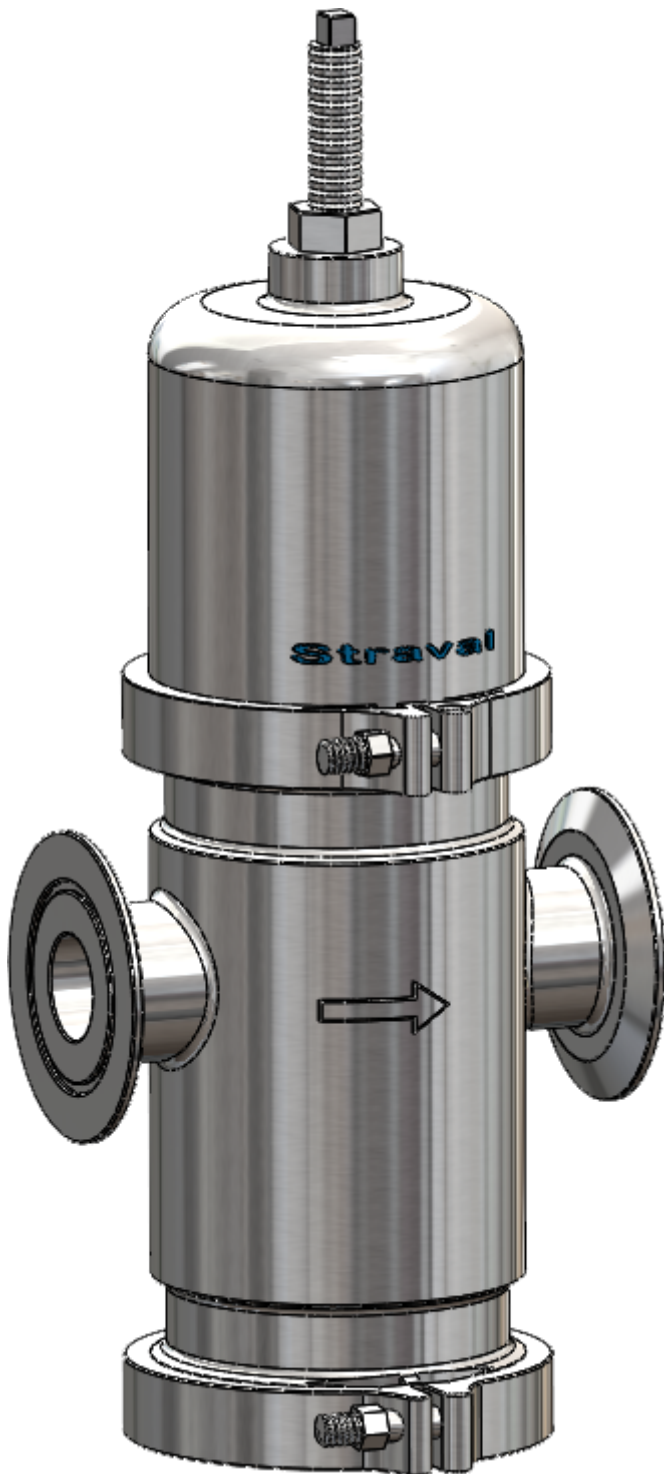


## Model PRS09-TC-V

### Electropolish Tri-Clamp In-Line Sanitary Pressure-Reducing Valve



- Spring diaphragm operated
- 1/2"-4" in-line Tri-Clamp connections

- Inlet pressures to 150 PSI (~10 Bar)
- Outlet pressures 8 to 80 PSI (~5.5 Bar) (multiple spring ranges) (consult factory for higher pressures)

## Features

- **Body and flanges:** Standard material is type 316 Stainless Steel.
- **Trim: 316 Stainless Steel** for poppet and seat is standard.
- **Internal Surface finish 20RA is standard.** Electro-polishing is optional
- **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. Max temperature rating is 350 °F(176 °C). Viton is the elastomeric seal on the non-wetted side.
- **In-line flanges: Sanitary Tri-Clamp type** is standard for this model with face-to-face dimensions as illustrated. Custom flange spacing can also be made available. 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.
- **Quick Disconnect V-Band Clamp:** made from 300 series SS (18Cr, 8Ni)
- **Metal or Soft seat** :Several elastomer material options are available to suit various liquid or gas applications. See options in pricing section below.
- **Top guided poppet** with accurately machined body bore eliminates poppet misalignment & assures proper seating under all conditions.
- **External Spring Housing:** Standard material for sanitary application is 316 series stainless steel, but 300 series Stainless Steel (18Cr,8Ni) can also be selected for less stringent sanitary applications, as this part is nonwetted and does not come in contact with the product flowing through the valve.

## Applications

This is a direct-acting pressure-reducing valve with an adjustable spring operating against a flexible elastomeric diaphragm for sizes up to 2", and a piston for larger sizes, which is subjected to the reduced outlet pressure of the valve.

This valve is used for medium flow applications. See flow data below. For larger capacities to a higher flow model can be custom made with offset flanges.

This valve can be used for many fluids, clean steam, air & gases, and various products used in the food processing and pharmaceutical industry. Only clean, filtered, or strained solids free 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. **Sanitary strainers or filters** can be purchased from Straval 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 ( no flow passing through the valve) for prolonged periods, pressure at the inlet should be shut off, or a relief valve(Available here) 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.

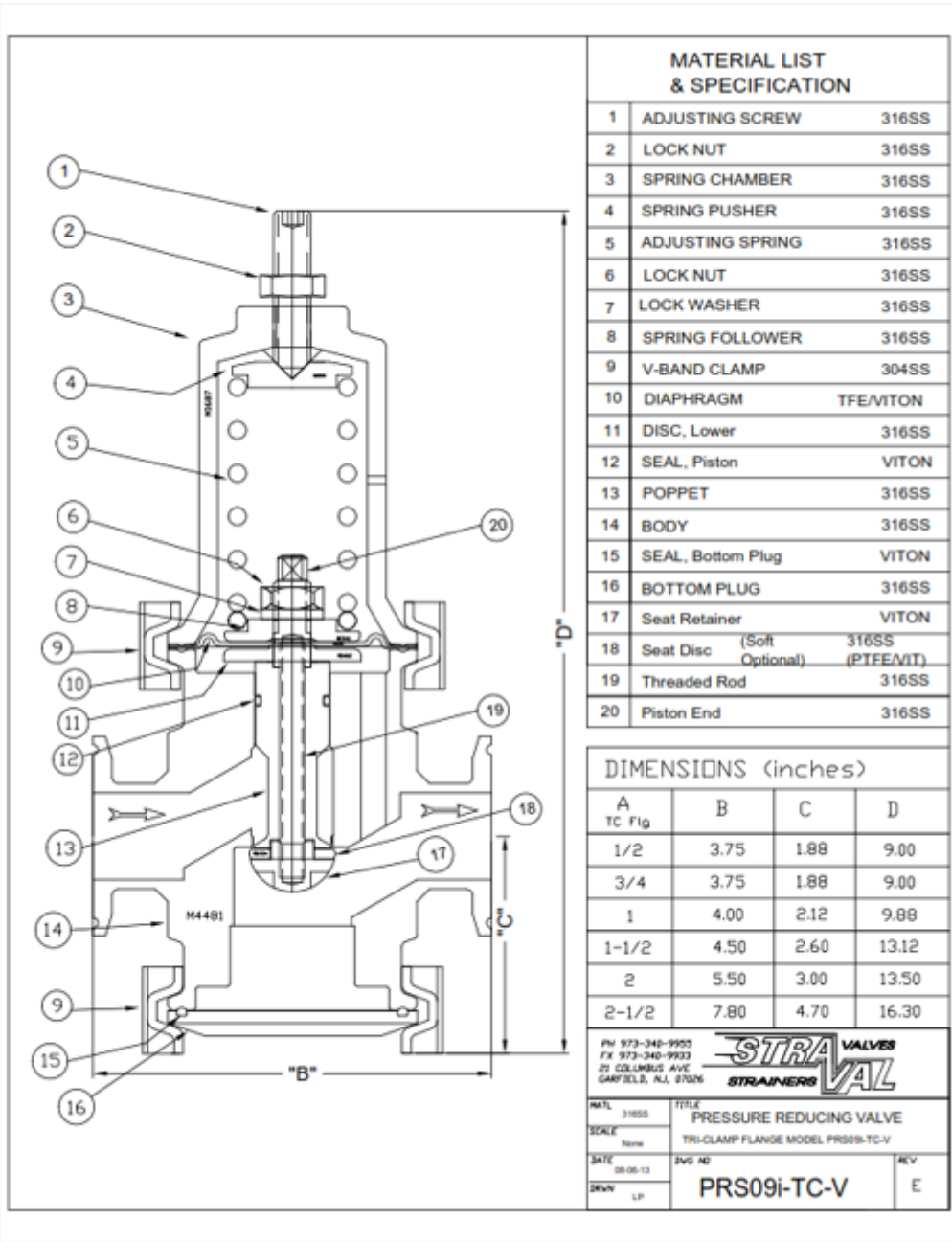
## Options

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, choice of seat materials, and if you would like the valve to be electropolished. 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 at 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.



MATERIAL LIST & SPECIFICATION		
1	ADJUSTING SCREW	316SS
2	LOCK NUT	316SS
3	SPRING CHAMBER	316SS
4	SPRING PUSHER	316SS
5	ADJUSTING SPRING	316SS
6	LOCK NUT	316SS
7	LOCK WASHER	316SS
8	SPRING FOLLOWER	316SS
9	V-BAND CLAMP	304SS
10	DIAPHRAGM	TFE/VITON
11	DISC, Lower	316SS
12	SEAL, Piston	VITON
13	POPPET	316SS
14	BODY	316SS
15	SEAL, Bottom Plug	VITON
16	BOTTOM PLUG	316SS
17	Seat Retainer	VITON
18	Seat Disc (Soft Optional)	316SS (PTFE/VIT)
19	Threaded Rod	316SS
20	Piston End	316SS

DIMENSIONS (inches)			
A TC Flg	B	C	D
1/2	3.75	1.88	9.00
3/4	3.75	1.88	9.00
1	4.00	2.12	9.88
1-1/2	4.50	2.60	13.12
2	5.50	3.00	13.50
2-1/2	7.80	4.70	16.30

PH 973-340-9905  
 FX 973-340-9933  
 20 COLUMBUS AVE  
 GARFIELD, N.J. 07026

**STRAVAL**  
**STRAINERS VALVES**

MATL	316SS	TITLE	PRESSURE REDUCING VALVE
SCALE	None		TRI-CLAMP FLANGE MODEL PRS09-TC-V
DATE	08.06.13	DWG NO	PRS09i-TC-V
DRWN	LP	REV	E

## 1/2" PRS09-05TC-V

150# Sanitary TriClamp Connections (~10 bar nominal rating)  
 Multiple Spring Ranges from:5-125 psig (0.345-8.62 barg) Select spring from pricing page

## 3/4" PRS09-07TC-V

**150# Sanitary TriClamp Connections (~10 bar nominal rating)**

Multiple Spring Ranges from:5-90 psig (0.345-6.21 barg) Select spring from pricing page

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## **1" PRS09-10TC**

**150# Sanitary TriClamp Connections (~10 bar nominal rating)**

Multiple Spring Ranges from:5-90 psig (0.345-6.21 barg) Select spring from pricing page

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## **1-1/2" PRS09-15TC**

**150# Sanitary TriClamp Connections (~10 bar nominal rating)**

Multiple Spring Ranges from:2-80 psig (0.138-5.52 barg) Select spring from pricing page

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## **2" PRS09-20TC-V**

**150# Sanitary TriClamp Connections (~10 bar nominal rating)**

Multiple Spring Ranges from:2-80 psig (0.138-5.52 barg) Select spring from pricing page

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## **2-1/2" PRS09-25TC-V**

**150# Sanitary TriClamp Connections (~10 bar nominal rating)**

Multiple Spring Ranges from:2-80 psig (0.138-5.52 barg) Select spring from pricing page

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## **3" PRS09-30TC-V**

**150# Sanitary TriClamp Connections (~10 bar nominal rating)**

Multiple Spring Ranges from:2-80 psig (0.138-5.52 barg) Select spring from pricing page

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## **4" PRS09-40TC-V**

**150# Sanitary TriClamp Connections (~10 bar nominal rating)**

Multiple Spring Ranges from:2-80 psig (0.138-5.52 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.