

## **Press End Ball Valve for Water Service**

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### **INTRODUCTION**

This instruction manual includes installation, operation, and maintenance information for press end ball valves for water service. Verify you have a water service valve by ensuring that the proper valve markings and model number are on the valve, and that black EPDM o-rings are inside the press ends.

### **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. Specifically, ensure that the o-ring seals in the press ends are present and undamaged. For sizes 2-1/2", 3", and 4", also ensure that the cir-clips (grip-rings) are undamaged. Make certain the body interior is clean.
  2. Before installing the valve, inspect the pipe line, 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. Press end ball valves for water service are intended for water in the liquid state, **NOT STEAM**. Pressures should not exceed 200 PSI, and temperatures should not exceed 250°F.
  4. Press end ball valves for water service are designed to install on type K, L, or M copper tubing. Annealed (soft) copper tubing can be used on sizes 1/2" to 1-1/4" valves, however, for best possible fit and seal, drawn (hard) copper tubing from 1/2" to 2" is recommended. For XL valves sizes 2-1/2" to 4", use only drawn (hard) copper tubing. All copper tubing must be in compliance with ASTM B-88.
  5. The pipe/valve assembly must be free of tension before and after installation. Neither valve nor copper tubing is to be used as a means of support.
  6. Concealed valve and copper tubing are to be protected from puncture threats.
  7. Under no circumstances is the valve or copper tubing to be used as a grounding electrode for electrical systems.
  8. Inspection, testing, and purging of the installation shall be performed using applicable local codes.
  9. Brass valves are not to be installed at or below ground level.

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### 10. Physical installation (1/2" to 2" Valves):



A. Cut copper tubing at right angles (using displacement type cutter or fine-toothed steel saw).



B. De-burr tubing on the inside and outside to prevent cutting of the valve's o-ring seals.



C. Check seal for correct fit. Do not use oils or lubricants. Use only the valve's black EPDM o-ring seals.



D. Turning slightly, slide press valve on to tubing to the fitting stop. Note: end of tubing must be fully inserted.



E. Using a marker, draw a line on the tubing where it enters the valve (marking the full insertion depth).



F. Insert the appropriate jaw into the pressing tool and push in holding pin until it locks into place.



G. Open the jaw and place at right angles on the fitting. Visually check the insertion mark to ensure the tubing has not moved.



H. Start the pressing process and hold the trigger until the jaw has engaged the fitting.



I. After pressing, release the jaws and remove the tool. Do not attempt to adjust the valve on the pipe after pressing.

### 11. Physical installation (2-1/2" to 4" XL Valves):



A. Cut copper tubing at right angles (using displacement type cutter or fine-toothed steel saw).



B. De-burr tubing on the inside and outside to prevent cutting of the valve's o-ring seals.



C. Mark proper insertion depth: 2.125" for 2-1/2" and 3" valves, 2.5" for 4" valves. Improper insertion depth may result in an improper seal.

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D. Check seal and grip-ring for correct fit. Do not use oils or lubricants. Use only the valve's black EPDM o-ring seals.



E. While turning slightly, slide the press valve onto the tubing to the fitting stop. Note: end of tubing must be fully inserted.



F. Insert the actuator into the pressing tool and push in the holding pin until it locks into place.



G. Open the XL ring and place at right angle on the fitting. The XL ring must be engaged on the fitting bead. Visually check the insertion mark to ensure the tubing has not moved.



H. With the actuator inserted into the pressing tool, open the actuator as shown.



I. Place the actuator onto the XL ring and start the pressing process. Hold the trigger until the actuator has engaged the XL ring.



J. After pressing, the actuator can be opened again. Remove the XL ring from the fitting on completion of press.

12. Before use, pressure-test the system in accordance with local codes.

### 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°).
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.
5. It is recommended that the valve be used in open/close applications, not in mid, or modulating, services.

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### **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.
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1. Press end 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. For stem leaks, use a wrench 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, the valve will have to be replaced.