

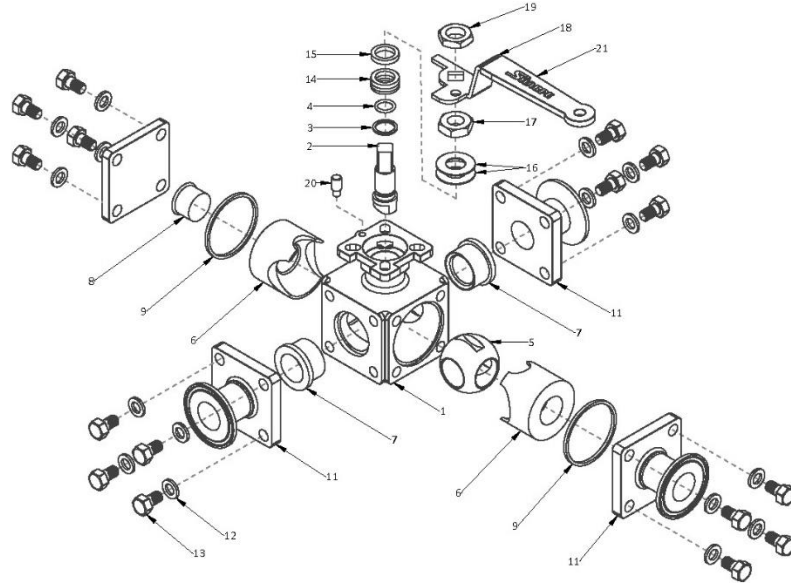
**Series 75 IOM**

**INSTALLATION, OPERATION  
AND MAINTENANCE FOR  
SHARPE® SERIES 75  
THREE & FOUR WAY  
HIGH PURITY TUBE FULL PORT**

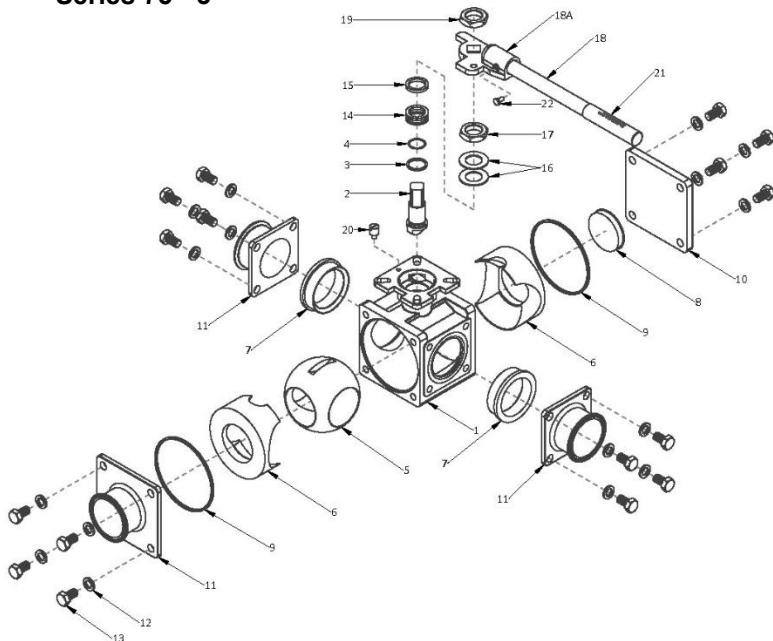


## Sharpe® Series 75

### Series 75 - 1/2" - 2"



### Series 75 - 3"



No.	Part Name	Qty	Material
1	Body	1	316 Stainless Steel, ASTM A351 CF8M
2	Stem	1	316 Stainless Steel
3	Thrust Washer	1	PTFE
4	O-Ring	1	Viton®
5	Ball	1	316 Stainless Steel, ASTM A351 CF8M
6	Seat 1	1/2	TFM®, TFM® Cavity Fill
7	Seat 2	1/2	TFM®, TFM® Cavity Fill
8	Seat Cap	0/1	TFM®, TFM® Cavity Fill
9	Gasket	2	PTFE
10	End Cap	0/1	316 Stainless Steel, ASTM A351 CF8M
11	Cap	3/4	316 Stainless Steel, ASTM A351 CF8M
12	Spring Washer	16	300 Series Stainless Steel
13	Bolt	16	300 Series Stainless Steel
14	Stem Packing	1	300 Series Stainless Steel
15	Ring	1	300 Series Stainless Steel
16	Belleville Washer	2	300 Series Stainless Steel
17	Stem Nut	1	300 Series Stainless Steel
18	Handle	1	300 Series Stainless Steel
18A	Handle Head	1	300 Series Stainless Steel
19	Handle Nut	1	300 Series Stainless Steel
20	Stop Pin	1	300 Series Stainless Steel
21	Handle Cover	1	Plastic
22	Lock Washer	1	300 Series Stainless Steel
23	Handle Bolt	1	300 Series Stainless Steel

\*Shown in cavity fill configuration

It is the responsibility of the customer to determine the suitability of Sharpe® valves products in their particular application.  
Disclaimer: Supplier shall not be liable or responsible for omissions or errors in its bulletin.

## INSTALLATION

Sharpe® ball valves have been designed and engineered to provide long lasting and trouble-free service when used in accordance with the instructions and specifications herein.

### • General

- The following instructions only refer to Sharpe® standard valves as described in this document.
- Keep the protective covering in place until the moment of installation. Valve performance depends upon the prevention of damage to the ball surface. Upon removal of the cover, make sure that the valve is completely open and free of obstructions.
- When shipped, valves may contain a silicon based lubricant which aids in the assembly of the valve however valves can be ordered clean and free of lubricants.

### • Safety Precautions

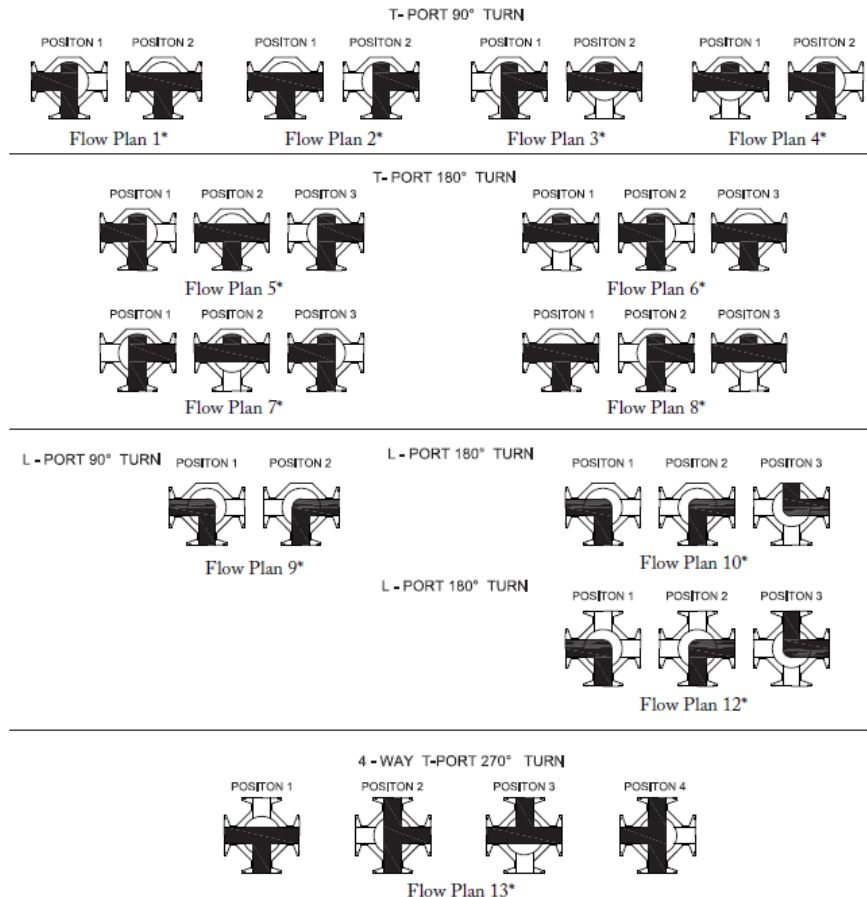
- Before removing valve from pipeline: media flowing through a valve may be corrosive, toxic, flammable, or of a contaminant nature. Where there is evidence of harmful fluids having flowed through the valve, the utmost care must be taken. It is suggested that at least the following safety precautions should be taken when handling the valves. More precautions may be required, refer to the media's Safety Data Sheet for additional precautions.
  1. Always wear eye shields
  2. Always wear gloves and overalls
  3. Wear protective footwear
  4. Wear protective headgear
  5. Ensure that running water is easily available
  6. Have suitable fire extinguisher ready if the media is flammable
- By checking line gauges, ensure that no pressure exists on either the upstream or the downstream sides of the valve.
- Ensure that any media is released by operating the valve slowly to the half-open position.
- Ideally, the valve should be decontaminated when the ball is in the half-open position and then leave the valve in the fully open position.

## OPERATION

- Sharpe® valves provide tight shut off when used under normal conditions and in accordance with Sharpe® valves published pressure/temperature charts.
- If these valves are used in a partially open (throttled) position, seat life will be reduced and is not recommended.
- Any media which might solidify, crystallize or polymerize should not be allowed to stand in the ball valve cavities unless regular maintenance is provided.
- Valves are not intended to be used for isolation or as a mixing valve.

### • Manual Operation

- Series 75 valves allow 0° -- 90° -- 180° -- 270° --360° rotation increments based on the different flow path arrangements available. The valves may also be locked in every 90° position. Please see flow plan below. Valves were shipped with flow direction marked at the top of the stem.



\*Not to be used as an isolation valve.

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## • Remote Operation

- Where manual operation is not required, valves may be automated for remote operation, instrument control, etc. A range of Sharpe® valves pneumatic and electric actuators are available.
  - Based on the desired flow plan special actuators may need to be purchased.
- Operation will be in accordance with Sharpe® valves installation, operation and maintenance instructions for the relevant actuator

## INSTALLATION

- Sharpe® Valves cannot anticipate all of the situations a user may encounter while installing and using the valve.
- The user must know and follow all applicable industry specifications and government regulations for the safe installation and use of these valves.
- Only qualified personnel or technicians who are trained for maintenance work and have read the instructions are to install the valve.
- Misapplication of the product may result in injuries or property damage of which Sharpe® is not liable for.
- Before installing the valves, the pipes must be flushed clean of dirt, burrs and welding residues, or you will damage the seats and ball surface.
- These valves should be installed using good pipe fitting practices.
- Install only Sanitary Tri-clamp and mating ferrule that conform to ASME BPE-2009 Bioprocessing Equipment.
- The pipeline must be free of tension or angular forces.

## MAINTENANCE

### • General

- Sharpe® valves are designed to have a long, trouble-free life.
- The following checks should, however, help to extend valve life or reduce plant problems.

## • Stem Seal Adjustment:

- Examine the Belleville washers for damage. If they are in good condition, retighten the packing nut to the required torque listed at the end of this IOM. If no torque wrench is available start by tightening it  $\frac{1}{8}$  of turn at a time. If after  $\frac{1}{2}$  to  $\frac{3}{4}$  of a turn leakage is still apparent then the packing should be replaced. If damaged, dismantle the stem down to the gland and install new Belleville washers with their outer edges touching. Further maintenance necessitates dismantling of the valve.

## • Leakage at Body Joint

- Check for tightness in the body bolts. If loose, tighten body bolts to the specifications listed at the end of this IOM. Excessive force will only stretch or strip the bolts.
- If there is still leakage, this may be due to damage to the body seal, and it will be necessary to dismantle the valve.

## • Leakage at Pipeline Joint

- Check the tightness of the clamp and make sure the seal is properly aligned and not damaged.

## • In-Line Leakage

- Check that the valve is fully closed. If it is, leakage may be due to a damaged seat or ball sealing surface and it will be necessary to dismantle the valve.
  - *Note:* Stem leakage and leakage at body joint, if not cured by simple means described above, necessitate dismantling valve. If there is not stem leakage, the stem assembly should not be touched.

# REFURBISHING

- ❖ Before disassembly of valves from the pipeline follow these instructions.
  1. Cycle the valve with the line pressure fully relieved before attempting to the remove the valve from the pipeline to insure pressure has also been discharged from the valve cavity.
  2. Loosen the clamps making sure that any leftover pressure or media has been evacuated. Remove the clamps so the valve can be removed from the line. Bring the body out from the line and bring it to a clean space where it can be dismantled.

3. Remove the body nuts from the end caps and remove them. Making sure to discard the seats and body seals. Be careful not to damage the sealing surfaces.
4. Support the ball to prevent it from falling out of the body and turn the handle so that the ball can be removed out of the body through one of the large diameter body ports. Set the ball aside in a clean secure area for reuse.
5. To dismantle the stem assembly, first remove the handle nut and handle from the stem. Using a wrench to prevent the stem from turning, remove the packing nut, Belleville washers and gland(s). It is normally not possible to remove the stem packing at this stage.
6. Withdraw the stem through the body cavity and remove the thrust seals from the stem. Stem packing may now be removed from the top of the stem bore.
7. Clean all components thoroughly and examine all seating/sealing surfaces.
8. If there is a build-up of solids which cleaning fluids will not remove, use a proper tool to get it off making sure not to scratch the machined surfaces.
9. No eroded or corroded leak paths are permissible. If any are found, the part must be replaced. The ball must have no scratches across its seating surfaces and any damage to the port lip will damage the new seats - a damaged ball must not be re-used, install a new ball.

## • Rebuilding

- Before rebuilding, check that all the correct components are available and that they are fit for re-assembling. When rebuilding, cleanliness is essential to allow long valve life and provide cost-effective maintenance.
  - Note: The valve may be assembled and operated dry where no lubricants are allowed in the system; however, a light lubrication of mating parts will aid in assembly and reduce initial operating torque.
  - Lubricant used must be compatible with the intended line fluid.
- 1. Install thrust bearings on the stem and slide the stem up through the body.
- 2. Install new stem seals, gland ring, and Belleville washers onto the stem. Install stem nut and tighten to the torque values given in the table at the end of this IOM.
- 3. Install the stem nut locking tab and tighten the stem nut slightly if necessary to align nut with locking device surfaces.

4. Install travel stop (if supplied) and handle. Make sure handle aligns with the flow bore through ball. Install the handle retainer nut or screw.
5. Turn the handle to line up the ball slot with the stem tang and place the ball into position on the stem tang through one of the large diameter body ports. Turn the handle to hold the ball in place.
6. Install the seats into the body.
7. Install new body seals into the valve body.
8. Install the body bolts and nuts and tighten in a "Star" pattern to the torque specified in the table at the end of this IOM.
9. Cycle the valve open and closed several times slowly to ensure that operation is smooth and free of binding or sticking.

## • Test

- If possible, leak tightness should be checked.

## • New Parts

- Maintenance kits are available from Sharpe® valves.
- When ordering maintenance kits, please be sure to specify type and size of valve as well as the seating material required.
- Where a valve needs repairing, rather than maintaining, it must be noted that only Sharpe® valves authorized spare parts should be used.
  - These also include basic components such as bolts, screws and nuts, etc.
- In addition to maintenance kits, some spare parts are available from Sharpe® Valves.
- Parts from different valve series or suppliers should **NOT** be interchanged.
  - This is to ensure, so far as is reasonably practicable, that the valve remains capable of being used for the purpose for which it was designed and constructed, without risk to health and safety of plant personnel.

**HOWEVER, IF THE VALVE IS ALTERED IN ANY WAY, NO LIABILITY CAN BE ACCEPTED BY SHARPE® VALVES.**

## • Tools

- No special tools are required for the maintenance of Sharpe® valves.

## • Dismantling

- During dismantling, do not assume that the valve is totally decontaminated - harmful media may still be trapped in crevices.

## • Torque Requirements

VALVE SIZE		BODY BOLT/NUT			STEM NUT	
INCHES	DN	SIZE	IN-LB	N-M	IN-LB	N-M
1/2"	15	M6	70	7.6	60-80	7-9
3/4"	20	M6	70	7.6	60-80	7-9
1"	25	M8	160	19	60-80	7-9
1-1/2"	40	M10	345	39	130-150	14-17
2"	50	M12	570	64	130-150	14-17
3"	80	M14	832	94	190-210	21-24

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