

2-Piece Threaded and Soldered End Ball Valves

INTRODUCTION

This instruction manual includes installation, operation and maintenance information for 2-piece threaded and soldered end ball valves. This manual addresses brass, carbon steel, or stainless steel valves with, or without, a PTFE body seal.

INSTALLATION

WARNING

To avoid personal injury to your self, fellow workers, or damage to property from release of process fluid, before installation:

- a. Shut off all operating lines to the valve site
 - b. Isolate the valve site completely from the process
 - c. Release process pressure
 - d. Drain the process fluid from the valve site
1. Before installing the valve, inspect the valve body port and associated equipment for any damage that may have occurred and for any foreign matter that may have collected in shipping or storage. Make certain the body interior is clean.
 2. Before installing the valve, inspect the pipe line and mating pipe, making sure the pipe is free of foreign material and the ends are clean and have no burrs or pits that could cause leakage.
 3. The pipe must be free of tension before and after installation.
 4. If the valve was supplied with an actuator, secondary support may be necessary. Contact FNW for recommendations.
 5. If the valve is lubricated (carbon steel valves are oiled to prevent corrosion during shipping and storage), the lubricant can be removed with an application compatible solvent if required.
 6. Valves that are tested to ASTM 16.34 may have water trapped between the ball and body cavity. This can be removed by partially opening the valve, exposing the cavity to the through port of the ball. Allow the water to drain out.
 7. Cycle the valve a couple of times before installation.
 8. When installing valves with square stems, ensure that the port is configured correctly. There is a slot in the top of the stem that indicates the ports position.
 9. The valve should be installed in the open position

Threaded Ends

1. Unless otherwise specified, pipe threads are American National Standard Taper Pipe Threads (NPT) per ANSI B1.20.1. This standard requires that a pipe sealant be used. Use an anti-seize thread sealant to seal and prevent galling. Use pipe sealants in accordance with the manufacturer's instructions and good piping practices. Correct lubrication of stainless steel pipe threads is especially important to prevent galling.
2. To prevent distortion or damage to the valve, do not apply torque through the valve. When tightening the valve, always use a wrench on the end nearest the pipe being tightened. It is preferred that the pipe be screwed into the valve, holding the valve stationary at the end being connected.
3. Always leak test the system before using.

2-Piece Threaded and Soldered End Ball Valves

Soldered Ends

1. Use standard pipe soldering practices for standard trim valves (i.e. – PTFE seats and seals).
2. Piping ends to be soldered into valve ends should be cut square and then cleaned with an appropriate cleaner or flux.
3. Valves are designed to be soft soldered. Apply heat with flame directed away from the center of the valve body. Excessive heat can harm the PTFE seats. For added seat and seal protection, wrap a cold damp cloth around the body of the valve.
4. Clean finished joint.
5. Always leak test the system before using.

MANUAL OPERATION

1. Ensure that the valve materials are compatible with the service and that the operating characteristics are below the valves maximum.
2. Open and close the valve by turning the handle one-quarter turn (90°). Valves may have a locking lever device. If so equipped, slide the locking plate up the lever before operating.
3. The valve is in the open position when the maximum handle length is parallel to the pipe.
4. The valve is in the closed position when the maximum handle length is perpendicular to the pipe.

MAINTENANCE

WARNING

To avoid personal injury to your self, fellow workers, or damage to property from release of process fluids, before performing any maintenance:

- a. Shut off all operating lines to the valve.
 - b. Isolate the valve completely from the process.
 - c. Release process pressure.
 - d. Drain the process fluid from the valve.
1. Brass body valves without a body seal are not designed for rebuilding, nor is it economical to do so. If over time, the valve leaks, complete replacement is recommended.
 2. Ball valves, if properly used, do not require internal lubrication or maintenance. However, a visual inspection should be part of a regular maintenance program. A higher frequency of inspection is recommended for valves operating under extreme conditions. Also, for proper operation it is recommended that the valve be opened and closed at least twice a year.
 3. Before any maintenance, open and close the valve at least once to release the pressure completely from the valve body.
 4. For stem leaks, if the valve has adjustable packing, use a crescent wrench, or spanner wrench as needed, to turn the packing nut/gland clockwise at quarter-turn intervals until the leak stops. If the packing nut/gland can not be turned clockwise any further, or if the valve continues to leak, it will have to be replaced or repaired.

NEVER REPLACE VALVE PACKING WHILE THE VALVE IS IN SERVICE.

2-Piece Threaded and Soldered End Ball Valves

5. Valves with body seals can be rebuilt by using a “Soft Goods” rebuild kit from FNW.

Disassembly

- A. Place the body end of the valve in a vise, secured on the flats of the valve end. Do not over-tighten the vise or the valve port may be deformed.
- B. With a wrench on the cap end, remove the cap by turning counter clockwise.
- C. Remove the body seal and seat.
- D. Move the lever to the open position and lift the ball out.
- E. Remove the seat from the far side of the body.
- F. Unscrew the packing nut/gland by turning if counter clockwise.
- G. Push the stem down into the body and out the end of the valve.
- H. Remove packing and washers as applicable.

Assembly

- A. Rebuild the valve by using all the replacement parts of the rebuild kit.
- B. Ensure that all parts are clean and undamaged.
- C. Assemble the valve in reverse order of the disassembly instructions.
- D. After reinstallation into the piping system, it may be necessary to adjust the packing nut/gland as described in step 4.

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