INSTALLATION, OPERATION, & MAINTENANCE OF BERIC BALL VALVES

PRE-INSTALLATION

Prior to installation, user should ensure compatibility between valve materials and media being used. Valve markings and nameplate should be verified to ensure that the valve is of the correct type and pressure class for the intended service.

Check the valve visually and operate the valve to check for damage due to shipping and handling. Particular attention should be paid to pipe threads and flanges to make sure there are no foreign materials, scratches, nicks, or dents present. It will be necessary to remove the protective caps from the end connections for this inspection. If the valve is not to be installed immediately, the protective caps should be re-installed on the end connections.

INSTALLATION

It is extremely important to make certain that the valve and piping being installed are properly supported and that the valve and piping are properly aligned.

When installing flanged valves, the flange bolts should all be snugged tight using a "star" pattern. After snugging all bolts, each bolt should be tightened to the required torque, again using a "star" pattern. All bolts should then be re-checked for correct torque.

Buttweld end ball valves should in the open position during pipeline installation welding. Welding leads must be placed on the same side of the body that is being welded. It is important to ensure that the valve seats do not see temperatures in excess of 200°C (400°F). Use of heat sinks away from the valve and/or wet cooling rags over the body are recommended.

Unless otherwise noted, ball valves can be installed with the higher pressure on either side of the ball.

Once installation is complete, it is highly recommended that the entire system be pressurized and inspected for leakage. If leakage is detected, the valve and/or piping should be repaired or replaced prior to the system being placed into service.

ROUTINE INSPECTION AND MAINTENANCE

A good program of inspection and maintenance can not be over-stressed. Periodic inspection of critical leak-path areas such as; body/retainer joint, end connections, seating surfaces, and around the stem packing should be a requirement.

The most common area for leakage is around the stem packing. This is usually due to wear and can normally be stopped by adjusting the packing. This procedure is performed by turning both gland plate nuts (1) 1/2 turn at a time until leakage stops. Once leakage stops, continue tightening gland plate nuts an additional 1/2 turn. If leakage cannot be halted by adjusting packing, repacking of the valve is indicated. (Refer to Field Repair)

REPLACEMENT PARTS

We recommend using genuine BERIC Valve replacement parts. These parts are generally available from stock and are manufactured to the same specifications as those parts that were originally supplied.

When ordering replacement parts, be sure to have as much information about the valve available as can be found. Most of the information can be found on the valve nameplate (model #, material, and trim specification). Other information required (size and class) can be found on the valve body.

Contact your dealer for prices for valve parts.

FIELD REPAIR

STEM LEAKAGE

The most common point for leakage is around the stem and packing. This leakage can normally be stopped by adjustment of the packing gland. If this does not stop the leakage, the valve will have to be repacked.

The system and valve **MUST** be depressurized before attempting any repair work. After removing all pressure from the valve and draining the system, the following procedure should be used to repack the valve.

1. Remove the lever. Remove retaining clip and locator plate. Remove the gland plate bolts and remove the gland plate and gland.

2. Remove old packing, taking care not to scratch or damage the stem or stuffing box.

3. Clean and inspect stem, stuffing box, and gland. If any scratches, nicks, or corrosion is found, the parts should be replaced.

4. Slide each packing ring over the stem and into packing chamber. Carefully tamp each ring into place and continue installing rings until the recommended number of rings have been installed.

5. Replace gland, gland plate, and gland plate bolts. Tighten nuts alternately in 1/2 turn increments until torqued to the values shown in Beric Valves **Bolt Torque Chart**. Lubricate stem and cycle valve through a couple of complete cycles.

6. If slight stem leakage occurs after system is pressurized, continue tightening gland plate bolts in alternating 1/4 turn increments until leakage stops. Once leakage stops, continue tightening gland plate nuts an additional 1/4 turn.

BODY/RETAINER JOINT

Should leakage occur at the body/retainer joint, tighten body bolts to the values shown in Table 1. If, after tightening bonnet bolts, leakage continues, replacement of gasket is recommended. A new gasket is recommended anytime the valve is disassembled. The following procedure is recommended for the replacement of the gasket and/or seats.

1. Place the valve in the half open position and remove all pressure and drain the system. Make sure that leakage of any residual material will be caught in an appropriate container and disposed of properly. After draining the valve place the valve in the full open position.

2. For gear operator or power actuator
   Remove the bolt fastening the gear body or power actuator.
   Remove the gear operator or power actuator.
   Remove the bolt fastening the yoke. Remove the yoke.
   For subsequent operation, follow the disassembling procedure for the gland flange

3. For lever.
   Remove the screw fastening the lever. Remove the lever. Remove the retainer/locked washer and the stop plate.

4. Remove the screw fastening the gland flange. Remove the gland flange. Remove the gland. Pick out the packing from the stuffing box being careful not to damage the stem or stuffing box.

5. Remove the bolts fastening the retainer. Remove the retainer.

6. Remove the seat/seat ring from the retainer. Check the seat for any damage and replace if necessary.

7. Remove the ball from the body. Check the ball for any damage. Remove the seat/seat ring from the body. Check the seat for any damage and replace if necessary.

8. Remove the stem and thrust plate from the body. Remove the thrust plate from the stem. Check the stem for any damage.

9. Inspect all seals for damage and replace if necessary.

This completes the disassembly

9. Clean and inspect body and retainer gasket surfaces. Check for erosion, corrosion, or damage, especially near point where leakage occurred. If damage is found, those surfaces must be repaired before continuing. If repair is not possible, valve should be replaced.

Reassembly.

Installation of new seats, packing and seals is recommended

1. Put the seat/seat ring into the body being careful not to damage the seat and O-rings.

2. Install the thrust washer on the stem.

3. Put the stem through the top hole of the body from inside the body being careful not to damage the seals.

4. Put the ball into the body and make the stem insert the top groove of the ball.

5. Install the bolts on the body.

6. Put the seat/seat ring into the retainer being careful not to damage the seat and O-rings.

7. Install the gasket on the retainer.

8. Put the retainer on the body and make sure the stem moves freely, install retainer nuts and tightening nuts according to Table 1.

9. Put the packing into the stuffing box.

10. Install the gland and the gland flange around the stem.

11. Install the bolts through the gland flange into the body.

For gear operator

12. Install the yoke and tighten the screws.

13. Install key on the stem.

14. Install gear operator on top flange and tighten the bolts

For lever

15. Install stop plate.

16. Install retaining washer.

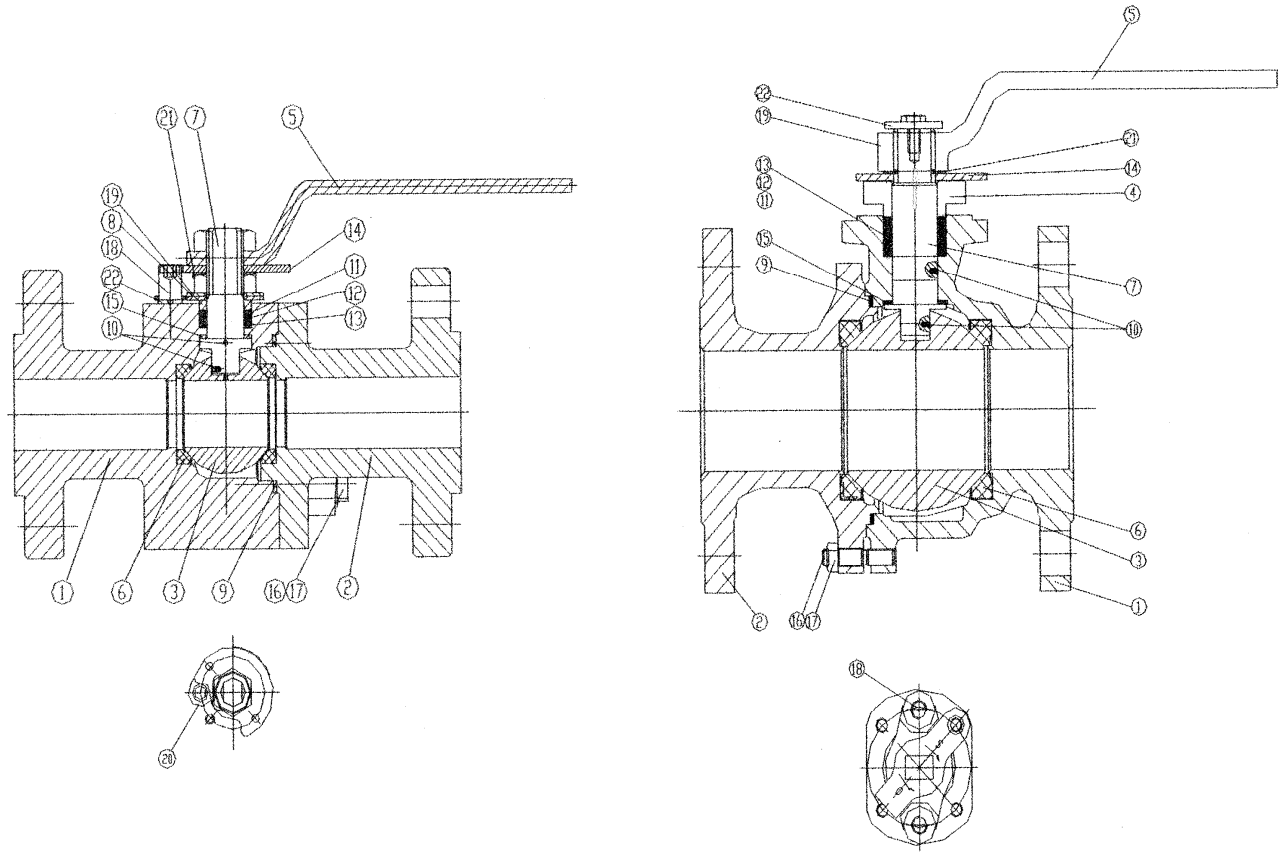
17. Install lever.

This completes the reassembly.

Cycle the valve from open to closed several times to verify free operation. Pressurize the system and check for leakage. Occasionally, after testing or initial startup, a minor body joint or stem packing leak may occur. If so, re-adjust the body bolt torque or stem packing torque as necessary.

BOLT DIA.	TORQUE (FT/LBS)
3/8"	18.00
1/2"	45.00
5/8"	90.00

Table 1



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