

# Cylinder Pressure Regulators

## FCR-1 Series General Diaphragm Regulators

### Features

- ⦿ Metal-to-metal seal to minimize external leak
- ⦿ Convoluted 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

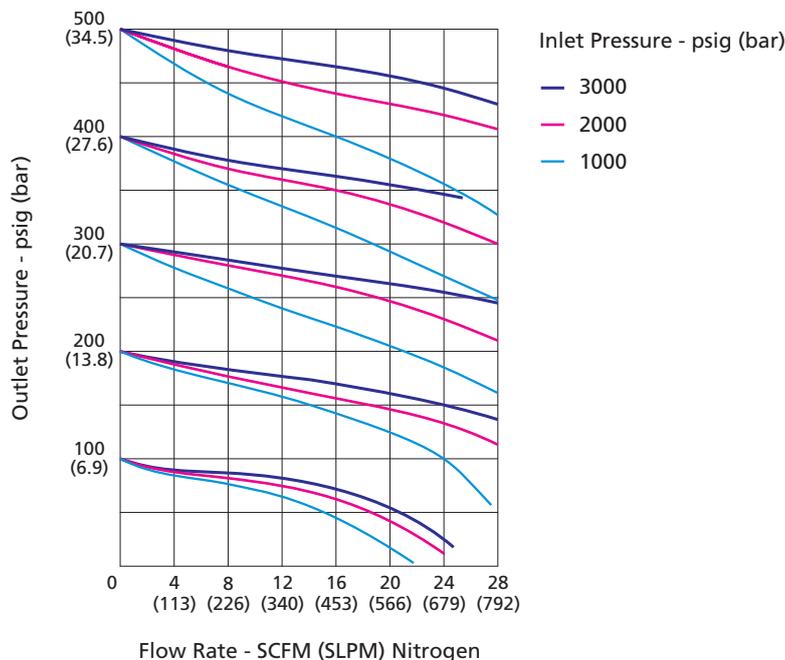


Model: FCR-16L-30-100-C330-B-B-00-R-P

### Technical Data

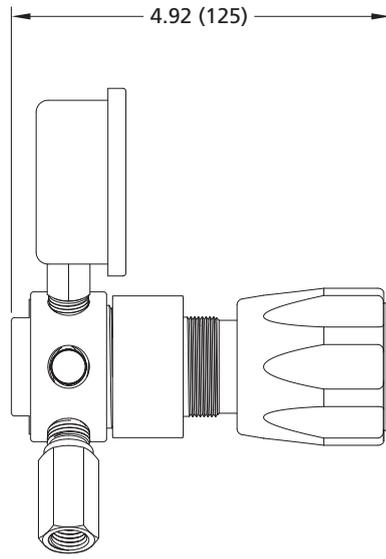
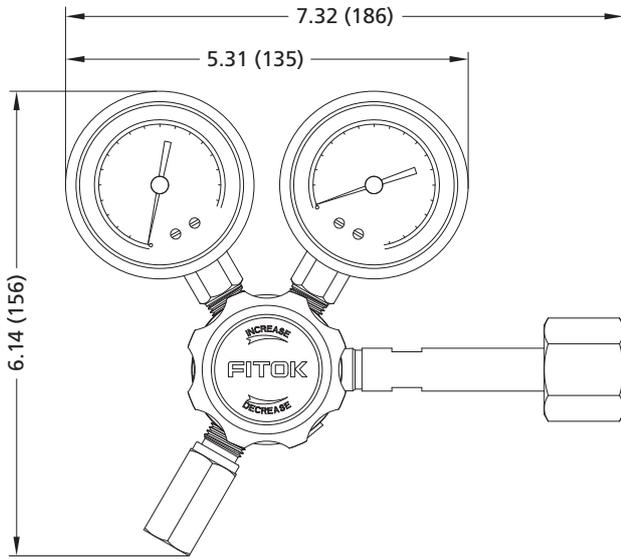
- ⦿ Single-stage regulator
- ⦿ Maximum inlet pressure: 3000 or 4500 psig
- ⦿ Outlet pressure range: 0~25, 0~50, 0~100, 0~250 or 0~500 psig
- ⦿ Material of the internal components:
  - Seat: PCTFE
  - Diaphragm: Hastelloy
  - Filter: 316L
- ⦿ Temperature: -40°F~+165°F (-40°C~+74°C)
- ⦿ Leak rates:
  - 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):  $\approx 1.98$  lbs (0.9 kg)
- ⦿ Body ports: 1/4" female NPT for inlet, outlet, gauge and relief valve

### Typical Flow Chart

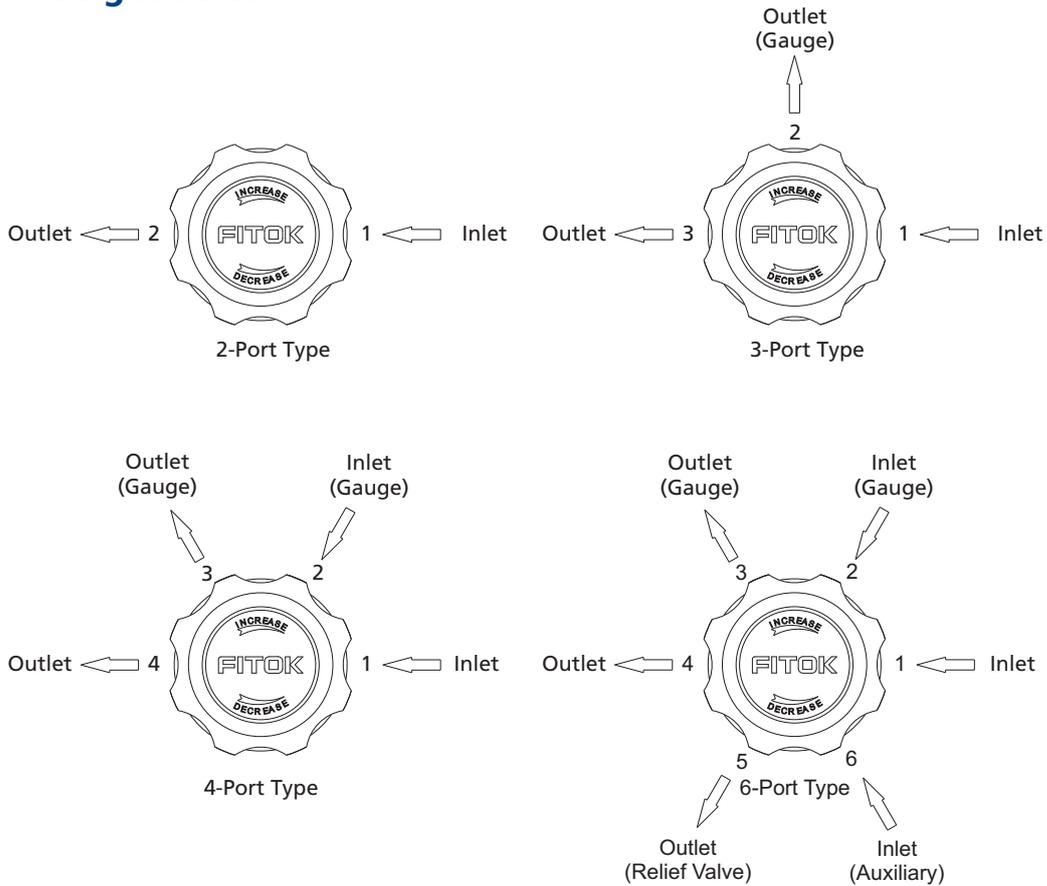


## Dimensions

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



## Porting Configurations



## Part Number Description

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

Body Material		Connection 1		Connection 2		Connection 4		Connection 5	
<b>6L</b>	316L SS	<b>00</b>	1/4" Female NPT	<b>B</b>	With Gauge (psi/bar)	<b>00</b>	1/4" Female NPT	<b>R</b>	Relief Valve
<b>SS</b>	316 SS	<b>C_ _ _</b>	CGA Number (USA)	<b>M</b>	With Gauge (MPa)	<b>01</b>	1/4" Male NPT	<b>P</b>	Plug
<b>HC</b>	Hastelloy C-276	<b>DIN_</b>	DIN Number (Germany)	<b>P</b>	Plug	<b>10</b>	1/4" Tube Fitting	<b>00</b>	1/4" Female NPT
<b>B</b>	Brass (Nickel-plated)	Refer to page B-28 for cylinder connections based on specific gas type. Cylinder connections compliant to other standards are available upon request. Please contact FITOK Group for details.		Others refer to Connection 4		<b>11</b>	3/8" Tube Fitting	<b>Connection 6</b>	
<b>Inlet Pressure P1</b>				<b>Connection 3</b>		<b>20</b>	6 mm Tube Fitting	Same as Connection 5	
<b>30</b>	3000 psig			Same as Connection 2		<b>21</b>	8 mm Tube Fitting		
<b>45</b>	4500 psig					<b>30</b>	Diaphragm Valve with 1/4" Female NPT		
<b>Outlet Pressure Range P2</b>						<b>31</b>	Diaphragm Valve with 1/4" Male NPT		
<b>25</b>	0~25 psig					<b>32</b>	Diaphragm Valve with 1/4" Tube Fitting		
<b>50</b>	0~50 psig					<b>33</b>	Diaphragm Valve with 3/8" Tube Fitting		
<b>100</b>	0~100 psig					<b>34</b>	Diaphragm Valve with 6 mm Tube Fitting		
<b>250</b>	0~250 psig					<b>35</b>	Diaphragm Valve with 8 mm Tube Fitting		
<b>500</b>	0~500 psig					Other connections are available upon request			

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-1SS-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
- ⦿ Fitted with captured vent as standard
- ⦿ 316L SS and Brass available for valve
- ⦿ With special cleaning and packaging, applicable to oxygen-enriched environments
- ⦿ Die spring for stable outlet pressure
- ⦿ 20 µm filter installed at inlet

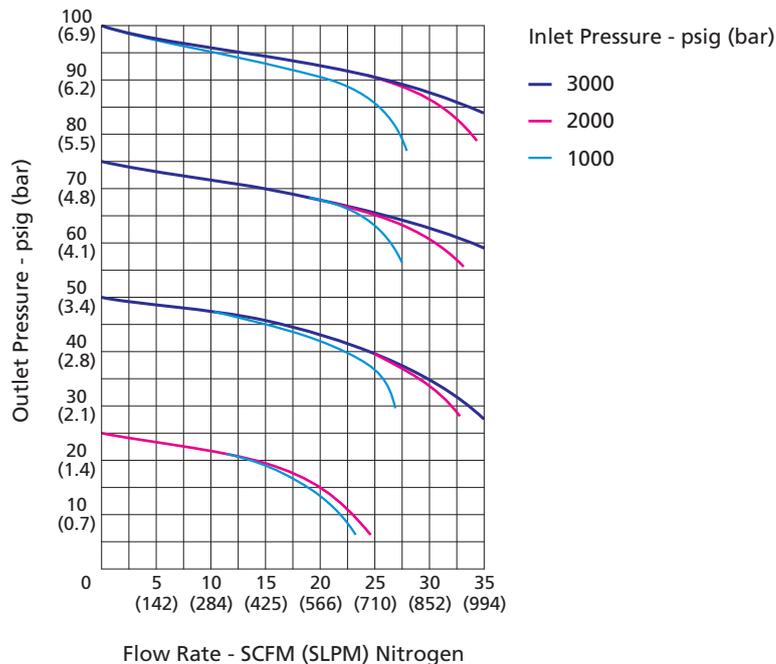


Model: FCR-1S6L-30-50-C580-B-B-00-R-P

### Technical Data

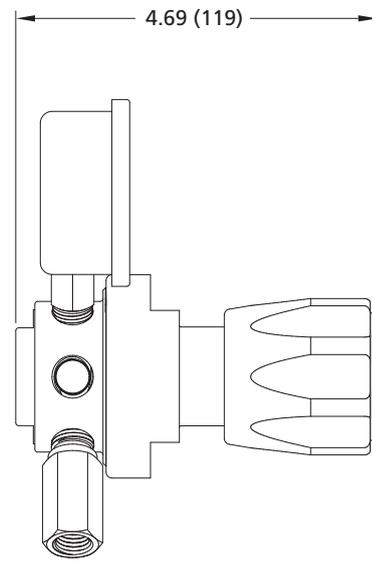
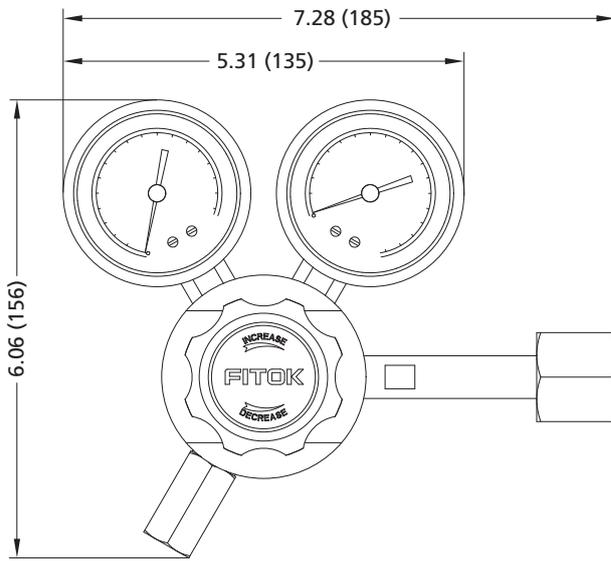
- ⦿ Single-stage regulator
- ⦿ Maximum inlet pressure: 3000 or 4500 psig
- ⦿ Outlet pressure range: 0~25, 0~50, 0~100, 0~150 or 0~200 psig
- ⦿ Material of the internal components:
  - Seat: PCTFE
  - Diaphragm: 316L
  - Filter: 316L
- ⦿ Temperature: -40°F~+165°F (-40°C~+74°C)
- ⦿ Leak rates:
  - Internal: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

### Typical Flow Chart

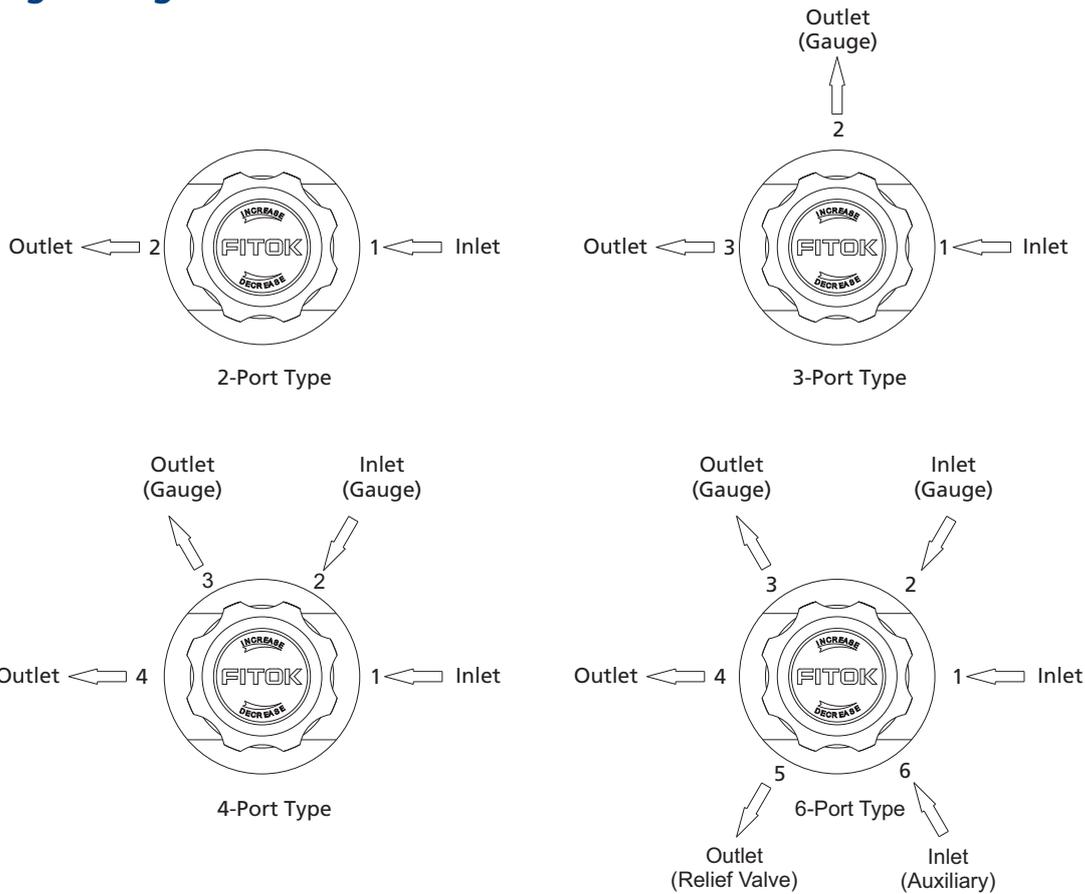


## Dimensions

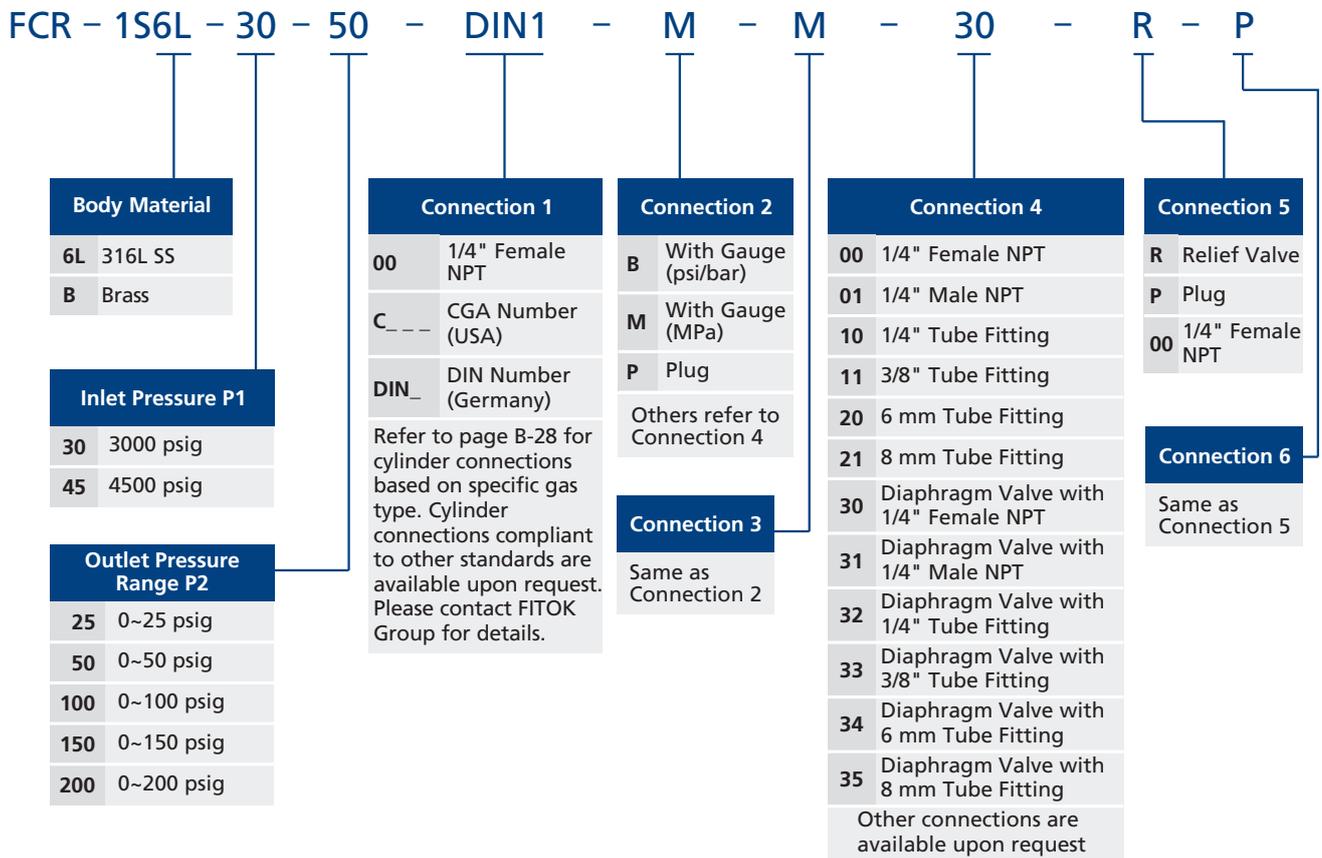
Dimensions, in inches (millimeters), are for reference only.



## 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

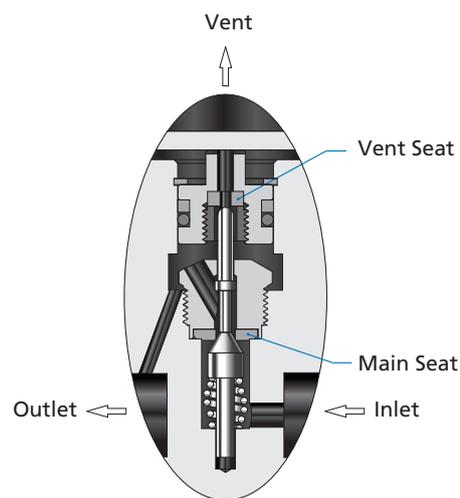
- ⦿ For high pressure applications
- ⦿ Robust piston-sensed design to ensure safety and reliability
- ⦿ 316L SS or Nickel-plated Brass body optional
- ⦿ For non-corrosive gases (due to seal limit)
- ⦿ With special cleaning and packaging, applicable to oxygen-enriched environments
- ⦿ Venting model available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



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

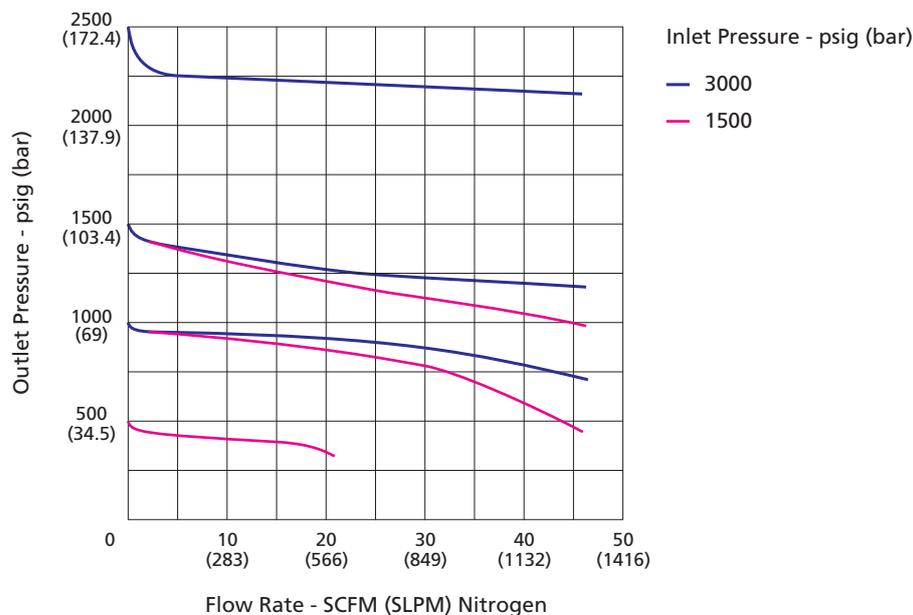
### Technical Data

- ⦿ 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:
  - Main Seat: PCTFE (PEEK for Venting Model)
  - Vent 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



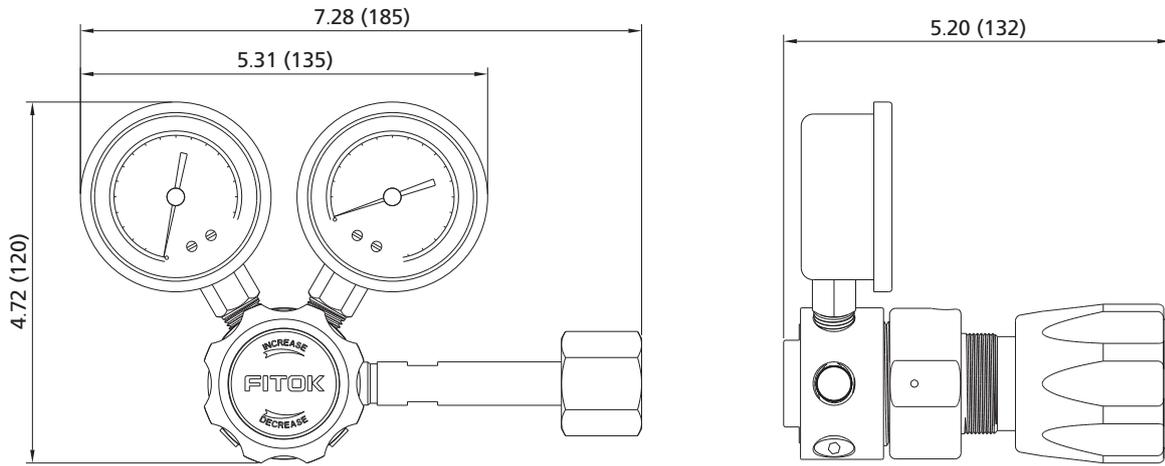
Construction Drawing with Venting Model

### Typical Flow Chart

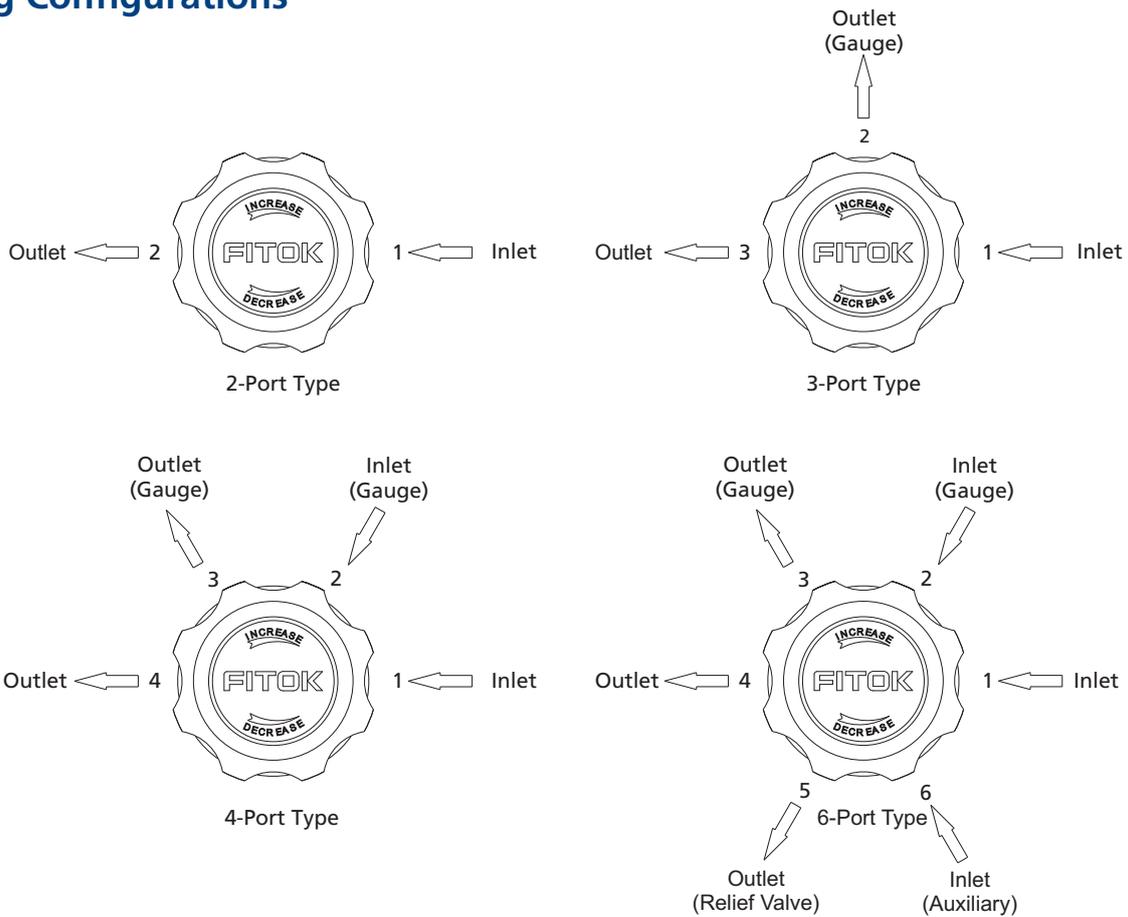


## Dimensions

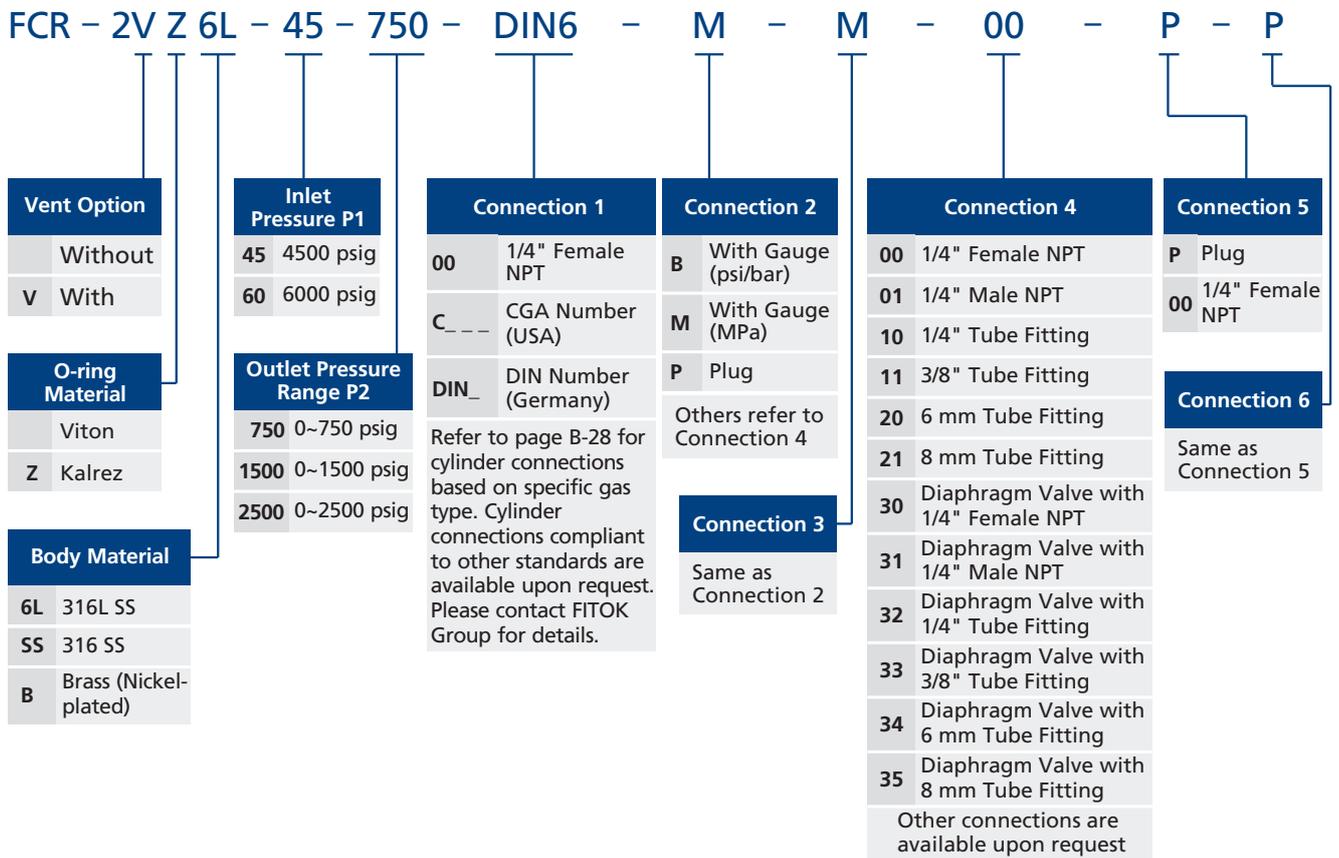
Dimensions, in inches (millimeters), are for reference only.



## 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  $\mu\text{m}$  filter installed at inlet
- ⦿ With special cleaning and packaging, applicable to oxygen-enriched environments

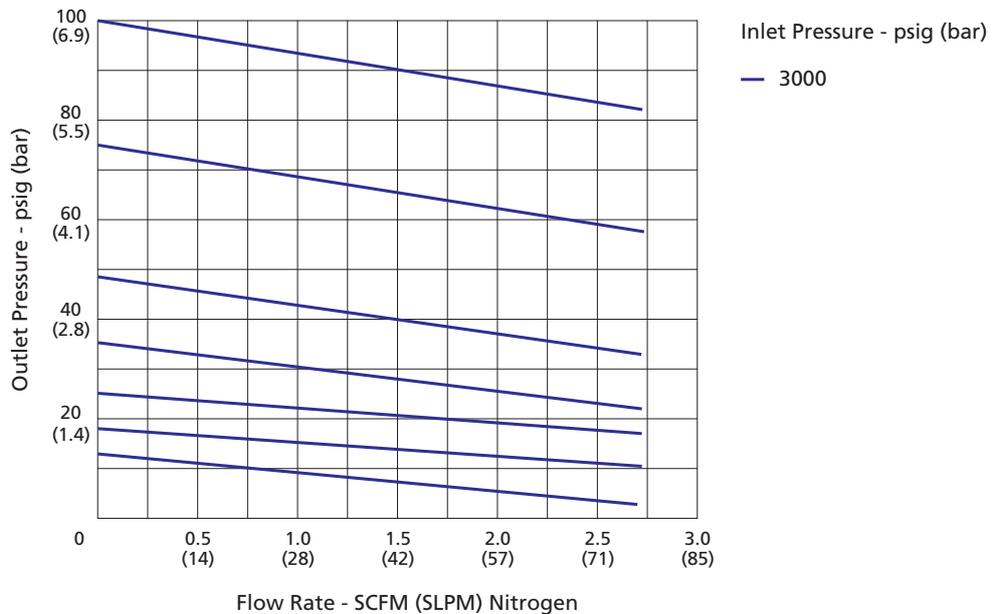


Model: FCR-1D6L-30-100-C660-B-B-00-R-P

### Technical Data

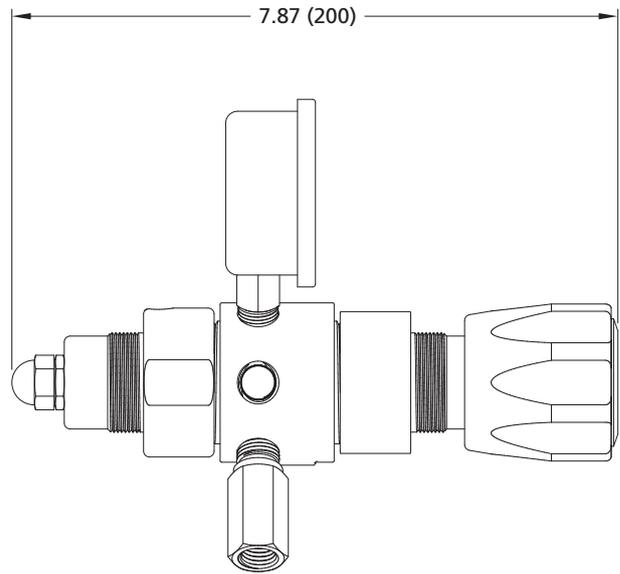
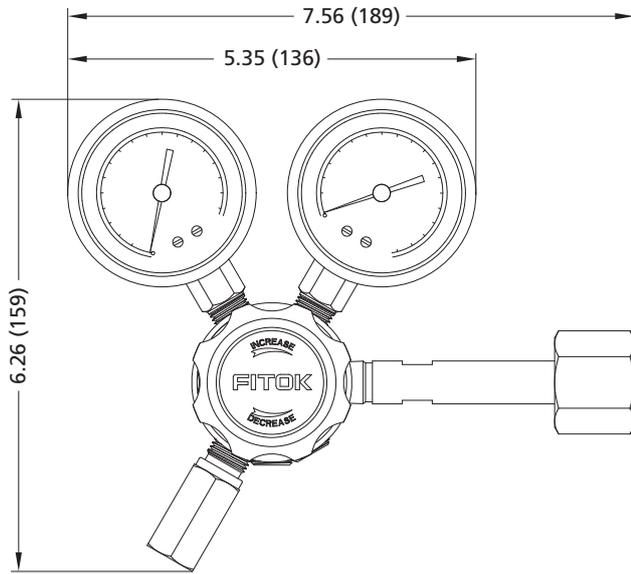
- ⦿ Maximum inlet pressure: 3000 or 4500 psig
- ⦿ 1st stage outlet pressure range: 480~500 psig  
2nd stage outlet pressure range: 0~25, 0~50, 0~100, 0~150, 0~250 psig
- ⦿ Material of the internal components:
  - Seat: PCTFE
  - Diaphragm: Hastelloy
  - Filter: 316L
- ⦿ Temperature:  $-40^{\circ}\text{F} \sim +165^{\circ}\text{F}$  ( $-40^{\circ}\text{C} \sim +74^{\circ}\text{C}$ )
- ⦿ 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):  $\approx 3.3$  lbs (1.5 kg)
- ⦿ Body ports: 1/4" female NPT for inlet, outlet, gauge and relief valve

### Typical Flow Chart

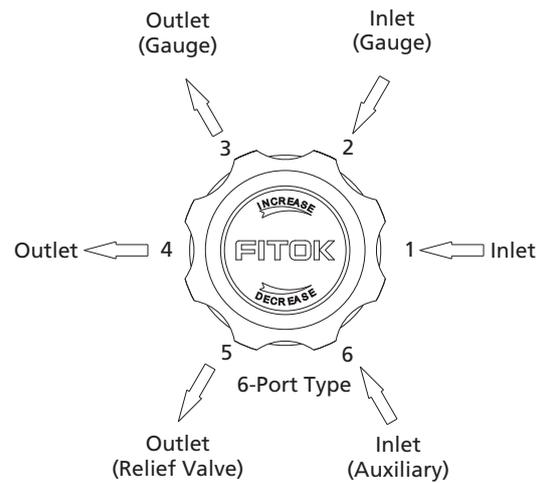
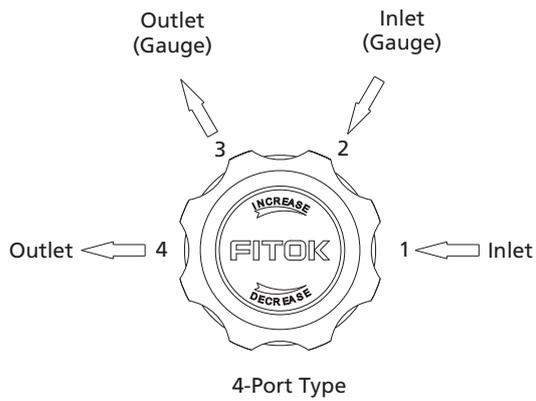


## Dimensions

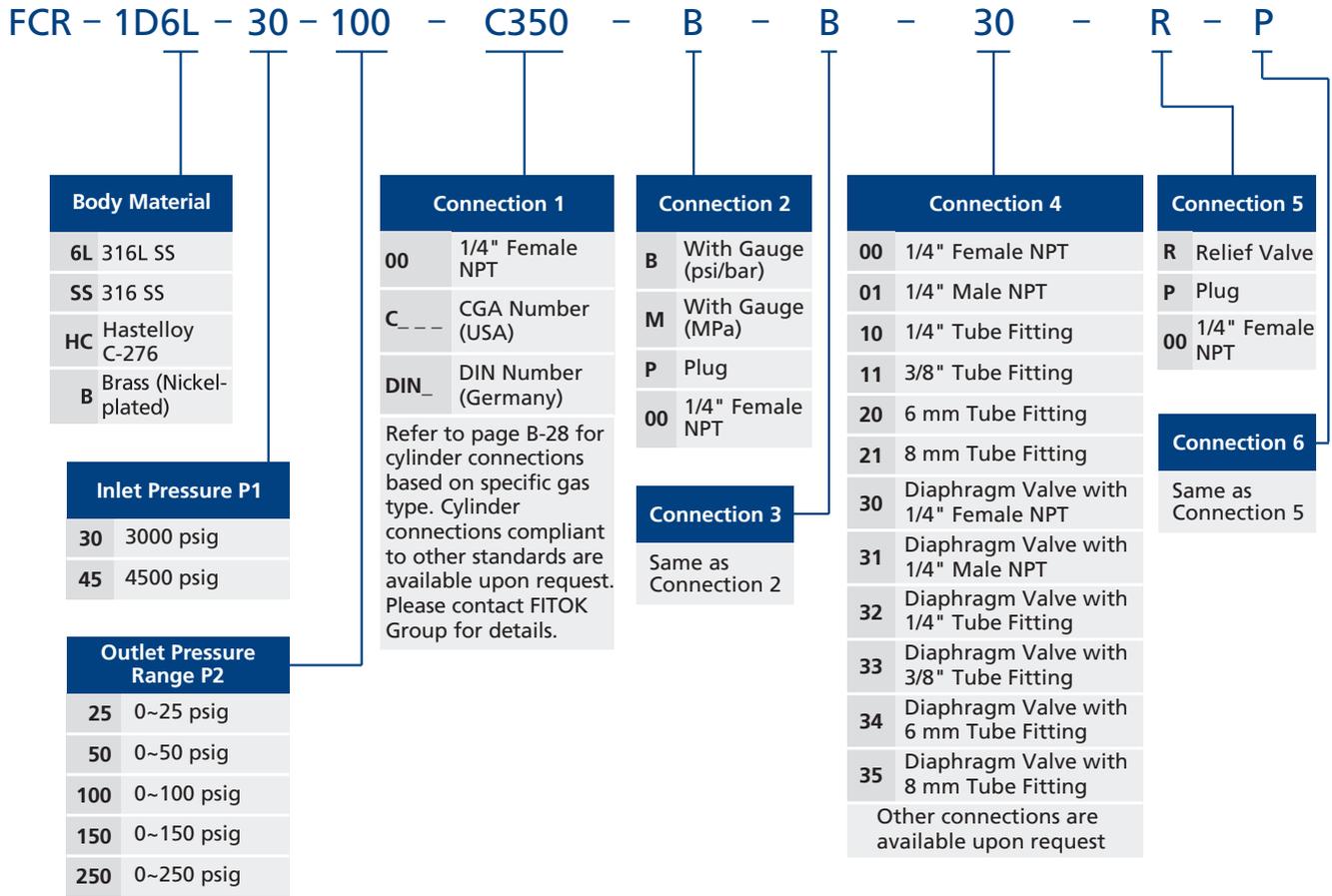
Dimensions, in inches (millimeters), are for reference only.



## Porting Configurations



## Part Number Description



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