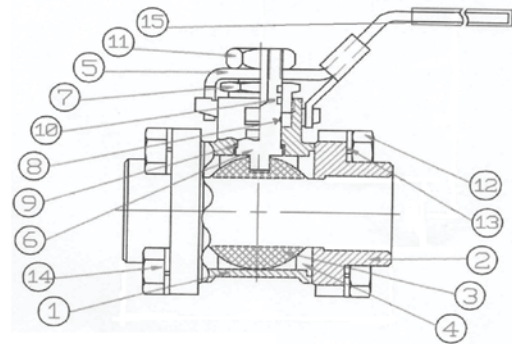


3 Piece 4 Bolt • Threaded & Brazed Weld Connections



INSTALLATION

THREADED CONNECTION

1. Use standard piping practice to install valves with threaded end caps. When tightening the valve to the pipe, apply wrench to the end cap nearest the pipe being worked.

BRAZED CONNECTION

1. Only a qualified person should do the brazing job according to best practices and choose the correct filler metals.
2. Turn the valve to the fully open position.
3. DO NOT overheat the center body section.

NOTE: Overheating the valve body can damage the seats, leading to failure. Take caution to limit the heat exposure in the valve body to protect against seat damage.

DISASSEMBLY

This ball valve is designed to be serviced in or out of the pipe line. The following instructions are for in-line disassembly.

1. Comply fully with the WARNING instructions found in this document.
2. Be sure to cycle the valve. Leave the valve in the open position. The center body section will not swing out if the valve is in the closed position.
3. Remove the stem nut (11) and the handle (5).
4. Loosen all four body bolts (12). Remove three of the four bolts from the valve. Leave the remaining bolt in place with the nut backed off at least 1/4".
5. Spread the end caps and swing the valve body (1) out of the pipe line. Be careful not to damage the sealing surface at each end cap of the valve.
6. Turn the stem (6) so that the valve is in the fully closed position. Remove the seats (4) from the valve body (1). If the seats are not easily removed, gently tap the ball (3) with a piece of wood or other soft material.
7. Remove the stem gland (7).
8. Remove the ball (3) from the valve body (1).
9. Press the stem (6) from the top into the valve body (1) and remove it through one end of the body.
10. Carefully pry out and discard the old stem seals (8) and the stem washer (9). Be careful not to damage any of the sealing or washer surfaces.

ASSEMBLY

The following instructions are for in-line assembly, which may be more convenient. For bench assembly, follow a similar procedure by holding the valve in a vise by one end cap. Use care not to cut or scratch the seats (4) or stem seals (8).

1. With the valve body (1) swung to the out-of-line position.
2. Install the stem washer (9) onto the stem (6).
3. Insert the stem seal (8) into the valve body (1) from the top of the stem bore. Thread the stem gland (7) into the stem bore.
4. Insert the stem (6) into the stem bore and up out the top of the valve. Be careful not to damage the stem washer (9).
5. Align the stem blade inside the valve body (1) with the ball (3). Insert the ball (3) and rotate the stem (6) to the fully closed position.
6. Working at either end of the body (1), push a seat (4) snugly against the closed ball (3).

Material Specifications

No.	Part	
1	BODY	1
2	END CAP	2
3	BALL	1
4	SEAT	2
5	HANDLE	1
6	STEM	1
7	STEM GLAND	1
8	STEM SEAL	1
9	STEM WASHER	1
10	STEM O-RING	2
11	STEM NUT	1
12	BODY BOLT	4
13	SPRING WASHER	8
14	BODY NUT	4
15	GRIP	1

Table 1 - Torque

Size	Bolt Torque (IN-LBS)
1/2"	56
3/4"	96
1"	104
1-1/4"	217
1-1/2"	217
2"	347

7. Repeat step 6 for assembly of the opposite end of the valve.
8. Turn the stem to the fully open position.
9. Swing the entire body assembly back into the properly aligned position between the end caps (2). The end caps (2) may have to be spread slightly to accept the valve body (1).
10. Close the valve.
11. Bolt the valve together with body bolts (13), spring washer (12), and nuts (14). Tighten the nuts evenly, alternating between them to the torque listed in Table 1.
12. Tighten the stem gland (7) until it is snug.
13. Place the locking handle (5) and stem nut (11) over the stem (6). Tighten the stem nut (11) until it is snug.

REPAIR KITS

Repair kits include two seats (4), one stem washer (9), and one stem seal (8).

MAINTENANCE

Periodically observe the valve to be sure of proper performance. More frequent observation is recommended under extreme operating conditions. Routine maintenance consists of tightening the stem gland 1/4 turn periodically to compensate for stem seal wear.

CAUTION: Tightening stem gland (7) too severely will shorten the life of the stem seal.

Warning:

For your safety, it is important that the following precautions be taken prior to installation. Any servicing or removal of the valve from the line or before any disassembly:

1. Wear any protective clothing or equipment normally required when working with the fluid involved.
2. At all times during this entire procedure, keep hands out of the valve. A remotely actuated valve could close at any time and result in serious injury.
3. Before removing the valve from the line, depressurize the line and perform the following:
 - a. Place the valve in the open position and drain the line.
 - b. Cycle the valve to relieve residual pressure in the body cavity before removal from the line.
 - c. After removal and before disassembly, cycle the valve again several times.
4. It is important to refer to the information on each valve for the pressure rating and material description.
5. These valves are suitable for a wide variety of fluids and gases. Be certain that the materials selected are suitable for the application.