

Back Pressure Regulators

Manual Adjusted and Dome-loaded

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back pressure regulators

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

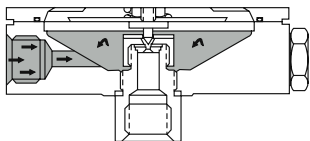
- Chromatography
- Process stream sampling
- Bubbling operations
- Medical instrumentation
- Research laboratories
- Instrument calibration

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

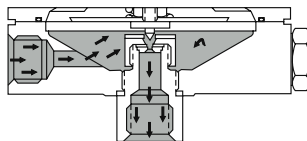
Note: Proper filtration is recommended to prevent damage to sealing surfaces.

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.

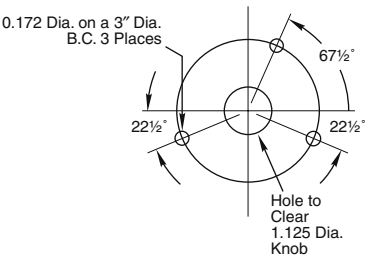
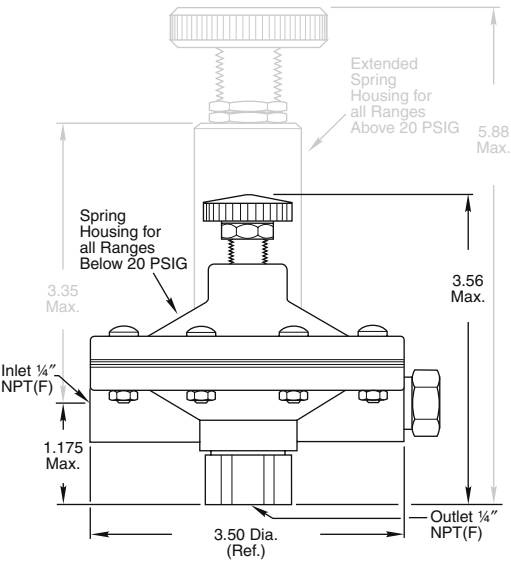
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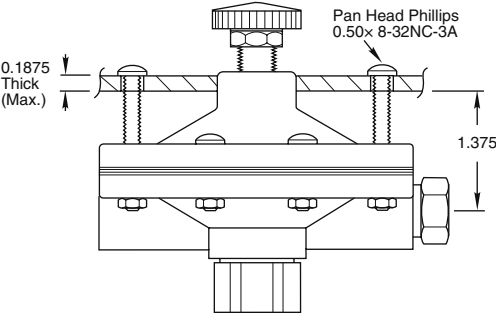
back pressure regulators

BP-3 Series

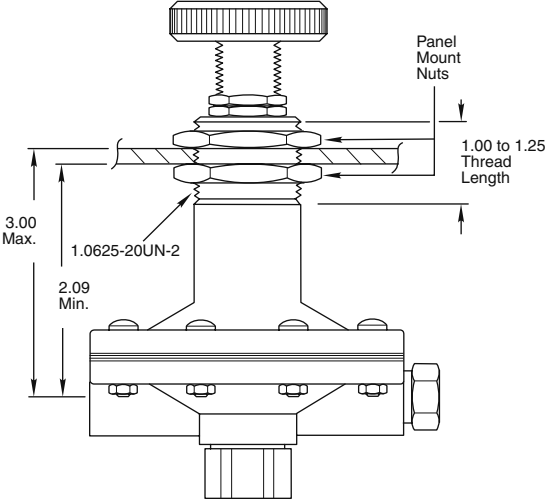
Dimensions



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

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Kel-F® is a registered trademark of 3M Company.
Teflon® is a registered trademark of the DuPont Company.
Delrin® is a registered trademark of DuPont.
Monel® is a registered trademark of Special Metals Corporation.

BP-3 Series*

Adjustable Back Pressure Regulators



The BP-3 Series is designed for either liquid or gas service in instrumentation systems. Similar in design to pressure reducing control regulators which regulate outlet pressures, back pressure regulators control the inlet pressure. The many features of this regulator, particularly its precise throttling action, make it ideal for this type of application. In low flow or closed systems, overpressures often are released by pressure relief valves. This type of relief is on-off with no throttling control. In contrast to relief valves, the back pressure control regulator with its throttling action substantially improves system pressure regulation.

* Replaces the BPR7A and BPR8A Series.

Applications

- Analytical instrumentation
- Pilot plants
- Specialty gas systems
- Compressors
- Pump bypass
- Process vessel protection

Features & Specifications

- Only 316L stainless steel and Teflon® in flow stream
- 316L stainless steel construction
- Operating temperatures of -40° F to +500° F (-40° C to +260° C)
- Bubble-tight shutoff
- Gas or liquid service
- Adjustable pressure control ranges of 0-6 psig, 0-10 psig, 0-25 psig, 0-50 psig, 0-100 psig, 0-250 psig, 0-500 psig, 0-750 psig, and 0-1,000 psig
- Cv flow coefficient is 0.2

Options

- Wetted materials of construction: brass, Monel®, Hastelloy®, titanium
- Extra ports
- Panel mount (requires a 1 3/8" mounting hole)
- High purity connections (tube stubs, metal face seals, etc.)
- Pressure gauges
- Optional Cv's: 0.03, 0.05, 0.06, 0.12, 0.24, 0.3, 0.095, 0.025, 0.04, 0.005, and 0.01

Maximum Temperature & Control Pressures

Seat Material	Maximum Temperature	@	Maximum Control Range
Viton®	250° F (121° C)	@	250 psig (1.72 MPa)
Kalrez®	300° F (148° C)	@	250 psig (1.72 MPa)
High-density Teflon®	200° F (93° C)	@	500 psig (3.44 MPa)
Polyimide	500° F (260° C)	@	1,000 psig (6.89 MPa)
PEEK™	500° F (260° C)	@	1,000 psig (6.89 MPa)

Note: Temperatures in excess of 175° F (80° C) require the use of a metal knob or the tamper-proof option.

Circle Seal Controls

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back pressure regulators

How to Order

BP3 - 1 A 1 1 I 5 G 1 1 1 C

BODY MATERIALS

- 1 316L stainless steel
- 2 Brass
- 4 Monel®
- 5 Hastelloy® B
- 6 Hastelloy® C
- 7 Titanium

PORT CONFIGURATION

- A Standard (one inlet & one outlet port)
- For more port configurations, see page 13.

PROCESS PORT TYPES

- 1 ¼" FNPT (¼" FNPT gauge ports) (standard)
- 2 ¼" tube (¼" tube gauge ports)
- 3 ¼" sch 80 pipe (¼" FNPT gauge ports)
- 4 ¾" FNPT (¼" FNPT gauge ports)
- 6 ½" tube (¼" tube gauge ports)
- 0 ⅛" FNPT (⅛" FNPT gauge ports)
- A ¼" ISO 7-Rc taper internal (¼" FNPT gauge ports)
- B ¼" internal VCR (¼" tube gauge ports)
- K ¼" sch 40 pipe (¼" FNPT gauge ports)

SURFACE FINISH/DIAPHRAGM CAVITY

- 1 < 25 Ra

ACTUATOR MATERIALS

- B CF Teflon®
- C Polyimide (metal knob is standard)
- D Viton®
- I High-density Teflon®
- K Kalrez®
- Q PEEK™

CAP ASSEMBLY

- 1 Standard
- 4 Panel mount
- 8 Tamper-proof
- F Tamper-proof, panel mount
- G Metal knob
- H ¼" FNPT dome-loaded
- L BP-6 top works, stainless steel
- O BP-6 top works, panel mount, stainless steel

DIAPHRAGM FACING/BACKING MATERIAL

- 1 Teflon®/stainless steel
- 6 Tefzel® ring/stainless steel
- 7 Viton®/stainless steel
- 8 Teflon®/Inconel®
- 9 Teflon®/Hastelloy® B
- 0 Teflon®/Hastelloy® C
- A Teflon®/tantalum

DIAPHRAGM TYPE

- 1 Standard diaphragm
- 4 Vacuum assist spring, standard diaphragm

CONTROL RANGE

- B 0-6 psig
- C 0-10 psig
- D 0-25 psig
- E 0-50 psig
- G 0-100 psig
- I 0-250 psig
- J 0-500 psig*
- W 0-750 psig*
- K 0-1,000 psig*†

FLOW COEFFICIENT (CV)

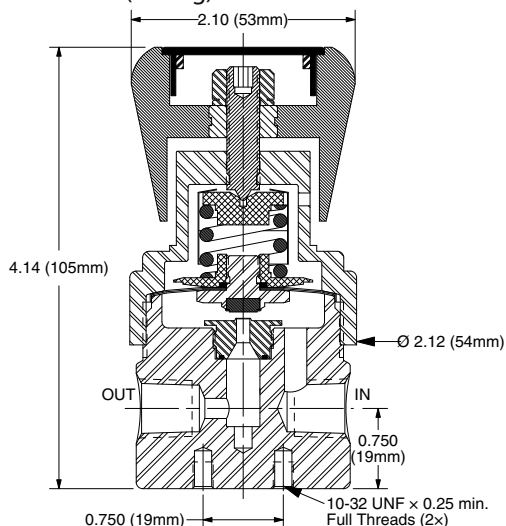
- 1 0.03
- 2 0.05
- 3 0.06
- 4 0.12
- 5 0.2 (standard)
- 6 0.24
- 7 0.30
- A 0.095
- C 0.025
- E 0.04
- I 0.005
- J 0.01

* Polyimide, PEEK™, or Kel-F® actuators are recommended for these pressure ranges.

† Must use BP-6 top works

Outline & Mounting Dimensions

Weight = 1.9 lbs (0.86kg)



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 Kalrez® and Viton® are registered trademarks of DuPont Dow Elastomers.
 PEEK™ is a trademark of Victrex PLC.
 Inconel® and Monel® are registered trademarks of Special Metals Corporation.
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BP-60 Series*

High Pressure Back Pressure Regulator



The BP-60 Series is the counterpart of the PR-50 pressure reducing series for systems that are higher in pressure and low to moderate flows. This regulator has a diaphragm for maximum sensitivity in providing relief at high pressures. The Teflon® stainless seat assembly provides good shutoff in most applications. For economy purposes, the cap assembly and knob are of aluminum construction as in the PR-50 companion unit. Good sensitivity and a wide selection of control ranges make this regulator an excellent selection in many research and pilot plant facilities.

* Replaces the BPR9A Series.

Applications

- Pilot plants
- Analytical instrumentation
- Compressors
- Pump bypass
- Pressure vessel protection
- Hydrostatic testing

Features & Specifications

- Adjustable pressure control ranges of 0–500 psig, 0–1,000 psig and 0–2,000 psig
- 316L stainless steel or brass (alloy 360) body construction
- Designed for moderate flow applications with standard Cv flow coefficient of 0.04
- Diaphragm sensing with nylon, Teflon®, or stainless steel diaphragm
- Operating temperatures of –40° F to +350° F (–40° C to +176° C)
- Bubble-tight shutoff
- Inlet/outlet connections 1/4" FNPT

Options

- Option Cv's available: 0.025, 0.005, 0.01
- Panel mounting
- 3/8" FNPT, AND10050–4, SAE J514 or MS33649 connections
- Monel® and Hastelloy® C body construction

Maximum Temperature & Control Pressures

Nylon Diaphragm Backing

Seat Material	Maximum Temperature	@	Maximum Control Range
Tefzel®	175° F (80° C)	@	1,000 psig (6.89 MPa)
Teflon®	175° F (80° C)	@	1,000 psig (6.89 MPa)
Polyimide	175° F (80° C)	@	2,000 psig (13.79 MPa)
PEEK™	175° F (80° C)	@	2,000 psig (13.79 MPa)

Teflon® Diaphragm Backing

Seat Material	Maximum Temperature	@	Maximum Control Range
Tefzel®	175° F (80° C)	@	2,000 psig (13.79 MPa)
Teflon®	175° F (93° C)	@	2,000 psig (13.79 MPa)
Polyimide	350° F (176° C)	@	2,000 psig (13.79 MPa)
PEEK™	350° F (176° C)	@	2,000 psig (13.79 MPa)

Circle Seal Controls

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back pressure regulators

BP-3 Series

How to Order

BP60 – 1 A 1 1 I 5 G 1 1 1 C

BODY MATERIALS

- 1 316L stainless steel
- 2 Brass
- 4 Monel®
- 6 Hastelloy® C

PORT CONFIGURATION

- A Standard (one inlet & one outlet port)
- For more port configurations, see page 13.

PROCESS PORT TYPES

- 1 ¼" FNPT (¼" FNPT gauge ports) (standard)
- 2 ¼" tube (¼" tube gauge ports)
- 4 ⅜" FNPT (¼" FNPT gauge ports)
- 7 AND10050-4 (¼" FNPT gauge ports)
- 8 SAE J514 (¼" FNPT gauge ports)
- 9 MS 33649 (¼" FNPT gauge ports)

SURFACE FINISH/DIAPHRAGM CAVITY

- 1 < 25 Ra (standard)
- 5 < 25 Ra with 10-32 mounting holes

ACTUATOR MATERIALS

- A Tefzel®
- B CF Teflon®
- C Polyimide
- I Teflon®
- Q PEEK™

CAP ASSEMBLY

- 1 Standard, aluminum
- 4 Panel mount, aluminum
- 5 Captured vent, aluminum

DIAPHRAGM FACING/BACKING MATERIAL

Facing	O-rings	Actuator
<i>Nylon backing</i>		
1 SS	Viton®	SS
2 —	Teflon®	SS
7 Inconel®	Viton®	Monel®
8 Inconel®	Teflon®	Monel®
0 Hastelloy® C	Teflon®	Hastelloy® C
A Hastelloy® C	Viton®	Hastelloy® C
<i>Teflon® backing</i>		
Q SS	Teflon®	SS
S SS	Teflon®/Kalrez®	SS (max. 450° F)
T SS	Kalrez®	SS (max. 570° F)
V Inconel®	Teflon®	Monel®
W Hastelloy® C	Teflon®	Hastelloy® C

DIAPHRAGM TYPE

- 1 Standard

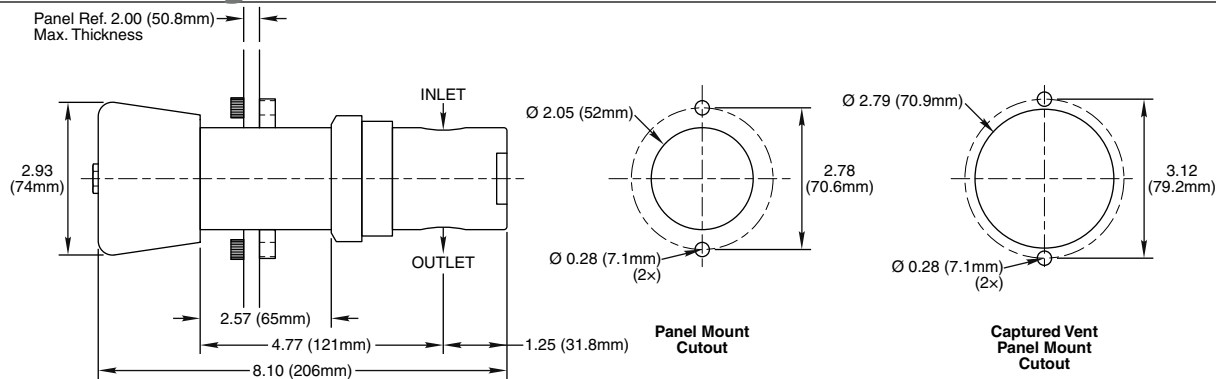
CONTROL RANGE

- J 0–500 psig
- K 0–1,000 psig
- L 0–2,000 psig

FLOW COEFFICIENT (CV)

- C 0.025
- E 0.04 (standard)
- I 0.005
- J 0.01
- G 0.09

Outline & Mounting Dimensions



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 Kalrez® and Viton® are registered trademarks of DuPont Dow Elastomers.
 PEEK™ is a trademark of Victrex PLC.
 Inconel® and Monel® are registered trademarks of Special Metals Corporation.
 Hastelloy® is a registered trademark of Haynes International, Inc.

BPR30 Series

*Corrosion Resistant Back Pressure Regulator
160 to 2,500 psig*



Features

- Positive shutoff at zero flow
- Compatible with corrosive or non-corrosive media
- Full range capability
- Unique design prevents clogging
- Tee handle for fast & precise control

Applications

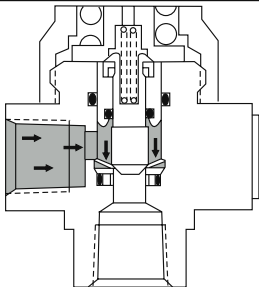
- Compressors
- Pump bypass
- Hydrostatic testing
- Water descaling systems
- Pressure vessel protection
- Reverse osmosis systems

Technical Data

Body Construction Materials	Brass or 316 stainless steel
Seal Materials	Ethylene propylene, Neoprene, Teflon® or Viton®
Seat Material	Kel-F®
Trim Material	Stainless steel exposed to line fluids
Port Sizes	¼" or ½" NPT female
Weight	2.75 lbs
Pressure Ratings	160 to 2,500 psig (11 to 172 BAR)
Temperature Range	-65° F to +250° F (-54° C to +121° C)
Flow Capacity	Cv = 0.25

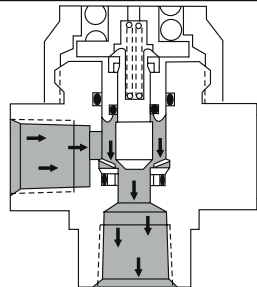
Note: Proper filtration is recommended to prevent damage to sealing surfaces.

How it Works



Closed

With the unit spring load adjusted to the desired regulated "set" pressure, a dead-tight seal is effected against the applied upstream pressure by the small seating spring contained within the poppet and spring retainer.



Regulating

When the upstream process pressure (acting on the regulating piston) increases, an opposing force is generated which, through the regulating piston, 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 poppet 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 spring-loaded poppet again creates a tight seal against the sharp edge of the valve seat.

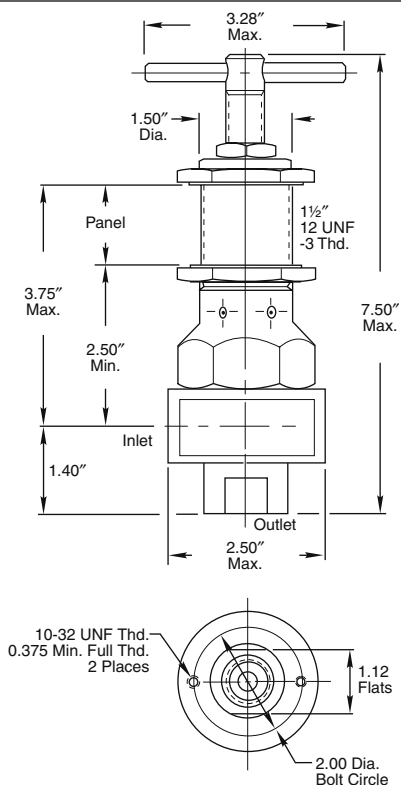
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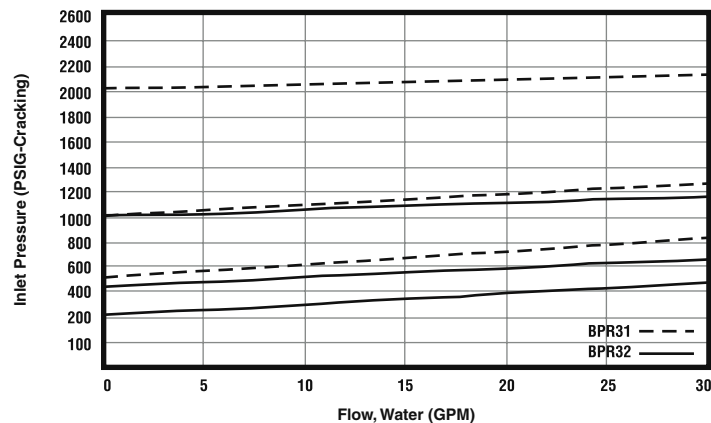
back pressure regulators

BP-3 Series

Dimensions & Flow Curves



BPR30 Flow Chart



How to Order

K/ BPR32 B 2 1 2

REPAIR KIT ————

BASIC MODEL NUMBER ————

BPR32 160 to 1,000 psig (11 to 69 BAR)

BPR31 200 to 2,500 psig (14 to 172 BAR)

BODY MATERIALS ————

B Brass

U 316 stainless steel

INLET & OUTLET PORTS ————

1 1/4" NPT female

2 1/2" NPT female

CLEANING LEVELS*

1 General oxygen service

2 General pneumatic service

3 Specify (define on sales order)

SEAL MATERIAL

1 Neoprene

3 Viton®

4 Ethylene propylene

5 Teflon® (Viton® static seal is used under the seat with Teflon® piston seals)

These units are not intended for applications where the exhaust connection will see buildup of downstream pressure. If this regulator is to be used in oxygen service, Vespel® SP-21 seat and Viton® seal are used and specify "General Oxygen Service" when ordering. Temperature range: -20° F to +250° F.

Viton® static seal is used under the seat with Teflon® piston seals.

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

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Teflon® is a registered trademark of the DuPont Company.
Viton® is a registered trademark of DuPont Dow Elastomers.
Kel-F® is a registered trademark of 3M Company.

BP-66 Series*

High Pressure Back Pressure Regulator (10,000 psig)



The BP-66 Series is the counterpart of the PR-57 pressure reducing series for systems that are higher in pressure and low to moderate flows. This regulator has piston sensing to provide relief at high pressures. The Polyimide/stainless steel assembly provides good shutoff in most applications. For economy purposes, the cap assembly and knob are of aluminum construction as in the PR-57 companion unit. Good sensitivity and a selection of control ranges make this regulator an excellent selection in many research and pilot plant facilities.

* Replaces the BPR1xA Series.

Features & Specifications

- 316L stainless steel construction
- Adjustable pressure control ranges of 0–2,000 psig, 0–4,000 psig, 0–6,000 psig, 0–7,500 psig, and 0–10,000 psig
- Spring-loaded piston sensor
- Gas and liquid service
- Cv flow coefficient: 0.04
- Operating temperature of –40° F to +350° F (–40° C to +176° C)
- 1/4" FNPT connections standard

Applications

- Pilot plants
- Analytical instrumentation
- Compressors
- Pump bypass
- Pressure vessel protection
- Hydrostatic testing

Options

- Monel® and titanium body construction
- Optional Cv's: 0.01 and 0.12
- Panel mounting
- AND10050–4, SAE J514, MS 33649, or 3/8" FNPT connections

Maximum Temperature & Control Pressures

Seat Material	Maximum Temperature	@	Maximum Control Range
Polyimide	350° F (176° C)	@	10,000 psig (68.9 MPa)
PEEK™	350° F (176° C)	@	10,000 psig (68.9 MPa)

Circle Seal Controls

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back pressure regulators

BP-3 Series

How to Order

BP66 – 1 A 1 1 C E L 1 5 1 C

BODY MATERIALS

- 1 316L stainless steel
- 4 Monel®
- 7 Titanium

PORT CONFIGURATION

A Standard (one inlet & one outlet port)
For more port configurations, see page 13.

PROCESS PORT TYPES

- 1 ¼" FNPT (¼" FNPT gauge ports)
- 2 ¼" tube (¼" tube gauge ports)
- 4 ⅜" FNPT (¼" FNPT gauge ports)
- 6 ½" tube (¼" tube gauge ports)
- 7 AND10050–4 (¼" FNPT gauge ports)
- 8 SAE J514 (¼" FNPT gauge ports)
- 9 MS 33649 (¼" FNPT gauge ports)

SURFACE FINISH/DIAPHRAGM CAVITY

- 1 < 25 Ra (standard)
- 5 < 25 Ra with 10-32 mounting holes

ACTUATOR MATERIALS

- C Polyimide
- Q PEEK™

CAP ASSEMBLY

- 1 Standard, aluminum
- 4 Panel mount, aluminum
- 5 Captured vent, aluminum
- 6 Captured vent, panel mount, aluminum
- 7 Captured vent, stainless steel
- F Stainless steel

PISTON MATERIAL

- 5 Stainless steel
- B Monel®
- S Titanium

PISTON TYPE

- 1 Standard

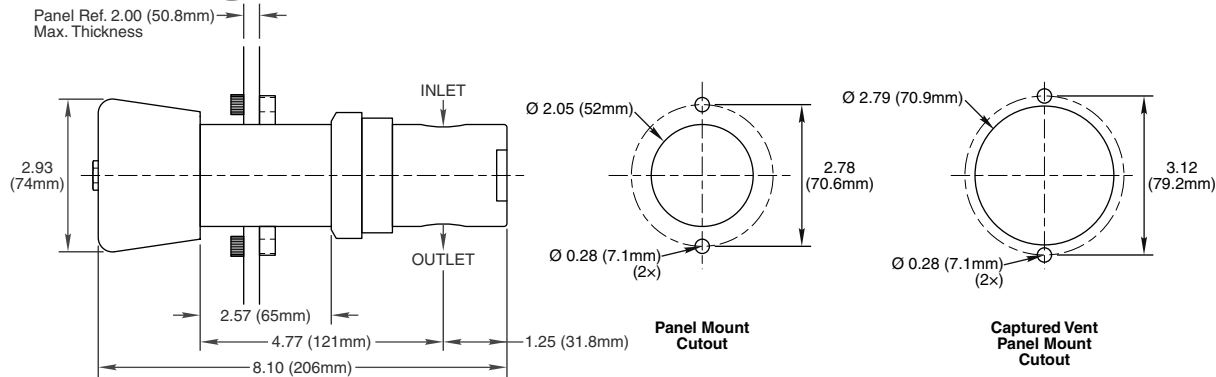
CONTROL RANGE

- L 0–2,000 psig
- N 0–4,000 psig
- O 0–6,000 psig
- P 0–7,500 psig
- Q 0–10,000 psig

FLOW COEFFICIENT (CV)

- 4 0.12
- E 0.04
- J 0.01

Outline & Mounting Dimensions



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PEEK™ is a trademark of Victrex PLC.
Monel® is a registered trademark of Special Metals Corporation.

BPR21 Series

High Flow Dome-loaded Back Pressure Regulator
 25–6,000 psig



Features

- Extremely reliable
- High flow capacity
- Remote control capability
- Large diaphragm provides accuracy & sensitivity
- Compatible with most liquids & gases

Applications

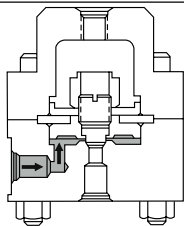
- System bypass valve
- Pressure vessel protection
- Chemical/petroleum plants
- Industrial controls
- Pumps or compressors
- Heat exchangers

Technical Data

Body Construction Materials	Brass or 316 stainless steel
Seat Materials	Hastelloy® C, Kel-F®, KYNAR®, Nylatron®, Polyimide, stainless steel, or Vespel® SP-21
Port Sizes	¼" NPT female, ⅜" NPT female, AND10050–4 or AND10050–6
Pressure Ratings	Brass: 25 to 3,500 psig (1.7 to 241 BAR) Stainless steel: 25 to 6,000 psig (1.7 to 414 BAR)
Temperature Range	–65° F to +400° F (–54° C to +204° C)
Flow Capacity	Cv = 0.90 Orifice diameter = 0.23"

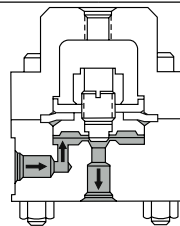
Note: Proper filtration is recommended to prevent damage to sealing surfaces.

How it Works



Closed

With a pressure regulator connected to the dome port and the dome pressure adjusted slightly above the desired regulated "set" pressure, a bubble-tight seal is effected against the applied upstream pressure.



Regulating

When the upstream process pressure (applied to the inlet side of the diaphragm) increases, an opposing force is generated which acts on the diaphragm and attached poppet against the "set" pressure load in the dome.

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 poppet at a faster rate than the upstream pressure can supply.

With decreasing upstream pressure, the pressure-loaded dome starts moving the poppet 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 generated forces from the pressure-loaded dome again create a tight seal between the poppet and the sharp edge of the valve seat.

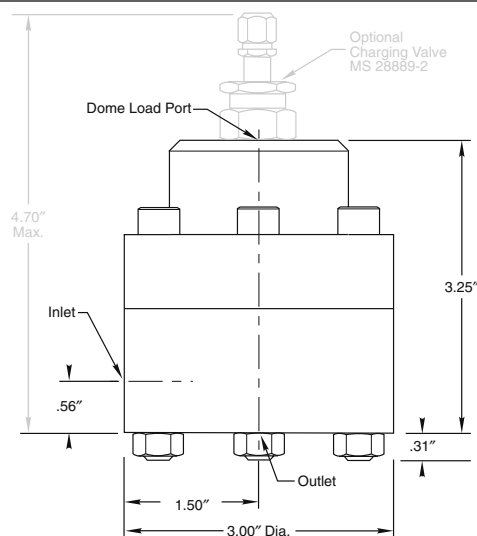
Circle Seal Controls

2301 Wardlow Circle • Corona, CA 92880
 Phone (951) 270-6200 • Fax (951) 270-6201
 www.circle-seal.com

back pressure regulators

BPR 21 Series

Dimensions



How to Order

K/ BPR21 B 2 2 1 3 2 C

REPAIR KIT

BODY MATERIALS

- B** Brass
- U** 316 stainless steel

INLET & OUTLET PORT

- 1** AND10050-4
- 2** 1/4" NPT female (standard)
- 3** AND10050-6
- 4** 3/8" NPT female

DOME-LOAD PORT

- 1** AND10050-4
- 2** 1/4" NPT female (standard)

SEAL & DIAPHRAGM MATERIAL

- 1** Neoprene (standard)
- 3** Viton®**
- 4** Buna N
- 5** Teflon®-coated Neoprene diaphragm, Teflon® o-ring

OPTIONS

- C** Charging valve

CLEANING LEVELS

- 1** General oxygen service*
- 2** General pneumatic service
- 3** Specify***
- 4** Precision pneumatic service

SEAT MATERIAL

- 1** Nylatron® (standard)
- 2** Kel-F® (limited to 3,600 psig)
- 3** KYNAR®
- 4** Stainless steel
- 5** Polyimide (Vespel® SP-21)**
- 7** Hastelloy® C

* If this regulator is to be used in oxygen service, specify "OXYGEN SERVICE" when ordering or furnish a copy of the special requirements.

** Standard for oxygen service (Vespel® seat and Viton® seal & diaphragm). Temperature range: -20°F to +250°F

*** List requirements or furnish the factory a copy of the requirements or specifications

Performance characteristics: Repeatability of cracking (set) pressure: $\pm 2\%$

Crack pressure to full flow: 110% of set pressure

Reseat pressure: within 2% of set pressure above 400 psig.

CAUTION: These units are not intended for applications where the exhaust connection will see a buildup of downstream pressure.

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.

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Kel-F® is a registered trademark of 3M Company.

KYNAR® is a registered trademark of ATOFINA Chemicals, Inc.

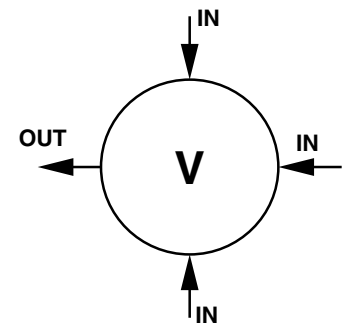
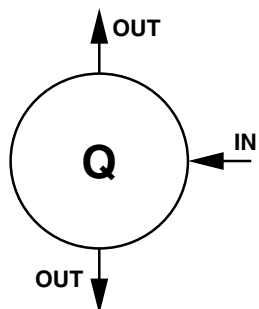
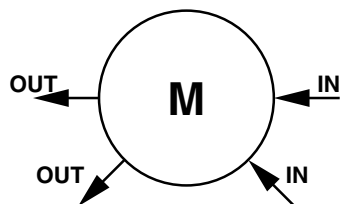
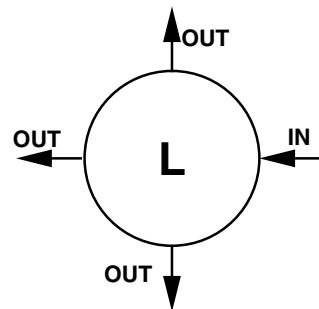
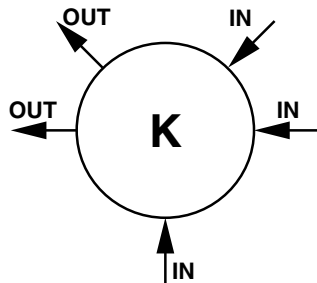
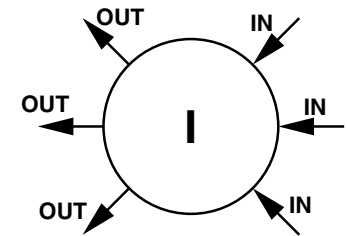
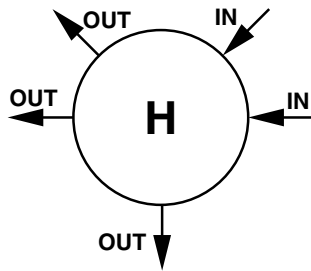
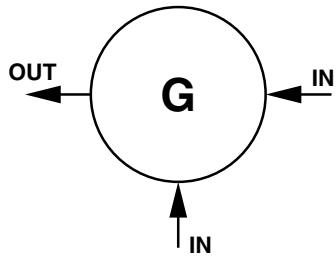
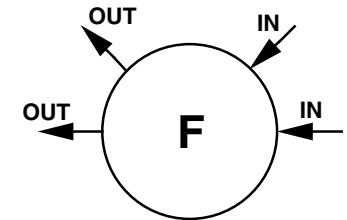
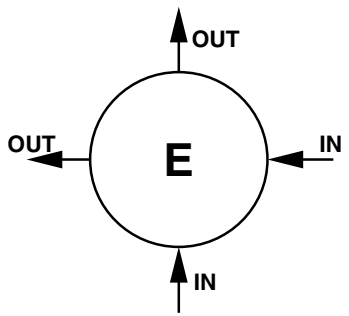
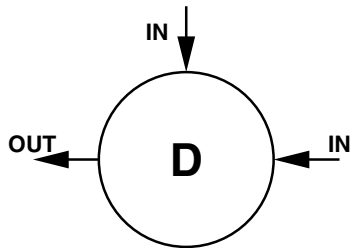
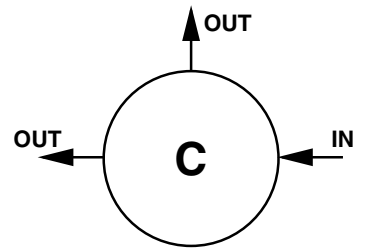
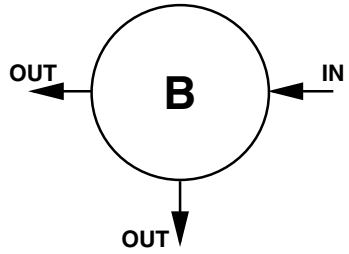
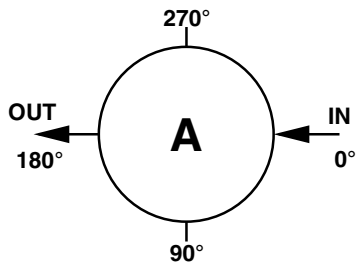
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Vespel® is a registered trademark of E.I. du Pont de Nemours and Company.

Viton® is a registered trademark of DuPont Dow Elastomers.

Teflon® is a registered trademark of the DuPont Company.

Porting Configurations for Back Pressure Regulators



Location Of Ports From Top View



405 Centura Court
PO Box 4866 (29305)
Spartanburg, SC 29303
Tel (864) 574-7966
Fax (864) 587-5608
www.circortechnologies.com

Circle Seal Controls, Inc.

2301 Wardlow Circle
Corona, CA 92880
Tel (951) 270-6200
Fax (951) 270-6201
www.circle-seal.com

GO Regulator

405 Centura Court
PO Box 4866 (29305)
Spartanburg, SC 29303
Tel (864) 574-7966
Fax (864) 587-5608
www.goreg.com

HOKE, Inc.

405 Centura Court
PO Box 4866
Spartanburg, SC 29303
Tel (864) 574-7966
Fax (864) 587-5608
www.hoke.com

CIRCOR Instrumentation, Ltd.

1-3 Bouverie Road
Harrow
Middlesex, HA1 4HB
UK
Tel +44 (0) 20 8423 0113
Fax +44 (0) 20 8864 7008
www.circor.co.uk

HOKE Controls

1901 Lynx Place
Ontario, CA 91761
Tel (909) 923-3770
Fax (909) 923-2550

Panels Plus

2054 Francis St.
Ontario, CA 91761
Tel (909) 923-3770
Fax (909) 923-2550
www.circor-panelsplus.com

CIRCOR Tech

405 Centura Court
PO Box 4866 (29305)
Spartanburg, SC 29303
Tel (864) 574-7966
Fax (864) 587-5608
www.circortech.com

HOKE GmbH

Weitzesweg 11
Postfach 15 41
D-61118 Bad Vilbel-Dortelweil
Germany
Tel +49-6101-82 56 0
Fax +49-6101-82 56 40
www.hoke.de

TOMCO

51 Zima Park
PO Box 4866 (29305)
Spartanburg, SC 29303
Tel (864) 574-7966
Fax (864) 587-5608
www.tomcoquickcouplers.com

CIRCOR Instrumentation Technologies

Central Europe

Leeuwenhoekweg 24
2661 CZ Bergschenhoek
The Netherlands
Tel +31-10-4206011
Fax +31-10-4566774
www.circortechnologies.com

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