

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 μ m filter installed at inlet

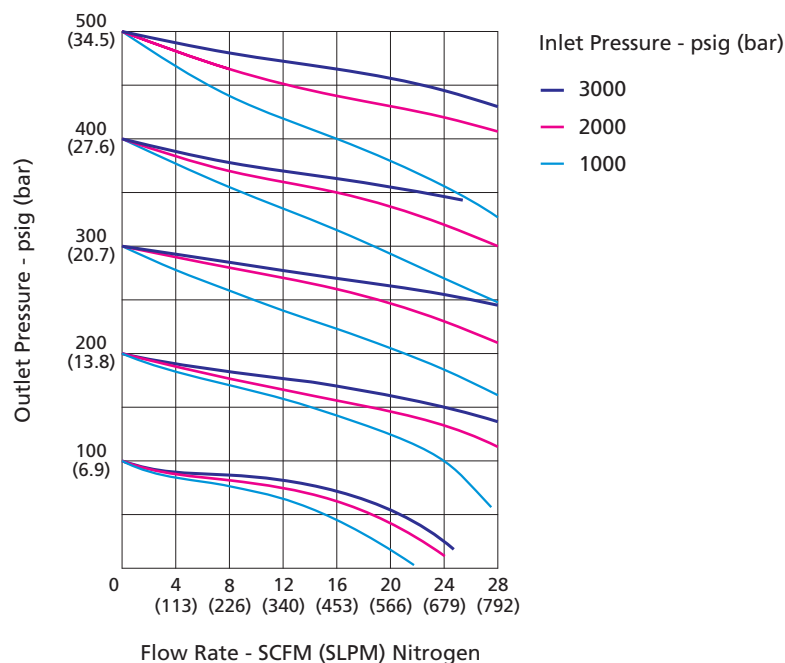


Model: FCR-16L-30-100-C330-B-B-00-R-P

Technical Data

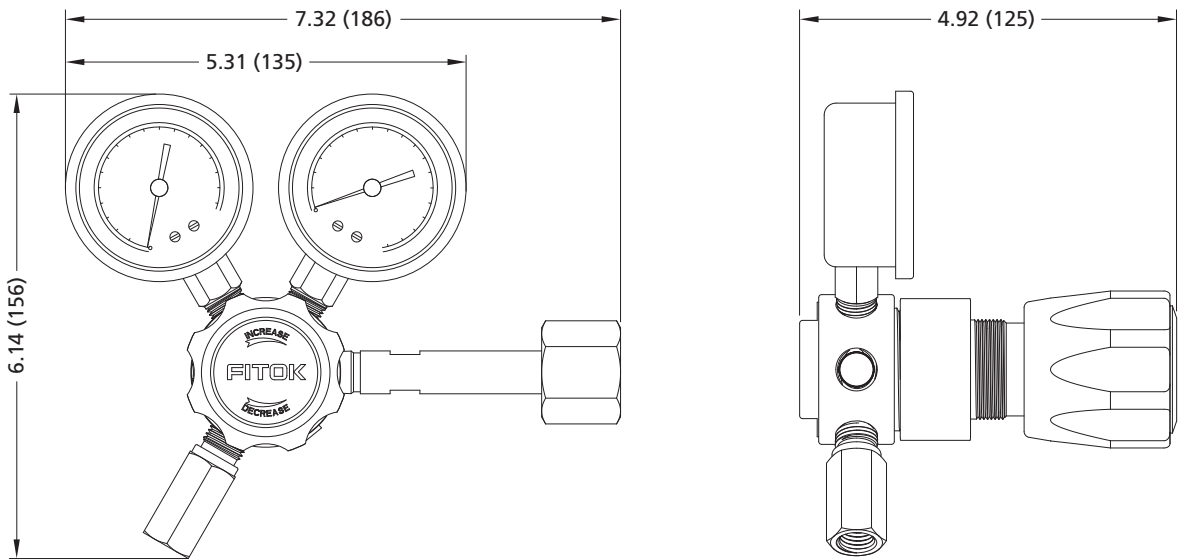
- ⦿ Single-stage regulator
- ⦿ Maximum inlet pressure: 3000 or 4500 psig
- ⦿ Outlet pressure range: 0~25, 0~50, 0~100, 0~250 or 0~500 psig
- ⦿ Material of the internal components:
 - Seat: PCTFE
 - Diaphragm: Hastelloy
 - Filter: 316L
- ⦿ Temperature: -40°F~+165°F (-40°C~+74°C)
- ⦿ Leak rates:
 - Internal: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

Typical Flow Chart

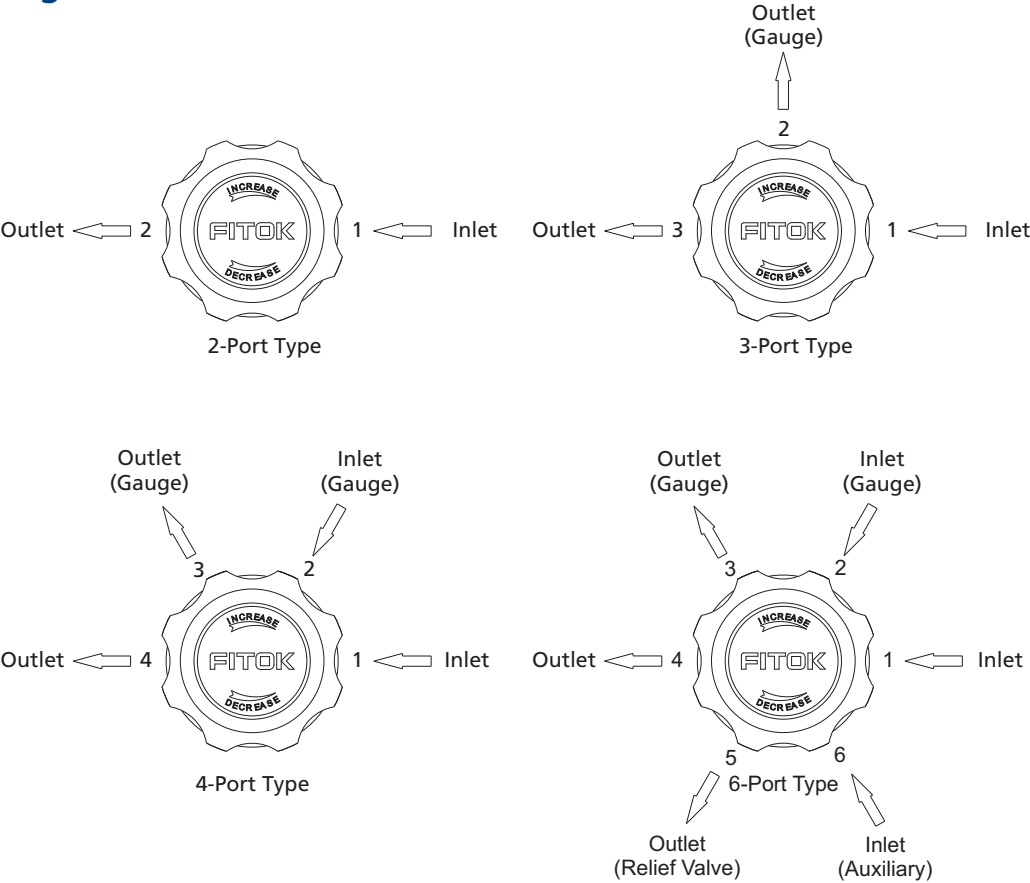


Dimensions

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 µm filter installed at inlet

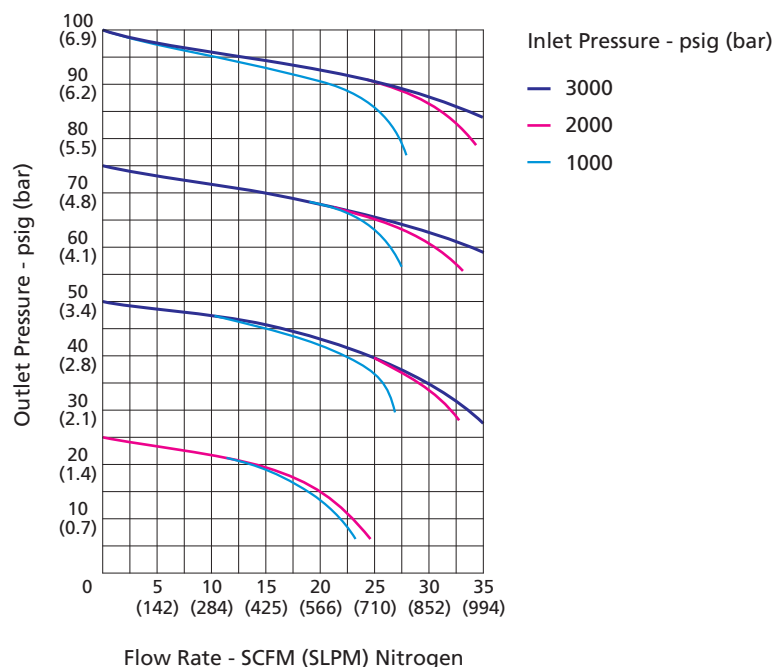


Model: FCR-1S6L-30-50-C580-B-B-00-R-P

Technical Data

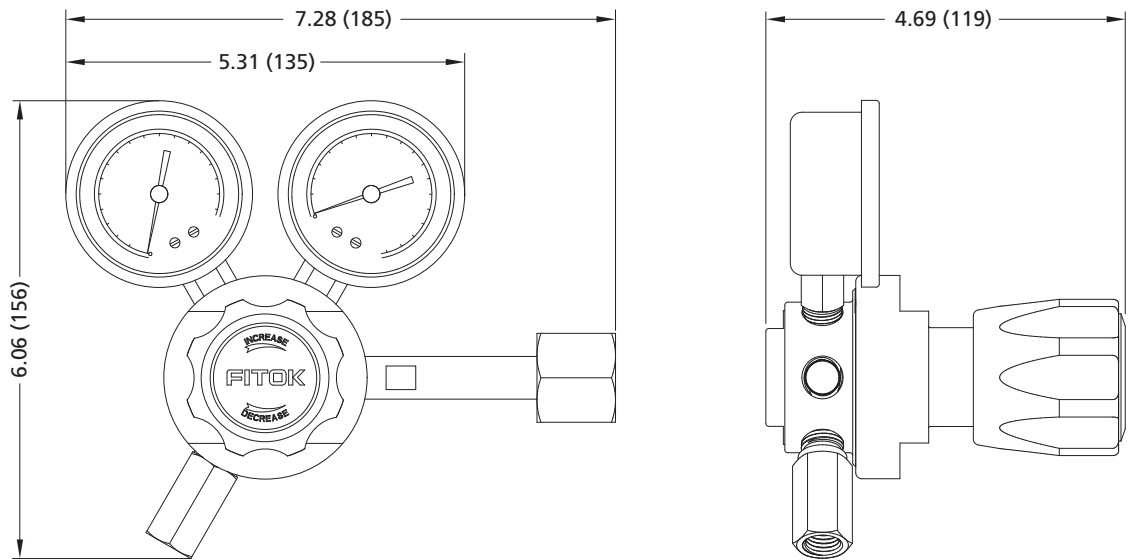
- ⊙ Single-stage regulator
- ⊙ Maximum inlet pressure: 3000 or 4500 psig
- ⊙ Outlet pressure range: 0~25, 0~50, 0~100, 0~150 or 0~200 psig
- ⊙ Material of the internal components:
 - Seat: PCTFE
 - Diaphragm: 316L
 - Filter: 316L
- ⊙ Temperature: -40°F~+165°F (-40°C~+74°C)
- ⊙ Leak rates:
 - Internal: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

Typical Flow Chart

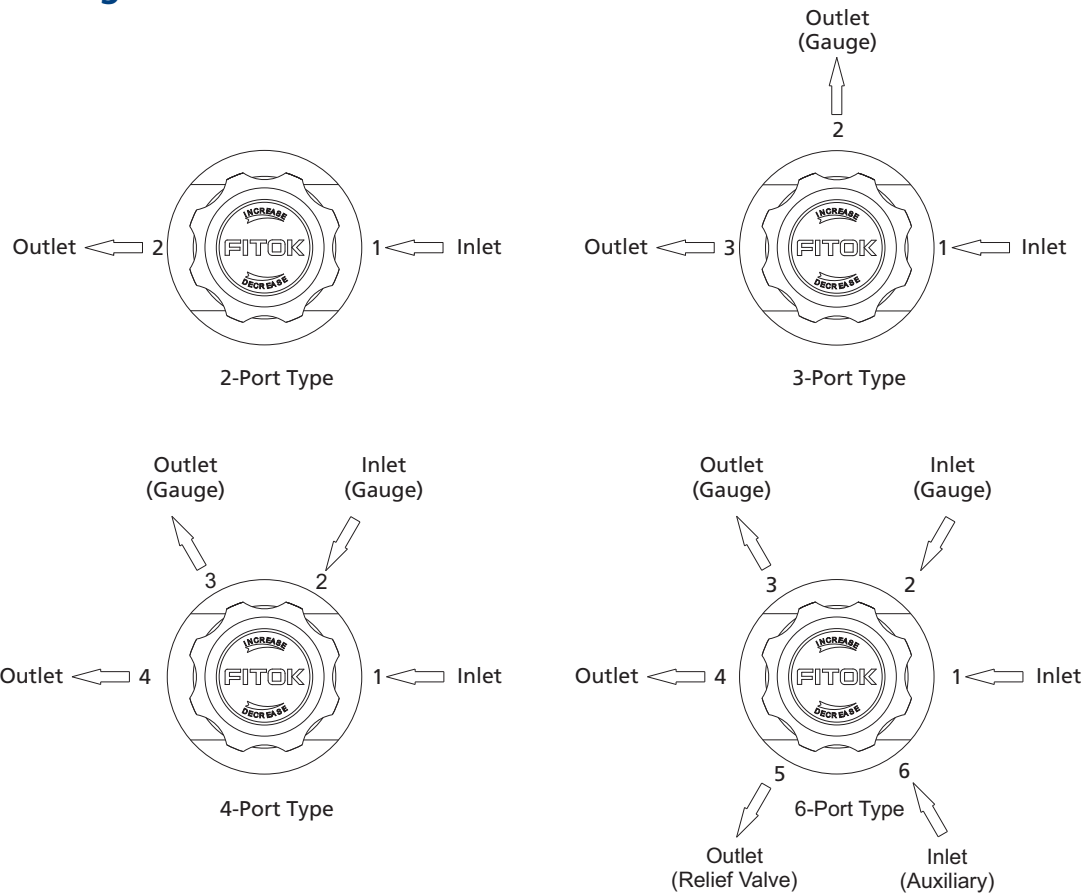


Dimensions

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		11	3/8" Tube Fitting	Connection 6 Same as Connection 5
30	3000 psig	Outlet Pressure Range P2		Connection 3		20	6 mm Tube Fitting		
45	4500 psig			Same as Connection 2		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

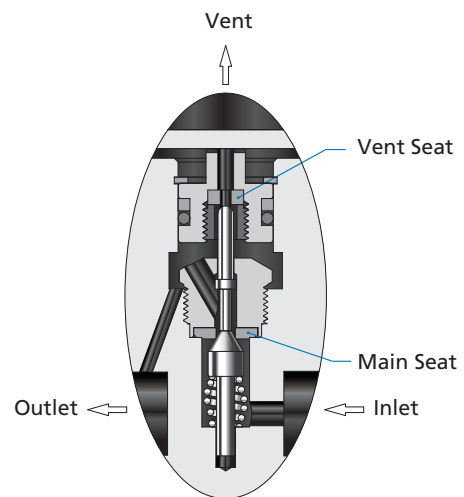
- ⦿ For high pressure applications
- ⦿ Robust piston-sensed design to ensure safety and reliability
- ⦿ 316L SS or Nickel-plated Brass body optional
- ⦿ For non-corrosive gases (due to seal limit)
- ⦿ With special cleaning and packaging, applicable to oxygen-enriched environments
- ⦿ Venting model available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



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

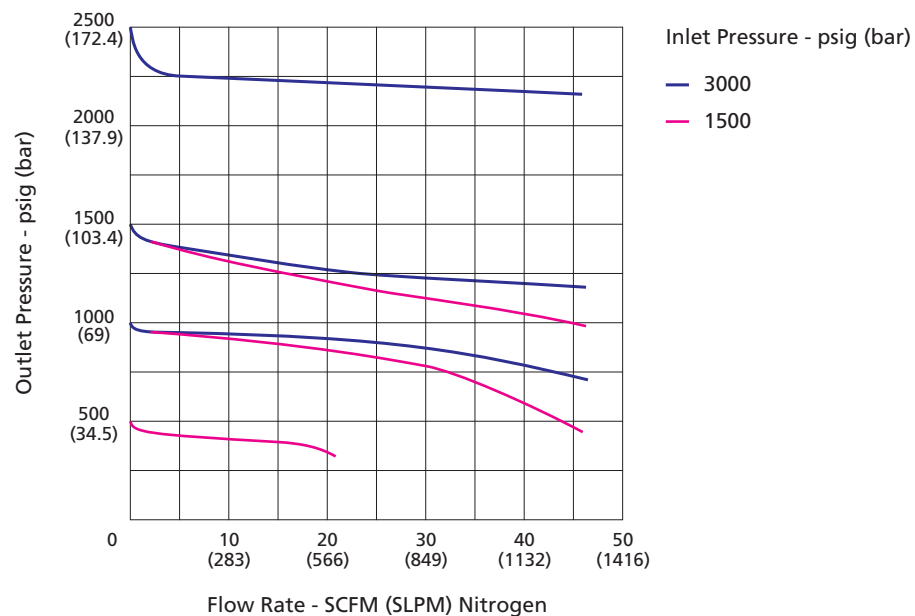
Technical Data

- ⦿ 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



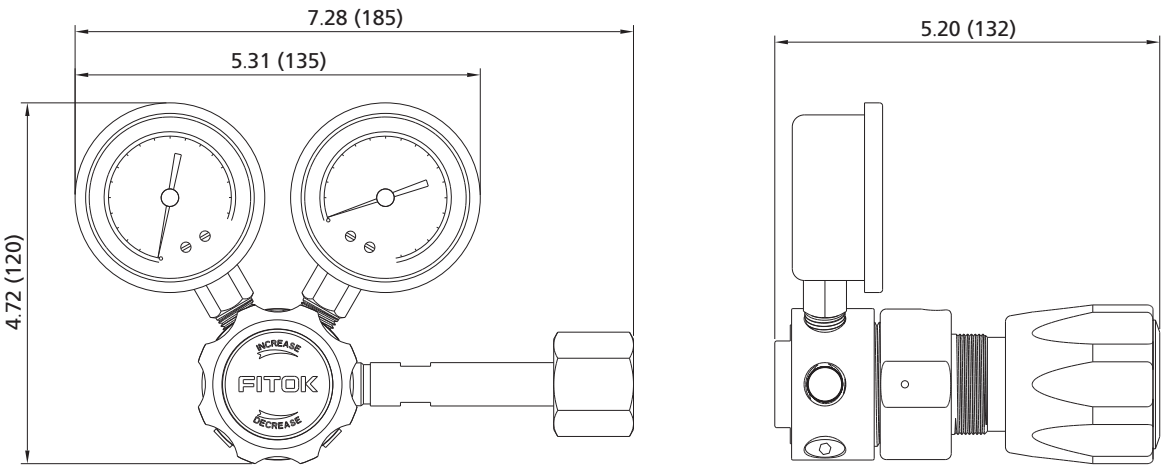
Construction Drawing with Venting Model

Typical Flow Chart

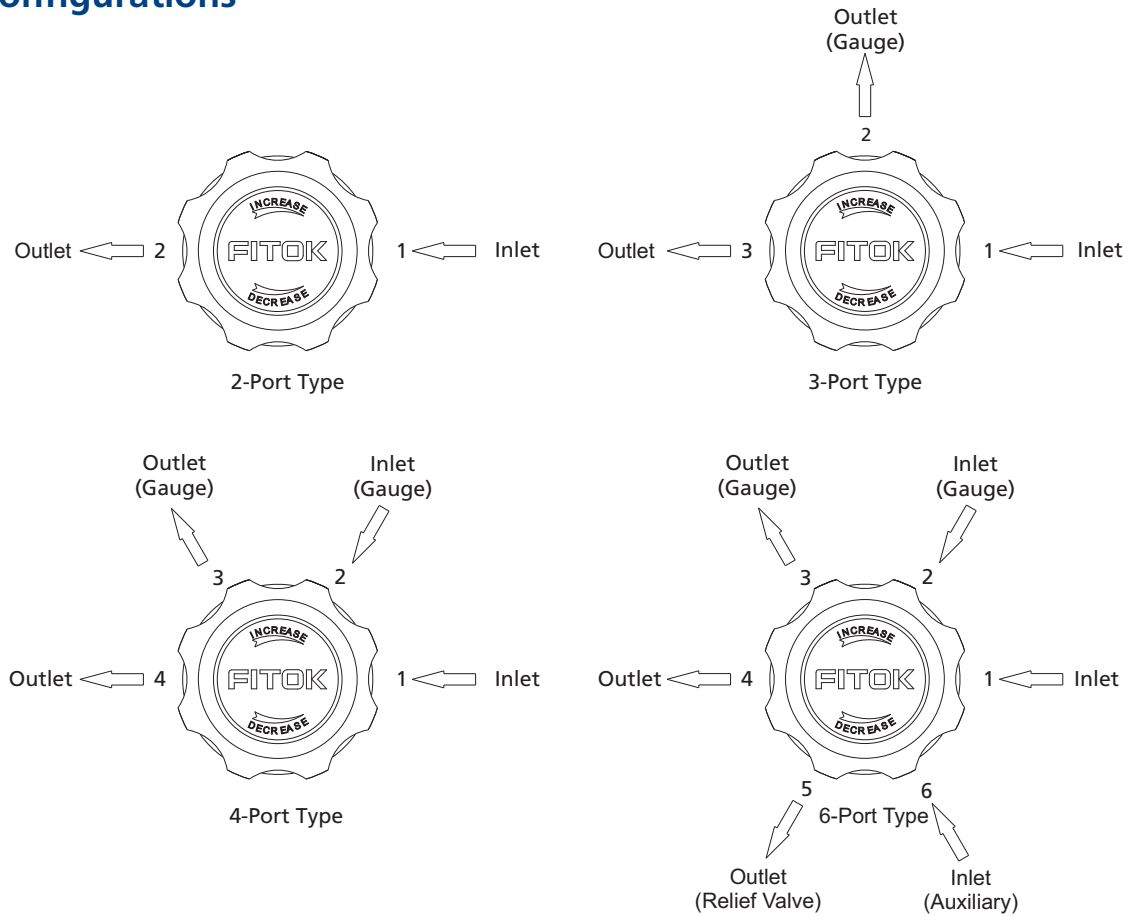


Dimensions

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

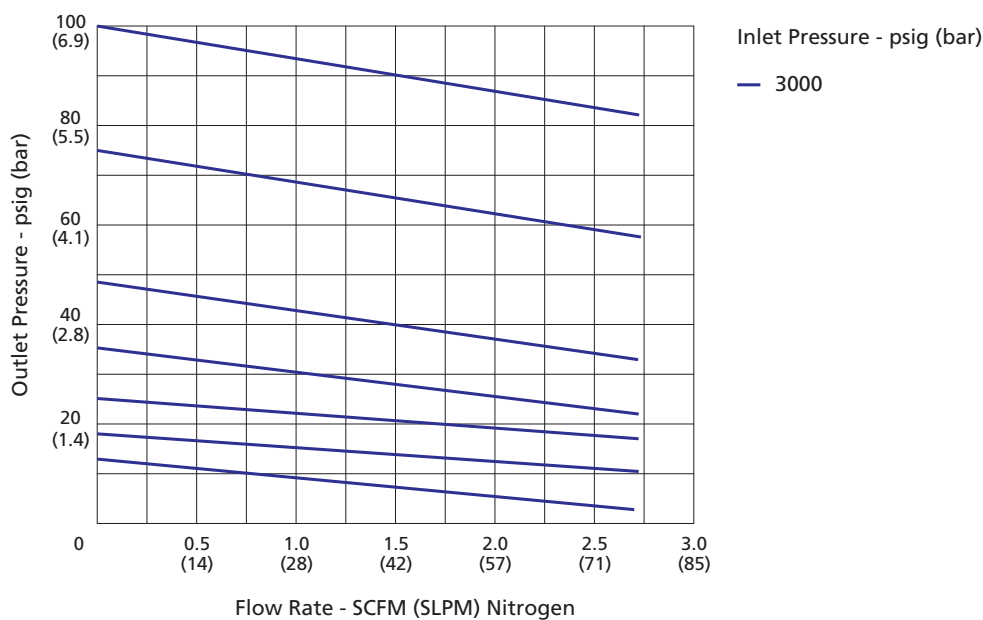


Model: FCR-1D6L-30-100-C660-B-B-00-R-P

Technical Data

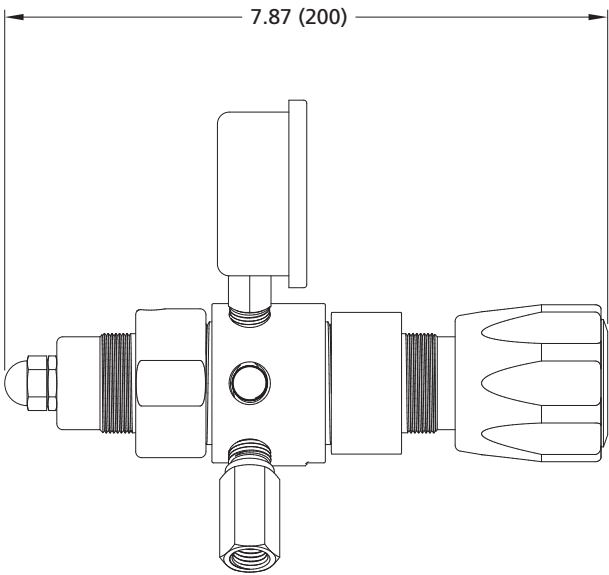
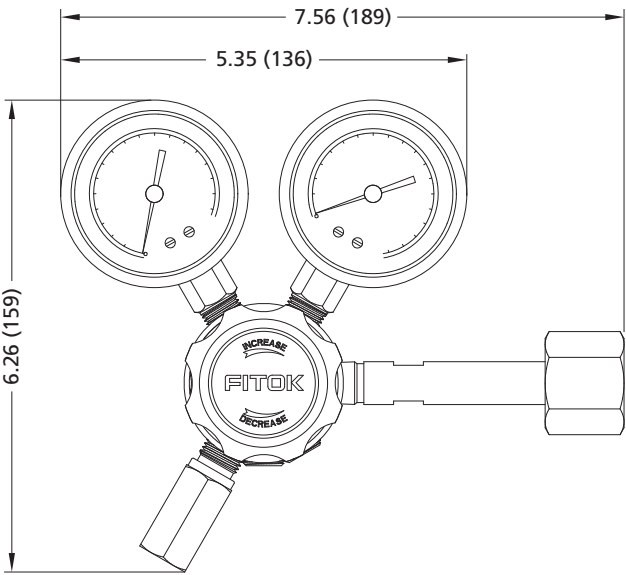
- ⦿ Maximum inlet pressure: 3000 or 4500 psig
- ⦿ 1st stage outlet pressure range: 480~500 psig
2nd stage outlet pressure range: 0~25, 0~50, 0~100, 0~150, 0~250 psig
- ⦿ Material of the internal components:
Seat: PCTFE
Diaphragm: Hastelloy
Filter: 316L
- ⦿ Temperature: -40°F~+165°F (-40°C~+74°C)
- ⦿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

Typical Flow Chart

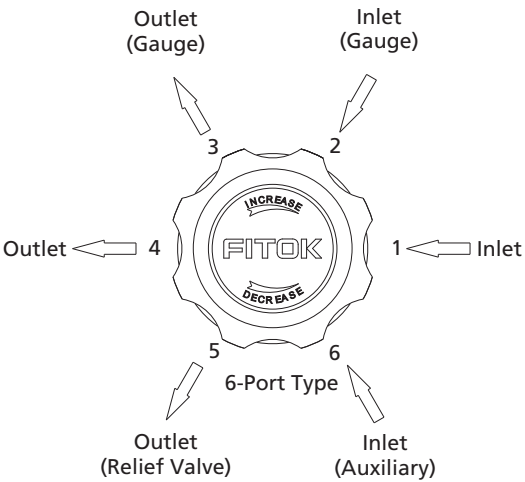
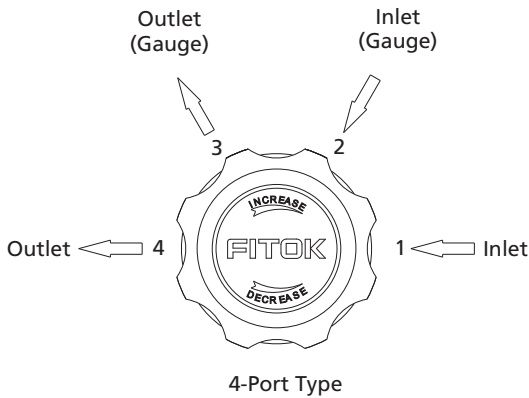


Dimensions

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



Port Configurations



Part Number Description

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