

Integral Bonnet Bar Stock Needle Valves

SBNV Series

Features

- Integral bonnet design
- Bar stock body
- Compact design
- Low operating torques
- Variety of End Connections
- Straight and Angle flow patterns
- Each and every valve is tested at the factory



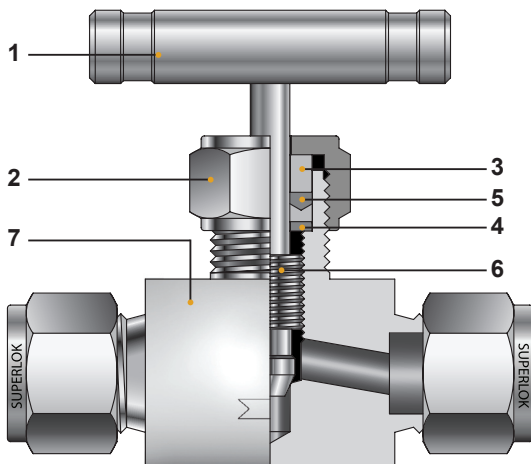
Specifications

Pressure rating	6000psig (413bar)@100°F (38°C)
Temperature rating	-65 to 450°F (-54 to 232°C) with PTFE packing and up to 600°F (315°C) with PEEK packing
Body material	316 stainless steel and Alloy400
Orifice	0.17" and 0.25" (4.3mm and 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)

Materials of Construction



No.	Component	Material Grade / ASTM Specification	
		Stainless Steel	Alloy 400
1	Bar Handle	Stainless Steel	
	Knob Handle	Phenolic with brass insert	
	Set Screw	Stainless Steel	
2	Packing Nut	SS316 / A276	Alloy R-405/B164
3	Packing Gland		
*4	Packing Support	PTFE (Standard), PEEK (Optional)	
*5	Packing		
*6	Vee Stem	SS316 / A276	Alloy R-405/B164
	Soft Seat Stem	SS316 / A276 with PCTFE	ALLOY R-405/B164 with PCTFE
*7	Body	SS316 / A479	ALLOY R-405/B164

*Wetted components are marked **

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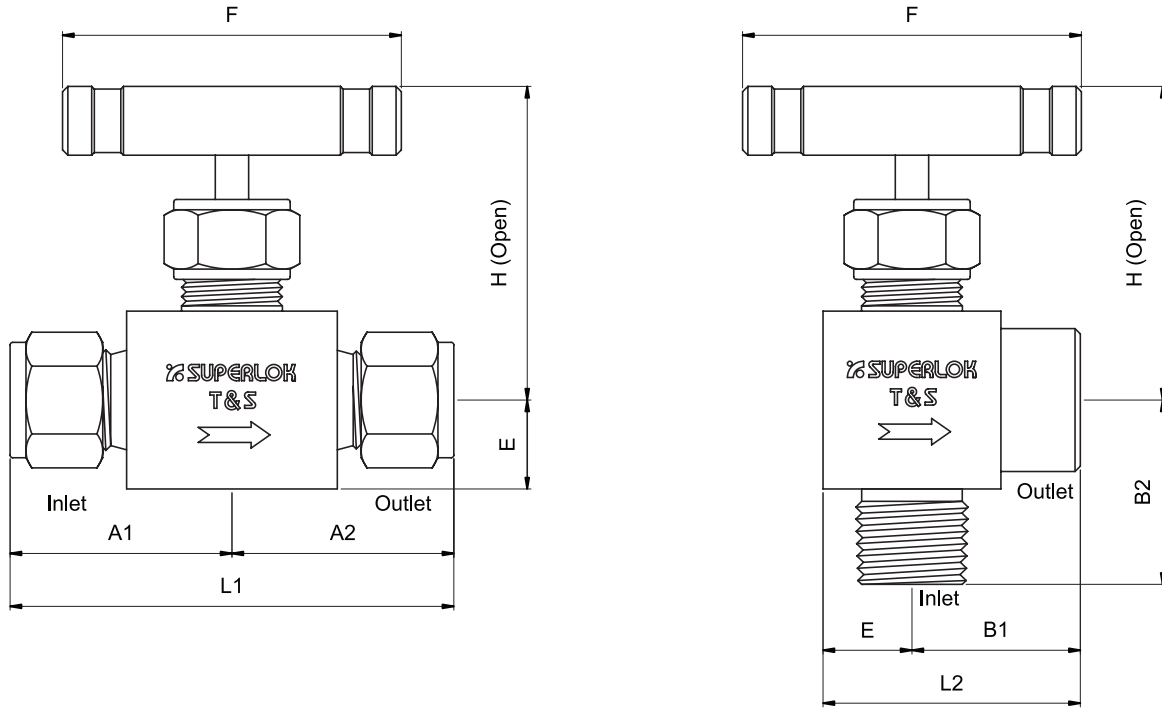


Table of dimensions

Order Number		Orifice	Cv	End Connections		Dimensions									
Series	Part No.			Inlet	Outlet	L1	A1	A2	L2	B1	B2	E	F	H	
SBNV1	F	4N	4.3	0.37	1/4" FEMALE NPT		47.6	23.8	23.8	36.5	25.4	25.4	11.1	45.0	51.0
	F	4R			1/4" FEMALE ISO										
	M	4N			1/4" MALE NPT		49.2	24.6	24.6	-	-	-	-		
	MF	4N			1/4" MALE NPT	1/4" FEMALE NPT	48.4		23.8	36.5	25.4	26.2	11.1		
	MS	4N-4			1/4" MALE NPT	1/4" SUPERLOK	53.3		28.7	39.8	28.7				
	S	4			1/4" SUPERLOK		62.4	31.2	31.2			-	-		
SBNV2	F	6N	6.4	0.73	3/8" FEMALE NPT		64.0	32.0	32.0	48.6	31.8	31.8	16.8	64.0	63.0
	F	8N			1/2" FEMALE NPT							35.8			
	F	8R			1/2" FEMALE ISO							31.0			
	MF	6N			3/8" MALE NPT	3/8" FEMALE NPT	64.5	32.5	32.0	48.6	31.8	35.8	11.1		
	MF	8N			1/2" MALE NPT	1/2" FEMALE NPT									
	MF	12N-8N			3/4" MALE NPT	1/2" FEMALE NPT	63.8	31.8	41.9	-	-	-	-		
	MS	6N-8			3/8" MALE NPT	1/2" SUPERLOK	73.7								
	S	6			3/8" SUPERLOK		78.2	39.1	39.1	-	-	-	-		
	S	8			1/2" SUPERLOK		83.8	41.9	41.9	-	-	-	-		

*All dimensions in millimeters. All dimensions are for reference only, subject to change.
 *Dimension shown with SUPERLOK nuts measure in the finger-tight, where applicable.

Technical Data

Temperature and Pressure Rating

Body Material	Stem	Temperature Rating	Pressure Rating@ -65°F~-100°F (-54°C~38°C)
SS316	Vee	-65°F~450°F (-54°C~232°C)	6000psig (413 bar)
	Soft Seat	-65°F~200°F (-54°C~93°C)	
Alloy 400	Vee	-65°F~450°F (-54°C~232°C)	5000psig (345bar)
	Soft Seat	-65°F~200°F (-54°C~93°C)	

*The above ratings are for a standard valve with PTFE packing.

*Extreme temperature fluctuations may require packing adjustment.

Temperature vs Working Pressure

Temperature Rating		Pressure psig(bar) @ Temperature Rating	
		SS316	Alloy 400
-65°F (-54°C) to	100°F (38°C)	6000psig (413bar)	5000psig (435 bar)
	200°F (93°C)	5160psig (355bar)	4400psig (303 bar)
	300°F (148°C)	4660psig (321bar)	4120psig (284 bar)
	350°F (176°C)	4470psig (308bar)	4050psig (279 bar)
	400°F (204°C)	4280psig (295bar)	3980psig (274bar)
	450°F (232°C)	4130psig (284bar)	3970psig (273 bar)

Packing and Body material vs Temperature and Pressure Rating

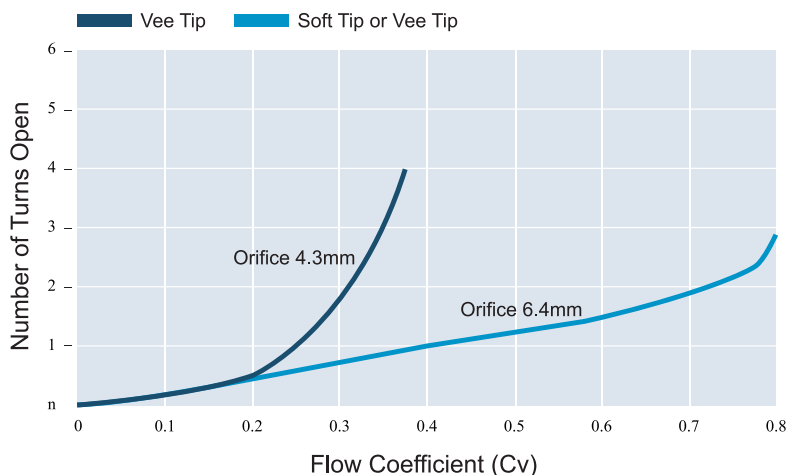
Packing Material	Body Material	Temperature Rating	Pressure Rating@ Max. Temperature
PTFE (Standard)	SS316	-65°F~450°F (-54°C~232°C)	4130psig (284 bar)
	Alloy 400		3970psig (273 bar)
PEEK	SS316	-65°F~600°F (-54°C~315°C)	3760psig (259bar)
	Alloy 400	-65°F~500°F (-54°C~260°C)	3960psig (272bar)

* Alloy 400 not applicable over 500 °F(260 °C)

* PEEK is not recommended for service with aromatic heat transfer or concentrated sulfuric and nitric acids. Other limitations may apply.

Flow Data at 100°F (37°C)

Flow Coefficient at Turns Open



Handle

- 316 Stainless steel bar handles are standard.
- Black phenolic knob is standard for soft seat stem Valves.
- Anodized black aluminum bar handles

Available Stem Type

- Two stem types
 - Vee stem : All metal, Vee stem tip (Standard)
 - Soft Seat Stem: PCTFE stem tip (Optional)

Ordering Information

SBNV2-MS-6N-8-KH-A-PEST-SS

1

2

3

4

5

6

7

8

1. Valve Series

- SBNV1 : 4.3mm Orifice
- SBNV2 : 6.4mm Orifice

2. Port Type (Inlet x Outlet)

- S : SUPERLOK Tube Fitting
- M : Male Pipe Thread
- F : Female Pipe Thread
- MS : Male Pipe Thread x SUPERLOK Tube Fitting
- MF : Male Pipe Thread x Female Pipe Thread

3. Port Size

■ Pipe Thread Designation

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

■ 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	10	12	20	25
Designation	6M	10M	12M	20M	25M

4. Handle

- Nil : Stainless Steel Bar Handle (Standard)
- KH : Black Phenolic Knob Handle
- AH : Anodized black aluminum bar handle

5. Flow Pattern

- Nil : Straight Pattern (Standard)
- A : Angle Pattern

6. Packing Material

- Nil : PTFE (Standard)
- PE : PEEK

7. Stem Type

- Nil : Vee Stem (Standard)
- ST : Soft Seat Stem

8. Body Material

- SS : 316 Stainless Steel
- M : Alloy 400 (Monel)

■ Examples

ex1) SBNV1 - S - 4 - SS

- SBNV1 Series / [Inlet]SUPERLOK x [Outlet]SUPERLOK / Port Size: 1/4" x 1/4" / SS316 Bar Handle / Straight Pattern / PTFE packing / Vee Stem / 316 Stainless Steel Body

ex2) SBNV2 - F - 8N - KH - ST - SS

- SBNV2 Series / [Inlet]Female Pipe Thread x [Outlet]Female Pipe Thread / Port Size: 1/2"NPT x 1/2"NPT / Black phenolic knob handle / Straight Pattern / PTFE packing / Soft Seat Stem / 316 Stainless Steel Body

ex3) SBNV2 - MF - 8N - A - PE - SS

- SBNV2 Series / [Inlet]Male Pipe Thread x [Outlet]Female Pipe Thread / Port Size: 1/2"NPT x 1/2"NPT / SS316 Bar Handle / Angle Pattern / PEEK packing / Vee Stem / 316 Stainless Steel Body