

## FE Series

### Use & Care Manual

#### 1. INSTALLATION

1. For the lever handle style, attach the handle to the valve body using the supplied bolt and washer. Affix the cap over the bolt.
2. Ensure that the length of the bolts is sufficient for the size of valve being installed. Due to the varying designs of plastic flanges, there is no recommended minimum length. However, a length that results in at least 5 exposed threads on each side should be sufficient.
3. Take care to properly line up the valve and flanges as any misalignment may cause leakage. Please refer to the appropriate application sub-section:
  - a. For typical inline installation, ensure that the disc is in the partially closed position then carefully insert the valve into the piping system between the two flanges. Insert the bolts, washers, and nuts (if necessary), then hand tighten.
  - b. For lugged version end of line installation, insert the necessary steel lugs into the valve body. Ensure that the disc is in the partially closed position then carefully position the valve on the flange. Insert the bolts and washers, then hand tighten.



4. To avoid damage to the primary gasket, cycle the valve to the open position before tightening the bolts. The bolts should be tightened in an even pattern to the nominal torque (Fig. 1). These torque ratings are sufficient to maintain a watertight seal at the maximum rated operating pressure.

**Note:** End of line installation will cause the maximum rated pressure to be reduced (Fig. 1). If the process media is dirty or contains suspended particles, it is advisable to install the valve in an orientation in which the shaft is not vertical (Fig. 2). Over time, particles may collect at the bottom of the valve posing a threat to the seal between the disc, liner, and shaft.

**Figure 1: Nominal Bolt Torque & End of Line Installation Pressure Ratings**

Size	Torque (ft/lb)	Max. PSI
1-1/2"	7	90
2"	9	90
2-1/2"	11	90
3"	13	90
4"	15	90
5"	26	90
6"	30	60
8"	41	60
10"	52	-
12"	52	-

**Figure 2: Installation Orientations**



## 2. MAINTENANCE: DISASSEMBLY

1. If removing the valve from an operating system, isolate the valve from the rest of the system. Be sure to depressurize and drain the isolated branch before continuing.
2. Cycle the valve to a partially open position then loosen each bolt holding the valve to the pipe flange(s). Follow the same pattern when disassembling the flanged joint(s) then carefully remove the valve from the line.

### Sizes 1-1/2" to 8"

3. For the lever handle style, remove the cap then loosen the screw and washer to remove the handle.
4. For the mounted gear box style, loosen and remove the bolts and washers fixed to the gear box. Carefully remove the gear box from the valve taking care not to damage the stem.
5. For 8" sizes, loosen and remove the bolts, washers, and nuts then remove the spacer pad from the valve body.
6. Remove the cap then loosen and remove the screw and washer(s) from the base of the valve body.
7. Carefully pull the shaft out of the valve body then remove the disc.
8. Remove the primary liner from the valve body.
9. Remove the nylon bushing and o-rings from the valve body (sizes 2-1/2" to 8").
10. Remove the disc anti-friction rings, and o-rings (sizes 2-1/2" to 8").
11. Remove the retaining ring (sizes 2-1/2" to 8") and o-rings from the shaft.
12. The valve components can now be checked for problems and/or replaced.

### Sizes 10" to 12"

3. Loosen and remove the bolts and washers fixed to the gear box. Carefully remove the gear box from the valve taking care not to damage the stem.
4. Remove the cap then loosen and remove the screw and washer(s) from the base of the valve body.
5. Carefully pull the shaft out of the valve body then remove the disc.
6. Remove the primary liner from the valve body.
7. Remove the upper and lower bushings, washers, and o-rings from the valve body.
8. Remove the disc anti-friction rings, and o-rings.
9. Remove the retaining ring and o-rings from the shaft.
10. The valve components can now be checked for problems and/or replaced.

## 3. MAINTENANCE: ASSEMBLY

**Note:** Before assembling the valve components, it is advisable to lubricate the o-rings with a water soluble lubricant. Be sure to consult trusted resources to determine specific lubricant-rubber compatibilities.

### Sizes 1-1/2" to 8"

1. Insert the primary liner into the valve body. Ensure that the proper holes line up with those on the body.
2. Properly fit the o-rings on the nylon bushing (sizes 2-1/2" to 8") then insert into the valve body from above.
3. Properly fit the disc o-rings (sizes 2-1/2" to 8") and anti-friction rings on the disc, then insert into the valve liner taking care to center the holes.

4. Properly fit the o-rings and retaining ring (sizes 2-1/2" to 8") in their grooves on the shaft, then carefully insert into the valve body from above.
5. Fasten the shaft at the base of the valve body using the screw and washer. Affix the cap over the bolt.
6. For 8" sizes, affix the spacer pad to the valve body using the screws, washers, and nuts.
7. For the lever handle style, affix the handle using the screw, washer, and cap.
8. For the mounted gear box style, carefully place the gear box on the stem, lining up the holes. Fasten using the necessary bolts and washers.

### Sizes 10" to 12"

1. Insert the primary liner into the valve body. Ensure that the proper holes line up with those on the body.
2. Properly fit the o-rings on the upper and lower bushings then insert into the valve body from above and below along with the washers.
3. Properly fit the disc o-rings and anti-friction rings on the disc, then insert into the valve liner taking care to center the holes.
4. Properly fit the o-rings and retaining ring in their grooves on the shaft, then carefully insert into the valve body from above.
5. Fasten the shaft at the base of the valve body using the screw and washers. Affix the cap over the bolt.
6. Carefully place the gear box on the stem, lining up the holes. Fasten using the necessary bolts and washers.