

Back Pressure Regulators



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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

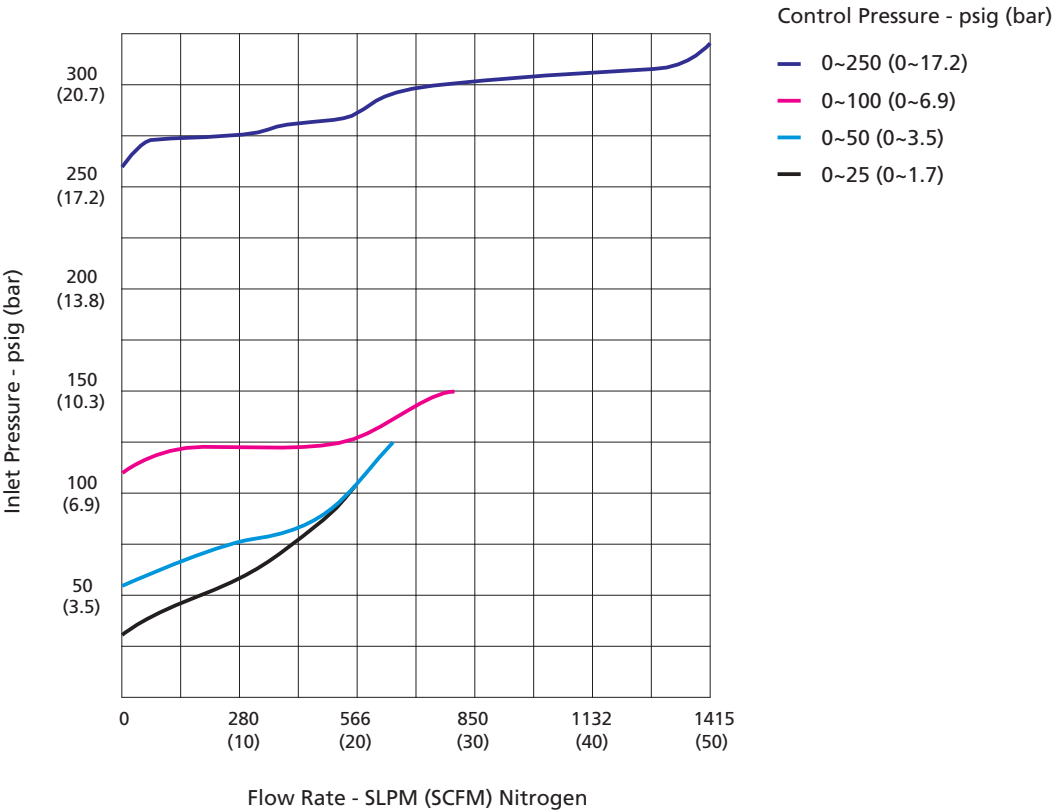
- ⦿ Lightweight, compact design
- ⦿ Metal-to-metal seal between valve body and diaphragm provides ensured sealing performance



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 | ≤1×10 ⁻⁹ std cm ³ /s (helium) |
| | Internal | Bubble tight |

Flow Data

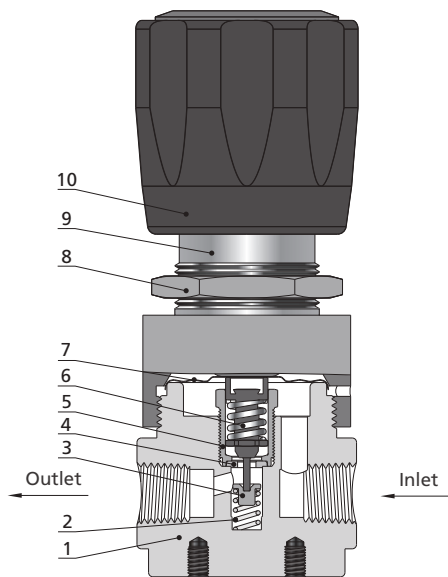


Process Specification

| Process Specification | |
|--------------------------|--|
| Item | 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 μin. (0.5 μm) Threaded Connection or Tube Fitting Connection: Ra 32 μin. (0.8 μm) |
| Polishing Process | Machine Finished |
| Assembly Environment | In specially cleaned areas |
| Packaging | Double bagged |

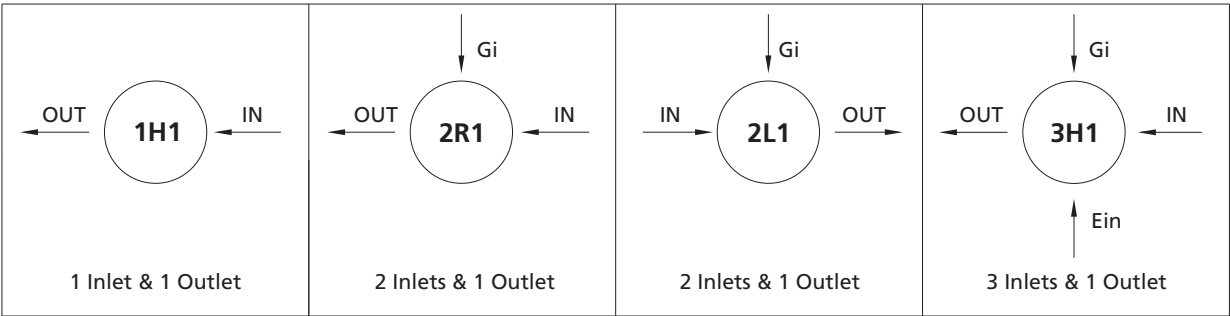
Note: For products with higher surface finish, please contact FITOK.

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



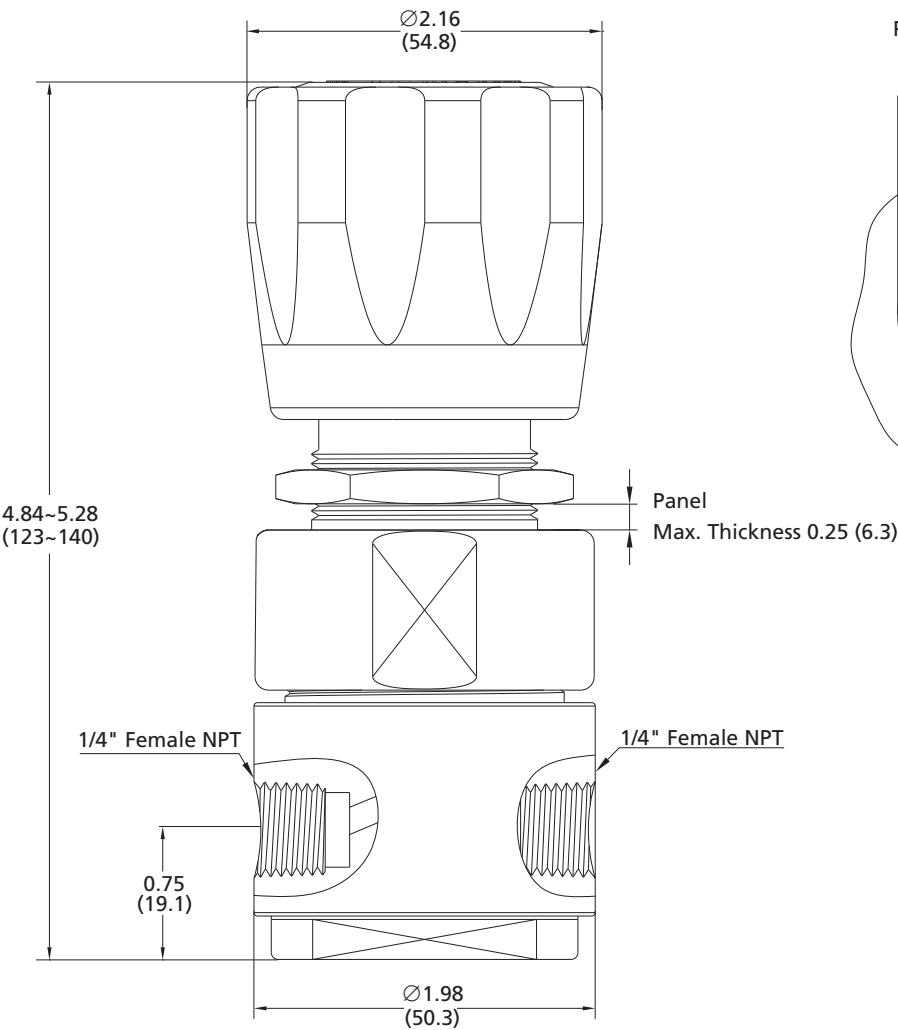
Porting Configuration Symbol

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

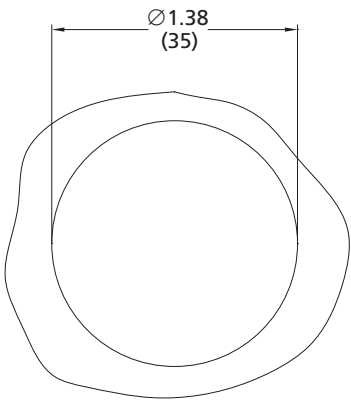
- Notes:
1. IN and OUT are the inlet and outlet ports for connecting the valve to the system. Ports other than IN and OUT should not be used for system connections.
 2. Porting configuration is viewed from the top.

Dimensions

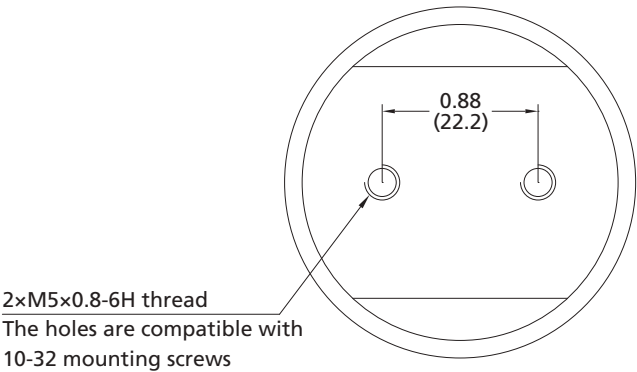
Dimensions, in inches (millimeters), are for reference only.



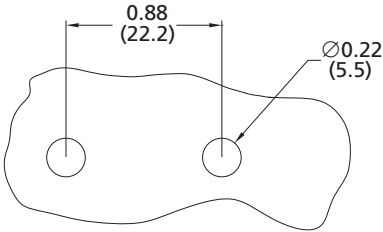
Panel Mounting Cut-Out



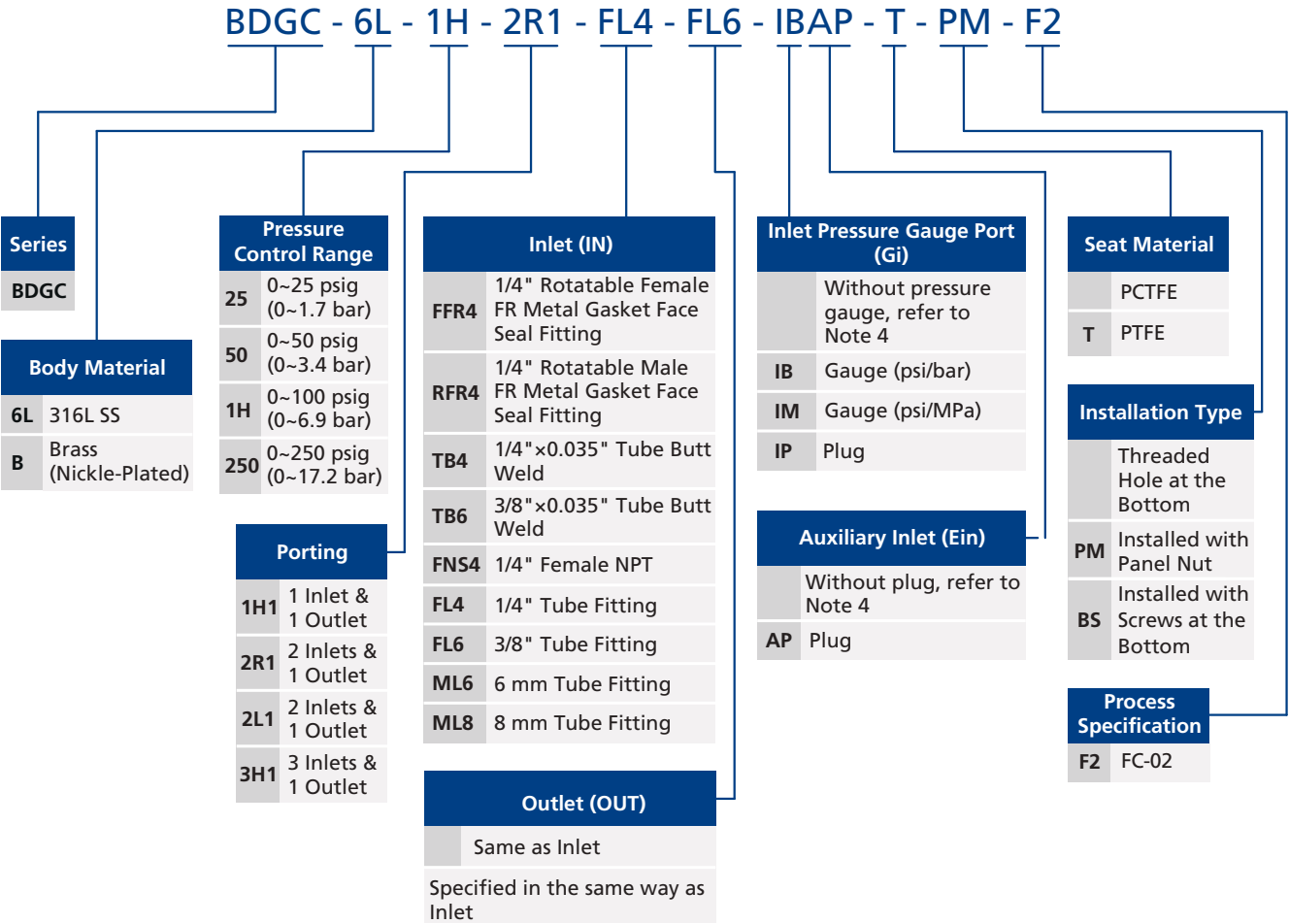
Bottom View



Bottom Mounting Cut-Outs



Ordering Number Description



- Notes:
- 1. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.
 - 2. For metal gasket face seal fitting connection or tube butt weld connection, the connection and body are orbital-welded integral structure by default.
 - 3. 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.
 - 4. 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

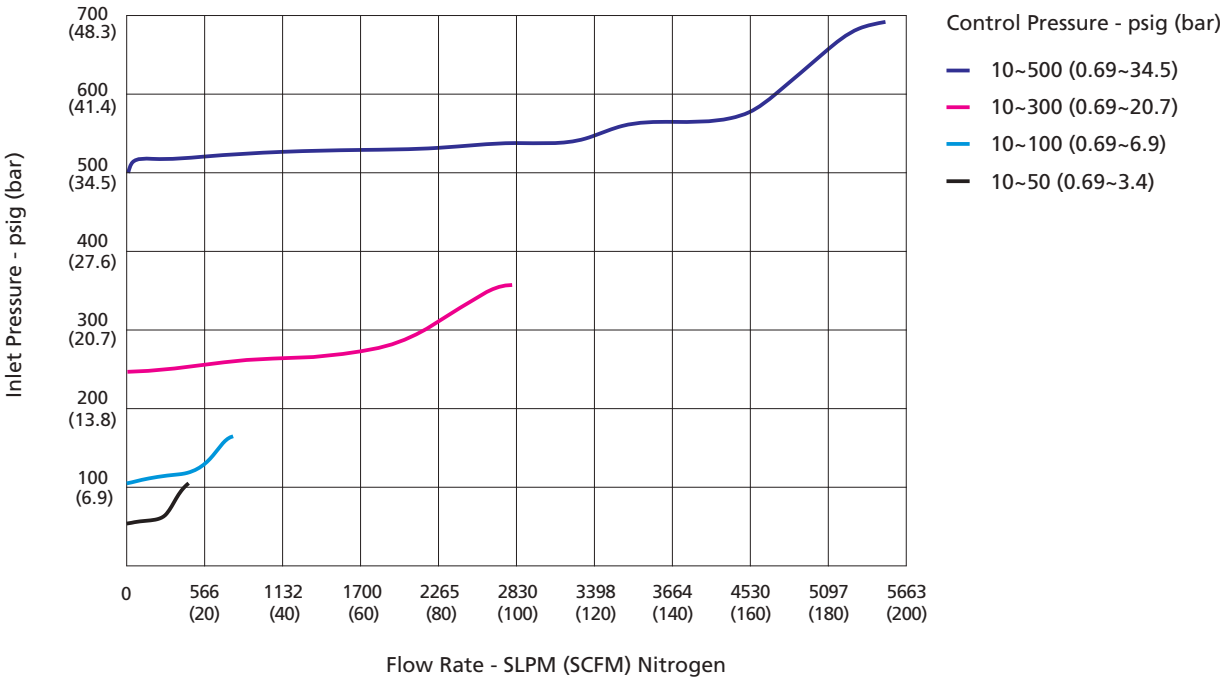
- ⦿ Piston sensing mechanism offers a wider pressure control range
- ⦿ The bonnet includes a captured vent port, allowing media to be vented to a designated location in the event of accidental O-ring failure

Technical Data

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



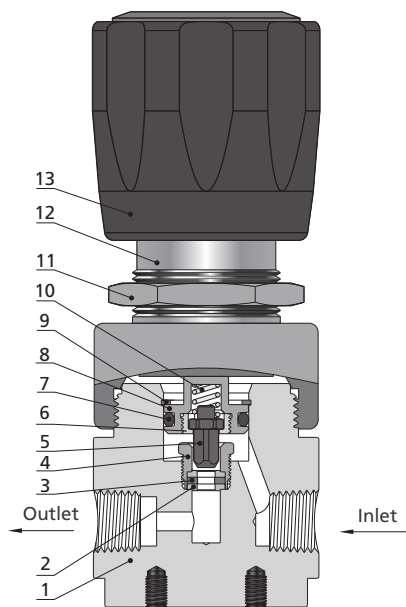
Flow Data



Process Specification

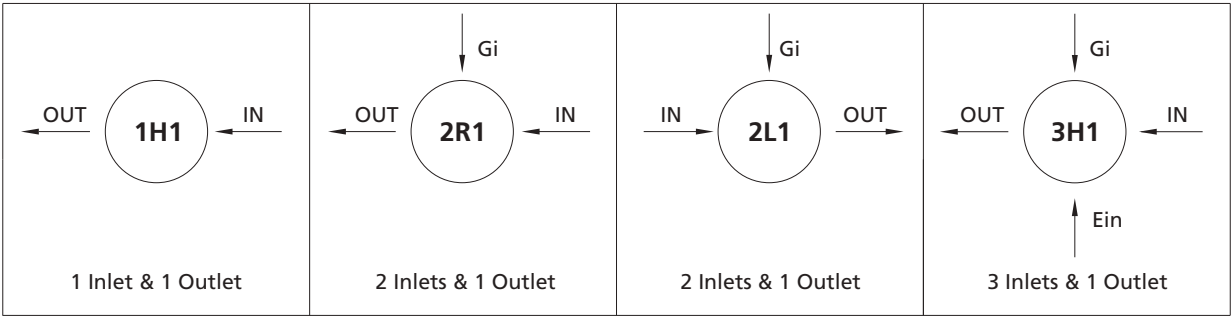
| Process Specification | |
|--------------------------|--|
| Item | Special Cleaning and Packaging Process (FC-02) |
| Material | 316L SS, Brass (Nickle-Plated) |
| Wetted Surface Roughness | Ra 32 μin. (0.8 μm) |
| Polishing Process | Machine Finished |
| Assembly Environment | In specially cleaned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



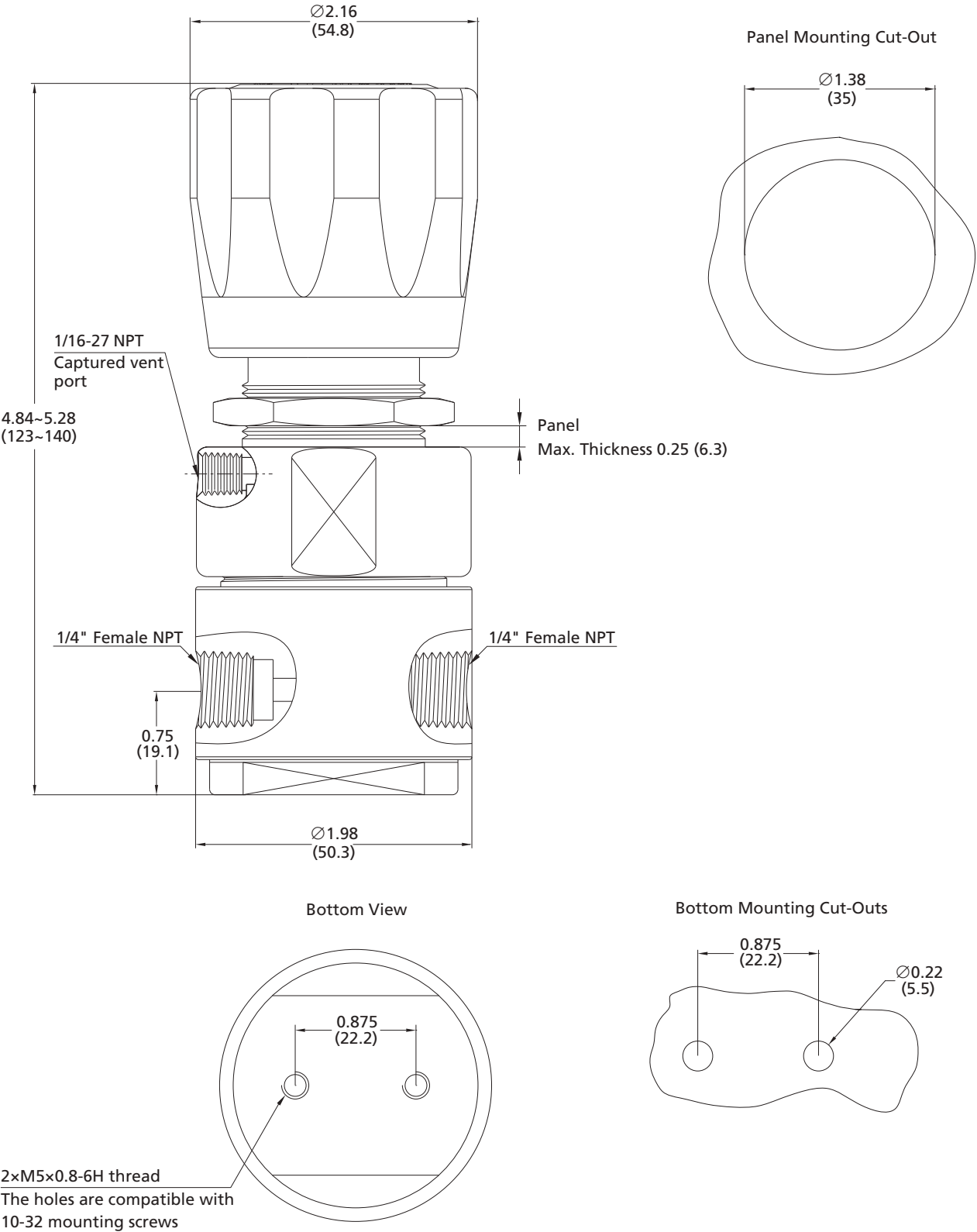
Porting Configuration Symbol

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

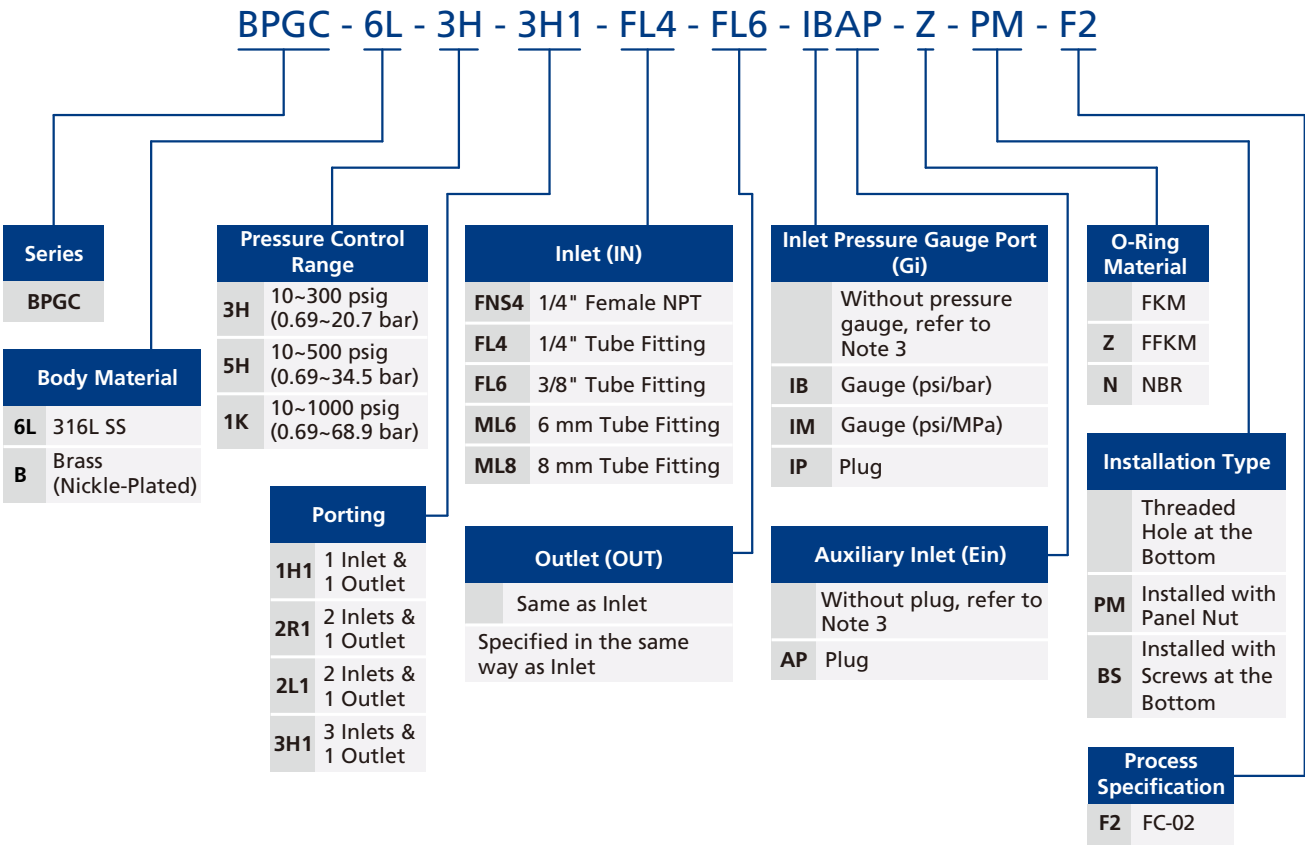
- Notes:
1. IN and OUT are the inlet and outlet ports for connecting the valve to the system. Ports other than IN and OUT should not be used for system connections.
 2. Porting configuration is viewed from the top.

Dimensions

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



Ordering Number Description



- Notes:
- 1. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.
 - 2. 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.
 - 3. 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

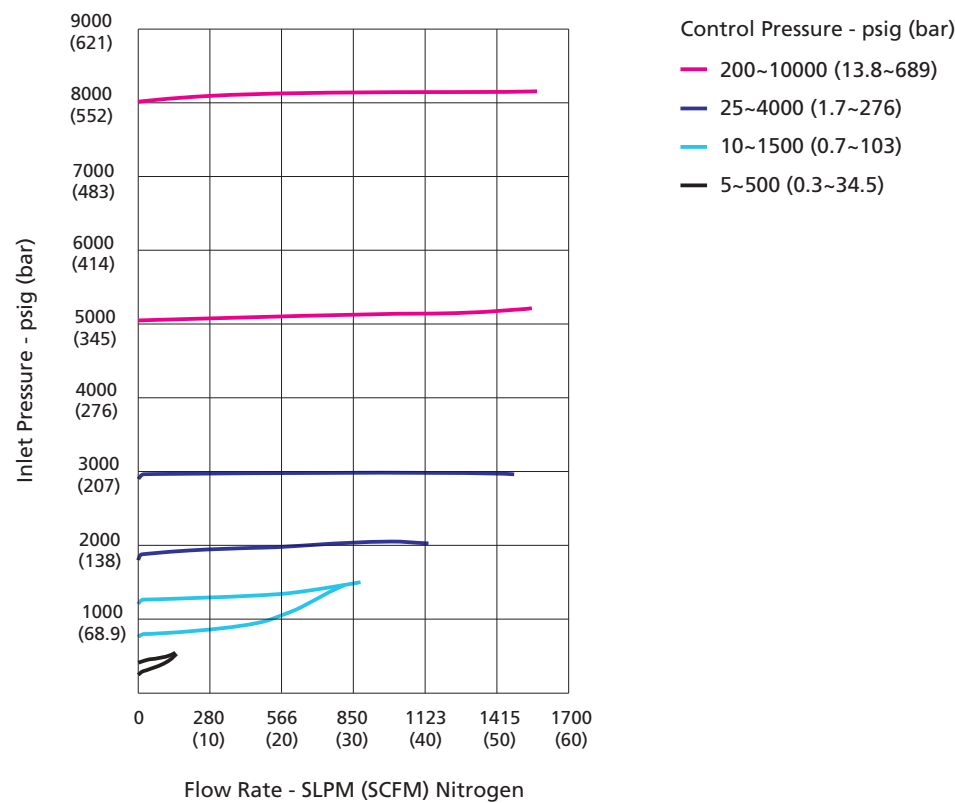
Technical Data

| | | | |
|------------------------|-----------------|----------------------------|--|
| Port Size | | | 1/4", 3/8", 6 mm or 8 mm |
| Max. Control Pressure | 316 SS, 316L SS | 10000 psig (689 bar) | |
| | Brass | 6000 psig (414 bar) | |
| Pressure Control Range | | | 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) ^① |
| Flow Coefficient (Cv) | | | 0.25 |
| Working Temperature | FKM | -4 ~ 165 °F (-20 ~ 74 °C) | |
| | FFKM | 1.4 ~ 165 °F (-17 ~ 74 °C) | |
| | NBR | -20 ~ 165 °F (-29 ~ 74 °C) | |
| Leak Rate | External | Bubble tight | |
| | Internal | Bubble tight | |

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



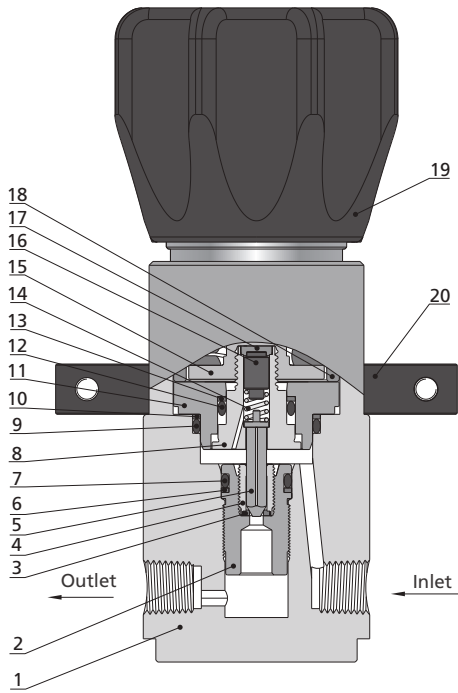
Flow Data



Process Specification

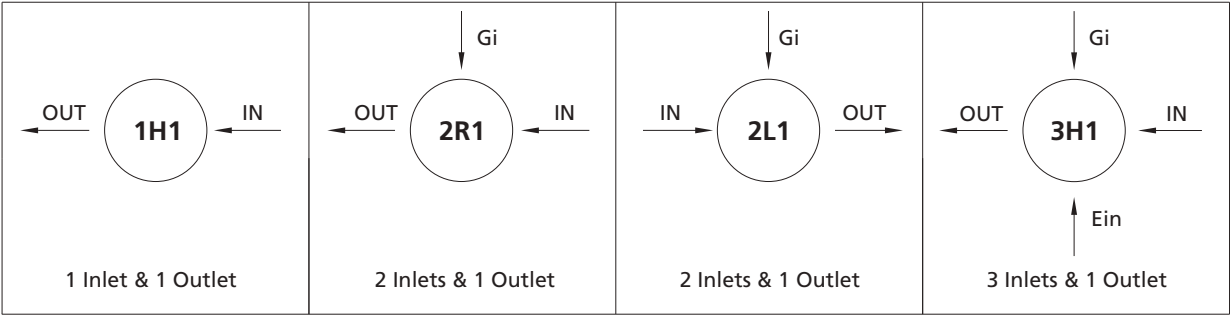
| Item | Process Specification | |
|--------------------------|---|--|
| | Standard cleaning and Packaging Process (FC-01) | Special Cleaning and Packaging Process (FC-02) |
| Material | 316 SS, 316L SS, Brass | |
| Wetted Surface Roughness | Ra 32 μin. (0.8 μm) | |
| Polishing Process | Machine Finished | |
| 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



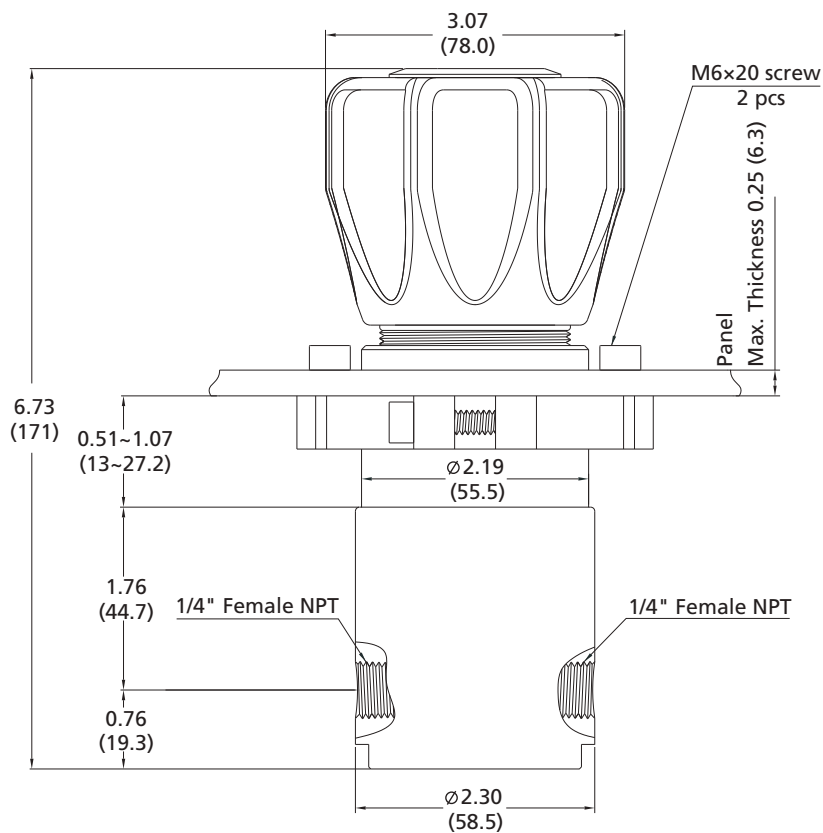
Porting Configuration Symbol

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

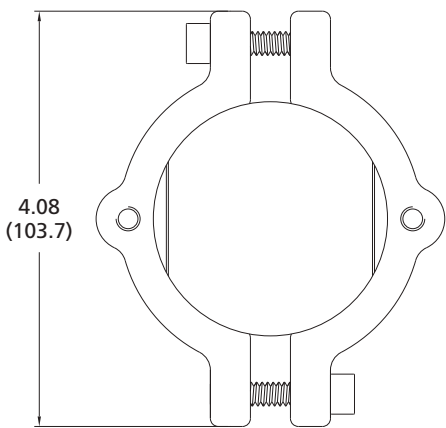
- Notes:
1. IN and OUT are the inlet and outlet ports for connecting the valve to the system. Ports other than IN and OUT should not be used for system connections.
 2. Porting configuration is viewed from the top.

Dimensions

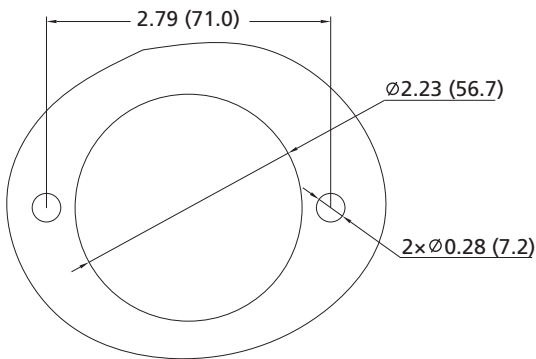
Dimensions, in inches (millimeters), are for reference only.



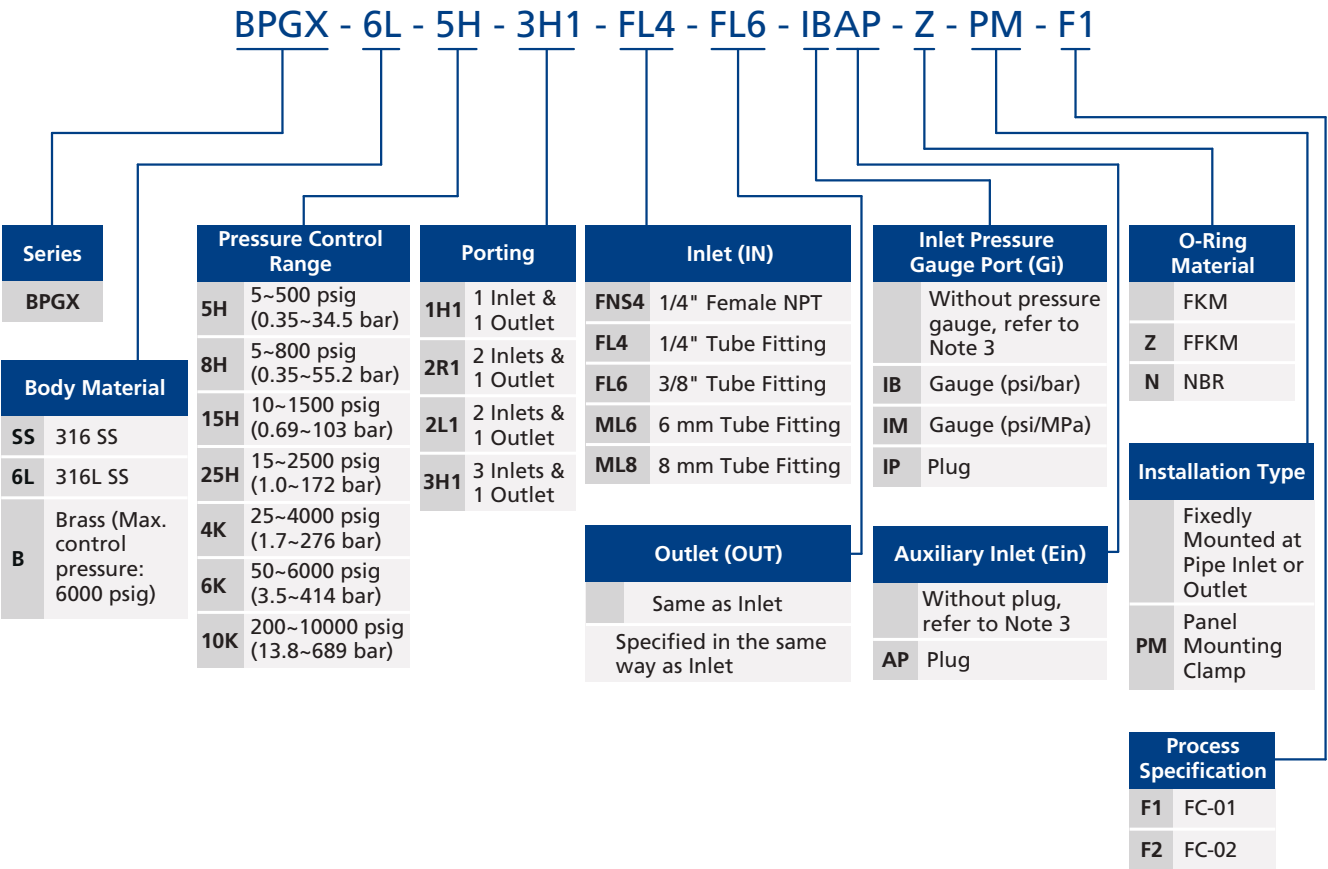
Bottom View



Panel Mounting Cut-Out



Ordering Number Description



- Notes:
- 1. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.
 - 2. 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.
 - 3. Gauge connection (Gi) and auxiliary inlet (Ein) are 1/4" Female NPT.