

Needle/Gauge Valves

Series 5000

Accurate flow measurement is of primary importance in achieving an efficient process system. Autoclave Engineers offers a complete line of needle, gauge and instrument manifold valves designed to provide accurate, safe and dependable flow measurement. Manufactured for Autoclave Engineers, the design of these valves reflects extensive engineering and manufacturing experience, resulting in attainment of the highest standards for valve quality and reliability.

AE Series 5000 needle, gauge and instrument manifold valves have been engineered to provide versatility in meeting specific process requirements. Several standard bonnet assemblies offer different stem, seal and material selections. Bonnets are installed in hard seat, soft seat and roddable valve models of varied body designs to accommodate the process control, flow measurement and mounting requirements of specific applications. Most valves are rated for pressure service to 6,000 psi (414 bar) with certain models rated to 10,000 psi (690 bar).

Features:

- One piece bar stock construction with full material traceability.
- Back seating of stems in a fully open position prevents stem backout.
- Permanent locking of valve bonnet prevents accidental removal while operating valve.
- Stem seal isolates the lubricated stem threads from the process.
- Stainless steel models of needle, gauge and instrument manifold valves, equipped with needle stems, meet NACE MR-01-75.
- Optional high temperature packing for compatibility to 1000°F (538°C) on certain models.
- All valves are designed in accordance with ASME/ANSI B16.34-1988 and ASME Section VIII, Div. 1.



**Autoclave
Engineers** 

Fluid Components
Division of Snap-tite, Inc.

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Needle/Gauge Valves - Series 5000

Needle/Gauge Valve - General Information

Needle Valves - Gauge Valve - Instrument Manifold Valves - Customer Support

Needle Valves

Autoclave needle valves are engineered to provide a reliable method for isolating instrumentation from the process and for throttling or shut-off requirements. AE Series 5000 Valves are bubble tight in both the seated and back seated positions. Both hard and soft seated models are available. These needle valves will accept a variety of pipe sizes from 1/4" to 1" and are rated for either 6,000 psi (414 bar) or 10,000 psi (690 bar).

Gauge Valves

Gauge valves are primarily used to isolate the process from instrumentation such as gauges or transducers. These valves are typically used in conjunction with block and bleed valves. AE Series 5000 gauge valves are available with an extended length between the inlet and the bonnet centerline to ensure the valve extends far enough from the process connection to clear the pipeline insulation or to distance a socket weld end from the bonnet. Autoclave gauge valves accept a variety of bonnet styles, threaded pipe sizes and socket welds and are rated for service to 6,000 psi (414 bar).

Instrument Manifold Valves

Autoclave instrument manifold valves provide a safe, economical and convenient method of isolating, blocking, bleeding and calibrating instruments, meters and pressure transmitters. These valves are available in numerous body, bonnet and seal configurations with FNPT, tube fittings and/or instrument flange connections.

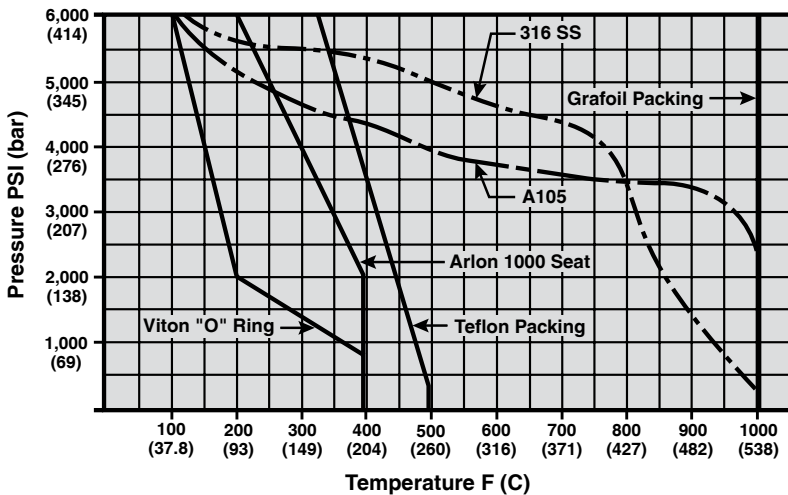
AE Series 5000 instrument manifold valves operate to pressures of 6,000 psi (414 bar) and offer excellent flexibility with different body patterns and hard seat models utilizing either a vee, ball or non-rotating stem. Valve models include 2, 3 and 5 bonnet remote line mounting; 2, 3 and 5 bonnet direct mounting single flange; and 2 and 3 bonnet direct mounting, dual flange. Vee, ball and non-rotating tips are available in hard seat models; soft seats use only vee tip stems.

Customer Support

Autoclave Engineers is prepared to assist you in every phase of the design/application cycle. Our technical sales specialists will work with your design team to ensure the correct valve configuration is selected, and/or to custom engineer a special valve for your individual requirements. Our worldwide sales and service organization is available to conduct any on-site review/analysis of your application requirements or to provide timely installation and repair services. Whatever your need, Autoclave's engineering experience and customer oriented focus will help you find a solution.

Pressure vs. Temperature

Ratings for body, seat and packing materials



Note: Soft seats are bubble-tight at pressure vs. temperature ratings shown above. Metal seat meets ANSI B16.104 Class V.



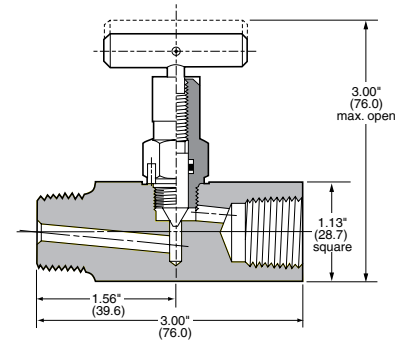
Needle/Gauge Valve - Needle Valves

Hard Seated Needle Valve-Model 6N2H

Model 6N2H hard seated needle valve is designed for applications requiring throttling or shut-off. The wide selection of inlet and outlet configurations makes this valve extremely versatile.

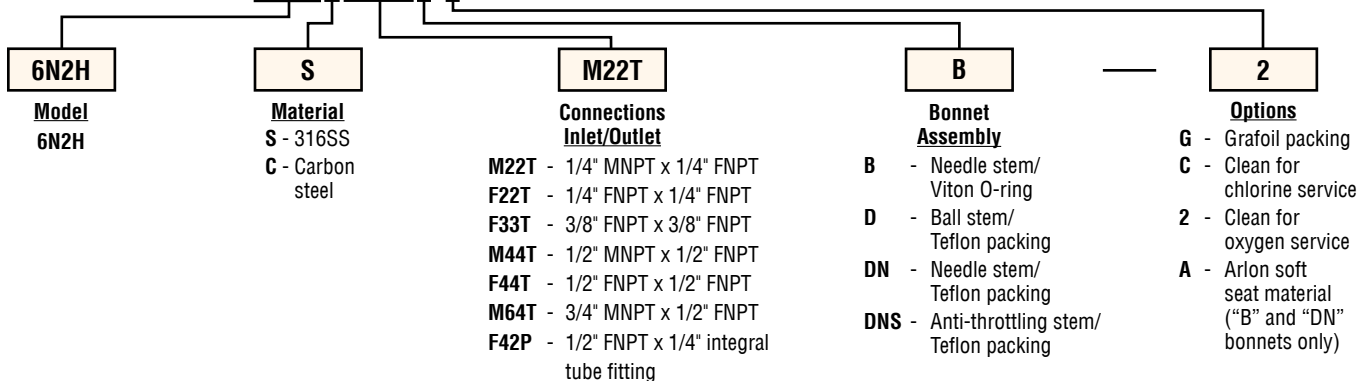
Features

- Pressures to 6,000 psi (414 bar)
- 1/8" bore for 1/4" NPT valves
- 3/16" bore for 3/8" NPT and larger valves
- Optional Arlon soft seat available



Ordering Procedure

Typical ordering number: **6N2HSM22TB-2**

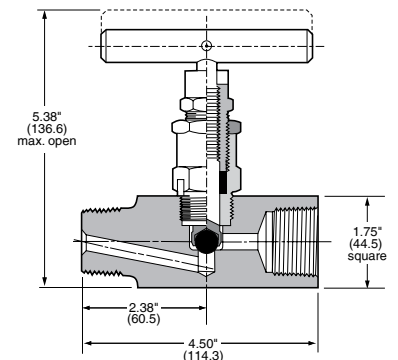


Special Purpose Heavy Duty/Isolation Valve - Model 6N3H

Model 6N3H special purpose, heavy duty, isolation valve is designed for rugged service applications where a large bore is required for viscous fluids or solids entrainment. Large 1" NPT, M x F or F x F body connections and type "G" high pressure bonnet assure reliable performance and versatility.

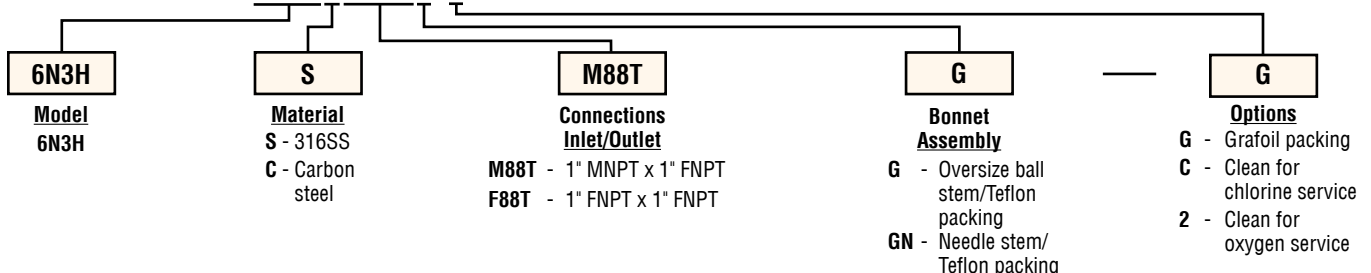
Features

- Pressures to 6,000 psi (414 bar)
- Globe flow pattern with large bore suitable for high temperature applications up to 1,000°F (538°C)
- Rugged type "G" bonnet assembly with self-centering ball stem on hard seat provides positive shut-off and dependable performance
- 5/16" bore



Ordering Procedure

Typical ordering number: **6N3HSM88TG-G**



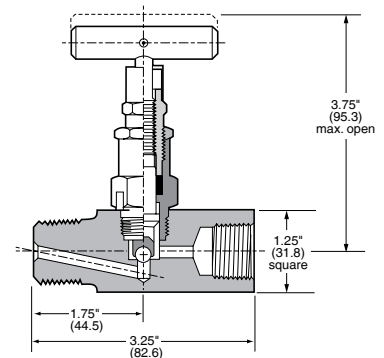
Needle/Gauge Valve - Needle Valves

Self-Aligning Metal Seated-Model 10N2

Model 10N2 self-aligning, metal seat, needle valve is designed with a globe flow pattern, suitable for high temperature applications. This high pressure valve combines operating advantages and rugged construction for dependable, leak-free performance under widely varying pressure and temperature conditions.

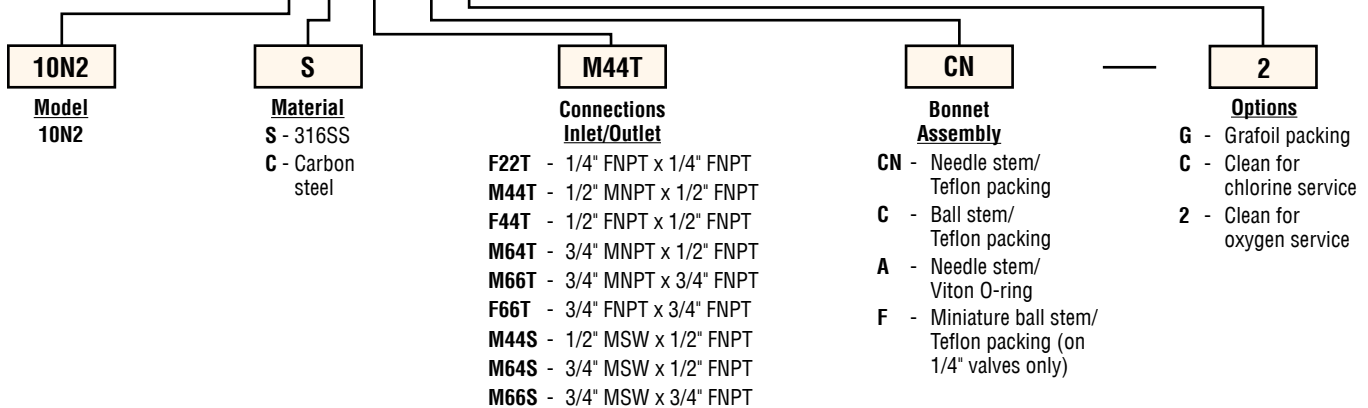
Features

- Pressures to 10,000 psi (690 bar)
- Self-centering ball stem provides positive shut-off on "C" type bonnet assembly
- Needle stem also available
- Available in 7/8" square stock with "F" type bonnet in 1/4" NPT female connections
- 1/8" bore for 1/4" NPT valves
- 3/16" bore for 3/8" NPT and larger valves



Ordering Procedure

Typical ordering number: **10N2SM44TCN-2**

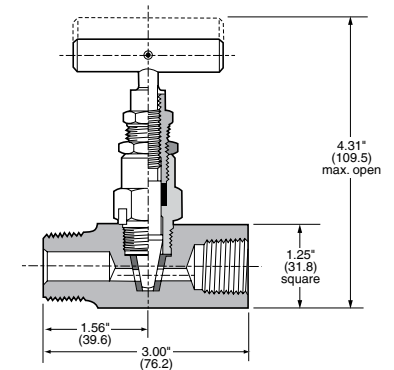


Soft Seated Roddable Hand Valve-Model 6N1S

Model 6N1S soft seated needle valve is an all purpose valve for gauge or isolation service. The straight through flow design allows for higher flow capacity. The wide selection of inlet and outlet configurations makes this valve extremely versatile.

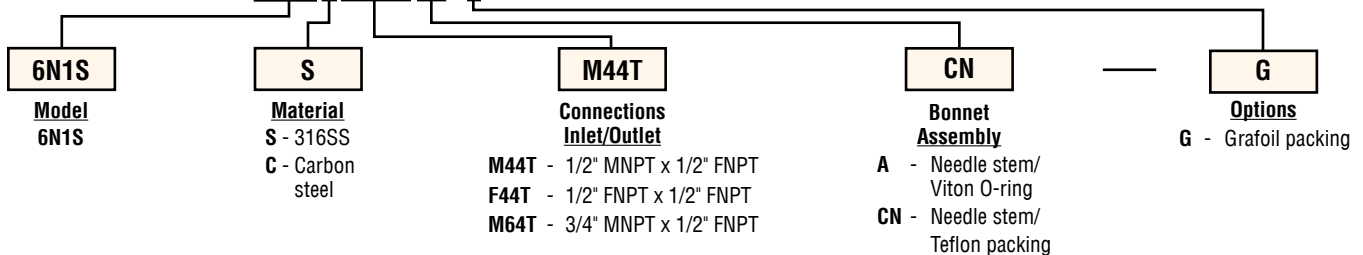
Features

- Pressures to 6,000 psi (414 bar)
- A replaceable, roddable Arlon soft seat
- 3/16" bore



Ordering Procedure

Typical ordering number: **6N1SSM44TCN-G**

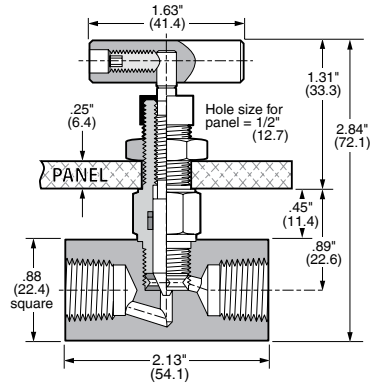


Needle/Gauge Valve - Needle Valves

Panel Mount Needle Valve-Model 6N2H

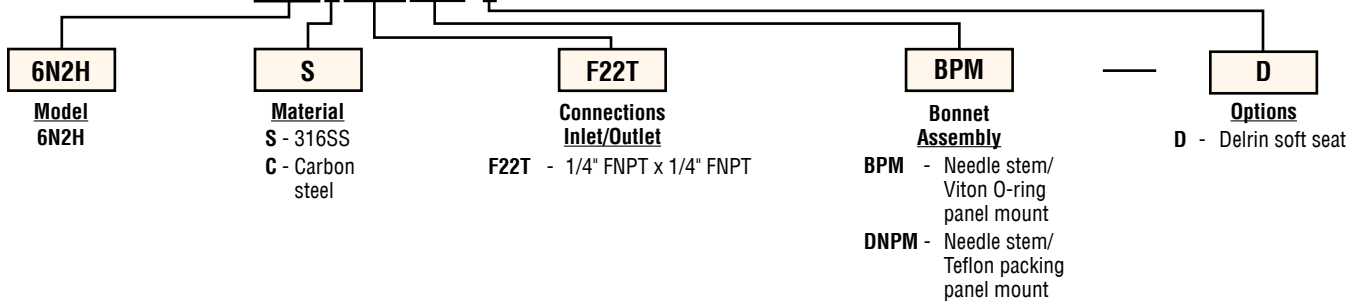
Features

- Pressures to 6,000 psi (414 bar)
- Optional Delrin soft seat available
- Viton o-ring or Teflon packing available



Ordering Procedure

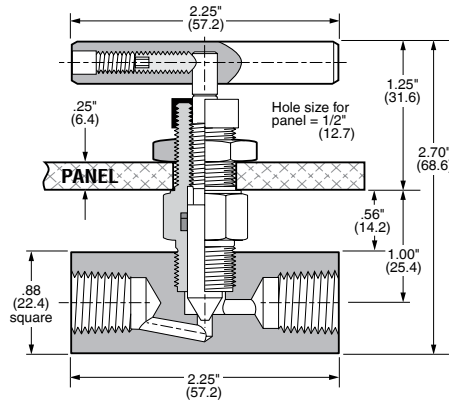
Typical ordering number: **6N2HSF22TBPM-D**



Panel Mount Needle Valve-Model 10N2

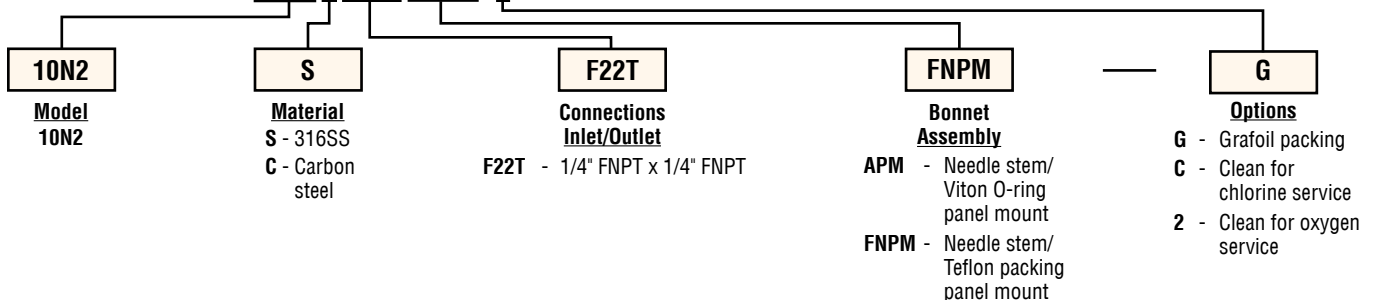
Features

- Pressures to 10,000 psi (690 bar)



Ordering Procedure

Typical ordering number: **10N2SF22TFNPM-G**

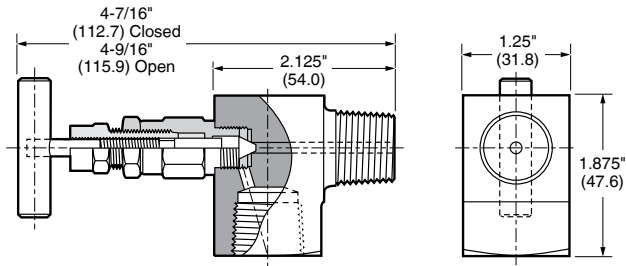


Needle/Gauge Valve - Needle Valves

90° Angle Needle Valve-Model 6N2A

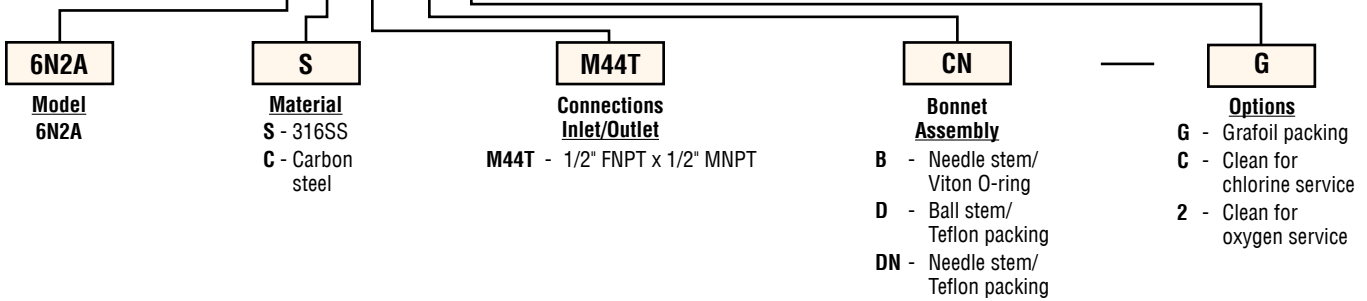
Features

- Pressures to 6,000 psi (414 bar)



Ordering Procedure

Typical ordering number: **6N2ASM44TDN-G**



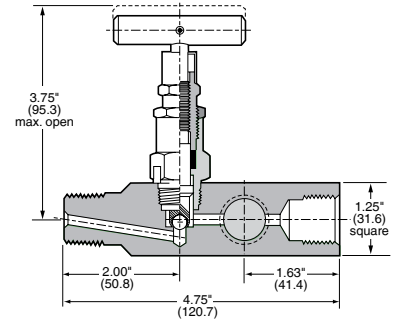
Needle/Gauge Valve - Gauge Valves

Gauge Valve with Multiple Outlet-Model 6G11

Model 6G11 gauge valve provides the strength necessary for direct instrument mounting in any position. The extra valve connections provide an easy method for obtaining process samples, checking and calibrating the instrument.

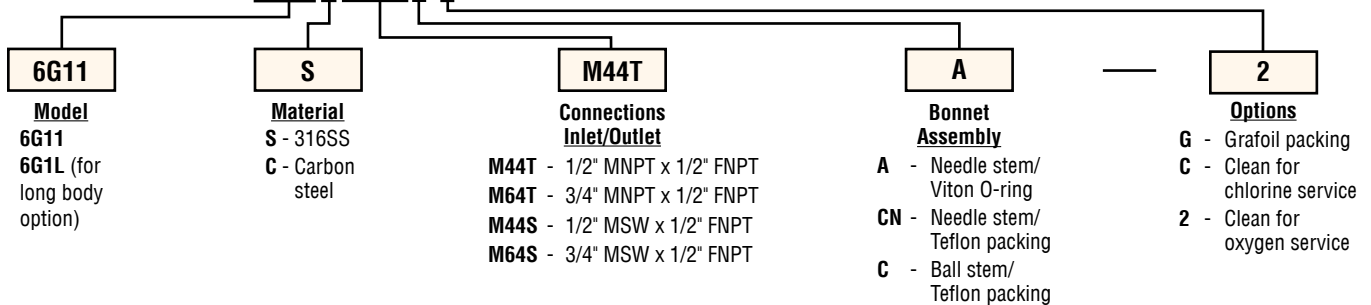
Features

- Pressures to 6,000 psi (414 bar)
- Self-centering ball seat provides positive shut-off
- Optional extended inlet available for insulation clearance - add 2.50" (63.5)
- 3/16" bore



Ordering Procedure

Typical ordering number: **6G11SM44TA-2**

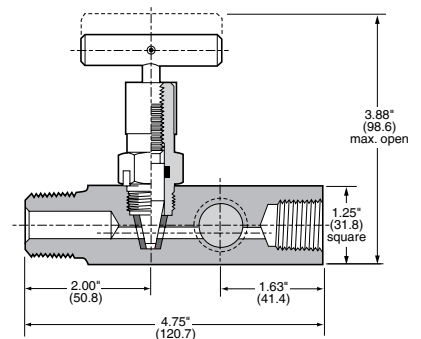


Soft Seat with Multiple Outlet-Model 6G6S

Model 6G6S soft-seated gauge valve offers multiple ports which allows for choice of gauge or handle orientation. This valve version is a roddable design utilizing a replaceable soft seat for positive shut-off capability.

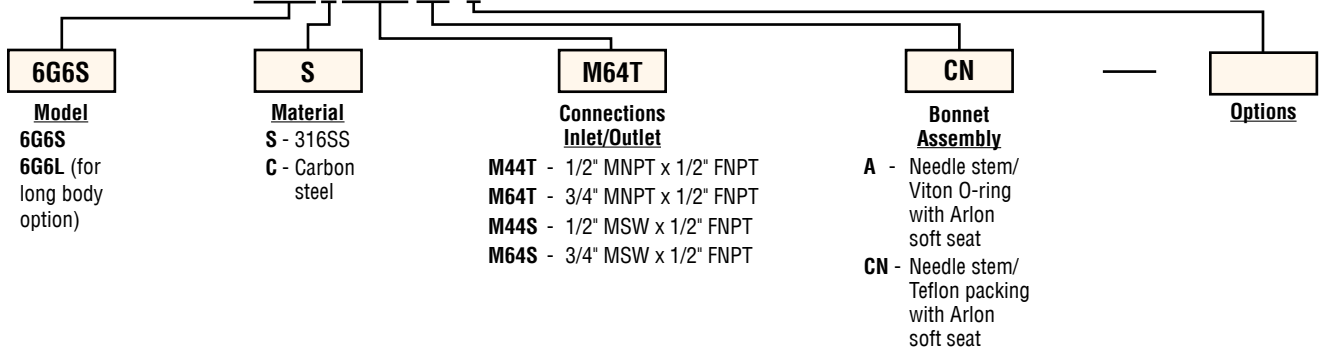
Features

- Pressures to 6,000 psi (414 bar)
- Optional extended inlet available for insulation clearance -add 2.50" (63.5)
- Replaceable roddable Arlon soft seat
- 3/16" bore



Ordering Procedure

Typical ordering number: **6G6SSM64TCN-**



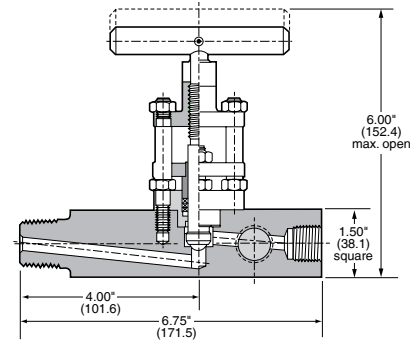
Needle/Gauge Valve - Gauge Valves

Gauge Valve OS&Y Construction-Model 6G9H

Model 6G9H gauge valve is designed as a primary block valve. The OS&Y bonnet design is suitable for high temperature applications. Multiple outlet connections allow for flexibility during installation. This valve has a 5/16" orifice for high C.V. capability. It is ideally suited for severe service application

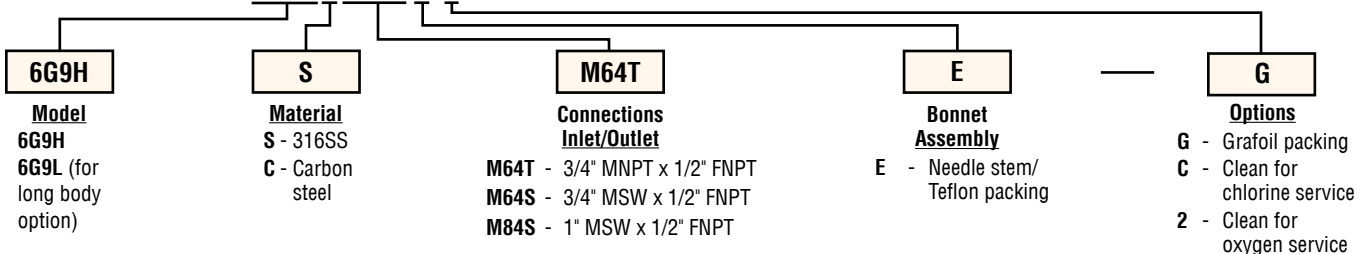
Features

- Pressures to 6,000 psi (414 bar)
- Extreme service design
- Inlet is schedule 160 or heavier
- Optional extended inlet available for insulation clearance -add 3.00" (76.2)
- Back seated stem design
- 5/16" bore



Ordering Procedure

Typical ordering number: **6G9HSM64TE-G**

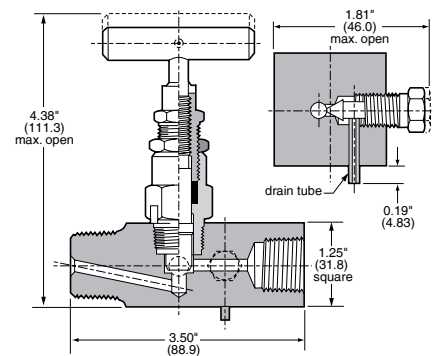


Instrument Block Valve with Integral Bleed-Model 6GIB

Model 6GIB instrument valve is a ruggedly constructed direct mounting instrument block valve. Featuring the larger configuration Type "C" bonnet, model 6GIB is a durable block and integral bleed valve providing safe instrument depressurization. A small drain tube allows venting of process.

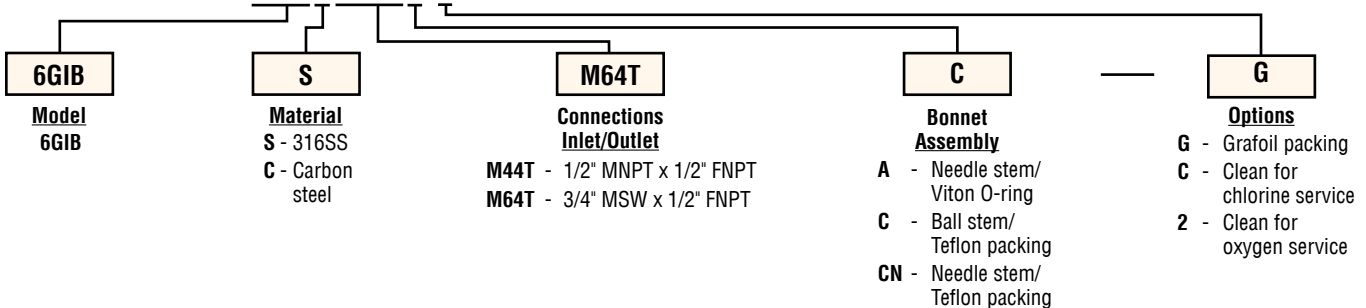
Features

- Pressures to 6,000 psi (414 bar)
- Available with needle or self-aligning ball stem
- 3/16" bore



Ordering Procedure

Typical ordering number: **6GIBSM64TC-G**



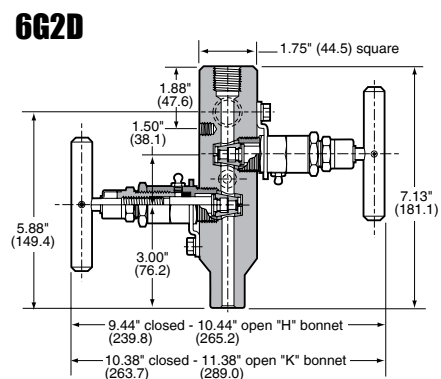
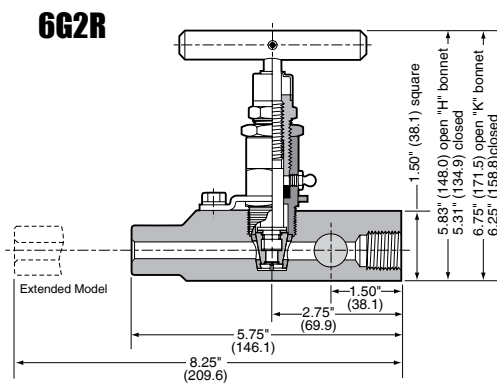
Needle/Gauge Valve - Gauge Valves

Gauge Valve Roddable 3/8" Bore-Models 6G2R & 6G2D

Models 6G2R and 6G2D gauge valves are roddable designs with a large 3/8" bore and multiple ports. They can be supplied with hard or soft seats and the bonnets are equipped with an injection nipple for on-line emergency venting or sealing in the event of packing failure or lubrication injection.

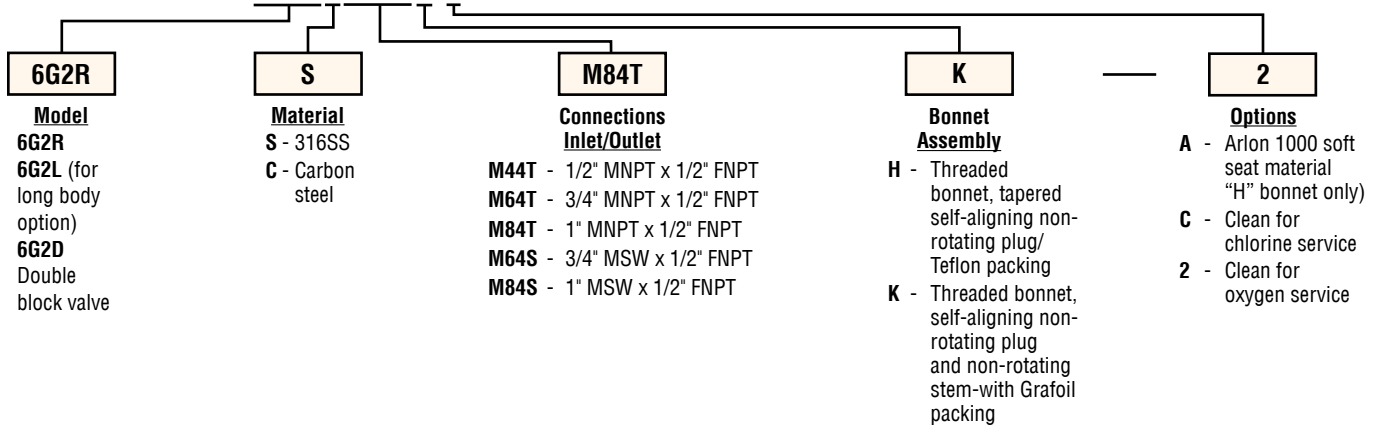
Features

- Pressures to 6,000 psi (414 bar)
- Both bonnet assemblies offered for these valves have a tapered self-aligning, non-rotating plug
- Optional high temperature model "K" bonnet, to 1,000°F (538°)
- An optional, replaceable, roddable Arlon soft seat which has been used in steam applications up to 550° (288°C)



Ordering Procedure

Typical ordering number: **6G2RSM84TK-2**



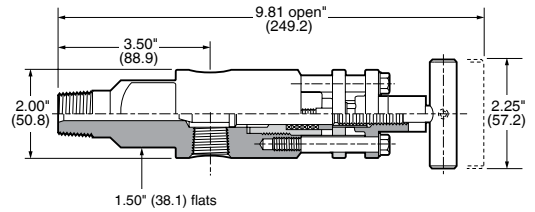
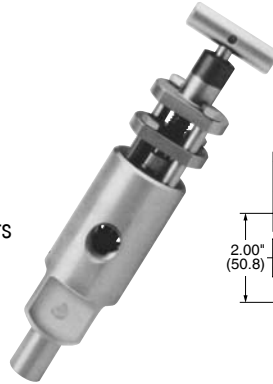
Needle/Gauge Valve - Gauge Valves

Orifice Valve OS&Y Construction-Models 6G80

Models 6G80 orifice valve utilizes the OS&Y style bonnet and offers two outlet ports at 90° to the inlet. The valve is primarily designed for side-by-side installation on orifice flanges.

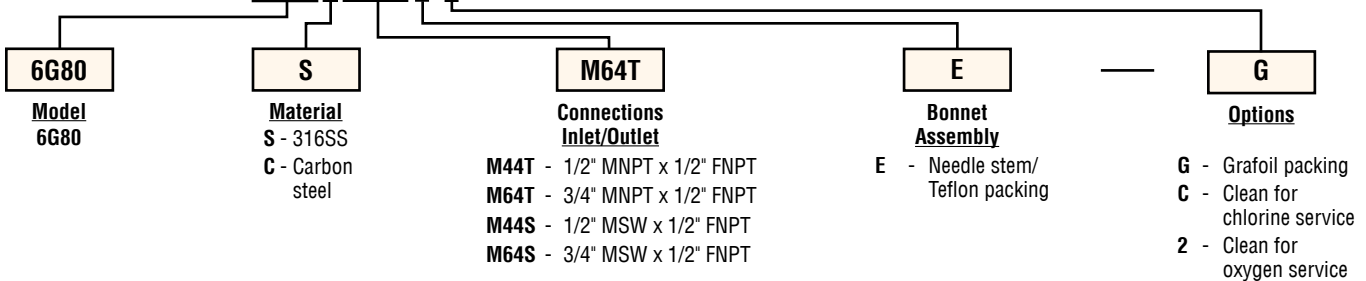
Features

- Pressures to 6,000 psi (414 bar)
- Inlet is schedule 160 or heavier
- Large C.V. roddable seats
- Manufactured to fit standard orifice flanges @ 2.13" (54.1) centers
- Back seated stem design
- Available with non-rotating ball stem
- 5/16" bore



Ordering Procedure

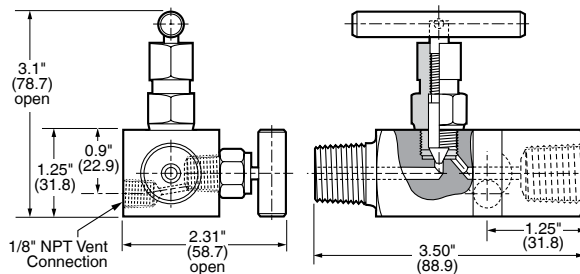
Typical ordering number: **6G80SM64TE-G**



Instrument Block and Bleed Valve with Integral Vent-Model 6GIV

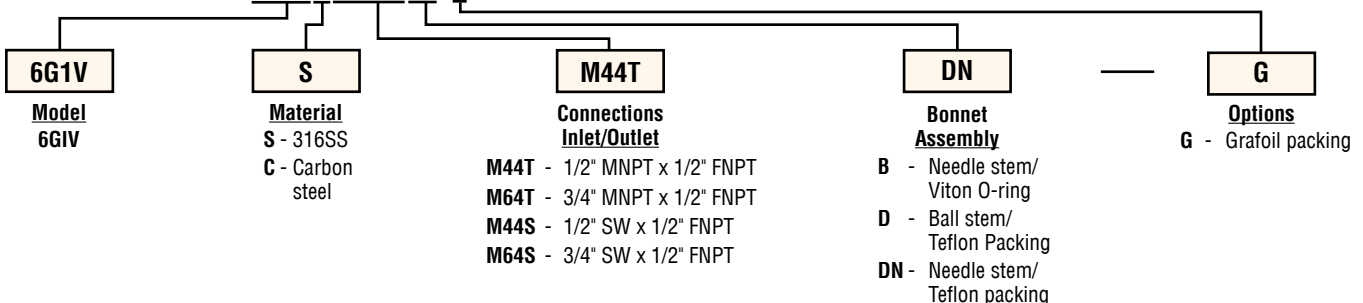
Features

- Pressures to 6,000 psi (414 bar)



Ordering Procedure

Typical ordering number: **6GIVSM44TDN-G**

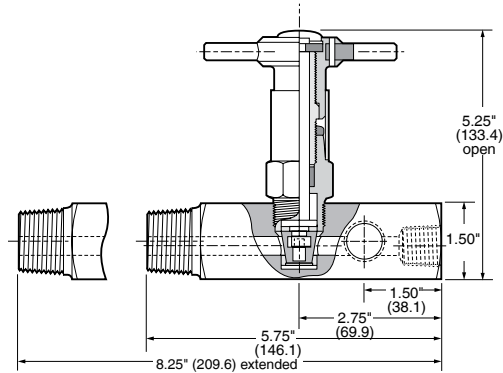


Needle/Gauge Valve - Gauge Valves

Replaceable Seat non-Rotating Stem Root/Gauge Valve-Model 6G4R

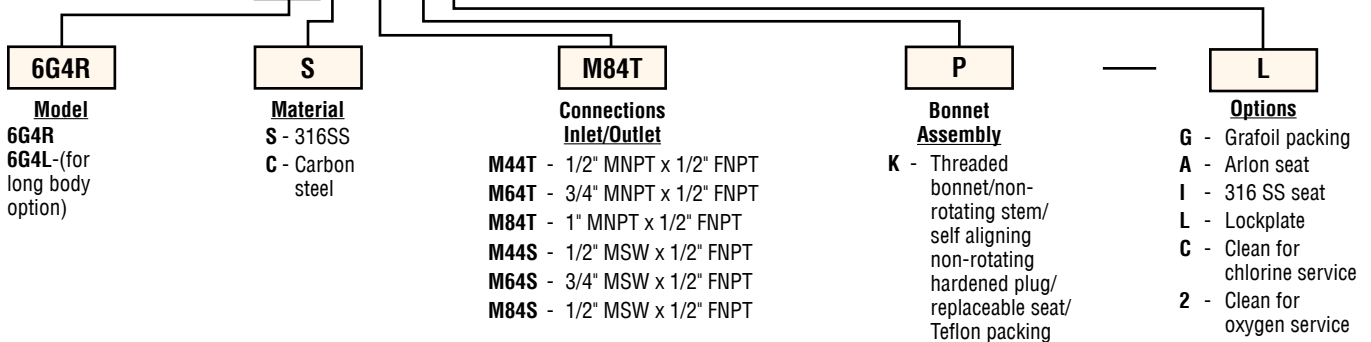
Features

- Pressures to 6,000 psi (414 bar)
- Replaceable hard or soft seat available
- Complete roddability through a 3/8" diameter orifice
- Available with Teflon or Grafoil packing



Ordering Procedure

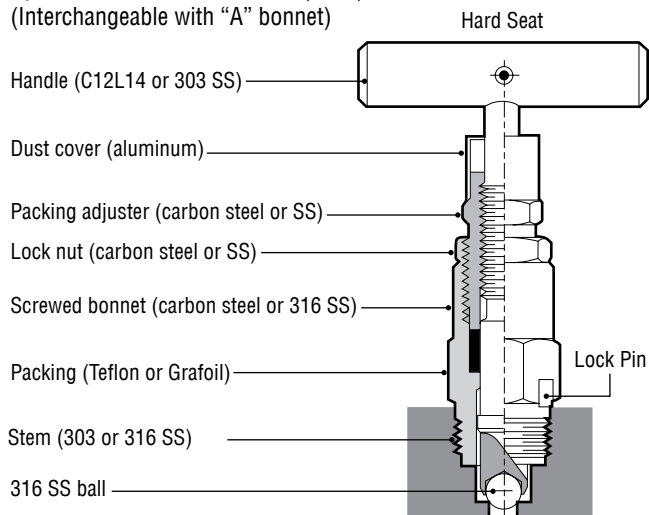
Typical ordering number: **6G4RSM84TK-L**



Needle/Gauge Valve - Bonnets

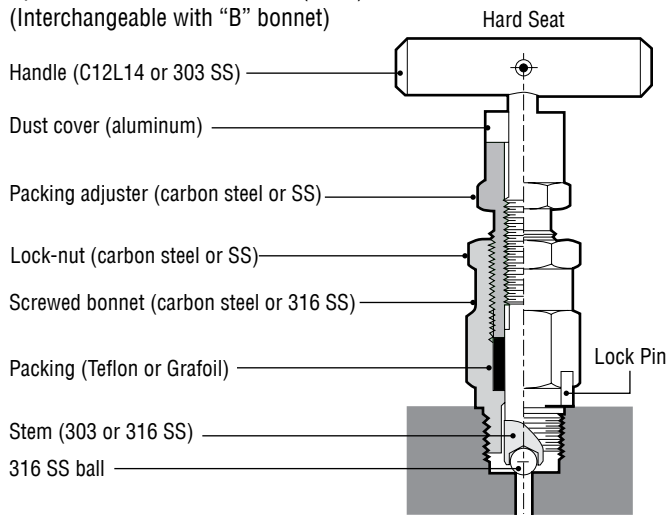
Type "C" Bonnet Assembly

Optional needle stem available ("CN")
(Interchangeable with "A" bonnet)

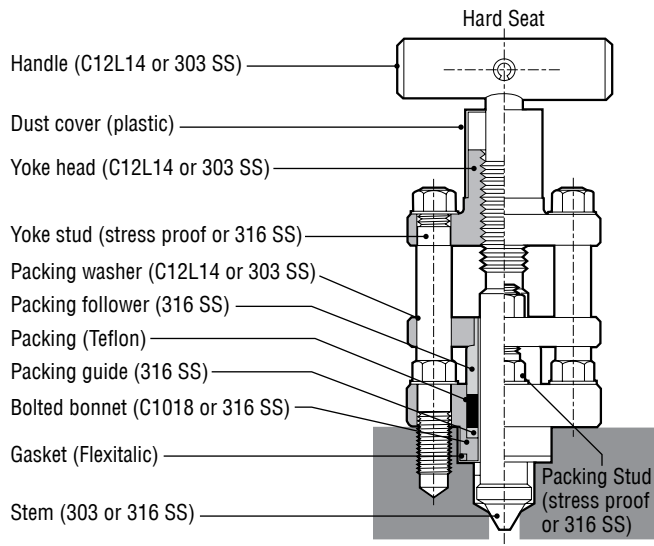


Type "D" Bonnet Assembly

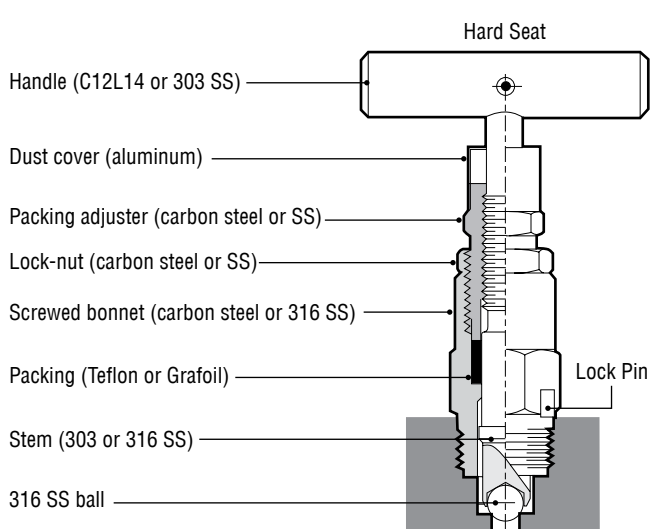
Optional needle stem available ("DN")
(Interchangeable with "B" bonnet)



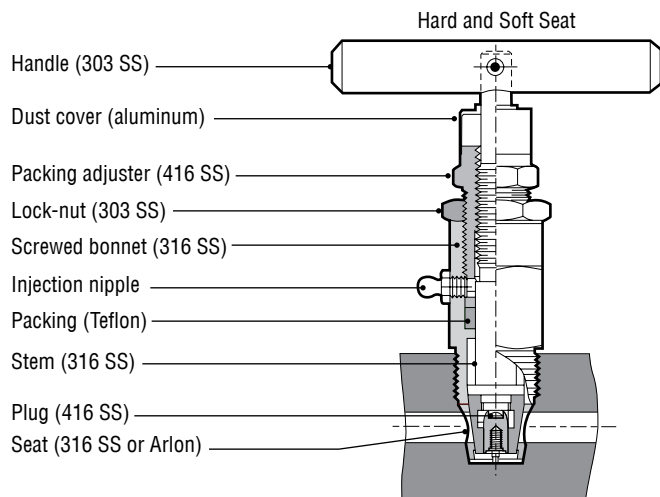
Type "E" Bonnet Assembly



Type "G" Bonnet Assembly

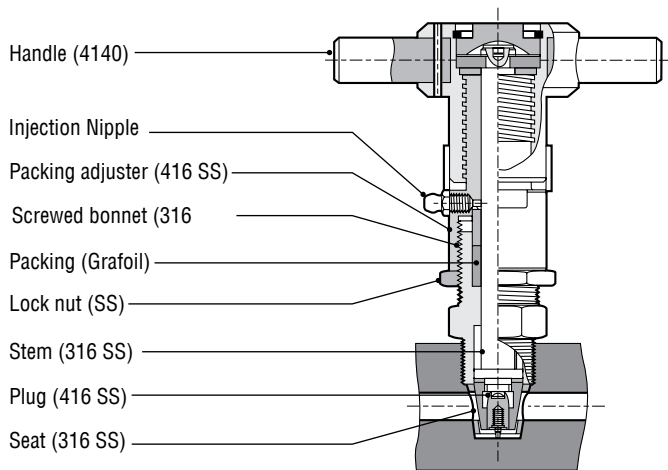


Type "H" Bonnet Assembly



Type "K" Bonnet Assembly

(For high temperature and severe service applications)



Needle/Gauge Valve - Bonnets

Bonnet Assemblies

Autoclave Engineers needle, gauge and instrument manifold valves utilize several different bonnet styles to increase operational flexibility and process compatibility. These bonnets offer both adjustable and non-adjustable packing as well as designs incorporating ball or needle stems, non-rotating stems and a non-rotating plug. Standard materials for bonnet, stem and handle construction are offered in either carbon steel or stainless steel with monel available as an option. Handles are pinned to the stem and are designed to shear the pin to prevent over torquing. Standard seal materials are Viton O-rings or Teflon packing with Grafoil packing available as an option.

Features

- Stem back seat the bonnet for a metal-to-metal seal isolating the packing from the process.
- All stem packing is located below the stem threads thereby isolating stem threads from process fluids.
- All bonnets include color-coded dust covers to prevent abrasive materials from entering the stem threads. The color coding identifies the packing materials.
- All threaded bonnets include a lock pin to prevent accidental removal of the bonnet.
- Lockplates also available as an option and are standard on the "H" and "K" bonnets.



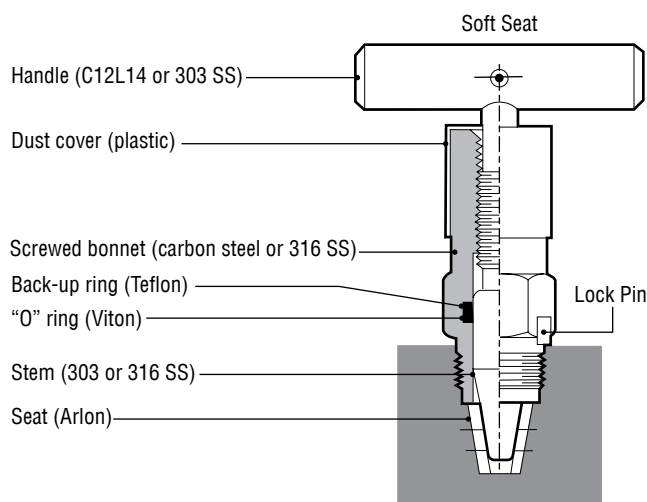
Seal Temperature Limits

Material	Type	Minimum Temperature	Maximum Temperature	Cover Color
Viton	O-ring	-20°F (-29°C)	400°F (204°C)	orange
Teflon	Packing	-100°F (-73°C)	500°F (260°C)	red
Grafoil	Packing	-40°F (-40°C)	1000°F (538°C)	silver

For NACE requirements-needle stem required

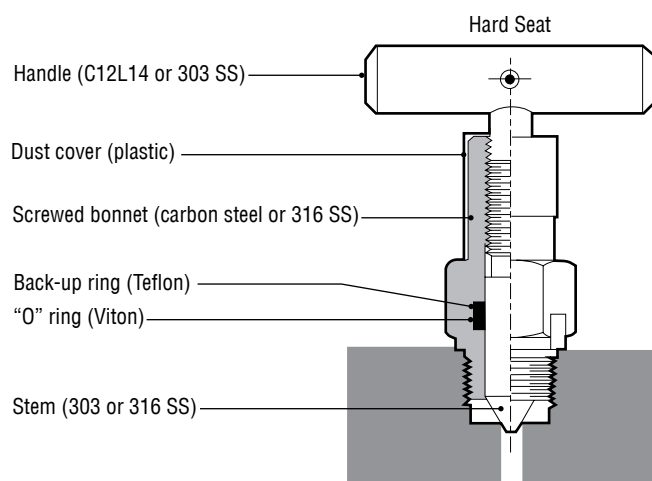
Type "A" Bonnet Assembly

(Interchangeable with "C" bonnet)



Type "B" Bonnet Assembly

(Interchangeable with "D" bonnet)

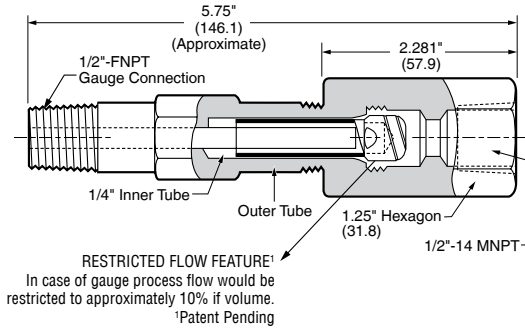


Needle/Gauge Valve - Accessories

Gauge Siphon-Model 6GS

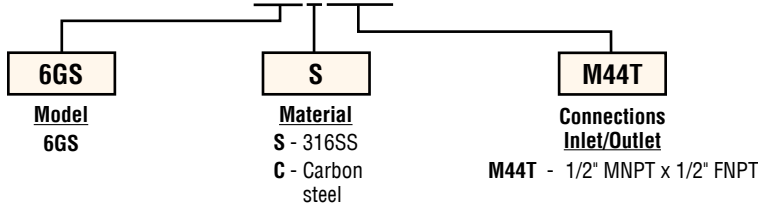
Features

- Pressures to 6,000 psi (414 bar)



Ordering Procedure

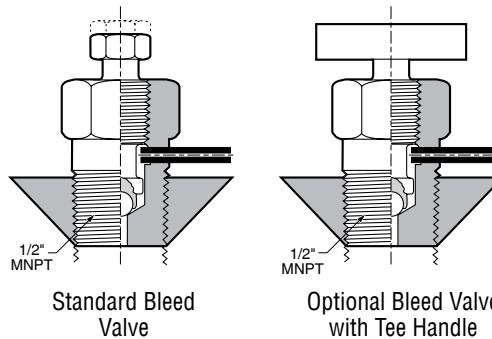
Typical ordering number: **6GSSM44T**



Bleed Valve with Integral Vent-Model 6BV

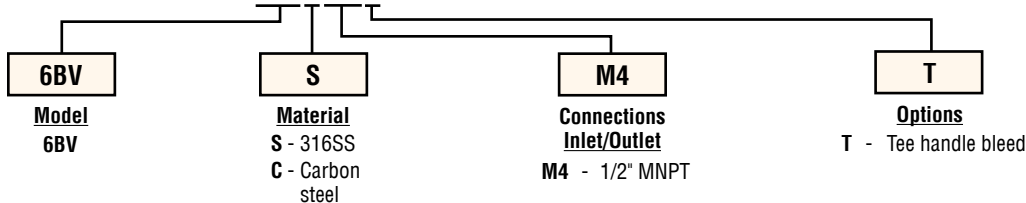
Features

- Pressures to 6,000 psi (414 bar)



Ordering Procedure

Typical ordering number: **6BVSM4T**



! WARNING !

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

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Industrial Estate
Whitemill-Wexford
Republic of Ireland
PH: 353 53 914 1566 FAX: 353 53 914 1582
e-mail: ste-sales@snap-tite.com
www.snap-tite.com



Fluid Components
Division of Snap-tite, Inc.

8325 Hessinger Drive
Erie, Pennsylvania 16509-4679
PH: 814-860-5700 FAX: 814-860-5811
e-mail: ae_sales@snap-tite.com
www.autoclave.com