

# Back Pressure Regulator

BPR, BPH Series



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# Contents

## General Purpose Back Pressure Regulator

BPR Series 01

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## General Purpose Back Pressure Regulator

BPH Series 06

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# General Purpose Back Pressure Regulator

## BPR Series

BPR series, stainless steel diaphragm pressure transmission, accurate regulation designed to control back pressure levels upstream of the regulator, applied to pure gases, corrosive and non-corrosive gases.

### Features

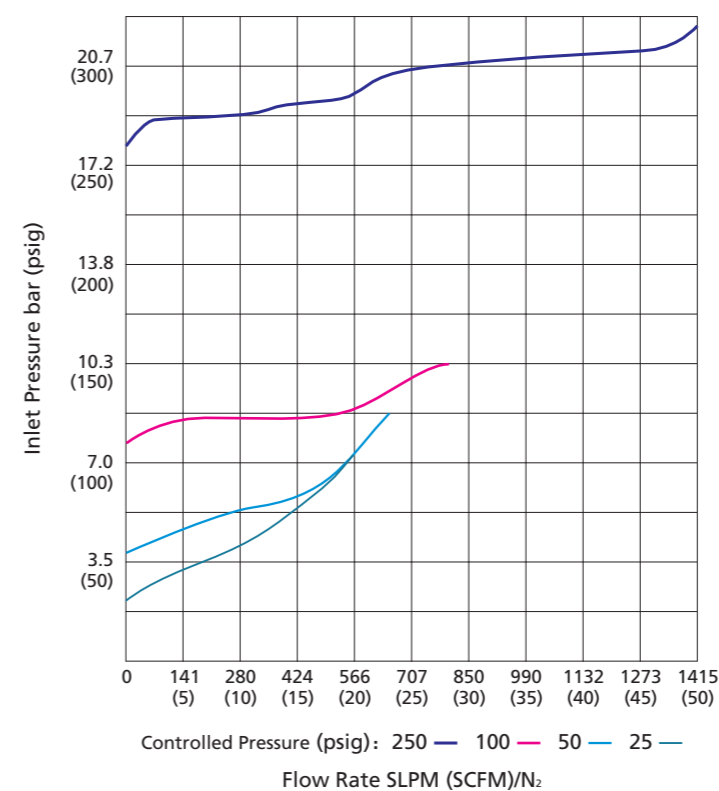
- ⦿ Low cost 316 stainless steel or brass body
- ⦿ Convoluted diaphragm provides accurate pressure adjustment
- ⦿ Metal-to-metal diaphragm seal
- ⦿ Panel mounting available

### Technical Data

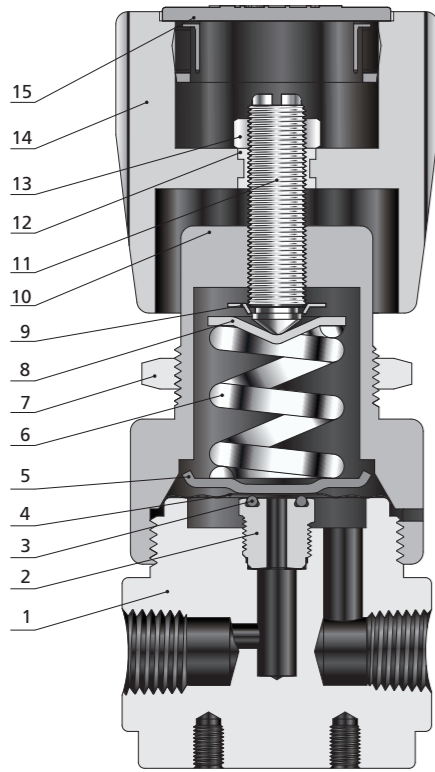
- ⦿ Maximum control pressure: 250 psig
- ⦿ Controlled pressure ranges: 0~25, 0~50, 0~100, 0~250 psig
- ⦿ Flow coefficient (Cv): 0.3
- ⦿ Working temperature: -15°F~+165°F (-26°C~+74°C)
- ⦿ Leak rate:
  - Internal: Bubble-tight
  - External:  $\leq 2 \times 10^{-8}$  atm · cc/sec He
- ⦿ Weight:  $\approx 1.98$  lbs (0.9 KG)
- ⦿ Ports: inlet, outlet, gauge ports — 1/4" female NPT



### Flow charts



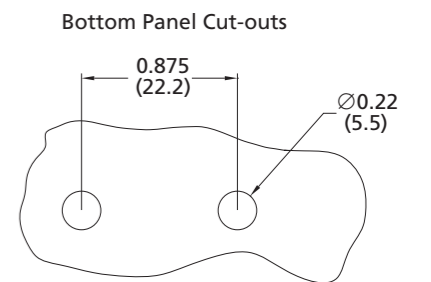
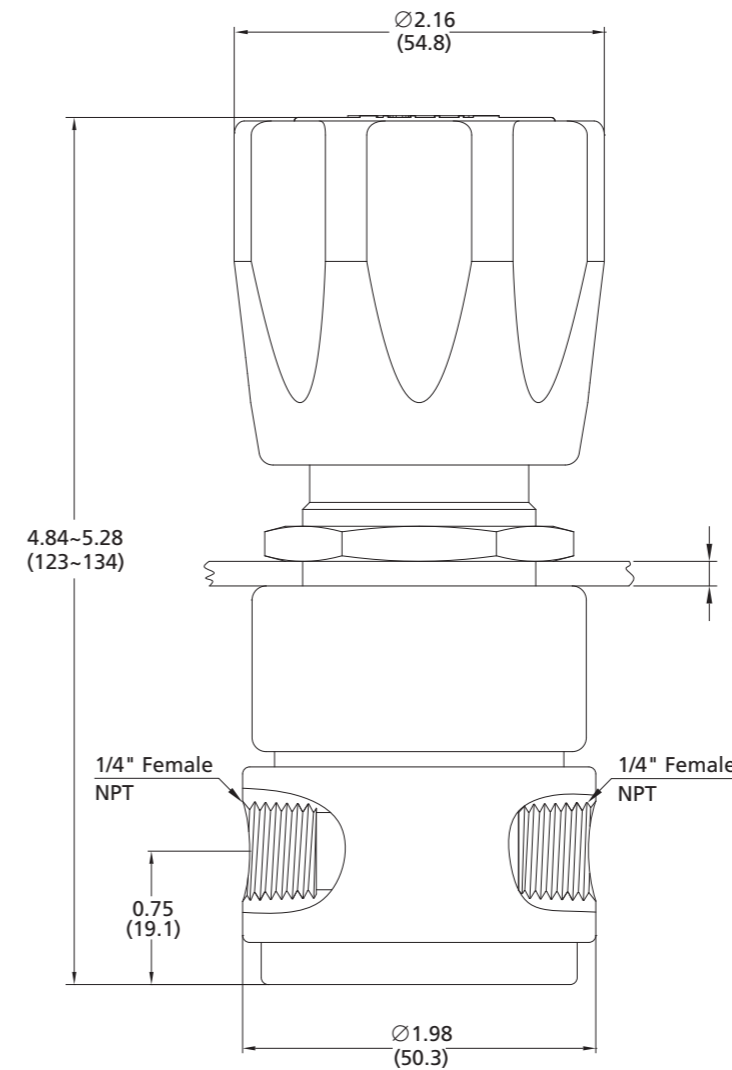
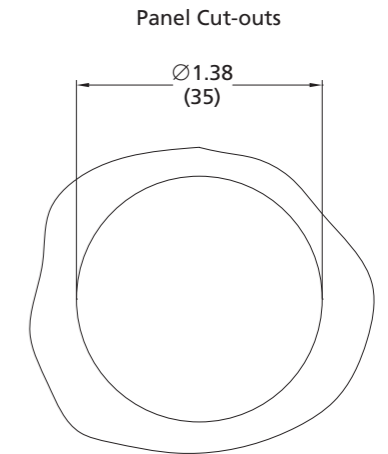
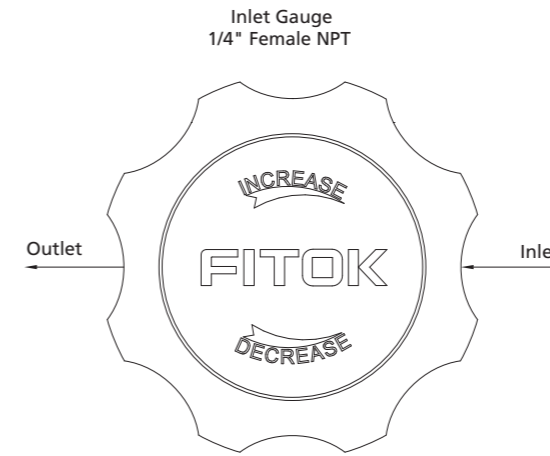
### Normal Materials of Construction



Component	Material Grade/ASTM Specification
1 Body	316L SS/A479
2 Seat retainer	PEEK
3 Seat	Viton®
4 Diaphragm	316L SS/A240
5 Stop plate	304 SS/A240
6 Range spring	Alloy
7 Mounting nut	304 SS/A276
8 Spring button	304 SS/A240
9 Lock ring	304 SS/A240
10 Bonnet	304 SS/A479
11 Stem	C36000/B16
12 Embedded nut	C36000/B16
13 Stem nut	C36000/B16
14 Knob handle	ABS
15 Hole plug	ABS

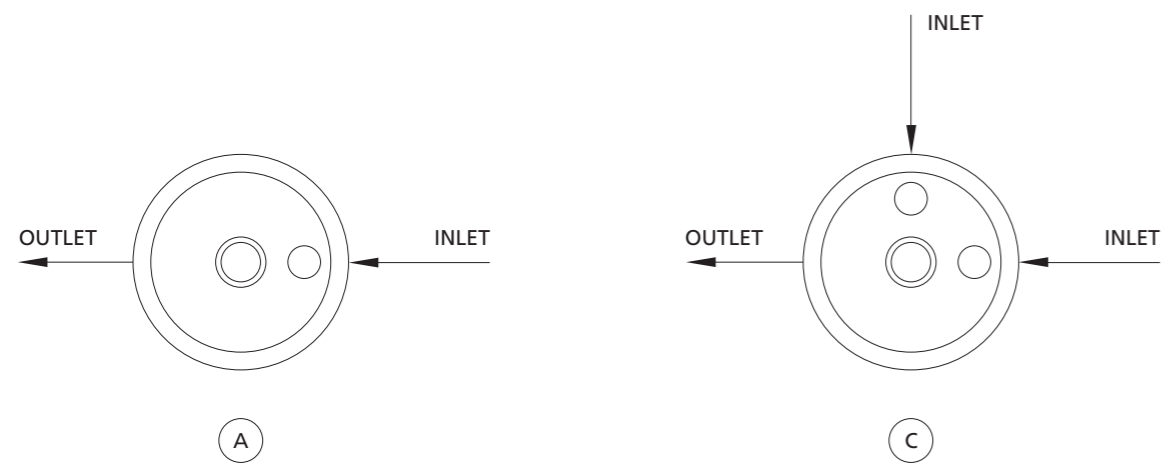
### Dimensions

Dimensions, in. (mm), are for reference only and are subject to change.



### Porting configurations

2 Types: A, C, all ports are 1/4" Female NPT.



Panel (Ref.)  
0.25 (6.3) Max. thickness  
Panel nut optional order  
separately

Screw 2-#10-32 UNF  
10-32×5/16" UNF  
bolts optional order  
separately

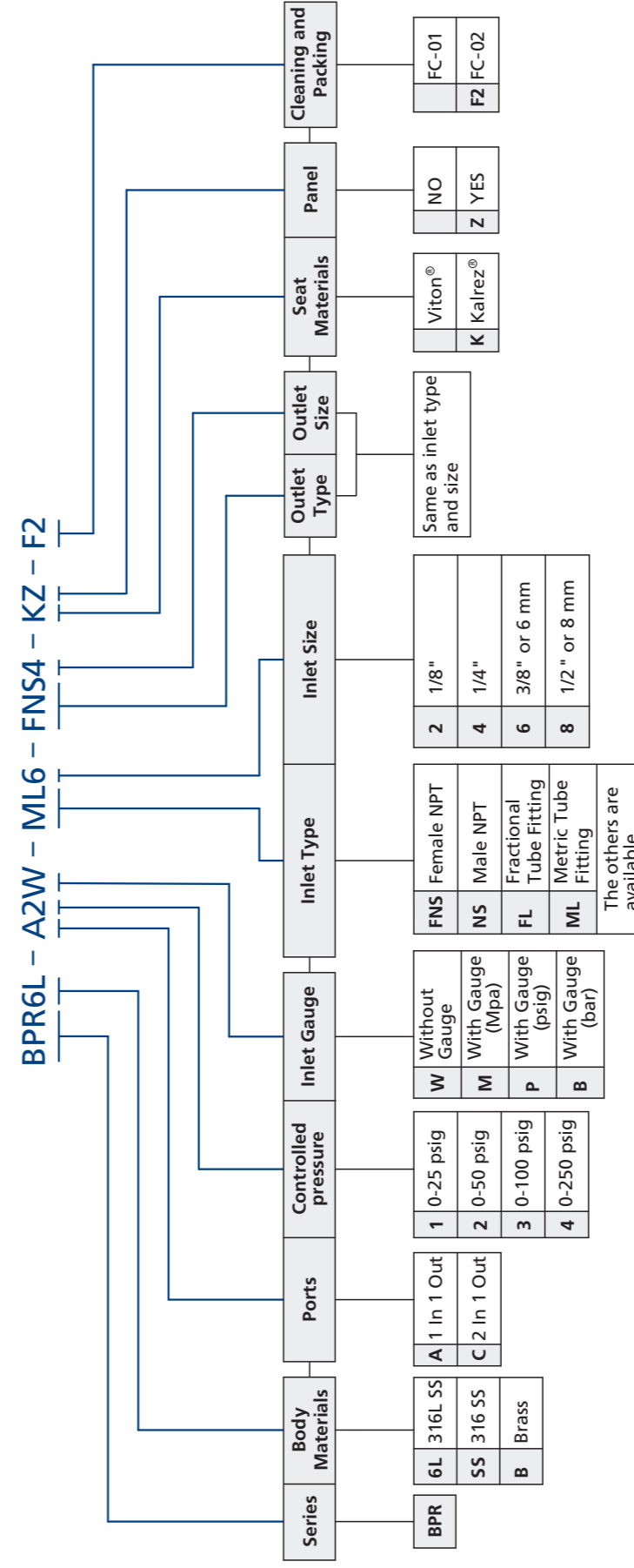
Ordering Number

Basic Ordering Number	Porting Configurations	Cv	Controlled pressure (psig)
BPR □ -C2P-FNS4-FL4-F2	C	0.3	0~50
BPR □ -C4M-FNS4-K			0~250

Basic Ordering Number	Porting Configurations	Cv	Controlled pressure (psig)
BPR □ -A1W-FL4-Z	A	0.3	0~25
BPR □ -C3W-FL4-ML6	C		0~100

Note: The others are available, please contact FITOK group or authorized agent for the others.

Part Number Description



Note:

- "Part Number Description" is used for composition rules of FITOK product model, not suitable for specific product part number selection, not random combinations;
- The ports from body are 1/4" Female NPT, the other port types and sizes could be chosen with adapters, for further detail, please contact FITOK group or authorized agent;
- Gauge configurations description for back pressure regulator:  
Pay attention to the ordering number cause the ports from body for gauges are one part of the total number.  
For further detail, please read the stylebook of gauge or contact FITOK group;
- Cleaning and Packing:  
FC-01: Normal industry standard cleaning and packaging.  
FC-02: Special cleaning and packaging, following ASTM G93 level C.

# General Purpose Back Pressure Regulator

## BPH Series

BPH series, stainless steel piston pressure transmission to control back pressure levels upstream of the regulator, applied to general gases.

### Features

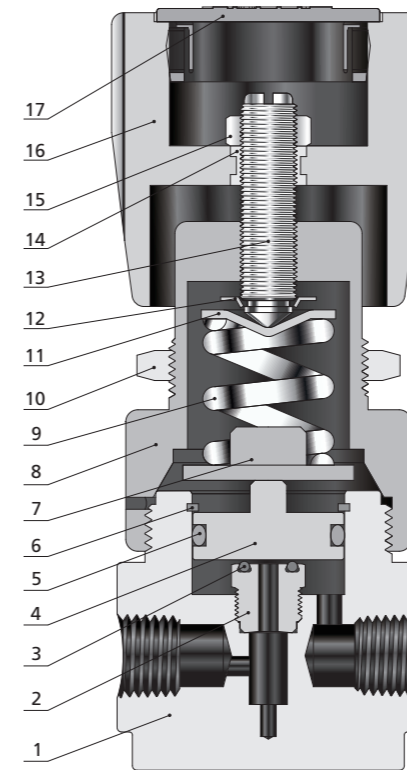
- ⦿ Low cost 316 stainless steel or brass body
- ⦿ Robust piston sensed design
- ⦿ Low hand knob torque
- ⦿ Panel mounting available

### Technical Data

- ⦿ Maximum control pressure: 300 psig
- ⦿ Controlled pressure ranges: 0~50, 0~100, 0~300 psig
- ⦿ Flow coefficient (Cv): 0.3
- ⦿ Working temperature: -15°F~+200°F (-26°C~+93°C)
- ⦿ Leak rate: Bubble-tight
- ⦿ Weight: ≈1.98 lbs (0.9 KG)
- ⦿ Ports: inlet, outlet, gauge ports — 1/4" female NPT

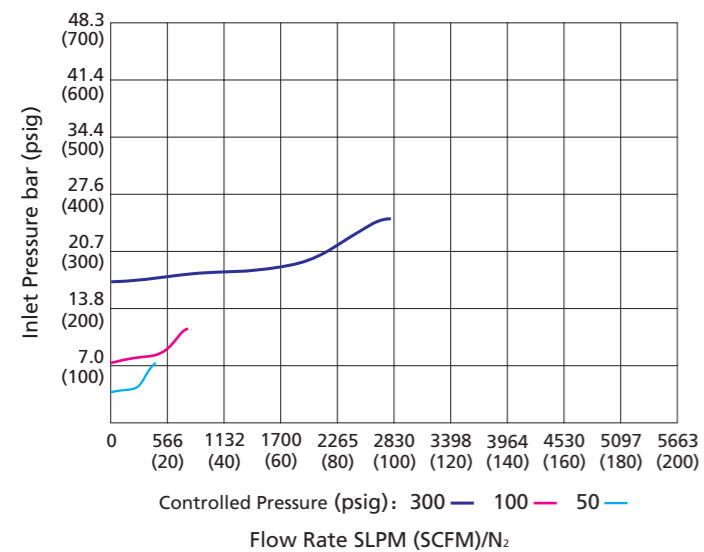


## Normal Materials of Construction



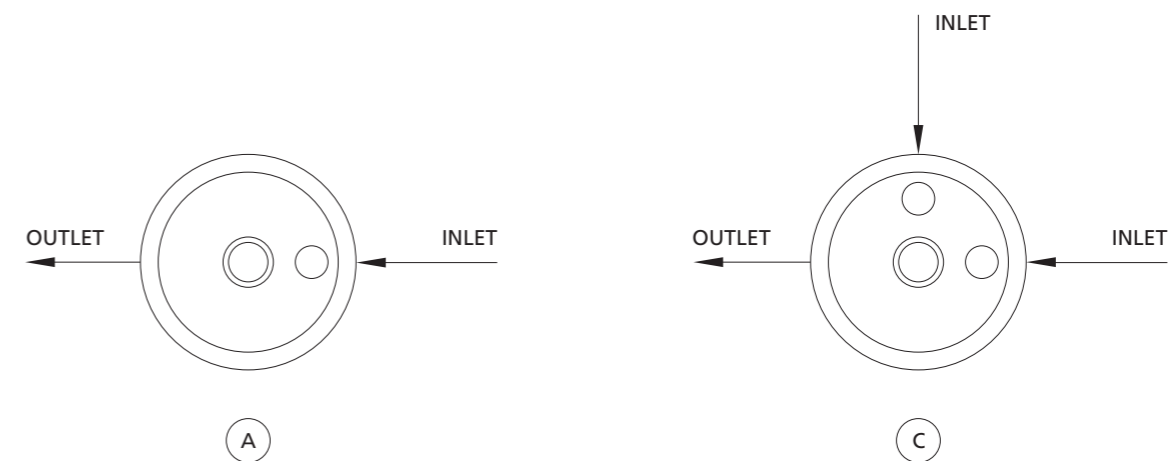
Component		Material Grade/ASTM Specification
1	Body	316 SS/A479
2	Seat retainer	PEEK
3	Seat	Viton®
4	Piston	316L SS/A276
5	Seal ring	Viton®
6	Stretch block	304 SS
7	Spring seat	Brass
8	Bonnet	304 SS/A479
9	Range spring	Alloy
10	Mounting nut	304 SS/A276
11	Spring button	304 SS/A240
12	Lock ring	304 SS/A240
13	Stem	C36000/B16
14	Embedded nut	C36000/B16
15	Stem nut	C36000/B16
16	Knob handle	ABS
17	Hole plug	ABS

### Flow charts



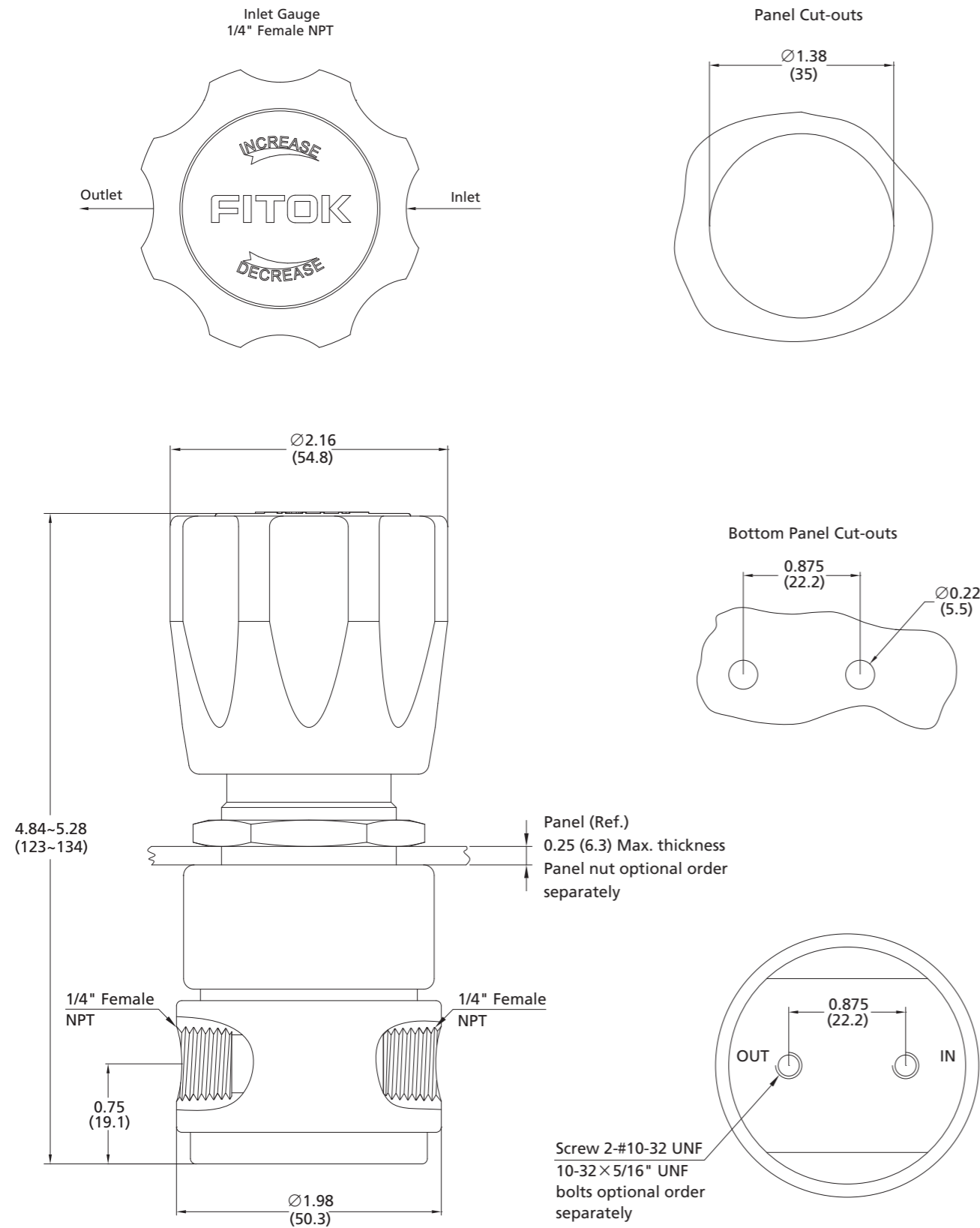
### Porting configurations

2 Types: A, C, all ports are 1/4" Female NPT.



### Dimensions

Dimensions, in. (mm), are for reference only and are subject to change.

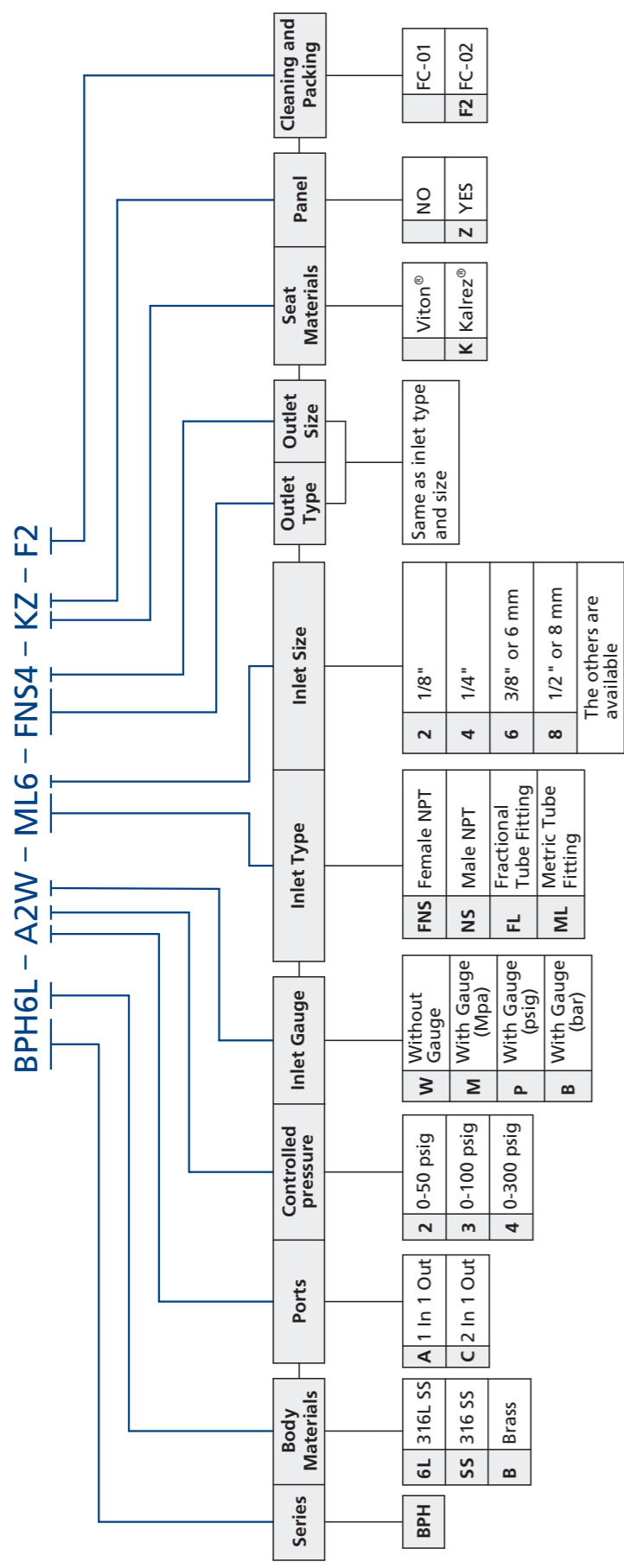


### Ordering Number

Basic Ordering Number	Porting Configurations	Cv	Controlled pressure (psig)
BPH □ -C2M-FNS4-ML6-F2	C	0.3	0~50
BPH □ -C3B-FNS4			0~100

Basic Ordering Number	Porting Configurations	Cv	Controlled pressure (psig)
BPH □ -A2W-FL4-KZ	A	0.3	0~50
BPH □ -C4W-FL4-FNS4	C		0~300

Note: The others are available, please contact FITOK group or authorized agent for the others.



**Note:**

1. "Part Number Description" is used for composition rules of FITOK product model, not suitable for specific product part number selection, not random combinations;
2. The ports from body are 1/4" Female NPT, the other port types and sizes could be chosen with adapters, for further detail, please contact FITOK group or authorized agent;
3. Gauge configurations description for back pressure regulator:  
Pay attention to the ordering number cause the ports from body for gauges are one part of the total number.  
For further detail, please read the stylebook of gauge or contact FITOK group;
4. Cleaning and Packing:  
FC-01: Normal industry standard cleaning and packaging.  
FC-02: Special cleaning and packaging, following ASTM G93 level C.

# Back Pressure Regulators

## BPR-1 Series Back Pressure Diaphragm Regulators

### Features

- ⦿ Metal-to-metal seal with convoluted diaphragm
- ⦿ Close pressure differential between crack and reset
- ⦿ Panel mounting available

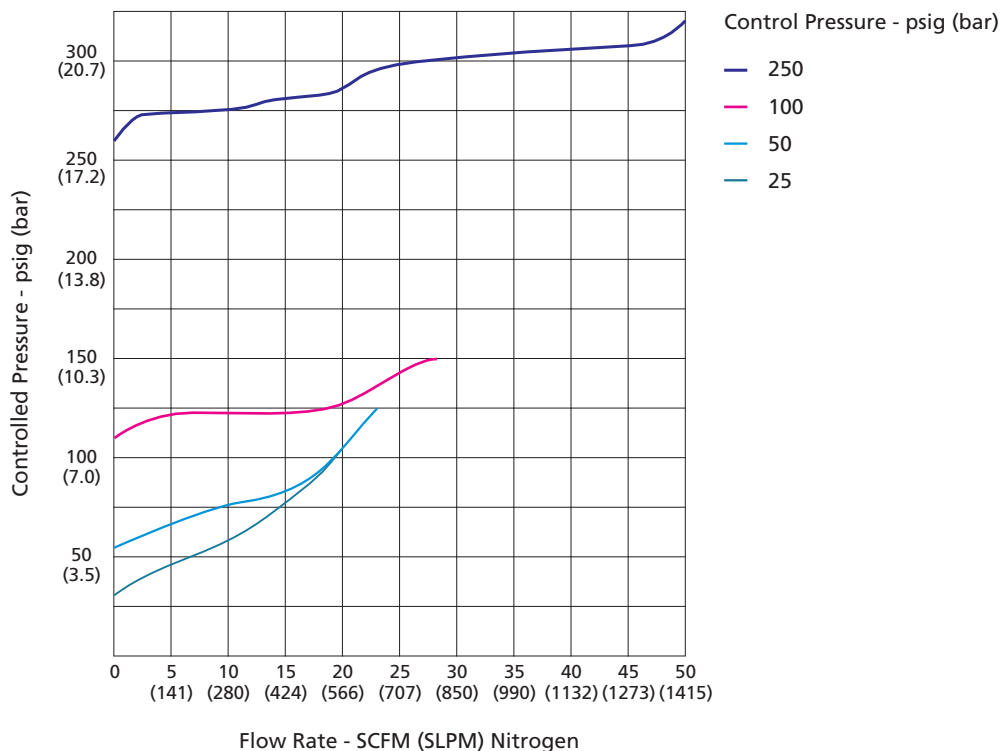
### Technical Data

- ⦿ Maximum control pressure: 250 psig
- ⦿ Pressure control range: 0~25, 0~50, 0~100 or 0~250 psig
- ⦿ Material of the main components:
  - Seat: PCTFE
  - Diaphragm: Hastelloy
- ⦿ Temperature: -15°F~+165°F (-26°C~+74°C)
- ⦿ Leak rates:
  - Internal: Bubble-tight
  - External:  $\leq 1 \times 10^{-9}$  mbar · l/s helium
- ⦿ Flow coefficient (Cv): 0.3
- ⦿ Weight:  $\approx 1.98$  lbs (0.9 kg)
- ⦿ Body ports: 1/4" female NPT for inlet, outlet and gauge



Model: BPR-16L-250-00-00

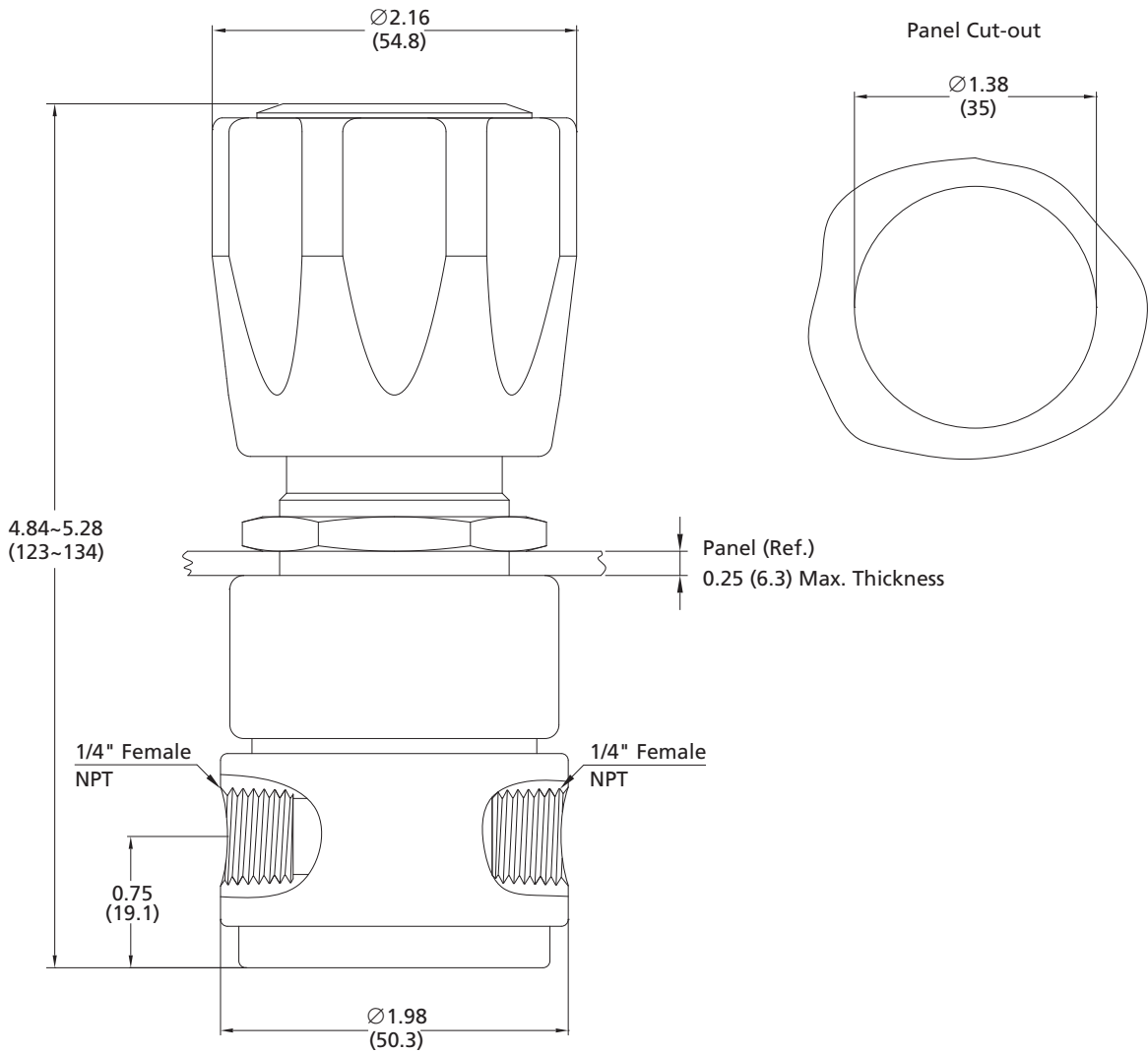
### Typical Flow Chart



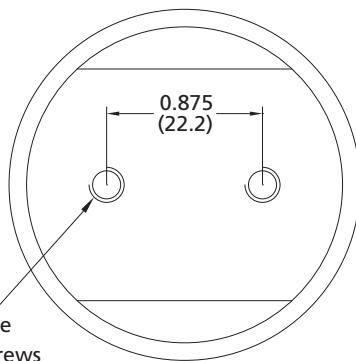


## Dimensions

Dimensions, in inches (millimeters), are for reference only.

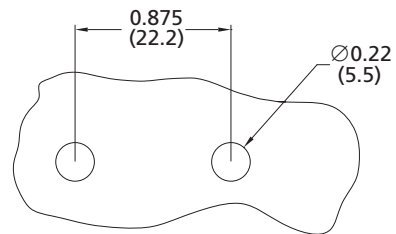


Bottom View

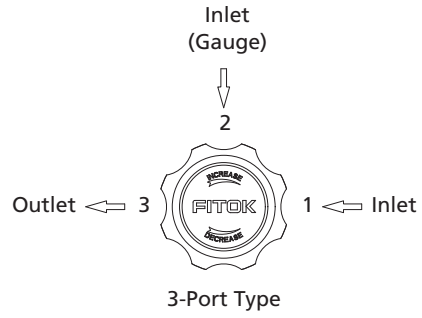
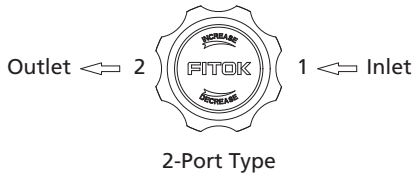


$2 \times M5 \times 0.8-6H$  thread  
The holes are compatible with 10-32 mounting screws

Bottom Panel Cut-out

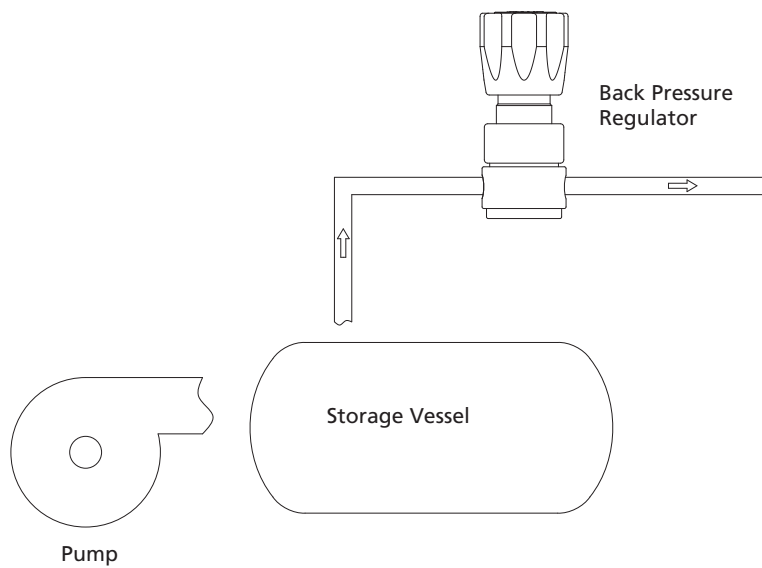


## Port Configurations



## Typical Application

When the system pressure is lower than the set pressure, the diaphragm obstructs the flow by the force of spring. When the system pressure is higher than the set pressure, the diaphragm compresses the inner spring to connect the flow so as to allow the fluid to pass through the back pressure regulator to keep the pressure of the Storage Vessel stable.



## Part Number Description

BPR – 16L – 100 – 10 – M – 11

Body Material		Control Pressure Range P		Connection 1		Connection 2		Connection 3	
6L	316L SS	25	0~25 psig	00	1/4" Female NPT	B	With Gauge (psi/bar)	Same as Connection 1	
SS	316 SS	50	0~50 psig	01	1/4" Male NPT	M	With Gauge (MPa)		
B	Brass (Nickel-plated)	100	0~100 psig	10	1/4" Tube Fitting	P	Plug	Other connections are available upon request	
		250	0~250 psig	11	3/8" Tube Fitting	00	1/4" Female NPT		
				20	6 mm Tube Fitting	01	1/4" Male NPT		
				21	8 mm Tube Fitting	10	1/4" Tube Fitting	Other connections are available upon request	
Other connections are available upon request						Other connections are available upon request			

Examples of part number:  
 a. 2-port type (1 in, 1 out): BPR-16L-25-00-00

# Back Pressure Regulators

## BPR-2 Series Back Pressure Piston Regulators

### Features

- ⦿ Durable piston-sensed design
- ⦿ Bubble-tight shutoff at all reseating pressure
- ⦿ Low operating torque
- ⦿ Panel mounting available
- ⦿ With special cleaning and packaging, applicable to oxygen-enriched environments

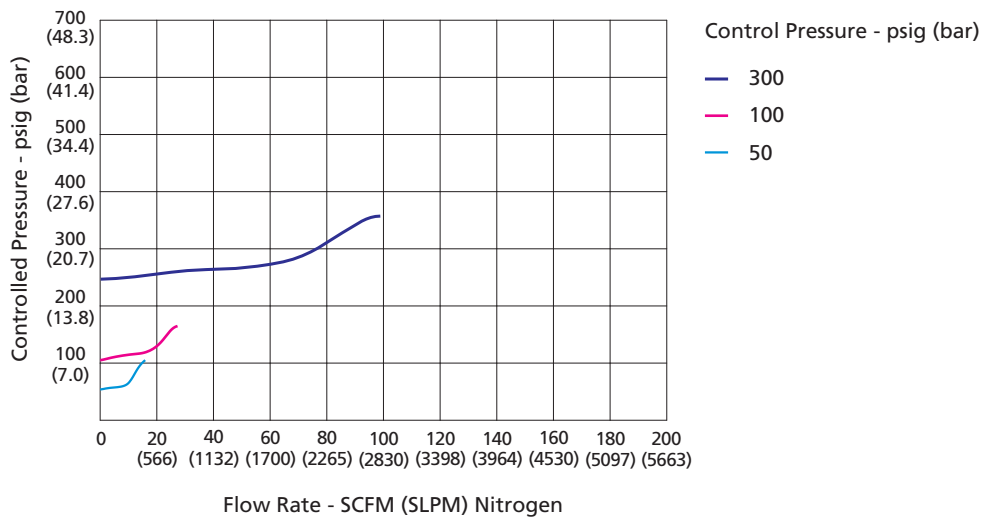
### Technical Data

- ⦿ Maximum control pressure: 1000 psig
- ⦿ Pressure control range: 50~300, 100~500 or 200~1000 psig
- ⦿ Material of the main components:
  - Piston: 316L
  - O-rings: Viton or Kalrez
- ⦿ Temperature: -15°F~+165°F (-26°C~+74°C)
- ⦿ Leak rates:
  - Internal: Bubble-tight
  - External: Bubble-tight
- ⦿ Flow coefficient (Cv): 0.3
- ⦿ Weight: ≈1.98 lbs (0.9 kg)
- ⦿ Body ports: 1/4" female NPT for inlet, outlet and gauge



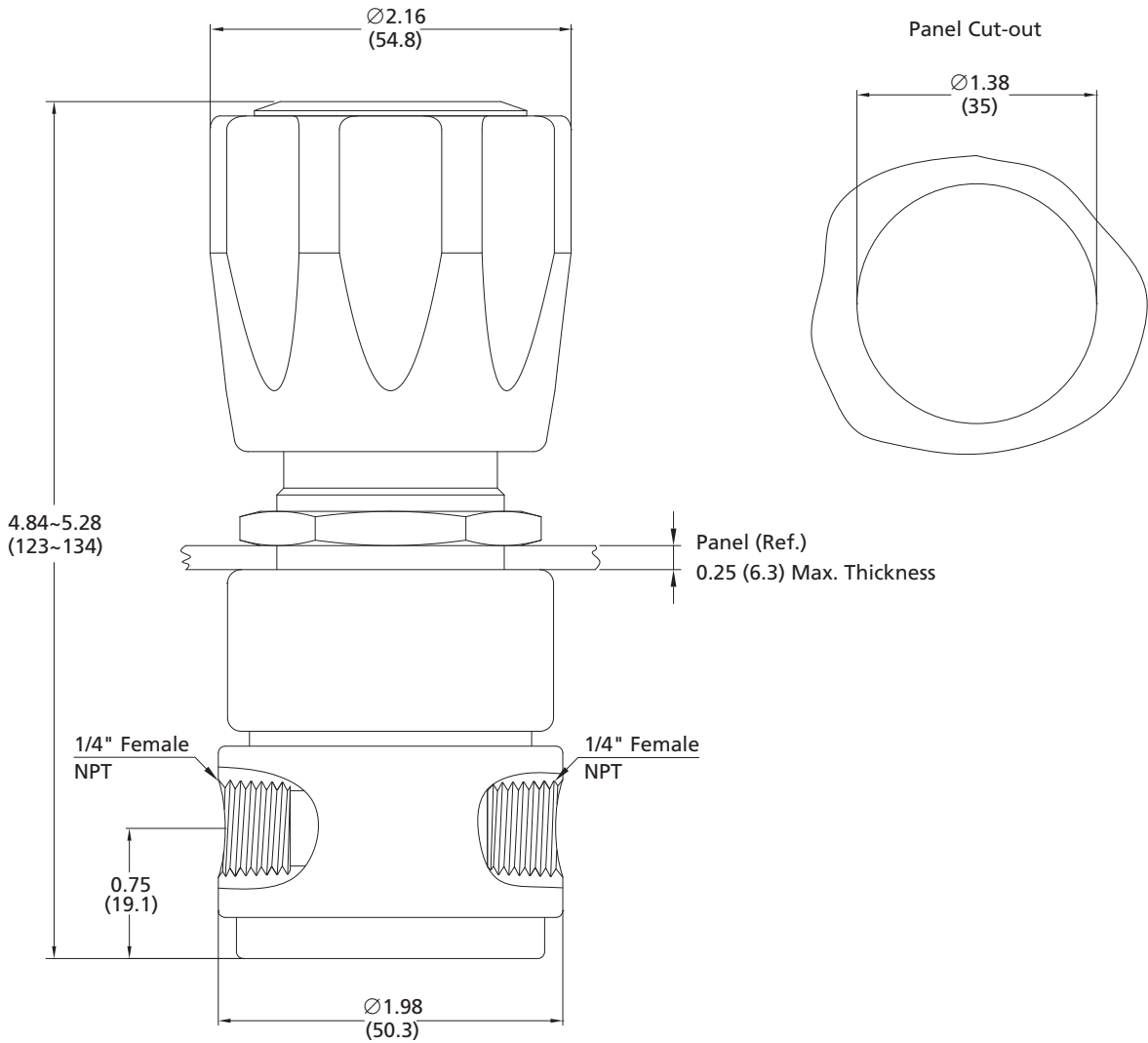
Model: BPR-26LZ-300-00-00

### Typical Flow Chart

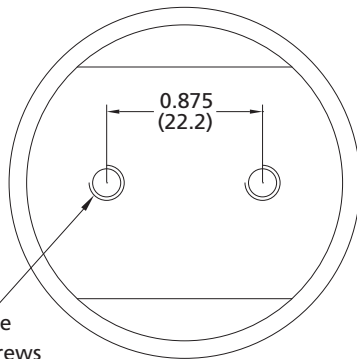


## Dimensions

Dimensions, in inches (millimeters), are for reference only.

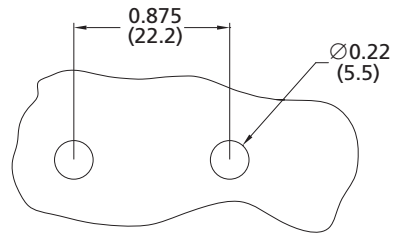


Bottom View

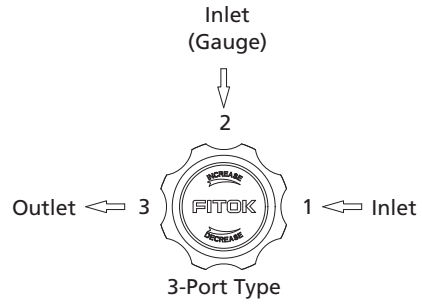


$2 \times M5 \times 0.8-6H$  thread  
The holes are compatible with 10-32 mounting screws

Bottom Panel Cut-out

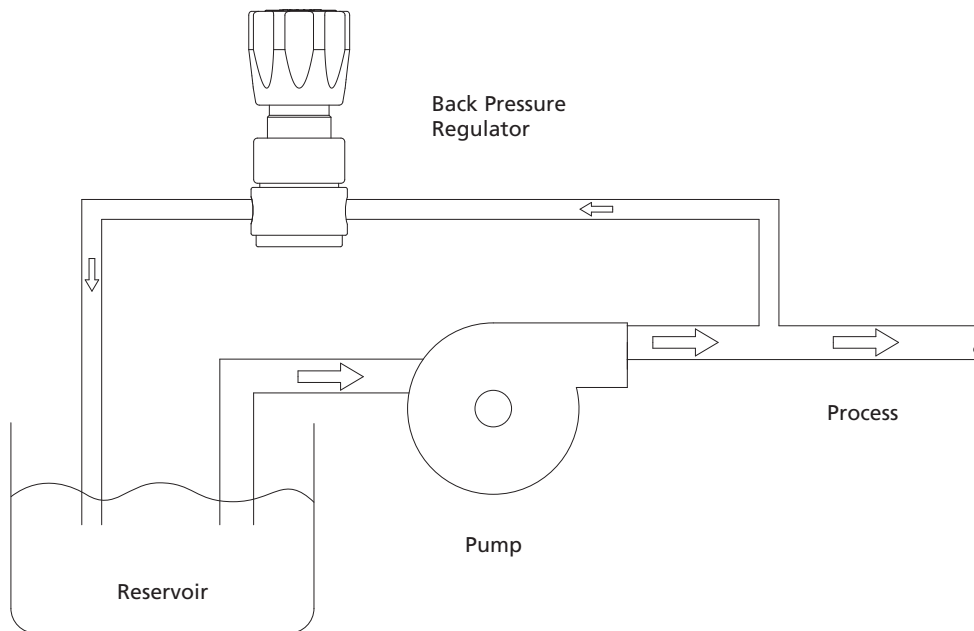


# Port Configurations



## Typical Application

BPR-2 Series Back Pressure Regulators maintain the required pipeline pressure to ensure the Pump to output fluid stably when system pressure fluctuates.



## Part Number Description

BPR – 26L Z – 300 – 10 – M – 11

Body Material		Control Pressure Range P		Connection 1		Connection 2		Connection 3	
6L	316L SS	300	50~300 psig	00	1/4" Female NPT	B	With Gauge (psi/bar)	Same as Connection 1	
SS	316 SS	500	100~500 psig	01	1/4" Male NPT	M	With Gauge (MPa)		
B	Brass (Nickel-plated)	1000	200~1000 psig	10	1/4" Tube Fitting	P	Plug		
O-ring Material				11	3/8" Tube Fitting	00	1/4" Female NPT		
	Viton			20	6 mm Tube Fitting	01	1/4" Male NPT		
Z	Kalrez			21	8 mm Tube Fitting	10	1/4" Tube Fitting		
				Other connections are available upon request		Other connections are available upon request			

Examples of part number:  
 a. 2-port type (1 in, 1 out): BPR-2SS-500-00-00

# Back Pressure Regulators

## BPR-3 Series Back Pressure Piston Regulators

### Features

- ⦿ Control of back-pressure up to 10000 psig for gas or liquid application
- ⦿ Safe and reliable piston sensing
- ⦿ 7 pressure control ranges
- ⦿ Panel mounting available
- ⦿ Special cleaning and packaging available for application in oxygen-enriched environments

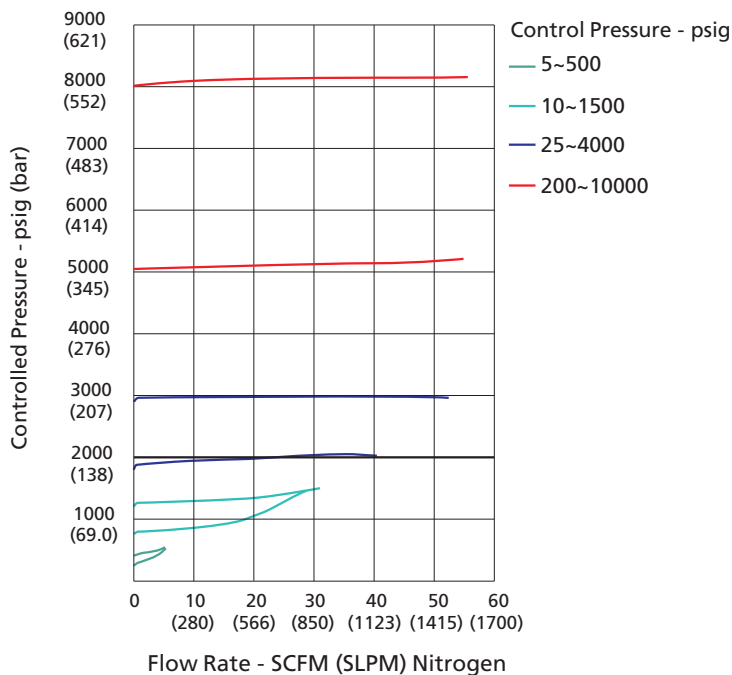
### Technical Data

- ⦿ Maximum control pressure:  
Stainless steel: 10000 psig  
Brass: 6000 psig
- ⦿ Pressure control ranges: 5~500, 5~800, 10~1500, 15~2500, 25~4000, 50~6000, 200~10000 psig
- ⦿ Material of the main components:  
Body: 316 SS or brass  
Seat: PEEK  
Piston: 316L  
O-rings: Viton or Kalrez
- ⦿ Temperature: -15°F~+165°F (-26°C~+74°C)
- ⦿ Leak rates:  
Internal: Bubble-tight  
External: Bubble-tight
- ⦿ Flow coefficient (Cv): 0.25
- ⦿ Weight: ≈5.7 lbs (2.6 Kg)
- ⦿ Body ports: 1/4" female NPT for inlet, outlet, and gauge



Model: BPR-355-40-00-00

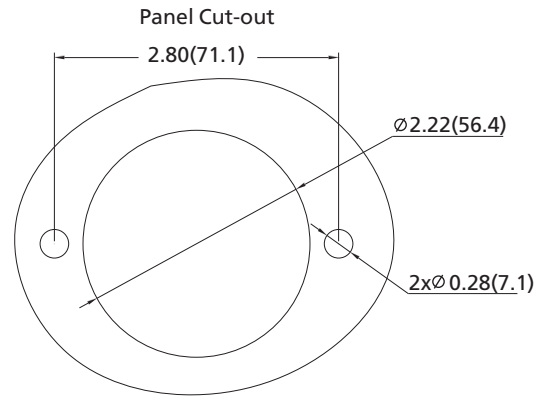
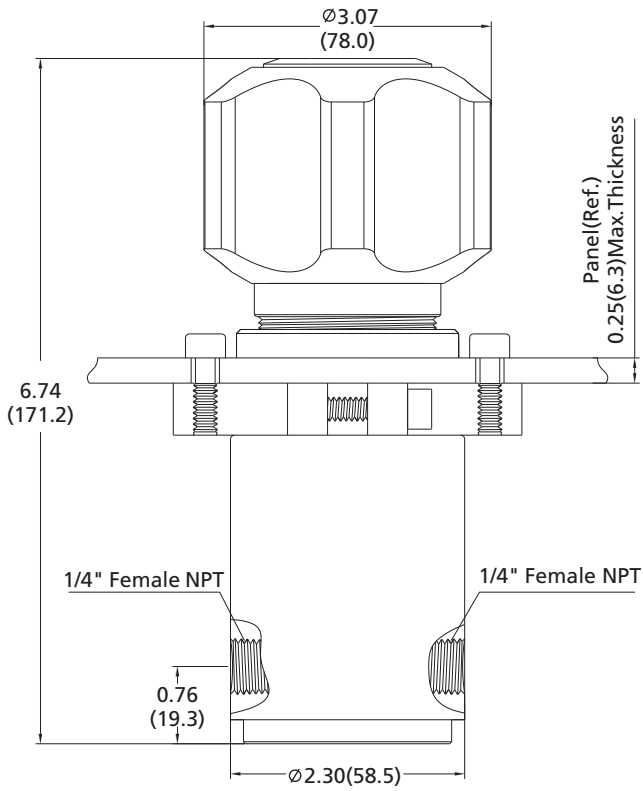
### Typical Flow Chart





## Dimensions

Dimensions, in inches (millimeters), are for reference only.



Bottom View

