

# NEEDLE VALVE SERIES

QUALITY • VALUE • INNOVATION

# Integral Bonnet Needle Valves

## SINV Series

### Features

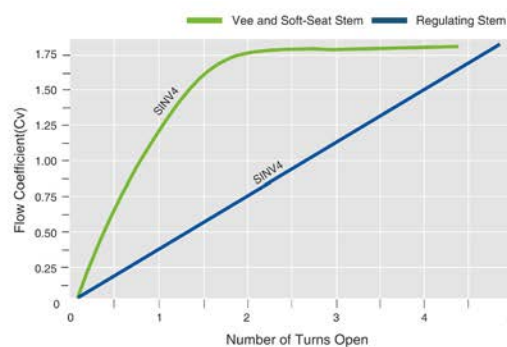
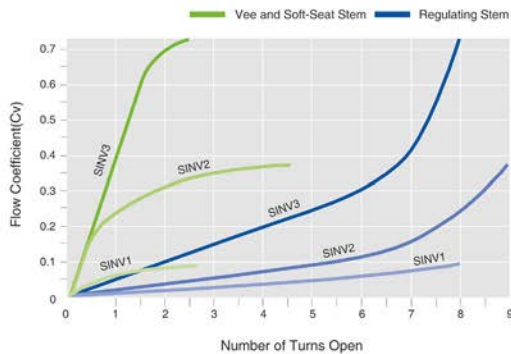
- Compact design.
- Low operating torques.
- Panel mountable.
- Straight and angle flow patterns.
- Tee and round handles are available.
- Three stem types are available.



### Specifications

Temperature Ratings	316 Stainless Steel with PTFE packing	: -65°F to 450°F (-53°C to 232°C)		
	316 Stainless Steel with PEEK packing	: -65°F to 600°F (-53°C to 315°C)		
	Brass	: -65°F to 400°F (-53°C to 204°C)		
	Alloy400 with PTFE packing	: -65°F to 450°F (-53°C to 232°C)		
	Alloy400 with PEEK packing	: -65°F to 500°F (-53°C to 260°C)		
	PCTFE Stem Tip	: -65°F to 200°F (-53°C to 93°C)		
	PTFE Packing	: -65°F to 450°F (-53°C to 232°C)		
	PEEK Packing	: -65°F to 600°F (-53°C to 315°C)		
Orifice Size	From 0.08" to 0.375" (2mm to 9.5mm)			
Flow Coefficients (Cv)	From 0.09 to 1.80			
End Connection Size	From 1/8" to 3/4", 3mm to 18mm			
<b>Pressure - Temperature Ratings</b>				
Material Group	2.2	N/A	3.4	
Material	316 SS	Brass	Alloy 400	
Temperature, °F(°C)	<b>Working Pressure, psig (bar)</b>			
-65 (-53) to 100 (37)	5000 (344)	3000 (206)	3000 (206)	
200 (93)	4295 (295)	2350 (161)	2640 (181)	
250 (121)	4085 (281)	2200 (151)	2555 (176)	
300 (148)	3875 (266)	2050 (141)	2470 (170)	
350 (176)	3715 (255)	1470 (101)	2430 (167)	
400 (204)	3560 (245)	390 (26)	2390 (164)	
450 (232)	3435 (236)	-	2380 (163)	
500 (260)	3310 (228)	-	2375 (163)	
600 (315)	3130 (215)	-	-	

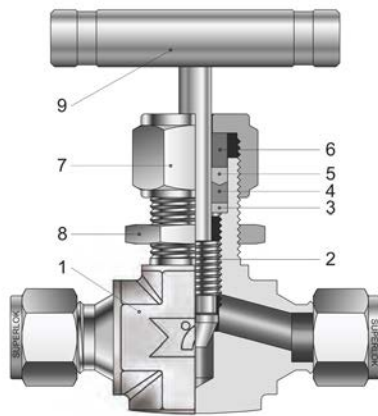
### Flow Data at 100°F (37°C)



## Testing

- Every valve is tested with nitrogen at 1000psig (69bar).
- Valves have a maximum allowable leak rate of 0.1cm<sup>3</sup>/min.
- Shell testing is performed upon request.

## Materials of Construction



No.	Component	Material		
		Stainless Steel	Brass	Alloy 400
*1	Body	ASTM A182 F316	ASTM B283	ASTM B564
	Vee stem	ASTM A276 Type316	ASTM A276 Type316	ASTM B164
*2	Regulating stem	ASTM A276 Type316	ASTM A276 Type316	ASTM B164
	Soft seat stem	ASTM A276 Type316 + PCTFE	ASTM A276 Type316 + PCTFE	ASTM A276 Type316 + PCTFE
*3	Packing support	ASTM A276 Type316	ASTM B16	ASTM B164
*4	Lower packing	PTFE	PTFE	PTFE
*5	Upper packing	PTFE	PTFE	PTFE
6	Packing gland	ASTM A276 Type316	ASTM B16	ASTM B164
7	Packing nut	ASTM A276 Type316	ASTM B16	ASTM B164
8	Panel nut	ASTM A276 Type316	ASTM B16	ASTM B164
	Tee handle	ASTM A276 Type304		
9	Round handle	Phenolic with brass insert		
	Set screw	Stainless Steel		

Wetted components are marked "\*\*"

## Stem Type

Vee Stem(Standard)		Regulating Stem		Soft Seat Stem	
--------------------	---	-----------------	---	----------------	---

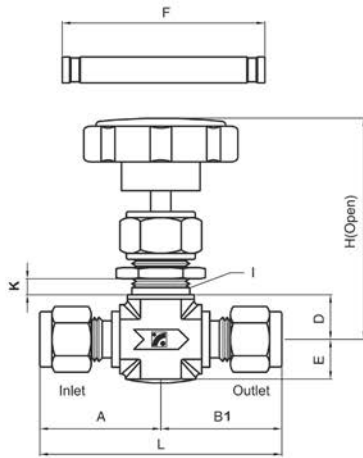
## Packing

- PTFE packing is standard. PEEK packing is optional.

## Handle

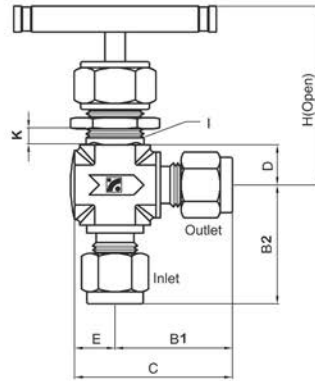
- 316 stainless steel and alloy 400 body valve - stainless steel tee handles are standard.
- Brass body and soft seat stem valve - black round handles are standard.
- Anodized black aluminum tee handles are optional.

### SINV Series



Straight Flow Pattern

### SINV A Series



Angle Flow Pattern

I : Panel Hole Drill

K : Panel Mount Thickness  
 Min 3.17, Max 6.35

### Table of Dimensions

Part Number	Orifice	Cv	End Connections		Dimensions										
			Inlet	Outlet	L	A	B1	B2	C	D	E	F	I	H	
SINV1	S2	2.0	0.09	1/8" SUPERLOK		49.4	24.7	24.7	24.7	32.6	11.2	7.9	32.0	11.9	55
	S3M			3mm SUPERLOK		49.4	24.7	24.7	24.7	32.6					
	M2N			1/8" Male NPT		38.1	19.1	19.1	19.1	27.0					
	F2N			1/8" Female NPT		47.8	23.9	23.9	23.9	31.8					
	M2N-S2			1/8" Male NPT	1/8" SUPERLOK	43.8	19.1	24.7	19.1	32.6					
SINV2	S4	4.4	0.37	1/4" SUPERLOK		57.4	28.7	28.7	28.7	38.4	11.2	9.7	45.0	13.5	51.5
	S6M			6mm SUPERLOK		57.4	28.7	28.7	28.7	38.4					
	S8M			8mm SUPERLOK		59.4	29.7	29.7	29.7	39.4					
	M2N			1/8" Male NPT		41.2	20.6	20.6	20.6	30.3					
	M4N			1/4" Male NPT		49.8	24.9	24.9	24.9	34.6					
	M4N-S4			1/4" Male NPT	1/4" SUPERLOK	53.6	24.9	28.7	24.9	38.4					
SINV3	S6	6.3	0.73	3/8" SUPERLOK		65.6	32.8	32.8	32.8	45.5	12.7	12.7	64.0	20.0	63.5
	S8			1/2" SUPERLOK		71.2	35.6	35.6	35.6	48.3	14.0				
	S10M			10mm SUPERLOK		66.0	33.0	33.0	33.0	45.7	12.7				
	S12M			12mm SUPERLOK		71.2	35.6	35.6	35.6	48.3	14.0				
	M6N			3/8" Male NPT		57.4	28.7	28.7	28.7	41.4	12.7				
	F4N			1/4" Female NPT		53.8	26.9	26.9	26.9	39.6	12.7				
	M4N-S6			1/4" Male NPT	3/8" SUPERLOK	61.5	28.7	32.8	28.7	45.5	12.7				
	M6N-S6			3/8" Male NPT	3/8" SUPERLOK	61.5	28.7	32.8	28.7	45.5	12.7				
	M6N-S8			3/8" Male NPT	1/2" SUPERLOK	64.3	28.7	35.6	28.7	48.3	14.0				
	M4N-F4N			1/4" Male NPT	1/4" Female NPT	55.6	28.7	26.9	28.7	39.6	12.7				
SINV4	S8	9.5	1.80	1/2" SUPERLOK		96.6	48.3	48.3	48.3	67.4	19.1	19.1	76.0	26.2	99.5
	S12			3/4" SUPERLOK											
	M8N			1/2" Male NPT											
	F6N			3/8" Female NPT		76.2	38.1	38.1	38.1	57.2					
	F8N			1/2" Female NPT											
	M8N-F8N			1/2" Male NPT	1/2" Female NPT										

• All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change.  
 • Dimensions based on SUPERLOK nuts finger-tight.

## Ordering Information

Example : **SINV3 - M6N - S8 - RS - PE - KH - SS**

Inlet
Outlet

1
2
3
2
3
4
5
6
7

### 1. Valve Series

#### Straight Flow Pattern

SINV1 : Orifice 2.0mm  
 SINV2 : Orifice 4.4mm  
 SINV3 : Orifice 6.3mm  
 SINV4 : Orifice 9.5mm

#### Angle Flow Pattern

SINV1A : Orifice 2.0mm  
 SINV2A : Orifice 4.4mm  
 SINV3A : Orifice 6.3mm  
 SINV4A : Orifice 9.5mm

### 2. End Connection Type

S : SUPERLOK Tube Fitting  
 M : Male Pipe Thread  
 F : Female Pipe Thread

### 3. End Connection Size

#### Pipe Thread Designation

Size (inch)	1/8	1/4	3/8	1/2	3/4
Screwed NPT	2N	4N	6N	8N	12N
Screwed BSPT	2R	4R	6R	8R	12R

#### Tube O.D Designation

Tube O.D (inch)	1/16	1/8	1/4	3/8	1/2	3/4
Designation	1	2	4	6	8	12

Tube O.D (mm)	3	6	8	10	12	16
Designation	3M	6M	8M	10M	12M	16M

### 4. Stem

Blank : Vee Stem (Standard)  
 RS : Regulating Stem  
 SS : Soft Seat Stem

### 5. Packing

Blank : PTFE Packing (Standard)  
 PE : PEEK Packing

### 6. Handle

Blank : Stainless Steel Tee Handle (Standard)  
 KH : Black Round Handle  
 AH : Anodized Black Aluminum Tee Handle

### 7. Body Material

SS (Blank) : 316 Stainless Steel  
 B : Brass  
 M40 : Alloy 400 (Monel)

### Examples

#### ex1) SINV2 - S4 - SS

Straight flow pattern, Orifice 4.4mm/ Inlet: SUPERLOK 1/4" / Outlet: SUPERLOK 1/4" / Vee stem / PTFE Packing  
 Stainless steel tee handle / 316 Stainless steel body

#### ex2) SINV3A - M4N - S6 - RS - PE - KH - SS

Angle flow pattern, Orifice 6.3mm/ Inlet: 1/4"NPT Male / Outlet: SUPERLOK 3/8" / Regulating stem / PEEK Packing  
 Black round handle / 316 Stainless steel body

#### ex3) SINV4 - M8N - F8N - KH - B

Straight flow pattern, Orifice 9.5mm/ Inlet: 1/2"NPT Male / Outlet: 1/2"NPT Female / Vee stem  
 PTFE Packing / Black round handle / brass body

# Union Bonnet Needle Valves

## SUNV Series

### Features

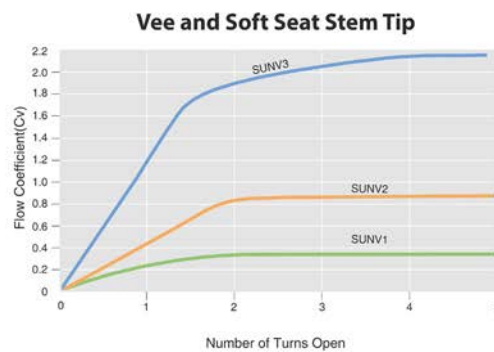
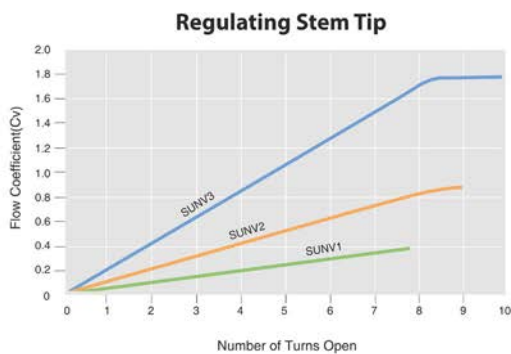
- Compact design.
- Low operating torques.
- Panel mountable.
- Straight and angle flow patterns.
- Non-rotating vee stem tip.
- Three stem types are available.



### Specifications

Temperature Ratings	PCTFE Stem Tip : -65°F to 200°F (-53°C to 93°C)				
	PTFE Packing : -65°F to 450°F (-53°C to 232°C)				
	PEEK Packing : -65°F to 600°F (-53°C to 315°C)				
	Graphite Packing : -65°F to 1200°F (-53°C to 648°C)				
Orifice Size	From 0.156" to 0.437" (4mm to 11mm)				
Flow Coefficients (Cv)	From 0.35 to 2.2				
End Connection Size	From 1/4" to 1", 6mm to 25mm				
<b>Pressure - Temperature Ratings</b>					
Material Group	2.2	3.4	3.1	3.5	3.8
Material	316 SS	Alloy 400	Alloy 20	Alloy 600	Alloy C-276
Temperature, °F(°C)	Working Pressure, psig (bar)				
-20 (-28) to 100 (37)	6000 (413)	5000 (344)	5000 (344)	6000 (413)	6000 (413)
200 (93)	5160 (355)	4400 (303)	4640 (319)	5600 (385)	6000 (413)
250 (121)	4910 (338)	4260 (293)	4500 (310)	5460 (376)	6000 (413)
300 (148)	4660 (321)	4120 (283)	4360 (300)	5320 (366)	6000 (413)
350 (176)	4470 (307)	4050 (279)	4185 (288)	5220 (359)	5975 (411)
400 (204)	4280 (294)	3980 (274)	4010 (276)	5120 (352)	5880 (405)
450 (232)	4130 (284)	3970 (273)	3955 (272)	5030 (346)	5710 (393)
500 (260)	3980 (274)	3960 (272)	3900 (268)	4940 (340)	5540 (381)
600 (315)	3760 (259)	-	3790 (261)	4780 (329)	5040 (347)
650 (343)	3700 (254)	-	3750 (258)	4700 (323)	4905 (337)
700 (371)	3600 (248)	-	3710 (255)	4640 (319)	4730 (325)
750 (398)	3520 (242)	-	3665 (252)	4430 (305)	4430 (305)
800 (426)	3460 (238)	-	3600 (248)	4230 (291)	4230 (291)
850 (454)	3380 (232)	-	-	4060 (279)	4060 (279)
900 (482)	3280 (225)	-	-	3745 (258)	3745 (258)
950 (510)	3220 (221)	-	-	2725 (187)	3220 (221)
1000 (537)	3030 (208)	-	-	1800 (124)	3030 (208)
1050 (565)	3000 (206)	-	-	1155 (79.5)	3000 (206)
1100 (593)	2685 (184)	-	-	770 (53.0)	2685 (184)
1150 (621)	2285 (157)	-	-	565 (38.9)	2285 (157)
1200 (648)	1715 (118)	-	-	515 (35.4)	1715 (118)

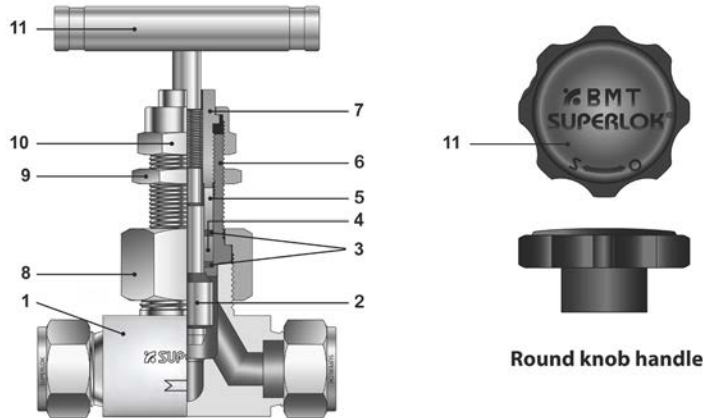
### Flow Data at 100°F (37°C)



## Testing

- Every valve is tested with nitrogen at 1000psig (69bar).
- Valves have a maximum allowable leak rate of 0.1cm<sup>3</sup>/min.
- Shell testing is performed upon request.




## Materials of Construction



No.	Component	Material		
		Stainless Steel	Alloy 400	Alloy C-276
*1	Body	ASTM A479 Type316	ASTM B164	ASTM B574
	Non rotating vee stem	ASTM A276 Type316	ASTM B164	ASTM B574
*2	Regulating stem	ASTM A276 Type316	ASTM B164	ASTM B574
	Soft seat stem	ASTM A276 Type316 + PCTFE	ASTM B164 + PCTFE	ASTM B574 + PCTFE
*3	Packing support	Glass filled PTFE	Glass filled PTFE	Glass filled PTFE
*4	Packing	PTFE	PTFE	PTFE
5	Packing gland	ASTM A276 Type316	ASTM B164	ASTM B574
*6	Bonnet	ASTM A276 Type316	ASTM B164	ASTM B574
7	Packing bolt	ASTM A276 Type316	ASTM A276 Type316	ASTM A276 Type316
8	Union nut	ASTM A276 Type316	ASTM A276 Type316	ASTM A276 Type316
9	Panel nut	ASTM A276 Type316	ASTM A276 Type316	ASTM A276 Type316
10	Packing nut	ASTM A276 Type316	ASTM A276 Type316	ASTM A276 Type316
11	Bar handle	Stainless Steel		
	Round knob handle	Phenolic with brass insert		
	Set screw	Stainless Steel		

Wetted components are marked " \* " .

## Stem Type

Non Rotating Vee Stem	Regulating Stem	Soft Seat Stem
		

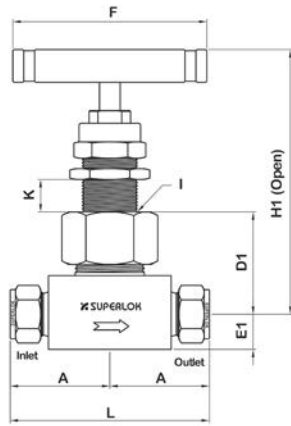
## Packing

- PTFE packing is standard. PEEK and Graphite packing is optional.

## Handle

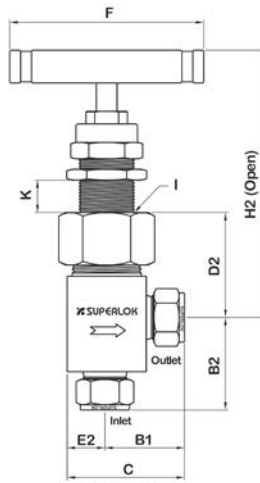
- 316 stainless steel, alloy 400 and alloy C-276 body valve - Stainless steel bar handles are standard.
- Black round knob handles are optional. (SUNV1 and SUNV2 Series)
- Anodized black aluminum bar handles are optional.

**SUNV Series**



Straight Flow Pattern

**SUNV A Series**



Angle Flow Pattern

- I : Panel Hole Drill
- J : Socket weld end connection depth
- K : Panel Mount Thickness  
1/16" (1.6) min, 3/8" (9.5) max

**Table of Dimensions**

Part Number	Orifice	Cv	End Connections		Dimensions															
			Inlet	Outlet	L	A	B1	B2	C	D1	D2	E1	E2	F	I	H1	H2	J		
SUNV1	S4	4.0	0.35	1/4" SUPERLOK		62.0	31.0	29.4	37.3	38.9		27.8						77.8		
	S6M			6mm SUPERLOK		62.0	31.0	29.4	37.3	38.9		27.8							77.8	
	S8M			8mm SUPERLOK		62.0	31.0	29.4	37.3	38.9		27.8							77.8	
	M4N			1/4" Male NPT		50.8	25.4	25.4	25.4	35.0		27.8	32.6	9.9	9.9	45.0	15.1	77.8	82.6	-
	F2N			1/8" Female NPT		50.8	25.4	23.0	25.4	32.6		27.8	32.6						82.6	
	F4N			1/4" Female NPT		52.4	26.2	23.0	25.4	32.6		27.8	32.6						82.6	
	M4N-F4N			1/4" Male NPT 1/4" Female NPT		52.4	26.2	23.0	25.4	32.6		27.8	32.6						82.6	
	SW4T			1/4" Tube Socket Weld		46.0	23.0	22.3	30.2	31.8		27.8							77.8	7.2
SUNV2	S6	6.0	0.86	3/8" SUPERLOK		73.0	36.5	32.5	42.9	45.3		31.0						90.5		
	S8			1/2" SUPERLOK		77.8	38.9	34.9	42.1	47.6		34.2						93.7		
	S10M			10mm SUPERLOK		73.0	36.5	33.3	39.7	46.1		34.2						93.7		
	S12M			12mm SUPERLOK		77.8	38.9	35.7	42.1	48.4		34.2						93.7		
	F4N			1/4" Female NPT		57.2	28.6	25.4	28.6	38.1		34.1	37.3	12.7	12.7	64.0	19.9	93.7	96.9	
	F6N			3/8" Female NPT		57.2	28.6	25.4	25.4	38.1		34.1	37.3						96.9	
	SW6T			3/8" Tube Socket Weld		57.2	28.6	25.4	28.6	38.1		34.1	37.3						93.7	8.0
	SW8T			1/2" Tube Socket Weld		57.2	28.6	25.4	25.4	38.1		34.1	35.7						95.3	9.6
SW4P	1/4" Pipe Socket Weld		57.2	28.6	25.4	28.6	38.1		34.1	37.3						96.9	9.6			
SUNV3	S8	11.0	2.2	1/2" SUPERLOK		100.0	50.0	43.7	53.2	61.1	46.0	47.6	15.9	17.5				123.1	123.1	
	S12			3/4" SUPERLOK		100.0	50.0	43.7	53.2	61.1	46.0	47.6	15.9	17.5				123.1	123.1	
	S16			1" SUPERLOK		100.0	50.0	-	-	-	47.6	-	17.5	-				123.1	-	
	S12M			12mm SUPERLOK		100.0	50.0	-	-	-	46.0	-	15.9	-				121.5	-	
	F8N			1/2" Female NPT		79.4	39.7	33.3	39.7	50.8	46.1	50.8	15.9	17.5				121.5	126.2	
	F12N			3/4" Female NPT		82.6	41.3	-	-	-	48.4	-	19.9	-				123.9	-	
	F16N			1" Female NPT		92.1	46.0	-	-	-	54.0	-	25.4	-	89.0	26.2		129.4	-	
	M8N-F8N			1/2" Male NPT 1/2" Female NPT		79.4	39.7	33.3	39.7	50.8	46.0	50.8	15.9	17.5				121.5	126.2	
	M12N-F12N			3/4" Male NPT 3/4" Female NPT		82.6	41.3	-	-	-	48.4	-	19.9	-				123.9	-	
	M16N-F16N			1" Male NPT 1" Female NPT		92.1	46.0	-	-	-	54.0	-	25.4	-				129.4	-	
	SW8T			1/2" Tube Socket Weld		79.4	39.7	33.3	42.9	50.8	46.0	47.6	15.9	17.5				121.5	123.1	9.6
	SW12T			3/4" Tube Socket Weld		79.4	39.7	-	-	-	46.0	-	15.9	-				121.5	-	11.1
	SW8P			1/2" Pipe Socket Weld		79.4	39.7	33.3	39.7	50.8	47.6	50.8	17.5	17.5				123.1	123.1	9.6

• All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change.  
 • Dimensions based on SUPERLOK nuts finger-tight.  
 • ISO Tapered Threads are available upon request.



## Ordering Information

Example : **SUNV1 - M4N - S4 - RS - GR - KH - SS**

1
2
3
2
3
4
5
6
7

### 1. Valve Series

#### Straight Flow Pattern

SUNV1: Orifice 4.0mm  
 SUNV2: Orifice 6.4mm  
 SUNV3: Orifice 11.0mm

#### Angle Flow Pattern

SUNV1A: Orifice 4.0mm  
 SUNV2A: Orifice 6.4mm  
 SUNV3A: Orifice 11.0mm

### 2. End Connection Type

S : SUPERLOK Tube Fitting  
 M : Male Pipe Thread  
 F : Female Pipe Thread  
 SW : Socket Weld

### 3. End connection Size

#### Pipe Thread Designation

Size (inch)	1/8	1/4	3/8	1/2	3/4	1
Screwed NPT	2N	4N	6N	8N	12N	16N
Screwed BSPT	2R	4R	6R	8R	12R	16R

#### Tube O.D Designation

Tube O.D (inch)	1/4	3/8	1/2	3/4	1
Designation	4	6	8	12	16

Tube O.D (mm)	6	8	10	12	16	20	25
Designation	6M	8M	10M	12M	16M	20M	25M

### 4. Stem

Blank : Non Rotating Vee Stem (Standard)  
 RS : Regulating Stem  
 SS : Soft Seat Stem

### 5. Packing

Blank : PTFE Packing (Standard)  
 PE : PEEK Packing  
 GR : Graphite Packing

### 6. Handle

Blank : Stainless Steel Bar Handle (Standard)  
 KH : Black Round Knob Handle  
 AH : Anodized Black Aluminum Bar Handle

### 7. Body Material

SS : 316 Stainless Steel  
 M40 : Alloy 400 (Monel)  
 276 : Alloy C-276 (Hastelloy)

### Examples

#### ex1) SUNV1 - S4 - 276

Straight flow pattern, Orifice 4.0mm/ Inlet: SUPERLOK 1/4" / Outlet: SUPERLOK 1/4" / Non rotating vee stem / PTFE Packing  
 Stainless steel bar handle / Hastelloy body

#### ex2) SUNV2A - SW8T - RS - GR - SS

Angle flow pattern, Orifice 6.4mm/ Inlet: 1/2"Socket weld / Outlet: 1/2" Socket weld / Regulating stem / Graphite Packing  
 Stainless steel bar handle / 316 Stainless steel body

#### ex3) SUNV3 - M12N - F8N - SS

- Straight flow pattern, Orifice 11.0mm/ Inlet: 3/4"NPT Male / Outlet: 1/2"NPT Female / Non rotating vee stem / PTFE Packing  
 Stainless steel bar handle / 316 Stainless steel body

# High Pressure Bar Stock Needle Valves

## SHBNV Series

### Features

- Bar stock body
- Compact design.
- Low operating torques.
- Variety of end connections available.
- Straight and Angle flow patterns.
- Every valve is factory tested.



### Specifications

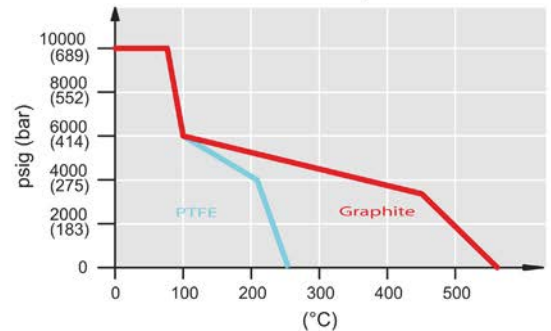
Maximum Working Pressure rating	10000psig (689bar) @100°F(38°C)
Temperature rating	-65 to 450°F (-54 to 232 °C) with PTFE packing
Body material	316 stainless steel, Carbon steel
Orifice	0.197" (5.0mm)

### Testing

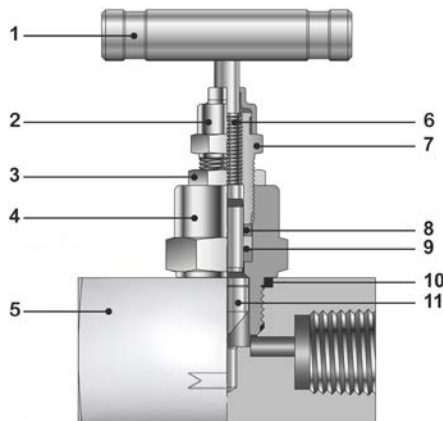
- Each Valve is tested with nitrogen at 1000psig(69bar) to maximum allowable leak rate of 0.1 SCCM.
- Hydrostatic shell test is performed at 1.5 times of the working pressure. (OPTION)

### Technical Data

Body Material	Stainless Steel	Carbon Steel
Temperature Rating	-65 °F ~ 450 °F (-54 °C ~ 232 °C)	-20 °F ~ 350 °F (-29 °C ~ 176 °C)
Pressure Rating @ 100 °F	10000 psig (689bar)	10000 psig (689bar)
Pressure Rating @ Max Temperature	4000 psig @ 500 °F 276 bar @ 260 °C	5230 psig @ 350 °F 360 bar @ 176 °C

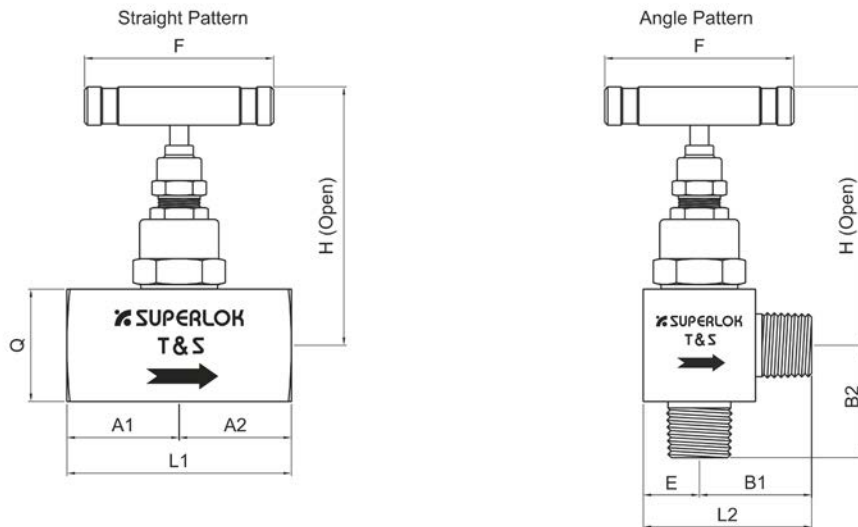


### Materials of Construction



No.	Component	Material Grade / ASTM Specification	
		Stainless Steel	Carbon Steel
1	Bar Handle	Stainless Steel	
2	Dust Cap	Nylon	
3	Lock Nut	Stainless Steel	
4	Bonnet	SS316 / A479	A105
5	Body	SS316 / A479	A105
6	Stem	SS316 / A479	
7	Packing Bolt	SS316 / A276	
8	Packing Gland	SS316 / A276	
9	Packing	PTFE, Graphite	
10	Bonnet Seal	PTFE, Graphite	
11	Vee Tip	SS630 / A564	

## SHBUNV Series



### Table of Dimensions

Part Number	Orifice	Cv	End Connections		Dimensions										
			Inlet	Outlet	L1	A1	A2	Q	L2	B1	B2	E	F	H	
SHBUNV	F4N	4.0	0.52	1/4 Female NPT		60.4	30.2	30.2	32.0	51.0	35.0	35.0	16.0	64.0	85.5
	M4N-F4N			1/4 Male NPT	1/4 Female NPT	62.0	31.8								
	F6N			3/8 Female NPT		68.0	34.0	34.0							
	M6N-F6N			3/8 Male NPT	3/8 Female NPT	70.0	36.0								
	F8N			1/2 Female NPT		70.0	35.0	35.0							
	M8N-F8N			1/2 Male NPT	1/2 Female NPT	79.0	44.0								

\* All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change.

### Ordering Information

Example : **SHBUNV - M 8N - F 8N - AH - GR - SS**

1
2
3
2
3
4
5
6

#### 1. Valve Series

SHBUNV : Straight Flow Pattern  
SHBUNVA : Angle Flow Pattern

#### 2. (Inlet x Outlet)

M : Male Pipe Thread  
F : Female Pipe Thread

#### 3. Port Size

Pipe Thread Designation

Size (inch)	1/4	3/8	1/2
Screwed BSPT	4R	6R	8R
Screwed NPT	4N	6N	8N

#### 4. Handle

Nil : Stainless Steel Bar Handle (Standard)  
AH : Anodized black aluminum bar handle

#### 5. Packing Material

Nil : PTFE (Standard)  
GR : Grafoil

#### 6. Body Material

SS : 316 Stainless Steel  
C : Carbon Steel

# Instrumentation Manifold Valves

## SM2V / SM3V / SM5V Series

### Features

- 2-, 3-, and 5-Valve Instrument Manifolds.
- 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 0.1scc/min.



### 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

#### Pressure-Temperature Rating

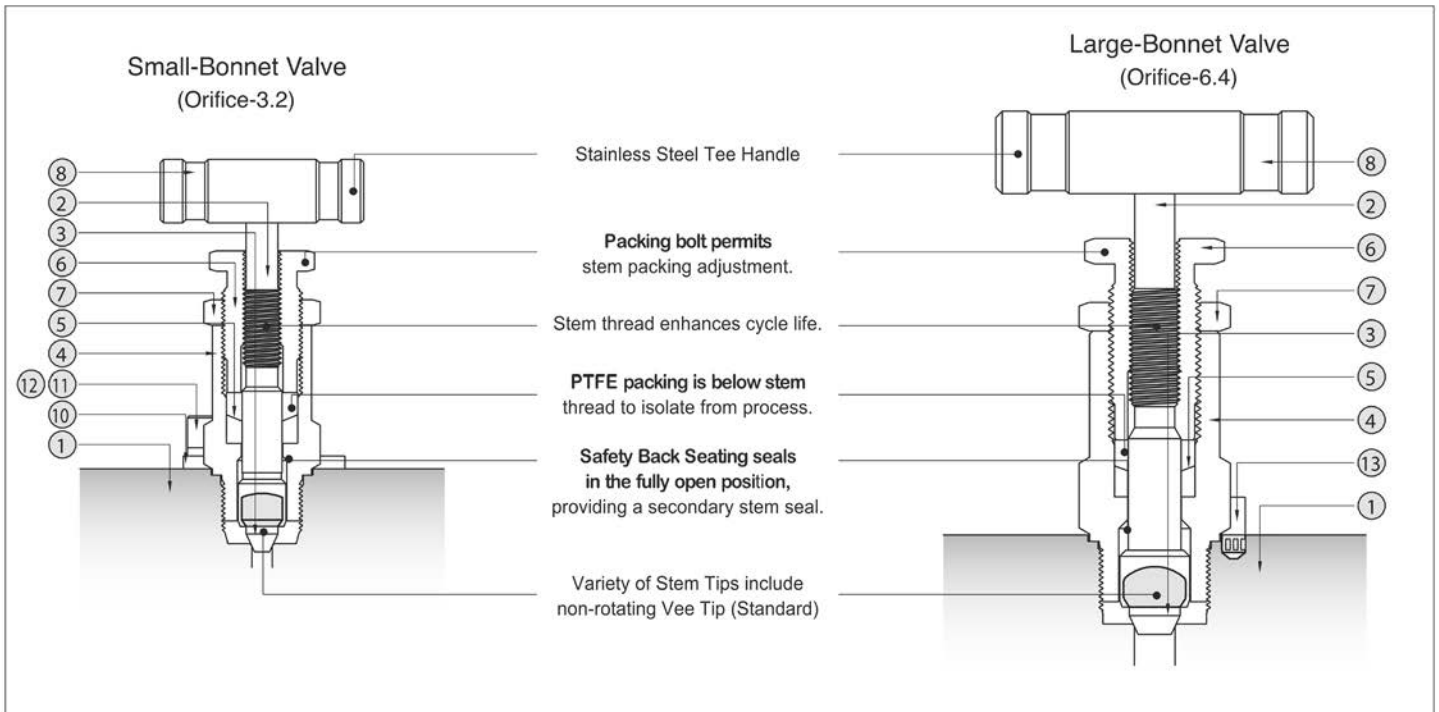
Component	SS 316	
	Packing Material	
Temperature(°C)	PTFE	Grafoil
	Working Pressure psig(bar)	
-65 (-53) to 100(37)	6000 (413)	6000 (413)
200 (93)	5160 (355)	5160 (355)
250 (121)	4910 (338)	4910 (338)
300 (148)	4660 (321)	4660 (321)
350 (176)	4470 (307)	4470 (307)
400 (204)	4280 (294)	4280 (294)
450 (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)

### 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

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

# NEEDLE VALVES



## 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

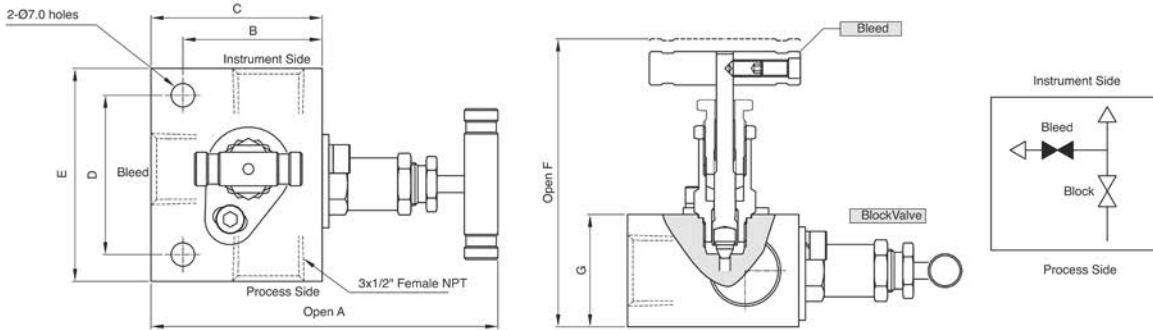
Size (inch)	1/2
Screwed NPT	8N

### 5. Body Material

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

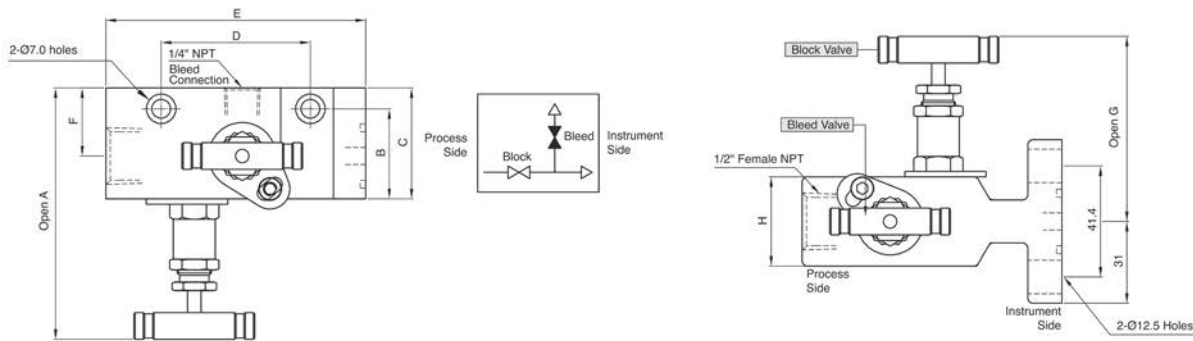
## 2-Valve Manifolds

### Horizontal Style (Remote Mounting)



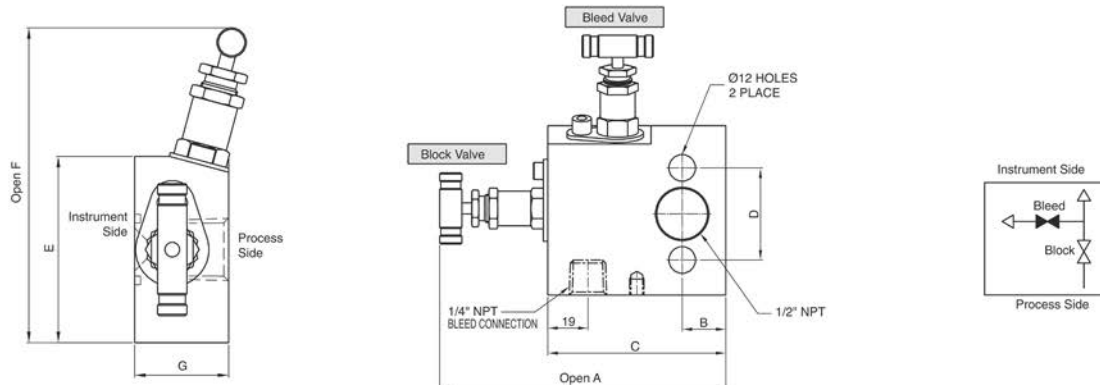
Part Number	End Connections			Weight Dimensions						
	Process	Instrument	Bleed	A	B	C	D	E	F	G
SM2V-F8N	1/2" Female NPT			103.5	41.5	51	47.5	63.5	85.9	33.5

### 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)

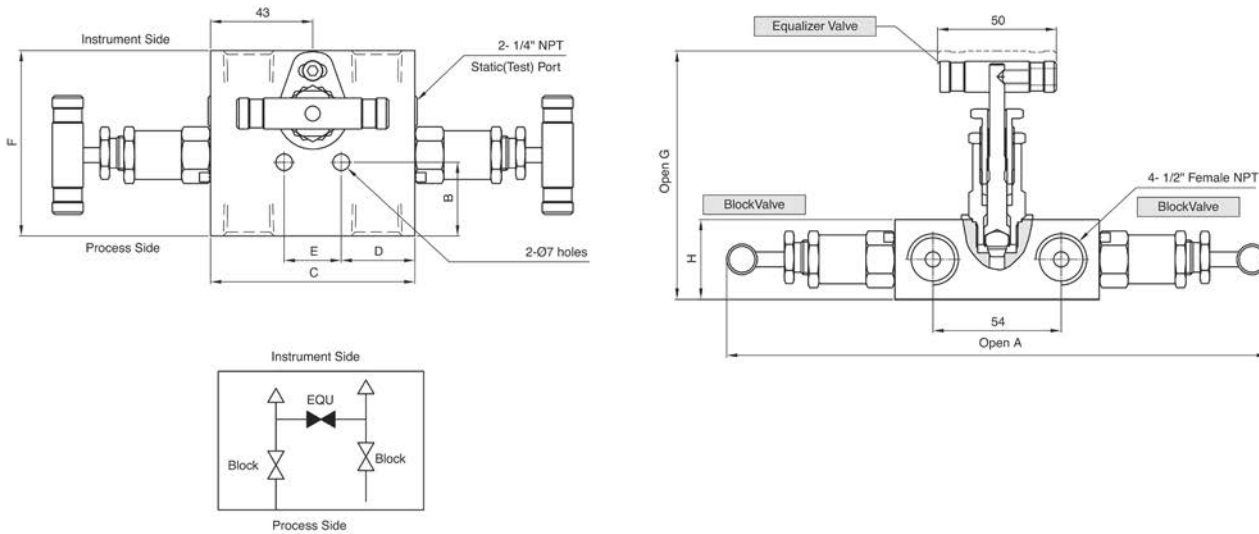


Part Number	End Connections			Weight Dimensions						
	Process	Instrument	Bleed	A	B	C	D	E	F	G
SM2VD-F8N	1/2" Female NPT	Flange	1/4" Female NPT	116.0	17.0	63.5	41.4	63.5	115.0	28.6

• 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.

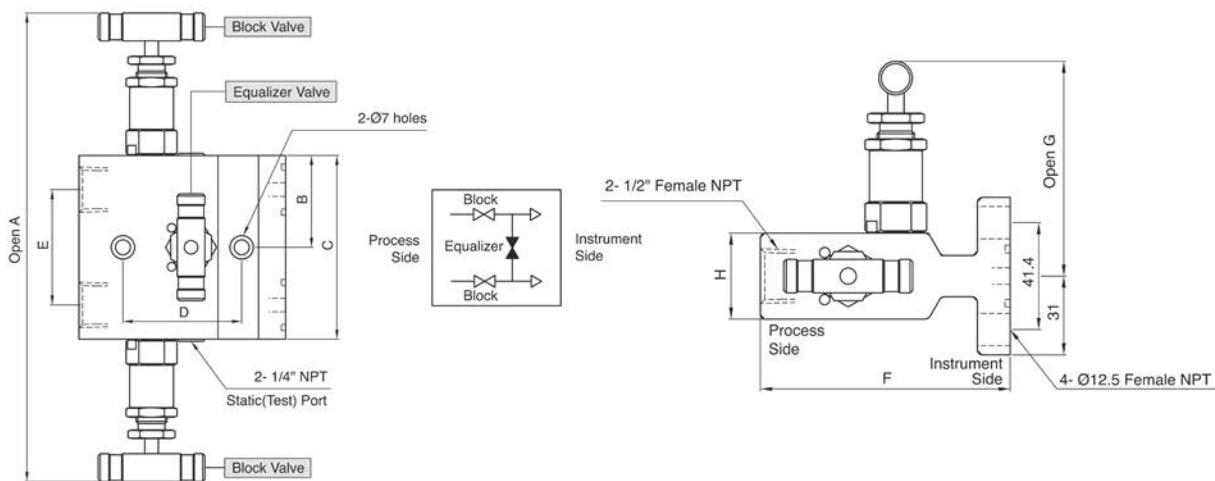
## 3-Valve Manifolds

### 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)

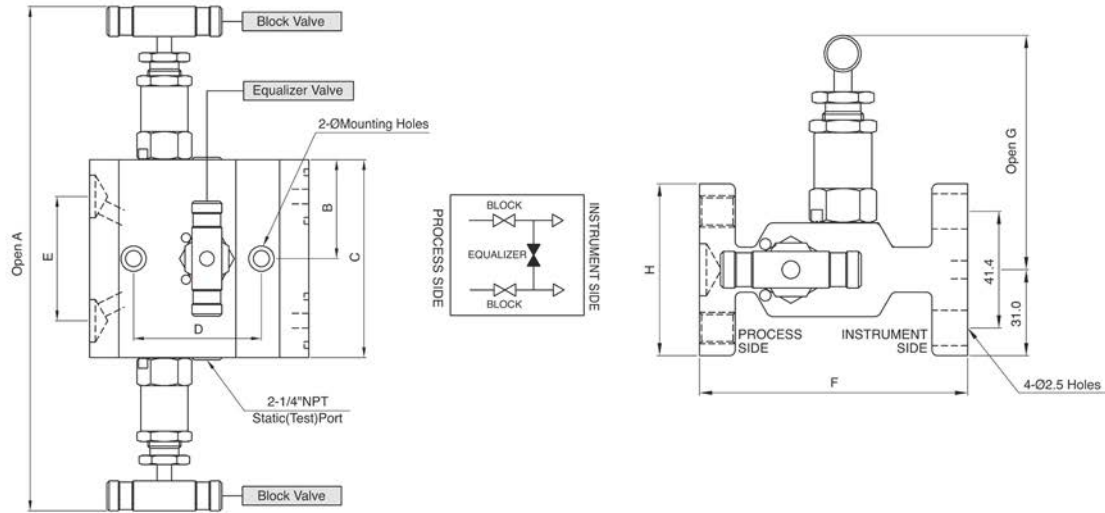


Part Number	End Connections		Weight Dimensions							
	Process	Instrument	A	B	C	D	E	F	G	H
SM3VF-F8N	1/2" Female NPT	Flange	228.0	43.0	86.0	55.6	54.0	97.0	87.7	31.8

- 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.

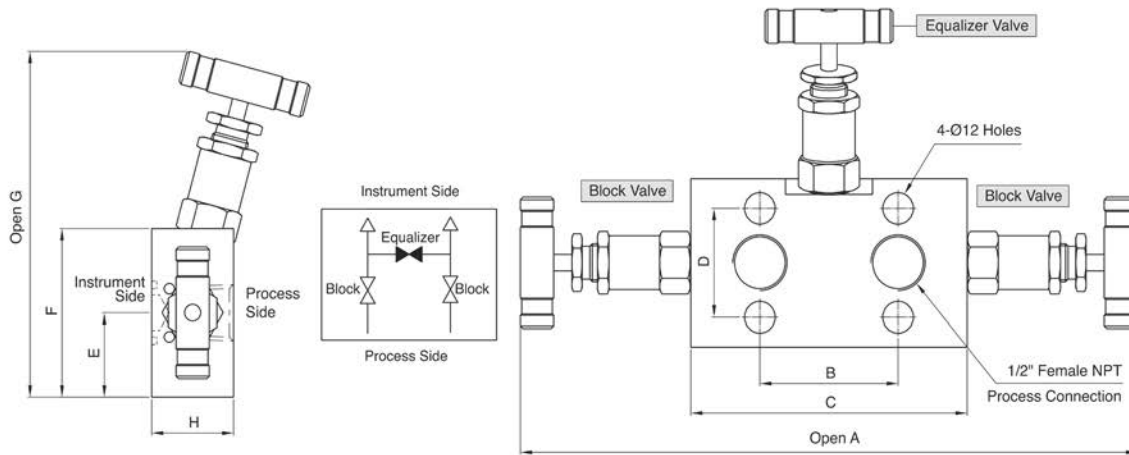
## 3-Valve Manifolds

### 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)



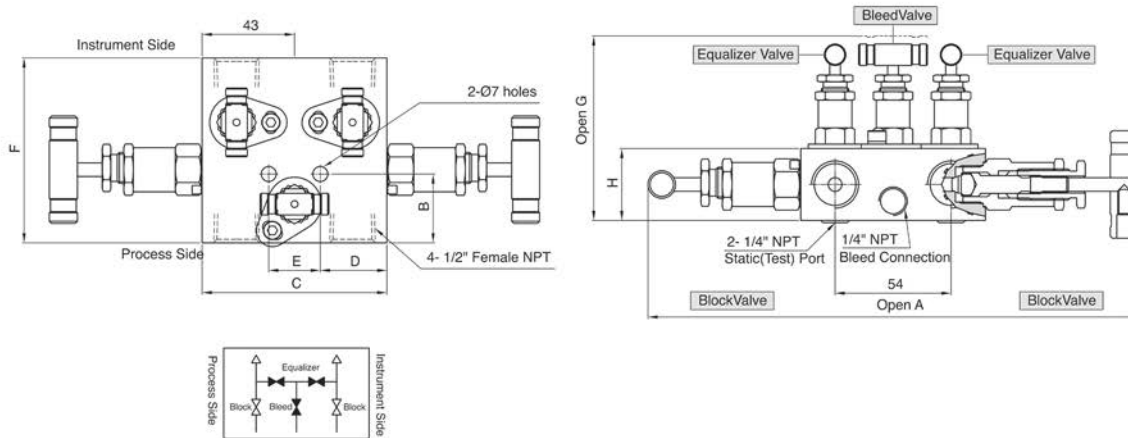
Part Number	End Connections		Weight Dimensions							
	Process	Instrument	A	B	C	D	E	F	G	H
SM3VD-F8N	1/2" Female NPT	Flange	250.0	54.0	108.0	41.4	32.0	64.0	136.0	32.0

• 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.



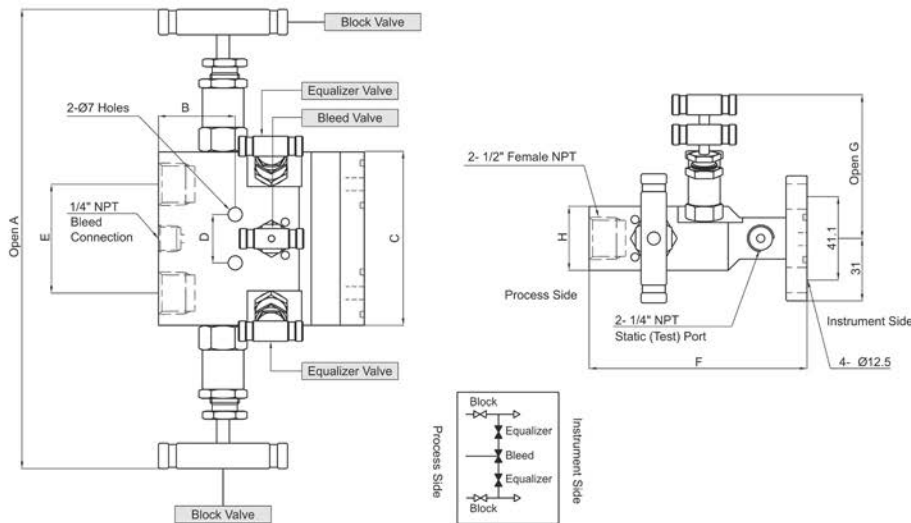
## 5-Valve Manifolds

### Horizontal 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)

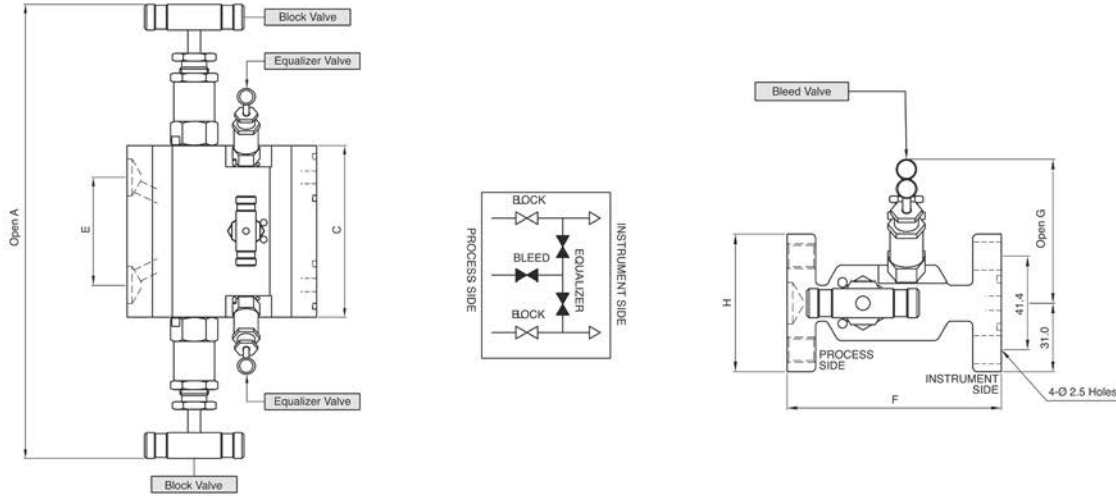


Part Number	End Connections			Weight Dimensions							
	Process	Instrument	Bleed	A	B	C	D	E	F	G	H
SM5VF-F8N	1/2" Female NPT	Flange	1/4" Female NPT	228.0	38.0	86.0	24.0	54.0	108.0	69.0	31.8

• 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.

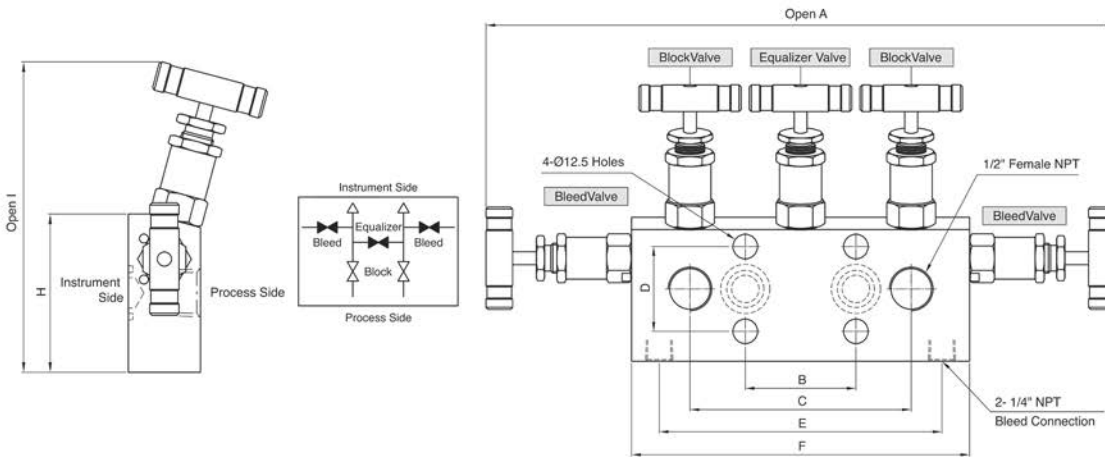
## 5-Valve Manifolds

### 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.

## Manifold 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)		

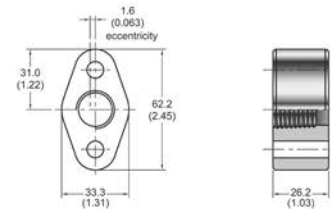


#### Flange Seals

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)

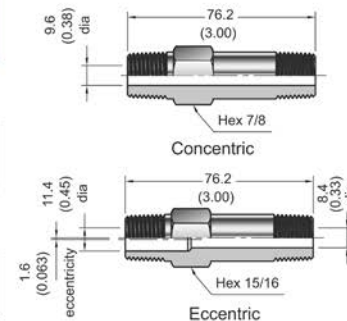
### Concentric & Eccentric Oval Flange

- Eccentric Flanges and Pipe Nipples 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.	Stright Male Thread
Stainless Steel / A276	SCAL4 - 1U	1/4"	1/4 - 28UNF
	SCAL4 - 2U		5/16 - 24UNF

### Vent Pluses, Bleed & Psree Valt es

- Bleed and purge valves used to vent to atmosphere and to assist in calibration.
- Available in 1/4, 3/8, and 1/2 in. male NPT sizes.
- For more information, see the Superlok Bleed and Purge Valve catalog.
- 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" and 3/4", male to 1/2" female end connections.
- 1/2" female gauge ports standard.

### Testing

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

### 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)

### 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

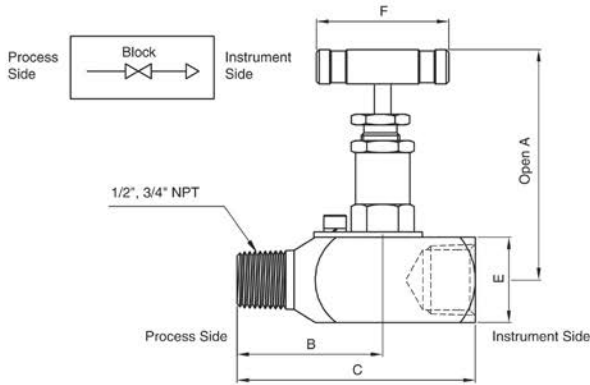
#### 4. Body Material

SS : 316 Stainless Steel

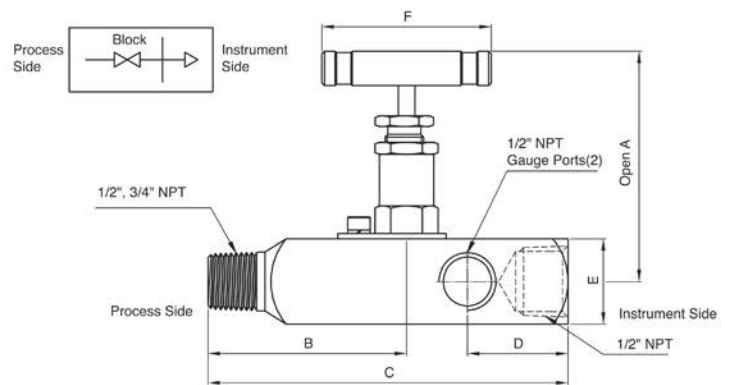
## Gauge Valve

### Gauge / Root Valve

#### SGBV (Gauge Valve)



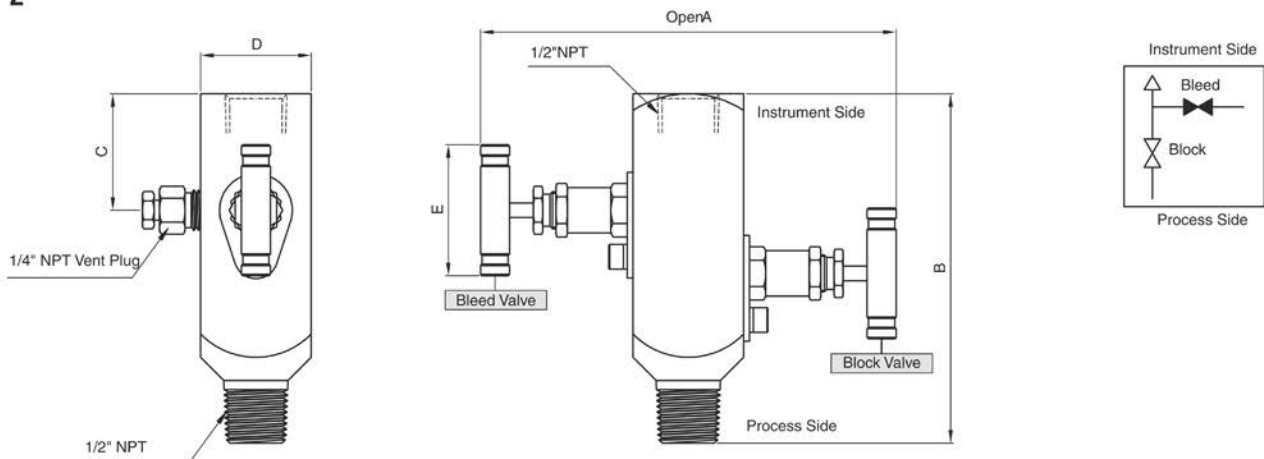
#### SGRV (Gauge Root Valve)



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

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.

# OTHER PRODUCTS

## Superlok Tube Fittings



High quality dual and single ferrule Tube fittings for the most reliable tube connections. Our tube fitting are available in a broad range of sizes, materials and configurations.

## Tubing



High quality stainless steel and exotic alloy tubing for industrial process and instrumentation. We proudly represent Alleima (Sandvik), the world leader in development of stainless steels and advanced alloys for industry.

## Valves



A full range of instrument ball valves, needle valves, check valves and relief valves. Our instrument valves are available in multiple configurations, end connection sizes and materials.

## UHP Fittings & Valves



Ultra-High Purity fittings & valves are used to connect tubing in industries that require extremely clean and contaminant-free systems. The process involves electro-polishing and ultrasonic cleaning with deionized water.



**Unmatched**  
**PERFORMANCE**  
**& RELIABILITY**

**CONTACT US**

**1.888.898.1967**

**BMT FLUID COMPONENTS**  
**SUPERLOK®**

**BMTsuperlok.com**