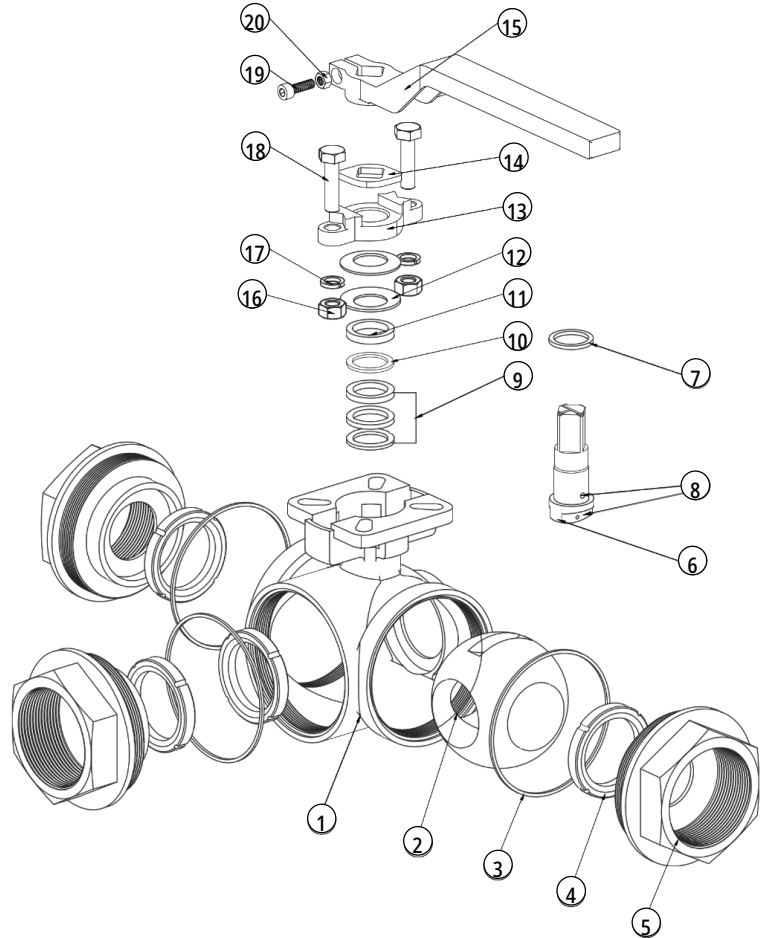


MODEL 16- 3 WAY VALVE Installation, Operation, and Maintenance Manual



No.	Part Name	Qty	Material
1	Body	1	316 SS ASTM A351 CF8M
2	Ball	1	316 Stainless Steel
3	Body Seal	3	PTFE
4	Seat	4	RPTFE
5	End Piece	3	316 SS ASTM A351 CF8M
6	Stem	1	316 Stainless Steel
7	Thrust Bearing	1	PTFE+25%GF
8	Anti Static Device	2	316 Stainless Steel
9	Stem Packing	3	PTFE
10	Thrust Bearing	1	PTFE+25%GF

No.	Part Name	Qty	Material
11	Gland Packing	1	304 Stainless Steel
12	Belleville Washer	2	304 Stainless Steel
13	Packing Gland	1	304 Stainless Steel
14	Lock Tab	1	304 Stainless Steel
15	Handle	1	304 Stainless Steel
16	Nut	2	304 Stainless Steel
17	Washer	2	304 Stainless Steel
18	Bolt	2	304 Stainless Steel
19	Hndle Bolt	1	304 Stainless Steel
20	Nut	1	304 Stainless Steel



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MANUAL OPERATION:

Series 16- Three-way ball valves allow 0° -- 90° -- 180° rotation increments based on the different flow path arrangements available. The valves may also be locked in every 90° position.

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.

Installation of Threaded End Valves:

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

- a. 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.

Welding of Socket Ends:

- a. Caps must be disassembled, removed from the valve body to prevent heat damage of the soft plastic seats and seals in the valve during welding.
- b. Place the valve to the vise, and use a wrench to unscrew the ends caps. Valve must be partially in open position to prevent the ball from sliding out. .
- c. Place the center section in a clean area where it will not be damaged.
- d. Insert the pipe to be welded to the socket of the end cap and tack weld around then complete the welding. Once the pipes are fully welded to the end caps, and the welds are cool to touch, re-install the seats and seals then re-install welded end caps back to the body. Tighten all the threaded joints 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.



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Replacement of seats and body seals:

Disassembly:

1. Remove all 3 end caps with end seals and ball seats (4).
2. Align ball slot with body port and remove ball, noting orientation of ports when removed.
3. Remove 4th seat (4) from inside body

Reassembly:

1. Install new seats in end cap cavity, spherical surface facing inside.
2. Replace ball in body in same position as when it was removed.
3. Install new end seals over threads on end caps.
4. Apply a small amount of thread lubricant such as Never-Seez Pure Nickel Special or equivalent to the end cap threads to prevent galling.
5. Carefully thread end caps into body threads and tighten finger tight, making sure seals
6. seat properly.
7. Fully tighten the end caps into the body until the end cap shoulder contacts the body fully. Cycle valve several times to make sure operation is satisfactory.
8. If possible, perform a hydrostatic shell test to verify that there is no leakage from the body or end caps.

STEM SEAL ADJUSTMENT:

1. Stem seal leakage may be corrected without disassembly. If leakage is evident in stem packing area, tighten the adjusting nut* 1/4 turn. If leakage persists, repeat above. Replacement of stem seals is indicated if the leak is still apparent after 1/2 turn.

* refers to both nuts – part no 16