



H-500 SERIES 3-PIECE BALL VALVES

1. Use:

- 1.1 For maximum valve life, use the valve only within the stated pressure and temperature range, and in accordance with the corrosion resistance of the material. Give particular attention to the compatibility of the O-ring material.

2. Manual Operation

- 2.1 To open or close the valve, turn the handle 1/4 of a turn (90 degrees).
 - A. When the valve is in the Open Position, the handle is parallel (in-line) with the valve or pipeline.
 - B. When the valve is in the Closed Position, the handle is perpendicular (crossed) to the valve or pipeline.

3. Automated Operation

- 3.1 Check any valve with an actuator for valve-stem alignment. Angular or linear misalignment will result in high operational torque and unnecessary wear on the stem seal.

4. Disassembling & Cleaning of the Valve:

A ball valve can trap fluids in the ball cavity when it is in the closed position. If the valve has been used in a hazardous medium, decontaminate it before disassembly.

- A. Relieve the line pressure.
- B. Place the valve in the half-open position and flush the line to remove any hazardous material from the valve.
- C. All persons involved in the removal and disassembly of the valve should wear proper protective clothing, such as face shields, gloves, aprons, etc.

5. Replacing Seats, Joint Gaskets, Stem Seal and Stem Packing

Model H-500 is designed with Belleville washers for automatic seal wear compensation. If there is any sign of leakage from the stem, replace the stem packing and the stem seal. If there is any sign of internal leakage, replace the ball seats.

- 5.1 When replacing the seats and joint gaskets, refer to the assembly diagram.
 - A. Follow the above Disassembling & Cleaning Instructions (number 4, above). Make sure the pipeline is de-pressurized.
 - B. With the valve in the open position (lever parallel to the axis of the pipe), loosen all the nuts on the body bolting. Remove all the bolts except one. Swing

the body outside the pipe.

- C. Turn the handle to the half-open position to assist in the removal of the seats.
- D. Replace with a new set of seats and joint gaskets.
- E. Swing the body back into position. Replace the removed bolt, and tighten the bolts according to the Bolt Tightening Specification Table on the next page.

5.2 When replacing the stem seal and stem packing, refer to the assembly diagram.

- A. Follow the direction for replacing the seats and joint gaskets from 5.1.A to 5.1.C.
- B. To assist in loosening the stem nut, place a rod of a diameter smaller than the ball orifice into the ball orifice. Loosen and remove the top stem nut with a wrench. Remove the stem washer, handle and lock saddle. Place all removed parts in a clean and secure place.
- C. Loosen and remove the second stem nut with a wrench. Remove the set of Belleville washers. Place all removed parts in a clean and secure place.
- D. Remove the rod. Turn the valve to the closed position (handle perpendicular to the pipeline). Remove the seats and gaskets. The ball should slide out with a gentle push. Place all removed parts in a clean and secure place.
- E. Push the stem downward. It should come out through the center body. Remove the stem, then remove the stem seal. Thoroughly clean the stem. Replace it with a new stem seal.
- F. Remove the stem packing from the center body cavity. Thoroughly clean the center body. Insert a new stem packing.
- G. Replace the stem, the Belleville washers and the gland. Replace the first stem nut. To tighten the nut, hold the stem in place and tighten the nut with a wrench. When tightening the stem nuts, make sure they are snug and the Belleville washer is compressed to the maximum extent. Replace the lock saddle, the stem handle, the stem washer and the top stem nut. Tighten the top stem nut with a wrench.
- H. Turn the valve to the closed position (handle perpendicular to the pipeline). Replace the ball. Turn the valve to the open position (handle parallel to the pipeline). Replace the seats and joint gaskets.
- I. Swing the center body back into position. Replace the removed bolts and nuts. Tighten the nuts according to the Bolt Tightening Specification Table.



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6. General Information for On-Site Installation:

- 6.1 The valve may be fitted in any position on the pipeline.
- 6.2 To prevent damage to the seats and ball surface, make sure the pipeline is flushed, free of dirt, burrs and welding residues before installing the valve.

7. Installation of Threaded Valves

- 7.1 Use a conventional sealant, such as a hemp core, PTFE, etc.
- 7.2 Apply a wrench to the hexagon end of the valve only. Tightening by using the valve body or handle can seriously damage the valve.
- 7.3 For applications where the screwed end valves are back-welded on site, dismantle these valves according to the instructions for weld end valves.

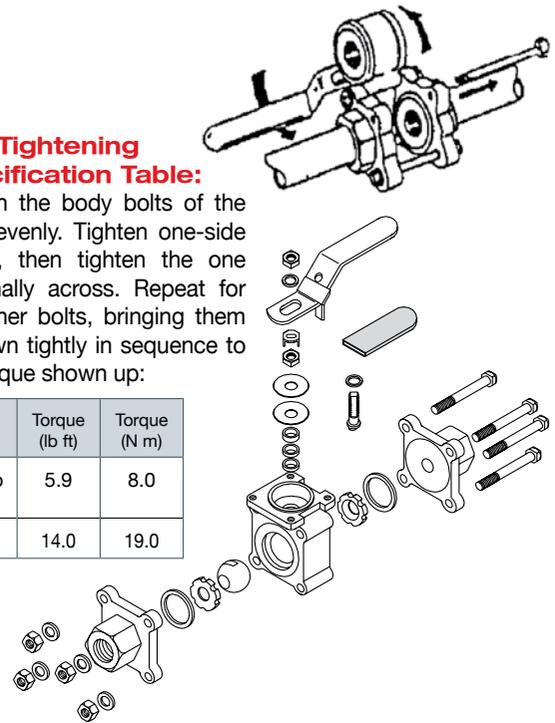
8. Installation Of Weld End Valves

- 8.1 Tack-weld the valve onto the pipe in four points on both end caps.
- 8.2 With the valve in the open position (lever parallel to the axis of the pipe), loosen all of the nuts on the body bolts. Remove all of the bolts except one. Swing the body outside the pipe.
- 8.3 Turn the handle to the half-open position to assist in the removal of the seats and joint gaskets.
- 8.4 Turn the handle to the closed position and remove the ball.
- 8.5 Place all removed parts in a clean and secure place.
- 8.6 Replace the body and the removed bolt. Tighten all nuts slightly.
To prevent any leakage to the body joints after welding, make sure that the body and the end caps remain perfectly parallel.
- 8.7 Finish welding both end caps onto the pipe.
- 8.8 After the pipeline and valve cool, clean the end caps, then remove the previous, and replace the bolt. Swing out the body.
Turn the valve to the closed position, then replace the ball. Turn the valve to the open position and replace the seats and joint gaskets.
- 8.9 After you have replaced the seats, joint gaskets and ball, swing the body into position, replace the removed bolts and nuts, and tighten the nuts according to the Bolt Tightening Specification Table.

Bolt Tightening Specification Table:

Tighten the body bolts of the valve evenly. Tighten one-side snugly, then tighten the one diagonally across. Repeat for the other bolts, bringing them all down tightly in sequence to the torque shown up:

Valve Size	Torque (lb ft)	Torque (N m)
1/4" to 3/4"	5.9	8.0
1"	14.0	19.0



Warning!

The system designer and user have the sole responsibility for selecting products suitable for their special application requirements, ensuring their safe and trouble-free installation, operation, and maintenance. Application details, material compatibility and product ratings should all be considered for each selected product. Improper selection, installation or use of products can cause property damage or personal injury.