



## 2-Piece Threaded and Soldered End Ball Valves

### Introduction

This instruction sheet includes installation, operation, and maintenance procedures for 2-piece threaded and solder end brass or bronze ball valves.

### Installation

#### Warning:

To avoid personal injury to yourself and fellow workers, or to avoid property damage due to accidental release of fluid from the system, before installation please utilize the following procedure:

- a] Shut off all operating lines to the valve site
  - b] Isolate the valve site from the line fluid
  - c] Relieve the pressure of the fluid in the system
  - d] Drain the fluid in the system around the valve site.
- 1] Prior to installation the valve should be inspected for any exterior deformations, and the interior or porting area inspected for any foreign matter or damage to the treads or soldering cups.
  - 2] Prior to installation, inspect the pipeline and the mating pipe making sure both are free of foreign material. In addition, inspect these piping components ensuring they are clean, and there are zero burrs or pits that could cause leakage.
  - 3] Make sure it piping system is tension free before and after installation.
  - 4] The valve should be manually cycled a couple of times prior to installation
  - 5] Make sure the valve is installed in the OPEN position.
  - 6] Brass ball valves are NOT to be installed at or BELOW GROUND LEVEL.
  - 7] Bronze ball valves can be installed at or below ground level, but NOT BURIED.

#### THREADED ENDS

- 1] Unless otherwise specified, ball valve pipe threads are American National Standard Taper Pipe Threads [NPT] to ANSI/ASME B1.20.1. Use pipe sealants in accordance with the manufacturer's instructions and in keeping with good piping
- 2] To prevent distortion or damage to the brass or bronze ball valve do not apply torque directly to 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.

### SOLDER ENDS

1] Ball valve should be in the open position

2] After cutting tubing square, use 100-180 grit emery cloth to burnish the end of the tube.

3] Use solders with melting points below 500°F

4] Clean and prepare the pipe and valve with a clean rag. For drinking water systems (Lead Free valves), apply a non-toxic, water-based solder/flux compliant with NSF 61 to maintain certification throughout the piping system.

4] During the soldering process the ball valve body should not exceed 300°F or deformation of the PTFE seats can occur. To avoid this, use a wet rag or similar heat absorbing technique over the valve body while soldering.

Keep the flame away from the valve body and direct it only towards the soldering cups.

5] Apply heat directly to, and away from the valve end and the pipe. Continue heating from the bottom of the valve while placing non-toxic solder to the top of the connection.

6] Move the torch up and around both sides of the joint while maintaining pressure on the solder at the top.

7] When the solder melts rapidly and is sucked into the joint, continuing applying solder until it drips from the bottom of the connection.

8] Once the first joint is evenly soldered, allow it to cool down before beginning the second joint.

9] When done, make sure to leak test the system.

### Manual Operation

1. Periodically 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.

2. The valve is in the open position when the maximum handle length is parallel to the pipe.

3. The valve is in the closed position when the maximum handle length is perpendicular to the pipe.

## Maintenance

### **WARNING**

To avoid personal injury to yourself, 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 and bronze body ball valves **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. The packing glands on FNW's Ball Valves are adjustable. If a leak should occur, you may adjust the packing gland by tightening it slightly in a clockwise manner.

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