



Flanged Ball Valve Installation and Service Manual (Metal Seated Ball Valves)

Installation:

1. Watson Valve Services ball valves are bi-directional valves and may be installed in either direction. If a choice is available, the valves should be installed with the flow of the media from the end piece to the body.
2. Temperature and media compatibility should be verified prior to installation to assure the valve is able to perform in the desired application.
3. Care should be taken to assure the lines are free from debris, weld slag or other solid particles that could damage the ball or seat
4. The valve should be lifted with slings around the valve and not from the stem or actuator.
5. Flanged raised faces should be protected at all times prior to installation to prevent possible damage.
6. Actuator, gear operators and handle stops are pre-set at the factory and should not require any further adjustments. Should the actuator or gear operator require removal for installation, please call the factory or authorized Service Company first.
7. The valve should be cycled several times and the packing gland nut or bolts should be checked to make sure they are snug and applying a sealing force on the packing prior to applying pressure.

Maintenance:

1. A repair kit is available for the valve, which consists of two seats, two seat gaskets, a body seal, stem packing, a ball, and a thrust washer. The metal seats and ball are fitted together as a matched set and must be fitted to the valve as a set. This operation must be performed by authorized service organization or a factory trained technician.
2. To replace the ball and seat set:
 - a. Pull the valve out of service. Remove all equipment attached to the valve and disconnect at the ends.
 - b. Clean the valve removing all media.
 - c. Move the valve to an authorized service repair organization.
 - d. The service organization will refurbish the valve by replacing all gaskets, seals, packing, and ball and seat set.
3. To replace the packing:
 - a. Remove all pressure from the system.
 - b. Remove all equipment attached to the top of the valve.
 - c. Loosen and remove the packing nut or bolts.
 - d. Remove the packing gland.
 - e. Remove the packing, being careful not to score the stem.
 - f. Care should be taken to assure all the old packing is removed from the stuffing box.
 - g. Place the new packing into the stuffing box making sure the proper orientation of the packing is used.
 - h. Replace the packing gland and packing nuts or bolts.
 - i. Adjust down on the packing to obtain a compression load on the packing. This normally requires approximately 18 to 20 foot pounds of torque on the packing nuts or bolts. Cycle the valve several times and re-check the packing nut or bolts. Once the operation is restarted, the packing may need to be snugged to remove all leaks.

Trouble Shooting:

1. Leaking at the stem:
 - a. Loose packing nut or bolts - retighten to obtain a seal.



- b. Scratched or marked stem - remove and refurbish stems surface if possible or replace.
- c. Failure of any of the parts in the packing assembly-replace.
- d. Media is not compatible with the packing material- replace.

2. Leaking at die body joint:

- a. Loose body bolts - retighten to proper torque.
- b. Body seat material not compatible with the media - replace.
- c. Body seal worn or damaged - replace.
- d. Temperatures and/or pressure limits exceeded - check application and replace.

3. Internal Leaks – across the ball and seats:

- a. Ball and seat set damaged – replace.
- b. Seat gaskets damaged or blown out – replace.

4. Twisted or broken stem – replace.

5. High Torque:

- a. Media Build up on the surface of ball or around the cavity of the body – flush if possible or pull valve from service and refurbish.
- b. Over tightening of the packing – readjust to allow the stem to turn and yet maintain a seal.
- c. Corrosion or gulling or internal parts – replace.

Removal Notice:

Warning – When a ball is removed from service it may contain pressure or fluid trapped in the body cavity. Care should be taken when opening the valve when it is out of the line.