

# Back Pressure Regulators

## General Diaphragm Back Pressure Regulators

### BDGC Series

#### Introduction

BDGC Series General Diaphragm Back Pressure Regulators feature a metal diaphragm design, ensuring excellent sensitivity and set point pressure stability. These regulators are ideal for handling various gas and low viscosity liquid media with small to medium flow.

#### Features

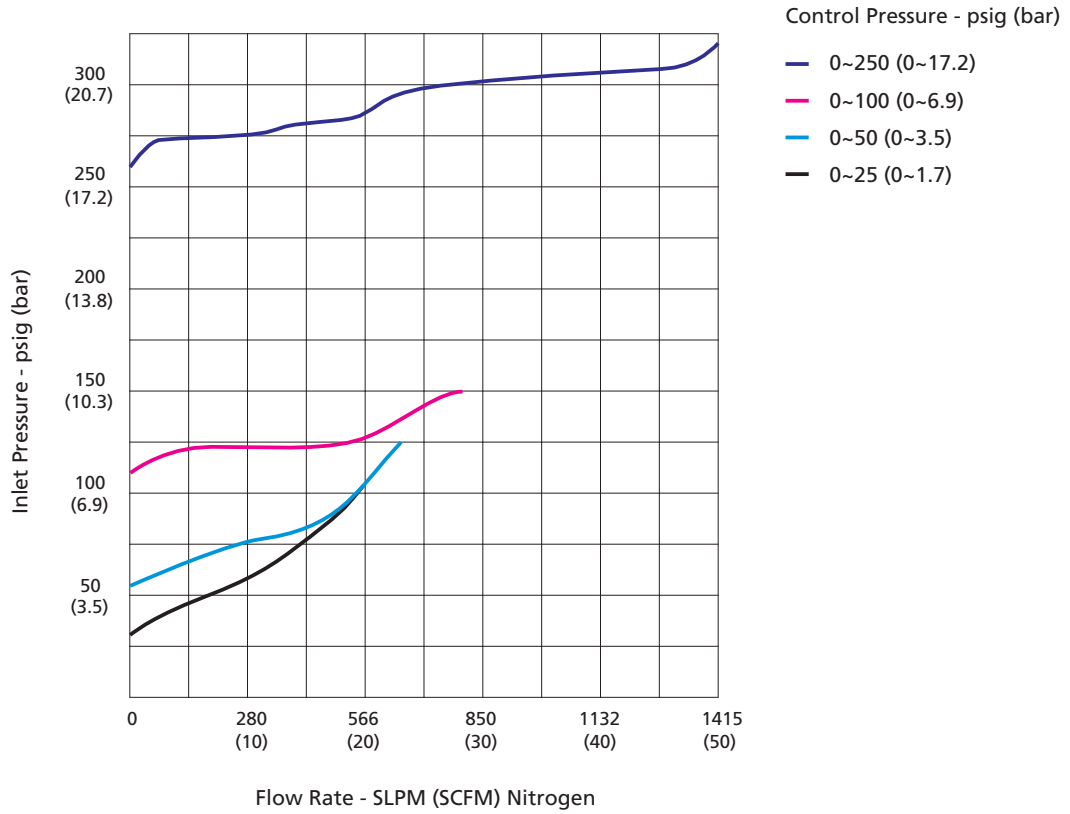
- ⦿ Lightweight, compact design
- ⦿ Metal-to-metal seal between valve body and diaphragm provides ensured sealing performance



#### Technical Data

Port Size	1/4", 3/8", 6 mm or 8 mm	
Max. Control Pressure	250 psig (17.2 bar)	
Pressure Control Range	0 ~ 25 psig (0 ~ 1.7 bar)	
	0 ~ 50 psig (0 ~ 3.4 bar)	
	0 ~ 100 psig (0 ~ 6.9 bar)	
	0 ~ 250 psig (0 ~ 17.2 bar)	
Flow Coefficient (Cv)	0.3	
Working Temperature	-40 ~ 165 °F (-40 ~ 74 °C)	
Leak Rate	External	$\leq 1 \times 10^{-9}$ std cm <sup>3</sup> /s (helium)
	Internal	Bubble tight

## Flow Data

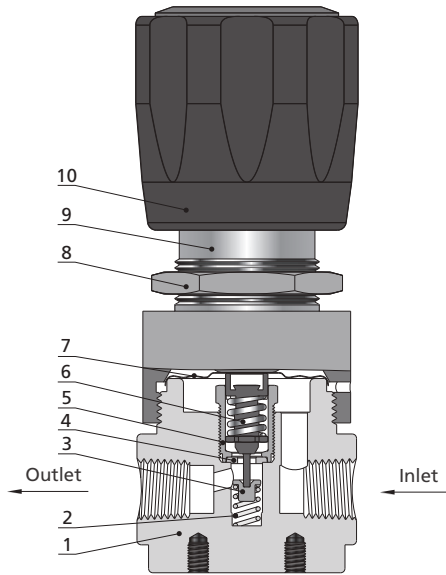


## Process Specification

Item	Process Specification	Special Cleaning and Packaging Process (FC-02)
Material		316L SS, Brass (Nickle-Plated)
Wetted Surface Roughness		Face Seal Connection or Butt Weld Connection: Ra 20 $\mu\text{in.}$ (0.5 $\mu\text{m}$ ) Threaded Connection or Tube Fitting Connection: Ra 32 $\mu\text{in.}$ (0.8 $\mu\text{m}$ )
Polishing Process		Machine Finished
Assembly Environment		In specially cleaned areas
Packaging		Double bagged

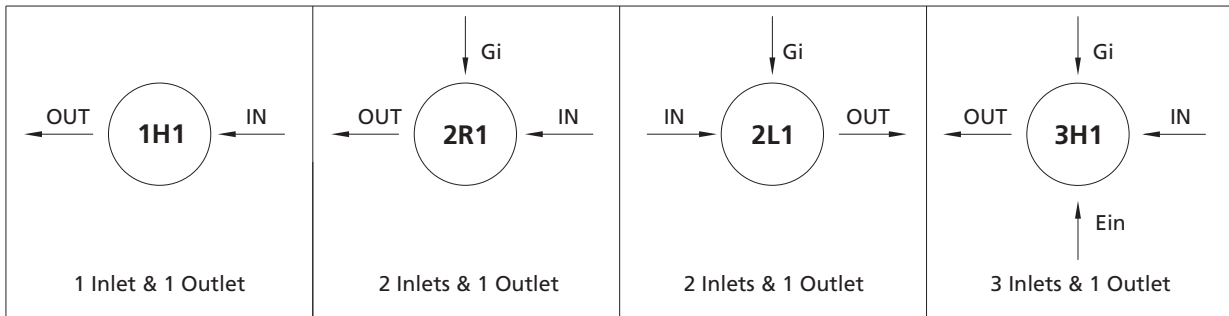
Note: For products with higher surface finish, please contact FITOK.

## Major Materials of Construction



Item	Component	Material/Specification
1	Body	316L SS or Brass (Nickle-Plated)
2	Poppet Spring	316 SS/ASTM A313
3	Friction Sleeve	316L SS/ASTM A479
4	Seat	PCTFE/ASTM D1430 or PTFE/ASTM D1710
5	Seat Retainer	316L SS/ASTM A479
6	Lift Poppet Assembly	316L SS and 316 SS
7	Diaphragm	316L SS/ASTM A240
8	Panel Nut	304 SS/ASTM A479
9	Bonnet	304 SS/ASTM A479 or Brass (Nickle-Plated)
10	Handle	ABS

## Porting Configurations



## Porting Configuration Symbol

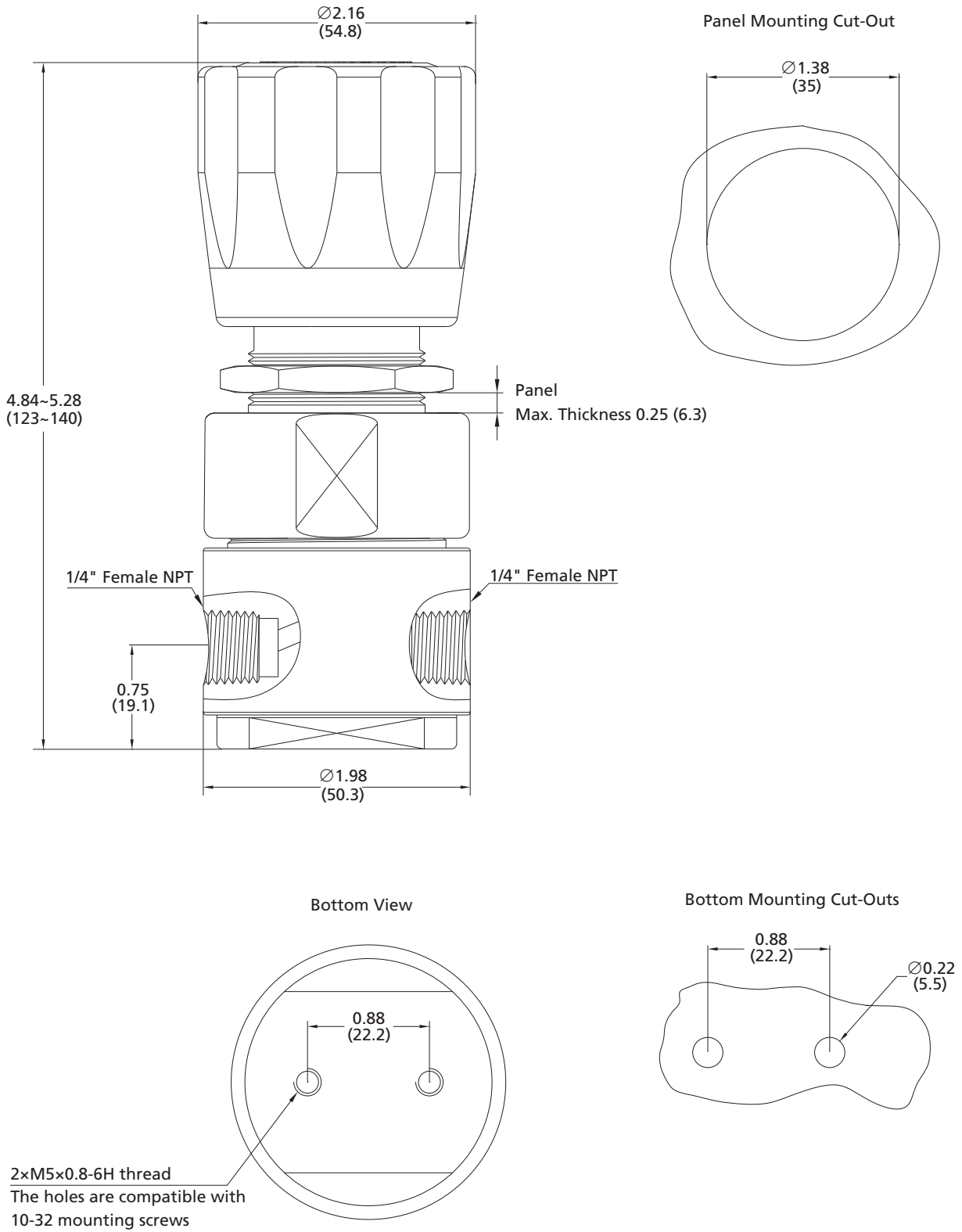
IN	OUT	Gi	Ein
Inlet	Outlet	Inlet Pressure Gauge Port	Auxiliary Inlet

Notes:

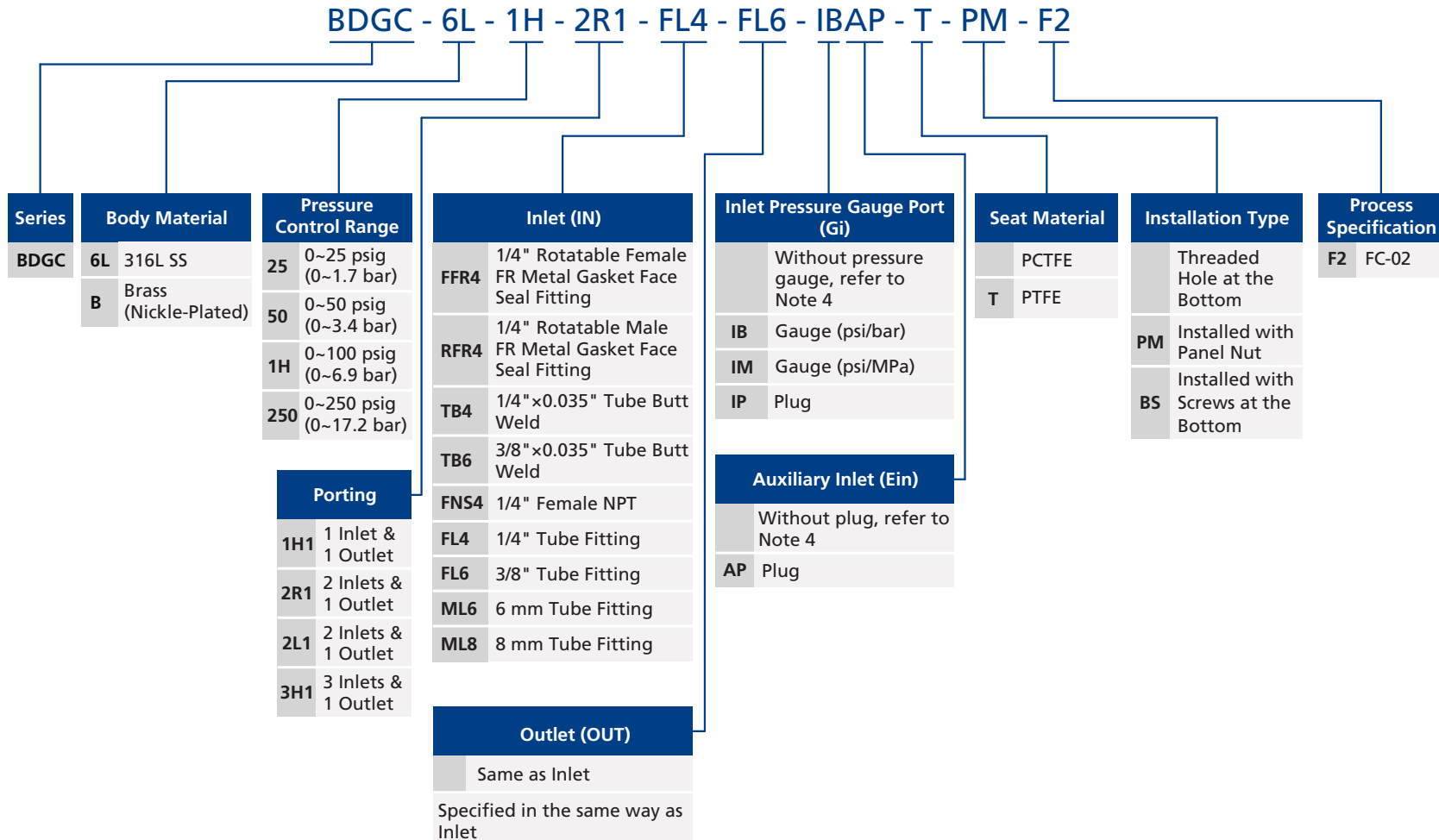
1. IN and OUT are the inlet and outlet ports for connecting the valve to the system. Ports other than IN and OUT should not be used for system connections.
2. Porting configuration is viewed from the top.

## Dimensions

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



## Ordering Number Description



**Notes:**

- "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.
- For metal gasket face seal fitting connection or tube butt weld connection, the connection and body are orbital-welded integral structure by default.
- For NPT connection and Metric/Fractional Tube Fitting connection, the body connection is 1/4" Female NPT by default. Other options are adapted from Male NPT.
- When choosing NPT or Metric/Fractional Tube Fitting for inlet and outlet, gauge connection (Gi) and auxiliary inlet (Ein) are 1/4" Female NPT. When choosing Metal Gasket Face Seal Fitting or Tube Butt Weld for inlet and outlet, gauge connection (Gi) and auxiliary inlet (Ein) are 1/4" Rotatable Male FR Metal Gasket Face Seal Fitting.

# General Piston Back Pressure Regulators

## BPGC Series

### Introduction

BPGC Series General Piston Back Pressure Regulators feature a piston sensing mechanism, offering robust resistance to damage caused by pressure spikes. These regulators are ideal for regulating medium to high pressure settings.

### Features

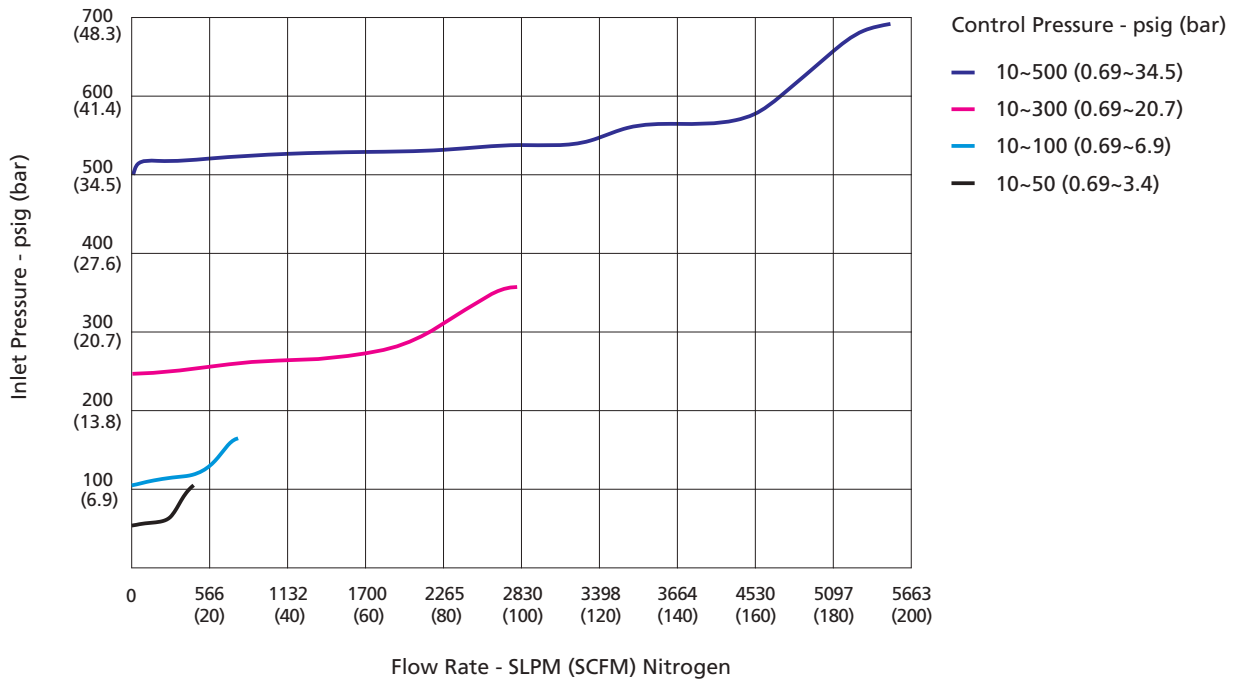
- ◎ Piston sensing mechanism offers a wider pressure control range
- ◎ The bonnet includes a captured vent port, allowing media to be vented to a designated location in the event of accidental O-ring failure

### Technical Data

<b>Port Size</b>			1/4", 3/8", 6 mm or 8 mm
<b>Max. Control Pressure</b>			1000 psig (68.9 bar)
<b>Pressure Control Range</b>			10 ~ 300 psig (0.69 ~ 20.7 bar)
			10 ~ 500 psig (0.69 ~ 34.5 bar)
			10 ~ 1000 psig (0.69 ~ 68.9 bar)
<b>Flow Coefficient (Cv)</b>			0.3
<b>Working Temperature</b>	<b>FKM</b>	-4 ~ 165 °F (-20 ~ 74 °C)	
	<b>FFKM</b>	1.4 ~ 165 °F (-17 ~ 74 °C)	
	<b>NBR</b>	-20 ~ 165 °F (-29 ~ 74 °C)	
<b>Leak Rate</b>	<b>External</b>	Bubble tight	
	<b>Internal</b>	Bubble tight	



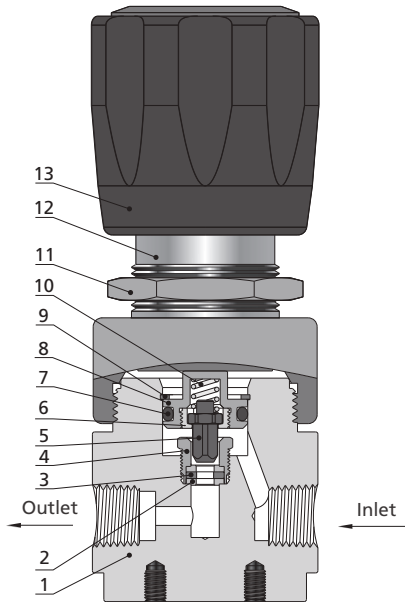
## Flow Data



## Process Specification

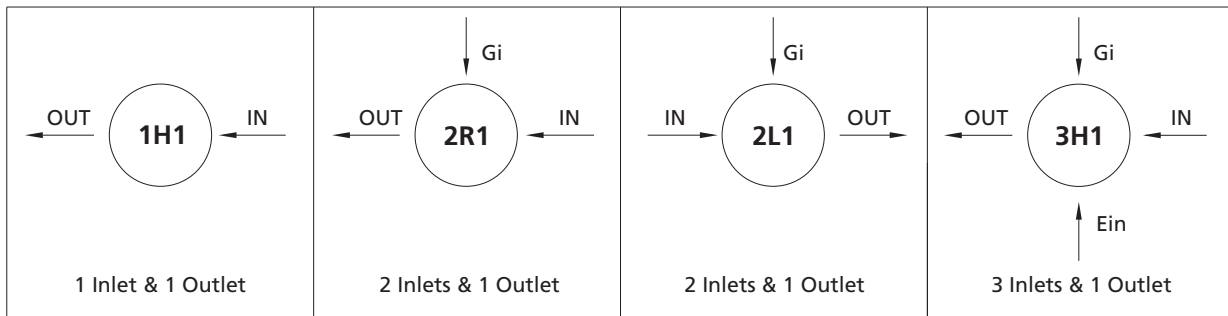
Item	Process Specification	Special Cleaning and Packaging Process (FC-02)
Material		316L SS, Brass (Nickle-Plated)
Wetted Surface Roughness		Ra 32 μin. (0.8 μm)
Polishing Process		Machine Finished
Assembly Environment		In specially cleaned areas
Packaging		Double bagged

## Major Materials of Construction



Item	Component	Material/Specification
1	Body	316L SS or Brass (Nickle-Plated)
2	Seat	PCTFE/ASTM D1430
3	Seat Gasket	316L SS/ASTM A479
4	Seat Retainer	316L SS/ASTM A479
5	Lift Poppet	316L SS/ASTM A479
6	Piston Nut	316L SS/ASTM A479
7	O-Ring	FKM or FFKM or NBR
8	Piston	316L SS/ASTM A479
9	Circlip	304 SS
10	Poppet Spring	316 SS/ASTM A313
11	Panel Nut	304 SS/ASTM A479
12	Bonnet	304 SS/ASTM A479 or Brass (Nickle-Plated)
13	Handle	ABS

## Porting Configurations



## Porting Configuration Symbol

IN	OUT	Gi	Ein
Inlet	Outlet	Inlet Pressure Gauge Port	Auxiliary Inlet

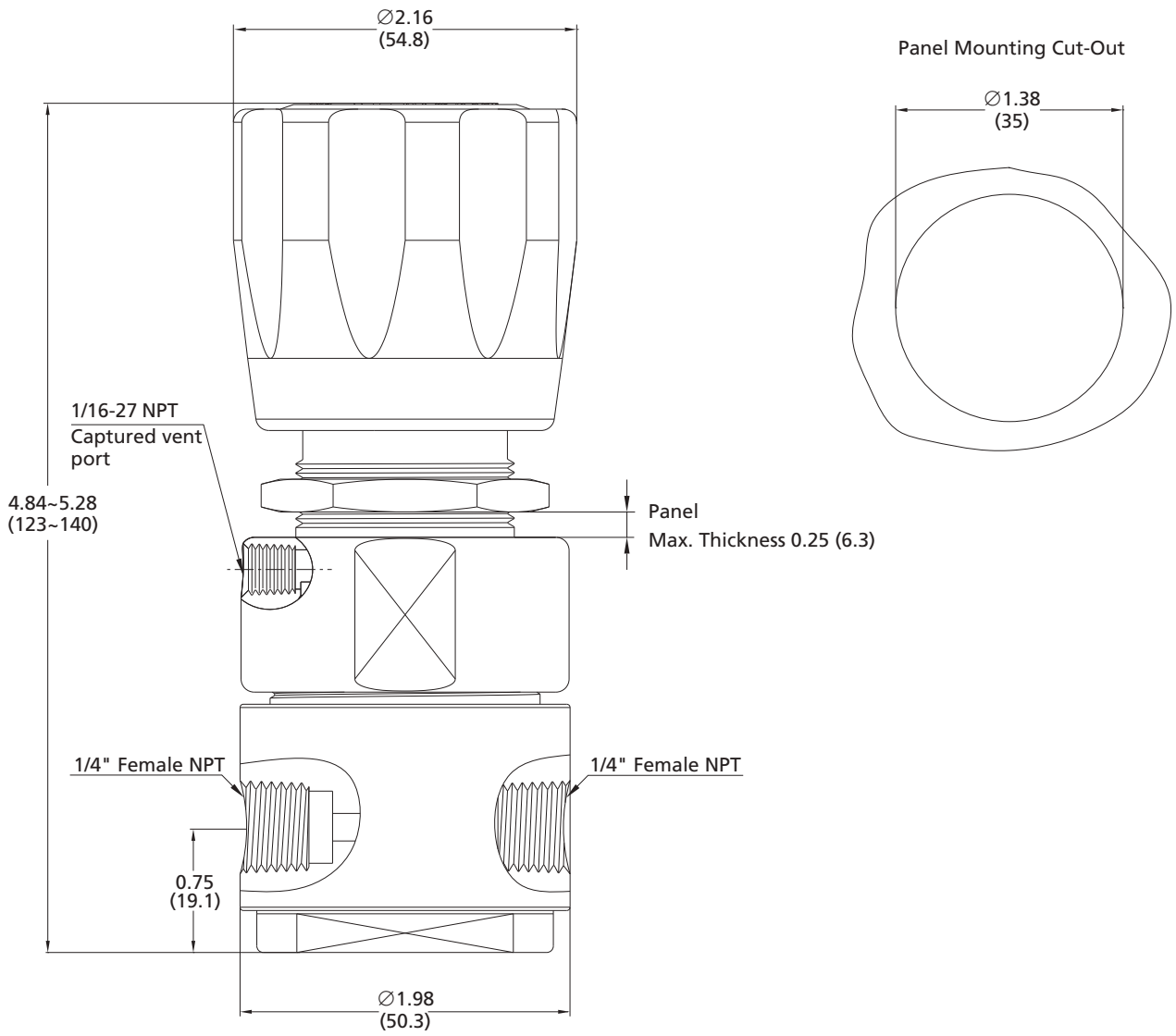
Notes:

1. IN and OUT are the inlet and outlet ports for connecting the valve to the system. Ports other than IN and OUT should not be used for system connections.
2. Porting configuration is viewed from the top.

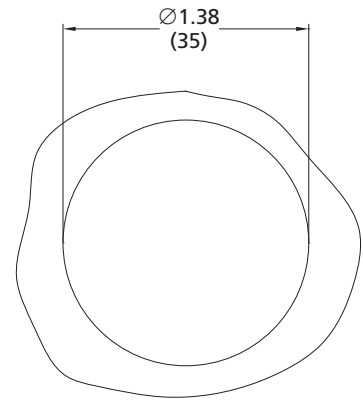


## Dimensions

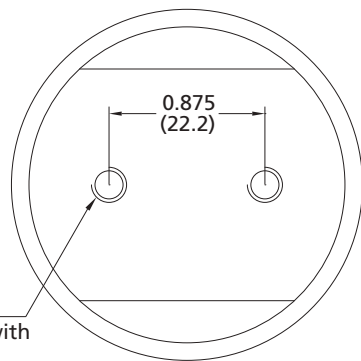
Dimensions, in inches (millimeters), are for reference only.



Panel Mounting Cut-Out

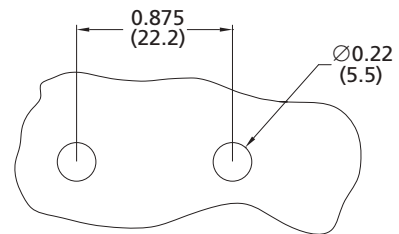


Bottom View

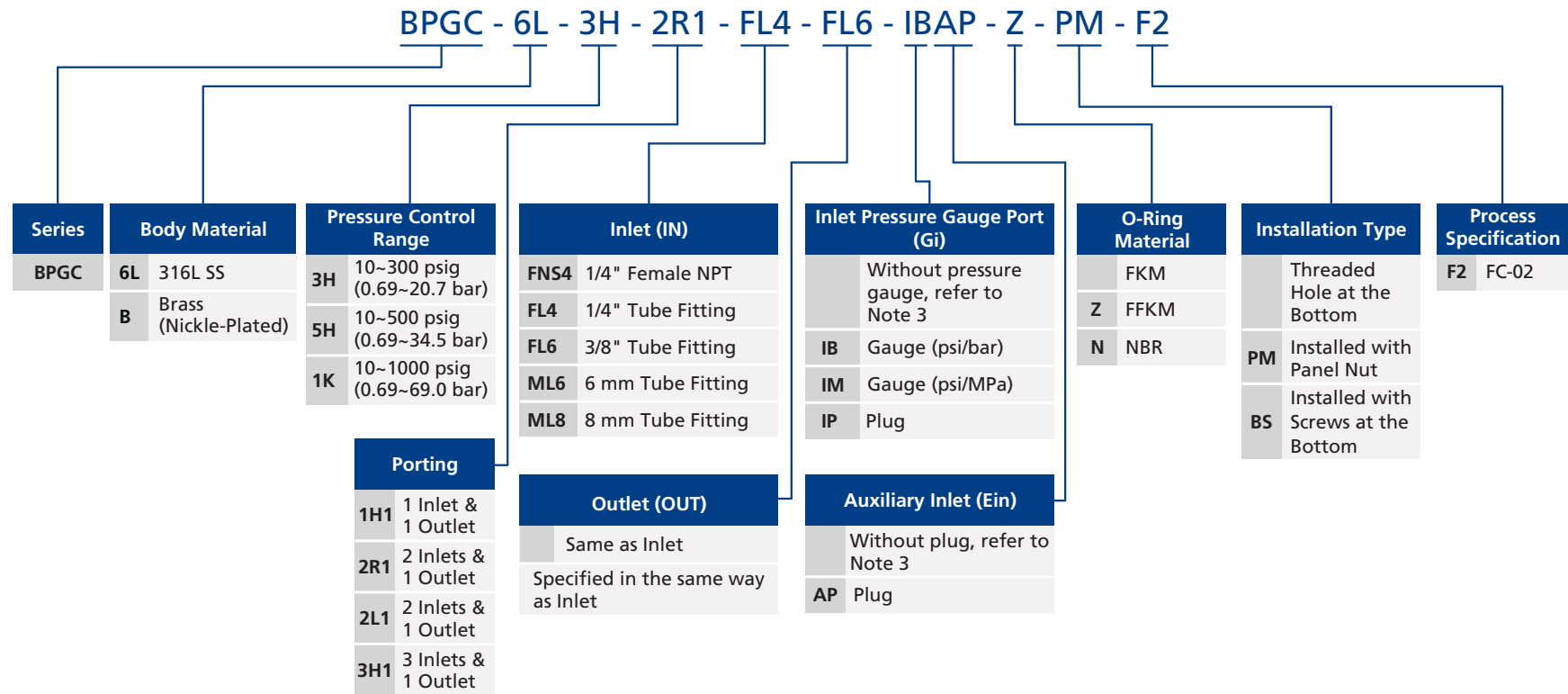


$2 \times M5 \times 0.8$ -6H thread  
The holes are compatible with 10-32 mounting screws

Bottom Mounting Cut-Outs



# Ordering Number Description



**Notes:**

- "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.
- For NPT connection and Metric/Fractional Tube Fitting connection, the body connection is 1/4" Female NPT by default. Other options are adapted from Male NPT.
- Gauge connection (Gi) and auxiliary inlet (Ein) are 1/4" Female NPT.

# High Pressure Piston Back Pressure Regulators

## BPGX Series

### Introduction

BPGX Series High Pressure Piston Back Pressure Regulators feature a piston sensing mechanism and a handle using thrust roller bearing. These regulators are ideal for regulating medium to ultra high pressure settings.

### Features

- Piston sensing mechanism offers a wider pressure control range
- Thrust roller bearing eases operation
- Panel mounting clamp available

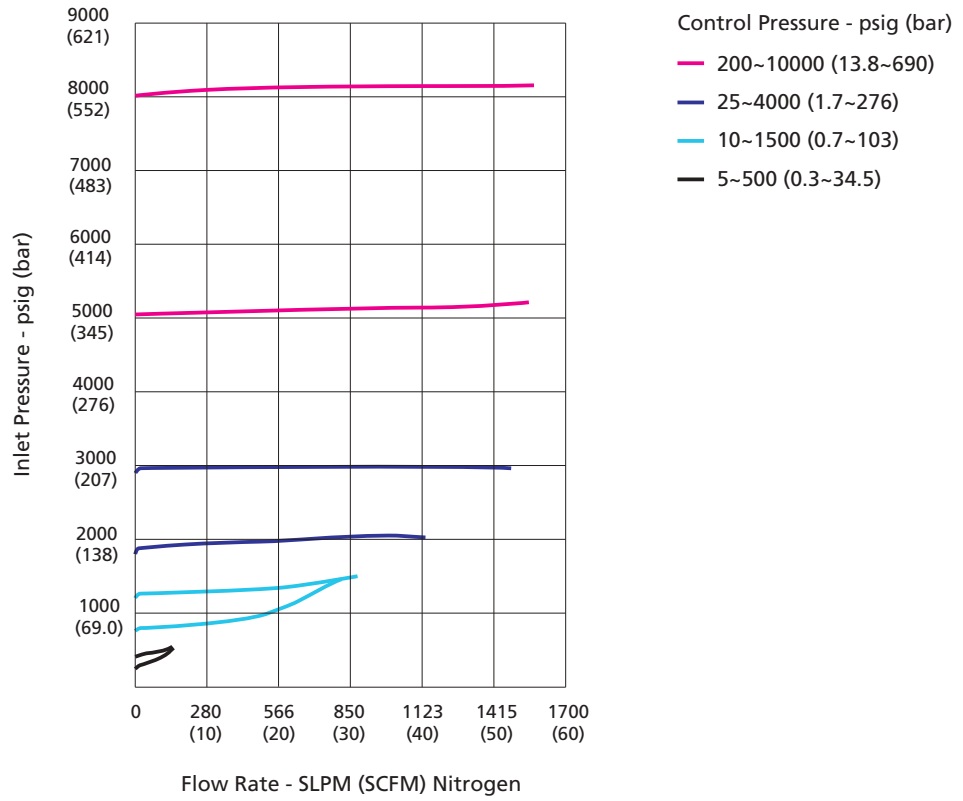


### Technical Data

<b>Port Size</b>		1/4", 3/8", 6 mm or 8 mm
<b>Max. Control Pressure</b>	<b>316 SS, 316L SS</b>	10000 psig (689 bar)
	<b>Brass</b>	6000 psig (414 bar)
<b>Pressure Control Range</b>		5 ~ 500 psig (0.35 ~ 34.5 bar)
		5 ~ 800 psig (0.35 ~ 55.2 bar)
		10 ~ 1500 psig (0.69 ~ 103 bar)
		15 ~ 2500 psig (1.0 ~ 172 bar)
		25 ~ 4000 psig (1.7 ~ 276 bar)
		50 ~ 6000 psig (3.5 ~ 414 bar)
		200 ~ 10000 psig (13.8 ~ 689 bar) <sup>①</sup>
<b>Flow Coefficient (Cv)</b>		0.25
<b>Working Temperature</b>	<b>FKM</b>	-4 ~ 165 °F (-20 ~ 74 °C)
	<b>FFKM</b>	1.4 ~ 165 °F (-17 ~ 74 °C)
	<b>NBR</b>	-20 ~ 165 °F (-29 ~ 74 °C)
<b>Leak Rate</b>	<b>External</b>	Bubble tight
	<b>Internal</b>	Bubble tight

① Applies to valves made of 316 SS and 316L SS only

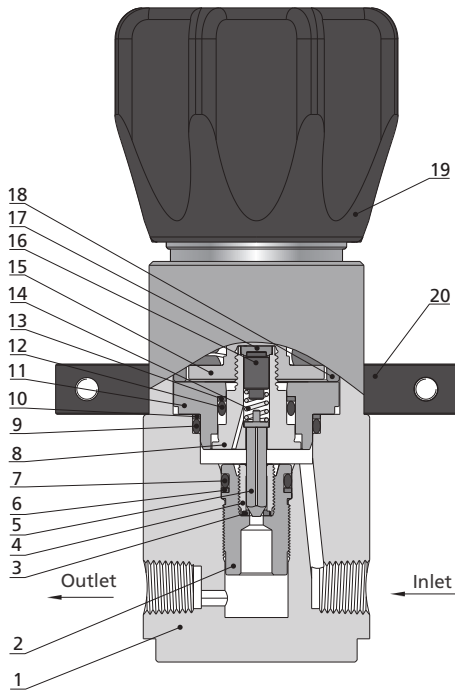
## Flow Data



## Process Specification

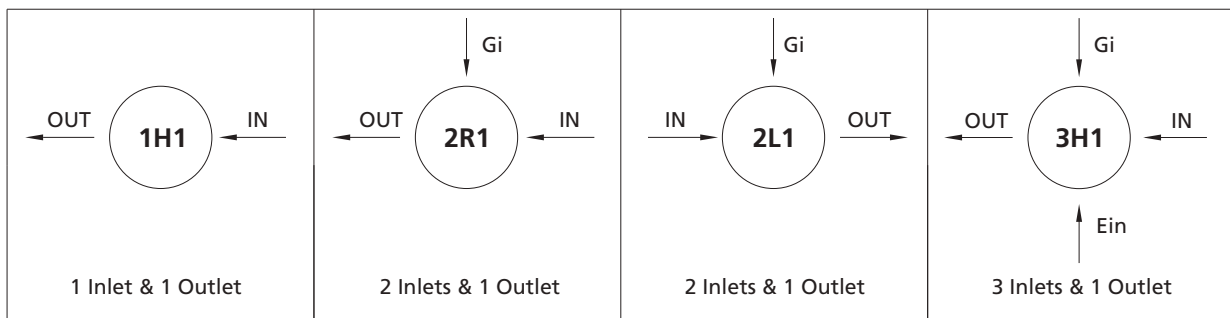
Item \ Process Specification	Standard cleaning and Packaging Process (FC-01)	Special Cleaning and Packaging Process (FC-02)
Material	316 SS, 316L SS, Brass	
Wetted Surface Roughness	Ra 32 μin. (0.8 μm)	
Polishing Process	Machine Finished	
Assembly Environment	At atmosphere	In specially cleaned areas
Packaging	Individually bagged	Double bagged

## Major Materials of Construction



Item	Component	Material/Specification
1	Body	316 SS or 316L SS or Brass
2	Poppet	316 SS/ASTM A479
3	Seat	PEEK
4	Seat Retainer	316 SS/ASTM A479
5	Lift Poppet	S17400/A564
6	Circlip	PTFE+25%Carbon Fiber
7	O-Ring	FKM or FFKM or NBR
8	Piston	316 SS/ASTM A479
9	O-Ring	FKM or FFKM or NBR
10	Circlip	PTFE+25%Carbon Fiber
11	Piston Ring	316 SS/ASTM A479
12	O-Ring	FKM or FFKM or NBR
13	Circlip	PTFE+25%Carbon Fiber
14	Poppet Spring	316 SS/ASTM A313
15	Spring Seat	304 SS/ASTM A479
16	Spring Button	316 SS/ASTM A479
17	Seat	PEEK
18	Bonnet	304 SS/ASTM A479 or Brass
19	Handle	Aluminium Alloy
20	Clamp	Aluminium Alloy

## Porting Configurations



## Porting Configuration Symbol

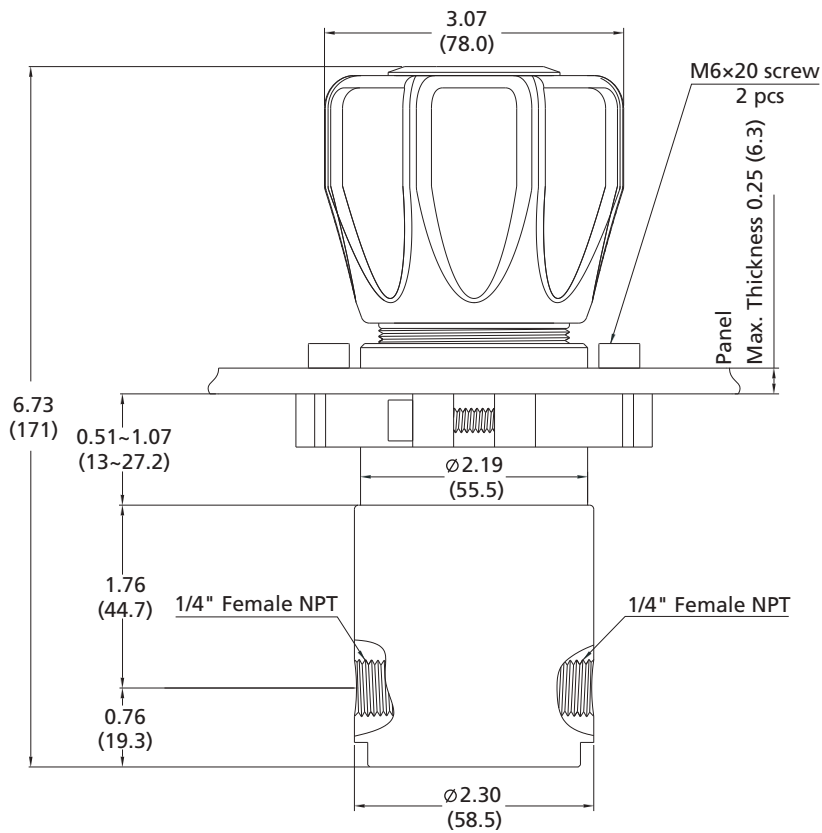
IN	OUT	Gi	Ein
Inlet	Outlet	Inlet Pressure Gauge Port	Auxiliary Inlet

Notes:

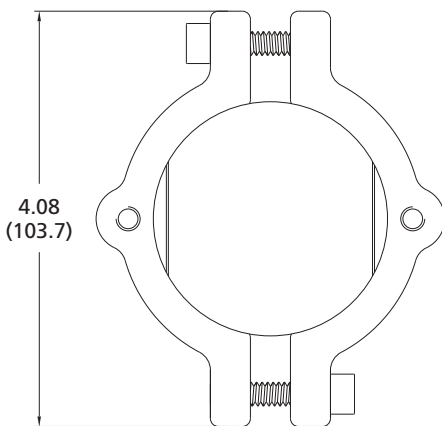
1. IN and OUT are the inlet and outlet ports for connecting the valve to the system. Ports other than IN and OUT should not be used for system connections.
2. Porting configuration is viewed from the top.

## Dimensions

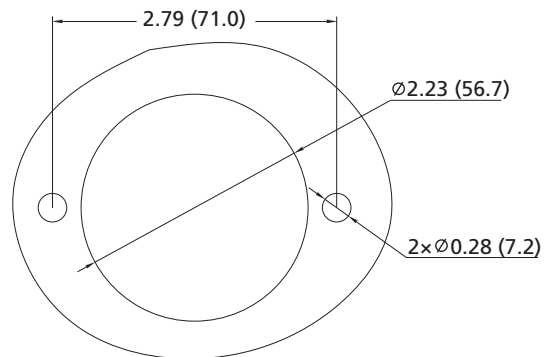
Dimensions, in inches (millimeters), are for reference only.



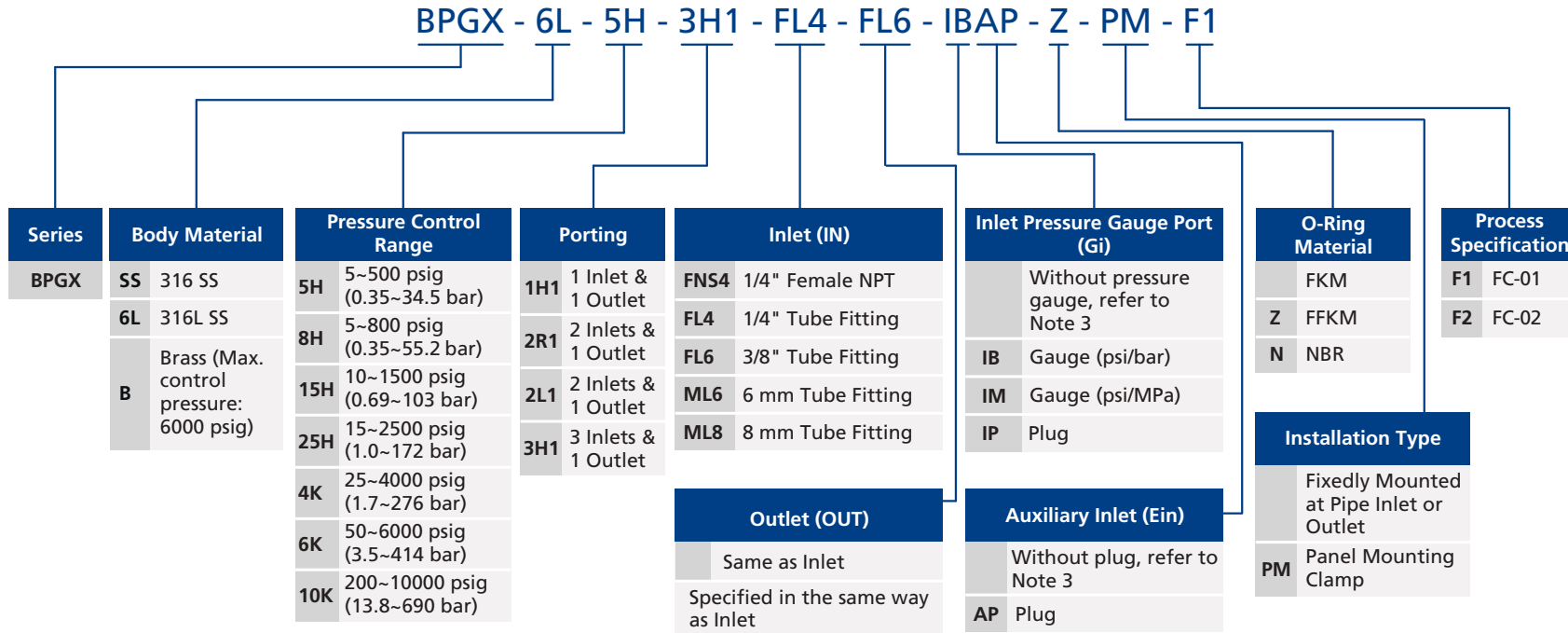
Bottom View



Panel Mounting Cut-Out



## Ordering Number Description



**Notes:**

- "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.
- For NPT connection and Metric/Fractional Tube Fitting connection, the body connection is 1/4" Female NPT by default. Other options are adapted from Male NPT.
- Gauge connection (Gi) and auxiliary inlet (Ein) are 1/4" Female NPT.