

## Model PRH09-EX

### Pressure Regulator (Reducing Valve)



- Hastelloy C276, Monel, Titanium, Alloy 20 Model ( Stainless Steel Model also **available**)
- Spring and double piston operated
- 1/2"-2" NPT THD
- Inlet pressures to 1500 PSI (103 Bar)
- Outlet pressures from 20 psig (1.4 barg) to 450 PSI (30 Bar) multiple spring ranges
- Max operating temperatures -40 to 300 °F (-40 to 150 °C) depending on elastomers selected

## Features

- **Pressure-containing parts** made from solid bar stock materials — unlike castings which have wall thickness variations.
- **Body and trim:** Hastelloy C276, Monel, Titanium, Alloy 20.
- **Elastomeric piston seals:** Viton is standard. Alternates when specified are Buna, EPDM, Kalrez, and PTFE. Select PTFE seals only when required for chemical compatibility reasons as these seals create higher piston drag than the softer elastomeric seals.
- **Spring chamber and adjusting spring:** These parts are non-wetted, are not in contact with the fluid or gas, and are normally offered in stainless steel as a minimum. When these parts are submerged or located in a corrosive atmosphere, they can be upgraded to higher grade alloys
- **Standard porting:** Right-angle porting, NPT threads (side inlet, bottom outlet). Valve works in any orientation, upright as illustrated, horizontal, etc.
- **Optional In-Line porting:** is available but with reduced Cv (typ 60% of full flow model) can be supplied at additional cost.
- **Other options:** See pricing pages below

## Applications

Designed for clean, filtered or strained, non-abrasive liquid service: oils, lubricants, greases, solvents, and most chemicals compatible with Viton seals. Valve is piston-operated, metal-seated with only the piston seals as elastomers. **Do not use for extended shutoff service** or for extremely low flows (less than 5% of maximum capacity). Values below the low limit of the spring ranges shown below can be achieved if the flow rates are substantially higher than the minimum 5% of maximum rated capacity. To be on the safe side, a **relief valve** or **bypass valve** should always be installed on the outlet side of the regulator (not included with valve). For outlet pressures above the ranges stated below, request the single piston model **PRH04-EX**, that is specifically designed to handle the higher outlet pressures that the PRH09 cannot handle. Do not use with liquids that tend to crystallize or solidify under operating conditions. Generally not for use on high pressure steam service as operating temperatures can easily exceed the limitations of the seal selections below. Consult factory for steam & gas service. Although the metal seat is standard, for gas service a soft seat such as Viton, Buna or EPDM or PTFE may be offered for improved shut off capability compared to a metal seat. But this depends on the operating conditions and is generally limited to lower pressure differences and not recommended for extreme pressure conditions. Consult factory.

The balanced piston design of this model accommodates large variations in inlet pressure. When ordered, if a set pressure is not specified, valves are set to the minimum pressure setting for the range selected. Valve can operate in any orientation: vertical, horizontal, etc. A high-pressure filter or strainer, which should be no coarser than #20 mesh, can be ordered from Stra-Val. See model **SBS-10-EX**.

## Options

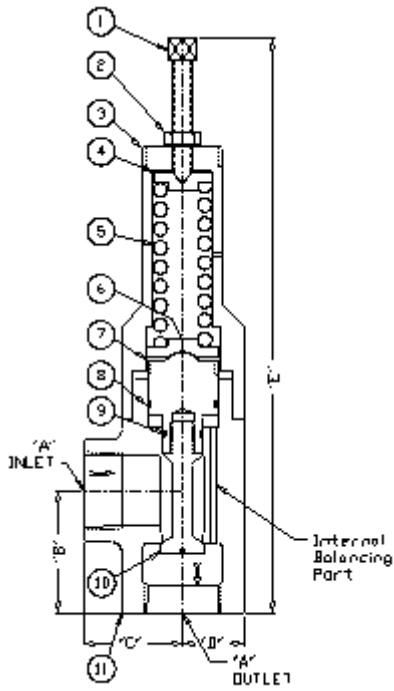
- Reduced trim for low-flow applications, all sizes.
- Locking cap to enclose adjusting screw (1).
- Wetted materials (7,10) in Alloy 20, Monel, titanium, and Hastelloy.
- Hard-chromed piston (7) for longer life and seal (9) wear.
- In-line Porting available but with Reduced Cv of approx 60% of standard angle pattern model

## Principle of Operation

This valve operates with a compression spring acting on the main valve which is used to adjust the outlet pressure with an adjusting screw. The reduced outlet pressure is very easily adjusted in the field. To increase outlet pressure, simply loosen adjusting screw lock nut (2) to increase spring compression by turning the adjusting screw (1) inward. Similarly, to get a lowering in outlet pressure requires a reduction in spring compression by turning the screw outward. A pressure gauge is required on the outlet side of the regulator somewhere in the downstream piping about 10 pipe diameters after the valve, to monitor the result while making the adjustment. The valve will operate in a vertical orientation as illustrated, horizontal, or any other orientation.

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**Typical Illustration PRH09-EX  
Hastelloy C276, Monel, Titanium, Alloy 20**



**PRH-09-EX Hastelloy C276, Monel, Titanium, Alloy 20**

**Material List and Specification**

#	Item	Materials
1.	Adjusting screw	SS or alloy upgrade
3.	Spring chamber	SS or alloy upgrade
4.	Spring pusher	SS or alloy upgrade
5.	Spring	SS or alloy upgrade
6.	Spring follower	SS or alloy upgrade
7.	Piston	SS or alloy upgrade
8.	Seal	Viton, Buna, EP or PTFE
9.	Seal	Viton, Buna, EP or PTFE
10.	Poppet	Hastelloy C276, Monel, Titanium, Alloy 20
10.	Body	Hastelloy C276, Monel, Titanium, Alloy 20

**Dimensions (inches)**

A NPT	B	C	D	E
1/2	1.75	1.00	1.00	10.7
3/4	1.75	1.00	1.00	11
1	2.63	1.38	1.38	13.6
1-1/4	2.75	2.50	1.50	13.8
1-1/2	3.00	2.75	1.50	14
2	3.5	2.88	1.63	15

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

**Max Inlet pressure 1500 psig (103 barg)**

Multiple Spring Ranges from:10-450 psig (0.69-31 barg) Select spring from pricing page

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## **3/4" PRH09-07T-EX**

**Max Inlet pressure 1500 psig (103 barg)**

Multiple Spring Ranges from:10-450 psig (0.69-31 barg) Select spring from pricing page

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## **1" PRH09-10T-EX**

**Max Inlet pressure 1500 psig (103 barg)**

Multiple Spring Ranges from:15-450 psig (1.03-31 barg) Select spring from pricing page

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## **1-1/4" PRH09-12T-EX**

**Max Inlet pressure 1500 psig (103 barg)**

Multiple Spring Ranges from:15-450 psig (1.03-31 barg) Select spring from pricing page

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## **1-1/2" PRH09-15T-EX**

**Max Inlet pressure 1500 psig (103 barg)**

Multiple Spring Ranges from:15-450 psig (1.03-31 barg) Select spring from pricing page

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## **2" PRH09-20T-EX**

**Max Inlet pressure 1500 psig (103 barg)**

Multiple Spring Ranges from:15-235 psig (1.03-16.2 barg) Select spring from pricing page

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## **2-1/2" PRH09-25T-EX**

**Max Inlet pressure 1500 psig (103 barg)**

Multiple Spring Ranges from:15-235 psig (1.03-16.2 barg) Select spring from pricing page

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## **3" PRH09-30T-EX**

**Max Inlet pressure 1500 psig (103 barg)**

Multiple Spring Ranges from:25-235 psig (1.72-16.2 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.