



Fig. T-V3AM

3-Piece Stainless Steel Ball Valve with Direct Actuator Mounting Pad

Installation, Operation and Maintenance Instructions

INTRODUCTION

This instruction manual includes installation, operation, maintenance and engineering information for Trans-Valve Fig. T-V3AM 3-Piece Stainless Steel Full Port Ball Valves. These bi-directional valves are suitable for service in any application that meets the pressure/temperature limits of the valve materials. Under normal operating conditions, periodic inspection and/or maintenance can be performed without removing the entire valve from the pipeline.

STORAGE

Valves are shipped in the open position to avoid any damage to the outside surface of the ball. Valves should be stored in a clean, dry, sheltered area to prevent possible contamination from weather or foreign materials. Steps should be taken to ensure the end connections remain undamaged until ready for installation.

PRE-INSTALLATION

It is the responsibility of the end user to ensure the valve materials, including soft goods, are compatible with the process media. All applicable valve/piping standards and best practices regarding valve installation procedures must be understood and followed. The following should be read and understood prior to the installation of the valve.

WARNING: To avoid personal injury to yourself, fellow workers, or possible damage to property from accidental release of process media, the following steps should always be taken prior to valve installation:

- A. Shut off all operating lines to the valve installation location and isolate the area completely from the process.
- B. Release the process pressure.
- C. Vent and drain the process fluid or media from the valve location.

Inspect and clean the valve and adjoining pipe ends prior to installation. Visually check for any damage to the threads which could cause possible leakage. Cycle the valve to check for proper operation and to drain any fluid that may have been trapped in the body. Check for any misalignment of the pipeline to avoid any tension applied to the valve during installation. Valves can be installed in any position, however, installing the valve in the stem down position is not advised. If installed vertically, it is preferred that the upstream pressure be above the valve. This will allow the pressure to assist in sealing the ball against the downstream seat. Use of pipe hangers or supports may be required on larger size and/or actuated valves to prevent misalignment and pipeline stress.

INSTALLATION

Use applicable thread sealant (Teflon thread tape or equivalent sealant) on pipe threads.

The preferred method is to hold the valve stationary with a pipe wrench attached to the valve end cap nearest the pipe being connected while screwing the pipe into the valve until tight. Repeat this procedure on the opposite valve end connection.

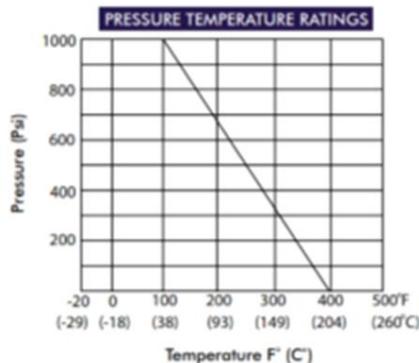
If the pipe cannot be rotated, the valve can be disassembled for installation. Remove the body bolts and end caps and remove the center section. Secure the seats and body seals so they are not lost. Hold the pipe stationary and screw the end caps onto the pipe ends until tight. Do not use the handle to tighten the assembly as damage can occur. Reinstall the center section, including seats and body seals, reinsert the body bolts, then SLIGHTLY tighten all bolts while ensuring the body and end caps are parallel and properly aligned to prevent any distortion during the final tightening phase. Finish tightening all body bolts evenly in a diagonal pattern (*see torque chart below*), then check for proper valve operation. The valve should open and close smoothly. Any binding should be investigated and corrected before proceeding.

Clean/flush the pipeline and test for leaks prior to returning the system to normal operation.

Body Bolt Torques for ASTM A351		
Valve Size	Bolt Size	In.-Lbs.
1/2"	5/16-18 UNC	88.51
3/4"	5/16-18 UNC	97.36
1"	5/16-18 UNC	115.06
1 1/4"	5/16-18 UNC	168.16
1 1/2"	3/8-16 UNC	203.57
2"	3/8-16 UNC	354.03
2 1/2"	1/2-13 UNC	442.54
3"	5/8-11 UNC	619.55

OPERATION

All T-V3AM ball valves are designed for service in applications that meet the pressure/temperature limits of the valve materials (see chart below).



All TV-3AM valves are supplied with latch-lock lever handles for quarter-turn manual operation. The sliding latch device locks the handle in both open and closed positions and prevents accidental lever operation. Also, the valve can be padlocked in either open or closed positions, if needed.

To manually operate the valve, lift the latch and turn the handle either 90 degrees clock-wise to close or 90 degrees counter-clockwise to open. The handle will contact the travel stop once the desired position has been reached. Valve position can be determined by the position of the handle in relation to the pipeline. The handle will be parallel to the pipe when open and perpendicular to the pipe when closed.

Careful consideration should be given to the media and conditions when the valve is used with the ball in a partially open/closed position (modulating/throttling). Critical pressure drops and high flow rates can damage the seats, resulting in decreased valve life. For example, steam and abrasive media should only be used in the on / off position.

MAINTENANCE

Valve parts are subject to normal wear and should be periodically inspected and replaced as necessary. The type and frequency of repair depends on the service conditions.

The live loaded stem packing may occasionally require adjustment to compensate for stem movement and packing fatigue caused by pressure changes. **NEVER REPLACE VALVE PACKING WHILE THE VALVE IS IN SERVICE AND PRESSURIZED.**

If leakage is detected at the stem, the packing can be adjusted by removing the operator and tightening the packing nut in ¼ turn intervals until the leak stops. If the nut cannot be tightened any further and the packing continues to leak, the stem packing will need to be replaced.

The 3-piece design allows the valve to be repaired without removing it completely from the pipeline. Prior to disassembly, follow the safety precautions outlined in the **PRE-INSTALLATION** section of this manual. Be sure to cycle the valve to release any fluid or pressure that may be trapped in the valve body before starting any repairs.

Only TRANS-VALVE parts should be used to repair TRANS-VALVE products. Contact your distributor to purchase Soft Goods Repair Kits.

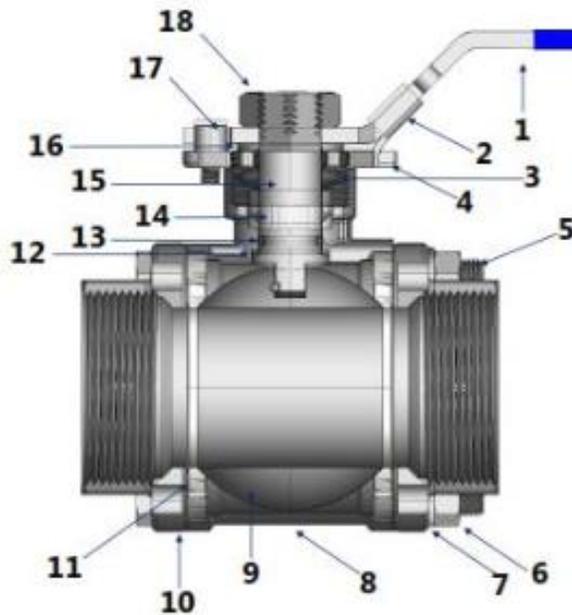
Disassembly Instructions

- A. In the closed position, remove the operator. The ball and stem cannot be removed with the valve in the open position.
- B. Remove the handle washer, packing nut, and Bellville washers from the top of stem.
- C. Loosen the body bolts in a diagonal pattern.
- D. Remove 3 of the 4 body bolts, bolt nuts and bolt washers.
- E. Slip the center section out to access the internal parts.
- F. Remove the seats and body seals.
- G. Remove the ball.
- H. Push the stem down through the body and then remove the O-ring and thrust washer from the stem.
- I. Remove the bushing and the packing from the body.

Assembly Instructions

- A. Rebuild the valve using all the replacement soft goods in the repair kit.
- B. Ensure that all parts are clean and undamaged.
- C. Assemble the valve in reverse order of the disassembly instructions, except install the packing after the stem is inserted into the valve body.
- D. Once the valve has been re-assembled, it is recommended to cycle and test the valve prior to resuming normal service.
- E. Adjust the stem packing, if necessary.

Exploded Parts View



Number	Part	Material	Quantity
1	Handle (Optional)	304 SS	1
2	Latch Lock	304 SS	1
3	Belleville Washer	410 SS	2
4	Mount Pad	A351 CF8M	1
5	Bolts	A193 B8M	4
6	Bolt Nuts	A194 B8M	4
7	Bolt Washer	304 SS	4
8	Body	A351 CF8M	1
9	Ball	A351 CF8M	1
10	End Caps	A351 CF8M	2
11	Seats	PTFE	2
12	Thrust Washer	PTFE	1
13	O-Ring	Viton	1
14	Packing	PTFE	1
15	Stem	A276 316 SS	1
16	Handle Washer	304 SS	1
17	Stop Pin	304 SS	1
18	Handle Nut	304 SS	1