

**J-FLOW CONTROLS**  
**4665 Interstate Dr. \* Cincinnati \* Ohio \* 45246 \* 513-731-2900**

**I & M 3PC SANITARY BALL VALVES**  
*Installation & Maintenance Instructions for J-Flow Ball Valves*



*J-Flow Ball Valves have been designed and engineered to provide long lasting and trouble-free service when used in accordance with the instructions and specifications herein.*

---

---

**Storage**

---

---

**CAUTION: If ball valves are not destined for immediate use, the following precautions should be taken:**

Internal surfaces are normally lubricated. This may be removed with a solvent if found objectionable. All valves are adequately packed in a strong cardboard case in such a way as to avoid any possible damage during transport and storage. Alternatively, valves can be ordered free of lubricants.

Certain ferrous valves are phosphated and oil dipped during the course of manufacture, but the processes used are completely non-toxic and the valves are quite safe to use for edible or potable products.

- 1) If possible, leave the ball valves in their packing cases during the period of storage.
- 2) Ball valves must remain in open position during this time.
- 3) In order to prevent damage, protective plastic covers on valve ends should not be removed until immediately prior to installation.
- 4) It is advisable to store the valves in waterproof conditions, Ball valves should be protected to safeguard against humidity, moisture, dust, dirt, sand, mud, salt spray, and seawater.
- 5) All valves complete with actuators are to be stored in dry conditions.
- 6) Valves to be stored for a long period of time should be checked by the quality control personnel every six months; every three months when valves are automated.

---

## **Installation**

---

The ball valves may be installed in any position using standard pipe fitting practice. It is recommended that unions be installed before each end of threaded and welded multi-port valves for easy installation and removal.

**CAUTION: Before Installation of the Valve:**

- 1. Pipe must be free of tension both during and after installation.**
- 2. Pipe must be flushed to clean dirt, welding residues, etc. which would damage ball or seats.**
- 3. The valve should be kept in OPEN POSITION during installation and protective plastic covers must be removed only at the moment of installation.**
- 4. Before shipment, the ball is lubricated. This can be easily removed with an application compatible solvent if required.**
- 5. If the valve was specified to be tested per ASME B16.34, there may be some trapped water between the ball and the body cavity. This can be removed by partially opening the valve, thereby exposing the cavity to the through port of the ball.**
- 6. When installing automated ball valves, special care should be taken that the ball is in the proper position.**
- 7. Make sure only the specified gasket and clamp ends are used.**
- 8. Make sure gasket is properly seated before tightening the clamp end.**

---

## **Operation**

---

J-flow valves provide tight shut off when used under normal conditions. If these valves are used in a partially open (throttled) position, seat life may be reduced. Any media which might solidify, crystallize or polymerize should not be allowed to stand in the ball valve cavities unless regular maintenance is provided. If minimal maintenance is performed, J-Flow Valves offer cavity filled and/or steam jacketed ball valves.

---

## **Manual Operation**

---

The basic type of wrench which is fitted to all sizes of valve is sheet steel with integral stop. J-Flow valves have ¼ turn operation closing in a counter-clockwise direction. It is possible to see when the valve is open or closed by the position of the wrench handle. When the wrench is across the pipeline, the valve is closed, unless using reverse handle.

---

## **Remote Operation**

---

Where manual operation is not required, valves may be automated for remote operation, instrument control, etc. A range of J-Flow valves pneumatic and electric actuators are available.

A No Stop plate is fitted to the valve, since the operation is normally part of the actuator, unless required.

---

---

## Maintenance

---

---

### Maintenance During Storage Period:

- Internal surface should be inspected to check for dirt or other foreign objects.
- Rust or dirt must be removed by cleaning with proper solvent.
- After cleaning, ball valves must be lubricated with an adequate lubricant.
- Ball valves should be operated for at least two complete cycles before installing or returning to storage.

### Maintenance Frequency:

- The maintenance frequency is determined upon the application of the ball valve. User should consider the time interval, the kinds of fluid, flow velocity, operation frequency, high-pressure effect and high-temperature effect etc.

### Maintenance – General:

- With self-wipe ball/seats and pressure equalizing slots, J-Flow valves have a long, trouble-free life, maintenance is seldom required. When necessary, valves may be refurbished, using a small number of components. The following checks should be done to extend the valve life or reduce any problems.

- **Stem Leakage**

Try to increase the torque on the gland nut in one-quarter turn increments to eliminate leakage in the stem area. If leakage continues, replace the stem packing.

- **Body Seal Leakage**

Check for tightness in the body connector bolts. If loose, tighten body bolts. Standard wrenches should only be used. Excessive force will only stretch or strip the bolts.

If there is still leakage, this will be due to damage to the body seal and it will be necessary to dismantle the valve.

- **In-Line Leakage**

Check that the valve is fully **CLOSED**. If it is, leakage will be due to damaged seat or ball sealing surfaces and it will be necessary to dismantle the valve at this time.

NOTE: Stem leakage and leakage at body joint, if not cured by simple means described above, necessitates dismantling the valve. If there is not stem leakage, the stem assembly should NOT be touched.

---

## Valve Disassembly

---

### Dismantle – To inspect and/or replace body seals, seats, packing and ball

- Valve must be in the **OPEN** position
- Remove one body bolt opposite hinge point and loosen all others. This will allow valve to swing out.
- Make sure the valve is in the **CLOSE** position and remove the seats, ball and body seals. Be very careful not to damage the ball.
- Remove the handle nut, handle, gland nut, gland, and stem packing.
- Push the stem into the body and remove the thrust washer from the stem.

### Inspecting and Replacement

- Before rebuilding, check that all the correct components are available and that they are fit for re-assembling. When rebuilding, cleanliness is essential to allow long valve life and provide cost-effective maintenance. Clean and examine all components closely.
- It is recommended to replace the seats and seals. Replace all other defective parts after careful examination.
- After cleaning all the remaining components of the valve, carefully examine for wear, corrosion and mechanical damage and replace all defective parts.
- Clean inside of body and stem housing. Light grease that is compatible with the line fluid may be used on the ball, seals and stem surface.

---

## Valve Re-Assembly

---

### Stem

- Replace the thrust washer and insert the stem from inside the body of the valve
- Install stem packing, gland nut and tighten until snug, then ½ turn. **Do not overtighten. To avoid rotation of stem, insert the handle and ball**
- Install handle and handle nut and tighten.

### Ball, Seats and Seals

- Place the stem in the **CLOSE** position and insert the ball, aligning groove in ball with bottom of stem
- Position the ball in the **OPEN** position and insert the seats and body seals.
- Insert the centerpiece between the end caps, re-install removed bolts and hand tighten all bolts and nuts.
- Tight nuts to recommended torque values using an alternating/opposing pattern with no more than 1/4 turn on each nut before alternating.

---

## Testing

---

- After completing the reassembly, check that the valve operates smoothly by opening and closing valve several times.
- If the entire valve was removed from the line and if facilities are available, test the ball valve to appropriate specifications.

NOTE: When ordering maintenance kits, please be sure to specify type and size of valve and seating material required. Parts from different valves should NOT be interchanged.

This is to ensure, that the valve remains capable of being used for the purpose for which was designed and constructed, without risk to health and safety of plant personnel.

---

## Safety Precautions

---

**NOTE: Before removing valve from pipeline, media flowing through a valve may be corrosive, toxic, flammable, or of a contaminant nature. Where there is evidence of harmful fluids having flowed through the valve, the utmost care must be taken. It is suggested that the following safety precautions should be taken when handling valves:**

- 1) Always wear eye shields
  - 2) Always wear gloves and overalls
  - 3) Wear protective footwear
  - 4) Wear protective headgear
  - 5) Ensure that running water is easily available
  - 6) Have suitable fire extinguisher ready if media is flammable
- 
- By checking line gauges, ensure that no pressure exists on either the upstream or the downstream sides of the valve.
  - Ensure that any media is released by operating valve slowly to half-open position.
  - Ideally, the valve should be decontaminated when the ball is in the half-open position. Leave valve in fully open position.
  - These valves, when installed, have body connectors which form an integral part of the pipeline, and the valve cannot be removed from the pipeline without being dismantled.