

# Cylinder Pressure Regulators

## FCR-1 Series General Diaphragm Regulators

### Features

- ⦿ Metal-to-metal seal to minimize external leak
- ⦿ Convolutional 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  $\mu$ m filter installed at inlet

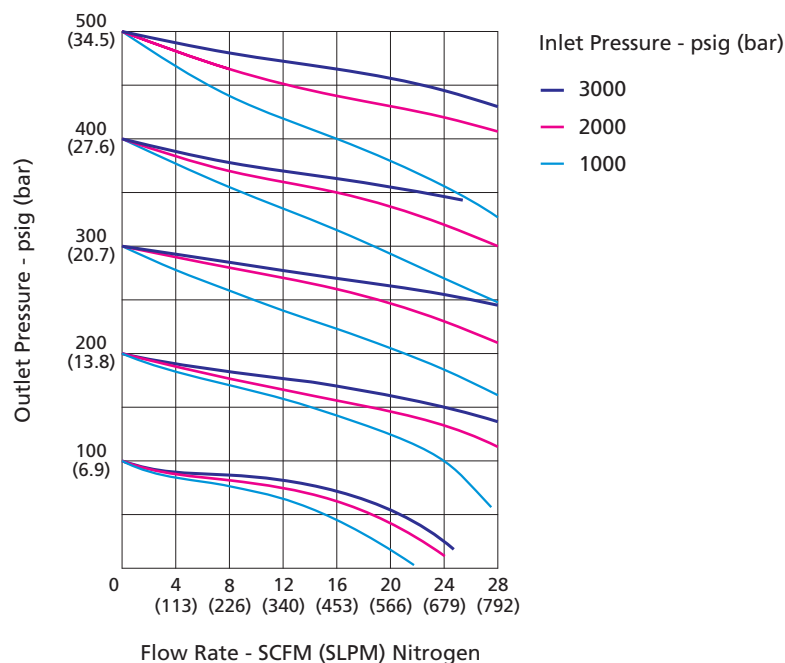


Model: FCR-16L-30-100-C330-B-B-00-R-P

### Technical Data

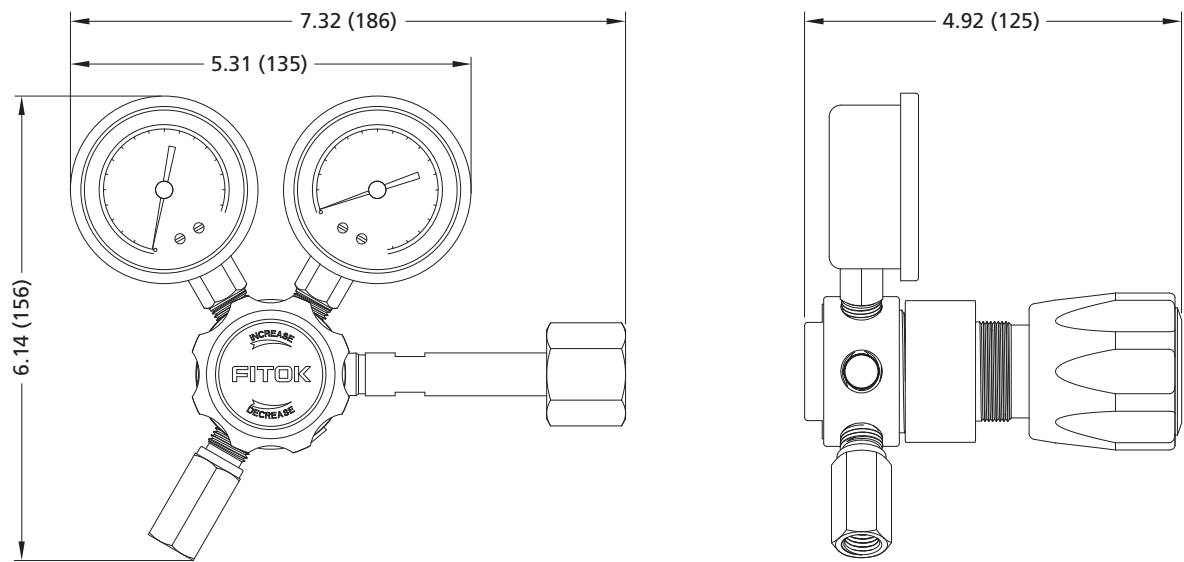
- ⦿ Single-stage regulator
- ⦿ Maximum inlet pressure: 3000 or 4500 psig
- ⦿ Outlet pressure range: 0~25, 0~50, 0~100, 0~250 or 0~500 psig
- ⦿ Material of the internal components:
  - Seat: PCTFE
  - Diaphragm: Hastelloy
  - Filter: 316L
- ⦿ Temperature: -40°F~+165°F (-40°C~+74°C)
- ⦿ Leak rates:
  - 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

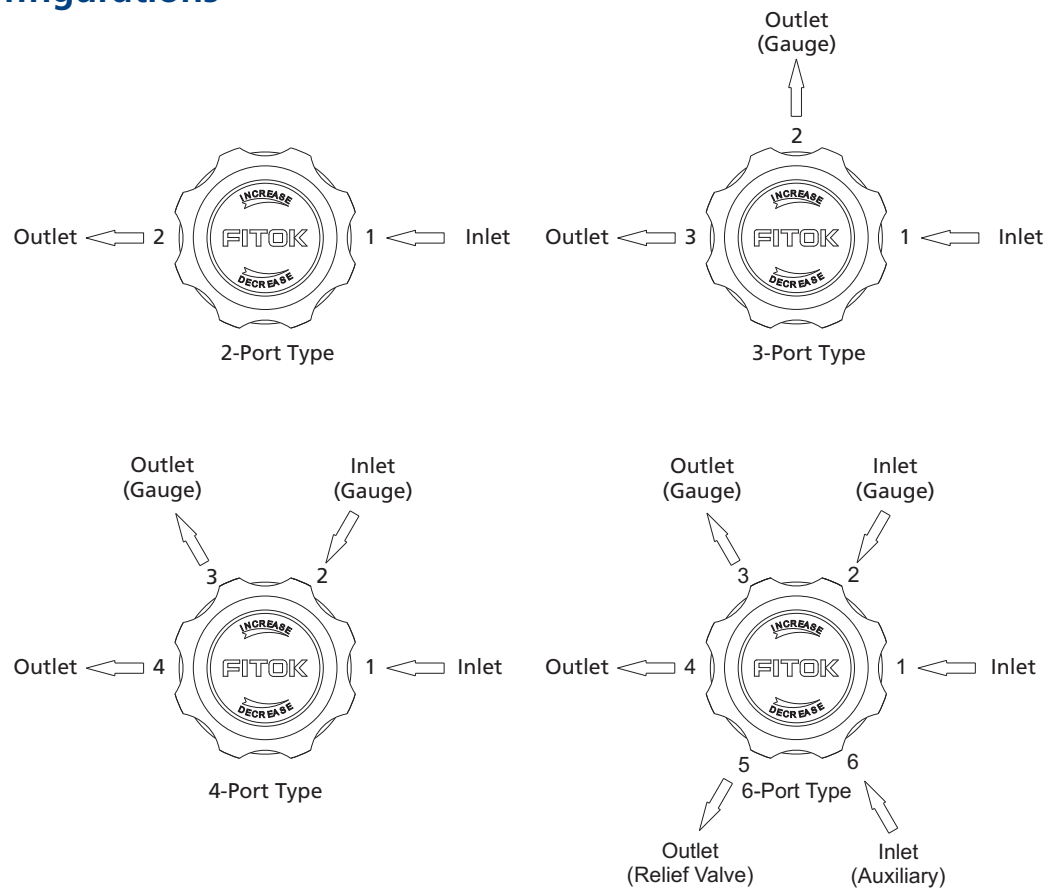


Dimensions

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



Port Configurations



Part Number Description

Gas Control Equipment

Related Products

Technical References

FCR – 16L – 30 – 100 – C580 – M – M – 32 – 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

250 0~250 psig

500 0~500 psig

Connection 1

00 1/4" Female NPT

C\_ \_ \_ CGA Number (USA)

DIN\_ DIN Number (Germany)

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.

Connection 2

B With Gauge (psi/bar)

M With Gauge (psi/MPa)

P Plug

Others refer to Connection 4

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

Notes:

- 1. Most configurations are available.
- 2. Before ordering, please read **Installation Instructions and Cautions** on A-77.

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  $\mu$ m filter installed at inlet

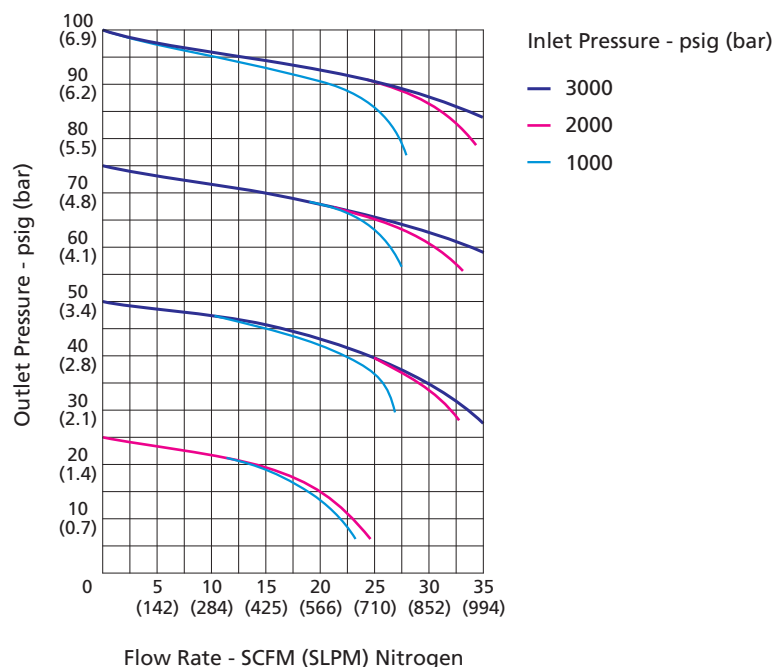


Model: FCR-1S6L-30-50-C580-B-B-00-R-P

### Technical Data

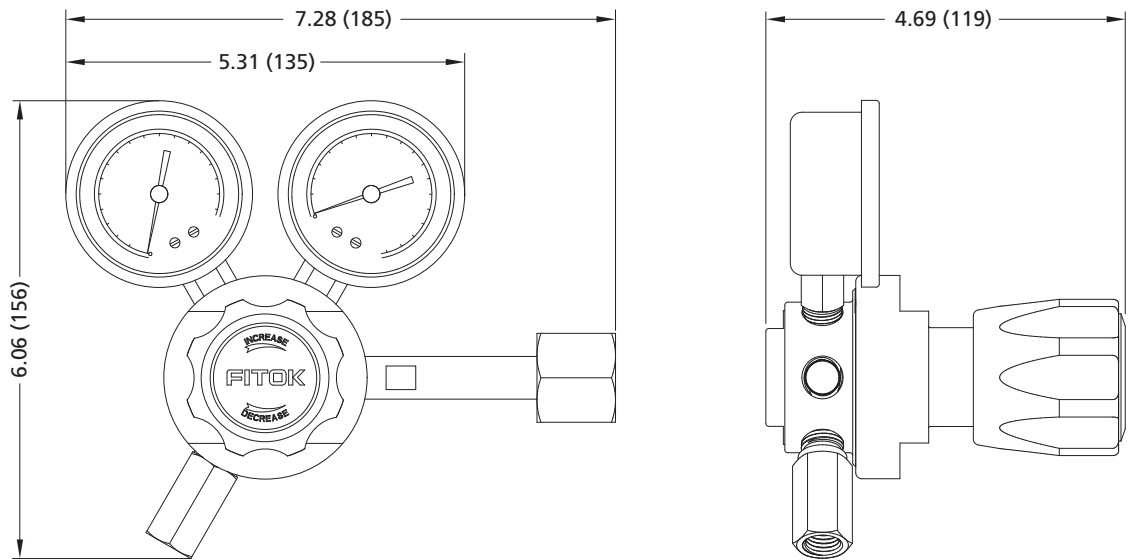
- ⦿ Single-stage regulator
- ⦿ Maximum inlet pressure: 3000 or 4500 psig
- ⦿ Outlet pressure range: 0~25, 0~50, 0~100, 0~150 or 0~200 psig
- ⦿ Material of the internal components:
  - Seat: PCTFE
  - Diaphragm: 316L
  - Filter: 316L
- ⦿ Temperature: -40°F~+165°F (-40°C~+74°C)
- ⦿ Leak rates:
  - Internal:  $\leq 1 \times 10^{-7}$  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

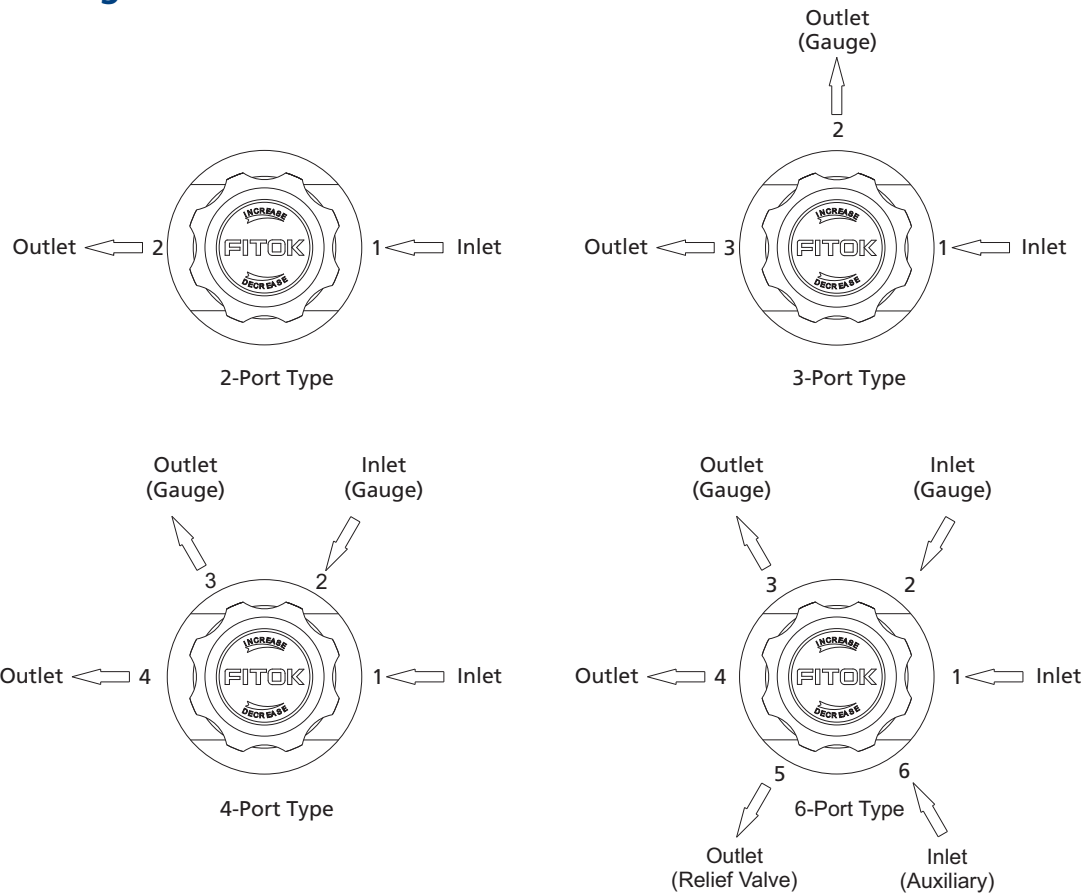


## Dimensions

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



## Port Configurations



## Part Number Description

FCR - 1S6L - 30 - 50		DIN1		M - M		30 -		R - P	
Body Material		Connection 1		Connection 2		Connection 4		Connection 5	
6L	316L SS	00	1/4" Female NPT	B	With Gauge (psi/bar)	00	1/4" Female NPT	R	Relief Valve
B	Brass	C_ _ _	CGA Number (USA)	M	With Gauge (psi/MPa)	01	1/4" Male NPT	P	Plug
Inlet Pressure P1		DIN_	DIN Number (Germany)	P	Plug	10	1/4" Tube Fitting	00	1/4" Female NPT
		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		Connection 6 Same as Connection 5		
30	3000 psig				Connection 3				
45	4500 psig				Same as Connection 2				
Outlet Pressure Range P2									
25	0~25 psig								
50	0~50 psig								
100	0~100 psig								
150	0~150 psig								
200	0~200 psig								
						30			
						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	

### Notes:

- Most configurations are available.
- Before ordering, please read **Installation Instructions and Cautions** on A-77.

Examples of part number:

- 2-port type (1 in, 1 out): FCR-1S6L-45-25-C580-00
- 3-port type (1 in, 2 out): FCR-1SB-30-150-C330-B-00
- 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

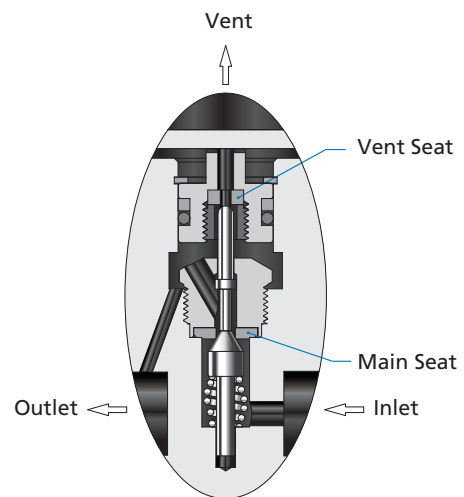
- ⦿ For high pressure applications
- ⦿ Robust piston-sensed design to ensure safety and reliability
- ⦿ 316L SS or Nickel-plated Brass body optional
- ⦿ For non-corrosive gases (due to seal limit)
- ⦿ With special cleaning and packaging, applicable to oxygen-enriched environments
- ⦿ Venting model available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



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

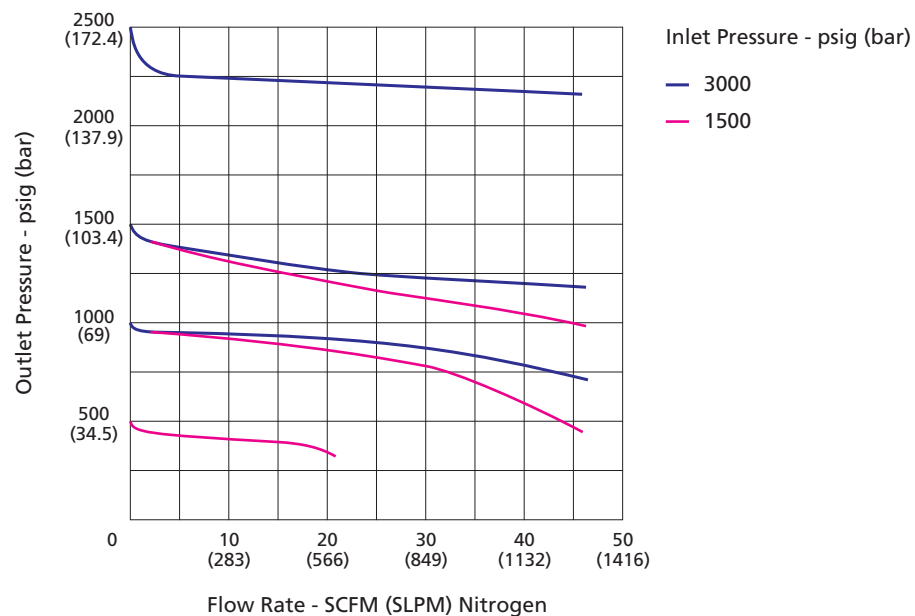
### Technical Data

- ⦿ 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):  $\approx$  1.98 lbs (0.9 kg)
- ⦿ Body ports: 1/4" female NPT for inlet, outlet and gauge



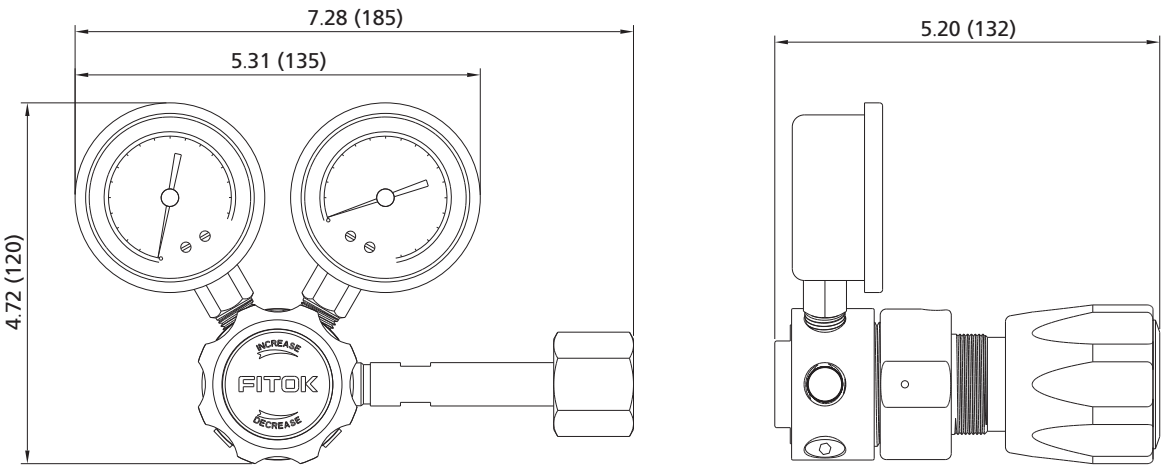
Construction Drawing with Venting Model

### Typical Flow Chart

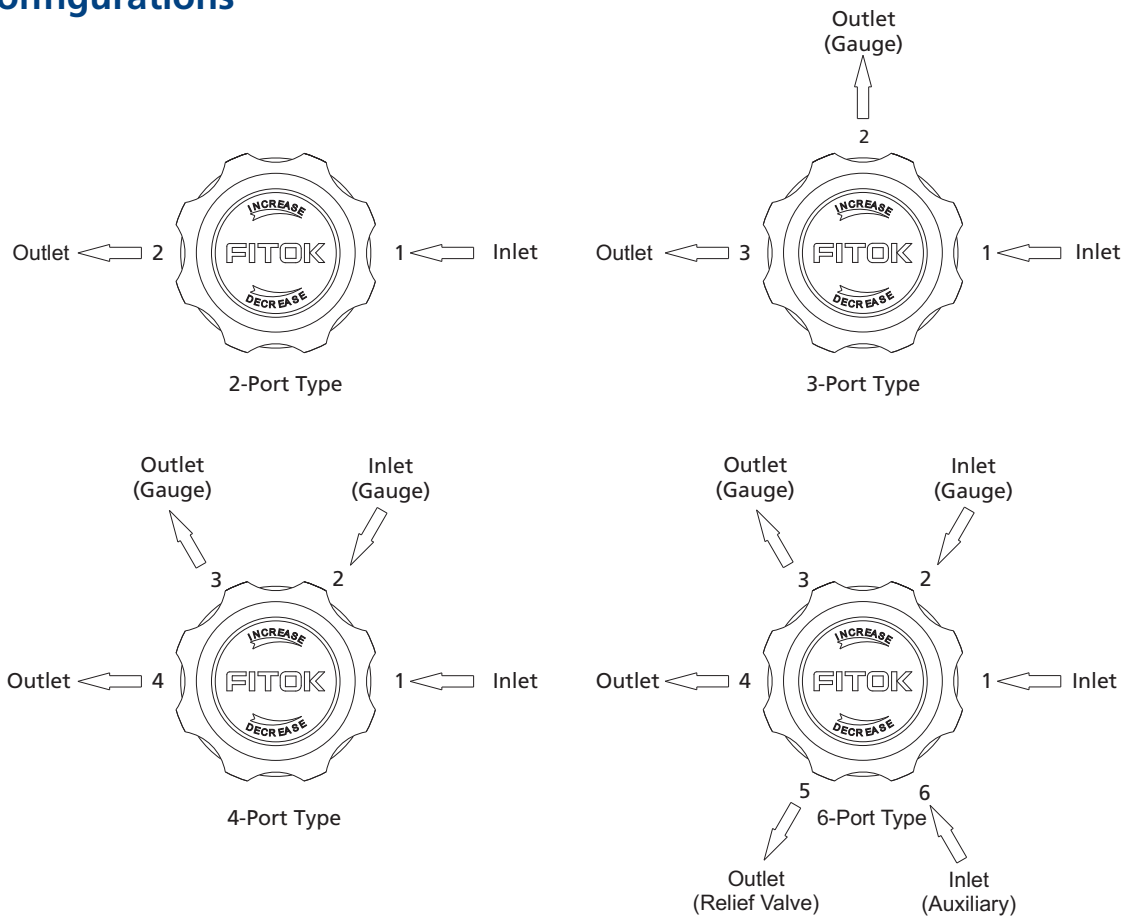


Dimensions

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



Port Configurations





Part Number Description

FCR – 2V Z 6L – 45 – 750 – DIN6 – M – M – 00 – P – P																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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- Notes:
- 1. Most configurations are available.
  - 2. Before ordering, please read **Installation Instructions and Cautions** on A-77.
- 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  $\mu$ m filter installed at inlet
- ⦿ With special cleaning and packaging, applicable to oxygen-enriched environments

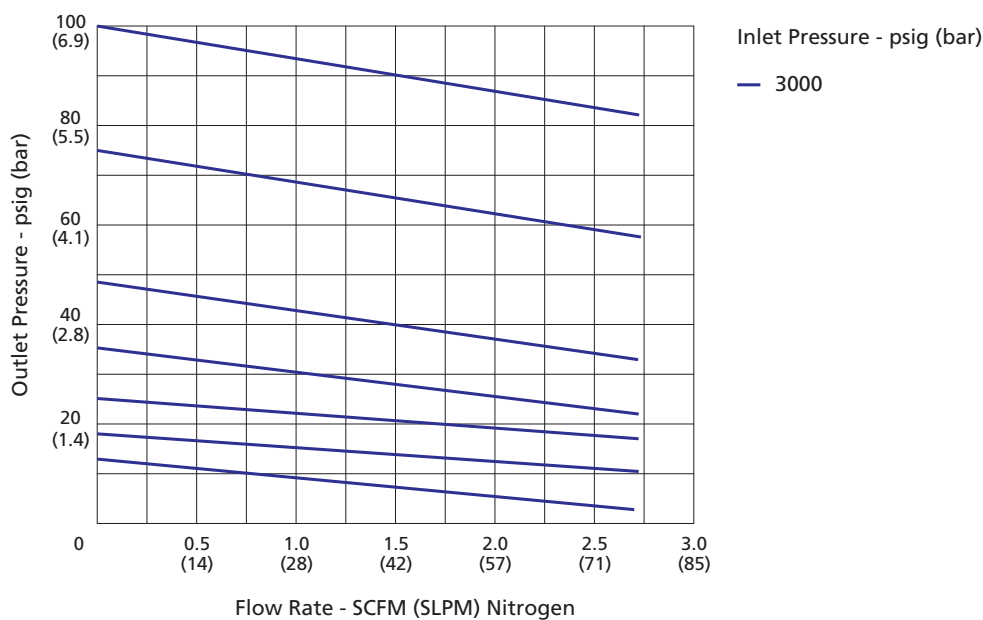


Model: FCR-1D6L-30-100-C660-B-B-00-R-P

### Technical Data

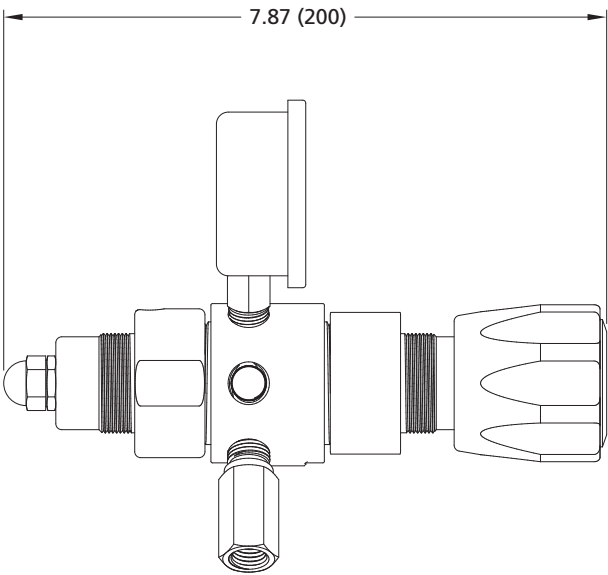
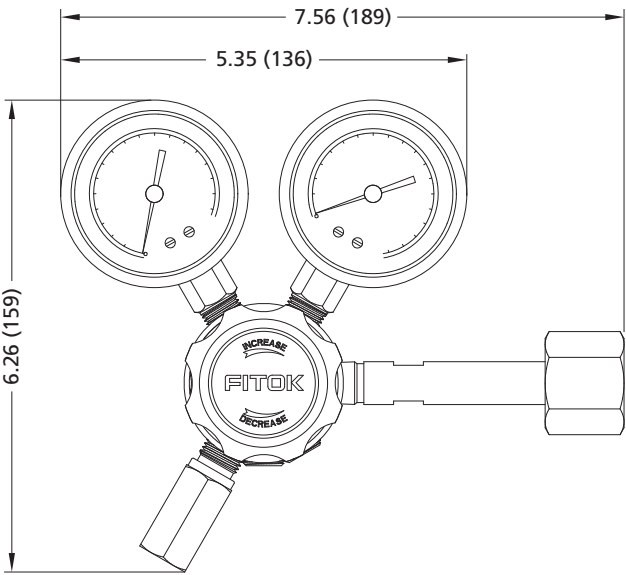
- ⦿ Maximum inlet pressure: 3000 or 4500 psig
- ⦿ 1st stage outlet pressure range: 480~500 psig  
2nd stage outlet pressure range: 0~25, 0~50, 0~100, 0~150, 0~250 psig
- ⦿ Material of the internal components:  
Seat: PCTFE  
Diaphragm: Hastelloy  
Filter: 316L
- ⦿ Temperature: -40°F~+165°F (-40°C~+74°C)
- ⦿ 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): 0.05
- ⦿ 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

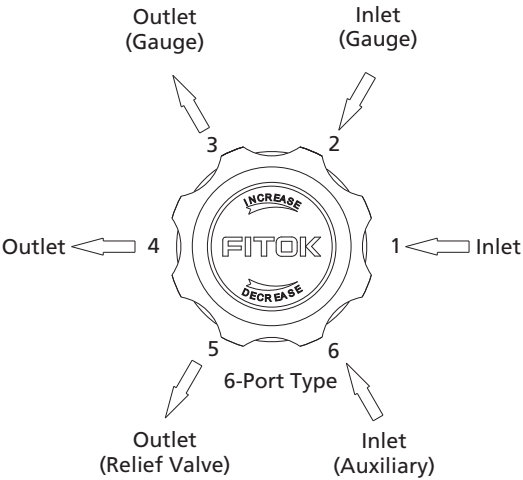
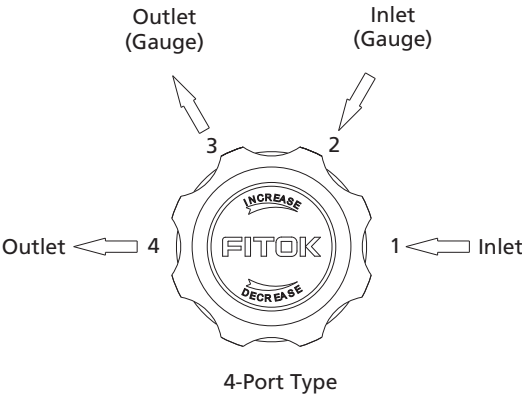


Dimensions

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



Port Configurations



## Part Number Description

FCR – 1D6L – 30 – 100 – C350 – B – B – 30 – R – P											
Body Material		Connection 1		Connection 2		Connection 4				Connection 5	
6L	316L SS	00	1/4" Female NPT	B	With Gauge (psi/bar)	00	1/4" Female NPT	R	Relief Valve		
SS	316 SS	C---	CGA Number (USA)	M	With Gauge (psi/MPa)	01	1/4" Male NPT	P	Plug		
HC	Hastelloy C-276	DIN_	DIN Number (Germany)	P	Plug	10	1/4" Tube Fitting	00	1/4" Female NPT		
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.				11	3/8" Tube Fitting	Connection 6 Same as Connection 5			
Inlet Pressure P1						20	6 mm Tube Fitting				
30	3000 psig					21	8 mm Tube Fitting				
45	4500 psig					30	Diaphragm Valve with 1/4" Female NPT				
Outlet Pressure Range P2		Connection 3 Same as Connection 2		Connection 4		31	Diaphragm Valve with 1/4" Male NPT				
25	0~25 psig					32	Diaphragm Valve with 1/4" Tube Fitting				
50	0~50 psig					33	Diaphragm Valve with 3/8" Tube Fitting				
100	0~100 psig					34	Diaphragm Valve with 6 mm Tube Fitting				
150	0~150 psig					35	Diaphragm Valve with 8 mm Tube Fitting				
250	0~250 psig										
						Other connections are available upon request					