

Union Bonnet Needle Valves

SUNV Series

Features

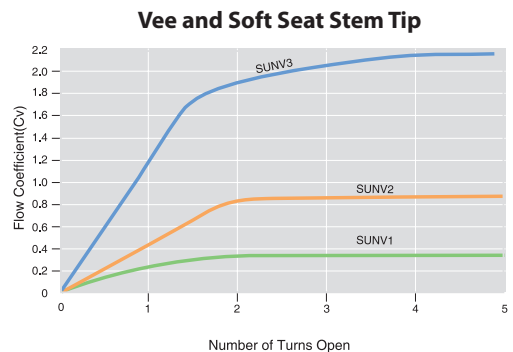
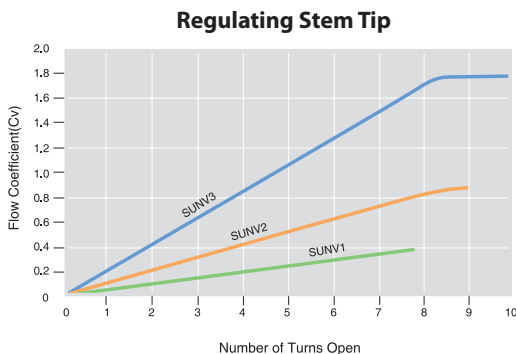
- Compact design
- Low operating torques
- Panel mountable
- Straight and angle flow patterns
- Non rotating vee stem tip
- Three stem type are available



Specifications

Temperature Ratings	PCTFE Stem Tip	: -65°F to 200°F (-53°C to 93°C)				
	PTFE Packing	: -65°F to 450°F (-53°C to 232°C)				
	PEEK Packing	: -65°F to 600°F (-53°C to 315°C)				
	Graphite Packing	: -65°F to 1200°F (-53°C to 648°C)				
Orifice Size	From 0.156" to 0.437" (4mm to 11mm)					
Flow Coefficients (Cv)	From 0.35 to 2.2					
End Connection Size	From 1/4" to 1" , 6mm to 25mm					
Pressure - Temperature Ratings						
Material Group	2.2	3.4	3.1	3.5	3.8	
Material	316 SS	Alloy 400	Alloy 20	Alloy 600	Alloy C-276	
Temperature, °F(°C)	Working Pressure, psig (bar)					
-20 (-28) to 100 (37)	6000 (413)	5000 (344)	5000 (344)	6000 (413)	6000 (413)	
200 (93)	5160 (355)	4400 (303)	4640 (319)	5600 (385)	6000 (413)	
250 (121)	4910 (338)	4260 (293)	4500 (310)	5460 (376)	6000 (413)	
300 (148)	4660 (321)	4120 (283)	4360 (300)	5320 (366)	6000 (413)	
350 (176)	4470 (307)	4050 (279)	4185 (288)	5220 (359)	5975 (411)	
400 (204)	4280 (294)	3980 (274)	4010 (276)	5120 (352)	5880 (405)	
450 (232)	4130 (284)	3970 (273)	3955 (272)	5030 (346)	5710 (393)	
500 (260)	3980 (274)	3960 (272)	3900 (268)	4940 (340)	5540 (381)	
600 (315)	3760 (259)	-	3790 (261)	4780 (329)	5040 (347)	
650 (343)	3700 (254)	-	3750 (258)	4700 (323)	4905 (337)	
700 (371)	3600 (248)	-	3710 (255)	4640 (319)	4730 (325)	
750 (398)	3520 (242)	-	3665 (252)	4430 (305)	4430 (305)	
800 (426)	3460 (238)	-	3600 (248)	4230 (291)	4230 (291)	
850 (454)	3380 (232)	-	-	4060 (279)	4060 (279)	
900 (482)	3280 (225)	-	-	3745 (258)	3745 (258)	
950 (510)	3220 (221)	-	-	2725 (187)	3220 (221)	
1000 (537)	3030 (208)	-	-	1800 (124)	3030 (208)	
1050 (565)	3000 (206)	-	-	1155 (79.5)	3000 (206)	
1100 (593)	2685 (184)	-	-	770 (53.0)	2685 (184)	
1150 (621)	2285 (157)	-	-	565 (38.9)	2285 (157)	
1200 (648)	1715 (118)	-	-	515 (35.4)	1715 (118)	

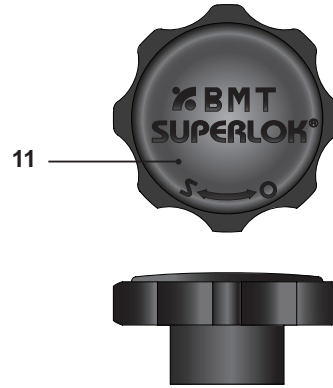
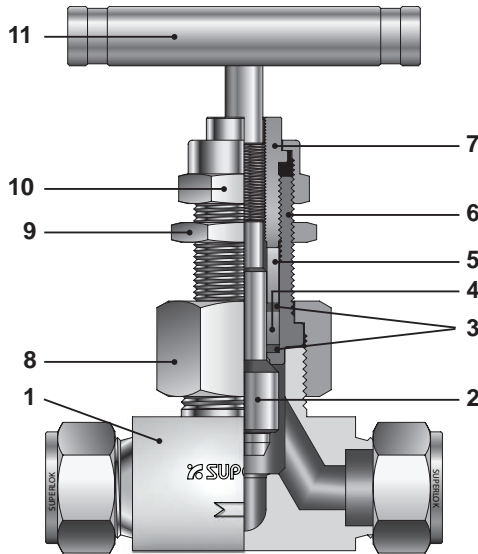
Flow Data at 100°F (37°C)



Materials of Construction

Testing

- Each and every Valve is tested with nitrogen at 1000psig (69bar).
- Valve have max allowable leak rate of 0.1 cm³/min.
- Shell testing is performed on demand.



Round knob handle

No.	Component	Material		
		Stainless Steel	Alloy 400	Alloy C-276
*1	Body	ASTM A479 Type316	ASTM B164	ASTM B574
	Non rotating vee stem	ASTM A276 Type316	ASTM B164	ASTM B574
*2	Regulating stem	ASTM A276 Type316	ASTM B164	ASTM B574
	Soft seat stem	ASTM A276 Type316 + PCTFE	ASTM B164 + PCTFE	ASTM B574 + PCTFE
*3	Packing support	Glass filled PTFE	Glass filled PTFE	Glass filled PTFE
*4	Packing	PTFE	PTFE	PTFE
5	Packing gland	ASTM A276 Type316	ASTM B164	ASTM B574
*6	Bonnet	ASTM A276 Type316	ASTM B164	ASTM B574
7	Packing bolt	ASTM A276 Type316	ASTM A276 Type316	ASTM A276 Type316
8	Union nut	ASTM A276 Type316	ASTM A276 Type316	ASTM A276 Type316
9	Panel nut	ASTM A276 Type316	ASTM A276 Type316	ASTM A276 Type316
10	Packing nut	ASTM A276 Type316	ASTM A276 Type316	ASTM A276 Type316
11	Bar handle	Stainless Steel		
	Round knob handle	Phenolic with brass insert		
	Set screw	Stainless Steel		

Wetted components are marked " * ".

Stem Type

Non Rotating Vee Stem



Regulating Stem



Soft Seat Stem



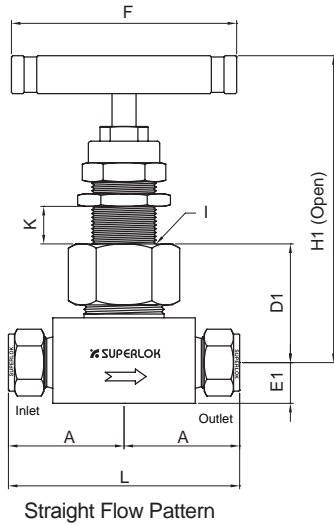
Packing

PTFE packing is standard. PEEK and Graphite packing is optional.

Handle

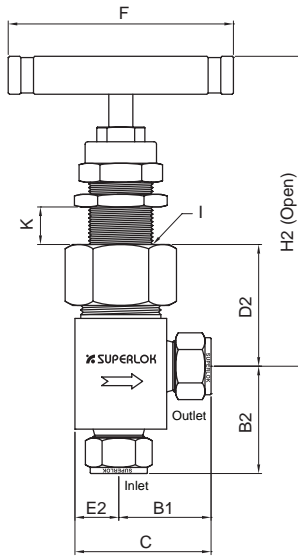
- 316 stainless steel, alloy 400 and alloy C-276 body valve - Stainless steel bar handles are standard.
- Black round knob handles are optional. (SUNV1 and SUNV2 Series)
- Anodized black aluminum bar handles are optional.

SUNV Series



Straight Flow Pattern

SUNV A Series



Angle Flow Pattern

- I : Panel Hole Drill
- J : Socket weld end connection depth
- K : Panel Mount Thickness
1/16" (1.6) min, 3/8" (9.5) max

Table of Dimensions

Part Number	Orifice	Cv	End Connections		Dimensions																	
			Inlet	Outlet	L	A	B1	B2	C	D1	D2	E1	E2	F	I	H1	H2	J				
SUNV1	S4	4.0	0.35	1/4" SUPERLOK		62.0	31.0	29.4	37.3	38.9	27.8	27.8	9.9	9.9	45.0	15.1	77.8	77.8				
	S6M			6mm SUPERLOK		62.0	31.0	29.4	37.3	38.9		27.8								77.8		
	S8M			8mm SUPERLOK		62.0	31.0	29.4	37.3	38.9		27.8								77.8		
	M4N			1/4" Male NPT		50.8	25.4	25.4	25.4	35.0		32.6								82.6	-	
	F2N			1/8" Female NPT		50.8	25.4	23.0	25.4	32.6		32.6								82.6	-	
	F4N			1/4" Female NPT		52.4	26.2	23.0	25.4	32.6		32.6								82.6	-	
	M4N-F4N			1/4" Male NPT	1/4" Female NPT	52.4	26.2	23.0	25.4	32.6		32.6								82.6	-	
	SW4T			1/4" Tube Socket Weld		46.0	23.0	22.3	30.2	31.8		27.8								77.8	7.2	
SUNV2	S6	6.0	0.86	3/8" SUPERLOK		73.0	36.5	32.5	42.9	45.3	34.1	31.0	12.7	12.7	64.0	19.9	93.7	96.9	8.0	9.6		
	S8			1/2" SUPERLOK		77.8	38.9	34.9	42.1	47.6		34.2									93.7	
	S10M			10mm SUPERLOK		73.0	36.5	33.3	39.7	46.1		34.2									93.7	
	S12M			12mm SUPERLOK		77.8	38.9	35.7	42.1	48.4		34.2									93.7	
	F4N			1/4" Female NPT		57.2	28.6	25.4	28.6	38.1		37.3									96.9	
	F6N			3/8" Female NPT		57.2	28.6	25.4	25.4	38.1		37.3									96.9	
	SW6T			3/8" Tube Socket Weld		57.2	28.6	25.4	28.6	38.1		37.3									93.7	8.0
	SW8T			1/2" Tube Socket Weld		57.2	28.6	25.4	25.4	38.1		35.7									95.3	9.6
	SW4P			1/4" Pipe Socket Weld		57.2	28.6	25.4	28.6	38.1		37.3									96.9	9.6
SUNV3	S8	11.0	2.2	1/2" SUPERLOK		100.0	50.0	43.7	53.2	61.1	46.0	47.6	15.9	17.5	89.0	26.2	121.5	123.1				
	S12			3/4" SUPERLOK		100.0	50.0	43.7	53.2	61.1	46.0	47.6	15.9	17.5			121.5	123.1				
	S16			1" SUPERLOK		100.0	50.0	-	-	-	47.6	-	17.5	-			123.1	-				
	S12M			12mm SUPERLOK		100.0	50.0	-	-	-	46.0	-	15.9	-			121.5	-				
	F8N			1/2" Female NPT		79.4	39.7	33.3	39.7	50.8	46.1	50.8	15.9	17.5			121.5	126.2				
	F12N			3/4" Female NPT		82.6	41.3	-	-	-	48.4	-	19.9	-			123.9	-				
	F16N			1" Female NPT		92.1	46.0	-	-	-	54.0	-	25.4	-			129.4	-				
	M8N-F8N			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				
	M12N-F12N			3/4" Male NPT	3/4" Female NPT	82.6	41.3	-	-	-	48.4	-	19.9	-			123.9	-				
	M16N-F16N			1" Male NPT	1" Female NPT	92.1	46.0	-	-	-	54.0	-	25.4	-			129.4	-				
	SW8T			1/2" Tube Socket Weld		79.4	39.7	33.3	42.9	50.8	46.0	47.6	15.9	17.5			121.5	123.1			9.6	
	SW12T			3/4" Tube Socket Weld		79.4	39.7	-	-	-	46.0	-	15.9	-			121.5	-			11.1	
	SW8P			1/2" Pipe Socket Weld		79.4	39.7	33.3	39.7	50.8	47.6	50.8	17.5	17.5			123.1	123.1			9.6	

• All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change / Dimensions based on SUPERLOK nuts finger-tight.
 • ISO Tapered Threads are available upon request.

Ordering Information

Example : **SUNV1 - M4N - S4 - RS - GR - KH - SS**

1
2 3
2 3
4
5
6
7

1. Valve Series

Straight Flow Pattern

SUNV1: Orifice 4.0mm

SUNV2: Orifice 6.4mm

SUNV3: Orifice 11.0mm

Angle Flow Pattern

SUNV1A: Orifice 4.0mm

SUNV2A: Orifice 6.4mm

SUNV3A: Orifice 11.0mm

2. End Connection Type

S : SUPERLOK Tube Fitting

M : Male Pipe Thread

F : Female Pipe Thread

SW : Socket Weld

3. End connection Size

Pipe Thread Designation

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

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	8	10	12	16	20	25
Designation	6M	8M	10M	12M	16M	20M	25M

4. Stem

Blank : Non Rotating Vee Stem (Standard)

RS : Regulating Stem

SS : Soft Seat Stem

5. Packing

Blank : PTFE Packing (Standard)

PE : PEEK Packing

GR : Graphite Packing

6. Handle

Blank : Stainless Steel Bar Handle (Standard)

KH : Black Round Knob Handle

AH : Anodized Black Aluminum Bar Handle

7. Body Material

SS : 316 Stainless Steel

M40 : Alloy 400 (Monel)

276 : Alloy C-276 (Hastelloy)

Examples

ex1) SUNV1 - S4 - 276

Straight flow pattern, Orifice 4.0mm/ Inlet: SUPERLOK 1/4" / Outlet: SUPERLOK 1/4" / Non rotating vee stem / PTFE Packing

Stainless steel bar handle / Hastelloy body

ex2) SUNV2A - SW8T - RS - GR - SS

Angle flow pattern, Orifice 6.4mm/ Inlet: 1/2"Socket weld / Outlet: 1/2" Socket weld / Regulating stem / Graphite Packing

Stainless steel bar handle / 316 Stainless steel body

ex3) SUNV3 - M12N - F8N - SS

- Straight flow pattern, Orifice 11.0mm/ Inlet: 3/4"NPT Male / Outlet: 1/2"NPT Female / Non rotating vee stem / PTFE Packing

Stainless steel bar handle / 316 Stainless steel body