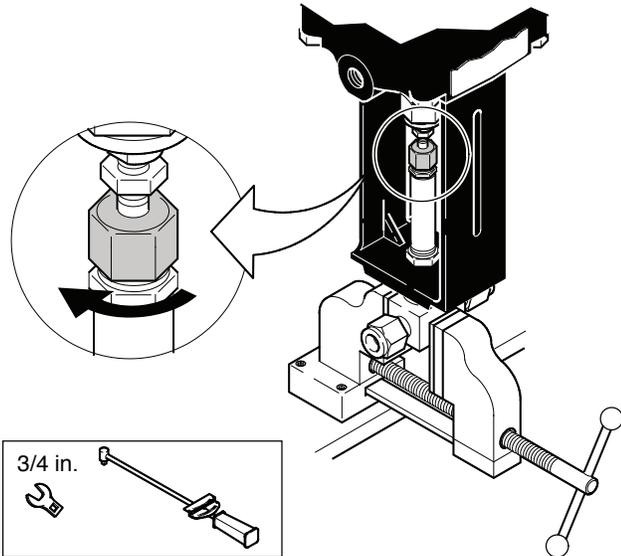


9. Continue to turn the valve until it is aligned to the actuator as required for the installation.
10. Place the assembly in a vise. Hold the actuator in place and tighten the flange nut.

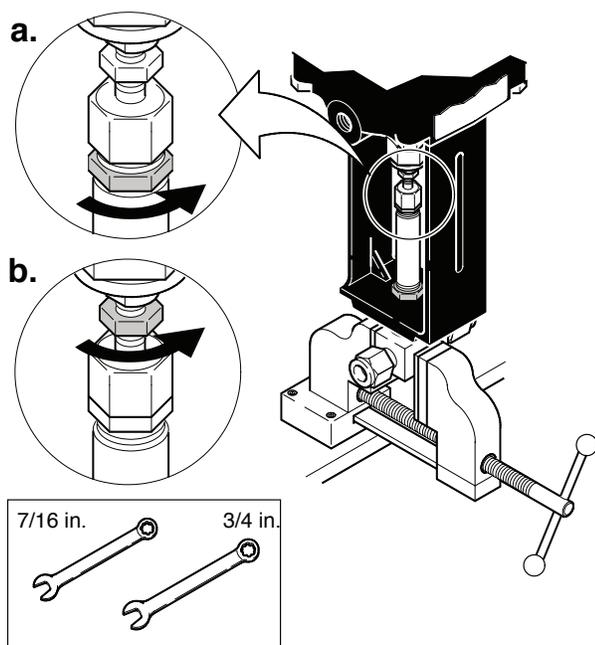


## Assembly Instructions (continued)

- 11. Normally Closed or Normally Open:**  
Relieve pressure to the actuator. Maintain the air connection.
- Tighten the gland nut. Torque specifications depend on the type of packing material in the valve stem:
  - UK Series—PTFE: 100 in.-lb (11.3 N·m)
  - UG, UW Series—Grafoil®: 50 in.-lb (5.7 N·m)



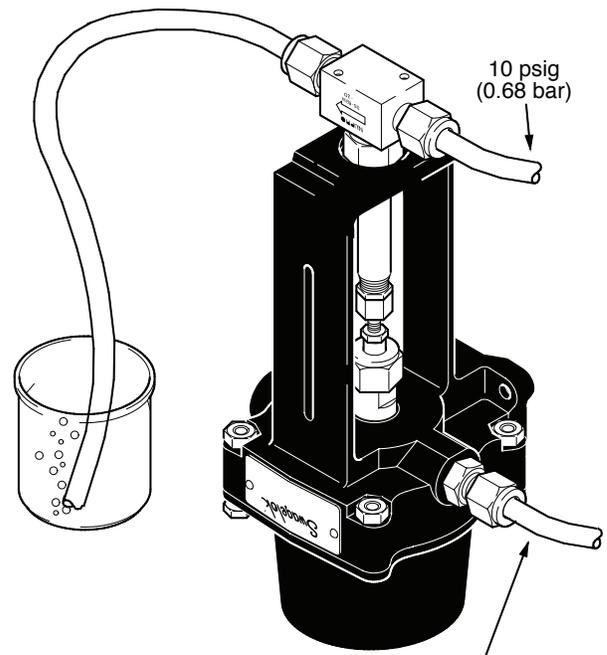
- Tighten the gland jam nut (a) against the gland nut. Tighten the coupling nut (b) against the piston rod.



## Testing the Assembly

- Connect a regulated air supply to the **valve inlet**. Set the pressure at 10 psig (0.68 bar).
- Connect one end of a piece of flexible tubing to the **valve outlet** and place the other end in a beaker of water.
- Pressurize the actuator and verify that the valve opens and closes. See the following illustrations for specific instructions:

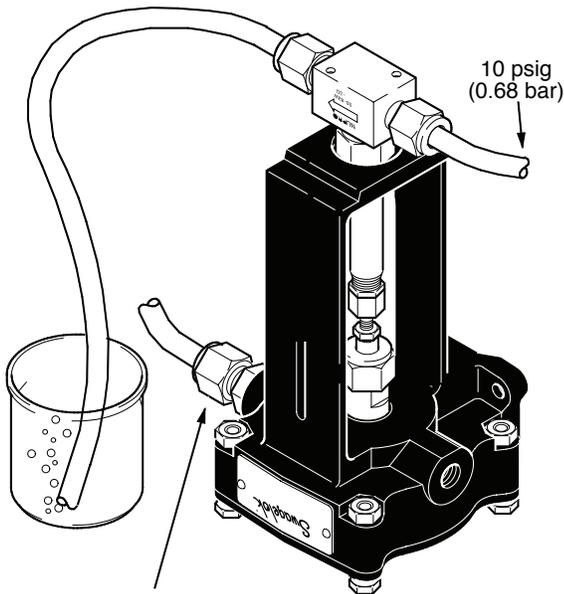
### Normally Closed



- Apply 70 psig (4.8 bar) to open valve (bubbles visible in beaker)
- Relieve pressure to close valve (no bubbles)

## Testing the Assembly (continued)

### Normally Open



- a. Apply 25 psig (1.7 bar) to close valve (no bubbles visible in beaker)
- b. Relieve pressure to open valve (bubbles visible)

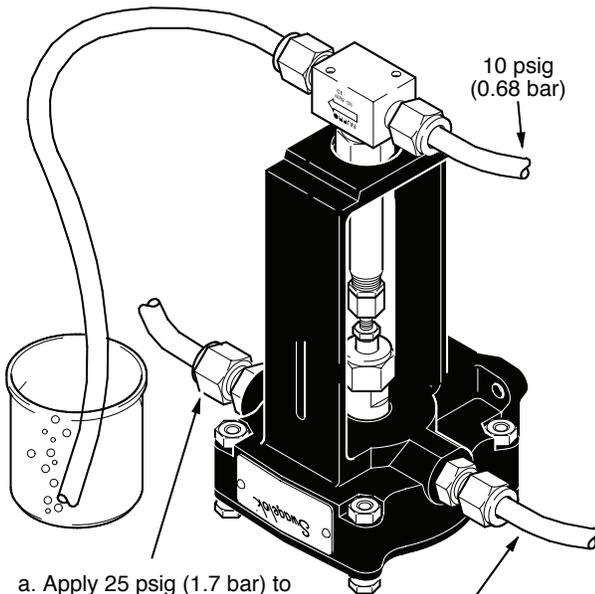


### CAUTION:

Relieve air pressure before disconnecting any air supply lines from the assembly.

4. Disconnect all air supply lines when testing is complete.

### Double Acting



- a. Apply 25 psig (1.7 bar) to close valve (no bubbles visible in beaker)
- b. Apply 25 psig (1.7 bar) to open valve (bubbles visible)

#### Safe Component Selection

When selecting a component, the total system design must be considered to ensure safe, trouble-free performance. Function, material compatibility, adequate ratings, proper installation, operation, and maintenance are the responsibilities of the system designer and user.

#### Caution:

Do not mix or interchange parts with those of other manufacturers.