CIRCLE SEAL CONTROLS, INC.

PVRB Series

Ultra-sensitive Back Pressure Regulator
Inlet & Outlet to 60 psig

Features

- Low pressure control
- Full range capability
- Compatible with corrosive and non-corrosive gases & liquids
- Ultra-sensitive pressure regulator

Applications

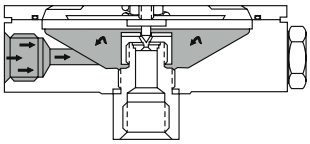
- Chromatography
- Process stream sampling
- Bubbling operations
- Medical instrumentation
- Research laboratories
- Instrument calibration

Technical Data

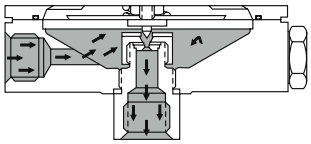
Body Construction Material	Polyvinyl chloride
Spring Housing Materials	• PVRB2 & PVRB3: Polyvinyl chloride • PVRB4 & PVRB5: Aluminum alloy
Seat Material	Kel-F®
Diaphragm Material	Teflon®
Adjustment Screw Material	Delrin®
Port Sizes	¼˝ NPT female
Pressure Ratings	Maximum control pressure: 60 psig (4 BAR)
Temperature Range	0° F to +125° F (–18° C to +52° C)
Flow Capacity	Cv = 0.011 maximum Orifice diameter = 0.025˝
Weight	PVRB2 & PVRB3: 14 oz PVRB4 & PVRB5: 1.5 lbs
Leakage	Bubble-tight
Sensitivity	Less than ½ psi

Note: Proper filtration is recommended to prevent damage to sealing surfaces.

How it Works



Closed
With the unit spring load adjusted to the desired regulated "set" pressure, a dead-tight seal is affected against the applied upstream pressure.



Regulating
When the upstream process pressure (applied on the diaphragm) increases, an opposing force is generated which, through the diaphragm plate, acts against the "set" spring load.

As the increasing upstream pressure level reaches the "set" pressure, the poppet is gradually lifted off its seat. A consequent decrease in upstream pressure is experienced when the flowing fluid is relieved to the downstream side of the process at a faster rate than the upstream pressure can supply.

With decreasing upstream pressure, the spring force starts the poppet moving toward its closed position, thus maintaining the desired "set" pressure level within a narrow band.

When the upstream pressure has decreased to a level just below "crack", the adjusting spring load again creates a tight seal between the poppet and the sharp edge of the valve seat.

Circle Seal Controls
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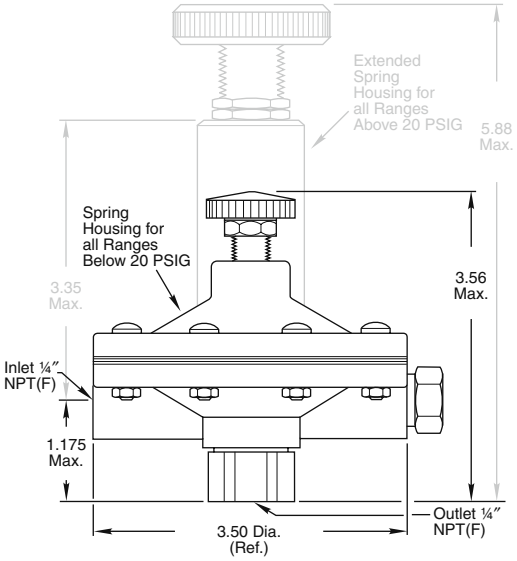
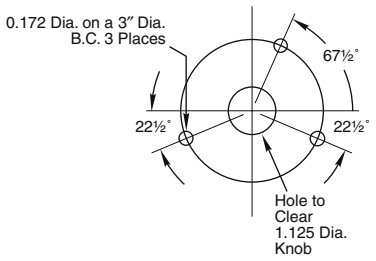
back pressure regulators

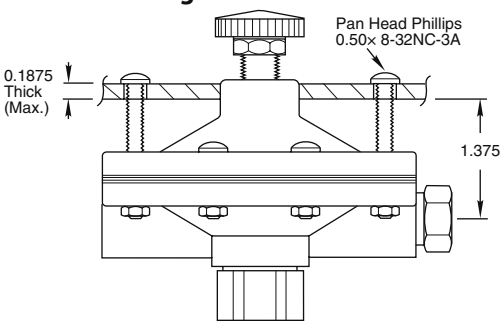
BP-3 Series

Dimensions

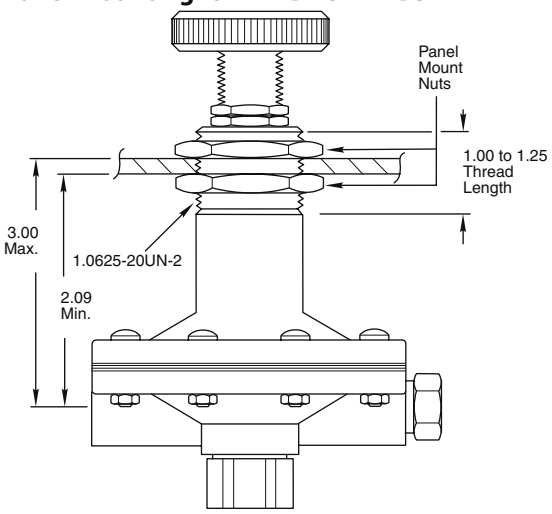




Panel Mounting for PVRB2 & PVRB3



Panel Mounting for PVRB4 & PVRB5



How to Order

K/ PVRB 3 M PM

REPAIR KIT

PRESSURE RANGE

- **2** 2 to 6 psig
- **3** 6 to 20 psig
- **4** 20 to 40 psig
- **5** 40 to 60 psig

OPTIONS

- **Blank** None
- **PM** Panel mount

TRIM MATERIAL

- **Blank** 316 stainless steel
- **M** Monel®

Note: if this regulator is to be used in oxygen service, specify "GENERAL OXYGEN SERVICE" when ordering or furnish the factory a copy of the special requirements.

Please consult your Circle Seal Controls distributor, representative, or the factory for information on special connections, operating pressures and temperature ranges.

For Your Safety

It is solely the responsibility of the system designer and user to select products suitable for their specific application requirements and to ensure proper installation, operation, and maintenance of these products. Material compatibility, product ratings and application details should be considered in the selection. Improper selection or use of products described herein can cause personal injury or property damage.