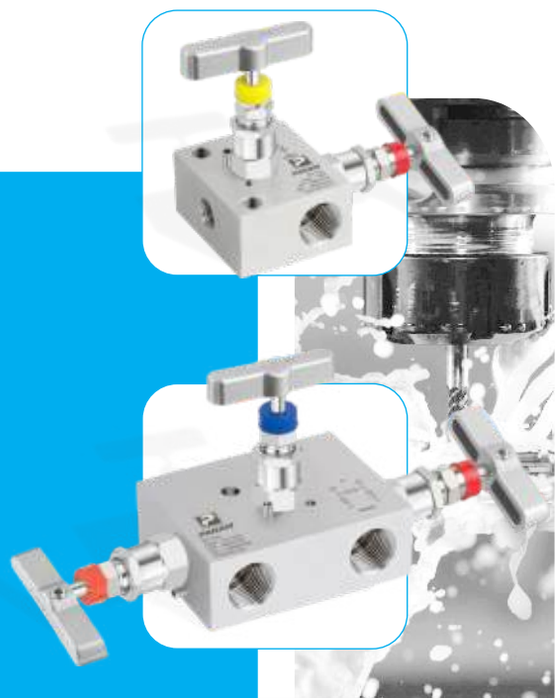
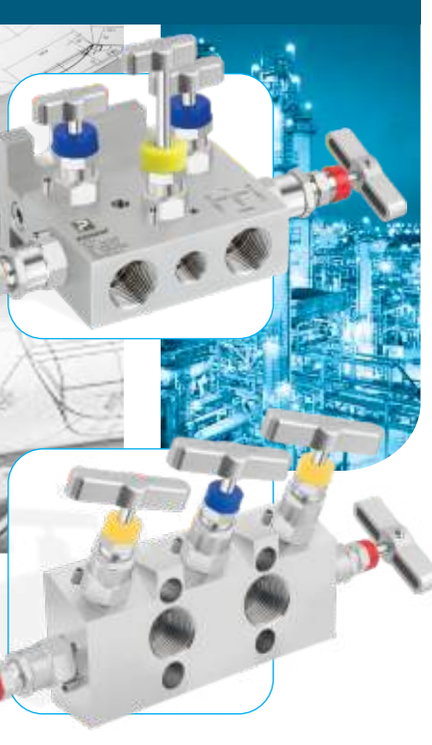
PANAM®

ENGINEERING BEYOND LIMITS

Valve Manifolds

Maximum Working Pressure upto 10000 psi (689 bar)





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Introduction

PANAM® has emerged as renowned name in global market for 'Instrumentation Fittings & Valves'. Since its inception in 1998 to present day, **PANAM®** has added new product every year and has broadened its product portfolio and its clientele base by supplying to potential customers worldwide. Key core values like Timely Delivery, Quality Consistency, Product Improvisation and After Sales Service has been instrumental in the phase wise evolution of company. Continuous improvement is the key to success, Customer feedback are taken with positive attitude and product are constantly groomed to a new quality and performance level to cope up with the competition. Our products are known for providing high-quality, high-reliability, low-cost options for the oil and gas industry. Over the year, the company has evolved from a product based company to a complete system solution provider. Over the coming years the entity of the company will attain state of the art operational efficiency for maintaining a competitive edge, with the advent increase in the utilization of its products in oil, gas and power sector.

PANAM® is having state of the art manufacturing facility span over an area of 65,000 sqft with a fleet of CNC Machines, VMC Machines, Semi-Automatic Lathe Machines, High Pressure Test Bench with SCADA Control, Configuration Centre for Transmitters and dedicated R&D Team.

PANAM® offers a large variety of Valve Manifolds from different materials like Stainless Steel, Carbon Steel, Monel 400, Hastalloy C276, Inconel 625, Inconel 825, Duplex and Superduplex as per the customer's requirements.

PANAM® offers Valve Manifolds with a variety of end connections including NPT Tapered, ISO Tapered (BSPT), ISO Parallel (BSPP), Metric Thread /**PANAM®** Tube Fittings and Flanged Connections (MSS-SP-99, IEC 61518 ® Type A and B).

PANAM® Valve Manifolds are 100% factory tested, comply with NACE MR0175 / ISO 15156 with Heat Code Traceability. Maximum Working Pressure up to 10000 psi (689 bar). The product meets and even exceeds the requirements of ASME. All materials are supplied in compliance with ASTM Specifications and verified by NABL approved third party laboratories.

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Description

PANAM® Valve Manifolds are designed for connecting the gauges (pressure gauges, etc) to process lines in hazardous and corrosion media under pressure of 10000 psi (689 bar). They are designed for easy block, bleed of pressure during maintenance and calibration of pressure transmitters or gauges. They are ruggedly manufactured and precision machined to the most exacting dimensional tolerance to ensure perfect installation and application. Valve Manifolds are available in SS 316, CS, Monel 400, Hastalloy C276, Inconel 625, Inconel 825, Duplex and Superduplex. Valve Manifolds have high durability, maximum efficiency in operation, high quality and afford ability.

PANAM® offers 2, 3, 5 - Way Valve Manifolds of standard body design and space saving body design with a variety of end connections including NPT Tapered, ISO Tapered (BSPT), ISO Parallel (BSPP), Metric Thread / **PANAM**® Tube Fittings and flanged connections (MSS-SP-99, IEC 61518 ® Type A and B).

NACE-MR-01-75 Complied Manifolds are also available (For sour gas).

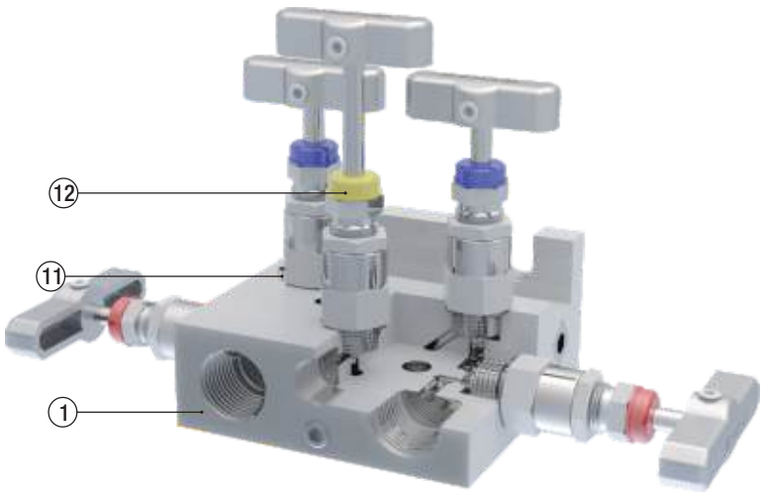
Characteristics

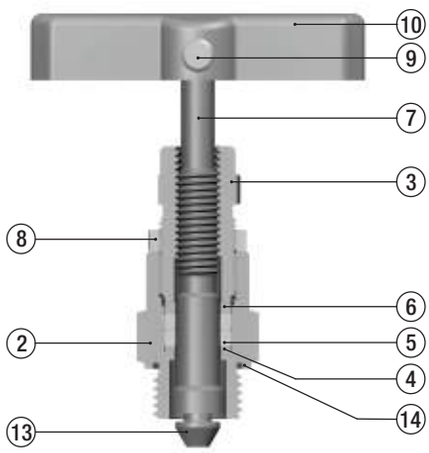
- Standard body material – Stainless Steel SS 316
- Maximum Working Pressure 10000 psi (689 bar) with modified PTFE seat
- PTFE / PCTFE / Grafoil valve stem packing (PTFE as standard stem packing)
- Working temperature: from -54ºC to 232ºC (-65ºF to 450ºF) with PTFE stem packing
- Working temperature: from -60ºC to + 149ºC (-76ºF to + 300ºF) with PCTFE stem packing
- Working temperature: from -40ºC to + 648ºC (-40ºF to + 1198ºF) with Grafoil stem packing
- Connection sizes: 1/4 ", 1/2", M20x1.5, 12 mm.
- Connection options: **PANAM**® Tube Connection – metric or fractional, female thread, male thread, male/female thread, female/male thread (MSS-SP-99, IEC 61518 type A and B)
- Thread types - NPT tapered threads, ISO tapered threads (BSPT), ISO parallel threads (BSPP), metric thread, metric thread with union nut
- Other types of valve stem seals for other temperature ranges possible upon request

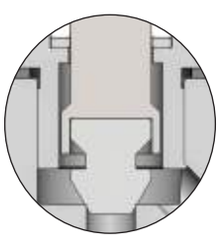
Features and Benefits

- Forged One Piece Body Construction (No Welding)
- Non Rotating Vee / Ball Tip Design - Which forms a bearing joint with the stem, eliminates rotation between plug & seat at closure. This prevents scoring and galling up the valve seat and ensure long life in repetitive shut off service.
- Safety Bonnet Lock - Prevents accidental disassembly.
- Stem Thread Rolled & Hard Plated - Provides additional strength & maximum service life.
- Mirror Finish Stem, Furnished to a 16RMS - Extends packing life and smooth stem operation.
- Adjustable Packing Below Stem Threads - Prevents stem lubrication washout and isolate threads from process contamination.
- Safety Back Seating - Provides secondary stem seal in full open position, prevents stem blow out.
- Stainless Steel Handle - For proper actuation.
- Body to Bonnet Seal - Metal to metal constant compression, Isolate bonnet threads from system fluids and eliminates possible tensile.
- Dust Cap - Prevents contaminants and lubricant washout of bonnet assembly.
- Heat Code Traceability.

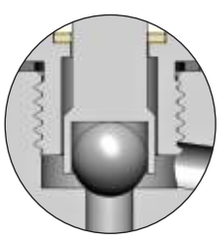
Material of Construction



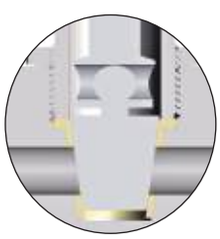




Non-Rotating V Tip



Non-Rotating Ball Tip

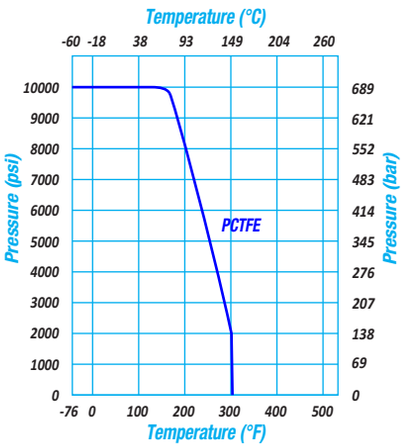


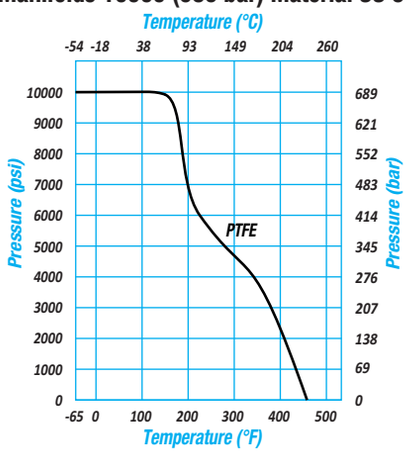
Soft Seat - Large Bore

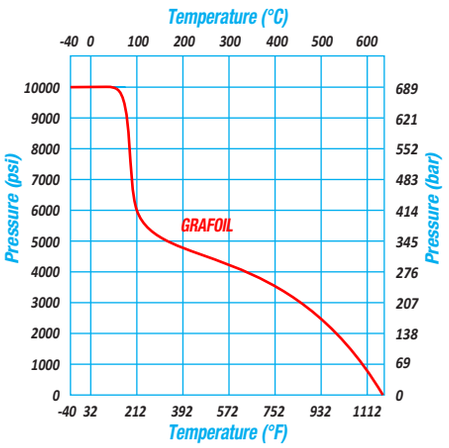
No	Part	Qty.	Material
1.	Body	1	A479-316 / A-105
2.	Gland Body	1	A479-316 / A-105
3.	Gland Retainer	1	A479-316 / A-105
4.	Washer	1	A479-316 / A-105
5.	Packing	1	PTFE / PCTFE / Grafoil
6.	Packing Washing	1	A276-316 / A-105
7.	Spindle	1	A276-316
8.	Lock Nut	1	A479-316 / A-105
9.	Grub Screw	1	Steel
10.	Handle	1	A276-304 / A-105
11.	Lock Pin	1	A479-316 / A-105
12.	Dust Cap	1	Nylone
13.	Non Rotating Tip	1	A564 - 630
14.	Gasket Washer	1	A276-316 / A-105

Pressure & Temperature

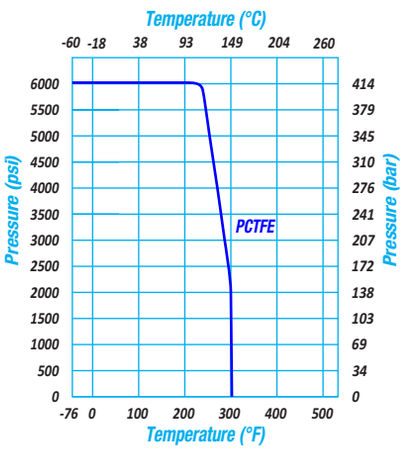
Manifolds 10000 (689 bar) Material SS 316

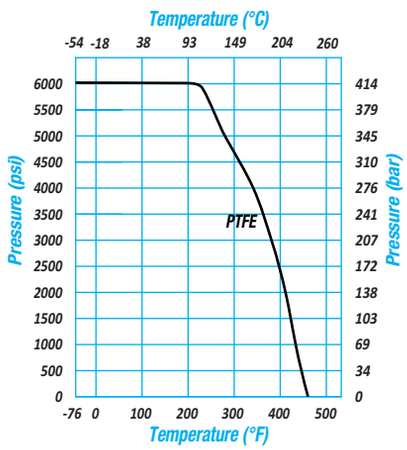


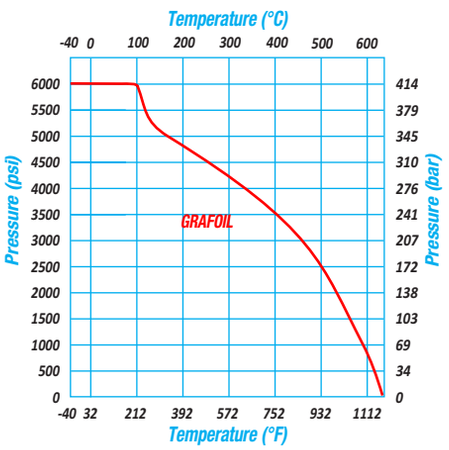




Manifolds 6000 psi (414 bar) Material SS 316







Sealing Material Characteristics

PTFE (Polytetrafluorethylene)

PTFE is an excellent material for applications in clean environments.

- It is highly resistant to the chemical effects of many organic and inorganic reagents and solvents.
- It has a low coefficient of deformation, increased strength and abrasion resistance, and a low friction coefficient

PCTFE (Polychlorotetrafluoroethylene)

- high resistance to chemical attack and low temperatures
- Very low moisture absorption, resistance to hydrolysis and hot steam, ability to maintain strength and flexibility at low temperatures (operating temperature range -60ºC to + 149ºC (-76ºF to + 300ºF).

Grafoil

- Grafoil (thermally expanded graphite) is a material with resistance to high temperature and chemical impacts.
- Due to its unique features, this material is used in high temperatures and corrosive environments
- Thermally expanded graphite is one of the safest materials for sealing systems in liquid environments. Seals from the thermally expanded graphite is used in applications of highly volatile liquids and at extremely high temperatures

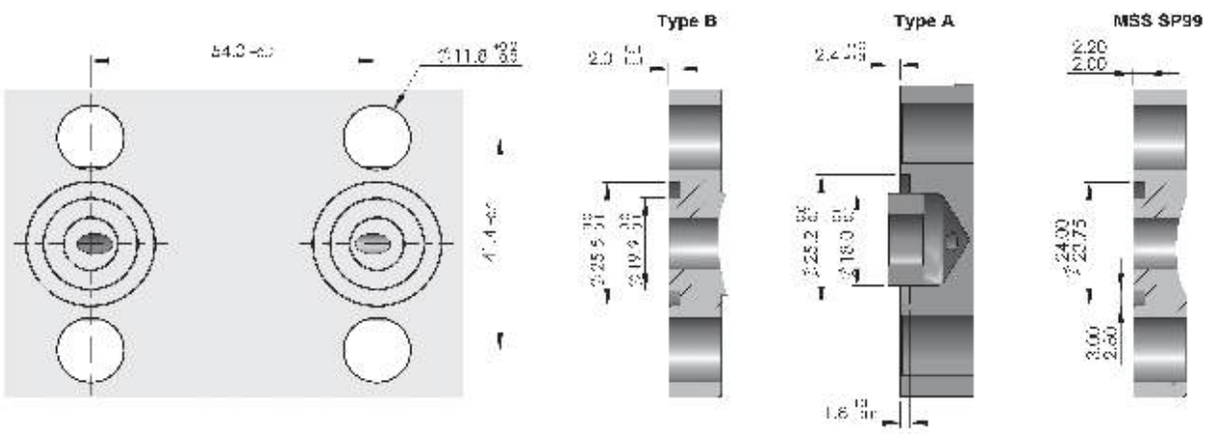
Configurations

Type L

Type V

Type A

Flange Connections - Manifold to Transmitter DIN EN 61518 / IEC 61518 Type A and Type B / MSS SP99



Testing

Each Valve is hydrostatically tested in accordance with MSS-SP-99. This procedure includes testing of the body cavity and spindle leaks. Other tests like Vibration, Temperature, Helium are available upon request.

Hydrostatic test is performed with pure water or other liquids of similar or lower viscosity at 1.5 times and seat leakage test at 1.1 times of the maximum working pressure. Each valve is also tested with Nitrogen Gas at 6.9 MPa (1000 psi) for seat, seal, and shell leakage.

Safety

Pressure and Temperature rating are selected from ANSI B16.34 for standard class valves based on ANSI B16-Class 2500. Option SG - for sour gas service, in accordance with NACE STD MR-01-75.

For safe operation of **PANAM**® manifolds shall be adequately selected. When choosing materials operating conditions, compatibility of materials, purpose and product specifications shall be considered. Installation and maintenance of products shall be carried out by qualified personnel.

Wrong selection, poor installation or incorrect operation and maintenance may result in accident, causing personal injury and result in material damage.

PANAM® provides a guarantee for their products, but is not responsible for the wrong selection, installation, operation and maintenance of the supplied products.

2-Way Manifolds

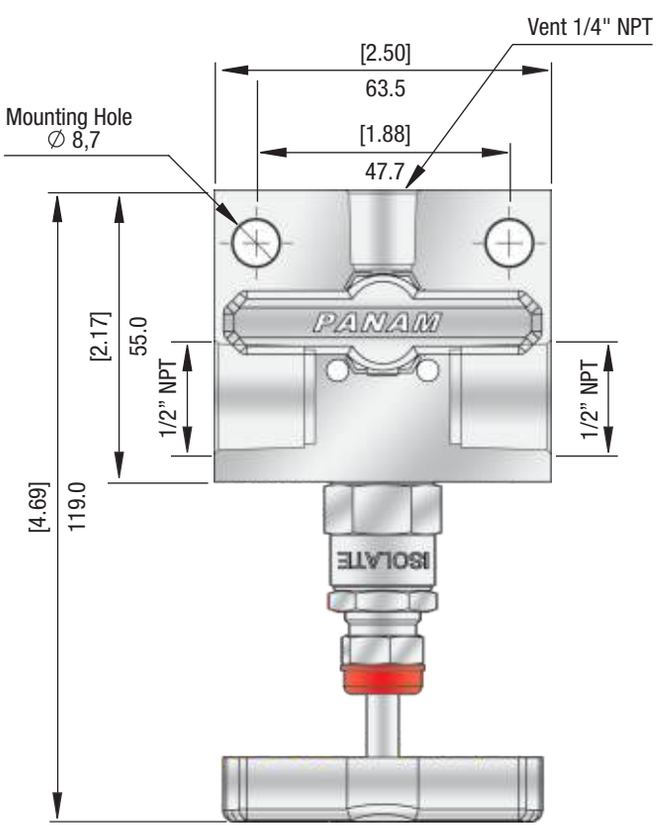
Standard Body - Pipe to Pipe

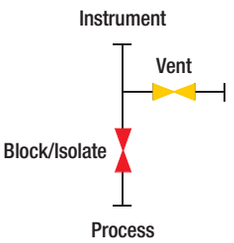
2 Valve Manifold Pipe to Pipe design has one block and bleed valve. It can be with pipe connection or PANAM® compression fitting.

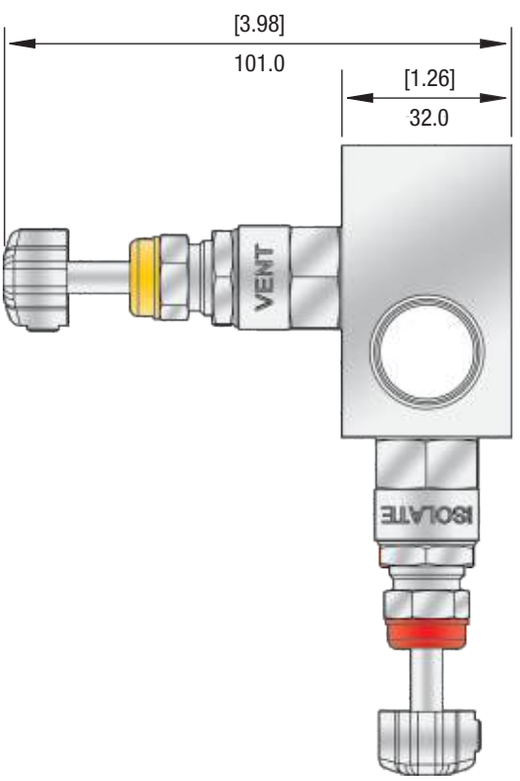
This type of manifold allows for easy block, bleed and calibration of a static pressure transmitter or gauge.

Dimensions

2VM-SS-8-R-V





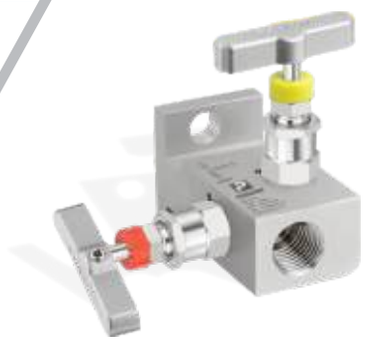


2-Way Manifolds

Standard Body - Pipe to Flange

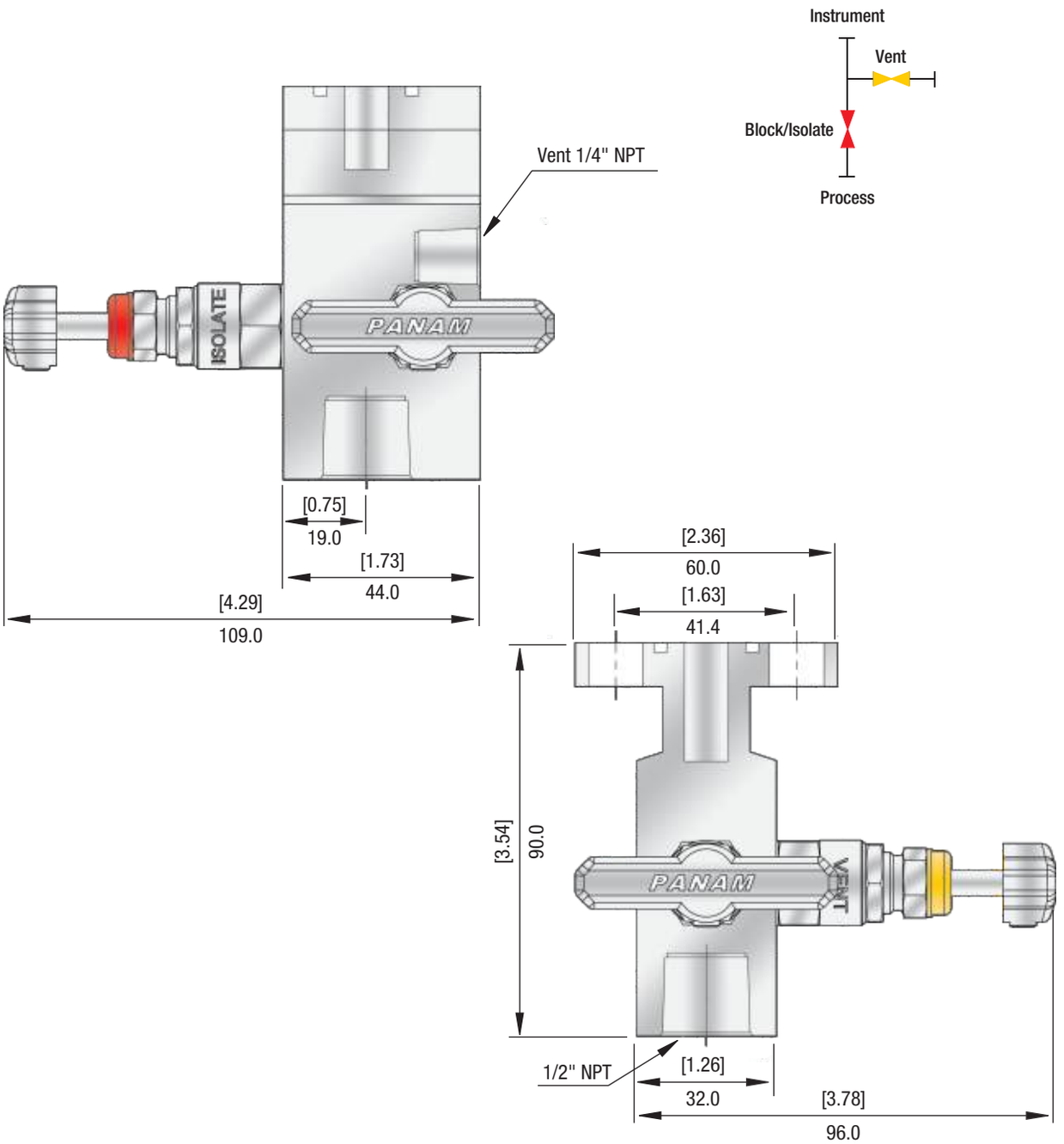
2-Valve Manifold consists of one block valve and one bleed valve. It can be with threaded end connection or PANAM® compression fitting for connection to the process line, It has a flanged end for instrument connection.

This manifold allows for easy block, bleed and calibration of a static pressure transmitter or gauge.



Dimensions

2VM-SS-8-T-V

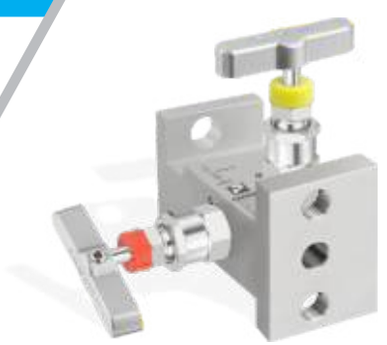


2-Way Manifolds

Standard Body - Flange to Flange

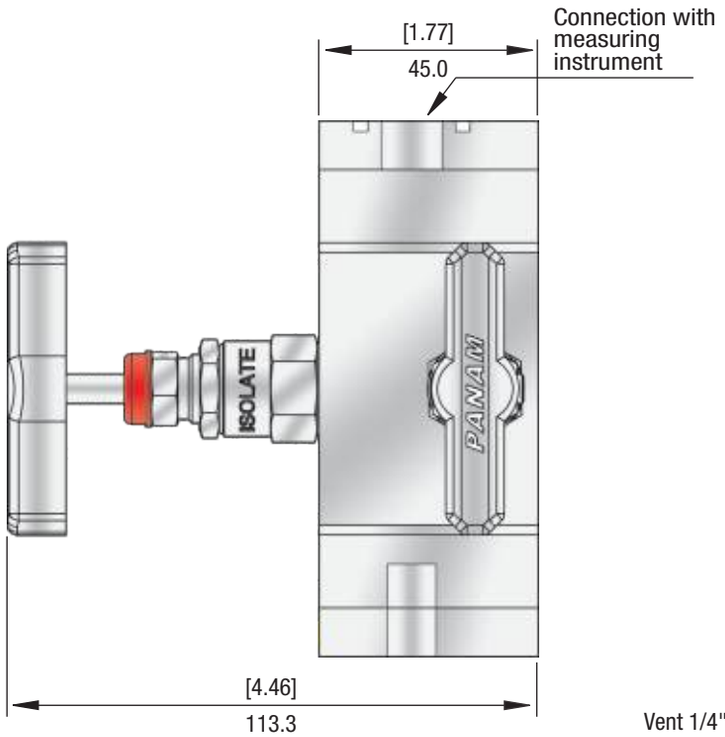
2-Valve Manifold consists of one block valve and one bleed valve. It has a flanged end for process connection and a flanged end for instrument connection.

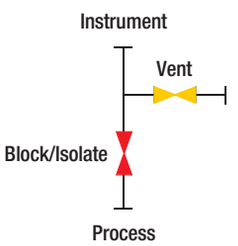
This manifold allows for easy block, bleed and calibration of a static pressure transmitter or gauge.

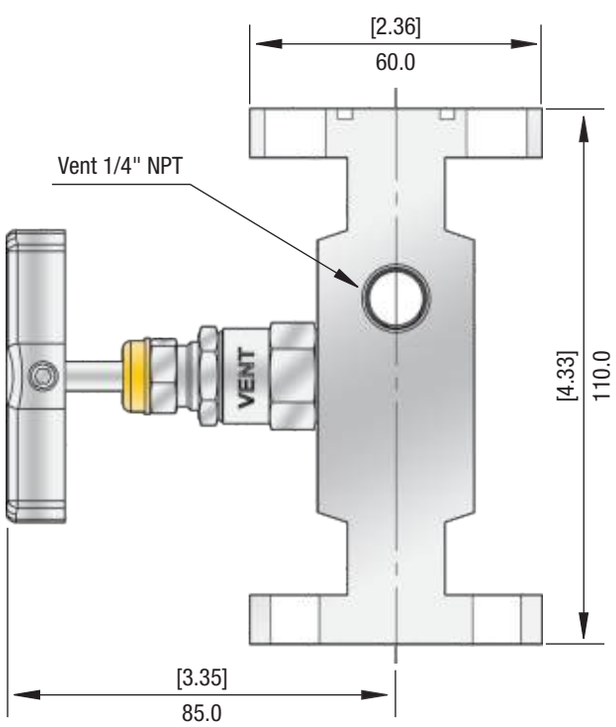


Dimensions

2VM-SS-H-V







2-Way Manifolds

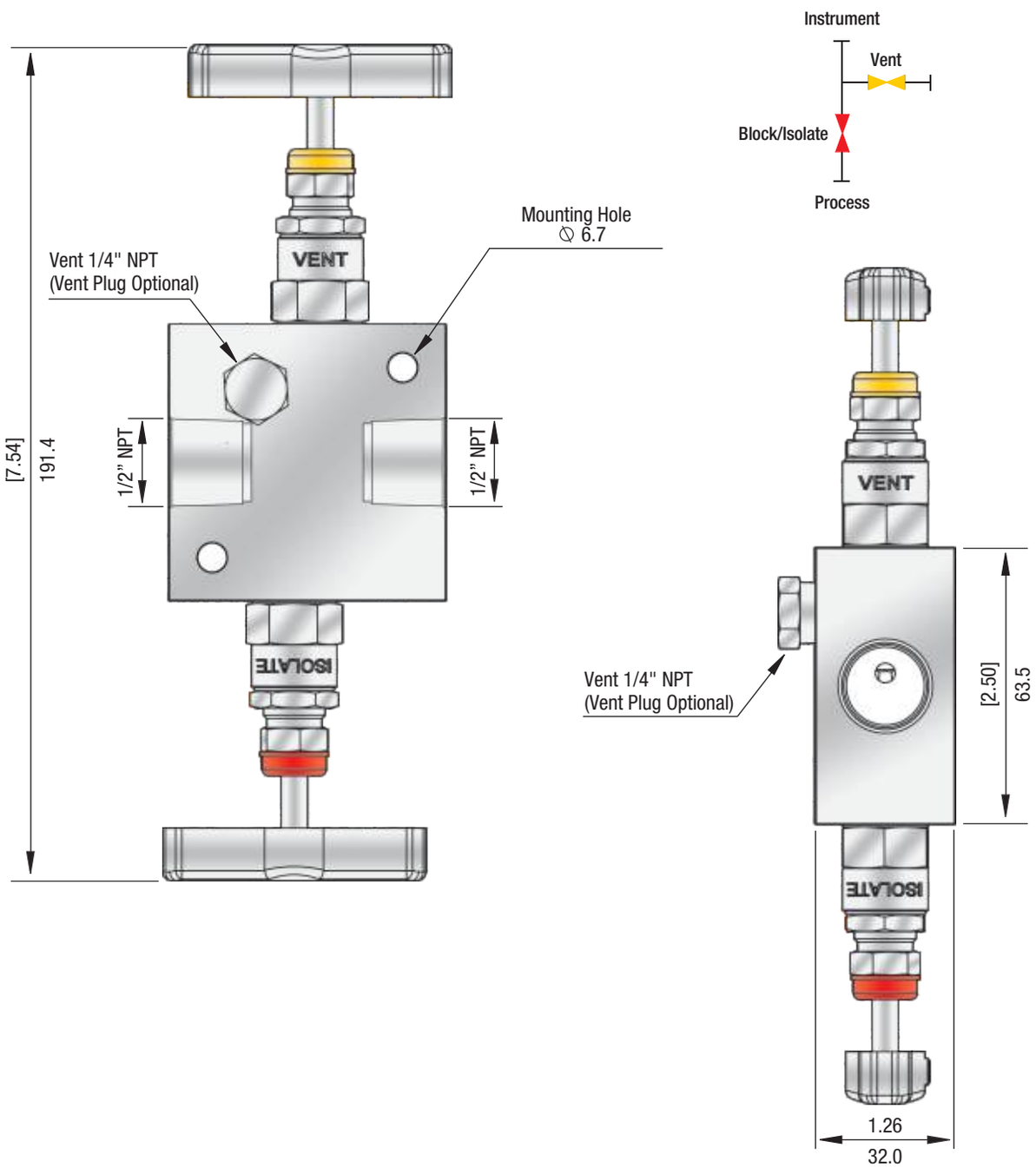
Standard Body - Pipe to Pipe, Base Mounting

2-Valve Manifold consists of one block valve and one bleed valve. It can be with threaded end connection or **PANAM®** compression fitting.

This manifold allows for easy block, bleed and calibration of a static pressure transmitter or gauge.

Dimensions

2VM-SS-8-BM-P

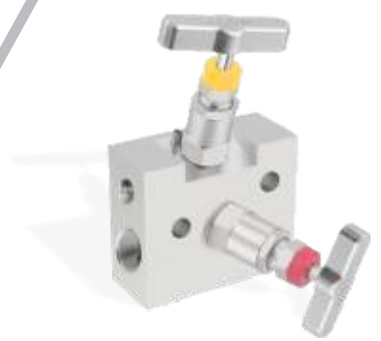


2-Way Manifolds

Standard Body - Pipe to Pipe, Base Vent

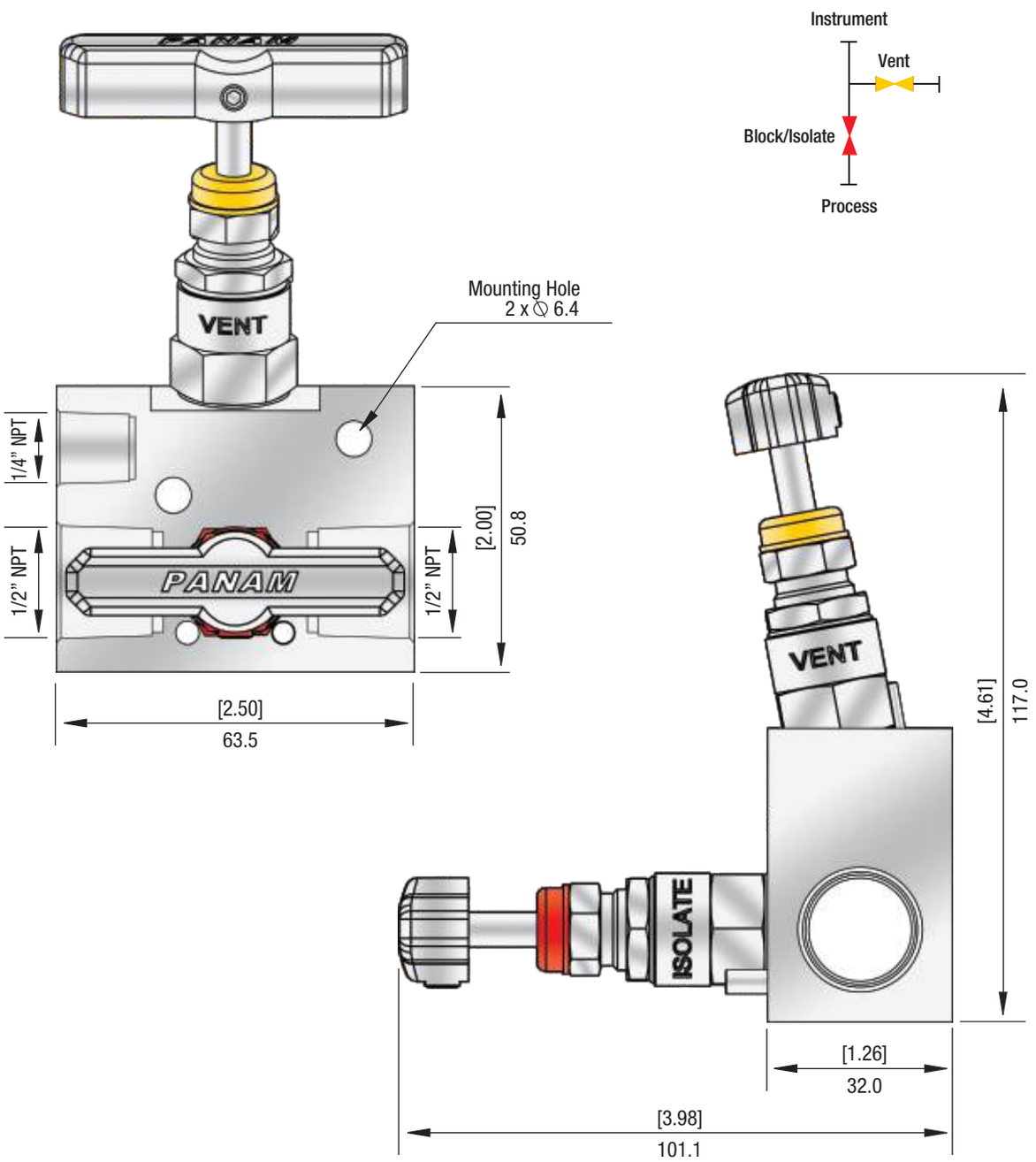
2-Valve Manifold consists of one block valve and one bleed valve. It can be with threaded end connection or PANAM® compression fitting.

This manifold allows for easy block, bleed and calibration of a static pressure transmitter or gauge.



Dimensions

2VM-SS-8-BV-A

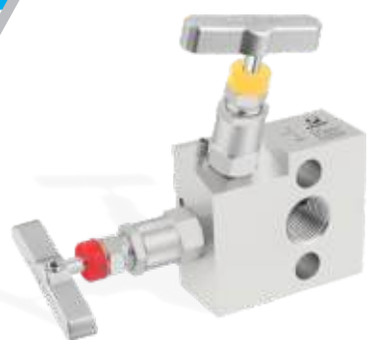


2-Way Manifolds

Standard Body - Pipe to Flange, Direct Mounting

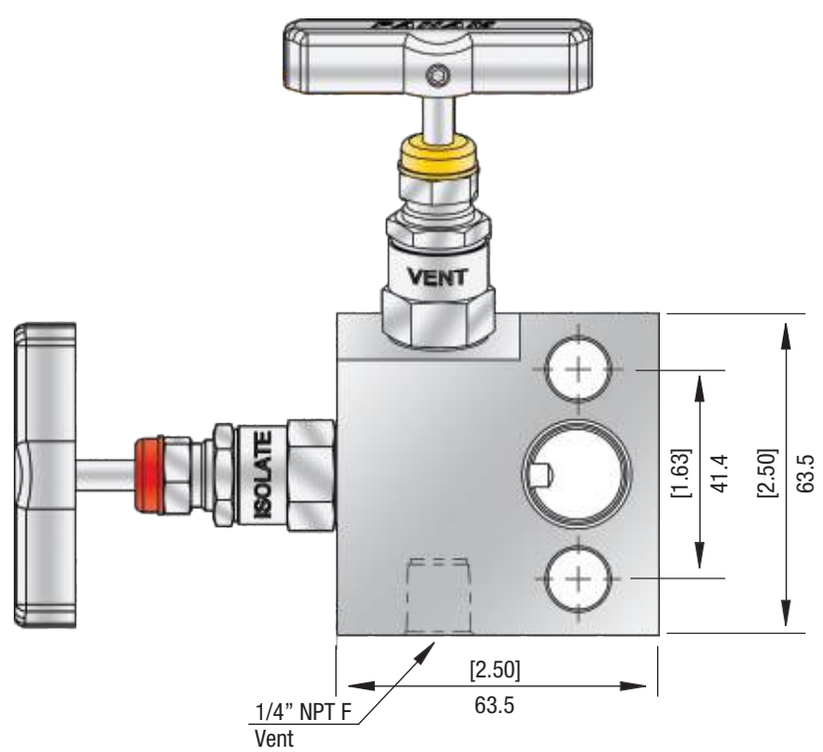
2-Valve Manifold consists of one block valve and one bleed valve. It can be with threaded end connection or **PANAM**® compression fitting for connection to the process line, It has a flanged end for instrument connection.

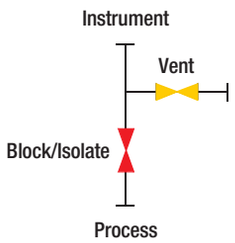
This manifold allows for easy block, bleed and calibration of a static pressure transmitter or gauge.

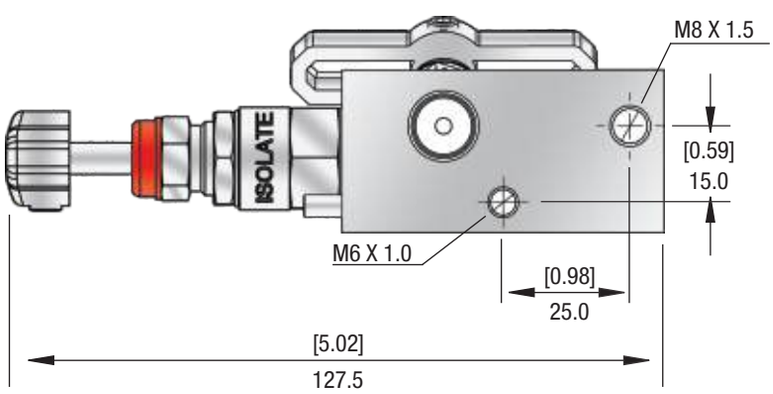


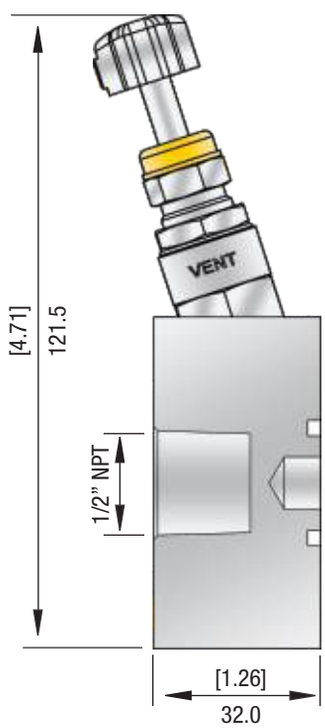
Dimensions

2VM-SS-8-DM-A









2-Way Manifolds

Ordering Information for 2-Way Manifolds with Standard Body

2VM-SS-20M-MF-R-V-V8-SG-10K-BKT

Number of Valves

2 Valve Manifolds

Material

SS	- Stainless Steel 316	SDSS	- Super Duplex - UNS S32750
CS	- Carbon Steel	6MO	- UNS S31254
MO	- Monel - 400	INC625	- Inconel 625
HC	- Hastalloy - C 276	INC825	- Inconel 825
DSS	- Duplex - UNS S32205		

Connection Size

4	- 1/4" NPT	4R	- 1/4" BSPT	20MM	- External Thread M20x1.5 / Flange
8	- 1/2" NPT	4G	- 1/4" BSPP	20MSWL	- M20x1.5 with Swivel Nut
20M	- M20x1.5	8R	- 1/2" BSPT	4GSWL	- 1/4" BSPP with Swivel Nut
		8G	- 1/2" BSPP	8GSWL	- 1/2" BSPP with Swivel Nut
				08	- 1/2" PANAM® Tube Fitting
				M12	- 12mm PANAM® Tube Fitting

Connection Type

-	- Female Thread (Standard)	MF	- Male/Female
MM	- Male Thread	FM	- Female/Male
OD	- PANAM® Tube Fitting		

Mounting

R	- Standard Body - Pipe to Pipe
T	- Standard Body - Pipe to Flange *
H	- Standard Body - Flange to Flange *
DM	- Standard Body - Pipe to Flange, Direct Mounting **
BM	- Pipe to Pipe (Base Mounting)
BV	- Pipe to Pipe (Base Vent)

* Standard Flange Type B to IEC 61518

** Type A to IEC 61518 - the letter are changed to TA, HA or DMA correspondingly,
As per MSS-SP-99 - the letters are changed to TM, HB or HM or DMM correspondingly.

Configuration

-	Type L (Standard)	V	- Type V
A	- Type A		

Vent Hole Size

-	- 1/4"NPT (Standard)	V8	- 1/2"NPT	V4G	- 1/4" BSPP	V8G	- 1/2" BSPP
V2	- 1/8"NPT	V20M	- M20x1.5	V2G	- 1/8" BSPP		

Optional

P	- Vent with a Plug	XLT	- Low Temperature Application
SG	- Sour Gas Conditions in Accordance to NACE MR-01-75	BT	- Ball Tip
		LB	- Soft Seat (Large Bore)
HT	- Grafoil Seal for High Temperature	ATK	- Anti-Tamper Key

Maximum Working Pressure

-	- Maximum Working Pressure 6000 (414 bar)
10K	- Maximum Working Pressure 10000 (689 bar)

Mounting

BKT - Mounting Brackets

2-Way Manifolds

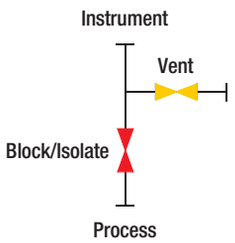
Space Saving Body - Pipe to Pipe, Remote Mounting

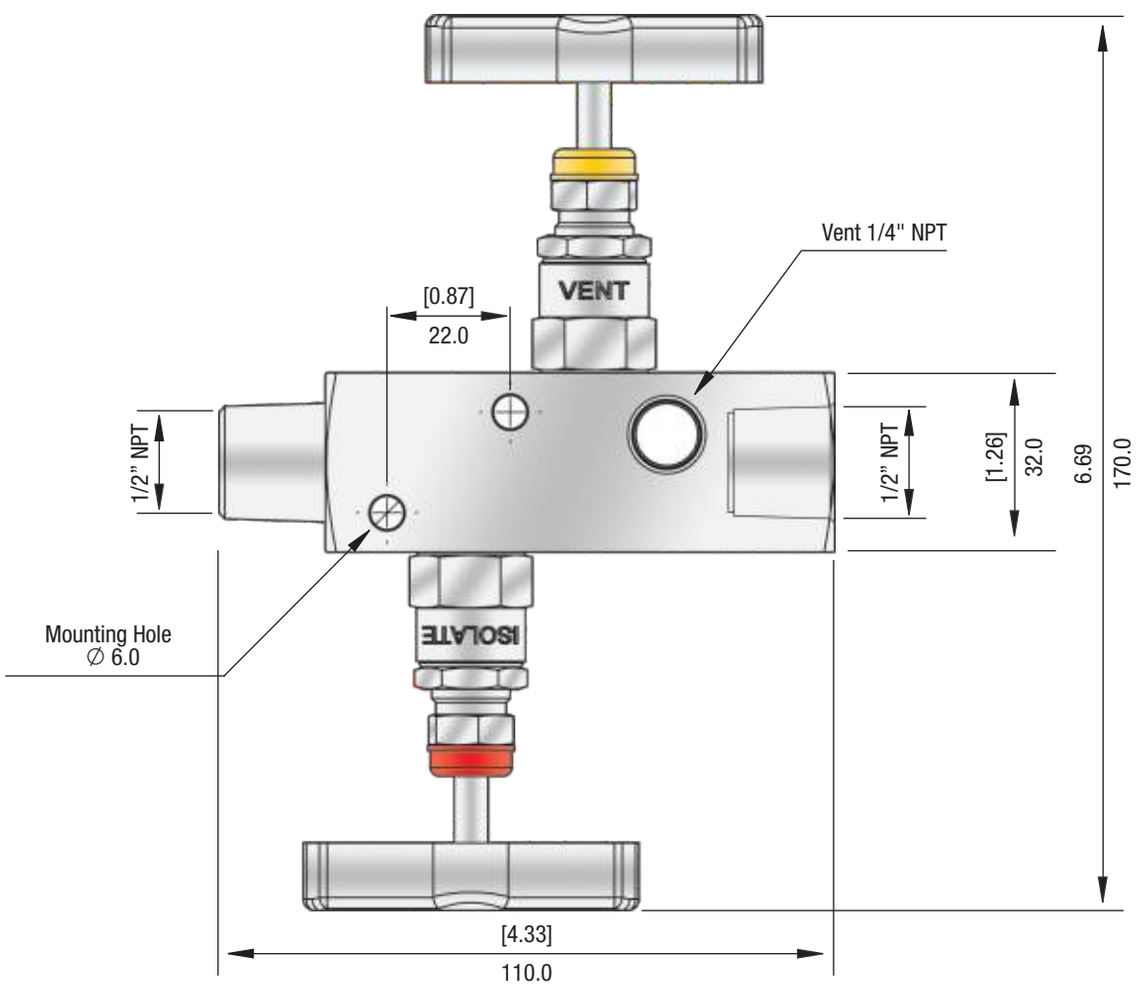
2-Way Manifold has a space saving body and consists of one bleed and one block valve. It can be with threaded end connection or **PANAM**® compression fitting connection for process and instrument.

This manifold allows for easy block, bleed and calibration of a static pressure transmitter or gauge.

Dimensions

2VM-SS-8-RM





2-Way Manifolds

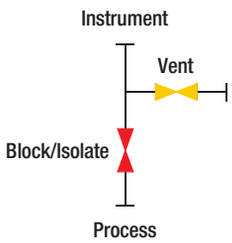
Space Saving Body - Pipe to Pipe, Remote Mounting

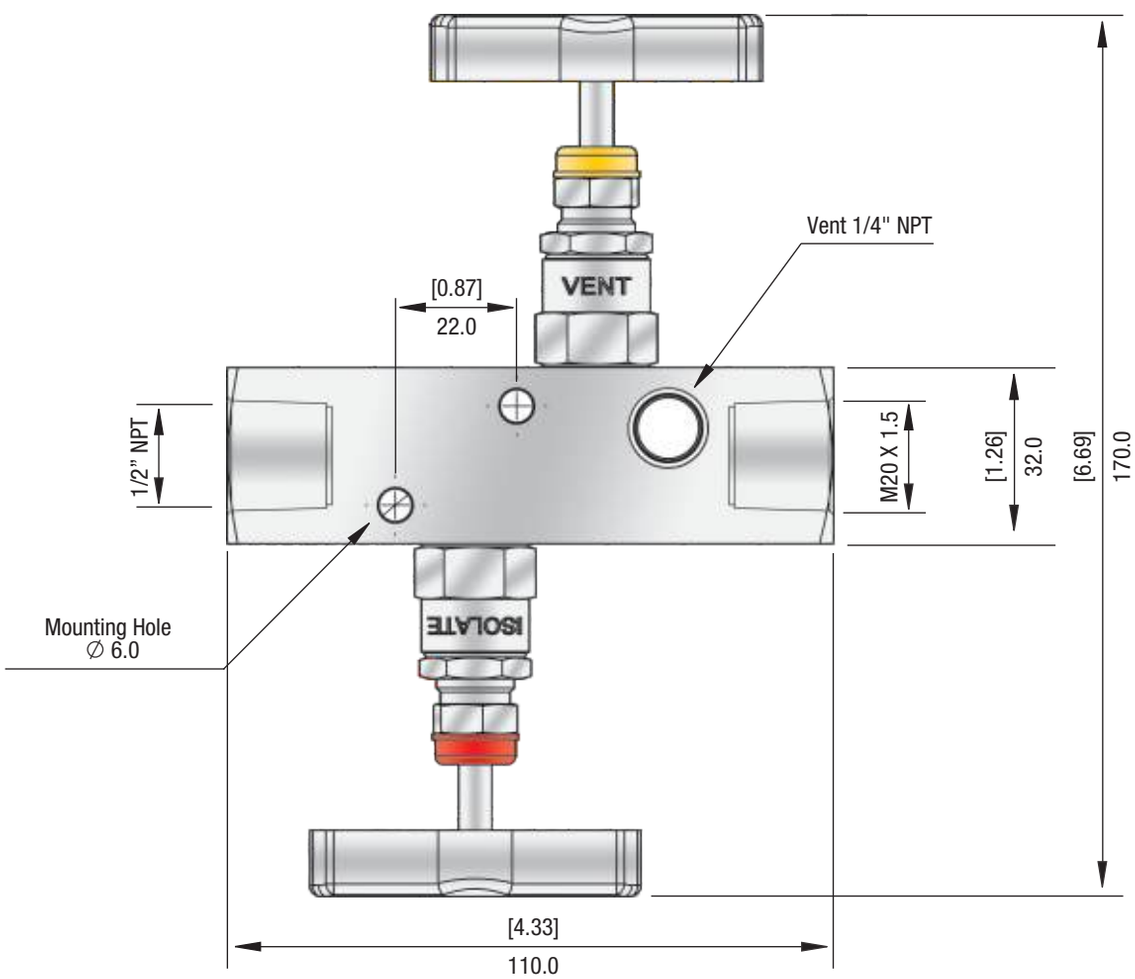
2-Way Manifold has a space saving body and consists of one bleed and one block valve. It can be with threaded end connection or **PANAM**® compression fitting connection for process and instrument.

This manifold allows for easy block, bleed and calibration of a static pressure transmitter or gauge.

Dimensions

2VM-SS-8-20M-FF-RM



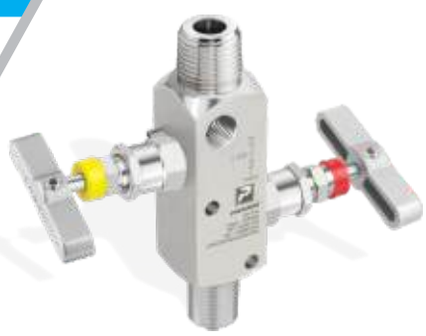


2-Way Manifolds

Space Saving Body - Pipe to Pipe, Remote Mounting

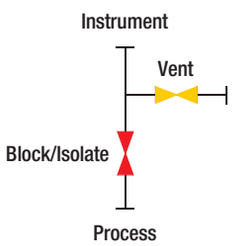
2-Way Manifold has a space saving body and consists of one bleed and one block valve. It can be with threaded end connection or **PANAM**® compression fitting connection for process and instrument.

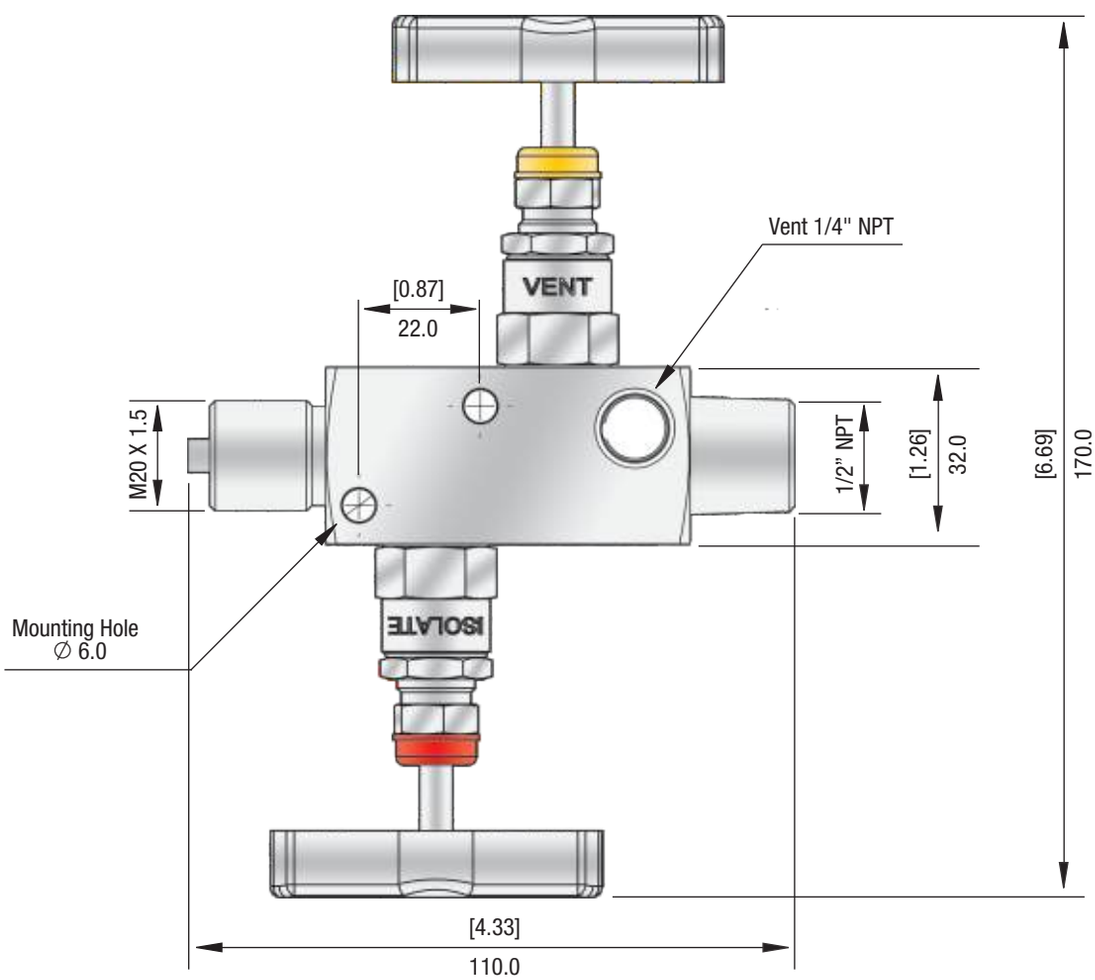
This manifold allows for easy block, bleed and calibration of a static pressure transmitter or gauge.



Dimensions

2VM-SS-20M-8-MM-RM





2-Way Manifolds

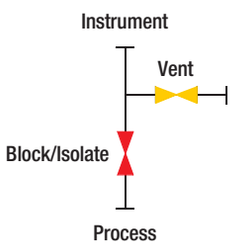
Space Saving Body - Pipe to Pipe, Remote Mounting

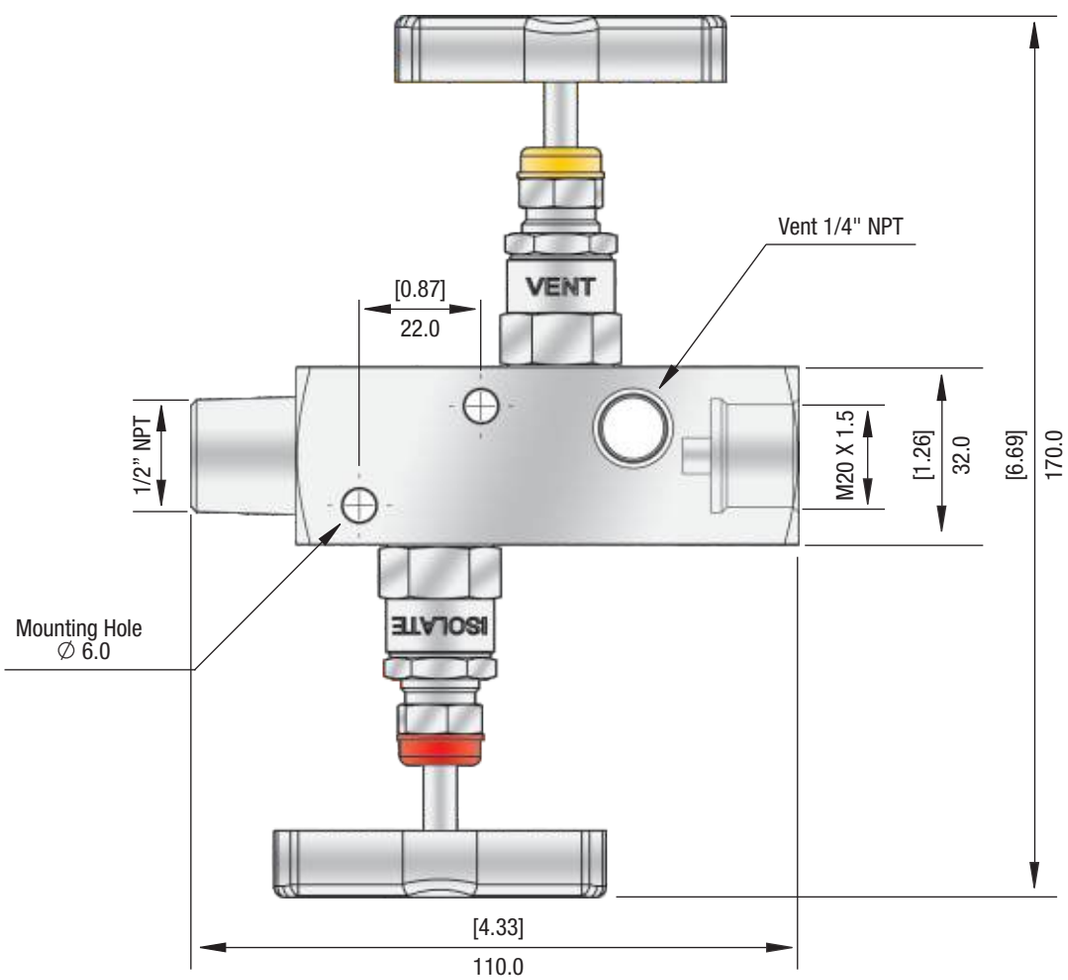
2-Way Manifold has a space saving body and consists of one bleed and one block valve. It can be with threaded end connection or ***PANAM***® compression fitting connection for process and instrument.

This manifold allows for easy block, bleed and calibration of a static pressure transmitter or gauge.

Dimensions

2VM-SS-8-20M-RM





2-Way Manifolds

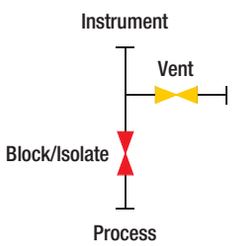
Space Saving Body - Pipe to Pipe, Remote Mounting

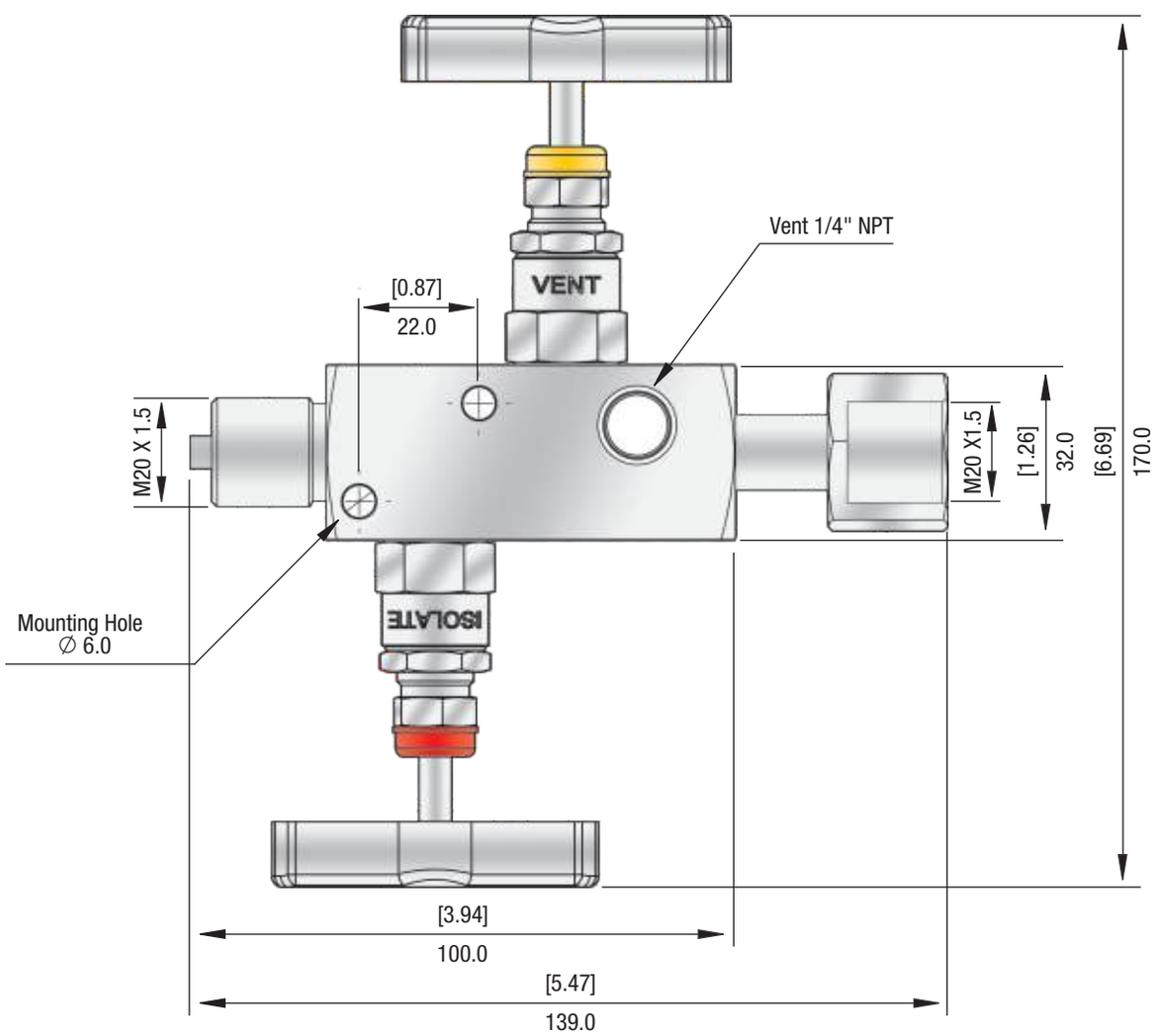
2-Way Manifold has a space saving body and consists of one bleed and one block valve. It can be with threaded end connection or ***PANAM***® compression fitting connection for process and instrument.

This manifold allows for easy block, bleed and calibration of a static pressure transmitter or gauge.

Dimensions

2VM-SS-20MSWL-RM





2-Way Manifolds

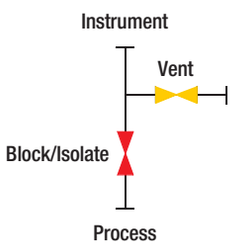
Space Saving Body - Pipe to Pipe, Remote Mounting

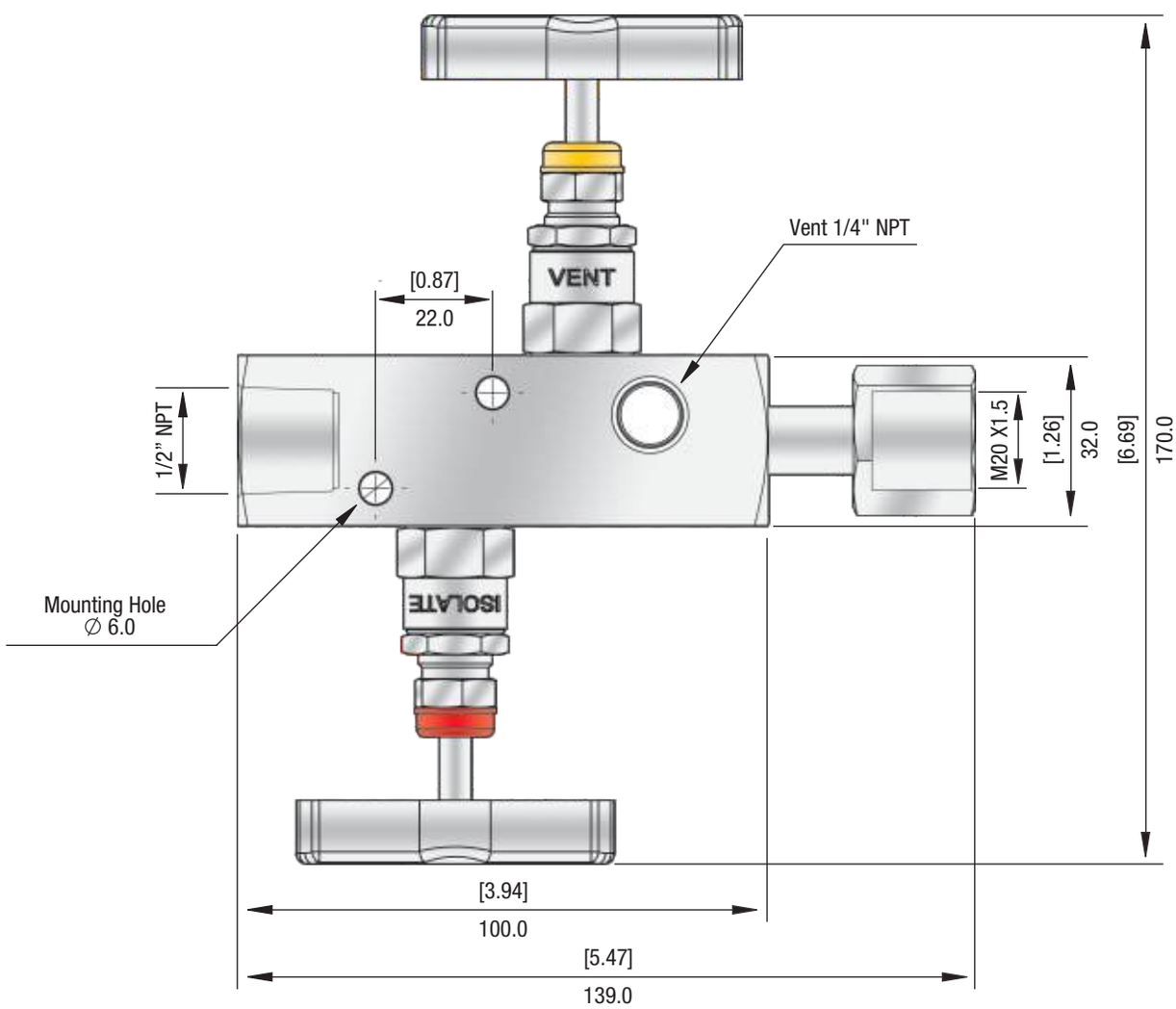
2-Way Manifold has a space saving body and consists of one bleed and one block valve. It can be with threaded end connection or **PANAM**® compression fitting connection for process and instrument.

This manifold allows for easy block, bleed and calibration of a static pressure transmitter or gauge.

Dimensions

2VM-SS-8-20MSWL-FF-RM





2-Way Manifolds

Ordering Information for 2-Way Manifolds with a Space Saving Body for Remote Mounting

2VM-SS-20M-FF-RM-V-V8-SG-10K-BKT

Number of Valves

2 Valve Manifolds

Material

SS	- Stainless Steel 316	SDSS	- Super Duplex - UNS S32750
CS	- Carbon Steel	6MO	- UNS S31254
MO	- Monel - 400	INC625	- Inconel 625
HC	- Hastalloy - C 276	INC825	- Inconel 825
DSS	- Duplex - UNS S32205		

Connection Size

4	- 1/4" NPT	4R	- 1/4" BSPT	20MSWL	- M20x1,5 with Swivel Nut
8	- 1/2" NPT	4G	- 1/4" BSPP	4GSWL	- 1/4" BSPP with Swivel Nut
20M	- M20x1.5	8R	- 1/2" BSPT	8GSWL	- 1/2" BSPP with Swivel Nut
		8G	- 1/2" BSPP	08	- 1/2" PANAM® Tube Fitting
				M12	- 12mm PANAM® Tube Fitting

Connection Type

-	- Male/Female (Standard)	FM	- Female/Male
FF	- Female Thread	OD	- PANAM® Tube Fitting
MM	- Male Thread		

Mounting

RM - Space Saving Body for Remote Mounting

Configuration

- - Type L (Standard)
V - Type V

Drain Hole Size

-	- 1/4"NPT (Standard)	V8	- 1/2"NPT	V4G	- 1/4" BSPP	V8G	- 1/2" BSPP
V2	- 1/8"NPT	V20M	- M20x1.5	V2G	- 1/8" BSPP		

Optional

P	- Vent with a Plug	XLT	- Low Temperature Application
SG	- Sour Gas Conditions in Accordance to NACE MR-01-75	BT	- Ball Tip
		ATK	- Anti-Tamper Key
HT	- Grafoil Seal for High Temperature		

Maximum Working Pressure

- - Maximum Working Pressure 6000 (414 bar)
10K - Maximum Working Pressure 10000 (689 bar)

Mounting

BKT - Mounting Brackets

3-Way Manifolds

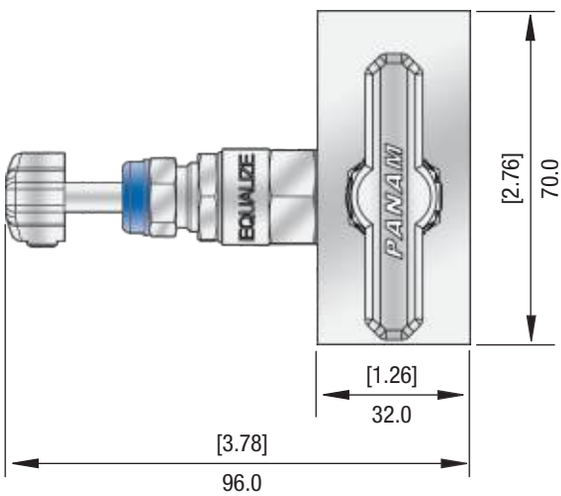
Standard Body - Pipe to Pipe

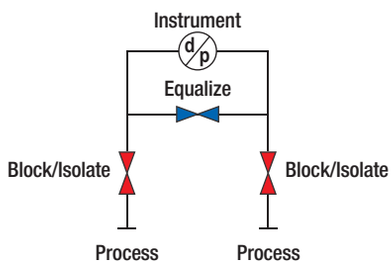
3-Way Manifold consists of one equalizer valve and two block valves. It can have pipe connections or **PANAM**® compression fittings for process and instrument connection.

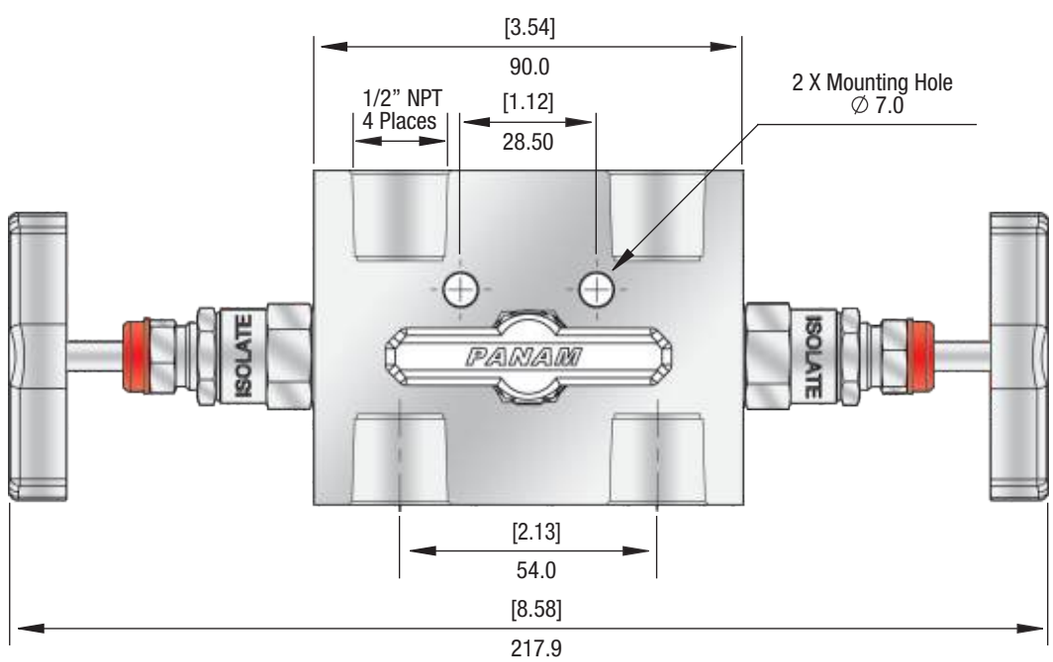
The distance between hole centers - 54mm (2-1/8")

Dimensions

3VM-SS-8-R





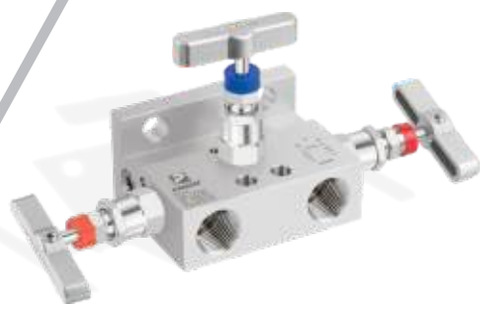


3-Way Manifolds

Standard Body - Pipe to Flange

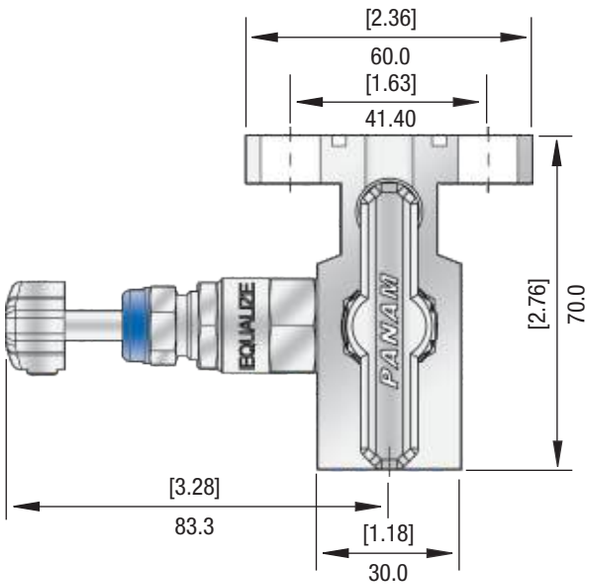
3-way manifold consists of one equalizer valve and two block valves. It can have pipe connections or **PANAM**® compression fittings for process and instrument connection and flanged end for instrument connection.

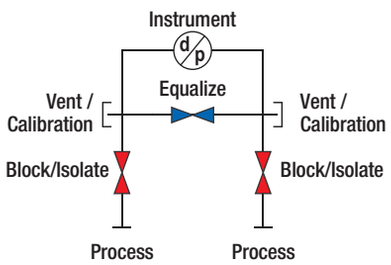
The distance between hole centers - 54mm (2-1/8")

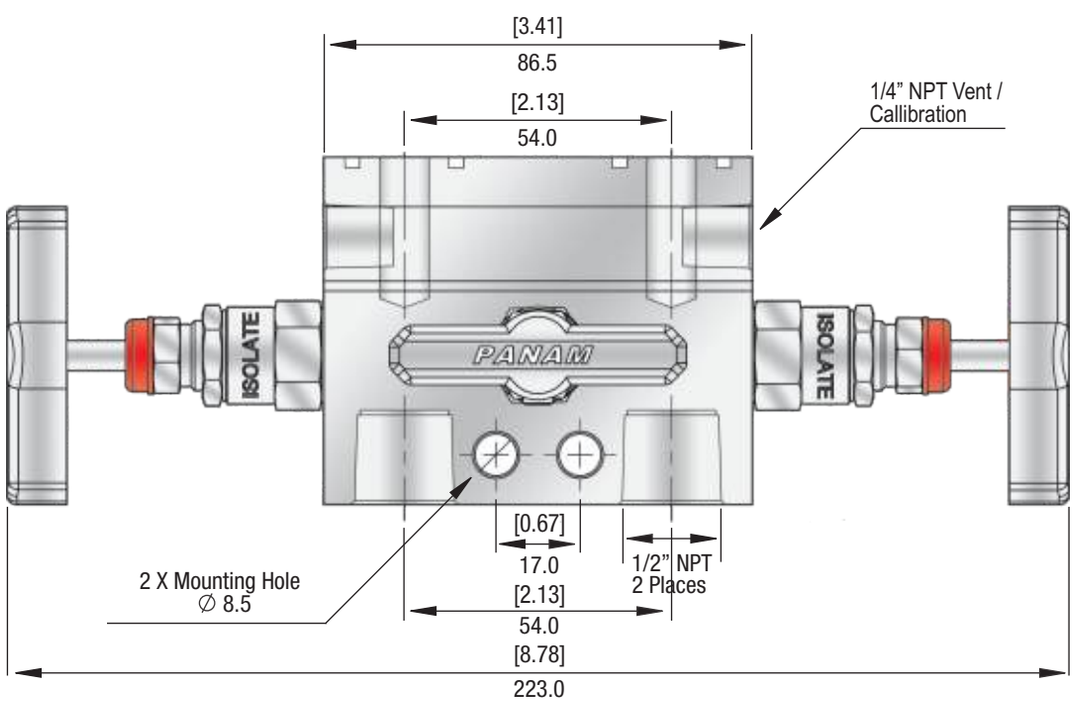


Dimensions

3VM-SS-8-T





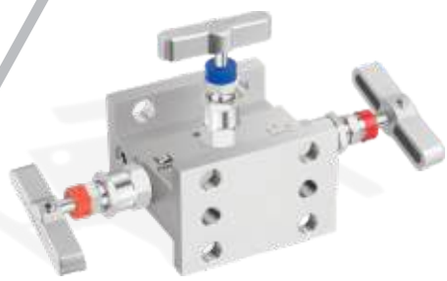


3-Way Manifolds

Standard Body - Flange to Flange

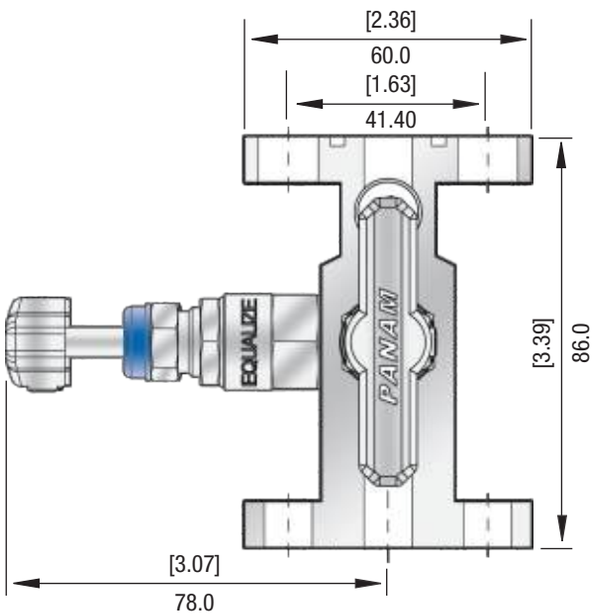
3-Way Manifold consists of one equalizer valve and two block valves. It has flanged ends for process connection and instrument connection.

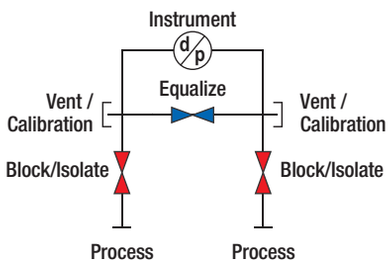
The distance between hole centers - 54mm (2-1/8").

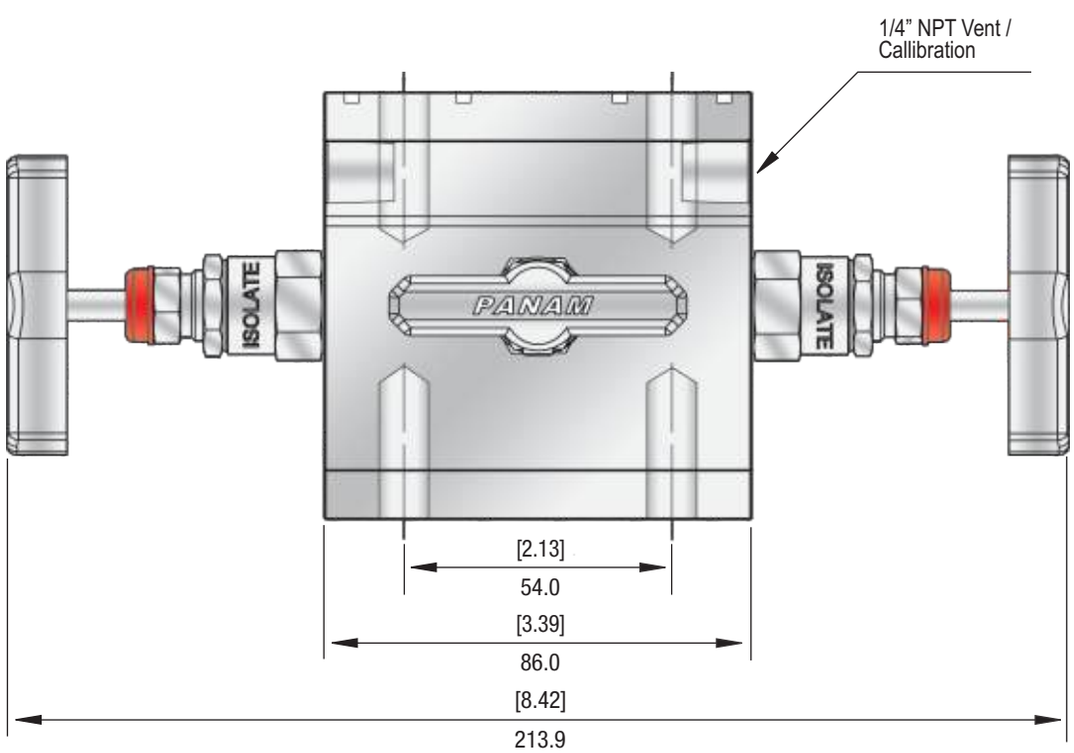


Dimensions

3VM-SS-H





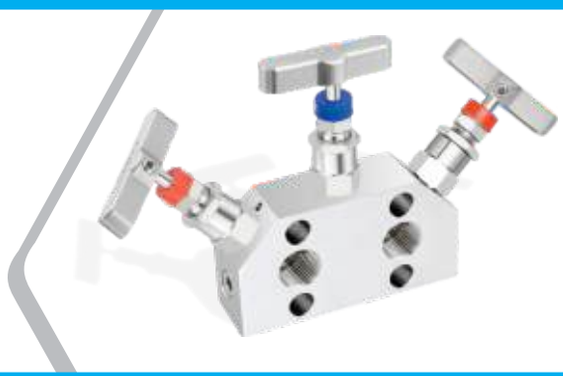


3-Way Manifolds

Standard Body - Pipe to Flange, Direct Mounting

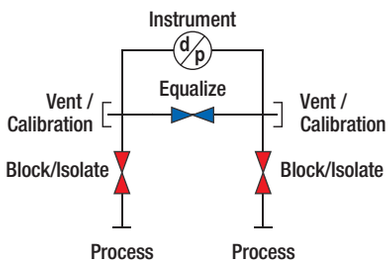
3-Way Manifold consists of one equalizer valve and two block valves and of two vents with caps. It can have pipe connections or **PANAM**® compression fittings for process connection and flanged end for instrument connection.

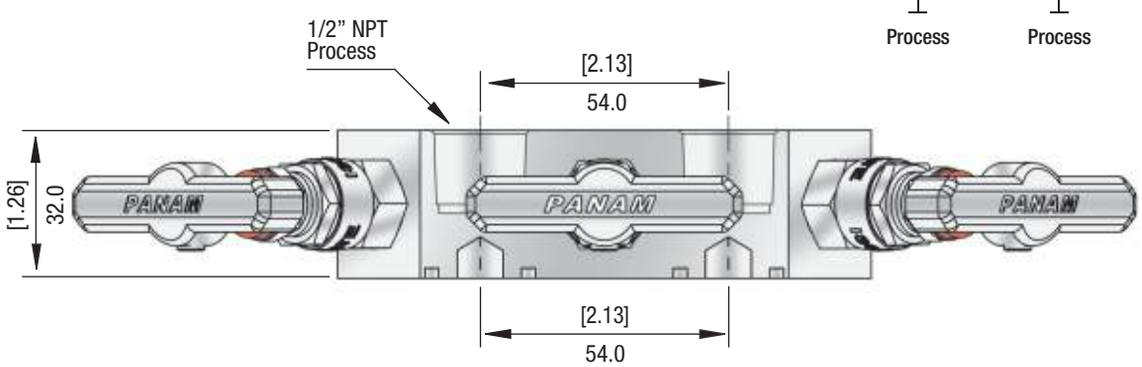
The distance between hole centers - 54mm (2-1/8").

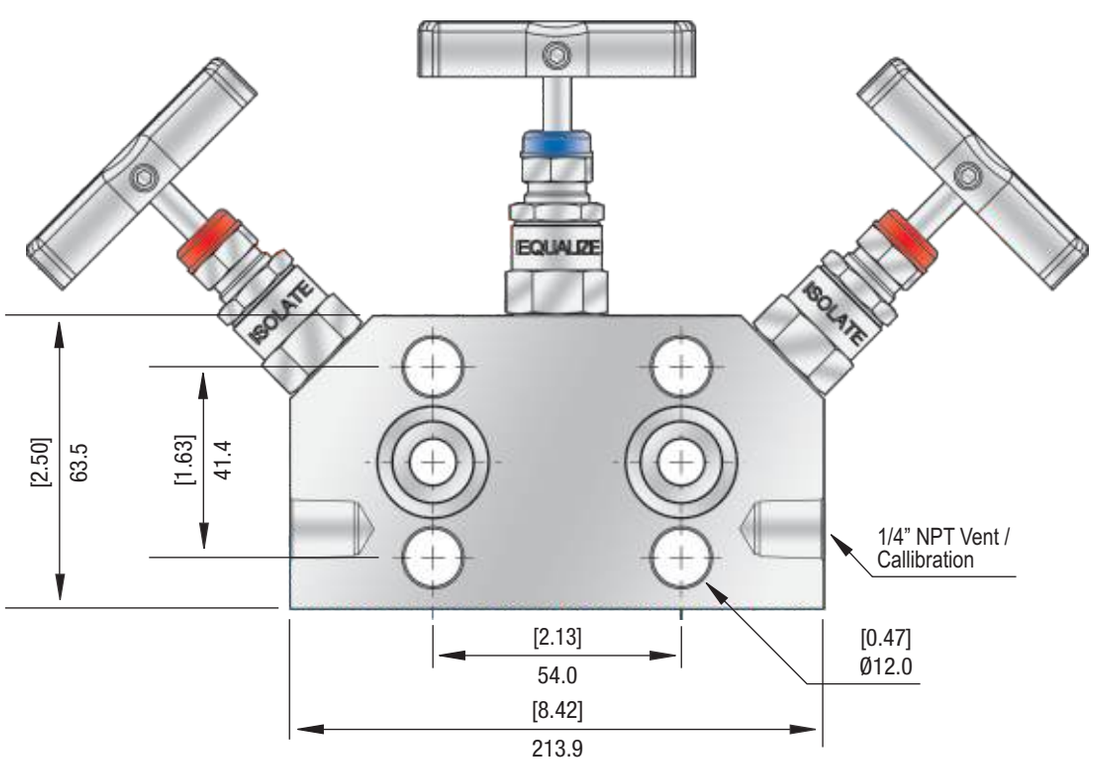


Dimensions

3VM-SS-8-DM







3-Way Manifolds

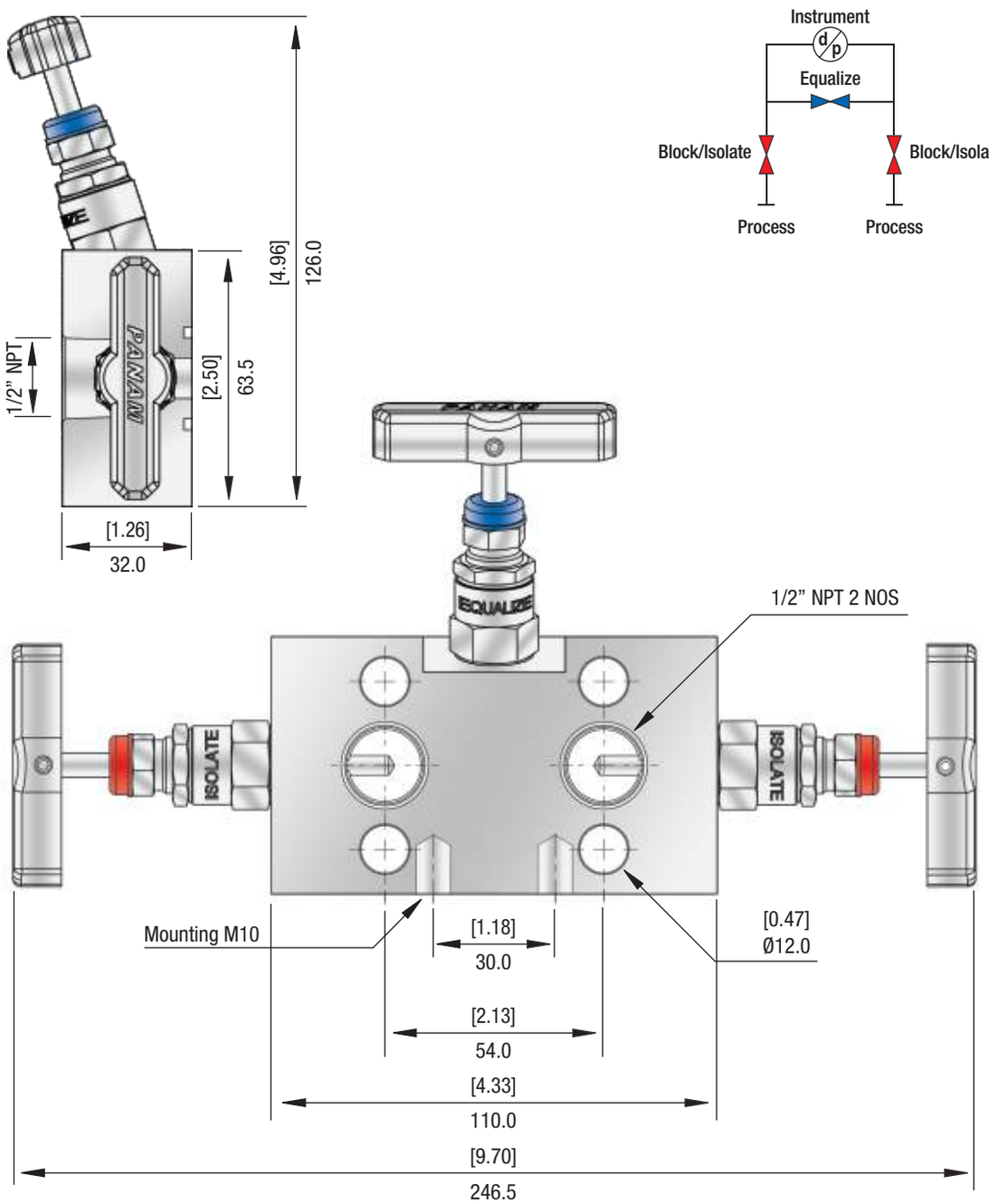
Standard Body - Pipe to Flange, Direct Mounting

3-Way Manifold consists of one equalizer valve and two block valves. It can have pipe connections or **PANAM**® compression fittings for process connection and flanged end for instrument connection.

The distance between hole centers - 54mm (2-1/8")

Dimensions

3VM-SS-8-DM-A

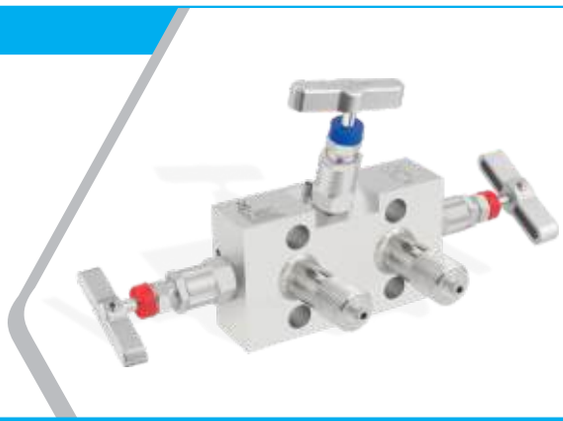


3-Way Manifolds

Standard Body - Pipe to Flange, Direct Mounting

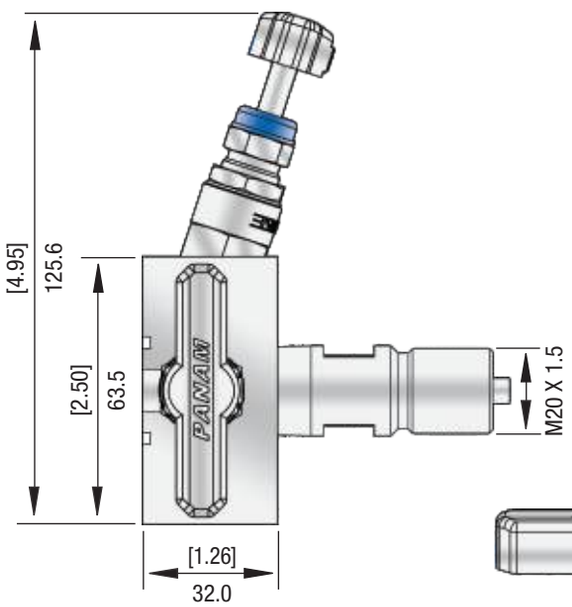
3-Way Manifold consists of one equalizer valve and two block valves. It can have pipe connections or **PANAM**® compression fittings for process connection and flanged end for instrument connection.

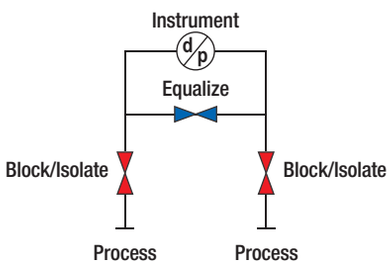
The distance between hole centers - 54mm (2-1/8")

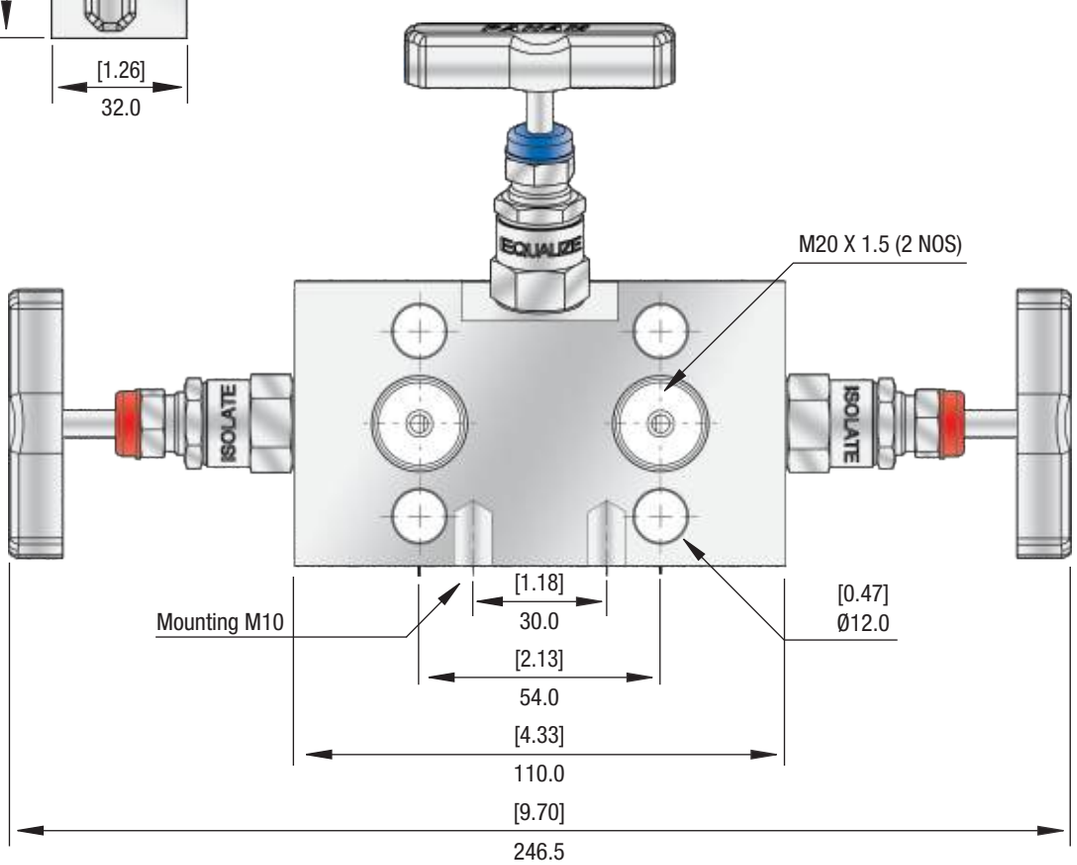


Dimensions

3VM-SS-20MM-DM-A







3-Way Manifolds

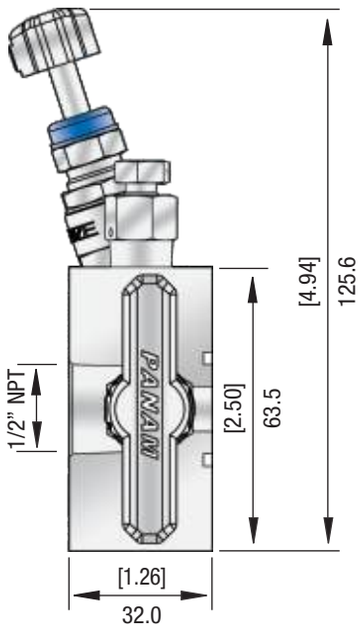
Standard Body - Pipe to Flange, Direct Mounting

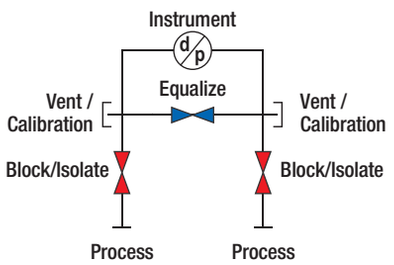
3-Way Manifold consists of one equalizer valve and two block valves. It can have pipe connections or **PANAM**® compression fittings for process connection and flanged end for instrument connection.

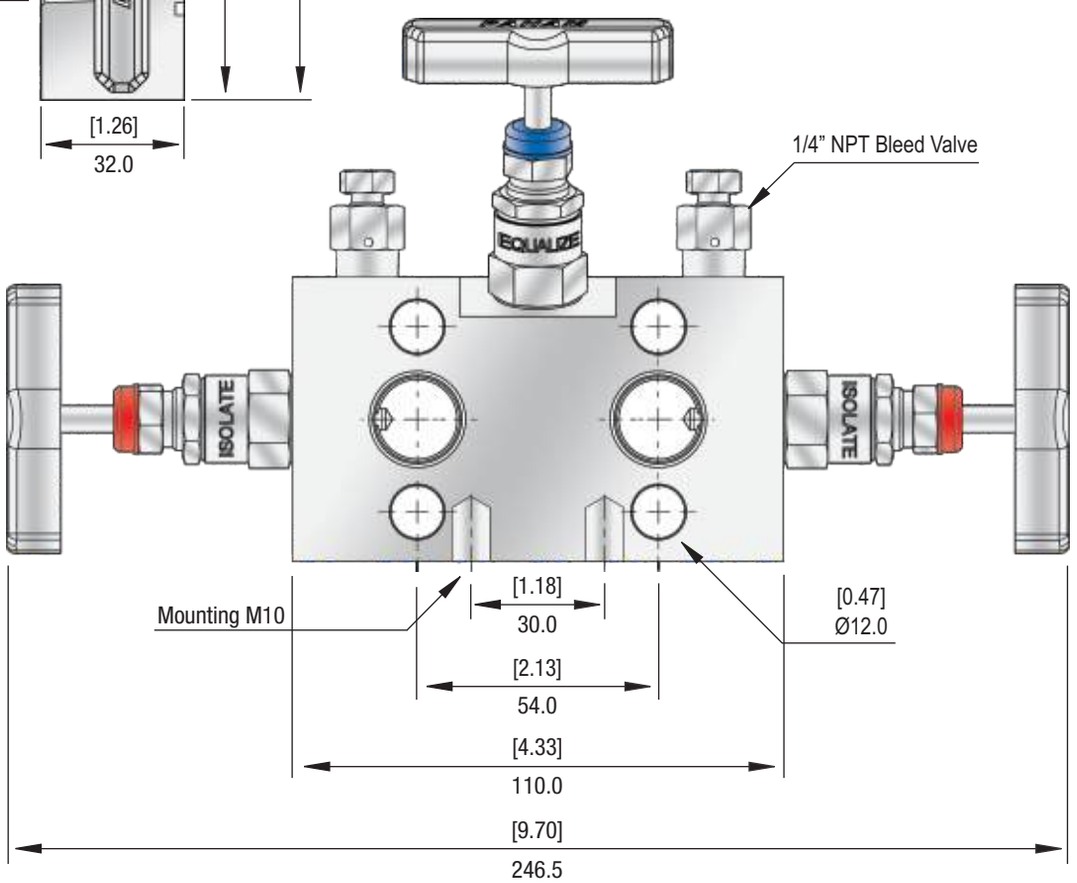
The distance between hole centers - 54mm (2-1/8")

Dimensions

3VM-SS-8-DM-A-BV







3-Way Manifolds

Ordering Information for 3-Way Manifolds with Standard Body

3VM-SS-20M-R-A-V8-SG-10K-BKT

Number of Valves

3 Valve Manifolds

Material

SS	- Stainless Steel 316	SDSS	- Super Duplex - UNS S32750
CS	- Carbon Steel	6MO	- UNS S31254
MO	- Monel - 400	INC625	- Inconel 625
HC	- Hastalloy - C 276	INC825	- Inconel 825
DSS	- Duplex - UNS S32205		

Connection Size

4	- 1/4" NPT	4R	- 1/4" BSPT	20MM	- External Thread M20x1.5 / Flange
8	- 1/2" NPT	4G	- 1/4" BSPP	20MSWL	- M20x1.5 with Swivel Nut
20M	- M20x1.5	8R	- 1/2" BSPT	4GSWL	- 1/4" BSPP with Swivel Nut
		8G	- 1/2" BSPP	8GSWL	- 1/2" BSPP with Swivel Nut
				08	- 1/2" PANAM® Tube Fitting
				M12	- 12mm PANAM® Tube Fitting

Mounting

R - Standard Body - Pipe to Pipe
T - Standard Body - Pipe to Flange *
H - Standard Body - Flange to Flange *
DM - Standard Body - Pipe to Flange, Direct Mounting **

* Standard Flange type MSS-SP-99
** Type A to IEC 61518 - the letter are changed to TA, HA or DMA correspondingly,
As per Type B to IEC 61518 the letters are changed to TB, HB or DMB correspondingly.

Configuration

A - Type A (Angular)

Drain Hole Size

-	- 1/4"NPT (Standard)	V8	- 1/2"NPT	V4G	- 1/4" BSPP	V8G	- 1/2" BSPP
V2	- 1/8"NPT	V20M	- M20x1.5	V2G	- 1/8" BSPP		

Optional

P	- Vent with a Plug	XLT	- Low Temperature Application
SG	- Sour Gas Conditions in Accordance to NACE MR-01-75	BV	- Vent with Bleed Valves
		BT	- Ball Tip
HT	- Grafoil Seal for High Temperature	ATK	- Anti-Tamper Key

Maximum Working Pressure

- - Maximum Working Pressure 6000 psi (414 bar)
10K - Maximum Working Pressure 10000 psi (689 bar)

Mounting

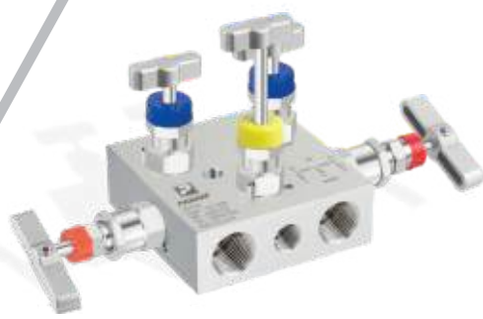
BKT - Mounting Brackets

5-Way Manifolds

Standard Body - Pipe to Pipe

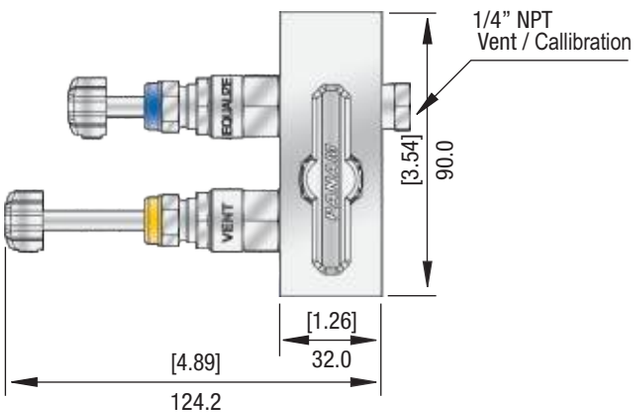
5-Way Manifold consists of two block valves, two equalizer valves and one vent valve. It can have pipe connections or PANAM® compression fittings for process connection and instrument connection.

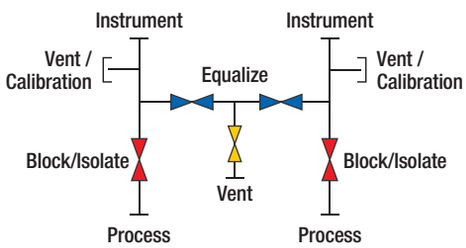
The distance between hole centers - 54mm (2-1/8").

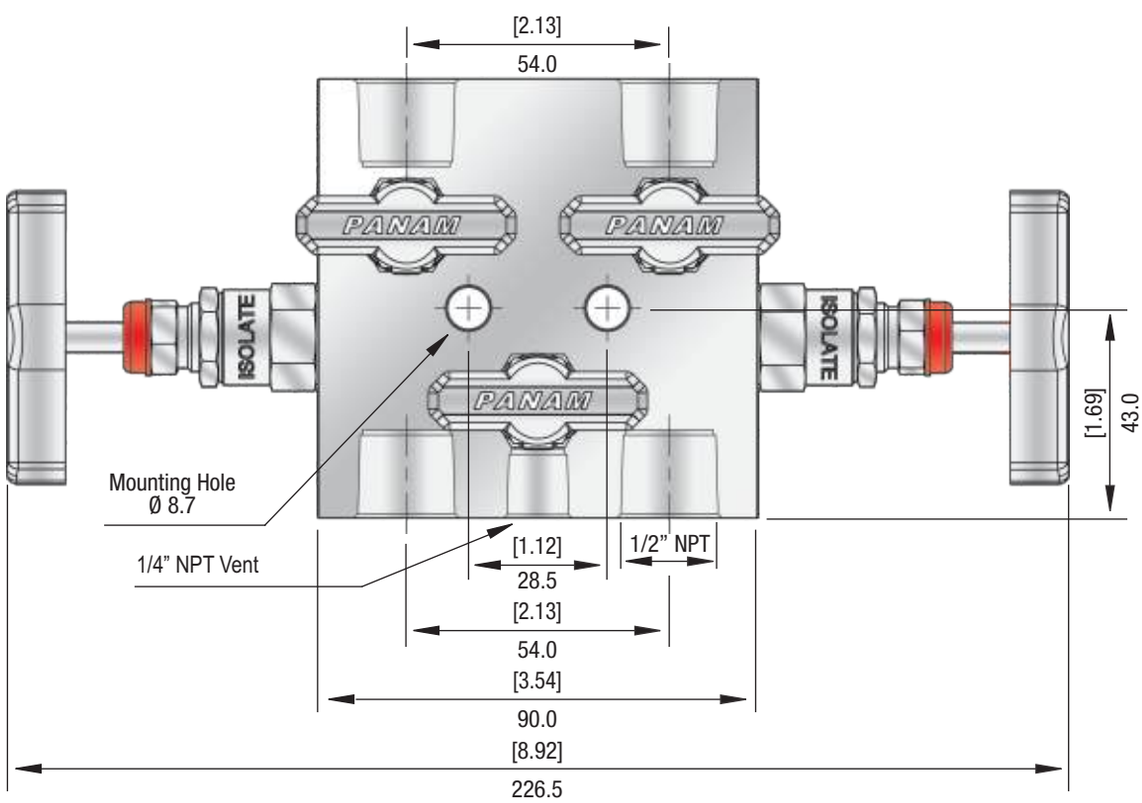


Dimensions

5VM-SS-8-R





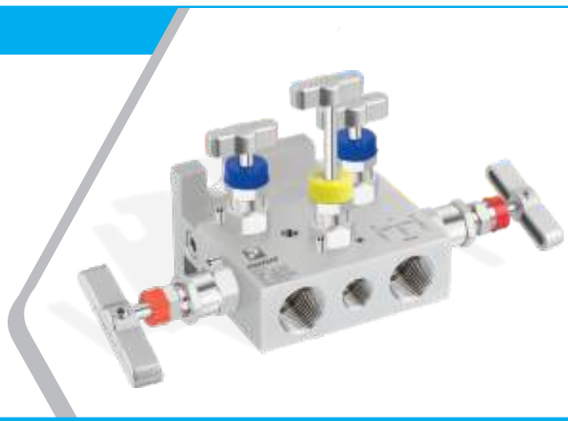


5-Way Manifolds

Standard Body - Pipe to Flange

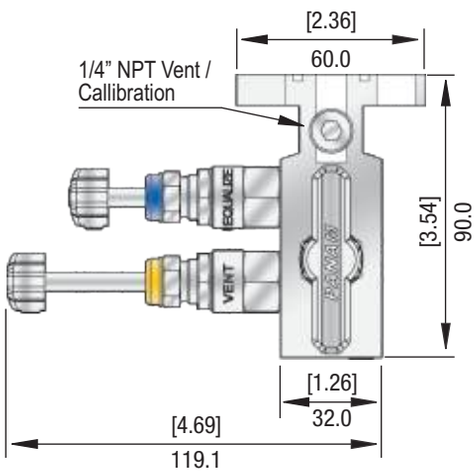
5-Way Manifold consists of two block valves, two equalizer valves and one vent valve. It can have pipe connections or PANAM® compression fittings for process connection and flanged instrument connection.

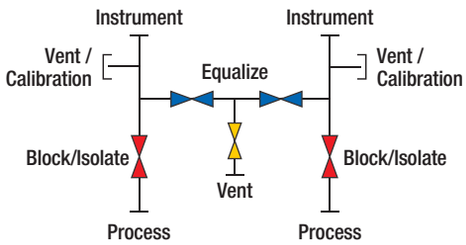
The distance between hole centers - 54mm (2-1/8").

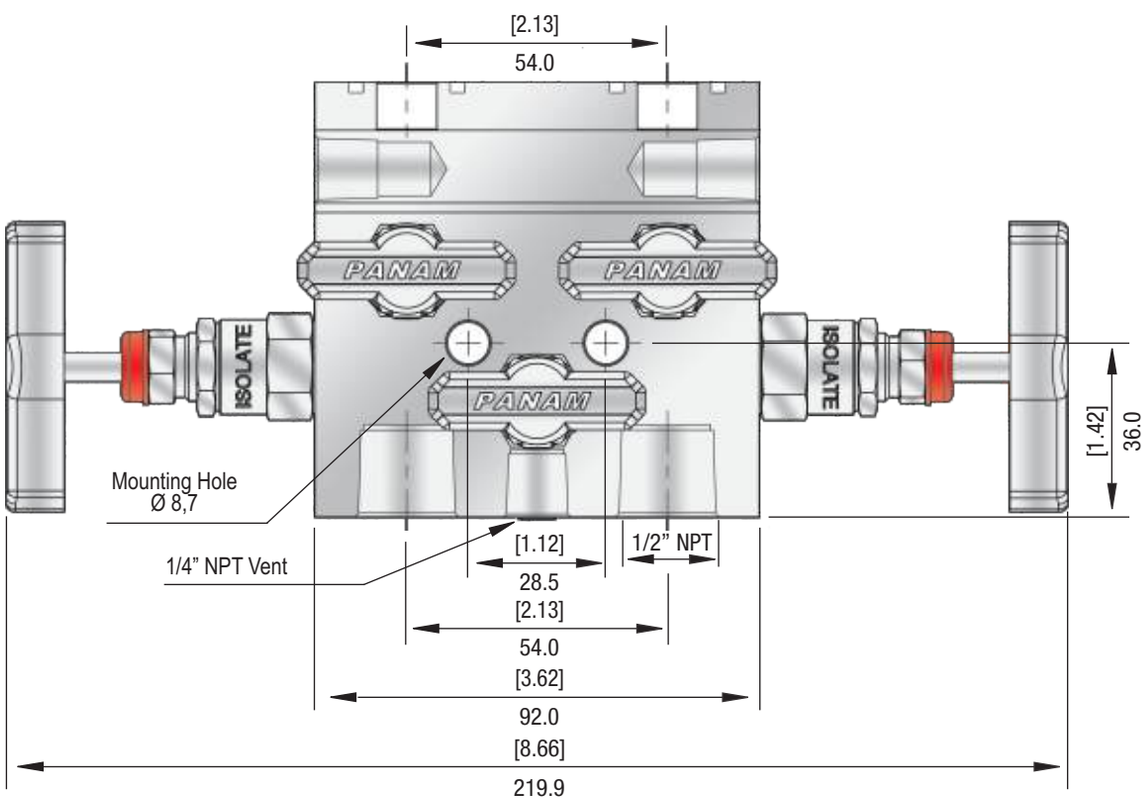


Dimensions

5VM-SS-8-T





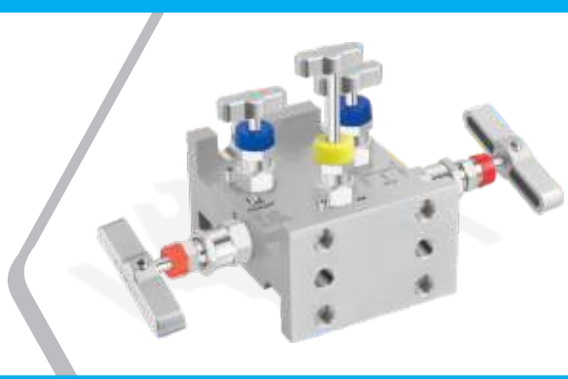


5-Way Manifolds

Standard Body - Flange to Flange

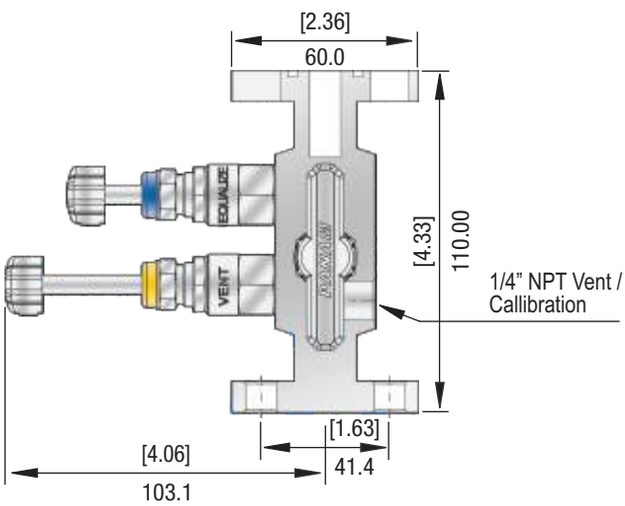
5-Way Manifold consists of two block valves, two equalizer valves and one vent valve. It has flanged ends for process connection and flanged instrument connection.

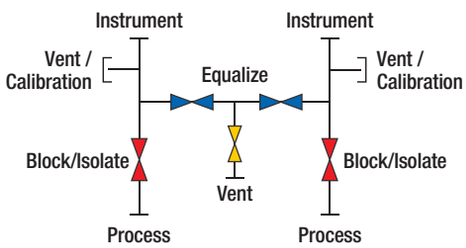
The distance between hole centers - 54mm (2-1/8").

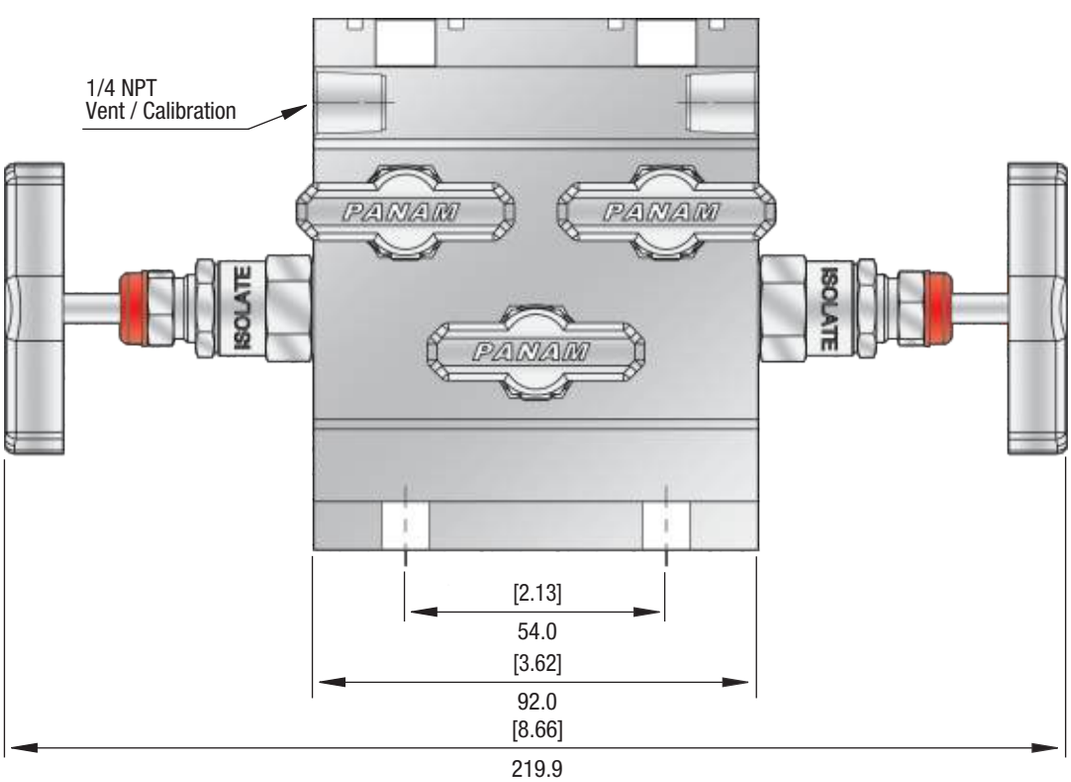


Dimensions

5VM-SS-H





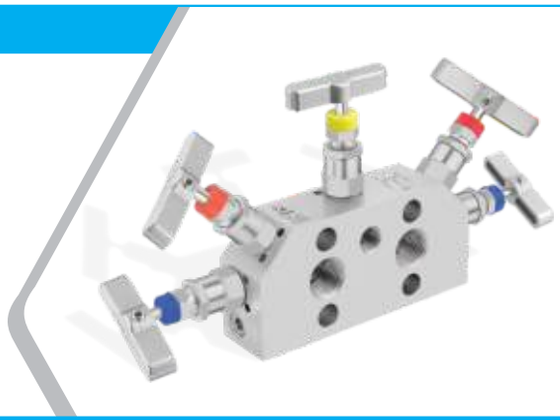


5-Way Manifolds

Standard Body - Pipe to Flange, Direct Mounting

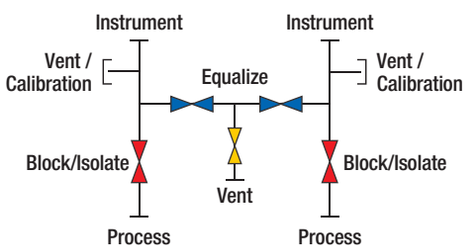
5-way manifold consists of two block valves, two equalizer valves and one vent valve. It can have pipe connections or PANAM® compression fittings for process connection and flanged instrument connection.

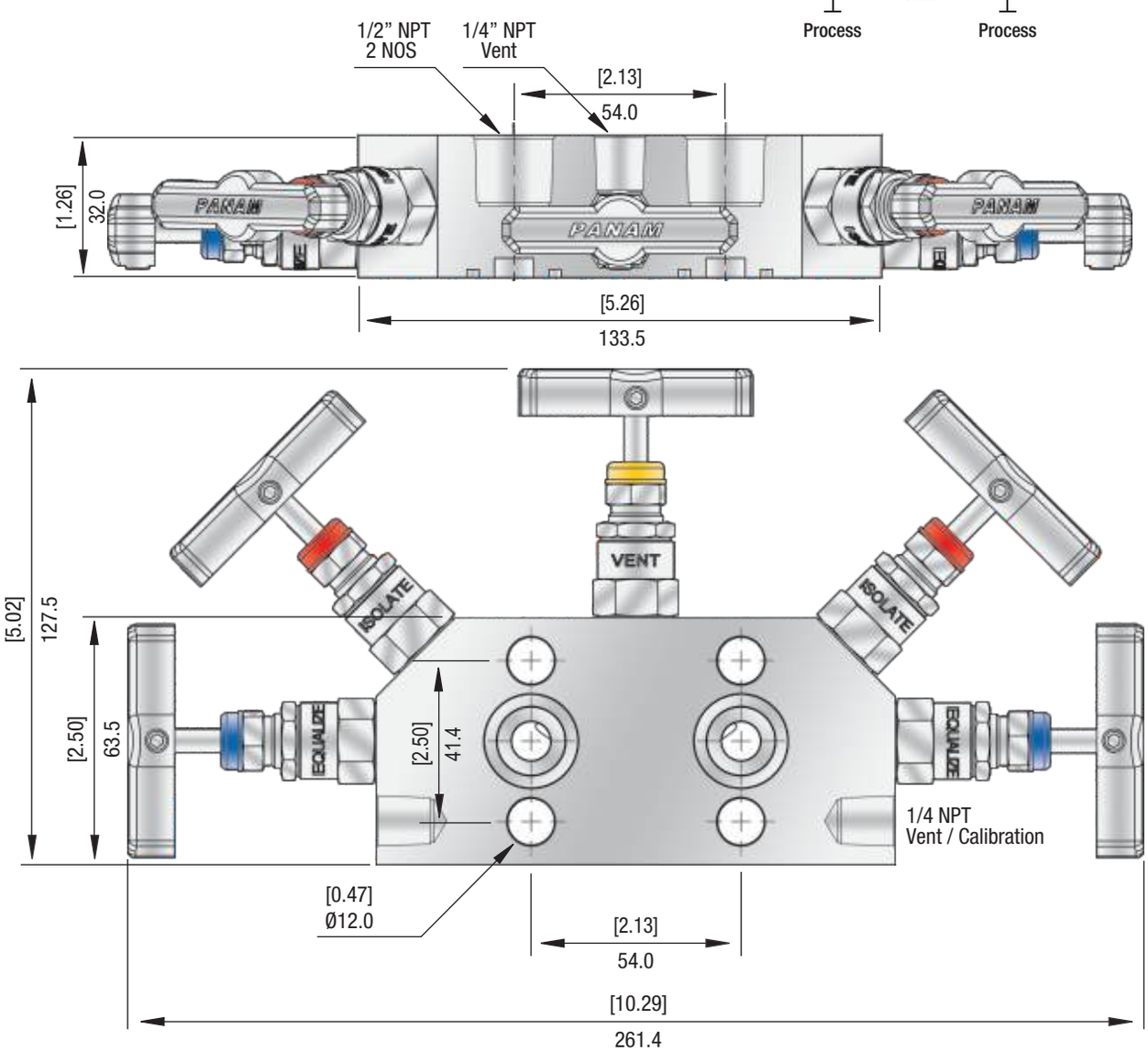
The distance between hole centers - 54mm (2-1/8").



Dimensions

5VM-SS-8-DM



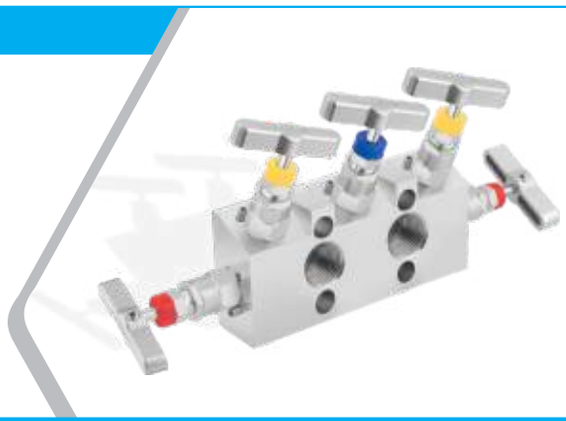


5-Way Manifolds

Standard Body - Pipe to Flange, Direct Mounting

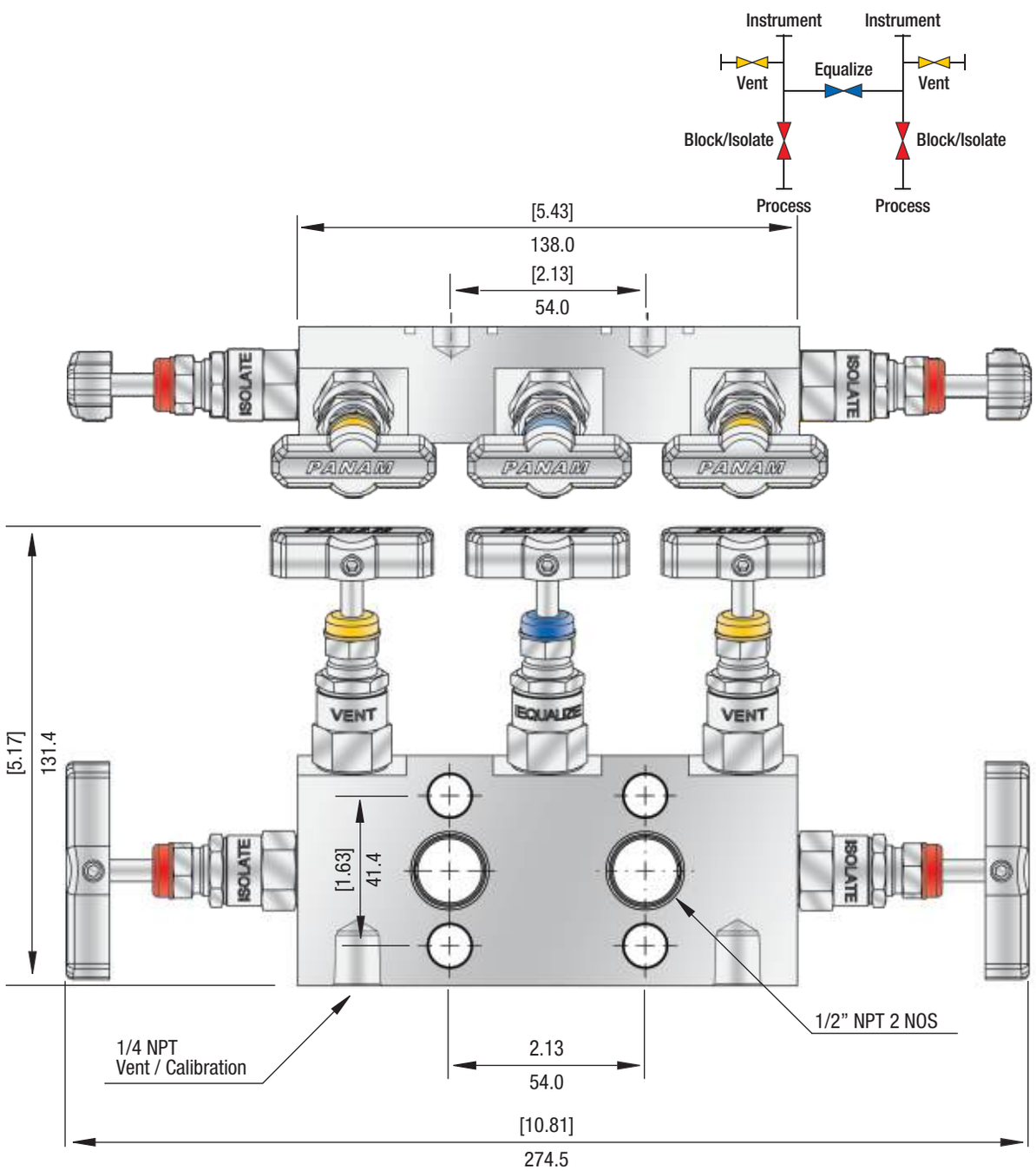
5-way manifold consists of two block valves, one equalizer valve and two vent valves. It can have pipe connections or PANAM® compression fittings for process connection and flanged instrument connection.

The distance between hole centers - 54mm (2-1/8").



Dimensions

5VM-SS-8-DM-A



5-Way Manifolds

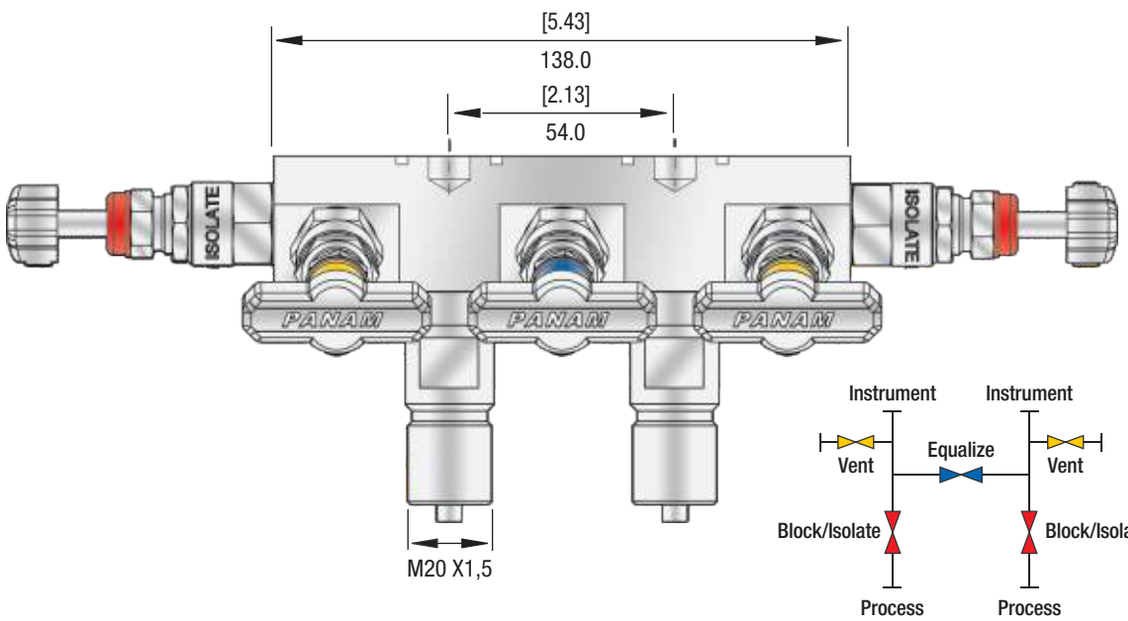
Standard Body - Pipe to Flange, Direct Mounting

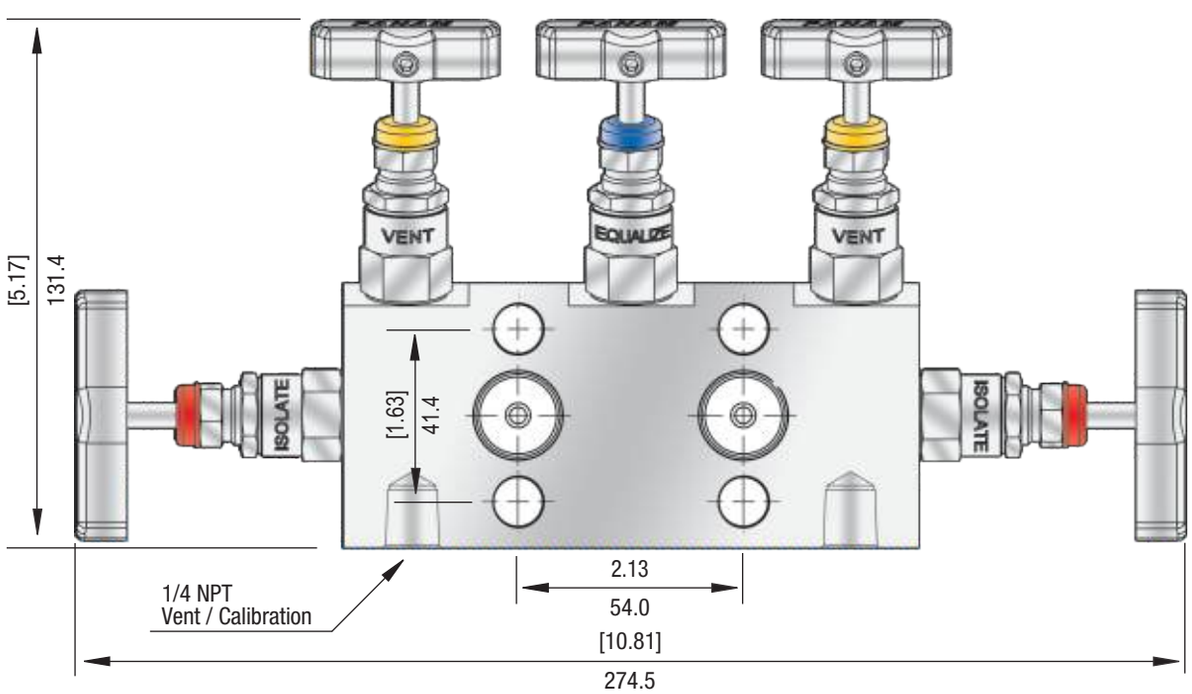
5-way manifold consists of two block valves, one equalizer valve and two vent valves. It can have pipe connections or PANAM® compression fittings for process connection and flanged instrument connection.

The distance between hole centers - 54mm (2-1/8").

Dimensions

5VM-SS-20MM-DM-A





5-Way Manifolds

Ordering Information for 5-Way Manifolds with Standard Body

5VM-SS-20M-R-A-V8-P-10K-BKT

Number of Valves

5 Valve Manifolds

Material

SS	- Stainless Steel 316	SDSS	- Super Duplex - UNS S32750
CS	- Carbon Steel	6MO	- UNS S31254
MO	- Monel - 400	INC625	- Inconel 625
HC	- Hastalloy - C 276	INC825	- Inconel 825
DSS	- Duplex - UNS S32205		

Connection Size

4	- 1/4" NPT	4R	- 1/4" BSPT	20MM	- External Thread M20x1.5 / Flange
8	- 1/2" NPT	4G	- 1/4" BSPP	20MSWL	- M20x1.5 with Swivel Nut
20M	- M20x1.5	8R	- 1/2" BSPT	4GSWL	- 1/4" BSPP with Swivel Nut
		8G	- 1/2" BSPP	8GSWL	- 1/2" BSPP with Swivel Nut
				08	- 1/2" PANAM® Tube Fitting
				M12	- 12mm PANAM® Tube Fitting

Mounting

R - Standard Body - Pipe to Pipe
T - Standard Body - Pipe to Flange *
H - Standard Body - Flange to Flange *
DM - Standard Body - Pipe to Flange, Direct Mounting **

* Standard Flange type MSS-SP-99
** Type A to IEC 61518 - the letter are changed to TA, HA or DMA correspondingly,
As per Type B to IEC 61518 the letters are changed to TB, HB or DMB correspondingly.

Configuration

A - Type A (Angular)

Drain Hole Size

-	- 1/4" NPT (Standard)	V8	- 1/8" NPT	V4G	- 1/4" BSPP	V2G	- 1/8" BSPP
V2	- 1/2" NPT	V20M	- M20x1.5	V8G	- 1/2" BSPP		

Optional

P	- Vent with a Plug	PC	- Power Configuration (2 Vent - 1 Equalizer - 2 Isolation)
SG	- Sour Gas Conditions in Accordance to NACE MR-01-75	BT	- Ball Tip
HT	- Grafoil Seal for High Temperature	LB	- Soft Seat (Large Bore)
XLT	- Low Temperature Application	ATK	- Anti-Tamper Key

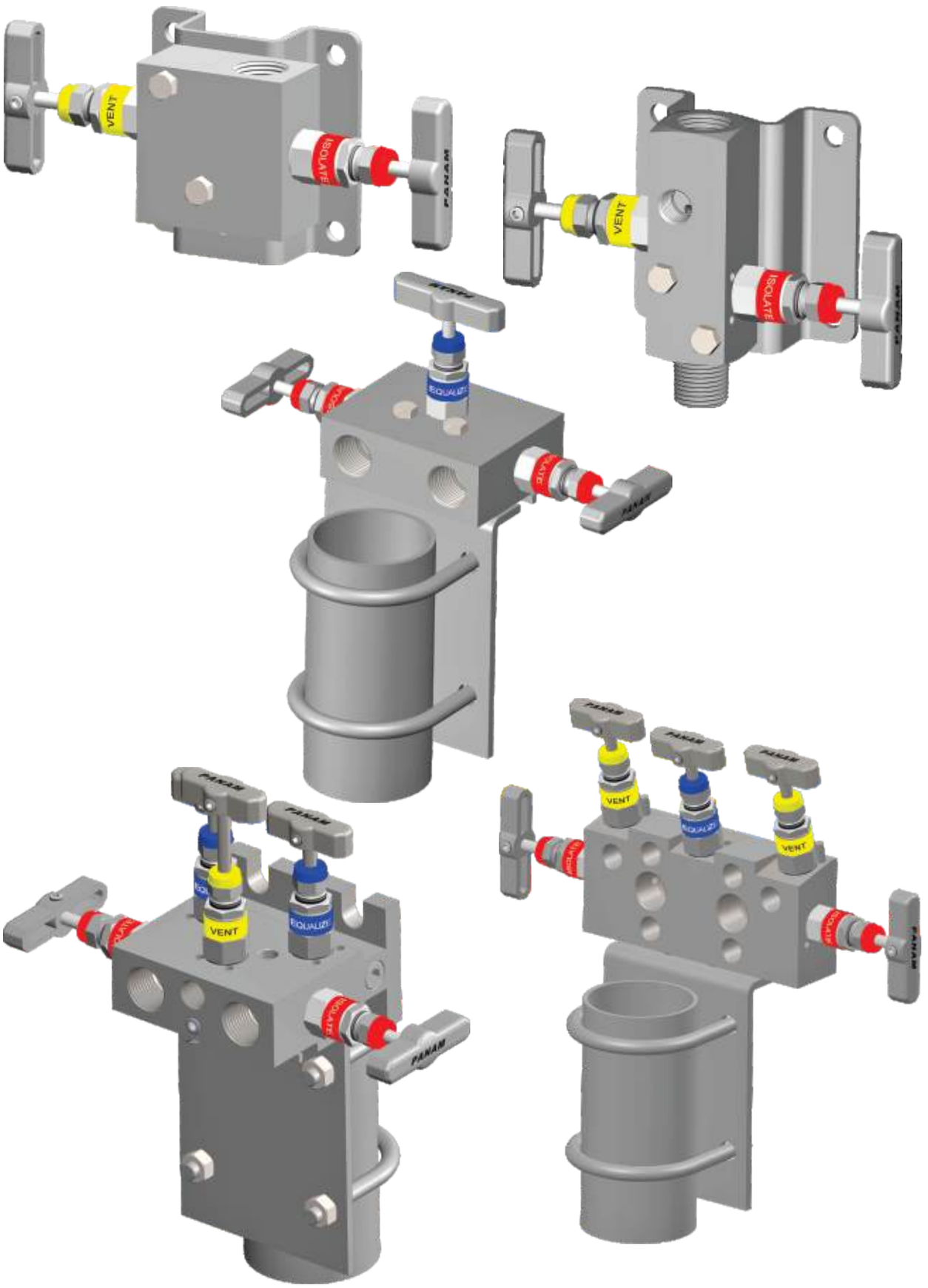
Maximum Working Pressure

- - Maximum Working Pressure 6000 psi (414 bar)
10K - Maximum Working Pressure 10000 psi (689 bar)

Mounting

BKT - Mounting Brackets

Manifold Installation Options



Notes

Other Products

2-3-5 VALVE MANIFOLDS

BELLOW SEAL VALVES

GAUGE ROOT VALVES

NEEDLE VALVES

HP NEEDLE VALVES

BALL VALVES

HP BALL VALVES

DOUBLE BLOCK & BLEED VALVES

MONO FLANGE VALVES

CHECK VALVES

RELIEF VALVES

FILTERS

TUBE FITTINGS

PIPE FITTINGS

HP PIPE FITTINGS

SWIVEL FITTINGS

JIC FITTINGS

WELD FITTINGS

HIGH PRESSURE FITTINGS

GAUGE SAVERS

PRESSURE GAUGES

TEMPERATURE GAUGES

PRESSURE TRANSMITTERS

TEMPERATURE TRANSMITTERS

PRESSURE REGULATORS

CONDENSATE POTS

AIR HEADERS

GRAB SAMPLING SYSTEM

PRE-FABRICATED HOOK UPS

FLANGE ADAPTERS

SWIVEL GAUGE ADAPTERS

THERMOWELLS

BLEED PLUGS

DIE-ELECTRIC FITTINGS

TUBING

PANAM ENGINEERS LTD.

501, Jaisingh Business Center, Parsiwada, Sahar Road, Andheri (East), Mumbai - 400 099. BHARAT •