

Cylinder Pressure Regulators

FCR-1 Series General Diaphragm Regulators

Features

- ⦿ Excellent sensitivity and set point pressure stability
- ⦿ Reduced inner capacity
- ⦿ 40 µm filter installed at inlet (face seal connection excluded)
- ⦿ With special cleaning and packaging, applicable to oxygen-enriched environments

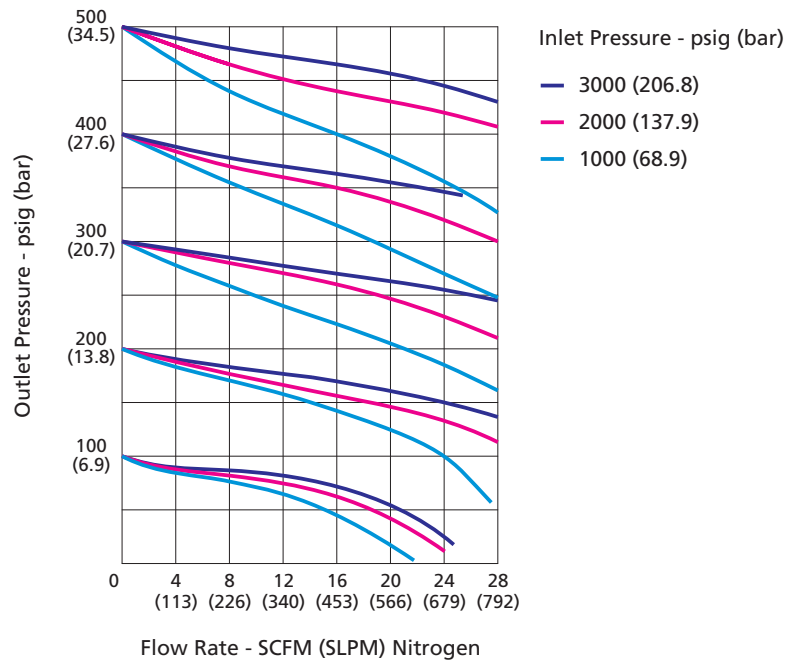


Model: FCR-16L-30-100-C330-B-B-00-R-P

Technical Data

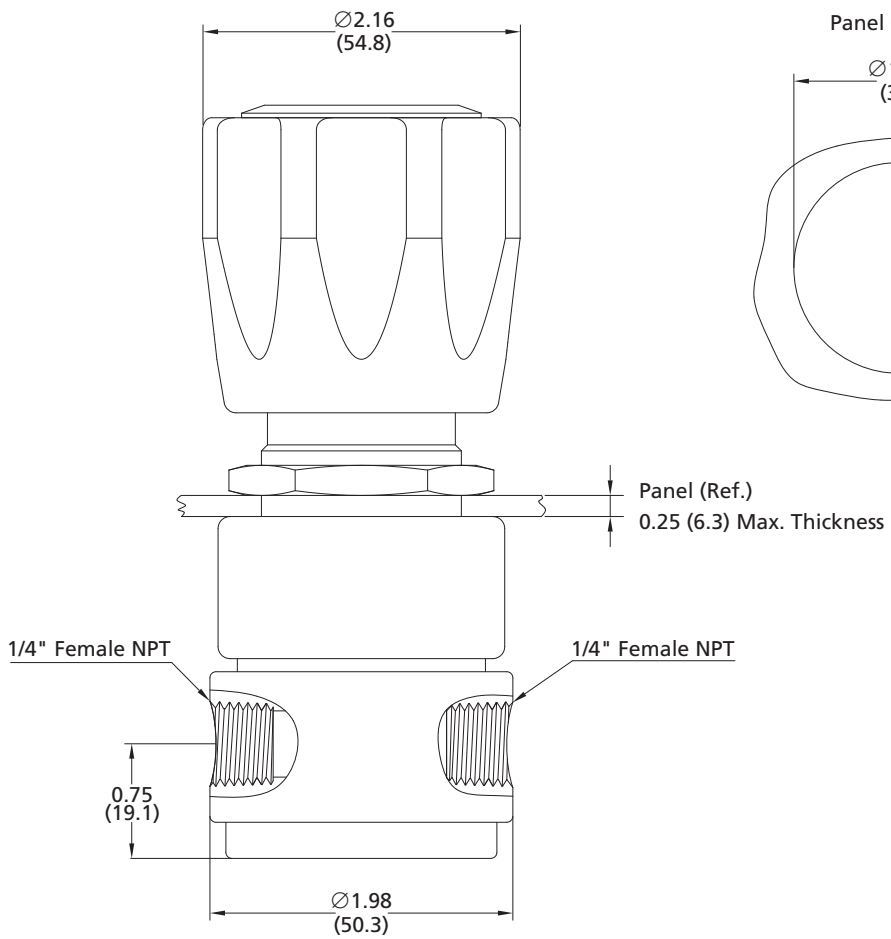
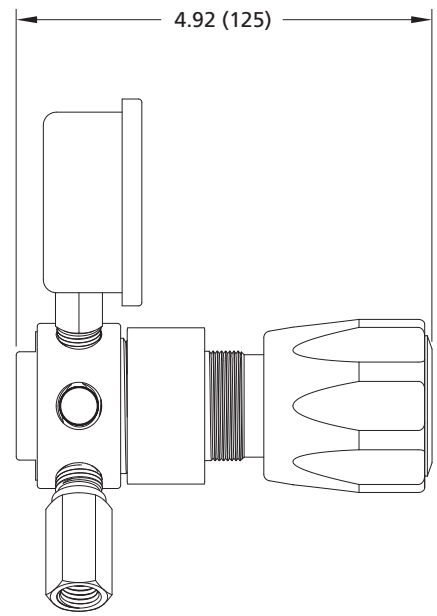
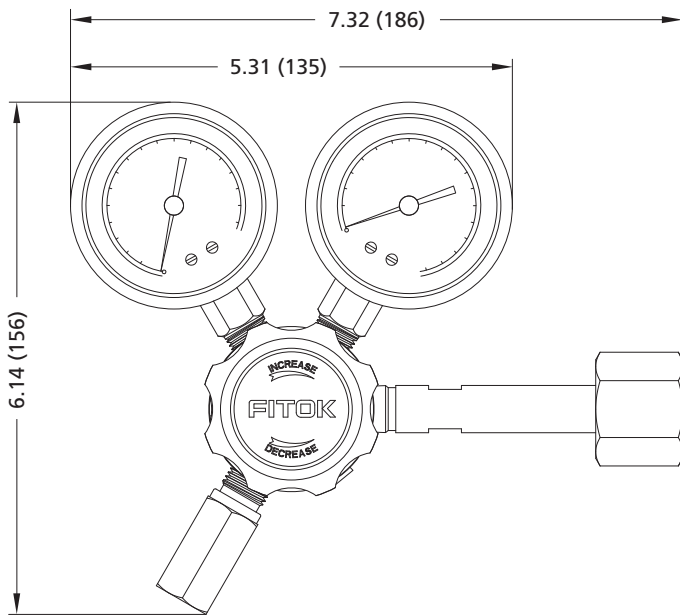
- ⦿ Single-stage regulator
- ⦿ Maximum inlet pressure: 3000 or 4500 psig
- ⦿ Outlet pressure range: 0~25, 0~50, 0~100, 0~250 or 0~500 psig
- ⦿ Material of the internal components:
 - Seat: PCTFE
 - Diaphragm: Hastelloy
 - Filter: 316L
- ⦿ Temperature: -40°F~+165°F (-40°C~+74°C)
- ⦿ Leak rates (helium):
 - Internal: $\leq 1 \times 10^{-7}$ std cm³ /s
 - External: $\leq 1 \times 10^{-9}$ std cm³ /s
- ⦿ Flow coefficient (Cv): 0.06
- ⦿ Weight (regulator only): ≈ 1.98 lbs (0.9 kg)

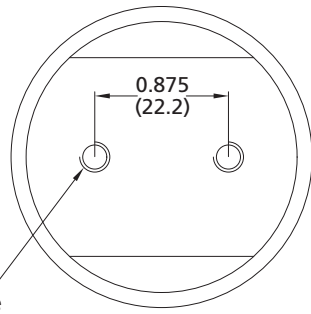
Typical Flow Chart



Dimensions

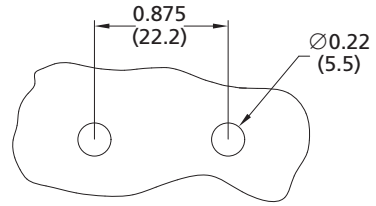
Dimensions, in inches (millimeters), are for reference only.



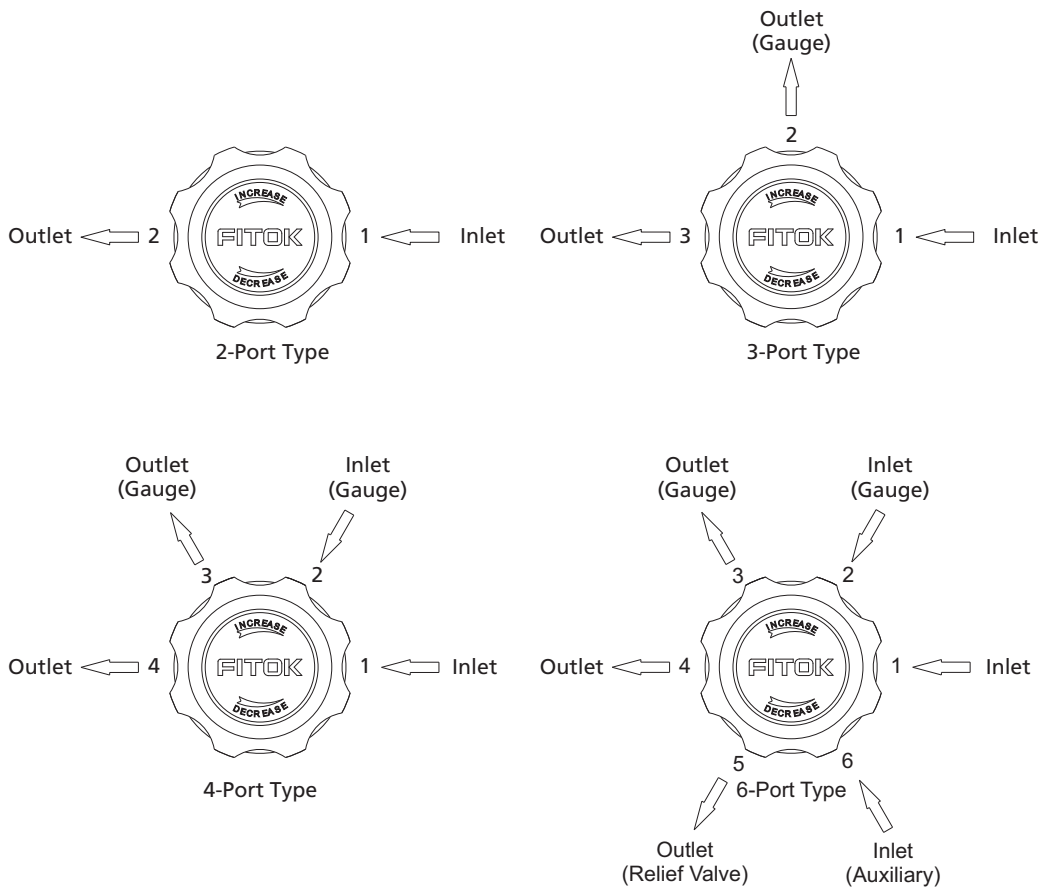


2×M5×0.8-6H Thread
The holes are compatible with 10-32 mounting screws

Bottom Panel Cut-out



Port Configurations



Ordering Number Description

FCR - 16L - 30 - 100 - C580 - M - M - 32 - R - P - Z

Body Material	Connection 1	Connection 2	Connection 4	Connection 5	Connection 6
6L 316L SS	00 1/4" Female NPT	B With Gauge (psi/bar)	None	None	Same as Connection 5
SS 316 SS	01 1/4" Male NPT	M With Gauge (psi/MPa)	00 1/4" Female NPT	R Relief Valve	
HC Hastelloy C-276	10 1/4" Tube Fitting	P Plug	01 1/4" Male NPT	P Plug	
B Brass (Nickel-plated)	11 3/8" Tube Fitting	FFR4 1/4" Rotatable Female FR Fitting	10 1/4" Tube Fitting	00 Female NPT	
	20 6 mm Tube Fitting	RFR4 1/4" Rotatable Male FR Fitting	11 3/8" Tube Fitting		
	21 8 mm Tube Fitting	IFR4 1/4" Integral Female FR Fitting	20 6 mm Tube Fitting		
	FFR4 1/4" Rotatable Female FR Fitting		21 8 mm Tube Fitting		
	RFR4 1/4" Rotatable Male FR Fitting		FFR4 1/4" Rotatable Female FR Fitting		
	C_ _ _ CGA Number (USA)		RFR4 1/4" Rotatable Male FR Fitting		
	DIN_ DIN Number (Germany)		30 Diaphragm Valve with 1/4" Female NPT		
	Other connections are available upon request	Others refer to Connection 4	31 Diaphragm Valve with 1/4" Male NPT		
	Refer to page B-30 for cylinder connections based on specific gas type. Cylinder connections compliant to other standards are available upon request. Please contact FITOK Group for details.		32 Diaphragm Valve with 1/4" Tube Fitting		
			33 Diaphragm Valve with 3/8" Tube Fitting		
			34 Diaphragm Valve with 6 mm Tube Fitting		
			35 Diaphragm Valve with 8 mm Tube Fitting		
			Other connections are available upon request		

Inlet Pressure P1	Outlet Pressure Range P2	Installation Type
30 3000 psig	25 0~25 psig	Bottom Thread Hole
45 4500 psig	50 0~50 psig	Z Installed with One Panel Nut
	100 0~100 psig	N Installed with Screws at the Bottom
	250 0~250 psig	
	500 0~500 psig	

Connection 3
None
3 ports same as Connection 1
4 ports same as Connection 2

Notes:

1. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.
 2. Before ordering, please read **User's Guide** on A-11.
 3. For face seal connection, the connection and body are orbital-welded integral structure. The pressure gauge is installed on "RFR4" connection by default.
 4. For connections other than face seal connection, the body connections are 1/4" Female NPT by default. Other options are adapted from 1/4" Male NPT.
- Examples of part number:
- a. 2-port type (1 in, 1 out): FCR-16L-45-100-C580-00, FCR-16L-45-100-RFR4-RFR4
 - b. 3-port type (1 in, 2 out): FCR-16L-30-500-C330-B-00, FCR-16L-45-100-FFR4-B-FFR4
 - c. 4-port type (2 in, 2 out): FCR-1B-45-250-00-B-B-34, FCR-16L-45-250-RFR4-B-B-RFR4

Gas Control Equipment
Related Products
Technical References

Cylinder Pressure Regulators

FCR-1S Series Sensitive Diaphragm Regulators

Features

- ⦿ Large diameter convoluted diaphragm to increase pressure sensitivity
- ⦿ 40 µm filter installed at inlet
- ⦿ With special cleaning and packaging, applicable to oxygen-enriched environments

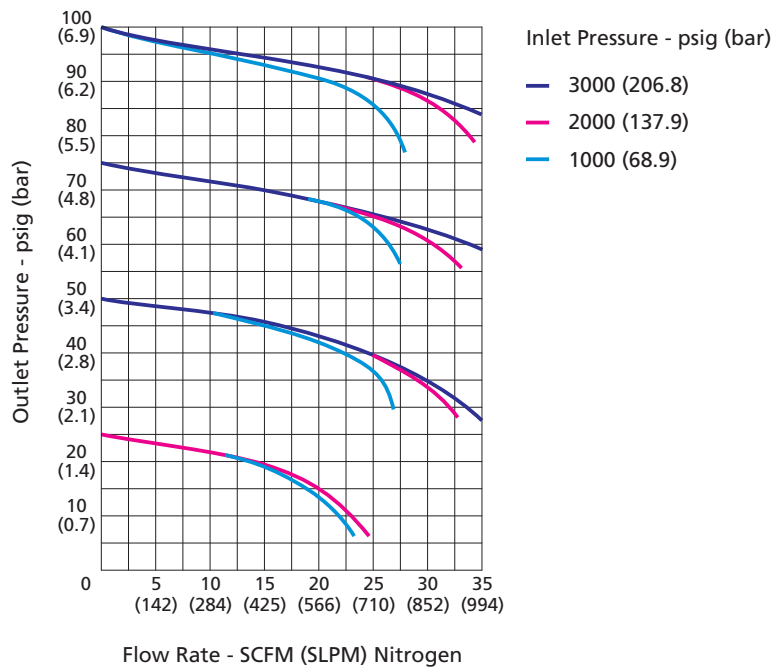
Technical Data

- ⦿ Single-stage regulator
- ⦿ Maximum inlet pressure: 3000 or 4500 psig
- ⦿ Outlet pressure range: 0~25, 0~50, 0~100, 0~150 or 0~200 psig
- ⦿ Material of the internal components:
 - Seat: PCTFE
 - Diaphragm: Hastelloy
 - Filter: 316L
- ⦿ Temperature: -40°F~+165°F (-40°C~+74°C)
- ⦿ Leak rates (helium):
 - Internal: $\leq 1 \times 10^{-7}$ std cm³/s
 - External: $\leq 1 \times 10^{-9}$ std cm³/s
- ⦿ Flow coefficient (Cv): 0.06
- ⦿ Weight (regulator only): ≈ 2.87 lbs (1.3 kg)



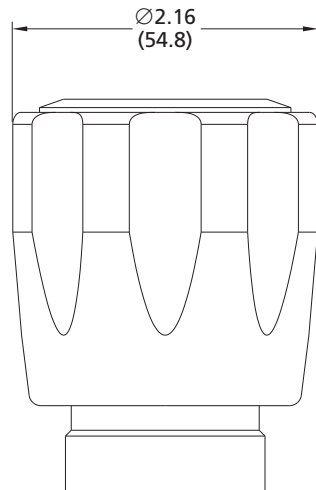
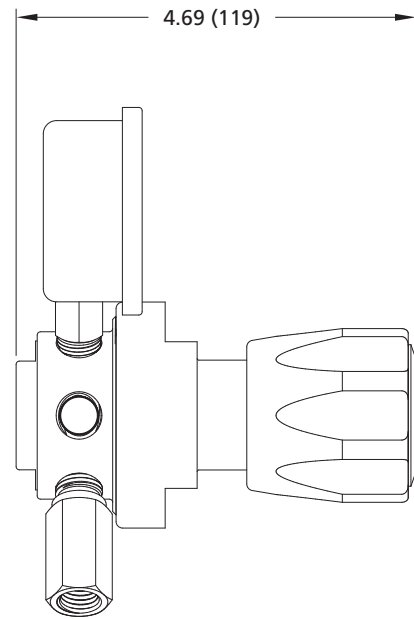
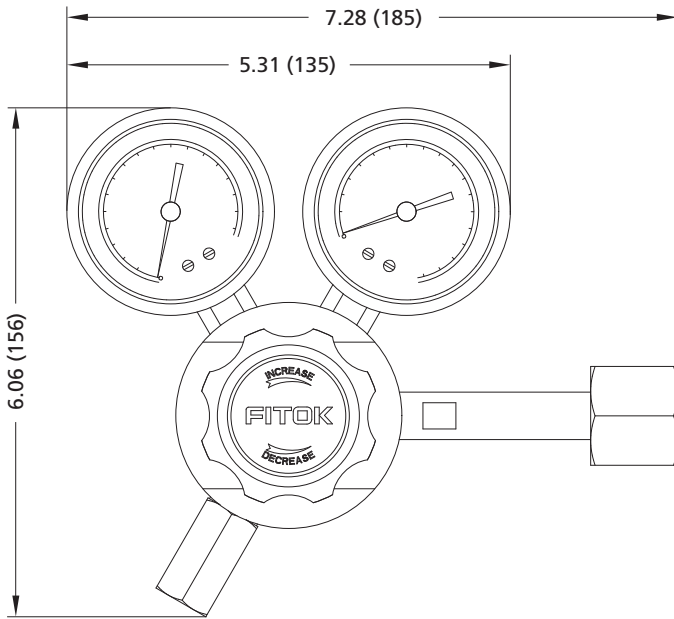
Model: FCR-156L-30-50-C580-B-B-00-R-P

Typical Flow Chart

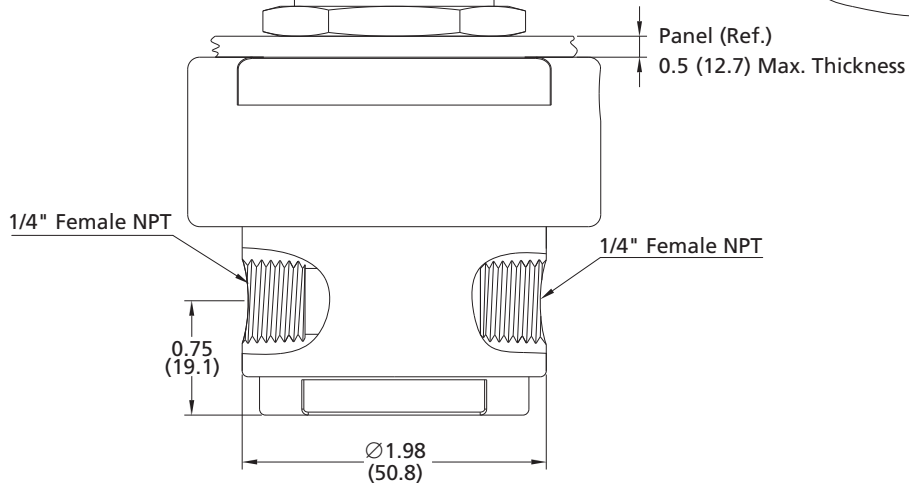
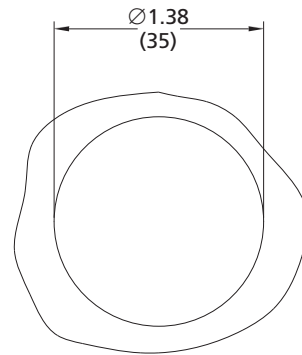


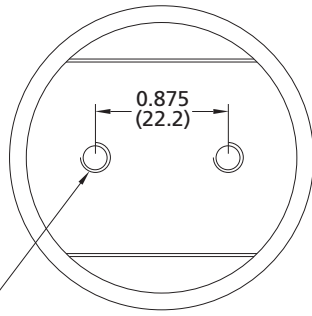
Dimensions

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



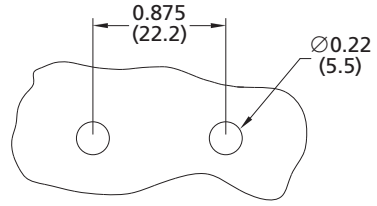
Panel Cut-out



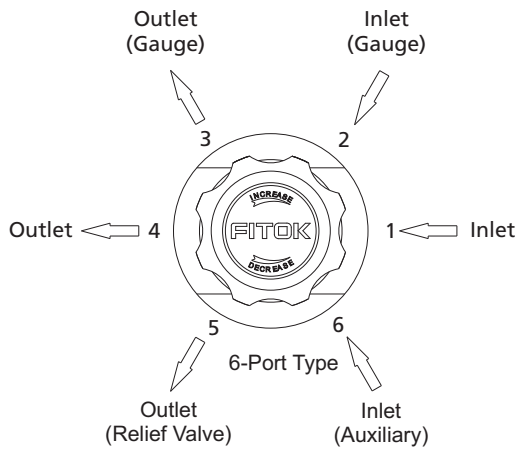
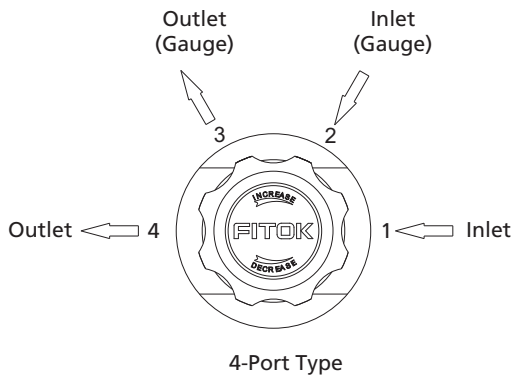
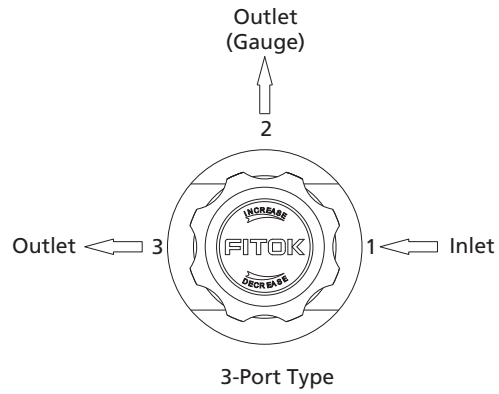
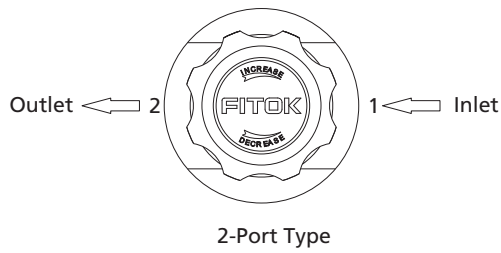


2xM5x0.8-6H Thread
The holes are compatible with 10-32 mounting screws

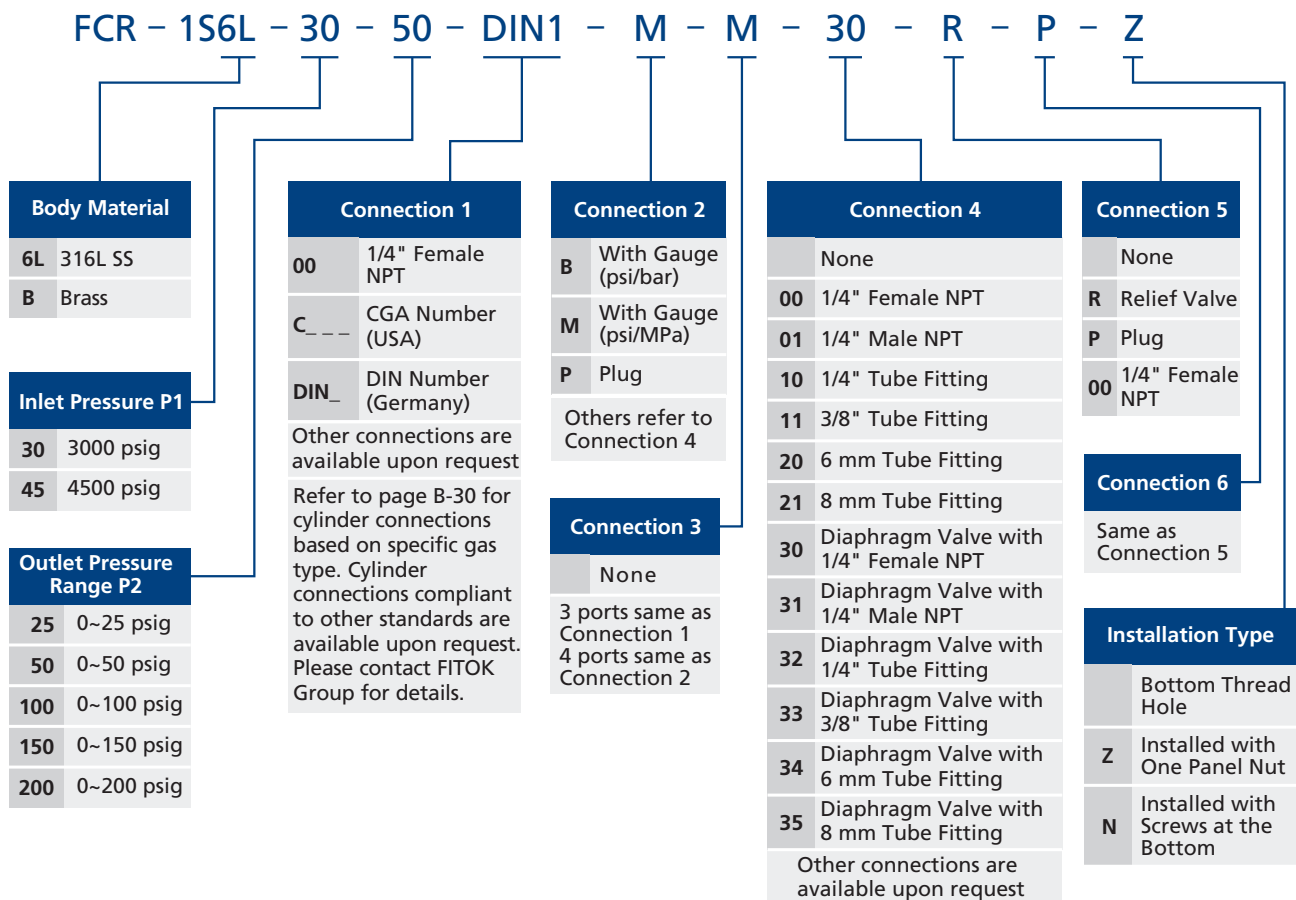
Bottom Panel Cut-out



Port Configurations



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. Before ordering, please read **User's Guide** on A-11.
3. The body connections are 1/4" Female NPT by default. Other options are adapted from 1/4" Male NPT.
Examples of part number:
 - a. 2-port type (1 in, 1 out): FCR-1S6L-45-25-C580-00
 - b. 3-port type (1 in, 2 out): FCR-1SB-30-150-C330-B-00
 - c. 4-port type (2 in, 2 out): FCR-1SB-45-200-00-00-00-00

Cylinder Pressure Regulators

FCR-2 Series General Piston Regulators

Features

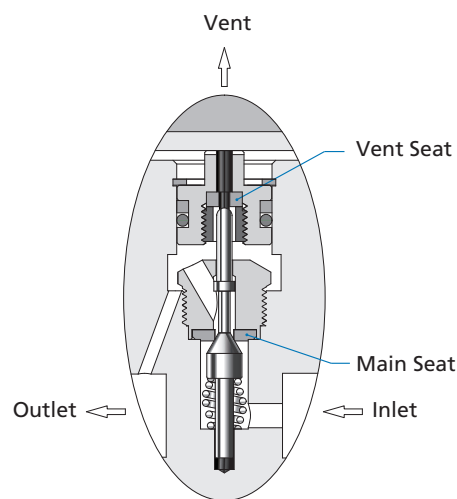
- ⦿ Piston sensing design with greater outlet pressure adjustment range
- ⦿ Reduced inner capacity
- ⦿ 40 µm filter installed at inlet
- ⦿ With special cleaning and packaging, applicable to oxygen-enriched environments



Model: FCR-26L-45-750-DIN8-B-B-00-P-P

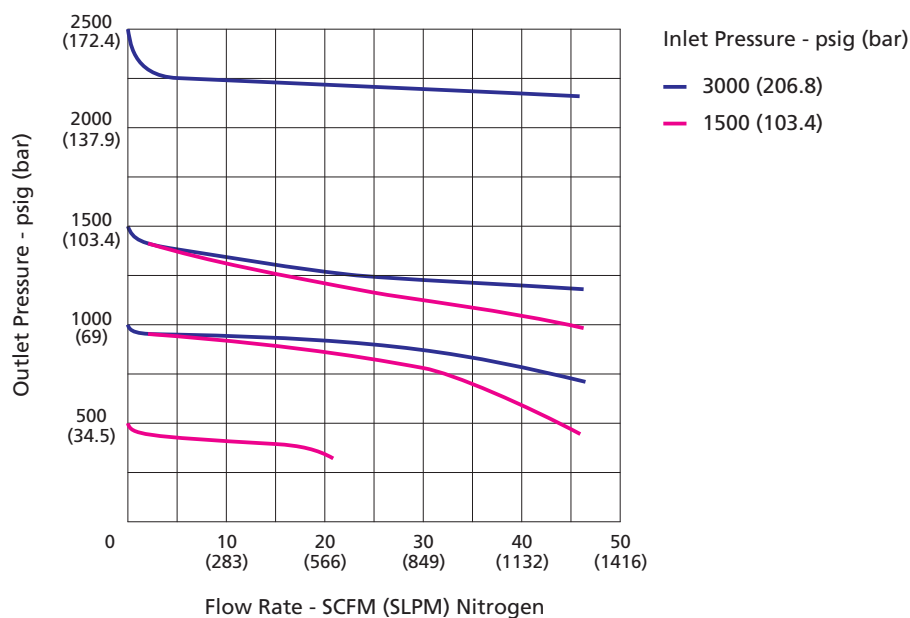
Technical Data

- ⦿ Single-stage regulator
- ⦿ Maximum inlet pressure: 4500 or 6000 psig
- ⦿ Outlet pressure range: 0~750, 0~1500 or 0~2500 psig
- ⦿ Material of the internal components:
 - Without venting Model: Main seat PCTFE
 - Venting Model: Main seat PEEK, vent seat PCTFE
 - Vent Seat: PCTFE
 - Piston: 316L
 - O-ring: FKM or FFKM
 - Filter: 316L
- ⦿ Temperature: -15°F~+165°F (-26°C~+74°C)
- ⦿ Leak rates:
 - Internal: Bubble-tight
 - External: Bubble-tight
- ⦿ Flow coefficient (Cv):
 - Without vent: 0.06
 - Vent: 0.1
- ⦿ Weight (regulator only): ≈1.98 lbs (0.9 kg)



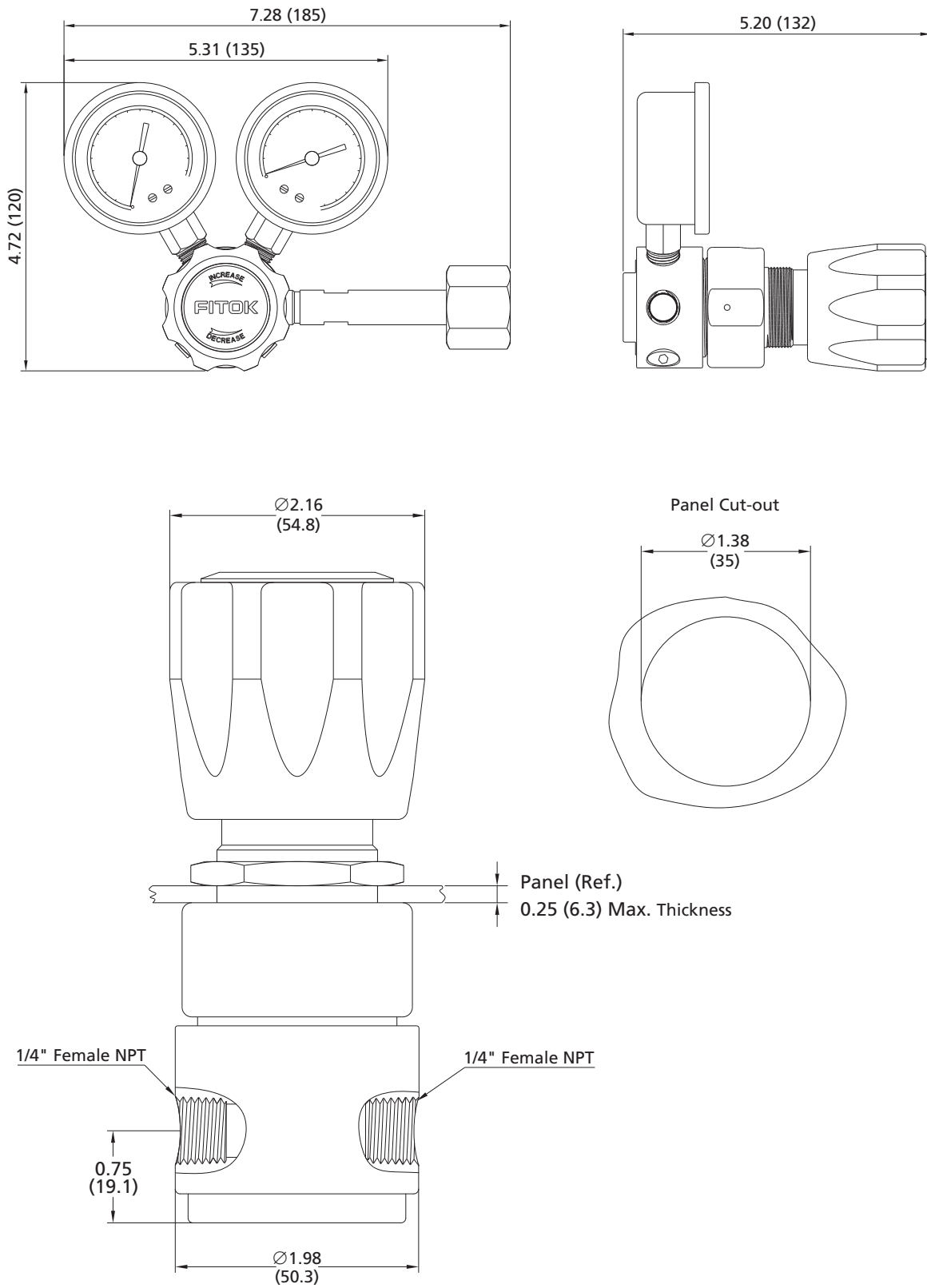
Construction Drawing with Venting Model

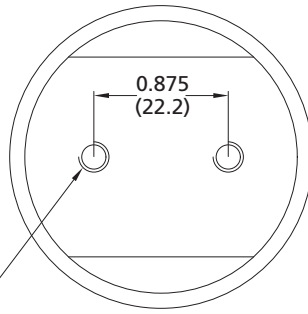
Typical Flow Chart



Dimensions

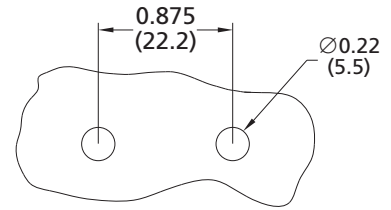
Dimensions, in inches (millimeters), are for reference only.



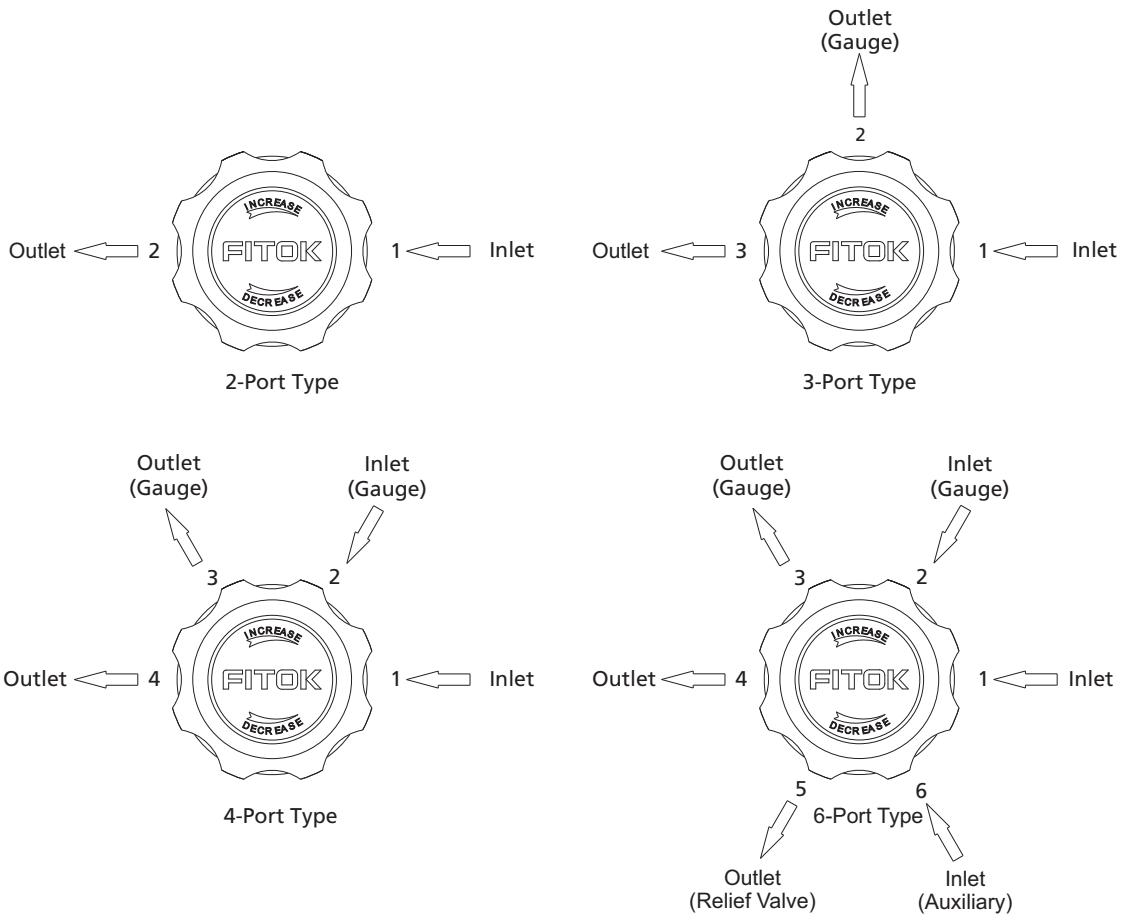


2×M5×0.8-6H Thread
The holes are compatible with 10-32 mounting screws

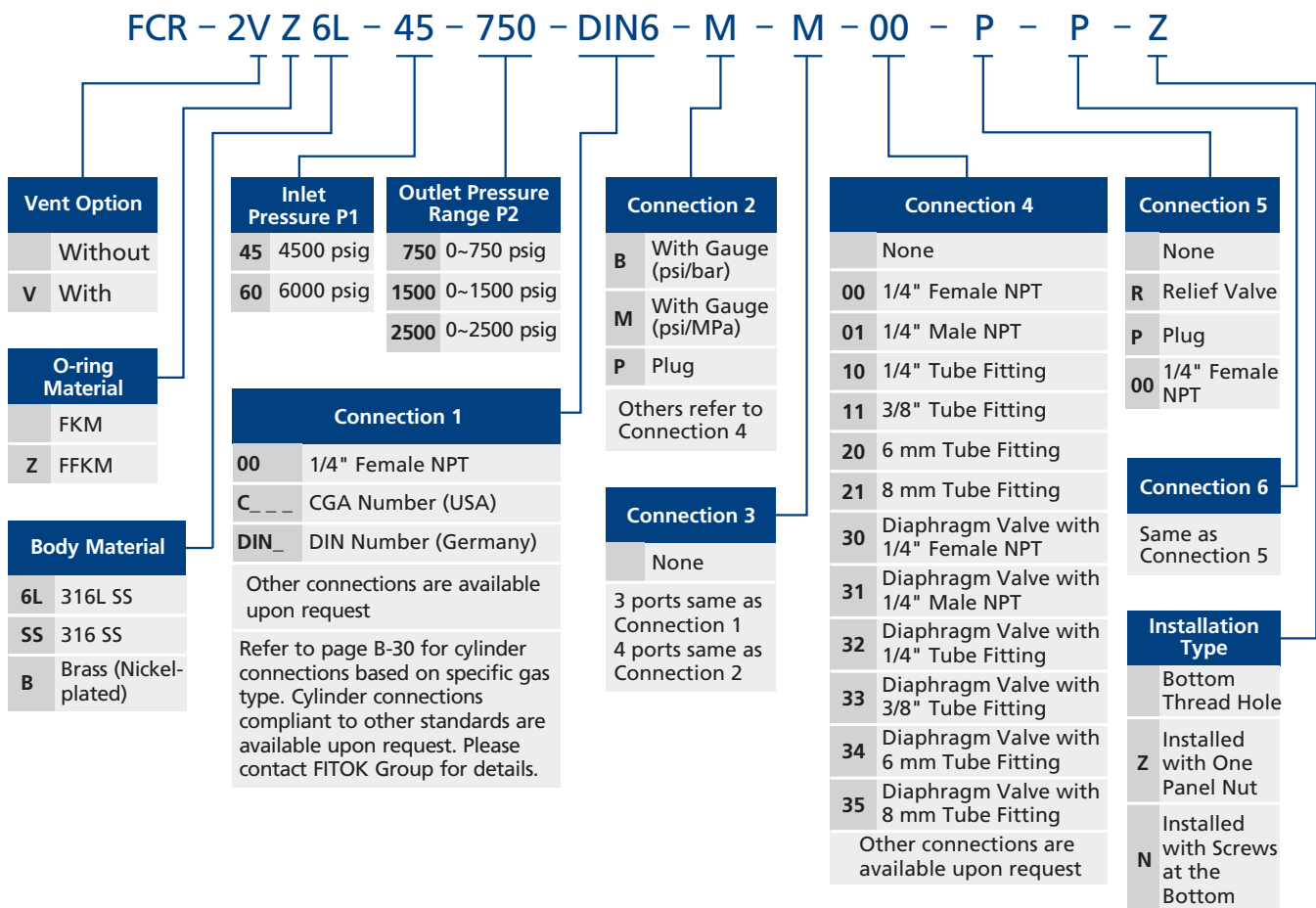
Bottom Panel Cut-out



Port Configurations



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. Before ordering, please read **User's Guide** on A-11.
3. The body Connections are 1/4" Female NPT by default. Other options are adapted from 1/4" Male NPT.

Examples of part number:

- a. 2-port type (1 in, 1 out): FCR-26L-45-1500-C580-00
- b. 3-port type (1 in, 2 out): FCR-2VB-45-750-C660-00-00
- c. 4-port type (2 in, 2 out): FCR-2VZSS-60-2500-00-B-B-32

Cylinder Pressure Regulators

FCR-1D Series Dual-stage Diaphragm Regulators

Features

- ⦿ Compact design
- ⦿ Dual-stage pressure reducing construction to provide accurate and stable pressure
- ⦿ 40 μm filter installed at inlet (face seal connection excluded)
- ⦿ With special cleaning and packaging, applicable to oxygen-enriched environments

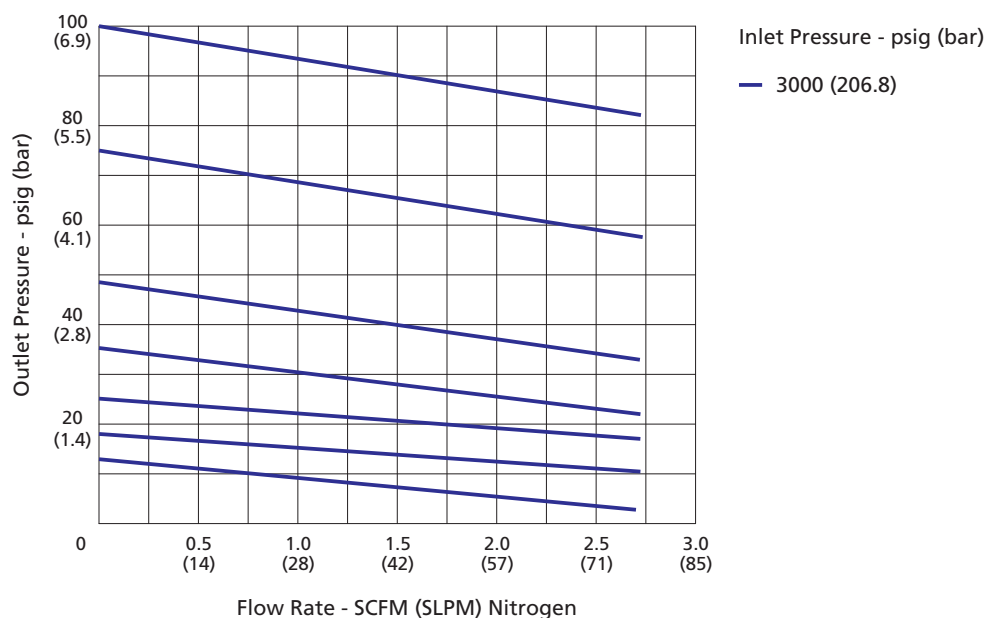


Model: FCR-1D6L-30-100-C660-B-B-00-R-P

Technical Data

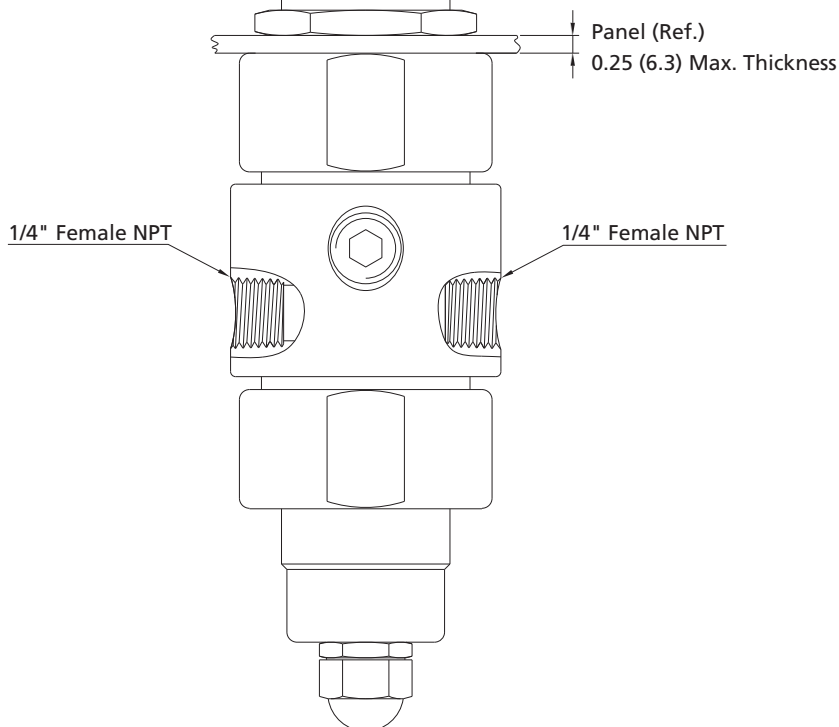
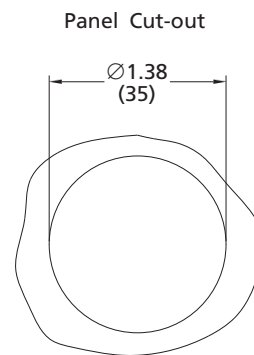
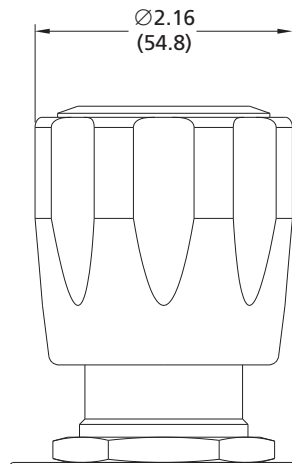
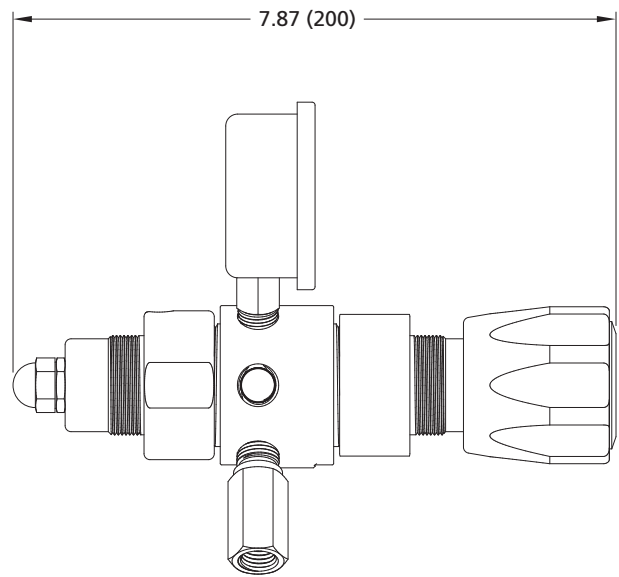
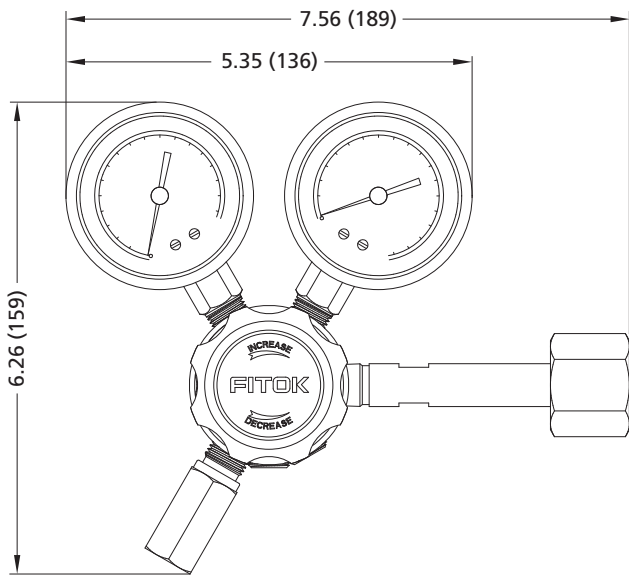
- ⦿ Maximum inlet pressure: 3000 or 4500 psig
- ⦿ 1st stage outlet pressure range: 480~500 psig
2nd stage outlet pressure range: 0~25, 0~50, 0~100, 0~150, 0~250 psig
- ⦿ Material of the internal components:
Seat: PCTFE
Diaphragm: Hastelloy
Filter: 316L
- ⦿ Temperature: -40°F~+165°F (-40°C~+74°C)
- ⦿ Leak rates (helium):
Internal: $\leq 1 \times 10^{-7}$ std cm³/s
External: $\leq 1 \times 10^{-9}$ std cm³/s
- ⦿ Flow coefficient (Cv): 0.05
- ⦿ Weight (regulator only): ≈ 3.3 lbs (1.5 kg)

Typical Flow Chart

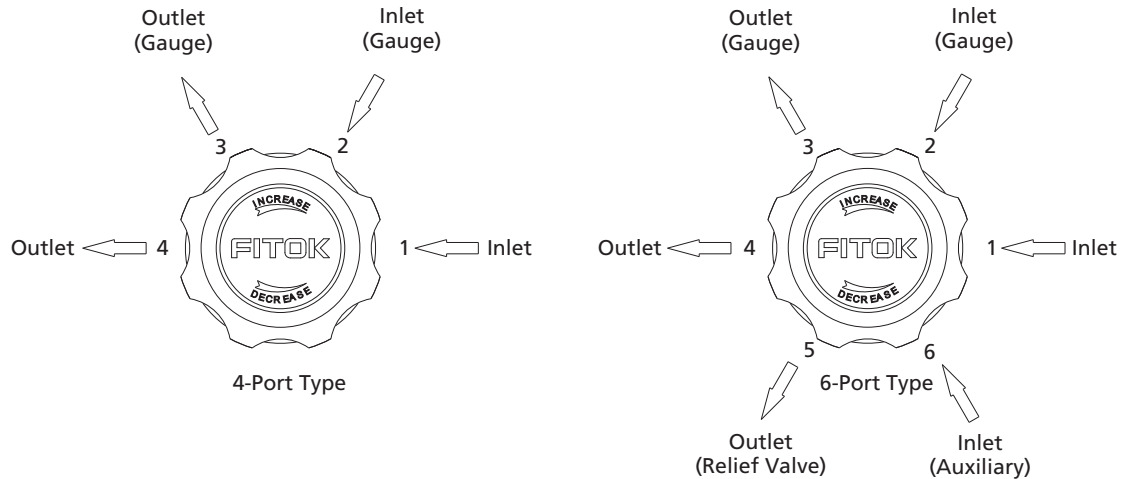


Dimensions

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



Port Configurations



Ordering Number Description

F C R - 1 D 6 L - 3 0 - 1 0 0 - C 3 5 0 - B - B - 3 0 - R - P - Z

Body Material	Connection 1	Connection 2	Connection 4	Connection 5
6L 316L SS	00 1/4" Female NPT	B With Gauge (psi/bar)	None	None
SS 316 SS	C_--- CGA Number (USA)	M With Gauge (psi/MPa)	00 1/4" Female NPT	R Relief Valve
HC Hastelloy C-276	DIN_ DIN Number (Germany)	P Plug	01 1/4" Male NPT	P Plug
B Brass (Nickel-plated)	FFR4 1/4" Rotatable Female FR Metal Gasket Face Seal Fitting	00 1/4" Female NPT	10 1/4" Tube Fitting	00 1/4" Female NPT
	RFR4 1/4" Rotatable Male FR Metal Gasket Face Seal Fitting	FFR4 1/4" Rotatable Female FR Metal Gasket Face Seal Fitting	11 3/8" Tube Fitting	
	Other connections are available upon request	RFR4 1/4" Rotatable Male FR Metal Gasket Face Seal Fitting	20 6 mm Tube Fitting	Connection 6
	Refer to page B-30 for cylinder connections based on specific gas type. Cylinder connections compliant to other standards are available upon request. Please contact FITOK Group for details.	IFR4 1/4" Integral Female FR Metal Gasket Face Seal Fitting	21 8 mm Tube Fitting	Same as Connection 5
		Others refer to Connection 4	FFR4 1/4" Rotatable Female FR Metal Gasket Face Seal Fitting	Panel Mounting
			RFR4 1/4" Rotatable Male FR Metal Gasket Face Seal Fitting	No
			30 Diaphragm Valve with 1/4" Female NPT	Z Yes
			31 Diaphragm Valve with 1/4" Male NPT	
			32 Diaphragm Valve with 1/4" Tube Fitting	
			33 Diaphragm Valve with 3/8" Tube Fitting	
			34 Diaphragm Valve with 6 mm Tube Fitting	
			35 Diaphragm Valve with 8 mm Tube Fitting	
			Other connections are available upon request	

Notes:

- "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.
- Before ordering, please read **User's Guide** on A-11.
- For face seal connection, the connection and body are orbital-welded integral structure. The pressure gauge is installed on "RFR4" connection by default.
- For connections other than face seal connection, the body connections are 1/4" Female NPT by default. Other options are adapted from 1/4" Male NPT.

Examples of part number: a. 4-port type (2 in, 2 out): FCR-1DB-45-150-DIN1-B-B-30, FCR-1D6L-45-150-FFR4-B-B-FFR4
 b. 6-port type (3 in, 3 out): FCR-1D6L-30-50-C580-B-B-00-R-P