

Series TMBV THREE-WAY BALL VALVES

INSTALLATION, OPERATION, & MAINTENANCE INSTRUCTIONS

IMPORTANT - BEFORE INSTALLING

True Blue ball valves will open and close when properly installed and used within the recommended ranges of pressure, temperature, and chemical compatibility. The ultimate determination of material compatibility is previous successful use in the same application. Refer to the catalog data sheet or call our Technical Support for information about your application.

CAUTION: Plastic materials degrade in ultraviolet (UV) light or sunlight.

BODY MATERIALS: PVC (dark grey), CPVC (light grey)

SEAL MATERIALS: Viton (brown), EPDM (black)

SIZES: ½" thru 2", 20mm thru 63mm

CONNECTION TYPES: threaded, socket, fusion, or flange

ACCESSORIES and OPTIONS

AIR ACTUATOR - Series TABVA, TABMS, TABRA, or TABRS

AIR ACTUATOR SPRING RETURN KIT - Series TABVS

ELECTRIC ACTUATOR - Series TEBV

AIR SOLENOID to control air actuator

LIMIT SWITCH - Series SW

LIMIT STOP for air actuator - Series LS

THREE HOLE BALL - for air actuators or non-deadheading applications

See the Data Sheet or call our Technical Support for more information.

INSTALLATION

Due to the trunion design, TRUE BLUE ball valves are suitable for flow or pressure in any direction. The valve may be set vertically or horizontally. To make the connections to piping, remove the union nuts and end connectors from the ball valve, slide the union nut onto the pipe, make the connections, close the valve, then tighten the union nuts hand tight. If needed, up to a ¼ turn with a strap wrench may be applied.

THREADED CONNECTION - Apply a suitable thread sealant (for example, Teflon[®] tape) to male tapered threads to assure a "leak-tight" seal. Assemble "hand-tight" followed by a quarter (1/4) turn with a strap wrench.

CAUTION: Teflon[®] tape will "*string*" as pipe threads are joined. Loose "*strings*" could lie across the seating surface and prevent the valve from completely closing. To avoid this problem, clean out old tape, and do not apply tape to the first thread.

CAUTION: Connect to plastic pipe and fittings only; when using metal pipe, install an intervening plastic fitting. Metal pipe and straight threaded pipe tends to cut, stretch, and distort the plastic bodies, resulting in cracking or leaking over time. Do not over tighten or use pipe wrenches on plastic pipe and components.

IMPORTANT: Tighten ball valve union nuts when the valve is in the CLOSED position. When the valve does not have a closed position (see "Three Hole Ball"), use the fully open position.

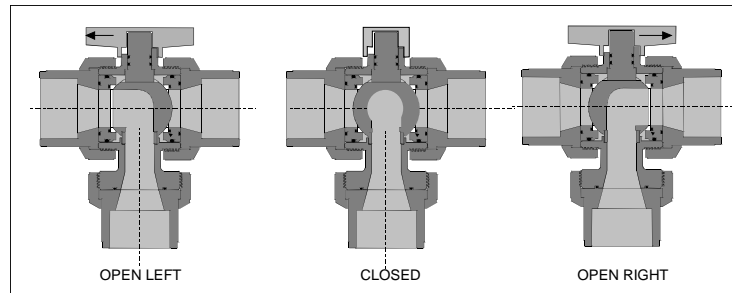
NON-THREADED CONNECTIONS - For solvent cementing, follow instructions supplied with the cement, or contact the distributor. Disassemble the valve, connect the end connectors to the pipe, then allow to cure before reassembly to prevent damage.

MOUNTING THE VALVE - Three-way ball valves are designed to be supported by the piping. The piping must be properly supported, taking into account the weight of the valve, piping, and process liquid.

MOUNTING ACTUATORS and ACCESSORIES - Three-way ball valves are not field adaptable.

OPERATION

Standard 3-way ball valves are open when the handle is in line with the pipe. $\frac{1}{4}$ turn is required to close the valve, and $\frac{1}{2}$ turn to change the direction of flow. Standard three-way valves can be open from the bottom port to the left, right, or closed.



3-way ball valves with the three hole ball option are never closed. If the handle is in line with the piping, flow direction can be changed by turning the handle $\frac{1}{4}$ turn clockwise or $\frac{1}{2}$ turn counterclockwise. Turning $\frac{1}{4}$ turn counterclockwise has no effect.

MAINTENANCE

CAUTION: Before disassembly, relieve pressure and drain fluid from the piping to be opened. Take proper precautions to protect people and equipment from any residual liquid.

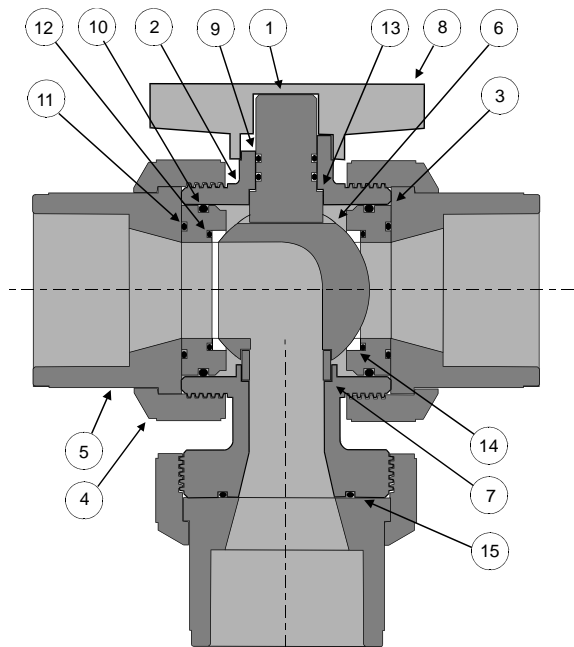
DISASSEMBLY FROM PIPING - The TRUE UNION design allows you to remove the valve from the piping by unscrewing the union nuts and sliding the valve out.

SPARE SEAL KIT - Plast-O-Matic recommends keeping a spare seal kit available for repairs. Seal life will vary in applications due to cycles, temperatures, pressures, chemicals, and concentration. Based on the application, a periodic inspection and maintenance plan should be established. The seal kit part number is "SK" plus the part number.

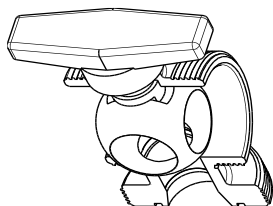
TROUBLESHOOTING

LEAKING AT THE UNION NUTS (or leaking internally when closed) - Turn the valve to the closed position and tighten the union nuts firmly and evenly by hand. (Some actuator valves do not have a closed position; in this case use the fully opened position) If this is not sufficient, disassemble the valve and replace the Teflon seats and o-rings.

LEAKING AT THE SHAFT (below the handle) - Disassemble the valve from the piping (see above) and replace the shaft O-rings.



| Item | Qty. | Description | Material |
|------|------|-----------------------|--------------------|
| 1 | 1 | SHAFT | Body Material & SS |
| 2 | 1 | BODY | Body Material |
| 3 | 2 | SLIDING SEAT | Body Material |
| 4 | 3 | UNION NUT | Body Material |
| 5 | 3 | END CONNECTOR | Body Material |
| 6 | 1 | BALL | Body Material |
| 7 | 1 | SUPPORT RING | Body Material |
| 8 | 1 | HANDLE | ABS |
| 9 | 2 | O-RING, SHAFT | Seal Material |
| 10 | 2 | O-RING, SLIDING SEAT | Seal Material |
| 11 | 2 | O-RING, END CONNECTOR | Seal Material |
| 12 | 2 | O-RING, BALL SEAT | Seal Material |
| 13 | 1 | THRUST WASHER | Teflon |
| 14 | 2 | TEFLON SEAT | Teflon |
| 15 | 1 | O-RING, BOTTOM PORT | Seal Material |



THREE HOLE BALL OPTION - Three-way ball valves can be supplied with a three hole ball. These valves have no closed position, and are open left or right with ¼ turn. Air actuated valves require the three hole ball option, because air actuators move ¼ turn only.