

FB Series Ball Valve Maintenance Instructions



WARNING

Before removing any installed valve for maintenance, you must

- Depressurize System
- Cycle The Valve
- Purge The Valve

Seat Kit



Seat spring
FB36 (4)
FB38 (2)



Seat O-ring (2)



Seat (2)



Seat backup
ring (4)



End screw
gasket (2)



Gland
assembly tool



Lubricant

Seat and Stem Kit – Includes seat kit contents and the following



Stem
backup ring



Stem chamfered
backup ring



Stem O-ring



Stem bearing



Stem guide ring
(FB38 Only)



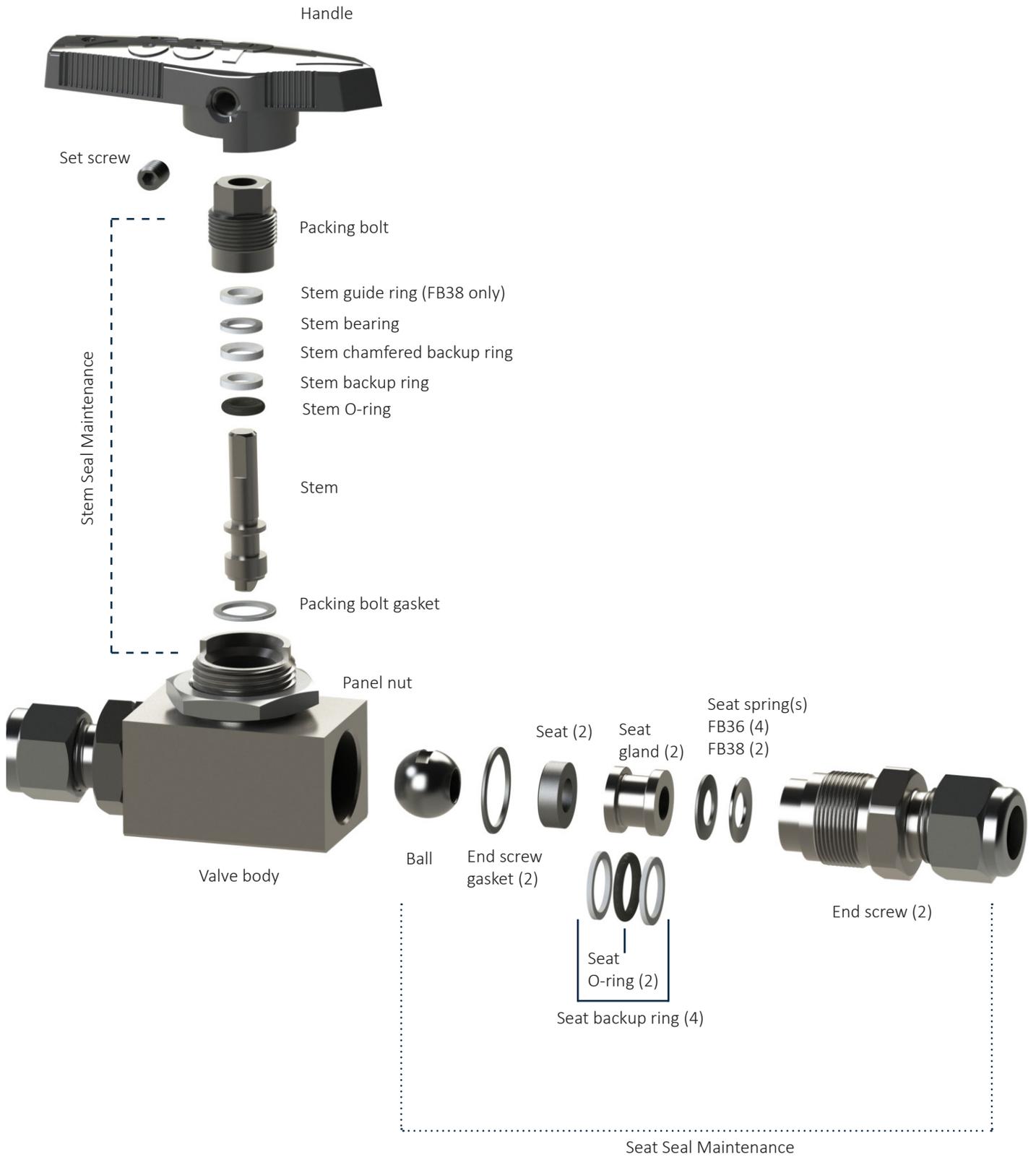
Packing bolt
gasket

Tools Required

| Part | Tool | Valve Size | |
|----------------------------|-----------------|------------|--|
| | | FB 36 | FB 38 |
| Valve Body | Bench Vise | | |
| | Open-end wrench | | 1 in. 1 1/2 in. |
| End screw | Open-end wrench | | |
| | Crow's foot | | 3/4 in. 1 3/16 in. |
| | Socket | | |
| Packing bolt | Socket | | 3/8 in. 13/16 in. |
| Packing bolt, end screw | Torque wrench | | Capable of 350 in.·lb Capable of 800 in.·lb |
| Gland | Pick | | - - |
| Handle | Hex key | | 3/32 in. 5/32 in. |

Exploded View

Figure 1



Maintenance on one end screw assembly should be completed before proceeding to the other end screw assembly.

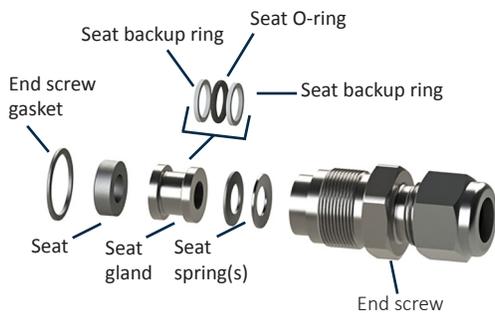
Refer to Fig. 1 while following these instructions.

Disassembly

Seat Disassembly

1. Remove the valve from the system.
2. Place the valve in the OPEN position.
3. Place the valve in a vise or use a wrench to hold the body.
4. Loosen and remove one end screw assembly from the body.
5. Remove the seat, seat O-ring, seat backup ring, seat gland, seat spring(s), and end screw gasket from the end screw as shown (The use of a small, non-metallic pick or similar tool is optional.)

Caution: Care should be taken to not scratch the seat gland or end screw bore as leakage could result.

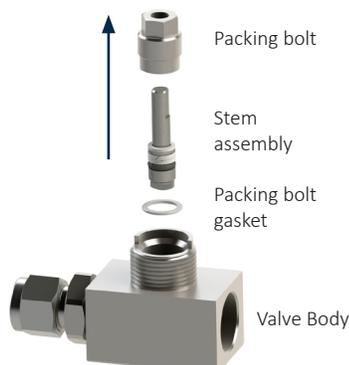


Discard all removed components except the seat gland and end screw.

6. Proceed to Reassembly if not replacing stem seal components.

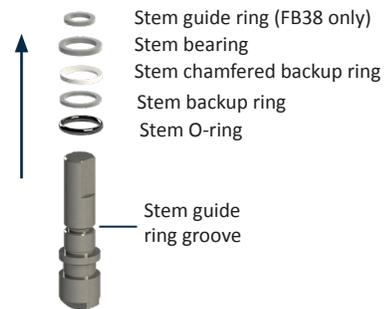
Stem Disassembly

7. Actuate the handle to the CLOSED position.
8. Remove the ball and set aside.
9. Loosen the handle set screw and remove handle and set aside.
10. Loosen and remove the packing bolt, stem assembly and packing bolt gasket from the valve body. Discard the packing bolt gasket.
11. Remove the stem assembly from the packing bolt.



12. Remove the stem guide ring (if present), stem bearing, stem chamfered backup ring, stem backup ring, and stem O-ring from stem and discard.

Caution: Care should be taken not to scratch the stem as leakage could result.



Reassembly Stem Reassembly

1. Clean all lubricant and contaminants from the packing bolt, stem, and ball.
2. Apply a thin film of the provided lubricant to the stem O-ring, stem backup ring, stem chamfered backup ring, stem bearing, and stem guide ring.
3. Install the stem O-ring, stem backup ring, stem chamfered backup ring, stem bearing, and stem guide ring onto the stem.

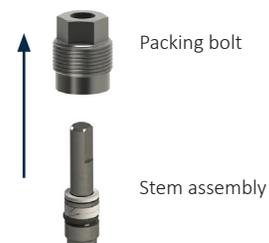


Note 1: The chamfer on the stem chamfered backup ring should point up.

Note 2: (FB38 Only) If no stem guide ring groove is present discard new stem guide ring.

4. Insert the stem assembly into the packing bolt.

Caution: Be careful not to pinch the stem assembly components when inserting into the packing bolt.

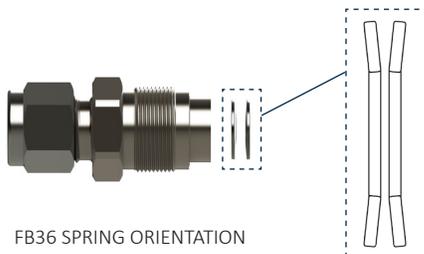


- Place the packing bolt gasket into the body.
- Thread packing bolt/stem assembly into valve body and tighten to the torque value listed in the table.
- Lubricate the ball with the supplied lubricant. Place the ball into the body by aligning the ball slot with the stem tang.

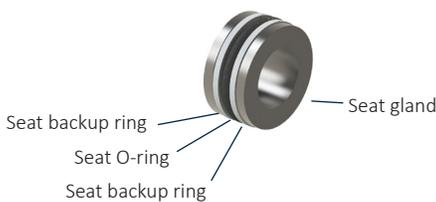
Note: Verify the ball and stem are aligned correctly by actuating the valve

Seat Reassembly

- Clean all lubricant and contaminants from the seat gland and end screw
- Insert the seat spring(s) into the end screw.
 - FB 36 – (2) Springs Must be installed in end screw with the convexed sides facing each other as shown.
 - FB38 – (1) Spring Can be installed in either orientation



- Apply a thin film of the provided lubricant to the seat O-ring, backup rings and seat gland.
- Install seat backup rings and seat O-ring on seat gland.



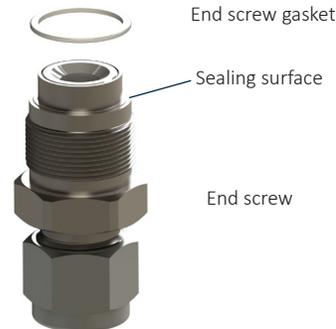
- With the gland assembly tool placed over the end screw, push the seat gland assembly into the end screw.



- Apply lubricant to the top and bottom surfaces of the seat and insert into end screw, bottom surface first.



- Install end screw gasket onto the sealing surface of the end screw.



- Actuate the handle to the open position and remove the valve from vise.
- While holding the valve's open end facing downward, screw the end screw assembly into the valve until no threads are visible.



- Place the valve into the vise and tighten the end screw to the required torque listed in the table.
- Repeat steps 2 through 5 of Seat Disassembly and steps 8 through 17 of Seat Reassembly for the other end screw.
- Install handle on valve and tighten set screw with hex key.
- Test the valve for proper operation.

| SIZE | PART | TORQUE REQUIRED | | | |
|-------|--------------|-----------------|-----------|-----------|---------|
| | | in.-lb | ft-lb | N·m | cm·kg |
| FB 36 | Packing Bolt | 200–250 | 16.7–20.8 | 22.6–28.2 | 230–290 |
| | End Screw | 300–350 | 25–29.2 | 33.9–39.5 | 315–403 |
| FB 38 | Packing Bolt | 600–700 | 50–58 | 68–79 | 692–806 |
| | End Screw | 700–800 | 58–66 | 79–90 | 806–921 |