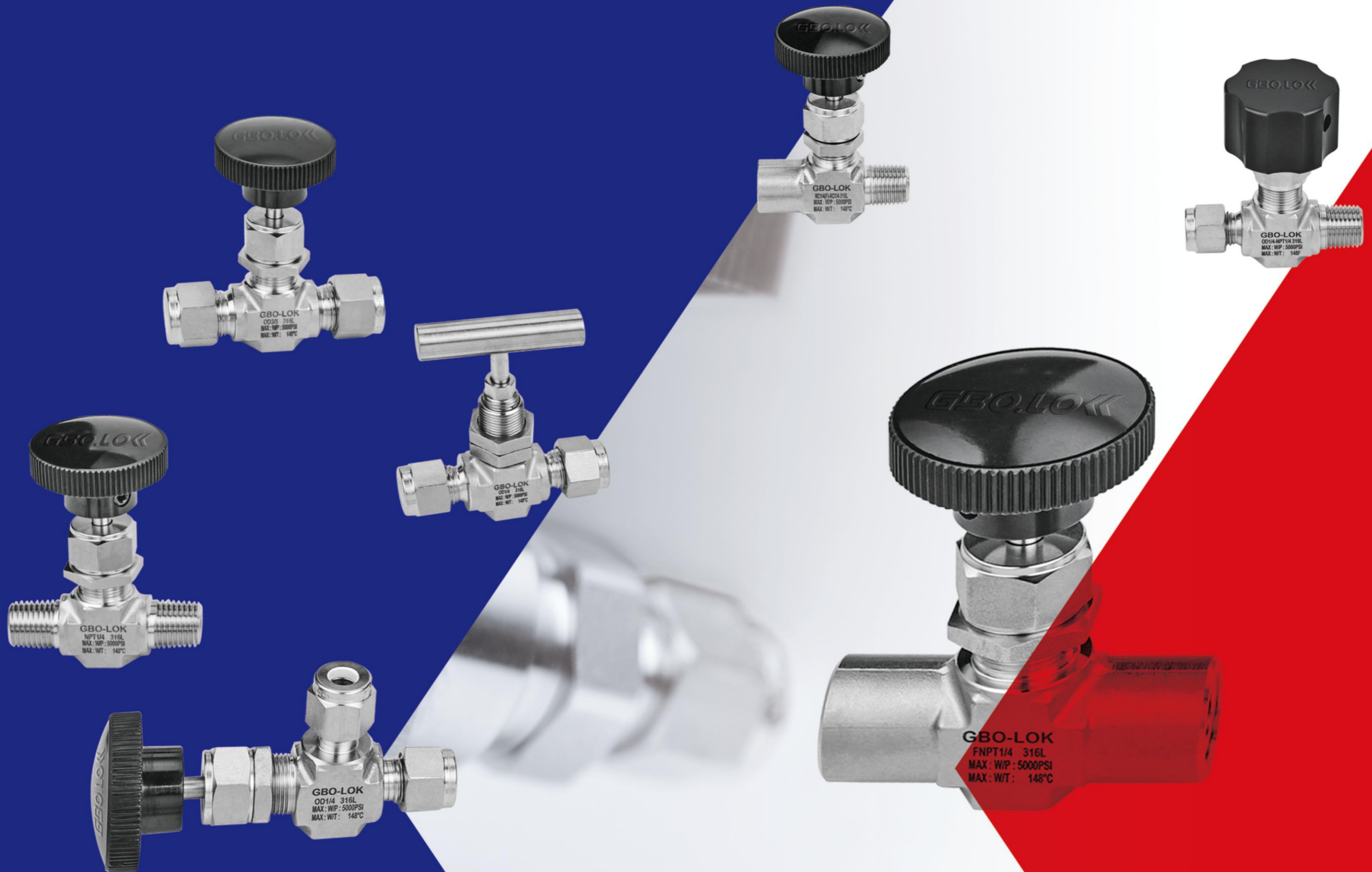


Needle Valve

GBO.LOK®



Integral valve cap needle valve

SINV Series

Feature

1. Integrated forged valve body;
2. Compact design;
3. Low operating torque;
4. Panel installation;
5. Provide options for straight through and angled designs;
6. Provide options for bar handles and circular handles;
7. Three types of valve stem options are available.



Technical Parameter

Working Temperature Range	316 stainless steel and PTFE seal: -65 ° F to 450 ° F (-53 ° C to 232 ° C)
	316 stainless steel and PEEK seal: -65 ° F to 600 ° F (-53 ° C to 315 ° C)
	Brass: -65 ° F to 400 ° F (-53 ° C to 204 ° C)
	Alloy 400 and PTFE seal: -65 ° F to 450 ° F (-53 ° C to 232 ° C)
	Alloy 400 and PEEK sealing: -65 ° F to 500 ° F (-53 ° C to 260 ° C)
	Soft seat valve stem with PCTFE stem tip: -65 ° F to 200 ° F (-53 ° C to 93 ° C)
Path Diameter	0.08" to 0.375"(2mm to 9.5mm)
	0.09 to 1.80
Flow Coefficient (Cv)	0.09 to 1.80
End Connection Specs	1/8" to 3/4", 3mm to 18mm

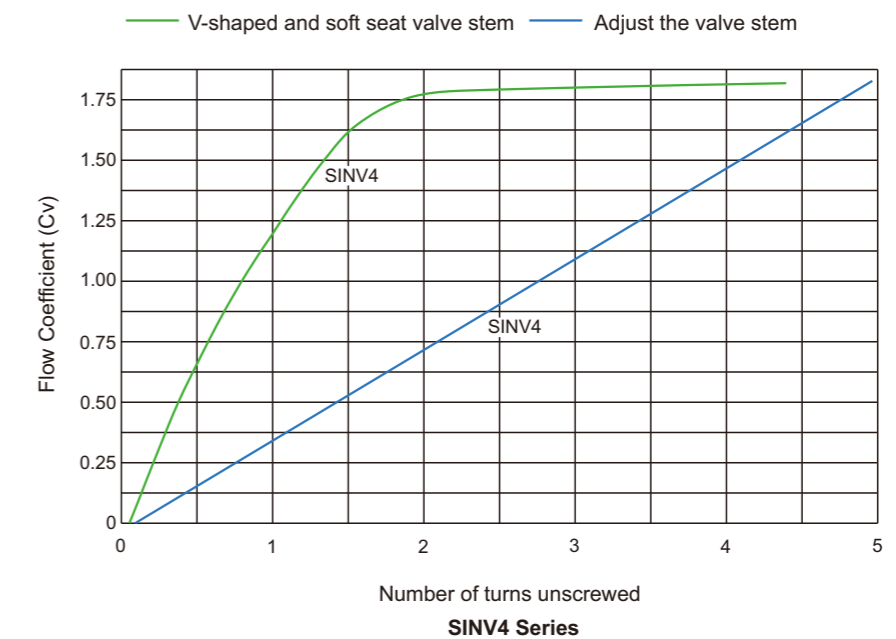
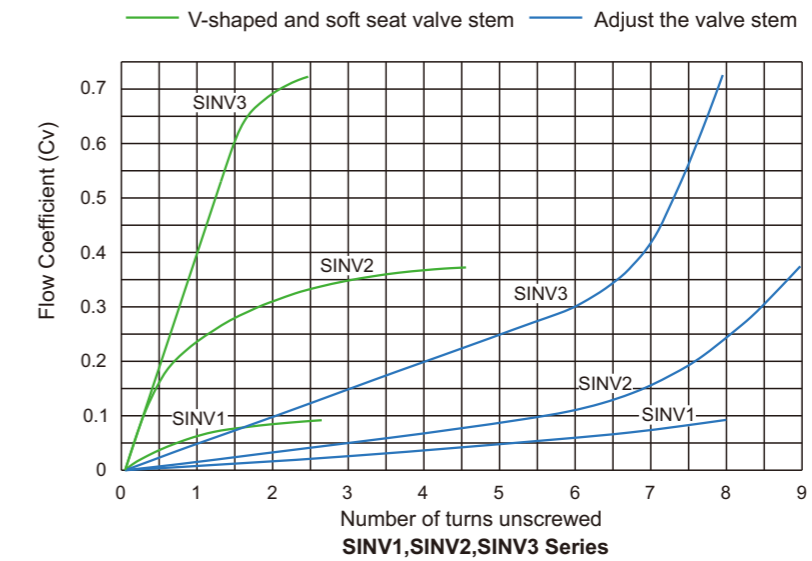
Pressure Temperature Rating

Material grade	2.2	N/A	3.4
Material Name	316 stainless steel	Brass	Alloy400
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)	-	-

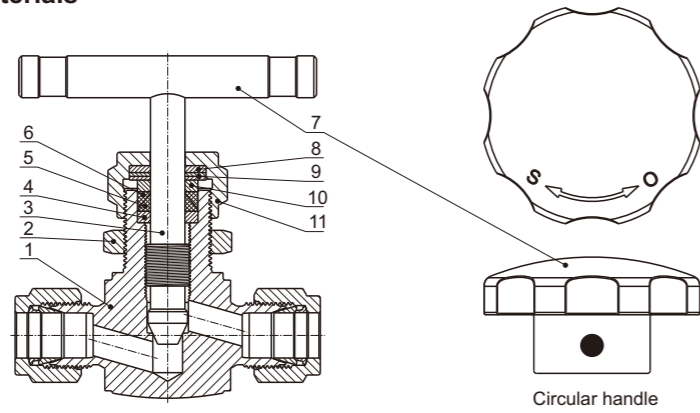
Test

Each valve has undergone nitrogen testing at a pressure of 1000 PSI (69 bar) and a maximum leakage rate of 0.1 std cm³/s;
Static pressure shell pressure test can be conducted at 1.5 times the maximum working pressure.

Flow data at 37 ° C (100 ° F)

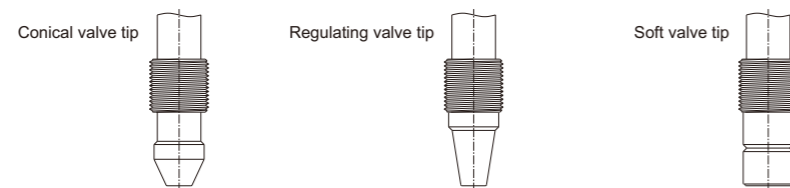


Standard structural materials



Number	Component Name	Body Material		
		stainless steel	Brass	Alloy400
1	Valve Body	F316 stainless steel/A182	Brass/B283	Alloy400/B564
2	Threading nut	316 stainless steel/A276	Brass/B16	Alloy400/B164
3	Conical valve tip	316 stainless steel/A479	316stainless steel/A479	Alloy400/B164
	Regulating valve tip	316 stainless steel/A479	316stainless steel/A479	Alloy400/B164
	Soft valve tip	316 stainless steel/A479+PTFE	316stainless steelA479+PTFE	Alloy400/B164+PTFE
4	Bottom packing pad	316 stainless steel/A479/A479	Brass/B16	Alloy400/B164
5	Bottom filling material	PTFE	PTFE	PTFE
6	Top filling material	PTFE	PTFE	PTFE
7	Circular handle	Aluminum alloy+nylon circular handle (or with copper insert)		
	Bar handle	Aluminum alloy strip handle or stainless steel strip handle		
	Locking screw	stainless steel		
8	shim	316 stainless steel/A276		
9	Disc-shaped spring	S17700/A693		
10	Top packing pad	316 stainless steel/A479	Brass/B16	Alloy400/B164
11	Loading cover	316 stainless steel/A479	Brass/B16	Alloy400/B164

Valve stem type



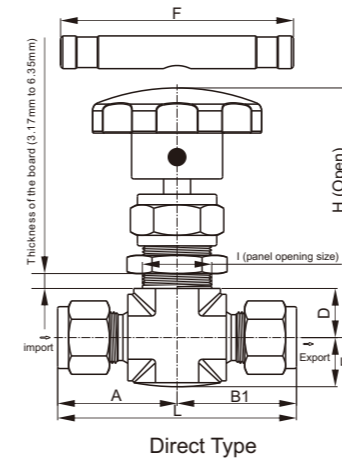
Filler

Standard packing: PTFE; Optional filler: PEEK.

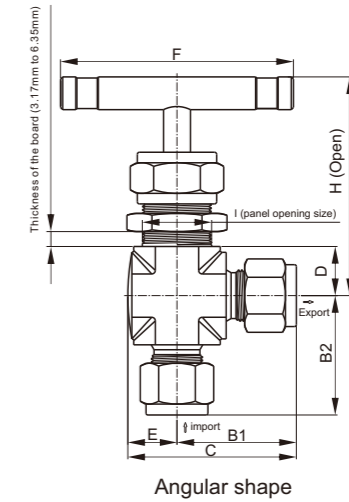
Handle

1. Valve body material is 316 stainless steel and alloy 400: stainless steel bar handle (standard)
2. Valves with brass body material and soft stem: black circular handle (standard)
3. Black anodized aluminum alloy handle available for selection

SINV Series



SINV A Series



Size table

series	Model		Internal diameter (mm)	Flow Coefficient (CV)	Connection Method		size(mm)												
	specs				import	Export	L	A	B1	B2	C	D	E	F	I	H			
SINV1	S2		2.0	0.09	1/8" Card sleeve connector	1/8" Card sleeve connector	49.4	24.7	24.7	24.7	32.6								
	S3M				3mm Card sleeve connector	3mm Card sleeve connector	49.4	24.7	24.7	24.7	32.6								
	M2N				1/8 NPT male thread	1/8 NPT male thread	38.1	19.1	19.1	19.1	27.0	11.2	7.9	32.0	11.9	55.0			
	F2N				1/8 NPT female thread	1/8 NPT female thread	47.8	23.9	23.9	23.9	31.8								
	M2N	S2			1/8 NPT male thread	1/8" Card sleeve connector	43.8	19.1	24.7	19.1	32.6								
SINV2	S4		4.4	0.37	1/4" Card sleeve connector	1/4" Card sleeve connector	57.4	28.7	28.7	28.7	38.4								
	S6M				6mm Card sleeve connector	6mm Card sleeve connector	57.4	28.7	28.7	28.7	38.4								
	S8M				8mm Card sleeve connector	8mm Card sleeve connector	59.4	29.7	29.7	29.7	39.4	11.2	9.7	45.0	13.5	51.5			
	M2N				1/8 NPT male thread	1/8 NPT male thread	41.2	20.6	20.6	20.6	30.3								
	M4N				1/4 NPT male thread	1/4 NPT male thread	49.8	24.9	24.9	24.9	34.6								
	M4N	S4			1/4 NPT male thread	1/4" Card sleeve connector	53.6	24.9	28.7	24.9	38.4								
SINV3	S6		6.3	0.73	3/8" Card sleeve connector	3/8" Card sleeve connector	65.6	32.8	32.8	32.8	45.5	12.7							
	S8				1/2" Card sleeve connector	1/2" Card sleeve connector	71.2	35.6	35.6	35.6	48.3	14.0							
	S10M				10mm Card sleeve connector	10mm Card sleeve connector	66.0	33.0	33.0	33.0	45.7	12.7							
	S12M				12mm Card sleeve connector	12mm Card sleeve connector	71.2	35.6	35.6	35.6	48.3	14.0							
	M6N				3/8 NPT male thread	3/8 NPT male thread	57.4	28.7	28.7	28.7	41.4	12.7	12.7	64.0	20.0	63.5			
	F4N				1/4 NPT female thread	1/4 NPT female thread	53.8	26.9	26.9	26.9	39.6	12.7							
	M4N	S6					1/4 NPT male thread	3/8" Card sleeve connector	61.5	28.7	32.8	28.7	45.5	12.7					
	M6N	S6					3/8 NPT male thread	3/8" Card sleeve connector	61.5	28.7	32.8	28.7	45.5	12.7					
	M6N	S8					3/8 NPT male thread	1/2" Card sleeve connector	64.3	28.7	35.6	28.7	48.3	14.0					
	M4N	F4N					1/4 NPT male thread	1/4 NPT female thread	55.6	28.7	26.9	28.7	39.6	12.7					
SINV4	S8		9.5	1.80	1/2" Card sleeve connector	1/2" Card sleeve connector	96.6	48.3	48.3	48.3	67.4								
	S12				3/4" Card sleeve connector	3/4" Card sleeve connector													
	M8N				1/2 NPT male thread	1/2 NPT male thread						19.1	19.1	76.0	26.2	99.5			
	F6N				3/8 NPT female thread	3/8 NPT female thread	76.2	38.1	38.1	38.1	57.2								
	F8N				1/2 NPT female thread	1/2 NPT female thread													
	M8N	F8N					1/2 NPT male thread	1/2 NPT female thread											

Ordering Information

Example

SINV3	M	6N	S	8	RS	PE	KH	SS
1	2	3	2	3	4	5	6	7

Valve Series

Direct type

SINV1	SINV2	SINV3	SINV4
2.0mm diameter	4.4mm diameter	6.3mm diameter	9.5mm diameter

Angular shape

SINV1A	SINV2A	SINV3A	SINV4A
2.0mm diameter	4.4mm diameter	6.3mm diameter	9.5mm diameter

End Connection Type

S	M	F
GBO-LOK Card sleeve connector	Male threaded joint	Female threaded joint

End Connection Specs

Tube outer diameter code

Code Name	1	2	4	6	8	12
Outside diameter(in.)	1/16	1/8	1/4	3/8	1/2	3/4
Code Name	3M	6M	8M	10M	12M	16M
Outside diameter(mm)	3	6	8	10	12	16

Pipe thread code

specs(in.)	1/8	1/4	3/8	1/2	3/4	
Code Name	NPT Thread	2N	4N	6N	8N	12N
	BSPT Thread	2R	4R	6R	8R	12R

Valve stem type

Blank	RS	ST
Conical valve tip (standard)	Adjustable valve tip	Soft seal valve tip

Filler Material

Blank	PE
PTFE filler (standard)	PEEK filler

6 Handle

Blank	KH	AH
Stainless steel bar handle (standard)	Black circular handle	Black anodized aluminum alloy handle

7 Valve Body Material

SS	B	M40
316 stainless steel	Brass	Alloy 400 (Monel)

Example:

SINV2-S4-SS

Valve Series	import	Export	Valve stem type
Straight through type, diameter4.4mm	GBO-LOK 1/4"Card sleeve connector	GBO-LOK1/4"Card sleeve connector	Conical valve tip
Packing material	Handle	Valve Body Material	
PTFE packing	Stainless steel bar handle	316 stainless steel valve body	

SINV3A-M4N-S6-RS-PE-AH-SS

Valve Series	import	Export	Valve stem type
Angle type, diameter6.3mm	1/4 NPT Male thread	GBO-LOK 3/8"Card sleeve connector	Regulating valve tip
Packing material	Handle	Valve Body Material	
PEEK packing	Black anodized aluminum alloy handle	316 stainless steel valve body	

SINV4-M8N-F8N-KH-B

Valve Series	import	Export	Valve stem type
Straight through type, diameter9.5mm	1/2 NPT Male thread	1/2 NPTFemale thread	Conical valve tip
Packing material	Handle	Valve Body Material	
PTFE packing	Black circular handle	Brass Body	

Integral valve cover rod needle valve

SBNV Series

Feature

1. Integrated forged valve body;
2. Structure of rod valve body;
3. Compact design;
4. Low operating torque;
5. Multiple terminal connections available for selection;
6. Can provide straight through and angular types;
7. Each valve undergoes pressure testing before leaving the factory.



Technical Parameter

Pressure Level	6000psig(413bar)@100°F(38°C)
Temperature Level	-65°F to 450°F(-54°C to 232°C), PTFE Filler -65°F to 600°F(-54°C to 315°C), PEEK Filler
Body Material	316Stainless steel and alloys400
Diameter Size	0.17" to 0.25" (4.3mm to 6.4mm)

Pressure-Temperature Range

Body Material	Valve Stem Type	Temperature Range	Pressure Range@ -65°F to 100°F(-54°C to 38°C)
316 stainless steel	Conical valve tip	-65°F to 450°F(-54°C to 232°C)	6000psig(413bar)
	Soft valve tip	-65°F to 200°F(-54°C to 93°C)	
Alloy400	Conical valve tip	-65°F to 450°F(-54°C to 232°C)	5000psig(345bar)
	Soft valve tip	-65°F to 200°F(-54°C to 93°C)	

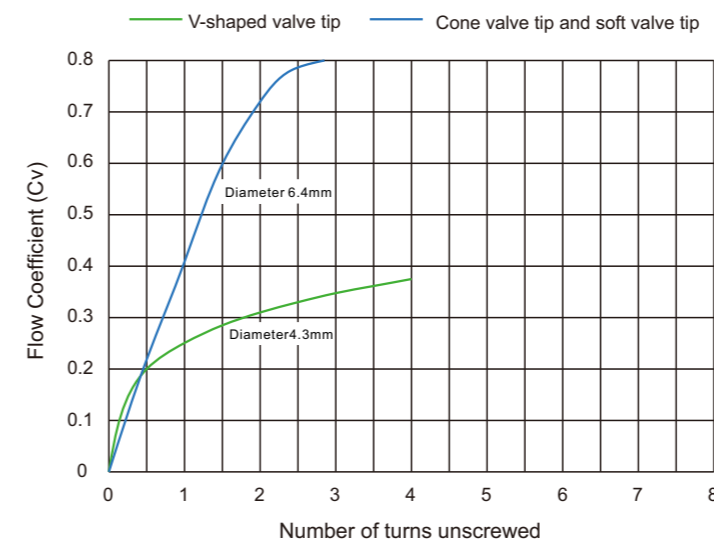
Pressure - Temperature Class

Temperature Range	Pressure psig(bar)@Temperature Range	
	316 stainless steel	alloy400
100°F(38°C)	6000psig(413bar)	5000psig(345bar)
200°F(93°C)	5160psig(355bar)	4400psig(303bar)
300°F(148°C)	4660psig(321bar)	4120psig(284bar)
350°F(176°C)	4470psig(308bar)	4050psig(279bar)
400°F(204°C)	4280psig(295bar)	3980psig(274bar)
450°F(232°C)	4130psig(284bar)	3970psig(273bar)

Temperature/pressure range corresponding to packing and valve body materials

Filler Material	Body Material	Temperature Range	Pressure @ Max Working Temperature
PTFE(standard)	316 stainless steel	-65°F to 450°F(-54°C to 232°C)	4130psig(284bar)
	alloy400	-65°F to 450°F(-54°C to 232°C)	3970psig(273bar)
PEEK	316 stainless steel	-65°F to 600°F(-54°C to 315°C)	3760psig(259bar)
	alloy400	-65°F to 500°F(-54°C to 260°C)	3960psig(273bar)

Flow data at 37 ° C (100 ° F)



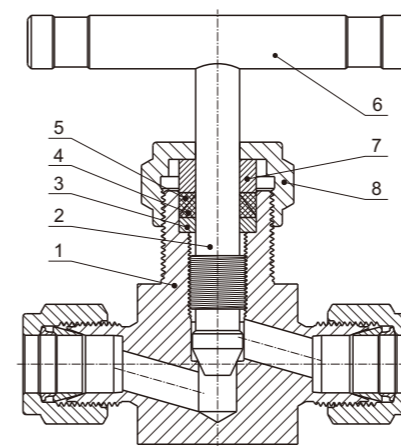
Handle:

1. 316 stainless steel bar handle (standard)
2. The standard configuration for soft valve tip valves is a black phenolic resin circular handle;
3. Black anodized bar handle options are available.

Testing:

1. Each valve undergoes nitrogen testing to test pressure 1000psig(69bar), Max leakage rate 0.1std cm³/s
2. Optional static pressure shell at 1.5 times the max working pressure Pressure test.

Standard Structural Materials:



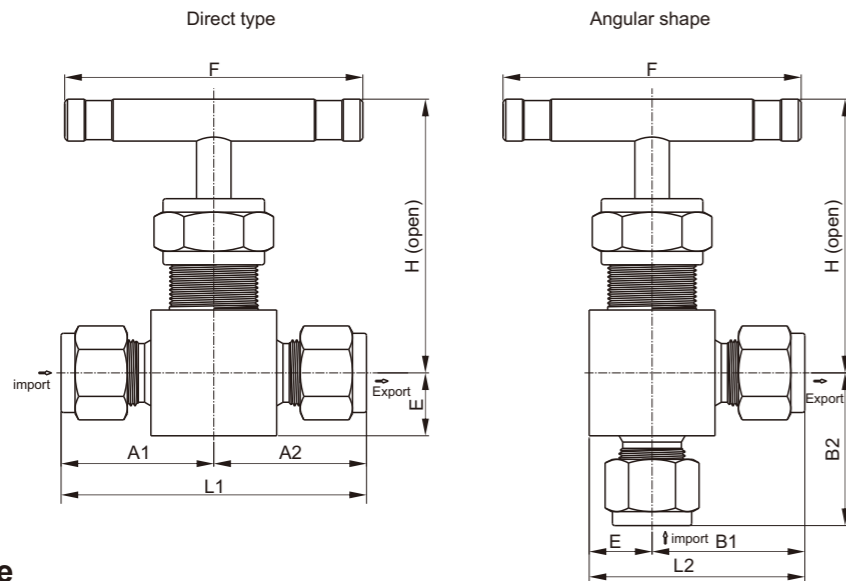
Number	Part Name	Body Material	
		Stainless Steel	Alloy400
1	Valve body	316stainless steel/A479	alloy400/B164
2	Conical valve tip	316stainless steel/A479	alloy400/B164
	Soft valve tip	316stainless steel/A479+PTFE	alloy400/B164+PTFE
3	Bottom Filling pad	316stainless steel/A479	alloy400/B164
4	Bottom filling	PTFE(standard)/PEEK(Optional)	PTFE(standard)/PEEK(Optional)
5	Top filling	PTFE(standard)/PEEK(Optional)	PTFE(standard)/PEEK(Optional)
6	Bar handle	stainless steel	
	Knob handle	Phenolic resin with brass inserts	
	Tightening screw	stainless steel	
7	Top filling pad	316stainless steel/A479	alloy400/B164
8	Filling gland	316stainless steel/A479	alloy400/B164

Valve stem type:

Conical stem: all metal conical valve tip (standard) Soft stem: PCTFE valve tip (optional)



SBNV Series



Size Table

Model		Internal diameter (mm)	Flow Coefficient (Cv)	Connection Method		Size (mm)								
series	specs			import	Export	L1	A1	A2	L2	B1	B2	E	F	H
SBNV1	F4N	4.3	0.37	1/4 NPT female thread	1/4 NPT female thread	47.6	23.8	23.8	36.5	25.4	25.4	11.1	45.0	51.0
	F4R			1/4 ISO cone tube female thread	1/4 ISO cone tube female thread									
	M4N			1/4 NPT male thread	1/4 NPT male thread	49.2	24.6	-	-	-				
	M4N F4N			1/4 NPT male thread	1/4 NPT female thread	48.4	24.6	23.8	36.5	25.4	26.2			
	M4N S4			1/4 NPT male thread	1/4" Card sleeve connector	53.3	28.7	39.8	28.7	11.1				
S4	1/4" Card sleeve connector	1/4" Card sleeve connector	62.4	31.2	31.2	39.8	28.7	29.7						
SBNV2	F6N	6.4	0.73	3/8 NPT female thread	3/8 NPT female thread	64.0	32.0	32.0	48.6	31.8	31.8	16.8	64.0	63.0
	F8N			1/2 NPT female thread	1/2 NPT female thread									
	F8R			1/2 ISO cone tube female thread	1/2 ISO cone tube female thread									
	M6N F6N			3/8 NPT male thread	3/8 NPT female thread	64.5	32.5	35.8	31.0					
	M8N F8N			1/2 NPT male thread	1/2 NPT female thread	64.5	32.5	35.8	35.8					
	M12N F8N			3/4 NPT male thread	1/2 NPT female thread	63.8	31.8	-	-	-				
	M6N S8			3/8 NPT male thread	1/2" Card sleeve connector	73.7	41.9	-	-	-				
	S6			1/2" Card sleeve connector	3/8" Card sleeve connector	78.2	39.1	39.1	-	-				
S8	1/2" Card sleeve connector	1/2" Card sleeve connector	83.8	41.9	41.9	-	-							

Ordering Information

Example

SBNV2	M	6N	S	8	KH	A	PE	ST	SS
1	2	3	2	3	4	5	6	7	8

1 Valve Series

SBNV1	SBNV2
4.3mm diameter	6.4mm diameter

2 End Connection Type

S	M	F
GBO-LOK Card sleeve connector	Male threaded joint	Female threaded joint

3 End Connection Specs

Tube outer diameter code

Code Name	4	6	8	12
Outside diameter(in.)	1/4	3/8	1/2	3/4

Code Name	6M	10M	12M	20M
Outside diameter(mm)	6	10	12	20

Pipe thread code

specs(in.)	1/8	1/4	3/8	1/2	3/4	
Code Name	NPTthread	2N	4N	6N	8N	12N
	BSPthread	2R	4R	6R	8R	12R

4 Handle

Blank	KH	AH
Stainless steel bar handle (standard)	Black circular handle	Black anodized aluminum alloy handle

5 Runner type

Blank	A
Straight through type (standard)	Angular shape

6 Filler Material

Blank	PE
PTFE filler (standard)	PEEK

7 Valve stem type

Blank	ST
Conical valve tip (standard)	Soft valve tip

8 Valve Body Material

SS	M
316 stainless steel	Alloy 400 (Monel)

Example:

1 SBNV1-S4-SS

import	Export	Handle	Runner type	Filler Material	Valve stem type	Valve body material
GBO-LOK 1/4"Card sleeve connector	GBO-LOK 1/4"Card sleeve connector	316 stainless steel bar handle	Direct type	PTFE filler	Conical valve tip	316 stainless steel valve body

2 SBNV2-F8N-KH-ST-SS(SBNV2 Series needle valve)

import	Export	Handle	Runner type	Filler Material	Valve stem type	Valve body material
1/2 NP Female thread	1/2 NP Female thread	Black phenolic resin circular handle	Direct type	PTFE filler	Soft valve tip	316 stainless steel valve body

3 SBNV2-M8N-F8N-A-PE-SS(SBNV2 Series needle valve)

import	Export	Handle	Runner type	Filler Material	Valve stem type	Valve body material
1/2 NPT Male thread	1/2 NP Female thread	316 stainless steel bar handle	Angular shape	PEEK filler	Conical valve tip	316 stainless steel valve body

Joint valve cap needle valve

SUNV Series

feature

1. Compact design;
2. Low operating torque;
3. Multiple terminal connections available for selection;
4. Can provide straight through and corner type;
5. Non rotating valve tip design;
6. Can provide three-way type selection;
7. Each valve undergoes pressure testing before leaving the factory.



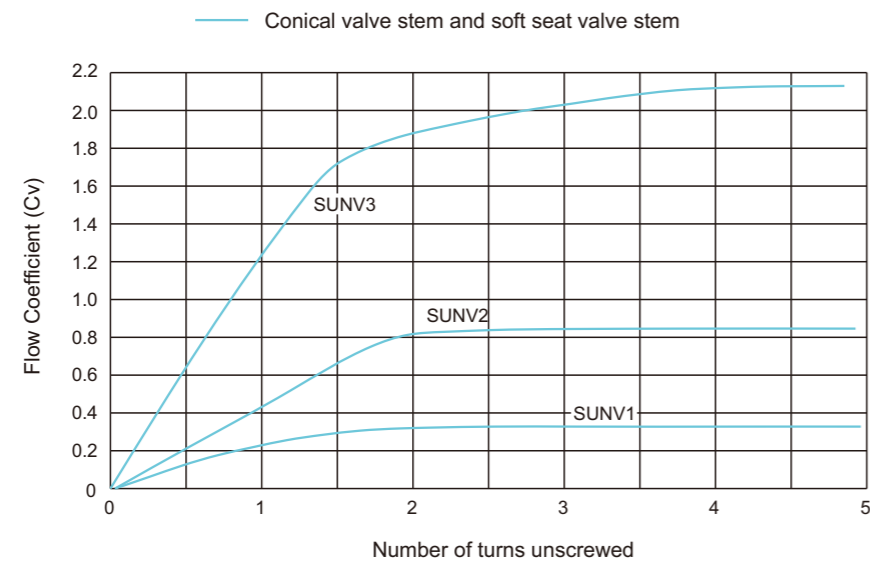
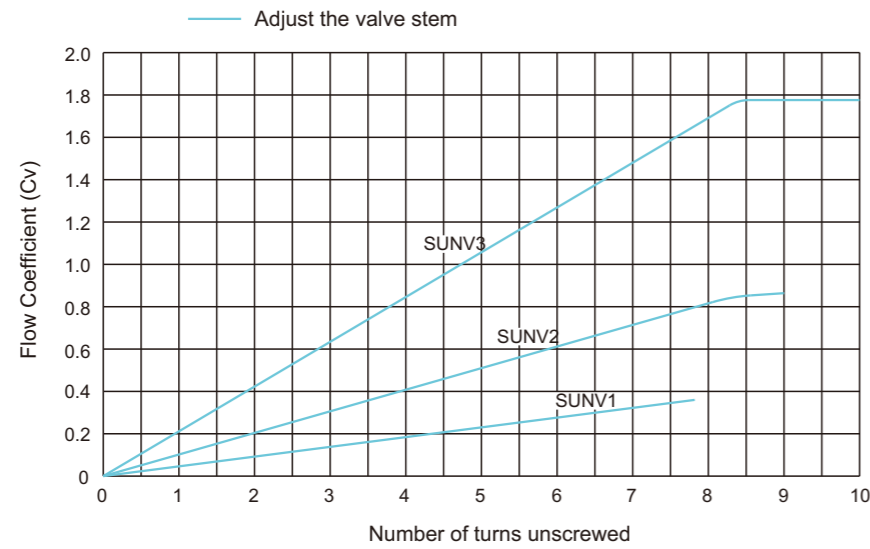
Technical Parameter

Working Temperature Range	PCTFE Soft valve tip:-65°F to 200°F(-54°C to 93°C)
	PTFE filler:-65°F to 450°F(-54°C to 232°C)
	PEEK filler:-65°F to 600°F(-54°C to 315°C)
	Graphite filler:-65°F to 1200°F(-54°C to 648°C)
Path Diameter	0.156" to 0.437"(4mm to 11mm)
Flow Coefficient (Cv)	0.35 to 2.2
End Connection Specs	1/4" to 1",6mm to 25mm

Pressure Temperature Rating

Material grade	2.2	3.4	3.1	3.5	3.8
Material Name	316 stainless steel	Alloy400	Alloy20	Alloy600	AlloyC-276
Temperature, °F (°C)	Working Pressure,psig(bar)				
-20(-28) to100(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 37 ° C (100 ° F)



Testing:

Each valve undergoes nitrogen testing at a test pressure of 1000 PSI (69 bar) and a max leakage rate 0.1std cm³/s
 Static pressure shell pressure test can be conducted at 1.5 times the maximum working pressure.

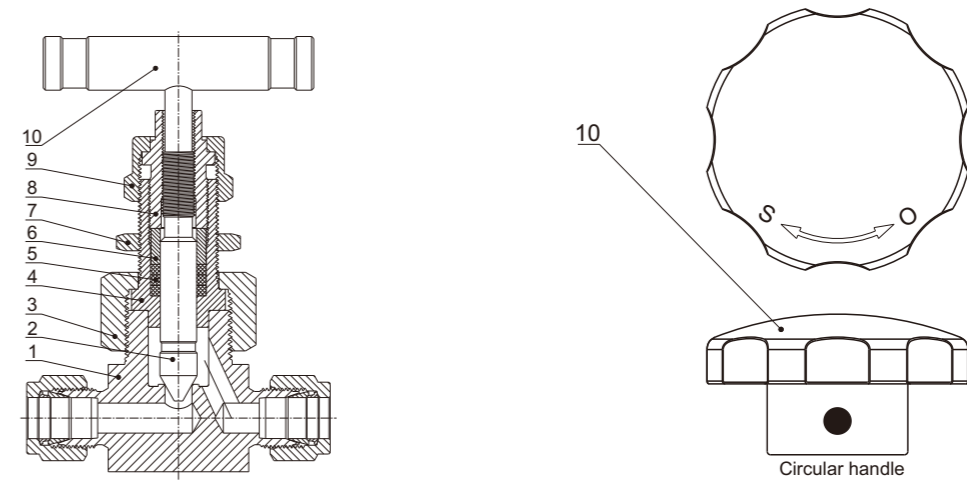
Filler

Standard fillers: PTFE;
 Optional fillers: PEEK or graphite.

Handle

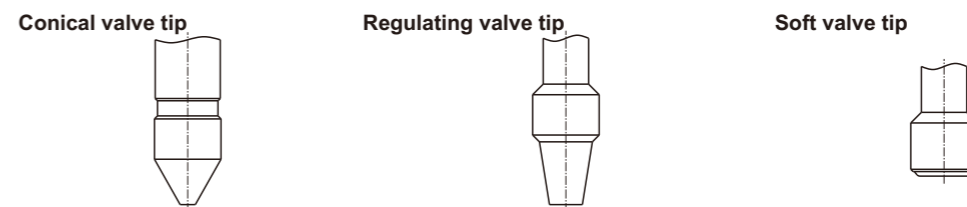
Valve body material Valves made of 316 stainless steel, alloy 400, and alloy C-276: Stainless steel bar handle (standard)
 Optional black circular handle (SUNV1 and SUNV2 series only)
 Black anodized aluminum alloy handle available for selection

Standard structural materials

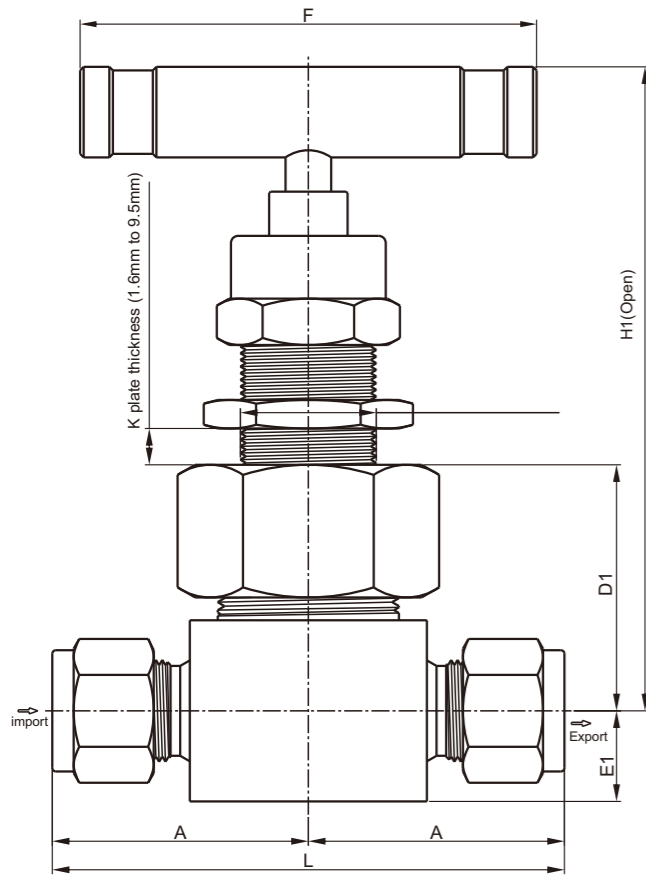


Number	Component Name	Valve body material		
		stainless steel	alloy400	alloyC-276
1	Valve Body	316 stainless steel/A479	alloy400/B164	alloyC-276/B564
	Conical valve tip	316 stainless steel/A479	alloy400/B164	alloy C-276/B564
	Regulating valve tip	316 stainless steel/A479	alloy400/B164	alloy C-276/B564
2	Soft valve tip	316 stainless steel/A479+PTFE	alloy400/B164+PTFE	alloy C-276/B564+PTFE
	Joint nut	316 stainless steel/A276	alloy400/B164	alloy C-276/B564
3	Valve cap	316 stainless steel/A479	alloy400/B164	alloy C-276/B564
4	Pressure ring	316 stainless steel/A276	alloy400/B164	alloy C-276/B564
5	Threading nut	316 stainless steel/A276	316 stainless steel/A276	316 stainless steel/A276
6	Filler gland	316 stainless steel/A276	316 stainless steel/A276	316 stainless steel/A276
7	Lock nut	316 stainless steel/A276	316 stainless steel/A276	316 stainless steel/A276
8	Bar handle	stainless steel		
	Circular handle	Phenolic resin with brass inserts		
	Locking screws	stainless steel		

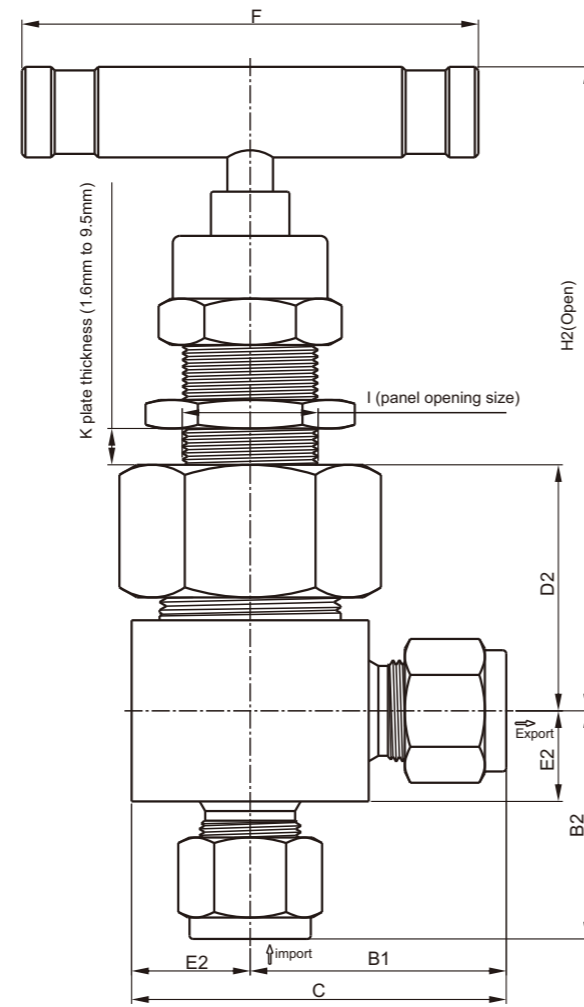
Valve stem type:



SUNV Series



SUNVA Series



Size table

series	Model specs	Internal diameter (mm)	Flow Coefficient (Cv)	Connection Method		size(mm)																	
				import	Export	L	A	B1	B2	C	D1	D2	E1	E2	F	I	H1	H2	J				
SUNV1	S4	4.0	0.35	1/4" Card sleeve connector		62.0	31.0	29.4	37.3	38.9			27.8							77.8			
	S6M			6mm Card sleeve connector		62.0	31.0	29.4	37.3	38.9			27.8								77.8		
	S8M			8mm Card sleeve connector		62.0	31.0	29.4	37.3	38.9			27.8								77.8		
	M4N			1/4 NPT male thread		50.8	25.4	25.4	25.4	35.0			32.6								82.6	-	
	F2N			1/8 NPT female thread		50.8	25.4	23.0	25.4	32.6		27.8	32.6	9.9	9.9	45.0	15.1	77.8			82.6		
	F4N			1/4 NPT female thread		52.4	26.2	23.0	25.4	32.6			32.6								82.6		
	M4N F4N			1/4 NPT male thread	1/4 NPT female thread	52.4	26.2	23.0	25.4	32.6			32.6								82.6		
SW4T	1/4" T Pipe insertion welding		46.0	23.0	22.3	30.2	31.8			27.8								77.8	7.2				
SUNV2	S6	6.0	0.86	3/8" Card sleeve connector		73.0	36.5	32.5	42.9	45.3			31.0							90.5			
	S8			1/2" Card sleeve connector		77.8	38.9	34.9	42.1	47.6			34.2								93.7		
	S10M			10mm Card sleeve connector		73.0	36.5	33.3	39.7	46.1			34.2								93.7		
	S12M			12mm Card sleeve connector		77.8	38.9	35.7	42.1	48.4			34.2								93.7		
	F4N			1/4 NPT female thread		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		
	F6N			3/8 NPT female thread		57.2	28.6	25.4	25.4	38.1			37.3								96.9		
	SW6T			3/8" T Pipe insertion welding		57.2	28.6	25.4	28.6	38.1			37.3								93.7	8.0	
SW8T	1/2" T Pipe insertion welding		57.2	28.6	25.4	25.4	38.1			35.7								95.3	9.6				
SW4P	1/4" P Pipe insertion welding		57.2	28.6	25.4	28.6	38.1			37.3								96.9	9.6				
SUNV3	S8	11.0	2.2	1/2" Card sleeve connector		100.0	50.0	43.7	53.2	61.1	46.0	47.6	15.9	17.5					121.5	123.1			
	S12			3/4" Card sleeve connector		100.0	50.0	43.7	53.2	61.1	46.0	47.6	15.9	17.5						121.5	123.1		
	S16			1" Card sleeve connector		100.0	50.0	-	-	-	47.6	-	17.5	-						123.1	-		
	S12M			12mm Card sleeve connector		100.0	50.0	-	-	-	46.0	-	15.9	-							121.5	-	
	F8N			1/2 NPT female thread		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 NPT female thread		82.6	41.3	-	-	-	48.4	-	19.9	-							123.9	-	
	F16N			1" NPT female thread		92.0	46.0	-	-	-	54.0	-	25.4	-	89.0	26.2					129.4	-	
	M8N F8N			1/2 NPT male thread	1/2 NPT female thread	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 NPT male thread	3/4 NPT female thread	82.6	41.3	-	-	-	48.4	-	19.9	-							123.9	-	
	M16N F16N			1" NPT male thread	1" NPT female thread	92.0	46.0	-	-	-	54.0	-	25.4	-							129.4	-	
	SW8T			1/2" T Pipe insertion welding		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" T Pipe insertion welding		79.4	39.7	-	-	-	46.0	-	15.9	-							121.5	-	11.1
SW8P	1/2" P Pipe insertion welding		79.4	39.7	33.3	39.7	50.8	47.6	50.8	17.5	17.5							123.1	123.1	9.6			

Note: "J" represents the depth of insertion welding

Ordering Information

Example

SUNV1	M	4N	S	4	RS	GR	KH	SS
1	2	3	2	3	4	5	6	7

Valve Series

Direct type

SUNV1	SUNV2	SUNV3
4.0mm diameter	6.4mm diameter	11.0mm diameter

Angular shape

SUNV1A	SUNV2A	SUNV3A
4.0mm diameter	6.4mm diameter	11.0mm diameter

End Connection Type

S	M	F	SW
GBO-LOK Card sleeve connector	Male threaded joint	Female threaded joint	Insert welding

End Connection Specs

Tube outer diameter code

Code Name	4	6	8	12	16
Outside diameter(in.)	1/4	3/8	1/2	3/4	1

Code Name	6M	8M	10M	12M	16M
Outside diameter(mm)	6	8	10	12	16

Pipe thread code

specs(in.)	1/8	1/4	3/8	1/2	3/4	1	
Code Name	NPT thread	2N	4N	6N	8N	12N	16N
	BSPT thread	2R	4R	6R	8R	12R	16R

Valve stem type

Blank	RS	ST
Conical valve tip (standard)	Adjustable valve tip	Soft and dense tip

Filler Material

Blank	PE	GR
PTFE filler(standard)	PEEK filler	graphite filler

Handle

Blank	KH	AH
Stainless steel bar handle (standard)	Black circular handle	Black anodized aluminum alloy handle

Valve body material

SS	M	276
316 stainless steel	alloy400(Monel)	alloyC-276(Hastelloy)

Example:

SUNV1-S4-276

Valve Series	import	Export	Valve stem type
Direct type, diameter4.0mm	GBO-LOK 1/4"Card sleeve connector	GBO-LOK 1/4"Card sleeve connector	Conical valve tip

Filler Materia	Handle	Valve body material
PTFE filler	Stainless steel bar handle	AlloyC-276 (Hastelloy) valve body

SUNV2A-SW8T-RS-GR-SS

Valve Series	import	Export	Valve stem type
Angular shape, diameter6.4mm	1/2" T Pipe insertion welding	1/2" T Pipe insertion welding	Regulating valve tip

Filler Materia	Handle	Valve body material
graphite filler	Stainless steel bar handle	316 stainless steel valve body

SUNV3-M12N-F8N-SS

Valve Series	import	Export	Valve stem type
Direct type, diameter11.0mm	3/4 NPTmalethread	1/2 NPTfemale thread	Conical valve tip

Filler Materia	Handle	Valve body material
PTFE filler	Stainless steel bar handle	316 stainless steel valve body