

# SG3 Series

## Regulators - Pressure Reducing

DSG032033X012

### Specifications

For questions about this product, please consult TESCO.

#### OPERATING PARAMETERS

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

**Maximum Inlet Pressure**

4500 psig / 310 bar

**Maximum Outlet Pressure**

15, 50, 125, 250 psig  
103, 345, 862, 1724 kPa  
1.0, 3.4, 8.6, 17.2 bar

**Design Proof Pressure**

150% of rated pressure

**Leakage**

**Internal:** Bubble-tight

**External:** Designed to meet  $< 2 \times 10^{-8}$  atm cc/sec He

**Operating Temperature**

-40°F to 140°F / -40°C to 60°C

**Flow Capacity**

$C_v = 1.0$

**Decaying Inlet Characteristic****For Stainless Steel**

0.8 psig / 100 psig  
0.06 bar / 6.9 bar

**For Neoprene Diaphragm**

0.49 psig / 100 psig  
0.03 bar / 6.9 bar



TESCOM SG3 Series is a compact, lightweight, high purity single-stage regulator for specialty, flammable and industrial gas flows of 5-200 SCFM / 141-5600 SLPM. Sensitive, extra long-life metal diaphragm ensures gas purity and integrity. Exceptionally low decaying inlet characteristic provides a stable outlet pressure as inlet pressure varies. 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.

### Applications

- Laboratory and Point-of-Use Gas Systems in medical, pharmaceutical, food and beverage and other high purity applications
- High flow, high purity air (CDA and APR) in semiconductor and biotech facilities

### Features and Benefits

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

#### MEDIA CONTACT MATERIALS

**Body**

316L Stainless Steel, Nickel-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

#### OTHERS

**Connections**

Inlet and outlet: 1/2" NPTF  
Accessories: 1/4" NPTF

**Cleaning**

CGA 4.1 and ASTM G93

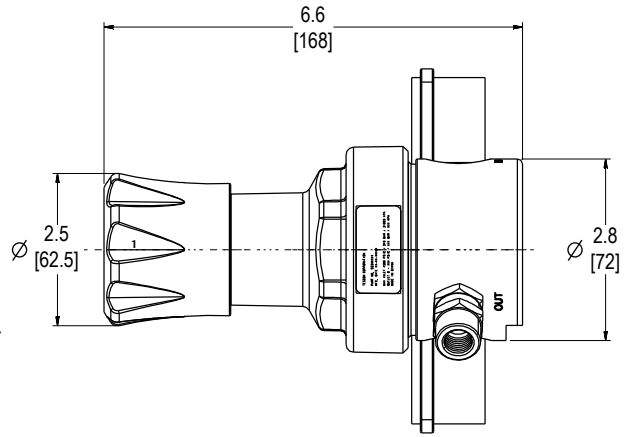
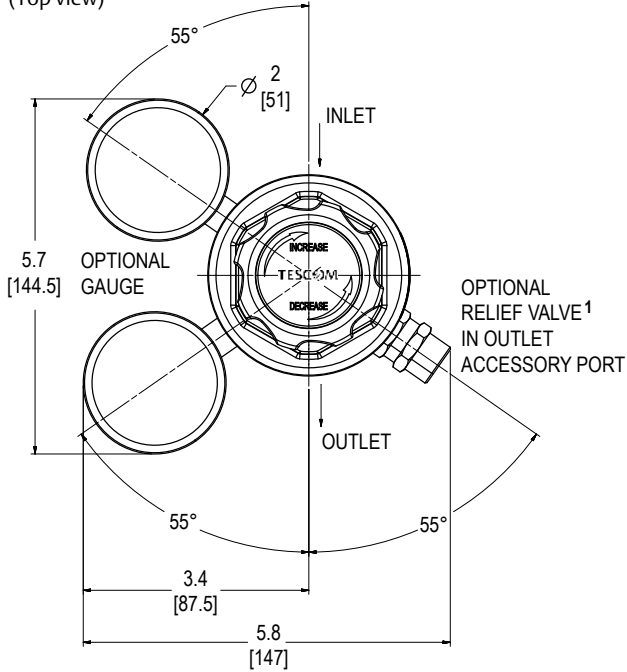
**Weight**

5.5 lbs / 2.5 kg

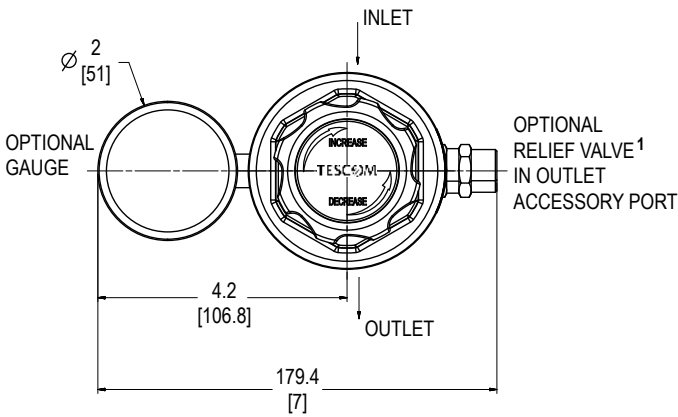
Teflon® is a registered trademark of E.I. du Pont de Nemours and Company.

SG3 Series Regulator Drawing

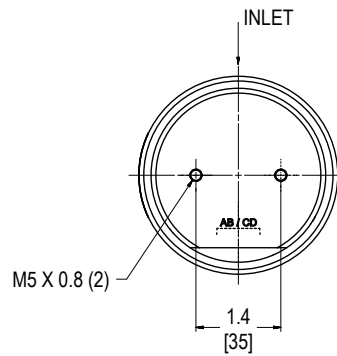
**5 Ports**  
(Top view)



**4 Ports**  
(Top view)



**Bottom Mounting**



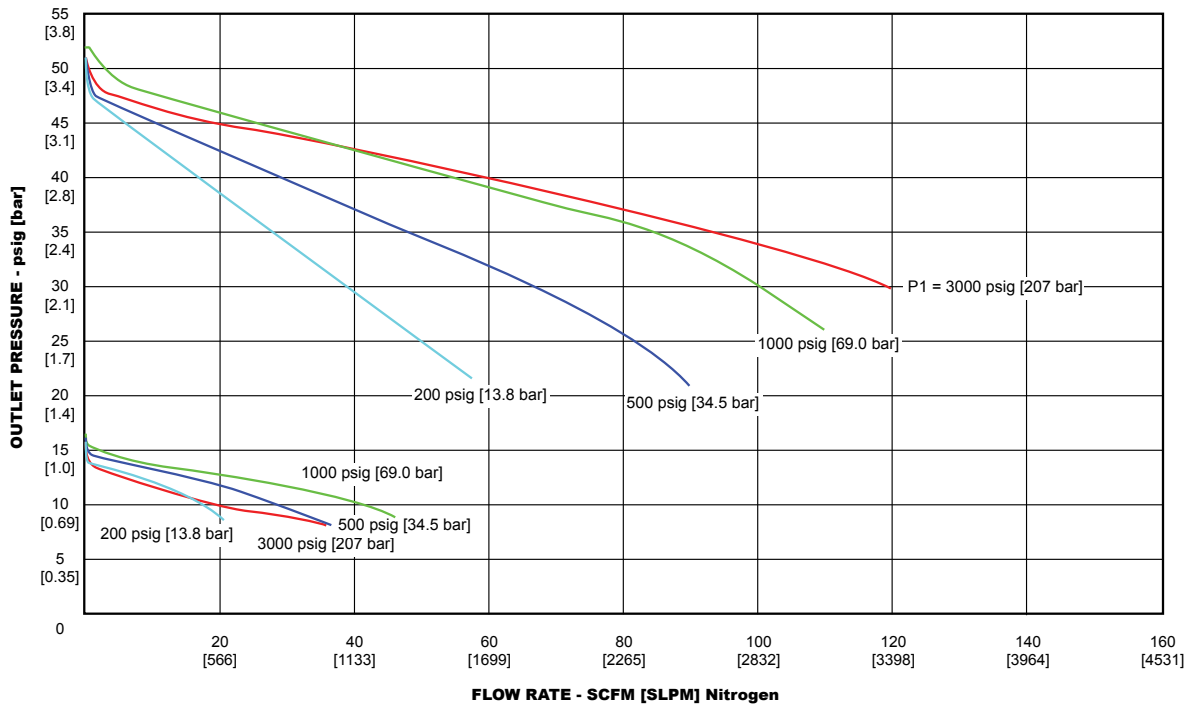
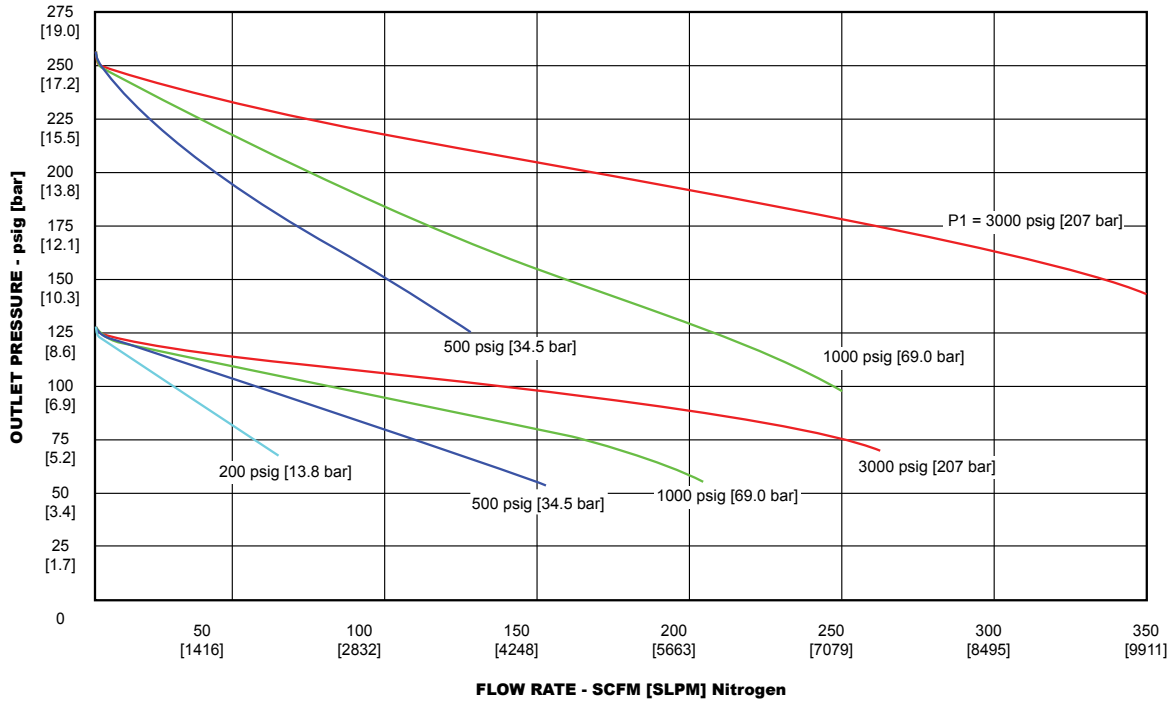
All dimensions are reference & nominal  
Metric [millimeter] equivalents are in brackets

## SG3 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).

### $C_v = 1.0$ Model

### Metal Diaphragm

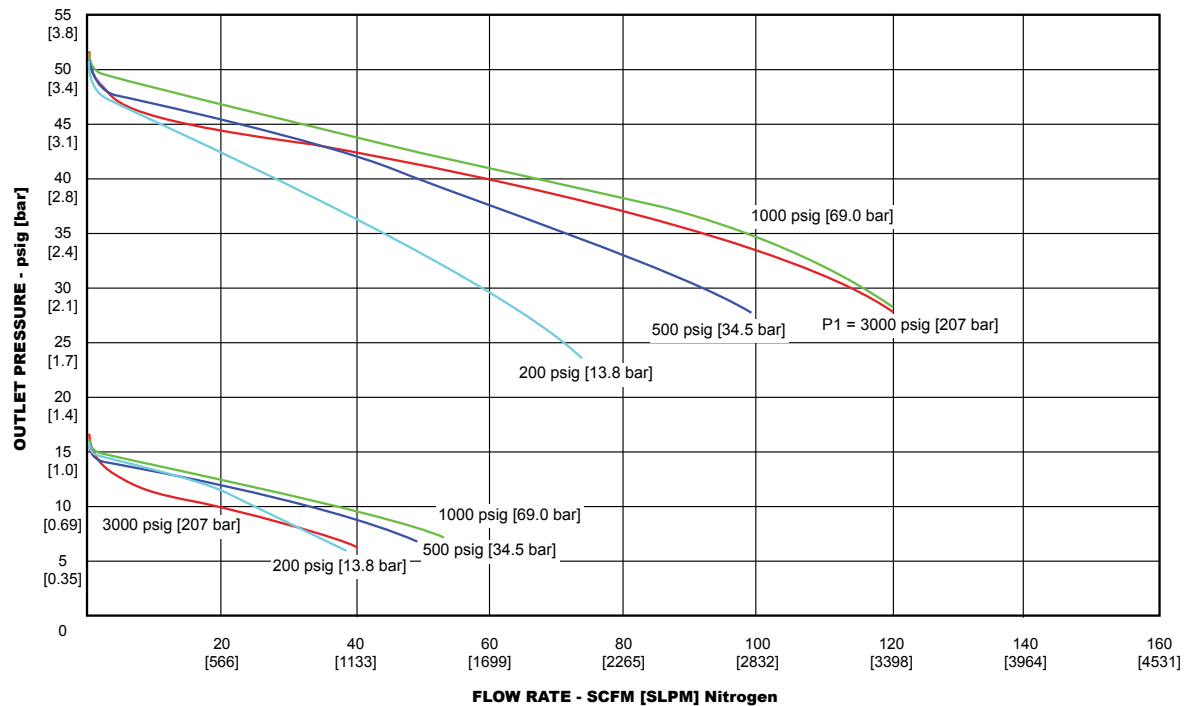
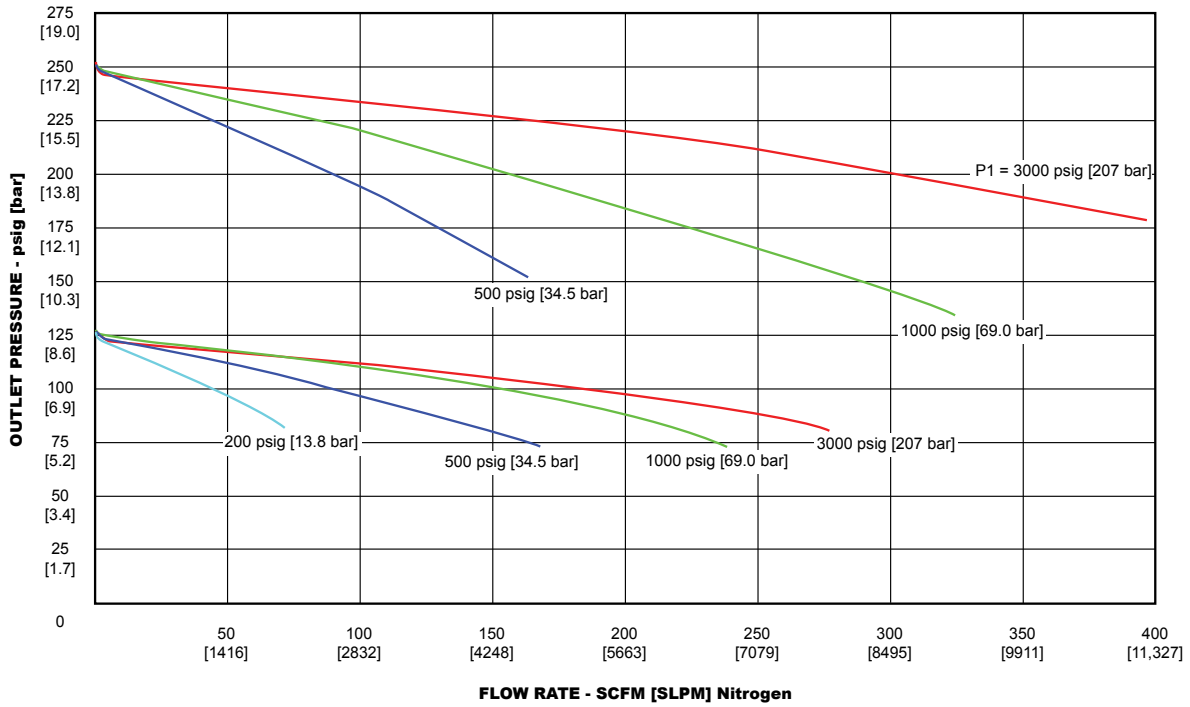


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### C<sub>v</sub> = 1.0 Model

### Neoprene Diaphragm

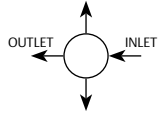
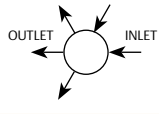


## SG3 Series Regulator Part Number Selector

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

### Base Model

Example for selecting a part number:

| <b>SG3</b>   | <b>6</b>                                            | <b>3</b>                                                                                                                                     | <b>1</b>                            | <b>4</b>          | <b>0</b>                                                                                                                                                                                                    |                |
|--------------|-----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| BASIC SERIES | BODY MATERIAL                                       | OUTLET PRESSURE RANGES                                                                                                                       | DIAPHRAGM MATERIAL                  | SEAL MATERIAL     | PORTS <sup>2</sup> (TOP VIEW)                                                                                                                                                                               | C <sub>v</sub> |
| SG3          | P – Nickel-Plated Brass<br>6 – 316L Stainless Steel | 1 – 15 psig / 103 kPa / 1.0 bar<br>3 – 50 psig / 345 kPa / 3.5 bar<br>4 – 125 psig / 862 kPa / 8.6 bar<br>5 – 250 psig / 1724 kPa / 17.2 bar | 1 – Stainless Steel<br>2 – Neoprene | Teflon®<br>Buna-N | <p>4 – 4 port</p>  <p>5 – 5 port</p>  | 0 – 1.0        |

### Accessories

Extension to base model part number:

SG3XXXXX – 0 0 A 1 0

BASE MODEL NUMBER

| GAUGES <sup>2</sup>                                       | RELIEF VALVE <sup>1</sup>                     |
|-----------------------------------------------------------|-----------------------------------------------|
| 0 – None<br>P – Plug(s)<br>A – psi / kPa<br>B – bar / psi | A – None<br>P – Plug<br>1 – Teflon® Pipe-away |

<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      |
|-------------------------------------------|----------------------------------|
| SG3X1XXX – 15 psig / 103 kPa / 1.0 bar    | 0-30 psig / 200 kPa / 2 bar      |
| SG3X3XXX – 50 psig / 345 kPa / 3.4 bar    | 0-60 psig / 400 kPa / 4 bar      |
| SG3X4XXX – 125 psig / 862 kPa / 8.6 bar   | 0-160 psig / 1100 kPa / 11 bar   |
| SG3X5XXX – 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 |

## SG3 Series Rebuild Kits

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

| KIT PART NUMBER | FOR SG PART NUMBER |
|-----------------|--------------------|
| JT389-8939      | SG3PX1X0           |
| JT389-8940      | SG3PX2X0           |
| JT389-8941      | SG36X1X0           |
| JT389-8942      | SG36X2X0           |

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**WARNING!** Do not attempt to select, install, use or maintain this product until you have read and fully understood the *TESCOM Safety, Installation and Operation Precautions*.

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