

## Model PRS09i-FLG-EX

### In-Line Pressure Reducing Valve



- Spring diaphragm operated
- 1"-6" ANSI B16.5 RF flanged in-line
- Inlet pressures to 275 PSI (~19 Bar)
- Outlet pressures 8 to 80 PSI (~0.5-5.5 Bar) (multiple spring ranges) For higher outlet pressures see this **pressure regulator** (Model PRH09-EX).

## Features

- **Pressure-containing parts** made from solid bar stock materials — unlike castings which have wall thickness variations.
- **Body and flanges:** Special alloys Monel, titanium, Alloy 20 and Hastelloy
- **Trim:** same materials as body
- **Teflon-Viton composite reinforced diaphragm** is rated pressure of 100 PSI and minimum burst pressure of 300 PSI. Teflon film on the wetted side provides good corrosion resistance to a wide range of fluids and gases including steam. Viton is the elastomeric backing on the non-wetted side and is rated to 350 °F for most applications. Buna backing is available for lower temperatures.
- **In-line flanges: 150 ANSI RF** is standard for this model with face-to-face dimensions as illustrated. Custom flange facing can also be made available. Bolt holes straddle centerline. Standard inlet flanges and outlet flanges are equal in size. Unequal flange combinations (larger outlet than inlet) are also available to compensate for expansion of gases at reduced pressures.

## Applications

This is a direct-acting pressure-reducing valve with an adjustable spring operating against a flexible elastomeric diaphragm subjected to the reduced outlet pressure of the valve.

This valve is used for medium to low flow applications. See flow data below. Corresponding threaded NPT models are also available.

This valve can be used for aggressive chemicals, gases, solvents, and fluids, depending on the materials selected (consult factory). Only clean, filtered, or strained liquids and gases should be used for best operation of the valve. A strainer or filter, depending on the degree of contamination, should be installed before the inlet of the valve. Strainers or filters can be purchased from Stra-Val to provide some degree of protection.

Unlike unbalanced pressure-reducing valves, this valve is a balanced inlet design and will work quite well on applications where the inlet pressure will fluctuate widely and will have little effect on outlet pressure.

This valve should not be used as a shutoff valve. If the valve is expected to be dead ended (having no flow passing through the valve) for prolonged periods, pressure at the inlet should be shut off, or a relief valve installed on the outlet side of the valve in case of excessive pressure buildup, reducing the life of the diaphragm or causing possible equipment damage downstream of the valve.

## Options

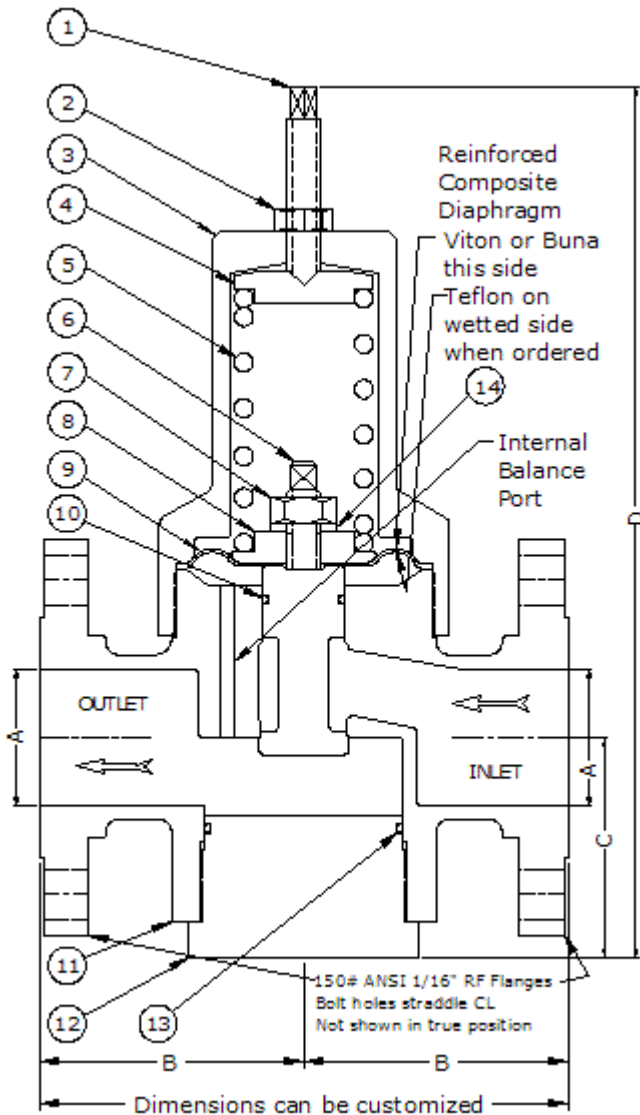
Select the valve size, spring range, material options in the customized pricing and ordering section indicated by the red arrows. You have the ability to customize your valve choices by selecting the wetted and nonwetted materials, and choice of seat materials to suit your shutoff requirements, using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

## Principle of Operation

This valve operates on the principle of balancing the spring force that is set by the user against the outlet pressure acting under the diaphragm. There is an internal pressure balancing port that subjects the outlet pressure directly to the underside of the diaphragm. When the outlet pressure falls below the set pressure required by the system on the outlet side of the valve, the spring force overcomes the force balance under the diaphragm causing the poppet and diaphragm assembly to drop down causing the valve to open and allow higher pressure from the valve inlet to pass through the valve. When the pressure rises to a sufficient level to restore the force balance against the spring, the valve will move toward the closed position. The valve is completely self regulating and the poppet is constantly moving to respond to pressure changes on the outlet side of the valve, not the inlet. The only time the poppet closes completely is when the outlet pressure has been reached to its set point. As long as the valve is able to shut off properly without solids or other material build up in the seat or because of seat wear, the valve should be able to maintain and hold the outlet pressure and keep it from rising for brief periods of time. If the valve is set with no flow passing through the system, there will be some droop (drop in outlet pressure) caused by relaxation of the spring when the valve first has to open. This occurs with all direct spring operated valves and can be compensated by making a slight readjustment to the set pressure once the desired capacity has been achieved.

## Metal Seated Regulator

See below



**Material List and Specification**

#	Item	Materials-Metal Seated
1.	Adjusting screw	Hastelloy, Alloy 20, Titanium, or Monel
2.	Lock nut	Hastelloy, Alloy 20, Titanium, or Monel
3.	Spring chamber	Hastelloy, Alloy 20, Titanium, or Monel
4.	Spring pusher	Hastelloy, Alloy 20, Titanium, or Monel
5.	Adjusting spring	Hastelloy, Alloy 20, Titanium, Monel or SS
6.	Main Valve	Hastelloy, Alloy 20, Titanium, or Monel
7.	Lock nut	St. Steel
8.	Nut, diaphragm	St. Steel
9.	Diaphragm	PTFE / Viton
10.	Seal	Viton, PTFE, EPDM
11.	Body	Hastelloy, Alloy 20, Titanium, or Mone
12.	Bottom plug	Hastelloy, Alloy 20, Titanium, or Mone
13.	Seal	Viton, PTFE, EPDM
14.	Lock washer	St. Steel

**Dimensions (inch)**

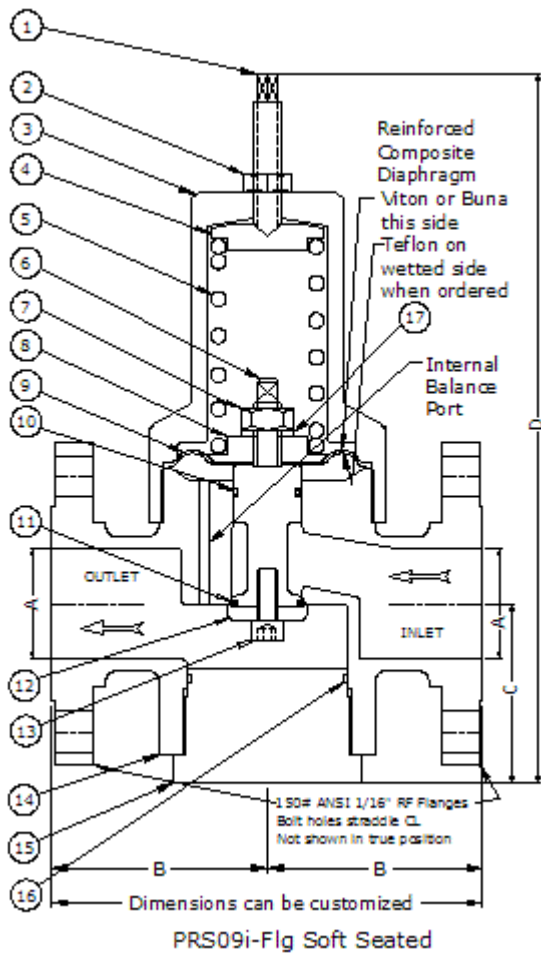
A	B	C	D
1/2	3	1.88	9.25
3/4	3	1.94	9.5
1	3.5	2.25	11.75
1-1/4	3.62	2.5	12.12
1-1/2	3.75	2.5	13.5
2	4	3.38	14.25
2-1/2	4.5	3.62	15.5
3	5	3.75	16

For Max Flow Cv data see Pricing pages

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

**Soft Seated Regulator**

See below



**PRS09i-FLG-EXHastelloy, Monel, Titanium A20**

**Material List and Specification**

#	Item	Materials- Soft Seated
1.	Adjusting screw	SS or upgrade
2.	Lock nut	SS or upgrade
3.	Spring chamber	SS or upgrade
4.	Spring pusher	SS or upgrade
5.	Adjusting spring	SS or upgrade
6.	Main valve	Hastelloy, Monel, Titanium A20
7.	Lock nut	SS or upgrade
8.	Spring Carrier	SS or upgrade
9.	Diaphragm	PTFE / Viton or PTFE/Buna
10.	Seal, Piston	Viton (std)
11.	Seat, Elastomeric	Viton, Epdm, Buna, Ptfе
12.	Seat Holder	Hastelloy, Monel, Titanium A20

13.	Screw	Hastelloy, Monel, Titanium A20
14	Body	Hastelloy, Monel, Titanium A20
15	Bottom Plug	Hastelloy, Monel, Titanium A20
16	Seal	Viton, Epdm, Buna, Ptfе
17	Lock Washer	St. Steel

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## 1/2" PRS09i-05A-EX

**150# ANSI B16.5 RF Flanges (10 bar nominal rating) 220 psi, 15 bar max**

Multiple Spring Ranges from:5-80 psig (0.345-5.52 barg) Select spring from pricing page

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## 3/4" PRS09i-07A-EX

**150# ANSI B16.5 RF Flanges (10 bar nominal rating) 220 psi, 15 bar max**

Multiple Spring Ranges from:5-80 psig (0.345-5.52 barg) Select spring from pricing page

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## 1" PRS09i-10A-EX

**150# ANSI B16.5 RF Flanges (10 bar nominal rating) 220 psi, 15 bar max**

Multiple Spring Ranges from:5-125 psig (0.345-8.62 barg) Select spring from pricing page

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## 1 1/4" PRS09i-12A-EX

**150# ANSI B16.5 RF Flanges (10 bar nominal rating) 220 psi, 15 bar max**

Multiple Spring Ranges from:5-125 psig (0.345-8.62 barg) Select spring from pricing page

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## 1 1/2" PRS09i-15A-EX

**150# ANSI B16.5 RF Flanges (10 bar nominal rating) 220 psi, 15 bar max**

Multiple Spring Ranges from:5-125 psig (0.345-8.62 barg) Select spring from pricing page

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## 2" PRS09i-20A-EX

**150# ANSI B16.5 RF Flanges (10 bar nominal rating) 220 psi, 15 bar max**

Multiple Spring Ranges from:5-125 psig (0.345-8.62 barg) Select spring from pricing page

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## **2-1/2" PRS09i-25A-EX**

**150# ANSI B16.5 RF Flanges (10 bar nominal rating) 220 psi, 15 bar max**

Multiple Spring Ranges from:5-200 psig (0.345-13.8 barg) Select spring from pricing page

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## **3" PRS09i-30A-EX**

**150# ANSI B16.5 RF Flanges (10 bar nominal rating) 220 psi, 15 bar max**

Multiple Spring Ranges from:5-200 psig (0.345-13.8 barg) Select spring from pricing page

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## **4" PRS09i-40A-EX**

**150# ANSI B16.5 RF Flanges (10 bar nominal rating) 220 psi, 15 bar max**

Multiple Spring Ranges from:5-200 psig (0.345-13.8 barg) Select spring from pricing page

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## **6" PRS09i-60A-EX**

**150# ANSI B16.5 RF Flanges (10 bar nominal rating) 220 psi, 15 bar max**

Multiple Spring Ranges from:5-200 psig (0.345-13.8 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.