

## SNV50 Series 5000psi Integral Bonnet Needle Valves

### Features

- Pressure rating up to 5000psi(344bar)@100°F(38°C).
- Temperature rating from -65°F(54°C) to 450°F(232°C) with standard PTFE packing, and up to 600°F(315°C) with optional PEEK packing.
- Choice of materials : Standard S316 and available in alloy 400 and Brass.
- Available sour Gas service per NACE MR0175.
- Every valve is 100% factory tested with the Nitrogen @1000psi.

### Design

- Applications : General purpose gas, water and oil.
- Variety stem tips include Vee, Regulating and Soft-seat with Kel-F.
- Orifice sizes : from 0.08in(2.0mm) to 0.375in(9.5mm).
- Flow Coefficients(Cv) : from 0.09 to 1.8.
- Forged body with straight and angle patterns.
- Panel mounting : from 3.17mm to 6.35mm.
- Stem threads are rolled and hard chrome-plated for maximum service life.
- Packing materials : Standard PTFE and optional PEEK packing for high temperature.
- Packing nut enables easy external adjustments to ensure leak-free stem seal.
- Variety of End connections include S-LOK, NPT & ISO threads Male/Female.
- Standard Round handle is Black Phenolic Knob and optional Bar Handle with S316.

### Technical Data

#### Temperature - Working Pressure

The class rating and rated working pressure are the way that ASME standards simplify the design process.

The pressure rating is governed by the allowable stress for each different material group, class rating and service temperature.

ASME Material Group	TABLE 2-2.2	N/A	TABLE 2-3.4
ASME CLASS Rating	2080	N/A	1500
Material Name	S316	Brass	Alloy 400
Temperature @pressure, °F(°C)	psig ( bar )	psig ( bar )	psig ( bar )
-65°F (-54°C) up to	100°F ( 38°C)	5000 (344)	3000 (206)
	200°F ( 93°C)	4295 (295)	2350 (161)
	300°F ( 148°C)	3875 (266)	2050 (141)
	350°F ( 176°C)	3710 (255)	1470 (101)
	400°F ( 204°C)	3560 (245)	390 ( 26 )
450°F ( 232°C)	3435 (236)	-	2380 (163)

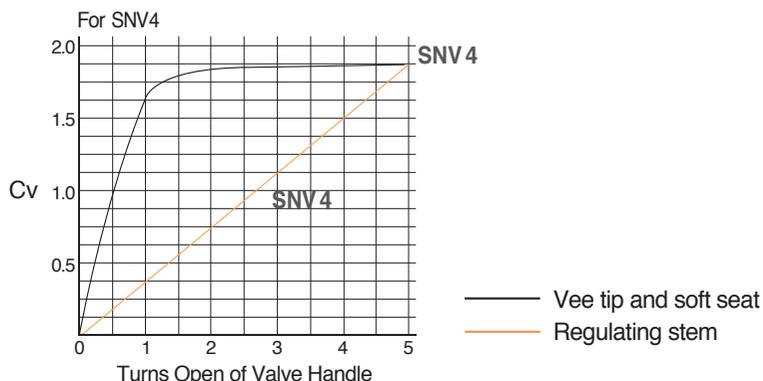
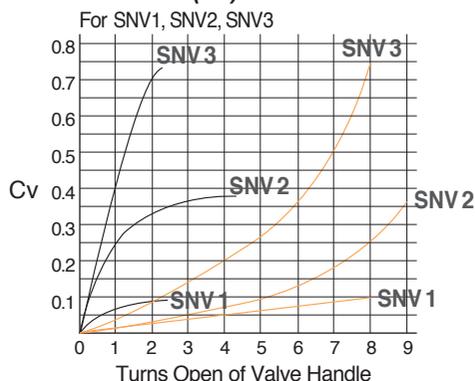
Pressure ratings of valves with S-LOK end connections are determined by the tubing material and wall thickness.

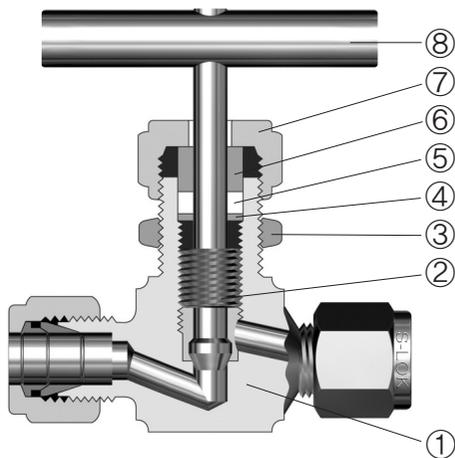
*Note* Pressure rating of valve is sometimes limited to the working pressure of pipe ends and the tubing connected.

#### Temperature & Pressure Rating with Packing and Body Material

Valve Material	Stem	with PTFE packing (Standard)		with PEEK packing (Optional)	
		Temperature °F(°C)	Pressure Rating @100°F(37°C)	Temperature °F(°C)	Pressure @Temp. Rating psig (bar)
Stainless Steel S316	Metal to metal (Vee & Regulating)	-65°F to 450°F (-54°C to 232°C)	5000psig (344bar)	-65°F to 600°F (-54°C to 315°C)	3130psig (215bar)
	Soft Seat (Kel-F)	-65°F to 200°F (-54°C to 93°C)		-65°F to 200°F (-54°C to 93°C)	
Brass	Metal to metal (Vee & Regulating)	-65°F to 400°F (-54°C to 204°C)	3000psig (206bar)	-65°F to 400°F (-54°C to 204°C)	3000psig (206bar)
	Soft Seat (Kel-F)	-65°F to 200°F (-54°C to 93°C)		-65°F to 200°F (-54°C to 93°C)	
Alloy 400 (Monel)	Metal to metal (Vee & Regulating)	-65°F to 450°F (-54°C to 232°C)	3000psig (206bar)	-65°F to 500°F (-54°C to 260°C)	2370psig (162bar)
	Soft Seat (Kel-F)	-65°F to 200°F (-54°C to 93°C)		-65°F to 200°F (-54°C to 93°C)	

#### Flow Coefficient (Cv) with Number of Handle Turns





### Materials of Construction

Item	Description	Material / ASTM Specification		
		S316	BRASS	Alloy 400
1	Body	S316	Brass	Alloy 400/B564
2	Vee Stem	Chrome plated S316	S316	Alloy R-405/B 164
	Soft Seat Stem			
	Regulating Stem			
2a	Stem Tip (Soft Seat)	Kel-F (PCTFE)		
3	Panel Nut	S316	Brass	Alloy R-405/B 164
4	Packing Ring	S316	Brass	Alloy R-405/B 164
5	Packing	Standard PTFE, Optional PEEK		
6	Grand	S316	Brass	Alloy R-405/B 164
7	Packing Nut	S316	Brass	S316
8	Knop Handle	Black phenolic knop		
	Bar Handle	S 316		
9	Set screw	Nickel cadmium plated steel		

Wetted parts are listed in orange color.  
Standard Lubrication : Fluorocarbon based.

### Mounting as standard

Body Size	SNV 1	SNV 2	SNV 3	SNV 4
Panel Hole	13.5mm		19.8mm	26.0mm
Panel Mount Thickness	Min	3.17mm		
	Max	6.35mm		

Caution : Packing adjustments may be required during the valve is mounted.

### • Sour Gas Service

-Sour Gas Service is provided to meet NACE Standard MR 0175.

### • Handle

-Black phenolic knop is standard all body valves.  
-Stainless Steel bar is available as an option.

### Choice of Stem Tip's available

Vee Stem	Regulating Stem	Soft Seat(3 PCS)
For pressure tightness even at elevated temperatures	For flow rate control	For repetitive shut-off
		

### • Testing

-Every valve is factory tested for bubble-tight leakage at both seat and stem packing with nitrogen at 1000psi(69bar).  
-Seats have a maximum allowable leak rate of 0.1sccm **Hydrostatic Shell tests** is performed optional with water at 1.5 times the working pressure.

### • Safety in Valve Selection

-When selecting a valve, the total system design must be considered to ensure safe, trouble-free performance. Valve function, materials compatibility, adequate ratings, proper installation, operation, and maintenance are the responsibility of the system designer and user.

**Caution** : Packing adjustments may be required during the valve's service life.  
Extreme Temperature fluctuations may require packing nut adjustment.

### Ordering Information and Table of Dimensions



Valve Ordering Number	Orifice (mm)	Cv	End Connection		Dimensions (mm)									
			Inlet	Outlet	A	B	L	L1	L2	E	D	H	H1	
SNV 1	F-2N	2.0	0.09	1/8" Female NPT		61	21	42	21	21	9.5	11	35	32
	M-2N			1/8" Male NPT				42	20					
	MS-2N2T			1/8" Male NPT	1/8" S-LOK			47	26					
	S-2T			1/8" S-LOK				52	26					
	S-3M			3mm S-LOK				26	26					
SNV 2	F-2N	4.4	0.37	1/8" Female NPT		61	21	42	21	21	9.5	11	35	45
	M-2N			1/8" Male NPT				50	25					
	M-4N			1/4" Male NPT				54	28.8					
	MS-4N4T			1/4" Male NPT	1/4" S-LOK			29	28.8					
	S-6M			6mm S-LOK				30	29.6					
	S-4T			1/4" S-LOK				59.2	29.6					
S-8M	8mm S-LOK													
SNV 3	F-4N	6.4	0.73	1/4" Female NPT		77	28	56	28	28	13	13.5	47	64
	F-4R			1/4" Female ISO Tapered				61.2	33.2					
	MF-4N			1/4" Male NPT	1/4" Female NPT			58	29					
	MS-4N6T			1/4" Male NPT	3/8" S-LOK			62.2	33.2					
	M-6N			3/8" Male NPT				65	36					
	MS-6N6T			3/8" Male NPT	3/8" S-LOK									
	MS-6N8T			3/8" Male NPT	1/2" S-LOK									
	M-10M			10mm S-LOK				33	33.2					
	S-6T			3/8" S-LOK				36	36					
	S-12M			12mm S-LOK										
	S-8T			1/2" S-LOK										
SNV 4	F-6N	9.5	1.80	3/8" Female NPT		99	38	76	38	38	19	19	63	76
	F-6R			3/8" Female ISO Tapered										
	F-8N			1/2" Female NPT										
	F-8R			1/2" Female ISO Tapered										
	M-8N			1/2" Male NPT										
	MF-8N			1/2" Male NPT	1/2" Female NPT									
	S-8T			1/2" S-LOK				49	48.5					
	S-12T			3/4" S-LOK										

All dimensions shown are for reference only and are subject to change. Dimensions with S-LOK nuts are in finger-tight position.  
 Patterns : To order angle pattern, use-A as a suffix to the valve ordering number. *Example : SNV1-F-2N-A*

### • Ordering Information

<b>SNV3</b>	<b>S</b>	<b>8T</b>	<b>A</b>	<b>R</b>	<b>BH</b>	<b>SG</b>	<b>S6</b>
<b>Series Designator by Orifice Size</b>	<b>End Connection Designator</b>	<b>Inlet-Outlet Size Designator</b>	<b>Flow Designator</b>	<b>Stem Designator</b>	<b>Handle Designator</b>	<b>Sour Gas Designator</b>	<b>Body Material Designator</b>
			<ul style="list-style-type: none"> <li>• Nil : Straight</li> <li>• A : Angle Pattern</li> </ul>	<ul style="list-style-type: none"> <li>• Nil : Vee Stem</li> <li>• R : Regulating</li> <li>• K : Soft Tip with Kel-F</li> </ul>	<ul style="list-style-type: none"> <li>• Nil : Standard black phenolic Knob</li> <li>• BH: Stainless Round Bar Handle</li> </ul>	<ul style="list-style-type: none"> <li>• Nil : Standard</li> <li>• SG: Sour Gas Service</li> </ul>	<ul style="list-style-type: none"> <li>• S6 : 316 Stainless Steel</li> <li>• BS : Brass</li> <li>• MO : Alloy 400</li> </ul>