



Red Valve Company, Inc.®

QUARTER TURN PINCH VALVE MANUALLY OPERATED

INSTALLATION, OPERATION, AND MAINTENANCE MANUAL



The Red Valve Quarter Turn Pinch combines the reliability and a long service life of a pinch valve, with the ease of operation of a quarter turn valve. It is designed to operate in the toughest applications, in both abrasive and corrosive processes.

The Quarter Turn Pinch Valve is 100% full-ported when open, with no pressure drop or change in the direction of flow. Closing is accomplished by a single pinch bar, which operates on a toggle principal to reduce the closing force required as the lever is turned. A 10-stop sprocket allows the valve to be set in a throttled position, where the sleeve will maintain a laminar flow path and smooth venturi flow.

The flexing action of the sleeve prevents buildup and scaling from forming on the walls of the sleeve, and there are no cracks, crevices, or dead spots to accumulate debris and hamper valve operation. The sleeve is the only wetted part of the valve, eliminating the need for packing and seals.

Red Valve pinch sleeves are available in a variety of elastomers to meet your specific application needs.

- Simple Design
- No Packing to Maintain
- No Cavities or Dead Spots
- Low Maintenance

IMPORTANT

Please take a moment to **review this manual. Before performing any maintenance on the pressure sensors be sure the pipeline has been depressurized.** The improper installation or use of this product may result in personal injury, product failure, or reduced product life. Red Valve Co., Inc. can accept NO liability resulting from the improper use or installation of this product. If you have any questions or problems, please call the customer service department at (412) 279-0044. We appreciate your comments. And thank you for choosing Red Valve.

INSPECTION OF A VALVE

When your Red Valve order arrives, check the contents carefully to assure that no damage or loss occurred in transit.

Check flange faces of pipe for rough or damaged areas. Pipeline flanges must be flat, properly spaced, and parallel to achieve a proper seal.

INSTALLATION

1. The pipe flanges should be of the flat-faced, non-serrated, weld-neck type. The flanges should be clean and free of debris. No gasket or additional sealant such as silicone or Permatex is required.
2. The valve should be in the open position prior to installation.
3. The sleeve of the valve is flush with the face of the body. An integral "O"-Ring is designed to be compressed by the mating pipe flange to create a seal.
4. The valve body is drilled and tapped. It is important to use the correct size and length of the bolt to prevent "bottoming out" and damaging the valve casting. Stud bolts are recommended. Select and torque all bolts according to the provided chart. Red Valve recommends the use of a high-quality anti-seize compound on all bolts.

Valve Size	1/2"	3/4"	1"	1-1/2"	2"
Number of Bolts	4	4	4	4	4
Bolt Circle Diameter	2.38"	2.75"	3.12"	3.88"	4.75"
Thread Size	1/2-13NC	1/2-13NC	1/2-13NC	1/2-13NC	5/8-11NC
Minimum Thread Depth A	11/16"	11/16"	11/16"	11/16"	7/8"
Bolt Torque foot-pounds	3	4	4	4	6

NEVER use pipe flanges with a larger I.D. than the sleeve I.D.

NEVER perform maintenance on the valve when closing or with pressure in the line.

NEVER Use flange bolts that are too long.

ALWAYS tighten all flange bolts evenly.

OPERATION

Red Valve Quarter-Turn Pinch Valves consist of four major components:

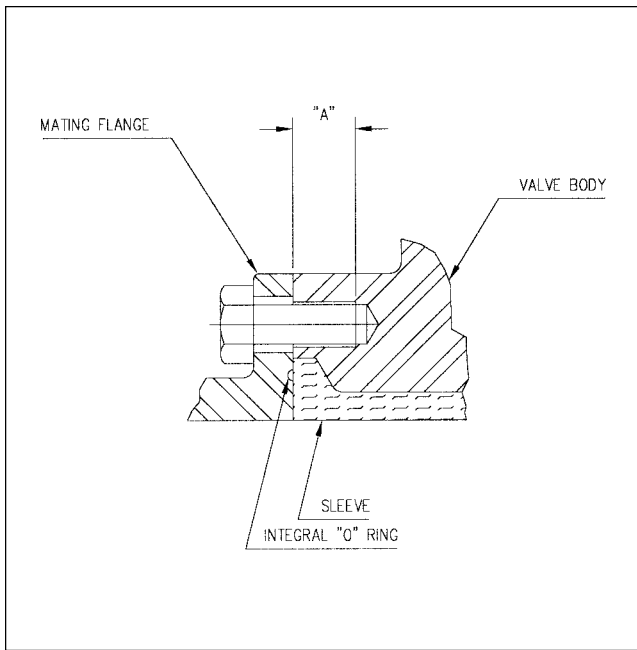
1. **Body:** the body acts as a housing and support for the other valve components. It is NOT the primary pressure-containing component. The body is sealed by silicone RTV sealant to contain fluid in the event of a sleeve rupture.
2. **Sleeve:** The sleeve is the only wetted part of the valve and is primary pressure containing component. The sleeve is a single, molded piece of elastomer with integral fabric and wire reinforcement.
3. **Pinch Mechanism:** The pinch mechanism consists of a pinch bar and a toggle mechanism that is operated by the lever handle. The pinch mechanism is a floating design, meaning that it is not connected to the body or sleeve. It may feel loose in the body, but this is to minimize binding from corrosion or periods on inactivity. The mechanism is liberally greased at the factory.
4. **Actuator Lever:** The actuator assembly consists of a lever, a 10-stop sprocket, and a locking pin with spring-loaded release handle. The length of the handle varies according to valve size, and is connected by means of a slot and retaining screw or quick removal. Squeezing the release handle up will remove the locking pin from the sprocket, and allow the lever to turn. Releasing the handle will lock the lever into any of 10 present positions. The valve is designed to have an increasing mechanical advantage as the valve closes, including enough travel to tightly pinch the sleeve completely closed.

MAINTENANCE

Lubrication: The valve's operating mechanism is greased at the factory, and should be reapplied whenever a sleeve change is performed.

Sleeves: A spare sleeve is the only factory recommended spare part, and a spare sleeve should be ordered when the valve is put into service.

CAUTION: Rubber sleeves are subject to deterioration from ozone, light, or chemicals. Spare replacement sleeves should be stored in a cool, dry location away from exposure to light, electric motors, or harsh chemicals.



SLEEVE REPLACEMENT

1. Make certain that there is no pressure in the sleeve.
2. Open the valve.
3. Remove the valve from the pipeline.
4. Disassemble the valve by removing the body bolts.
5. Separate the top half of the from the bottom. The halves may need to be pried apart using a screwdriver.
6. Clean off the old silicone sealant.
7. Lift out the old sleeve. It may need to be pried out using a screwdriver or dull blade.
8. Drop the replacement sleeve into place. Be sure that it is properly aligned in the groove in the body.
9. Apply a bead of silicone RTV sealant to the mating surface of 1 body half.
10. Place the top body half onto the bottom, and replace all bolts.

STORAGE

If your quarter-turn pinch valve is to be stored for a long period of time prior to installation, the following guidelines will help preserve your valve and assure a trouble-free installation.

1. Store valve and spare sleeves in a cool, clean, and dry location.

2. Avoid exposure to light, electric motors, or chemicals. Rubber sleeves are subject to rapid deterioration when exposed to ozone and certain chemicals.
3. Do not stack other items on top of valve.
4. Store this IOM with the valve so that it will be readily available for installation.

TROUBLESHOOTING GUIDE

If your quarter-turn pinch valve is to be stored for a long period of time prior to installation, the following guidelines will help preserve your valve and assure a trouble-free installation.

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2. Avoid exposure to light, electric motors, or chemicals. Rubber sleeves are subject to rapid deterioration when exposed to ozone and certain chemicals.
3. Do not stack other items on top of valve.
4. Store this IOM with the valve so that it will be readily available for installation.

Valve is difficult to operate

- Make certain that pinching mechanism is fully greased.
- Make certain that the locking pin is fully disengaged.
- Make certain that the lever is not blocked or restricted.
- Make sure that line pressure does not exceed rated valve working pressure.

Valve will not close fully, or check flow when closed

- Possible obstruction in line. Open valve to allow obstruction to flush out and close again.
- Pinching mechanism is blocked.
- Lever is blocked.
- Sleeve is worn beyond useful service life. Replace sleeve.

Valve leaks at flange

- Check flange bolts to assure that no bolts are of excess length. Retighten all flange bolts uniformly.
- Be certain that the valve sleeve was not pinched or folded during installation. Valve must be in full open position during installation.

RETURNS

All returns must have standard Red Valve Company, Inc. return goods tags. Sleeves to be inspected by Red Valve must have the tag firmly attached to the sleeve, and must list the company, order number, address, valve serial number, your telephone number, operating temperature and pressure, closing frequency, fluid media, and total days in service.

NOTE: If the product being returned has been in contact with a hazardous chemical or material, a MSDS (Material Data Safety Sheet) must be provided with the return paperwork, otherwise, the return will not be processed. ***Any product that has been in contact with a hazardous substance MUST be cleaned prior to being returned to Red Valve, or the return will not be processed.***

RED VALVE WARRANTY

WARRANTIES - REMEDIES - DISCLAIMERS - LIMITATION OF LIABILITY

Unless otherwise agreed to in writing signed by Red Valve, all Products supplied by Red Valve will be described in the specifications set forth on the face hereof.

THE WARRANTIES SET FORTH IN THIS PROVISION ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES WHETHER STATUTORY, EXPRESS OR IMPLIED (INCLUDING ALL WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND ALL WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OR TRADE).

Red Valve Products are guaranteed for a period of one year from date of shipment, against defective workmanship and material only, when properly installed, operated and serviced in accordance with Red Valve's recommendations. Replacement for items of Red Valve's manufacture will be made free of charge if proved to be defective within such year; but not claim for transportation, labor or consequential damages shall be allowed. We shall have the option of requiring the return of the defective product to our factory, with transportation charges prepaid, to establish the claim and our liability shall be limited to the repair or replacement of the defective product, F.O.B. our factory. Red Valve will not assume costs incurred to remove or install defective products nor shall we incur back charges or liquidated damages as a result of warranty work. Red Valve does not guarantee resistance to corrosion erosion, abrasion or other sources of failure, nor does Red Valve guarantee a minimum length of service, or that the product shall be fit for any particular service. Failure of purchaser to give prompt written notice of any alleged defect under this guarantee forthwith upon its discovery, or use, and possession thereof after an attempt has been made and completed to remedy defects therein, or failure to return product or part for replacement as herein provided, or failure to install and operate said products and parts according to instructions furnished by Red Valve, or failure to pay entire contract price when due, shall be a waiver by purchaser of all rights under these representations. All orders accepted shall be deemed accepted subject to this warranty which shall be exclusive of any other or previous warranty, and shall be the only effective guarantee or warranty binding on Red Valve, anything on the contrary contained in purchaser's order, or represented by any agent or employee of Red Valve in writing or otherwise, not withstanding implied warranties. RED VALVE MAKES NO WARRANTY THAT THE PRODUCTS, AUXILIARIES AND PARTS ARE MERCHANTABILITY OR FIT FOR ANY PARTICULAR PURPOSE.



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