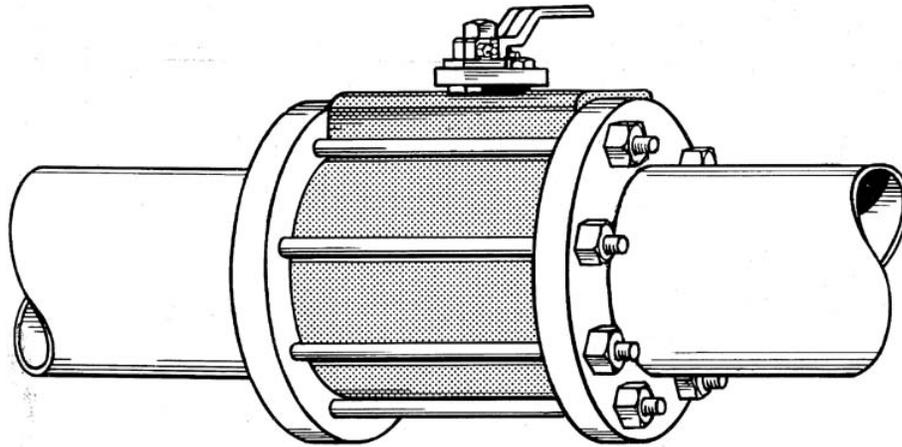




# Installation and Maintenance

For 8" Nil-Cor Ball Valve (Wafer Design)



## Installation

1. Fluid flow may be in either direction and the valve may be mounted in any position. When the valve terminates a line, the insert end should be positioned toward the flow direction (upstream side).
2. Adjacent pipe flanges supporting the valve should be aligned well to minimize stresses on the assembly.
3. 50 durometer (Shore A) elastomer gaskets or PTFE envelope gaskets are recommended.
4. Eight 14-inch long flange bolts 3/4-inch in diameter are required to install the wafer 8" Nil-Cor ball valve. They should be evenly torqued to prevent damage to the pipe flanges. The recommended installation-torque at ambient temperature for this valve is 50 ft. lbs. When the valve is used above 200°F, the bolts should be re-tightened to the original torque level after the first cycle to the operating temperature and back to ambient.
5. Maximum service conditions are: 150 psi from 40°F through 200°F. This pressure-temperature rating is based on capabilities of the material under non-corrosive conditions. In situations where corrosion may occur, these limits may be reduced. Refer to Nil-Cor Catalog 1000 for chemical compatibility and temperature ratings.

## Safety Precautions

For your safety, it is important that these precautions be taken before removal of the valve from the line or before disassembly:

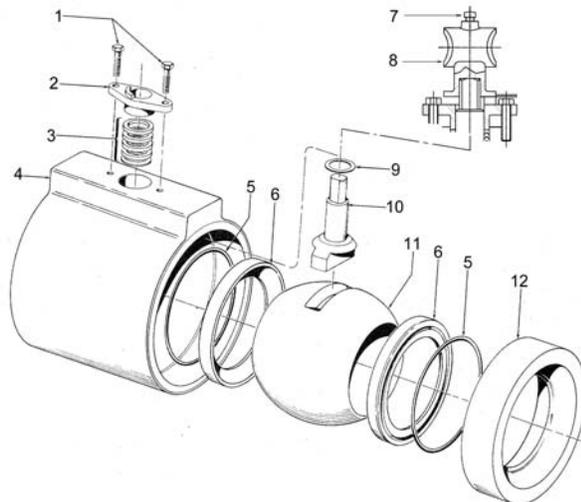
1. Wear protective clothing or equipment appropriate for the particular fluid.
2. Observe the precautions and follow the procedures in Disassembly item 1.

## Disassembly

1. Open the valve, depressurize and drain the line.
2. Before removal from the line, cycle (open and close) the valve to relieve residual pressure in the body cavity.
3. After removal and before disassembly, cycle (open and close) the valve several times to clear it of fluid.
4. Open valve completely and remove handle.
5. Secure body in a clamping device, being careful not to damage or crush it.
6. Remove gland bolts from the valve body.
7. Pull out the body insert. It is not threaded and so will slide out. Carefully remove ball, body insert gasket o-ring and the two ball seats. Take care not to damage sealing surfaces in body or gland.
8. Carefully push valve stem down into the valve body and withdraw it through the open end. Remove the thrust washer from the stem.



ITEM NO.	DESCRIPTION
1	Hex Hd. Cap Screw
2	Gland
3	Stem V-Ring Packing
4	Body
5	"O" Ring (2)
6	Ball Seat (2)
7	Set Screw
8	Handle Adaptor
9	Thrust Washer
10	Stem
11	Ball
12	Body Insert



### **Assembly**

1. Inspect and clean all parts to make sure they are free of dust, grit or other material. New O-ring and ball seats should be used after the valve has been used in service and is reassembled.
2. A good lubricant compatible with the fluid service, such as a silicone grease, should be applied lightly to seats, seal, ball and stem.
3. Assemble thrust washer on stem. Carefully insert upper end of stem into body of valve and maneuver into opening in top of valve. Push stem upward until thrust washer is seated.
4. While holding stem in position with one hand, slip gland packing into cavity around upper end of stem. The 8" valve requires 3 compression rings and 2 adaptor rings. Use the gland to press packing into place and slightly draw up the packing by tightening the gland bolts. Assemble valve handle to stem and tighten.
5. Press one ball seat firmly into the valve body seat cavity, making sure spherical surface faces center of valve.
6. Rotate handle so that stem bottom is lined-up axially with the valve and ball can be fully inserted.
7. Place ball in body against seat, with ball in the valve-closed position. Rotate stem and ball to the open position so that ball cannot fall out.
8. Place second ball seat into the body against the ball, and the insert gasket (O-ring) in the body against the back of the seat.
9. Push body insert into the valve body as far as it will go. When the valve is installed in a line, the body insert will be properly positioned by the mating pipe flange.
10. Since the valve is a wafer design it is installed

in a line between pipe flanges and secured in place by eight flange bolts. The four lowest flange bolts should be loosely assembled between the flanges to form a cradle to support the valve while the four upper ones are positioned. Then all eight are tightened according to Installation Item 4.

11. With the valve installed in line, cycle the valve slowly with a gentle back and forth motion, building gradually to a full quarter turn. By rotating slowly, the seal lips will gradually conform to the shape of the ball and prevent damage to the seals. After ten full break-in cycles, the operating torque should not exceed: 4200 in-lbs to break out of the seat, 2500 in-lbs to run between closed and open, and 3360 in-lbs to re-seat the ball. If the operating torque exceeds these limits, check the torque on the flange bolts, per Installation Item 4 on page 1.
12. Gland bolts should be tightened to 65 in-lbs. If additional tightening is required to stop stem leakage, do not exceed 130 in-lbs.

### **Maintenance**

Periodic observation is recommended to ensure that the valve is functioning well. The frequency of observation depends on the application. Adjustment to stem gland packing should be made periodically to compensate for wear caused by the stem turning against the TFE packing.

**Nil-Cor, LLC**  
**4855 Broadmoor Ave.**  
**Kentwood, MI 49512**  
**(616) 554-3100**  
**www.nilcor.com**