

# Instrumentation Manifold Valves

## SM2V / SM3V / SM5V Series



### Ordering Information

Example : **SM2 V - F 8N - M40**

1 2 3 4 5

#### 1. Valve Series

SM2 : 2-Valve Manifolds  
SM3 : 3-Valve Manifolds  
SM5 : 5-Valve Manifolds

#### 2. Mounting Type

V : Horizontal Style (Remote Mounting)  
VF : Horizontal Single Flange Style (Direct Mounting)  
VDF : Horizontal Dual Flange Style (Direct Mounting)  
VD : Vertical Style (Direct Mounting)

#### 3. End Connection Type

S : Superlok Female Tube Fitting  
F : Female Pipe Thread

#### 4. End Connection Size

##### Tube O.D Designation

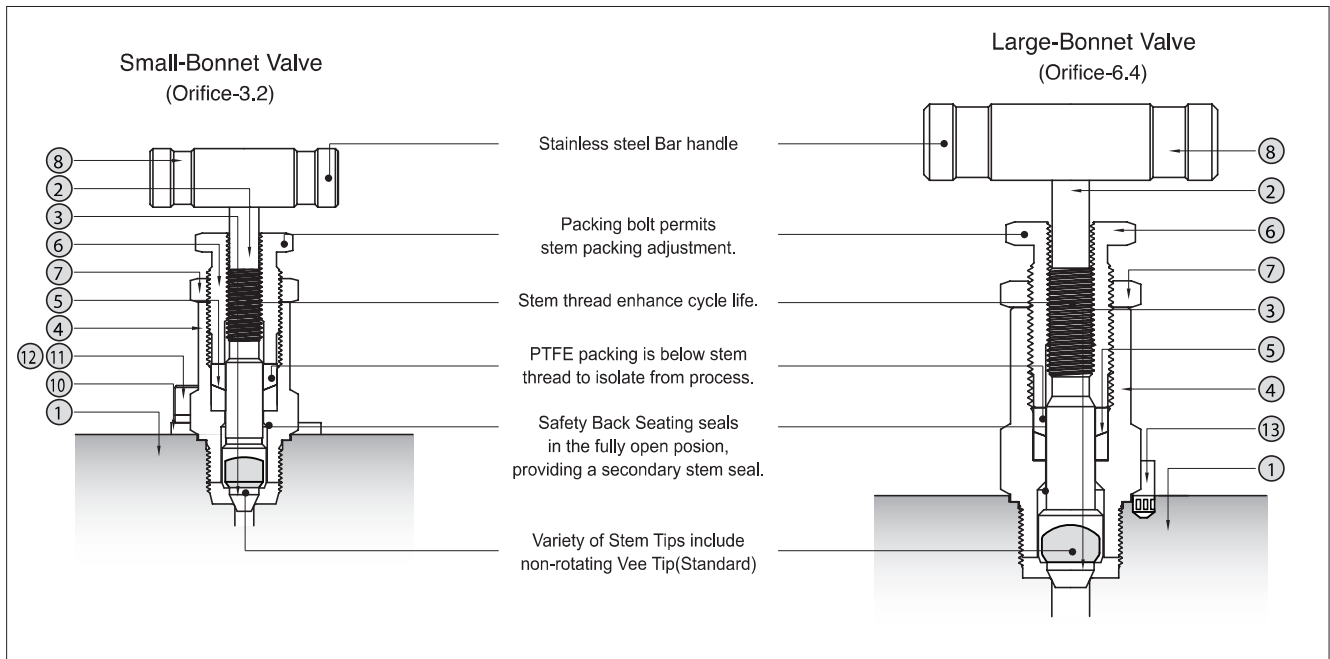
Size (inch)	1/2
Designation	8

##### Pipe Thread Designation

Size (inch)	1/2
Screwed NPT	8N

#### 5. Body Material

SS : 316 Stainless Steel  
M40 : Alloy 400 (Monel)



## Technical Data

### Material of Construction

Component	Material Grade
1 Body	SS316 / A276 or A479
2 Stem	SS316 / A276 or A479
3 Vee Tip	SS316 / A479
4 Bonnet	SS316 / A276 / or A479
5 Packing	PTFE Grafoil (optional)
6 Packing Bolt	SS316 / A276 / or A479
7 Lock Nut	SS316 / A276 / or A479
8 Handle	Stainless Steel
9 Set Screw	Stainless Steel
10 Locking Plate	Stainless Steel
11 Wrench Bolt	Stainless Steel
12 Spring Washer	Stainless Steel
13 Stop Pin	Stainless Steel

### Orifice

3.2mm (0.125 in.)	2-Valve Manifolds Block, Bleed Valve 5-Valve Manifolds Equalizer, Bleed Valve
6.4mm (0.250 in.)	3-Valve Manifolds Block, Equalizer Valve 5-Valve Manifolds Block Valve

### Features

- 2-,3-,and 5-valves Instrument manifolds valves.
- Pressure Rating up to 6000psig (413bar) @ 100°F (37°C)
- Temperature up to 1200°F (648°C) with optional Grafoil packing
- All 316 stainless steel construction with PTFE packing

### Testing

Each valve on every manifold is factory tested with nitrogen gas.  
The test is performed to a maximum allowable leak rate of 0.1sc/min.

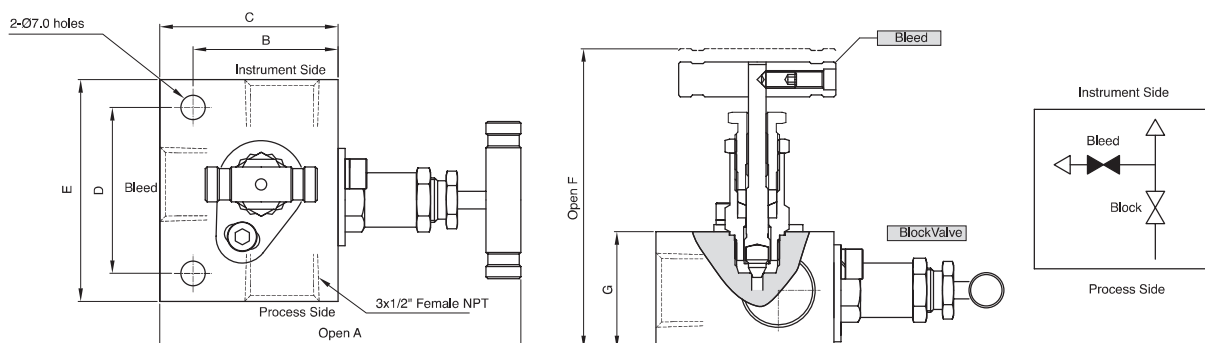
### Pressure-Temperature Rating

Component	SS 316	
Packing Material	PTFE	Grafoil
Temperature(°C)	Working Pressure psig(bar)	
-65 (-53) to 100(37)	6000 (413)	6000 (413)
200 (93)	5160 (355)	5160 (355)
250 (121)	4910 (338)	4910 (338)
300 (148)	4660 (321)	4660 (321)
350 (176)	4470 (307)	4470 (307)
400 (204)	4280 (294)	4280 (294)
450 (232)	4130 (284)	4130 (284)
500 (260)	-	3980 (274)
550 (287)	-	3870 (266)
600 (315)	-	3760 (259)
650 (343)	-	3700 (254)
700 (371)	-	3600 (248)
750 (398)	-	3520 (242)
800 (426)	-	3460 (235)
850 (454)	-	3380 (232)
900 (482)	-	3280 (225)
950 (510)	-	3220 (221)
1000 (537)	-	3030 (208)
1050 (565)	-	3000 (206)
1100 (593)	-	2685 (184)
1150 (621)	-	2285 (157)
1200 (648)	-	1715 (118)

\* Note  
450°F (232°C) with standard PTFE packing.  
1200°F (648°C) with Optional Grafoil packing.

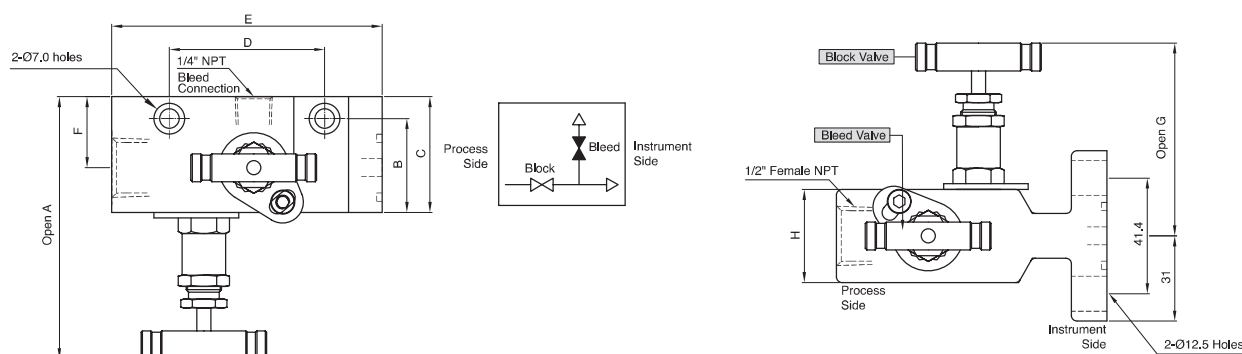
## 2-Valve Manifolds

### Horizontal Style (Remote Mounting)



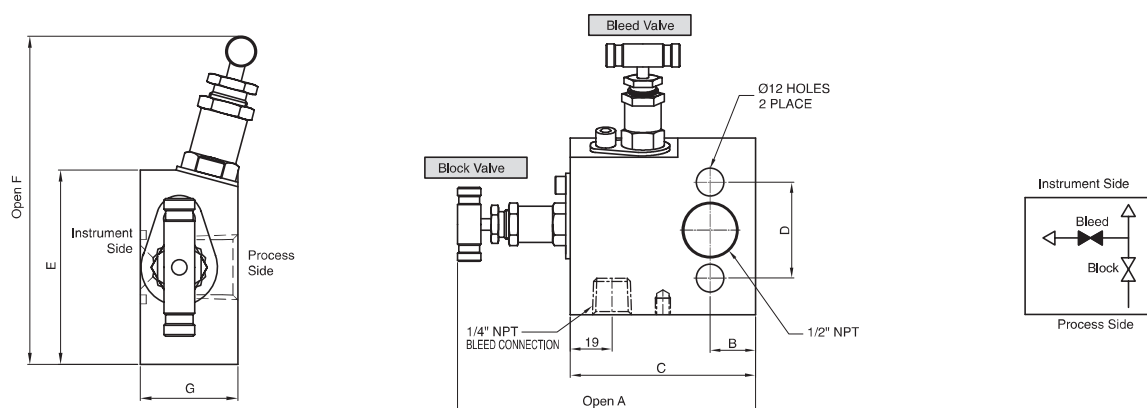
Part Number	End Connections			Weight Dimensions						
	Process	Instrument	Bleed	A	B	C	D	E	F	G
SM2V-F8N	1/2" Female NPT			103,5	41,5	51	47,5	63,5	85,9	33,5

### Horizontal Single Flange Style (Direct Mounting)



Part Number	End Connections			Weight Dimensions							
	Process	Instrument	Bleed	A	B	C	D	E	F	G	H
SM2VF-F8N	1/2" Female NPT	Flange	1/4" Female NPT	93,8	33,6	41,4	47,8	97,0	25,4	69,0	31,8

### Vertical Style (Direct Mounting)

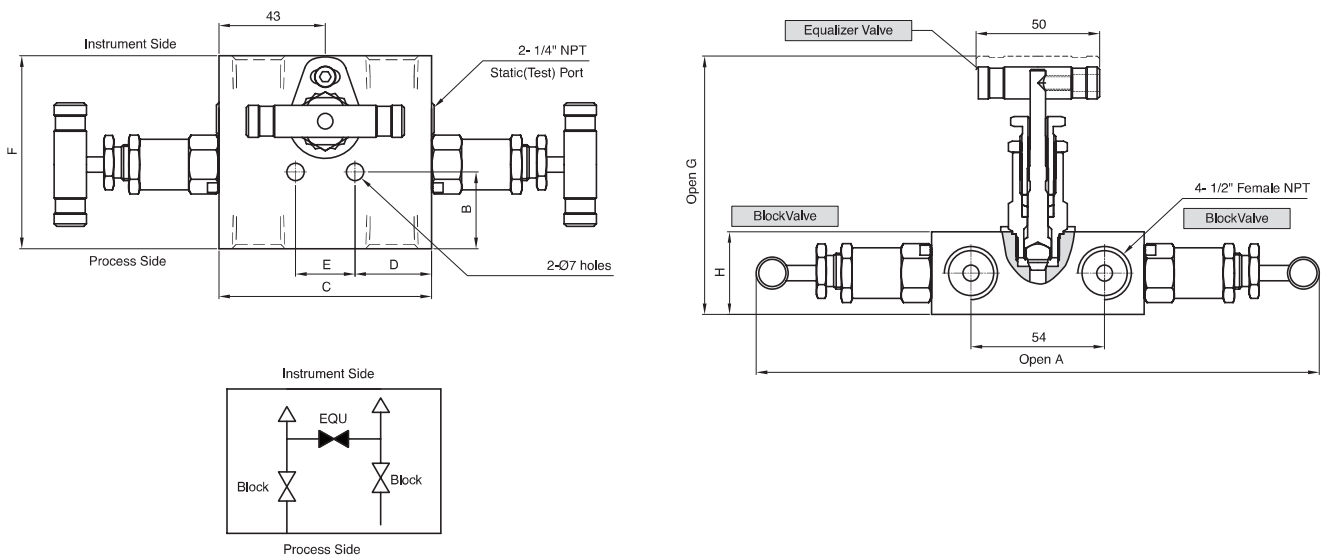


Part Number	End Connections			Weight Dimensions						
	Process	Instrument	Bleed	A	B	C	D	E	F	G
SM2VD-F8N	1/2" Female NPT	Flange	1/4" Female NPT	116,0	17,0	63,5	41,4	63,5	115,0	28,6

- All dimensions in millimeters unless specified as "inch". Dimension are for reference only and are subject to change.
- To order a manifold with optional Grafoil packing, add-G to the manifold ordering number.

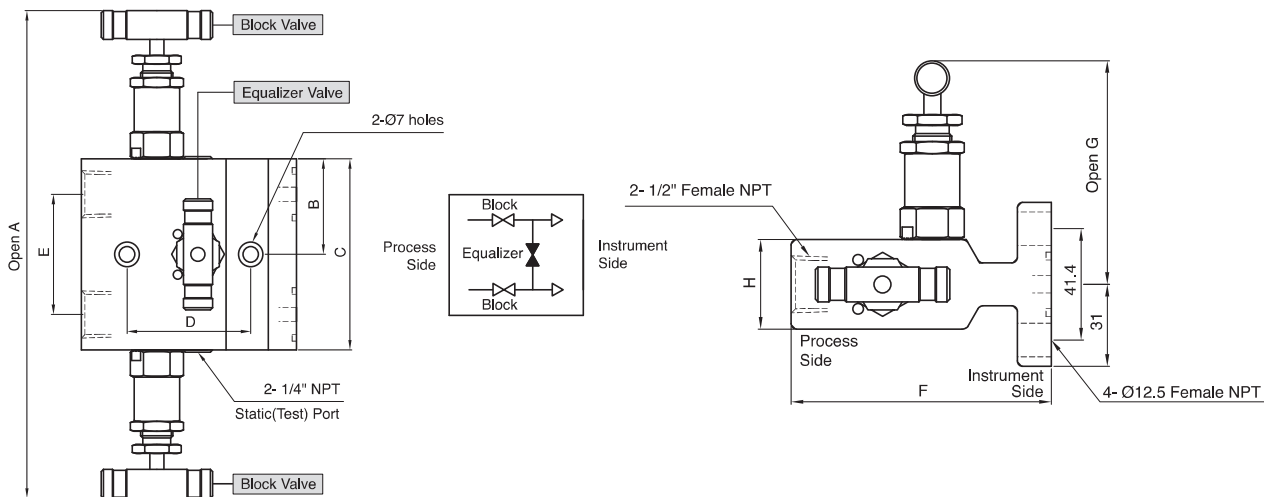
# 3-Valve Manifolds

## Horizontal Style(Remote Mounting)



Part Number	End Connections		Weight Dimensions							
	Process	Instrument	A	B	C	D	E	F	G	H
SM3V-F8N	1/2" Female NPT		228.0	31.0	86.0	31.0	24.0	78.0	106.0	33.5

## Horizontal Single Flange Style (Direct Mounting)



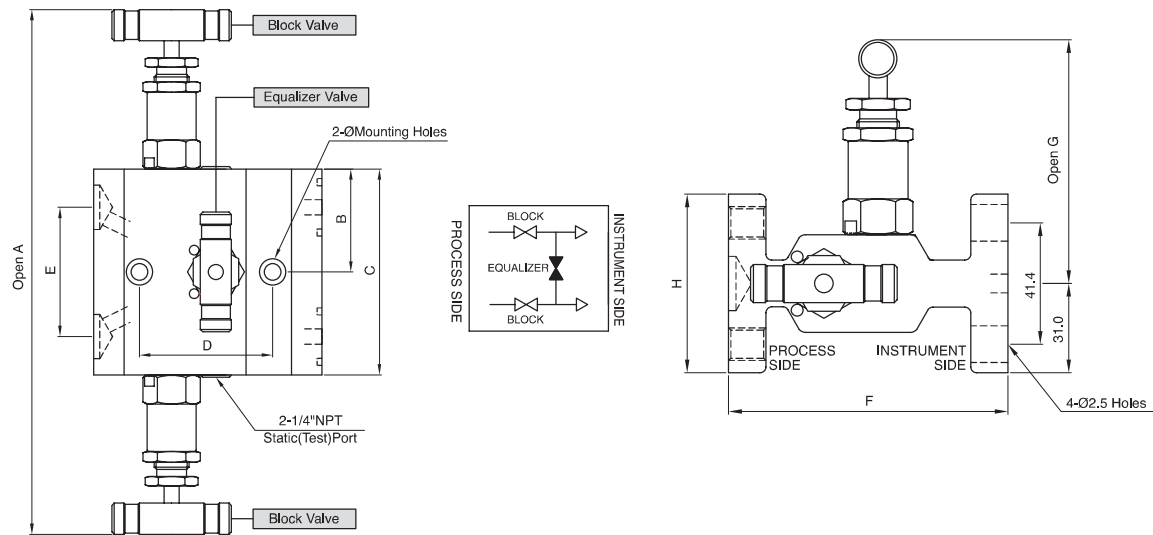
Part Number	End Connections		Weight Dimensions							
	Process	Instrument	A	B	C	D	E	F	G	H
SM3VF-F8N	1/2" Female NPT	Flange	228.0	43.0	86.0	55.6	54.0	97.0	87.7	31.8

• All dimensions in millimeters unless specified as "inch". Dimension are for reference only and are subject to change.

• To order a manifold with optional Grafoil packing, add-G to the manifold ordering number.

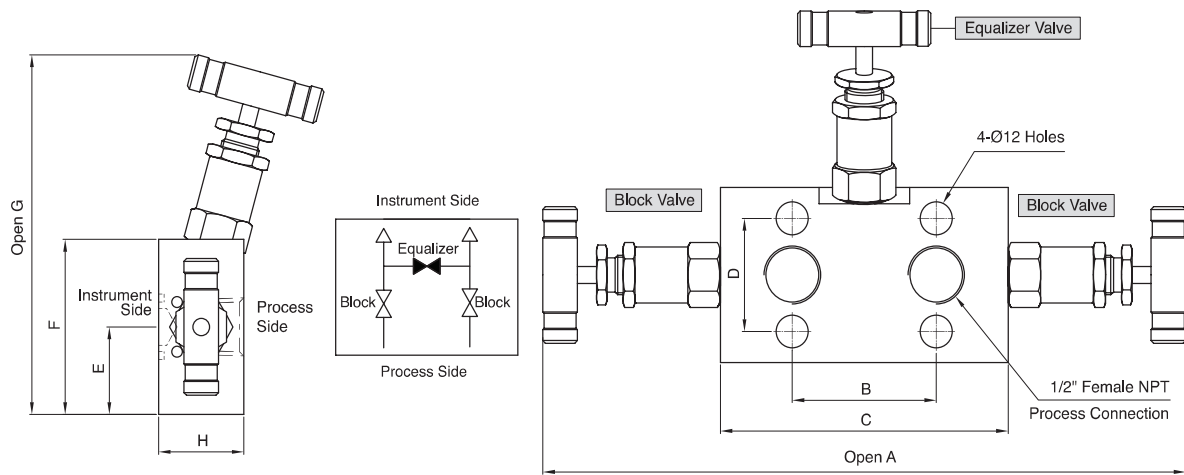
### 3-Valve Manifolds

#### Horizontal Dual Flange Style (Direct Mounting)



Part Number	End Connections		Weight Dimensions							
	Process	Instrument	A	B	C	D	E	F	G	H
SM3VDF	Flange	Flange	228.0	43.0	86.0	55.6	54.0	96.4	87.7	62.0

#### Vertical Style (Direct Mounting)

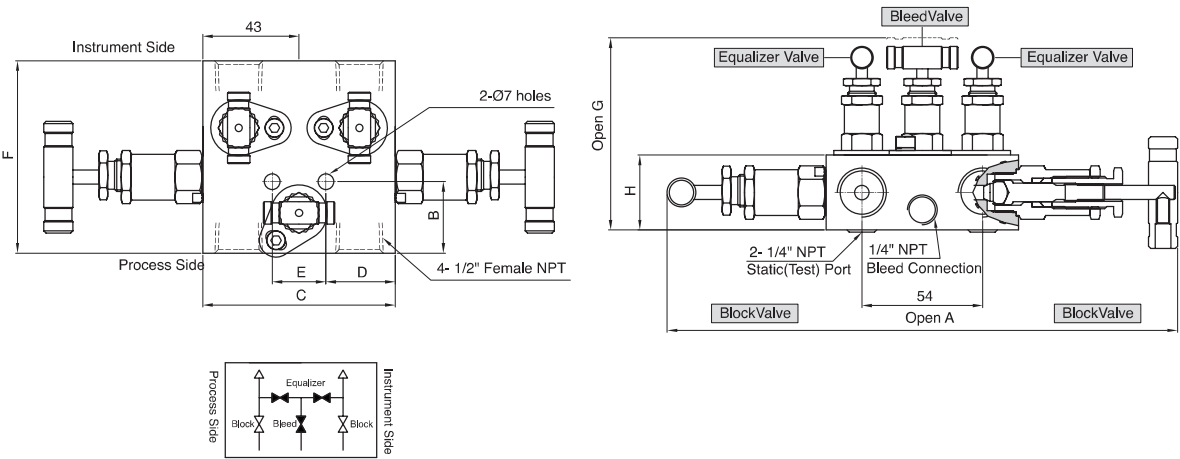


Part Number	End Connections		Weight Dimensions							
	Process	Instrument	A	B	C	D	E	F	G	H
SM3VD-F8N	1/2" Female NPT	Flange	250.0	54.0	108.0	41.4	32.0	64.0	136.0	32.0

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• To order a manifold with optional Grafoil packing, add-G to the manifold ordering number.

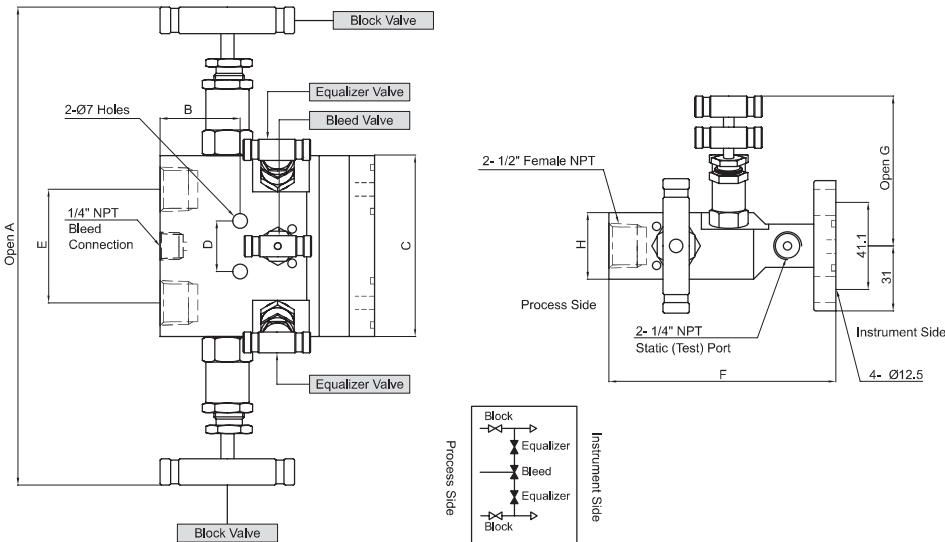
# 5-Valve Manifolds

## Horizontal Style(Remote Mounting)



Part Number	End Connections			Weight Dimensions							
	Process	Instrument	Bleed	A	B	C	D	E	F	G	H
SM5V-F8N	1/2" Female NPT		1/4" Female NPT	228.0	32.0	86.0	31.0	24.0	86.0	85.9	33.5

## Horizontal Single Flange Style (Direct Mounting)

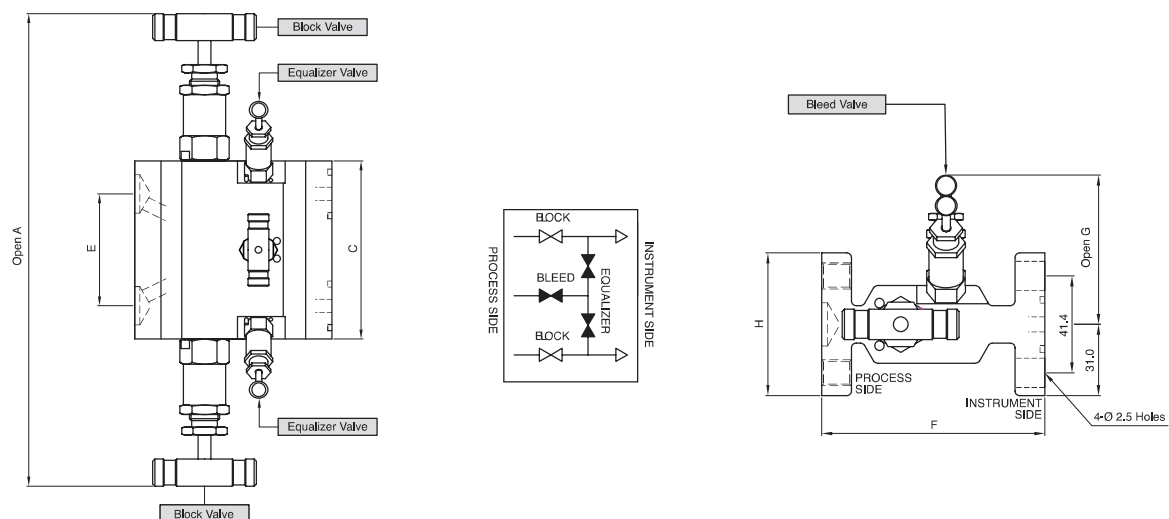


Part Number	End Connections			Weight Dimensions							
	Process	Instrument	Bleed	A	B	C	D	E	F	G	H
SM5VF-F8N	1/2" Female NPT	Flange	1/4" Female NPT	228.0	38.0	86.0	24.0	54.0	108.0	69.0	31.8

• All dimensions in millimeters unless specified as "inch". Dimension are for reference only and are subject to change.  
 • To order a manifold with optional Grafoil packing, add-G to the manifold ordering number.

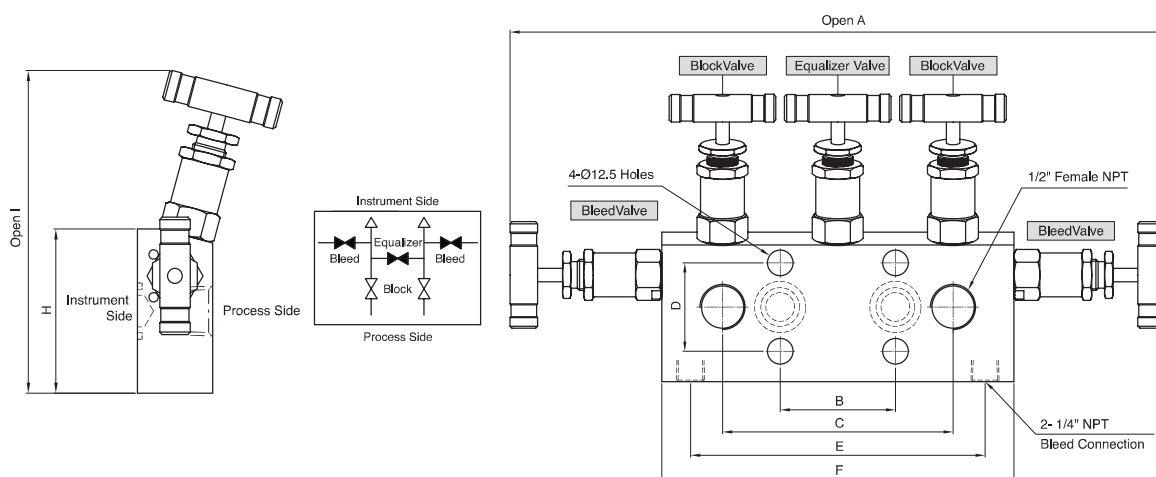
## 5-Valve Manifolds

### Horizontal Dual Flange Style (Direct Mounting)



Part Number	End Connections			Weight Dimensions (mm)							
	Process	Instrument	Bleed	A	B	C	D	E	F	G	H
SM5VDF	Flange	Flange	1/4" Female NPT	228.0	32.0	86.0	24.0	54.0	96.4	69.0	61.0

### Vertical Style (Direct Mounting)



Part Number	End Connections			Weight Dimensions (mm)								
	Process	Instrument	Bleed	A	B	C	D	E	F	G	H	I
SM5VD-F8N	1/2" Female NPT	Flange	1/4" Female NPT	312.0	54.0	102.0	41.4	138.0	158.0	148.0	76.2	32.0

- All dimensions in millimeters unless specified as "inch". Dimension are for reference only and are subject to change.
- To order a manifold with optional Grafoil packing, add-G to the manifold ordering number.

## Manifolds Accessories

### Flange Bolts & Seals

#### Flange Bolts

Flange Bolt	Part Number	Hex Size mm (in.)	Length mm (in.)	Threads	Bolt Material Designator
Standard Hex Head Bolt	SM-FB	15.87 (5/8)	25.0 (1.0)	7/16 - 20	Stainless Steel : -S Carbon Steel : -C
Long Stud with Hex Nut	SM-LFB		58.0 (2.28)		
Short Hex Head Bolt	SM-SFB		22.2 (0.875)		

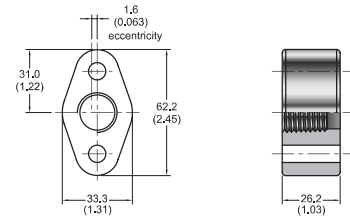
#### Flange Seals

Seal Material	Ordering No.	Temperature Rating
Viton	SM - FS - V	-20°F ~ 450°F (-28°C ~ 232°C)
PTFE	SM - FS	-65°F ~ 250°F (-53°C ~ 121°C)
Grafoil	SM - FS - GR	-65°F ~ 1000°F (-53°C ~ 537°C)



### Concentric & Eccentric Oval Flange

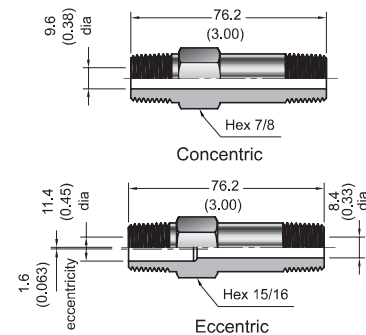
- Eccentric Flanges and Pipe Nipple allow connections of flange - to - flange manifolds to process flange taps or process root valves.
- Standard connection is female NPT 1/2".
- Concentric & eccentric oval flange ordering number : Concentric oval flange female NPT 1/2" : SM - COF - F8N  
Eccentric oval flange female NPT 1/2" : SM - EOF - F8N
- Dimensions, in millimeters (inches), are for reference only and are subject to change.



### Concentric & Eccentric Pipe Nipple

Type	Part Number	Material	Pressure Rating @70°F (20°C) psig (bar)	Temperature Rating °F (°C)	Pressure Rating @Max. temperature
Concentric	SM - CPN - S	SS316 / A276	10000 (689)	-65 to 1200 (-53 to 648)	2850 psig @ 1200°F (196 bar @ 648°C)
	SM - CPN - C	Carbon Steel / A108	8000 (551)	-20 to 350 (-28 to 176)	6970 psig @ 350°F (480 bar @ 176°C)
Eccentric	SM - EPN - S	SS316 / A276	7500 (516)	-65 to 1200 (-53 to 648)	2140 psig @ 1200°F (147 bar @ 648°C)
	SM - EPN - C	Carbon Steel / A108	6000 (413)	-20 to 350 (-28 to 176)	5230 psig @ 350°F (360 bar @ 176°C)

\* Dimensions, in millimeters (inches), are for reference only and are subject to change.



### Calibration Fittings



Calibration fittings connect directly to the bleed port of differential pressure transmitter.

Material	Part Number	SUPERLOK O.D.	Straight Male Thread
Stainless Steel / A276	SCAL4 - 1U	1/4"	1/4 - 28UNF
	SCAL4 - 2U		5/16 - 24UNF

### Vent plugs, Bleed & Purge Valves

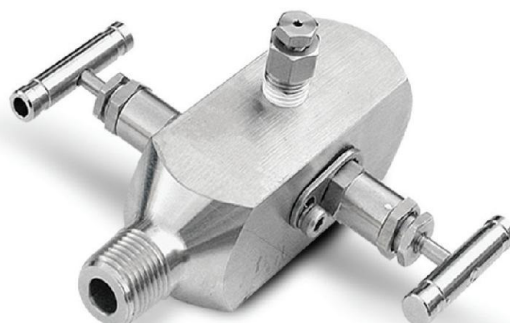
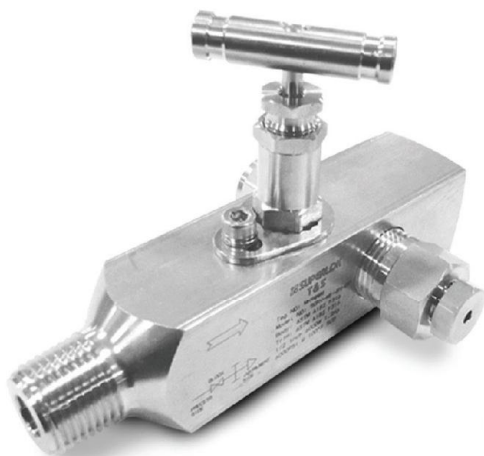
- Bleed & Purge valves used to vent to atmosphere and to assist in calibration.
- Are offered in 1/4, 3/8, and 1/2 in. male NPT sizes.
- For more information, see the SUPERLOK BLEED & PURGE VALVE catalog. (BMT CBPV)
- Dimensions, in millimeters (inches), are for reference only and are subject to change.





# Instrumentation Gauge Valves

## SGBV / SGBV2 Series



### Features

- Stainless Steel construction.
- 1/2 in. and 3/4 in. male to 1/2 in. female end connections.
- 1/2 in. female gauge ports standard.

### Specifications

Maximum Working Pressure Rating	6000 psig (413 bar) @100°F(38°C)
Temperature Rating	-65 to 450°F (-54 to 232 °C) with PTFE packing
Body Material	316 Stainless Steel
Orifice	0.125" (3.2mm), 0.250" (6.4mm)

### Testing

- Each Valve is tested with nitrogen at 1000psig(69bar) to maximum allowable leak rate of 0.1 SCCM.
- Hydrostatic shell test is performed at 1.5 times of the working pressure. (OPTION)

### Ordering Information

Example : **SGBV - M 8N - F 8N - SS**

1
2
3
2
3
4

#### 1. Valve Series

SGBV : Gauge  
SGRV : Gauge Root Valve  
SGBV2 : Gauge 2- Vale

#### 2. End Connection Type

M : Male Pipe Thread  
F : Female Pipe Thread

#### 3. Port Size

##### Pipe Thread Designation

Size (inch)	1/2	3/4
Screwed NPT	8N	12N
Screwed BSPT	8R	12R

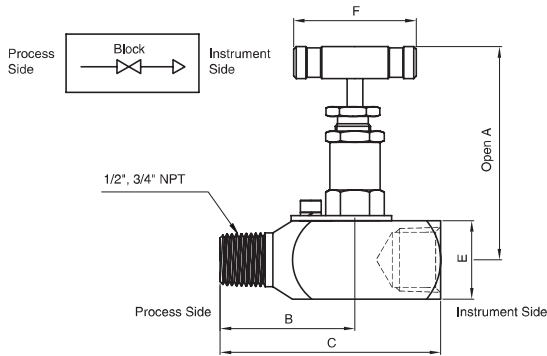
#### 4. Body Material

SS : 316 Stainless Steel

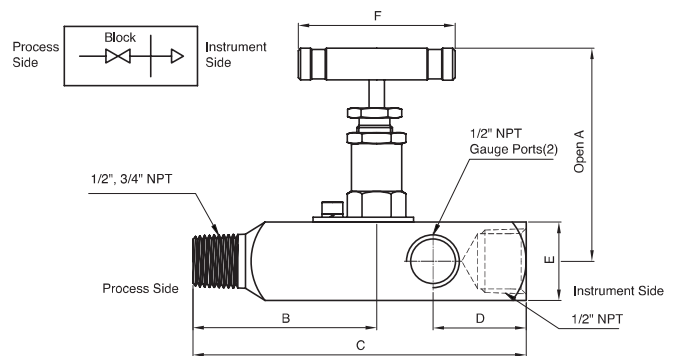
## Gauge Valve

### Gauge / Root Valve

#### SGBV(Gauge Valve)



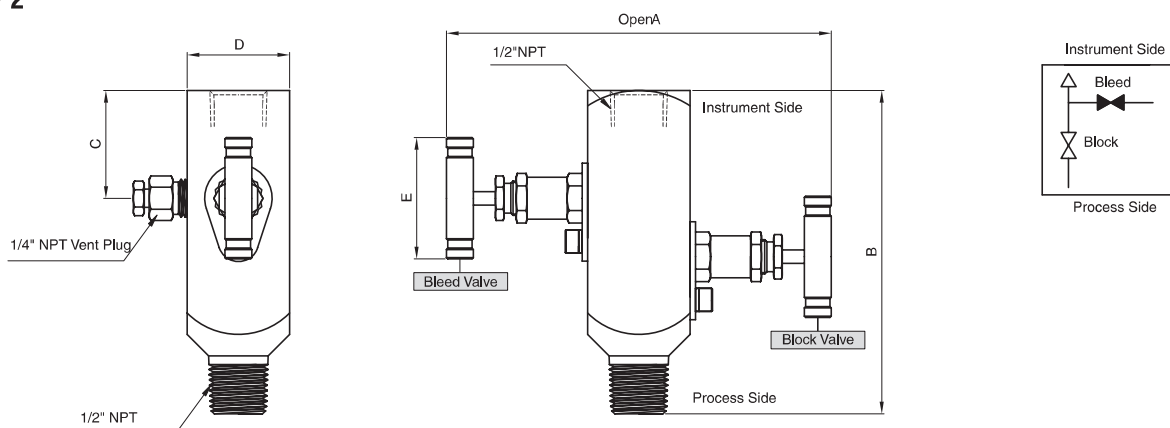
#### SGRV(Gauge Root Valve)



Part Number	End Connections		Dimensions (mm)					
	Process	Instrument	A	B	C	D	E	F
SGBV-M8N-F8N	1/2" Male NPT	1/2" Female NPT	68.4	54.0	90.0	-	32.0	45.0
SGBV-M12N-F8N	3/4" Male NPT	1/2" Female NPT						
SGRV-M8N-F8N	1/2" Male NPT	1/2" Female NPT	68.4	75.0	136.0	38.1	32.0	45.0
SGRV-M12N-F8N	3/4" Male NPT	1/2" Female NPT						

## Gauge 2-Valve

#### SGBV 2



Part Number	End Connections		Dimensions (mm)				
	Process	Instrument	A	B	C	D	E
SGBV2-M8N-F8N	1/2" Male NPT	1/2" Female NPT	142	120	40	38	45

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- To order a manifold with optional Grafoil packing, add-G to the manifold ordering number.