



Systematic Controls - Valtorc International

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PVC Valve Operations and Maintenance

Valtorc USA valves should be stored at room temperature indoors in their original containers to keep them clean and to avoid damage. Valves with elastomer seats and seals should be stored in cool and dark conditions and for not more than a year. Failure to store valves properly could void warranty.

End Connections

Socket: Provides a stronger connection than threading and is preferred in permanent installations. Socket dimensions are in conformance with ASTM D2467.

Solvent Cemented: Compatible with PVC and CPVC Valves, using normal solvent cementing techniques. Caution should be taken that cement does not get on the inside face of the end connection or inside the valve. Refer to cement manufacturer's guidelines for bonding temperature limitations and recommended cementing cure times.

Note: Shelf life of solvent cement is limited to the time advised by the manufacturer. That is approximately one year for CPVC and two years for PVC.

Socket Fusion (Thermal Bonding): The superb resistance of PVDF and PP to organic solvents, including solvent cements make it necessary to join those socket connections, in 1/2" thru 4" sizes, by thermal bonding technique.

Butt Fusion (Thermal Bonding): A heat fusion technique necessary for joining PVDF and PP butt end connections to similar material piping.

Threaded: Preferred when occasional disconnecting of piping system is necessary, but limited to a maximum of 4 inches in diameter. Thermoplastic pipe of Schedule 80 or heavier should be used because threading reduces the effective wall thickness, resulting in a reduction in pressure rating to one-half that of solvent cemented or thermal bonded socket connections. Threads are American Standard Tapered Pipe Threads per ANSI B2.1.

Preparation for assembly consists of wrapping the pipe threads with Teflon (TFE) tape, starting with the second thread from the end and wrapping in the direction of threads, with a slight overlap. After a hand-tight assembly, an additional 1/2 to 1-1/2 turns with a strap wrench will complete the connection. Care must be taken to not overtighten, which can cause distortion or even failure of threads.

Flanged: Manufactured to ANSI B16.5, (150lb. class). Available in most all sizes and most widely used throughout the industry for process systems that require occasional dismantling. Thermoplastic flanges may be connected to pipe or fitting by the method required by the individual material. A full flat face elastomeric gasket seal of a 50 to 70 durometer hardness , is required between flanges, with the exception of Butterfly Valves in which the fully booted body seat liner acts also as the gaskets.

Joining Flanges:

1. Carefully observe for proper alignment of bolt holes, and also for parallelity and closeness of mating flanges.
2. Position gasket seal. Then insert and lubricate all bolts, using flat washers under bolt heads and nuts.
3. With a wrench on bolt head, tighten each nut with a torque wrench in a pattern, diametrically opposite each other, as shown below. Do this in increments until finally reaching the recommended torque values charted below.

Valve Adjustments And Installation Guide

Coupling Nuts: On all true union style valves when installing into pipe line, nuts should be tightened by hand. It is not recommended to use pipe or strap wrench.

Safety Block True Union Ball Valves: Adjustment for ball to seat tightness: (a) Sizes 1/2" thru 4" - Remove coupling nut on adjusting end of valve. Use valve handle on threaded cartridge and turn 20 degree clockwise. Replace coupling nut hand tight.

(b) Do not over-tighten or handle will not turn valve from open to close position and forcing valve to open or close after over-tightening will break stem or handle.

Ball Check Valve: No adjustment is required other than making certain that the union nuts are tight. Install in line with the flow arrow in the same direction as the fluid flow. Caution should be taken not to install a Ball Check too close to a discharge pump. The resulting turbulent fluid flow may cause ball chatter and internal valve damage.

Butterfly Valve: Always install between two pipe flanges, and never with a gasket seal. The outer rim of the elastomeric valve seal acts as the gasket seal. Refer to previous section "joining flanges"

Diaphragm Valve Installation:

1. Refer to section " Joining Flanges" and follow written procedures.
2. Sizes 3" and larger have a bonnet grease fitting. Lubricate before placing valve in service.
3. Use torque wrench, follow same recommended torque's shown for flange bolt connections and tighten body/bonnet bolting.
4. Full open flow setting has been set at factory before factory pressure testing.

Maintenance:

- The TVI thermoplastic diaphragm valves require no maintenance other than periodic grease fitting lubrication.

Operating & Maintenance Guide For TVI Valves

Safety Block True Union Ball Valves

Operating: Manual handle control, arrow on top of handle gives direction for open and close positions.

Maintenance: The valve requires no maintenance. If seat or surface of ball wears, due to abrasion and valve does not shut off tightly, valve can be adjusted.

Adjustment: The operating handle is the tool for tightening the adjusting cartridge (seat carrier part No. 4). Remove body from pipe line by loosening coupling nuts. Remove handle from stem. Place handle hub into seat carrier and give quarter turn clockwise. Reassemble valve and reconnect to pipe line.

Compact Ball Valves

Operating: Manual handle control, arrow on top of handle gives direction for open and close positions.

Maintenance: The valve requires no maintenance. Valve cannot be adjusted. When materials wear and valve begins to leak, valve must be replaced.

Butterfly Valves

Operating: Lever type manual operation. The handle position is the indicator of the blade position in the body. When the lever handle is perpendicular to the pipe line, the blade is in the closed position. If the lever handle is parallel to the pipe line the valve is open.

Important: The handle has a ten position locking plate. The lever part No.16 must be disengaged from the locking plate before moving the handle part No. 13 to position desired.

Operating: Manual Gear type with handwheel or chainwheel. Revolving indicator plate mounted on top of gear box moves to indicate the position of the blade. Mechanical stops are furnished. They can be adjusted to increase or decrease travel into open or closed position.

Maintenance: No maintenance required. If valve is to be stored for any length of time, it should be stored in dark and cool condition to lengthen the shelf life of the full faced elastomeric liner seat. Also in outside pipe lines exposed to sun light precautions should be taken to eliminate valve failures. Expansion joints in the pipe line are necessary to combat pipe expansion causing crushing and fracturing the flanged portion of the full faced elastomeric liner. This will push the rubber into the seating area and bind the operation of the valve. If an outdoor pipe line subject to direct sun light is not normally conveying flow materials the heat can deteriorate the elastomeric liner and shorten life of valve seat.

Manual Gear type operator should be repacked with axle grease every 18 to 24 months. Remove indicator cap Part No. 11 and then the top cap Part No. 9. Pack gears with normal amount of axle grease and reassemble.

Horizontal Swing Check/Ball Check Valves

Operating: The flow material direction operates the valve. The valve will close under back pressure of flow material.

Maintenance: Periodic maintenance is not required. If parts wear and need replacing the Horizontal Swing Check valve does not need to be removed from piping system. It is necessary to shut off line pressure. Remove valve bonnet and shaft holder bolt and all parts can be easily removed. The ball check valve requires the loosening of the coupling nut.

Diaphragm Valves

Operating: All size valves are equipped with a handwheel for controlling flow. Valves can be pneumatically or electrically operated as an option.

Maintenance: 1/2" through 2" True Union Diaphragm Valves require no maintenance. Flanged valves 3" through 10" have a grease fitting on the bonnet. Standard axle grease should be injected one time every 18 months. Replacing rubber or TFE diaphragm requires removing bonnet and unscrewing diaphragm. When replacing new diaphragm be sure to have seating cross bead directly above body seating ridge. The body seating ridge runs perpendicular to flow stream.

6" Strong Union Ball Valve

Operating: Manual handle indicates open and closed position of valve.

Maintenance: If valve leaks because of seat wear, seats can be replaced by removing nuts and bolts and removing worn seats. Valve may also leak because of worn seals. They can also be replaced. After removing nuts and bolts ball can be turned sideways and removed from stem. Stem can then be removed and seals replaced on the stem if necessary. When replacing nuts and bolts make sure that all are tightened to the same degree for bubble-tight shutoff.

Adjustment: This valve cannot be adjusted for seat wear. Seats must be replaced.