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20 Bushes Lane
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Model RVi-20

Low-Pressure Accurate Relief Valve



- Stainless Steel & Plastic depending of size (Pastic Relief Valve can be found here and Hastelloy, titanium, Alloy20, Monel here)

- 1/8"-1 1/4" NPT THD (For larger models see RVL-20) (Not all materials available in all sizes, See pricing pages)
- Accurate relief pressures from 0.50 PSI (0.03 Bar) to 75 PSI (5 Bar)
- Adjustable pressure in multiple spring ranges (See pricing table below)

Features

- **Low-pressure valve body:** Available in a wide variety of alloys and high-performance engineered plastics (see above).
- **Elastomeric diaphragm:** Choice of different low-pressure valve diaphragm elastomers includes reinforced Teflon, Viton, Buna, and EPDM.
- **Spring chamber:** Safety relief valve standard construction is carbon steel as it is non-wetted. Alternates: stainless steel, aluminum, etc.
- **In-line valve porting** is standard. This is not a through flow model. Only ports are inline. For right-angle valve porting (side inlet, bottom outlet) see model RVL-20. Special threads, flanges, and sanitary connections are also available.

Applications

This safety relief valve can be used for relieving pressures and maintaining upstream line pressures to a specific set pressure. Pressure relief valve can also be used for bypassing fluids or gases. Only strained or filtered liquids are recommended. When liquids contain debris or other solid matter which might cause the valve seat not to close properly with this type of pressure relief valve, a low-pressure strainer with a fine wire mesh should be installed before the inlet of the valve. Simplex basket strainers or low-pressure filters can be purchased from Stra-Val. This is a diaphragm low-pressure valve which is used where accurate set pressures must be maintained. The large diaphragm area compared to a piston pressure relief valve produces much more accurate pressure control with very low hysteresis between opening and closing pressures. See available orifice sizes and flow Cv below.

For higher relief pressures see models RVC05 or RVT05

We now offer some models that meet [NACE MR0175](#). These are not priced on line. Consult factory.

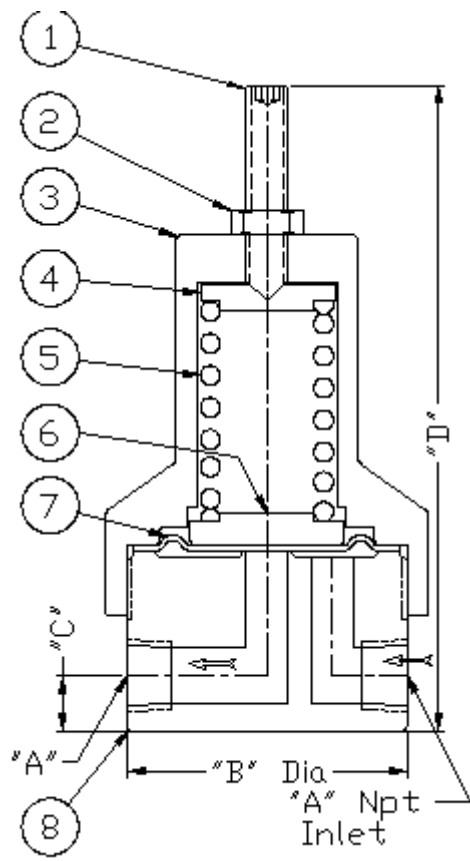
Options

See pricing Table to select available options

Principle of Operation

This is a diaphragm and spring type relief valve where the spring constantly opposes the pressure acting against the diaphragm which seals off the inlet port from the outlet port at the valve seat. The desired relief or bypass pressure is achieved by compressing the spring until the spring force is adequate to balance the pressure force acting against the diaphragm. When the inlet pressure exceeds the set pressure, the diaphragm will open to relieve and bypass the excess pressure. The valve will operate in a vertical orientation as illustrated, horizontal, or any other orientation.

Although the ports are inline, this is not a "through flow" model where flow continuously passes through the valve. If this valve were to be installed in a flow line, it would shut off flow to the line completely and open only when the set pressure is exceeded. This valve is typically mounted to a device to be protected such as a tank or other pressure containing device. If a flow stream needs to be protected from overpressure, then the valve is mounted on the side of a Tee, or at the end of a line branch where it will pass excess flow only when the valve opens. The outlet port of the valve is usually piped to a drain or discharged directly to atmosphere only if the liquid or gas is safe to be discharged without injuring personnel or damaging equipment nearby. For a true "through flow" model, see our model RVT05 which is a piston type that has three ports.



RVi-20

Material List and Specification

| # | Item | Materials |
|----|-----------------|----------------------|
| 1. | Adjusting screw | Steel & SS |
| 2. | Lock nut | Steel & SS |
| 3. | Spring chamber | Steel & SS |
| 4. | Spring pusher | Steel & SS |
| 5. | Spring | Steel & SS |
| 6. | Spring Carrier | Steel & SS |
| 7. | Diaphragm | Teflon / Viton/ Buna |
| 8. | *Body | 303SS & 316SS |

*Body also available in brass, PVC, Teflon, Monel, and Hastelloy

Dimensions

| Dimensions (inch) | | | |
|-------------------|------|------|-------|
| A | B | C | D |
| 1/8 & 1/4 | 2 | .44 | 5.56 |
| 3/8 | 2.50 | .50 | 5.59 |
| 1/2 | 2.50 | .63 | 5.62 |
| 3/4 | 3 | .75 | 6.17 |
| 1 | 3 | 1.00 | 9.25 |
| 1 1/4 | 4 | 1.12 | 11.12 |

Note: Dimensions are approximate and are subject to change without notice. Request certified dimensions before final product installation.

1/8" RVi20-01T

Low Spring Range Group

Multiple Spring Ranges from:0.3-35 psig (0.021-2.41 barg) Select spring from pricing page

High Spring Range Group

Multiple Spring Ranges from:3-75 psig (0.207-5.17 barg) Select spring from pricing page

1/4" RVi20-02T

Low Spring Range Group

Multiple Spring Ranges from:0.3-35 psig (0.021-2.41 barg) Select spring from pricing page

High Spring Range Group

Multiple Spring Ranges from:3-75 psig (0.207-5.17 barg) Select spring from pricing page

3/8" RVi20-03T

Low Spring Range Group

Multiple Spring Ranges from:0.3-35 psig (0.021-2.41 barg) Select spring from pricing page

High Spring Range Group

Multiple Spring Ranges from:3-75 psig (0.207-5.17 barg) Select spring from pricing page

1/2" RVi20-05T

Low Spring Range Group

Multiple Spring Ranges from:0.3-35 psig (0.021-2.41 barg) Select spring from pricing page

High Spring Range Group

Multiple Spring Ranges from:3-75 psig (0.207-5.17 barg) Select spring from pricing page

3/4" RVi20-07T

Low Spring Range Group (Max Working press 35 psi plastics)

Multiple Spring Ranges from:0.3-35 psig (0.021-2.41 barg) Select spring from pricing page

High Spring Range Group

Multiple Spring Ranges from:3-75 psig (0.207-5.17 barg) Select spring from pricing page

1" RVi20-10T

Low Spring Range Group

Multiple Spring Ranges from:0.5-25 psig (0.034-1.72 barg) Select spring from pricing page

High Spring Range Group

Multiple Spring Ranges from:3-75 psig (0.207-5.17 barg) Select spring from pricing page

1 1/4" RVi20-12T

Low Spring Range Group

Multiple Spring Ranges from:0.3-25 psig (0.021-1.72 barg) Select spring from pricing page

High Spring Range Group

Multiple Spring Ranges from:3-75 psig (0.207-5.17 barg) Select spring from pricing page

The spring ranges listed above are not achievable with one spring, but are compressed to show overall product capability.

Select a specific spring range in the pricing pages or specify a set pressure when ordering.