



Union Bonnet Needle Valves

SUNV Series

Features

- Panel mountable
- Non-rotating stem tips
- Variety of stem tips
- Variety of End Connections
- Straight and Angle flow patterns
- Each and every valve is tested at the factory



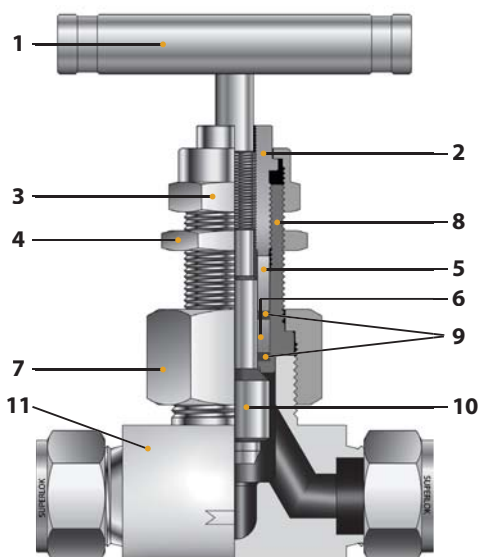
Specifications

Pressure rating	6000psig (413 bar) @100°F(38°C)
Temperature rating	-65 to 450°F (-54 to 232 °C) with PTFE packing and up to 1200°F(648°C) with Grafoil packing
Body material	316 stainless steel, alloy 400 and Alloy C-276
Orifice	0.156" to 0.437" (4.0mm to 11.1mm)

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	Alloy C-276	
1	Bar Handle	SS316 / A276			
	Set Screw	Stainless Steel			
2	Packing Bolt	SS316 / A276			
3	Packing Nut	SS316 / A276 or A479			
4	Panel Nut	SS316 / A276			
5	Packing Gland	SS316 / A276	Alloy R-405 / B164	Alloy C-276 / B574	
*6	Packing	PTFE			
7	Union Nut	SS316 / A276			
*8	Bonnet	SS316 / A479	Alloy R-405 / B164	Alloy C-276 / B574	
*9	Packing Supports	Glass-filled PTFE			
*10	STEM	Vee Tip	SS316 / A276	Alloy R-405 / B164	Alloy C-276 / B574
		Ball Tip			
		Soft Tip			
		Regulating			
*11	Body	SS316 / A479	Alloy R-400 / B164	Alloy C-276 / B574	

*Wetted components are marked "W"

SUNV Series

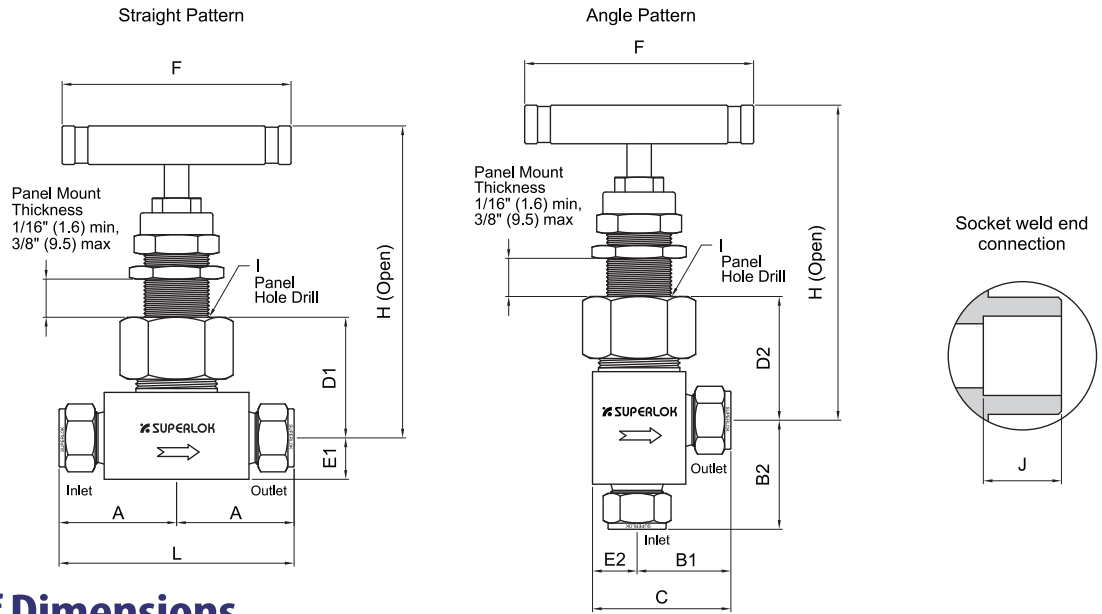


Table of Dimensions

Order Number		Orifice (mm)	Cv	End Connections		Dimensions (mm)																												
Series	Part No.			Inlet	Outlet	L	A	B1	B2	C	D1	D2	E1	E2	F	I	H Straight	H Angle	J															
LOK-SUNV1	F	2N	4.0	0.35	1/8" Female NPT		50.8	25.4	23.0	32.9	27.8	9.9	9.9	45.0	15.1	77.8	82.6	-																
	F	4N			1/4" Female NPT		52.4	26.2																										
	M	4N			1/4" Male NPT		50.8	25.4	25.4	35.3																								
	MF	4N			1/4" Male NPT	1/4" Female NPT	52.4	26.2	23.0	32.9																								
	S	6M			6mm SUPERLOK		62.0	31.0	29.4	37.3									39.3															
	S	4			1/4" SUPERLOK		46.0	23.0	22.3	30.2									32.2	27.8	77.8	7.2												
	SW	4T			1/4" Tube Socket Weld																													
	S	8M			8mm SUPERLOK		62.0	31.0	29.4	37.3									39.3	-														
LOK-SUNV2	F	4N	6.4	0.86	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	-														
	F	6N			3/8" Female NPT		73.0	36.5	33.3	39.7	46.1										34.2	93.7												
	S	10M			10mm SUPERLOK																													
	S	6			3/8" SUPERLOK		77.8	38.9	35.7	42.1	48.4										31.0	90.5												
	S	12M			12mm SUPERLOK																													
	S	8			1/2" SUPERLOK		57.2	28.6	25.4	28.6	38.1										37.3	96.9	9.6											
	SW	4P			1/4" Pipe Socket Weld																													
	SW	6T			3/8" Tube Socket Weld		93.7	8.0																										
	SW	8T			1/2" Tube Socket Weld				95.3	9.6																								
LOK-SUNV3	F	8N	11.0	2.2	1/2" Female NPT		79.4	39.7	33.3	39.7	50.8	46.0	50.8	15.9	17.5	89.0	26.2	121.5	126.2	-														
	F	12N			3/4" Female NPT		82.6	41.3	-	-	-	48.4	-	19.9	-			123.9	-															
	F	16N			1" Female NPT		92.0	46.0	-	-	-	54.0	-	25.4	-			129.4	-															
	MF	8N			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															
	MF	12N			3/4" Male NPT	3/4" Female NPT	82.6	41.3	-	-	-	48.4	-	19.9	-			123.9	-															
	MF	16N			1" Male NPT	1" Female NPT	92.0	46.0	-	-	-	54.0	-	25.4	-			129.4	-															
	S	12M			12mm SUPERLOK		100.0	50.0	43.7	53.2	61.2	46.0	47.6	15.9	17.5			-	-		121.5	123.1												
	S	8			1/2" SUPERLOK																													
	S	12			3/4" SUPERLOK																													
	S	16			1" SUPERLOK																													
	SW	8P			1/2" Pipe Socket Weld		79.4	39.7	33.3	39.7	50.8	47.6	50.8	17.5	-			-	123.1		126.2	9.6												
	SW	8T			1/2" Tube Socket Weld																													
	SW	12T			3/4" Tube Socket Weld																		-	-	-	-	46.0	-	15.9	-	-	121.5	123.1	11.1
	SW	12T			3/4" Tube Socket Weld																													

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

Technical Data

Temperature and Pressure Rating

Body Material	Stem	Temperature Rating	Pressure Rating @ -65°F ~ 100°F (-54°C ~ 38°C)
SS316	NR-Vee, NR-Ball & Regulating	-65°F ~ 450°F (-54 °C ~ 232 °C)	6000 psig (413 bar)
	NR-Soft Seat(Kel-F)	-65°F ~ 200°F (-54 °C ~ 93 °C)	
Alloy 400	NR-Vee, NR-Ball & Regulating	-65°F ~ 450°F (-54 °C ~ 232 °C)	5000 psig (345 bar)
	NR-Soft Seat(Kel-F)	-65°F ~ 200°F (-54 °C ~ 93 °C)	
Alloy C-276	NR-Vee, NR-Ball & Regulating	-65°F ~ 450°F (-54 °C ~ 232 °C)	6000 psig (413 bar)
	NR-Soft Seat(Kel-F)	-65°F ~ 200°F (-54 °C ~ 93 °C)	

*NR : Non-Rotating * 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	Alloy C-276	
-65°F (-54 °C) to	100°F (38 °C)	6000psig (413bar)	5000psig (345bar)	6000psig (413bar)
	200°F (93 °C)	5160psig (355bar)	4400psig (303bar)	6000psig (413bar)
	300°F (148 °C)	4660psig (321bar)	4120psig (283bar)	6000psig (413bar)
	350°F (176 °C)	4470psig (308bar)	4050psig (279bar)	5975psig (411bar)
	400°F (204 °C)	4280psig (294bar)	3980psig (274bar)	5880psig (405bar)
	450°F (232 °C)	4130psig (284bar)	3970psig (273bar)	5710psig (393bar)

Packing and Body materials vs Temperature and Pressure Rating

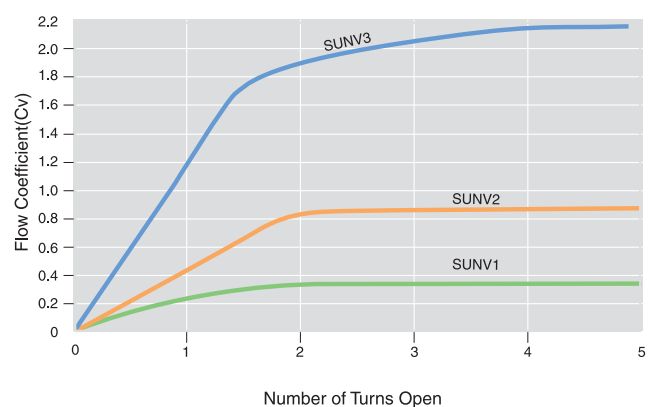
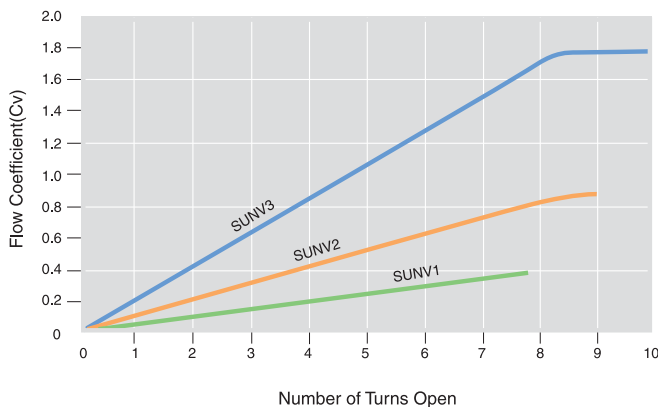
Packing Material	Body Material	Temperature Rating	Pressure Rating @ Max. Temperature
PTFE (Standard)	SS316	-65°F ~ 450°F (-54 °C ~ 232 °C)	4130 psig (284 bar)
	Alloy 400		3970 psig (273 bar)
	Alloy C-276		5710 psig (393 bar)
PEEK	SS316	-65°F ~ 600°F (-54 °C ~ 315 °C)	3760 psig (259 bar)
	Alloy 400	-65°F ~ 500°F (-54 °C ~ 260 °C)	3960 psig (272 bar)
	Alloy C-276	-65°F ~ 600°F (-54 °C ~ 315 °C)	5040 psig (347 bar)
Grafoil	SS316	-65°F ~ 1200°F (-54 °C ~ 648 °C)	1715 psig (118 bar)
	Alloy 400	-65°F ~ 500°F (-54 °C ~ 260 °C)	3960 psig (272 bar)
	Alloy C-276	-65°F ~ 1200°F (-54 °C ~ 648 °C)	1545 psig (106 bar)

*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.
- Optional anodized black aluminum bar handles are available.

Ordering Information

LOK-SUNV1 - MS - 4N - 4 - AH - A - GRBT - SS

1
2
3
4
5
6
7
8

1. Valve Series

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

2. Port Type (Inlet x Outlet)

- S : SUPERLOK Tube Fitting
- M : Male Pipe Thread
- F : Female Pipe Thread
- SW : Socket Weld
- 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 : 316 Stainless Steel Bar Handle (Standard)
- AH : Anodized Black aluminum bar handle

5. Flow Pattern

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

6. Packing Material

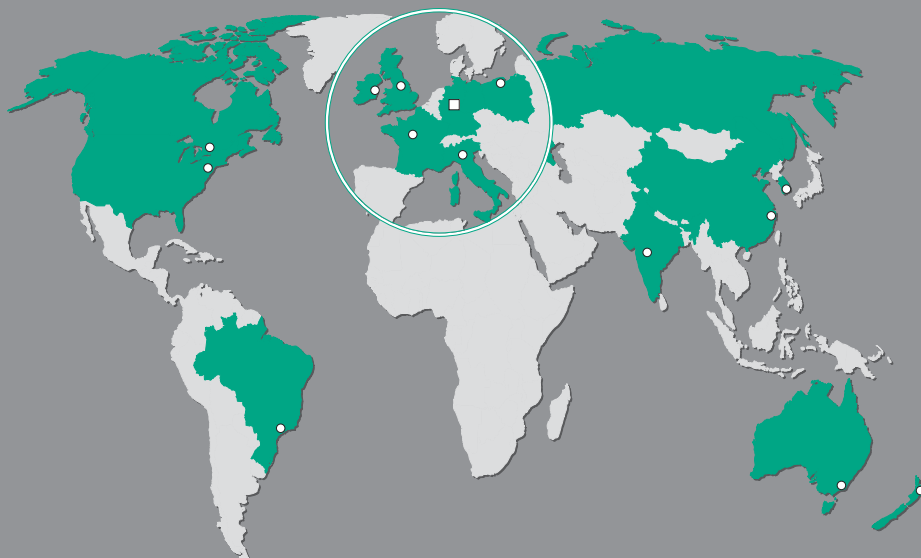
- Nil : PTFE (Standard)
- PE : PEEK
- GR : Grafoil

7. Stem Tip

- Nil : Non-Rotating Vee (Standard)
- RT : Regulating
- BT : Non-Rotating Ball
- ST : Non-Rotating Soft Seat

8. Body Material

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


AUSTRALIA

STAUFF Corporation Pty. Ltd.
P. O. Box 227
Unanderra, NSW, 2526
24-26 Doyle Avenue
Unanderra, Wollongong, NSW, 2526
Tel.: +61 2 4271 18 77
Fax: +61 2 4271 84 32
sales@stauff.com.au

BRAZIL

STAUFF Brasil Ltda.
Avenida Gupê 10767
Galpão 2 - Bloco A
Barueri - São Paulo
CEP 06422-120
Tel.: +55 11 47 72 72 00
Fax: +55 11 47 72 72 10
stauff@stauffbrasil.com

CANADA

STAUFF Canada Ltd.
866 Milner Avenue
Scarborough
Ontario M1B 5N7
Tel.: +1 416 282 46 08
Fax: +1 416 282 30 39
sales@stauffcanada.com

CHINA

STAUFF International Trading
(Shanghai) Co., Ltd.
No. 41-42, Lane 369, Chuang Ye Road
Jushuo Industrial Zone, Kang Qiao
Shanghai, 201319
Tel.: +86 21 68 18 70 00
Fax: +86 21 68 18 71 36
info@stauff.com.cn

FRANCE

STAUFF S.A.S.
230, Avenue du Grain d'Or
Z.I. de Vineuil - Blois Sud
41354 Vineuil-cedex
Tel.: +33 2 54 50 55 50
Fax: +33 2 54 42 29 19
direction@stauffsa.com

INDIA

STAUFF India Pvt. Ltd.
Gat. No. 2340
Pune Nagar Road, Wagholi
Pune, 412207
Tel.: +91 20 6620 2473
Fax: +91 20 2705 1567
sales@stauffindia.com

ITALY

STAUFF Italia s.r.l.
Viale Nuova Valassina 78
angolo Via Baragiola sn
20033 Desio (MI)
Tel.: +39 0362 63 80 70
Fax: +39 0362 63 80 69
sales@stauff.it

IRELAND

STAUFF Ireland Ltd.
Unit B3
Weatherwell Business Park
Clondalkin
Dublin 22
Tel.: +353 1457 4936
Fax: +353 1467 0687
sales@stauff.ie

KOREA

STAUFF Korea Ltd.
1500-12, Dadae-Dong
Saha-Ku
Pusan, 604-826
Tel.: +82 51 266 6666
Fax.: +82 51 266 8866
info@stauff.co.kr

NEW ZEALAND

STAUFF Corporation (NZ) Ltd.
P. O. Box 58517
Greenmount, Auckland
Unit D, 103 Harris Road
East Tamaki, Auckland
Tel.: + 64 9 271 48 12
Fax: + 64 9 271 48 32
info@stauff.co.nz

POLAND

STAUFF Polska Sp. z o.o.
Miszewko 43 A
80-297 Banino
Tel.: +48 58 660 11 60
Fax: +48 58 629 79 52
sales@stauff.pl

RUSSIAN FEDERATION

STAUFF LLC
Office 205, Building 7
Scharikopodschipnikovskaya 11
Moscow, 115088
Tel.: +7 495 987 36 29
+7 495 223 89 61
Fax: +7 495 679 90 48
sales@stauff.ru

UNITED KINGDOM

STAUFF UK
Unit B3
500, Carlisle Street East
Off Downgate Drive
Sheffield, S4 8BS
Tel.: +44 114 251 85 18
Fax: +44 114 251 85 19
sales@stauff.co.uk

UNITED STATES

STAUFF Corporation
7 Wm. Demarest Place
Waldwick, 07463-1542
New Jersey
Tel.: +1 201 444 78 00
Fax: +1 201 444 78 52
sales@stauffusa.com

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distributors in all industrial
countries.

GERMANY
WALTER STAUFFENBERG GmbH & Co. KG

P. O. Box 1745
D-58777 Werdohl
Im Ehrenfeld 4
D-58791 Werdohl
Tel.: +49 23 92 916-0
Fax: +49 23 92 2505
filtrationtechnology@stauff.com
www.stauff.com