

Cylinder Pressure Regulators

FCR-1, FCR-1S, FCR-2 and FCR-1D Series



FITOK
Valves and Fittings

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Cylinder Pressure Regulators

FCR-1 Series General Diaphragm Regulators

Features

- ⦿ Metal-to-metal seal to minimize external leak
- ⦿ Convolved diaphragm design to improve regulation precision and cycle life
- ⦿ Applicable to corrosive or toxic gases
- ⦿ With special cleaning and packaging, applicable to oxygen-enriched environments
- ⦿ Adjustable relief pressure
- ⦿ 20 µm filter installed at inlet

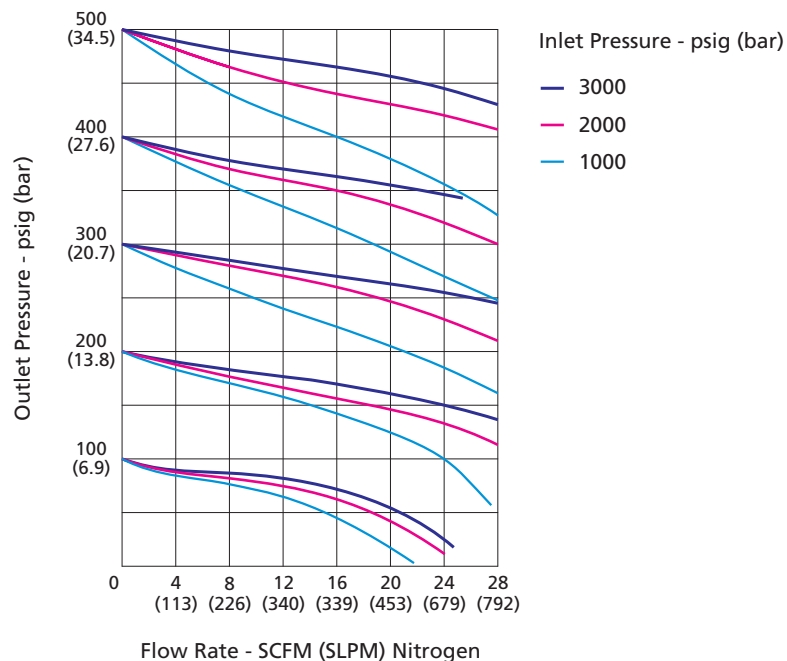


Model: FCR-16L-30-100-C330-B-B-00-R-P

Technical Data

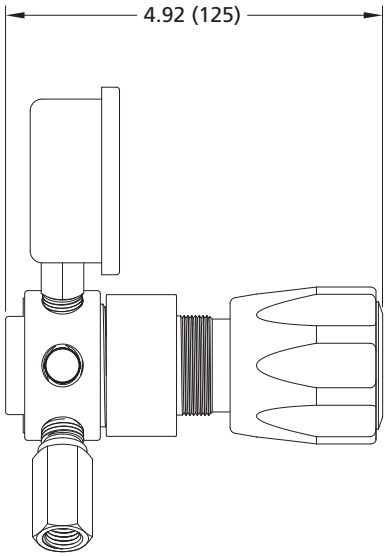
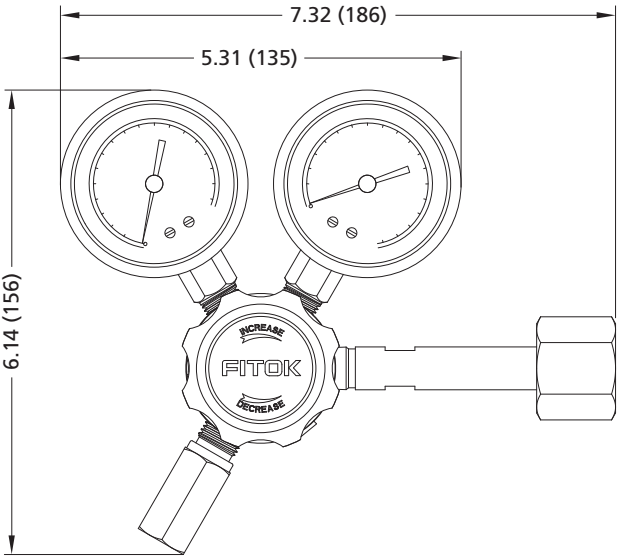
- ⦿ Single-stage regulator
- ⦿ Maximum inlet pressure: 3000 or 4500 psig
- ⦿ Outlet pressure range: 0~25, 0~50, 0~100, 0~250 or 0~500 psig
- ⦿ Material of the internal components:
 - Seat: PCTFE
 - Diaphragm: Hastelloy
 - Filter: 316L
- ⦿ Temperature: -40°F~+165°F (-40°C~+74°C)
- ⦿ Leak rates:
 - Internal: $\leq 1 \times 10^{-7}$ mbar·l/s helium
 - External: $\leq 1 \times 10^{-9}$ mbar·l/s helium
- ⦿ Flow coefficient (Cv): 0.06
- ⦿ Weight (regulator only): ≈ 1.98 lbs (0.9 kg)
- ⦿ Body ports: 1/4" female NPT for inlet, outlet, gauge and relief valve

Typical Flow Chart

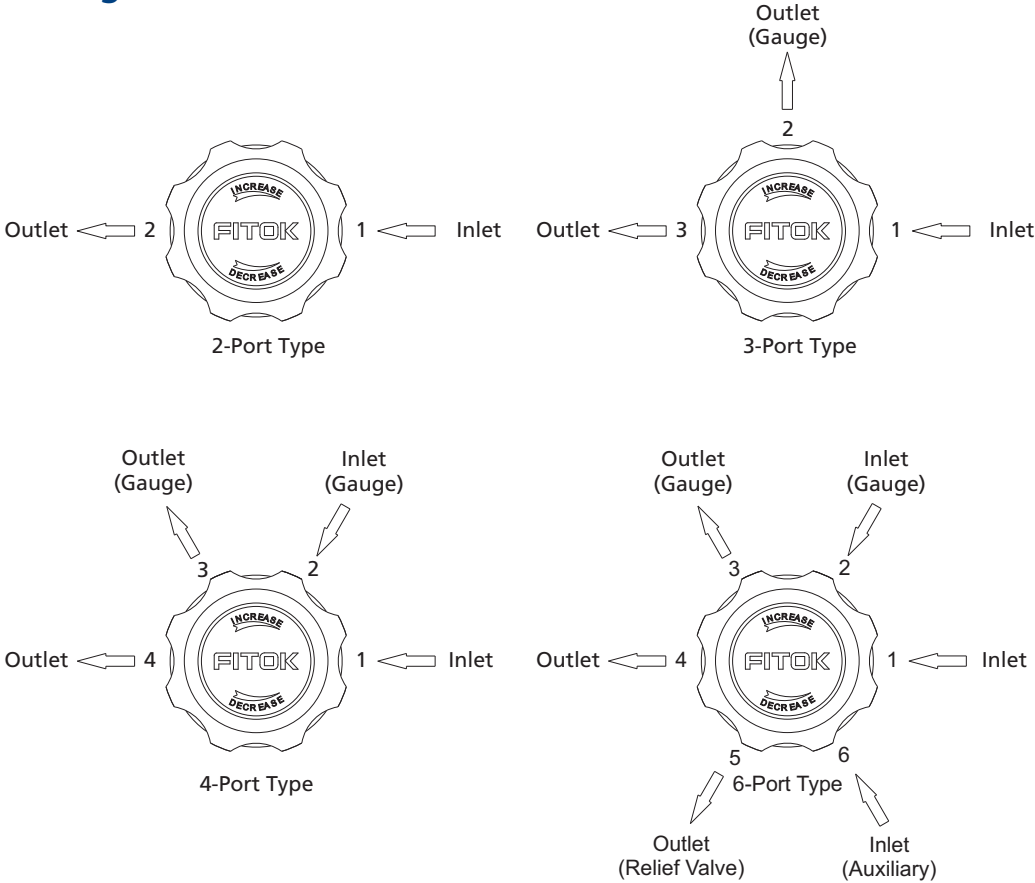


Dimensions

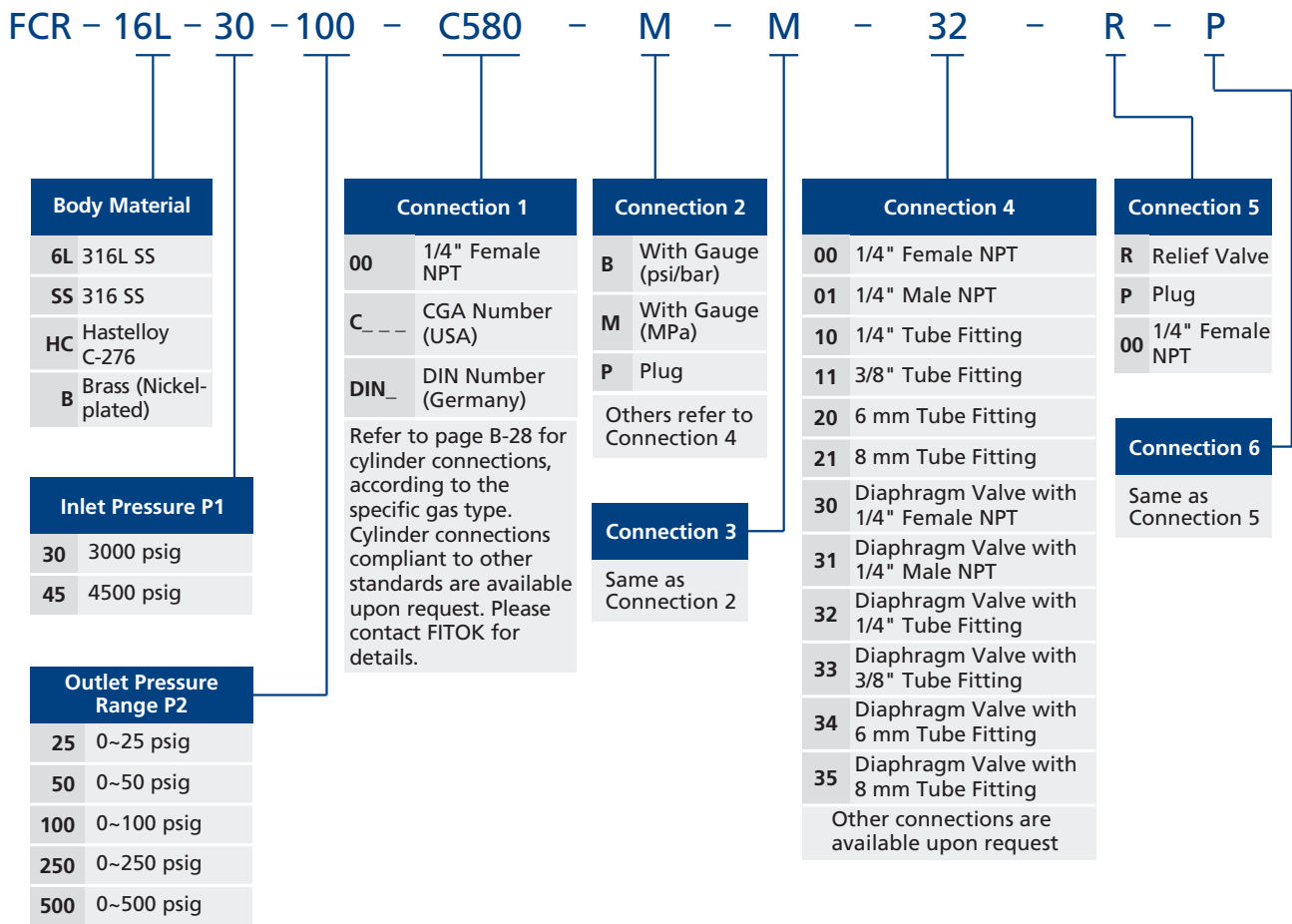
Dimensions, in inches (millimeters), are for reference only.



Porting Configurations



Part Number Description



Note: Most configurations are available.

Examples of part number:

- a. 2-port type (1 in, 1 out): FCR-16L-45-100-C580-00
- b. 3-port type (1 in, 2 out): FCR-15S-30-500-C330-B-00
- c. 4-port type (2 in, 2 out): FCR-1B-45-250-00-B-B-34

Cylinder Pressure Regulators

FCR-1S Series Sensitive Diaphragm Regulators

Features

- ⦿ Large diameter convoluted diaphragm to increase pressure sensitivity and minimize pressure drop
- ⦿ Metal-to-metal seal
- ⦿ 316L SS and Nickel-plated Brass available for valve body, Nickel-plated Brass for bonnet
- ⦿ With special cleaning and packaging, applicable to oxygen-enriched environments
- ⦿ Die spring for stable outlet pressure
- ⦿ 20 μm filter installed at inlet

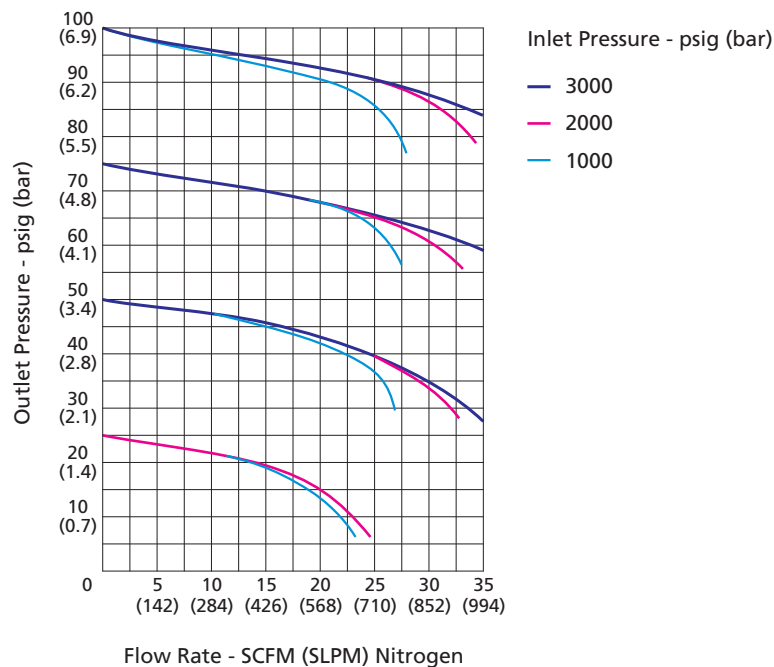


Model: FCR-1S6L-30-50-C580-B-B-00-R-P

Technical Data

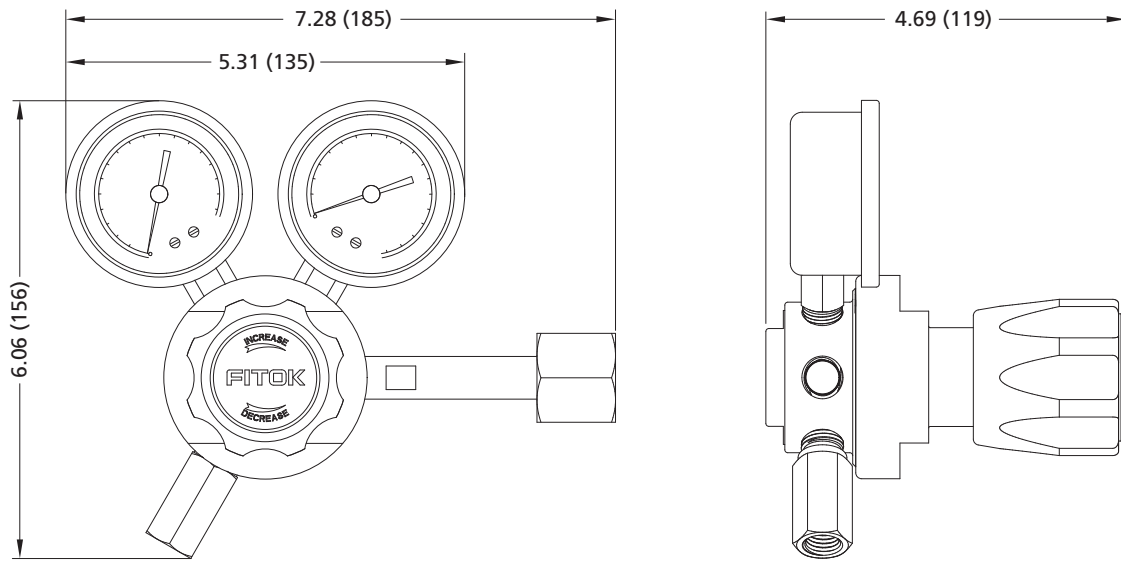
- ⦿ Single-stage regulator
- ⦿ Maximum inlet pressure: 3000 or 4500 psig
- ⦿ Outlet pressure range: 0~25, 0~50, 0~100, 0~150 or 0~200 psig
- ⦿ Material of the internal components:
 - Seat: PCTFE
 - Diaphragm: 316L
 - Filter: 316L
- ⦿ Temperature: $-40^{\circ}\text{F} \sim +165^{\circ}\text{F}$ ($-40^{\circ}\text{C} \sim +74^{\circ}\text{C}$)
- ⦿ Leak rates:
 - Internal: $\leq 1 \times 10^{-7}$ mbar-l/s helium
 - External: $\leq 1 \times 10^{-9}$ mbar-l/s helium
- ⦿ Flow coefficient (Cv): 0.06
- ⦿ Weight (regulator only): ≈ 2.87 lbs (1.3 kg)
- ⦿ Body ports: 1/4" female NPT for inlet, outlet, gauge and relief valve

Typical Flow Chart

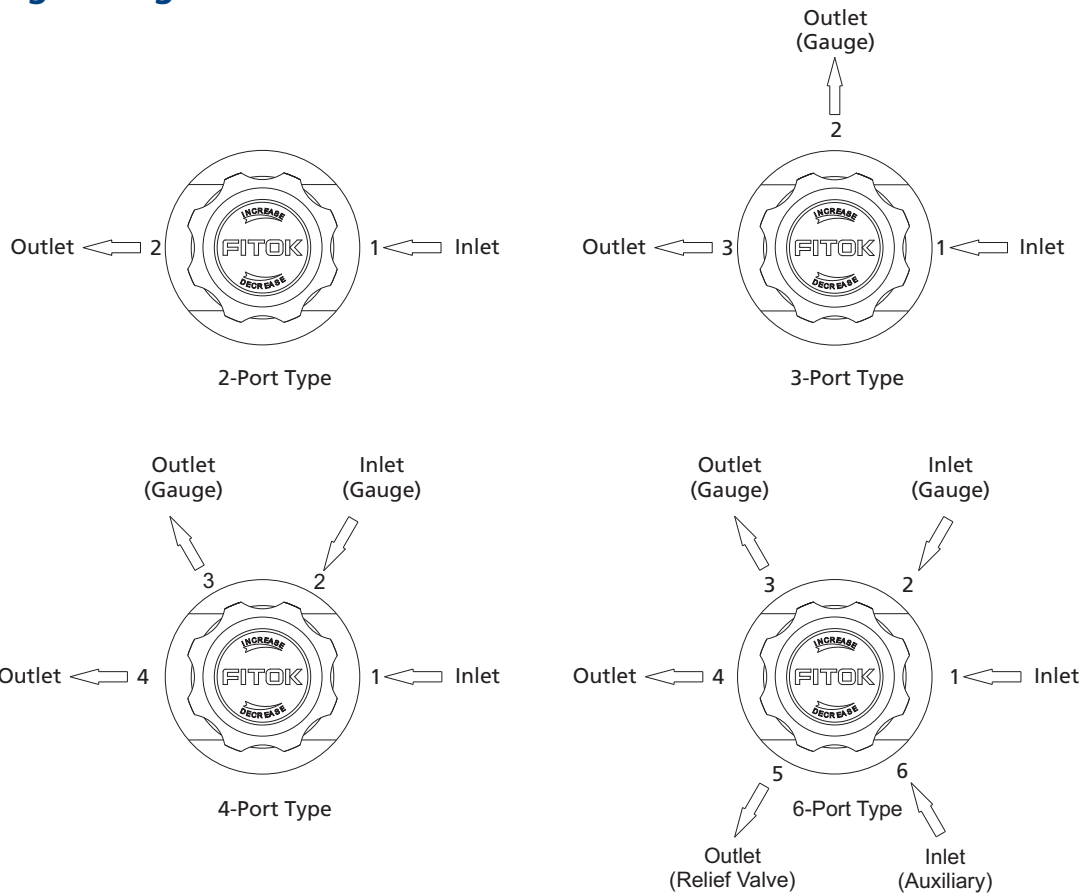


Dimensions

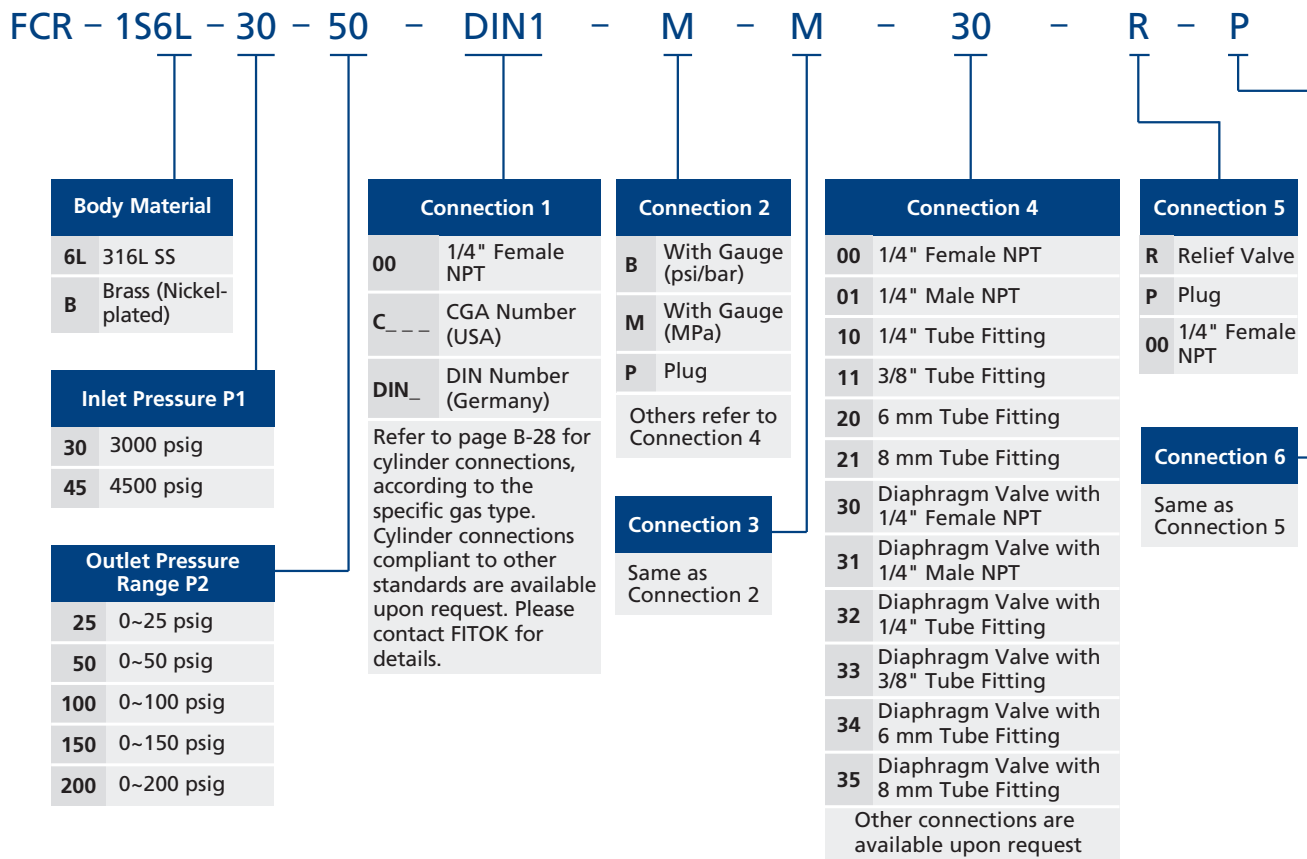
Dimensions, in inches (millimeters), are for reference only.



Porting Configurations



Part Number Description



Note: Most configurations are available.

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 High Pressure Piston Regulators

Features

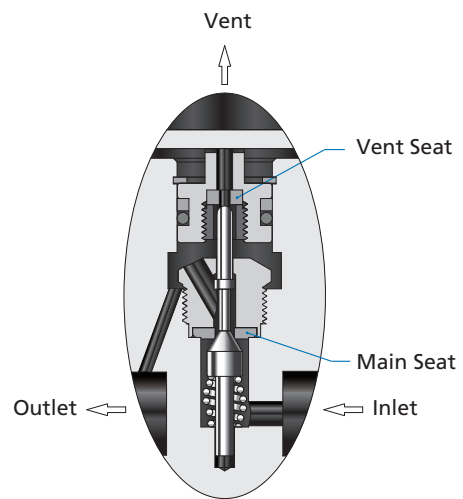
- ⦿ For high pressure applications
- ⦿ Robust piston-sensed design to ensure safety and reliability
- ⦿ 316L SS or Nickel-plated Brass body optional
- ⦿ For non-corrosive gases (due to seal limit)
- ⦿ With special cleaning and packaging, applicable to oxygen-enriched environments
- ⦿ Venting model available
- ⦿ 20 µm filter installed at inlet



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

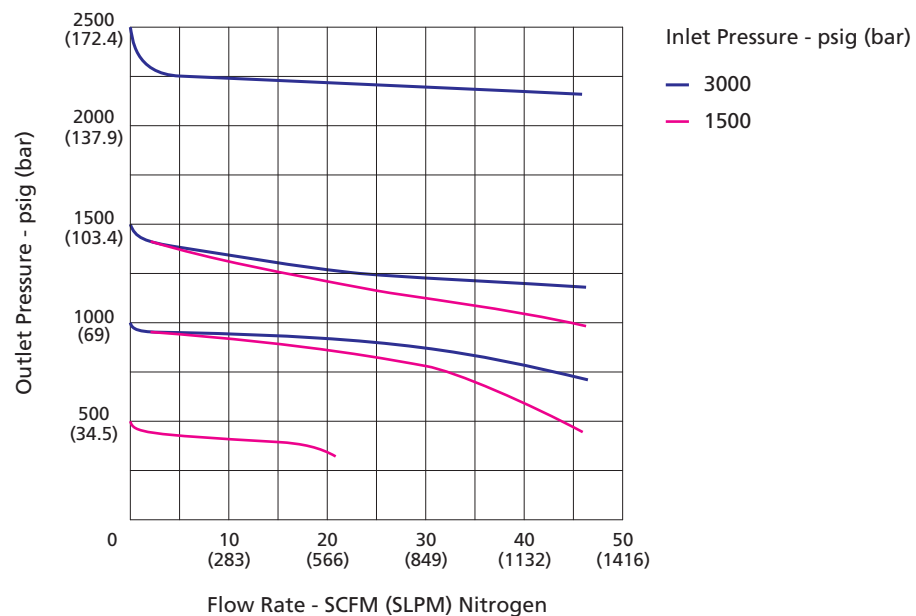
Technical Data

- ⦿ 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:
 - Seat: PCTFE
 - Piston: 316L
 - O-ring: Viton or Kalrez
 - 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)
- ⦿ Body ports: 1/4" female NPT for inlet, outlet and gauge



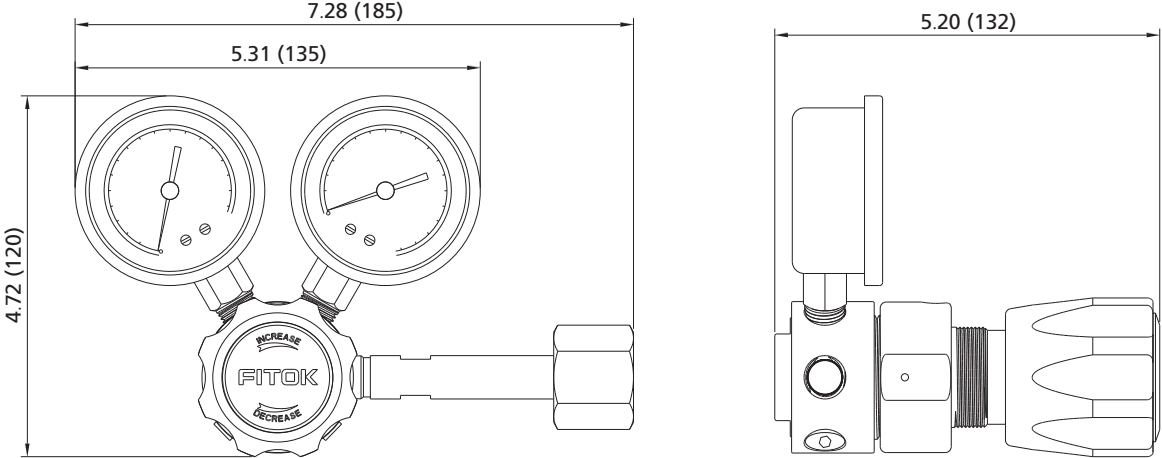
Construction Drawing with Venting Model

Typical Flow Chart

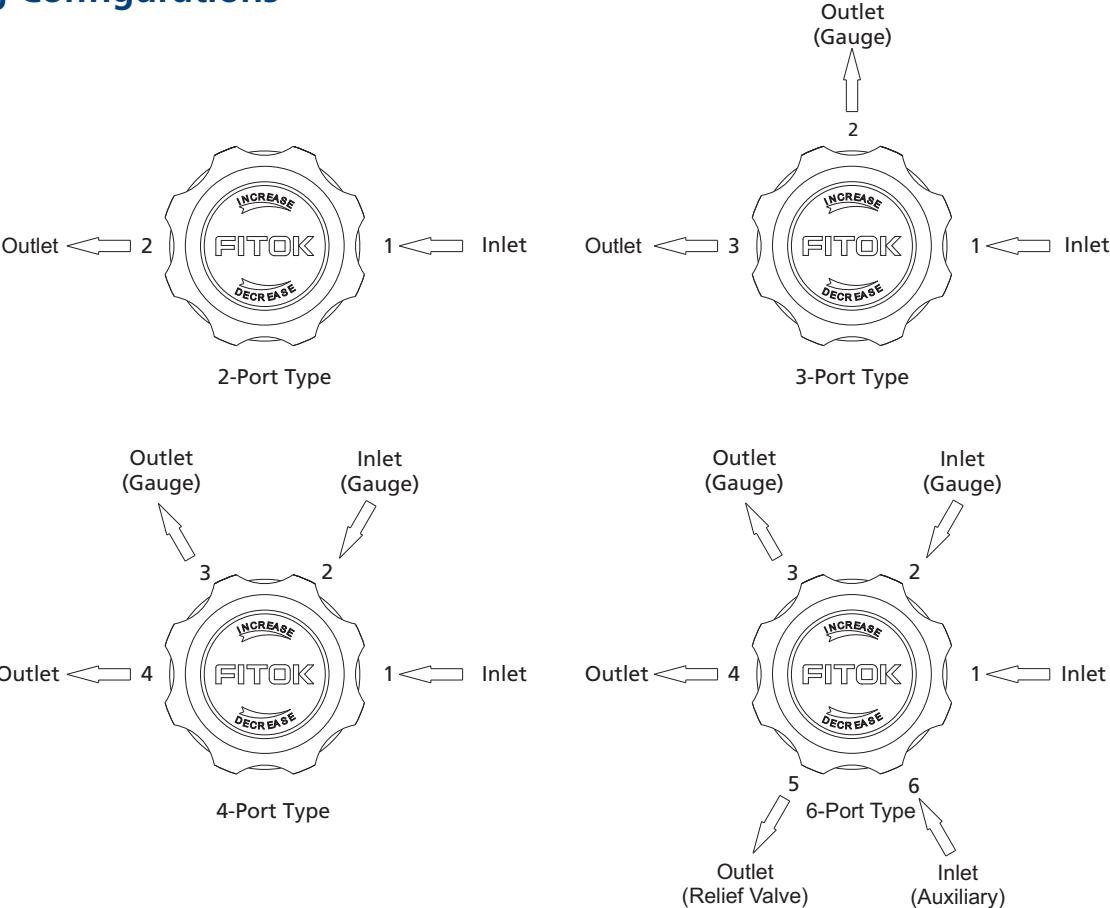


Dimensions

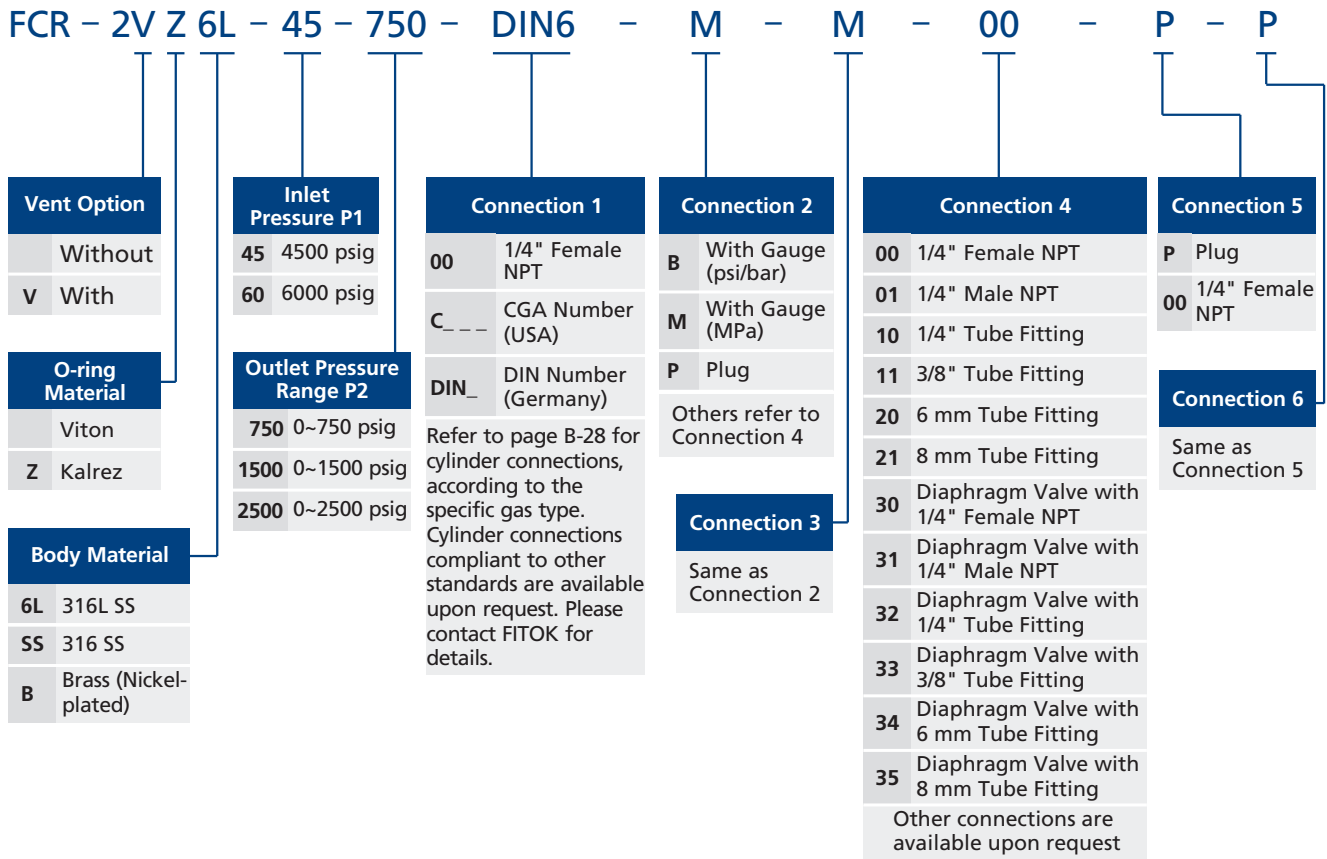
Dimensions, in inches (millimeters), are for reference only.



Porting Configurations



Part Number Description



Note: Most configurations are available.

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
- ⦿ 20 μm filter installed at inlet
- ⦿ With special cleaning and packaging, applicable to oxygen-enriched environments

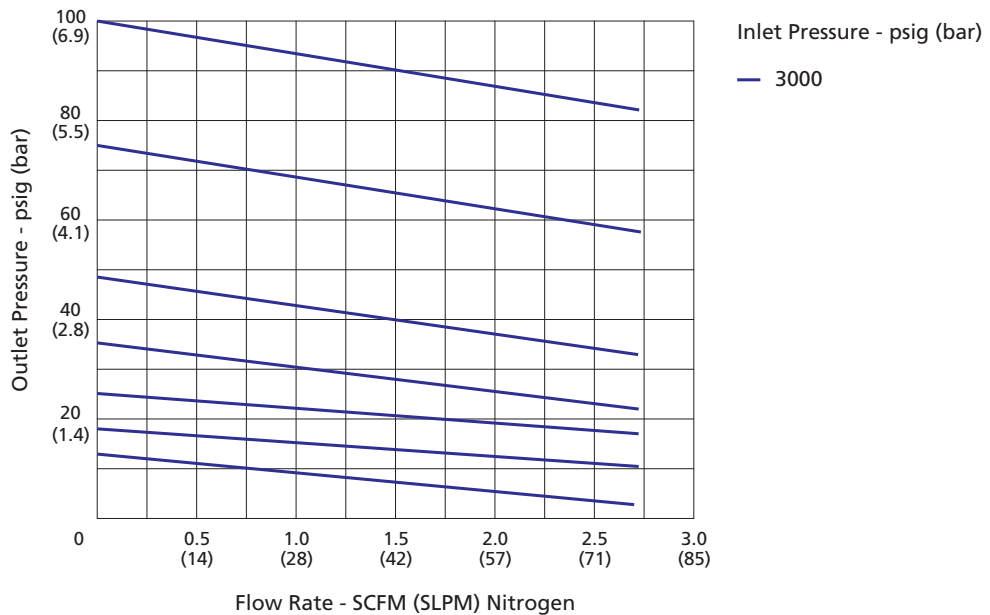


Model: FCR-1D6L-30-100-C660-B-B-00-R-P

Technical Data

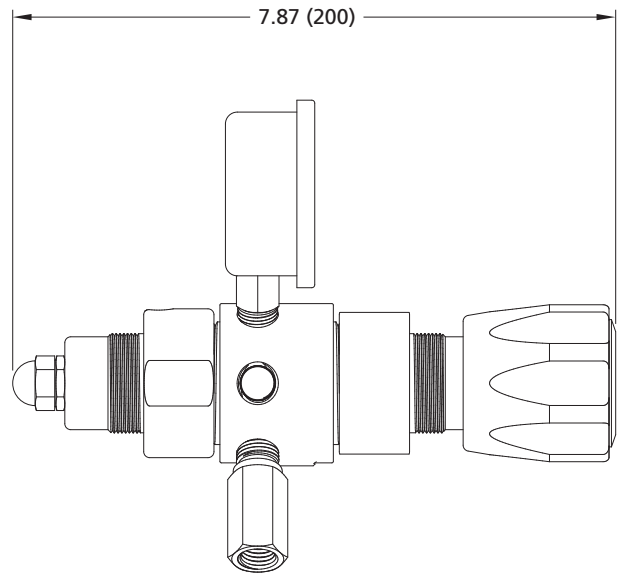
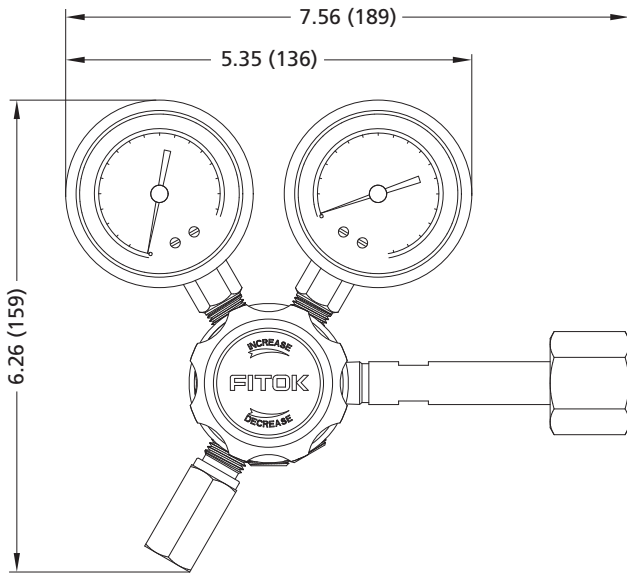
- ⦿ Maximum inlet pressure: 3000 or 4500 psig
- ⦿ Outlet pressure range: 0~25, 0~50, 0~100, 0~150 or 0~250 psig
- ⦿ Material of the internal components:
 - Seat: PCTFE
 - Diaphragm: Hastelloy
 - Filter: 316L
- ⦿ Temperature: $-40^{\circ}\text{F} \sim +165^{\circ}\text{F}$ ($-40^{\circ}\text{C} \sim +74^{\circ}\text{C}$)
- ⦿ Leak rates:
 - Internal: $\leq 1 \times 10^{-7}$ mbar·l/s helium
 - External: $\leq 1 \times 10^{-9}$ mbar·l/s helium
- ⦿ Flow coefficient (Cv): 0.05
- ⦿ Weight (regulator only): ≈ 3.3 lbs (1.5 kg)
- ⦿ Body ports: 1/4" female NPT for inlet, outlet, gauge and relief valve

Typical Flow Chart

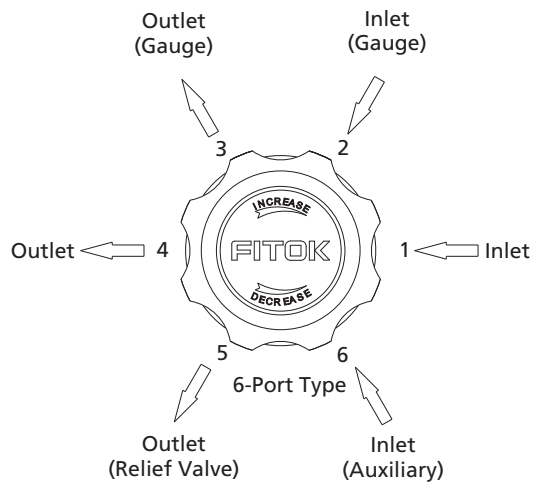
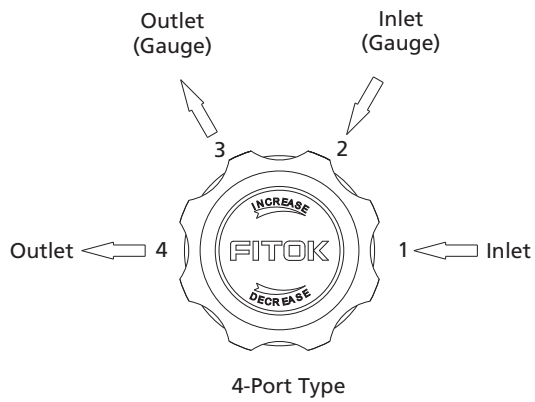


Dimensions

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



Porting Configurations



Part Number Description

FCR – 1D6L – 30 – 100 – C350 – B – B – 30 – R – P

Body Material	
6L	316L SS
SS	316 SS
HC	Hastelloy C-276
B	Brass (Nickel-plated)

Inlet Pressure P1	
30	3000 psig
45	4500 psig

Outlet Pressure Range P2	
25	0~25 psig
50	0~50 psig
100	0~100 psig
150	0~150 psig
250	0~250 psig

Connection 1	
00	1/4" Female NPT
C_ _ _	CGA Number (USA)
DIN_	DIN Number (Germany)

Refer to page B-28 for cylinder connections, according to the specific gas type. Cylinder connections compliant to other standards are available upon request. Please contact FITOK for details.

Connection 2	
B	With Gauge (psi/bar)
M	With Gauge (MPa)
P	Plug
00	1/4" Female NPT

Connection 3	
Same as Connection 2	

Connection 4	
00	1/4" Female NPT
01	1/4" Male NPT
10	1/4" Tube Fitting
11	3/8" Tube Fitting
20	6 mm Tube Fitting
21	8 mm Tube Fitting
30	Diaphragm Valve with 1/4" Female NPT
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	

Connection 5	
R	Relief Valve
P	Plug
00	1/4" Female NPT

Connection 6	
Same as Connection 5	

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

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