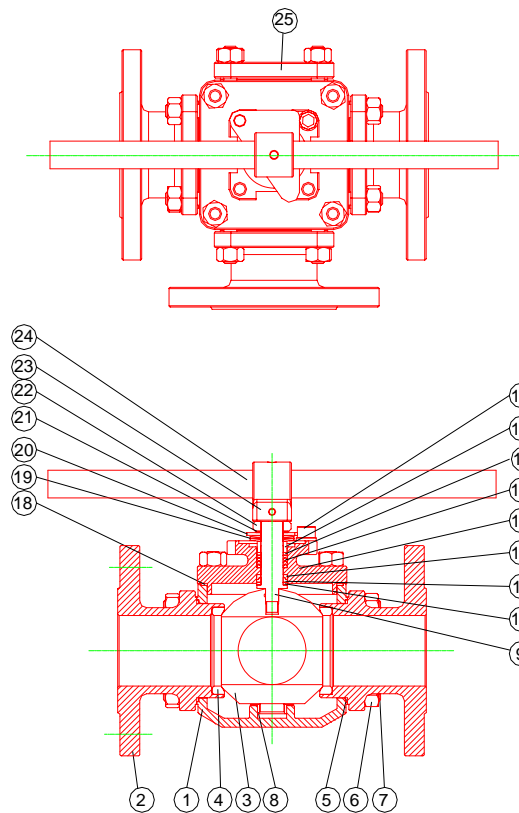


## Installation, Operation, and Maintenance Manual Series 77 Three- and Four-way Ball Valves



NO.	PART NAME
1	BODY
2	CAP
3	BALL
4	BALL SEAT
5	BODY GASKET
6	BOLT NUT
7	BOLT
8	BEARING
9	ANTI-STATIC STEM
10	LOWER THRUST WASHER
11	COMPRESS RING
12	UPPER THRUST WASHER
13	COVER
14	V-RING STEM PACKING
15	THRUST WASHER
16	GLAND
17	STOP BOLT
18	COVER SEAL
19	BELLEVILLE WASHER
20	TRIANGLE STOPPER
21	LOCK SADDLE
22	STEM NUT
23	STEM ADAPTER
24	HANDLE
25	BLOCK COVER

**1. INSTALLATION:**

a) Sharpe Series 77 valves ball valves have been designed and engineered to provide you with long lasting trouble free service when used in accordance with the instructions and specifications mentioned herein.

**2. USE:**

a) Long life of valves can be maintained under normal working condition and in accordance with pressure/temperature and corrosion data chart.

**3. MANUAL OPERATION:**

a) Series 77 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.

**4. GENERAL INFORMATION FOR ON-SITE INSTALLATION:**

a) The valve may be fitted in any position on the pipeline.

b) Before installing the valves, the pipes must be flushed clean of dirt, burrs and welding residues to prevent damage to the seats and ball surface.

c) The pipeline must be free of tension.

**5. INSTALLATION OF THREADED END VALVES**

a) Use conventional sealant, such as TFE tape, etc. on the threads.

b) Apply pipe wrench on the end cap of the ball valve only. Tightening by using the valve body or handle can seriously damage the valves.

**6. INSTALLATION OF WELD END VALVES**

a) Tack weld the valve on the pipe in 4 points on all end caps.

b) Complete the full weld taking care to avoid damage to the body seal. The heat in the end cap sealing area to be controlled under 400° F during the welding process.

c) When cooled down, clean all end cap welds and body surfaces.

d) Tighten body bolts evenly. Make sure that maximum tightening torque is observed per Bolting Torque Table.

e) Check proper operation of the valve.

Note: For installation of threaded & welded end multi-port ball valves, unions may be installed before each end for easy installation and removal of the valve.

## **7. INSTALLATION OF FLANGED END VALVE**

a) When installing, user must supply flange gasket suitable for the service intended. Tighten flange bolts or studs evenly.

## **8. MAINTENANCE**

When rebuilding, a standard repair kit designated for each size and style valve is available. Each repair kit to contain all the soft parts. When ordering, be sure to specify size, valve code, valve size, seat, seal and stem packing material. Optional components such as ball, stem and handle are also available.

a) Before disassembly, be sure to discharge any media that might be entrapped inside valve cavity.

b) Remove valves from pipeline.

c) Unbolt all the end caps and top cover.

d) Remove end caps, seals, seats, ball and stem.

e) Clean and inspect all components to be sure that they are free from foreign matter and damage, paying particular attention to the areas that must maintain a seal. Areas such as finished diameter on stem, inside pipe end surface, ball, and stuffing box should be free from scratches and pitting.

f) Once all components have been cleaned, inspected, and replaced as necessary, the valve can be rebuilt using the factory repair kit recommended.

g) Reassemble stem with new stem seals, insert stem thru stuffing box, replace follower, Belleville washers, stem nut. Adjust stem packing to feel snug and firm (refer to for stem nut torque).

h) Reassemble ball into body cavity.

- i) Insert new seats and seals into the end caps and cover.
- j) Mount end caps and cover on body and tighten bolting evenly following the Bolting Torque Table. Tighten bolts evenly, alternating from end to end and bolt to bolt in a “cross” pattern. Un-even force applied to body may affect the ball valve performance.
- k) Reassembly into line following the installation procedure.
- l) Cycle valve several times before resuming service to ensure satisfactory operation.

**BOLTING TORQUE DATA**

VALVE SIZE		BODY BOLT/NUT			STEM NUT		TOP COVER		
INCHES	DN	SIZE	IN-LB	N-M	IN-LB	N-M	SIZE	IN-LB	N-M
1/2"	15	M8	160	19	60-80	7-9			
3/4"	20	M8	160	19	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	M10	345	39	130-150	14-17	M10	345	39
2-1/2"	65	M12	580	66	190-210	21-24	M12	580	66
3"	80	M12	580	66	190-210	21-24	M12	580	66
4"	100	M12	580	66	290-310	33-35	M12	580	66
6"	150	M16	1450	164	500-550	56-62	M16	1450	164
8"	200	M16	1450	164	500-550	56-62	M16	1450	164