



# **BACK PRESSURE REGULATORS**

Instrument/Analyzer Products

Catalog 4510/USA  
*April 2003*



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# ABP1 Series

## Back Pressure Regulator



Parker Hannifin Corporation's Veriflo Division presents the ABP1 Series back pressure regulator.

The ABP1 is a versatile design for the control of inlet, upstream or back pressure in an instrument or analyzer system. The materials of construction of this regulator make it suitable for applications where corrosive media and or environments are present.



### features

- ▶ Standard Hastelloy C-22<sup>®</sup> diaphragm for superior strength and corrosion resistance.
- ▶ Convoluted diaphragm provides outlet pressure stability with changes in flow.
- ▶ Integral diaphragm stop provides an additional safety measure.
- ▶ Meets NACE Standard MR0175.

### materials of construction

#### Wetted

Body . . . . . 316L Stainless Steel, Monel<sup>®</sup>  
or Hastelloy C-22<sup>®</sup>  
Seat . . . . . Teflon<sup>®</sup>, Viton<sup>®</sup> or Kalrez<sup>®</sup>  
Seals . . . . . Teflon<sup>®</sup>  
Diaphragm . . . . . Hastelloy C-22<sup>®</sup>

#### Nonwetted

Cap . . . . . 303 Stainless Steel  
Cap nut . . . . . 316L Stainless Steel  
Knob . . . . . ABS Plastic (Black)

### operating conditions

Control pressure . . . . . 0-25 psig (0-1.7 barg)  
0-50 psig (0-3.5 barg), 0-100 psig (0-7.0 barg)  
0-250 psig (0-17.2 barg), 0-500 psig (0-35.0 barg)

Max temperature of flow media:  
. . . . . -40°F to 400°F (-40°C to 204°C)

### functional performance

Design proof pressure . . . . . 0-25: 37.5 psig  
0-50: 75 psig, 0-100: 150 psig, 0-250: 375 psig,  
0-500: 750 psig  
Design burst pressure . . . . . 0-25: 75 psig  
0-50: 150 psig, 0-100: 300 psig,  
0-250: 750 psig, 0-500: 1500 psig  
Flow capacity . . . . . C<sub>v</sub> 0.3  
(Optional 0.1 C<sub>v</sub> and 0.06 C<sub>v</sub>)  
(SEMI Flow Coefficient Test# F-32-0998)

Maximum Inboard Design  
Leak Rate . . . . . < 2 x 10<sup>8</sup> scc/sec HE

### internal volume

5.9cc

### standard connections

1/8" or 1/4" female pipe threads (NPTF)

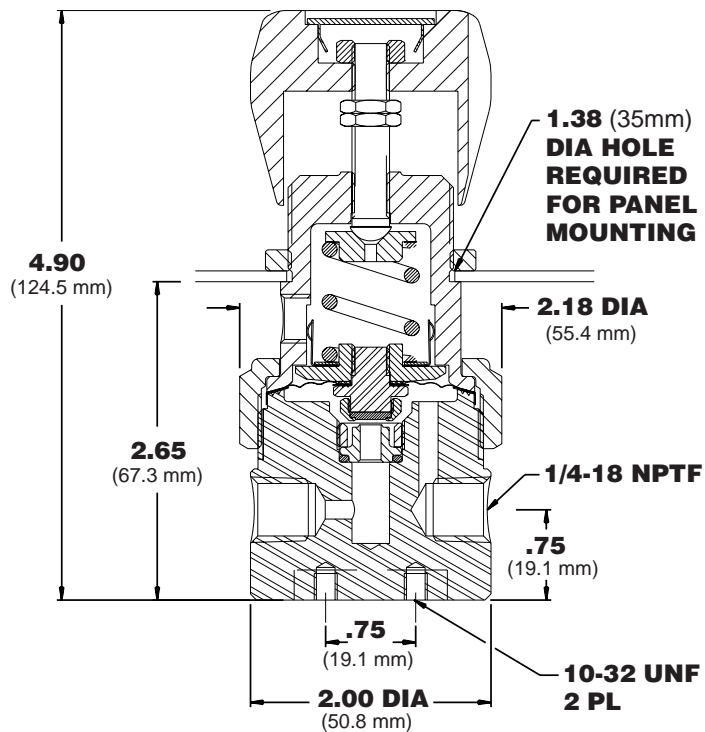
### approximate weight

2.2 lbs (1.0 kgm)

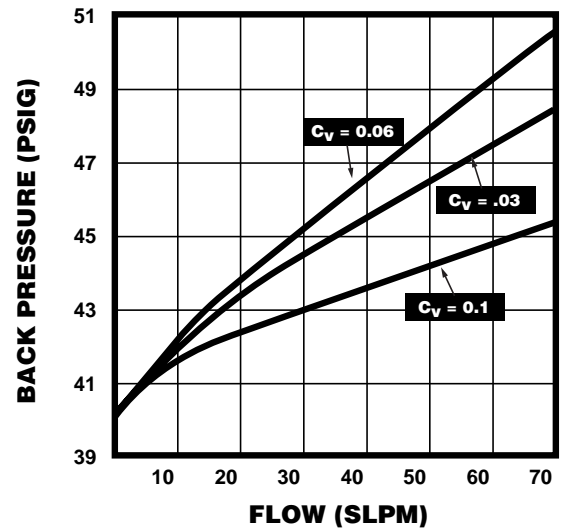


# ABP1 Series

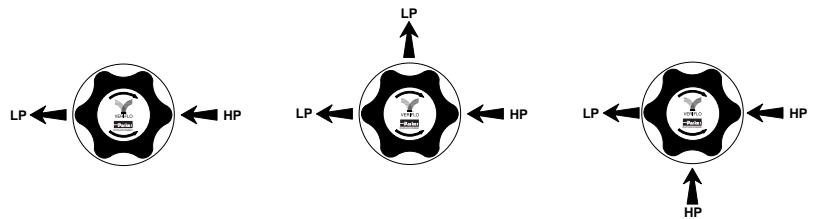
## Cross Sectional Drawings



## Flow Curve



## Porting Configurations



Porting Code: 2BP

Porting Code: 3BP

Porting Code: 3PP

## Order Information

**ABP1 S T 3 3BP 01 4 PM**

**BASIC SERIES**  
 ABP1

**MATERIALS**  
 S = 316L Stainless Steel  
 M = Monel®  
 H = Hastelloy C-22®

**SEAT MATERIALS\***  
 T = Teflon®  
 V = Viton®  
 K = Kalrez®

**PRESSURE RANGE**  
 1 = 0 - 25 psig  
 2 = 0 - 50 psig  
 3 = 0 - 100 psig  
 4 = 0 - 250 psig  
 5 = 0 - 500 psig

**PORTING**  
 2BP = 2 Ports  
 3BP = 3 Ports  
 3PB = 3 Ports (Outlet through bottom)  
 3PP = 3 Ports

**OPTIONAL FEATURES**  
 DO = Dome Loaded  
 M = Metal Knob  
 PM = Panel Mount  
 06 = 0.06 C<sub>v</sub>  
 1 = .1 C<sub>v</sub>

**PORT STYLE**  
 2 = 1/8" NPTF  
 4 = 1/4" NPTF

**INLET GAUGE**  
 03 = 0 - 30 psig  
 OL = 0 - 60 psig  
 01 = 0 - 100 psig  
 4 = 0 - 400 psig  
 6 = 0 - 600 psig  
 X = No Gauge

\* See temperature ratings under operating conditions.

Hastelloy C-22® is a registered trademark of Haynes International, Inc.  
 Monel® is a registered trademark of International Nickel Company.  
 Kalrez® and Teflon® are registered trademarks of DuPont Company.  
 Viton® registered is a trademark of DuPont Dow Elastomers.



# ABP3 Series

## Back Pressure Regulator



Parker Hannifin Corporation's Veriflo Division presents the ABP3 Series. This regulator is designed to provide precise inlet, upstream or back pressure control with corrosive media and environments. The large convoluted diaphragm provides the user greater sensitivity of outlet pressures.



### features

- ▶ Oversized diaphragm provides more sensitive pressure adjustments.
- ▶ Standard Hastelloy C-22<sup>®</sup> diaphragm is superior in strength and corrosion resistance, which minimizes the hazards of a rupture.
- ▶ Convoluted diaphragm provides outlet pressure stability with changes in flow design.
- ▶ Integral stop mechanism limits the travel of the diaphragm and will also provide an additional measure of safety to the user.
- ▶ Meets NACE standard MR-01-75.

### materials of construction

#### Wetted

Body . . . . . 316L Stainless Steel,  
Hastelloy C-22<sup>®</sup>, Nickel Plated Brass  
Seat . . . . . Teflon<sup>®</sup>, Viton<sup>®</sup>, Kalrez<sup>®</sup>  
Seals . . . . . Teflon<sup>®</sup>  
Diaphragm . . . . . Hastelloy C-22<sup>®</sup>  
Seat Holder . . . . . 316L Stainless Steel

#### Non-Wetted

Cap . . . . . Nickel Plated Brass  
Cap nut . . . . . Nickel Plated Brass  
Knob . . . . . 6061-T6 Aluminum

### operating conditions

Control pressure . . . . . 0-5 psig (0-.3 barg)  
0-30 psig (0-2 barg)  
0-60 psig (0-4 barg)  
Temperature of flow media:  
. . . . . -40°F to 150°F (-40°C to 66°C)

### functional performance

Design proof pressure . . . . . 90 psig (6 barg)  
Design burst pressure . . . . . 180 psig (12.4 barg)

Flow capacity . . . . .  $C_v = 0.3$  (.06, 0.1 optional)  
(SEMI Flow coefficient Test #F-32-0998)

Maximum Inboard Design  
Leak Rate . . . . .  $< 2 \times 10^{-8}$  scc/sec HE

### internal volume

13.8 cc

### standard connections

1/8", or 1/4", female pipe threads (NPT)

Standard Ra . . . . . 15 - 20 Micro Inch  
(.38 to .5 Micro meter or less)

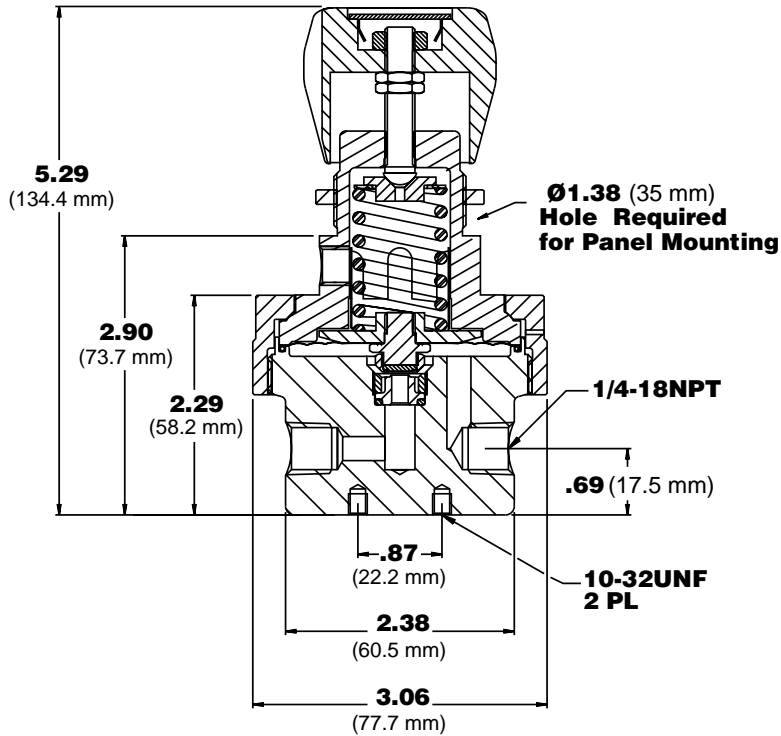
### approximate weight

4.2 lbs (1.9 kg)

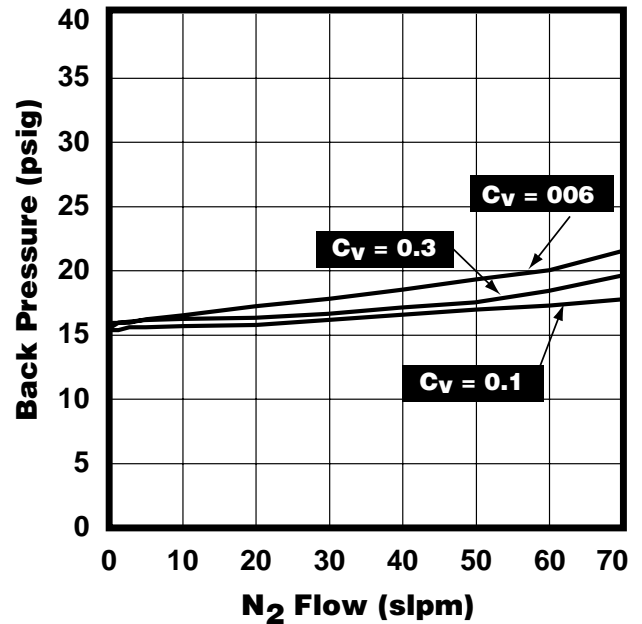


# ABP3 Series

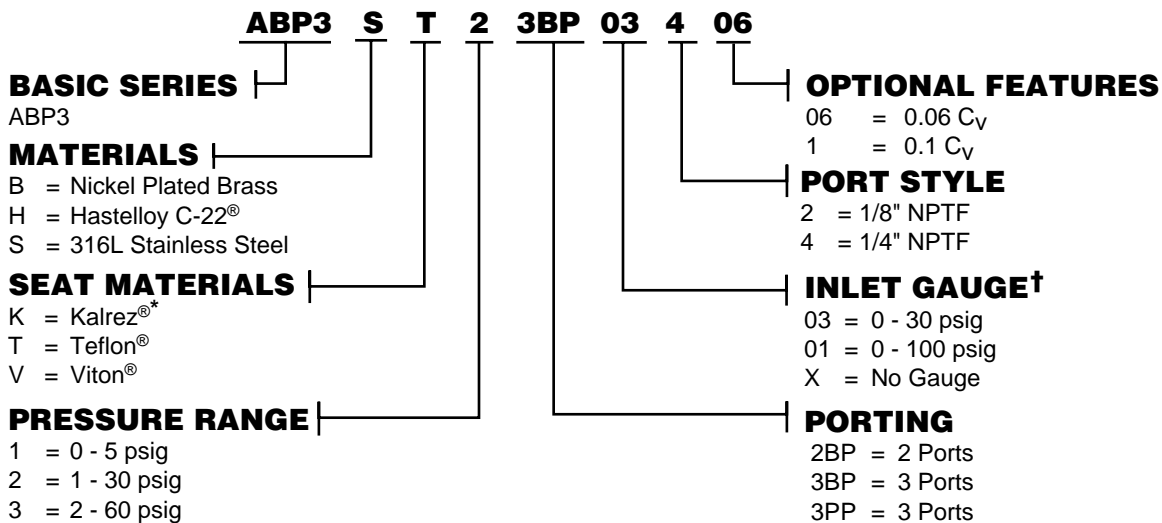
## Dimensional Drawing



## Flow Curve



## Ordering Information



\* Kalrez® seats available with Hastelloy C-22® or Stainless Steel nozzles only  
 † Stainless Steel gauges only

Note: All units are standard with threaded caps (bonnets) and nuts for panel mounting.

Hastelloy C-22® is a registered trademark of Haynes International, Inc. Kalrez®, and Teflon® are registered trademarks of DuPont Company. Viton® is a registered trademark of DuPont Dow Elastomers.



# BPR50 Series

## Back Pressure Regulator



Parker Hannifin Corporation's Veriflo Division presents the BPR50. The BPR50 is a piston style back pressure regulator designed to control upstream or back pressures. The BPR50 can be used with high pressure corrosive and non-corrosive liquids and gases at pressures up to 2,000 psig.



### features

- ▶ "VeriClean," Veriflo's custom low sulfur high purity 316L Stainless Steel which enhances corrosion resistance.
- ▶ Adjustable pressures from 100 to 1,200 psig and 200 to 2000 psig.
- ▶ Panel mountable.
- ▶ Simple construction makes maintenance easy.

### materials of construction

#### Wetted

Body . . . . . "VeriClean", Veriflo's high purity type 316L Stainless Steel  
Seal . . . . . Glass filled Teflon®, optional PCTFE  
O-ring . . . . . Viton®, optional Kalrez®  
Piston . . . . . 316L Stainless Steel

#### Non-Wetted

Cap. . . . . Nickel plated Brass

### operating conditions

Maximum supply pressure . . . . . 2,000 psig (138 barg)  
Adjustable outlet pressure . . . . . 100-1,200 psig (6.8-82.8 barg)  
200-2,000 psig (13.8 - 138 barg)  
Temperature . . . -40°F to +150°F (-40°C to +66°C)

### functional performance

Design Burst pressure . . . . . 6,000 psig (414 barg)  
Design Proof pressure . . . . . 3,000 psig (276 barg)  
Flow capacity . . . . .  $C_v = .45$   
(SEMI Flow Coefficient Test #F-32-0998)  
Maximum Liquid Flow . . . . . 20 lpm (5 gpm)  
Hysteresis . . . . . 20 psig (1.37 barg)  
Sensitivity . . . . . 0.5 psig (.03 barg)

### internal volume

5 cc

### surface finishes

Standard Ra . . . . . 15-20 micro in  
(.38 to .5 micro) meter or less

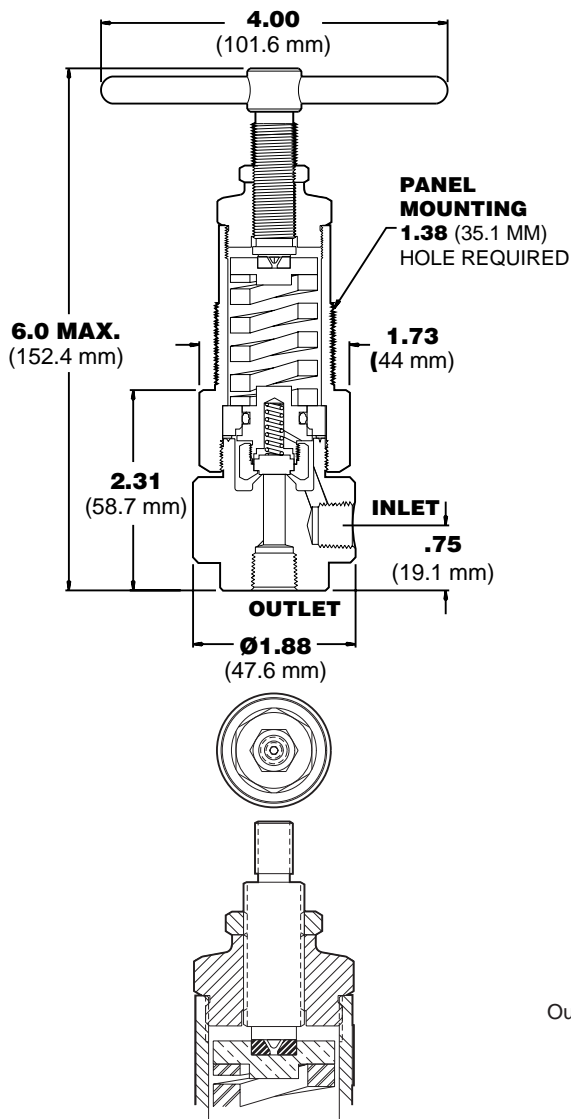
### approximate weight

3 lbs. (1.3 kg)



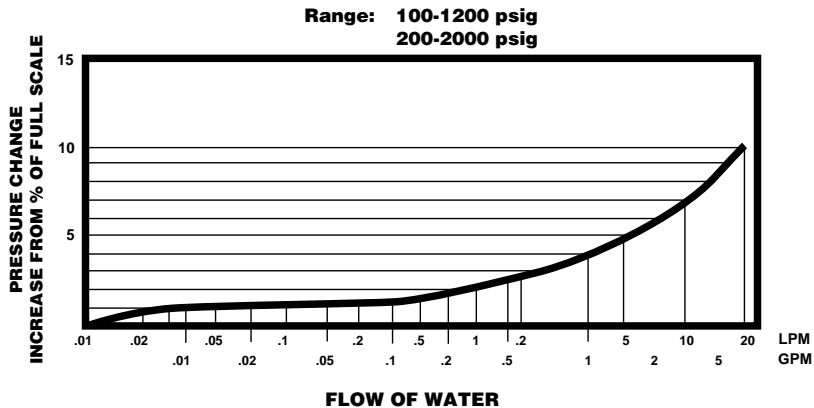
# BPR50 Series

## Cross Sectional Drawing

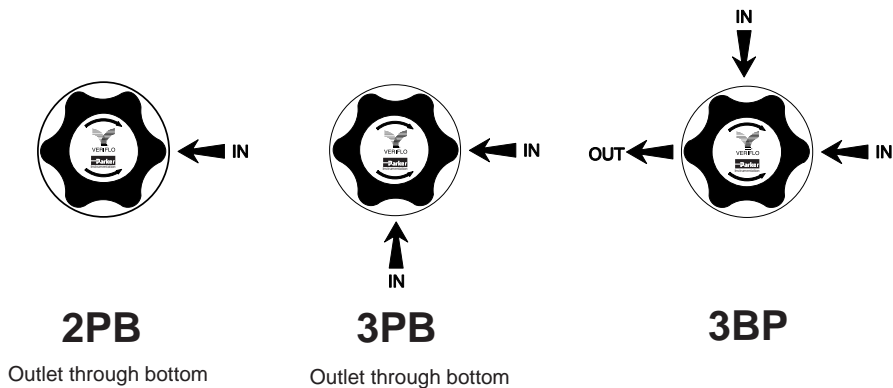


BPR50 with Broach Stem

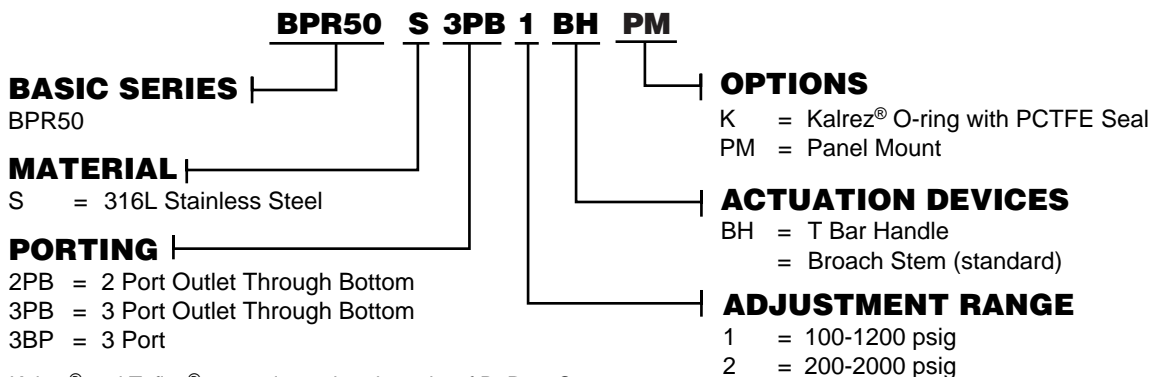
## Flow Curve



## Porting Configurations



## Ordering Information



Kalrez® and Teflon® are registered trademarks of DuPont Company.  
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