

ONYX VALVE CO

Series DHO Installation and Maintenance Instructions

OPERATION

Series DHO and DHO-BG Pinch Valves utilize a simple hand wheel operated, free floating dual pinch bar mechanism which closes or opens the full round elastomeric sleeve. The free floating mechanism permits even closure from both sides and the positive opening feature attached directly to the pinch bars, insures complete and even opening. Closure is bubble tight; over pinching is prevented by a positive closure stops on the stem.

STORAGE

Correct storage procedures can appreciably extend the service life of the valve. Most important to remember is that the rubber sleeve in the valve is perishable. While sleeves are stored at 50°F at 60% relative humidity at the factory, field storage conditions are seldom optimum. Therefore, we recommend the following precautions for valves and spare sleeves which are to be stored for any length of time prior to installation.

1. Keep valves and spare sleeves as cool as possible. They can be safely stored in an unheated area, but allow maximum ventilation in storage areas subject to high ambient summer temperatures. Enclosed truck trailers, storage sheds, and the like can become incredibly hot during summer months. Avoid such locations.
2. Avoid sunlight. Ultra-violet light will accelerate the deterioration of rubber. Leave the valve in its box, if it was so packaged. If not feasible to box the valve, cover the sleeve with black plastic.
3. Avoid ozone. **DO NOT STORE** valve near active electrical equipment. For long-term storage, coat the face and inside the sleeve twice yearly with silicone spray or liquid.

INSTALLATION:

1. Safety considerations:
 - a) Leakage: Consider the possibility of flange leakage due to improper tightening of flange bolts. Refer to Paragraph 8 and Figure 1 for correct flange tightening procedure. As pinch valves frequently handle abrasive fluids, it is reasonable to expect that the sleeve will eventually wear out. Precautions should be taken where liquids may drip down onto electrical equipment, or plant personnel, and where a combustible fluid may drain into a dangerous area.
 - b) After shut down: Pinch valves seat absolutely gas tight and can hold pressure in a system for a considerable length of time. Means should be provided to safely relieve this pressure and drain lines.

2. Allow as long a straight run as possible into and out of throttling valves. Ideally, there should be a minimum of 10 to 20 pipe diameters up stream, and 3 to 5 pipe diameters down stream.
3. Locate the valve where it can be reached for service, if necessary.
4. Be sure pipeline is clean. Foreign material left in the pipeline can damage valves. Clean the mating flanges of adjacent pipe. Be sure to remove any old gasket material.
5. Inspect the valve before installation. Report any shipping damage before installation. **DO NOT INSTALL A VALVE KNOWN TO HAVE BEEN DAMAGED IN SHIPMENT.** Check inside the valve sleeve to make sure no foreign objects are present.
6. ONYX DHO pinch valves can be installed in any position with flow in either direction. Do not install valve adjacent to a source of extreme heat.
7. Make sure adjacent pipe is properly aligned. Adjacent pipe must have sufficient travel to insert valve and then draw up tight to compress sleeve faces; valve will not stretch. The sleeve faces are quite thick, so be sure to check for required free play. If necessary install an expansion joint to obtain required free play. (Flange gaskets are not required, but may be used for spacers if necessary.) Coating faces of valve sleeve with silicone lubricant will facilitate installation and later removal of the valve, and will help preserve the resilience of the elastomer sleeve.
8. If any misalignment in the piping occurs, slight adjustment can be made for this misalignment by loosening the four outside tie rod nuts, (# 7) and then tightening the split flange sections, (# 11) against the companion flange with your flange bolts, then re-tightening the four tie rod nuts (# 7). **CAUTION** - do not use these four nuts to draw pipe sections toward each other.

IMPORTANT - never exceed installed face to face dimensions - see catalogue page for Dimensions.

Note: the rubber sleeve is intentionally made longer than the installed length to compensate for closing forces. You can partially close the valve prior to installation if this makes it easier to insert the valve between companion flanges. Loosening the nuts that secure the steel back-up plates may also aid in valve installation.

9. Bolt valve into pipeline. Snug up the bolts gently in a criss-cross pattern. It may be necessary to re tighten bolts later after the rubber has taken a set.
10. If valve is provided with a mechanical assist device, such as a bevel gear operator, refer to particular instructions regarding the installation and maintenance of the operator.

MAINTENANCE

- A. It is advisable to visually inspect each valve periodically.

- B. Lubricate valve occasionally.
 - 1. Inject grease into the grease fitting on the yoke (Item 5).
 - 2. Brush grease onto the stem threads. If the valve is not provided with a stem cover, and operates in a dusty environment, grease may cause dirt to cling to the stem threads. In this case, we recommend using Silicone Spray Lubricant.

SLEEVE REPLACEMENT

Sleeve life can vary considerably depending upon the media handled. When it eventually becomes necessary to replace the sleeve, follow this procedure:

- 1. Relieve pressure and drain line.
- 2. Open valve completely.
- 3. Remove valve from line.
- 4. Remove the two lower pinch bar (#12) by removing the lock nuts (#17) on the under side of the lower pinch bar.
 - a. If you have positive opening tabs, remove the P.O.F. Bolts (#10) through the positive opening tabs. The sleeve is now free to be removed from the mechanism.
- 5. Insert the new pinch valve sleeve into the pinching mechanism.
 - a. If the new sleeve is supplied with positive opening tabs, the tabs must be punched before installing in the mechanism.
 - 1. Use the lower pinch bar as a template, align on the sleeve as indicated in figure 2.
 - 2. To mark the location of the holes on the tabs, fold down one tab while holding the other tab firmly in the vertical position. Direct spray paint through the exposed tab holes. Without moving the pinch bar, reverse the position of the flat and vertical tabs and paint through holes in the opposite direction.
 - 3. Punch holes in the positive opening tabs in the location marked in (2) above using a gasket hole or pliers type punch. Hole diameter in tabs should be approximately equal to the hole diameter in the pinch bar. Trim the tab so that it is even with the top surface of the pinch bar.
- 6. Replace the lower pinch bar (#12), replace the lower pinch bar lock nuts (#17) and tighten securely.
- 7. Before inserting the valve in the line, close the valve tightly so that the stop nuts (#3) are firmly against the yoke (#5). Look through the valve and make sure there is no opening. If there is an opening, the lower pinch bar can be adjusted to eliminate the opening by

loosening the two upper pinch bar lock nuts, (#15) an equal amount and taking up on the two lower pinch bar lock nuts (#17). CAUTION - do not over pinch the rubber body. IMPORTANT- upper and lower pinch bars must be parallel at closure.

8. Be sure to clean the companion flanges to which the rubber flanges are mated and lubricate with material such as silicone grease for easy parting of the rubber flange from the metal flange at a later date if necessary.
9. Reinsert flange bolts and tighten the valve in place.
10. If after installation, the valve does not close tightly, adjustments can be made on the stop nuts (#3) to obtain tight closure.

