

# High Pressure Piston Regulators

## RPGX Series

### Introduction

RPGX Series High Pressure Piston Regulators feature a single-stage pressure reduction design with a piston sensing mechanism that is more resistant to damage caused by pressure spikes. These regulators offer a wide outlet pressure range, with a maximum inlet and outlet pressure of up to 10,000 psig. With eight port configuration options, these regulators are ideal for high pressure, low flow applications.

### Features

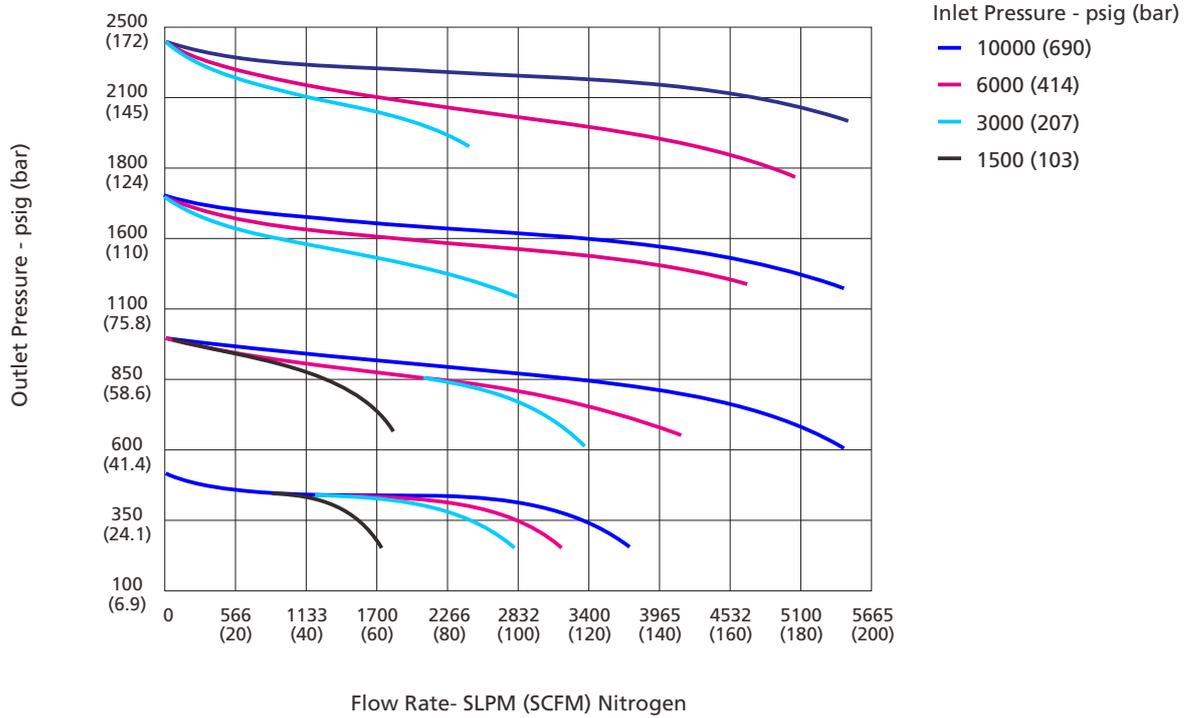
- ⦿ Built-in 40 µm inlet filter for cleanliness and extended service life.
- ⦿ Optional self-venting feature.
- ⦿ Drain port design allows residual liquid media in the downstream pipeline to be vented to a designated location.



### Technical Data

Port Size			1/4", 3/8", 6 mm or 8 mm
Max. Working Pressure	316 SS	10000 psig (690 bar)	
	Brass	6000 psig (414 bar)	
Outlet Pressure Range	10 ~ 500 psig (0.69 ~ 34.4 bar)		
	15 ~ 800 psig (1.03 ~ 55.2 bar)		
	15 ~ 1500 psig (1.03 ~ 103 bar)		
	30 ~ 2500 psig (2.1 ~ 172 bar)		
	50 ~ 4000 psig (3.4 ~ 276 bar)		
	60 ~ 6000 psig (4.1 ~ 414 bar)		
	200 ~ 10000 psig (13.8 ~ 690 bar)		
Flow Coefficient (Cv)			0.06
Working Temperature	FKM	-4 ~ 165 °F (-20 ~ 74 °C)	
	NBR	-20 ~ 165 °F (-29 ~ 74 °C)	
SPE (Supply Pressure Effect)	Max. Outlet Pressure: 500, 800 psig	1.1 psig per 100 psig source pressure change	
	Max. Outlet Pressure: 1500, 2500 psig	3 psig per 100 psig source pressure change	
	Max. Outlet Pressure: 4000, 6000 psig	9 psig per 100 psig source pressure change	
	Max. Outlet Pressure: 10000 psig	13 psig per 100 psig source pressure change	
Leak Rate	External	Bubble tight	
	Internal	Bubble tight	

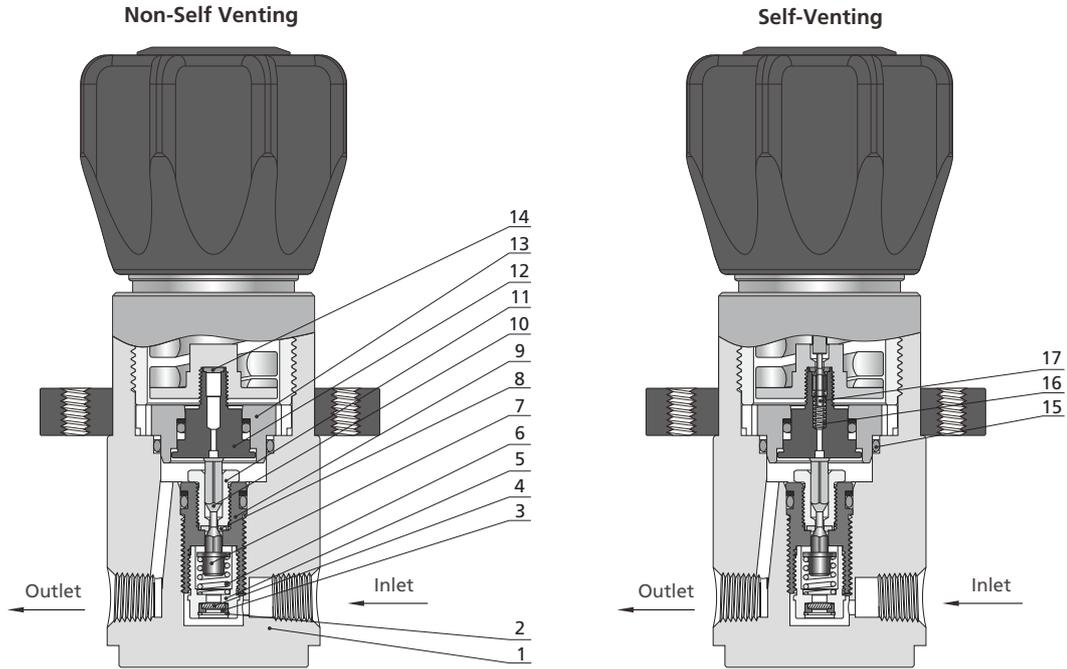
## Flow Data



## Process Specification

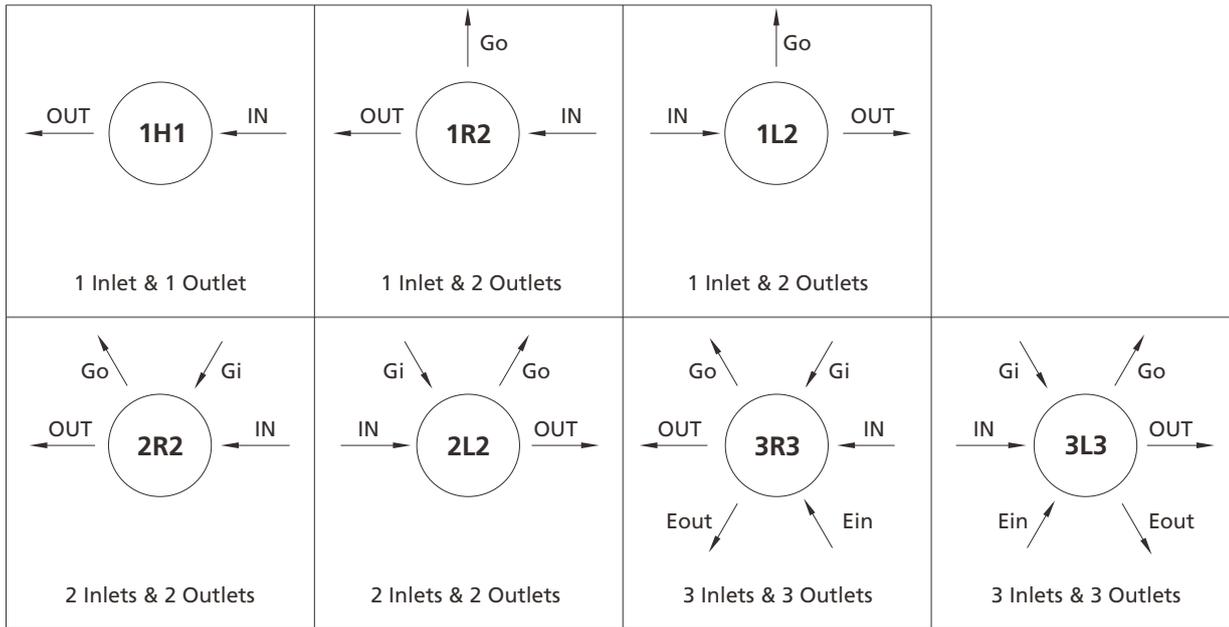
Item	Process Specification	Standard Cleaning and Packaging Process (FC-01)	Special Cleaning and Packaging Process (FC-02)
Material		316 SS, Brass	
Wetted Surface Roughness		Ra 32 $\mu\text{in.}$ (0.8 $\mu\text{m}$ )	
Polishing Process		Machine Finished	
Assembly Environment		At atmosphere	In specially cleaned areas
Packaging		Single bagged	Double bagged

## Major Materials of Construction



Item	Component	Material/Specification
1	Body	316 SS/A479 or Brass
2	Circlips for Bores	304 SS
3	Retaining Ring	PTFE/ASTM D1710
4	Filter	316L SS
5	Main Poppet Cap	316 SS/ASTM A479
6	Poppet Spring	316 SS/ASTM A313
7	Lift Poppet	S17400/ASTM A564
8	Seat	PEEK
9	Main Poppet	S17400/ASTM A564
10	Poppet Button	S17400/ASTM A564
11	Seat Retainer	S17400/ASTM A564
12	Piston	316 SS/ASTM A479
13	Piston Ring	316 SS/ASTM A479
14	Auxiliary Seat	PEEK
15	O-Ring	FKM or NBR
16	Poppet Spring	316L SS/ASTM A313
17	Auxiliary Poppet	S17400/ASTM A564

## Porting Configurations



### Porting Configuration Symbol

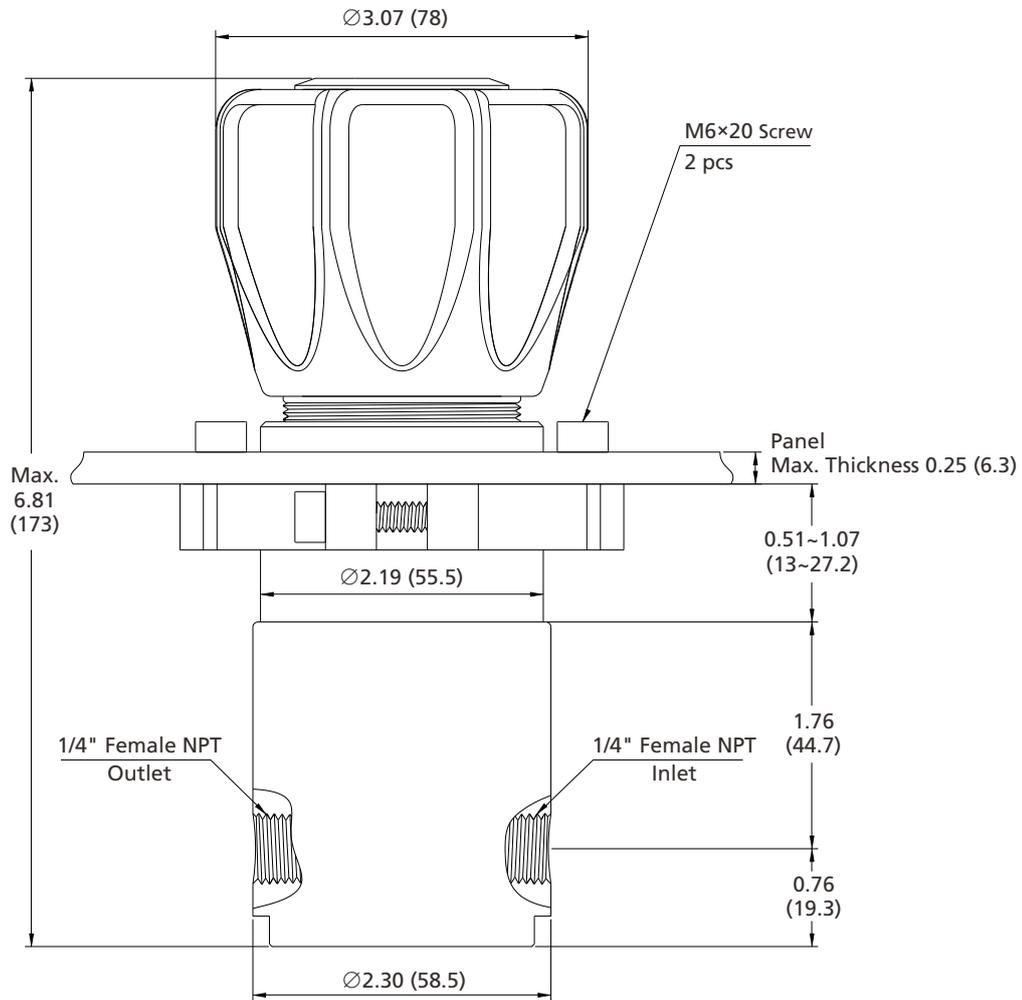
IN	OUT	Gi	Go	Ein	Eout
Inlet	Outlet	Inlet Pressure Gauge Port	Outlet Pressure Gauge Port	Auxiliary Inlet	Auxiliary Outlet

#### Notes:

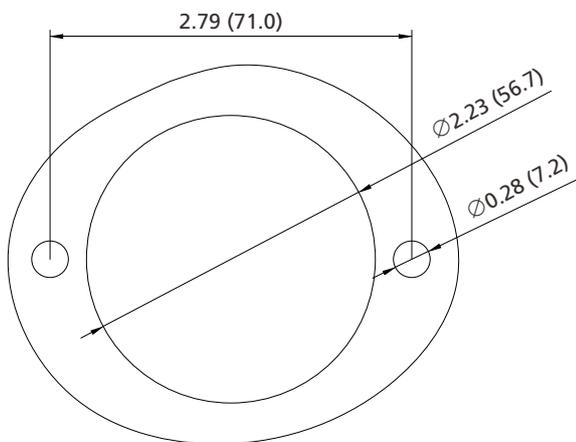
1. IN and OUT are the inlet and outlet ports for connecting the valve to the system. Ports other than IN and OUT should not be used for system connections.
2. Porting configuration is viewed from the top.

## Dimensions

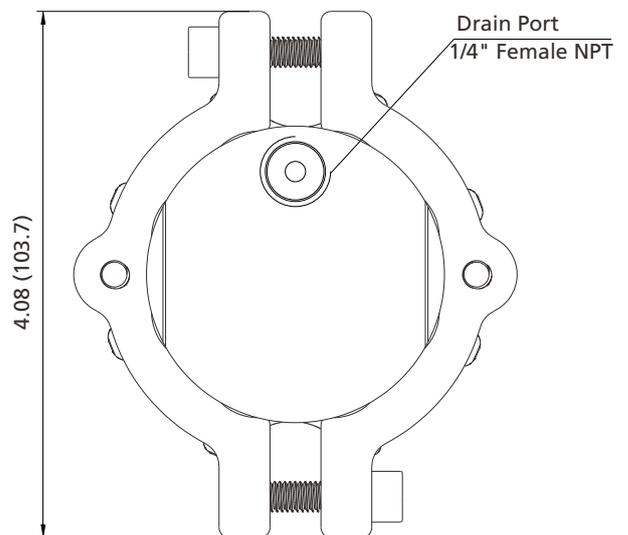
Dimensions, in inches (millimeters), are for reference only.



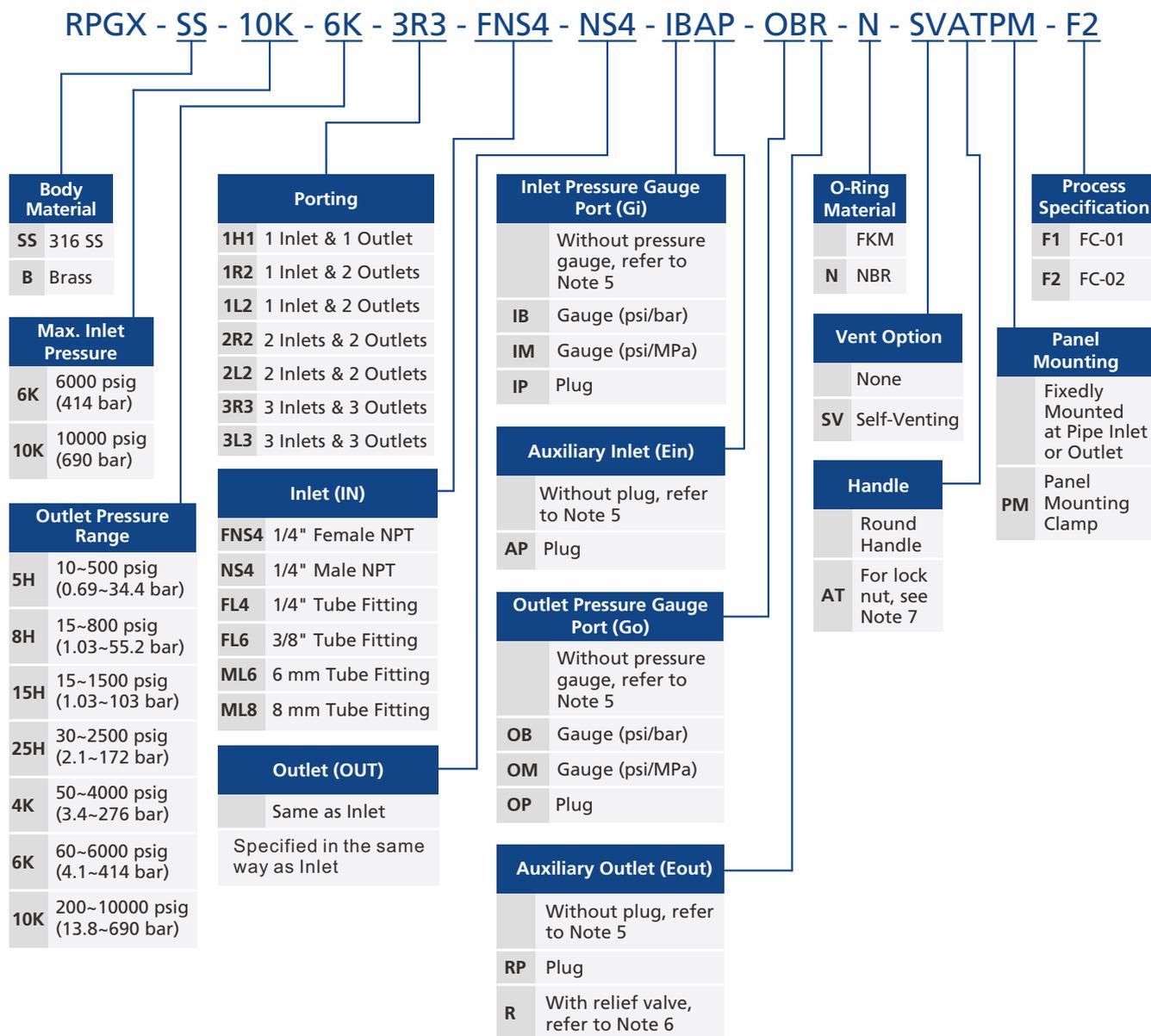
Panel Mounting Cut-Out



Bottom View



## 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.
- Drain port at the bottom of the regulator can not be blocked.
- Differentiating media status when selecting the vent option:
  - Liquid Services: For downstream pipelines with minimal residual media, install the regulator with the drain port facing vertically downward. This configuration allows liquid to drain effectively from the bottom port when the self-venting feature is selected.
  - Gas Services: With the self-venting feature, gas can be vented directly to the atmosphere from below the handle.
  - Fully captured-vent option is available upon request. Contact FITOK Group or our authorized distributors for more information.
- When choosing NPT or Metric/Fractional Tube Fitting ports, the regulator body comes with 1/4" Female NPT inlet and outlet by default. Other options are adapted from 1/4" Male NPT.
- When choosing NPT or Metric/Fractional Tube Fitting for inlet and outlet, gauge ports (Gi, Go) and auxiliary ports (Ein, Eout) are 1/4" Female NPT.
- For the outlet relief valve, the set pressure is factory-set to 1.05-1.1 times the maximum outlet pressure by default, FITOK can preset the specified set pressure according to customer requirements. Please specify the desired set pressure when placing your order.
- Lock nut (AT): The metal lock nut construction is designed to prevent accidental pressure adjustments. FITOK can set the specified outlet pressure based on customer requirements; simply include this information in the remarks when placing an order. If the outlet pressure is not specified, customers will need to adjust and fix it themselves.