

ONYX VALVE CO MODEL CHR & CHP

Installation & Maintenance

OPERATION:

(05-2011)

The Onyx series CHR and CHP are hand operated pinch valves. A simple hand-operated mechanism drives a direct acting pinch bar to close a rubber sleeve bubble tight. Positive opening tabs molded into the sleeve attached to the pinch bar insure complete opening.

TESTING:

All Onyx pinch valves are tested to customer specifications before shipment. Unless otherwise specified, all valves are shipped assembled with all accessories mounted and calibrated.

STORAGE

Correct storage extends valve life. The rubber sleeve in the valve is perishable. Ideal storage conditions are 10°C (50°F) and 60% relative humidity.

1. Keep valves and spare sleeves cool. They can be stored in an unheated area, but allow maximum ventilation in storage areas subject to high ambient temperatures. Truck trailers and storage sheds become incredibly hot during summer months. Avoid such locations.
2. Avoid sunlight. Ultra-violet light accelerates the deterioration of rubber. Leave the valve in its box. 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 with silicone spray or liquid.

CONSTRUCTION

Onyx pinch valve housings are available in Cast Iron, with Ductile Iron available as an option. Valve stems and pinch bars are 303 Stainless Steel, or optional 316 stainless steel.

INSTALLATION:

1. Safety considerations.
 - a) Leakage: Consider possible flange leakage due to improper tightening of flange bolts. Pinch valves handle abrasive fluids; it may be reasonable to expect the sleeve to eventually wear out. Precautions should be taken where liquids may drip onto electrical equipment or plant personnel, or where combustible fluid may drain into a dangerous area.
 - b) After shut down: Pinch valves can hold pressure in a system for a considerable length of time. Means should be provided to safely relieve pressure and drain lines.

2. **Flanges:** Onyx pinch valves are designed to work with standard ANSI 150# (or 300#) **flat face** flanges. No gasket is required; the sleeve face *is* the gasket. Be careful when using Victaulic type flanges, as the grooving machine often leaves a sharp edge inside the flange. This sharp edge will cut the rubber valve sleeve causing premature sleeve failure. Make absolutely sure that the inside edges of mating flanges are filed or ground smooth. Valve flanges have through holes and are designed to have an ANSI hex (not heavy hex) nut behind the flange. Flange bolts must be inserted from the mating flange side.
3. Locate the valve where it can be reached for service and sleeve replacement. Allow access by technicians who may have to calibrate automatic valves. If valve is operated with an auxiliary hand wheel, allow access to the hand wheel. Locate valve so that operators can see relevant gauges.
4. Be sure pipeline is clean. Foreign material left in the pipeline can damage valves. Clean the mating flanges of adjacent pipe. Remove old gasket material.
5. Inspect valve before installation. Report shipping damage before installation. **DO NOT INSTALL A VALVE KNOWN TO HAVE BEEN DAMAGED IN SHIPMENT.** Check inside the valve to make sure no foreign objects are present.
6. The model CHR & CHP pinch valve can be installed in any position with flow in either direction.

Do not install valve next to a source of extreme heat.

7. Make sure adjacent pipe is properly aligned. Adjacent pipe must have sufficient travel to insert valve and draw tight to compress sleeve faces; valve will not stretch. Make certain adjacent pipe has sufficient free play for removal and reinstallation of the valve. (Flange gaskets are not required, but may be used for spacers if necessary.) Coat faces of valve sleeve with silicone lubricant to facilitate later removal of the valve and preserve the resiliency of the rubber.
8. Bolt valve into pipe line. Snug up the bolts gently in a criss-cross pattern. It may be necessary to re tighten bolts later after the rubber has taken set.
9. **IMPORTANT - INSTALL SUFFICIENT PIPE SUPPORTS TO ISOLATE VALVE BODY FROM EXCESSIVE BENDING MOMENTS.**

MAINTENANCE

1. Visually inspect valve periodically.

2. Lubricate valve once a year. Coat stem (#7) where it passes through the yoke adapter (#12) with grease. If valve is in a dusty environment, grease may cause dust to stick to the stem; use light oil instead.

SLEEVE REPLACEMENT

1. Relieve process pressure and drain process line.
 2. Open valve.
 3. Remove valve from process line.
 4. Disconnect any accessories attached to the stem or coupling.
 5. Disassemble valve bonnet assembly (#2) by removing bolts, nuts, and washers (#2A, 2B, 2C).
 6. Separate upper and lower bonnet halves (#2). By slowly turning the hand wheel clockwise, the bonnet halves can be easily apart without difficulty.
 7. If sleeve (#1) is provided with positive opening tabs (integrally molded tabs bolted to the pinch bar), follow steps 'a' through 'e' below. If positive opening tabs are not provided, proceed directly to step 8.
 - a) Remove bolts, nuts and washers that secure the positive opening tabs to the pinch bar (#8A, 8B, 8C). The sleeve (#1) is now free from the pinch bar (#8). Discard old sleeve. Prepare new sleeve for installation.
 - b) Punch holes through the Positive Opening Tabs using a gasket hole or pliers type punch. Hole diameter in tabs should be approximately equal to hole diameter in the pinch bar.
 - c) Positive opening tab holes must be punched in proper alignment with respect to the flange face holes, or there will be hell to pay when you reinstall the valve.
- Make certain that flange holes in the rubber sleeve face match the drilled holes in the metal bonnet assembly. It is very difficult to twist the rubber sleeve to align these holes later.



- d) Replace tab bolts, nuts and washers (#8A, 8B & 8C). Use flat washers on every hole. If you replace bolts (#8A), cut or grind flush with nut (#8C) so bolts will not puncture sleeve in closed position.
 - e) Trim the tabs even with the top of the pinch bar.
- 8. If valve is provided with optional bonnet seal kit, remove the yoke adapter (#12) and replace the O-ring (#12B).
 - 9. Insert new sleeve and reassemble the valve bonnets.
 - 10. Apply a coat of silicone sealant to the mating flanges of the bonnet assembly. Bonnets must be matched and oriented as they were originally or bonnet hardware will not line up properly. Replace bonnet hardware(#2A, 2B & 2C).
 - 11. Replace any accessories that were previously removed.
 - 12. Reinstall valve in process line.



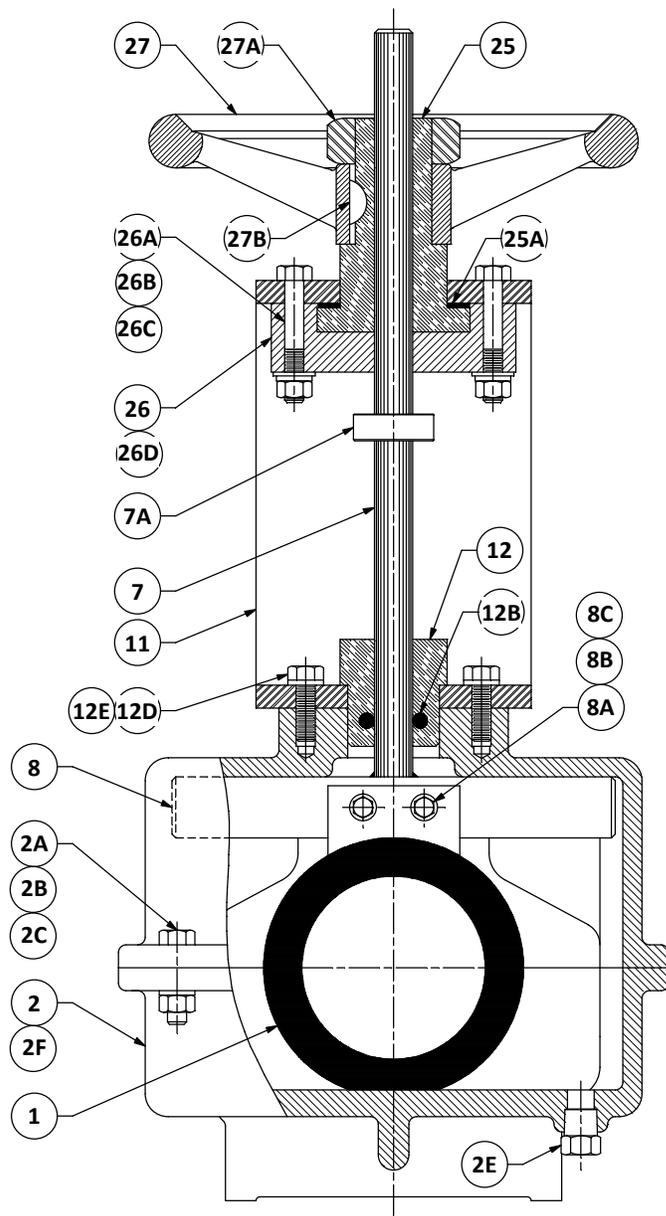
Questions ?

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ITEM	DESCRIPTION
1	SLEEVE
2	BONNET ASSY
2A	BOLT, BONNET ASSY
2B	LK WASHER, BONNET ASSY
2C	NUT, BONNET ASSY
2E	PIPE PLUG, BONNET ASSY
2F	SEALANT, BONNET ASSY
7	STEM
7A	MECHANICAL STOP
8	PINCH BAR
8A	BOLT, P.O.F.
8B	WASHER, P.O.F.
8C	NUT, P.O.F.
11	YOKE
12	YOKE ADAPTER
12B	O-RING, YOKE ADAPTER
25	BRASS NUT
25A	NYLATRON WASHER, BRASS NUT
26	BRASS NUT CAP
26A	BOLT, BRASS NUT CAP
26B	LK WASHER, BRASS NUT CAP
26C	NUT, BRASS NUT CAP
26D	GREASE FITTING, BRASS NUT CAP
27	HAND WHEEL
27A	RETAINING NUT, HAND WHEEL
27B	KEY, HAND WHEEL