

# High Purity Gas Stick Assemblies

## AGH Series

### Introduction

AGH series high purity gas stick assemblies are applicable for high purity gas systems in the semiconductor industry and others. AGH series integrate a diaphragm valve, a regulator and a pressure gauge into one stick to reduce site connections. FITOK has been adopting strict specifications for materials, welding and cleaning processes to ensure products meet the ultra-clean and high-performance requirements of the semiconductor manufacturing industry.

### Features

- Ultra high purity diaphragm valve for shut-off function
- With ultra high purity pressure gauge and regulator
- Sizes from 1/4" to 1" optional
- Alloy diaphragm improves strength and corrosion resistance for long cycle life
- T series tubular fittings optional for pressure gauge connection (customized lengths available)
- FC-03 Ultra High Purity Process Specification
  - Assembled and tested in ISO 4 / FED-STD-209E Class 10 Cleanroom
  - Manufactured from high purity stainless steel complying with SEMI F20 standard, wetted surfaces electropolished to an average internal surface roughness Ra of 10  $\mu\text{m}$ . (0.25  $\mu\text{m}$ )
  - Ultra high purity cleaning with continuously monitored DI water ultrasonic cleaning system
  - Double bagged with vacuum sealed polyethylene dust-free inner bag (inert gas filling optional) and sealed polyethylene outer bag



※ Figure shows the pressure gauge is connected with a T series tubular fitting

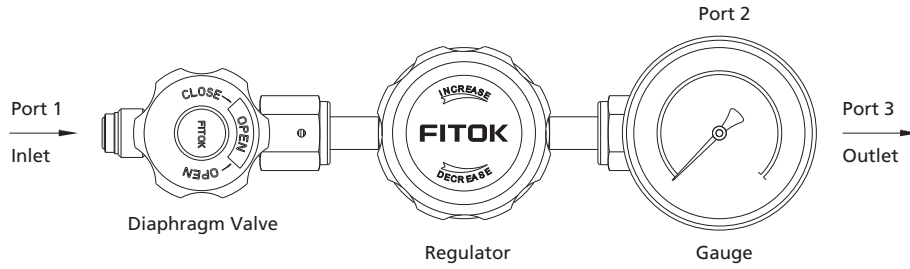
### Technical Data

<b>Max. Inlet Pressure</b>		300 psig
<b>Outlet Pressure</b>		0 ~ 25, 0 ~ 50, 0 ~ 100, 0 ~ 250 psig
<b>Working Temperature</b>		-9.4 ~ 140 °F (-23 ~ 60 °C)
<b>Flow Coefficient (Regulator Cv)</b>	1/4"	0.2
	1/2"	1.0
	3/4"	1.8
	1"	

### Parameters of Main Components

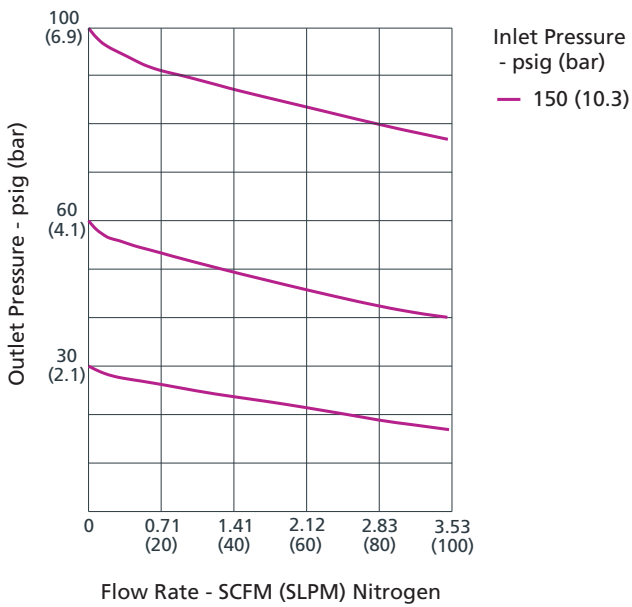
Components	Series	Parameters	
<b>Diaphragm Valves</b>	DH Series (1/4") DV Series (1/2") DL Series (3/4" & 1")	Internal/External Leak Rate: $\leq 1 \times 10^{-9}$ std $\text{cm}^3/\text{s}$ (Helium)	Material Diaphragm: Cobalt alloy Other Wetted Parts: Same as Body Material in Ordering Number Description
<b>Regulators</b>	RDG Series (1/4") RDM Series (1/2") RDH Series (3/4" & 1")	Internal Leak Rate: Bubble Method (Helium) External Leak Rate: $\leq 1 \times 10^{-9}$ std $\text{cm}^3/\text{s}$ (Helium)	Material Seat: PCTFE Diaphragm: Hastelloy Other Wetted Parts: Same as Body Material in Ordering Number Description
<b>Gauges</b>	GP Series	Dial Size: 50mm Accuracy: Grade A (ASME B40.1) Protection Class: IP54 Leak Rate(Helium): $\leq 1 \times 10^{-9}$ std $\text{cm}^3/\text{s}$	Material Case: 304 SS Wetted Parts: 316L

# Standard Construction

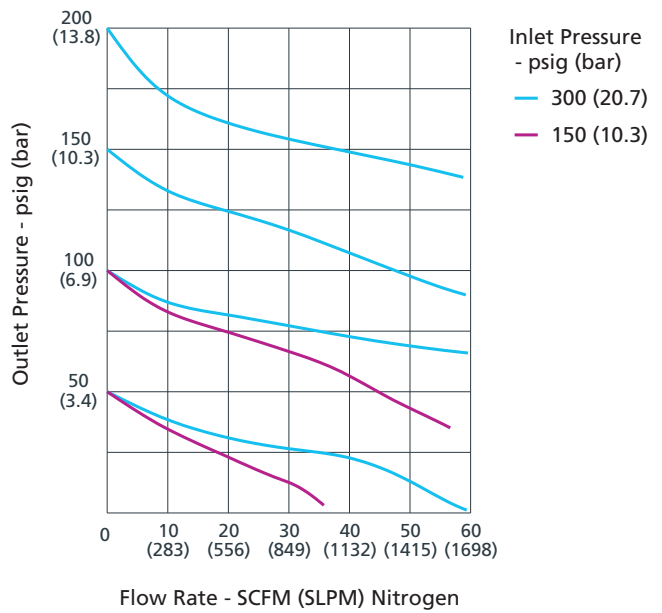


# Flow Chart

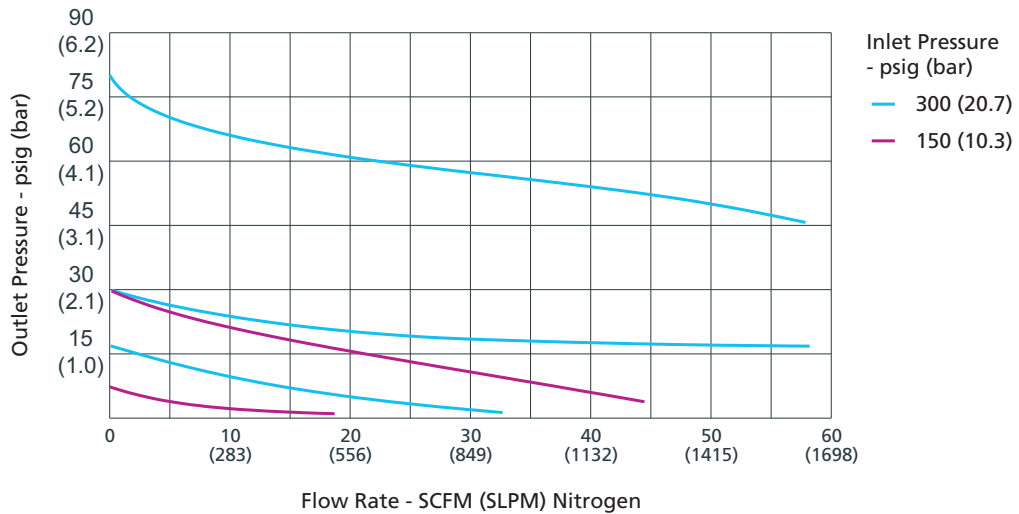
1/4" Cv=0.2



1/2" Cv=1.0

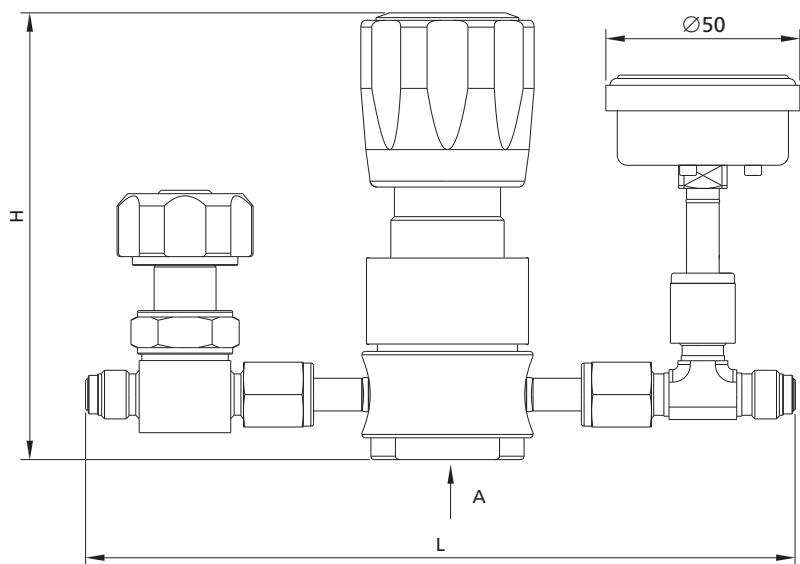


3/4" & 1" Cv=1.8



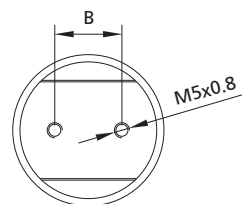
## Dimensions

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

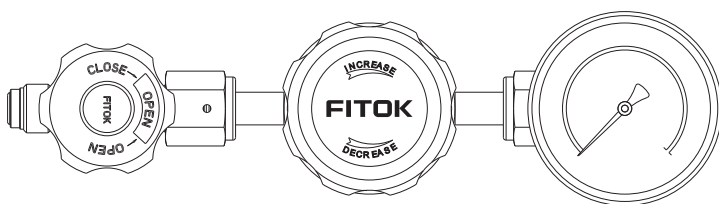
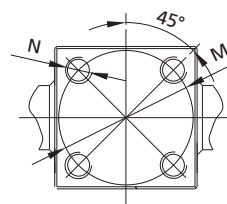


**A direction**

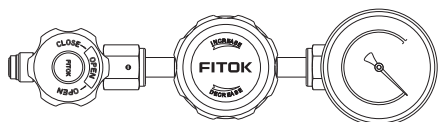
**Regulator Bottom Mounting Holes**



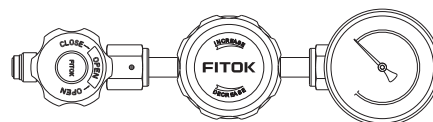
**Diaphragm Valve Bottom Mounting Holes**



Note: Figure shows the standard gauge position, 90° rotation to the left/right is optional.



90° rotation to the right



90° rotation to the left

AGH\*\*-300-\*\*-\*\*\*-CMR-\*\*\*-F3

AGH\*\*-300-\*\*-\*\*\*-CML-\*\*\*-F3

Connection Size	Dimensions, in. (mm)				
	L	H	B	N	M
1/4"	8.23 (209.0)	4.84~5.28 (123.0~134.0)	0.87 (22.2)	M5x0.8	1.00 (25.4)
1/2"	13.74 (349.0)	5.42~5.91 (137.7~150.0)	1.37 (34.9)	M5x0.8	1.50 (38.1)
3/4"	20.22 (513.5)	5.91~6.30 (150.0~160.0)	1.37 (34.9)	M5x0.8	1.69 (43.0)
1"	20.67 (525.0)	5.91~6.30 (150.0~160.0)	1.37 (34.9)	M5x0.8	1.69 (43.0)



# General Gas Stick Assemblies

## AGL Series

### Introduction

AGL series general gas stick assemblies are used for precise pressure control and fluid shutoff in general gas systems and oxygen-enriched environments. AGL series are integrated from a ball valve, a regulator and a pressure gauge for easy site installation. FITOK has been adopting strict specifications for materials, cleaning and packaging processes to ensure product cleanliness meets ASTM G93, Level C requirements.

### Features

- ⦿ Excellent sensitivity and set point pressure stability
- ⦿ Sizes from 1/4" to 1" optional
- ⦿ Alloy diaphragm improves strength and corrosion resistance for long cycle life
- ⦿ FC-02 Special Cleaning and Packaging Process Specification
  - Meet the requirements of ASTM G93 Level C specifying nonvolatile residues shall not exceed 6 mg/ft<sup>2</sup>, applicable for oxygen-enriched environments
  - Double bagged with vacuum sealed polyethylene dust-free inner bag (inert gas filling optional) and sealed polyethylene outer bag



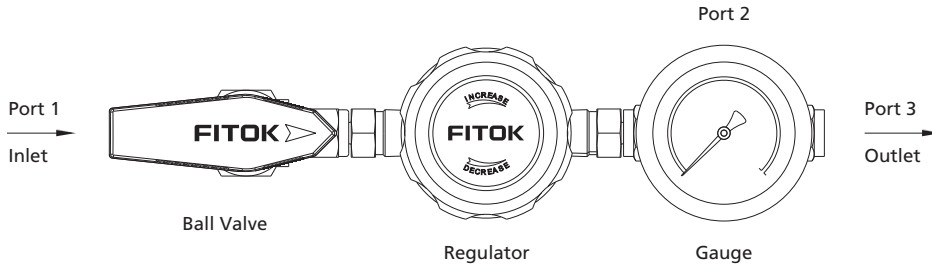
### Technical Data

<b>Max. Inlet Pressure</b>	500 psig	
<b>Outlet Pressure</b>	0 ~ 25, 0 ~ 50, 0 ~ 100, 0 ~ 250 psig	
<b>Working Temperature</b>	-40 ~ 140 °F (-40 ~ 60 °C)	
<b>Flow Coefficient (Regulator Cv)</b>	1/4"	0.2
	1/2"	1.0
	3/4"	1.8
	1"	

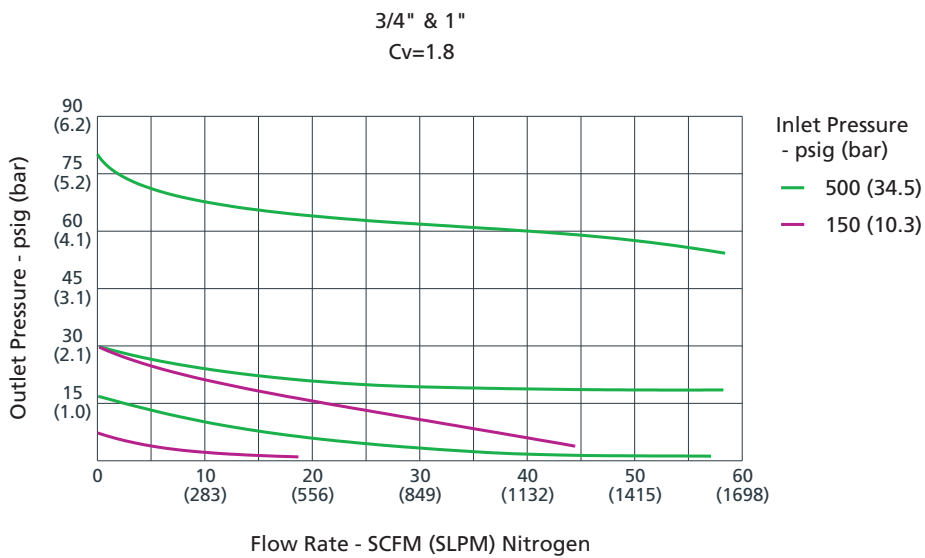
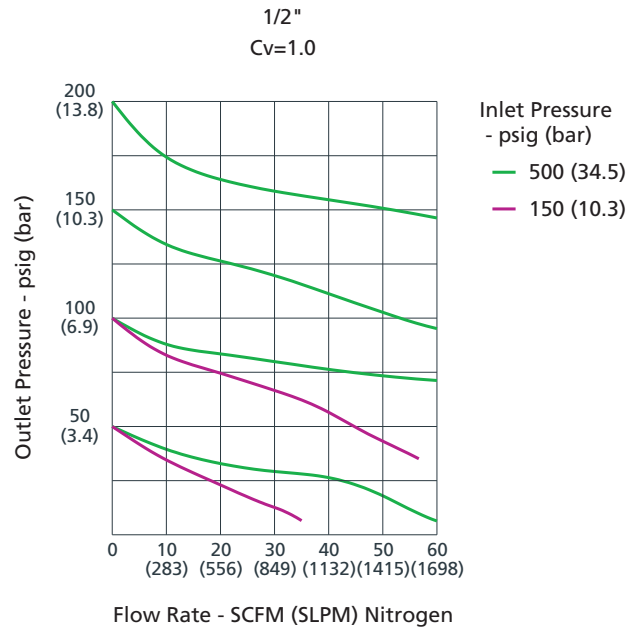
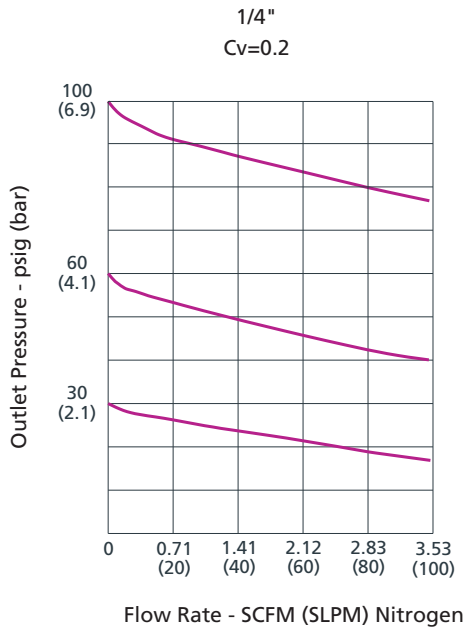
### Parameters of Main Components

Components	Series	Parameters	
<b>Ball Valves</b>	BO Series	Locking Device Optional Test: Bubble Method (Helium)	Material Seat: PTFE Other Wetted Parts: Same as Body Material in Ordering Number Description
<b>Regulators</b>	RDG Series (1/4") RDM Series (1/2") RDH Series (3/4" & 1")	Internal Leak Rate: Bubble Method (Helium) External Leak Rate: ≤ 1x10 <sup>-9</sup> std cm <sup>3</sup> /s (Helium)	Material Seat: PCTFE Diaphragm: Hastelloy Other Wetted Parts: Same as Body Material in Ordering Number Description
<b>Gauges</b>	GC Series	Dial Size: 50 mm Accuracy: Grade B (ASME B40.1) Protection Class: IP54	Material Case: 304 SS Wetted Parts: 316 SS

# Standard Construction

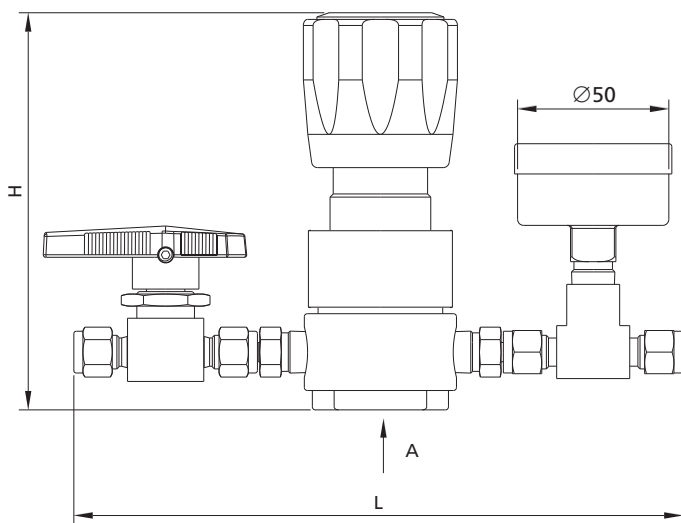


## Flow Chart



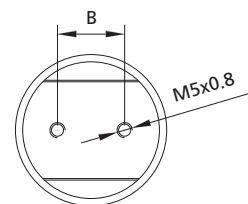
## Dimensions

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

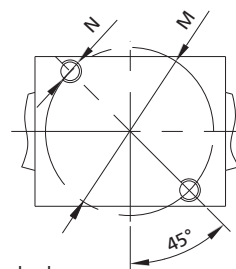


A direction

Regulator Bottom Mounting Holes



Ball Valve Bottom Mounting Holes

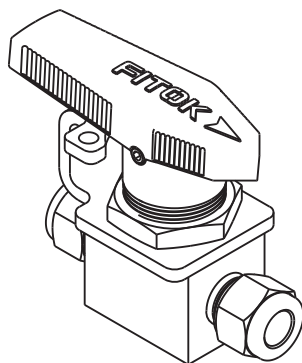


Note: Figure shows the standard gauge position, 90° rotation to the left/right is optional.



Connection Size	Dimensions, in. (mm)				
	L	H	B	N	M
1/4"	7.91 (201.0)	4.84~5.28 (123.0~134.0)	0.87 (22.2)	M3x0.5	0.88 (22.2)
1/2"	10.63 (270.0)	5.42~5.91 (137.7~150.0)	1.37 (34.9)	M5x0.8	1.63 (41.3)
3/4"	11.06 (281.0)	5.91~6.30 (150.0~160.0)	1.37 (34.9)	M5x0.8	1.63 (41.3)
1"	12.24 (311.0)	5.91~6.30 (150.0~160.0)	1.37 (34.9)	M5x0.8	1.63 (41.3)

### Ball Valves with Locking Device



### Gauge Position Description



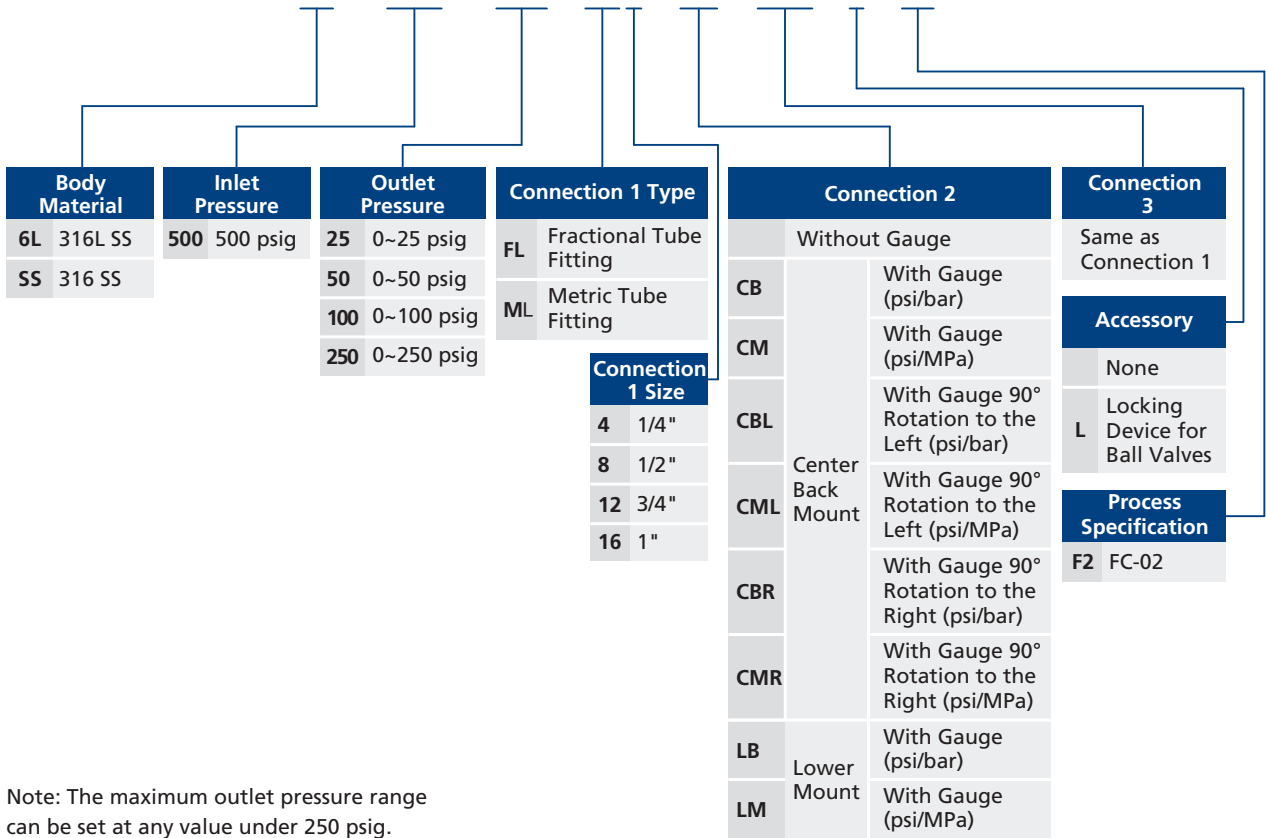
AGL\*\*-500-\*\*-\*\*\*-CMR-\*\*\*-F2



AGL\*\*-500-\*\*-\*\*\*-CML-\*\*\*-F2

## Ordering Number Description

AGL6L - 500 - 100 - FL4 - CB - FL4 - L - F2



Note: The maximum outlet pressure range can be set at any value under 250 psig.