High Flow Piston Regulators

RPGN Series

Introduction

RPGN Series High Flow Piston Regulators feature a single-stage pressure reduction design with a piston sensing mechanism that is more resistant to damage caused by pressure spikes and offers a broad outlet pressure range, making them ideal for high flow applications.

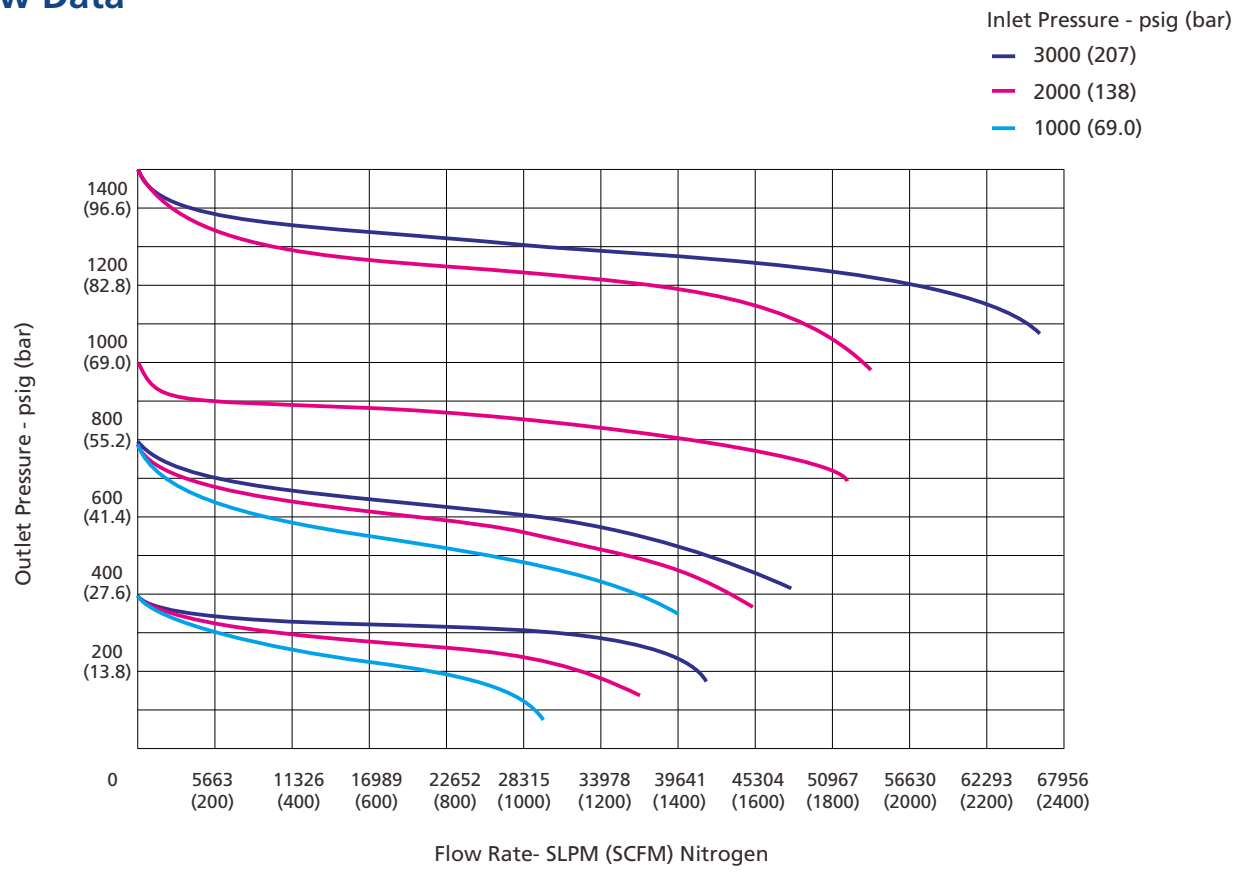
Features

◎ Large diameter piston improves pressure sensitivity.
◎ Optional self-venting feature.

Technical Data

Port Size		1/2", 3/4", 16 mm or 18 mm
Max. Working Pressure	**F316 SS, F316L SS**	4500 psig (310 bar)
	Brass	3800 psig (262 bar)
Outlet Pressure Range		0 ~ 300 psig (0 ~ 20.7 bar)
		0 ~ 600 psig (0 ~ 41.4 bar)
		0 ~ 1000 psig (0 ~ 69.0 bar)
		0 ~ 1500 psig (0 ~ 103 bar)
Flow Coefficient (Cv)		2.0
Working Temperature	**FKM**	-4 ~ 220 °F (-20 ~ 104 °C)
	FFKM	1.4 ~ 220 °F (-17 ~ 104 °C)
SPE (Supply Pressure Effect)	**Max. Outlet Pressure: 300, 600 psig**	1.5 psig per 100 psig source pressure change
	Max. Outlet Pressure: 1000, 1500 psig	4 psig per 100 psig source pressure change
Leak Rate	**External**	Bubble tight
	Internal	Bubble tight

Flow Data

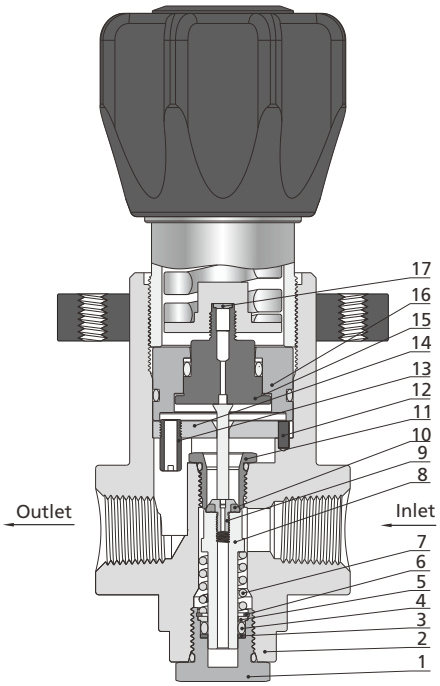


Process Specification

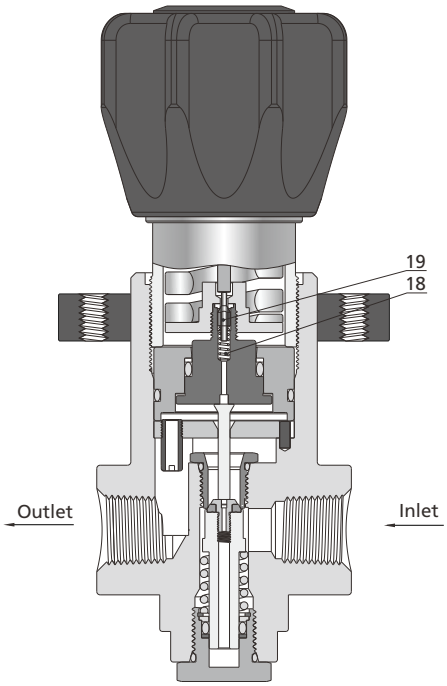
Item \ Process Specification	Special Cleaning and Packaging Process (FC-02)
Material	F316 SS, F316L SS, Brass
Wetted Surface Roughness	Ra 32 µin. (0.8 µm)
Polishing Process	Machine Finished
Assembly Environment	In specially cleaned areas
Packaging	Double bagged

Major Materials of Construction

Non-Self-Venting

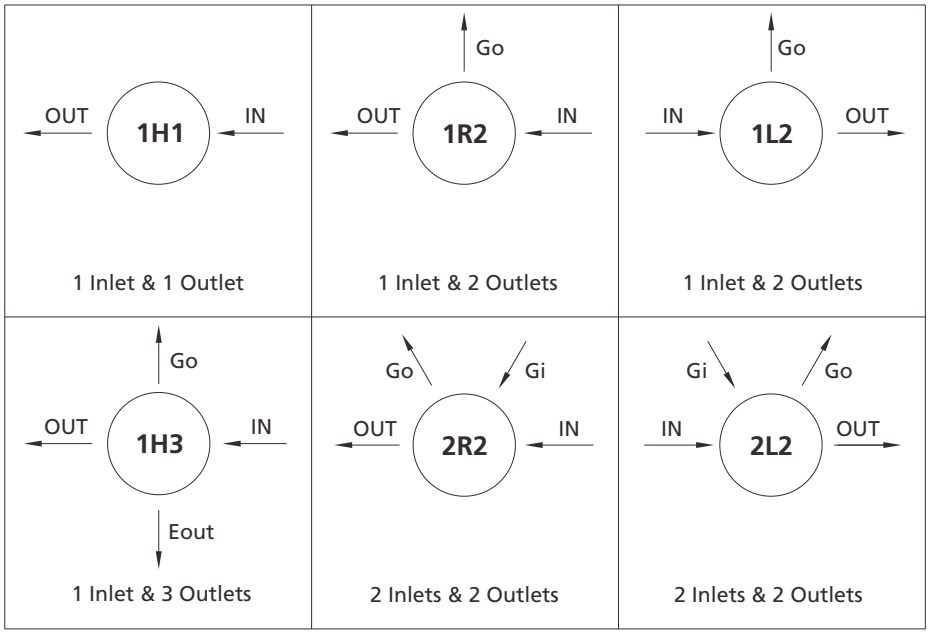


Self-Venting



Item	Component	Material/Specification
1	Plug	316 SS/ASTM A479 or Brass
2	Body	F316 SS/ASTM A182 or F316L SS/ASTM A182 or Brass
3	Circlip	PEEK
4	O-Ring	FKM or FFKM
5	Gland	316 SS/ASTM A479
6	Circlip for Bores	304 SS
7	Poppet Spring	316 SS/ASTM A313
8	Lift Poppet	316 SS/ASTM A479
9	Screw	S17400/ASTM A564
10	Seat	PCTFE/ASTM D1430
11	Seat Retainer	316 SS/ASTM A479
12	Pin	316 SS/ASTM A479
13	Cylinder	316 SS/ASTM A479
14	Guide Block	316 SS/ASTM A479
15	Piston	316 SS/ASTM A479
16	Piston Ring	316 SS/ASTM A479
17	Auxiliary Seat	PCTFE/ASTM D1430
18	Poppet Spring	316L SS/ASTM A313
19	Auxiliary Poppet	S17400/ASTM A564

Porting Configurations



Porting Configuration Symbol

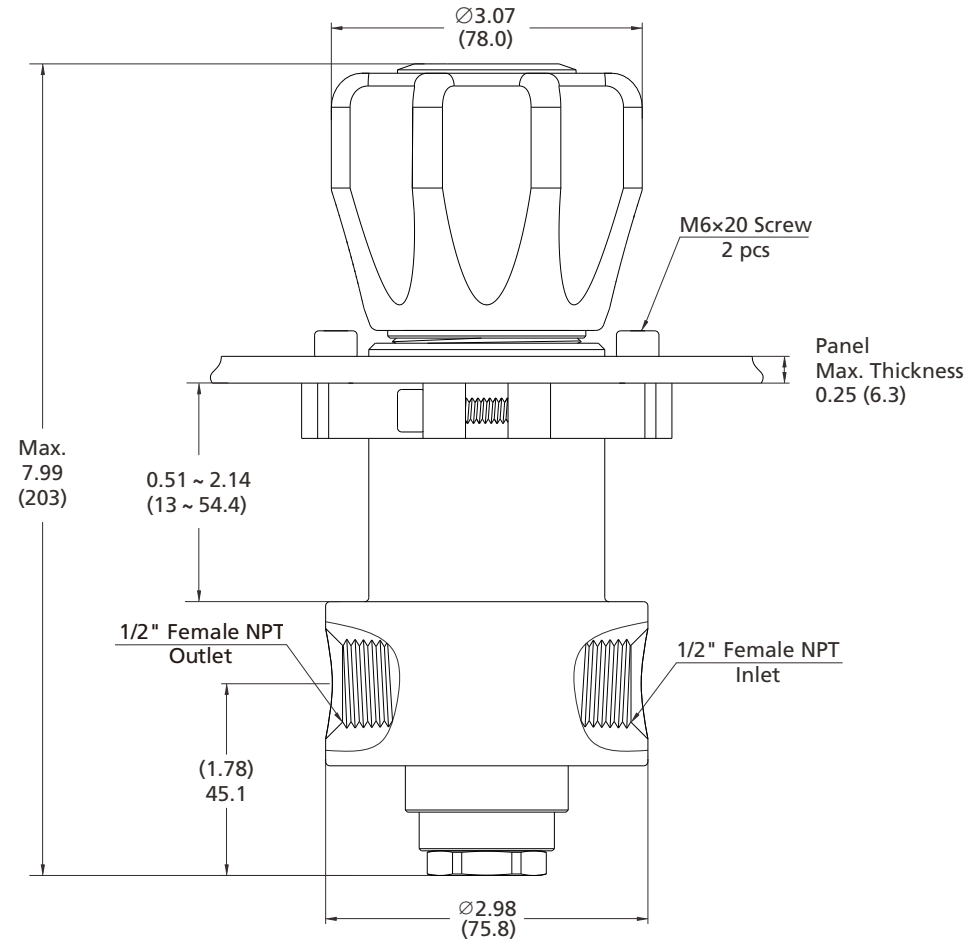
IN	OUT	Gi	Go	Eout
Inlet	Outlet	Inlet Pressure Gauge Port	Outlet Pressure Gauge Port	Auxiliary Outlet

Notes:

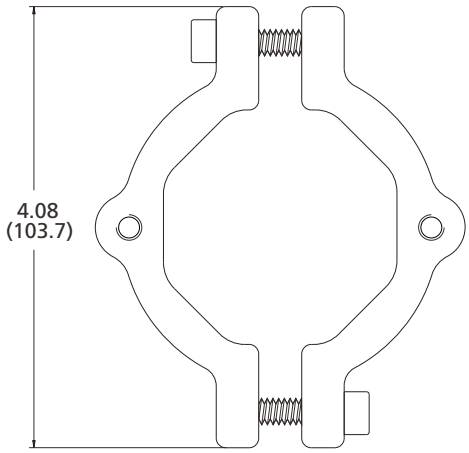
1. IN and OUT are the inlet and outlet ports for connecting the valve to the system. Ports other than IN and OUT should not be used for system connections.
2. Porting configuration is viewed from the top.

Dimensions

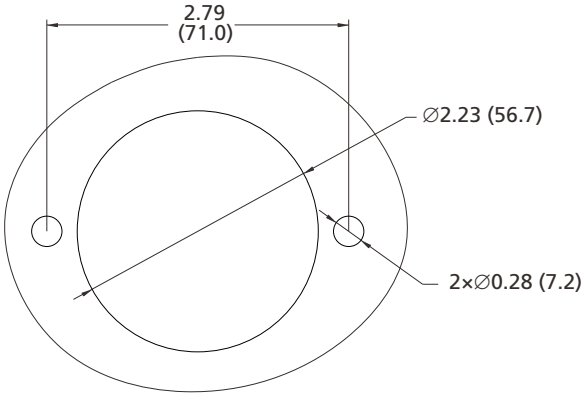
Dimensions, in inches (millimeters), are for reference only.



Clamp View



Panel Mounting Cut-Out



Ordering Number Description

RPGN - 6L - 45H - 1K - 2R2 - FNS8 - FL12 - IB - OB - Z - SVATPM - F2

Body Material	
SS	F316 SS
6L	F316L SS
B	Brass

Max. Inlet Pressure	
38H	3800 psig (262 bar)
45H	4500 psig (310 bar)

Outlet Pressure Range	
3H	0~300 psig (0~20.7 bar)
6H	0~600 psig (0~41.4 bar)
1K	0~1000 psig (0~69.0 bar)
15H	0~1500 psig (0~103 bar)

Porting	
1H1	1 Inlet & 1 Outlet
1R2	1 Inlet & 2 Outlets
1L2	1 Inlet & 2 Outlets
1H3	1 Inlet & 3 Outlets
2R2	2 Inlets & 2 Outlets
2L2	2 Inlets & 2 Outlets

Inlet (IN)	
FNS8	1/2" Female NPT
FNS12	3/4" Female NPT
FL12	3/4" Tube Fitting
ML16	16 mm Tube Fitting
ML18	18 mm Tube Fitting

Outlet (OUT)
Same as Inlet
Specified in the same way as Inlet

Inlet Pressure Gauge Port (Gi)	
	No pressure gauge, refer to Note 3
IB	Gauge (psi/bar)
IM	Gauge (psi/MPa)
IP	Plug

Outlet Pressure Gauge Port (Go)	
	No pressure gauge, refer to Note 3
OB	Gauge (psi/bar)
OM	Gauge (psi/MPa)
OP	Plug

O-Ring Material	
	FKM
Z	FFKM

Vent Option	
	None
SV	Self-Venting

Handle	
	Round Handle
AT	For lock nut, see Note 5

Panel Mounting	
	Fixedly Mounted at Pipe Inlet or Outlet
PM	Panel Mounting Clamp

Process Specification	
F2	FC-02

Notes:

1. "Ordering Number Description" is a reference to understanding the combination rules of FITOK product part numbers. Not all combinations are available. Should you have any questions, please contact FITOK Group or our authorized distributors.
2. When choosing NPT or Metric/Fractional Tube Fitting ports, the regulator body comes with 1/2" Female NPT inlet and outlet by default. Other options are adapted from 1/2" Male NPT.
3. When choosing NPT or Metric/Fractional Tube Fitting for inlet and outlet, gauge ports (Gi, Go) and auxiliary outlet (Eout) are 1/4" Female NPT.
4. When using the vent function, media will be discharged into the atmosphere from beneath the handle.
5. 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.