

Regulators

FHR-1 Series High Performance High Purity Regulators

Features

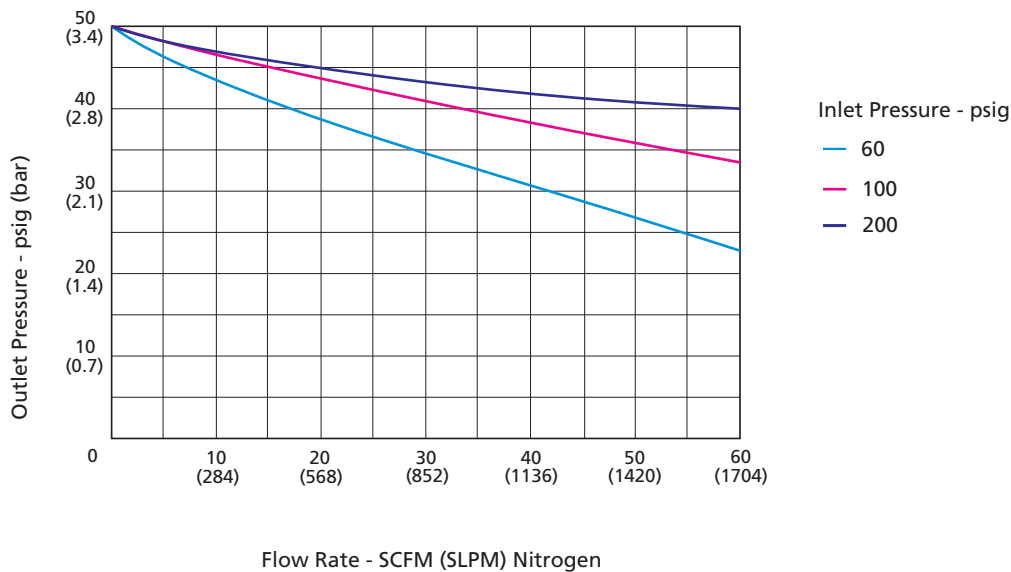
- 316L stainless steel body for corrosive gases and toxic gases
- Standard Hastelloy poppet and diaphragm
- Tied diaphragm for added safety
- Metal to metal diaphragm to body seal
- No springs or threads are exposed to the wetted area
- Internal surfaces are finished with Ra 10 µin. (0.25 µm) or Ra 5 µin. (0.13 µm) to ensure minimal particle generation
- With special cleaning and packaging, applicable to oxygen-enriched environments
- Ultra High Purity Service available

Technical Data

Port Size		1/4" , 3/8" or 1/2"
Max. Working Pressure		3500 psig
Outlet Pressure Range		0~30, 0~60, 0~100, 0 ~150 psig
Flow Coefficient (Cv)		3500 psig Inltet: 0.06 600,1000 psig Inlet: 0.15
Temperature		PCTFE: -40~149°F (-40~65°C) Vespel: -15~302°F (-26~150°C)
Leak Rate (Helium)	Internal	≤5x10 ⁻⁸ std cm ³ /s
	External	≤1x10 ⁻⁹ std cm ³ /s
Weight (regulator only)		≈ 1.5 lbs (0.7 kg)



Flow Data

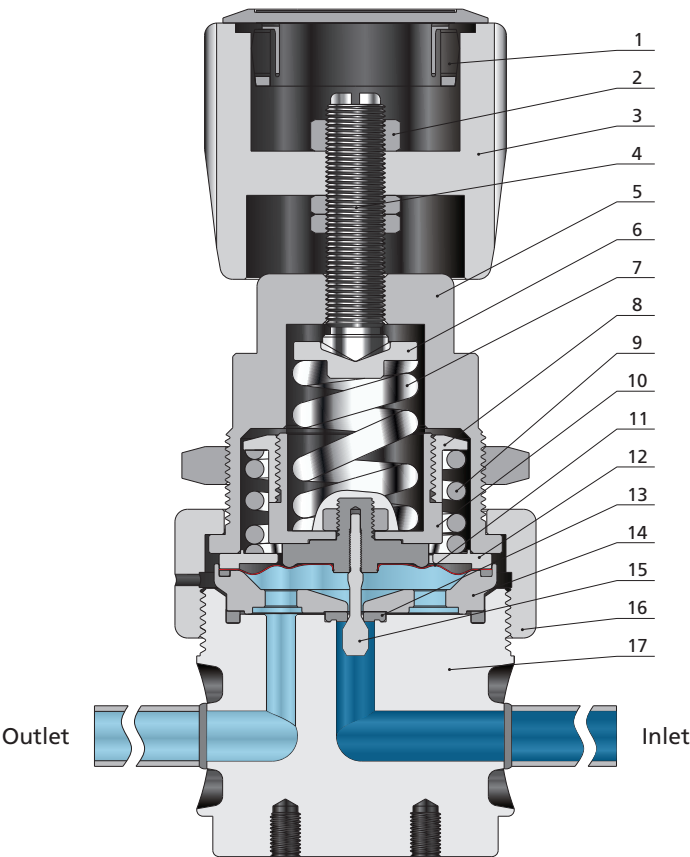


Process Specification

Technology	Special Cleaning and Packaging (FC-02)	Ultra High Purity (FC-03)
Material/Specification	316L SS/ASTM A479	316L VAR /SEMI F20
Wetted Surface Roughness	Ra 10 µin. (0.25 µm) ^①	Ra 5 µin. (0.13 µm)
Polishing Process	Machine finished ^①	Electropolished

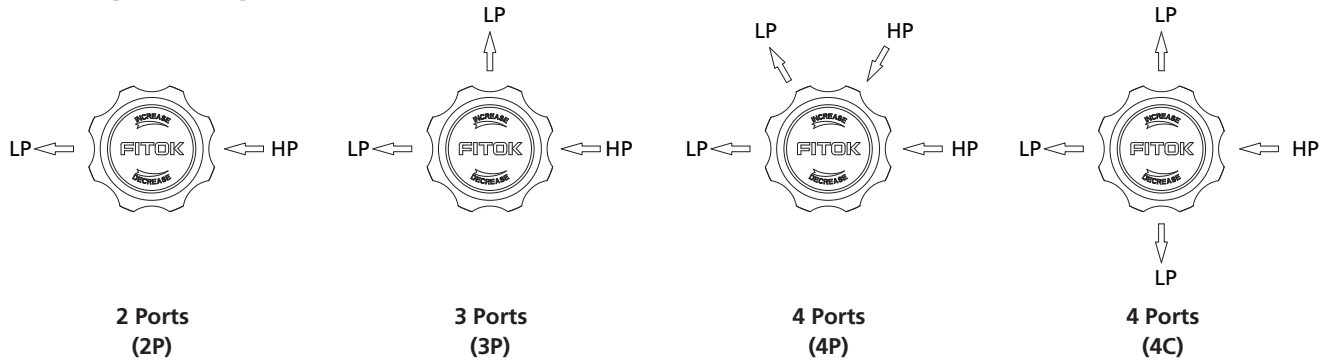
① For valves with FR connections and tube butt connections, the standard polishing process is electropolishing and the internal surface roughness is finished to an average of Ra 5 µin. (0.13 µm).

Major Materials of Construction



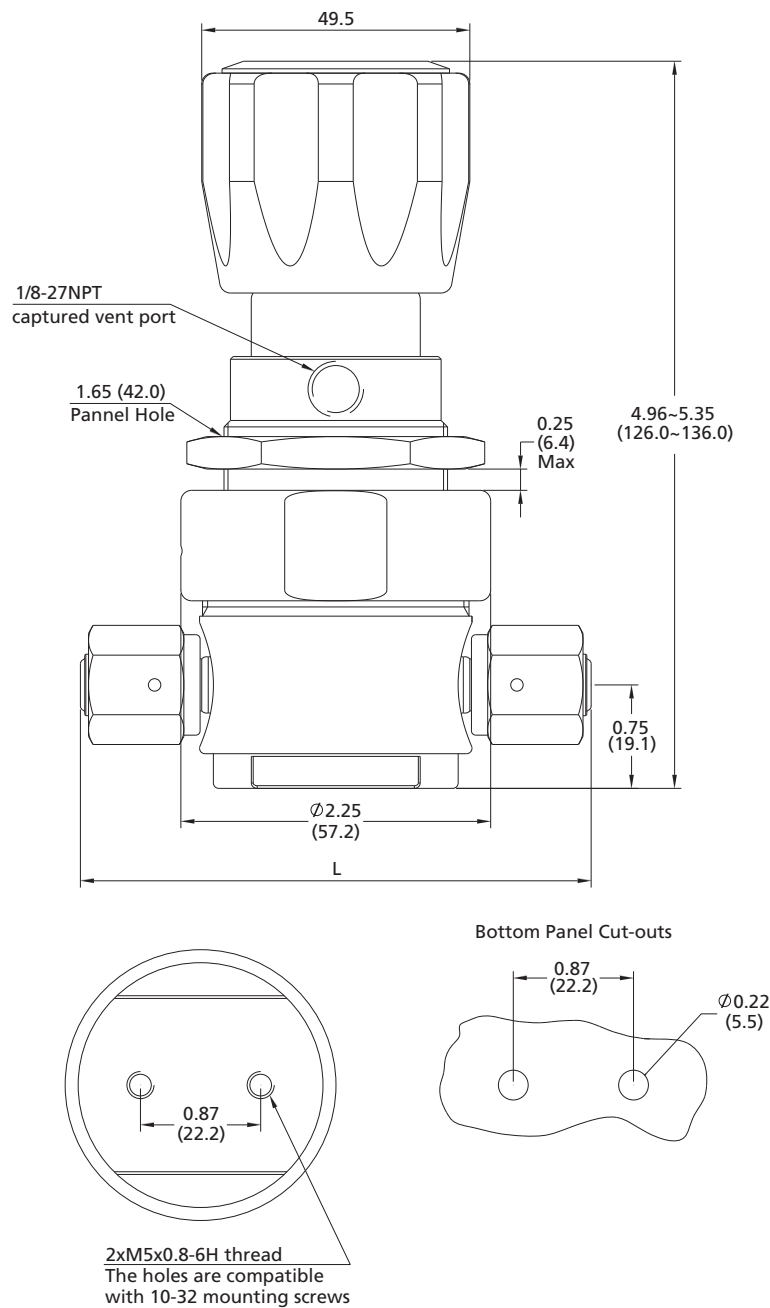
Item	Component	Material/Specification
1	Hole Plug	ABS
2	Stem Nut	Brass
3	Knob Handle	Aluminium
4	Stem	Brass
5	Bonnet	304 SS/ASTM A479
6	Spring Button	304 SS/ASTM A479
7	Range Spring	Alloy
8	Adjustment Nut	Aluminium
9	Return Spring	302 SS/ASTM A313
10	Spring Shield	Aluminium
11	Diaphragm	Hastelloy
12	Gland	630/ASTM A564
13	Seat	PCTFE/ASTM D1430 or Vespel
14	Support	316L SS/ASTM A479 or 316L VAR/SEMI F20 or 316L VIM-VAR /SEMI F20
15	Lift Poppet	Alloy C-22/ASTM B574
16	Bonnet Nut	304 SS/ASTM A479
17	Body	316L SS/ASTM A479 or 316L VAR /SEMI F20 or 316L VIM-VAR /SEMI F20

Porting Configurations



Dimensions

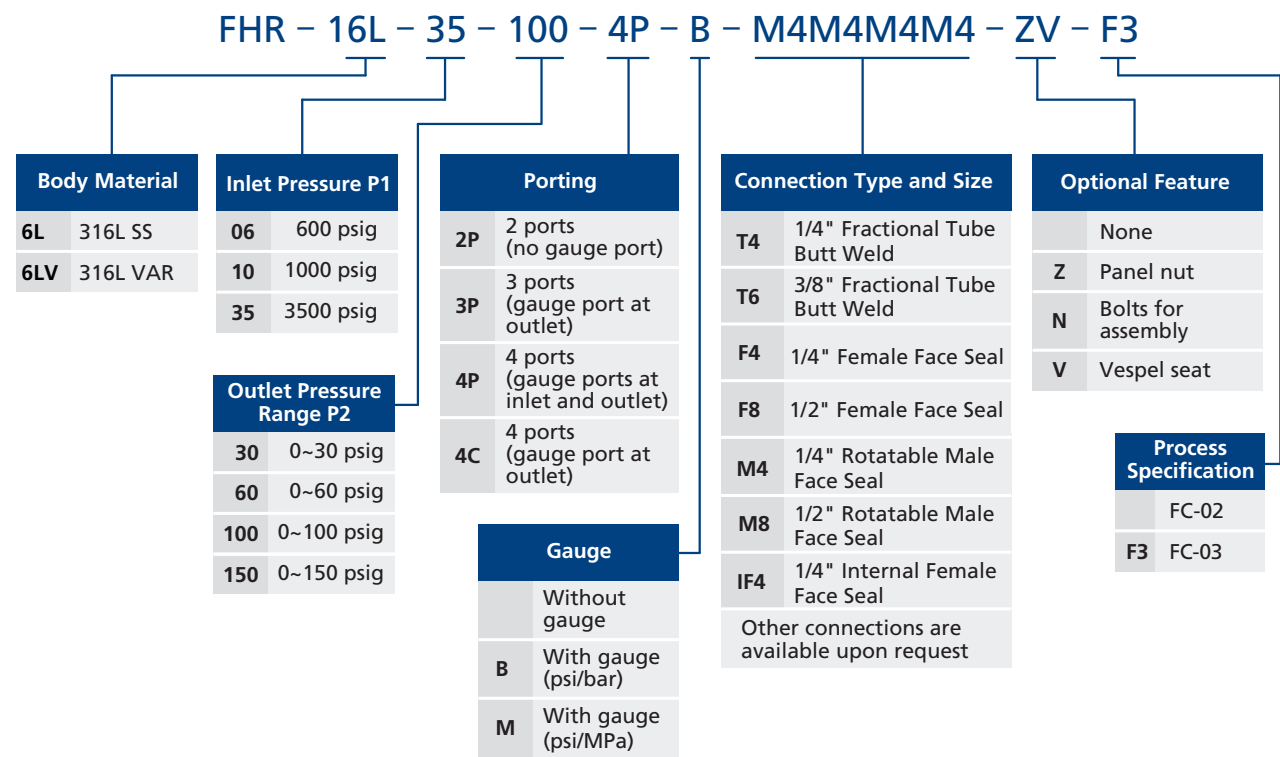
Dimensions, in inches (millimeters), are for reference only.



Note: Vent port (1/8-27NPT) points to 12 o'clock direction from top view.

Connection Designator	Connection Type and Size	Dimensions, in. (mm)
		L
T4	1/4" Fractional Tube Butt Weld	3.70 (94.0)
T6	3/8" Fractional Tube Butt Weld	
F4	1/4" Female Face Seal	
F8	1/2" Female Face Seal	4.75 (120.6)
M4	1/4" Rotatable Male Face Seal	3.70 (94.0)
M8	1/2" Rotatable Male Face Seal	4.75 (120.6)
IF4	1/4" Internal Female Face Seal	1.09 (27.7)

Ordering Number Description



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