

Instruction
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December 2010

NOR'EAST

— CONTROLS, INC.

A DIVISION OF ALLGASH INTERNATIONAL, INC.



Operator's Manual

SERIES 8600 AND 8900 MIXING AND DIVERTING, GLOBE VALVES

Previously manufactured by Dezurik® and Honeywell®

Nor' East

2-1/2" – 8" 8600 and 8900 Series Mixing and Diverting Globe Valves

Instructions These instructions are intended for personnel who are responsible for installation, operation and maintenance of your DeZURIK Globe Valve.

Safety Messages All safety messages in the instructions are flagged with the word Caution, Warning or Danger. These messages must be followed exactly to avoid equipment damage, personal injury or death.

Safety label(s) on the product indicate hazards that can cause equipment damage, personal injury or death. If a safety label becomes difficult to see or read, or if a label has been removed, please contact DeZURIK for replacement label(s).



WARNING!

Personnel involved in the installation or maintenance of valves should be constantly alert to potential emission of pipeline material and take appropriate safety precautions. Always wear suitable protection when dealing with hazardous pipeline materials. Handle valves, which have been removed from service with suitable protection for any potential pipeline material in the valve.

Inspection Your DeZURIK Globe Valve has been packaged to provide protection during shipment. Carefully inspect the unit for damage upon arrival and file a claim with the carrier if damage is apparent.

Parts Order parts from your local sales representative, or directly from DeZURIK, as listed on the back cover. Recommended spare parts are listed on the assembly drawing. These parts should be stocked to minimize downtime.

DeZURIK Service DeZURIK service personnel are available to install, maintain and repair all DeZURIK products. DeZURIK also offers customized training programs and consultation services.

For more information, contact your local DeZURIK sales representative or visit our website at www.dezurik.com.

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Nor' East

2-1/2" – 8" 8600 and 8900 Series Mixing and Diverting Globe Valves

Description

The Series 8600 (Mixing) and Series 8900 (Diverting) valves are light duty, cast iron, cage type globe valves with a pneumatic diaphragm spring actuator. See Figure 1 for flow direction.



WARNING!

This valve is a pressure vessel. Failure to release pipeline pressure may result in personal injury and/or flow system damage. Completely release pipeline pressure before removing the actuator from the valve or removing the valve from the pipeline.

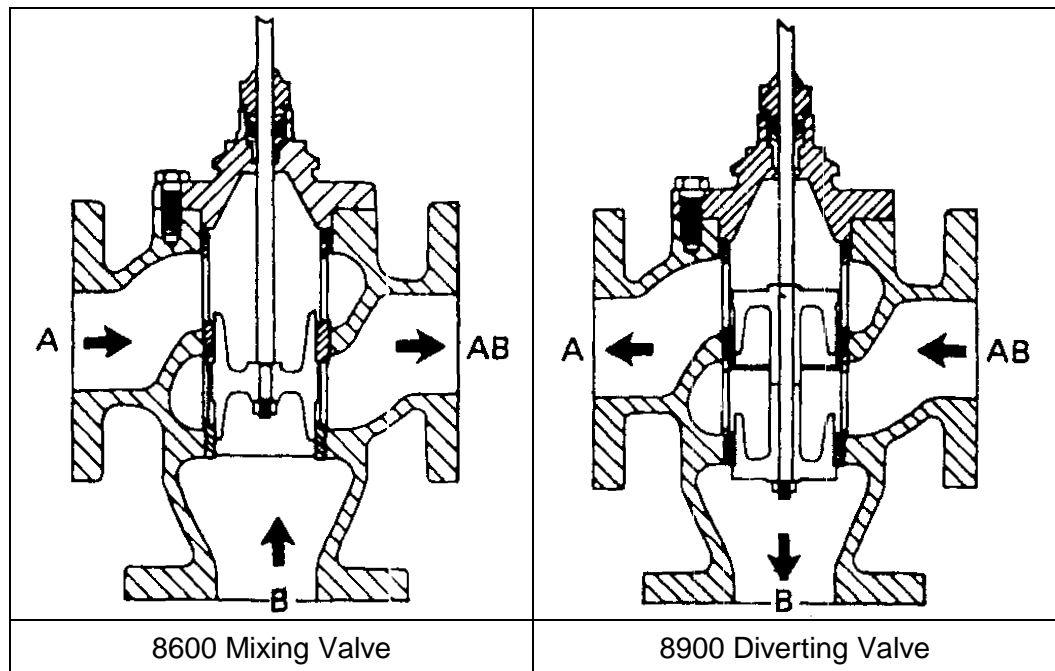


Figure 1 – Flow Direction

Valve Pressure Ratings

See Table A for valve pressure ratings.

Table A: Valve Pressure Ratings

Valve Size	Pressure Rating (ANSI)
	Cast Iron (ANSI B16.1) Flanged Ends
2-1/2"	125 lbs and 250 lbs
3"	
4"	
5"	
6"	
8"	

Installation**CAUTION!**

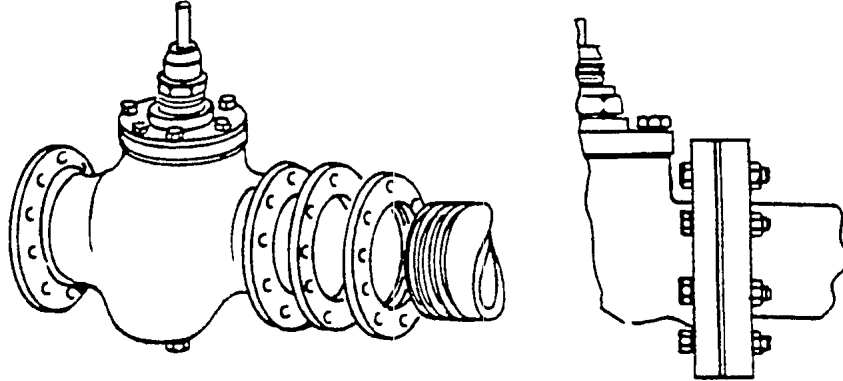
If valve is used in a water system, the water must be adequately treated to prevent the formation of rust, carbonates and other undesirable deposits on valve parts. Otherwise, deposit build ups can damage packing, seats or other internal valve parts.

- For maximum efficiency and minimum wear, install valve in the vertical position with valve stem pointing up.
- Be sure to leave a minimum of 4 inches clearance for actuator removal.
- Before installing, be sure valve and pipeline are clean inside and free of scale, chips and welding spatter.
- The valve must be installed with the fluid flow in the direction of the arrow on the valve body (pressure under plug). Pipes must be lined squarely with the valve at each connection. If they are forced into the valve, the body may become twisted, causing improper seating. Be sure there are no pockets in the line where condensate could accumulate and cause an undesirable water hammer.
- Be sure that the flow medium and ambient temperature and the selected location will not exceed the maximum temperature limitations for the valve or actuator.
- If the valve has flanged ends, tighten flange bolts evenly to prevent excessive stress and possible cracking.

Installation (Continued)

Piping Tips for Valves with Flanged Ends

If possible, mount companion flange on pipe before mounting flange on the valve.



Do not apply pipe dope to valve flange, companion flange or gasket. Be sure face of companion flange is flush with face of valve-body flange and lined up square before tightening mounting nuts.

Note: If valve has welded ends, prevent plug and cage distortion by keeping excess heat from valve body.

Parts Identification**Nameplate Data**

The nameplate gives vital information on valve construction and operation. Always reference the serial number when ordering spare parts.

The spring range (on spring diaphragm actuators) is factory set to specifications on the order. Note the type of trim material, packing and lubricant number ("NONE" means packing does not require lubrication.) Remember that a change in operating conditions may mean a change in trim material, packing and lubricant type. Keep a permanent record of all nameplate information.

See Figure 2 for parts identification.

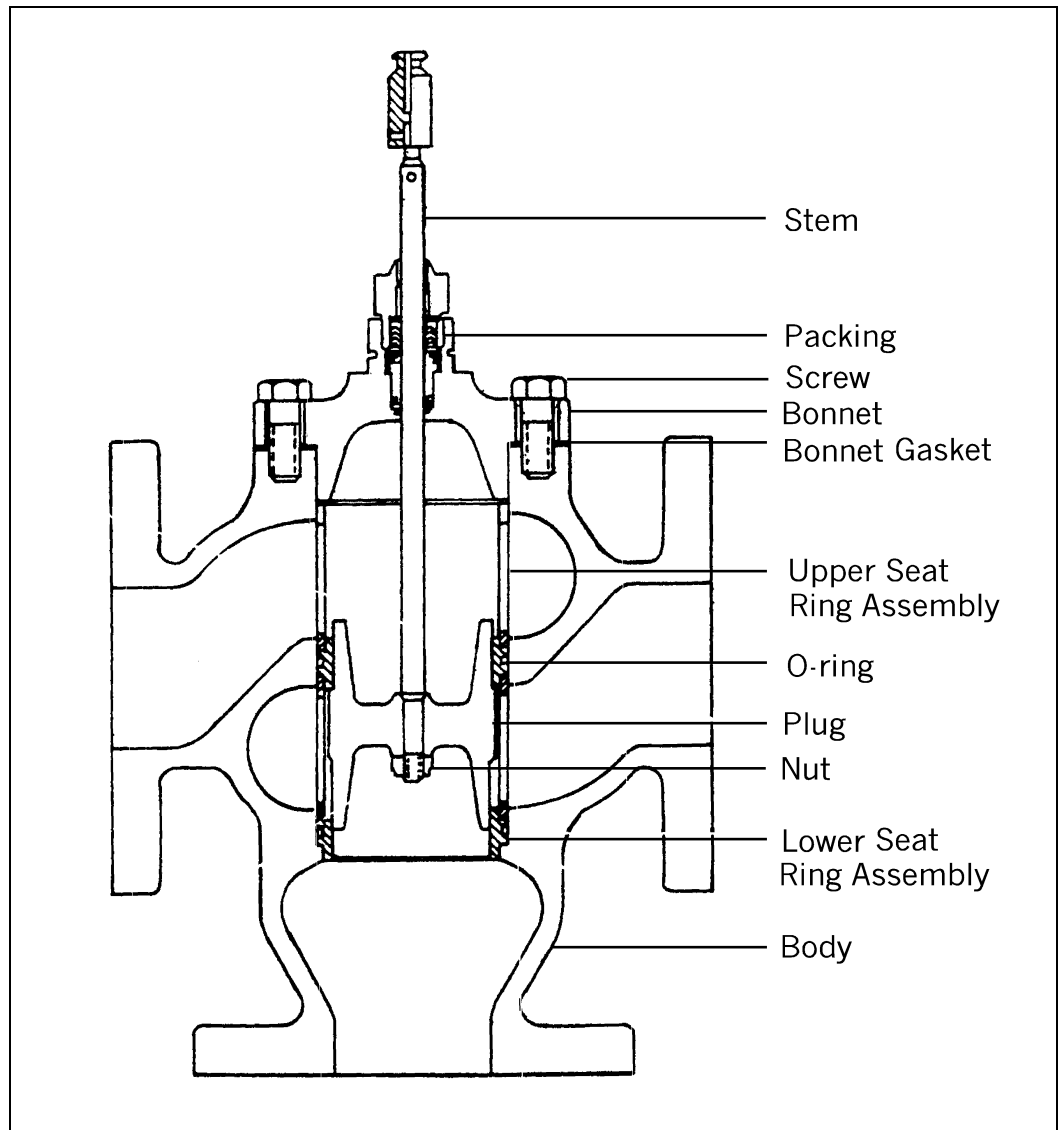


Figure 2: Parts Identification

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Maintenance

Preventive maintenance consists of making a periodic visual inspection. This will reveal packing box leaks, loosening of air connections due to vibration and visible failures of valve parts and accessories.

Packing Box

Checking packing box for leakage. If leakage is evident;

- With spring-loaded Teflon packing, replace packing.

Connections

Check all mechanical and air connections. In some applications, particularly where the valve is located in a line near a pump, vibrations may cause both mechanical and air connections to work loose.

If possible, stroke the valve through several cycles, noting the operation, the pressure required to for stroking and the normal action of the valve.

**Valve
Overhaul**

Generally, when a valve is overhauled the bonnet and actuator are removed from the valve body, the packing is removed from the packing box and all parts are cleaned. Make a thorough inspection of the plug, cage and stem to determine whether these parts should be re-used, re-worked or replaced. To minimize the possibility of leakage, always replace the bonnet and cage gaskets whenever the valve is disassembled.

Actuator Removal

- Stop pipeline flow and completely release pipe line pressure.
-

**WARNING!**

This valve is a pressure vessel. The bonnet will blow off the actuator if the bonnet bolts are removed with pressure in the valve. Completely release pressure before disassembling the valve.

- Disconnect and lock out the pneumatic or electrical power to prevent accidental operation of the actuator.
-

**WARNING!**

Moving parts from accidental operation of power actuator can cause personal injury or equipment damage. Disconnect and lock out power to actuator before removal.

- Remove actuator from valve. See Figures 3 for actuator removal.

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2-1/2" – 8" 8600 and 8900 Series Mixing and Diverting Globe Valves

Valve Overhaul (Continued)

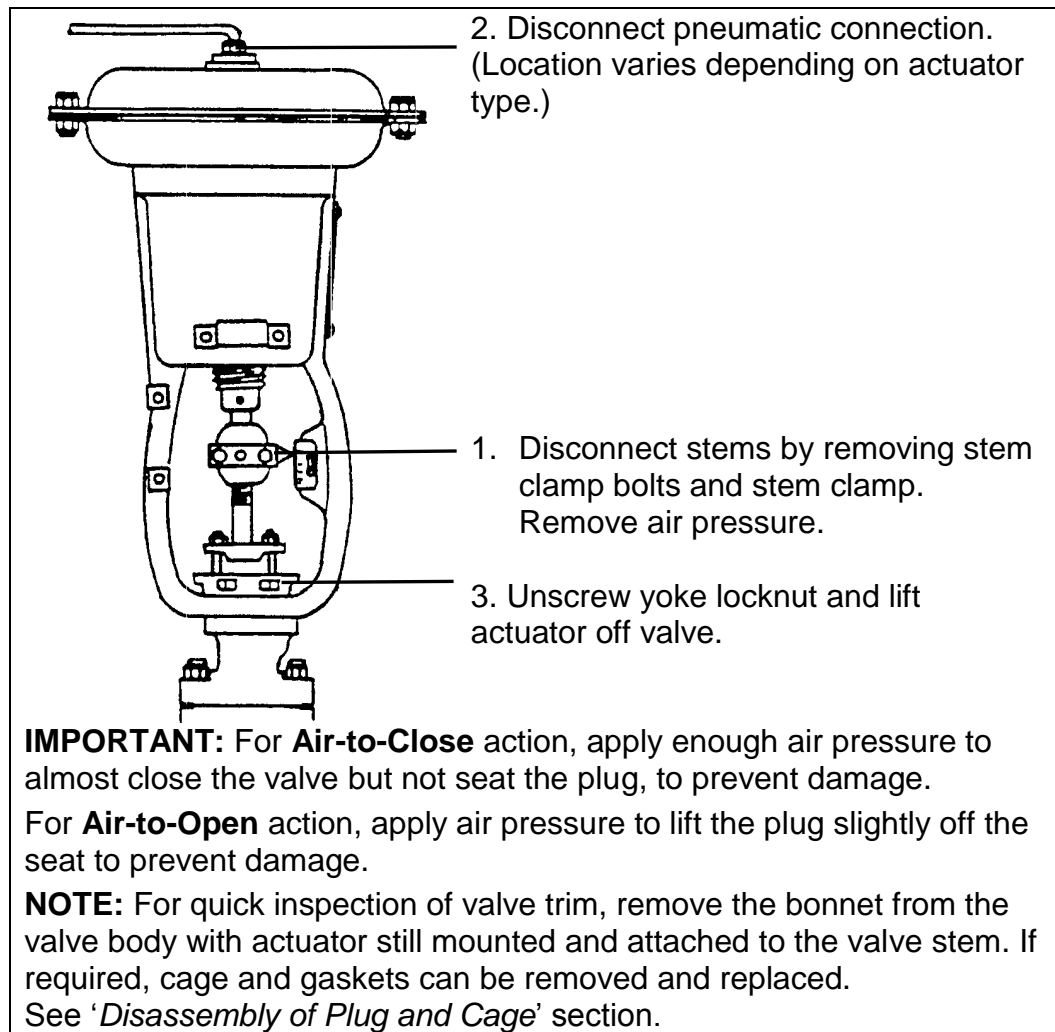


Figure 3: Actuator Removal (Diaphragm Actuators)

Valve Overhaul **Valve Disassembly**
(Continued)

See Figure 4 for disassembly of valve.

1. Remove bonnet capscrews.
2. **2-1/2" – 6" Valves:** Loosen packing nut.

8" Valves: Remove nuts from studs, then remove packing gland and packing follower.

3. Lift bonnet off of valve stem.
4. Remove bonnet gasket.
5. Lift upper seat ring assembly out of valve body.
6. Lift valve stem and plug assembly out of valve body.
7. Lift lower seat ring assembly out of valve body and remove O-rings from both seat ring assemblies.

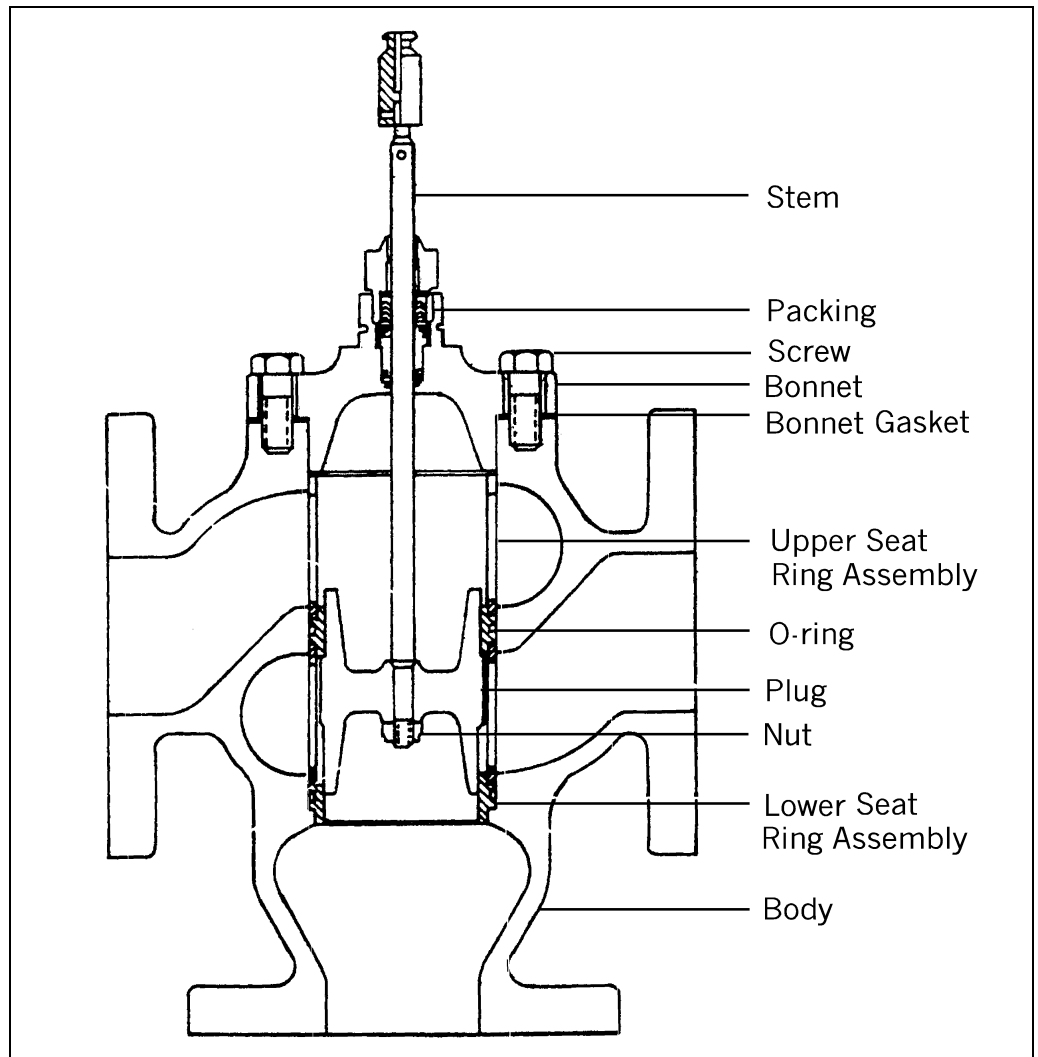


Figure 4: Valve Disassembly

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2-1/2" – 8" 8600 and 8900 Series Mixing and Diverting Globe Valves

Valve Overhaul *Valve Re-assembly*

(Continued)

NOTE: A new plug and seat rings should be installed at the same time to insure tight shutoff. Always replace required gaskets and O-rings whenever the valve is disassembled to prevent leakage.

1. Place new O-rings in grooves on both the upper and lower seat ring assemblies.
2. Insert the lower seat ring assembly into the valve body.
3. Insert the plug and stem assembly into the lower seat ring assembly.
4. Insert the upper seat ring assembly into the valve body.
5. Place the bonnet gasket onto the valve body.
6. Slide the bonnet down the stem and screw the bonnet to the valve body. Alternate tightening of the bonnet capscrews until the bonnet raised face contacts the body on all sides. Tighten to the appropriate torque listed in Table B.
7. Install new packing. (See "Packing Replacement" section.)
8. Return valve to service and check for leaks before installing actuator.

Table B: Bonnet Capscrews Torque

Stud Size (Inches-UNC)	Recommended Torque	
	Lbs.-ft.	N-m
7/16-14	15-25	21-33
1/2-13	30-40	41-54
9/16-12	50-70	68-94
5/8-11	70-100	95-135
3/4-10	120-170	163-230

Valve Overhaul *Packing Replacement***(Continued)**

Spring-Loaded Teflon - To replace this packing, it is necessary to remove the actuator from valve and stem clamp from valve stem. See "*Actuator Removal*" section for instructions to remove actuator.

- Disconnect and lock out the pneumatic or electrical power to prevent accidental operation of the actuator.

**WARNING!**

Moving parts from accidental operation of power actuator can cause personal injury or equipment damage. Disconnect and lock out power to actuator before servicing valve.

Packing Replacement – 2-1/2" - 6" Valves

See Figures 5 and 6 for Spring-Loaded Teflon packing identification.

1. Unscrew packing box nut.
2. **125 lbs Valves:** Remove packing, spring flange and spring from bonnet.

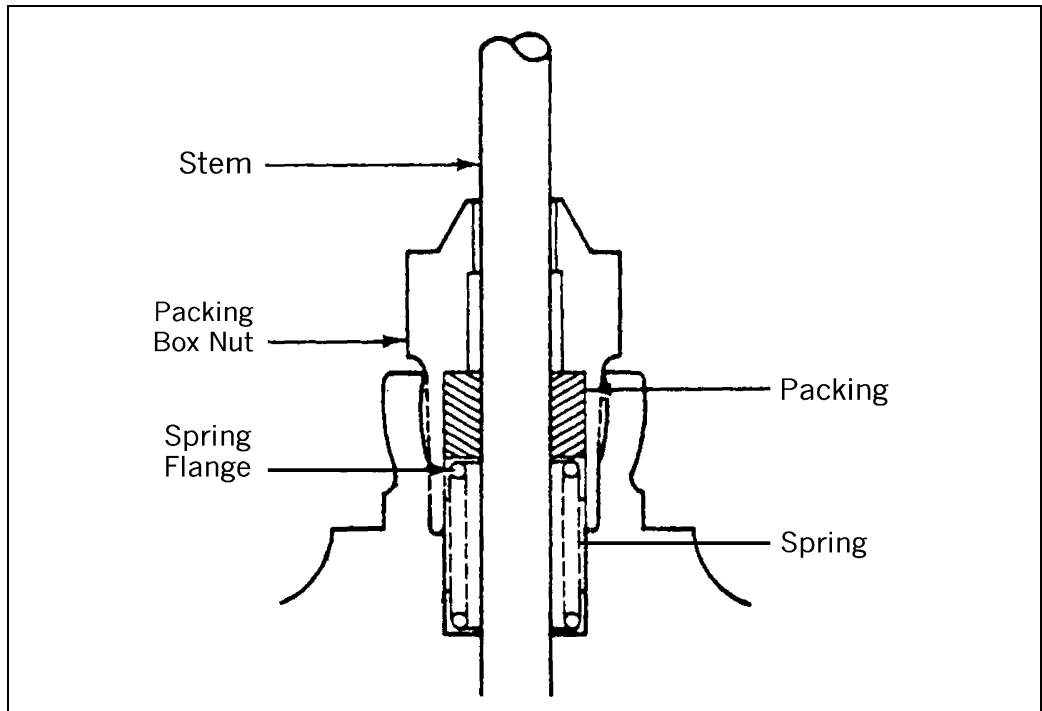
250 lbs Valves: Remove seal, packing, spring, spring flange and O-ring from bonnet.
3. Clean spring flange, packing spring, packing well and valve stem (if in place).
4. Place a small amount of Plasti-Lube #2 on the Teflon rings, the upper half of the valve stem (if in place) and the packing box nut.
5. **125 lbs Valves:** Insert spring and spring flange and spring in bonnet.

250 lbs Valves: Insert O-ring, spring flange and spring in bonnet.
6. Insert new Teflon packing into packing chamber. Be careful not to scratch or tear the Teflon rings while sliding over the valve stem (if in place).
7. **250 lbs Valves:** Insert seal on top of packing.
8. Replace packing box nut. Turn the packing box down tight on the bonnet.
9. Mount actuator on valve and reconnect power. Turn on system and check valve for leaks.

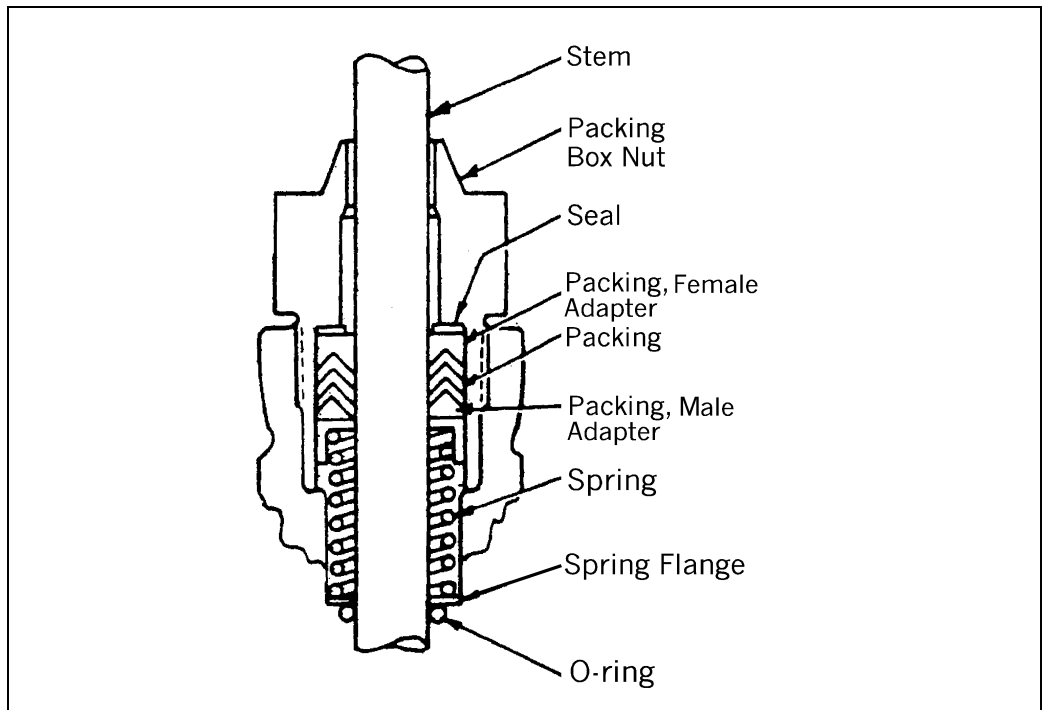
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Valve Overhaul (Continued)



**Figure 5: Spring-Loaded Teflon Packing
(2-1/2" – 6" 125 lb Valves)**



**Figure 6: Spring-Loaded Teflon Packing
(2-1/2" – 6" 250 lb Valves)**

Valve Overhaul (Continued) Packing Replacement – 8" Valves

See Figure 7 for Spring-Loaded Teflon packing identification.

1. Unscrew packing flange nuts.
2. Remove packing flange, packing follower, upper stem wiper, packing, washer, spring, washers and lower stem wiper from bonnet.
3. Clean upper washer, spring, lower washer, lower stem wiper and valve stem (if in place).
4. Place a small amount of Plasti-Lube #2 on the Teflon rings and the upper half of the valve stem.
5. Replace lower stem wiper, 8 lower washers, spring and upper washer.
6. Insert new packing into packing chamber. If valve stem is in place, be careful not to scratch or tear the Teflon rings while sliding over the valve stem.
7. Replace the upper stem wiper, packing follower and packing flange. Finger tighten the packing flange nuts.
8. Mount actuator on valve and reconnect power. Turn on system and check valve for leaks.

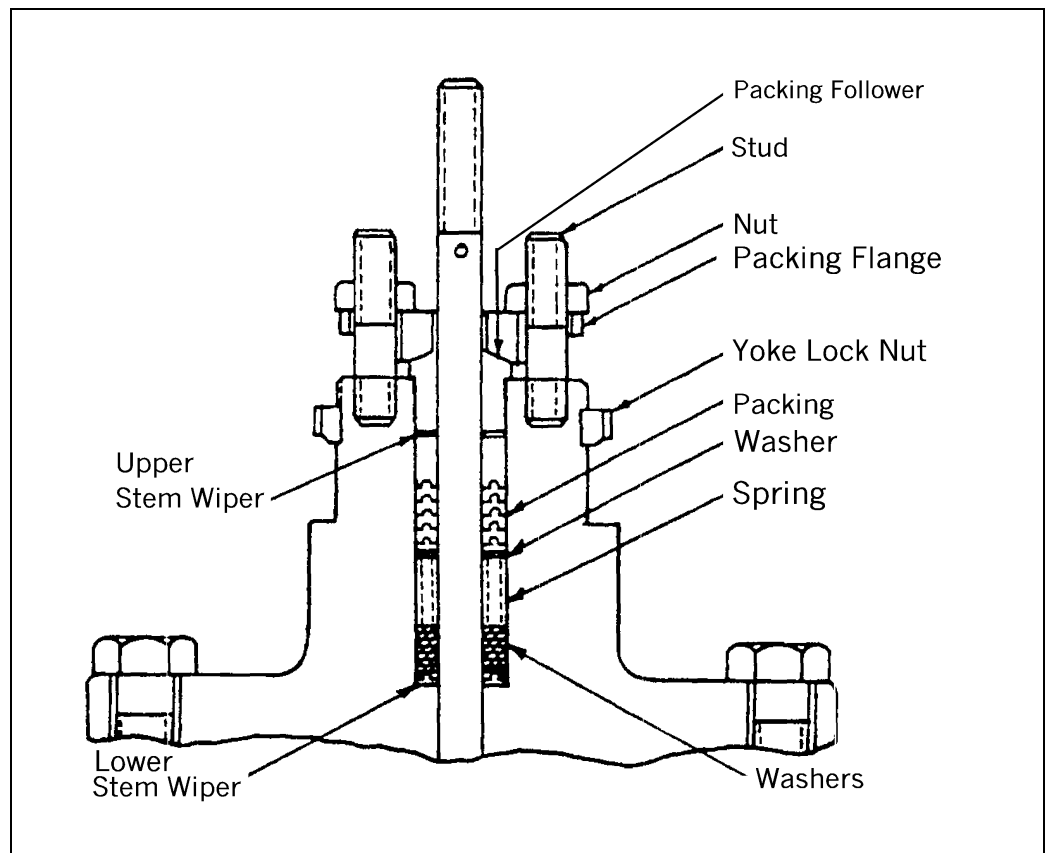


Figure 7: Spring-Loaded Teflon Packing (8" Valves)

Mounting Actuator

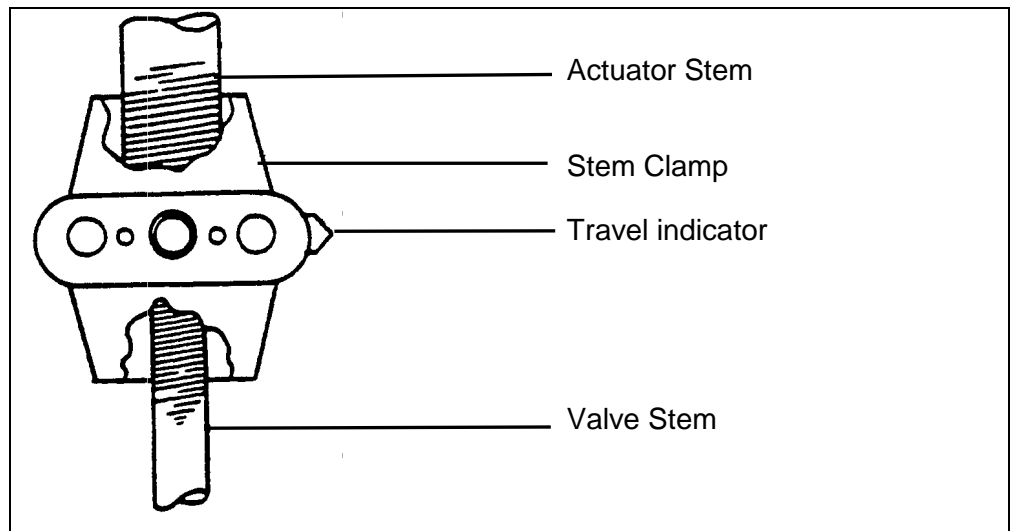
NOTE: Refer to nameplate to determine actuator and valve combination. See Figure 8 for stem connection.

Air-to-Close (Direct Acting) Actuator

1. Mount actuator onto bonnet and lock in place with hex socket head cap screws. Slip yoke lock nut over valve stem and tighten down on mounting yoke.
2. With no air pressure in actuator, seat valve plug.
3. Raise valve stem and plug a distance equal to the travel specified on nameplate.
4. Lock valve stem to actuator stem with stem clamp.

2-1/2" – 8" 8600 and 8900 Series Mixing and Diverting Globe Valves**Mounting
Actuator
(Continued)****Air-to-Open (Reverse Acting) Actuator**

1. Push valve stem down and seat plug.
2. Mount actuator onto bonnet and lock in place with hex socket head cap screws. Slip yoke lock nut over valve stem and tighten down on mounting yoke.
3. Apply sufficient air pressure in actuator to raise actuator stem 1/16".
4. Lock valve stem to actuator stem with stem clamp.

**Figure 8: Stem Connection**

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