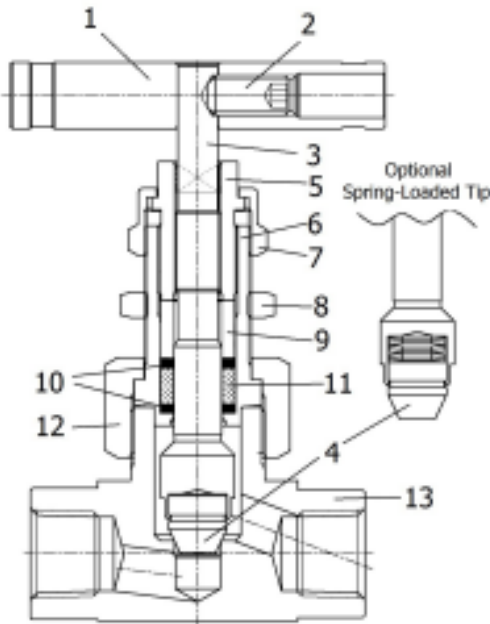


VNS6 & VNS10 Series Severe Service Needle Valves

Working Pressure: 10 000 psig (689 bar) @ 100° F (37° C)

Features

- High temperature up to 450 °F (232 °C) with PTFE packing; up to 1200 °F (648 °C) with Graphite packing.
- Back seating in the valve in full open position prevents a leakage through the bonnet if the packing fails.
- Packing bolt permits external packing adjustment, maintaining the valve in line.
- Optional Inconel 718 disc spring-loaded stem tip ensures excellent compensation on high temperature and high impulse application.



Materials of Construction

Components		Valve Body Material	
		Stainless Steel	Alloy C276
		Material Grade/ASTM Specification	
1	Bar handle	SS316/A276, optional black-anodized aluminum handle	
2	Set screw	Stainless Steel	
3	Stem	SS316/A276 or A479 hard chrome-plated	C276/B574
4	Non-Rotating Tip	Standard Type 630/A564 Optional Inconel 718 disc spring-loaded alloy 80A/B537 tip applicable to VNS6B & VNS6C Series	
5	Packing bolt	SS316/A276 or A479	
6	Bonnet	SS316/A276 or A479	C276/B574
7	Cap nut	SS316/A276 or A479	
8	Panel nut		
9	Gland	SS316/A276 or A479	C276/B574
10	Packing supports (2)	PTFE/D1710, optional Graphite	
11	Packing	PTFE/D1710, optional Graphite	
12	Union nut	SS316/A276 or A479	
13	Body	SS316/A276 or A479	C276/B574

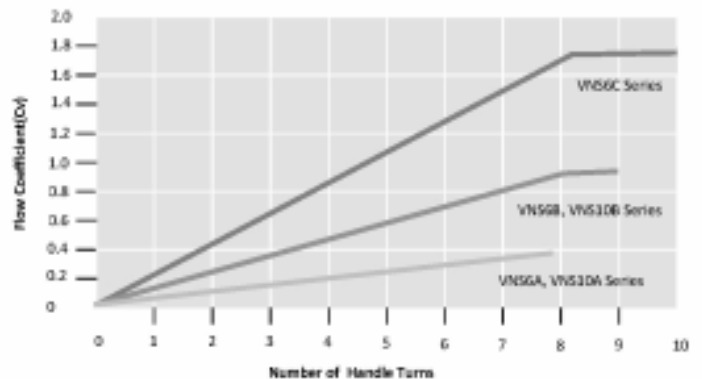
- Wetted parts listed in **BOLD** letters.
- **Wetted parts** are lubricated with Nickel anti-seize lubricant.

Pressure – Temperature Ratings

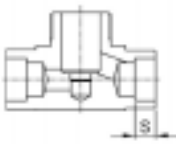
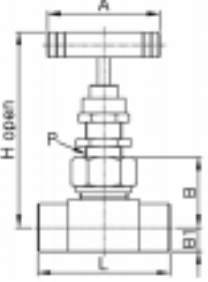
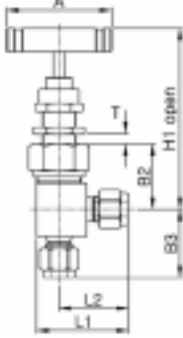
- Ratings are based on graphite packing.
- Max. 450 °F (232 °C) for valve with standard PTFE packing.

ASME Class	VNS6 Series		VNS10 Series
	2.2	3.8	N/A
Material Group	2.2		3.8
Material Name	SS316	C276	SS316
Temperature, °F (°C)	Working pressure, psig (bar)		
-65 to 100 (-53 to 37)	6000 (413)	6000 (413)	10 000 (689)
200 (93)	5160 (355)	6000 (413)	9290 (640)
300 (148)	4660 (321)	6000 (413)	8390 (578)
400 (204)	4280 (294)	5820 (401)	7705 (530)
500 (260)	3980 (274)	5540 (381)	7165 (493)
600 (315)	3760 (259)	5040 (347)	6770 (466)
700 (371)	3620 (249)	4730 (326)	6480 (446)
800 (426)	3520 (242)	4230 (291)	6230 (429)
900 (482)	3460 (238)	3745 (258)	5905 (405)
1000 (537)	3030 (208)	3030 (208)	5450 (375)
1100 (593)	2545 (175)	2685 (185)	4835 (333)
1200 (648)	1545 (106)	1715 (118)	3085 (212)

Number of Handle Turns - Cv



VNS6 & VNS10 Series Ordering Information and Dimensions

Socket weld end		Straight pattern		Angle pattern		Handle length "A", mm (in.)																								
						<table border="1"> <thead> <tr> <th colspan="2">Valve Series</th> <th>A</th> </tr> </thead> <tbody> <tr> <td>VNS6</td> <td>VNS10</td> <td></td> </tr> <tr> <td>VNS6A</td> <td>-</td> <td>44.4 (1.75)</td> </tr> <tr> <td>VNS6B</td> <td>VNS10A</td> <td>63.5 (2.50)</td> </tr> <tr> <td>VNS6C</td> <td>VNS10B</td> <td>88.9 (3.50)</td> </tr> </tbody> </table>			Valve Series		A	VNS6	VNS10		VNS6A	-	44.4 (1.75)	VNS6B	VNS10A	63.5 (2.50)	VNS6C	VNS10B	88.9 (3.50)							
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VNS6 Series

Complete Ordering Number	End connections Inlet / Outlet	Cv	Dimensions, mm (in.)						
			L	L1	L2	B	B1	B2	B3
Orifice 4.0 (0.156)									
VNS6A-	A4T-SS 1/4 OD M Tube Fitting	0.35	61.0(2.40)	39.1(1.54)	29.5(1.16)	27.7(1.09)	9.7(0.38)	27.7(1.09)	37.6(1.48)
	A6M-SS 6mm OD M Tube Fitting		61.0(2.40)	39.1(1.54)	29.5(1.16)			27.7(1.09)	37.6(1.48)
	A8M-SS 8mm OD M Tube Fitting		61.0(2.40)	-	-			-	-
	F2N-SS 1/8 Female NPT		50.8(2.00)	32.3(1.27)	22.6(0.89)			32.5(1.28)	25.4(1.00)
	F4N-SS 1/4 Female NPT		52.3(2.06)	32.3(1.27)	22.6(0.89)			32.5(1.28)	25.4(1.00)
	M4N-SS 1/4 Male NPT		50.8(2.00)	35.1(1.38)	25.4(1.00)			27.7(1.09)	25.4(1.00)
	MF4N-SS 1/4 Male to Female NPT		51.6(2.03)	32.3(1.27)	22.6(0.89)			32.5(1.28)	25.4(1.00)
SW4T-SS 1/4 Tube SW	46.2(1.82)	31.8(1.25)	22.4(0.88)	27.7(1.09)	30.2(1.19)				
Orifice 6.4 (0.25)									
VNS6B-	A6T-SS 3/8 OD M Tube Fitting	0.86	71.9(2.83)	45.5(1.79)	32.8(1.29)	34.0(1.34)	12.7(0.50)	31.0(1.22)	42.2(1.66)
	A8T-SS 1/2 OD M Tube Fitting		77.2(3.04)	48.3(1.90)	35.6(1.40)			34.0(1.34)	41.9(1.65)
	A10M-SS 10mm OD M Tube Fitting		72.4(2.85)	45.7(1.80)	33.0(1.30)			34.3(1.35)	39.4(1.55)
	A12M-SS 12mm OD M Tube Fitting		77.2(3.04)	48.3(1.90)	35.6(1.40)			34.0(1.34)	41.9(1.65)
	F4N-SS 1/4 Female NPT		57.2(2.25)	38.1(1.50)	25.4(1.00)			37.3(1.47)	28.4(1.12)
	F6N-SS 3/8 Female NPT		57.2(2.25)	38.1(1.50)	25.4(1.00)			37.3(1.47)	28.4(1.12)
	SW6T-SS 3/8 Tube SW		57.2(2.25)	38.1(1.50)	25.4(1.00)			34.0(1.34)	31.8(1.25)
	SW8T-SS 1/2 Tube SW		57.2(2.25)	38.1(1.50)	25.4(1.00)			35.6(1.40)	25.4(1.00)
SW4P-SS 1/4 Pipe SW	57.2(2.25)	38.1(1.50)	25.4(1.00)	37.3(1.47)	28.4(1.12)				
Orifice 11.1 (0.437)									
VNS6C-	A8T-SS 1/2 OD M Tube Fitting	2.1	99.6(3.92)	60.2(2.37)	42.7(1.68)	46.2(1.82)	15.7(0.62)	47.8(1.88)	52.8(2.08)
	A12T-SS 3/4 OD M Tube Fitting	2.4	99.6(3.92)	60.2(2.37)	42.7(1.68)	46.2(1.82)	15.7(0.62)	47.8(1.88)	52.8(2.08)
	A16T-SS 1 OD M Tube Fitting	2.4	104.0(4.09)	-	-	47.8(1.88)	17.5(0.69)	-	-
	A12M-SS 12mm OD M Tube Fitting	1.9	99.6(3.92)	60.2(2.37)	42.7(1.68)	46.2(1.82)	15.7(0.62)	47.8(1.88)	52.8(2.08)
	F8N-SS 1/2 Female NPT	2.4	79.2(3.12)	50.8(2.00)	33.3(1.31)	46.2(1.82)	15.7(0.62)	50.8(2.00)	39.6(1.56)
	F12N-SS 3/4 Female NPT	2.4	82.6(3.25)	-	-	48.5(1.91)	19.8(0.78)	-	-
	F16N-SS 1 Female NPT	2.4	91.9(3.62)	-	-	54.1(2.13)	25.4(1.00)	-	-
	MF8N-SS 1/2 Male to Female NPT	1.9	79.2(3.12)	50.8(2.00)	33.3(1.31)	46.2(1.82)	15.7(0.62)	50.8(2.00)	39.6(1.56)
	MF12N-SS 3/4 Male to Female NPT	1.9	82.6(3.25)	-	-	48.5(1.91)	19.8(0.78)	-	-
	MF16N-SS 1 Male to Female NPT	1.9	91.9(3.62)	-	-	54.1(2.13)	25.4(1.00)	-	-
	SW8T-SS 1/2 Tube SW	2.2	79.2(3.12)	50.8(2.00)	33.3(1.31)	46.2(1.82)	15.7(0.62)	47.8(1.88)	42.9(1.69)
	SW12T-SS 3/4 Tube SW	2.2	79.2(3.12)	-	-	46.2(1.82)	15.7(0.62)	-	-
	SW8P-SS 1/2 Pipe SW	2.4	79.2(3.12)	50.8(2.00)	33.3(1.31)	47.8(1.88)	17.5(0.69)	50.8(2.00)	39.6(1.56)

VNS10 Series

Complete Ordering Number	End connections Inlet / Outlet	Orifice	Cv	Dimensions, mm (in.)					
				L	B	B1	P	T	H
VNS10A-	A4T-SS 1/4 OD M Tube Fitting	4.0 (0.156)	0.35	71.6 (2.82)	34.0 (1.34)	12.7 (0.50)	20.6 (0.81)	Max. 6.4 (1/4)	78.1 (3.03)
	F2N-SS 1/8 Female NPT								
	F4N-SS 1/4 Female NPT								
	M4N-SS 1/4 Male NPT								
MF4N-SS 1/4 Male to Female NPT									
VNS10B-	F4N-SS 1/4 Female NPT	4.0 (0.156)	0.86	79.5 (3.13)	46.0 (1.81)	16.0 (0.63)	26.9 (1.06)	108 (4.27)	
	M8N-SS 1/2 Male NPT			82.6 (3.25)	48.2 (1.90)	19.8 (0.78)		111 (4.36)	
	F8N-SS 1/2 Female NPT								
MF8N-SS 1/2 Male NPT									

Ordering Information

Select an applicable valve pattern, options and body material from the designator table below.

Step 1. Select the desired valve complete ordering number.

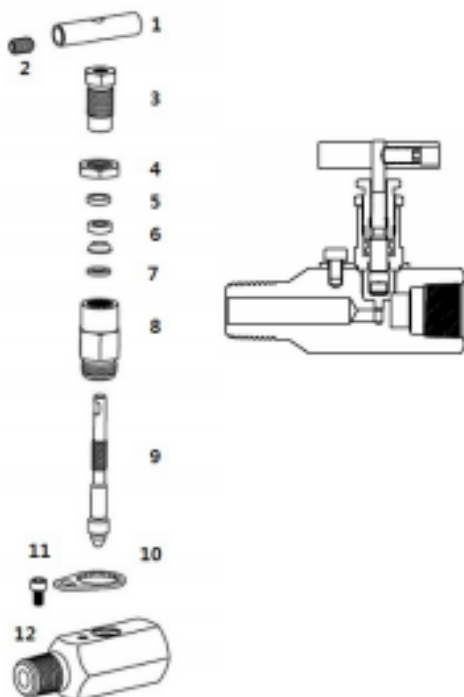
Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7
VNS6B-A6T-SS	*	*	VNS6B-A6T-GF-SS	*	VNS6B-A6T-GF-SG-SS	VNS6B-A6T-GF-SG-C276
VNS6C-F8N-SS	VNS6CS-F8N-SS	VNS6CS-F8N-A-SS	*	VNS6CS-F8N-A-AH-SS	*	*

Designator Table

Step 2 Optional Stem Tip	Step 3 Flow Pattern	Step 4 Packing Material
<ul style="list-style-type: none"> Nil: Standard Vee Tip S: Optional Spring-Loaded Alloy Tip Applicable to VNS6B & VNS6C Series 	<ul style="list-style-type: none"> Nil: Straight Pattern A: Angle Pattern 	<ul style="list-style-type: none"> Nil: Standard PTFE GF: Optional Graphite
Step 5 Handle Option	Step 6 Sour Gas Service	Step 7 Body Material
<ul style="list-style-type: none"> Nil: Standard Stainless Bar Handle AH: Black-anodized aluminum Handle 	<ul style="list-style-type: none"> SG 	<ul style="list-style-type: none"> SS: Stainless Steel 316 C276: Hastelloy C276

VNH10 Series Bonnet Needle Valves

Working Pressure 10 000psig (689 bar) @100° F (37° C)



Materials of Construction

Components	Valve Body Material	
	Stainless Steel	Steel
	Material Grade / ASTM Standard	
1 Bar Handle	SS316 / A276	
2 Set Screw	Phosphated Steel	
3 Packing Bolt	SS316 / A276	Steel S45C/ JIS G4051 White Zinc plated
4 Locking Nut	SS316/A276	
5 Upper Gland	SS316/A276	
6 Packing	Standard Chevron PTFE / D1710 Optional Grafoil®	
7 Lower Gland	SS316/A276	
8 Bonnet	SS316/A276	Steel S45C/ JIS G4051 White Zinc plated
9 Non-Rotating Stem Tip	Hard Chrome-plate SS316/A276	SS316/A276
10 Locking Plate	Stainless Steel	
11 Locking Bolt	Stainless Steel	
12 Hex Body	SS316 / A276	White Zinc plated Steel Gr.60-90/A675 Steel S45C/ JIS G4051

Features

Stem Back Seating Design <ul style="list-style-type: none"> Provides positive back stop and back seating in valve full open position. Prevents stem blowout. In valve in full open position, prevents a leakage through the bonnet when packing fails. 	Roll Stem Threads and hard-chrome plated <ul style="list-style-type: none"> Enhances cycle life. Low torque actuation.
Packing Below Stem Threads Isolates stem threads from system fluid and lubricant washout.	Non-Rotating Vee Stem <ul style="list-style-type: none"> Ensures repetitive leak-tight shutoff. Protects the valve seat from damage.
Two-Piece Chevron PTFE Packing Provides maximum sealing over stem.	Packing Bolt Permits external packing adjustment ,maintaining the valve in-line.
Sturdy Locking Plate Holds the bonnet valve to the body at the factory-fastened level.	