

Integral Bonnet Needle Valves

• SINV Series

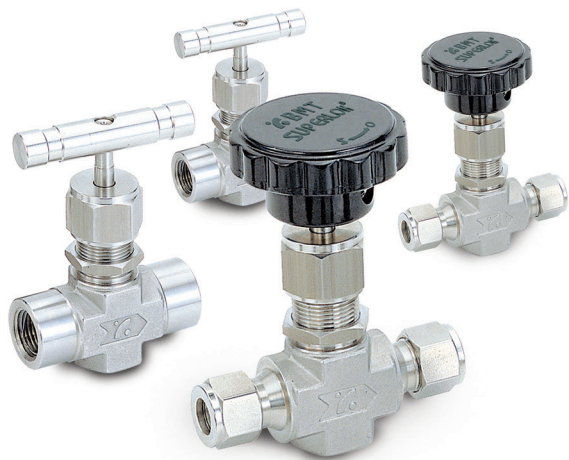


Integral Bonnet Needle Valves

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



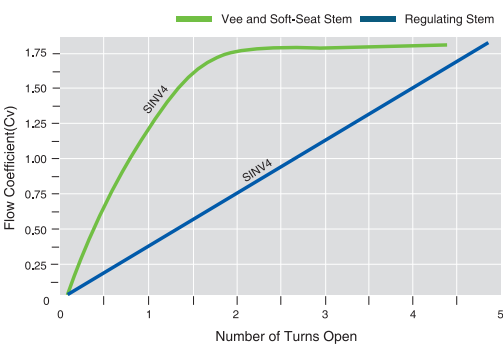
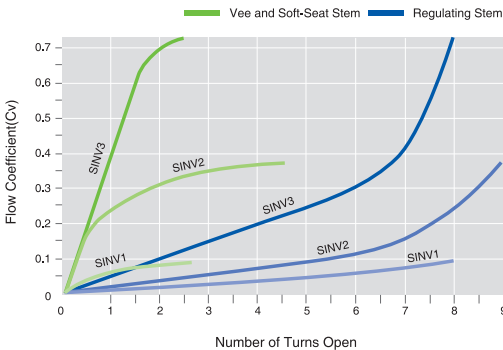
Specifications

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)
	PTFE 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 in. (2 to 9.5mm)	
Flow Coefficients (Cv)	From 0.09 to 1.80	
End Connection Size	From 1/8 to 3/4 in. 3 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)	-	-

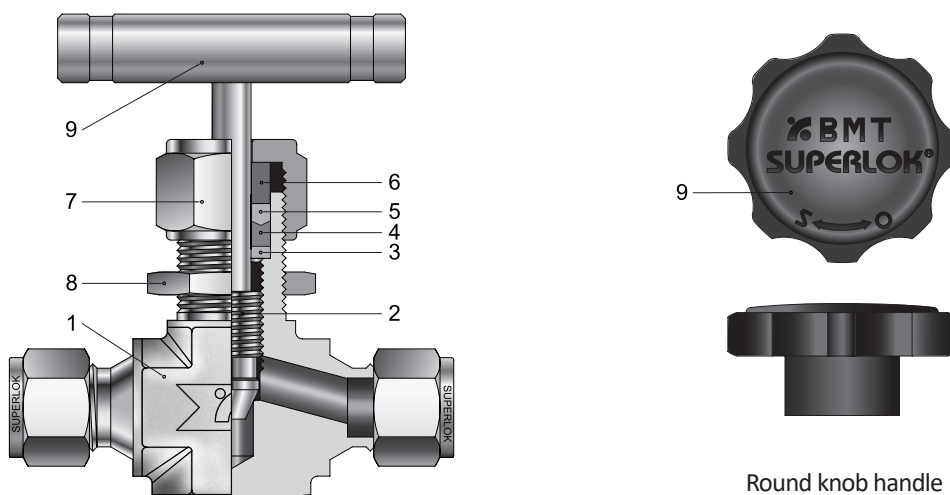
Flow Data at 100°F (37°C)



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 available upon request.

Materials of Construction



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 B164 + 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

Stem Type

Vee Stem(Standard)		Regulating Stem		Soft Seat Stem	
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Packing

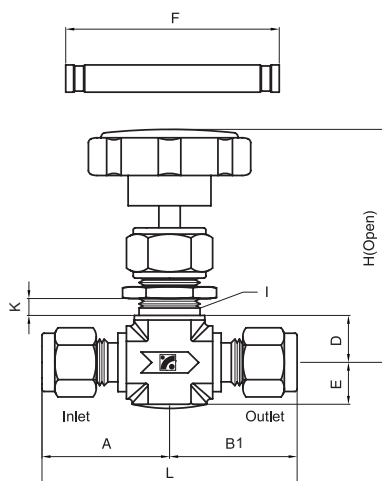
PTFE packing is standard. PEEK packing is optional.

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.

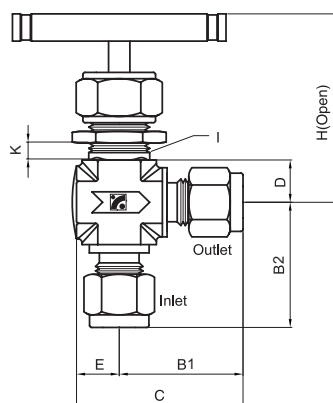
Table of Dimensions

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

Part No.		Orifice	Cv	End Connections		Dimensions									
				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
	3mm SUPERLOK			49.4	24.7	24.7	24.7	32.6							
	1/8" Male NPT			38.1	19.1	19.1	19.1	27.0							
	1/8" Female NPT			47.8	23.9	23.9	23.9	31.8							
	1/8" Male NPT			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
	6mm SUPERLOK			57.4	28.7	28.7	28.7	38.4							
	8mm SUPERLOK			59.4	29.7	29.7	29.7	39.4							
	1/8" Male NPT			41.2	20.6	20.6	20.6	30.3							
	1/4" Male NPT			49.8	24.9	24.9	24.9	34.6							
	1/4" Male NPT			53.6	24.9	28.7	24.9	38.4							
SINV3	S6	6.4	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
	1/2" SUPERLOK			71.2	35.6	35.6	35.6	48.3	14.0						
	10mm SUPERLOK			66.0	33.0	33.0	33.0	45.7	12.7						
	12mm SUPERLOK			71.2	35.6	35.6	35.6	48.3	14.0						
	3/8" Male NPT			57.4	28.7	28.7	28.7	41.4	12.7						
	1/4" Female NPT			53.8	26.9	26.9	26.9	39.6	12.7						
	1/4" Male NPT			61.5	28.7	32.8	28.7	45.5	12.7						
	3/8" Male NPT			61.5	28.7	32.8	28.7	45.5	12.7						
	3/8" Male NPT			64.3	28.7	35.6	28.7	48.3	14.0						
	1/4" Male 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
	3/4" SUPERLOK														
	1/2" Male NPT			76.2	38.1	38.1	38.1	57.2							
	3/8" Female NPT														
	1/2" Female NPT														
	1/2" Male NPT														

- Dimensions and Drawings are for reference only and are subject to change without prior notice.
- Unless otherwise specified, all dimensions are in millimeters.
- Sizes, pressure classes, and end connections not listed are available upon request.
- Dimensions shown with SUPERLOK nuts finger-tight, where applicable.

Ordering Information

Example 1 :

SINV3

-

M6N

Inlet

-

S8

Outlet

-

RS

-

PE

-

KH

1

2

3

2

3

4

5

6

Example 2 :

SINV4

-

M8N

Inlet

-

F8N

Outlet

-

KH

-

B

1

2

3

2

3

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 Designator

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

Tube O.D Designator

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

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

- ☐ (Blank) = 316 Stainless Steel
- ☐ B = Brass
- ☐ M40 = Alloy 400 (Monel)

BMT Co., Ltd.

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