Phone (toll-free): (888) 380-9660
Phone (local): (973) 340-9955
Fax: (973) 340-9933
Web: www.straval.com

21 Columbus Avenue
Garfield, NJ 07026

Model BPS05-Npt-P

Plastic Back Pressure Regulator Valve

- Piston-operated pressure regulator and bypass valve
- 1/2"-2" NPT THD (see also all metal water pressure regulator models)
- Bypass valve controls pressures from 5 to 125 PSI (0.34-8.6 Bar) (see table below)
- Standard PVC/PTFE construction, alternates CPVC,& PVDF

Features

- **Pressure-containing back pressure regulator parts** made from solid plastic bar stock materials (PVC, CPVC, PTFE & PVDF). No metals in contact with product going through valve.
- **Valve Body:** The construction is manufactured entirely of plastic for optimal flow, strength and chemical resistance.
- **Piston valve/poppet:** Is made of the same high grade grade plastics selected for the valve body. PTFE can be requested for custom applications
- **Elastomeric Poppet Seal:** Available in Viton, Epdm, Buna, Kalrez and Parfluor
- **Soft Valve Seat:** Elastomeric seats are for liquid, chemical service to help insure ANSI Class IV bubble tight shut-off.
- **Hardware & Adjusting Spring:** Adjustment screw, lock nut and spring will be a 300 series stainless by default with 316SS optional
- **Right-angle valve porting** (bottom inlet, side outlet) is the standard piping arrangement.

Applications

This corrosion-resistant valve is used as a bypass valve and is also a used for back pressure control applications such as maintaining constant pump discharge pressures, limiting pump overpressure and bypassing excessive pressures from various types of process equipment, and wherever a constant pressure must be maintained in a process or piping system. This back pressure valve can be used for corrosive liquids when the proper materials are selected and applied and are compatible with the temperature limit of the valve materials chosen. Make sure the fluids chosen are not only chemically compatible with the valve, but also 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. Standard Soft seated valves meet ANSI Class VI seat leakage standards. (Bubble tight).

This particular model can be utilized where outlet pressure is present. Where the outlet pressures in the discharge piping are elevated and stay elevated, re-seating of the valve will not be affected. The valve will re-seat itself to its original set pressure once the outlet pressure is reduced to its original value when the valve was set. Balanced piston models compensate for outlet pressures.

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 can be easily accessed for making adjustments.

Do not oversize a back pressure valve simply because the piping is already oversized, unless it has a reduced trim option designed into it. Because very often this will result in "valve chatter" when the capacity for which the valve is designed for is too low. This is because an oversized valve seat for a very low flow rate barely opens to satisfy an overpressure condition, only to close again very quickly. This repeated action usually at very low flows, results in valve chatter and can eventually result in severe valve seat damage. This can often be corrected by replacing the piston with a reduced trim version to match the lower flow conditions that were not anticipated. Special custom trim can be designed to tolerate very low flows when these conditions are specified and such trim requested. This must be quoted on request.

Where an overpressure condition needs to be relieved quickly, such as for emergency relief, use the closely related model RVC05-P. Both models have the same maximum relieving capacity, except the BPS05-P is designed to control the relief pressure more gradually at the lower capacities resulting in less of a chance for pressure spikes and possible valve chatter at low capacities. This makes the BPS05-P model more suitable for pump bypass service or for back pressure control than the RVC05-P.

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.

Standard Soft seated valves meet ANSI Class VI seat leakage standards. (Bubble tight).

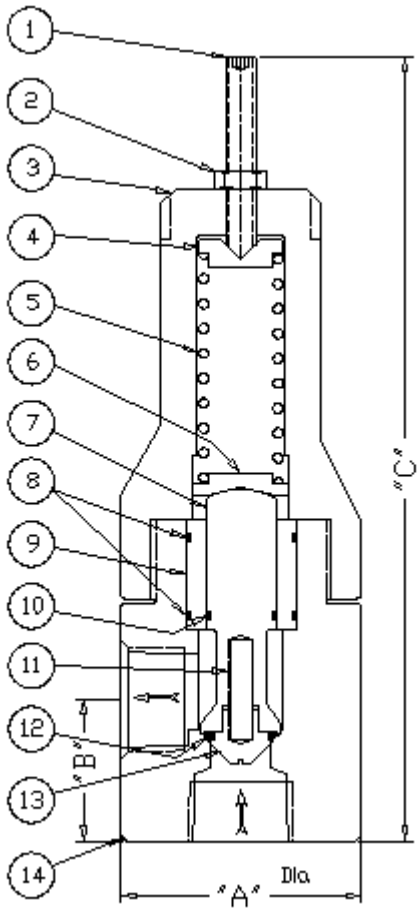
Options

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. 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 set pressure if you expect the valve to relieve at only one pressure. This pressure will be stamped on the valve 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

Although this valve operates very similar to a relief valve which is usually designed to release pressure quickly as soon as the set pressure is exceeded , this valve is designed to relieve pressure more gradually with changes in flow resulting in fewer pressure spikes when the valve opens and closes. This is a direct-acting valve with an adjustable spring operating against a piston subjected to the inlet pressure of the valve. Increasing the spring compression will increase the system or line pressure to be maintained. Reducing the spring compression will reduce the system or line pressure to be maintained. An increase in system pressure beyond the set point will cause the main valve to open and relieve or bypass 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 locking 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.



Shown with Npt connections

BPS-05-Npt-P

Material List and Specification

#	Item	Materials
1.	Adjusting screw	Stainless steel
2.	Lock nut	Stainless steel
3.	Spring chamber	PVC
4.	Spring pusher	Stainless steel
5.	Adjusting spring	Stainless steel
6.	Spring Carrier	Stainless steel
7.	*Poppet	PVC, CPVC, PVDF
8.	Seal, Bushing	Viton, Epdm, Buna, Kalrez
9.	Guide Bushing	PTFE
10.	Seal	Viton, Epdm, Buna, Kalrez
11.	Screw	Stainless steel
12.	Seat	Viton, Epdm, Buna, Kalrez
13.	Seat Holder	PVC, CPVC, PVDF
14.	Body	PVC, CPVC, PVDF

Dimensions Inches

Size	A(in)	B(in)	C(in)	D(in)
1/2	1	1	1-3/8	7-3/8
3/4	1-1/8	1-1/8	1-5/8	8-1/2
1	1-1/2	1-3/16	2	10-1/4
1-1/4	2	1-1/4	2-1/2	11
1-1/2	2	1-1/2	2-1/2	12-1/4
2	2-3/8	1-1/2	3	12-1/2

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

1/2" BPS05P-05T

Rated pressure 150 psig (~10 barg)

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

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3/4" BPS05P-07T

Rated pressure 150 psig (~10 barg)

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

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1" BPS05P-10T

Rated pressure 150 psig (~10 barg)

Multiple Spring Ranges from:15-125 psig (1.03-8.62 barg) Select spring from pricing page

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1 1/2" BPS05P-15T

Rated pressure 150 psig (~10 barg)

Multiple Spring Ranges from:15-125 psig (1.03-8.62 barg) Select spring from pricing page

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2" BPS05P-20T

Rated pressure 150 psig (~10 barg)

Multiple Spring Ranges from:15-125 psig (1.03-8.62 barg) Select spring from pricing page

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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.