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21 Columbus Avenue
Garfield, NJ 07026

Model RVC-05i-Npt

Stainless Steel Inline High Pressure Relief Valve (Liquid & Gas)

RVC05-Npt angle pattern

- Stainless Steel model
- 1/4"-2" NPT Threaded D (1/2"-4" flanged; see flanged model RVC05-150FLG, RVC05-300FLG, RVC05-600FLG)
- Pressure ratings to 5000 PSI (340 Bar) for specific spring ranges, see pricing pages below)

Features

- **Pressure-containing parts** of our safety relief valve are made from solid bar stock materials — unlike castings which have wall thickness variations.
- **High-pressure valve body:** Stainless Steel valve standard materials are Stainless Steel.Special alloys (e.g. Monel, titanium, Alloy 20, and Hastelloy) are also available. For low-pressure relief service, <75 PSI, see this accurate relief valve (model RVi20)
- **Poppet:** 303SS or 316SS Stainless steel is standard on every high-pressure valve.
- **Elastomeric Poppet seal:** Viton for stainless steel valves is standard. Choice of elastomers (e.g. Teflon, Kalrez, Parfluor, Buna, and EPDM) expands relief valve usage to a wide range of applications for fluids and gases. Selection of elastomer usually determines final temperature limitation of the relief valve.
- **Metal Seats or Soft Seats**: Metal seats are available for liquid service at all pressures and soft seats for gas service at limited pressures. See pricing pages for availability.
- **Spring chamber:** Standard construction is carbon steel because it is non-wetted; can upgrade to stainless steel when the external environment is corrosive or sanitary.
- **Right-angle valve porting:** Standard construction is bottom inlet, side outlet with NPT pipe threads. Special threads and ANSI or sanitary flanges are also available.

Applications

Use these valves for emergency relief where pressures must be relieved quickly to reduce damage that could result from overpressure in a system. Where the overpressure needs to be controlled more gradually ,such as in back pressure or pump bypass applications use our Back-pressure/Bypass valves which will reduce the probability of pressure spikes that often occur when relief valves are selected for pressure control applications. Standard metal seated valves meet ANSI/FCI Class IV seat leakage standards (0.01% of rated valve capacity, not bubble tight).

Although the valve is typically installed in the position illustrated, it can operate in any position or orientation, vertical horizontal, etc as long as it is easily accessible for making adjustments.

This safety relief valve should only be used selectively where the materials chosen are compatible with the fluid used and will not cause corrosive buildup, crystallization or solidification in the close clearances between the piston and body bore, which could keep the poppet from opening freely. Use only clean, strained (#20 mesh min), or filtered liquids or gases so that the valve can operate without buildup of debris or solid matter which can cause the valve to malfunction. A basket strainer or high-pressure filter with the appropriate material and pressure rating can be purchased from Stra-Val.
Avoid locating the valve where freezing can occur, and if unavoidable, take precautions to insulate or heat wrap valve and piping to keep from freezing.

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

These valves do not carry the Canadian CRN or ASME approval stamp and should not be applied where this requirement must be met. However, the valves generally meet or exceed ASME design criteria with wall thicknesses that are much heavier than the minimums required. For an additional charge, valves can be ordered with material certs and with a certified hydro-test certificate and other tests to meet special documentation and acceptance requirements.

Options

Scroll down below to select the valve size, spring range, material options in the customized pricing and ordering section indicated by the red arrows. You have the ability to customize your valve choices by selecting the wetted and nonwetted materials, and choice of seat materials to suit your shutoff requirements, using the softer seats for improved shutoff, particularly for air or gas applications where they are available at the lower pressures. Once these selections are made a price quote can be generated and printed directly to your computer or immediately e-mailed to you.

When ordering don't forget to state your desired relief set pressure if you expect the valve to relieve at only one pressure. This pressure will be lasered on theValve nameplate. **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 stamped on the nameplate.**

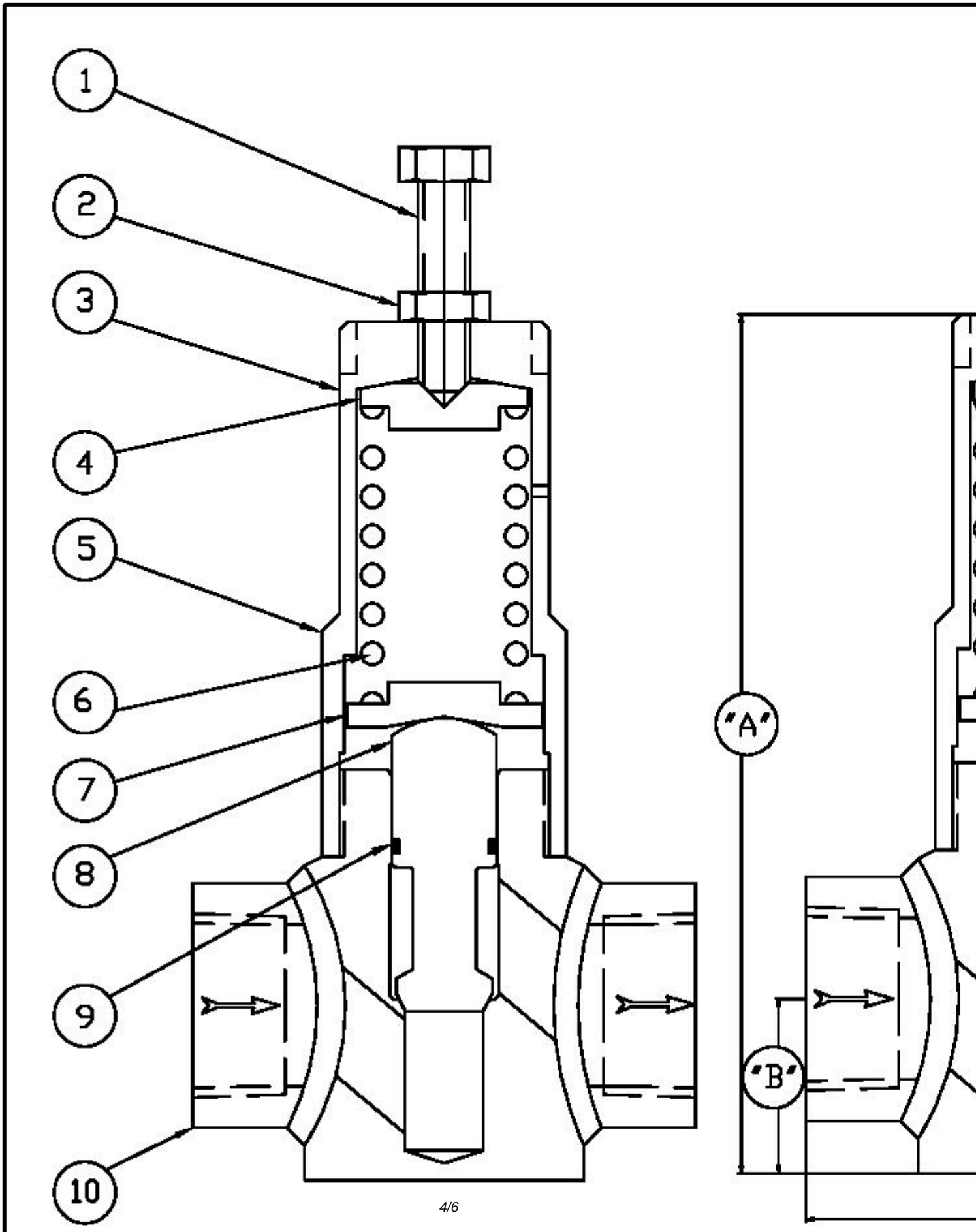
Principle of Operation

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

These valves are not equipped with a manual lever release. However, manual override is accomplished by first unlocking the spring lock nut to the adjusting screw and backing it out enough to open the poppet to release pressure, and then repositioning it to its original preset locked condition without losing the original set pressure. This procedure is recommended periodically to flush the seat and to check for proper opening of the valve piston.

Soft Seated Relief Valve RVC05

See Below


1
2
3
4
5
6
7
8
9
10
"A"
"B"

RVC-05 Soft Seated Relef Valve

Threaded NPT Connections

Material List and Specification

#	Item	Materials- Soft Seated
1.	Adjusting screw	Steel or SS
2.	Lock nut	Steel or SS
3.	Spring chamber	Steel or SS
4.	Spring pusher	Steel or SS
5.	Adjusting spring	Steel or SS
6.	Spring Carrier	Steel or SS
7.	Poppet	Stainless steel or upgrade
8.	Body	Stainless steel or upgrade
9.	Seat	Viton, Buna, EPDM, PTFE *.
10	Seat Holder	303SS or 316SS
11	Body	303SS or 316SS
		*Kalrez and other high end elastomers avaialble

1/4" RVC05i-02T

Low Pressure Group 1500 psi (100 bar) Rating

Multiple Spring Ranges from:20-1100 psig (1.38-75.9 barg) Select spring from pricing page

High Pressure Group 5000 psi (310 bar)

Multiple Spring Ranges from:20-4500 psig (1.38-310 barg) Select spring from pricing page

3/8" RVC05i-03T

Low Pressure Group 1500 psi (100 bar) Rating

Multiple Spring Ranges from:20-1250 psig (1.38-86.2 barg) Select spring from pricing page

High Pressure Group 5000 psi (310 bar) Rating

Multiple Spring Ranges from:250-4500 psig (17.2-310 barg) Select spring from pricing page

1/2" RVC05i-05T

Low Pressure Group 1000 psi (69 bar) Rating

Multiple Spring Ranges from:20-1000 psig (1.38-69 barg) Select spring from pricing page

High Pressure Group 5000 psi (310 bar) Rating

Multiple Spring Ranges from:150-4500 psig (10.3-310 barg) Select spring from pricing page

3/4" RVC05i-07T

Low Pressure Group 1000 psi (69 bar) Rating

Multiple Spring Ranges from:20-900 psig (1.38-62.1 barg) Select spring from pricing page

High Pressure Group 5000 psi (310 bar) Rating

Multiple Spring Ranges from:150-4500 psig (10.3-310 barg) Select spring from pricing page

1" RVC05i-10T

Low Pressure Group 1500 psi (~100 bar) Rating (Select High or Low Cv)

Multiple Spring Ranges from:10-1250 psig (0.69-86.2 barg) Select spring from pricing page

High Pressure Group 3000 psi (207 bar) Rating

Multiple Spring Ranges from:100-2700 psig (6.9-186 barg) Select spring from pricing page

High Pressure Group 5000 psi (345 bar) Rating

Multiple Spring Ranges from:250-4500 psig (17.2-310 barg) Select spring from pricing page

1 1/4" RVC05i-12T

Low Pressure Group 1500 psi (100 bar) Rating [Select High or Low Cv]

Multiple Spring Ranges from:15-1250 psig (1.03-86.2 barg) Select spring from pricing page

High Pressure Group 3000 psi (207 bar) Rating

Multiple Spring Ranges from:200-3000 psig (13.8-207 barg) Select spring from pricing page

High Pressure Group 5000 psi (345 bar) Rating

Multiple Spring Ranges from:200-4000 psig (13.8-276 barg) Select spring from pricing page

1 1/2" RVC05i-15T

Low Pressure Group 1000 psi (69 bar) Rating

Multiple Spring Ranges from:15-1000 psig (1.03-69 barg) Select spring from pricing page

High Pressure Group 3000 psi (207 bar) Rating

Multiple Spring Ranges from:200-3000 psig (13.8-207 barg) Select spring from pricing page

2" RVC05i-20T

Low Pressure Group 1000 psi (69 bar) Rating

Multiple Spring Ranges from:15-900 psig (1.03-62.1 barg) Select spring from pricing page

High Pressure Group 3000 psi (207 bar) Rating

Multiple Spring Ranges from:150-3000 psig (10.3-207 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.