

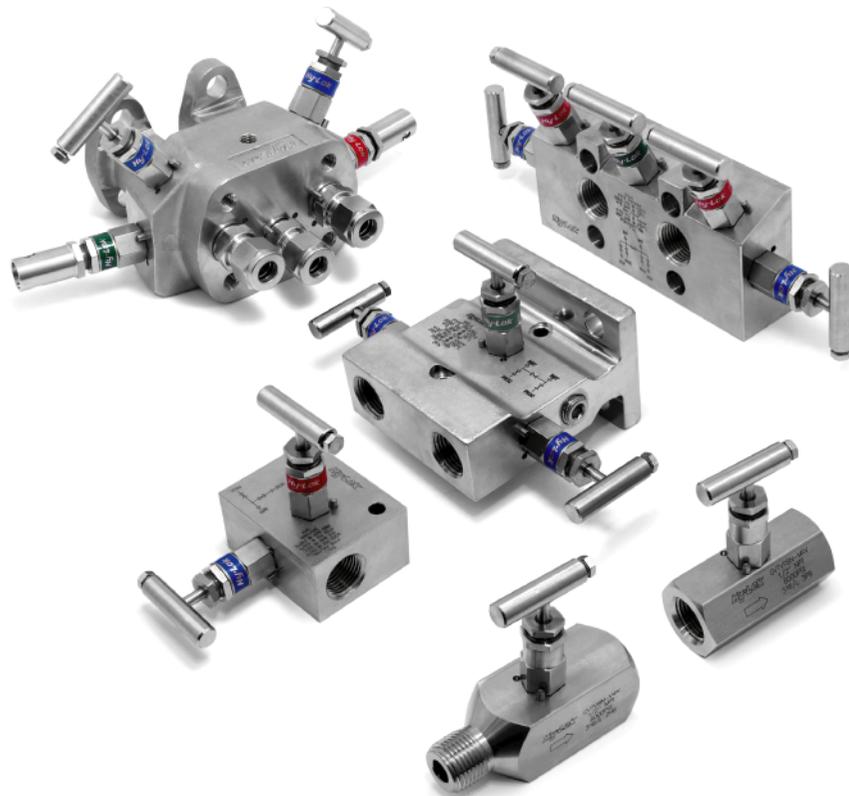


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Catalog No. H-120MV  
Mar. 2022



## Instrument Manifold Systems



### Instrument, Manifolds and Modular Systems

- GV Series Gauge & Root Valves
- M Series 2, 3, and 5-Valve Instrument Manifolds
- MS Series Modular Instrumentation Systems

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**TOMORROW**

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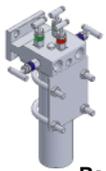
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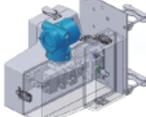
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### INTRODUCTION

Hy-Lok offers a variety of gauge valve, 2, 3, 4 and 5-Valve instrument manifolds all available in a wide range of materials and fully compatible with the requirements of the Oil & Gas, Petro-Chemical and Power Plant industries.

The gauge valve and 2-Valve manifolds are designed for static pressure applications; the 3, 4 and 5-Valve manifolds are designed for differential pressure applications.

As a customer-focused company, Hy-Lok provides high-quality products and engineering solutions that address our customers' business and technical requirements.

### GENERAL

#### ■ Max. Pressure & Temperature

- Max allowable working pressure : 6000 psi (413 bar) at 100°F (38°C)
- Max allowable temperature :
  - 450°F (232°C) max with PTFE stem packing
  - 1200°F (648°C) max with Graphite stem packing and 316SS, Hastelloy® C-276 , Super Duplex

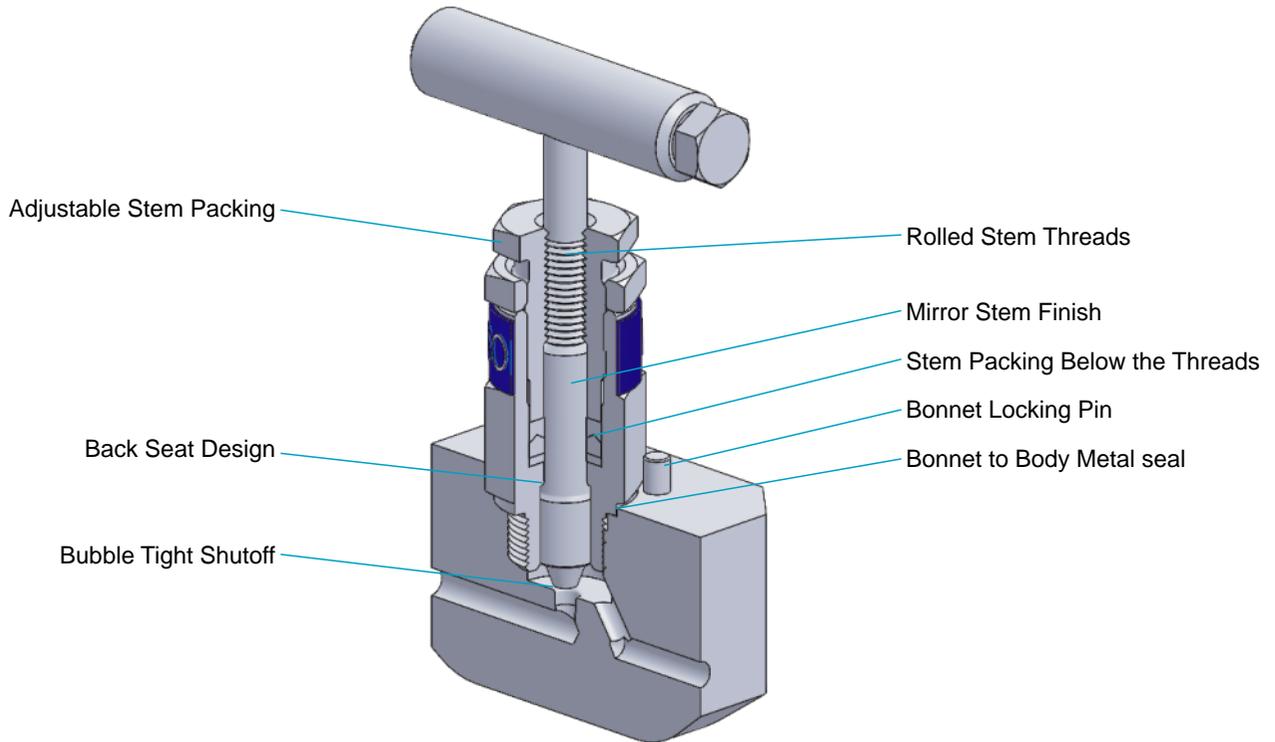
#### ■ Materials

- Manifold bodys : 316/316L Stainless Steel, Monel Alloy 400, Hastelloy® C-276, Super Duplex available
- Fixing bolts of high tensile stainless steel, ASTM A193-B8M CL.1
- Gasket of flat PTFE or Graphite rings

#### ■ Features

- Standard valve bonnet throughout manifold range.
- Integral back seat on stem for a secondary seal in the fully opened position.
- Non-rotating Tip & externally adjustable gland .
- Stem seals below stem threads.
- Stem threads are protected from process media (not-wetted)
  - Stem seals below stem threads for protect stem threads from process media.
- Stem with cold rolled threads.
- Blow-out proof stem.
- Back seat - Metal to metal secondary needle seal.
- Standard packing is PTFE and optional Graphite® packing is available for high temperature.
- Anti-Tamper valve bonnets for Equalize and Vent valves.
- Bonnet locking pin to prevents bonnet loosening due to vibration.
- All Valves 100% factory tested.

## BONNET TECHNOLOGY



### **Rolled Stem Threads**

Stem threads are rolled for increased thread strength.  
Prevents galling and adds years to the useful life of the valve.

### **Mirror Stem Finish**

Burnished to a Ra 0.15 $\mu\text{m}$  finish in the packing area enabling smooth stem operation and extending packing life.

### **Stem Packing Below the Threads**

Stem packing isolates the stem threads from process fluid.  
Prevents lubricant washout, thread corrosion and galling of the stem threads.

### **Bonnet Locking Pin**

Safety feature which prevents the accidental separation of the bonnet from the body while in service.

### **Bonnet to Body Metal Seal**

Metal-to-metal in constant compression, isolating the bonnet threads from process fluid corrosion.

### **Adjustable Stem Packing**

Simple and easily adjustable for gland wear compensation, increasing valve life.

### **Safety Back Seat Stem**

Prevents stem blowout or accidental removal while in operation and provides a metal-to-metal secondary stem seal while in the full open position.

### **Bubble Tight Shutoff**

Non-rotational tip gives successive positive bubble tight shut off assuring the user of leakage free performance and downstream functional safety.

## TECHNICAL DATA

### ■ Pressure - Temperature Ratings

- 450°F (232°C) max with PTFE stem packing
- 1200°F (648°C) max with Graphite stem packing and 316SS, Hastelloy® C-276
- 500°F (260°C) max with Graphite stem packing and Alloy 400

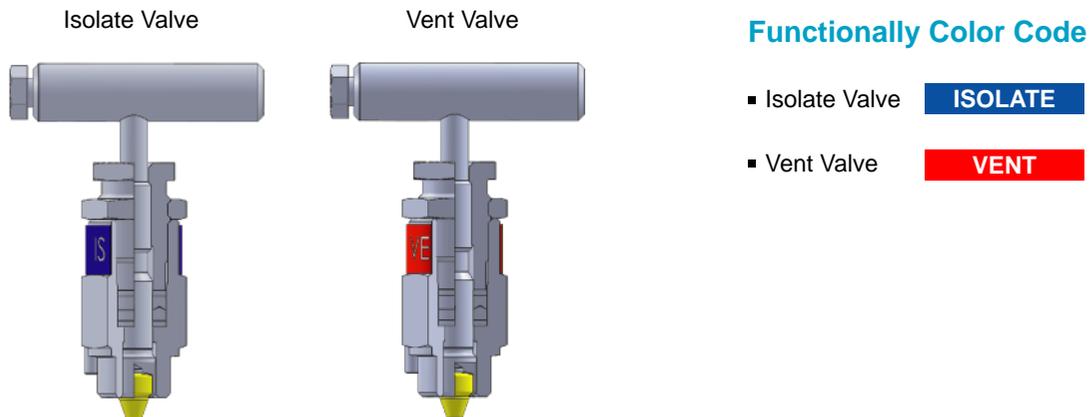
ASME Class	2500		N/A
Material Group	2.2	3.4	N/A
Material Name	316SS	Alloy 400	Hastelloy® C-276
Temperature, °F (°C)	Working Pressure, psig (bar)		
-65 (-53) to 100 (38)	6000 (413)	5000 (344)	6000 (413)
200 (93)	5160 (355)	4400 (303)	6000 (413)
250 (121)	4910 (338)	4260 (293)	6000 (413)
300 (148)	4660 (321)	4120 (283)	6000 (413)
350 (176)	4470 (308)	4050 (279)	5975 (412)
400 (204)	4280 (295)	3980 (274)	5880 (405)
450 (232)	4130 (284)	3970 (273)	5710 (393)
500 (260)	3980 (274)	3960 (272)	5540 (381)
600 (315)	3760 (259)	3940 (271)	5040 (347)
650 (343)	3680 (253)	3940 (271)	4905 (338)
700 (371)	3620 (249)	3920 (270)	4730 (326)
750 (398)	3560 (245)	3880 (267)	4430 (305)
800 (426)	3520 (242)	3820 (263)	4230 (291)
850 (454)	3480 (239)	3145 (216)	4060 (279)
900 (482)	3460 (238)	-	3745 (258)
950 (510)	3220 (222)	-	3220 (222)
1000 (537)	3030 (208)	-	3030 (208)
1050 (565)	3000 (206)	-	3000 (206)
1100 (593)	2545 (175)	-	2685 (185)
1150 (621)	1970 (135)	-	2285 (157)
1200 (648)	1545 (106)	-	1715 (118)

## GV Series Gauge and Root Valves

- The GV Series Gauge valves are designed for static pressure gauge and instrument installation for isolation and venting.
- The Gauge 2-valves are designed to facilitate safe, compact, and economical gauge installation and operation.
- The Gauge root valves(multi port) allowing the versatile positioning of gauges or instruments without requiring additional perforation of the main piping.

### ■ Standard Valve Bonnets

Gauge 2-Valves are provided with 1-Isolate and 1-Vent  
 Each valve bonnet is fitted with a color coded stainless steel identification tag.



### ■ Valve Body

This is standard hexagon or square bar stock material.

### ■ Connections

#### Process Side Inlet Connections

- 1/4 to 3/4 in. NPT male or female threads are standard.
- Alternative thread forms, socket or butt weld connections are available.

#### Instrument Side Outlet Connections

- 1/4 to 3/4 in. NPT male or female threads are standard.

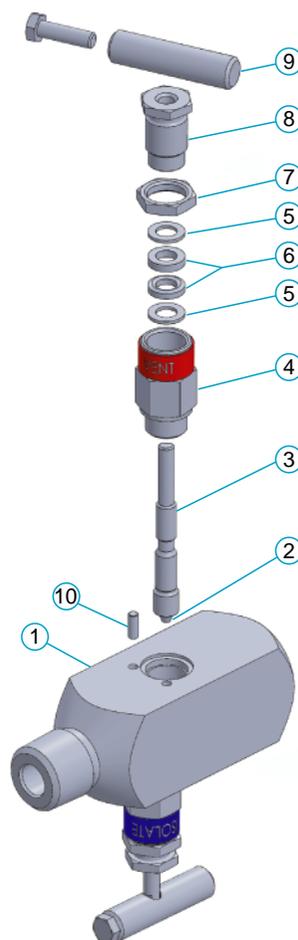
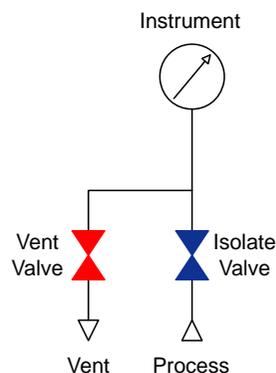
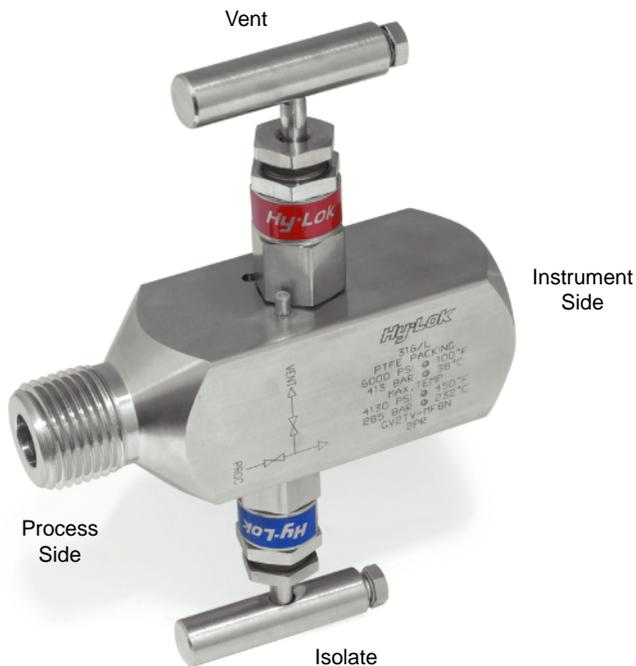
#### Vent/Bleed Connections

- The position depends upon valve design but are generally on the side or bottom face of the valve.
- 1/4 in. NPT female threads are standard.

## GV Series Gauge and Root Valves

The Gauge valves are mainly used for static pressure gauges and instrument applications that include process isolation valve and vent valve for pressure removal.

- Consists of isolation valve and vent valve.
- Connections - 1/4 to 3/4 in. NPT male or female threads.

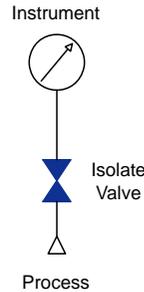
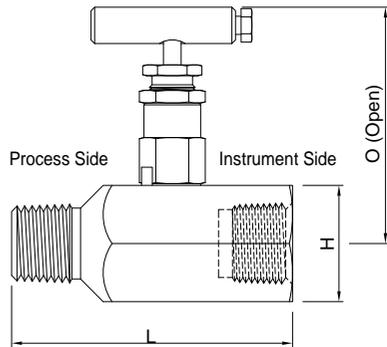


Component	Material Grade / ASTM Specification
1 Body	316 SS/A479 or A182
2 Disc	630 SS/A564
3 Stem	316 SS/A479
4 Bonnet	316 SS/A479
5 Packing Washer	Reinforced PTFE
6 Stem Packing	PTFE
7 Lock Nut	316 SS/A479
8 Packing Bolt	316 SS/A479
9 Handle	316 Stainless Steel
10 Stop Pin	316 Stainless Steel

## GV Series Gauge Valves

### VGTVMF (Male to Female)

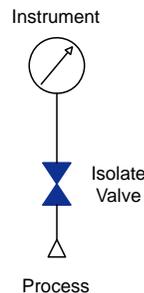
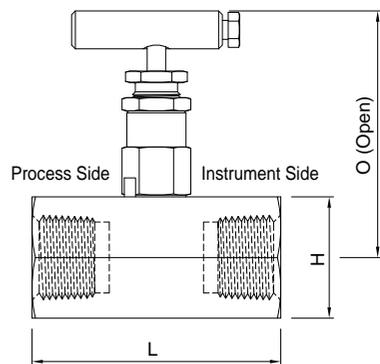
T : PTFE Packing  
G : Graphite Packing



Part No.	End Connection		Dimensions in. (mm)		
	Process	Instrument	L	O(open)	H(Hex)
VGTVMF4N	1/4 in. NPT Male	1/4 in. NPT Female	2.62(67.0)	2.62(67.0)	1.06(27.0)
VGTVMF8N	1/2 in. NPT Male	1/2 in. NPT Female	3.06(78.0)	2.72(69.0)	1.26(32.0)
VGTVMF12N8N	3/4 in. NPT Male	1/2 in. NPT Female	3.06(78.0)	2.72(69.0)	1.26(32.0)
VGTVMF12N	3/4 in. NPT Male	3/4 in. NPT Female	3.06(78.0)	2.83(72.0)	1.50(38.0)

### VGTVF (Female to Female)

T : PTFE Packing  
G : Graphite Packing



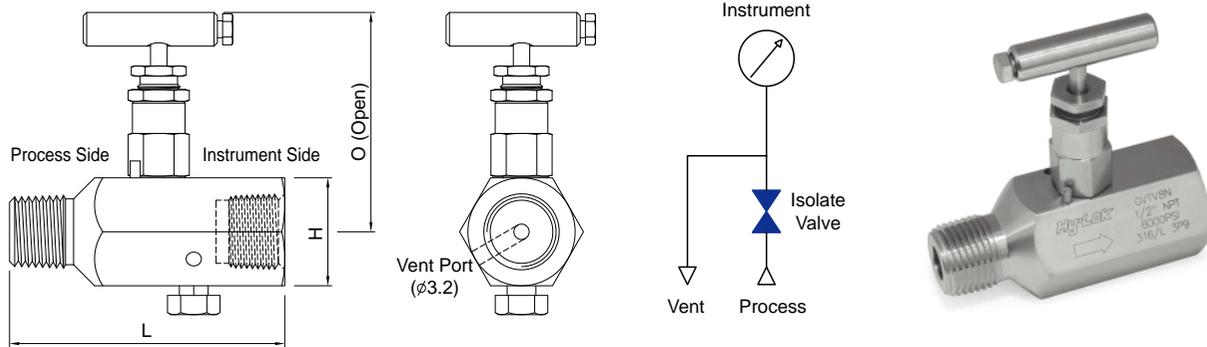
Part No.	End Connection		Dimensions in. (mm)		
	Process	Instrument	L	O(open)	H(Hex)
VGTVF4N	1/4 in. NPT Female		2.06(52.5)	2.62(67.0)	1.06(27.0)
VGTVF8N	1/2 in. NPT Female		2.63(67.0)	2.72(69.0)	1.26(32.0)
VGTVF12N	3/4 in. NPT Female		2.63(67.0)	2.83(72.0)	1.50(38.0)

All dimensions are in millimeters(inchs) reference only, subject to change.

## GV Series Gauge Valves

**VGVTVMF**(Male to Female with Vent Port)

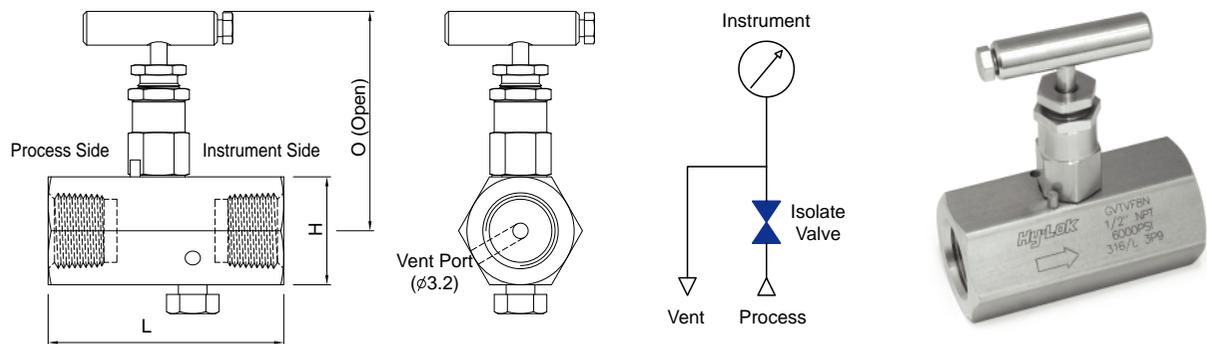
I : PTFE Packing  
G : Graphite Packing



Part No.	End Connection		Dimensions in. (mm)		
	Process	Instrument	L	O(open)	H(Hex.)
VGVTVMF4N-VP	1/4 in. NPT Male	1/4 in. NPT Female	2.94(75.0)	2.68(68.0)	1.18(30.0)
VGVTVMF8N-VP	1/2 in. NPT Male	1/2 in. NPT Female	3.50(89.0)	2.72(69.0)	1.26(32.0)
VGVTVMF12N8N-VP	3/4 in. NPT Male	1/2 in. NPT Female	3.50(89.0)	2.72(69.0)	1.26(32.0)
VGVTVMF12N-VP	3/4 in. NPT Male	3/4 in. NPT Female	3.50(89.0)	2.83(72.0)	1.50(38.0)

**VGVTVF**(Female to Female with Vent Port)

I : PTFE Packing  
G : Graphite Packing



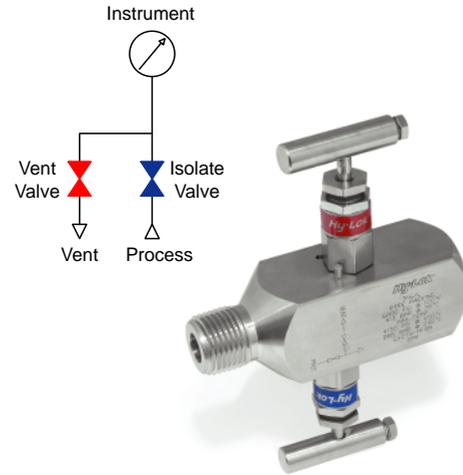
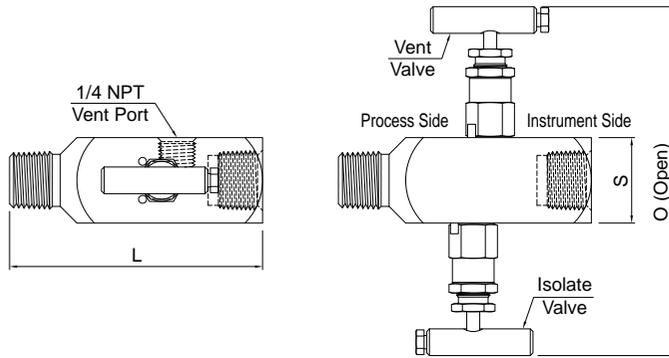
Part No.	End Connection		Dimensions in. (mm)		
	Process	Instrument	L	O(open)	H(Hex.)
VGVTVF4N-VP	1/4 in. NPT Female		2.25(57.5)	2.68(68.0)	1.18(30.0)
VGVTVF8N-VP	1/2 in. NPT Female		2.81(71.5)	2.72(69.0)	1.26(32.0)
VGVTVF12N-VP	3/4 in. NPT Female		2.81(71.5)	2.83(72.0)	1.50(38.0)

All dimensions are in millimeters(inchs) reference only, subject to change.

## GV Series Gauge 2-Valves

### VG2TV-MF (Male to Female with 1/4 in. NPT Vent Port)

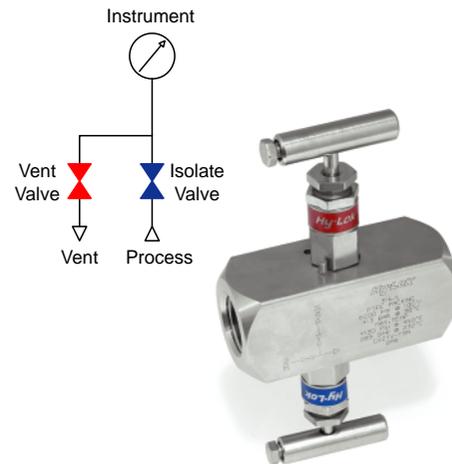
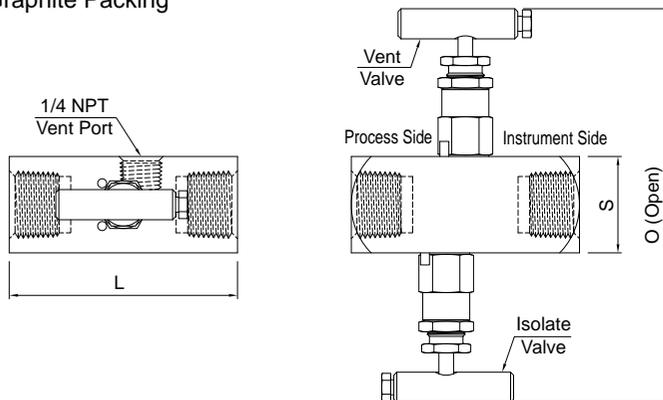
T : PTFE Packing  
G : Graphite Packing



Part No.	End Connection		Dimensions in. (mm)		
	Process	Instrument	L	O(open)	S(Square)
VG2TV-MF4N	1/4 in. NPT Male	1/4 in. NPT Female	3.19(81.0)	5.36(136.0)	1.18(30.0)
VG2TV-MF8N	1/2 in. NPT Male	1/2 in. NPT Female	3.75(95.5)	5.43(138.0)	1.26(32.0)
VG2TV-MF12N8N	3/4 in. NPT Male	1/2 in. NPT Female	3.75(95.5)	5.43(138.0)	1.26(32.0)
VG2TV-MF12N	3/4 in. NPT Male	3/4 in. NPT Female	3.75(95.5)	5.67(144.0)	1.50(38.0)

### VG2TV-F (Female to Female with 1/4 in. NPT Vent Port)

T : PTFE Packing  
G : Graphite Packing



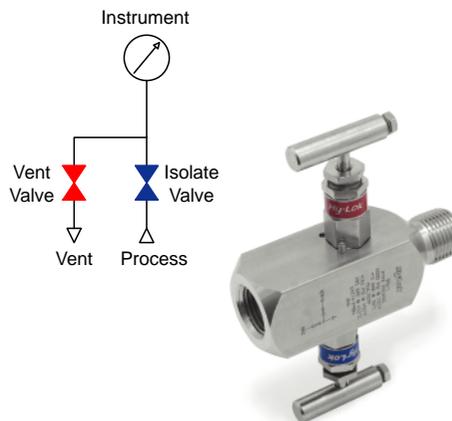
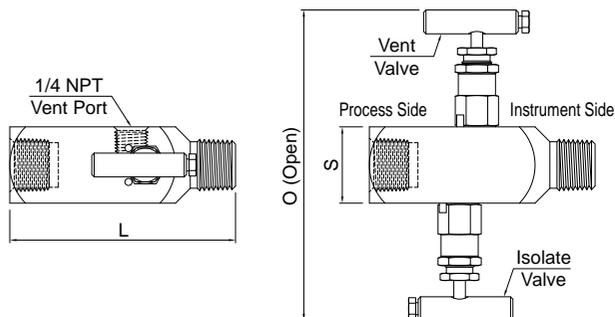
Part No.	End Connection		Dimensions in. (mm)		
	Process	Instrument	L	O(open)	S(Square)
VG2TV-F4N	1/4 in. NPT Female		2.50(63.5)	5.36(136.0)	1.18(30.0)
VG2TV-F8N	1/2 in. NPT Female		3.06(78.0)	5.43(138.0)	1.26(32.0)
VG2TV-F12N8N	3/4 in. NPT Female	1/2 in. NPT Female	3.06(78.0)	5.67(144.0)	1.50(38.0)
VG2TV-F12N	3/4 in. NPT Female		3.06(78.0)	5.67(144.0)	1.50(38.0)

All dimensions are in millimeters(inchs) reference only, subject to change.

## GV Series Gauge 2-Valves

**VG2TV-FM**(Female to Male with 1/4 in. NPT Vent Port)

I : PTFE Packing  
G : Graphite Packing

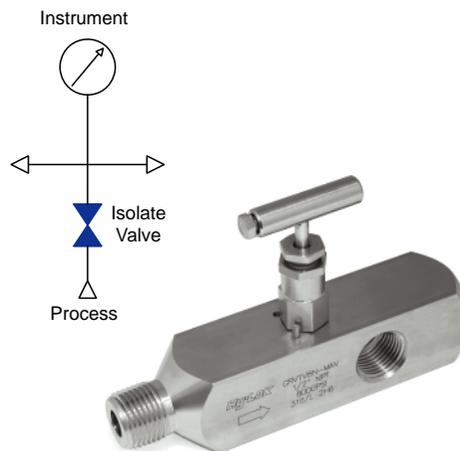
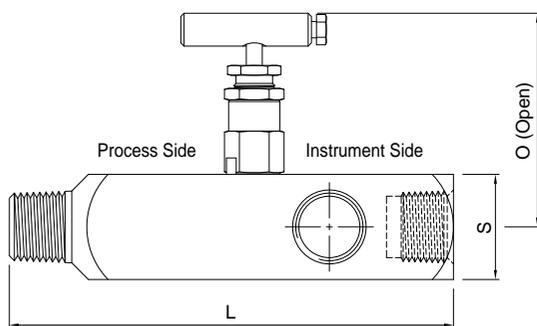


Part No.	End Connection		Dimensions in. (mm)		
	Process	Instrument	L	O(open)	S(Square)
VG2TV-FM4N	1/4 in. NPT Female	1/4 in. NPT Male	3.19(81.0)	5.36(136.0)	1.18(30.0)
VG2TV-FM8N	1/2 in. NPT Female	1/2 in. NPT Male	3.75(95.5)	5.43(138.0)	1.26(32.0)
VG2TV-FM12N8N	3/4 in. NPT Female	1/2 in. NPT Male	3.75(95.5)	5.67(144.0)	1.50(38.0)
VG2TV-FM12N	3/4 in. NPT Female	3/4 in. NPT Male	3.75(95.5)	5.67(144.0)	1.50(38.0)

## GV Series Gauge Root Valves

**VGRVTVMF**(Male to Female with Multi Port)

I : PTFE Packing  
G : Graphite Packing



Part No.	End Connection		Dimensions in. (mm)		
	Process	Instrument	L	O(open)	S(Square)
VGRVTVMF8N	1/2 in. NPT Male	1/2 in. NPT Female	5.35(136.0)	2.72(69.0)	1.26(32.0)
VGRVTVMF12N8N	3/4 in. NPT Male	1/2 in. NPT Female	5.35(136.0)	2.72(69.0)	1.26(32.0)
VGRVTVMF8N	1/2 in. NPT Female		5.35(136.0)	2.72(69.0)	1.26(32.0)
VGRVTVMF12N8N	3/4 in. NPT Female	1/2 in. NPT Female	4.02(102.0)	2.78(70.5)	1.38(35.0)

All dimensions are in millimeters(inchs) reference only, subject to change.

## Options

### High temperature Packing

Graphite valve packing material for high-temperature service. See Pressure-Temperature Ratings, page 8.  
 To order a manifold with an optional Graphite packing material, replace **T** with **G** in the manifold ordering number.  
 Example : VGV2**T**V-MF8N → VGV2**G**V-MF8N

## Maintenance kits

### Bonnet Assembly Kits

Select a Kit ordering number from the tables below based on the packing material.

Packing Material	Kit Ordering Number		Material Designator
	Isolate	Vent	
Graphite	XMAVBNTS- <b>G</b> -I	XMAVBNTS- <b>G</b> -V	G
PTFE	XMAVBNTS- <b>T</b> -I	XMAVBNTS- <b>T</b> -V	T



## Accessories

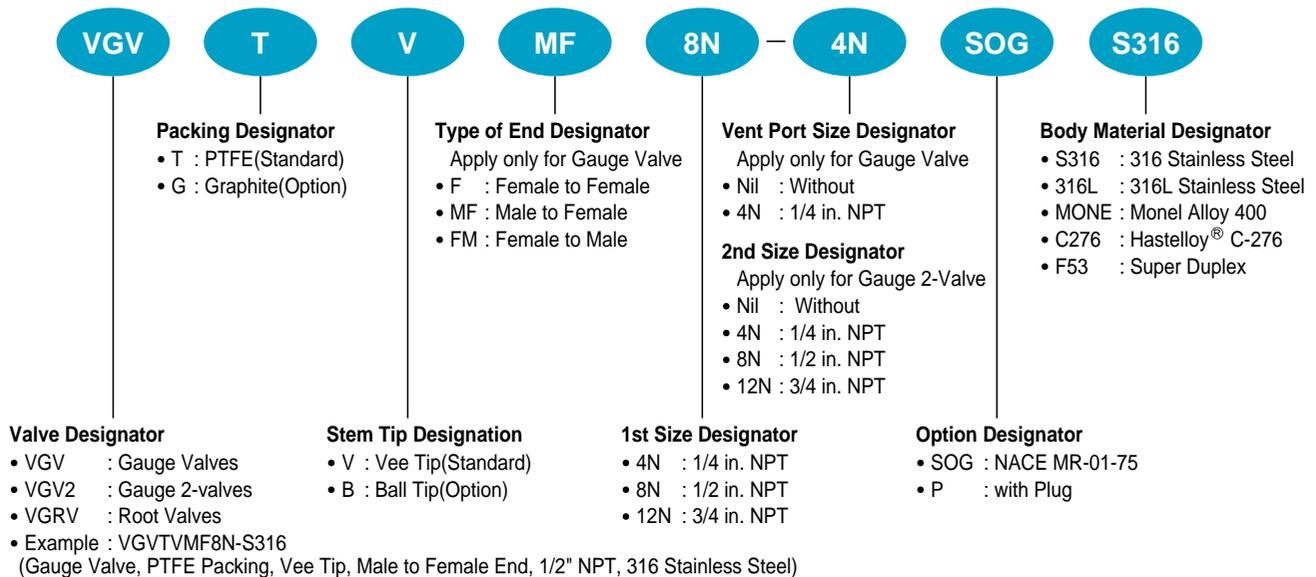
### Vent Plugs & Bleed Valves

Bleed & Vent plug valves are designed for use with gauge 2-valves or gauge root valves.  
 Can be used to vent to atmosphere before removal of an instrument.  
 Selection of Bleed & Vent plug valve with 1/4 in. NPT or 1/2 in. NPT, depending on the vent port size.  
 Are available in 316 stainless steel material.

Vent Port Size	Kit Ordering Number		Thread Designator	
	BLV Series	VPM Series		
1/4 in.	VBLV-4N	VPM-4N	4N	1/4 in. NPT
1/2 in.	VBLV-8N	VPM-8N	8N	1/2 in. NPT



## Ordering Information



## M Series Instrument Manifolds

The M Series instrument manifolds are designed for all types of instruments from static pressure gauge to differential pressure transmitters.

Available for direct or remote mounting, the pressure manifolds enable isolation, calibration and venting in a single unit.

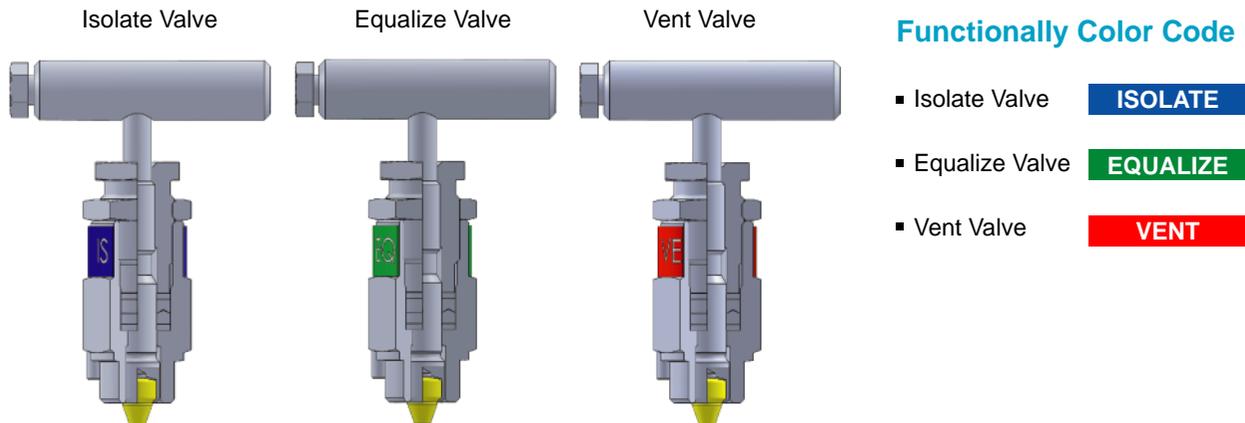
### Standard Valve Bonnets

2-Valve manifolds are provided with 1-Isolate and 1-Vent.

3-Valve manifolds are provided with 2-Isolate and 1-Equalize.

5-Valve manifolds are provided with 2-Isolate, 1- Vent and 2-Equalize. : GAS

5-Valve manifolds are provided with 2-Isolate, 2- Vent and 1-Equalize. : OIL



### Functionally Color Code

- Isolate Valve ISOLATE
- Equalize Valve EQUALIZE
- Vent Valve VENT

### Manifold Body

This is standard compact square bar stock style suitable for enclosure installation.

Forged forms are also available as standard.

### Connections

#### Process Side Inlet Connections :

- 1/2"NPT Female threads or Kidney Flange(oval) are standard.
- Alternative thread forms, socket or butt weld connections are available.
- Inlet connections are positioned on 2-1/4 in.(54mm).

#### Instrument Side Outlet Connections :

- Remote style manifolds are provided as standard with 1/2 in. NPT female threads.
- Direct style manifolds are provided as standard Flange face with DIN 19213 Part 2, DIN EN 61518 Type B
- Alternative thread forms, socket or butt weld connections are available.
- Outlet connections are positioned on 2-1/4 in.(54mm).

#### Vent/Bleed Connections :

- The position depends upon manifold design but are generally on the bottom face of the manifold.
- 2-Valve manifolds are provided as standard 1/4 in. or 1/2 in. NPT female threads.
- 3, 5-Valve manifolds are provided as standard 1/4 in. NPT female threads.

### Manifold Mountings

All direct mount manifolds are provided with 4 of 7/16 in.-20 thread Stainless Steel Bolts.

Bolt holes are positioned on 2-1/4 in.(54mm).

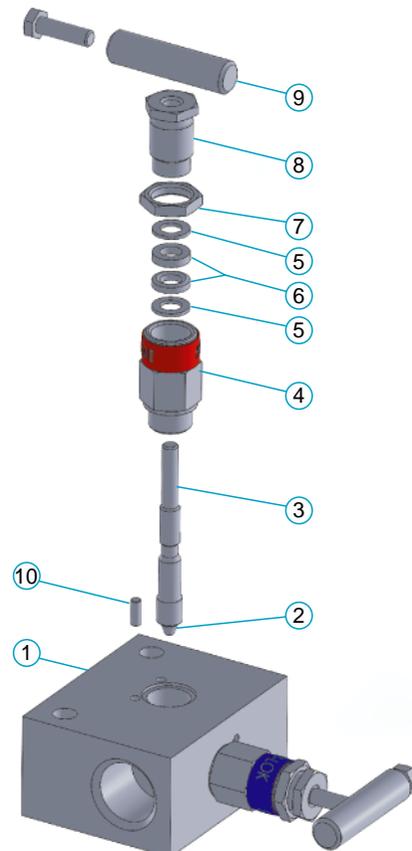
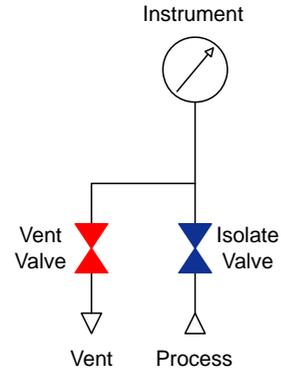
### Manifold Bracket Mountings

All manifolds are provided with bracket mounting holes.

## M Series 2-Valve Manifolds

The 2-Valve manifold used mainly in static pressure gauge and instrument applications such as pressure transmitters has process isolation valve and vent valve for pressure removal.

- Consists of one isolation valve and one vent valve.
- Connections - Female pipe (NPT) threads, Flange (IEC).
- Direct instrument mount and remote mount.
- Mounting holes as standard.



Component		Material Grade / ASTM Specification
1	Body	316 SS/A479 or A182
2	Disc	630 SS/A564
3	Stem	316 SS/A479
4	Bonnet	316 SS/A479
5	Packing Washer	Reinforced PTFE
6	Stem Packing	PTFE
7	Lock Nut	316 SS/A479
8	Packing Bolt	316 SS/A479
9	Handle	316 Stainless Steel
10	Stop Pin	316 Stainless Steel

## M Series 2-Valve Manifolds

### Remote Mount Manifolds (Female to Female)

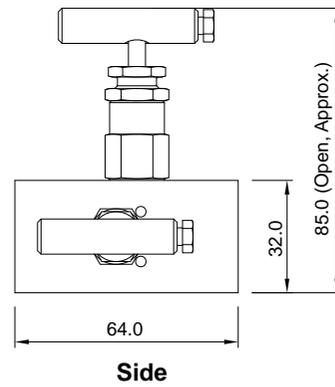
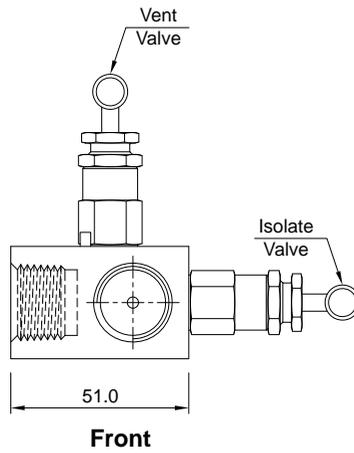
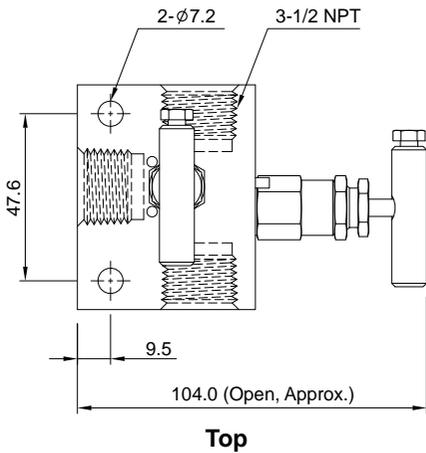
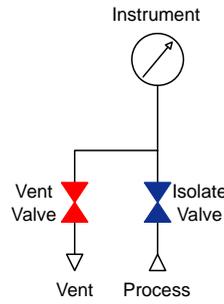
Pressure Manifolds

**VM2VTV8N**

0.8 Kg (1.8 lb)

**I** : PTFE Packing

**G** : Graphite Packing



### Remote Mount Manifolds / Vertical Vent (Female to Female)

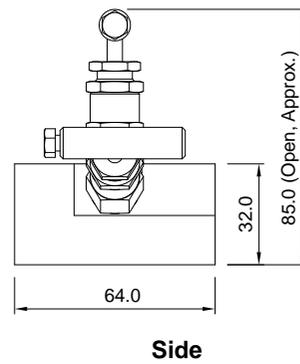
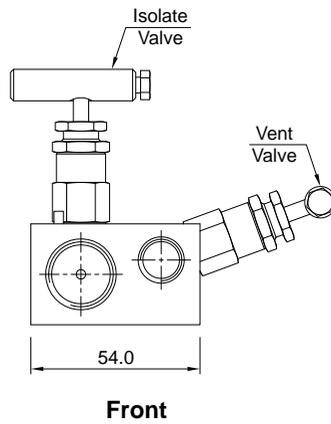
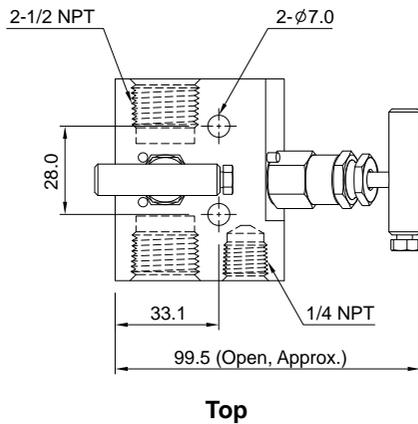
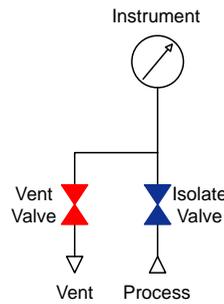
Pressure Manifolds

**VM2VTV8N**

0.9kg (2.0lb)

**I** : PTFE Packing

**G** : Graphite Packing



All dimensions are in millimeters(inchs) reference only, subject to change.

## M Series 2-Valve Manifolds

### Direct Mount Manifolds / 1-Flange (Female to Flange)

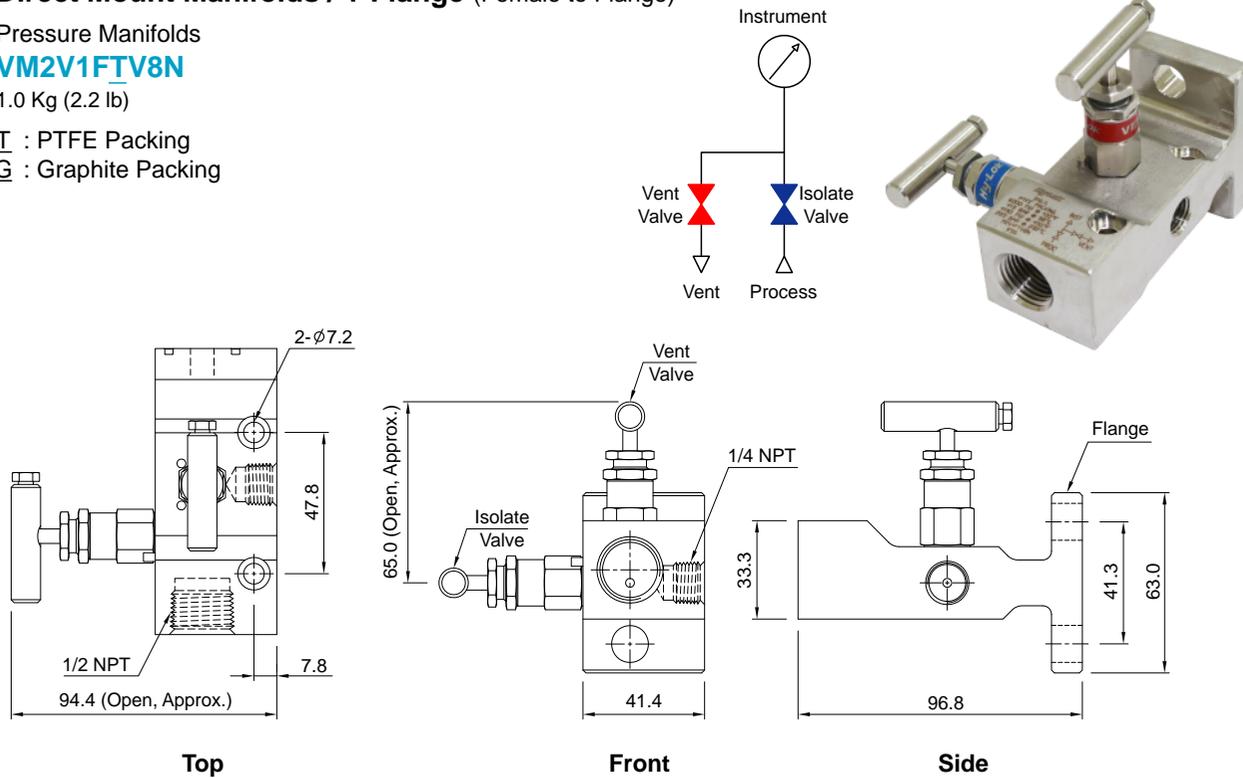
Pressure Manifolds

**VM2V1FTV8N**

1.0 Kg (2.2 lb)

T : PTFE Packing

G : Graphite Packing



### Direct Mount Manifolds (Female to Flange)

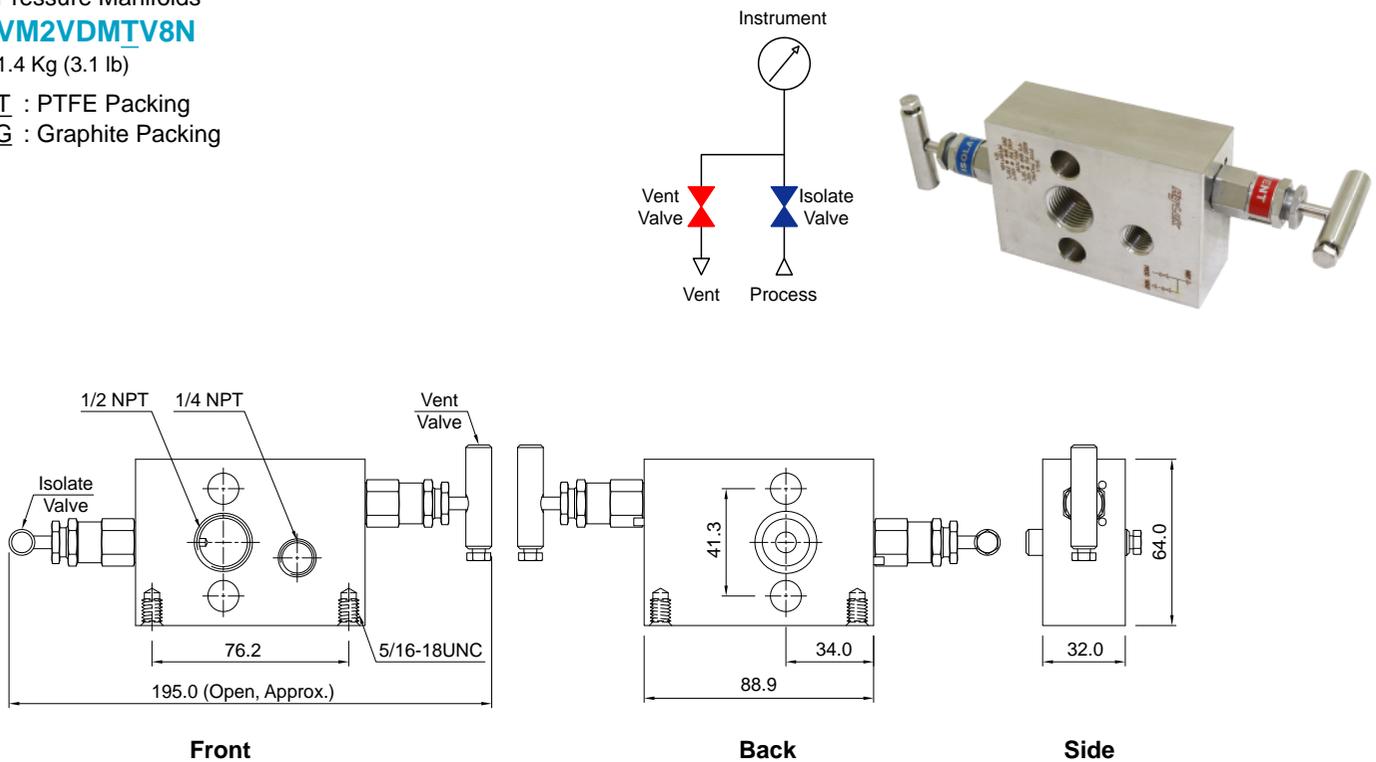
Pressure Manifolds

**VM2VDMTV8N**

1.4 Kg (3.1 lb)

T : PTFE Packing

G : Graphite Packing



All dimensions are in millimeters(inchs) reference only, subject to change.

## M Series 2-Valve Manifolds

### Direct Mount Manifolds / A Type (Female to Flange)

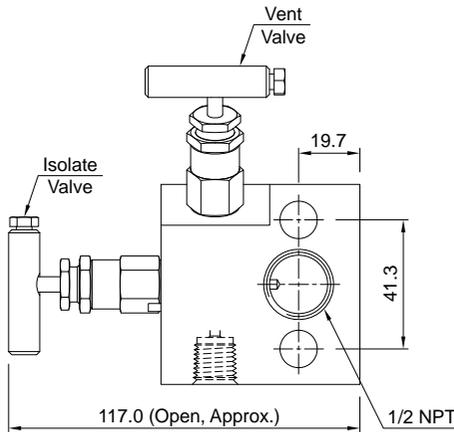
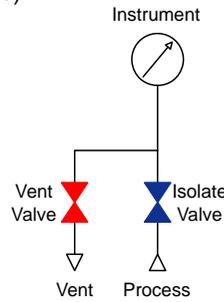
Pressure Manifolds

**VM2AVDMTV8N**

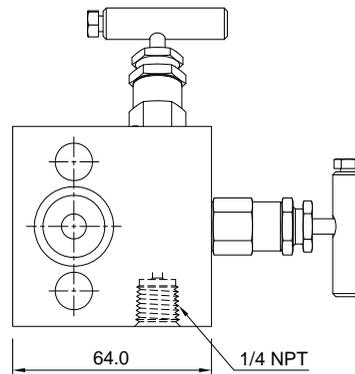
0.9 Kg (2.0 lb)

I : PTFE Packing

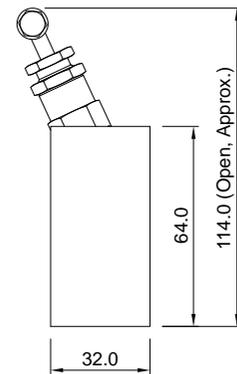
G : Graphite Packing



Front



Back



Side

### Double Direct Mount Manifolds / A Type (Flange to Flange)

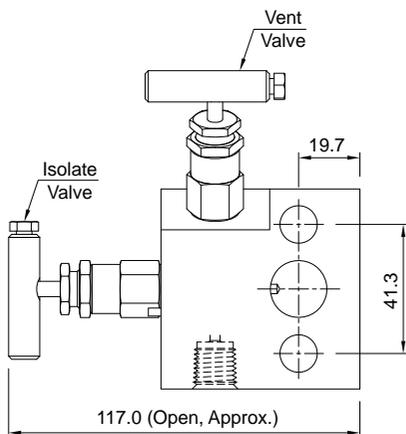
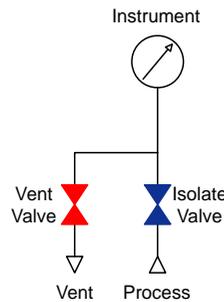
Pressure Manifolds

**VM2AV2DMTV**

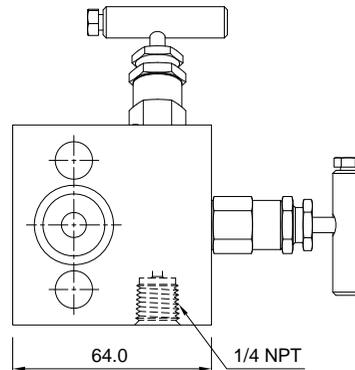
0.9 Kg (2.0 lb)

I : PTFE Packing

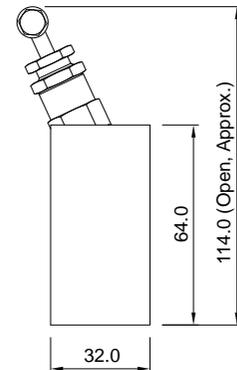
G : Graphite Packing



Front



Back



Side

All dimensions are in millimeters(inchs) reference only, subject to change.

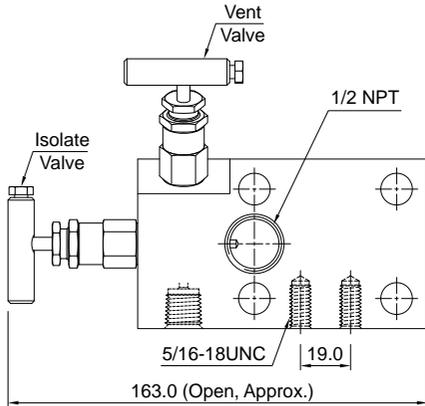
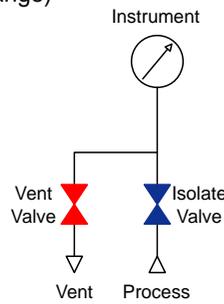
## M Series 2-Valve Manifolds

### Direct Mount Manifolds / A-A Type (Female to Flange)

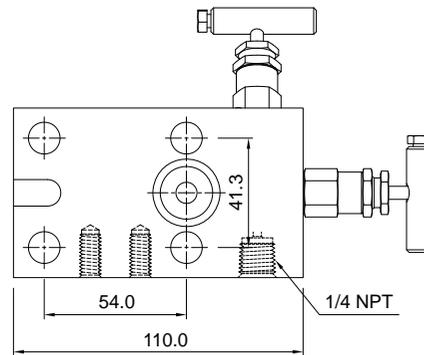
Pressure Manifolds  
**VM2AVDMATV8N**

1.6 Kg (3.6 lb)

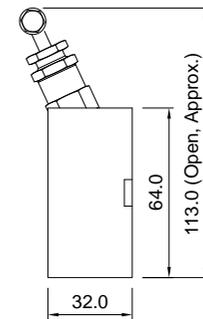
**T** : PTFE Packing  
**G** : Graphite Packing



Front



Back



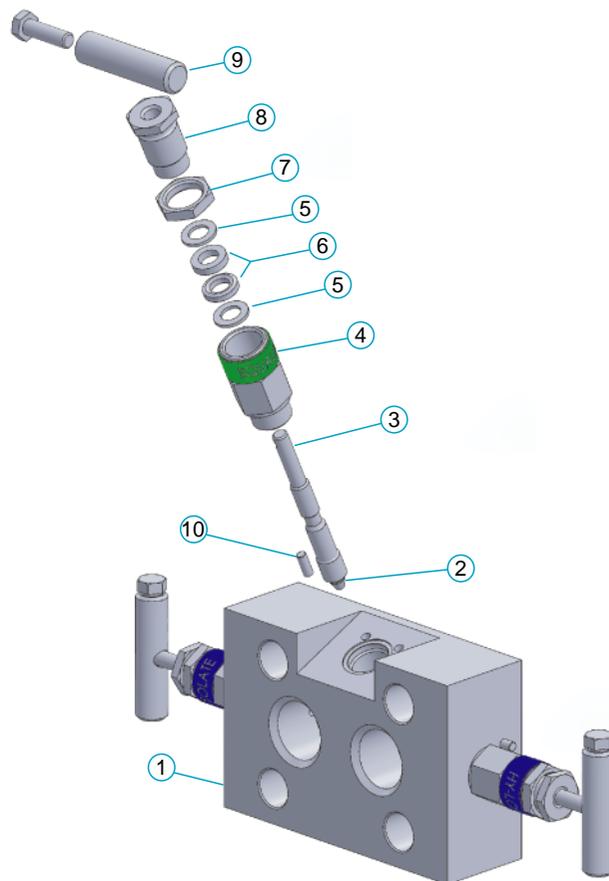
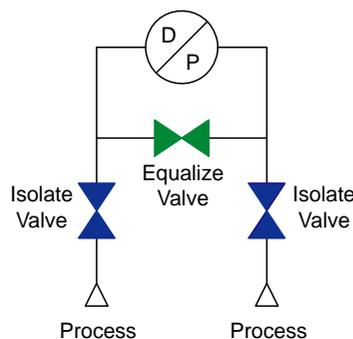
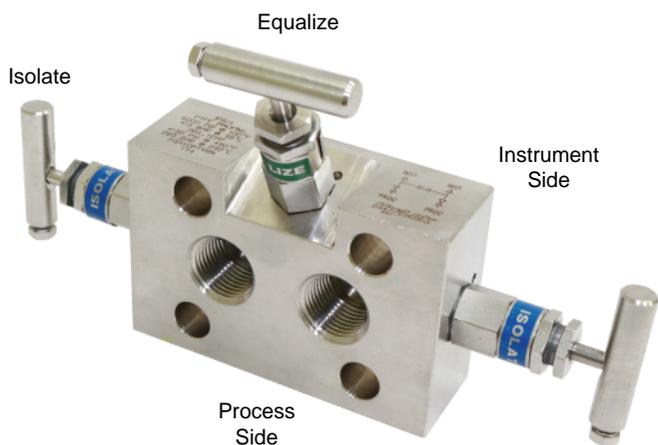
Side

All dimensions are in millimeters(inchs) reference only, subject to change.

### M Series 3-Valve Manifolds

The 3-Valve manifold used mainly in differential pressure transmitters applications has two process isolation valves and one equalize valve for differential pressure.

- Consists of two isolation valve and one equalization valve.
- Connections - Female pipe (NPT) threads, Flange (IEC).
- Direct instrument mount and remote mount.
- Mounting holes as standard.



Component		Material Grade / ASTM Specification
1	Body	316 SS/A479 or A182
2	Disc	630 SS/A564
3	Stem	316 SS/A479
4	Bonnet	316 SS/A479
5	Packing Washer	Reinforced PTFE
6	Stem Packing	PTFE
7	Lock Nut	316 SS/A479
8	Packing Bolt	316 SS/A479
9	Handle	316 Stainless Steel
10	Stop Pin	316 Stainless Steel

## M Series 3-Valve Manifolds

### Remote Mount Manifolds (Female to Female)

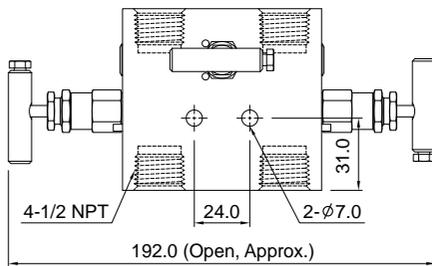
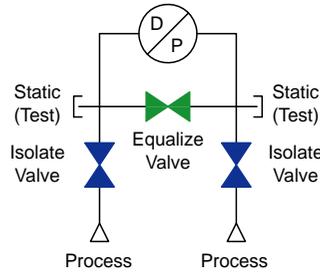
Differential Pressure Manifolds

#### VM3VTV8N

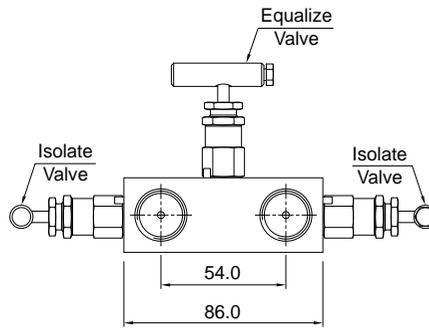
1.7 Kg (3.7 lb)

T : PTFE Packing

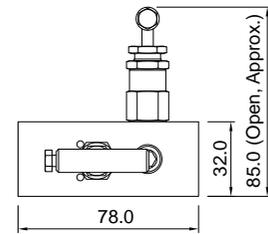
G : Graphite Packing



Top



Front



Side

### Direct Mount Manifolds / 1-Flange (Female to Flange)

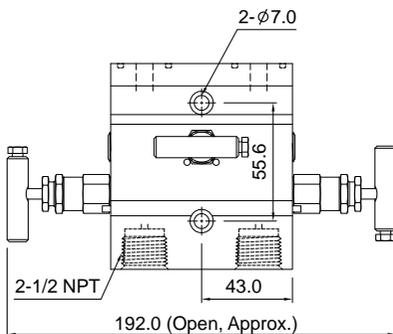
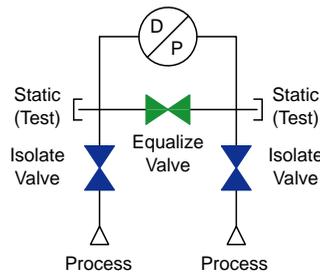
Differential Pressure Manifolds

#### VM3V1FTV8N

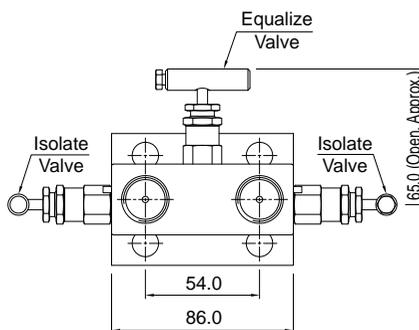
2.0 Kg (4.4 lb)

T : PTFE Packing

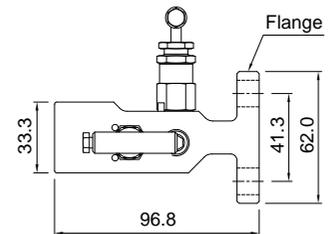
G : Graphite Packing



Top



Front



Side

All dimensions are in millimeters(inchs) reference only, subject to change.

## M Series 3-Valve Manifolds

### Direct Mount Manifolds / 2-Flange (Flange to Flange)

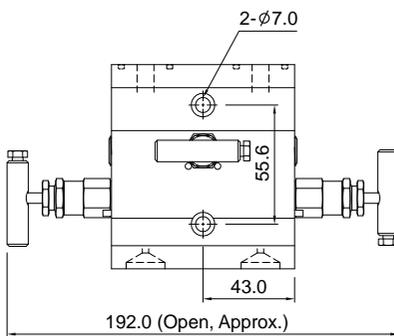
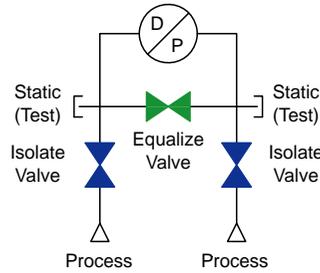
Differential Pressure Manifolds

#### VM3V2FTV

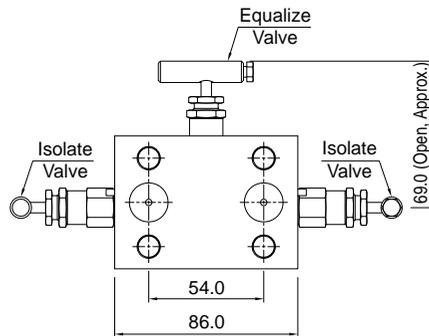
2.3 Kg (5.1 lb)

I : PTFE Packing

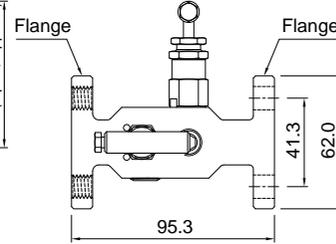
G : Graphite Packing



Top



Front



Side

### Direct Mount Manifolds (Female to Flange)

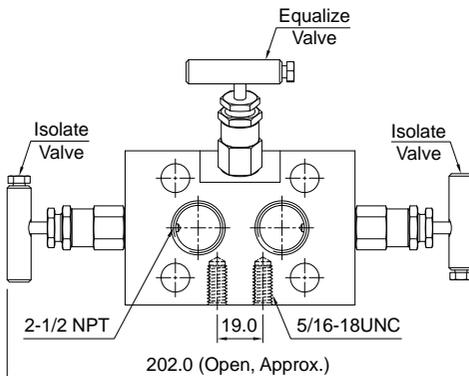
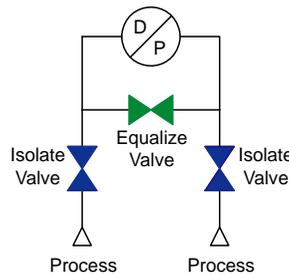
Differential Pressure Manifolds

#### VM3VDMTV8N

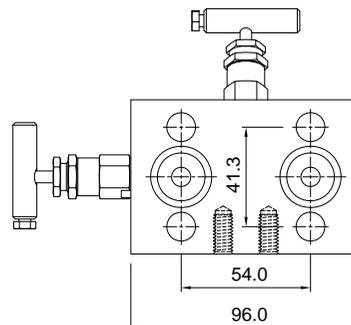
1.5 Kg (3.3 lb)

I : PTFE Packing

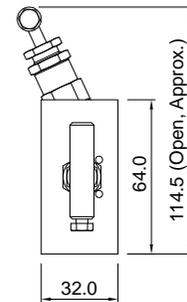
G : Graphite Packing



Front



Back



Side

All dimensions are in millimeters(inchs) reference only, subject to change.

## M Series 3-Valve Manifolds

### Double Direct Mount Manifolds (Flange to Flange)

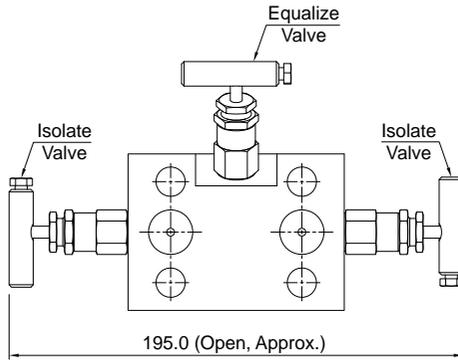
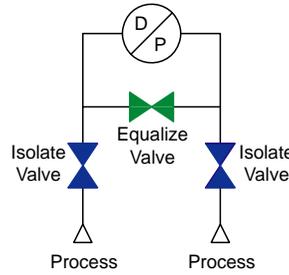
Differential Pressure Manifolds

#### VM3V2DMTV

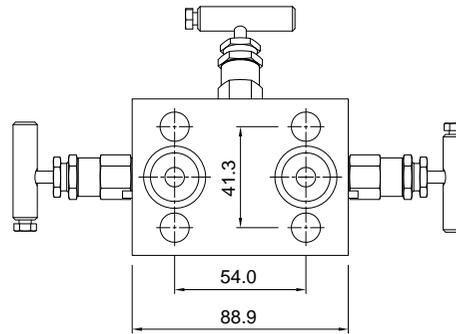
1.4 Kg (3.1 lb)

T : PTFE Packing

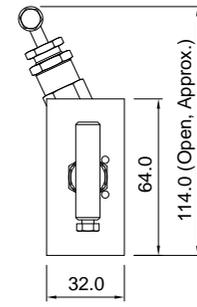
G : Graphite Packing



Front



Back



Side

### Direct Mount Manifolds / B Port (Female to Flange)

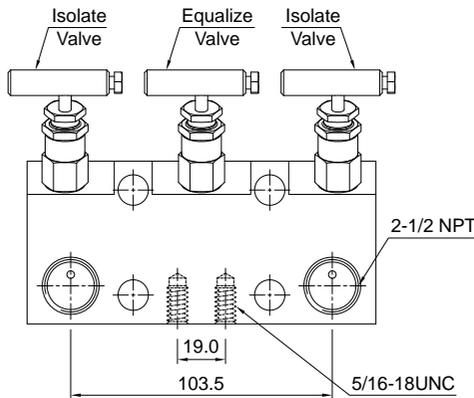
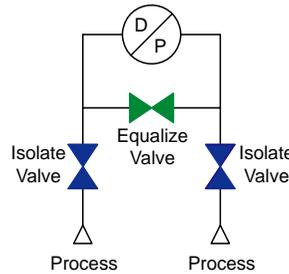
Differential Pressure Manifolds

#### VM3VDMBTV8N

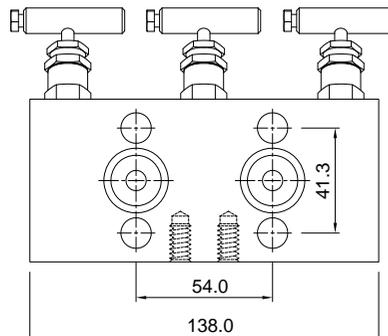
1.8 Kg (4.0 lb)

T : PTFE Packing

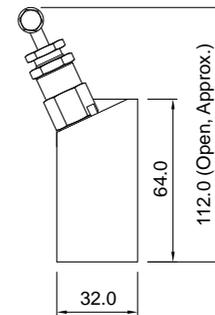
G : Graphite Packing



Front



Back



Side

All dimensions are in millimeters(inchs) reference only, subject to change.

## M Series 3-Valve Manifolds

### Direct Mount Manifolds / B Port (Socket Weld to Flange)

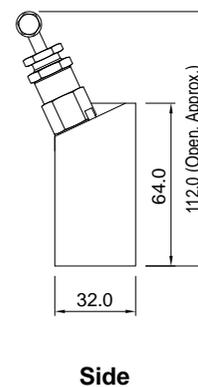
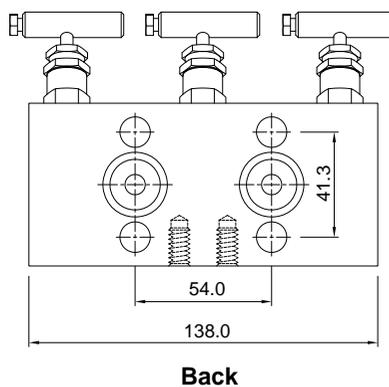
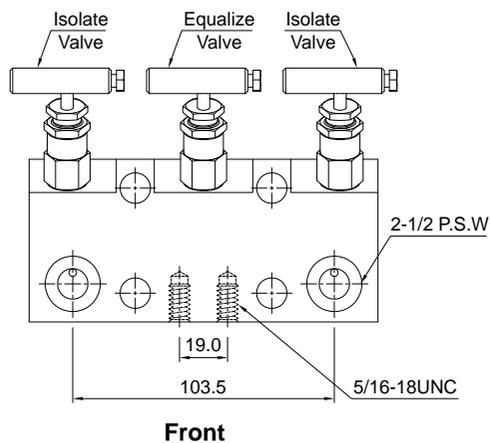
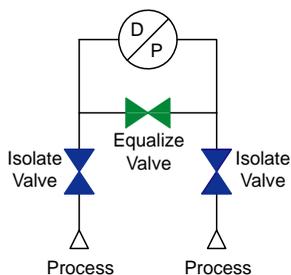
Differential Pressure Manifolds

#### VM3VDMBGV8P

1.8 Kg (4.0 lb)

I : PTFE Packing

G : Graphite Packing

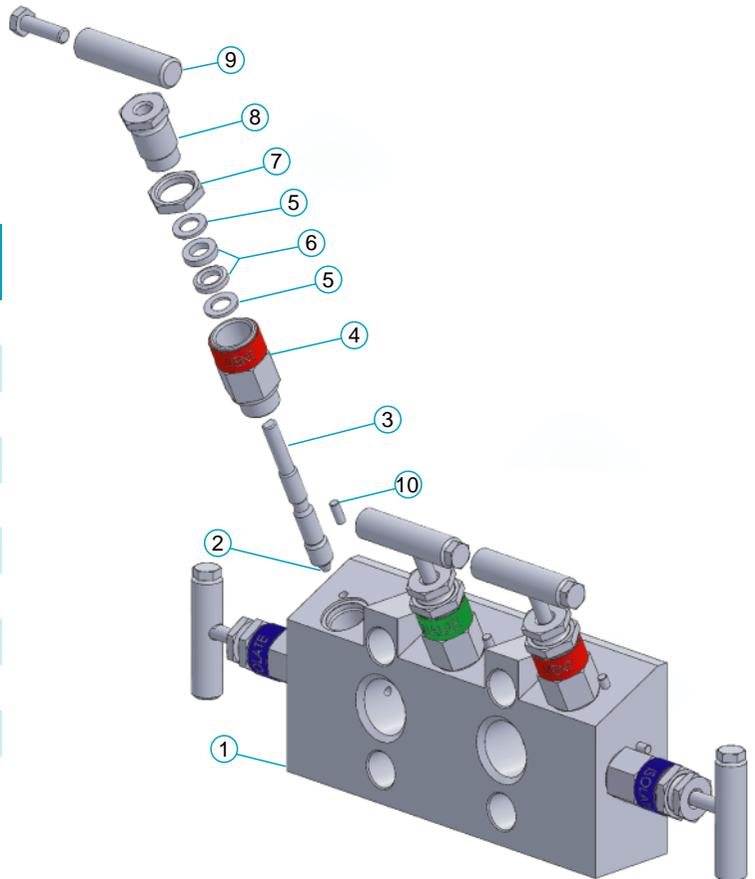
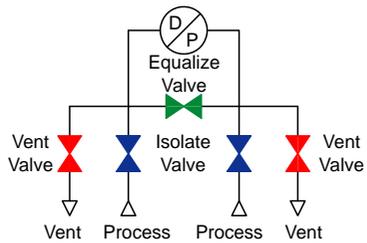
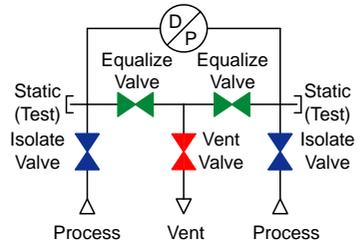
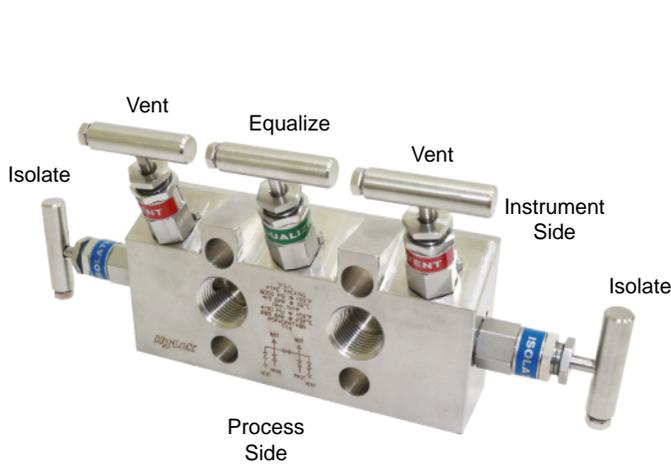


All dimensions are in millimeters(inchs) reference only, subject to change.

## M Series 5-Valve Manifolds

The 5-Valve manifold used mainly in differential pressure transmitters applications has two process isolation valves, one equalize valve for differential pressure and two vent valves for pressure removal.

- Consists of two isolation valves, one equalization valves and two vent valve for Oil.
- Consists of two isolation valves, two equalization valves and one vent valves for GAS.
- Connections - Female pipe (NPT) threads, Flange (IEC).
- Direct instrument mount and remote mount.
- Mounting holes as standard.



Component	Material Grade / ASTM Specification
1 Body	316 SS/A479 or A182
2 Disc	630 SS/A564
3 Stem	316 SS/A479
4 Bonnet	316 SS/A479
5 Packing Washer	Reinforced PTFE
6 Stem Packing	PTFE
7 Lock Nut	316 SS/A479
8 Packing Bolt	316 SS/A479
9 Handle	316 Stainless Steel
10 Stop Pin	316 Stainless Steel

All dimensions are in millimeters(inchs) reference only, subject to change.

## M Series 5-Valve Manifolds

### Remote Mount Manifolds (Female to Female)

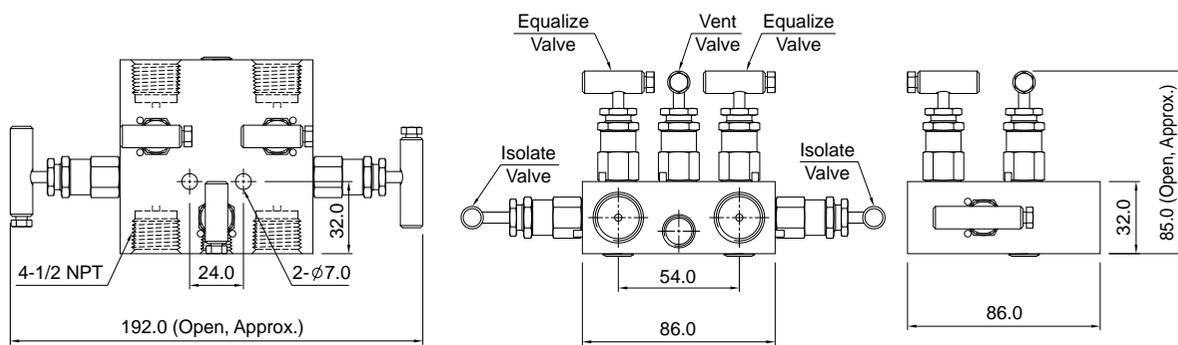
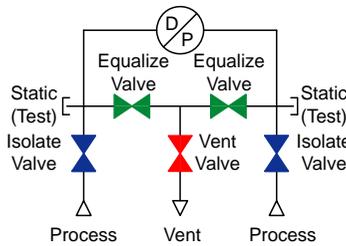
Differential Pressure Manifolds

#### VM5VTV8N

1.9 Kg (4.2 lb)

I : PTFE Packing

G : Graphite Packing



Top

Front

Side

### Direct Mount Manifolds / 1-Flange (Female to Flange)

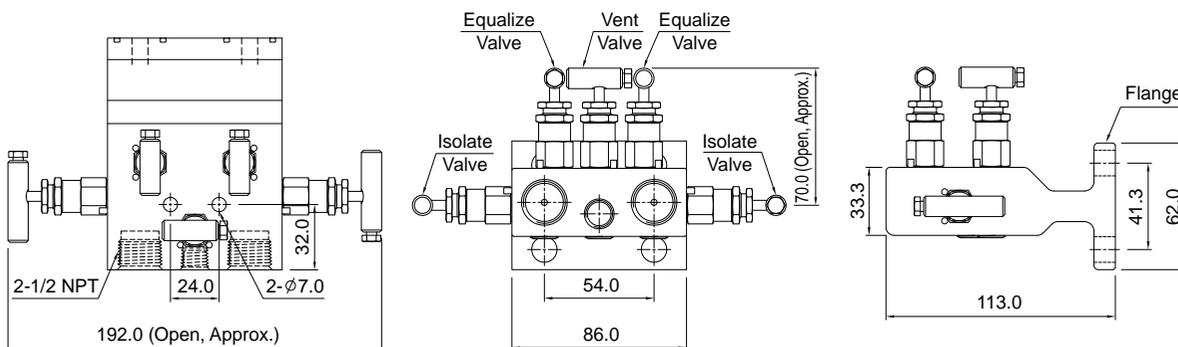
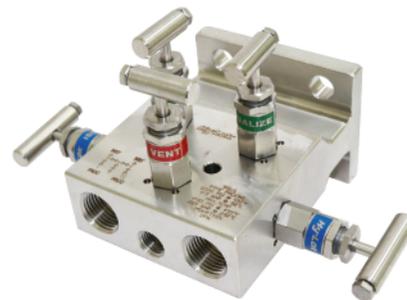
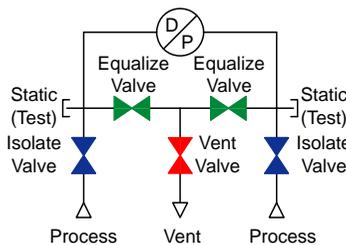
Differential Pressure Manifolds

#### VM5V1FTV8N

2.6 Kg (5.7 lb)

I : PTFE Packing

G : Graphite Packing



Top

Front

Side

All dimensions are in millimeters(inchs) reference only, subject to change.

## M Series 5-Valve Manifolds

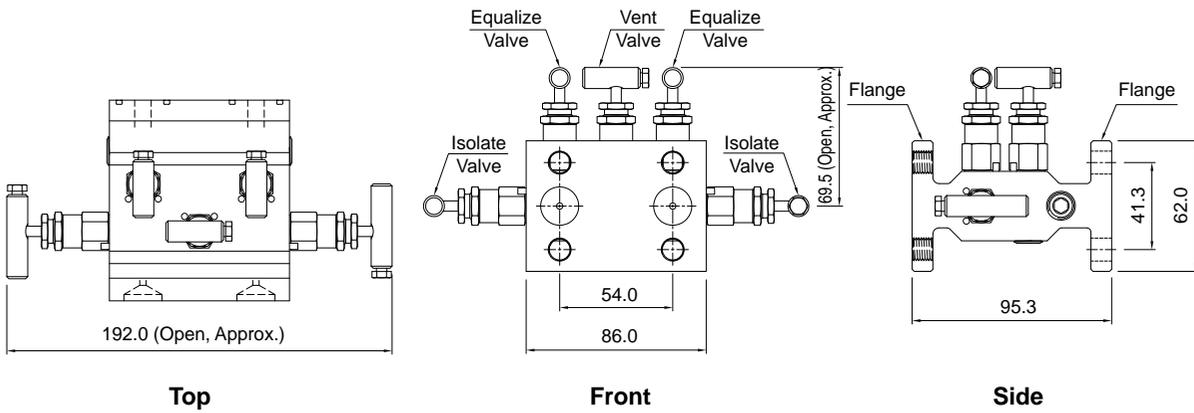
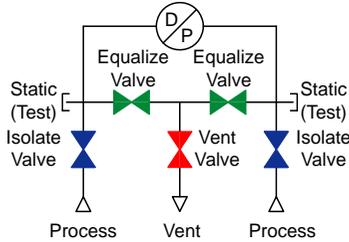
### Direct Mount Manifolds / 2-Flange (Flange to Flange)

Differential Pressure Manifolds

#### VM5V2FTV

2.5 Kg (5.5 lb)

T : PTFE Packing  
G : Graphite Packing



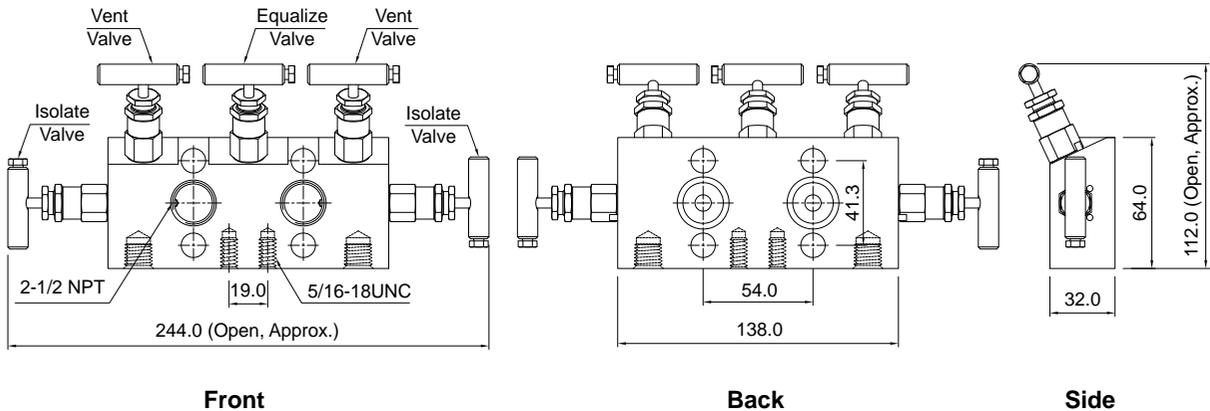
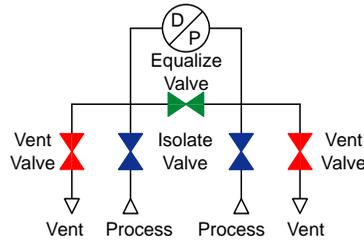
### Direct Mount Manifolds / A Port (Female to Flange)

Differential Pressure Manifolds

#### VM5VDMATV8N

2.6 Kg (5.8 lb)

T : PTFE Packing  
G : Graphite Packing



All dimensions are in millimeters(inchs) reference only, subject to change.

## M Series 5-Valve Manifolds

### Double Direct Mount Manifolds (Flange to Flange)

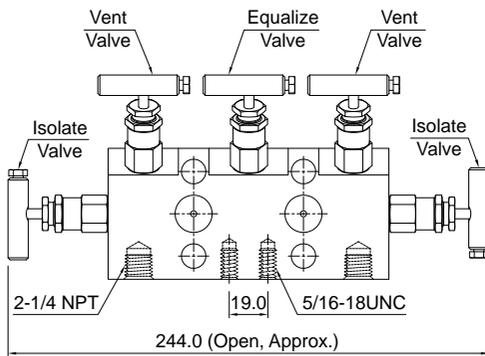
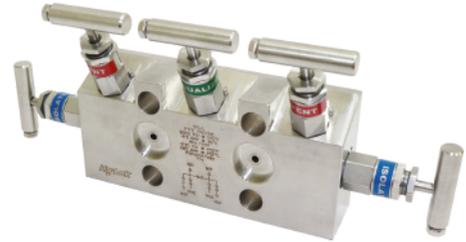
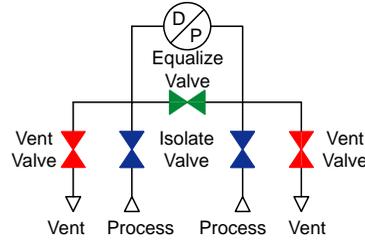
Differential Pressure Manifolds

#### VM5V2DMTV

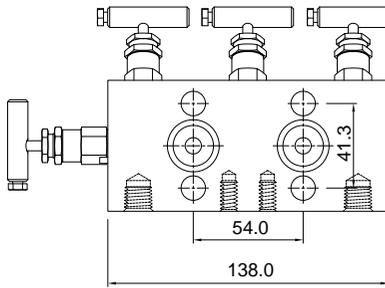
2.6 Kg (5.8 lb)

I : PTFE Packing

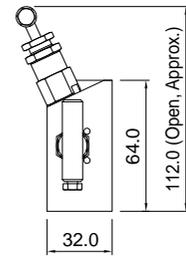
G : Graphite Packing



Front



Back



Side

### Direct Mount Manifolds / B Port (Female to Flange)

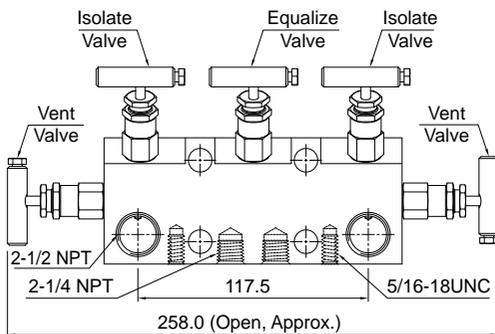
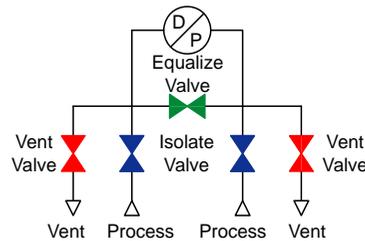
Differential Pressure Manifolds

#### VM5VDMBTV8N

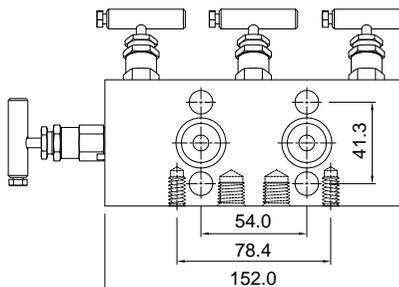
3.0 Kg (6.62 lb)

I : PTFE Packing

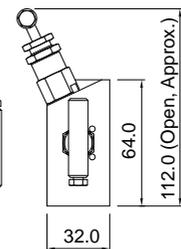
G : Graphite Packing



Front



Back



Side

All dimensions are in millimeters(inchs) reference only, subject to change.

## M Series 5-Valve Manifolds

### Direct Mount Manifolds / B Port (Socket Weld to Flange)

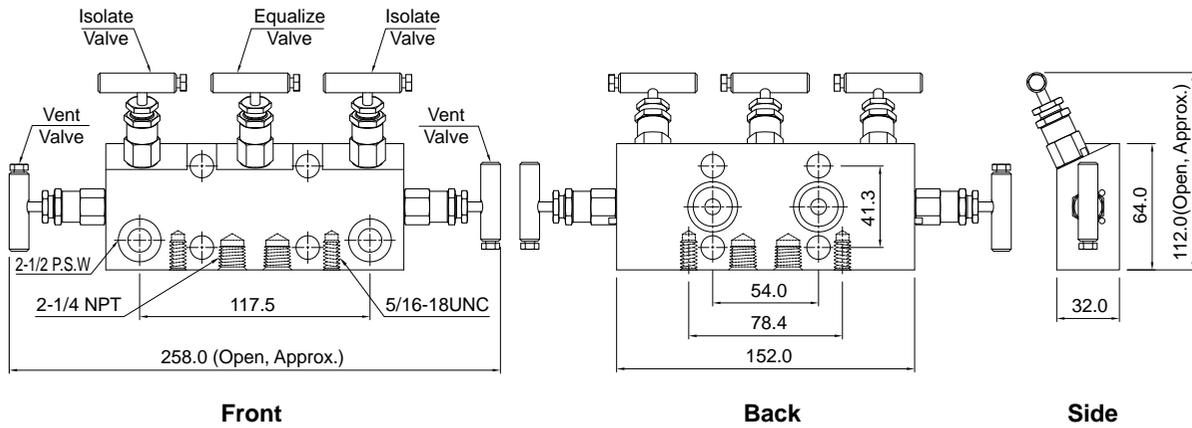
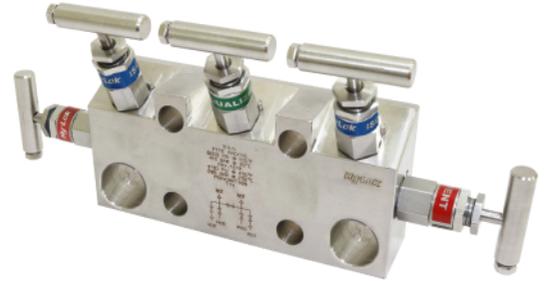
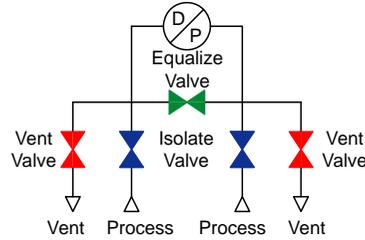
Differential Pressure Manifolds

**VM5VDMBGV8P**

3.0 Kg (6.62 lb)

T : PTFE Packing

G : Graphite Packing



All dimensions are in millimeters(inchs) reference only, subject to change.

## Mounting kits

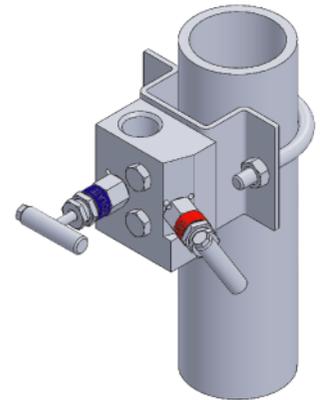
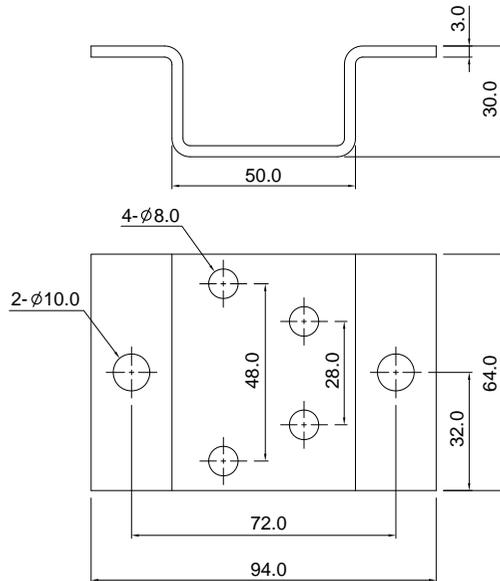
It is essential to fully support impulse/pressure measurement tubing lines, manifolds and instruments. All Hy-Lok manifolds are designed to accommodate bracket mounting and support, a full range of brackets with additional U-Bolt are available. Brackets are designed for panel and wall mounting and give full clearance for ease of handle operation. They are also suitable for vertical and horizontal positioning on 2 in. Pipe.

### Ordering Number : KIT-MMB-M2V

1. Applicable Manifolds

- VM2VTV8N
- VM2VVTV8N

2. Bracket, U-Bolts & Nuts

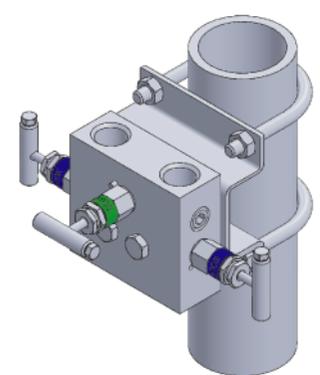
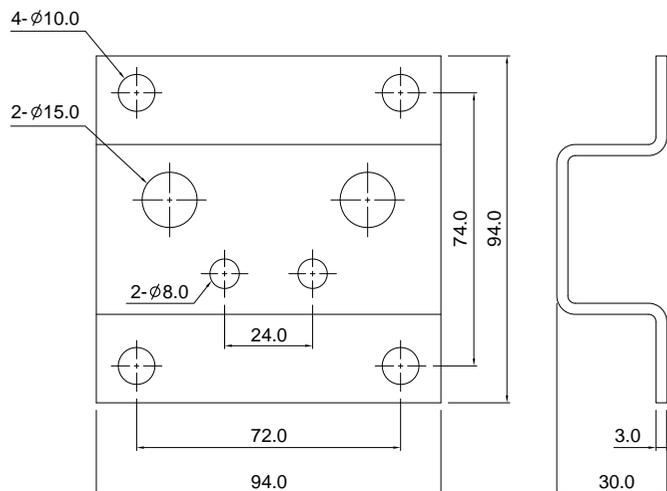


### Ordering Number : KIT-MMB-M35V

1. Applicable Manifolds

- VM3VTV8N
- VM5VTV8N

2. Bracket, U-Bolts & Nuts



All dimensions are in millimeters(inchs) reference only, subject to change.

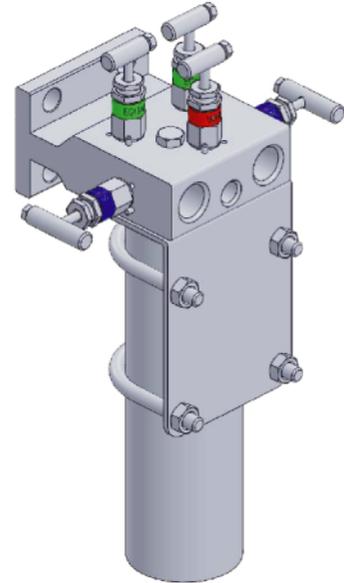
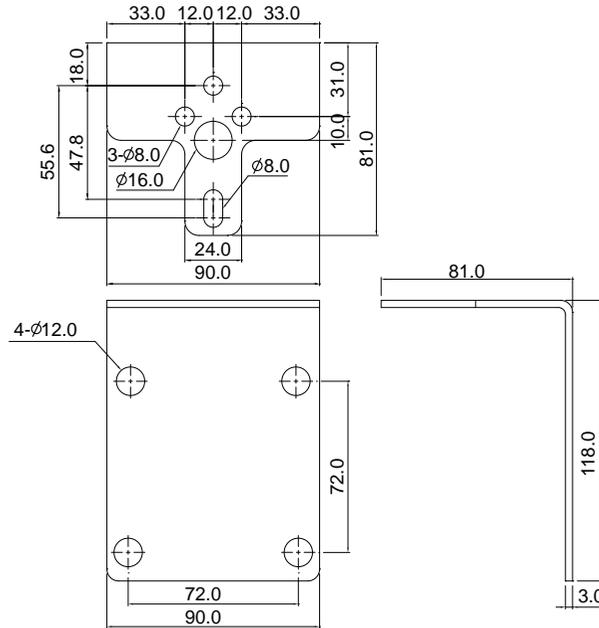
## Mounting kits

### Ordering Number : KIT-MMB-MVF

1. Applicable Manifolds

- VM2V1FTV8N
- VM3V1FTV8N
- VM5V1FTV8N

2. Bracket, U-Bolts & Nuts

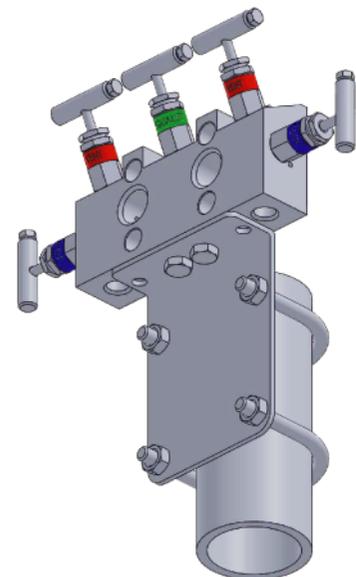
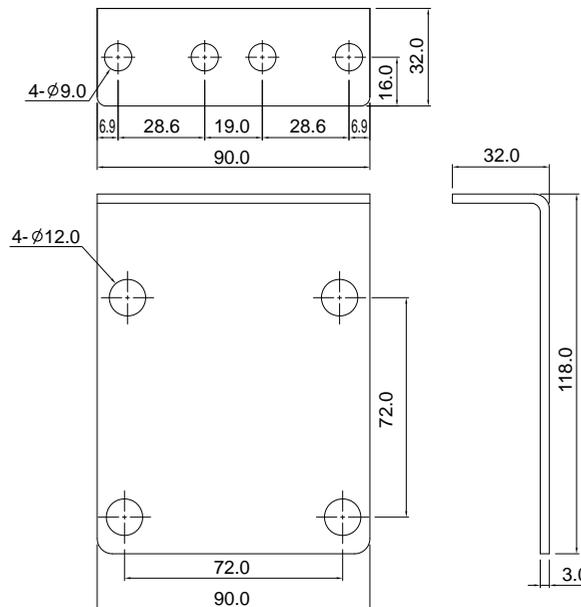


### Ordering Number : KIT-MMB-MVD

1. Applicable Manifolds

- VM2AVDMTV8N
- VM2AV2DMTV
- VM2VDMTV8N-L
- VM2VDMTV8N
- VM3VDMTV8N
- VM3VDMTV8N-B
- VM3VDMTV8P-B
- VM5VDMTV8N
- VM5V2DMTV

2. Bracket, U-Bolts & Nuts



All dimensions are in millimeters(inchs) reference only, subject to change.

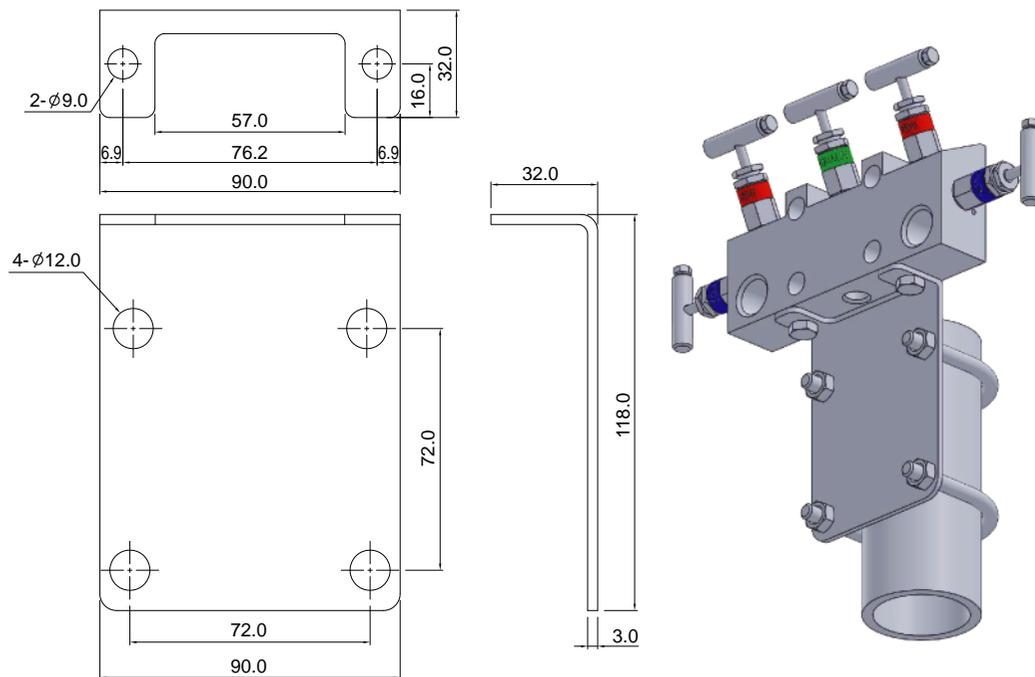
## Mounting kits

### Ordering Number : KIT-MMB-MVD2

1. Applicable Manifolds

- VM5VDMTV8N-B
- VM5VDMTV8P-B

2. Bracket, U-Bolts & Nuts



## Options

### High Temperature Packing

Graphite valve packing material for high-temperature service. See Pressure-Temperature Ratings, page 8. Includes Graphite flange seals on DIN/IEC 61518 Type B flanges.

To order a manifold with an optional Graphite packing material, replace **T** with **G** in the manifold ordering number. Example : VM3V1FTV8N → VM3V1FGV8N

### Flange Seal Materials

Flange seals are available in Graphite and PTFE for system compatibility. Temperature ratings are included in the table below.

To order a manifold with an optional Graphite packing material, replace **T** with **G** in the manifold ordering number. Example : VM3V1FTV8N → VM3V1FGV8N

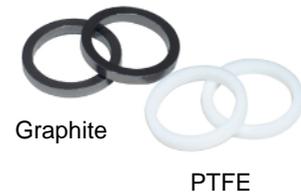
Packing or Flange Seal Material	Temperature Rating °F (°C)	Material Designator
Graphite	-65°F to 1000°F (-53°C to 537°C)	G
PTFE	-65°F to 450°F (-53°C to 232°C)	T

## Maintenance kits

### Flange Seal Kits

Select a Kit ordering number from the tables below based on the manifold series and seal material.

Flange Seal Material	Kit Ordering Number		Material Designator
	2-Valve (one seal)	3 & 5-Valve (two seals)	
Graphite	KIT-M2VFS- <u>G</u>	KIT-M3VFS- <u>G</u>	G
PTFE	KIT-M2VFS- <u>T</u>	KIT-M3VFS- <u>T</u>	T



### Transmitter Fixing Bolt Kits

Select a Kit ordering number from the tables below based on the manifold series and bolt length.

All Bolts are stainless steel(A193 B8M) with 7/16in.-20 threads.

Bolt Length	Kit Ordering Number	
	2-Valve(two bolts)	3 & 5-Valve(four bolts)
L22	KIT-M2VBT-L22	KIT-M3VBT-L22
L45	KIT-M2VBT-L45	KIT-M3VBT-L45



### Valve Bonnet Assembly Kits

Select a Kit ordering number from the tables below based on the valve bonnets and packing material.

Packing Material	Kit Ordering Number			Packing Designator
	Isolate	Vent	Equalize	
Graphite	XMAVBNTS- <u>G</u> -I	XMAVBNTS- <u>G</u> -V	XMAVBNTS- <u>G</u> -E	G
PTFE	XMAVBNTS- <u>T</u> -I	XMAVBNTS- <u>T</u> -V	XMAVBNTS- <u>T</u> -E	T



## Accessories

### ■ Oval Flange Kits

Used with flange-to-flange manifolds to allow the connection of process flange taps or process root valves.

Kit includes two (2) flanges, two (2) flange seals, four (4) 7/16 in.-20 thread hex bolts.

Standard Connection is female NPT 1/2 in.

Are available in 316 stainless steel material.

Select a Kit ordering number from the tables below based on the oval flanges and seal material.

Flange Seal Material	Kit Ordering Number		Material Designator
	Concentric Flange	Eccentric Flange	
Graphite	KIT-OCF-8NG	KIT-OEF-8NG	G
PTFE	KIT-OCF-8NT	KIT-OEF-8NT	T



### ■ Calibration Fittings

Calibration tube fittings directly connect into vent port fittings of transmitter plug.

Selection of fitting with 1/4 in. O.D x 1/4 in.-28 or 1/4 in. O.D x 5/16 in.-24, depends on the vent port size of the transmitter.

Are available in 316 stainless steel material.

Tubing O.D	Kit Ordering Number	Thread Designator	
1/4 in.	CCF4-1U	1U	1/4 in.-28
1/4 in.	CCF4-2U	2U	5/16 in.-24



## Ordering Information

**VM2V**

**T**

**V**

**8N**

**SOG**

**S316**

**Packing Designator**  
 • T : PTFE(Standard)  
 • G : Graphite(Option)

**Connection Size Designator**  
 • Nil : Both Flanged  
 • 8N : 1/2 in. NPT  
 • 8T : 1/2 in. Hy-Lok  
 • 8P : 1/2 in. S.W

**Body Material Designator**  
 • S316 316 Stainless Steel  
 • 316L 316L Stainless Steel  
 • MONE Monel Alloy 400  
 • C276 Hastelloy® C-276  
 • F53 Super Duplex

#### Valve Designator

- VM2V : 2-Valves, Remote Mount
- VM2VV : 2-Valves, Remote Mount / Vertical Vent
- VM2V1F : 2-Valves, Direct Mount / 1-Flange
- VM2VDM : 2-Valves, Direct Mount
- VM2AVDM : 2-Valves, Direct Mount / A Type
- VM2AV2DM : 2-Valves, Double Direct Mount / A Type
- VM2AVDMA : 2-Valves, Direct Mount / A-A Type
- VM3V : 3-Valves, Remote Mount
- VM3V1F : 3-Valves, Direct Mount / 1-Flange
- VM3V2F : 3-Valves, Direct Mount / 2-Flange
- VM3VDM : 3-Valves, Direct Mount
- VM3V2DM : 3-Valves, Double Direct Mount
- VM3AVDM : 3-Valves, Direct Mount / B Port
- VM3VDMB : 3-Valves, Direct Mount / B Port
- VM5V : 5-Valves, Remote Mount
- VM5V1F : 5-Valves, Direct Mount / 1-Flange
- VM5V2F : 5-Valves, Direct Mount / 2-Flange
- VM5V2DM : 5-Valves, Double Direct Mount
- VM5VDMA : 5-Valves, Direct Flange / A Port
- VM5VDMB : 5-Valves, Direct Flange / B Port

Example : VM5V1FGV8N-S316

(5-Valves, Direct Mount 1-Flange, Graphite Packing, Vee Tip, 1/2" NPT, 316 Stainless Steel)

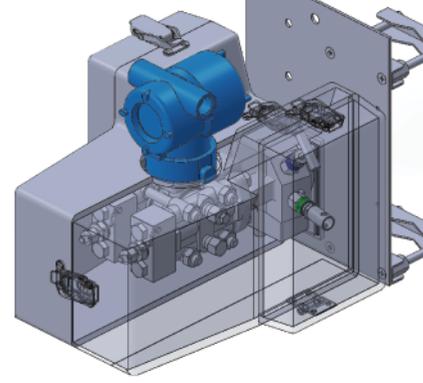
#### Stem Tip Designation

- V : Vee Tip(Standard)
- B : Ball Tip(Option)

#### Option Designator

- SOG : NACE MR-01-75
- P : with Plug

All dimensions are in millimeters(inchs) reference only, subject to change.



## Modular Instrumentation Systems

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### MS Series Modular Instrumentation Systems

- 2 & 4-Valve Pressure and Differential Pressure Manifolds
- Instrument Mono Flange Valves and Seal Pots
- Self venting Purge Blocks and Steam Tracing Blocks
- Filling Connector and Mounting Plates, Protective Sgade

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**FOR A BETTER**



All Your Solution Provider “HY-LOK”



**TOMORROW**

## MS Series Modular Instrumentation Systems

The MS Series Modular Instrumentation Systems are designed in accordance with the Shell® MESC specification for process instrumentation, and provides substantial advantages by the simplest and most effective means to install Transmitters and Gauges.

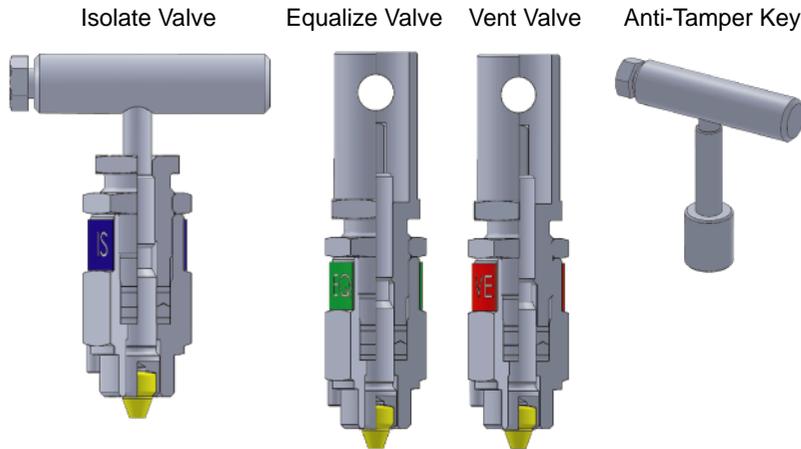
Based on a standard Mounting Plate, it allows components to be either pre-assembled in the workshop or assembled at a later stage, providing maximum flexibility without compromising quality and safety.

The Modular Instrumentation System has a full range of manifolds for differential pressure, pressure and gauge applications and accessories including GRP Enclosures, Steam Tracing Blocks, Seal Pots, Self Venting Purge Blocks.



### Standard Valve Bonnets

- 4-Valve manifolds : 2-Isolate / 1-Equalize / 1-Vent ..... Type A
  - 4-Valve manifolds : 2-Isolate / 2-Vent ..... Type B
  - 2-Valve manifolds : 1-Isolate / 1-Vent / atmospheric hole ..... Type C
  - 2-Valve manifolds : 1-Isolate / 1-Vent ..... Type D, E, F, G
- Equalize and Vent valves are equipped with an Anti-Temper valve bonnet.



### Functionally Color Code

- Isolate Valve ISOLATE
- Equalize Valve EQUALIZE
- Vent Valve VENT

### Manifold Body

This is standard is a forging or machined from bar stock material.

### Connections

Connections can be assembled with Tube Fittings.

Process and Vent Connections

- G1/4 in. female port with either 10mm or 3/8 in. or 1/2 in. Tube Fittings.

Instrument Connections

- Flange connection according to DIN 19213 Part 2, DIN EN 61518 Type A

### Mountings

The manifold suitable for direct bolting to the Type A or type B mounting plate.

Plate fixing bolt criteria dimensions (center to center) as follows;

- Horizontal: 54.0 mm
- Vertical: 41.3 mm
- Plate fixing bolt size: M8 thread.
- Transmitter fixing bolt size: 7/16 in.-20 thread

## MS Series 4-Valve Manifolds

4-Valve manifold used mainly in differential pressure transmitters applications.

Type A : Consists of two isolation valves, one equalization valves and one vent valves.

- Equalize valve is opened to can be vent of the both sides.

Type B : Consists of two isolation valves and two vent valves.

- Vent valve is opened independently to prevent contamination of the two process streams.

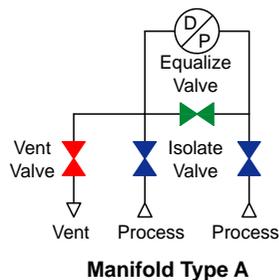
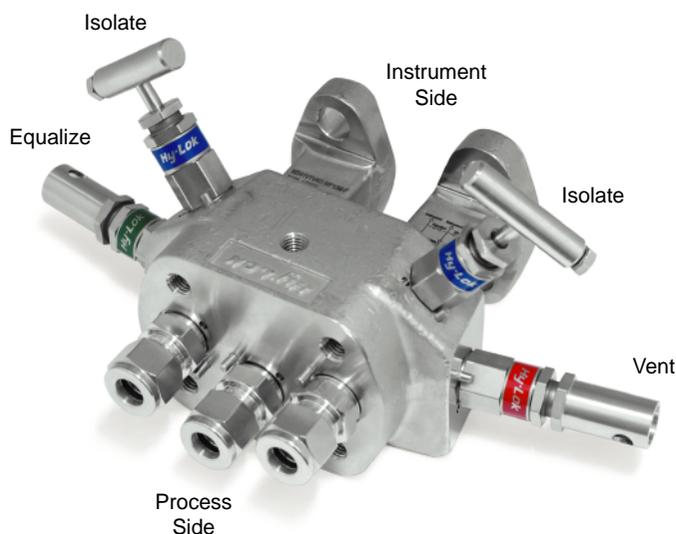
The isolation valves have a Tee bar handle, the vent and equalize valve each have anti tamper head units.

■ Process and Vent/Drain Connections

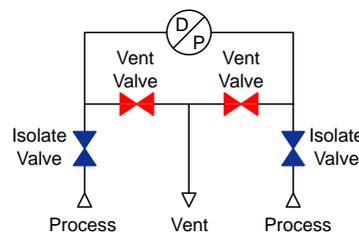
- G1/4 female port with either 10mm or 3/8 in. or 1/2 in. tube fittings.

■ Instrument Connections

- Flange connection according to DIN 19213 Part 2, DIN EN 61518 Type A.

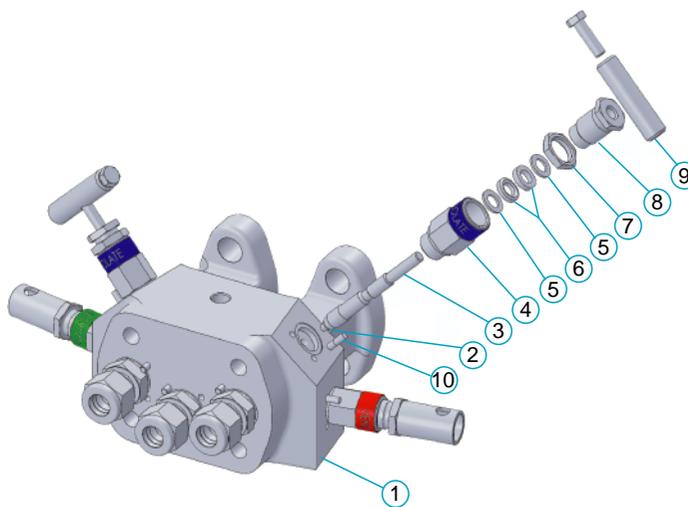


Manifold Type A



Manifold Type B

Component	Material Grade / ASTM Specification
1 Body	316SS / A479 or A182
2 Disc	630SS / A564
3 Stem	316SS / A479
4 Bonnet	316SS / A479
5 Packing Washer	Reinforced PTFE
6 Stem Packing	PTFE
7 Lock Nut	316SS / A479
8 Packing Bolt	316SS / A479
9 Handle	316 Stainless Steel
10 Stop Pin	316 Stainless Steel



All dimensions are in millimeters(inchs) reference only, subject to change.

## MS Series 4-Valve Manifolds

### Type A, 2-Isolate/1-Equalize/1-Vent Valve

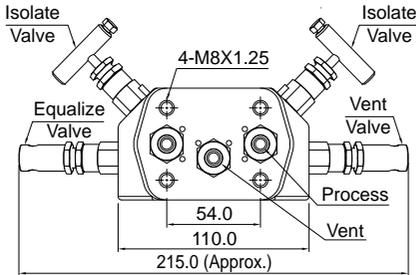
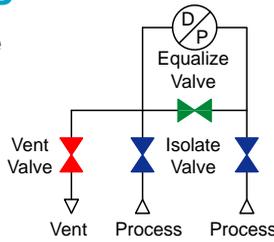
Differential Pressure Manifolds

**VMS41VTV**

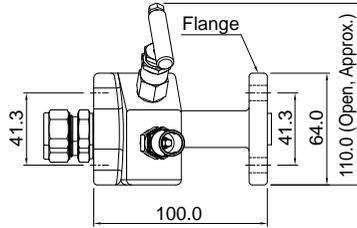
3.3 Kg (7.3 lb)

**T** : PTFE Packing

**G** : Graphite Packing



Front



Side



Type	MESC Code	Process	Instrument	Vent	Hy-Lok Part Number
A	-	G1/4 Female	Flange(DIN)	G1/4 Female	VMS41VTV4G
A	609856.205.1	10 mm	Flange(DIN)	10 mm	VMS41VTV4G-10M
A	609856.207.1	3/8 in.	Flange(DIN)	3/8 in.	VMS41VTV4G-6T
A	609856.209.1	1/2 in.	Flange(DIN)	1/2 in.	VMS41VTV4G-8T

### Type B, 2-Isolate/2-Vent Valve

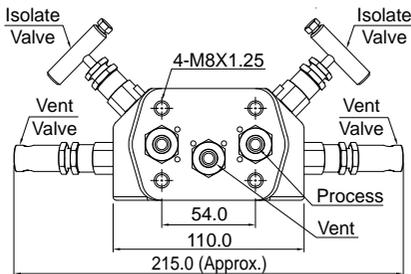
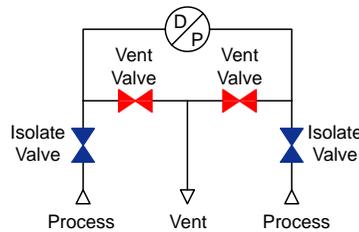
Differential Pressure Manifolds

**VMS42VTV**

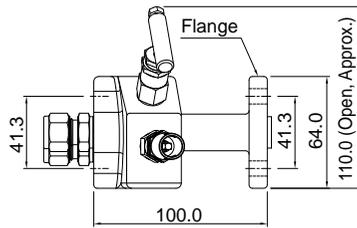
3.3 Kg (7.3 lb)

**T** : PTFE Packing

**G** : Graphite Packing



Front



Side



Type	MESC Code	Process	Instrument	Vent	Hy-Lok Part Number
B	-	G1/4 Female	Flange(DIN)	G1/4 Female	VMS42VTV4G
B	609856.215.1	10 mm	Flange(DIN)	10 mm	VMS42VTV4G-10M
B	609856.217.1	3/8 in.	Flange(DIN)	3/8 in.	VMS42VTV4G-6T
B	609856.219.1	1/2 in.	Flange(DIN)	1/2 in.	VMS42VTV4G-8T

All dimensions are in millimeters(inchs) reference only, subject to change.

## MS Series 2-Valve Manifolds

2-Valve manifold used mainly in pressure transmitters applications.

Type C : Consists of one isolation valve, one vent valve and atmospheric hole.

- Used for measure the level of atmospheric tank with differential pressure transmitter.

Type D : Consists of one isolation valve and one vent valve.

- Used for the Pressure Transmitter with oval flanged mounting.

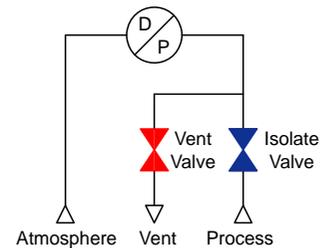
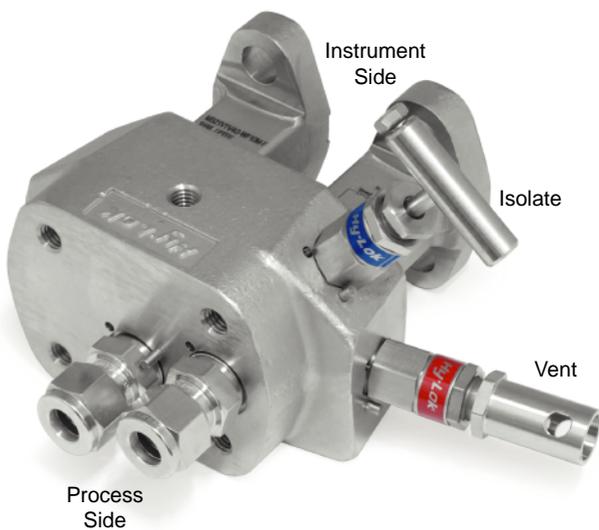
The isolation valves have a Tee bar handle, the vent valve have anti tamper head unit.

■ Process and Vent/Drain Connections

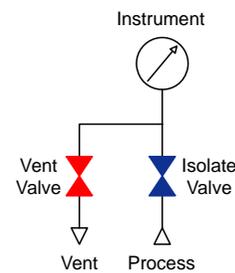
- G1/4 female port with either 10mm or 3/8 in. or 1/2 in. tube fittings.

■ Instrument Connections

- Flange connection according to DIN 19213 Part 2, DIN EN 61518 Type A.

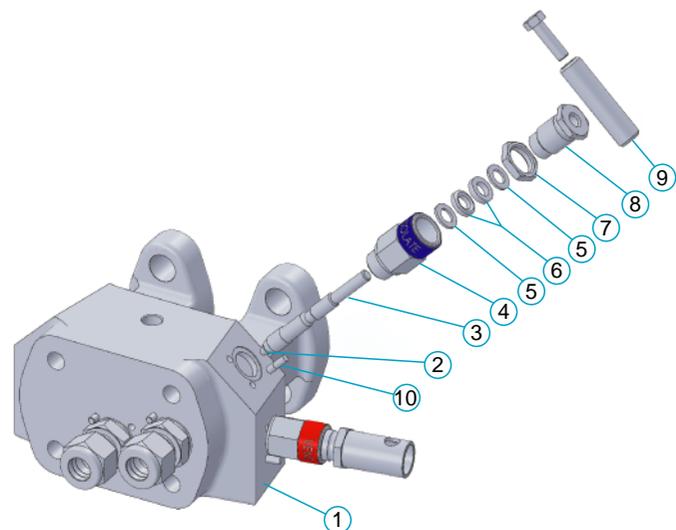


**Manifold Type C**



**Manifold Type D**

Component	Material Grade / ASTM Specification
1 Body	316SS / A479 or A182
2 Disc	630SS / A564
3 Stem	316SS / A479
4 Bonnet	316SS / A479
5 Packing Washer	Reinforced PTFE
6 Stem Packing	PTFE
7 Lock Nut	316SS / A479
8 Packing Bolt	316SS / A479
9 Handle	316 Stainless Steel
10 Stop Pin	316 Stainless Steel



All dimensions are in millimeters(inchs) reference only, subject to change.

## MS Series 2-Valve Manifolds

### Type C, 1-Isolate/1-Vent Valve with Atmospheric Hole

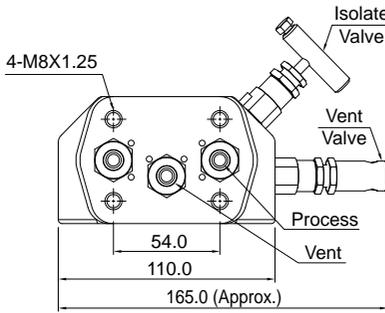
Differential Pressure Manifolds

**VMS22VTV**

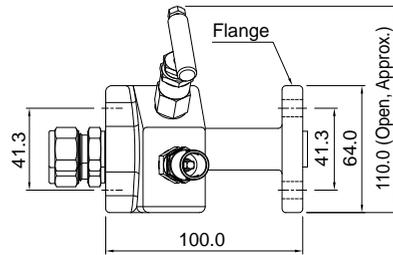
3.2 Kg (7.1 lb)

T : PTFE Packing

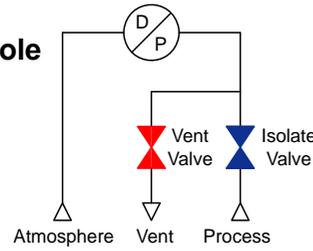
G : Graphite Packing



Front



Side



Type	MESC Code	Process	Instrument	Vent	Hy-Lok Part Number
C	-	G1/4 Female	Flange(DIN)	G1/4 Female	VMS22VTV4G
C	609856.225.1	10 mm	Flange(DIN)	10 mm	VMS22VTV4G-10M
C	609856.227.1	3/8 in.	Flange(DIN)	3/8 in.	VMS22VTV4G-6T
C	609856.229.1	1/2 in.	Flange(DIN)	1/2 in.	VMS22VTV4G-8T

### Type D, 1-Isolate/1-Vent Valve

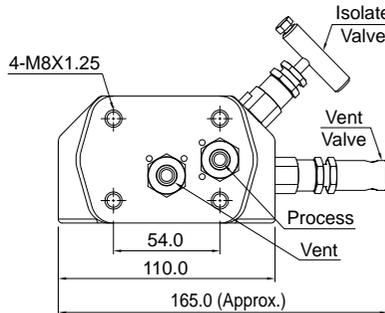
Pressure Manifolds

**VMS21VTV**

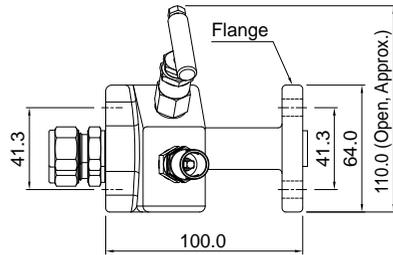
3.1 Kg (6.8 lb)

T : PTFE Packing

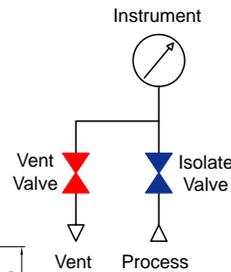
G : Graphite Packing



Front



Side



Type	MESC Code	Process	Instrument	Vent	Hy-Lok Part Number
D	-	G1/4 Female	Flange(DIN)	G1/4 Female	VMS21VTV4G
D	609856.235.1	10 mm	Flange(DIN)	10 mm	VMS21VTV4G-10M
D	609856.237.1	3/8 in.	Flange(DIN)	3/8 in.	VMS21VTV4G-6T
D	609856.239.1	1/2 in.	Flange(DIN)	1/2 in.	VMS21VTV4G-8T

All dimensions are in millimeters(inchs) reference only, subject to change.

## MS Series 2-Valve Manifolds

2-Valve manifold is mainly used for pressure transmitters with screw connection. Consists of one isolation valve and one vent valve.

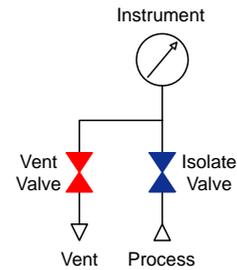
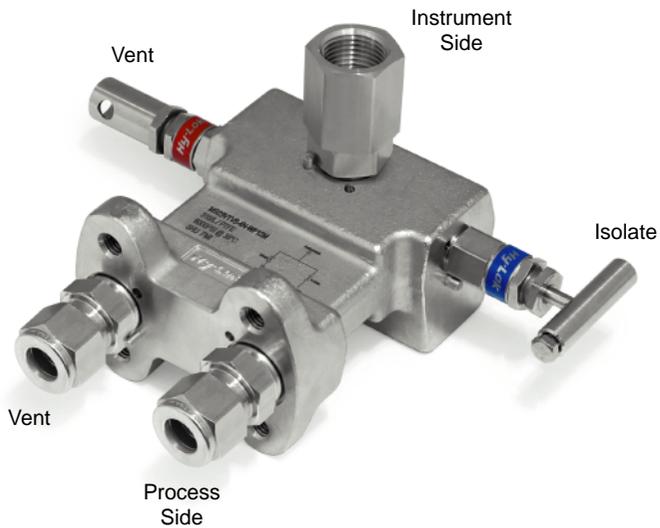
Type E : 1/2 in. NPT male.

Type F : 1/2 in. NPT female.

Type G : G1/2 female.

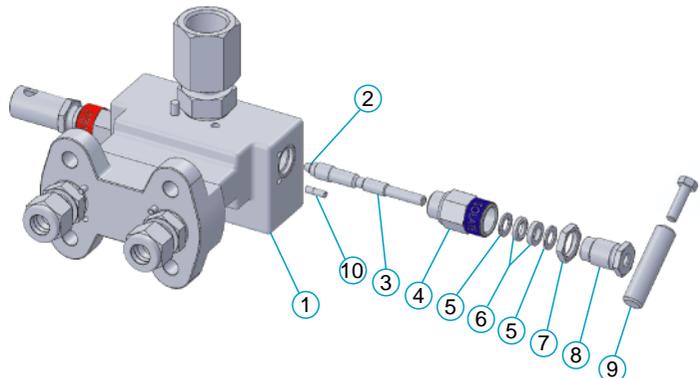
The isolation valves have a Tee bar handle, the vent valve have anti tamper head unit.

- Process and Vent/Drain Connections
  - G1/4 female port with either 10mm or 3/8 in. or 1/2 in. tube fittings.
- Instrument Connections
  - G1/2 female port with or 1/2 in. NPT or G1/2 gauge adapter for 360° positioning.
- Filling Connector Connections-Options



Manifold Type E/F/G

Component	Material Grade / ASTM Specification
1 Body	316SS / A479 or A182
2 Disc	630SS / A564
3 Stem	316SS / A479
4 Bonnet	316SS / A479
5 Packing Washer	Reinforced PTFE
6 Stem Packing	PTFE
7 Lock Nut	316SS / A479
8 Packing Bolt	316SS / A479
9 Handle	316 Stainless Steel
10 Stop Pin	316 Stainless Steel



All dimensions are in millimeters(inchs) reference only, subject to change.

## MS Series 2-Valve Manifolds

### Type E, F & G : 1-Isolate/1-Vent Valve with Gauge Adapter

Pressure Manifolds

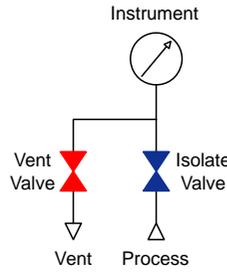
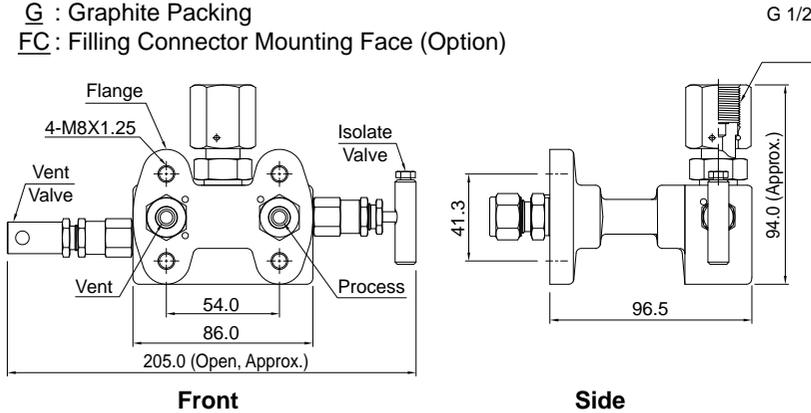
**VMS23VTV**

2.7 Kg (5.9 lb)

**T** : PTFE Packing

**G** : Graphite Packing

**FC** : Filling Connector Mounting Face (Option)



Type	MESC Code	Process	Instrument	Vent	Hy-Lok Part Number
E	609856.305.1	10mm	1/2 in. NPT Male	10mm	VMS23VTV4GE-10M-FC
E	609856.325.1	3/8 in.	1/2 in. NPT Male	3/8 in.	VMS23VTV4GE-6T-FC
E	609856.345.1	1/2 in.	1/2 in. NPT Male	1/2 in.	VMS23VTV4GE-8T-FC
F	609856.315.1	10mm	1/2 in. NPT Female	10mm	VMS23VTV4GF-10M-FC
F	609856.335.1	3/8 in.	1/2 in. NPT Female	3/8 in.	VMS23VTV4GF-6T-FC
F	609856.355.1	1/2 in.	1/2 in. NPT Female	1/2 in.	VMS23VTV4GF-8T-FC
G	609856.317.1	10mm	G1/2 Female	10mm	VMS23VTV4GG-10M-FC
G	609856.337.1	3/8 in.	G1/2 Female	3/8 in.	VMS23VTV4GG-6T-FC
G	609856.357.1	1/2 in.	G1/2 Female	1/2 in.	VMS23VTV4GG-8T-FC

All dimensions are in millimeters(inchs) reference only, subject to change.

# Mono Flange Valves

## VMNM

■ **Application** : Used for isolate and vent for remove the pressure in the pressure gauge or transmitter.

■ **Process**

According to 1/2 in. ASME B16.5 Flanges

Slotted bolt holes which cover the ranges between : CL.150 through to CL.2500 ASME B16.5

LPR-Low Pressure Rating : CL.150 ~ 600 ASME B16.5

1440 psi(99 bar) @ 100°F (38°C)

1030 psi(71 bar) @ 400°F (204°C)

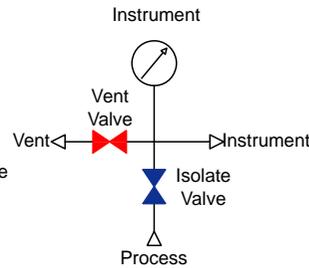
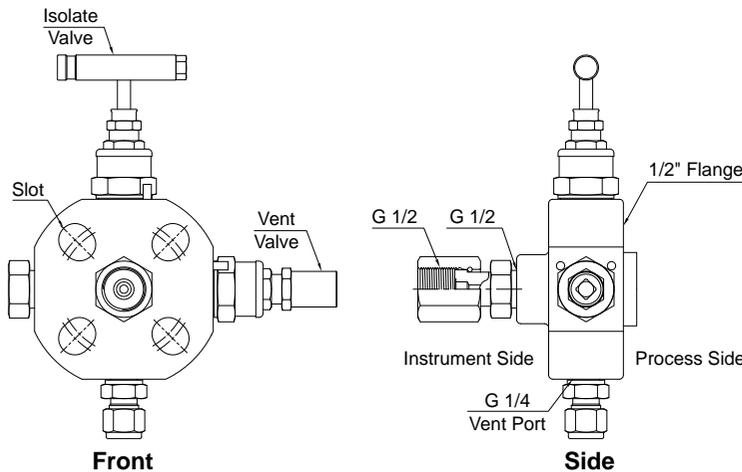
HPR-High Pressure Rating : CL.900 ~ 2500 ASME B16.5

6000 psi(413 bar) @ 100°F (38°C)

4280 psi(295 bar) @ 400°F (204°C)

■ **Instrument**

Supplied Swivel Gauge Adapter or Integral Syphon with 1/2 in. NPT or G1/2 female for 360° positioning.



T : PTFE Packing  
 G : Graphite Packing  
 A : Gauge Adapter  
 S : Syphon

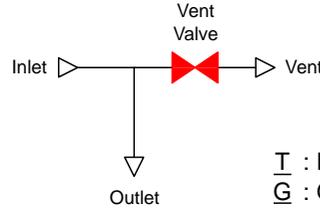
MESC Code	Process	Instrument	Vent	Hy-Lok Part Number
609855.200.1	1/2 in. LPR CL.150-600	1/2 in. NPT(F) Gauge Adapter	10mm	VMNMTV8SL8N-10M-A
609855.200.1	1/2 in. LPR CL.150-600	1/2 in. NPT(F) Gauge Adapter	3/8 in.	VMNMTV8SL8N-6T-A
609855.210.1	1/2 in. HPR CL.900-2500	1/2 in. NPT(F) Gauge Adapter	10mm	VMNMTV8SH8N-10M-A
609855.210.1	1/2 in. HPR CL.900-2500	1/2 in. NPT(F) Gauge Adapter	3/8 in.	VMNMTV8SH8N-6T-A
609855.220.1	1/2 in. LPR CL.150-600	G1/2(F) Gauge Adapter	10mm	VMNMTV8SL8G-10M-A
609855.220.1	1/2 in. LPR CL.150-600	G1/2(F) Gauge Adapter	13/8 in.	VMNMTV8SL8G-6T-A
609855.230.1	1/2 in. HPR CL.900-2500	G1/2(F) Gauge Adapter	10mm	VMNMTV8SH8G-10M-A
609855.230.1	1/2 in. HPR CL.900-2500	G1/2(F) Gauge Adapter	3/8 in.	VMNMTV8SH8G-6T-A
609855.300.1	1/2 in. LPR CL.150-600	1/2 in. NPT(F) Syphon	10mm	VMNMTV8SL8N-10M-S
609855.300.1	1/2 in. LPR CL.150-600	1/2 in. NPT(F) Syphon	3/8 in.	VMNMTV8SL8N-6T-S
609855.310.1	1/2 in. HPR CL.900-2500	1/2 in. NPT(F) Syphon	10mm	VMNMTV8SH8N-10M-S
609855.310.1	1/2 in. HPR CL.900-2500	1/2 in. NPT(F) Syphon	3/8 in.	VMNMTV8SH8N-6T-S
609855.320.1	1/2 in. LPR CL.150-600	G1/2(F) Syphon	10mm	VMNMTV8SL8G-10M-S
609855.320.1	1/2 in. LPR CL.150-600	G1/2(F) Syphon	3/8 in.	VMNMTV8SL8G-6T-S
609855.330.1	1/2 in. HPR CL.900-2500	G1/2(F) Syphon	10mm	VMNMTV8SH8G-10M-S
609855.330.1	1/2 in. HPR CL.900-2500	G1/2(F) Syphon	3/8 in.	VMNMTV8SH8G-6T-S

All dimensions are in millimeters(inchs) reference only, subject to change.

## Seal Pots

### VSPH

- Application : Used for protect measuring instruments from high-density and corrosive media.
- Complete with Vent Valve
- Liquid chamber volume : 50 cm<sup>3</sup>
- Connection : 10mm or 3/8 & 1/2 in. Tube Fitting
- Pressure - Temperature Rating
  - 6000 psi (413 bar) @ 100°F (38°C)
  - 3000 psi (206 bar) @ 842°F (450°C)



T : PTFE Packing  
G : Graphite Packing



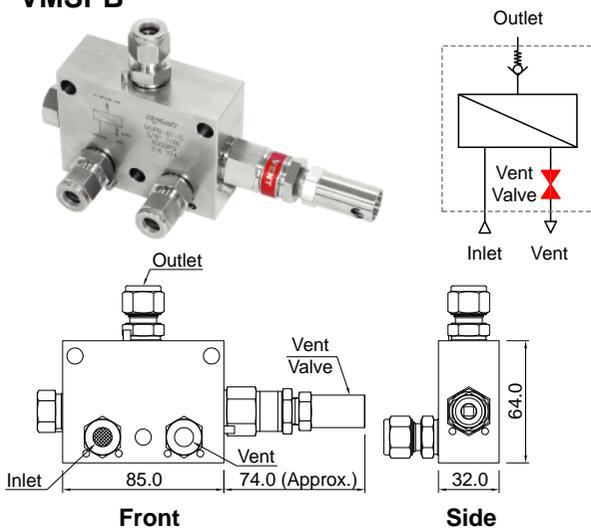
MESC Code	Inlet	Outlet	Vent	Hy-Lok Part Number
609870.510.1	10mm	10mm	10mm	VSPHT10M4G-50CC
609870.610.1	3/8 in.	3/8 in.	3/8 in.	VSPHT6T4G-50CC
609870.600.1	1/2 in.	1/2 in.	1/2 in.	VSPHT8T4G-50CC

## Self Venting Purge Blocks

- Application : Used for measure the level of tank by measure air purge pressure.
- Complete with Vent Valve, Filter, Check Valve
- Filter Screen : 750 μm
- Connection : 10mm or 3/8 in. tube fitting
- Pressure - Temperature Rating
  - 6000 psi (413 bar) @ 100°F (38°C)
  - 4000 psi (275 bar) @ 400°F (204°C)

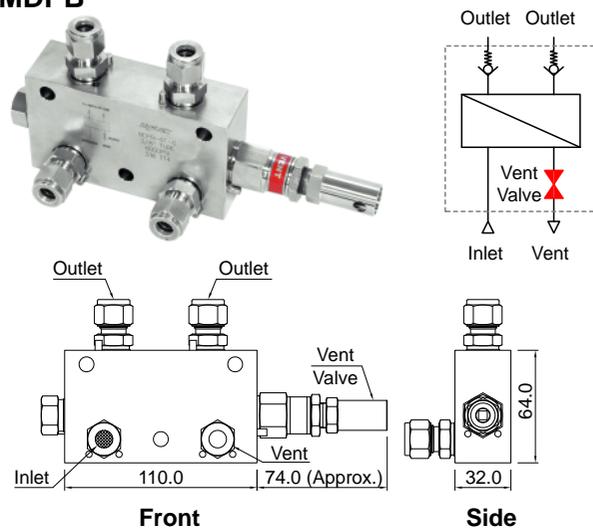
### Single Self Venting Purge Block

#### VMSPB



### Double Self Venting Purge Block

#### VMDPB



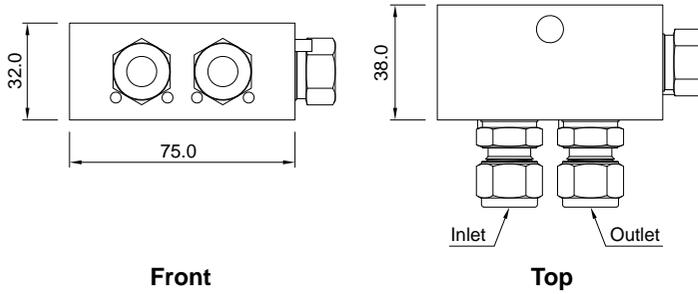
MESC Code	Description	Inlet	Outlet	Vent	Hy-Lok Part Number
609870.210.1	Single Self Venting Purge Block	10mm	10mm	10mm	VMSPB-10M-G
609870.310.1	Single Self Venting Purge Block	3/8 in.	3/8 in.	3/8 in.	VMSPB-6T-G
609870.220.1	Double Self Venting Purge Block	10mm	10mm	10mm	VMDPB-10M-G
609870.320.1	Double Self Venting Purge Block	3/8 in.	3/8 in.	3/8 in.	VMDPB-6T-G

All dimensions are in millimeters(inchs) reference only, subject to change.

## Steam Tracing Blocks

### VMSSTB

- Application : Used for maintain process temperature given that the steam tracing blocks are mounted directly to the manifold valve
- Connection : 10mm or 3/8 in. tube fitting
- Pressure - Temperature Rating  
290 psi (20 bar) @ 410°F (210°C)

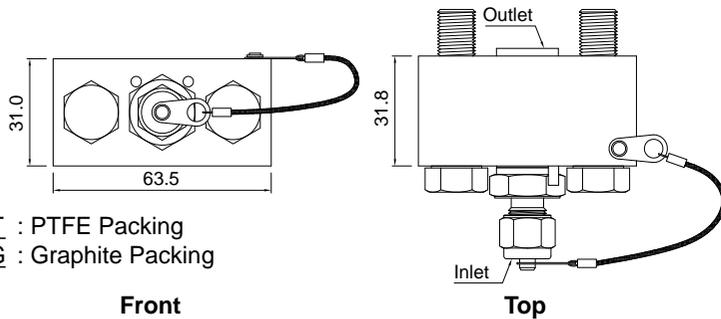


MESC Code	Inlet	Outlet	Hy-Lok Part Number
MESC 609870.010.1	10mm	10mm	VMSSTB10M-4G-P
MESC 609870.110.1	3/8 in.	3/8 in.	VMSSTB6T-4G-P

## Filling Connectors

### KIT-MVFC

- Application : Used for filling of the instrumentation line through the differential pressure transmitter.
- Integral with check valve.
- Connection : 6mm or 1/4 in. tube fitting with retained cap
- Supplied complete with 2 X 7/16 in.-20 bolts, PTFE or Graphite gasket
- Pressure - Temperature Rating  
6000 psi (413 bar) @ 100°F (38°C)  
4000 psi (275 bar) @ 400°F (204°C)



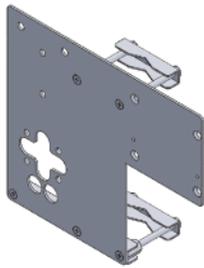
T : PTFE Packing  
G : Graphite Packing

MESC Code	Description	Inlet	Outlet	Gasket	Hy-Lok Part Number
609890.106.1	Filling Connector	6mm	Flange(DIN)	PTFE	KIT-MVFC6M-T
609890.107.1	Filling Connector	1/4 in.	Flange(DIN)	PTFE	KIT-MVFC4T-T
609890.307.1	Blind Flange		Flange(DIN)	PTFE	KIT-BOFC-T
609890.406.1	Filling Connector	6mm	Flange(DIN)	Graphite	KIT-MVFC6M-G
609890.407.1	Filling Connector	1/4 in.	Flange(DIN)	Graphite	KIT-MVFC4T-G
609890.507.1	Blind Flange		Flange(DIN)	Graphite	KIT-BOFC-G

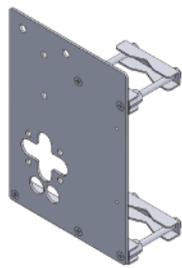
All dimensions are in millimeters(inchs) reference only, subject to change.

## Mounting Plates

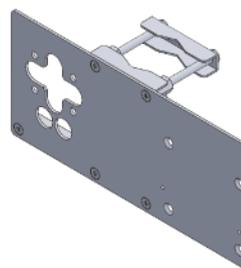
- Application : Used for mounting of the Manifold, Protective Shade and Junction Box.
- Drilled to fit the manifold mounting surface, process connection and steam tracer tubing.
- Type A : Installation option of instruments with the need for a Protective Shade.
- Type B : Installation option of instruments without the need for a Protective Shade.
- Supplied complete with 2 in. Pipe clamp.
- All materials are 316 Stainless Steel.



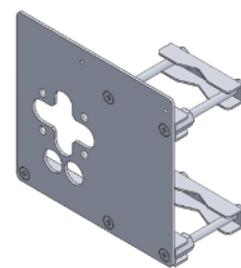
Type A1



Type A2



Type B1



Type B2

MESC Code	Type	Description	Hy-Lok Part Number
609891.105.1	Type A1	For Protective Shade and Junction Box	AMSMP-330X280X3T-A
609891.110.1	Type A2	For Protective Shade without Junction Box	AMSMP-200X280X3T-A
609891.118.1	Type B1	For Junction Box without Protective Shade	AMSMP-330X150X3T-B
609891.120.1	Type B2	Without Protective Shade and Junction Box	AMSMP-200X185X3T-B

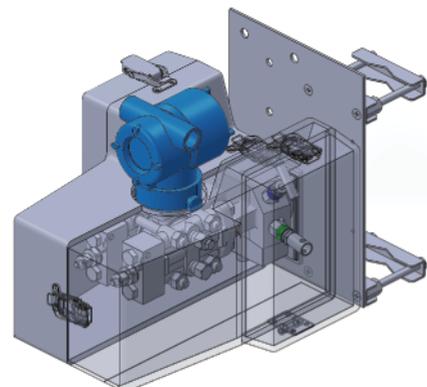
## Protective Shade

- Application : Used for protection of instruments against direct sunlight
- GRP with UV resistant and flame retardant synthetic material.
- Ordering Number : YMSPS-300X130X300



## Enclosure

- Application : Used for maintain process temperature.
- GRP with UV resistant and flame retardant synthetic material.
- Ordering Number : AINS-BOX-MESC



All dimensions are in millimeters(inchs) reference only, subject to change.

## Options

### High Temperature Packing

Graphite valve packing material for high-temperature service. See Pressure-Temperature Ratings, page 8. Includes Graphite flange seals on DIN/IEC 61518 Type A flanges.

To order a manifold with an optional Graphite packing material, replace **T** with **G** in the manifold ordering number. Example : VMS41V**T**V4G-10M → VMS41V**G**V4G-10M

### Flange Seal Materials

Flange seals are available in Graphite and PTFE for system compatibility. Temperature ratings are included in the table below.

To order a manifold with an optional Graphite packing material, replace **T** with **G** in the manifold ordering number. Example : VMS41V**T**V4G-10M → VMS41V**G**V4G-10M

Packing or Flange Seal Material	Temperature Rating °F (°C)	Material Designator
Graphite	-65°F to 1000°F (-53°C to 537°C)	G
PTFE	-65°F to 450°F (-53°C to 232°C)	T

## Maintenance kits

### Flange Seal Kits

Select a Kit ordering number from the tables below based on the manifold series and seal material.

Flange Seal Material	Kit Ordering Number		Material Designator
	2-Valve (one seal)	4-Valve (two seals)	
Graphite	KIT-MS2FS- <u>G</u>	KIT-MS4FS- <u>G</u>	G
PTFE	KIT-MS2FS- <u>T</u>	KIT-MS4FS- <u>T</u>	T



### Transmitter Fixing Bolt Kits

Select a Kit ordering number from the tables below based on the manifold series and bolt length.

All Bolts are stainless steel(A193 B8M) with 7/16 in.-20 threads.

Bolt Size	Kit Ordering Number
M8	KIT-B-HHB8-L12
7/16	KIT-MVBT-04U-L22



### Valve Bonnet Assembly Kits

Select a Kit ordering number from the tables below based on the valve bonnets and packing material.

Packing Material	Kit Ordering Number			Packing Designator
	Isolate	Vent	Equalize	
Graphite	XMAVBNTS- <u>G</u> -I	XMAVBNTS- <u>G</u> -V-AT	XMAVBNTS- <u>G</u> -E-AT	G
PTFE	XMAVBNTS- <u>T</u> -I	XMAVBNTS- <u>T</u> -V-AT	XMAVBNTS- <u>T</u> -E-AT	T



## Accessories

### Port Protector

- Application : Used for protected ingress of vermin, insects or dirt.
- Filter Screen : 750 μm
- Connection : G 1/4 in.
- Ordering Number : **AH-SBS-4G-G-750**



### Anti-Temper Key

- Application : use for security of valve operation.
- Ordering Number : **KIT-MSVHRD-3.2**



### Purge Orifice Plates

- Application : Use for restricted flow device for the purge block.
- Supplied complete with orifice plate, orifice tag plate.
- 0.5mm Orifice size as standard.

Ordering Information

Tubing O.D x thickness	Ordering Number	Orifice Size
6 x 1.0mm	ACPO-6M-OR0.5	0.5
10 x 1.5 mm	ACPO-10M-OR0.5	0.5
3/8 x 0.065 in	ACPO-6T-OR0.5	0.5



### Swivel Gauge Adapters

- Application : Used for orientation of pressure gauges.
- G 1/2 in. female or 1/2 in. NPT female for 360° positioning.
- Ordering Number for G 1/2 in. : **AGU04MN-04FN**
- Ordering Number for 1/2 in. NPT : **AGU04MN-04GN-S**



## Ordering Information

**VMS41V**

**Valve Designator**

- VMS41 4-Valves, Type A, 2-Isolate/1-Equalize/1-Vent
- VMS42 4-Valves, Type B, 2-Isolate/2-Vent
- VMS21 2-Valves, Type C, 1-Isolate/1-Vent (Atmo. Hole)
- VMS22 2-Valves, Type D, 1-Isolate/1-Vent
- VMS23 2-Valves, Type E/F/G, 1-Isolate/1-Vent

**T**

**Packing Designator**

- T : PTFE(Standard)
- G : Graphite(Optional)

**V**

**Stem Tip Designation**

- V : Vee Tip(Standard)
- B : Ball Tip(Optional)

**4G**

**Process & Vent Port Designator**

- 4G : G1/4 Female Port
- 8N : 1/2 in. Female Port (Option, Only Process)

**10M**

**Tubing Size Designator**

- 10M : 10mm Hy-Lok
- 6T : 3/8 in. Hy-Lok
- 8T : 1/2 in. Hy-Lok

**SOG**

**Option Designator**

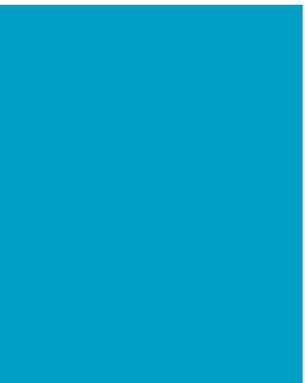
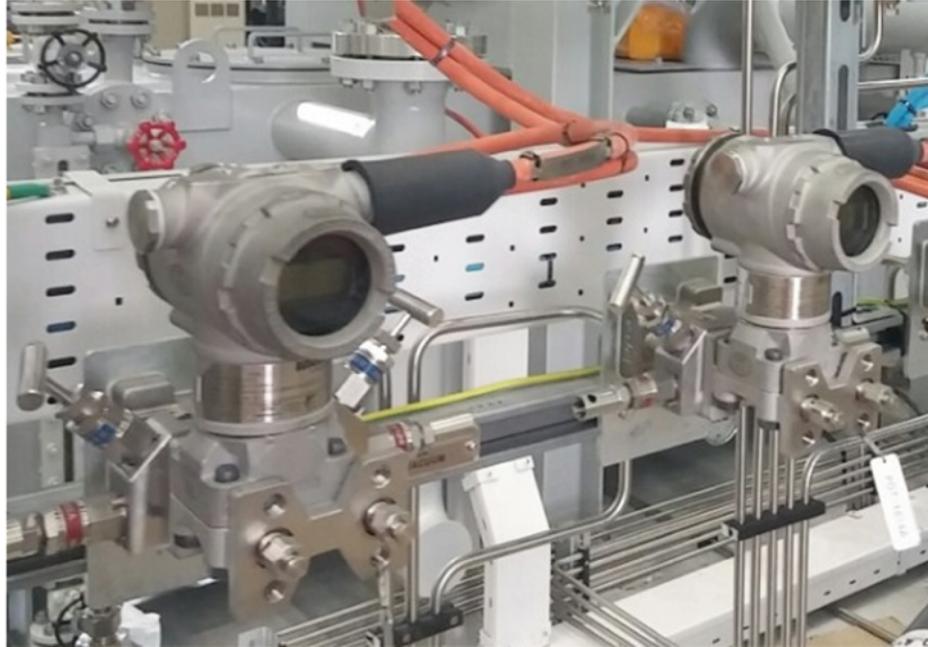
- SOG : NACE MR-01-75
- FC : Filling Connector Mounting Face

**S316**

**Body Material designator**

- S316 316 Stainless Steel
- 316L 316L Stainless Steel
- MONE Monel Alloy 400
- C276 Hastelloy® C-276
- F53 Super Duplex

Example : VMS41TV4G-10M-S316  
(4-Valve Type A, PTFE Packing, Vee Tip, G 1/4" Female to 10mm Hy-Lok, 316 Stainless Steel)



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