


# Installation, Operation & Maintenance **General Specifications**

  
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# Installation, Operation and Maintenance

## General Specifications

### Soldered End Connections

1. Clean both copper tube and valve ends with sand cloth and wire brush, wipe clean and apply flux uniformly.
2. If AutoFlow valve contains union nut, remove from valve assembly and place over copper tube past the flux surface. Install the union tail piece or the valve body on the copper tubing with a twisting motion to distribute the flux uniformly when fully inserted.
3.
  - **A heat sink is required** during the soldering of any valve. An appropriate heat sink is a wet rag wrapped around the valve closest to the solder connection shown as point A in the illustration.
  - Ball valves are required to be **fully closed** during soldering to avoid deformation to the EPDM seals during soldering.
  - Apply heat with the **flame directed away** from the center of the body. It is required that the flame of the torch not pass point or damage may occur due to excessive heat. This point may be marked on the valve with a groove in the metal as shown in the illustration.
  - Do not exceed the rated temperature of the valve. Excessive heat will harm internal polymer materials such as o-rings, pressure/temperature test point cores, EPDM seats and stem packing.
4. After the solder begins to melt remove the flame and continue to apply solder until a ring forms completely around the circumference of the joint. While the joint is still hot, remove excess flux and solder with cloth or wire brush to improve appearance and prevent flux from corroding tubing and valve.
5. After both ends of the valve are assembled to the piping, tighten the union (if so equipped) hand tight, and then tighten approximately an additional quarter of a turn. Various valve products contain O-ring unions and care must be taken not to cut or pinch O-rings during assembly.
6. The pressure/temperature test ports are factory installed with hydraulic sealant and will withstand the solder temperatures if PROPERLY HEAT-SINKED WITH WET CLOTH OR PUTTY. If the test port should leak upon pressure test, remove and reinstall with new sealant (do not tighten under pressure).
7. Tighten the valve stem packing nuts where necessary to prevent leakage around valve stems.
8. If union nut must be disassembled after tightening, use pipe wrench on valve body to prevent it from turning.

### Threaded Body Valves:

1. Inspect and clean pipe threads on both valves and piping. They should be free of burrs and cuttings.
2. Apply sealant, either pipe dope or tape, to the threads.
3. If the product contains a union nut, remove the nut from the assembly and place it over the pipe past the threads. Install the tailpiece with a socket wrench, not an open-end wrench, making sure the flow arrow is in the direction of the flow.
4. Attach the valve section to the other end of the piping, rotating the body to get the P/T ports and handle in the desired position. Any position is suitable for the P/T ports except straight down.
5. After both ends of the valve are assembled to the piping, tighten the union (if so equipped) hand tight, and then tighten an additional quarter turn. Care must be taken not to cut or pinch the O-ring in the union.
6. If the union nut must be disassembled after tightening, use a pipe wrench on the valve to prevent turning.

### Butterfly / Flanges:

1. Assemble and tighten the flanges to the valve.
2. Align and place the assembly to the mating piping.
3. Tack weld the flanges to the pipe.
 

**WARNING:** Do not finish welding the flanges to the pipe with the valve bolted between the flanges. This will result in serious heat damage to the valve seat.
4. Remove the flange bolting and valve from between the flanges.
5. Finish welding the flanges to the pipe and allow the flanges to cool completely before proceeding.
6. Install valve. Do not use flange gaskets. The molded valve gasket will seal against standard ANSI flanges.
7. Turn disk to full open position. Center valve and hand tighten bolts.
8. Slowly close to check for adequate disk clearance.
9. Return disk to full open position and cross-tighten all bolts.

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## P/T Port Specifications

### Safety Instructions

1. The seal is made of EPDM.  
**EPDM NOTE:** May be used with hot or cold water. EPDM is resistant to: glycol, alcohol, phosphates, esters, ketones and detergents.  
**DO NOT USE WITH:** Petroleum products, hydrocarbon solvents and/or oils, chlorinated hydrocarbon or turpentine.  
Temperature range: 30°F (-1°C) to 275°F (135°C).  
Maximum pressure: 1000 PSI (69 Bar) at 140°F (60°C).  
Operating pressure: 500 PSI (34.5 Bar) at 275°F (135°C).
2. Always wear protective eye wear when using P/T ports.
3. Always use a pressure gauge with a rating greater than the pressure in the system.
4. Not recommended for use in steam systems.

### Installation

1. P/T ports should be installed in accordance with generally accepted plumbing / fitting practices. Pipe dope or EPDM tape should be used to seal threads.
2. **DO NOT EXPOSE P/T PORTS** to soldering, brazing or welding heat. Complete this work before installing P/T ports.
3. If installation conditions permit, it is preferable to install the P/T port horizontally or higher. Do not install pointing down at the 6:00 position because of potential plugging.

### Operation

1. Remove cap slowly and look and listen for leaks.
2. Remove any foreign material(s) from entrance hole.
3. Select either the pressure or the temperature device to be used. Examine probe and remove any existing burrs. Apply FDI lubrication to probe, especially for first time use.
4. Insert probe slowly with twisting motion. As soon as the necessary readings and adjustments are made, remove probe and replace cap.  
**NOTE:** If probe is left inserted in valve for an extended period of time and then removed, the valve seal will leak until the seal regains its "memory". This is especially true at low pressures and temperatures.
5. Always replace cap after use.  
**HINT:** When taking pressure or temperature readings, use the same instrument for "high" and "low" reading to eliminate instrument errors.

### Maintenance

1. If a plug leaks persistently, replace it.
2. Keep debris out of plugs and keep caps on.

