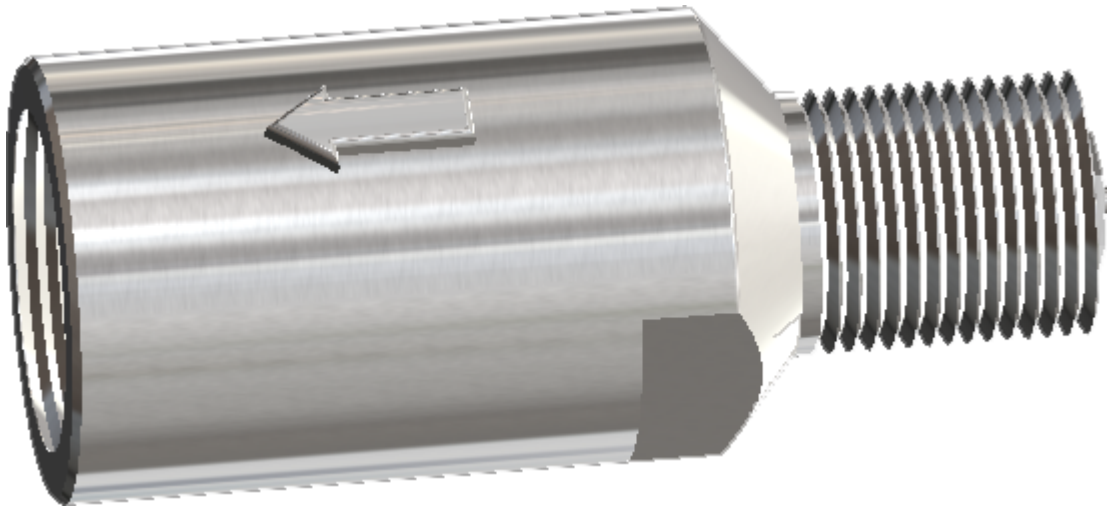


## Model RVi-05-EX

### Exotic Alloy In-Line Adjustable Pressure Relief Valve



- Hastelloy, Monel, Titanium, Alloy20 (Stainless Steel Model can be found here)
- 1/4"-3" NPT THD
- Adjustable relief pressures from 0.5 PSI (~0.03 Bar) to 400 PSI (~27 Bar)\*

\*1/4" size only

#### Features

- **Body:** Hastelloy, Monel, Titanium, Alloy20
- **Piston:** Hastelloy, Monel, Titanium, Alloy20
- **Spring:** Hastelloy, Monel, Titanium, Alloy20
- **Lock nut:** Hastelloy, Monel, Titanium, Alloy20
- **Elastomeric seal:** Bubble-tight seal is achieved with soft elastomers such as Buna, Viton, and EPDM and Kalrez, but not with the harder seal material, Teflon (PTFE) .
- **Tamper-proof construction-**This valve is not externally adjustable & requires removal of the valve to change the pressure setting.
- **Adjustable pressure-setting valve** can be factory-set or adjusted in the field. Spare springs can be changed in the field to achieve a different pressure range.

## Applications

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. When the flow is in the opposite direction the valve becomes a check valve. When used as a relief valve it 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 RVT05 model which is a piston type that has three ports.

This valve is normally used for liquids, air, or gases which cannot be safely discharged to atmosphere. Where the discharge can be directed to the atmosphere, please refer to our **Atmospheric Discharge Relief Valve**. Use only clean filtered or strained liquids or gases. To make sure the valves are protected from dirt and debris which might clog the valve, a strainer with a fine wire mesh should be installed before the inlet of the valve. In-line strainer fittings or basket strainers can be purchased from Straval to solve this problem. Because of its compact design, with the spring and spring hardware directly in the flow stream, this type of valve cannot handle the types of flow rates other, externally adjustable-full flow models, such as the RVC04 or RVC05 can handle, and should not be used where high capacity safety relief is required. Where this valve type is to be used, increasing one pipe size, or more depending on the pressure range, is often necessary to handle the restricted capacities that results from this type of construction. When a low pressure spring is selected, this valve can also be used as a check valve when installed with flow in reverse from that shown in the illustration below. The valve can also be used for vacuum relief service where the vacuum is connected to the internal thread side of the valve. Select the appropriate spring range converted to psi to correspond to the vacuum level desired.

## Options

Scroll down below to click on a valve size for pricing and then click on the spring range to see which options are available for that size. After selecting your options you may then print out a price, e-mail it (without having to contact the factory), and then when you are ready, proceed to order.

When ordering don't forget to state your desired relief set pressure if you expect the valve to relieve at only one pressure. There is no extra charge for this. This pressure will be engraved on the valve body. **If the set pressure is not specified, the valve will be set at or below the stated spring range as selected for the order and no set pressure will be engraved.**

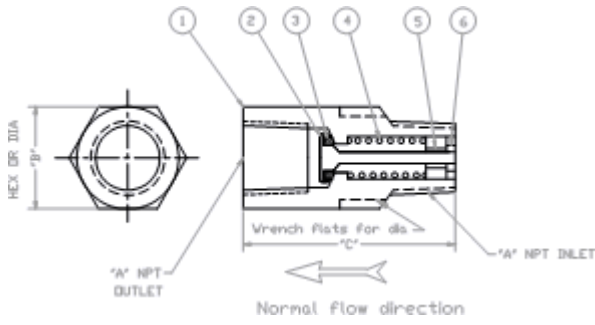
## Principle of Operation

This is a poppet (piston) and spring type relief valve where the spring constantly opposes the pressure acting against the piston which seals off the inlet port. The desired set pressure or relief is achieved by compressing the spring until the spring force is adequate to balance the pressure force acting against the poppet. The valve can be ordered factory-set for a specific relief pressure, or can be adjusted in the field. Setting the correct relief pressure in the field may require several tries, and requires measurement with a pressure gauge to verify. In order to make the pressure adjustment, the valve needs to be unscrewed from its mounting position with pressure removed from the line. Increasing the spring pressure increases the relief pressure and visa versa. A small nut driver and screwdriver may be used to make pressure adjustments for the low pressure springs. Where frequent pressure adjustments are anticipated, a special adjusting tool can be purchased from Straval which can be used for the 1/4" RVi05 size only and also for the 1/8" & 1/4" Rva05 models. This tool can be purchased from Straval, Part Number [T234](#) (Click on link to order).

When reinstalling the 1/4"Npt model do not exceed 10 ft-lbs on the male pipe thread end as minor distortions to the body may occur if substantially exceeded.

The larger sizes can be more easily adjusted with more conventional tools. However, ordering the valve to the correct set pressure would minimize or eliminate the need for making pressure adjustments in the field.

**Typical illustration Rvi05**



**Rvi-05**

The flow arrow above is shown as a relief valve, but it can be also used as a check valve when installed in reverse.

**Material List and Specification**

#	Item	Materials
1.	Body	Brass & SS
2.	Poppet	Brass & SS
3.	Seal	Buna, Viton, Epdm, Ptfе, Kalrez
4.	Spring	Stainless steel
5.	Guide	Brass & SS
6.	Nut	Stainless steel

Other elastomers are also available

**Dimensions**

Size A	B-flats	B-Hex Corners	C
1/4	11/16 Dia	.79	1-1/2
3/8	7/8 dia	---	1-15/16
1/2	1 1/8 dia	---	2-9/16
3/4	1-1/4 dia	---	3-1/8
1	1-1/2 dia	---	3-7/16
1 1/4	2' dia	---	4 1/8
1-1/2	2-1/4 dia	---	4-1/4
2	3 dia	---	4-3/8
2 1/2	3 1/4 Dia	---	6
3	4 1/4	---	5 7/8

\*400 PSI for size 1/4" only. See pricing table for spring ranges all sizes

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

## 1/4" RVi05-02T-EX

### High Pressure to 400 psi (27.6 bar)

Multiple Spring Ranges from:250- psig (17.2- barg) Select spring from pricing page

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### Low Pressure Group 2-225 psi (0.14-15.5 bar) 400 psi ~27.6 bar rating

Multiple Spring Ranges from:2-225 psig (0.138-15.5 barg) Select spring from pricing page

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## 3/8" RVi05-03T-EX

### Pressure Group 0.5 psi - 200 psi (0.14 bar-13.8 bar) 300 psi ~20 bar rating

Multiple Spring Ranges from:2-200 psig (0.138-13.8 barg) Select spring from pricing page

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## 1/2" RVi05-05T-EX

### Pressure Group 0.5-175 psi (0.34-12.1 bar) 300 psi ~20 bar rating

Multiple Spring Ranges from:0.5-175 psig (0.034-12.1 barg) Select spring from pricing page

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## 3/4" RVi05-07T-EX

### Metals Pressure Group 0.5-150 psi (0.034-10.3 bar) 300 psi ~20 bar rating

Multiple Spring Ranges from:0.5-150 psig (0.034-10.3 barg) Select spring from pricing page

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## 1" Rvi05-10T-EX

### Low Pressure Metals Group 0.5-125 psi (0.034-8.62 bar) 300 psi ~20 bar rating

Multiple Spring Ranges from:0.5-125 psig (0.034-8.62 barg) Select spring from pricing page

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### High Pressure Metals Group 200 psi max (13.8 bar) rating

Multiple Spring Ranges from:125-200 psig (8.62-13.8 barg) Select spring from pricing page

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## 1 1/4" RVi05-12T-EX

### Pressure Group 0.50-80 psi (0.034-5.5 bar)

Multiple Spring Ranges from:0.5-80 psig (0.034-5.52 barg) Select spring from pricing page

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## 1 1/2" RVi05-15T-EX

### Metals Pressure Group 0.5 psi-75 psi (.034-5.2 bar)

Multiple Spring Ranges from:0.5-75 psig (0.034-5.17 barg) Select spring from pricing page

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## 2" RVi05-20T-EX

### Metals Pressure Group 0.5-35 psi (0.034-2.4 bar)

Multiple Spring Ranges from:0.5-35 psig (0.034-2.41 barg) Select spring from pricing page

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## 2 1/2"RVi05-25T-EX

**Metals Pressure Group 0.5-20 psi (0.034-1.3 bar)**

Multiple Spring Ranges from:0.5-20 psig (0.034-1.38 barg) Select spring from pricing page

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## 3"RVi05-30T-EX

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.