

AIR JACKETED (AJ) PINCH VALVES

**INSTALLATION,
OPERATION,
& MAINTENANCE
INSTRUCTIONS**



BACKGROUND

EVR Air Jacketed (AJ SERIES) pinch valves are pneumatically-actuated valves designed to control various types of liquids, gases, and slurries. Manufactured from top quality elastomeric materials, AJ pinch valves incorporate a single rubber sleeve made with an inner profile most suitable for the intended application. Each valve's outer housing can be made from cast iron, cast steel, cast aluminum or a fabricated design, depending upon the customer's requirements.

Installed between pipe flanges, the simple design ensures reliable operation over a long service life. The valve's only wetted part, the inner rubber sleeve, has a smooth inner surface that eliminates clogging. The pinch valve can be supplied with solenoids and/or booster relays for remote actuation and throttling control.

Advantages of using EVR AJ Series pinch valves:

- SIMPLE OPERATION (ONLY ONE MOVING/WETTED PART)
- TIGHT SEAL AROUND TRAPPED SOLIDS
- STRAIGHT THROUGH FLOW
- OPTIONAL SOLENOID CONTROL FOR REMOTE USE
- MINIMAL MAINTENANCE

INSTALLATION

1. All EVR Pinch Valves have standard 125/150# flat faced flanges. Other flange standards are available. Consult factory for further information.
2. For best performance, a flat-faced serrated flange should be mated to the pinch valve flange face.
Note: (a) smooth-faced flanges may not seal properly
(b) raised-faced flanges may damage the rubber flange
3. The valve body flanges are supplied with threaded holes. Care should be taken to use the correct length of bolts to prevent "bottoming" which may crack the housing.
4. Valves should be installed where they can be easily accessed for service. Whenever possible, allow room on all sides of the valve for maintenance of valve components. Technicians should consult separate manufacturer's operating instructions for auxiliary controls.
5. Be sure the pipeline and mating flanges are clean of any foreign or old gasket material, which may damage the valve or prevent proper sealing. Avoid using sharp tools (screwdrivers, crow bars etc.) to install the valve. These can damage the sealing faces and cause leakage.
6. EVR's AJ Pinch Valves are designed to be installed in any position. However, if the operating air is not dry, it is recommended that the valve be rotated so that the "Drain Plug" is on the bottom to allow for proper drainage of condensate from the valve housing.
7. AJ Valves are supplied with an extruded diamond seal gasket. Prior to installation, the ends of the diamond seal gasket must protrude 1/16" to 1/8" beyond the flange face to provide a good seal.
8. The mating pipeline should be properly aligned. Sufficient space should be allowed between mating flanges for the AJ valve to be installed and a tight seal achieved once bolted. Note: The valve will not stretch to accommodate any extra space. Flange gaskets are not normally required but may be used as spacers if necessary.
9. Tighten all flange bolts in a criss-cross pattern (Figure 1) to the maximum torque recommended for the metal mating flanges. The rubber flange is not to be over-tightened. See Figure 2 for recommended torque settings. It is recommended that all hardware be re-checked and flange bolts be re-tightened after the valve has been in operation for a week, in order to compensate for rubber setting.

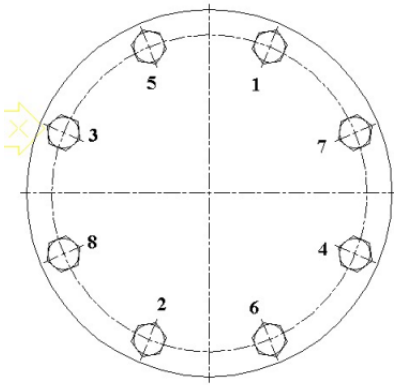


Figure 1

Pipe Size ID (in)	Torque (ft-lbs)*	Torque (Nm)*
1 - 2	20	27
2.5 - 5	25	34
6 - 12	35	48
14 - 18	50	68
20 and larger	60	82

*Torque settings are approximate and are as recommended by the Fluid Sealing Association Std FSA-PSJ-702-06 "Rubber Flanged Non-Metallic Expansion Joint Installation, Maintenance and Storage" Manual.

a) To prevent leakage, the flange bolts should be retightened after one week of operation and checked periodically thereafter.

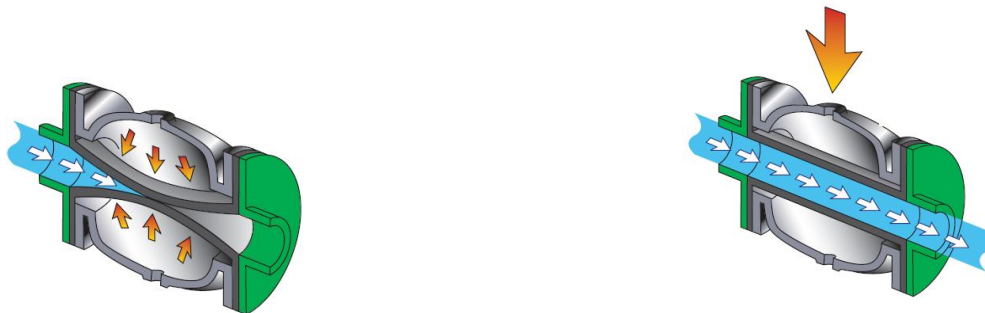
b) Torque values are approximate. After installation, the system should be pressurized and examined to confirm a proper seal.

Figure 2

OPERATION

EVR's AJ Pinch Valves are a fully enclosed body, direct loaded pressure jacket type. These operate by a simple application of pneumatic or hydraulic pressure through the annular connection in the housing to the elastomeric sleeve. Pressure causes the sleeve to collapse and provide a tight seal.

Various control instruments (i.e. vacuum generators, solenoids pressure reducing valves etc.) can be connected to the valve to meet the required application.



SUPPLYING AIR PRESSURE TO THE PINCH VALVE

Note: EVR pinch valve sleeves are designed for long-term, reliable operation. In order to ensure the sleeves last as long as possible, take care not supply significantly more air pressure to the valve than is required. The supply pressure required to close a valve will vary depending on the size of the valve, elastomers used within the valve sleeve, the type of sleeve, as well as the line pressure.

1. Attach the air supply to the valve housing at the threaded connection. *For operation of control instruments, refer to the manufacturer's installation and operation manuals supplied.*
2. Always use a pressure reducing valve and an integral gauge on the air supply line. This one single factor can affect sleeve life by 50%. The supply pressure may be cut back by another 5 psi, after 2-3 weeks of operation once the sleeve has become "worked in".
3. Only use clean, dry air or a specified hydraulic fluid to operate the valve.
4. With no line pressure applied to the valve, slowly increase the supply pressure applied to the valve until the valve sleeve is observed to close completely.
5. Determine the maximum line pressure that will be applied to the valve and increase the supply pressure to equal the pressure determined in step 4 plus the maximum line pressure.
6. If possible, test that the valve is closing properly under normal operating conditions. An additional 5 – 10 psi may have to be applied to close the valve "bubble tight" when subjected to maximum line pressure.

MAINTENANCE

EVR Series AJ Pinch Valves have no moving parts, and are maintenance-free except for the replacement of the rubber sleeve if/when needed. A spare sleeve and a set of diamond seal gaskets should always be ordered when the valve is placed in service.

SLEEVE REPLACEMENT

1. The AJ Series valve should be isolated (if possible) and the process line drained.
2. The valve sleeve should be fully open and the air supply turned off.
3. Remove the air supply (and any solenoids) from the valve body.
4. Remove the valve flange bolts and then remove the valve from the line.
5. Remove the body bolts & nuts. Check the sleeve for fitness.
6. Before separating the two body halves, reference mark one end of each of the body halves. This will ensure the body halves are re-assembled in the same orientation.
7. Separate the housing halves and remove the sleeve and diamond seal gaskets.
8. Clean the diamond seal gasket seating surfaces. Install a new diamond seal gasket each time the valve is serviced to maintain a proper seal. In most cases, used gaskets do not seal effectively.
9. Clean all housing mating surfaces, giving special attention to the mating flanges. Do not clean the surfaces with rough abrasive wheels. This may remove the machined grooves in the flange, causing leakage. Do not use "Permatex" or "RTV Silicone" on the metal flange surfaces. These compounds will fill in the grooves, causing leakage.
10. Place the new sleeve in the body. Be sure to line up the flange bolt holes.
11. Replace the Diamond Seal gaskets in their grooves with the "Tail" towards the inside of the valve. Some Silicone may be applied to the gasket for it to stay in its groove while the castings are being bolted. The end of the diamond seal gasket must protrude past the flange face by 1/16" to 1/8" to allow for a proper seal.
12. Replace the top half of the housing; be sure to match the reference marks on each end of both halves. Line up the body bolt holes.
13. Replace the bolts and tighten the nuts.
14. Re-install the valve in pipeline and re-connect the air supply.
15. Once the valve is in operation, recheck all hardware for tightness and fitness immediately and periodically thereafter.

WARRANTY

All products manufactured by Elasto-Valve Rubber Products Inc. (EVR) are guaranteed against defects resulting from faulty workmanship or materials for one (1) year from date of shipment to Buyer. If any such product is found to be defective by reason of faulty workmanship or materials, then upon written notice and return of the product, and at EVR's sole discretion, the defective product will be replaced or repaired by EVR free of charge at EVR's factory. Claims for labour costs and other expenses required to replace and/or transport such defective product or to repair damage resulting from the use thereof will not be allowed by EVR. Our liability does not include consequential damages and is limited to the price paid for the defective product.

EVR shall not be bound by any other warranty other than the above set forth unless such warranty shall be agreed in writing by EVR.

All EVR literature is published in good faith and is believed to be reliable at time of print; however, due to product design changes, EVR reserves the right to make alterations from published materials at any time. Formal approval drawings are available to confirm individual products upon request at time of order.

Elasto-Valve Rubber Products Inc.

1691 Pioneer Road, Sudbury, Ontario, Canada, P3G 1B2

Phone: 705-523-2026 Toll Free: 1-800-461-6331 Fax: 705-523-2033

www.evrproducts.com