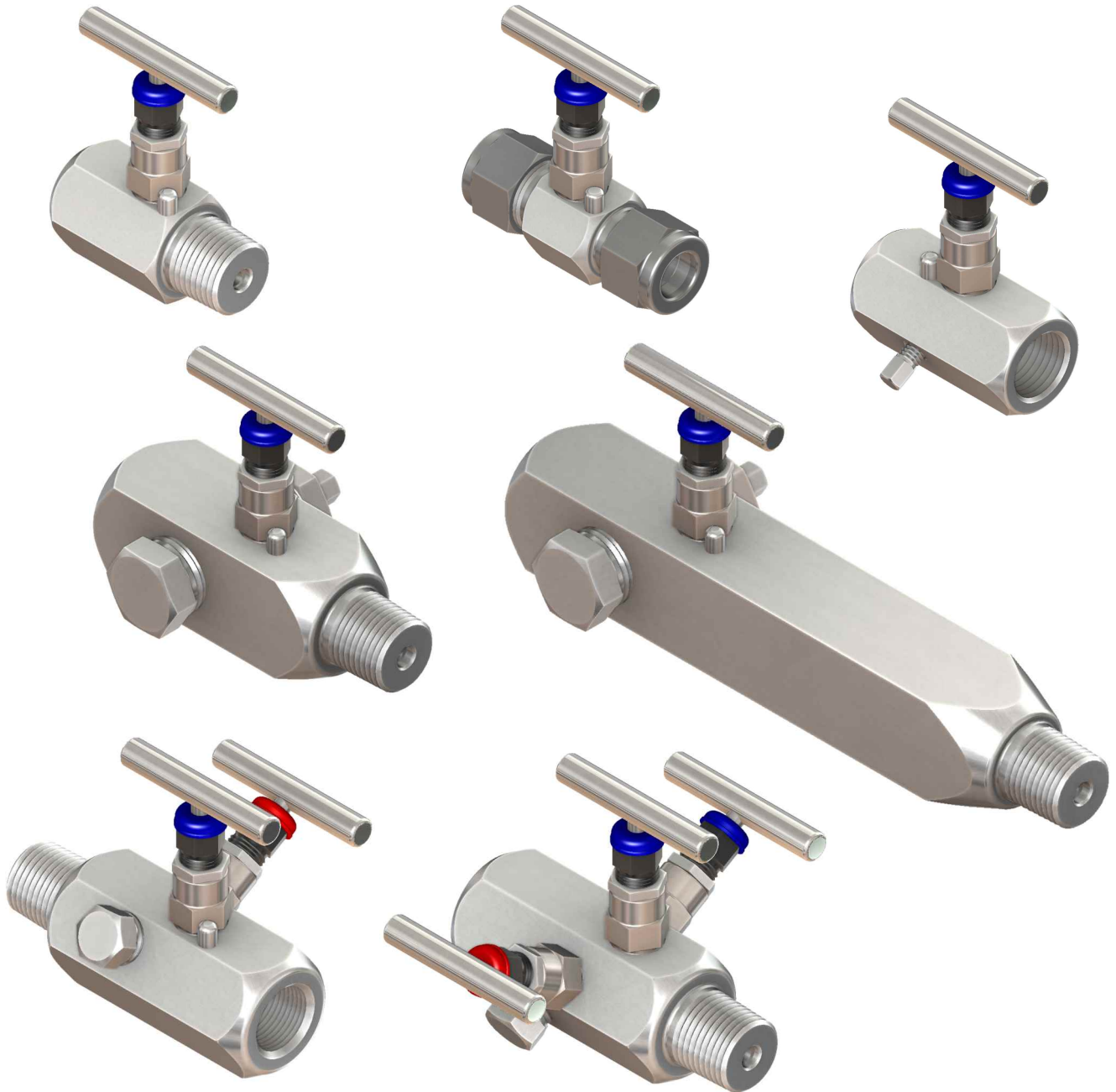


SUSTECH

PRECISION

ISO 9001:2008



Needle and Gauge Manifolds

L Series

Rated up to 10 000 psi

Compact design

Ease of use

www.sustech.com

sales@sustech.com | +27 11 452-9545

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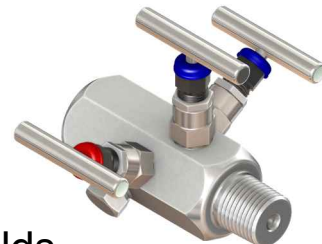
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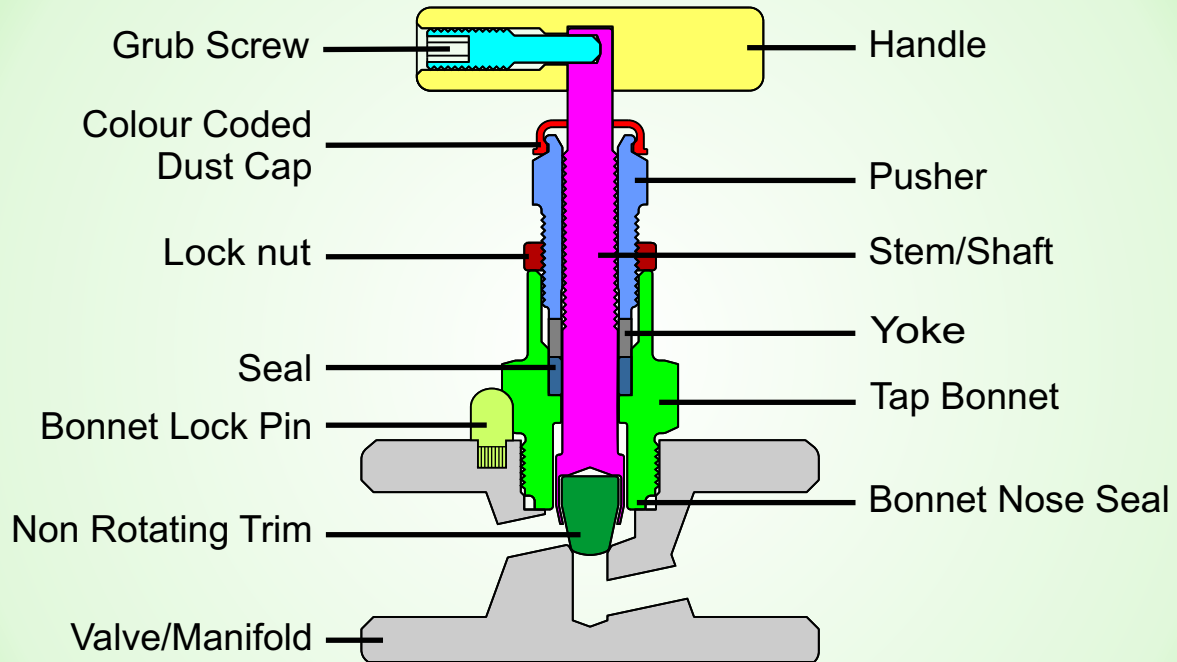
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L-Series Valve Head



Features and Benefits

- Low Operating Torque
- Safety Back Seating of Stem
- Anti Blow-Out Shaft
- Stem Seal below the Threads
- Bonnet Seal located below Threads
- Bonnet Lock Pin
- Non-Rotating Ball-Nose Trim
- External adjustment of packing seal
- Stem dust cap
- Colour Coded Valve Function
- Tracker Code
- Hidden Tap Handle Locating Screw
- Full Traceability
- Locknut
- Seal Yoke
- Low Friction Coating on Pusher
- Mirror Finish Burnished Stem Seal Surface
- Single Point Machined Threads
- 2 Times Overpressure Safety Margin
- 100% Pressure Tested
- Anti Tamper Option Available (with removable key)
- Lockable Option Available (with contained key)
- Panel Mount Option Available

L-Series Valve Head

Features and Benefits Explained

Safety Back Seating of Stem

This function prevents accidental removal of the stem while in operation. When the tap is in the fully opened position the stem produces a metal to metal secondary back seal, removing continuous pressure from the packing.

Anti Blow-Out Shaft

Reduces risk of injury as the shaft will be contained in the unlikely event of a shaft thread failure due to unforeseen circumstances.

Stem Seal below the Threads

This isolates the stem threads from the process media, preventing thread corrosion and keeps solids from entering the thread area which can cause galling. It also isolates the thread lubricant from the process, preventing process contamination as well as lubricant washout.

Bonnet Seal located below Threads

A metal to metal seal is utilized to provide a positive seal that also provides a great seal even at high temperatures. This seal is located below the bonnet threads isolating the bonnet threads from the process media.

Bonnet Lock Pin

All taps are secured by a Bonnet lock pin. These pins are machined from billet rather than using a roll pin. The end result is a shouldered bonnet dwell pin that is knurled on the insertion point.

Non-Rotating Ball-Nose Trim

This stops galling or damage to the seat face by allowing the trim to not rotate while lift off of, and seating down on, the seating surface. For added security the trim is produced from billet rather than using a sphere (pure ball) as a ball does not have polarity. This ensures the trim can only rotate around the same axis as the stem.

External adjustment of packing seal

The stem seal can be easily adjusted in position, without any disassembly of the valve or manifold.

Stem dust cap

Protects stem threads against contaminants in the atmosphere.

Colour Coded Valve Function

Tap function easily identifiable through colour coded dust caps.

Tracker Code

All taps are assembled with a tracker code to ensure 100% traceability.

Full Traceability

All components are fully traceable back to source.

Locknut

Ensures safe operation under high vibration conditions.

Seal Yoke

The high precision yoke provides good encapsulation and integrity of the stem seal.

Low Friction Coating on Pusher

The low friction coating is applied to the pusher so that both the stem threads and seal adjusting threads are protected. This greatly reduces friction, galling and wear of the stem threads increasing valve life. It also supplies protection to the seal adjusting threads.

Hidden Tap Handle Locating Screw

This improves the feel to the user when operating the tap as there are no sharp edges or protruding bolts.

Mirror Finish Burnished Stem Seal Surface

The face where the seal contacts the stem is burnished to a mirror like finish. This reduces operating torque and extends the life of the seal.

Single Point Machined Threads

Produces high accuracy threads as opposed to tapping. This ensures NACE compliance as no cold working operations such as thread rolling are performed on the material.

2 Times Overpressure Safety Margin

100% Pressure Tested

Each valve is tested with nitrogen gas to a minimum of 1000 psi. Optional 1.5X hydrostatic testing is available on special request.

Anti Tamper Option Available (with removable key).

Lockable Option Available (with contained key).

This option has a handle and key which can be disengaged from the stem and locked using a traditional padlock. The main advantage of this option is that the handle and key remain attached to the valve or manifold reducing the possibility of losing the key.

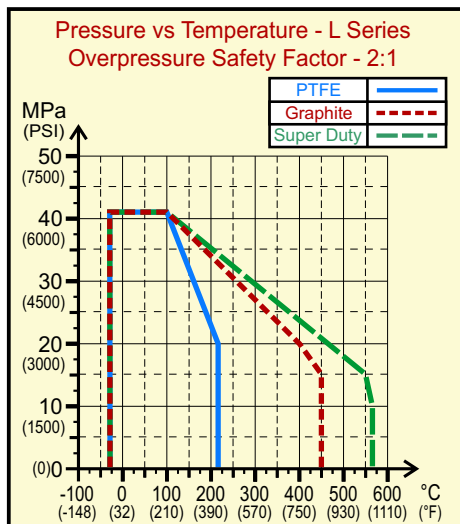
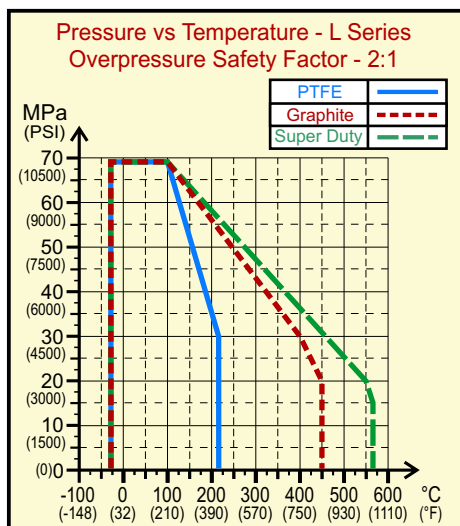
Panel Mount Option Available

Valve Head Materials, Pressure/Temperature Ratings

Standard Materials Makeup

Sustech's L Series valveheads are assembled with the best possible components. All wetted components of the valvehead are produced from the same material grade as the manifold body. When special alloys are used, the non wetted components will be produced from 316L SS. Below is a list of a few common materials to illustrate the list of materials used. Care should be taken to specify the correct material for the process media and conditions.

Component	316 SS Manifold	Monel 400 Manifold	Hastelloy C-276 Manifold	ASTM A105 Manifold
Tap Bonnet	316/316L SS	Monel 400	Hastelloy C-276	ASTM A105
Stem				304L SS
Trim				304L SS
Pusher	316/316L SS			ASTM A105
Yoke	316/316L SS			ASTM A105
Handle	316/316L SS			ASTM A105
Grub Screw	316/316L SS			304L SS
Bonnet Lock Pin	316/316L SS			316L SS
Lock Nut	316/316L SS			316L SS
Dust Cap	UV Stabalized Nylon			UV Stabalized Nylon
Packing Seal	PTFE or Graphite			PTFE or Graphite



Pressure/Temperature Ratings

10 000 psi Standard Pressure Version

PTFE PACKING

Maximum pressure 689 bar (10 000 psi) at -30 to 100° C (212° F)
Maximum pressure 310 bar (4 500 psi) at 215° C (420° F)

GRAFOIL® PACKING

Maximum pressure 689 bar (10 000 psi) at -30 to 100° C (212° F)
Maximum pressure 206 bar (3 000 psi) at 450° C (842° F)*

* For Super Duty High Temperature Power Valves contact Sustech for information

6 000 psi Standard Pressure Version

PTFE PACKING

Maximum pressure 413 bar (6 000 psi) at -30 to 100° C (212° F)
Maximum pressure 206 bar (3 000 psi) at 215° C (420° F)

GRAFOIL® PACKING

Maximum pressure 413 bar (6 000 psi) at -30 to 100° C (212° F)
Maximum pressure 155 bar (2 250 psi) at 450° C (842° F)*

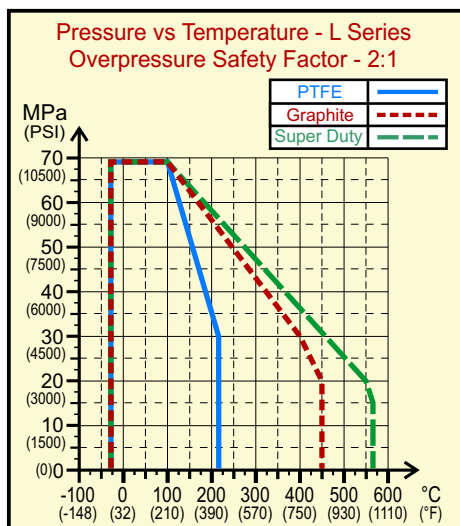
* For Super Duty High Temperature Power Valves contact Sustech for information

Valve Head Materials, Pressure/Temperature Ratings

Materials Makeup of -STC or -STJ Option

Sustech's L Series valveheads are assembled with the best possible components. The Stem and Trim of the valvehead are produced from the specified material grade in the order (-STC for Hastelloy C-276, and -STJ for Monel 400). When special alloys are used, the non wetted components will be produced from 316L SS. Below is a list of a few common materials to illustrate the list of materials used. Care should be taken to specify the correct material for the process media and conditions.

Component	316 SS Standard Manifold	- STJ Monel 400	-STC Hastelloy C-276
Tap Bonnet	316/316L SS		
Stem	316/316L SS	Monel 400	Hastelloy C-276
Trim			
Pusher	316/316L SS		
Yoke	316/316L SS		
Handle	316/316L SS		
Grub Screw	316/316L SS		
Bonnet Lock Pin	316/316L SS		
Lock Nut	316/316L SS		
Dust Cap	UV Stabalized Nylon		
Packing Seal	PTFE or Graphite		



Pressure/Temperature Ratings

10 000 psi Standard Pressure Version

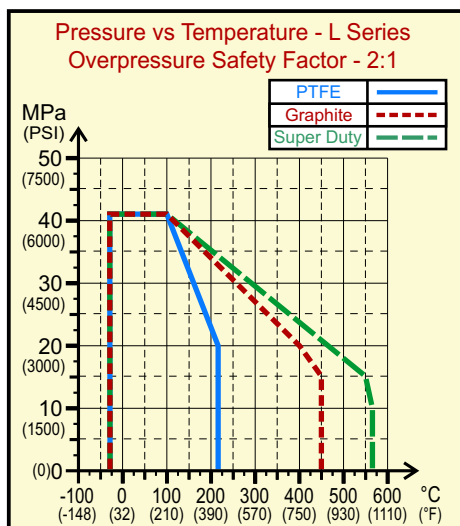
PTFE PACKING

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6 000 psi Standard Pressure Version

PTFE PACKING

Maximum pressure 413 bar (6 000 psi) at -30 to 100° C (212° F)
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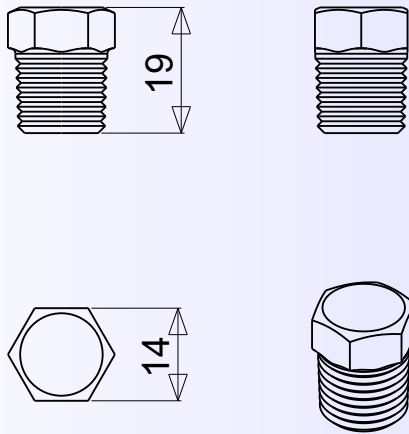
GRAFOIL® PACKING

Maximum pressure 413 bar (6 000 psi) at -30 to 100° C (212° F)
Maximum pressure 155 bar (2 250 psi) at 450° C (842° F)*

* For Super Duty High Temperature Power Valves contact Sustech for information

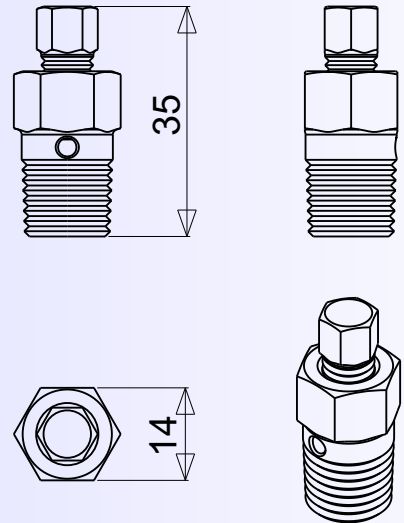
Accessories

Plug



Specifications subject to change without prior notification

Bleed Plug

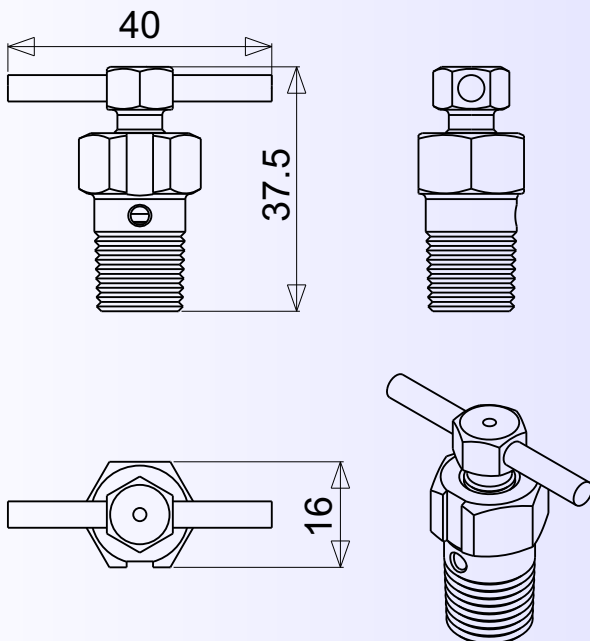


Specifications subject to change without prior notification

The following vent/test port plugging options are available:

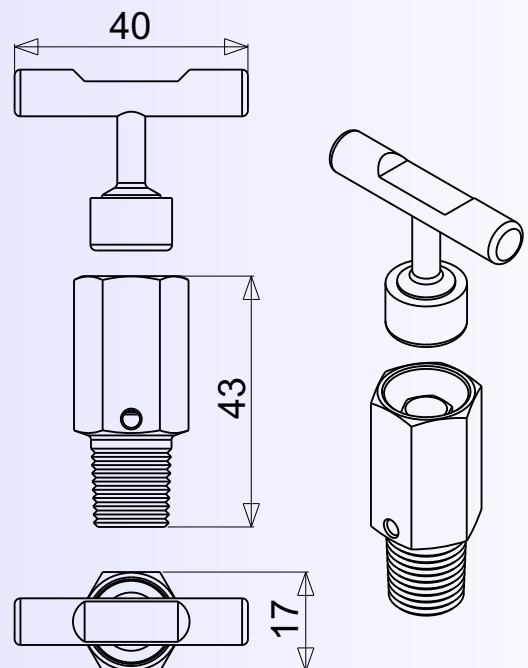
- Plug** - Standard plugging option.
- Bleed Plug** - Versatile option, allowing the user to bleed pressure off without removing the plug from the manifold.
- T Bar Handle Bleed Plug** - Further enhances ease of use by removing the need for tools to operate.
- Anti-Tamper Bleed Plug** - Provides added safety by offering a tamper resistant design. The removable key can be assigned to a designated user.

T Bar Handle Bleed Plug



Specifications subject to change without prior notification

Anti-Tamper Bleed Plug



Specifications subject to change without prior notification

Material Certificates, Testing and Traceability

Material Certificates and Traceability

Each manifold that we assemble is assigned a traceability code which we call our assembly A-Number.

This entails the main body of the manifold being marked with an alpha numeric code. Furthermore, the individual valveheads are pre-assembled and get their own traceability code marked onto them before being installed into the manifold bodies. These codes link each component to manufacturing, assembly and mill test reports (MTR's).

The A-Number is stored in our ISO 9001 quality management system for traceability and future reference. This A-Number corresponds to our Material Certificate Register (MCR).

An MCR is supplied with every order to the customer. This document gives a list of the corresponding material batch numbers and grades for all wetted components used to assemble that specific batch of manifolds. Along with this MCR, mill test reports (MTR's) are also supplied in a mini databook. This can be supplied in either a PDF file or a hard copy format.

All valves/manifolds are marked to a minimum of MSS-SP-25. This will include manufacturers name, material of construction, traceability code (A number), part number, temperature and pressure rating. These markings are permanently marked onto the body by either a pin stamping or laser etching process. The material of construction marking pertains to all the wetted components in the valve/manifold



Testing and Quality Control

All components undergo 100% size testing during the manufacturing process. From there the components will be assembled into the final product which gets pressure tested to confirm correct operation. To keep to the highest possible standard, 100% of the finished products are tested.

Sustech's standard testing procedure conforms to MSS-SP-99*. Each manifold is tested in such a way that every valve seat in the manifold, as well as every valvehead's stem packing and bonnet to body seal is checked. This test utilizes pressurized nitrogen gas at a minimum of 1000 psi (MSS-SP-99 only requires 80 psi). Sustech does not permit any leakage at all through the seat or the stem packing during testing.

The results are then recorded and a report compiled.

* For code applications where a hydrostatic 1.5X over-pressure shell test needs to be performed, Sustech uses the MSS-SP-105 testing procedure. This testing is done on special request.

Specifications

Manufacturing Standards and Compliances

Sustech products are designed, manufactured and tested to the highest possible standards and can have the following standards and regulations applied as required:

ASME BPVC VIII Div 1	- ASME Boiler Pressure Vessel Code Section 8 Division 1
ASME B31.1	- Power Piping
ASME B31.3	- Process Piping
ASME B16.34	- Valves Flanged, Threaded
ISO 9001:2008	- Certified Quality System
MSS-SP-99	- Instrument Valves
MSS-SP-105	- Instrument valves for code applications
MSS-SP-25	- Standard marking system for valves, fittings, flanges and unions
MSS-SP-61	- Hydrostatic testing of steel valves
NACE	- National Association of Corrosion Engineers
NACE MR0175 / ISO 15156	- Materials for use in H ₂ S-containing environments in oil and gas production
NACE MR0103	- Materials Resistant to Sulfide Stress Cracking in Corrosive Petroleum Refining Environments
NORSOK M650	- Qualification of manufacturers of special materials
EN 10204 3.1 or 3.2	- Mill Test Reports
ASME B1.20.1	- General Pipe Threads or high tolerance thread
ASTMA182	- Forged or Rolled Alloy - Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High Temperature Service
ASTMA276	- Standard Specification for Stainless Steel Bars and Shapes
ASTMA479	- Stainless Steel Bars and Shapes for Use in Boilers and other Pressure Vessels
SANS 347	- Categorization and conformity assessment criteria for all pressure equipment
P.E.R	- Pressure Equipment Regulations (South Africa)
P.E.D	- Pressure Equipment Directive (Europe)
CSA	- Canadian Standards Association
CSAB51.03	- Boiler, Pressure Vessel, and Pressure Piping Code
CRN	- Canadian Registration Number
GOST	- State Standard of the Soviet Union

Pressure Equipment Directive (P.E.D 97/23/EC) (Europe)

Due to internal bore size and internal volumes up to and including 1"/25mm, products offered in this catalogue comply with S.E.P (Sound Engineering Practice) article 3, paragraph 3 of the Pressure Equipment Directive P.E.D 97/23/EC and therefore CE marking is not applicable.

Materials

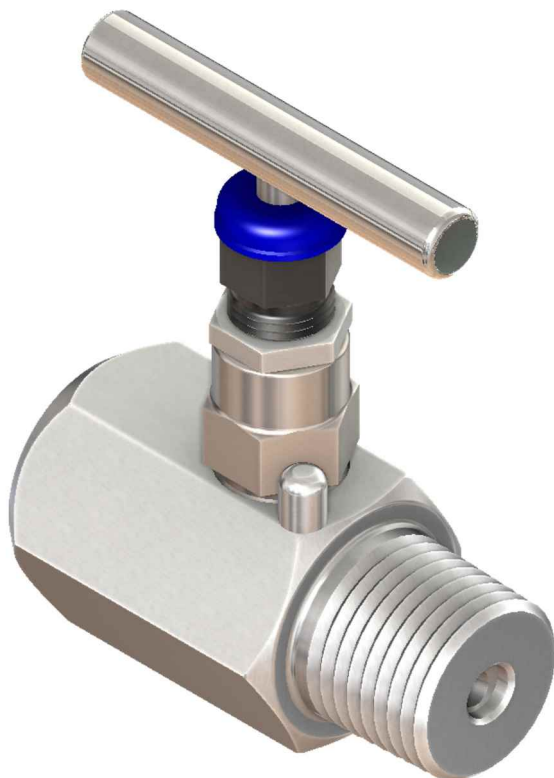
Code	Most Common Materials
H	316
L	316L
LD	316/316L Dual Certified
T	316 Ti
F	Alloy 20
K	ASTM A105
K2	ASTM A350 LF2
S	Duplex Stainless Steel
S2	Super Duplex Stainless Steel
J	Monel 400
C	Hastelloy C-276
C1	Hastelloy C-22
X	Inconel Alloy 625
Y	Inconel Alloy 825
4	304
U	Titanium Grade 5
	*Other materials available on request

Options

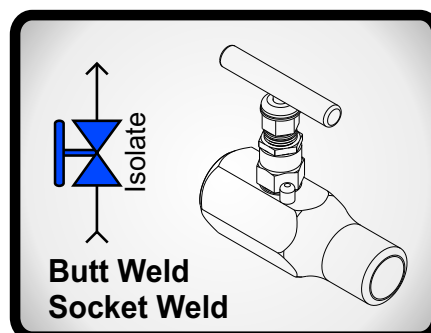
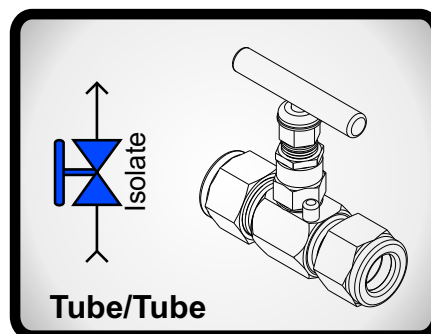
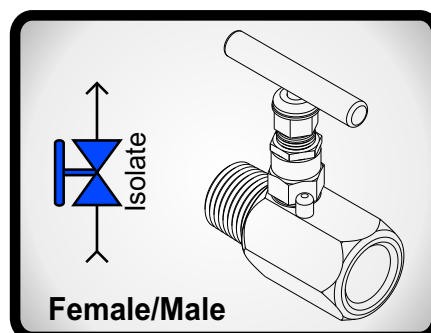
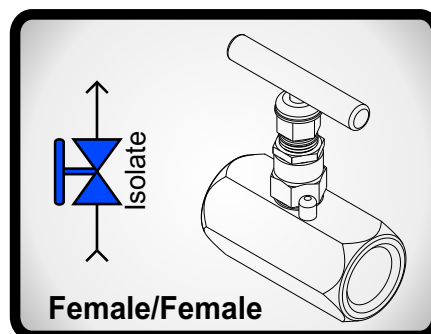
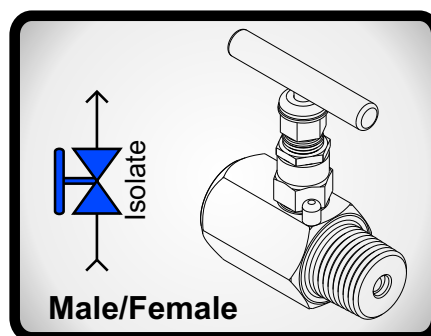
Code	Common Optional Extras
-ARC	Arctic Lube for service down to -57 degrees C
-M	Metering Trim
-OX	Oxygen Cleaning
-P	Plug installed in bleed / vent port
-Q	Bleed plug installed in bleed / vent port
-R	Bottom Mounting
-U	Upstream venting (Certain models only)
-T7	17/4 PH Condition H1075
-BSTC	Hastelloy C-276 Bonnet & Shaft & Trim
-STC	Hastelloy C-276 Shaft & Trim
-STJ	Monel 400 Shaft & Trim
-TW	Tungsten carbide ball trim
-26	Inlet to tap offset 26mm
-30	Inlet to tap offset 30mm
-40	Inlet to tap offset 40mm
-50	Inlet to tap offset 50mm
-66	Inlet to tap offset 66mm
-79	Inlet to tap offset 79mm
-100	Inlet to tap offset 100mm
-120	Inlet to tap offset 120mm
-134	Inlet to tap offset 134mm

Isolation Needle Valves - L1/A


Our isolation needle valves are primarily used for isolation of pressure gauges, switches and pressure transmitters. These high quality items are available in a variety of different shapes, sizes and can be purchased with various inlet and outlet connections.



- Superior Valvehead Technology
- Long Service Life
- Metal to metal seat for bubble tight shutoff
- Bonnet to body seal below bonnet threads isolating them from the process media
- Space saving compact design
- Many connection options available. This allows the user great flexibility and reduces amount of external components needed. Possible connections are male thread, female thread, tube end, butt weld and socket weld
- Tube end design eliminates the requirement for additional compression fittings, thus reducing costs, installation time and potential leak paths
- Full Traceability back to source
- 100% Pressure tested with nitrogen gas
- 2 Times over-pressure safety margin
- Manifold marking to a minimum of MSS-SP-25

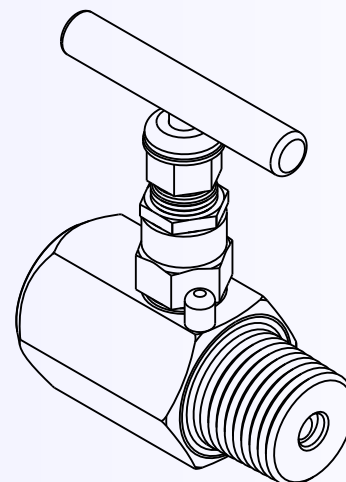
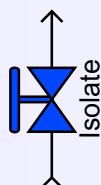
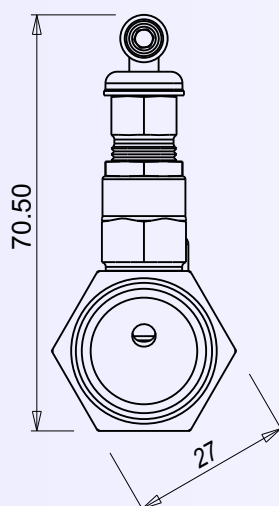
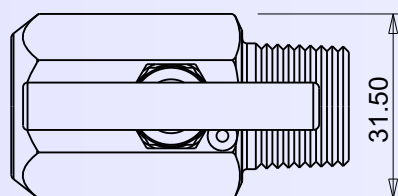
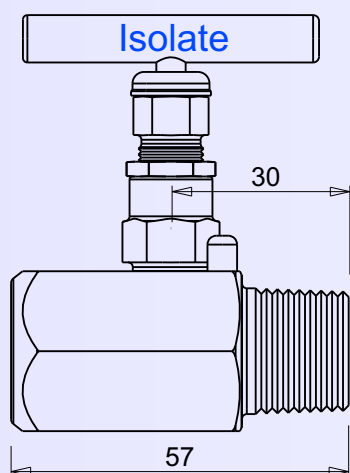


Isolation Needle Valves

Code		Range	Process Connection	Connection Size	Instrument Connection	Connection Size	Seals Material Type	No Bleed Option	No Bleed Option	Tap Options	Material	Options
		L1/	M	4	W	4	T	A	X	X	H	-OX
L1/	L Series Isolation Needle Valve											
M	Male Thread Connection											
W	Female Thread Connection											
S	Socket Weld											
B	Butt Weld											
2	1/4" NPT											
3	3/8" NPT											
4	1/2" NPT											
6	3/4" NPT											
Note: Add G to the size for BSP. Add R to the size for BSPT. Add GS for BSP Gauge Swivel												
M	Male Thread Connection											
W	Female Thread Connection											
S	Socket Weld											
B	Butt Weld											
2	1/4" NPT											
3	3/8" NPT											
4	1/2" NPT											
6	3/4" NPT											
Note: Add G to the size for BSP. Add R to the size for BSPT. Add GS for BSP Gauge Swivel												
T	PTFE Seals											
C	PCTFE Seals (KEL-F)											
F	Glass Filled PTFE											
G	Graphite Seals											
AX	No Bleeding Option											
X	All Taps Standard "T" Bar											
L	Isolate Tap Lockable (Captured)											
P	Isolate Tap Panel Mount											
Y	Isolate Tap Anti-Tamper											
H	See Materials List (Refer to page 11)											
-OX	See Options List (Refer to page 12)											

Isolation Needle Valves - L1/A

Model shown is 1/2" Male/Female



Specifications subject to change without prior notification

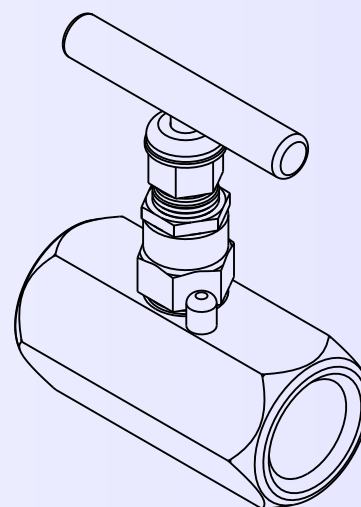
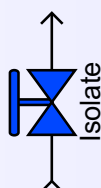
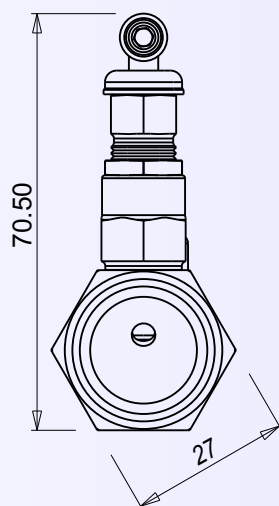
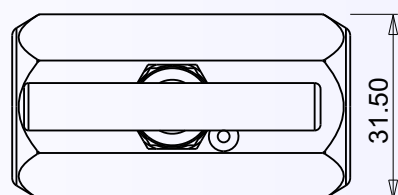
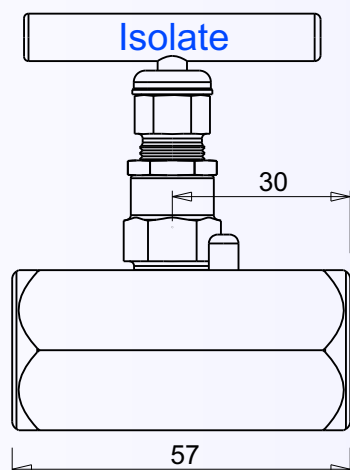
Specifications

Type	1 Way Isolation Valve (Pipe to Pipe)
Packing	PTFE Graphite
M.C.W.P Pressure	6 000 psi / 10 000 psi
Temperature Range	-30°C (-22°F) to 215°C (420°F) PTFE -30°C (-22°F) to 440°C (824°F) Graphite
Approximate Weight	260g

Connection Options

Process Connection	Instrument Connection
1/4" NPT	1/4" NPT
1/2" NPT	1/2" NPT
3/4" NPT	3/4" NPT
1/4" BSP(G)	1/4" BSP(G)
1/2" BSP(G)	1/2" BSP(G)
3/4" BSP(G)	3/4" BSP(G)

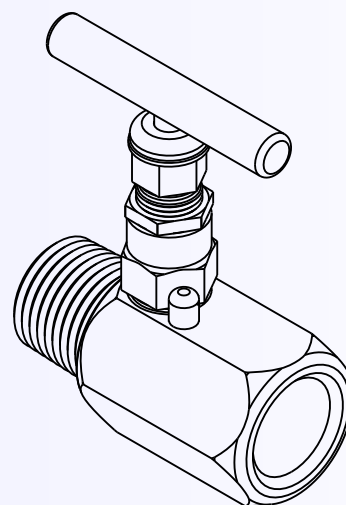
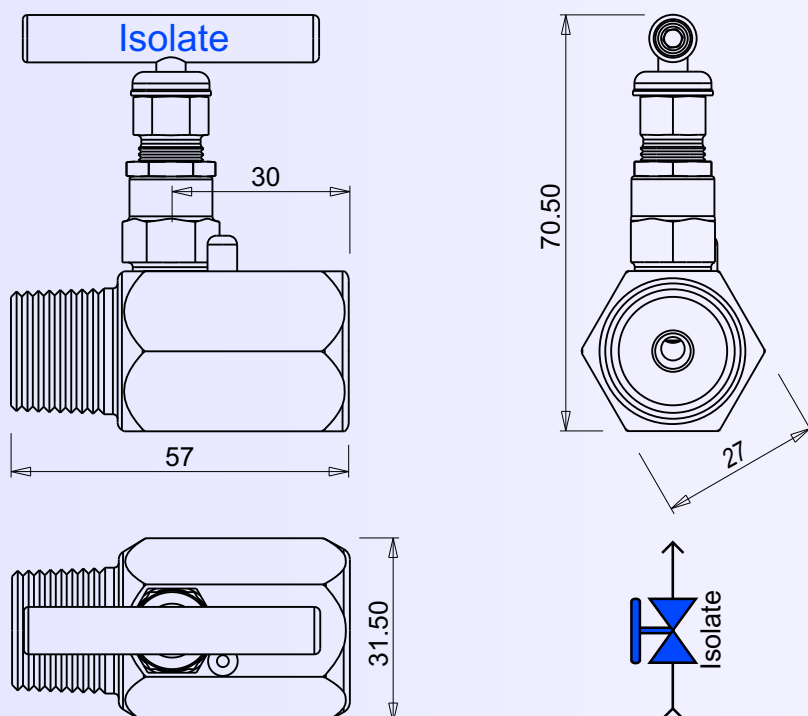
Model shown is 1/2" Female/Female



Specifications subject to change without prior notification

Isolation Needle Valves - L1/A

Model shown is 1/2" Female/Male



Specifications subject to change without prior notification

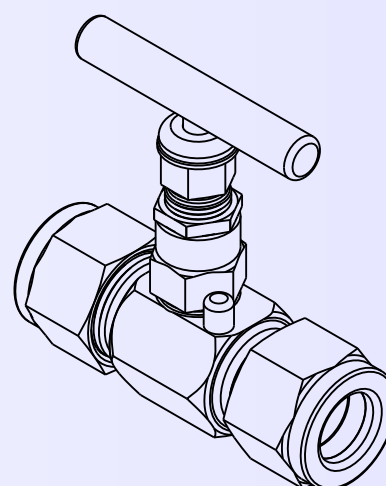
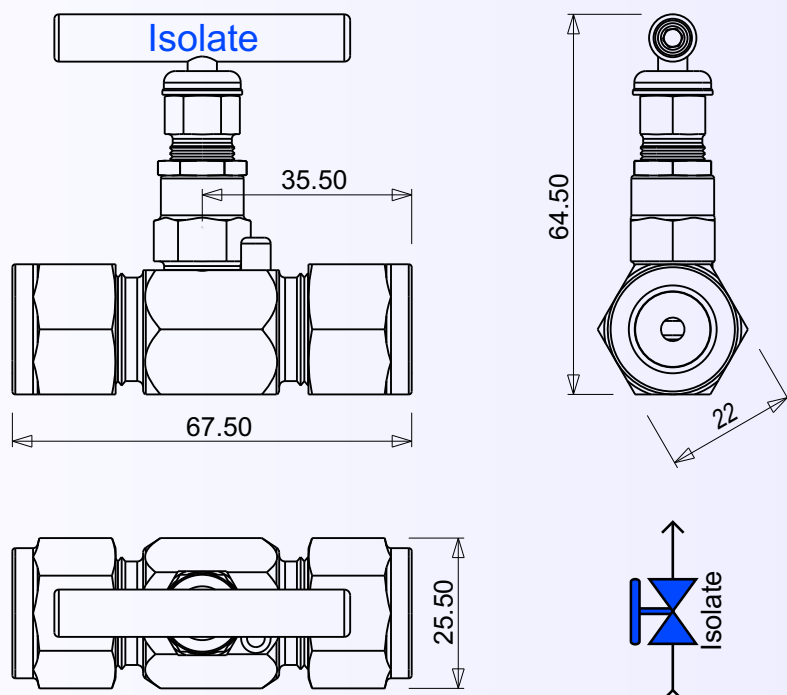
Specifications

Type	1 Way Isolation Valve (Pipe to Pipe)
Packing	PTFE Graphite
M.C.W.P Pressure	6 000 psi / 10 000 psi
Temperature Range	-30°C (-22°F) to 215°C (420°F) PTFE -30°C (-22°F) to 440°C (824°F) Graphite
Approximate Weight	250g

Connection Options

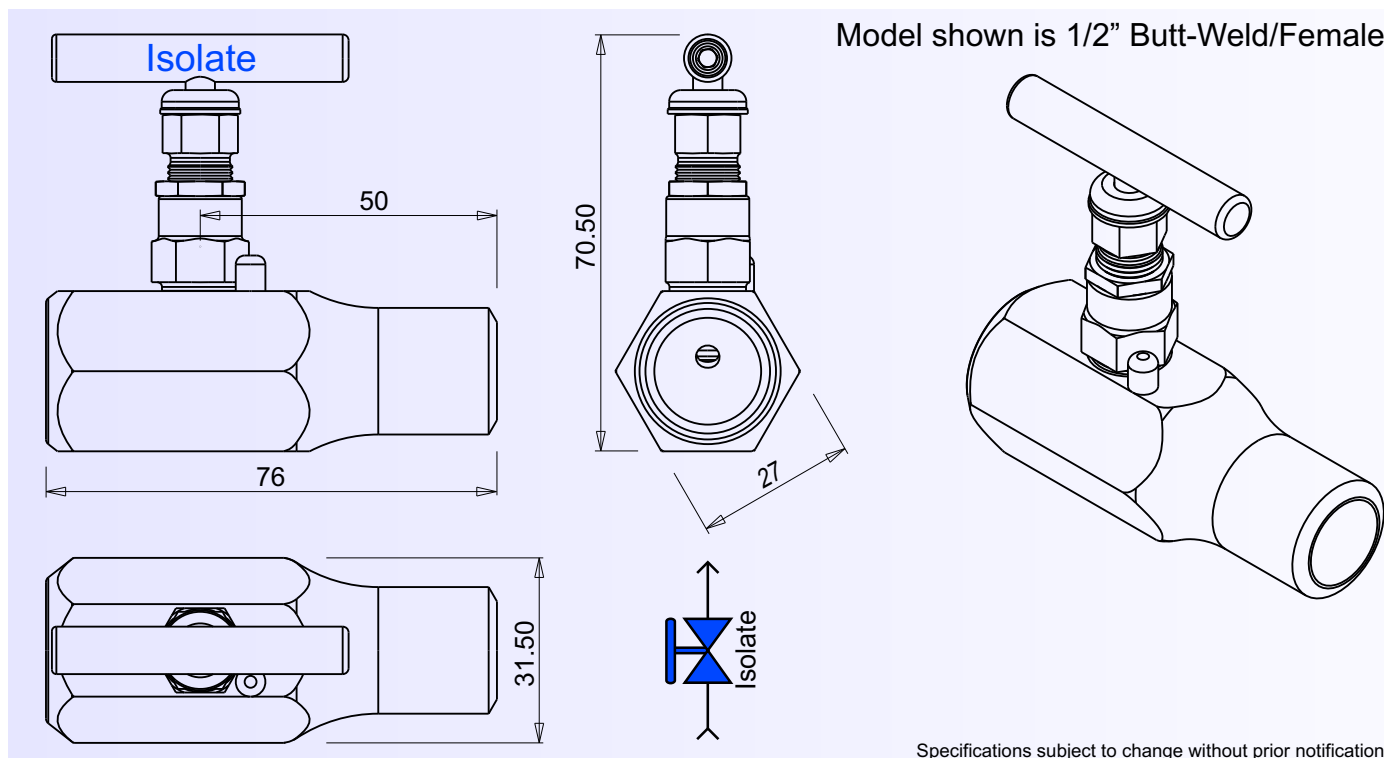
Process Connection	Instrument Connection
1/4" NPT	1/4" NPT
1/2" NPT	1/2" NPT
3/4" NPT	3/4" NPT
1/4" BSP(G)	1/4" BSP(G)
1/2" BSP(G)	1/2" BSP(G)
3/4" BSP(G)	3/4" BSP(G)

Model shown is 1/2" Tube/Tube



Specifications subject to change without prior notification

Isolation Needle Valves - L1/A



Specifications

Type	1 Way Isolation Valve (Pipe to Pipe)
Packing	PTFE Graphite
M.C.W.P Pressure	6 000 psi / 10 000 psi
Temperature Range	-30°C (-22°F) to 215°C (420°F) PTFE -30°C (-22°F) to 440°C (824°F) Graphite
Approximate Weight	306g

Connection Options

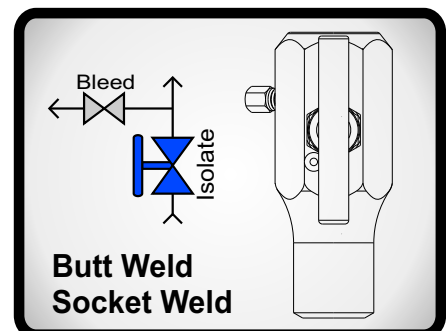
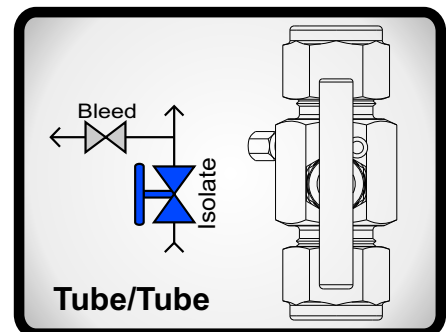
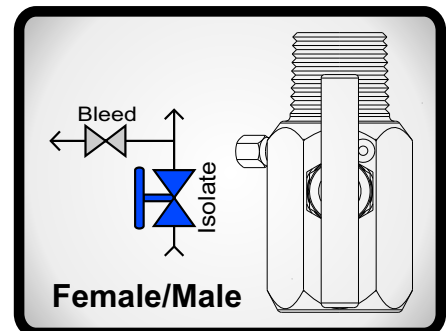
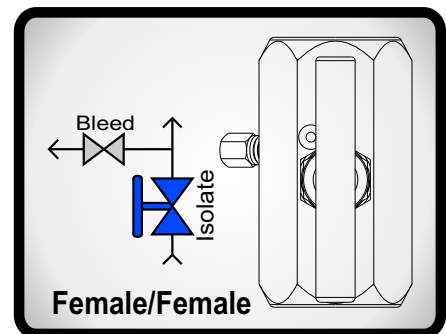
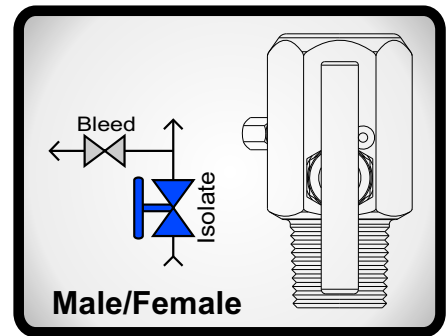
Process Connection	Instrument Connection
1/4" NPT	1/4" NPT
1/2" NPT	1/2" NPT
3/4" NPT	3/4" NPT
1/4" BSP(G)	1/4" BSP(G)
1/2" BSP(G)	1/2" BSP(G)
3/4" BSP(G)	3/4" BSP(G)

Bleeding Needle Valves - L1/B


Our bleeding gauge valves are primarily used for isolation of pressure gauges, switches and pressure transmitters. This design includes the facility to bleed off pressure for safe removal or maintenance of the instrument. Available in a variety of different shapes, sizes and connection options.



- Superior valvehead technology
- Long service life
- Metal to metal seat for bubble tight shutoff
- Bonnet to body seal below bonnet threads isolating them from the process media
- Space saving compact design
- Equipped with a 5/16" UNF bleed port for bleeding off pressure or easy connection of calibrating equipment
- Many Connection options available. This allows the user great flexibility and reduces amount of external components needed. Possible connections are male thread, female thread, tube end, butt weld and socket weld
- Tube end design eliminates the requirement for additional compression fittings, thus reducing costs, installation time and potential leak paths
- Full Traceability back to source
- 100% Pressure tested with nitrogen gas
- 2 Times over-pressure safety margin
- Manifold marking to a minimum of MSS-SP-25

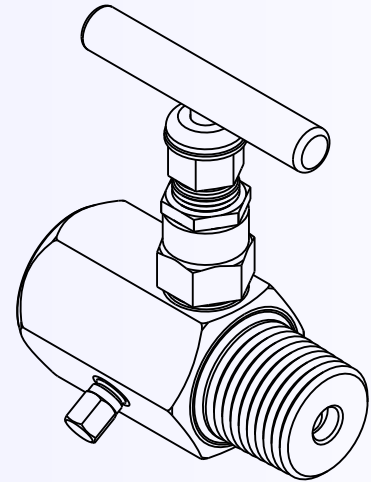
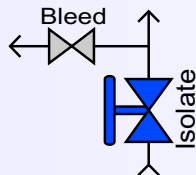
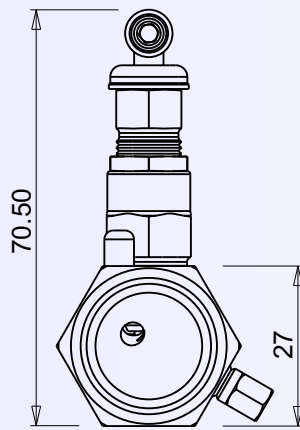
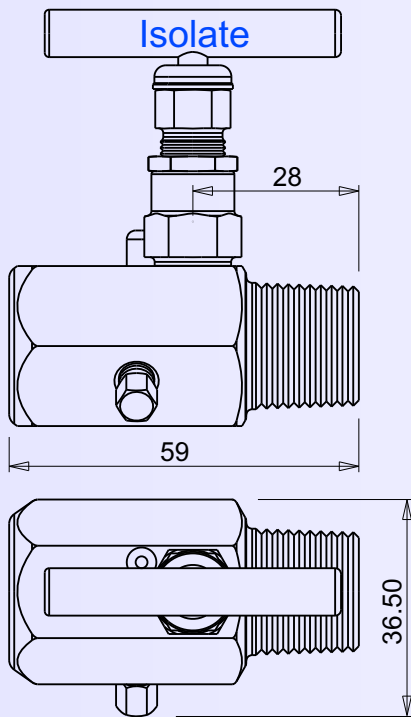


Bleeding Needle/Gauge Valves

Code		Range	Process Connection	Connection Size	Instrument Connection	Connection Size	Seals Material Type	Bleed Option	Bleed Size	Tap Options	Material	Options										
		L1/	M	4	W	4	T	B	0	X	H	-OX										
L1/	L Series Bleeding Needle/Gauge Valve																					
M	Male Thread Connection																					
W	Female Thread Connection																					
S	Socket Weld																					
B	Butt Weld																					
2	<div>1/4" NPT</div> <div>Note: Add G to the size for BSP. Add R to the size for BSPT. Add GS for BSP Gauge Swivel</div>																					
3																						
4																						
6																						
M	Male Thread Connection																					
W	Female Thread Connection																					
S	Socket Weld																					
B	Butt Weld																					
2	<div>1/4" NPT</div> <div>Note: Add G to the size for BSP. Add R to the size for BSPT. Add GS for BSP Gauge Swivel</div>																					
3																						
4																						
6																						
T	PTFE Seals																					
C	PCTFE Seals (KEL-F)																					
F	Glass Filled PTFE																					
G	Graphite Seals																					
B0	1 Bleed Port with 5/16" UNF Bleed Screw																					
X	All Taps Standard "T" Bar																					
L	Isolate Tap Lockable (Captured)																					
P	Isolate Tap Panel Mount																					
Y	Isolate Tap Anti-Tamper																					
H	See Materials List (Refer to page 11)																					
-OX	See Options List (Refer to page 12)																					

Bleeding Needle Valves - L1/B

Model shown is 1/2" Male/Female



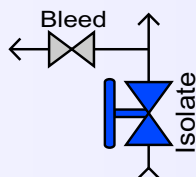
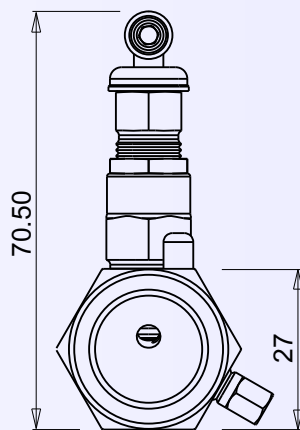
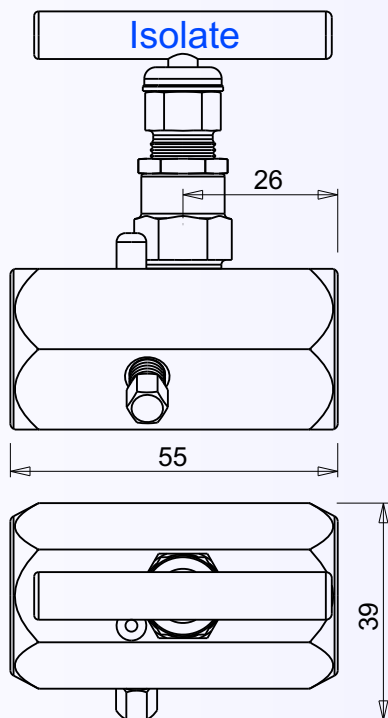
Specifications subject to change without prior notification

Specifications

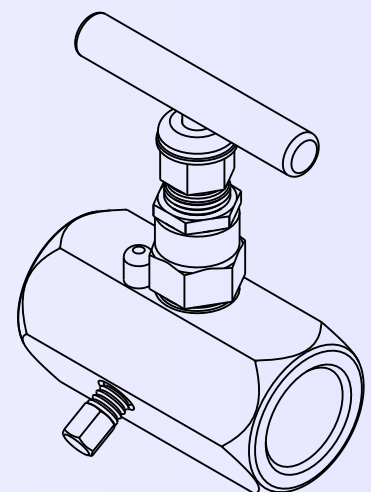
Type	1 Way Isolation Valve (Pipe to Pipe)
Packing	PTFE Graphite
M.C.W.P Pressure	6 000 psi / 10 000 psi
Temperature Range	-30°C (-22°F) to 215°C (420°F) PTFE -30°C (-22°F) to 440°C (824°F) Graphite
Approximate Weight	270g

Connection Options

Process Connection	Instrument Connection
1/4" NPT	1/4" NPT
1/2" NPT	1/2" NPT
3/4" NPT	3/4" NPT
1/4" BSP(G)	1/4" BSP(G)
1/2" BSP(G)	1/2" BSP(G)
3/4" BSP(G)	3/4" BSP(G)



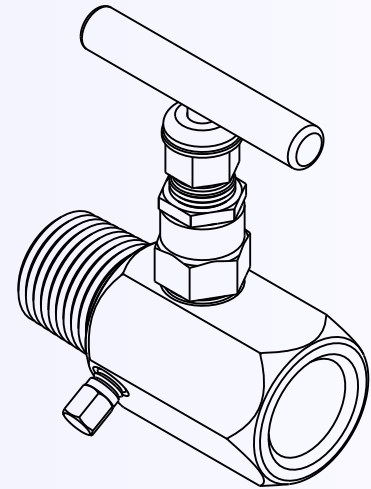
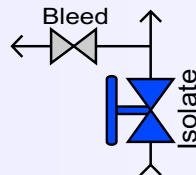
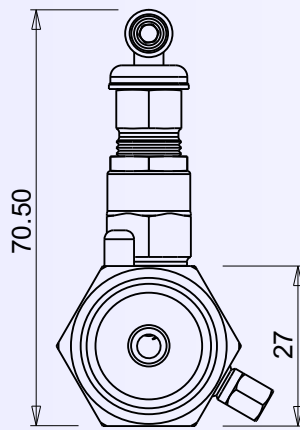
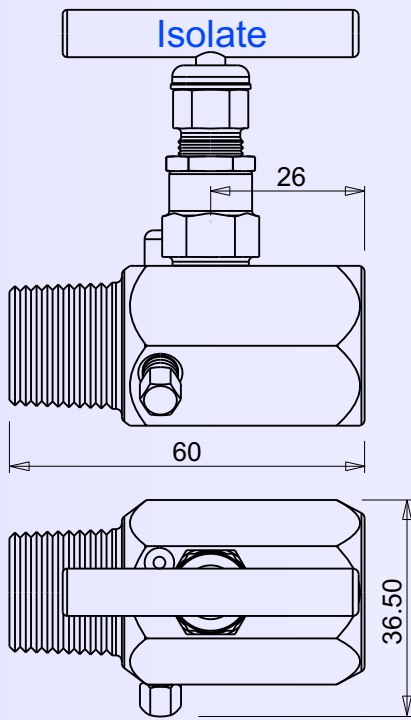
Model shown is 1/2" Female/Female



Specifications subject to change without prior notification

Bleeding Needle Valves - L1/B

Model shown is 1/2" Female/Male



Specifications subject to change without prior notification

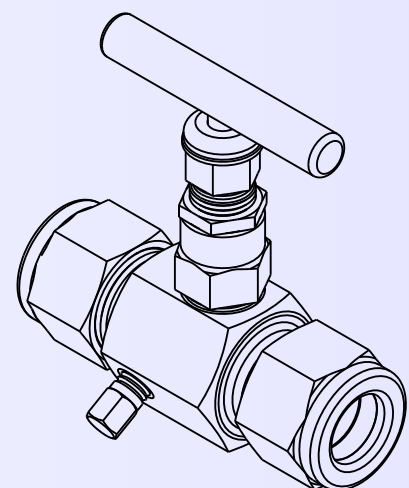
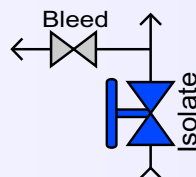
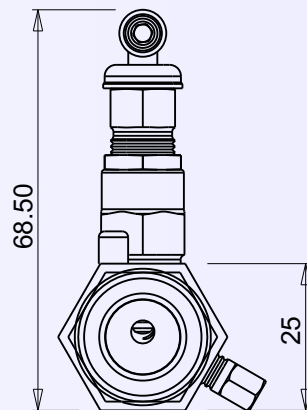
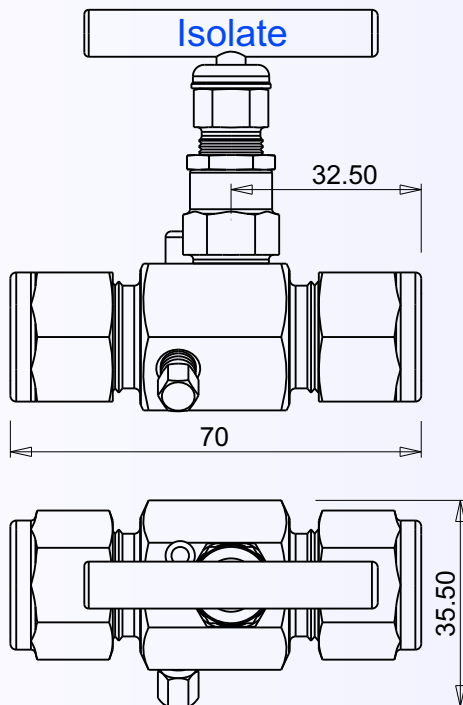
Specifications

Type	1 Way Isolation Valve (Pipe to Pipe)
Packing	PTFE Graphite
M.C.W.P Pressure	6 000 psi / 10 000 psi
Temperature Range	-30°C (-22°F) to 215°C (420°F) PTFE -30°C (-22°F) to 440°C (824°F) Graphite
Approximate Weight	260g

Connection Options

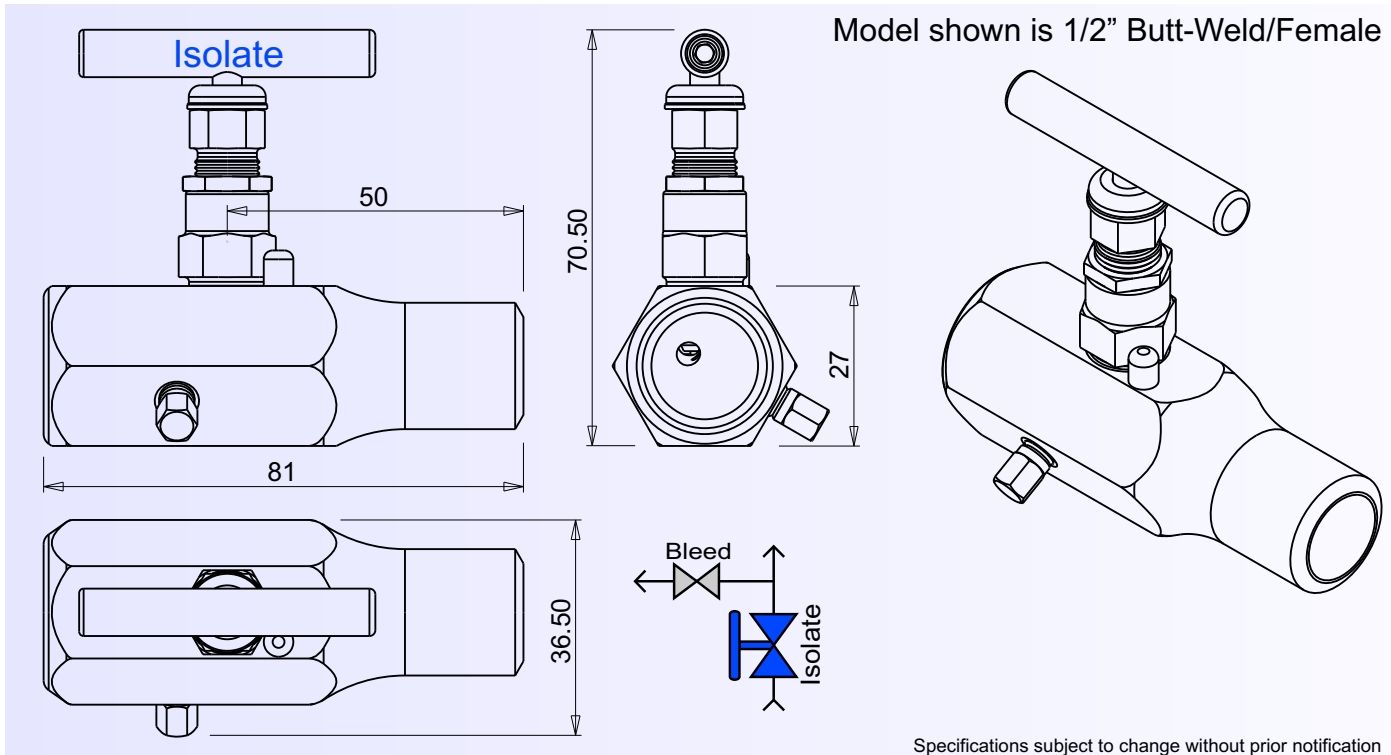
Process Connection	Instrument Connection
1/4" NPT	1/4" NPT
1/2" NPT	1/2" NPT
3/4" NPT	3/4" NPT
1/4" BSP(G)	1/4" BSP(G)
1/2" BSP(G)	1/2" BSP(G)
3/4" BSP(G)	3/4" BSP(G)

Model shown is 1/2" Tube/Tube



Specifications subject to change without prior notification

Bleeding Needle Valves - L1/B



Specifications

Type	1 Way Isolation Valve (Pipe to Pipe)
Packing	PTFE Graphite
M.C.W.P Pressure	6 000 psi / 10 000 psi
Temperature Range	-30°C (-22°F) to 215°C (420°F) PTFE -30°C (-22°F) to 440°C (824°F) Graphite
Approximate Weight	337g

Connection Options

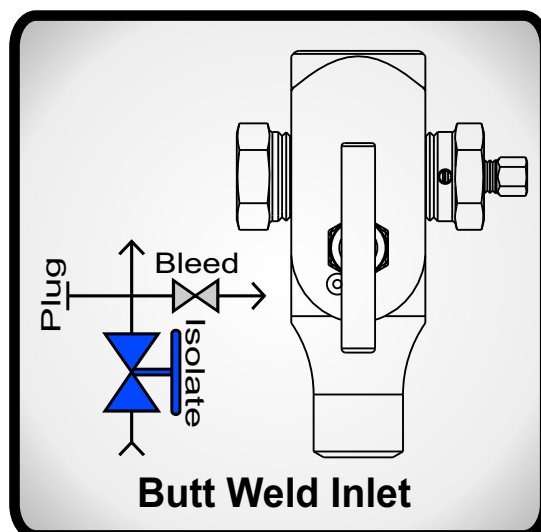
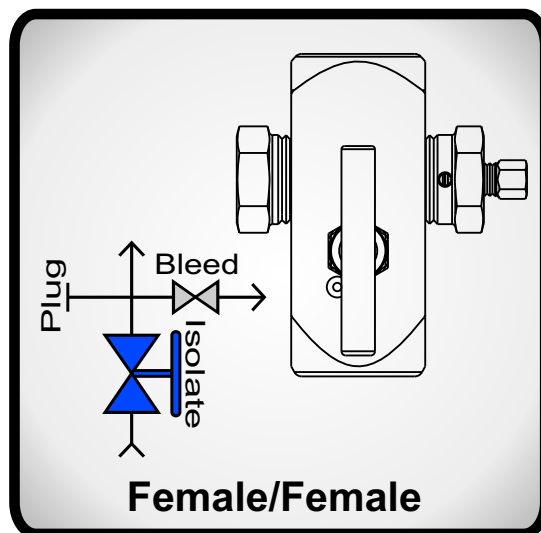
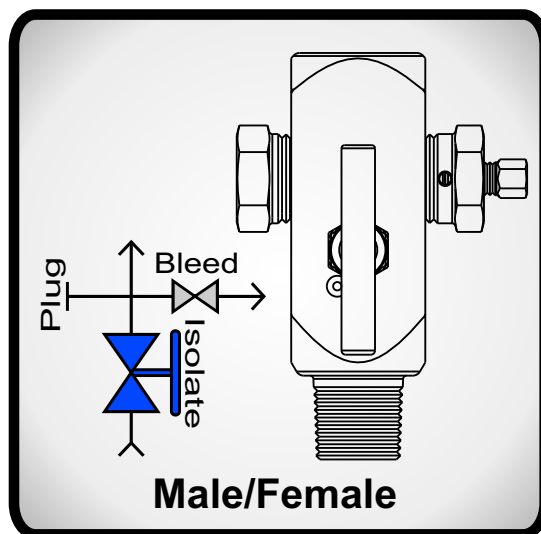
Process Connection	Instrument Connection
1/4" NPT	1/4" NPT
1/2" NPT	1/2" NPT
3/4" NPT	3/4" NPT
1/4" BSP(G)	1/4" BSP(G)
1/2" BSP(G)	1/2" BSP(G)
3/4" BSP(G)	3/4" BSP(G)

Multi-Port Gauge/Root Valves - L1/C


Our multi-port gauge valves are primarily used for isolation of pressure gauges, switches and pressure transmitters. When used as a root valve, great savings can be made due to the inherently simple design. Multiple outlets allow many instruments to be attached with ease. Available in a variety of different shapes, sizes and connection options.



- Superior valvehead technology
- Long service Life
- Metal to metal seat for bubble tight shutoff
- Bonnet to body seal below bonnet threads isolating them from the process media
- Space saving compact design
- Reduced leak paths
- 3 x ½" NPT outlets allowing connection of multiple instruments to one valve, reducing the number of tap-in points into the process piping
- Cost and time saving due to simpler installation procedures
- Many connection options available. This allows the user great flexibility and reduces amount of external components needed. Possible connections are male thread, female thread, tube end, butt weld and socket weld
- Full Traceability back to source
- 100% Pressure tested with nitrogen gas
- 2 Times over-pressure safety margin
- Manifold marking to a minimum of MSS-SP-25

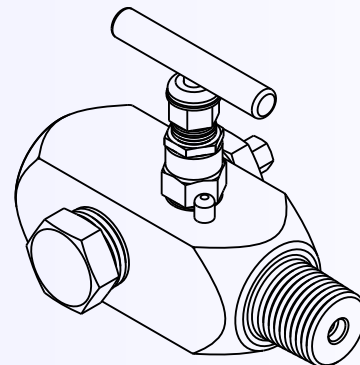
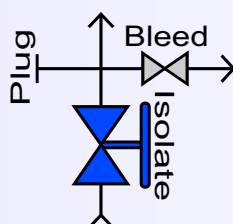
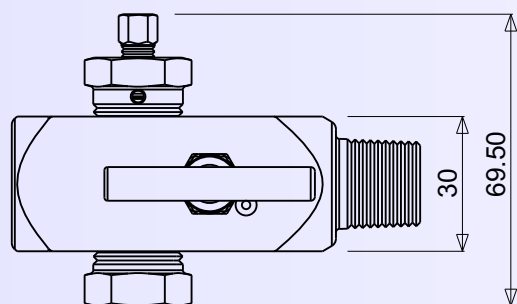
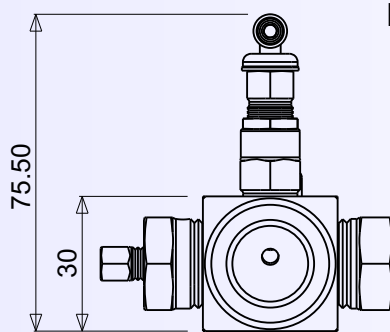
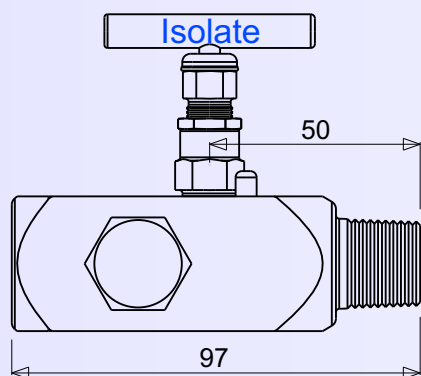


Multiport Gauge/Root Valves

Code		Range	Process Connection	Connection Size	Instrument Connection	Connection Size	Seals Material Type	Multiport Option	Multiport Size	Tap Options	Material	Options
		L1/	M	4	W	4	T	C	4	X	H	-OX
L1/	L Series Multiport Gauge/Root Valve											
M	Male Thread Connection											
W	Female Thread Connection											
S	Socket Weld											
B	Butt Weld											
2	1/4" NPT Note: Add G to the size for BSP. Add R to the size for BSPT. Add GS for BSP Gauge Swivel											
3												
4												
6												
M	Male Thread Connection											
W	Female Thread Connection											
S	Socket Weld											
B	Butt Weld											
2	1/4" NPT Note: Add G to the size for BSP. Add R to the size for BSPT. Add GS for BSP Gauge Swivel											
3												
4												
6												
T	PTFE Seals											
C	PCTFE Seals (KEL-F)											
F	Glass Filled PTFE											
G	Graphite Seals											
C2	Multiport Outlets - 2 x 1/4" NPT outlets (1 with plug and 1 with bleed plug installed)											
C4	Multiport Outlets - 2 x 1/2" NPT outlets (1 with plug and 1 with bleed plug installed)											
X	All Taps Standard "T" Bar											
L	Isolate Tap Lockable (Captured)											
P	Isolate Tap Panel Mount											
Y	Isolate Tap Anti-Tamper											
H	See Materials List (Refer to page 11)											
-OX	See Options List (Refer to page 12)											

Multi-Port Gauge/Root Valves - L1/C

Model shown is 1/2" Male/Female



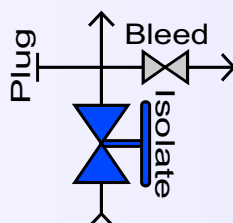
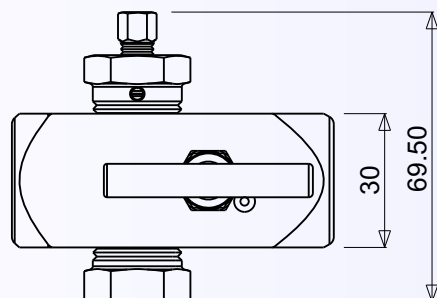
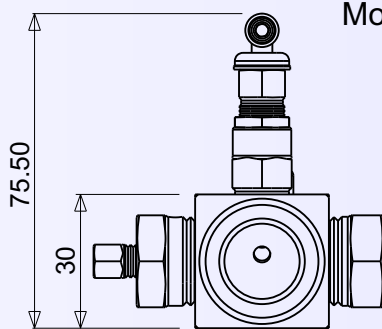
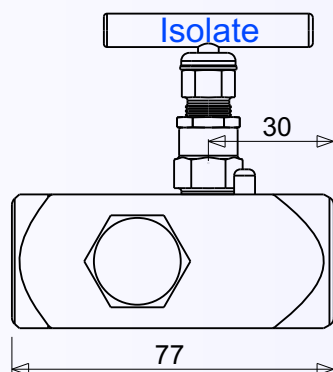
Plug and bleed plug shown for illustrative purposes only
Specifications subject to change without prior notification

Specifications

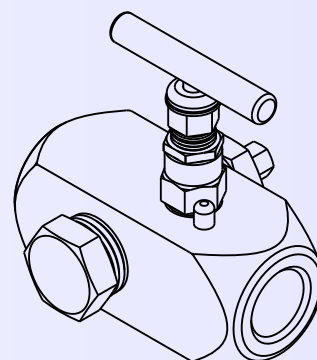
Type	1 Way Multi-Port Valve (Pipe to Pipe)
Packing	PTFE Graphite
M.C.W.P Pressure	6 000 psi / 10 000 psi
Temperature Range	-30°C (-22°F) to 215°C (420°F) PTFE -30°C (-22°F) to 440°C (824°F) Graphite
Approximate Weight	675g

Connection Options

Process Connection	Instrument Connection
1/4" NPT	1/4" NPT
1/2" NPT	1/2" NPT
3/4" NPT	3/4" NPT
1/4" BSP(G)	1/4" BSP(G)
1/2" BSP(G)	1/2" BSP(G)
3/4" BSP(G)	3/4" BSP(G)



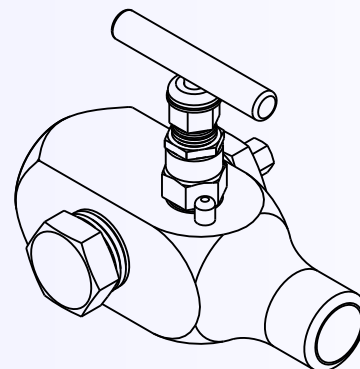
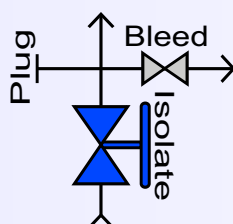
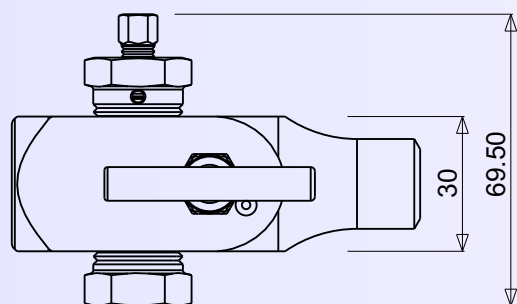
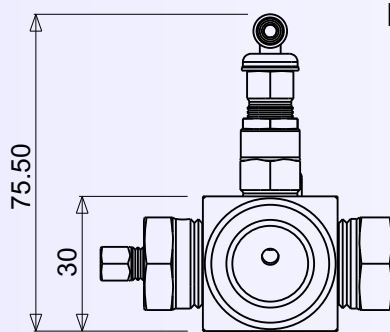
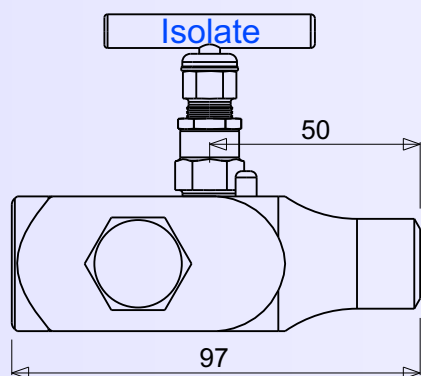
Model shown is 1/2" Female/Female



Plug and bleed plug shown for illustrative purposes only
Specifications subject to change without prior notification

Multi-Port Gauge/Root Valves - L1/C

Model shown is 1/2" Female/Male



Plug and bleed plug shown for illustrative purposes only
Specifications subject to change without prior notification

Specifications

Type	1 Way Multi-Port Valve (Pipe to Pipe)
Packing	PTFE Graphite
M.C.W.P Pressure	6 000 psi / 10 000 psi
Temperature Range	-30°C (-22°F) to 215°C (420°F) PTFE -30°C (-22°F) to 440°C (824°F) Graphite
Approximate Weight	640g

Connection Options

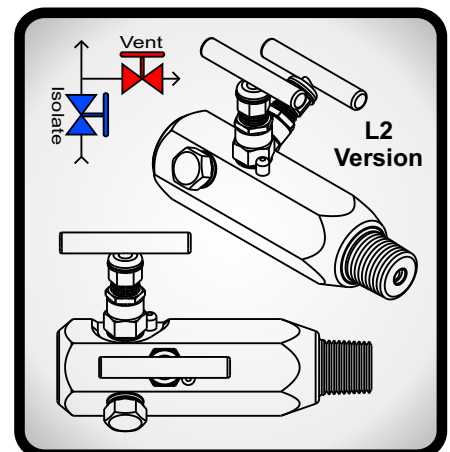
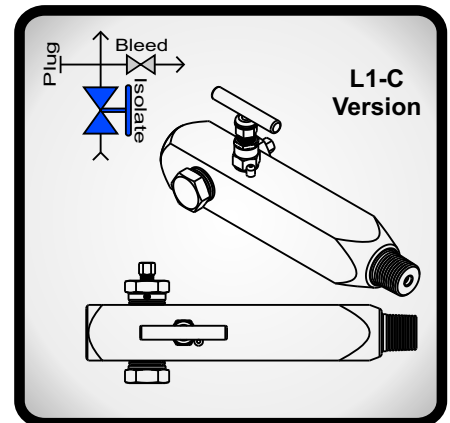
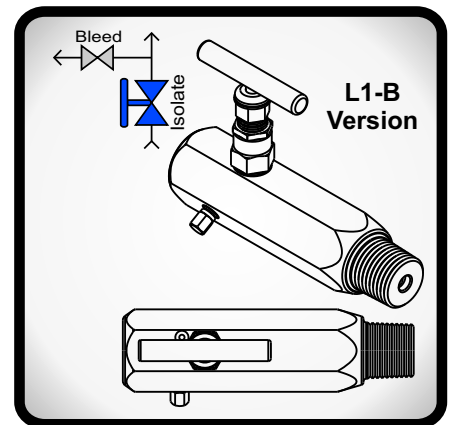
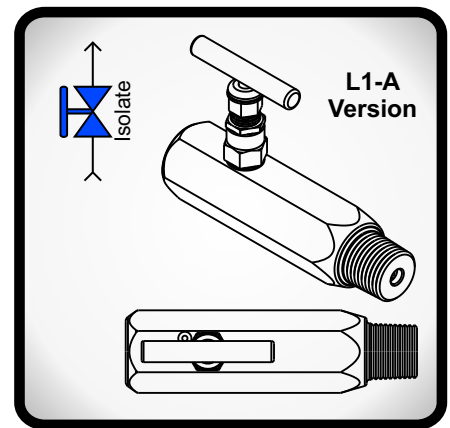
Process Connection	Instrument Connection
1/4" NPT	1/4" NPT
1/2" NPT	1/2" NPT
3/4" NPT	3/4" NPT
1/4" BSP(G)	1/4" BSP(G)
1/2" BSP(G)	1/2" BSP(G)
3/4" BSP(G)	3/4" BSP(G)

Extended Inlet Valves

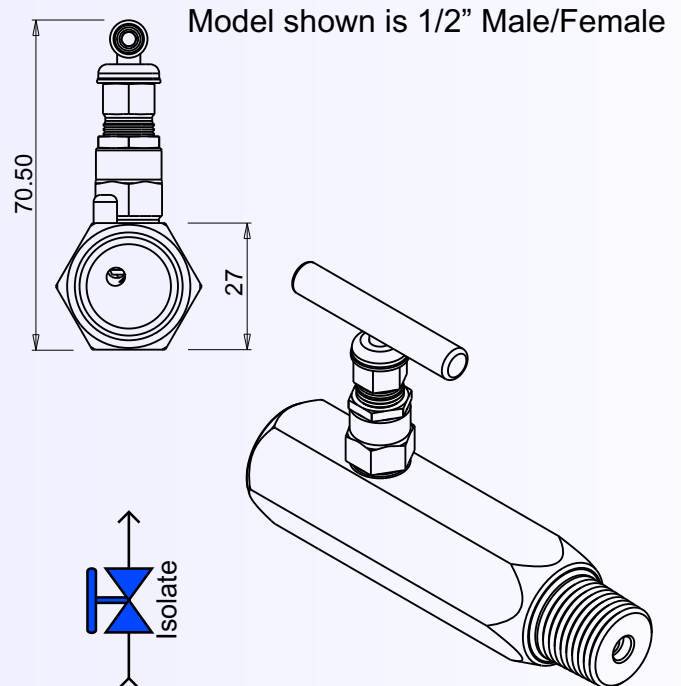
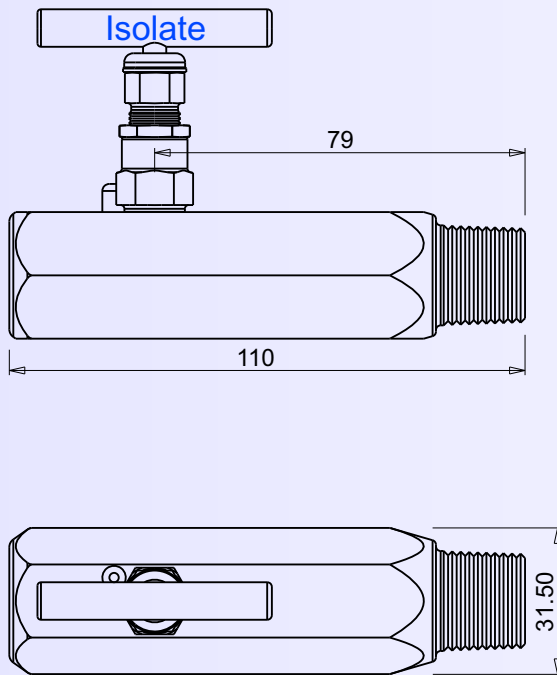
Our extended inlet gauge/needle/root valves are primarily used for isolation of pressure gauges, switches and pressure. The extended inlet proves very useful in places where there is constrained access or for customer specific requirements. Another advantage of the design is to increase the distance of the tap to the process media when extreme temperatures are involved, reducing the thermal load on the tap. Available in a variety of different extended lengths.



- Superior valvehead technology
- Long service life
- Metal to metal seat for bubble tight shutoff
- Bonnet to body seal below bonnet threads isolating them from the process media
- Large spacing between the taps reducing the possibility of pinching fingers
- Increased stand-off distance from the process piping in installations with confined spaces
- Increased distance from process reducing thermal load to the packing
- Many connection options available. This allows the user great flexibility and reduces amount of external components needed. Possible connections are male thread, female thread, tube end, butt weld and socket weld
- Full Traceability back to source
- 100% Pressure tested with nitrogen gas
- 2 Times over-pressure safety margin
- Manifold marking to a minimum of MSS-SP-25



Extended Inlet Valves



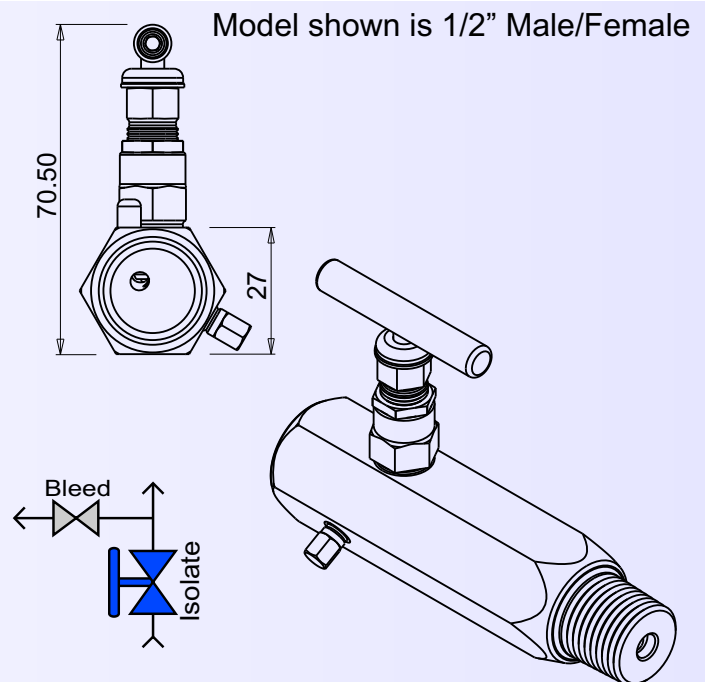
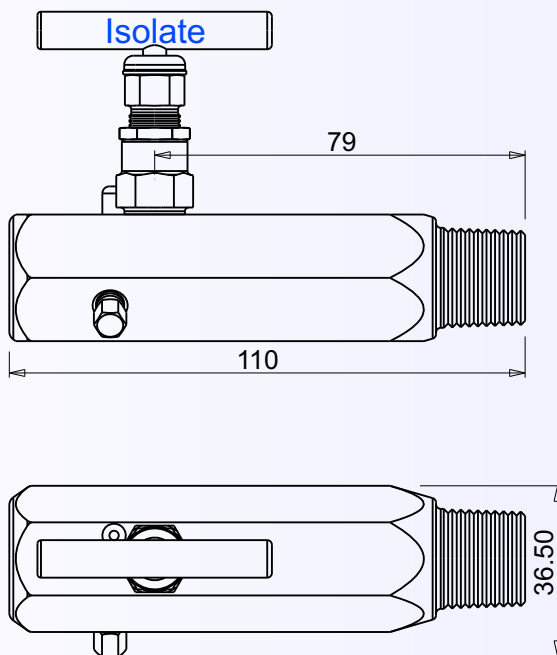
Specifications subject to change without prior notification

Specifications

Type	2 Way Extended Inlet (Pipe to Pipe)
Packing	PTFE Graphite
M.C.W.P Pressure	6 000 psi / 10 000 psi
Temperature Range	-30°C (-22°F) to 215°C (420°F) PTFE -30°C (-22°F) to 440°C (824°F) Graphite
Approximate Weight	515g

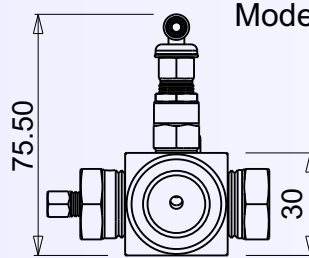
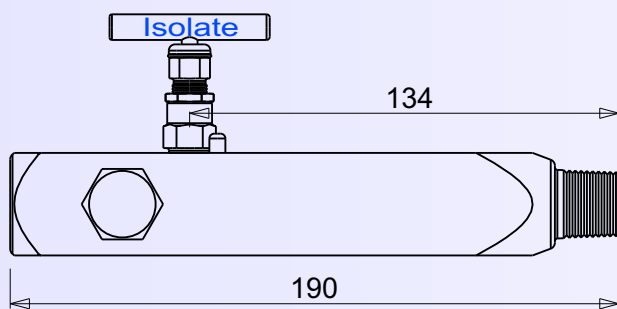
Connection Options

Process Connection	Instrument Connection
1/4" NPT	1/4" NPT
1/2" NPT	1/2" NPT
3/4" NPT	3/4" NPT
1/4" BSP(G)	1/4" BSP(G)
1/2" BSP(G)	1/2" BSP(G)
3/4" BSP(G)	3/4" BSP(G)



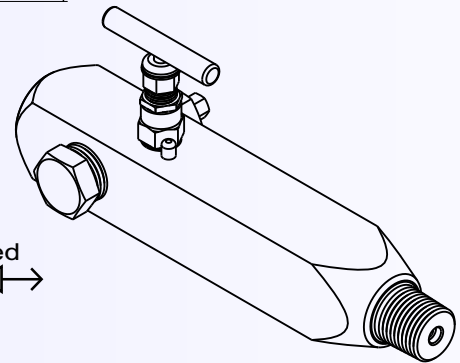
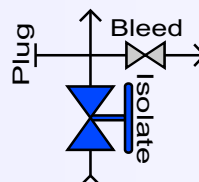
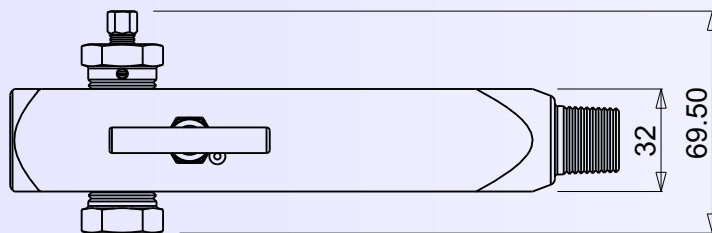
Plug shown for illustrative purposes only
Specifications subject to change without prior notification

Extended Inlet Valves



Model shown is 1/2" Male/Female

**L1-C
Version**



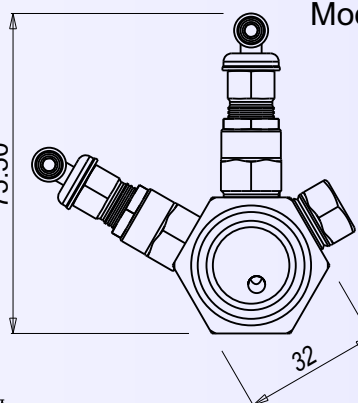
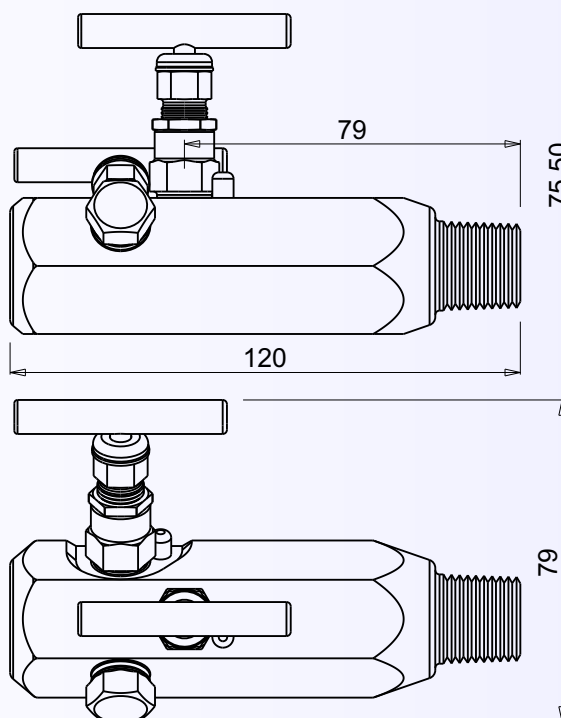
Plug shown for illustrative purposes only
Specifications subject to change without prior notification

Specifications

Type	1 and 2 Way Extended Inlet (Pipe to Pipe)
Packing	PTFE Graphite
M.C.W.P Pressure	6 000 psi / 10 000 psi
Temperature Range	-30°C (-22°F) to 215°C (420°F) PTFE -30°C (-22°F) to 440°C (824°F) Graphite
Approximate Weight	820-1350g

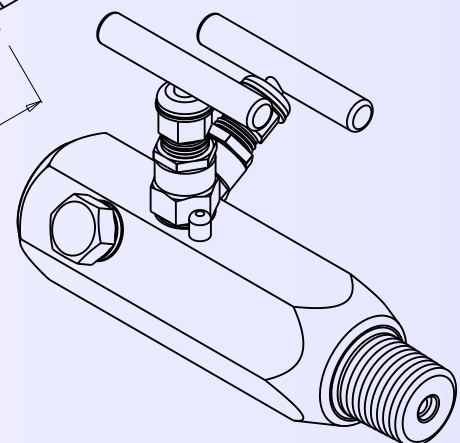
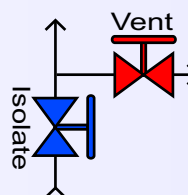
Connection Options

Process Connection	Instrument Connection
1/4" NPT	1/4" NPT
1/2" NPT	1/2" NPT
3/4" NPT	3/4" NPT
1/4" BSP(G)	1/4" BSP(G)
1/2" BSP(G)	1/2" BSP(G)
3/4" BSP(G)	3/4" BSP(G)



Model shown is 1/2" Male/Female

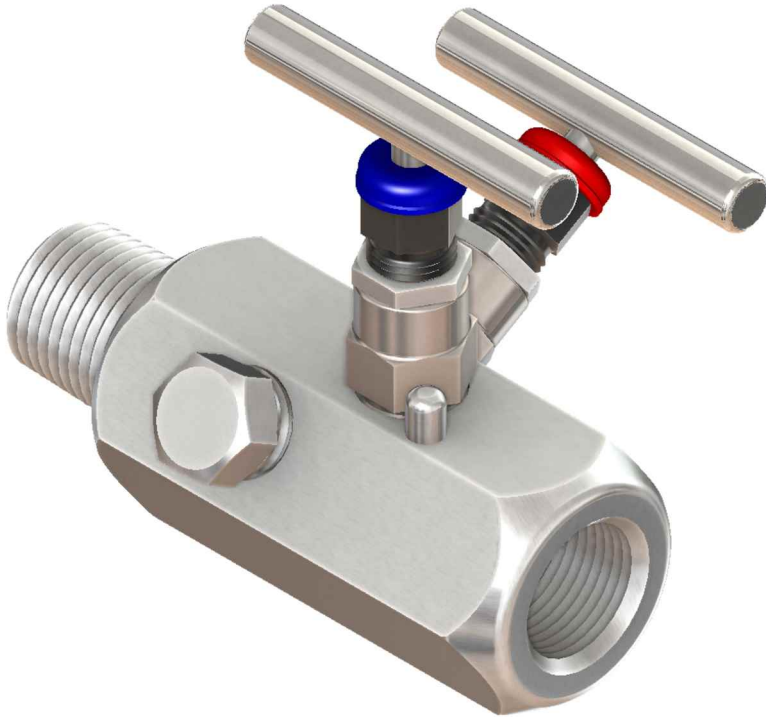
**L2
Version**



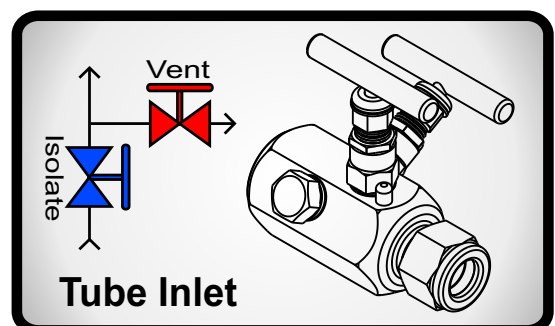
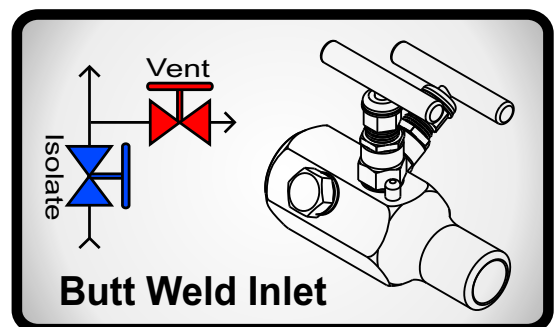
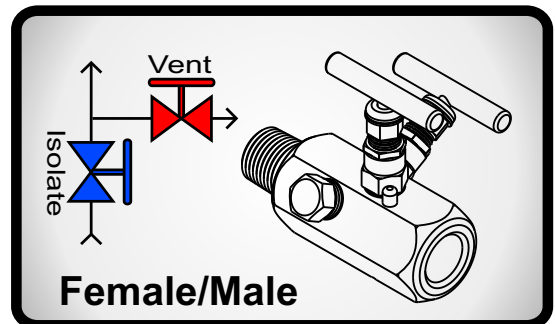
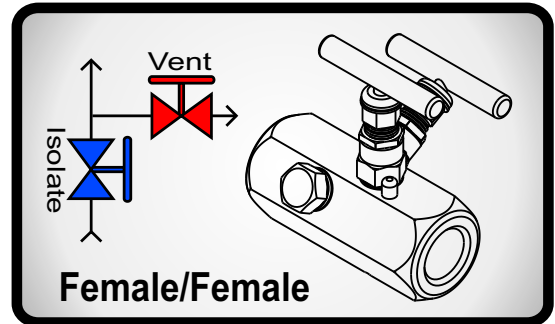
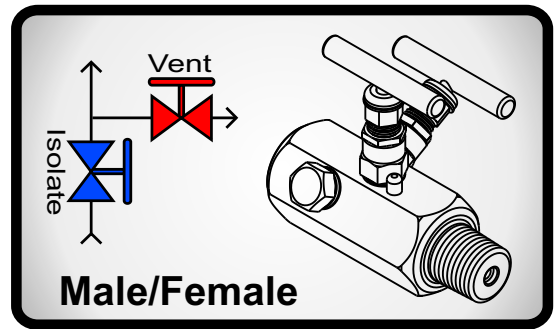
Plug shown for illustrative purposes only
Specifications subject to change without prior notification

Block and Vent Gauge Manifolds-L2

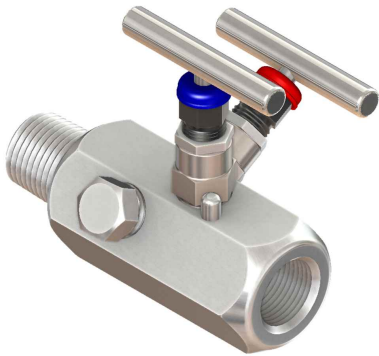
Our block and vent gauge valves are primarily used for isolation and maintenance of pressure gauges, switches and pressure transmitters. Available in a variety of different shapes, sizes and connection options.



- Superior valvehead technology
- Long service life
- Metal to metal seat for bubble tight shutoff
- Bonnet to body seal below bonnet threads isolating them from the process media
- Space saving compact design
- Reduced leak paths
- Large spacing between the taps reducing the possibility of pinching fingers
- Ergonomic angled tap design allowing the user to access both valveheads from one side of the manifold
- Equipped with a 1/4" NPT vent port for easy connection of vent exhaust piping. Alternatively, with the addition of our bleed plug, it is possible to use this port for calibration.
- Many connection options available. This allows the user great flexibility and reduces amount of external components needed. Possible connections are male thread, female thread, tube end, butt weld and socket weld
- Full Traceability back to source
- 100% Pressure tested with nitrogen gas
- 2 Times over-pressure safety margin
- Manifold marking to a minimum of MSS-SP-25

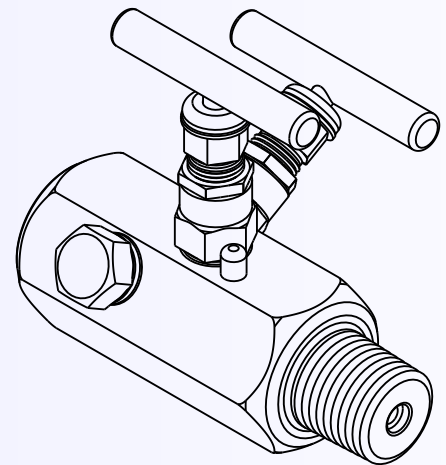
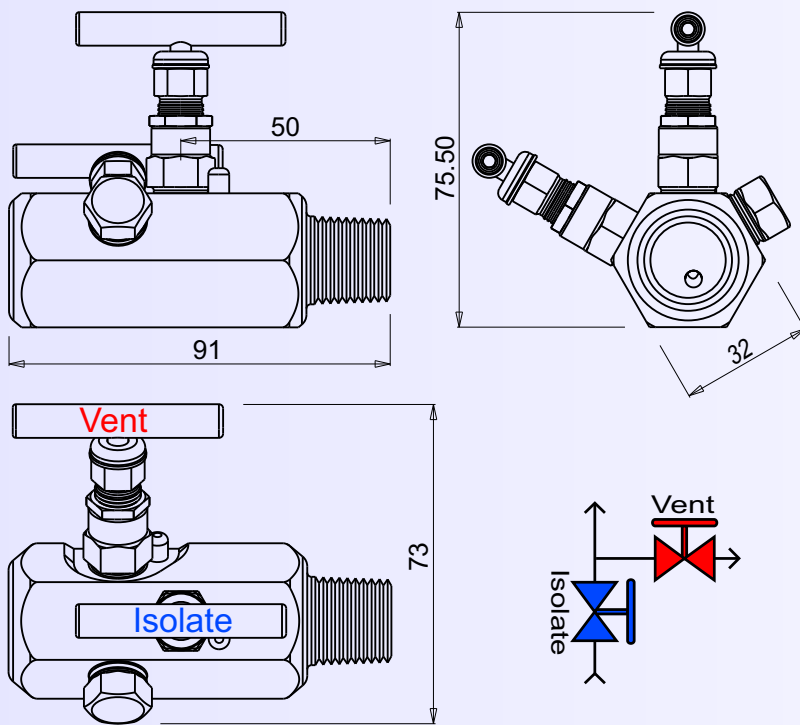


Block & Vent Gauge Manifolds

Code		Range	Process Connection	Connection Size	Instrument Connection	Connection Size	Seals Material Type	Vent/Test Port Option	Vent/Test Port Size	Tap Options	Material	Options
		L2/	M	4	W	4	T	V	2	X	H	-OX
L2/	L Series Block and Vent Gauge Manifold											
M	Male Thread Connection											
W	Female Thread Connection											
S	Socket Weld											
B	Butt Weld											
2	1/4" NPT Note: Add G to the size for BSP. Add R to the size for BSPT. Add GS for BSP Gauge Swivel											
3												
4												
6												
M	Male Thread Connection											
W	Female Thread Connection											
S	Socket Weld											
B	Butt Weld											
2	1/4" NPT Note: Add G to the size for BSP. Add R to the size for BSPT. Add GS for BSP Gauge Swivel											
3												
4												
6												
T	PTFE Seals											
C	PCTFE Seals (KEL-F)											
F	Glass Filled PTFE											
G	Graphite Seals											
V2	1/4" NPT Vent/Test Port											
X	All Taps Standard "T" Bar											
A	All Taps Anti-Tamper											
H	All Taps Lockable (Captured)											
K	Vent Tap Lockable (Captured)											
L	Isolate Tap Lockable (Captured)											
V	Vent Tap Anti-Tamper											
Y	Isolate Taps Anti-Tamper											
H	See Materials List (Refer to page 11)											
-OX	See Options List (Refer to page 12)											

Block and Vent Gauge Manifolds-L2

Model shown is 1/2" Male/Female



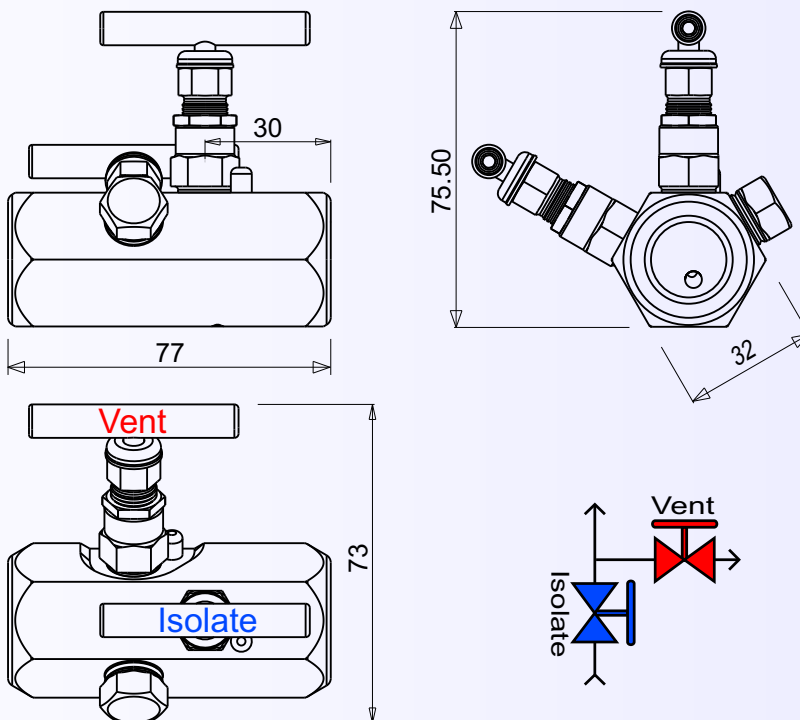
Plug shown for illustrative purposes only
Specifications subject to change without prior notification

Specifications

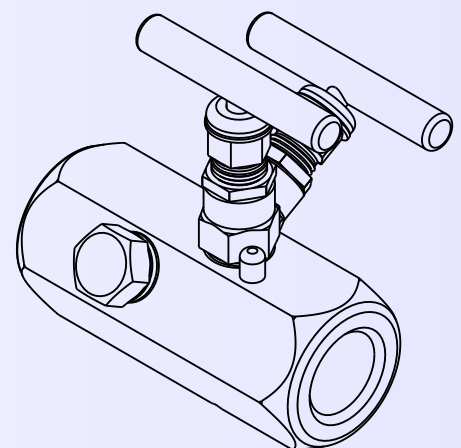
Type	2 Way Block and Vent (Pipe to Pipe)
Packing	PTFE Graphite
M.C.W.P Pressure	6 000 psi / 10 000 psi
Temperature Range	-30°C (-22°F) to 215°C (420°F) PTFE -30°C (-22°F) to 440°C (824°F) Graphite
Approximate Weight	650g

Connection Options

Process Connection	Instrument Connection
1/4" NPT	1/4" NPT
1/2" NPT	1/2" NPT
3/4" NPT	3/4" NPT
1/4" BSP(G)	1/4" BSP(G)
1/2" BSP(G)	1/2" BSP(G)
3/4" BSP(G)	3/4" BSP(G)



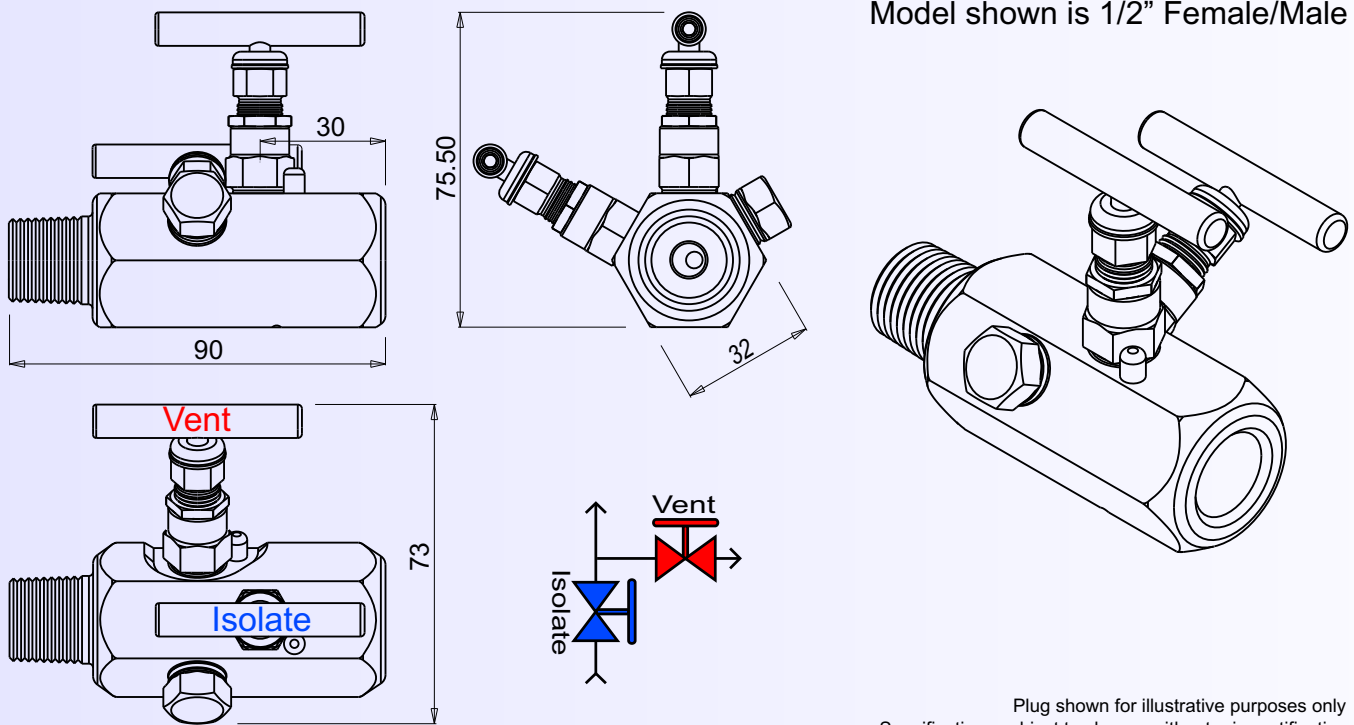
Model shown is 1/2" Female/Female



Plug shown for illustrative purposes only
Specifications subject to change without prior notification

Block and Vent Gauge Manifolds-L2

Model shown is 1/2" Female/Male



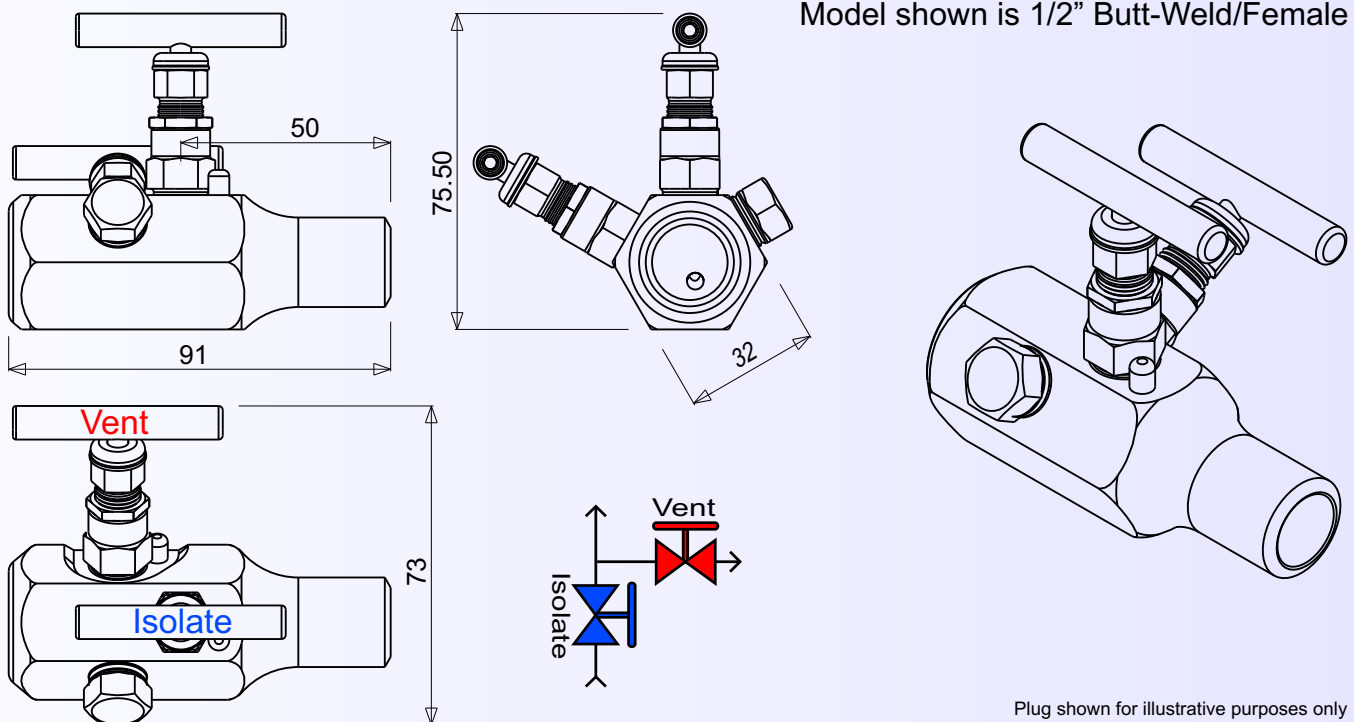
Specifications

Type	2 Way Block and Vent (Pipe to Pipe)
Packing	PTFE Graphite
M.C.W.P Pressure	6 000 psi / 10 000 psi
Temperature Range	-30°C (-22°F) to 215°C (420°F) PTFE -30°C (-22°F) to 440°C (824°F) Graphite
Approximate Weight	650g

Connection Options

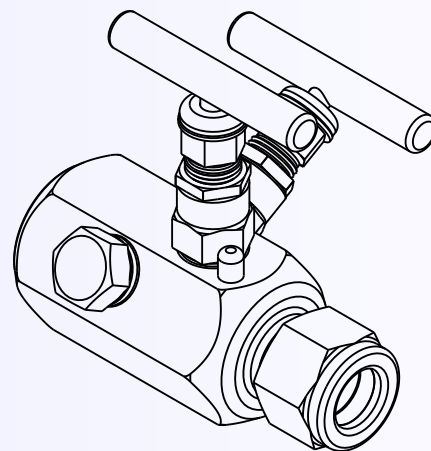
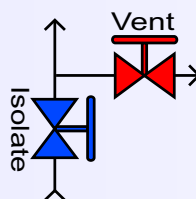
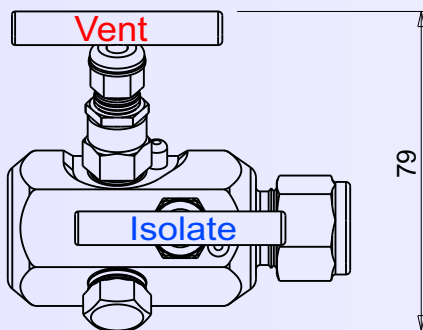
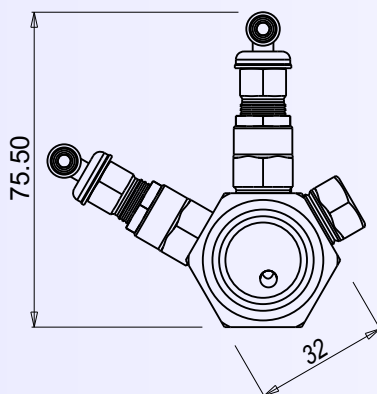
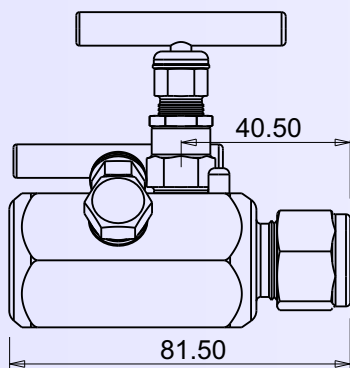
Process Connection	Instrument Connection
1/4" NPT	1/4" NPT
1/2" NPT	1/2" NPT
3/4" NPT	3/4" NPT
1/4" BSP(G)	1/4" BSP(G)
1/2" BSP(G)	1/2" BSP(G)
3/4" BSP(G)	3/4" BSP(G)

Model shown is 1/2" Butt-Weld/Female



Block and Vent Gauge Manifolds-L2

Model shown is 1/2" Tube/Female



Plug shown for illustrative purposes only
Specifications subject to change without prior notification

Specifications

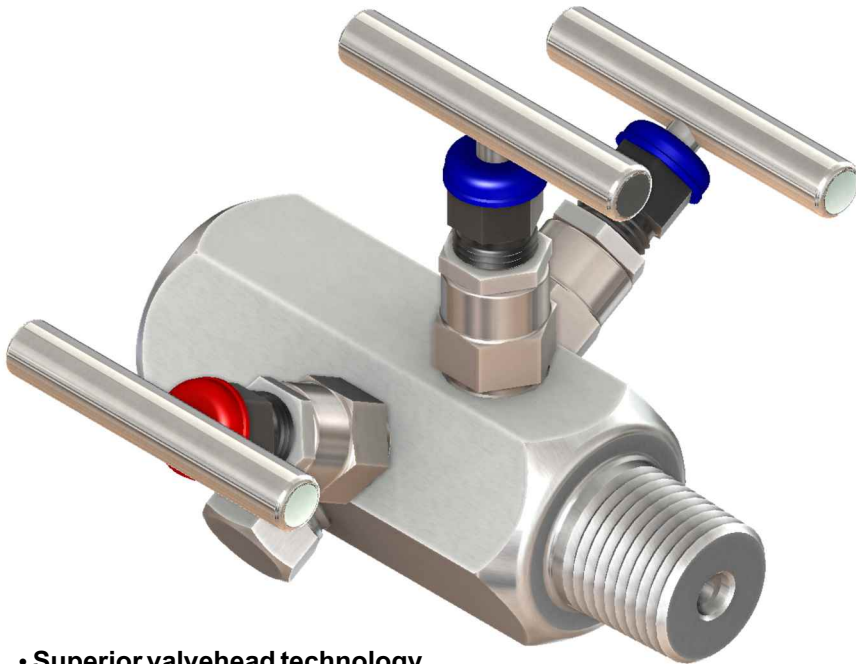
Type	2 Way Block and Vent (Pipe to Pipe)
Packing	PTFE Graphite
M.C.W.P Pressure	6 000 psi / 10 000 psi
Temperature Range	-30°C (-22°F) to 215°C (420°F) PTFE -30°C (-22°F) to 440°C (824°F) Graphite
Approximate Weight	640g

Connection Options

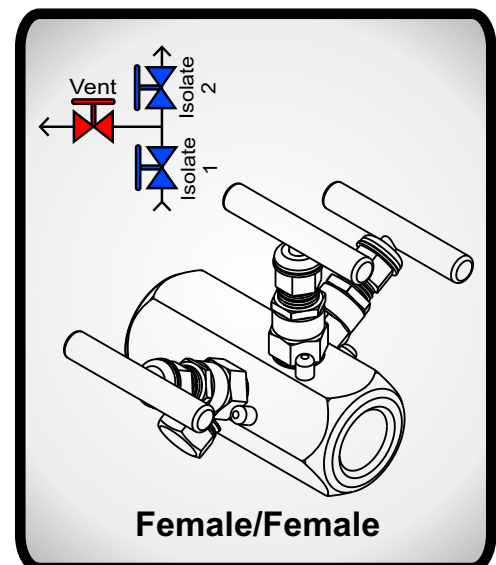
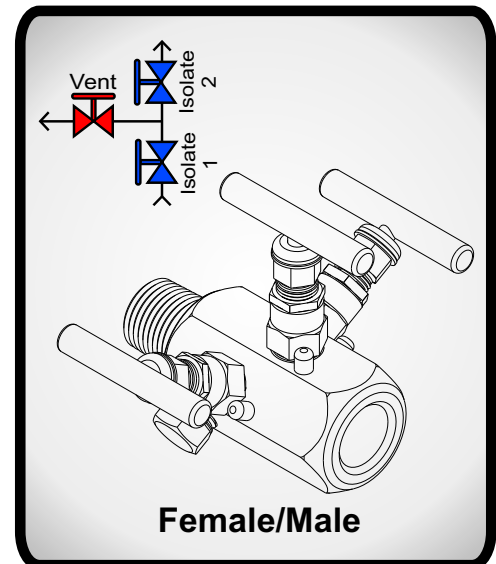
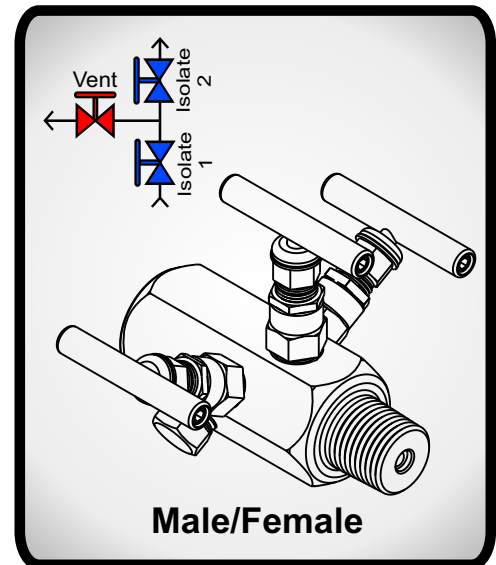
Process Connection	Instrument Connection
1/4" NPT	1/4" NPT
1/2" NPT	1/2" NPT
3/4" NPT	3/4" NPT
1/4" BSP(G)	1/4" BSP(G)
1/2" BSP(G)	1/2" BSP(G)
3/4" BSP(G)	3/4" BSP(G)

DBB Manifolds - L2D

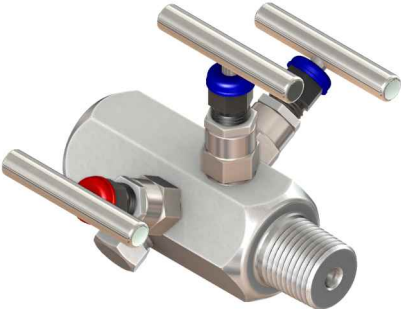
Our DBB gauge valves are primarily used for isolation, maintenance and calibration of pressure gauges, switches and pressure transmitters. The Double Block and Bleed design provides maximum safety by ensuring “Positive Energy Isolation”. Available in a variety of different shapes, sizes and connection options.



- Superior valvehead technology
- Metal to metal seat for bubble tight shutoff
- Bonnet to body seal below bonnet threads isolating them from the process media
- DBB design ensuring “Positive Energy Isolation” of both process and instrument sides
- Reduces cost due to eliminating multi valve systems
- Simplifies Installation
- Reduced leak paths
- Large spacing between the taps reducing the possibility of pinching fingers
- Ergonomic angled tap design allowing the user to access all valveheads from one side of the manifold
- Equipped with a 1/4” NPT vent port between the two isolates
- Many connection options available. Possible connections are male thread, female thread, tube end, butt weld and socket weld
- Full Traceability back to source
- 100% Pressure tested with nitrogen gas
- 2 Times over-pressure safety margin
- Manifold marking to a minimum of MSS-SP-25

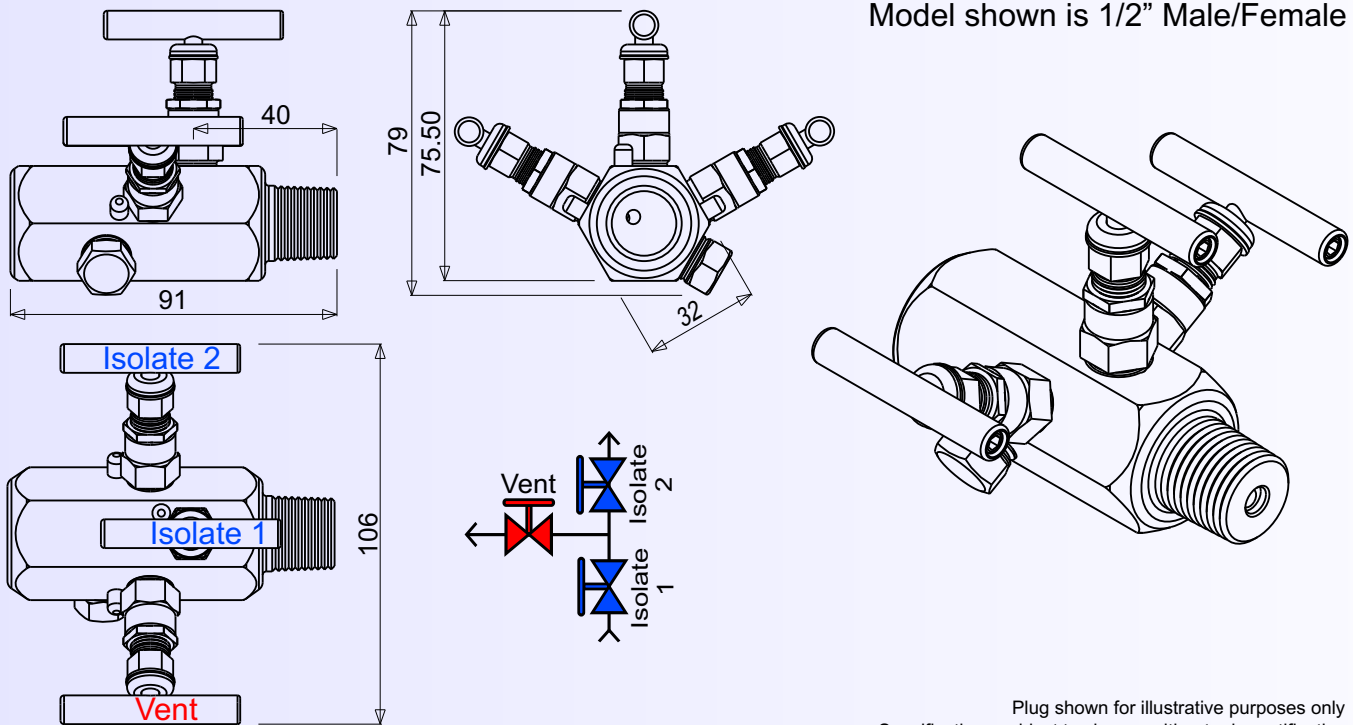


DBB Manifolds

Code											
	Range	Process Connection	Connection Size	Instrument Connection	Connection Size	Seals Material Type	Vent/Test Port Option	Vent/Test Port Size	Tap Options	Material	Options
L2D/	L Series Double Block and Bleed Manifold	M	4	W	4	T	V	2	X	H	-OX
L2D/	L Series Double Block and Bleed Manifold										
M	Male Thread Connection										
W	Female Thread Connection										
S	Socket Weld										
B	Butt Weld										
2	Note: Add G to the size for BSP. Add R to the size for BSPT. Add GS for BSP Gauge Swivel										
3											
4											
6											
M	Male Thread Connection										
W	Female Thread Connection										
S	Socket Weld										
B	Butt Weld										
2	Note: Add G to the size for BSP. Add R to the size for BSPT. Add GS for BSP Gauge Swivel										
3											
4											
6											
T	PTFE Seals										
C	PCTFE Seals (KEL-F)										
F	Glass Filled PTFE										
G	Graphite Seals										
V2	1/4" NPT Vent/Test Port										
X	All Taps Standard "T" Bar										
A	All Taps Anti-Tamper										
H	All Taps Lockable (Captured)										
K	Vent Tap Lockable (Captured)										
L	Isolate Tap Lockable (Captured)										
V	Vent Tap Anti-Tamper										
Y	Isolate Taps Anti-Tamper										
H	See Materials List (Refer to page 11)										
-OX	See Options List (Refer to page 12)										

DBB Manifolds - L2D

Model shown is 1/2" Male/Female



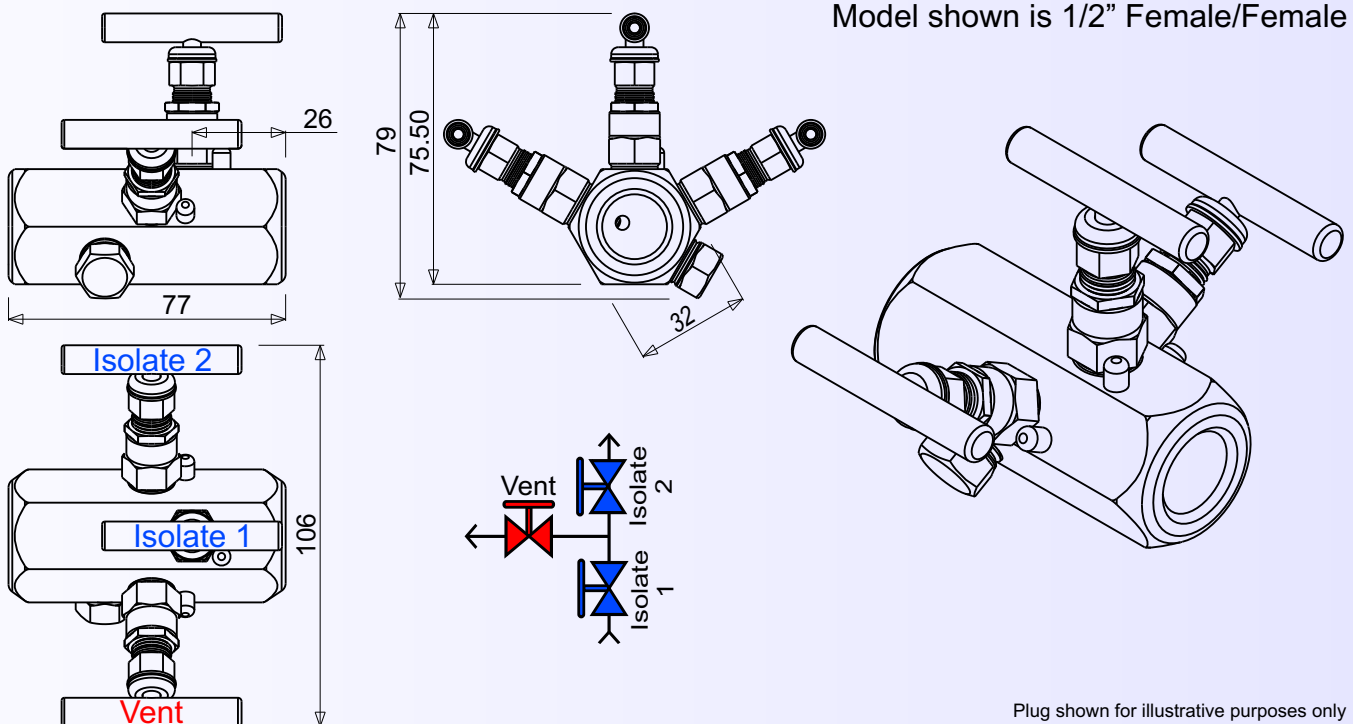
Plug shown for illustrative purposes only
Specifications subject to change without prior notification

Specifications

Type	2 Way DBB (Pipe to Pipe)
Packing	PTFE Graphite
M.C.W.P Pressure	6 000 psi / 10 000 psi
Temperature Range	-30°C (-22°F) to 215°C (420°F) PTFE -30°C (-22°F) to 440°C (824°F) Graphite
Approximate Weight	660g

Connection Options

Process Connection	Instrument Connection
1/4" NPT	1/4" NPT
1/2" NPT	1/2" NPT
3/4" NPT	3/4" NPT
1/4" BSP(G)	1/4" BSP(G)
1/2" BSP(G)	1/2" BSP(G)
3/4" BSP(G)	3/4" BSP(G)

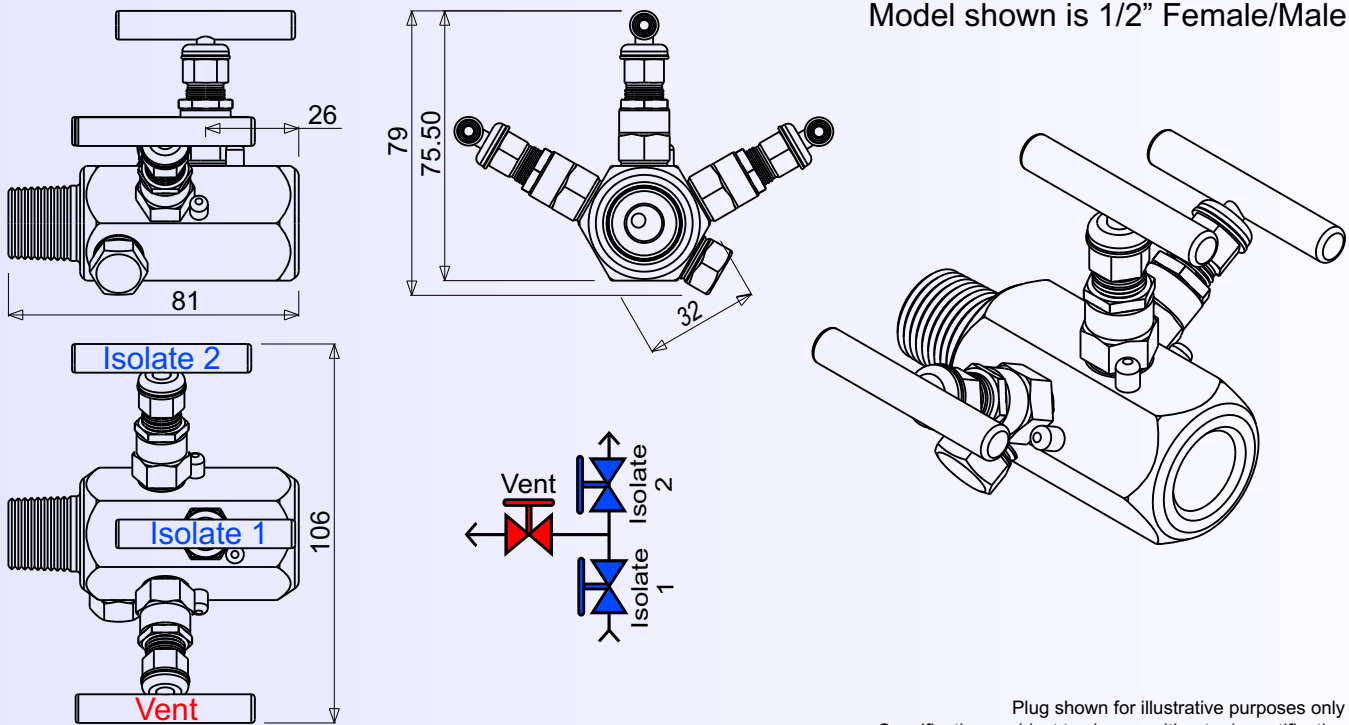


Model shown is 1/2" Female/Female

Plug shown for illustrative purposes only
Specifications subject to change without prior notification

DBB Manifolds - L2D

Model shown is 1/2" Female/Male



Plug shown for illustrative purposes only
Specifications subject to change without prior notification

Specifications

Type	2 Way DBB (Pipe to Pipe)
Packing	PTFE Graphite
M.C.W.P Pressure	6 000 psi / 10 000 psi
Temperature Range	-30°C (-22°F) to 215°C (420°F) PTFE -30°C (-22°F) to 440°C (824°F) Graphite
Approximate Weight	630g

Connection Options

Process Connection	Instrument Connection
1/4" NPT	1/4" NPT
1/2" NPT	1/2" NPT
3/4" NPT	3/4" NPT
1/4" BSP(G)	1/4" BSP(G)
1/2" BSP(G)	1/2" BSP(G)
3/4" BSP(G)	3/4" BSP(G)

Contact Details

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Business reg. no: 1990/004585/07
B-BBEE status: Level 2 contributor (South Africa)

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