

# SCF 3016AL SERIES

Air Loaded, High Pressure, High Flow  
Pressure Reducing Regulators



Premier SCF 3016AL Series regulators are designed to stand up to the aggressive, solvent-like qualities of supercritical CO<sub>2</sub>, while providing reliable and precise pressure regulation.

SCF 3016AL Series high flow, air loaded, piston sensed, pressure reducing regulators are rated for inlet pressures up to 6000 PSIG (413.7 bar) and Cv 2.0. This regulator features an air loader with a max load pressure of 110 PSIG (7.58 bar) and a balanced stem for increased outlet pressure stability.

## FEATURES

- Designed for use with supercritical CO<sub>2</sub>
- Captured venting
- High flow capacity (Cv): 2.0
- Balanced stem for increased outlet pressure stability
- 316 stainless steel construction
- Compatible with electro-pneumatic controllers
- Max inlet pressure: 6000 PSIG (*413.7 bar*)
- Machined bar stock body eliminates porosity found in castings

**SOME APPLICATIONS WILL REQUIRE A CUSTOM SOLUTION.**  
CONTACT PREMIER INDUSTRIES TO REQUEST A MODIFICATION  
OR A CUSTOM DESIGN.

## SPECIFICATIONS

- **MAXIMUM INLET PRESSURE:**
  - REGULATOR: 6000 PSIG (413.7 bar)
  - AIR ACTUATOR: 110 PSIG (7.58 bar)
- **OUTLET PRESSURE:**
  - 10-1500 PSIG (0.69 - 103.42 bar)
    - Diameter: 1.000"
    - Area: 0.7854 in<sup>2</sup>
    - Ratio: 1<sup>6</sup>/<sub>1</sub> \*\*
  - 15-2500 PSIG (1.03 - 172.37 bar)
    - Diameter: 0.750"
    - Area: 0.4418 in<sup>2</sup>
    - Ratio: 2<sup>8</sup>/<sub>1</sub> \*\*
  - 50-6000 PSIG (3.45 - 413.69 bar)
    - Diameter: 0.500"
    - Area: 0.1964 in<sup>2</sup>
    - Ratio: 6<sup>4</sup>/<sub>1</sub> \*\*

\*\* 4.0" diameter diaphragm  
Diaphragm area: 12.5664 in<sup>2</sup>

- **FLOW (Cv):**
  - MAIN VALVE: 2.0
  - VENT VALVE: 0.06
- **AMBIENT OPERATING TEMPERATURES:**
  - -4°F/-20°C to 212°F/100°C (Viton®)\*
  - -15°F/-26°C to 212°F/100°C (BUNA-N)\*
  - -65°F/-54°C to 212°F/100°C (EPDM)

\*lower temperature compounds available upon request

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Contact factory for material certifications. Fees may apply.

## MATERIALS OF CONSTRUCTION

- **BODY:** 316 Stainless Steel
- **HOUSING, AIR ACTUATOR :**
  - 6061-T6 Aluminum/clear anodized
- **DIAPHRAGM, AIR ACTUATOR :**
  - Neoprene, nylon fabric-reinforced
- **MAIN VALVE SEAT:**
  - PEEK®
- **VENT VALVE SEAT:**
  - PEEK®
- **ELASTOMER SEALS:**
  - Polyurethane
- **BACK-UP RINGS:**
  - PTFE
  - PCTFE
- **OTHER WETTED PARTS:**
  - 316 Stainless Steel
  - 17-4 Stainless Steel

## PORTING

- **INLET/OUTLET:**
  - 1/2" FNPT, SAE J1926, SAE AS5202
  - 9/16" medium pressure
  - 3/4" FNPT, SAE J1926, SAE AS5202, medium pressure
  - 1" FNPT, SAE J1926, SAE AS5202, medium pressure
- **AIR ACTUATOR:**
  - 1/4" FNPT (standard)
  - 1/4" SAE AS5202
  - 1/8" FNPT
  - 1/4" SAE J1926

\*\*SAE AS5202 supersedes MS33649

- **VENT:** 1/4" (inlet/outlet port type)
- **GAUGE PORTS:** 1/4" FNPT

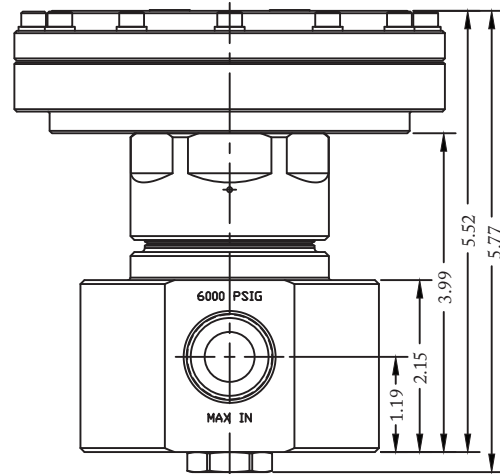
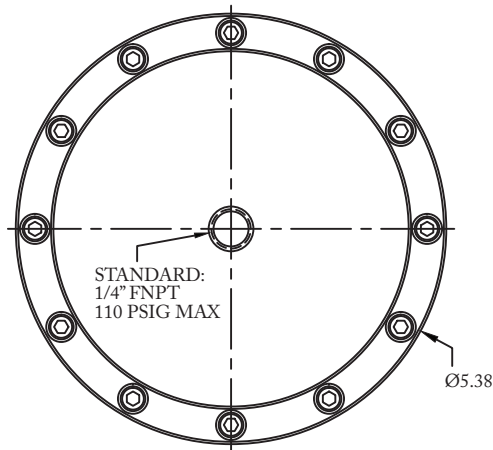
## OPTIONS

- Private Label

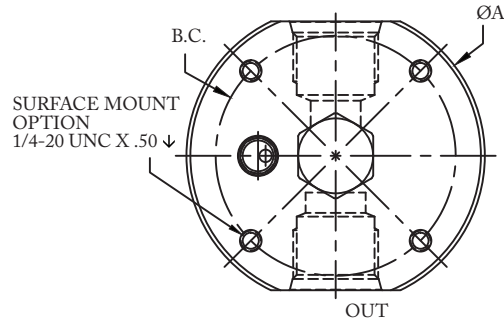
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PART NUMBER: 30-10227SC *Cv 2.0*



PORT TYPE	ØA	FLATS	B.C.
1/2" & 3/4" NPT	Ø2.98	—	Ø2.50
1/2" SAE	Ø3.23	3.05	Ø2.63
1" NPT	Ø3.48	—	Ø2.75
9/16" M.P.	Ø3.48	3.30	Ø2.75
3/4" J1926	Ø3.73	3.36	Ø3.00
3/4" AS5202	Ø3.98	3.72	Ø3.25
3/4" M.P.	Ø3.98	3.72	Ø3.25
1" SAE	Ø3.98	3.72	Ø3.25

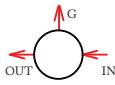
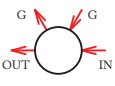
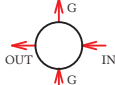



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PART #	-	1	2	3	4	-	5	6	-	MODS
30-10227SC	-					-			-	

**Cv 2.0 MODEL**

1	OUTLET PRESSURE
3	10-1500 PSIG (0.69 - 103.42 bar) <i>Diameter: 1.000"</i> <i>Area: 0.7854 in<sup>2</sup></i> <i>Ratio: 1<sup>6</sup>/<sub>1</sub> **</i>
4	15-2500 PSIG (1.03 - 172.37 bar) <i>Diameter: 0.750"</i> <i>Area: 0.4418 in<sup>2</sup></i> <i>Ratio: 2<sup>8</sup>/<sub>1</sub> **</i>
6	50-6000 PSIG (3.45 - 413.69 bar) <i>Diameter: 0.500"</i> <i>Area: 0.1964 in<sup>2</sup></i> <i>Ratio: 6<sup>4</sup>/<sub>1</sub> **</i>
<i>** 4.0" diameter diaphragm</i> <i>Diaphragm area: 12.5664 in<sup>2</sup></i>	
2	PORTING CONFIGURATIONS
A	
C	
L	
S	

3	PORT SIZE
8	1/2"
9	9/16"
T	3/4"
W	1"
<i>*1/2" ports not available in medium pressure</i> <i>**9/16" ports only available in medium pressure</i> <b>GAUGE PORTS: 1/4" FNPT</b> <b>VENT PORT: 1/4" inlet/outlet port type</b>	
4	PORT TYPE (IN/OUT/VENT)
N	NPT
J	SAE J1926
A	SAE AS5202**
M	MEDIUM PRESSURE
<i>**SAE AS5202 supersedes MS33649</i>	

5 6	O-RING MATERIAL
08	POLYURETHANE
MODIFICATIONS <i>Separate multiple mods with a dash</i>	
Blank	None
AS	1/4 SAE AS5202 loader port
E	1/8 NPT air loader port
J	1/4 SAE J1926 loader port
NV	Non-venting
SM	Surface mount
PTU	Port type uniform

**6000 PSIG MAX INLET**

*The end user is responsible to ensure adequate fittings are used to connect regulator to plumbing.*

*Contact factory for material certifications. Fees may apply.*