

Integral Bonnet Needle Valves

SINV Series

Features

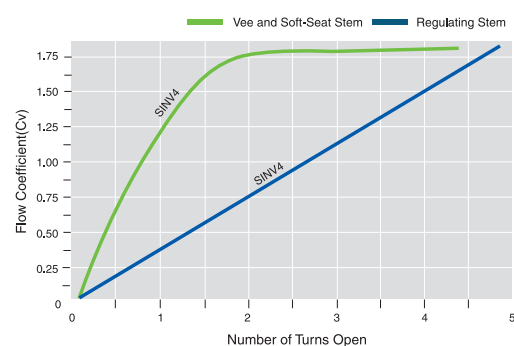
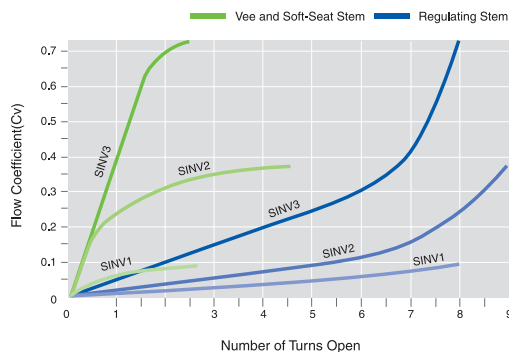
- Compact design
- Low operating torques
- Panel mountable
- Straight and angle flow patterns
- Bar and round knob handle are available
- Three stem type are available



Specifications

Temperature Ratings	316 Stainless Steel with PTFE packing : -65°F to 450°F (-53°C to 232°C)		
	316 Stainless Steel with PEEK packing : -65°F to 600°F (-53°C to 315°C)		
	Brass : -65°F to 400°F (-53°C to 204°C)		
	Alloy400 with PTFE packing : -65°F to 450°F (-53°C to 232°C)		
	Alloy400 with PEEK packing : -65°F to 500°F (-53°C to 260°C)		
	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)		
Orifice Size	From 0.08" to 0.375" (2mm to 9.5mm)		
Flow Coefficients (Cv)	From 0.09 to 1.80		
End Connection Size	From 1/8" to 3/4", 3mm to 18mm		
Pressure - Temperature Ratings			
Material Group	2.2	N/A	3.4
Material	316 SS	Brass	Alloy 400
Temperature, °F(°C)	Working Pressure, psig (bar)		
-65 (-53) to 100 (37)	5000 (344)	3000 (206)	3000 (206)
200 (93)	4295 (295)	2350 (161)	2640 (181)
250 (121)	4085 (281)	2200 (151)	2555 (176)
300 (148)	3875 (266)	2050 (141)	2470 (170)
350 (176)	3715 (255)	1470 (101)	2430 (167)
400 (204)	3560 (245)	390 (26)	2390 (164)
450 (232)	3435 (236)	-	2380 (163)
500 (260)	3310 (228)	-	2375 (163)
600 (315)	3130 (215)	-	-

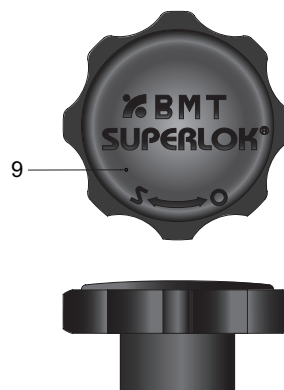
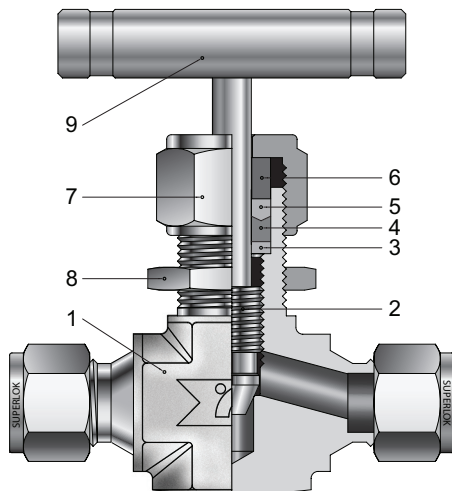
Flow Data at 100°F (37°C)



Testing

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

Materials of Construction



Round knob handle

No.	Component	Material		
		Stainless Steel	Brass	Alloy 400
*1	Body	ASTM A182 F316	ASTM B283	ASTM B564
*2	Vee stem	ASTM A276 Type316	ASTM A276 Type316	ASTM B164
	Regulating stem	ASTM A276 Type316	ASTM A276 Type316	ASTM B164
	Soft seat stem	ASTM A276 Type316 + PCTFE	ASTM A276 Type316 + PCTFE	ASTM A276 Type316 + PCTFE
*3	Packing support	ASTM A276 Type316	ASTM B16	ASTM B164
*4	Lower packing	PTFE	PTFE	PTFE
*5	Upper packing	PTFE	PTFE	PTFE
6	Packing gland	ASTM A276 Type316	ASTM B16	ASTM B164
7	Packing nut	ASTM A276 Type316	ASTM B16	ASTM B164
8	Panel nut	ASTM A276 Type316	ASTM B16	ASTM B164
9	Bar handle	ASTM A276 Type304		
	Round knob handle	Phenolic with brass insert		
	Set screw	Stainless Steel		

Wetted components are marked "*"

Stem Type

Vee Stem(Standard)	Regulating Stem	Soft Seat Stem

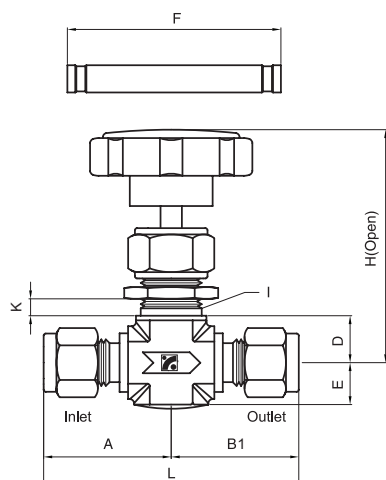
Packing

- PTFE packing is standard. PEEK packing is optional.

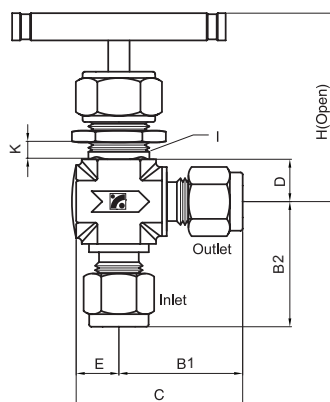
Handle

- 316 stainless steel and alloy 400 body valve - Stainless steel bar handles are standard.
- Brass body and Soft seat stem valve - Black round knob handles are standard.
- Anodized black aluminum bar handles are optional.

SINV Series


Straight Flow Pattern

SINV A Series


Angle Flow Pattern

I : Panel Hole Drill
K : Panel Mount Thickness
Min 3.17, Max 6.35

Table of dimensions

Order Number		Orifice (mm)	Cv	End Connections		Dimensions (mm)										
Series	Part No.			Inlet	Outlet	L	A	B1	B2	C	D	E	F	I	H	
SINV1	S2		2.0	0.09	1/8" SUPERLOK		49.4	24.7	24.7	24.7	32.6	11.2	7.9	32.0	11.9	55
	S3M				3mm SUPERLOK		49.4	24.7	24.7	24.7	32.6					
	M2N				1/8" Male NPT		38.1	19.1	19.1	19.1	27.0					
	F2N				1/8" Female NPT		47.8	23.9	23.9	23.9	31.8					
	M2N	S2			1/8" Male NPT	1/8" SUPERLOK	43.8	19.1	24.7	19.1	32.6					
SINV2	S4		4.4	0.37	1/4" SUPERLOK		57.4	28.7	28.7	28.7	38.4	11.2	9.7	45.0	13.5	51.5
	S6M				6mm SUPERLOK		57.4	28.7	28.7	28.7	38.4					
	S8M				8mm SUPERLOK		59.4	29.7	29.7	29.7	39.4					
	M2N				1/8" Male NPT		41.2	20.6	20.6	20.6	30.3					
	M4N				1/4" Male NPT		49.8	24.9	24.9	24.9	34.6					
	M4N	S4			1/4" Male NPT	1/4" SUPERLOK	53.6	24.9	28.7	24.9	38.4					
SINV3	S6		6.3	0.73	3/8" SUPERLOK		65.6	32.8	32.8	32.8	45.5	12.7	12.7	64.0	20.0	63.5
	S8				1/2" SUPERLOK		71.2	35.6	35.6	35.6	48.3	14.0				
	S10M				10mm SUPERLOK		66.0	33.0	33.0	33.0	45.7	12.7				
	S12M				12mm SUPERLOK		71.2	35.6	35.6	35.6	48.3	14.0				
	M6N				3/8" Male NPT		57.4	28.7	28.7	28.7	41.4	12.7				
	F4N				1/4" Female NPT		53.8	26.9	26.9	26.9	39.6	12.7				
	M4N	S6			1/4" Male NPT	3/8" SUPERLOK	61.5	28.7	32.8	28.7	45.5	12.7				
	M6N	S6			3/8" Male NPT	3/8" SUPERLOK	61.5	28.7	32.8	28.7	45.5	12.7				
	M6N	S8			3/8" Male NPT	1/2" SUPERLOK	64.3	28.7	35.6	28.7	48.3	14.0				
	M4N	F4N			1/4" Male NPT	1/4" Female NPT	55.6	28.7	26.9	28.7	39.6	12.7				
SINV4	S8		9.5	1.80	1/2" SUPERLOK		96.6	48.3	48.3	48.3	67.4	19.1	19.1	76.0	26.2	99.5
	S12				3/4" SUPERLOK											
	M8N				1/2" Male NPT											
	F6N				3/8" Female NPT		76.2	38.1	38.1	38.1	57.2					
	F8N				1/2" Female NPT											
	M8N	F8N			1/2" Male NPT	1/2" Female NPT										

* Dimensions based on **SUPERLOK** nuts finger-tight. Dimensions are reference only, subject to change.

Ordering Information

Inlet Outlet
SINV3 - M6N - S8 - RS - PE - KH - SS
1
2
3
2
3
4
5
6
7

1. Valve Series

- Straight Flow Pattern
 - SINV1 : Orifice 2.0mm
 - SINV2 : Orifice 4.4mm
 - SINV3 : Orifice 6.3mm
 - SINV4 : Orifice 9.5mm

- Angle Flow Pattern
 - SINV1A : Orifice 2.0mm
 - SINV2A : Orifice 4.4mm
 - SINV3A : Orifice 6.3mm
 - SINV4A : Orifice 9.5mm

2. End Connection Type

- S : SUPERLOK Tube Fitting
- M : Male Pipe Thread
- F : Female Pipe Thread

3. End connection Size

■ Pipe Thread Designation

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

■ Tube O.D Designation

Tube O.D (inch)	1/16	1/8	1/4	3/8	1/2	3/4
Designation	1	2	4	6	8	12

Tube O.D (mm)	3	6	8	10	12	16
Designation	3M	6M	8M	10M	12M	16M

4. Stem

- Blank : Vee Stem (Standard)
- RS : Regulating Stem
- SS : Soft Seat Stem

5. Packing

- Blank : PTFE Packing (Standard)
- PE : PEEK 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
- B : Brass
- M40 : Alloy 400 (Monel)

■ Examples

ex1) SINV2 - S4 - SS

- Straight flow pattern, Orifice 4.4mm/ Inlet: SUPERLOK 1/4" / Outlet: SUPERLOK 1/4" / Vee stem / PTFE Packing / Stainless steel bar handle / 316 Stainless steel body

ex2) SINV3A - M4N - S6 - RS - PE - KH - SS

- Angle flow pattern, Orifice 6.3mm/ Inlet: 1/4"NPT Male / Outlet: SUPERLOK 3/8" / Regulating stem / PEEK Packing / Black round knob handle / 316 Stainless steel body

ex3) SINV4 - M8N - F8N - KH - B

- Straight flow pattern, Orifice 9.5mm/ Inlet: 1/2"NPT Male / Outlet: 1/2"NPT Female / Vee stem / PTFE Packing / Black round knob handle / brass body