

## SG1 Series

## Regulators - Pressure Reducing

DSG012031X012

## Specifications

For questions about this product, please consult TESCOM.

## OPERATING PARAMETERS

Pressure rating per criteria of CGA E-4; ASME B31; ASME BPVC

**Maximum Inlet Pressure**

**C<sub>v</sub> = 0.06:** 4500 psig / 310 bar

**C<sub>v</sub> = 0.2:** 3000 psig / 207 bar

**Maximum Outlet Pressure**

15, 25, 50, 125, 250 psig

103, 172, 345, 862, 1724 kPa

1.0, 1.7, 3.4, 8.6, 17.2 bar

**Design Proof Pressure**

150% maximum rated

**Leakage**

**Internal:** Bubble-tight

**External:** Designed to meet

$< 2 \times 10^{-8}$  atm cc/sec He /  $< 2 \times 10^{-8}$  mbar l/s He

**Operating Temperature**

-40°F to 140°F / -40°C to 60°C

**Flow Capacity**

C<sub>v</sub> = 0.06, 0.2

**Decaying Inlet Characteristic**

**C<sub>v</sub> = 0.06**

0.37 psig / 100 psig

0.03 bar / 6.9 bar

**C<sub>v</sub> = 0.2**

1.45 psig / 100 psig

0.10 bar / 6.9 bar



TESCOM SG1 Series is a compact, lightweight high purity single-stage regulator for specialty and industrial gas flows of less than 10 SCFM / 283 SLPM. Sensitive, extra long-life metal diaphragm ensures gas purity and integrity. User-friendly model number enables the specifier to select optional gauges, relief and shut-off valves, and cylinder connections as part of the regulator assembly.

## MEDIA CONTACT MATERIALS

**Body**

316L Stainless Steel, Plated Brass

**Seat**

PCTFE

**Diaphragm**

316 Stainless Steel or neoprene

**Filter**

10 micron nominal sintered Bronze

10 micron nominal sintered 316 Stainless Steel

**Seal**

Teflon® or Buna-N

**Remaining Parts**

Brass, 300 Series Stainless Steel

## Applications

- Laboratory and Point-of-Use Gas Systems in medical, pharmaceutical, food and beverage, and other high purity applications
- Process analyzer gases, metal fabrication and specialty and industrial gas cylinders

## Features and Benefits

- Cartridge valve design incorporates a 10 micron filter that protects the regulator seat and makes service simple
- Optional neoprene diaphragm provides exceptional sensitivity for precise pressure control

## OTHERS

**Connections**

Inlet and outlet: 1/4" NPTF

Accessories: 1/4" NPTF

**Cleaning**

CGA 4.1 and ASTM G93

**Weight**

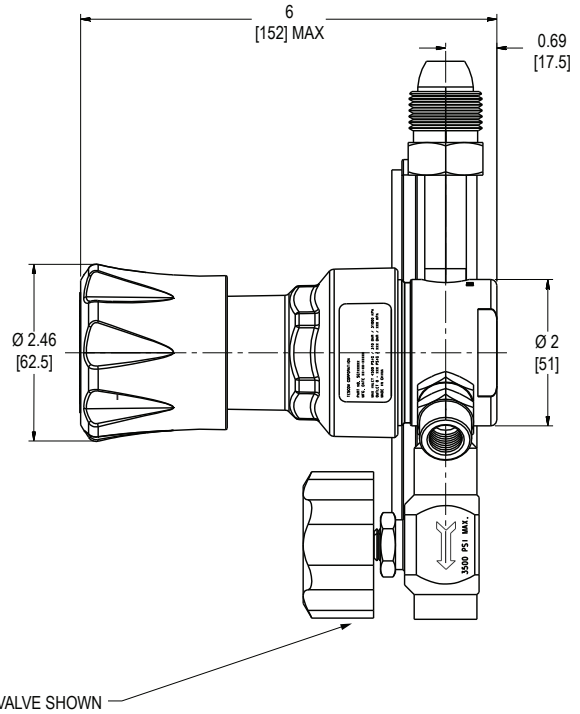
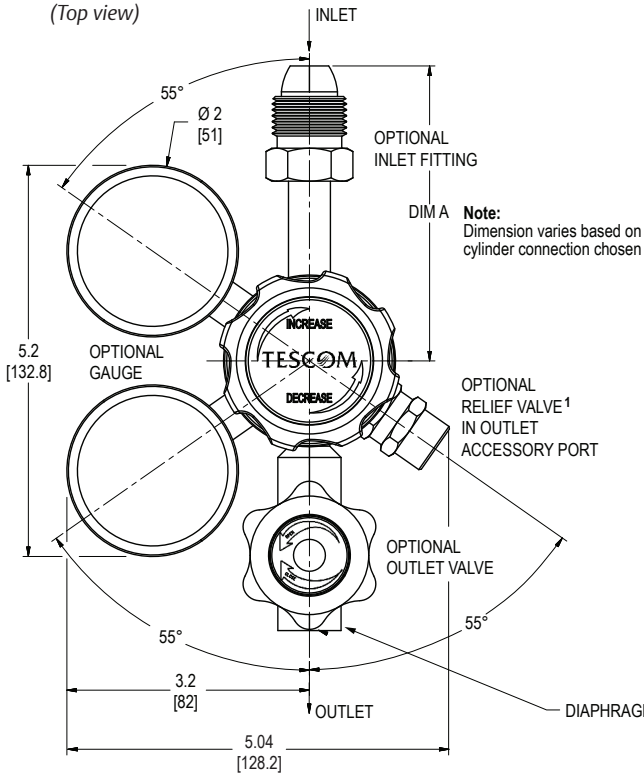
2.4 lbs / 1.1 kg

Teflon® is a registered trademark of E.I. du Pont de Nemours and Company.

SG1 Series Regulator Drawing

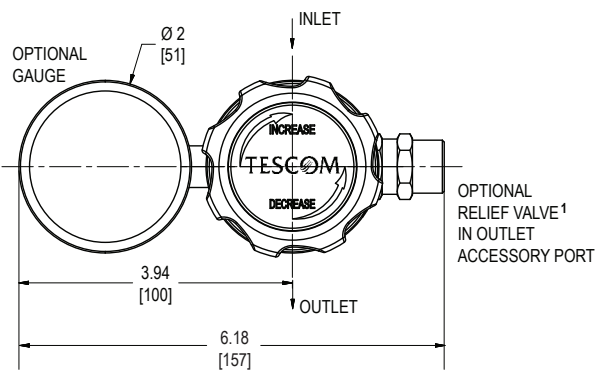
5 Ports

(Top view)

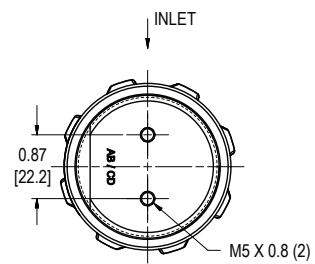


4 Ports

(Top view)



Bottom Mounting



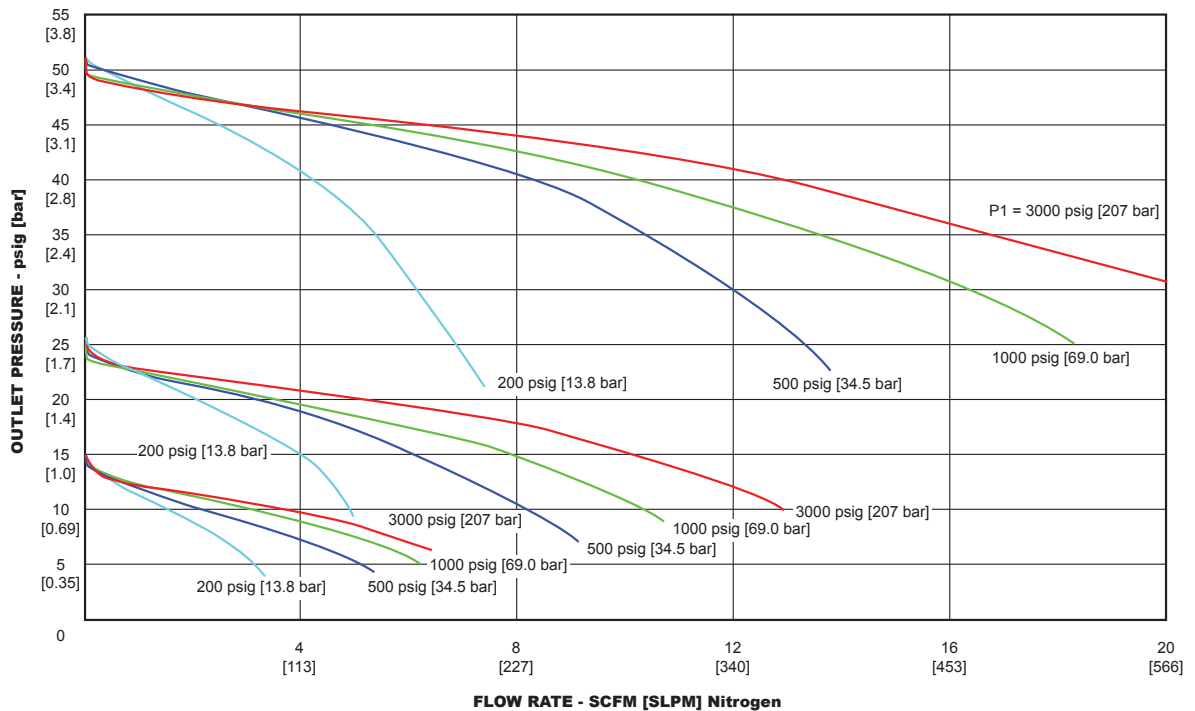
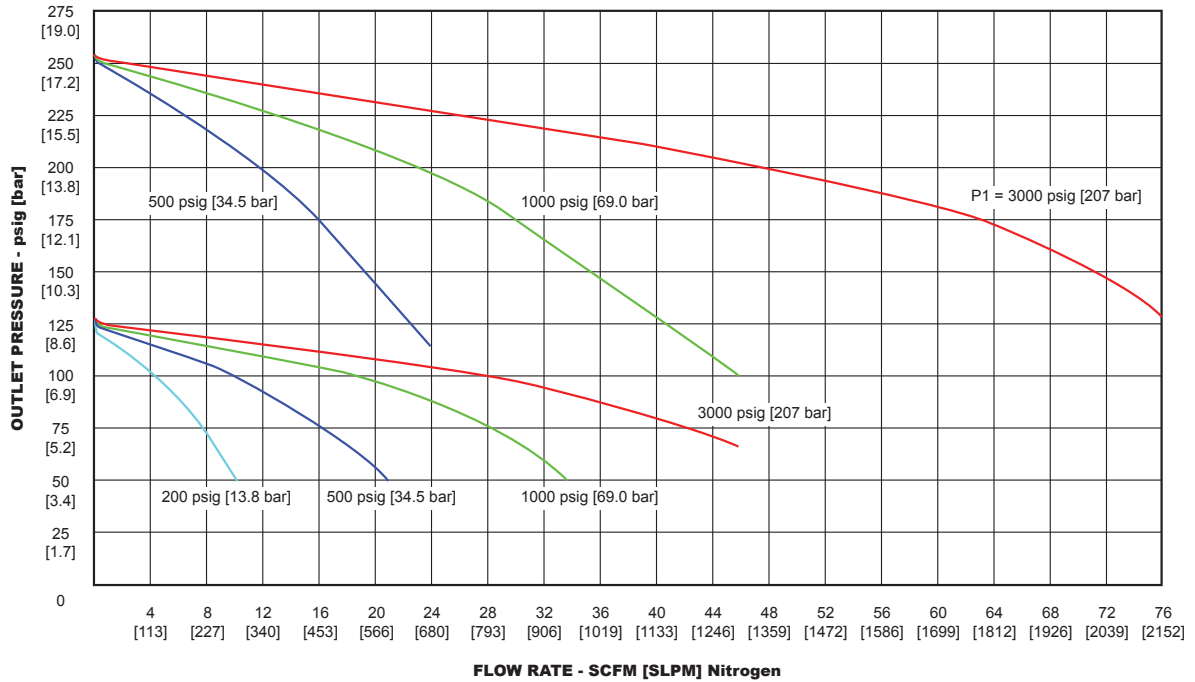
All dimensions are reference & nominal  
Metric [millimeter] equivalents are in brackets

## SG1 Series Regulator Flow Charts

For more information on how to read flow curves, please refer to the Flow Curves and Calculations document (debul2007x012) in the TESCOM catalog or on [www.tescom.com](http://www.tescom.com).

**C<sub>v</sub> = 0.06 Model**

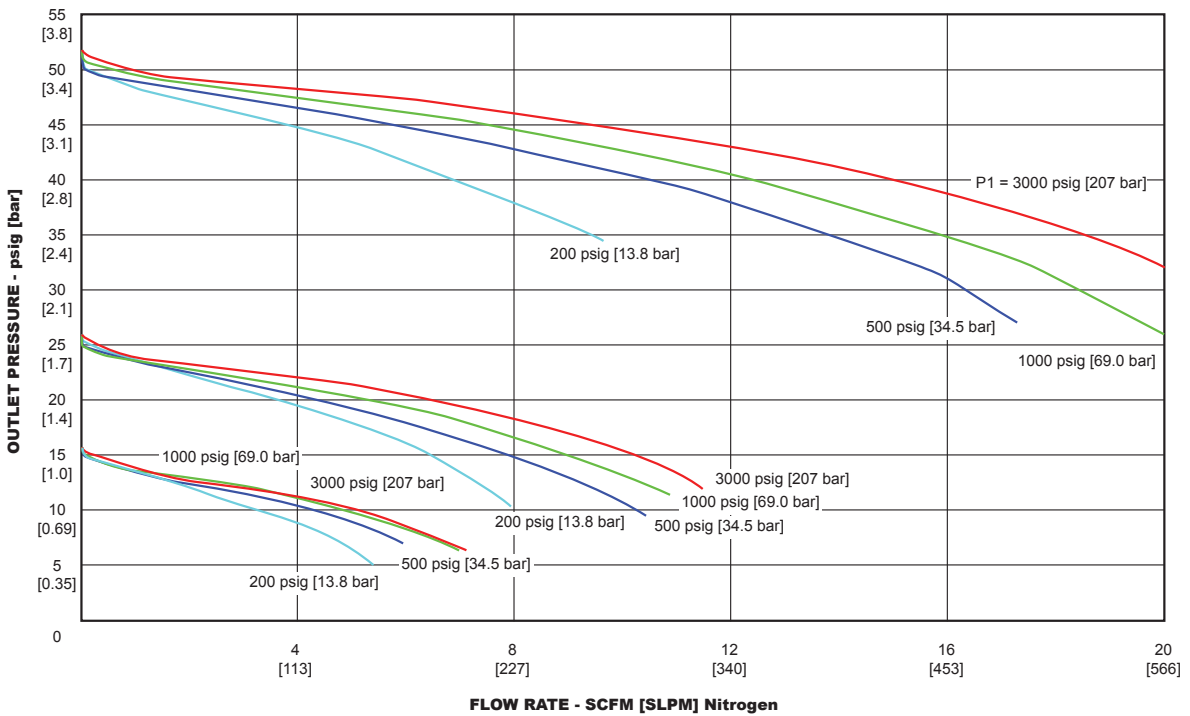
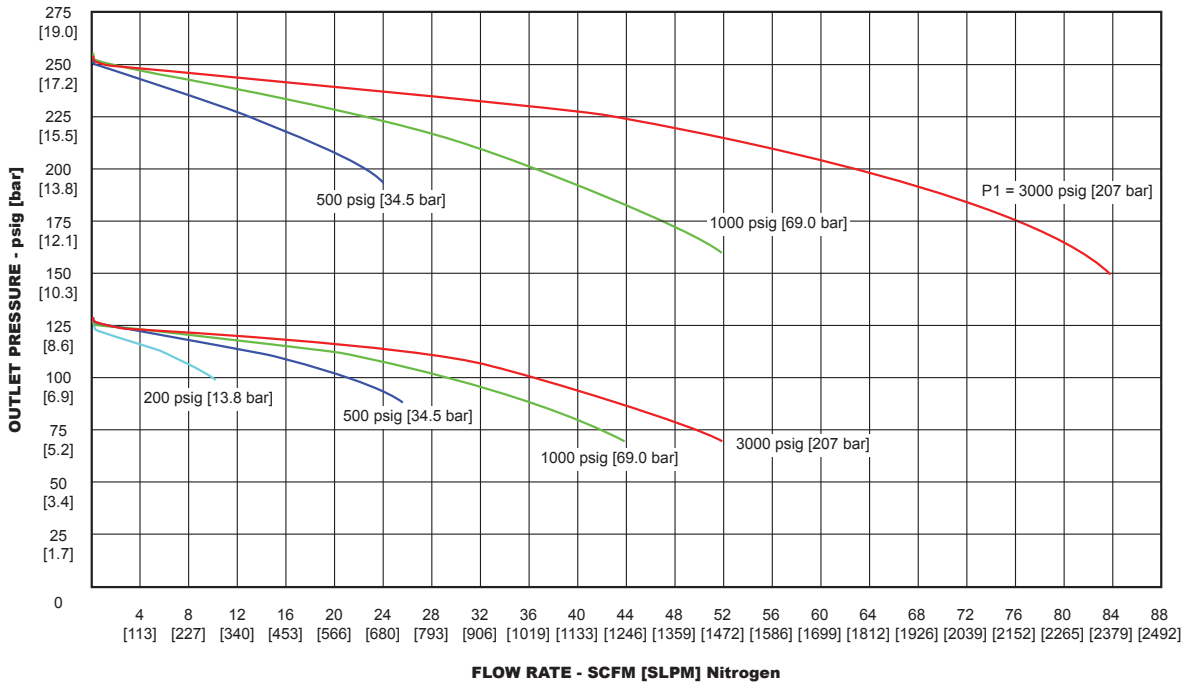
**Metal Diaphragm**



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#### C<sub>v</sub> = 0.06 Model Neoprene Diaphragm

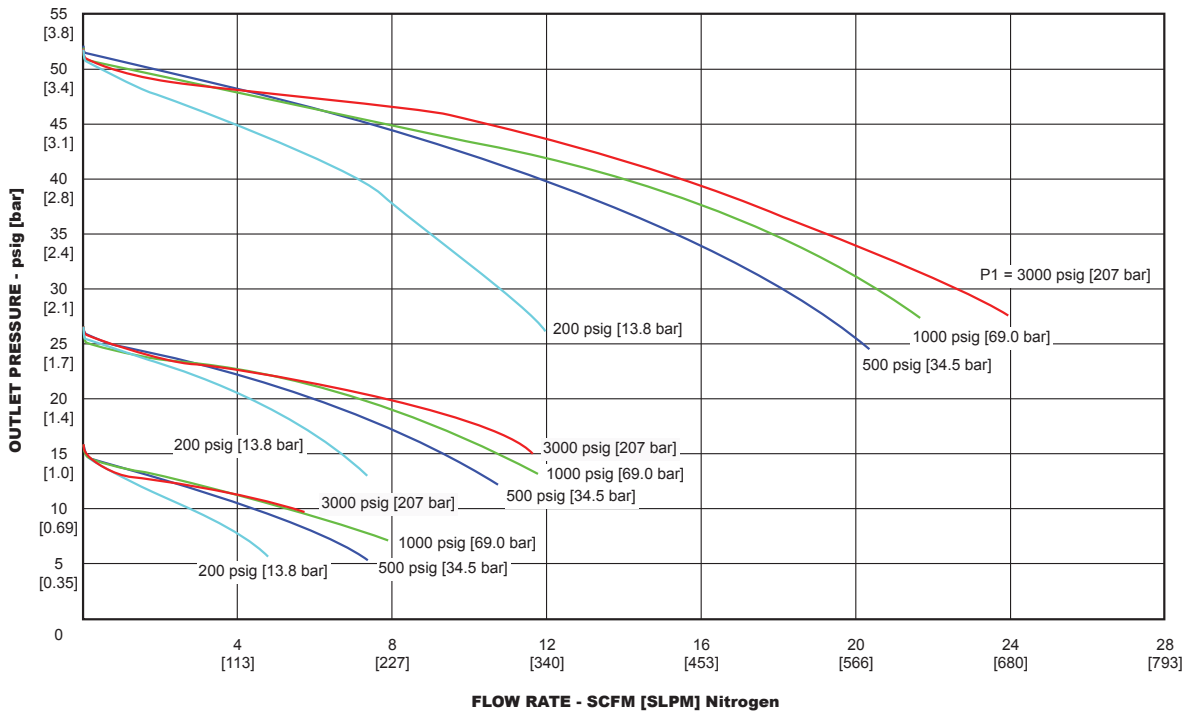
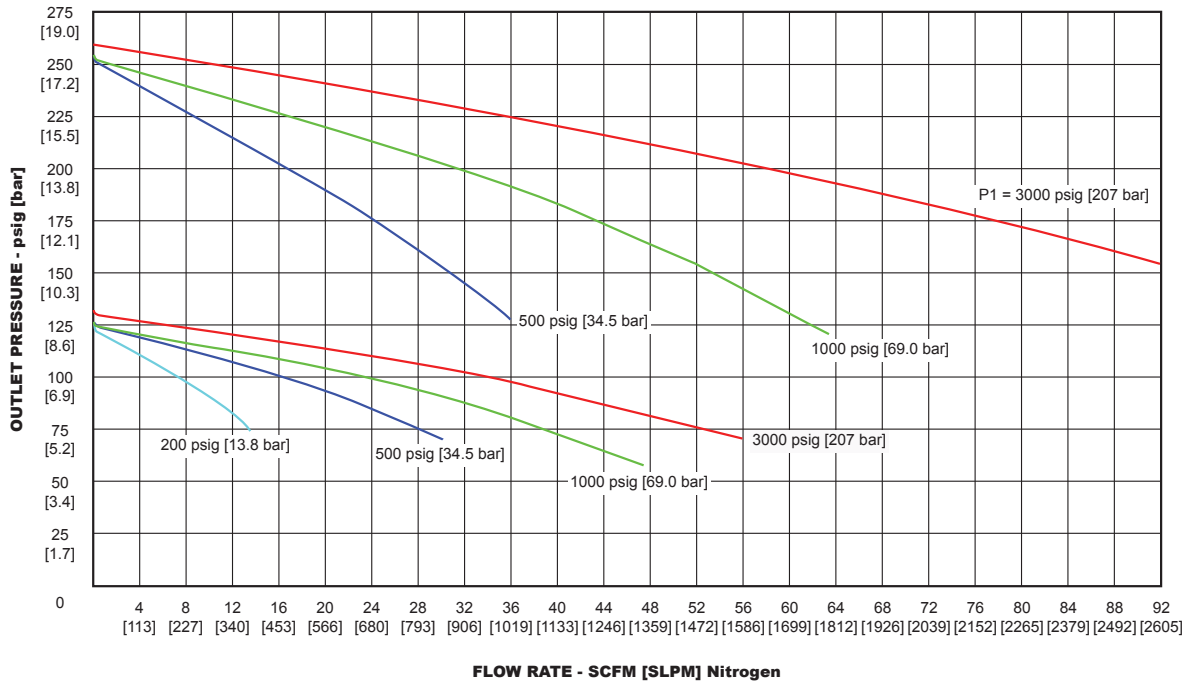


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**C<sub>v</sub> = 0.20 Model**

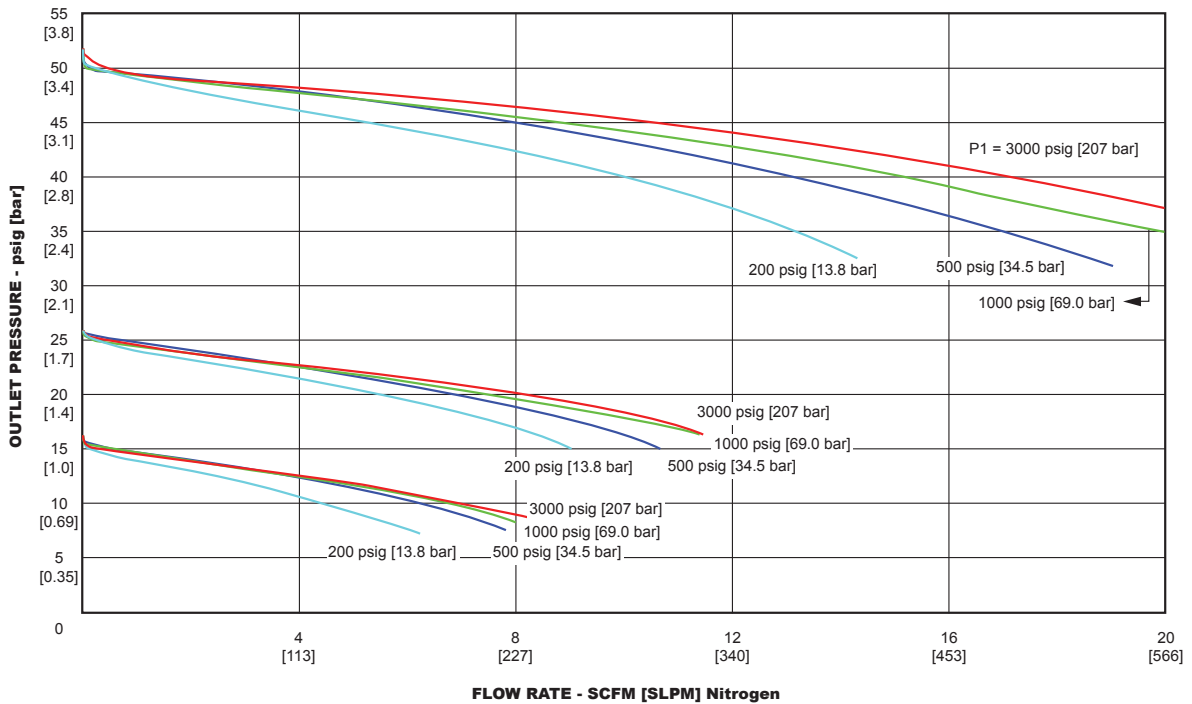
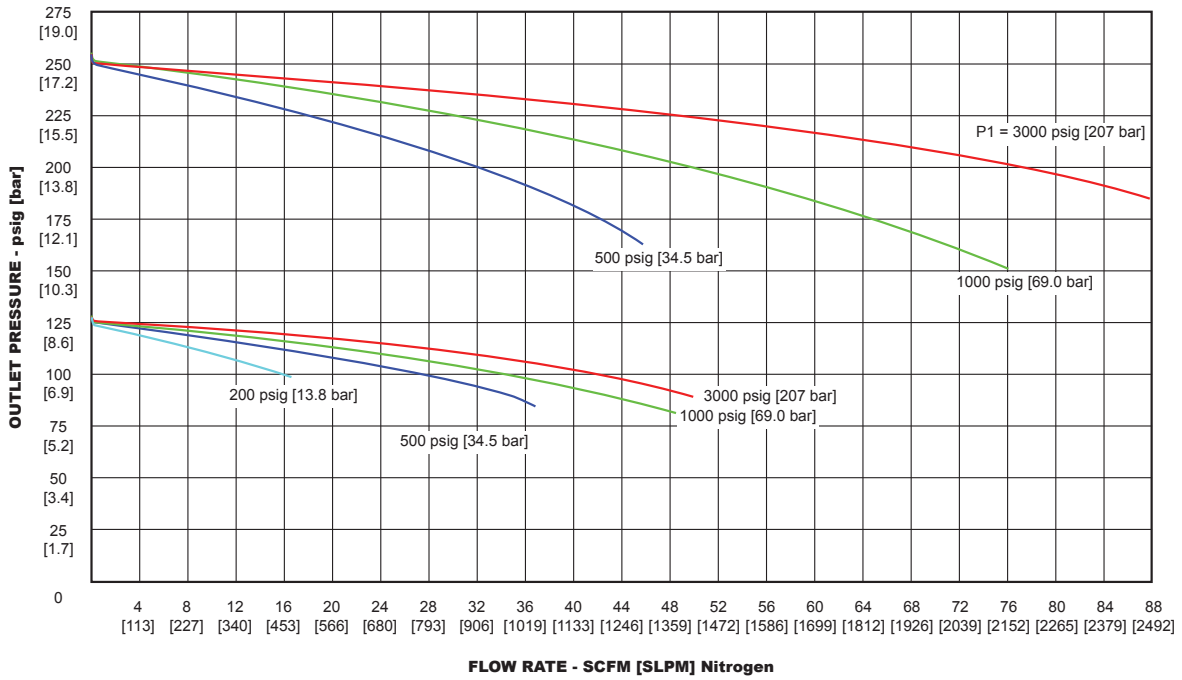
**Metal Diaphragm**



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#### C<sub>v</sub> = 0.20 Model Neoprene Diaphragm

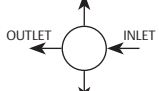
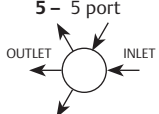


## SG1 Series Regulator Part Number Selector

Repair Kits, Accessories & Modifications may be available for this product. Please contact TESCOM for more information.

### Base Model

Example for selecting a part number:

SG1	6	3	1	4	1		
BASIC SERIES	BODY MATERIAL	OUTLET PRESSURE RANGES	DIAPHRAGM MATERIAL	SEAL MATERIAL	PORTS <sup>2</sup> (TOP VIEW)	FLOW C <sub>v</sub>	P1
SG1	P – Plated Brass 6 – Stainless Steel	1 – 15 psig / 103 kPa / 1.0 bar 2 – 25 psig / 172 kPa / 1.7 bar 3 – 50 psig / 345 kPa / 3.4 bar 4 – 125 psig / 862 kPa / 8.6 bar 5 – 250 psig / 1724 kPa / 17.2 bar	1 – Stainless Steel 2 – Neoprene	Teflon® Buna-N	4 – 4 port  5 – 5 port 	1 – 0.06 2 – 0.2	4500 psig 31,026 kPa 310 bar  3000 psig 20,684 kPa 207 bar

### Accessories

Extension to base model part number:

SG1XXXXX – 06 A 1 A

BASE MODEL NUMBER	CYLINDER CONNECTIONS	DIM A	GAUGES <sup>2</sup>	RELIEF VALVE <sup>1</sup>	OUTLET VALVE
00 – None	---	---	0 – None	A – None	0 – None
01 – CGA 296**	3.75" / 95.2 mm	3.75" / 95.2 mm	P – Plug(s)	P – Plug	A – Diaphragm valve
02 – CGA 350*	3.25" / 82.5 mm	3.25" / 82.5 mm	A – psi / kPa	1 – Teflon® Pipe-away	B – Needle valve
03 – CGA 540*	3.25" / 82.5 mm	3.25" / 82.5 mm	B – bar / psi		
04 – CGA 580*	3.75" / 95.2 mm	3.75" / 95.2 mm			
05 – CGA 590*	3.75" / 95.2 mm	3.75" / 95.2 mm			
06 – DIN 477-1.1*	3.1" / 78.7 mm	3.1" / 78.7 mm			
07 – DIN 477-1.3	3.1" / 78.7 mm	3.1" / 78.7 mm			
08 – DIN 477-1.5*	3.25" / 82.5 mm	3.25" / 82.5 mm			
09 – DIN 477-1.6*	3.1" / 78.7 mm	3.1" / 78.7 mm			
10 – DIN 477-1.7	3.1" / 78.7 mm	3.1" / 78.7 mm			
11 – DIN 477-1.8	3.1" / 78.7 mm	3.1" / 78.7 mm			
12 – DIN 477-1.9	3.1" / 78.7 mm	3.1" / 78.7 mm			
13 – DIN 477-1.10*	3.75" / 95.2 mm	3.75" / 95.2 mm			
14 – DIN 477-1.14	3.75" / 95.2 mm	3.75" / 95.2 mm			
15 – DIN 477-5.54	3.75" / 95.2 mm	3.75" / 95.2 mm			
16 – DIN 477-5.57	3.75" / 95.2 mm	3.75" / 95.2 mm			
17 – DIN 477-5.59	3.75" / 95.2 mm	3.75" / 95.2 mm			
18 – BS 341 (1990) #01	3.75" / 95.2 mm	3.75" / 95.2 mm			
19 – BS 341 (1990) #02	3.75" / 95.2 mm	3.75" / 95.2 mm			
20 – BS 341 (1990) #03**	3.75" / 95.2 mm	3.75" / 95.2 mm			
21 – BS 341 (1990) #04*	3.75" / 95.2 mm	3.75" / 95.2 mm			
22 – BS 341 (1990) #05***	3.75" / 95.2 mm	3.75" / 95.2 mm			
23 – BS 341 (1990) #06**	2.75" / 69.8 mm	2.75" / 69.8 mm			
24 – BS 341 (1990) #07***	2.75" / 69.8 mm	2.75" / 69.8 mm			
25 – BS 341 (1990) #08	2.75" / 69.8 mm	2.75" / 69.8 mm			
26 – BS 341 (1990) #09	2.75" / 69.8 mm	2.75" / 69.8 mm			
27 – BS 341 (1990) #10	2.75" / 69.8 mm	2.75" / 69.8 mm			
28 – BS 341 (1990) #11	2.75" / 69.8 mm	2.75" / 69.8 mm			
29 – BS 341 (1990) #12	2.75" / 69.8 mm	2.75" / 69.8 mm			
30 – BS 341 (1990) #13	2.25" / 57.1 mm	2.25" / 57.1 mm			
31 – BS 341 (1990) #14	2.25" / 57.1 mm	2.25" / 57.1 mm			
32 – BS 341 (1990) #15	2.25" / 57.1 mm	2.25" / 57.1 mm			

\* Stock item  
 \*\* Stock item - Brass only  
 \*\*\* Stock item - Stainless Steel only  
 Note: Cylinder connections are available in all world areas.

<sup>1</sup> The relief valve is not intended to be a "Pressure Relief Device" as defined by ASME Boiler & Pressure Vessel Code - Section VIII, nor is it intended to be a "Safety Accessory" or "Pressure Limiting Device" as defined by the Pressure Equipment Directive (97/23/EC). The relief valve is intended to indicate a potential problem with the regulator and prevent further damage to the regulator. The relief valve is not intended to protect the downstream process equipment.

<sup>2</sup> GAUGE PRESSURE RANGES	
OUTLET PRESSURE RANGE	OUTLET GAUGE PRESSURE RANGE
SG1X1XXX – 15 psig / 103 kPa / 1.0 bar	0-30 psig / 200 kpa / 2 bar
SG1X2XXX – 25 psig / 172 kPa / 1.7 bar	0-30 psig / 200 kpa / 2 bar
SG1X3XXX – 50 psig / 345 kPa / 3.4 bar	0-60 psig / 400 kpa / 4 bar
SG1X4XXX – 125 psig / 862 kPa / 8.6 bar	0-160 psig / 1100 kpa / 11 bar
SG1X5XXX – 250 psig / 1724 kPa / 17.2 bar	0-300 psig / 2000 kpa / 20 bar
INLET PRESSURE RANGE	INLET GAUGE PRESSURE RANGE
All	6000 psig / 41,000 kpa / 400 bar

## SG1 Series Rebuilt Kits

*Rebuild Kits include replacement cartridges, diaphragms, diaphragm seals and instruction sheet.*

KIT PART NUMBER	FOR SG PART NUMBER
JT389-8927	SG1PX1X1
JT389-8928	SG1PX1X2
JT389-8929	SG1PX2X1
JT389-8930	SG1PX2X2
JT389-8931	SG16X1X1
JT389-8932	SG16X1X2
JT389-8933	SG16X2X1
JT389-8934	SG16X2X2