

Manifold, Gauge & Rising Plug Valves

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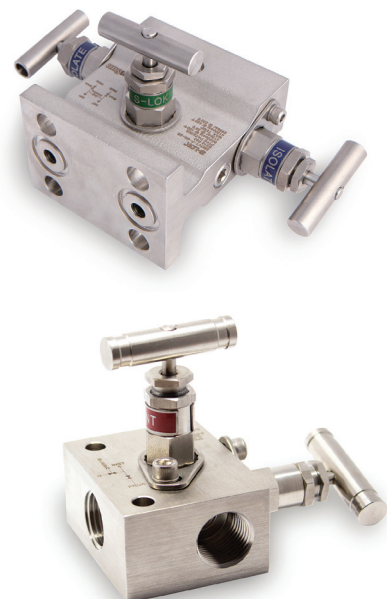


14

SM Series Manifold Valves

Features

- Non-rotating stem tip at closure for long-life and leak-tight shutoff. Blunt Vee tip
- Exclusive 2-piece, chevron PTFE packing design provides far improved sealing integrity. Graphite packing optional.
- Isolated Threads : Packing located below the threads prevents media contamination and thread lubricant washout.
- Packing under the stem threads is to isolate the threads from the system fluid and lubricant washout.
- Packing bolt permits stem packing adjustment.



Pressure-Temperature Ratings

Body Material	Packing Material	Temp. Range	Pressure Rating @ 100°F (37°C)	Pressure Rating @ Max. Temp.
Stainless Steel	PTFE	-54 ~ 232°C (-65 ~ 450°F)	413bar(6000 psig)	4130psig @ 450°F (285bar @ 232°C)
	Graphite	-54 ~ 648°C (-65 ~ 1200°F) (1)		1715psig @ 1,200°F (118bar @ 648°C)
Carbon Steel	PTFE	-29 ~ 176°C (-20 ~ 350°F)	413bar (6000 psig)	5230psig @ 350°F (360bar @ 176°C)
	Graphite	-29 ~ 176°C (-20 ~ 350°F)		

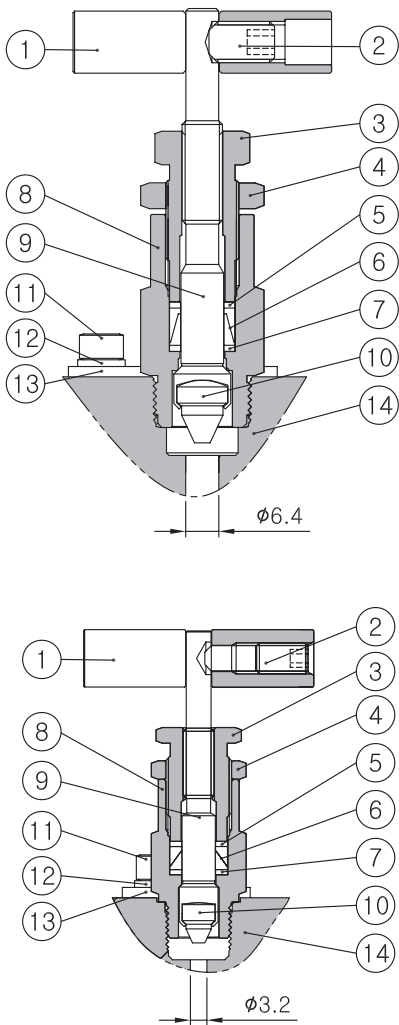
(1) Graphite packing rating is limited to 537°C(1,000°F) with flange end connection.

In air, Graphite rating is limited 523°C (975°F), in steam it can go up to the maximum temperature of 648°C (1200°F).

-28 to 204°C (-18 to 399°F) with optional fluorocarbon FKM flange seal.

2-Valve	3-Valve	5-Valve
For isolating, calibrating and draining pressure gauges and transmitters.	For measuring flow or leveling, using a differential pressure transmitter.	For measuring flow or leveling, using a differential pressure transmitter. Gauge with bleeding, calibration and test function.
In operation, the block valve is normally open when the bleed valve is closed. To remove the instrument, close the block valve first and open the bleed valve to relieve pressure at the upstream of the block valve. For calibration, connecting a calibration gauge to the bleed port allows checking the calibration of the instrument without removing it from the installation.	In operation, both block valves are open while the equalizer valve is closed to read a differential pressure to the pressure gauge or transmitter. To zero the instrument, close the block valve first then open the equalizer valve which will adjust the instrument to zero. To remove the instrument, close block valves first, then unscrew the bleeding plug to relieve pressure between the manifold and instrument.	In operation, both block valves are open while the equalizer and bleed valves are closed to read a differential pressure to pressure gauge or transmitter. To zero the instrument, close block valves and bleed valve, and open the equalizer valve which will adjust the instrument to zero. For calibration, connect the bleed port to a pressure gauge to check the calibration of the instrument.

Material of Construction



No	Component	Body Material	
		Stainless Steel	Carbon Steel
		Bonnet Valve Material	
1	Handle	Stainless Steel	Aluminum (Black Anodized)
2	Set screw	Stainless Steel	
3	Packing Bolt	SS316 / A276 or A479	A108
4	Lock Nut	SS316 / A276	
5	Upper Gland	SS316 / A276 or A479	
6	Packing	Chevron PTFE (Optional Graphite)	
7	Lower Gland	SS316 / A276 or A479	
8	Bonnet	SS316 / A276 or A479	
9	Stem	SS316 / A276 or A479	
10	Stem Tip	SS630 / A564	
11	Bolt	Stainless Steel	
12	Spring Washer	Stainless Steel	
13	Lock Plate	Stainless Steel	Carbon Steel
14	Body	SS316 / A276 or A479	A108 or A105 (Yellow Zinc Galvanized)

- Flange Seals : PTFE / D1710, Graphite and Fluorocarbon FKM O-ring

- Flange Bolts : ASTM A193

* Lubricant : Fluorinated base with PTFE and tungsten disulfide (Hydrocarbon based)

Sour Gas Service

- For the use of valves on sour gas, materials for wetted components are selected in accordance with NACE standard as MR0175, latest revision.

Testing

- Each instrument manifold is tested with nitrogen@1,000 psig (69 bar) to max. leak rate of 0.1 (SSCM).
- Hydrostatic shell test is performed at 1.5 times the working pressure as an option.
- Other tests are available upon request.

Ordering Information

Manifolds Type		Ordering Number		End Connection		Orifice Mm (inch)	Weight Kg (lb)
				Process	Instrument		
Remote Mount	Block	SM2VP	MF-8N	1/2" Male NPT (ASME B 1.20.1)	1/2" Female NPT (ASME B 1.20.1)	3.2 (.126)	1.2 (2.6)
			F-8N	1/2" Female NPT (ASME B 1.20.1)			1.2 (2.6)
		SM2V-F-8N		1/2" Female NPT (ASME B 1.20.1)	3.2 (.126)	0.8 (1.8)	
		SM3V-F-8N			6.4 (.251)	2.0 (4.4)	
		SM5V-F-8N				2.2 (4.9)	
	Block (Short Type)	SM2VPS	MF-8N	1/2" Male NPT (ASME B 1.20.1)	1/2" Female NPT (ASME B 1.20.1)	3.2 (.126)	0.9 (2.0)
			F-8N	1/2" Female NPT (ASME B 1.20.1)			0.9 (2.0)
	Direct Mount	Single Flange	SM2V1-F-8N		1/2" Female NPT (ASME B 1.20.1)	Flange (MSS-SP-99)	3.2 (.126)
SM3V1-F-8N			6.4 (.251)	2.2 (4.9)			
SM5V1-F-8N				2.7 (6.0)			
Double Flange		SM3V2		Flange (MSS-SP-99)		6.4 (.251)	2.5 (5.5)
		SM5V2					2.7 (6.0)
Single Flange (With Slotted Feature)		SM2V1S-F-8N		1/2" Female NPT (ASME B 1.20.1)	Flange (MSS-SP-99)	3.2 (.126)	1.0 (2.2)
		SM3V1S-F-8N				6.4 (.251)	2.2 (4.9)
		SM5V1S-F-8N					2.7 (6.0)
Double Flange (With Slotted Feature)		SM3V2S		Flange (MSS-SP-99)		6.4 (.251)	2.5 (5.5)
		SM5V2S					2.7 (6.0)
Vertical		SM2VD-F-8N		1/2" Female NPT (ASME B 1.20.1)	Flange (MSS-SP-99)	3.2 (.126)	1.6 (3.5)
		SM3VD-F-8N				6.4 (.251)	1.7 (3.8)
		SM5VD-F-8N					3.3 (7.3)
		SM5VDS	F-8N				2.7 (6.0)
			F-8N-RT				

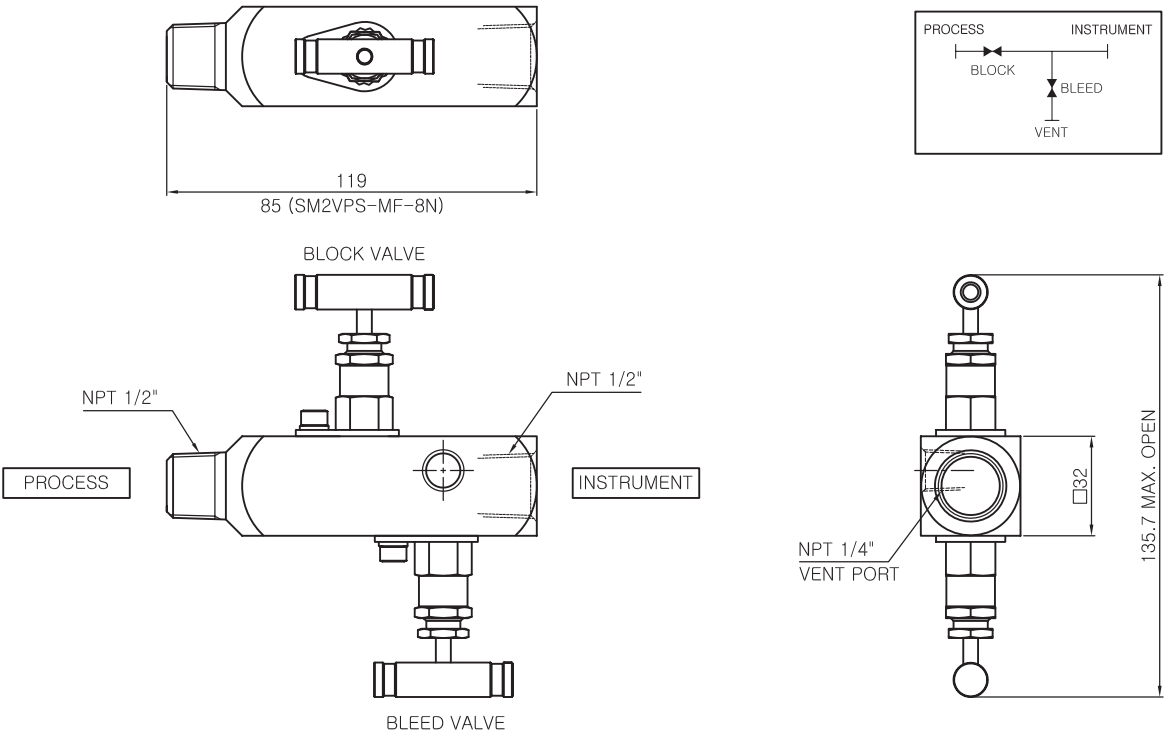
How to Order Manifolds With Options

- To order the optional Graphite packing, add-GF to the ordering number. SM3V-F-8N-GF-S6
- To order sour gas service valve, add-SG to the ordering number. SM3V-F-8N-GF-SG-S6
- To complete the ordering number, select valve body material designator -S6 for S316, -CS for carbon steel,
Example: SM3V-F-8N-S6

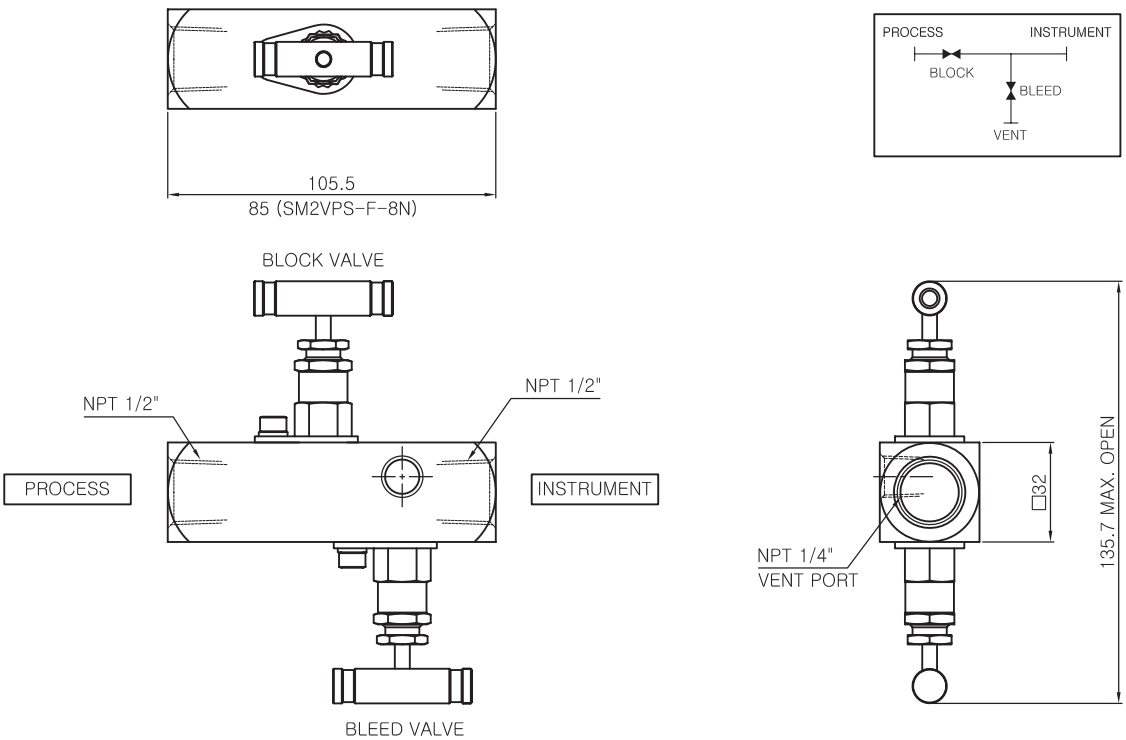
Packing adjustment : Extreme or rapid temperature cycle may require packing adjustment to maintain a leak-free system. Tightening the Locknut on the bonnet is for the packing adjustment.

Remote Mount

SM2VP-MF-8N / SM2VPS-MF-8N

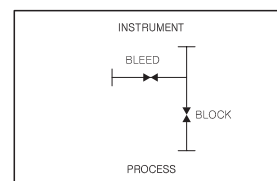
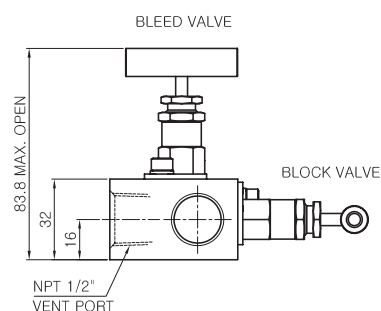
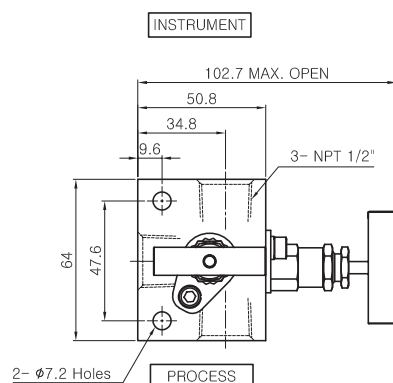


SM2VP-F-8N / SM2VPS-F-8N

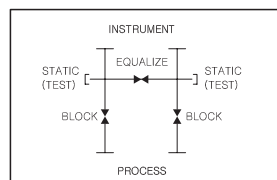
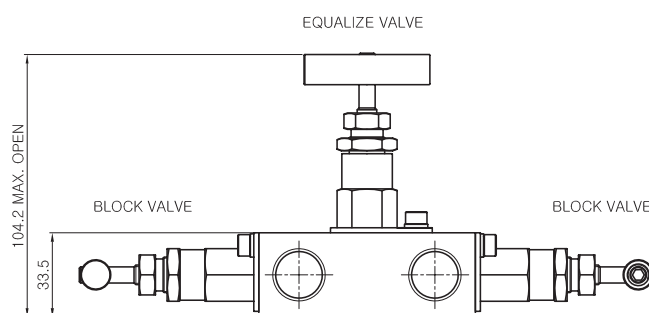
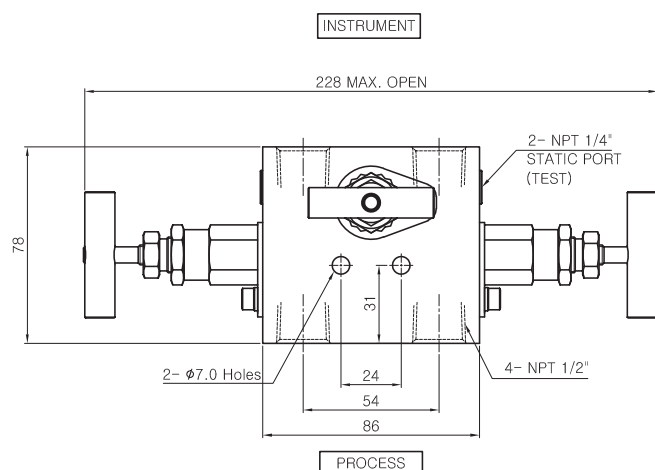


Remote Mount

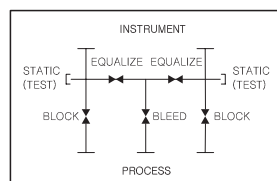
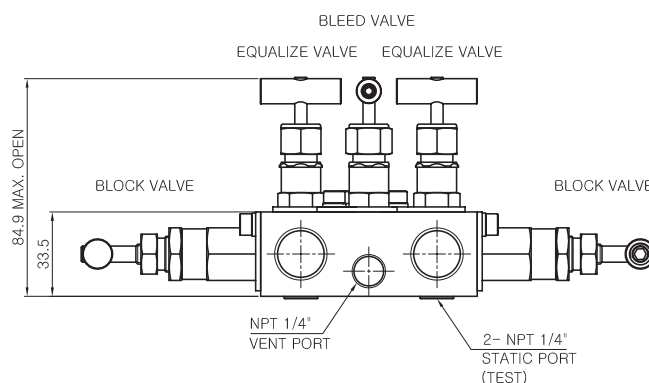
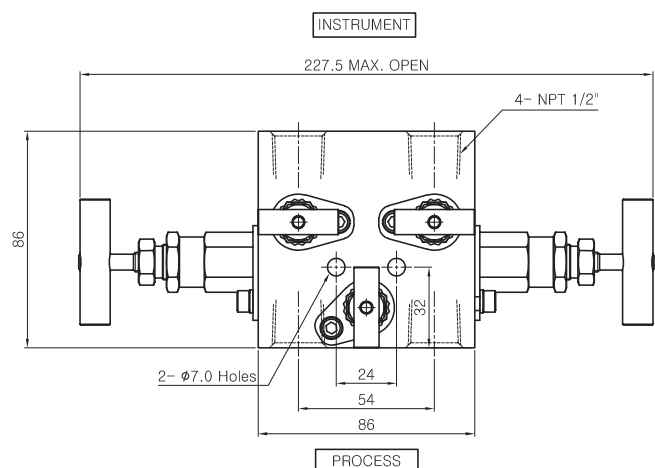
SM2V-F-8N



SM3V-F-8N

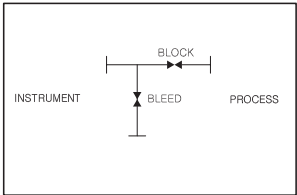
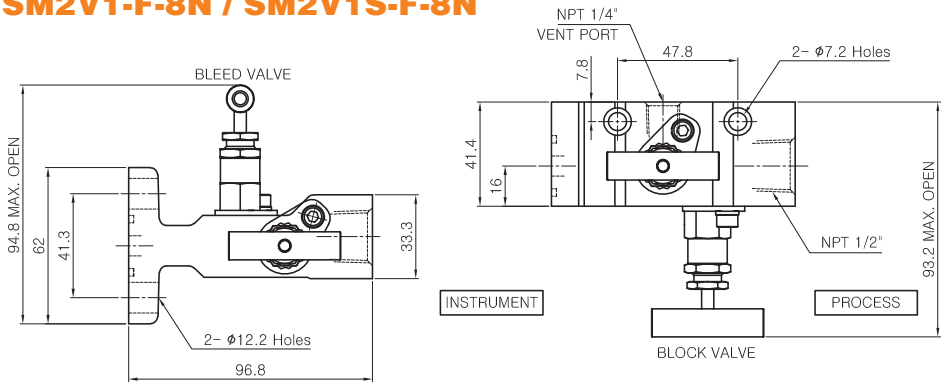


SM5V-F-8N

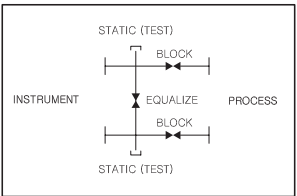
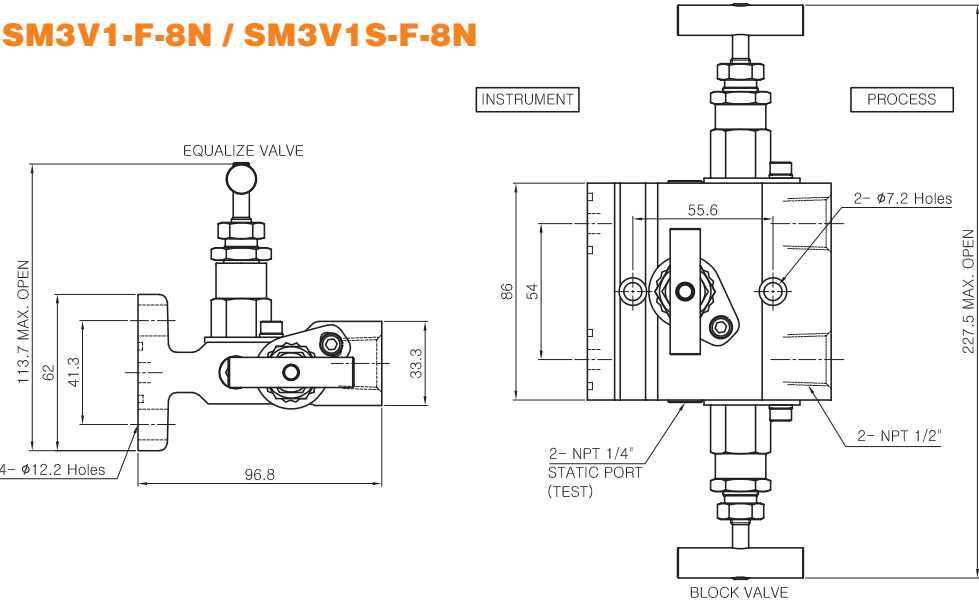


Single Flange Direct Mount

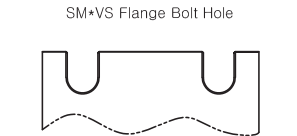
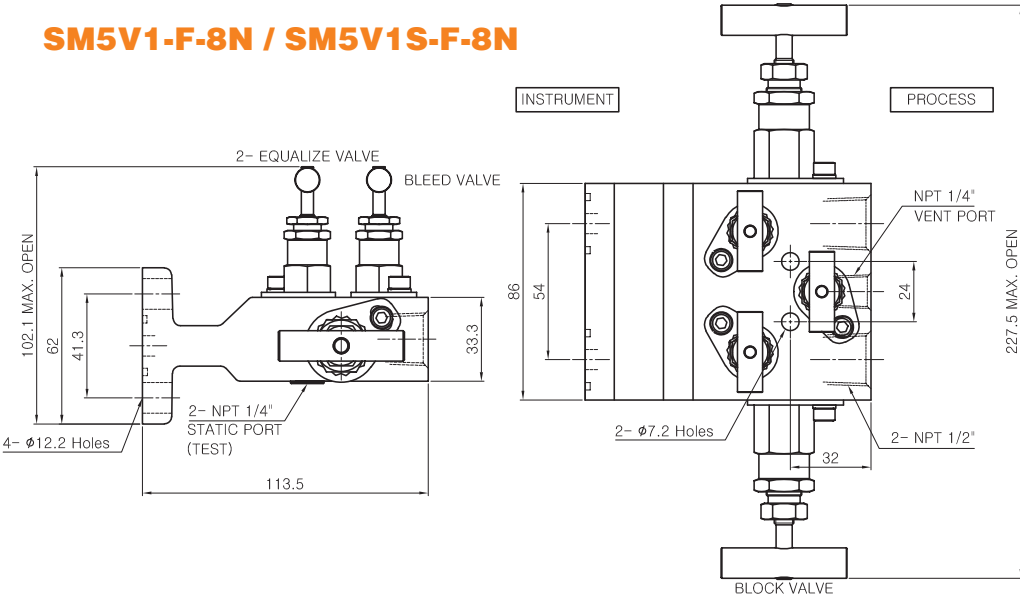
SM2V1-F-8N / SM2V1S-F-8N



SM3V1-F-8N / SM3V1S-F-8N



SM5V1-F-8N / SM5V1S-F-8N

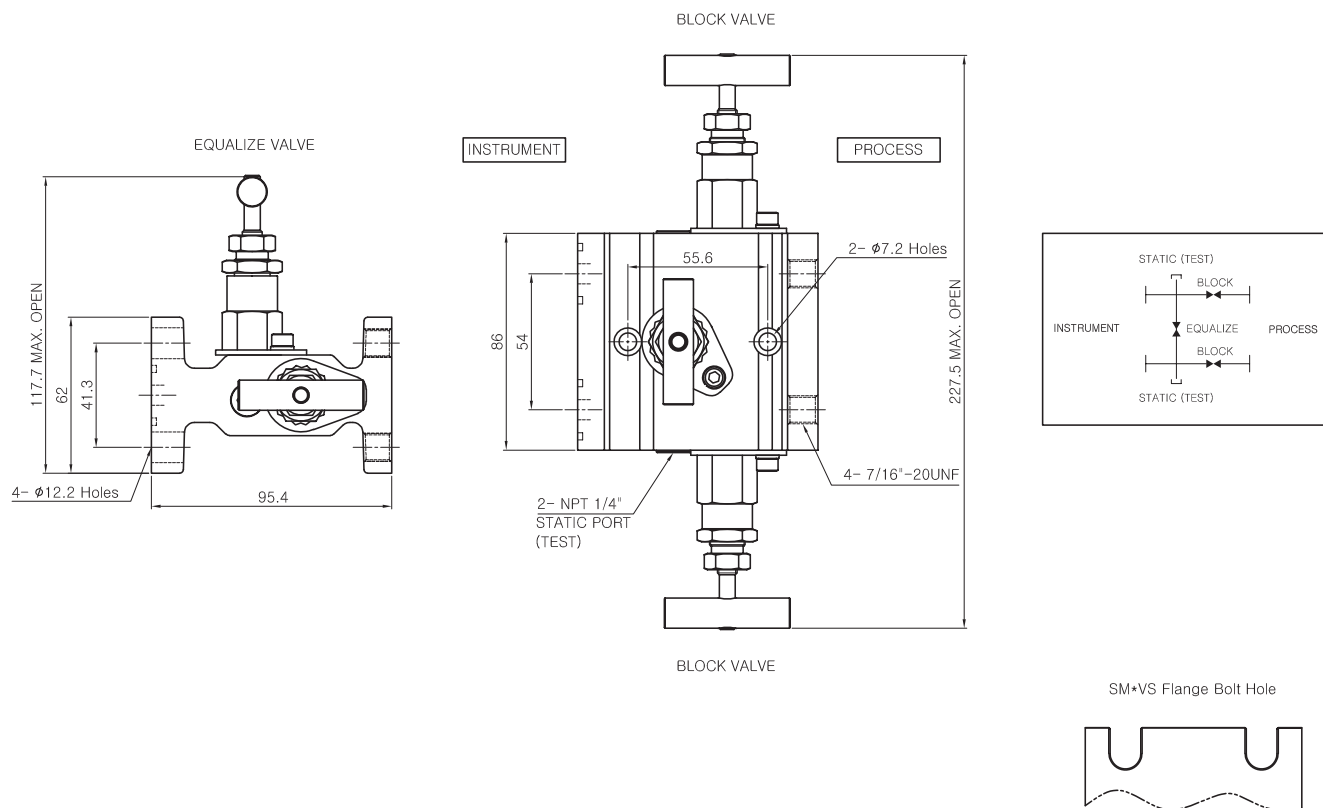


SM*VS Flange Bolt Hole

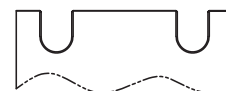


Double Flange Direct Mount

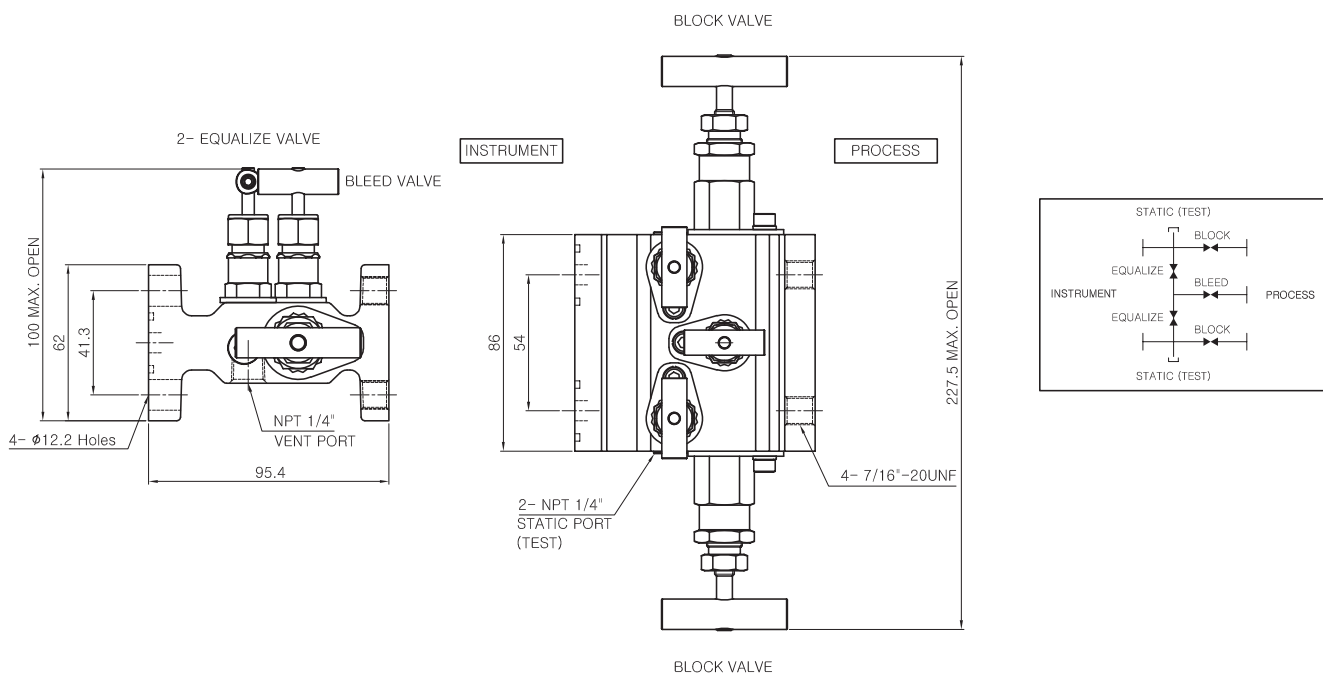
SM3V2 / SM3V2S



SM•VS Flange Bolt Hole

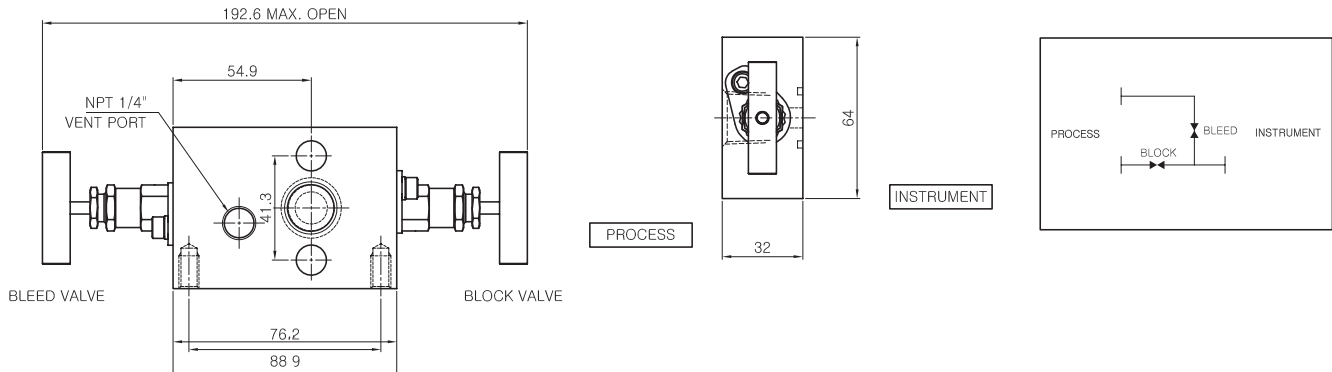


SM5V2 / SM5V2S

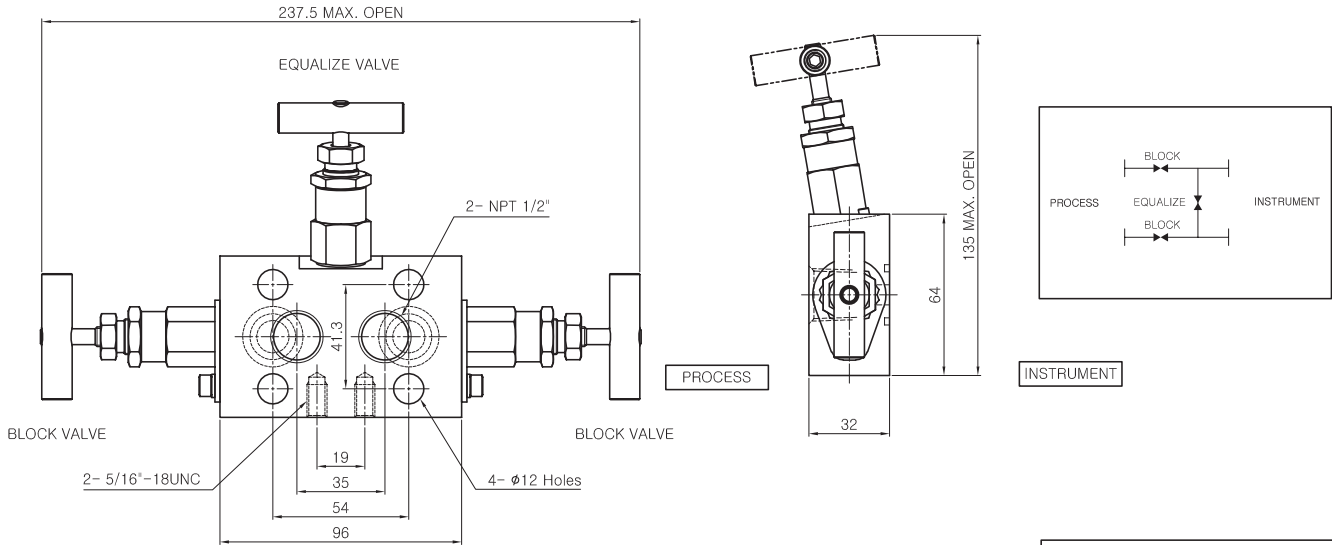


Vertical Direct Mount

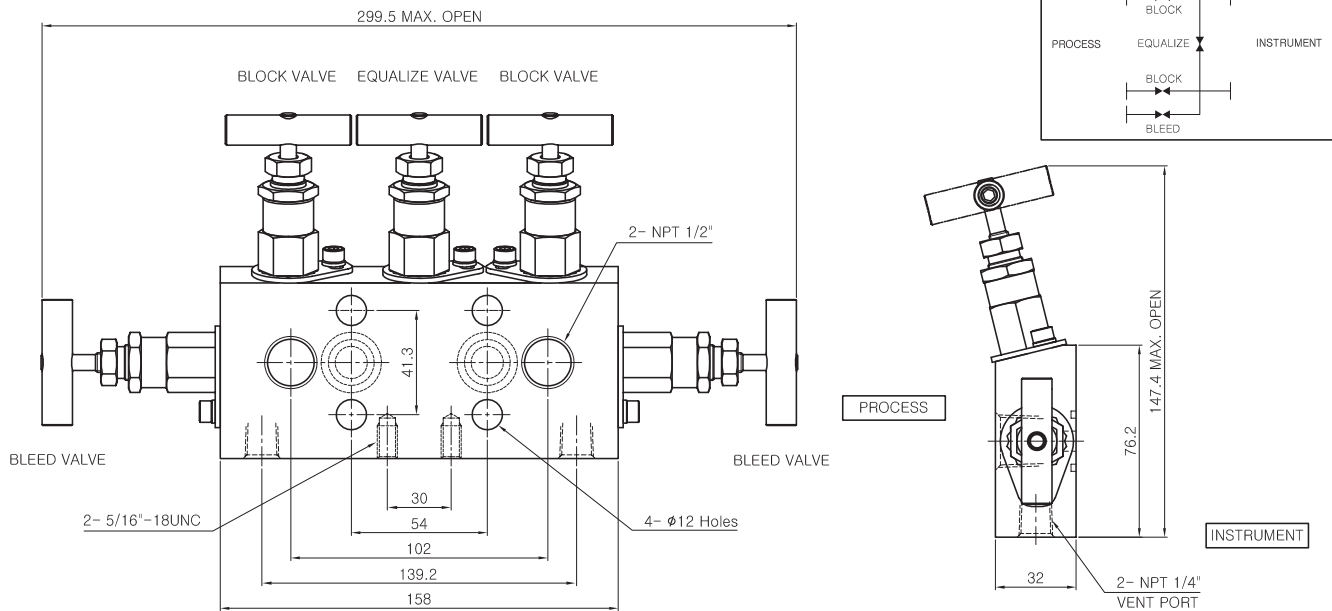
SM2VD-F-8N



SM3VD-F-8N

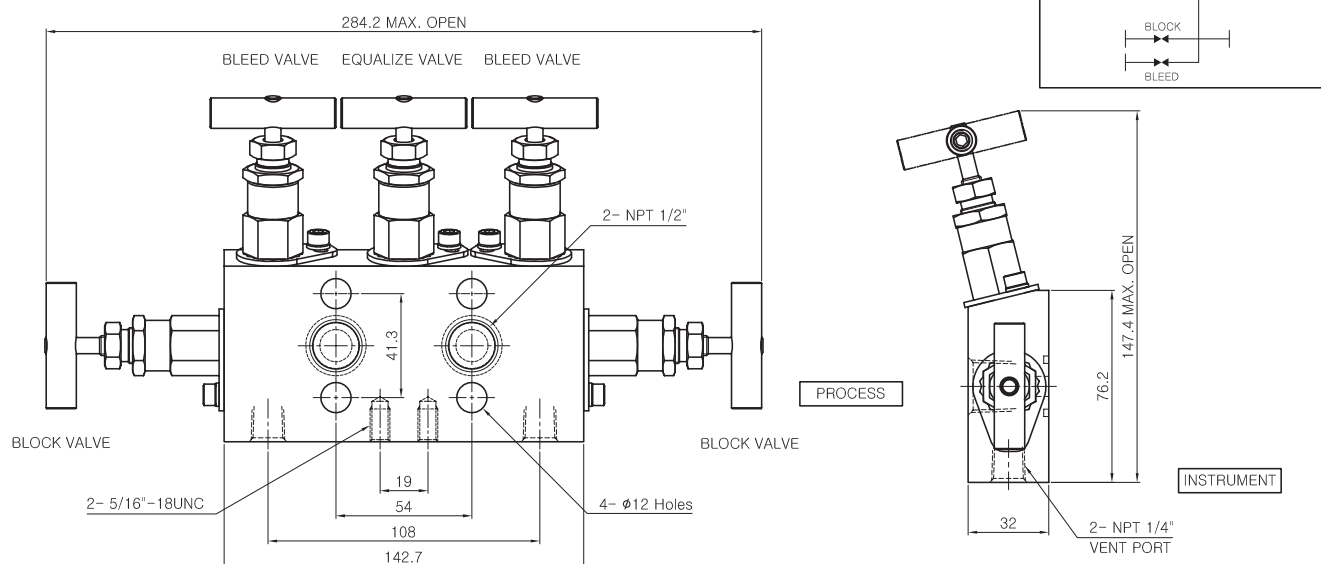


SM5VD-F-8N

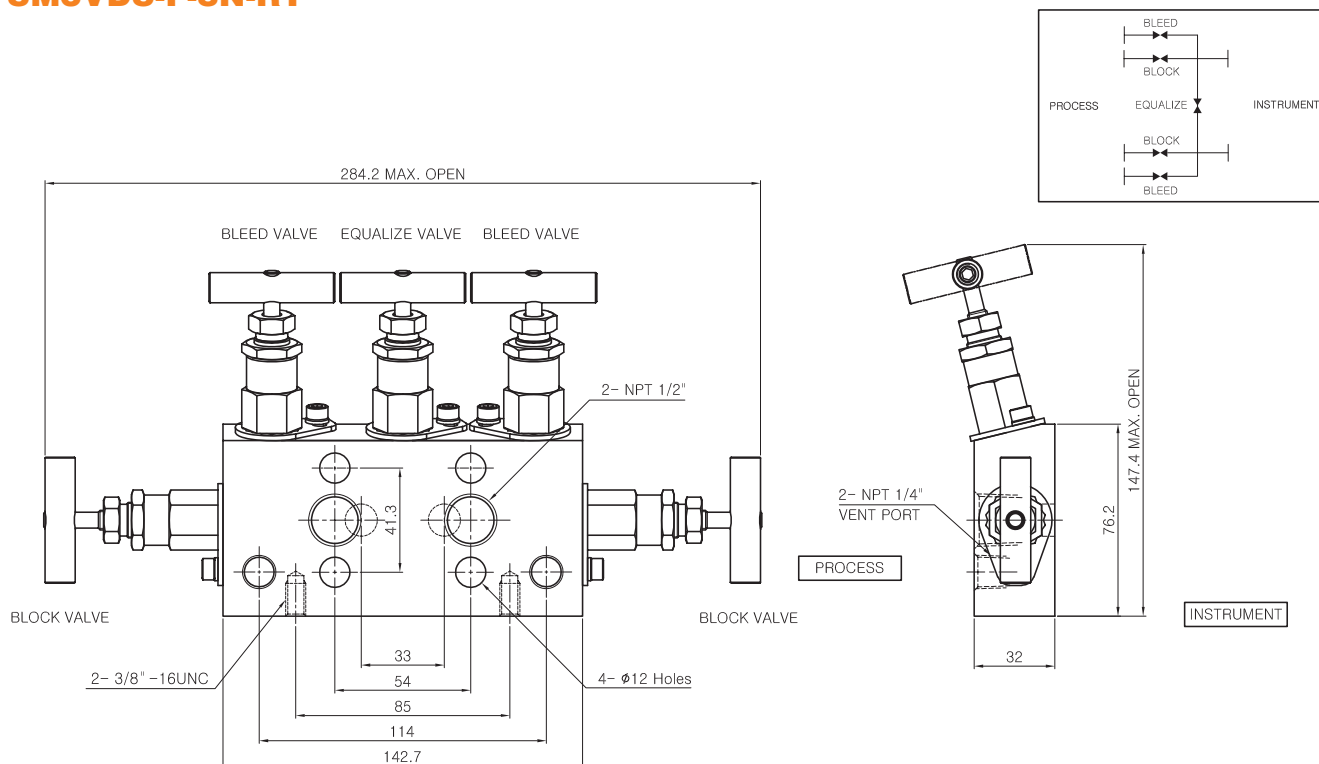


Vertical Direct Mount

SM5VDS-F-8N



SM5VDS-F-8N-RT



Accessories

Flange Bolts

For special mounting applications optional long and short bolts are available.

Ordering Number	Thread Size	Hex Size	Length (mm)	
BLT-04UL45	7/16-20UN	15.87 (5/8)	45.0	Standard
BLT-04UL58	7/16-20UN	15.87 (5/8)	58.0	Long
BLT-04UL25	7/16-20UN	15.87 (5/8)	25.0	Short

Flange Seals

Flanges seals are available in standard PTFE, GRAFOIL and fluorocarbon FKM (VITON) O-ring for system compatibility.

Ordering Number	Seal Material	Temperature Range
XMV-FSEAL-TE	PTFE	-53 ~ 121°C (-65 ~ 250°F)
XMV-FSEAL-GF	GRAFOIL	-53 ~ 537°C (-65 ~ 1000°F)
XMV-FSEAL-VT	VITON	-28 ~ 232°C (-20 ~ 450°F)

Oval Flange / Eccentric & Concentric Pipe Nipple

Oval flanges used to connect flange to flange manifold. 1/2" Female NPT (Standard)

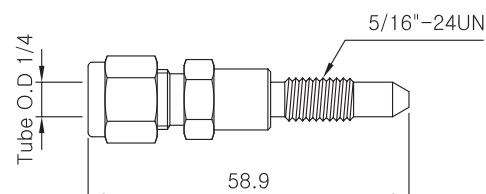
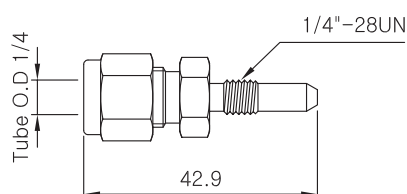
Concentric & Eccentric pipe nipples have 1/2" Male NPT and 76mm length.

Ordering Number	Thread Size	Ordering Number	Thread Size
SM-CO-FL-F8N	1/2" FNPT	SM-CO-PN-M8N	1/2" MNPT
SM-EC-FL-F8N	1/2" FNPT	SM-EC-PN-M8N	1/2" MNPT

Calibration Fittings

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

Ordering Number	Thread Size	S-LOK Tube O.D	Length (mm)
SCAB-4-S-S6	1/4"-28UN	1/4	42.9
SCAB-4-L-S6	5/16"-24UN	1/4	58.9



Mounting Bracket Kits

Bracket kit containing bracket, U-bolt, hex nut and washer allows horizontal and vertical manifold mounting.

Ordering Number	Material
SM*V-MKIT-S4	SS304
SM*V-MKIT-CS	SS400

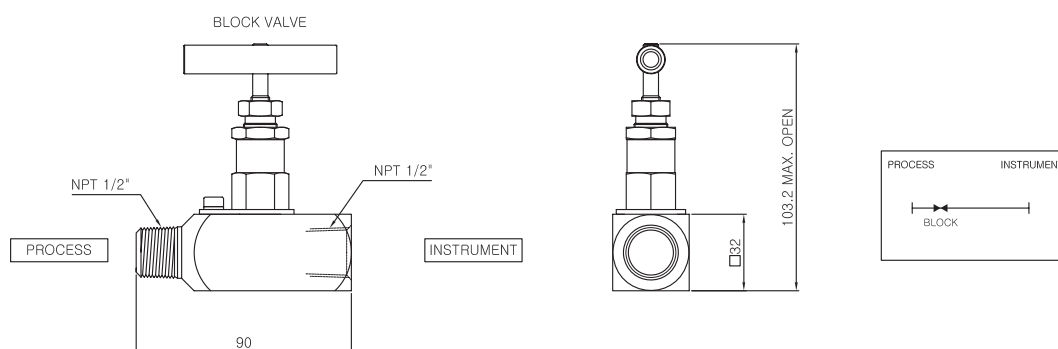
SGV & SGRV Series Gauge & Gauge Root Valves

Features

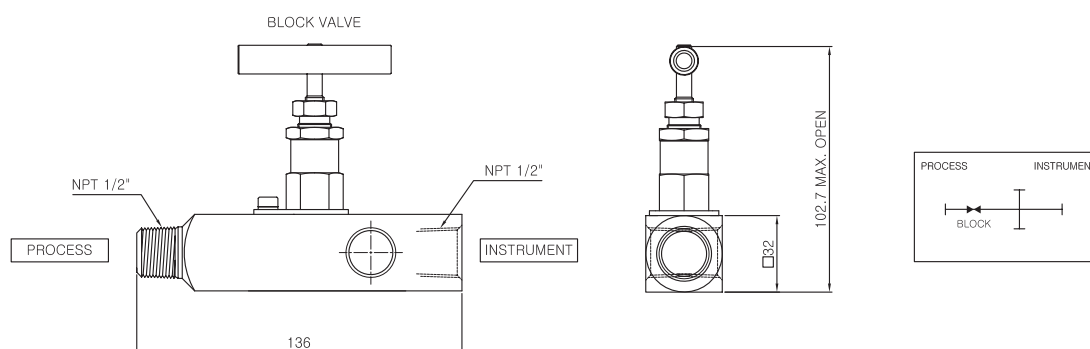
- The standard configuration has a male or female inlet and 1/2" female NPT outlet (gauge) port.
- Compact design requires minimum space for operation and installation.
- Locking device handle is optional.
- SGRV has extended 4.0 inch body for pipe insulation.
- Valve orifice standard are 6.4 mm (0.25in)



SGV-MF-8N



SGRV-MF-8N / SGRLV-MF-8N



Ordering Number		End Connection		Orifice Mm (inch)	Weight Kg (lb)
		Process	Instrument		
SGV	MF-4N	1/4" Male NPT	1/4" Female NPT	4.5 (0.18)	0.6 (1.3)
	MF-8N	1/2" Female NPT	1/2" Female NPT	6.4 (0.25)	0.6 (1.3)
SGRV	MF-8N	1/2" Female NPT	1/2" Female NPT	6.4 (0.25)	0.9 (2.0)
	MF-12N8N	3/4" Female NPT	1/2" Female NPT	6.4 (0.25)	1.0 (2.2)
SGRLV	MF-8N	1/2" Female NPT	1/2" Female NPT	6.4 (0.25)	1.6 (3.5)
	MF-12N8N	3/4" Female NPT	1/2" Female NPT	6.4 (0.25)	1.6 (3.5)

* SGRLV Length : 184mm

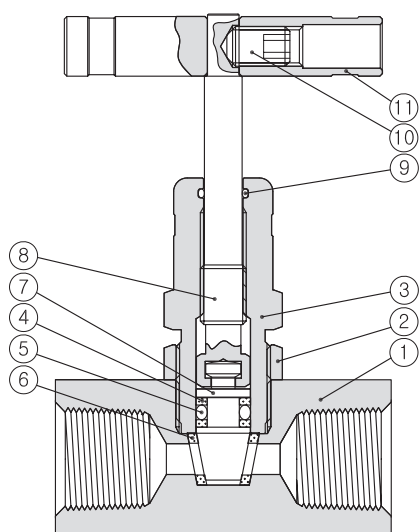
SRPV Series Rising Plug Valves

Features

- Bi-directional flow control.
- Replaceable seat design: Acetal seat standard, optional PEEK and PFA are available.
- Non-rotating Stem Tip are composed for positive sealing and maximize soft seat life.
- Internal bonnet O-ring protects threads from external contamination.
- Isolated threads' location above the sealing rings prevent media contamination and thread lubricant washout.



Material of Construction



No	Component	Material
1	Body	SS316 / A276 or A479
2	Locking Nut	SS316 / A276
3	Bonnet	SS316 / A276 or A479
4	Backup Ring	PTFE
5	O-ring	FKM
6	Seat	ACETAL (Optional PEEK, PFA)
7	Stem Tip	SS316 / A276 or A479
8	Stem Shank	SS316 / A276 or A479
9	O-ring	FKM
10	Handle	Stainless Steel
11	Set Screw	Stainless Steel

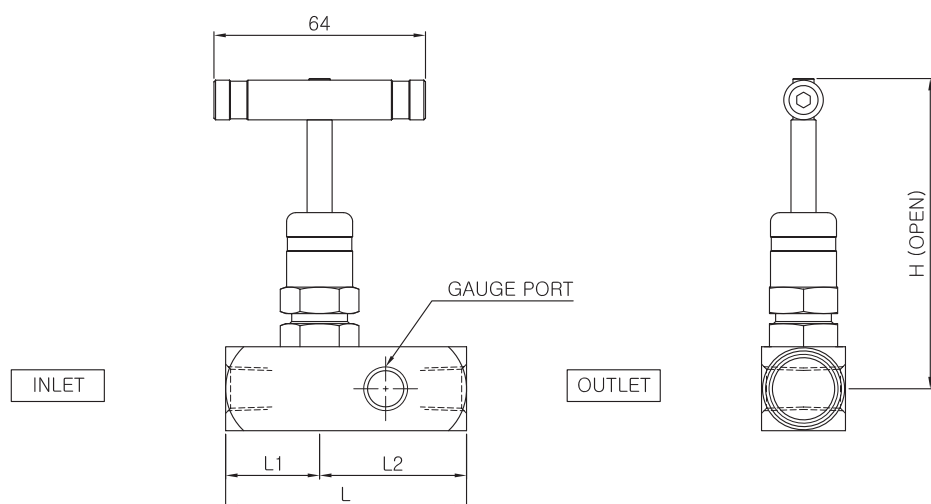
Pressure-Temperature Ratings

Ratings are based on standard stem tip of FKM O-ring and PTFE backup rings.

Body Material	SS316		
Seat Material	ACETAL	PEEK	PFA
Temperature, °F(°C)	Working Pressure, psig (bar)		
-20 (-28) to 100 (37)	6000 (413)	6000 (413)	750 (51.6)
200 (93)	2650 (182)	3000 (206)	625 (43.0)
250 (121)	1000 (68.9)	1600 (110)	450 (31.0)
300 (148)	-	1300 (89.5)	300 (20.6)
350 (176)	-	1200 (82.6)	200 (13.7)
400 (204)	-	1000 (68.9)	100 (6.8)

Valve with ACETAL seat : For water and steam application, standard valve with ACETAL seat is not recommended for application of greater than 200°F(93°C) temperature.

Ordering Information and Dimensions



Ordering Number		End Connections		Orifice mm(in.)	Cv	Dimensions, mm(in.)			
		Inlet	Outlet			L	L ₁	L ₂	H
SRPV1	F-4N	1/4" Female NPT		4.8 (0.187)	0.63	56.9 (2.24)	28.4 (1.12)	28.4 (1.12)	95.8 (3.77)
	MF-4N	1/4" Male NPT	1/4" Female NPT			73.4 (2.90)	45.2 (1.78)		
	MF-8N4N	1/2" Male NPT	1/4" Female NPT			76.5 (3.01)	48.0 (1.89)		
SRPV1-G4	F-4N	1/4" Female NPT				72.9 (2.87)	28.4 (1.12)	44.4 (1.75)	
	MF-8N-4N	1/2" Male NPT	1/4" Female NPT			124 (4.87)	79.2 (3.12)		
SRPV2	F-8N	1/2" Female NPT		6.2 (0.24)	1.8	67.6 (2.66)	33.8 (1.33)	33.8 (1.33)	97.3 (3.83)
	MF-8N	1/2" Male NPT	1/2" Female NPT			88.6 (3.49)	54.9 (2.16)		
	MF-12N8N	3/4" Male NPT	1/2" Female NPT			90.9 (3.58)	33.8 (1.33)	57.2 (2.25)	
SRPV2-G8	F-8N	1/2" Female NPT				142 (5.58)	84.6 (3.33)		
	MF-8N	1/2" Male NPT	1/2" Female NPT						
		3/4" Male NPT	1/2" Female NPT						

- SRPV1-G4 gauge port : 1/4" Female NPT, SRPV2-G8 gauge port : 1/2" Female NPT
- All dimensions shown are for reference only and are subjected to change.

Testing

- Each Rising plug valve is tested with nitrogen@1,000 psig (69 bar) to max. leak rate of 0.1 (SSCM).
- Hydrostatic shell test is performed at 1.5 times the working pressure as an option.
- Other tests are available upon request.