

## Multi-Purpose Valve

Plant I.D. 001-926

EFFECTIVE: August 1, 1994

### Seal Kits

The standard seals used in a Taco Multi-Purpose Valve are Ethylene Propylene. This elastomer was selected for use in Glycol and hot water applications and should give good service. Fluids containing oils will deteriorate the elastomer seals giving poor service.

### Stem and Gland Seals Installation

1. Isolate valve.
2. Remove memory clamp (items 11, 26, 27) and remove pointer (item 12) with a pair of pliers.
3. Remove two bolts securing gland (item 8) to bonnet (item 5). Insert the blade of a screwdriver in the groove between the gland and bonnet and pry gland up. Gland can now be twisted off stem.
4. Pick out o-rings (item 23) from grooves in gland bore and remove gland/bonnet seal o-ring (item 22). Clean grooves and sealing surfaces.
5. Lubricate o-rings with silicone grease or liquid soap. **DO NOT USE OIL!**
6. Install o-rings in grooves and in rabbet of bonnet.
7. Reverse disassembly procedure. Orientate scale towards the downstream side of the valve. Tap roll pin pointer into hole in stem. Make sure pin is straight. Slip memory clamp over stem, with valve open, secure clamp against counter clockwise-stop – You are now ready to recharge the system and check for leaks.

### Internal Body Seals

1. Isolate valve and prepare to catch remaining fluid in piping when valve is disassembled.
2. Remove 2 or 4 bonnet bolts (depending on valve size). Make sure valve is open. Using a screw driver and the groove at the corners of the bonnet (item 5), pry the bonnet up. Plug (item 3) should come out with the bonnet.

3. Remove memory clamp (items 11, 26, 27) and pointer (item 12) from stem and twist off bonnet/gland assembly from plug. Remove flat rubber ring (item 14) from top of plug.

4. Clean sealing surfaces.

5. The seat seal (item 24) can be pried from the dovetail groove while holding the clapper open. (If clapper hinders seal removal, the clapper assembly can be removed as described in the spring replacement section of this instruction sheet).

6. The seat to body seal (item 36) normally does not need replacing but if it is deemed necessary, the body must be removed from the piping so that a pin wrench can be engaged with the seat to facilitate removal of the seat.

7. Lubricate o-rings with liquid soap or silicone grease.

8. Seat o-ring should be pushed into the groove at four places 90° apart around the seat. Go around seat o-ring again pushing o-ring into groove between initial installation points. Push remaining o-ring into groove and smooth out around seat so that o-ring is flat.

9. Install flat ring (item 14) over stem of plug (item 3) and install gland/bonnet assembly onto plug.

10. Install pointer (item 12) and memory stop (items 11, 26, 27).

11. Place new body o-ring in counter bore of body opening and insert plug-gland/bonnet assembly into valve with nameplate and pointer orientated towards the downstream side of the valve.

12. Line up bolt holes and install bonnet bolts, tightening alternate bolts until snug.

13. Pressurize system and check for leaks.

### Spring and Clapper/Arm

1. Isolate valve, turn plug of MPV to the full open position

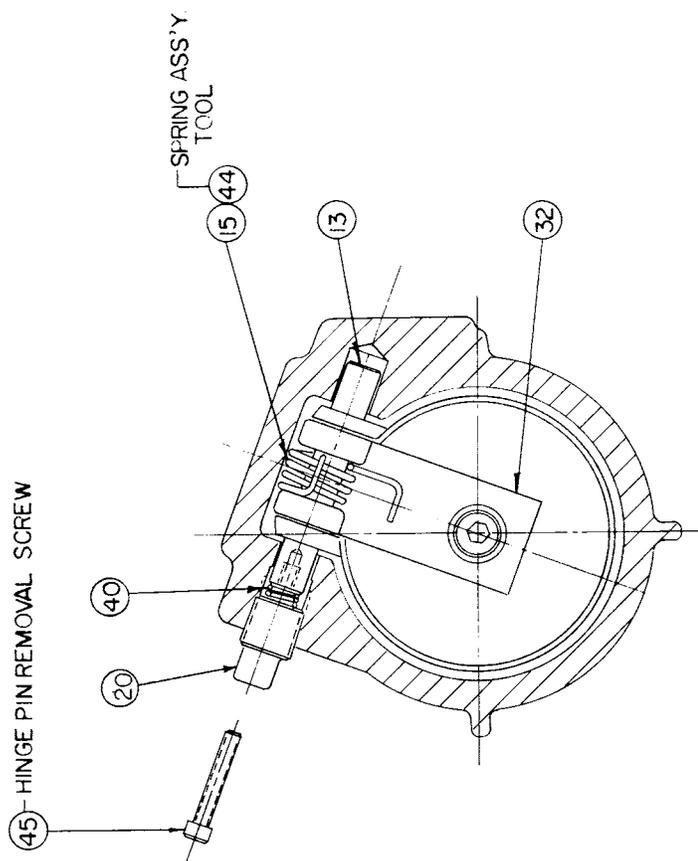
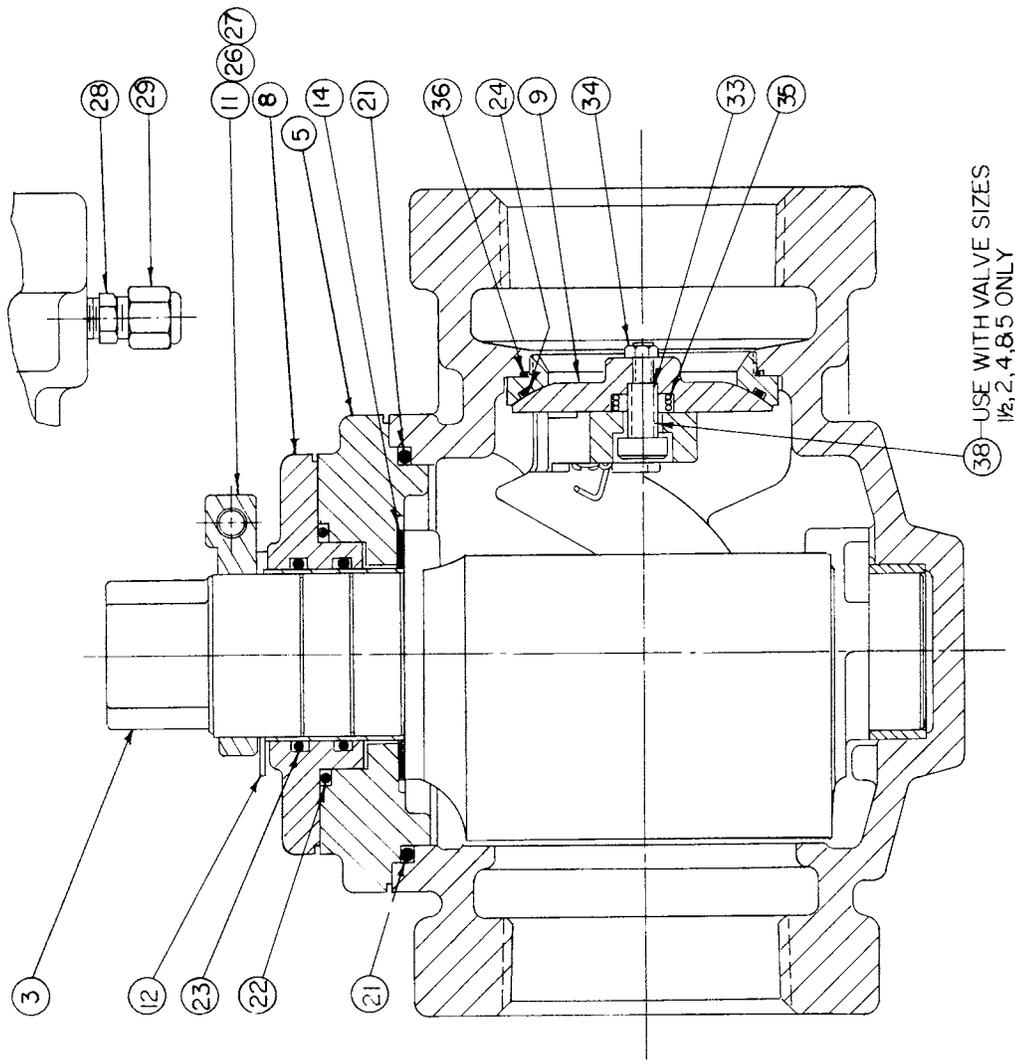
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and prepare to catch remaining fluid in piping as valve is disassembled.

2. Remove 2 or 4 bonnet bolts (depending on valve size). Using a screw driver and the groove at the corners of the bonnet, pry the bonnet/plug assembly up. Plug should come out with the bonnet.
3. Remove the pipe plug (item 20) on the side of the valve and remove small spring (item 40).
4. Screw pin removal screw (item 45) into exposed end of hinge pin (item 13). "WARNING"! Cover valve body opening with cardboard to prevent spring (item 15) from flying.
5. Pull pin (item 13).
6. Remove spring and clapper/arm assembly (item 32) from valve, if clapper/arm is to be changed.
7. Install new clapper/arm assembly (item 32), if needed. Insert pin (item 13), with pin removal screw (item 45) installed and pointing away from valve, into pin access hole in body and through first bearing of arm.
8. On 1½" through 5" valves, push spring (item 15), with stepped end of spring towards arm, in between arm bearings. While holding spring, push pin through spring coil, other arm bearing and into body pin hole. Position straight end of spring to rest in groove in side of body.

**Note:** On 6", 8" and 10" valves, spring winding/holder tools are needed due to heavy spring forces. (See 9 for spring winding for larger valves.)

**Note:** All MPV's use one torsional spring except the 10" which uses two.

- 9A. **6" Spring** 1) Install end of spring with straight "L" shaped end into side of holder marked #2. 2) Place notch of 6" winder around free leg of spring close to coil and arm of winder parallel and extending away from end of holder. 3) Wind spring by pulling winder towards holder and stop when free "L" shaped end of spring touches top of holder. Rotate holder bar over "L" shaped end of spring. Remove winder.
- 9B. **8" Spring** 1) Insert straight end of spring into end of 8" holder with coil of spring resting on incline of holder. 2) Insert round projection of hub of winder into coil of

spring from the "L" shaped free end side of spring. 3) Rotate winder until grooved pin catches the inside corner of the stepped portion of the free end of the spring. 4) Continue winding spring until "L" shaped end of spring rests on top of spring holder. 5) Rotate holder bar over "L" shaped end of spring and release winder.

10. On the 6" and 8" MPV, after having secured the spring (item 15) in the spring holder as described in steps 9A and 9B, insert the holder and spring through bonnet opening, positioning spring between arm bearings making sure stepped end of spring will rest against arm when spring is released.
11. Insert pin (item 13), with pin removal screw (item 45) installed and pointing away from valve into access hole in body and through first bearing of arm.
12. Push pin (item 13) through spring, second arm bearing and into body bearing.
13. Release spring holder and remove from body.
14. Remove pin removal screw (item 45) from pin.
15. Install tension spring (item 40) and pipe plug (item 20) in pin access hole.
16. Check to see that clapper assembly opens fully and closes without binding.
17. Install o-ring in counter bore of body opening.
18. Insert plug-gland/bonnet assembly into valve with nameplate and pointer orientated towards the downstream side of the valve. **Note:** Make sure bonnet o-ring does not fall into body.
19. Line up bolt holes and install bonnet/bolts, tightening alternate bolts until snug.
20. Pressurize system and check for leaks.

**Note:** 10" MPV uses two 8" MPV springs. Follow procedure starting with Step 11. Install first spring next to arm bearing nearest pin access hole. Push pin through first arm bearing and through first spring. Release spring. Wind second spring onto holder and install next to first spring between arm bearings. Push pin through second spring, arm bearing and into body bearing. Follow smaller valve final assembly instructions 13 through 20. The arm may have to be moved to align arm bearing with pin and hinge or body bearing.