

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_v = 0.06: 4500 psig / 310 bar

C_v = 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_v = 0.06, 0.2

Decaying Inlet Characteristic

C_v = 0.06

0.37 psig / 100 psig

0.03 bar / 6.9 bar

C_v = 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

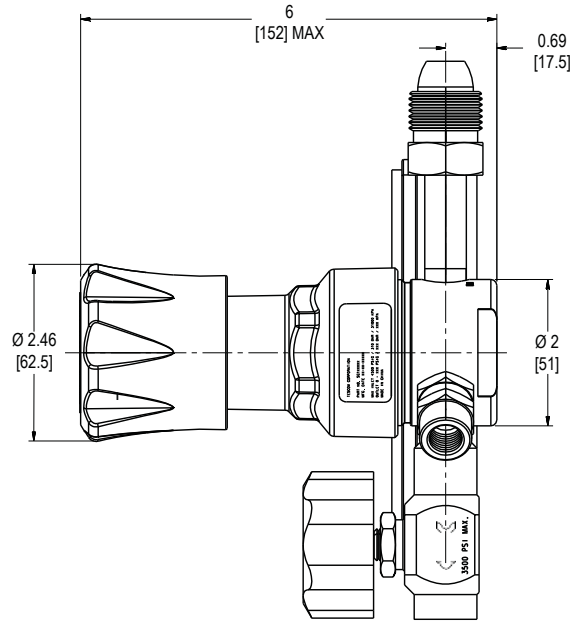
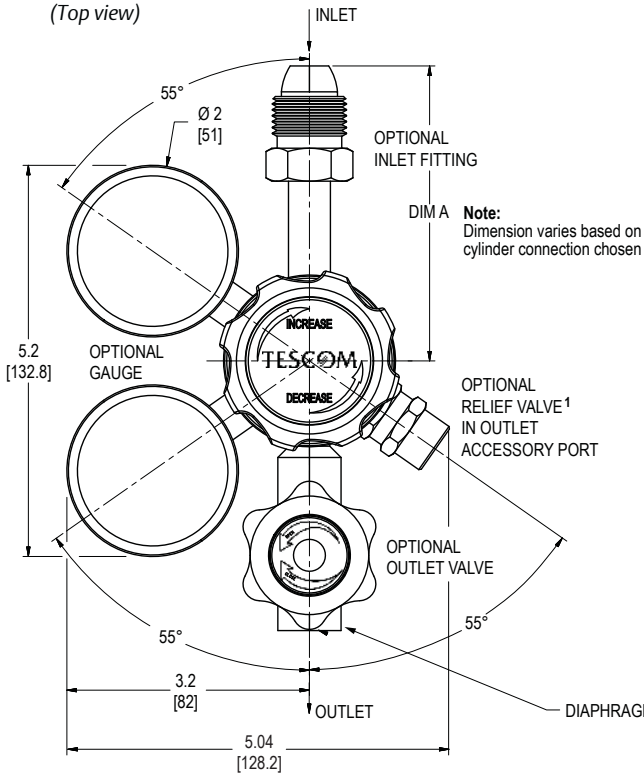
Weight

2.4 lbs / 1.1 kg

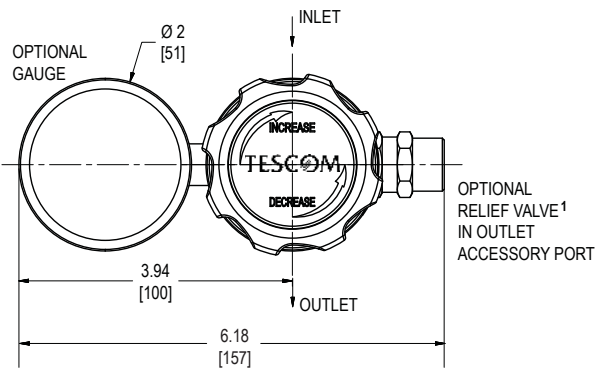
Teflon® is a registered trademark of E.I. du Pont de Nemours and Company.

SG1 Series Regulator Drawing

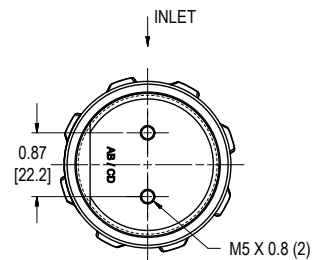
5 Ports (Top view)



4 Ports (Top view)



Bottom Mounting



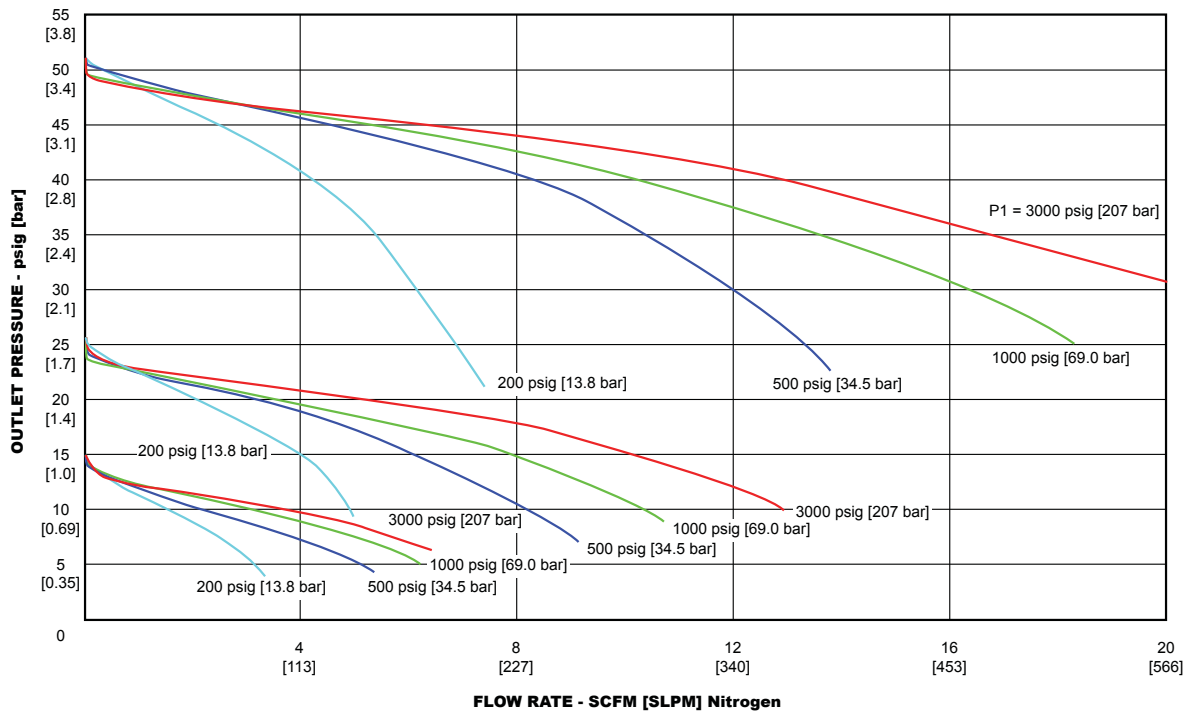
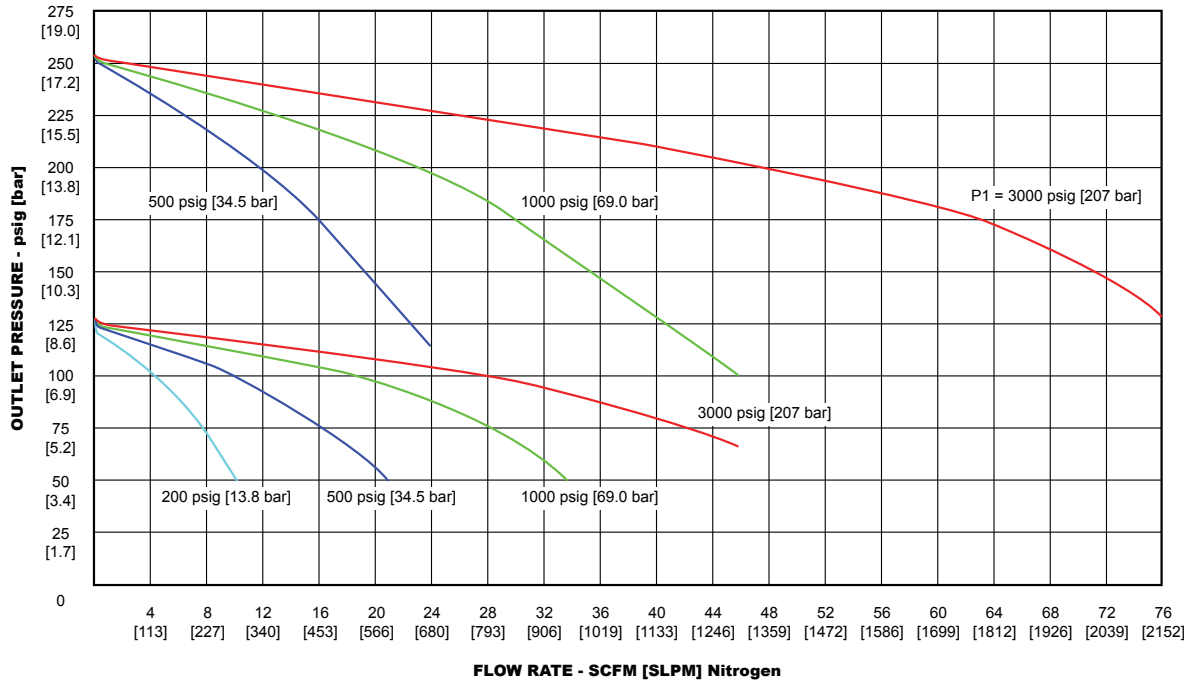
All dimensions are reference & nominal
Metric [millimeter] equivalents are in brackets

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.

C_v = 0.06 Model

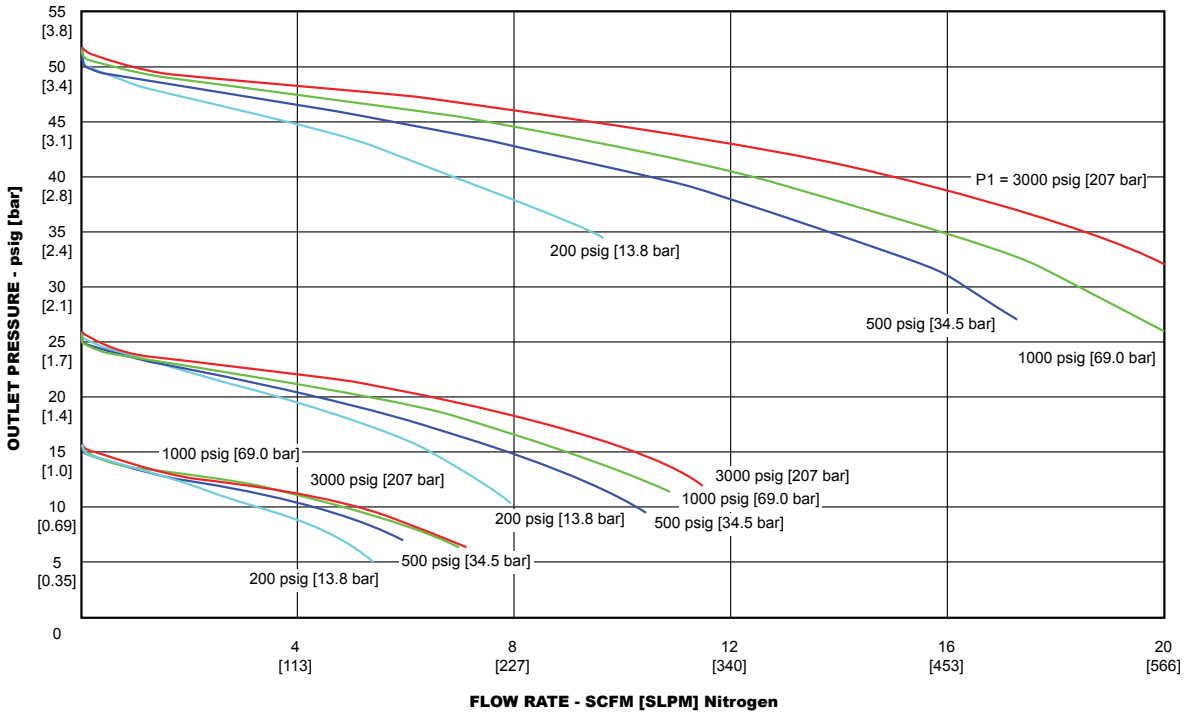
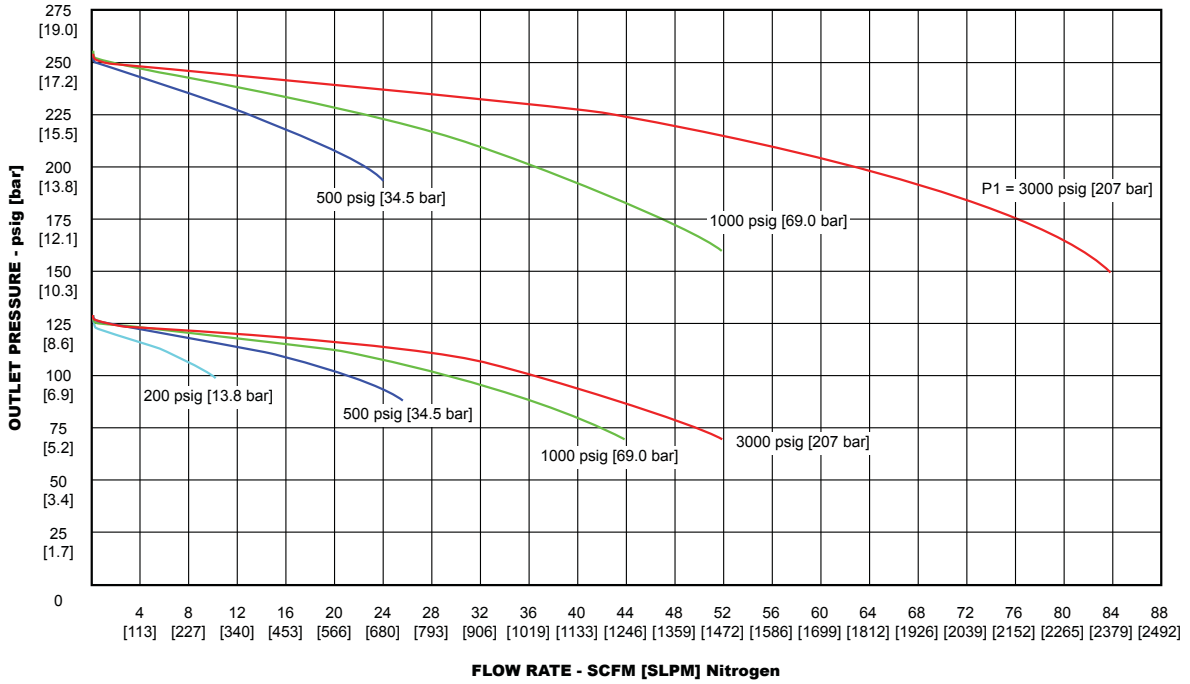
Metal Diaphragm



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.

C_v = 0.06 Model Neoprene Diaphragm

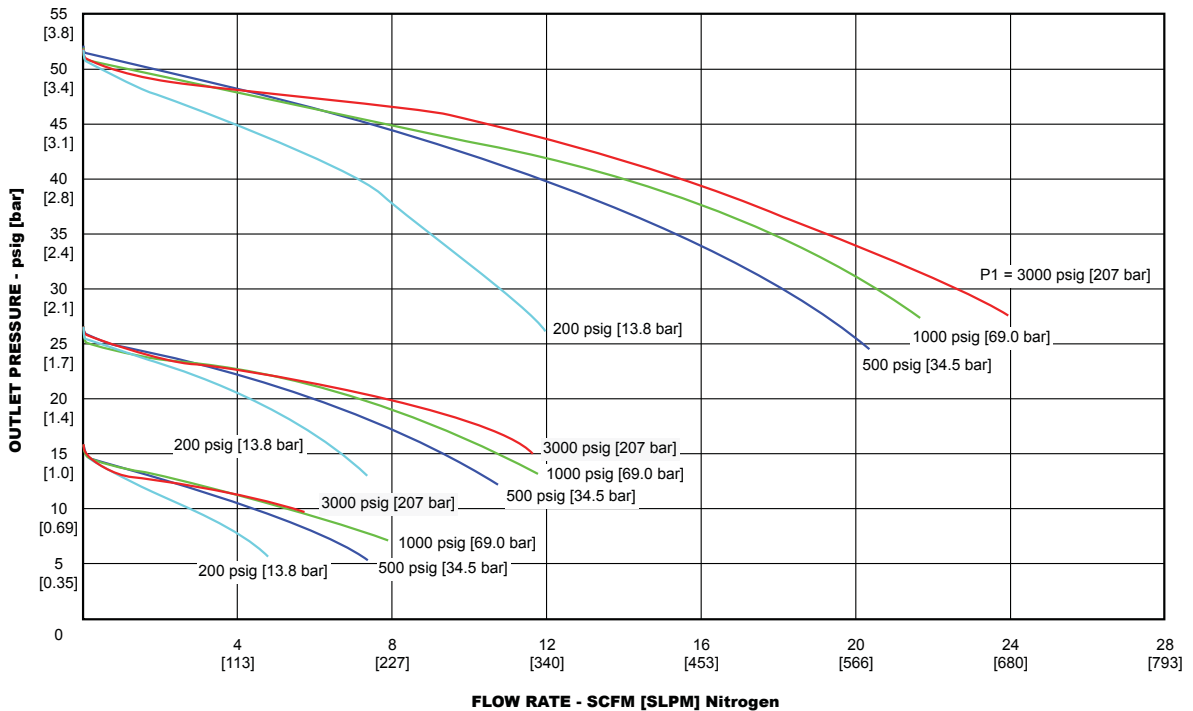
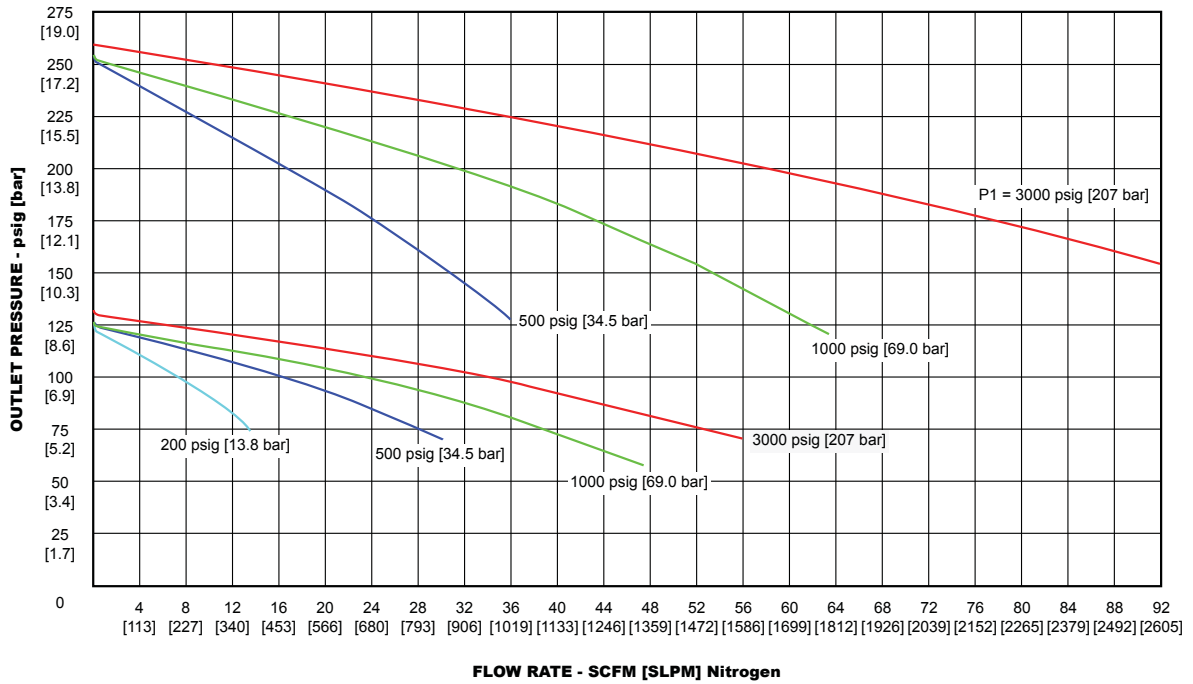


SG1 Series Regulator Flow Charts

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.

C_v = 0.20 Model

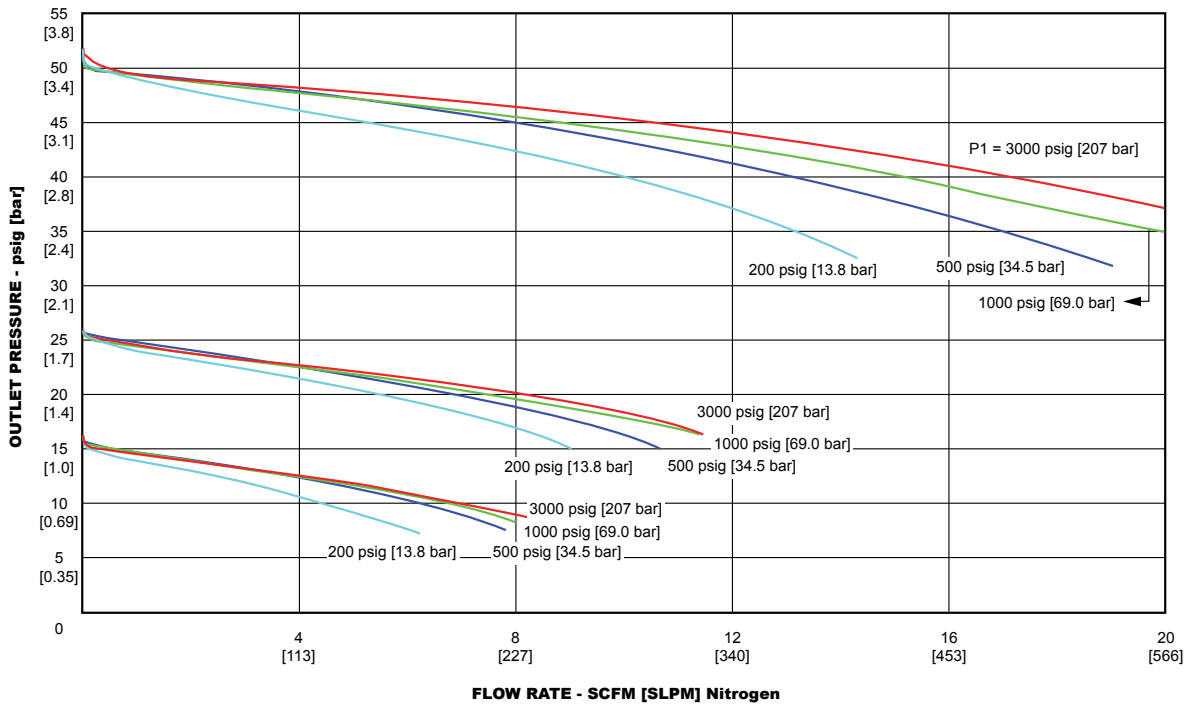
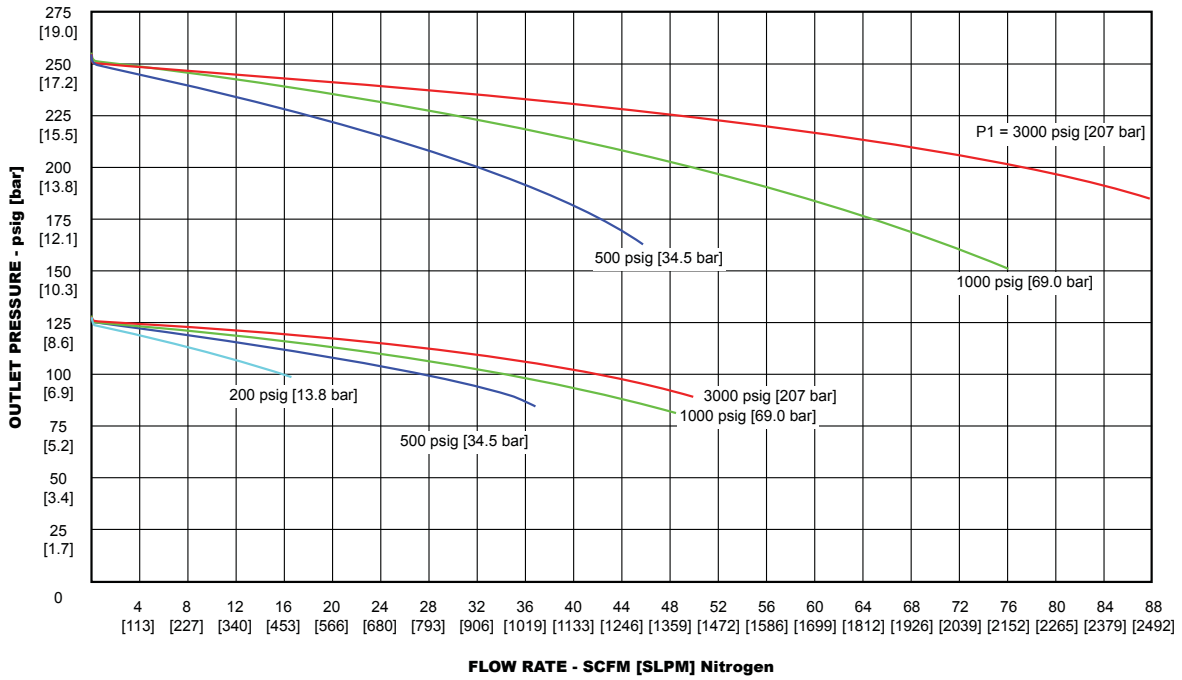
Metal Diaphragm



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.

C_v = 0.20 Model Neoprene Diaphragm

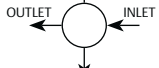
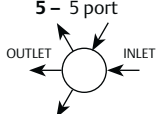


SG1 Series Regulator Part Number Selector

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

¹ 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.

² 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

SG2 Series

Regulators - Pressure Reducing

DSG022032X012

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

4500 psig / 310 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% 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

$C_v = 0.06$

**Decaying Inlet Characteristic
For Stainless Steel Diaphragm**

-0.09 psig / -100 psig
-6 mbar / -6.9 bar

For Neoprene Diaphragm

-0.03 psig / -100 psig
-2 mbar / -6.9 bar



TESCOM SG2 Series is a compact, lightweight, high purity two-stage cylinder regulator for specialty, flammable and industrial gas flows of less than 4 SCFM / 112 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

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 or
316L 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 10 micron filter to protect the regulator seat and makes service simple
- Optional neoprene diaphragms provide exceptional sensitivity for precise pressure control

OTHERS

Connections

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

Cleaning

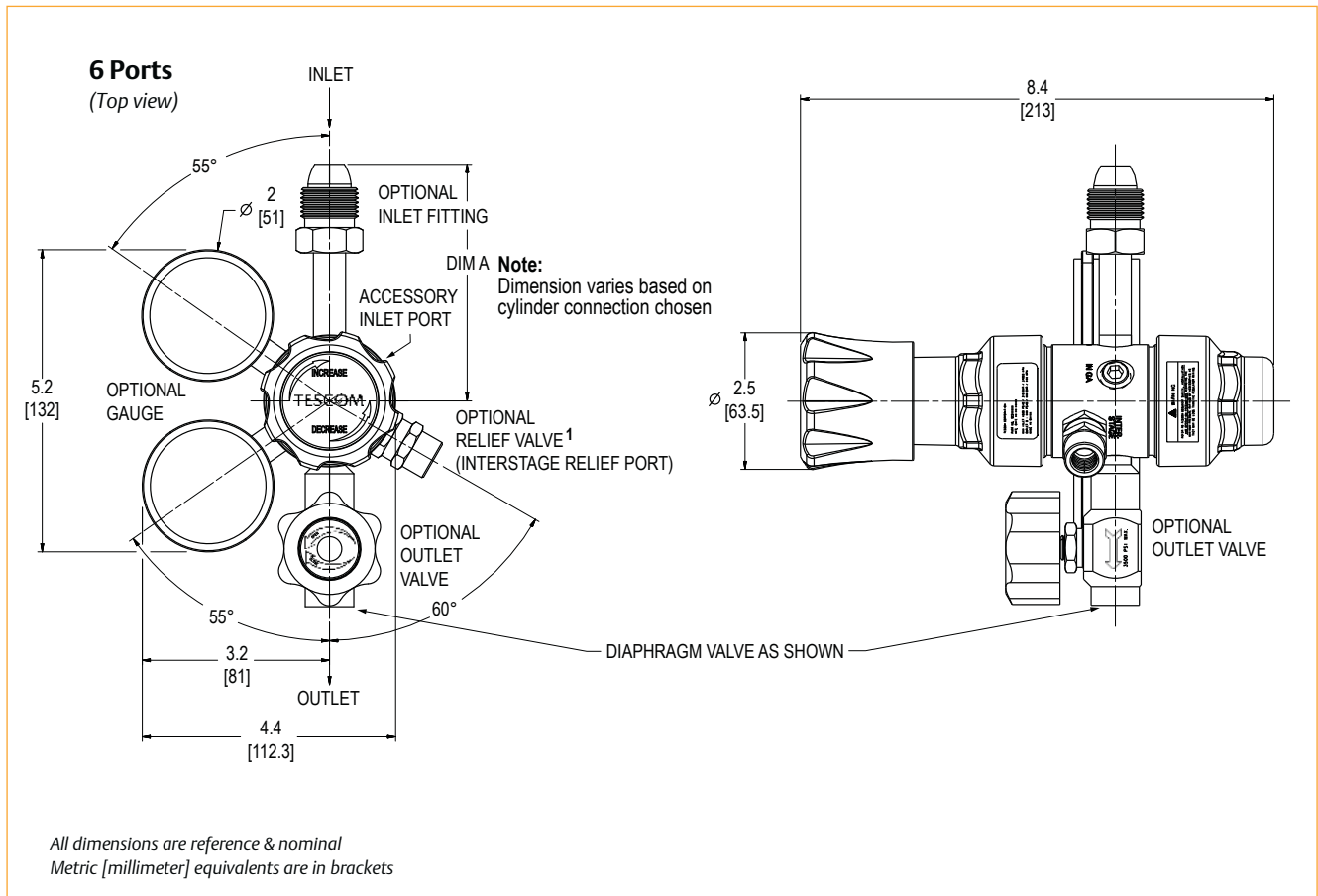
CGA 4.1 and ASTM G93

Weight

4.0 lbs / 1.8 kg

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

SG2 Series Regulator Drawing

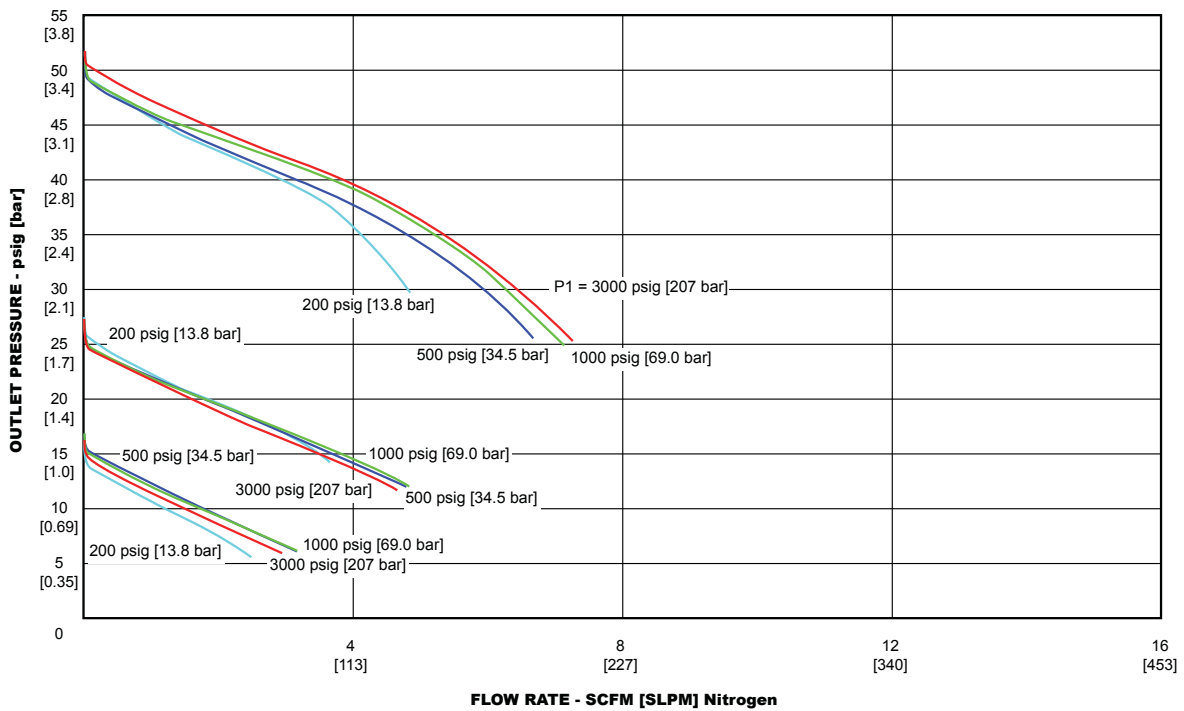
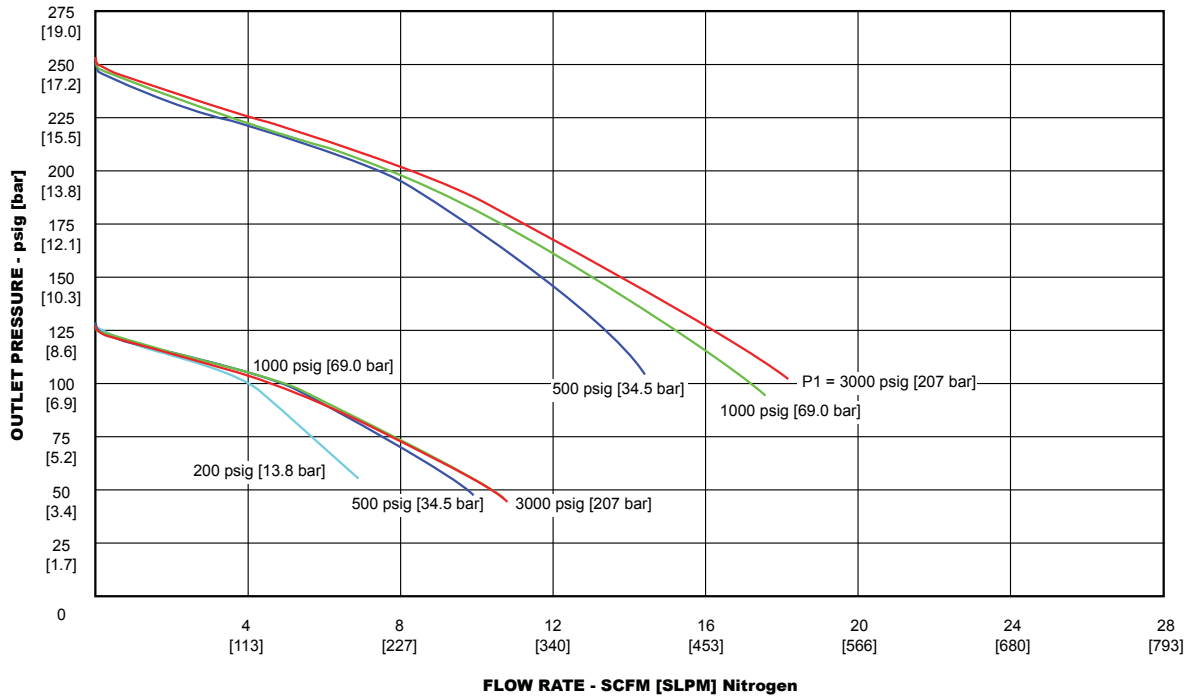


SG2 Series Regulator Flow Charts

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.

$C_v = 0.06$ Model

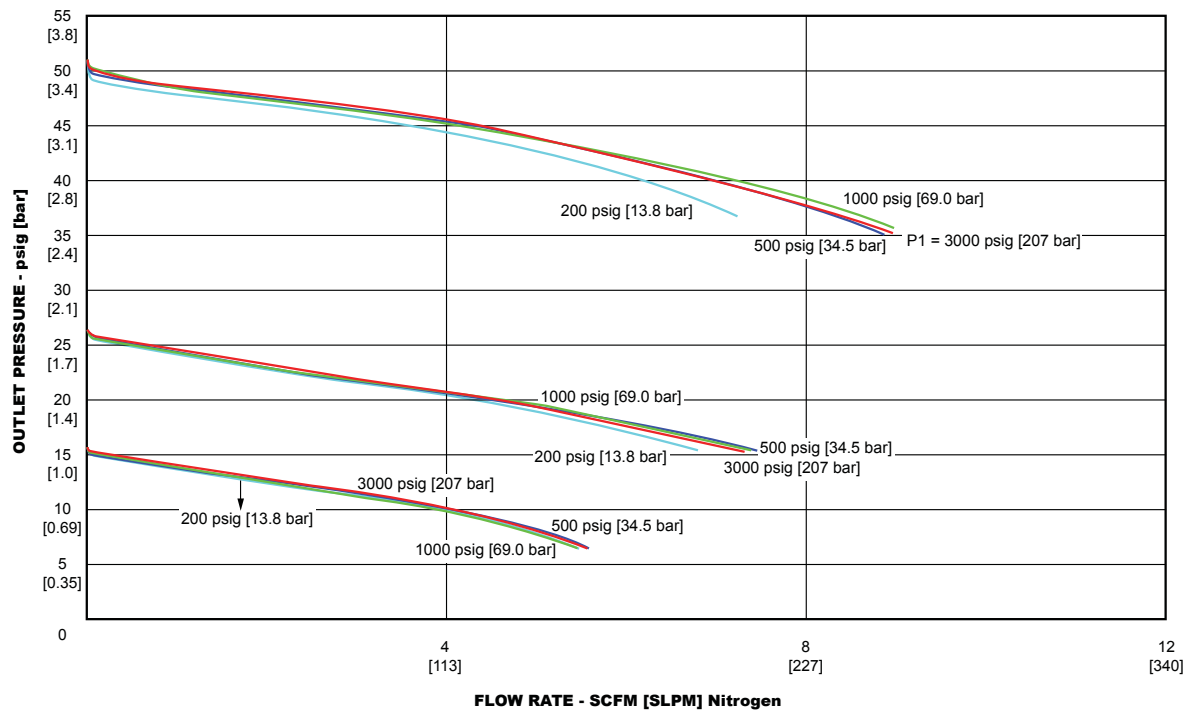
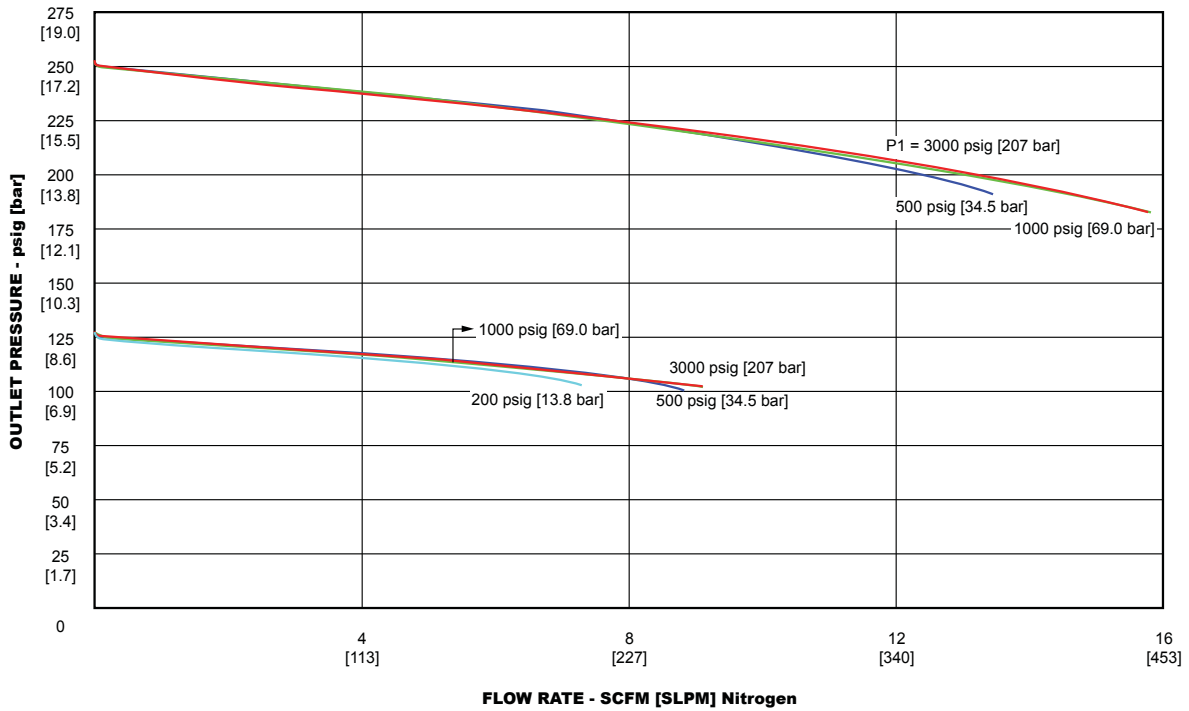
Metal Diaphragm



SG2 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.

C_v = 0.06 Model Neoprene Diaphragm

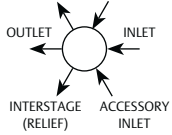


SG2 Series Regulator Part Number Selector

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

Base Model

Example for selecting a part number:

SG2	6	3	1	0	0	
BASIC SERIES	BODY MATERIAL	OUTLET PRESSURE RANGES	DIAPHRAGM MATERIAL	SEAL MATERIAL	PORTS ² (TOP VIEW)	C _v
SG2	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	0 – 6 Port 	0 – 0.06

Accessories

Extension to base model part number:

SG2XXXXX	—	06	A	1	A
BASE MODEL NUMBER	CYLINDER CONNECTIONS	DIM A	GAUGES ²	RELIEF VALVE ¹	OUTLET VALVE
00 – None	---	---	0 – None P – Plug(s) A – psi / kPa B – bar / psi	A – None P – Plug 1 – Teflon® Pipe-away	0 – None A – Diaphragm Valve B – Needle Valve
01 – CGA 296		3.75" / 95.2 mm			
02 – CGA 350		3.25" / 82.5 mm			
03 – CGA 540		3.25" / 82.5 mm			
04 – CGA 580		3.75" / 95.2 mm			
05 – CGA 590		3.75" / 95.2 mm			
06 – DIN 477-1.1		3.1" / 78.7 mm			
07 – DIN 477-1.3		3.1" / 78.7 mm			
08 – DIN 477-1.5		3.25" / 82.5 mm			
09 – DIN 477-1.6		3.1" / 78.7 mm			
10 – DIN 477-1.7		3.1" / 78.7 mm			
11 – DIN 477-1.8		3.1" / 78.7 mm			
12 – DIN 477-1.9		3.1" / 78.7 mm			
13 – DIN 477-1.10		3.75" / 95.2 mm			
14 – DIN 477-1.14		3.75" / 95.2 mm			
15 – DIN 477-5.54		3.75" / 95.2 mm			
16 – DIN 477-5.57		3.75" / 95.2 mm			
17 – DIN 477-5.59		3.75" / 95.2 mm			
18 – BS 341 (1990) #01		3.75" / 95.2 mm			
19 – BS 341 (1990) #02		3.75" / 95.2 mm			
20 – BS 341 (1990) #03		3.75" / 95.2 mm			
21 – BS 341 (1990) #04		3.75" / 95.2 mm			
22 – BS 341 (1990) #05		3.75" / 95.2 mm			
23 – BS 341 (1990) #06		2.75" / 69.8 mm			
24 – BS 341 (1990) #07		2.75" / 69.8 mm			
25 – BS 341 (1990) #08		2.75" / 69.8 mm			
26 – BS 341 (1990) #09		2.75" / 69.8 mm			
27 – BS 341 (1990) #10		2.75" / 69.8 mm			
28 – BS 341 (1990) #11		2.75" / 69.8 mm			
29 – BS 341 (1990) #12		2.75" / 69.8 mm			
30 – BS 341 (1990) #13		2.25" / 57.1 mm			
31 – BS 341 (1990) #14		2.25" / 57.1 mm			
32 – BS 341 (1990) #15		2.25" / 57.1 mm			

¹ 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.

² GAUGE PRESSURE RANGES

OUTLET PRESSURE RANGE	OUTLET GAUGE PRESSURE RANGE
SG2X1XXX – 15 psig / 103 kPa / 1.0 bar	0-30 psig / 200 kPa / 2 bar
SG2X2XXX – 25 psig / 172 kPa / 1.7 bar	0-30 psig / 200 kPa / 2 bar
SG2X3XXX – 50 psig / 345 kPa / 3.4 bar	0-60 psig / 400 kPa / 4 bar
SG2X4XXX – 125 psig / 862 kPa / 8.6 bar	0-160 psig / 1100 kPa / 11 bar
SG2X5XXX – 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

SG2 Series Rebuild Kits

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

KIT PART NUMBER	FOR SG PART NUMBER
JT389-8935	SG2PX100
JT389-8936	SG2PX200
JT389-8937	SG26X100
JT389-8938	SG26X200

SG3 Series

Regulators - Pressure Reducing

DSG032033X012

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

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.

MEDIA CONTACT MATERIALS

Body

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
or 316L 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
- 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

OTHERS

Connections

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

Cleaning

CGA 4.1 and ASTM G93

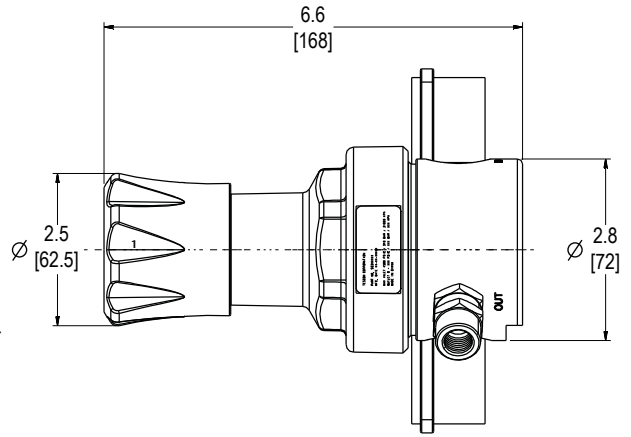
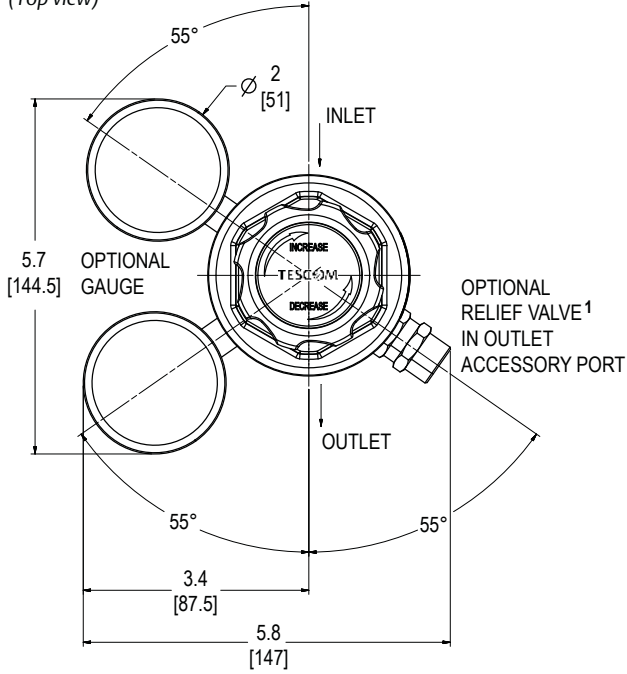
Weight

5.5 lbs / 2.5 kg

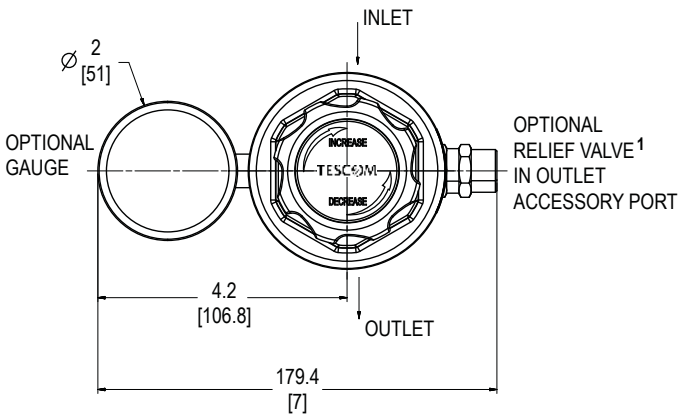
Teflon® is a registered trademark of E.I. du Pont de Nemours and Company.

SG3 Series Regulator Drawing

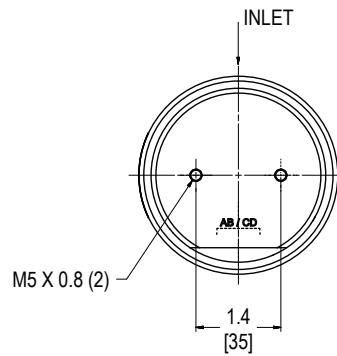
5 Ports
(Top view)



4 Ports
(Top view)



Bottom Mounting



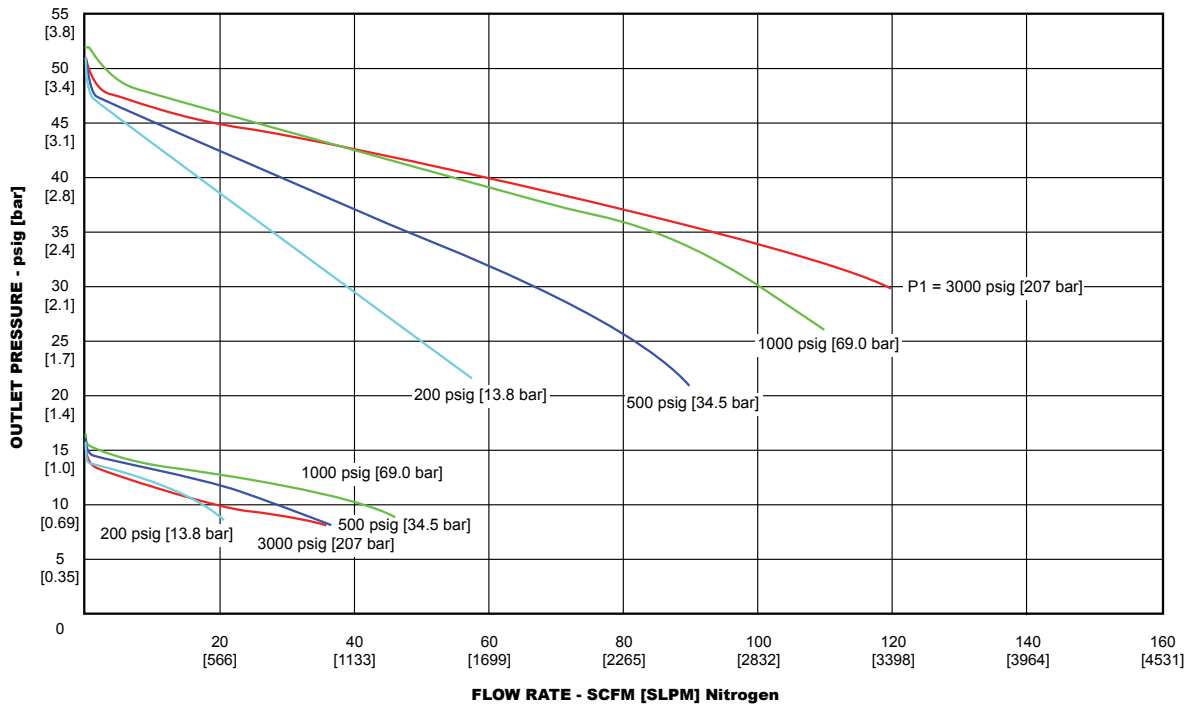
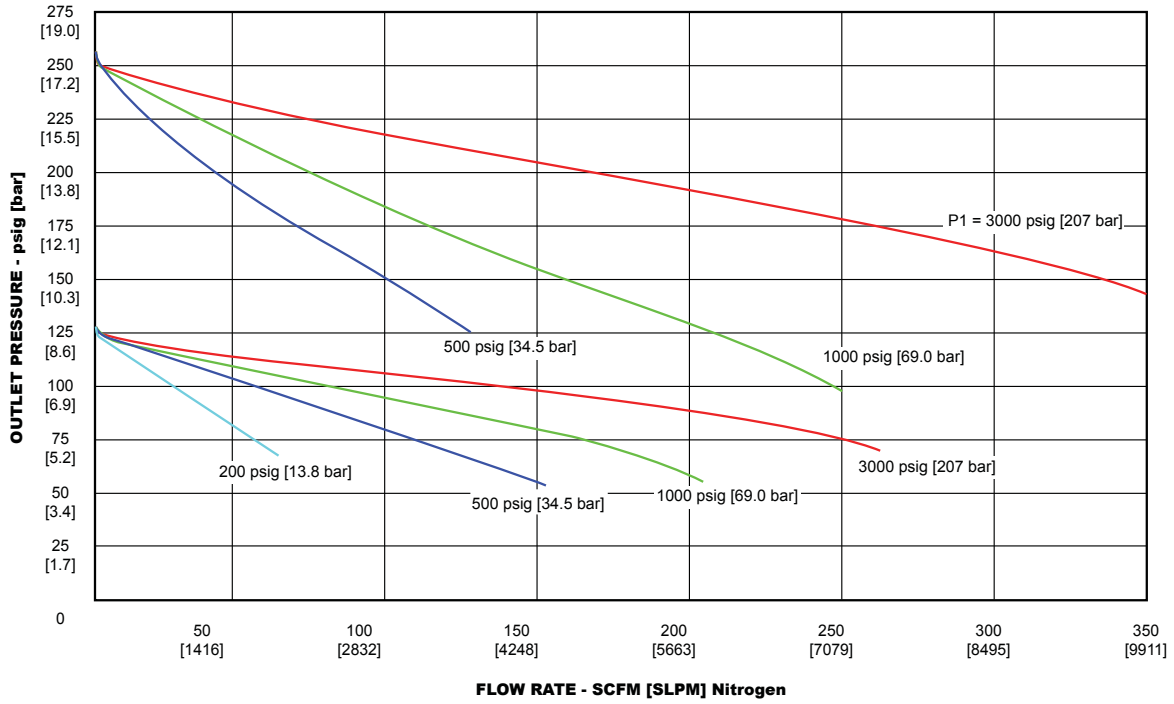
All dimensions are reference & nominal
Metric [millimeter] equivalents are in brackets

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.

C_v = 1.0 Model

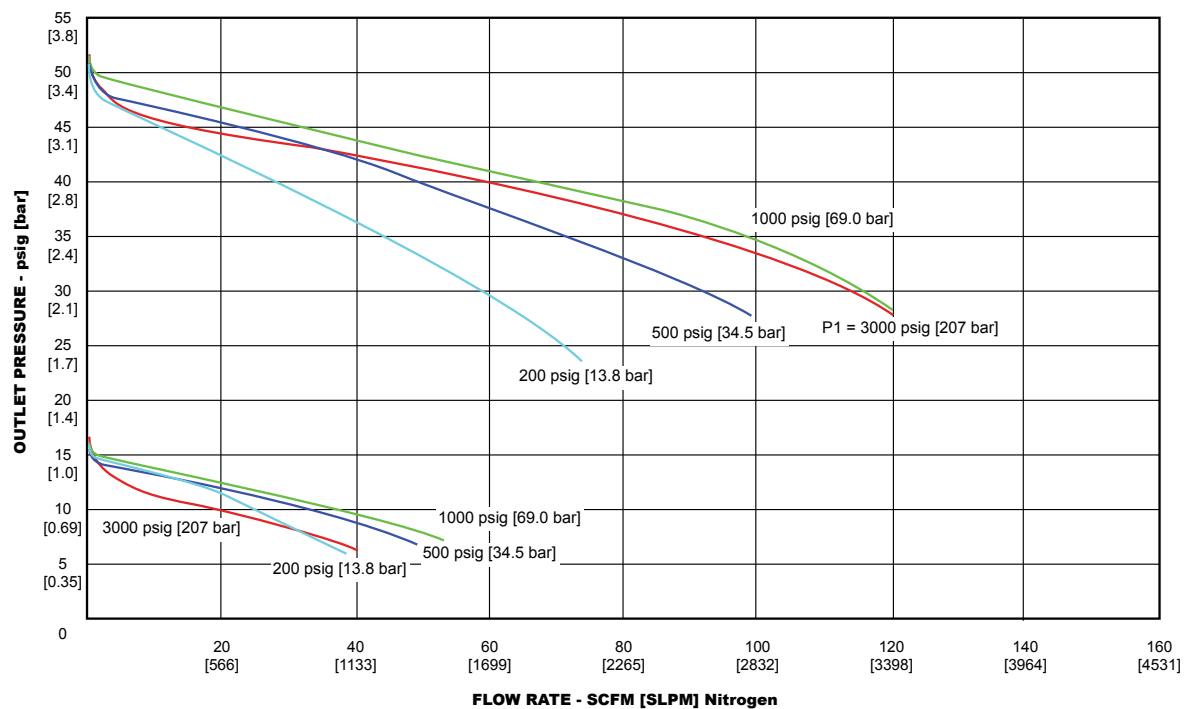
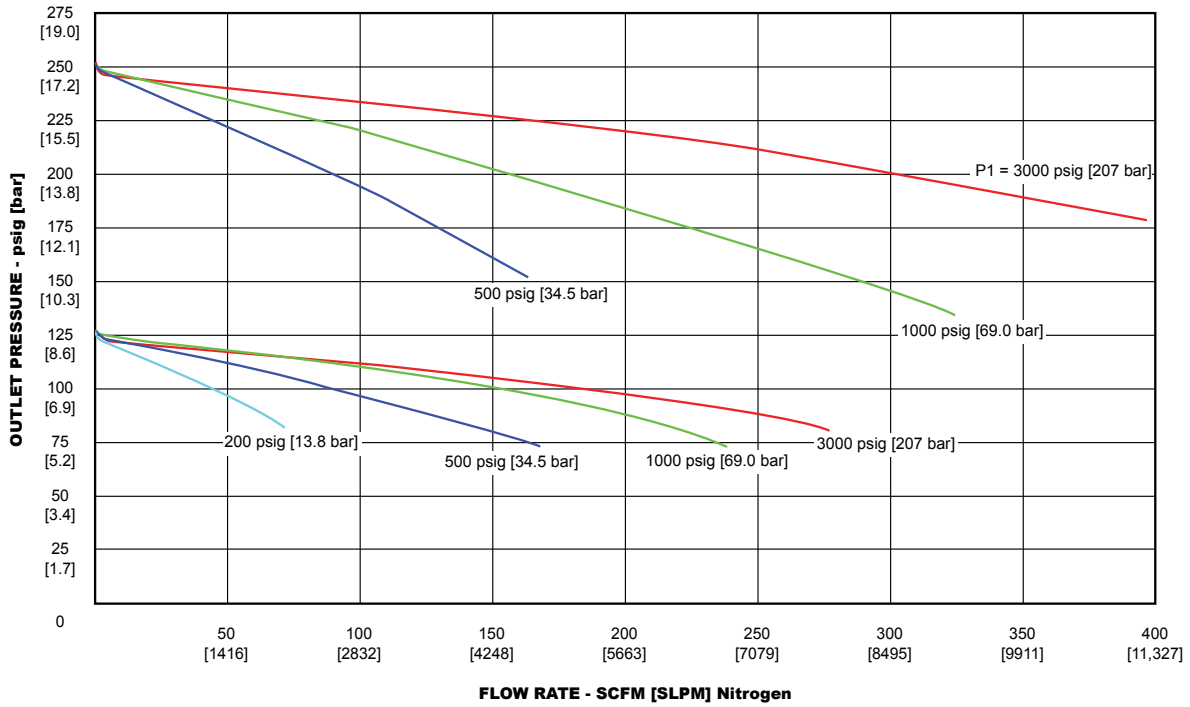
Metal Diaphragm



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.

C_v = 1.0 Model Neoprene Diaphragm

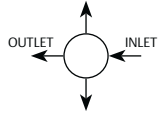
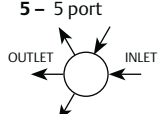


SG3 Series Regulator Part Number Selector

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

Base Model

Example for selecting a part number:

SG3	6	3	1	4	0	
BASIC SERIES	BODY MATERIAL	OUTLET PRESSURE RANGES	DIAPHRAGM MATERIAL	SEAL MATERIAL	PORTS ² (TOP VIEW)	C _v
SG3	P – Plated Brass 6 – Stainless Steel	1 – 15 psig / 103 kPa / 1.0 bar 3 – 50 psig / 345 kPa / 3.5 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 	0 – 1.0

Accessories

Extension to base model part number:

SG3XXXXX	0	0	A	1	0
BASE MODEL NUMBER			GAUGES ²	RELIEF VALVE ¹	
			0 – None P – Plug(s) A – psi / kPa B – bar / psi	A – None P – Plug 1 – Teflon® Pipe-away	
¹ 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.					
²GAUGE 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 and instruction sheet.

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