SNV50 Series 5000psi Integral Bonnet Needle Valves

Features

- Pressure rating up to 5000psi(344bar)@100°F(38°C).
- Temperature rating from -65°F(38°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 Knop 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.

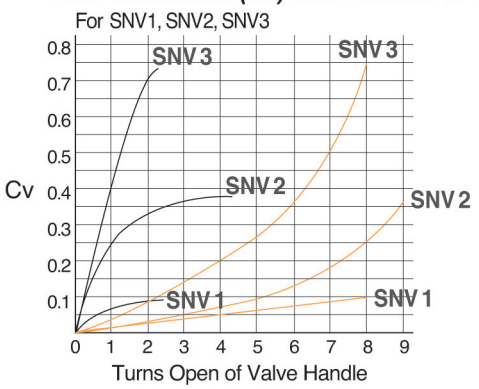
ASME Material Group		TABLE 2-2.2	N/A	TABLE 2-3.4
ASME CLASS Rating		2080	N/A	1500
Material Name		S316	Brass	Alloy 400
Temperature @pressure, °F(°C)		psig (bar)	psig (bar)	psig (bar)
-65°F(-54°C) up to	100°F(38°C)	5000 (344)	3000 (206)	3000 (206)
	200°F(93°C)	4295 (295)	2350 (161)	2640 (181)
	300°F(148°C)	3875 (266)	2050 (141)	2470 (170)
	350°F(176°C)	3710 (255)	1470 (101)	2430 (167)
	400°F(204°C)	3560 (245)	390 (26)	2390 (164)
	450°F(232°C)	3435 (236)	-	2380 (163)

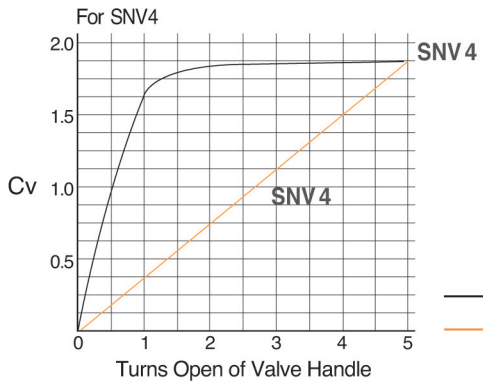
Pressure ratings of valves with S-LOK end connections are determined by the tubing material and wall thickness.
Note Pressure rating of valve is sometimes limited to the working pressure of pipe ends and the tubing connected.

Temperature & Pressure Rating with Packing and Body Material

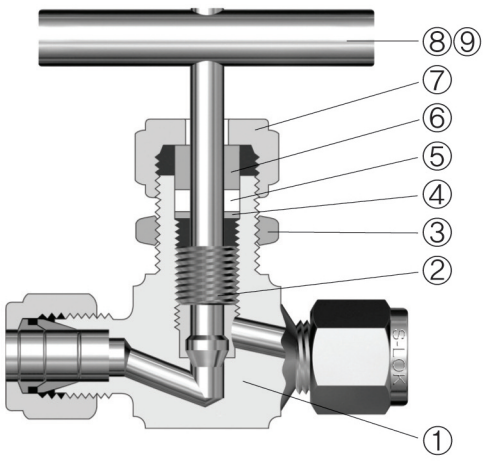
Valve Material	Stem	with PTFE packing (Standard)		with PEEK packing (Optional)	
		Temperature °F(°C)	Pressure Rating @100°F(37°C)	Temperature °F(°C)	Pressure @Temp. Rating psig (bar)
Stainless Steel S316	Metal to metal (Vee & Regulating)	-65°F to 450°F (-54°C to 232°C)	5000psig (344bar)	-65°F to 600°F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

Flow Coefficient (Cv) with Number of Handle Turns





Vee tip and soft seat
Regulating stem



Materials of Construction

Item	Description		Material / ASTM Specification		
			S316	BRASS	Alloy 400
1	Body		S316	Brass	Alloy 400/B564
2	Stem	Vee Stem	Chrome plated S316	S316	Alloy R-405/B164
		Soft Seat Stem			
		Regulating Stem			
2a	Stem Tip (Soft Seat)		Kel-F(PCTFE)		
3	Panel Nut		S316	Brass	Alloy R-405/B164
4	Packing Ring		S316	Brass	Alloy R-405/B164
5	Packing		Standard PTFE, Optional PEEK		
6	Gland		S316	Brass	Alloy R-405/B164
7	Packing Nut		S316	Brass	S316
8	Knop Handle		Black phenolic knop		
	Bar Handle		S316		
9	Set screw		Stainless steel		

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

Mounting as standard

Body Size		SNV1	SNV2	SNV3	SNV4
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.

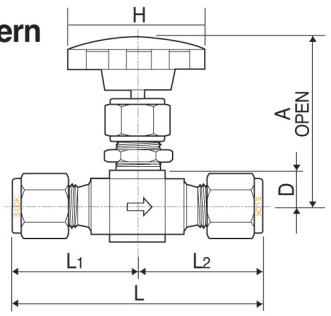
• Safety in Valve Selection

-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.

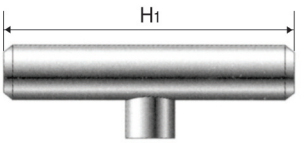
Caution : **Packing adjustments may be required during the valve's service life. Extreme Temperature fluctuations may require packing nut adjustment.**

Ordering Information and Table of Dimensions

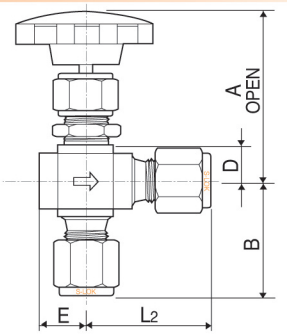
Inline Pattern



Bar Handle



Angle Pattern



Valve Ordering Number		Orifice (mm)	Cv	End Connection Inlet	End Connection Outlet	Dimensions (mm) A	B	L	L_1	L_2	E	D	H	H_1
SNV1	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	21	21				
	MS-2N2T			1/8″ Male NPT	1/8″ S-LOK			47		26				
	S-2T			1/8″ S-LOK			26	52	26	26				
	S-3M			3mm S-LOK										
SNV2	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										
	M-4N			1/4″ Male NPT			25	50	25	25				
	MS-4N4T			1/4″ Male NPT	1/4″ S-LOK			54		28.8				
	S-6M			6mm S-LOK			29	57.6	28.8	28.8				
	S-4T			1/4″ S-LOK										
	S-8M			8mm S-LOK			30	59.2	29.6	29.6				
SNV3	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										
	MF-4N			1/4″ Male NPT	1/4″ Female NPT									
	MS-4N6T			1/4″ Male NPT	3/8″ S-LOK			61.2		33.2				
	M-6N			3/8″ Male NPT			29	58	29	29				
	MS-6N6T			3/8″ Male NPT	3/8″ S-LOK			62.2		33.2				
	MS-6N8T			3/8″ Male NPT	1/2″ S-LOK			65		36				
	S-10M			10mm S-LOK			33	66.4	33.2	33.2				
	S-6T			3/8″ S-LOK										
	S-12M			12mm S-LOK			36	72	36	36				
	S-8T			1/2″ S-LOK										
SNV4	F-6N	9.5	1.80	3/8″ Female NPT		92	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	97	48.5	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-fight position.
Patterns : To order angle pattern, use-A as a suffix to the valve ordering number. *Example : SNV1-F-2N-A*

• Ordering Information

SNV3	S	8T	A	R	BH	SG	S6
Series Designator by Orifice Size	**End Connection Designator**	**Inlet-Outlet Size Designator**	**Flow Designator**	**Stem Designator**	**Handle Designator**	**Sour Gas Designator**	**Body Material Designator**
			• Nil : Straight • A : Angle Pattern	• Nil : Vee Stem • R : Regulating • K : Soft Tip with Kel-F	• Nil : Standard black phenolic Knop • BH: Stainless Round Bar Handle	• Nil : Standard • SG: Sour Gas Service	• S6 : 316 Stainless Steel • BS : Brass • MO: Alloy 400