

SERIES "AJ" AIR JACKETED PINCH VALVE **INSTALLATION, OPERATION, AND MAINTENANCE MANUAL**



Elasto-Valve's AJ series pinch valves are pneumatically actuated valves designed to control various types of slurries. Manufactured from top quality elastomeric materials, AJ series 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.

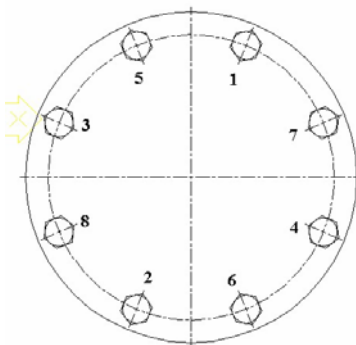
Advantages of using EVR AJ Series pinch valves:

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

INSTALLATION

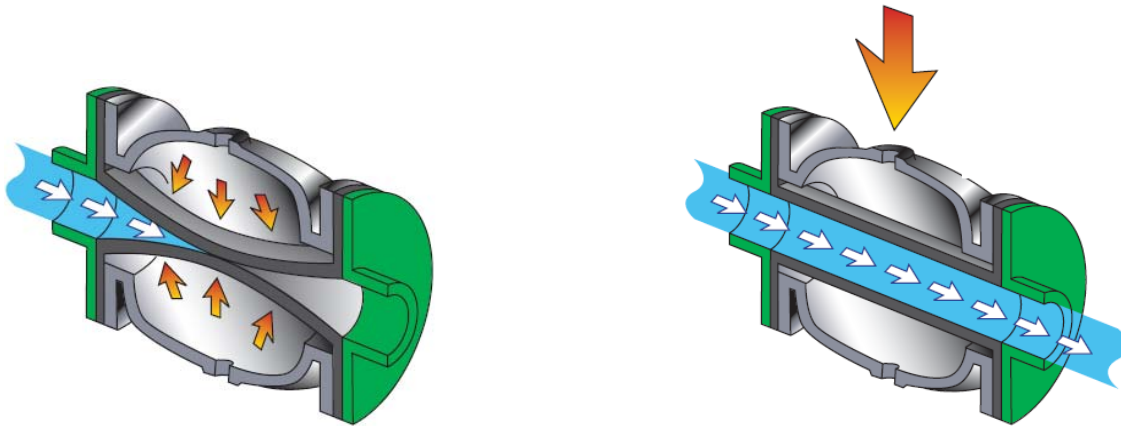
1. All EVR Pinch Valves have standard 125/150# flat faced flanges. Other flange standards are available. Consult factory for further information.
2. For best performance, a flat faced serrated flange should be mated to the pinch valve flange face.
Note: (a) smooth faced flanges may not seal properly
(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 Series "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 the "Drain Plug" is on the bottom to allow for proper drainage of condensate from the valve housing.
7. EVR Series "AJ" Pinch Valves are supplied with an extruded diamond seal gasket. Prior to installation the rubber flanges will typically not lie flush against the valve body. This is normal - do not trim the extruded gasket, it will reseat once the valve is bolted in the line. A 1/8" extrusion is normal and required for a good seal.
8. The mating pipeline should be properly aligned. Sufficient space should be allowed between mating flanges for Series "AJ" 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 (see Figure 1) to the maximum torque recommended for the metal mating flanges. The rubber flange cannot be over-torqued. 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



OPERATION

Elasto-Valve Series "AJ" Pinch Valves are a fully enclosed body, direct loaded pressure jacket type. These operate by a simple application of pneumatic 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 suit the required application.

SUPPLYING AIR PRESSURE TO THE PINCH VALVE

Notes:

- (i) 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 to supply significantly more air pressure to close 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.
- (ii) 'Supply' or 'Operating' pressure refers to the air pressure used to close the valve (supplied to the valve body connection).
- (iii) 'Line' pressure refers to the pressure of the process fluid that will flow through and be controlled by the AJ pinch valve.

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 can be cut back another 5 psi, after 2-3 weeks of operation (once the sleeve has become "worked in").
3. Only use clean, dry air or 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, (above), plus the maximum line pressure.
6. If possible, test that the valve is closing properly under normal operating conditions. An additional 5 – 10 psi of operating pressure 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.

The following lists the steps to be taken when replacing the sleeve in an AJ Series valve.

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 gaskets and the body recesses. Carefully inspect the gasket for damage or deformation. It is recommended that a new gasket be used each time the valve is serviced. A proper seal will not occur if the gasket is damaged or deformed.
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. It should be noted that 1/8" of the gasket will extrude 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 and periodically thereafter.

Warranty:

Our warranty as expressed on the back of all "EVR" brochures is as follows:

All EVR products are guaranteed for one full year against defects resulting from faulty workmanship or materials. If any such product is found to be defective, by reason of faulty workmanship or materials, upon written notice and return of the product, the defective product will be replaced by us free of charge, including the shipping charges for the replacement product. Claims for labour costs and other expenses required to replace such defective product, or to repair damage resulting from the use thereof will not be allowed by us. Our liability is limited to the price paid for the defective product. EVR Products shall not be bound by any warranty other than the above set forth unless such warranty shall be in writing. This literature is published in good faith and is believed to be reliable, however, EVR Products does not represent and/or warrant in any manner the above information and suggestions contained in this brochure. Data presented is the result of laboratory tests and field experience.