

Model RVi-20-EX

Exotic Alloy Low Pressure Diaphragm Relief Valve



- Hastelloy, titanium, Alloy20, and Monel
- 1/8"-1 1/4" NPT THD (For larger models see RVL-20-EX (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:** Hastelloy, Titanium, Alloy20, Monel
- **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 stainless steel as it is non-wetted. Can be upgraded to same materials as body
- **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-EX. 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-EX or RVT05-EX

We now offer some models that meet NACE MR0175. These are not priced on line. Consult factory.

Options

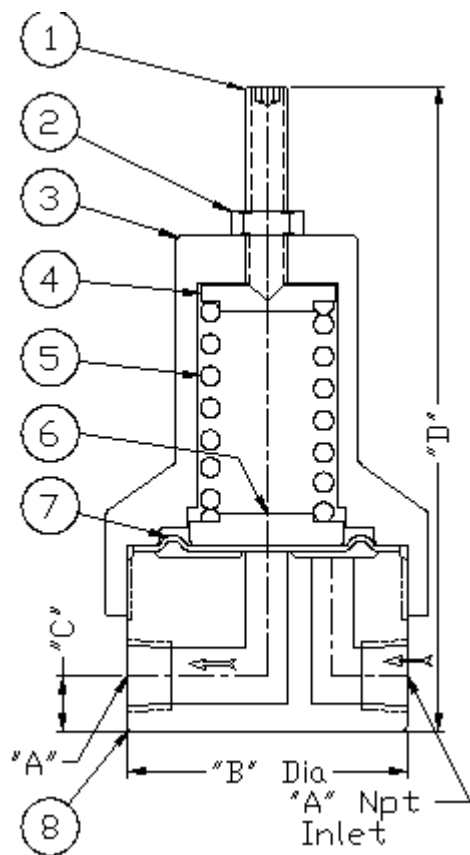
See pricing Table to select available options

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-EX which is a piston type that has three ports.



RVi-20 Exotic Alloys

Material List and Specification

#	Item	Materials
1.	Adjusting screw	St.Stl or upgraded
2.	Lock nut	St.Stl or upgraded
3.	Spring chamber	St.Stl or upgraded
4.	Spring pusher	St.Stl or upgraded
5.	Spring	St.Stl or upgraded
6.	Spring Carrier	St.Stl or upgraded
7.	Diaphragm	Teflon / Viton/ Buna
8.	*Body	Hastelloy, titanium, Alloy20, Monel

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		9.25
1 1/4	4		

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

1.00

1.12

11.12

1/8" RVi20-01T-EX

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-EX

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-EX

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-EX

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-EX

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-EX

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

1 1/4" RVi20-12T-EX

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.