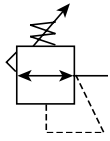
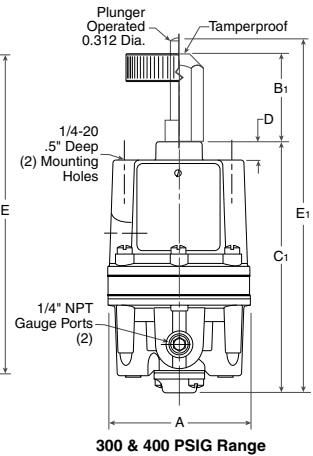
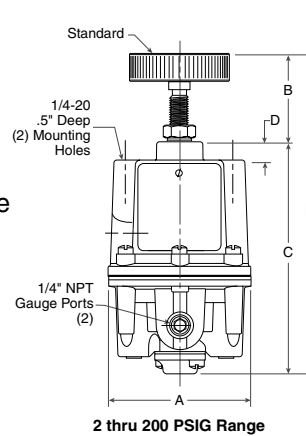


**P3RA102 Regulator – High Precision**



**Features**

- Control sensitivity of .125" (.32) water column allows use in precision processes.
- Pressure balanced supply valve prevents supply pressure changes from affecting the setpoint.
- Optional check valve permits dumping of downstream pressure when supply is opened to atmosphere.
- Separate control chamber isolates the diaphragm from the main flow to eliminate hunting and buzzing.
- An aspirator tube compensates downstream pressure droop under flow conditions.



P3RA102 Regulator Dimensions		
<b>A</b> 3.00 (76.2)	<b>B</b> 2.22 (56.5)	<b>B<sub>1</sub></b> 2.13 (53.9)
<b>C</b> 4.42 (111.9)	<b>C<sub>1</sub></b> 4.78 (121.6)	<b>D</b> 0.38 (9.4)
<b>E</b> 6.63 (168.5)	<b>E<sub>1</sub></b> 7.28 (184.9)	

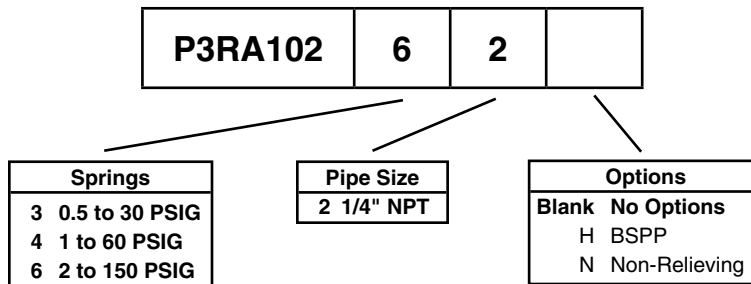
Inches (mm)

The P3RA102 Regulator is designed for applications that require high capacity and accurate process control. A poppet valve which is balanced by utilizing a rolling diaphragm, insures a constant output pressure even during wide supply pressure variations. Stability of regulated pressure is maintained under varying flow conditions through the use of an aspirator tube which adjusts the air supply in accordance with the flow velocity.

**⚠ WARNING**

**Product rupture can cause serious injury.  
 Do not connect regulator to bottled gas.  
 Do not exceed maximum primary pressure rating.**

**Ordering Information**



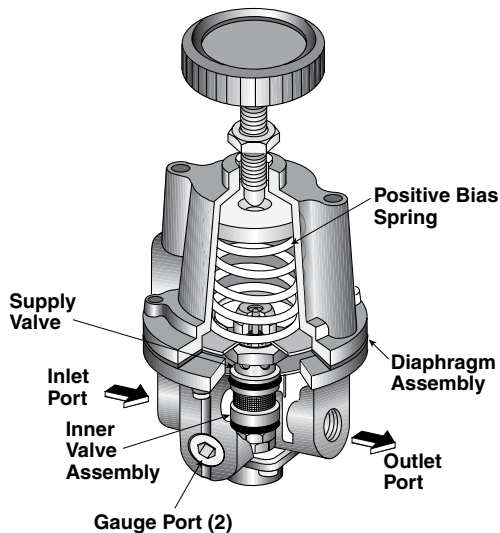
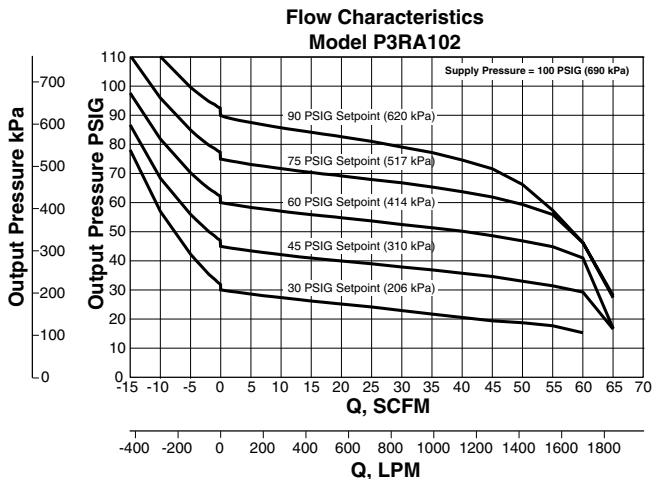
**Note:** Other Spring Ranges, Port Sizes, and Options Available.  
 Please Consult Factory

**BOLD ITEMS ARE MOST POPULAR.**



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	27 Series
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	Precision Regulators
	Precision Relief Valve
	Precision Vacuum Regulator
	Precision Filter / Regulator
	Input Signal Amplifier

**Technical Information**

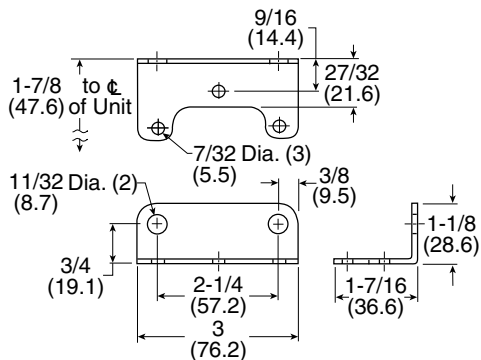


**Operating Principles**

The P3RA102 Series regulator use the force balance principal to control the movement of the Valve Assembly that controls the output pressure. When the regulator is adjusted for a specific set point, the downward force of the Positive Bias Spring moves the Diaphragm Assembly downward. The Supply Valve opens and allows air to pass to the Outlet Port. As the set point is reached, the downward force exerted by the Positive Bias Spring is balanced by the force of the downstream pressure that acts on the Diaphragm Assembly. The resultant force moves the Supply Valve upward to reduce the flow of air to the Outlet Port. Outlet pressure is maintained as a result of balance between forces acting on the top and bottom of the Diaphragm Assembly.

**P3RA102 Kits & Accessories**

**Mounting Bracket Kit –**  
 Zinc Plated Steel ..... PS09921



**Service Kits –**  
 0 to 200 PSIG, Relieving ..... PS12125-1  
 0 to 200 PSIG, Non-relieving ..... PS12125-4  
**Tamper Resistant Kit** ..... PS12165

**Specifications**

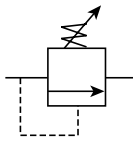
**Supply Pressure** ..... 500 PSIG, (35.0 bar), (3500 kPa) Maximum  
**Flow Capacity –**  
 40 SCFM (68 m<sup>3</sup>/HR) @ 100 PSIG, (7.0 bar), (700 kPa) Supply and 20 PSIG, (1.5 bar), (150 kPa) Setpoint  
**Exhaust Capacity –**  
 5.5 SCFM (9.35 m<sup>3</sup>/HR) where Downstream Pressure is 5 PSIG, (.35 bar), (35 kPa) above 20 PSIG, (1.5 bar), (150 kPa) Setpoint  
**Supply Pressure Effect –**  
 Less than 0.1 PSIG, (.007 bar), (.7 kPa) for 100 PSIG, (7.0 bar), (700 kPa) change in Supply Pressure  
**Sensitivity** ..... .125" (.005 PSIG) (.32 cm) Water Column  
**Ambient Temperature** ..... -40°F to +200°F, (-40°C to 93°C)  
**Hazardous Locations –**  
 Acceptable for use in Zones 1 and 2 for Gas Atmosphere:  
 Groups IIA and IIB and Zones 21 and 22 for Dust Atmospheres

**Materials of Construction**

**Body and Housing** ..... Aluminum  
**Diaphragms** ..... Buna N on Dacron (Standard Unit Only)  
**Trim** ..... Brass, Zinc Plated Steel

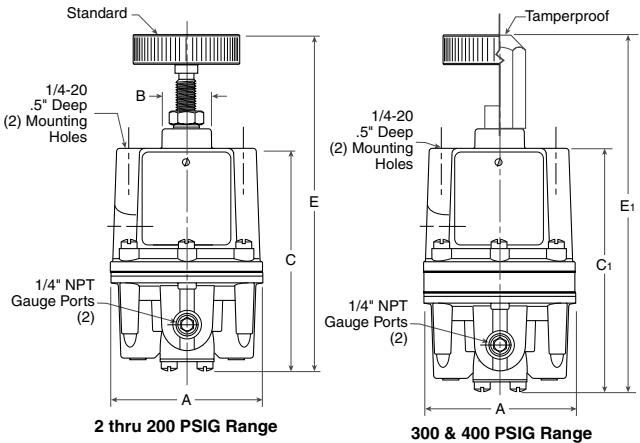
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**P3RA102BP Relief Valve – High Precision**



**Features**

- Control sensitivity of .125" (.32) water column allows use in precision applications.
- A separate Control Chamber and Aspirator Tube isolate the diaphragm from the main flow to eliminate hunting and buzzing.
- Unit construction lets you service the P3RA102BP without removing it from the line.
- Mounting Bracket is available.



A	B	C
3.00 (76.2)	0.97 (24.6)	4.19 (106.4)
C1	E	E1
4.56 (115.9)	6.31 (160.3)	6.75 (171.4)

Inches (mm)

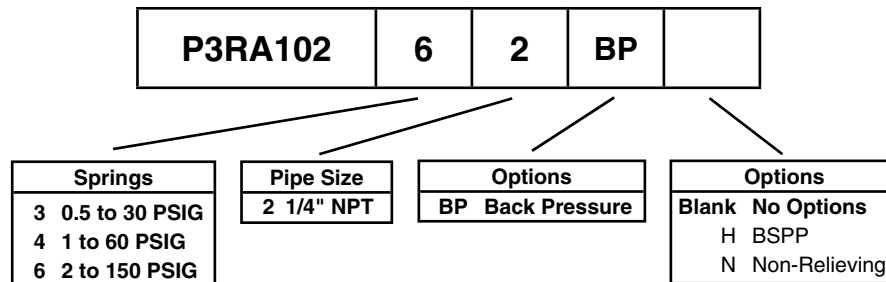
The P3RA102BP is a high capacity relief valve that relieves excess pressure in a pneumatic system.

The P3RA102BP provides greater accuracy than standard relief valves over a narrow pressure range. The P3RA102BP is an excellent choice for a wide range of precision applications.

**⚠ WARNING**

**Product rupture can cause serious injury.  
 Do not connect regulator to bottled gas.  
 Do not exceed maximum primary pressure rating.**

**Ordering Information**



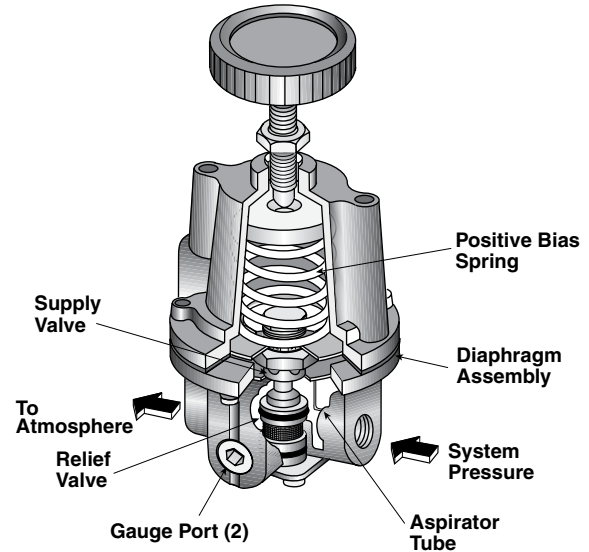
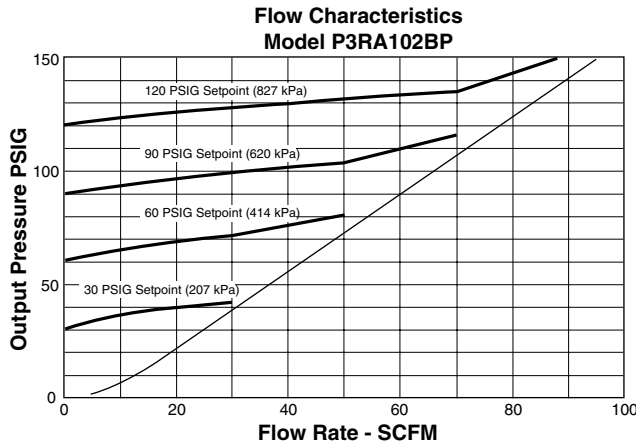
**Note:** Other Spring Ranges, Port Sizes, and Options Available.  
 Please Consult Factory

**BOLD ITEMS ARE MOST POPULAR.**



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	Input Signal Amplifier

**Technical Information**



**Operating Principles**

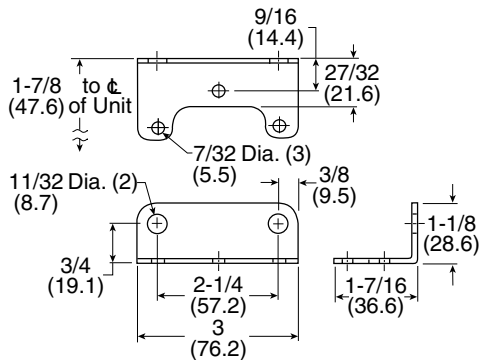
The P3RA102BP Regulator uses the force balance principle to open the Relief Valve and vent system pressure when the set point is exceeded.

Downstream pressure is transmitted through the Aspirator Tube to the bottom of the Diaphragm Assembly. When you adjust the range screw for a specific set point, the Positive Bias Spring compresses and exerts a force on the top of the Diaphragm Assembly. As long as the pressure acting on the bottom of the Diaphragm Assembly produces a force less than the spring force acting on the top of the Diaphragm Assembly, the Relief Valve remains closed. When system pressure increases, the force on the bottom of the Diaphragm Assembly increases until it reaches the set point. When system pressure increases beyond the set point, the assembly moves upward, lifting the Relief Valve from its seat and vents the downstream air.

If downstream pressure decreases below the set point, the assembly moves downward closing the Relief Valve.

**P3RA102BP Kits & Accessories**

**Mounting Bracket Kit –**  
 Zinc Plated Steel ..... PS09921



**Service Kits –**  
 0 to 200 PSIG, Standard ..... PS12127-1  
**Tamper Resistant Kit** ..... PS12165

**Specifications**

Set Point Range	System Pressure (Maximum)
2-200 PSIG (0.15-14 bar) (15-1400 kPa)	300 PSIG (21.0 bar) (2100 kPa)
300-400 PSIG (21-28 bar) (2100-2800 kPa)	500 PSIG (35.0 bar) (3500 kPa)

**Flow Capacity (SCFM) –**  
 40 (68 m<sup>3</sup>/HR) @ 100 PSIG, (7.0 bar), (700 kPa) System Pressure

**Sensitivity** ..... .125" (.005 PSIG) (.32 cm) Water Column  
**Ambient Temperature** ..... -40°F to +200°F, (-40°C to +93°C)

**Materials of Construction**

**Body and Housing** ..... Aluminum  
**Trim** ..... Zinc Plated Steel, Brass  
**Nozzle** ..... Nitrile on Dacron

**E**

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