



# SIGNATURE HD QUARTER-TURN VALVES

## INSTALLATION, OPERATION, & MAINTENANCE GUIDE

### GENERAL INFORMATION

American Valve's Signature HD Quarter-Turn valves are two-piece ball valves designed for connection to hoses and spray equipment. They may also be used for drainage without connection to downstream accessories.

American Valve Inc. assumes no liability for any damages or injuries resulting from non-compliance with installation instructions or standard good practices when installing, operating, or maintaining the valves, even if not explicitly mentioned in this document.

This document covers the following model families:

M71QT	M76QT
M71QTSS	M74QT
M71QTM	M74QTS

### VALVE SELECTION

American Valve offers ball valves made of different materials: brass, lead free\* brass, Dezincification Resistant (DZR) brass, lead free DZR brass, bronze, iron, ductile iron, and stainless steel. We recommend using valves made of a material suitable for the specific application. Stainless steel, bronze and DZR brasses are recommended to reduce risk of de-zincification and stress corrosion. Details of the materials used for each model are listed in the specific valve technical sheet. Please refer to your local water authority for compatibility with brass products. American Valve cannot be held responsible for failures caused by the quality of the water in combination with an unsuitable material chosen for the valve.

### PRESSURE & TEMPERATURE RATINGS

Specific information on pressure and temperature ratings of each valve model are provided in the American Valve technical sheets, those can be obtained through American Valve's website or by contacting American Valve. All contact information is provided in the last page of these instructions.

The operative conditions given in the technical sheets are intended for non-shock operating conditions. Applications subject to water hammer, impacts, stress loads, corrosive or erosive external environmental elements, or the transport of fluids with abrasive properties should be avoided.

## VALVE INSTALLATION

Prior to installation, confirm that the valve is suitable for the pressures, temperatures, operating fluids and environment in which it will be installed. It is the responsibility of the installer and/or of the facility designer to ensure that the application does not exceed the limits of pressure and temperature of the valve and is carried out in accordance with local current laws and regulations.

Special consideration must be given in applications where freezing conditions could allow residual fluid inside the valve to freeze. Valves should be installed with a slight downward pitch and left half-open (handle at 45 degrees) after draining to relieve pressure from any fluid that may be trapped around the ball.

Pipe ends should be void of any burrs and not protrude inside the bore or obstruct any part of the flow. Lines should be flushed after installation or after performing maintenance on the system.

Do not subject the valve to any twisting, bending or tension. Pipe brackets or supports should be installed at a distance suitable to properly support the valve and piping. Do not to overload the valve with any additional stress.

## THREADED CONNECTIONS

Valves shall be installed on pipes using a sealant suitable for the application and the expected type of fluid.

- All connecting threads shall be in accordance with the applicable standard requirements (please refer to the valve technical sheet). Pipe threads must be free of damage that could impair the connections.
- Additional stresses on the valve's body to cap connection must be avoided during installation. Always use a wrench to grasp the hexagon/octagon portion of valve end while attaching to the pipe. In order to avoid additional stress on the valve, be careful not to tighten the pipe at an excessive distance from the threaded area.
- Avoid over-insertion of male threaded fittings into the valve. This could result in damage to the valve seats, or exert undue stress on the valve body, leading to failure.

## SOLDER CONNECTIONS

**WARNING:**

DO NOT under any circumstances solder the downstream end of any valve while there is upstream pressure OR with fluid trapped in the cavity around the ball. **Steam created from trapped fluid in cavity around the ball could cause the valve to burst if valve is heated excessively.** Always drain down the system and cycle the valve two to three times after drain down is complete before applying heat.

American Valve sweat connections are designed to be soft soldered using lead-free solder and flux without disassembling the valve.

- Ball valves contain polymer materials such as o-rings and PTFE seals. These seals can be damaged by excessive heat, therefore the use of heat sinks (for example a wet towel around the valve) is required. The flame must be directed away from the center of the valve body.
- Ball valves must be placed in the closed position prior to soldering. After the installation wait for the valve to cool to room temperature before operating it.
- Ensure that the pipe is cut square free from burrs or rough edges. Clean both the valve socket and pipe end with a suitable tool until they are made polished.
- Coat both the valve socket and pipe with non-corrosive solder flux. In cold weather this should be done with the parts at ambient temperature. After applying the flux, slide the pipe to the shoulder of the socket then rotate a few times to insure flux properly covers the connection prior to soldering.

## USE AND MAINTENANCE

Valves need to be operated on a regular basis with a complete open/close cycle. Valves must be replaced when there is visible leakage or damage. For models with adjustable packing nuts, stem leakage may be stopped by tightening the packing nut. Rotate the nut clockwise taking care not to damage the valve body with excessive strength. Wear proper protection gear when performing any maintenance.

While all American Valve ball valves feature blow-out proof stems, you must depressurize the line prior to adjusting the valve packing. If leakage doesn't stop, the valve should be replaced.

Ball valves are designed shut-off valves. They should be used only in the fully open or closed position. Throttling will damage the seats and over time compromise the valve's ability to seal.

American Valve 2-piece ball valves must only be operated by handles and accessories supplied by American Valve.