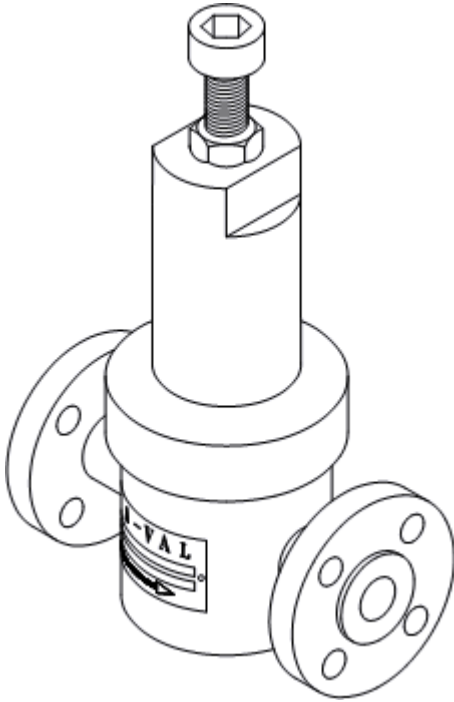


## Model PRS-09i-FLG

### IN-LINE PRESSURE-REDUCING VALVE



- Spring diaphragm operated
- 1"-3" 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 model>> prh09 also available in a flanged version

#### Features

- **Pressure-containing parts** made from solid bar stock materials — unlike castings which have wall thickness variations.
- **Body and flanges:** Standard material is type 316 stainless steel. Special alloys (e.g. Monel, titanium, and Hastelloy) also available.
- **Trim: Stainless steel** for main valve and seat is standard. Teflon sealing option is also available for air or gas service.
- **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. For larger capacities refer to model PRS-09-FLG with offset flanges. Corresponding threaded NPT models are also available.

This valve can be used for water, air, gases, chemicals, solvents, and fluids including steam, 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

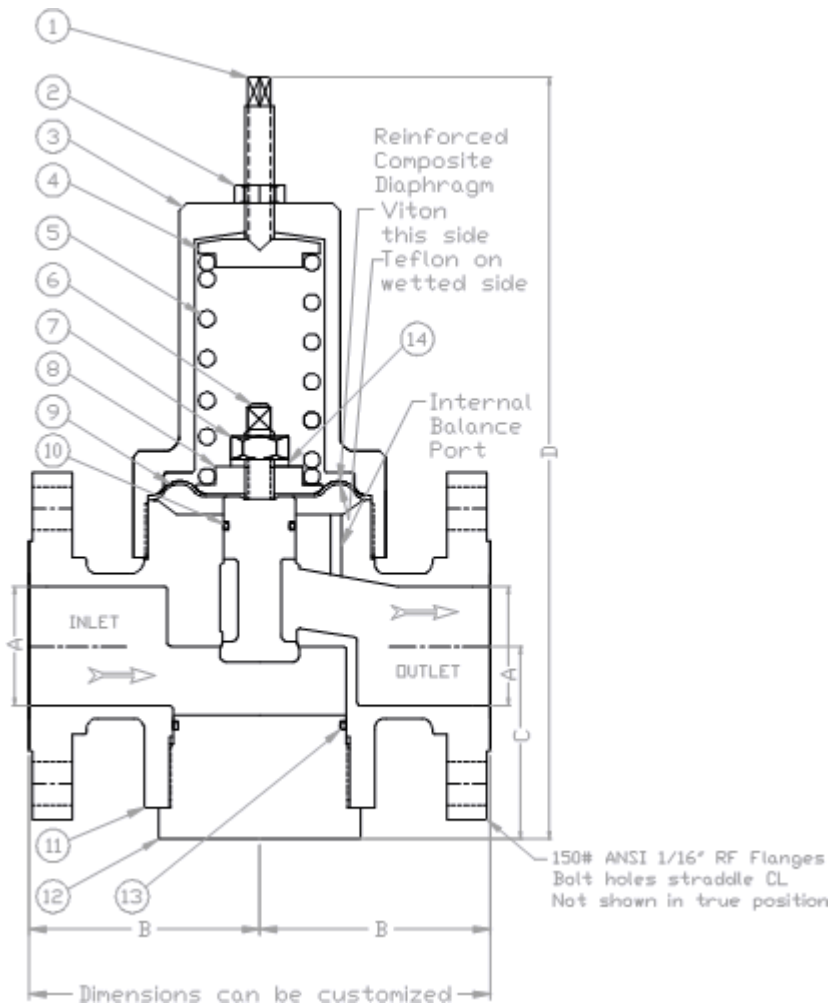
Select the valve size, spring range, material options in the customized pricing and ordering section indicated by the red arrows. You have the ability to customize your valve choices by selecting the wetted and nonwetted materials, and choice of seat materials to suit your shutoff requirements, using 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.

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## 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.

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**PRS-09i-FLG**

**Material List and Specification**

- 1. Adjusting screw Steel
- 2. Lock nut Steel
- 3. Spring chamber Steel
- 4. Spring pusher Steel
- 5. Adjusting spring Steel
- 6. Main Valve Stainless steel
- 7. Lock nut Steel
- 8. Nut, diaphragm Steel
- 9. Diaphragm TFE / Viton
- 10. Seal Viton
- 11. Body Stainless steel
- 12. Bottom plug Stainless steel
- 13. Seal Viton
- 14. Lock washer Steel

All carbon steel parts upgradeable to stainless steel

**Dimensions**

Flow is in US-GPM based on 25 PSI pressure

drop

Dimensions (inch)    Flow Data

Size A    B    C    D    Cv    Flow orifice inch

GPM\*

1    3.50    2.25    11.75    8.4    .75    42

1 1/4    3.62    2.50    12.12    9.3    .81    47

1.5    3.75    2.50    13.50    14.9    1.00    75

2    4.00    3.38    14.25    23.3    1.25    117

3    5.00    5.00    15.5    43.3    1.75    216

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

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## 1/2" PRS09i-05A

**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

**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

**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 1/4" PRS09i-12A

**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 1/2" PRS09i-15A

**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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## 2" PRS09i-20A

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

**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**

**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.