

# 120 SERIES ONE PIECE TYPE

## SBV 120H Series

### Features

- Simple design with one piece body
- Tight and smooth, low torque and easy operation
- One-piece ball stem
- Panel mountable
- Variety of End Connections
- Straight, Angle and 3-Way flow patterns
- Each and every valve is tested at the factory



### Specifications

<b>Pressure rating</b>	3000psig (206bar)@70°F (21°C)
<b>Temperature rating</b>	50 to 150°F (10 to 65°C) with PTFE seat and packing
<b>Body material</b>	316 stainless steel and Brass
<b>Port Connections</b>	1/16" to 3/4" and 3mm to 12mm
<b>Orifice</b>	0.052" and 0.406" (1.3mm to 10.3mm)

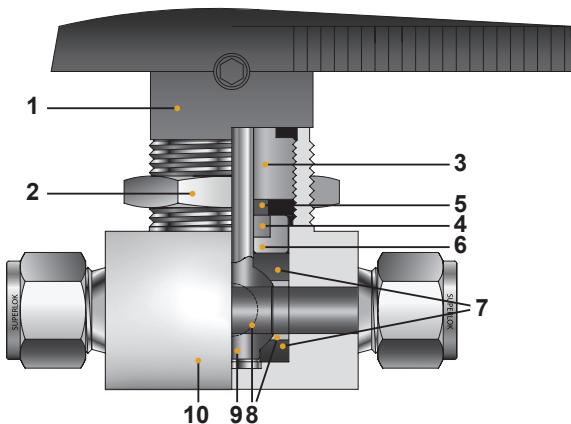
### Testing

- Each Valve is tested with nitrogen at 1000psig(69bar) to maximum allowable leak rate of 0.1 SCCM.

### Packing Adjustment

- Valves are adjusted for factory testing at 1000psig(69bar). ■ Packing must be readjusted for service at higher pressures.

### Materials of Construction

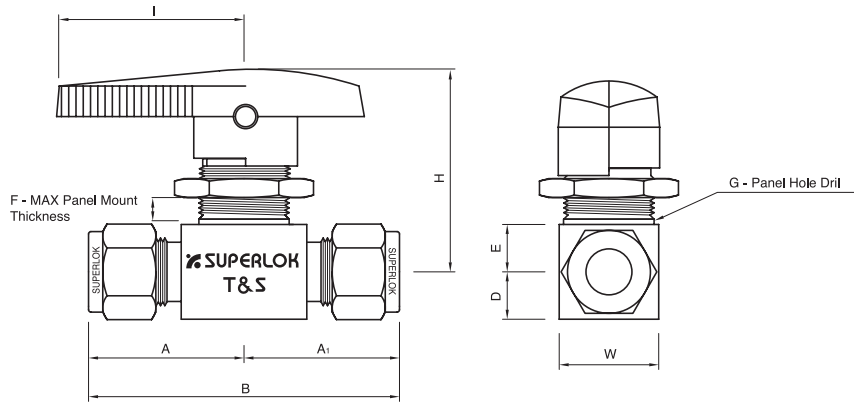


No.	Component	Material Grade / ASTM Specification	
		Stainless Steel	Brass
1	Handle	Zinc	
	Set Screw	Stainless Steel	
2	Panel Nut	Stainless Steel	Brass
3	Packing Bolt	SS316 / A479	Brass / B16
*4	Packing	PTFE	
5	Upper Packing Gland	SS316 / A479	
6	Lower Packing Gland		
*7	Upper&Lower Ball Seat	PTFE	
*8	Side Disc	SS316 - Sintered	
	Side Ring		
*9	Ball Stem	SS316 / A479	
*10	Body	SS316 / A479	Brass / B16

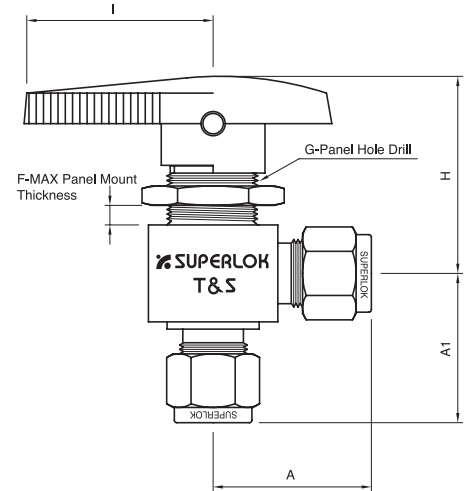
※ Wetted components are marked "\*"※

**SBV120H Series : 2-Way (On - Off Valve)**

**STRAIGHT TYPE**



**ANGLE TYPE**



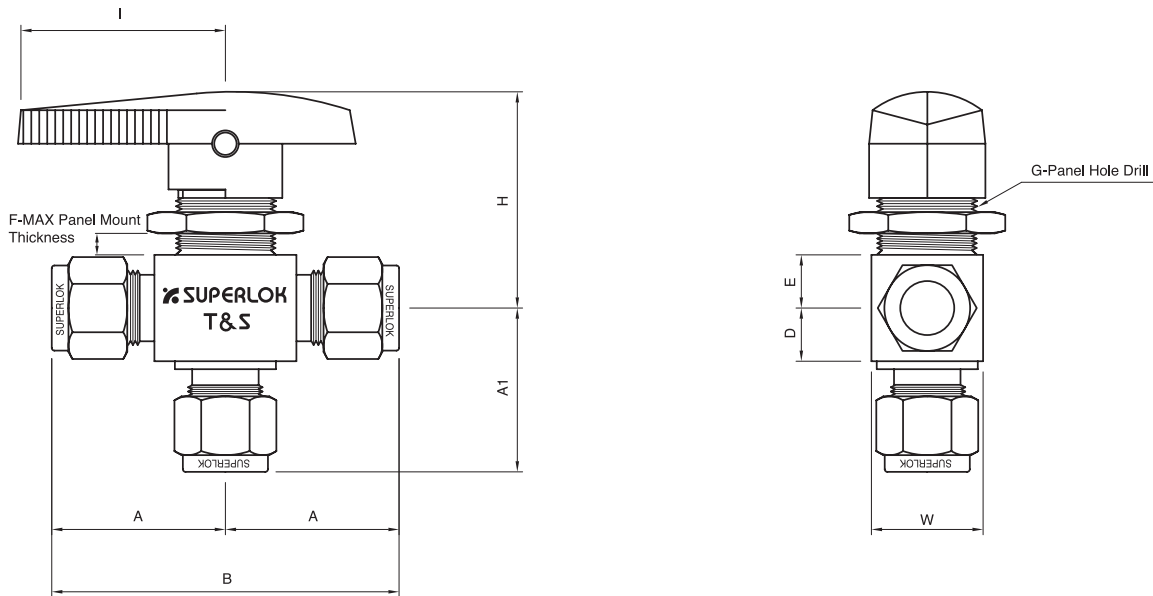
**Table of dimensions**

Order Number		Orifice	Cv	End Connections		Dimensions (mm)									
Series	Part No.			Inlet	Outlet	A	A1	B	D	E	F	G	H	I	W
SBV120 H1	S 1	1.3	0.1	1/16" SUPERLOK		21.3	21.3	42.6	7.1	8.7	6.4	15.0	36.0	29.0	15.0
	S 3M	2.4	0.2	3mm SUPERLOK		25.4	25.4	50.8							
	S 2	2.4	0.2	1/8" SUPERLOK		20.6	20.6	41.2							
	F 2N	3.2	0.5	1/8" FEMALE NPT		27.7	27.7	55.4							
	S 6M	3.2	0.6	6mm SUPERLOK											
SBV120 H2	S 4	4.8	0.6	1/4" SUPERLOK					9.4	11.2	4.8	19.8	43.7	38.5	19.8
	F 2N	4.8	1.2	1/8" FEMALE NPT		25.4	25.4	50.8							
	F 4N	4.8	0.9	1/4" FEMALE NPT		26.2	26.2	52.4							
	F 4R	4.8	0.9	1/4" ISO FEMALE		25.4	25.4	50.8							
	M 4N	4.8	1.2	1/4" MALE NPT		25.4	30.2	55.6							
	MS 4N-4	4.8	1.6	1/4" MALE NPT	1/4" SUPERLOK	30.2	30.2	60.4							
	S 6M	4.8	2.4	6mm SUPERLOK		31.0	31.0	62.0							
	S 4	4.8	2.4	1/4" SUPERLOK		32.5	32.5	65.0							
SBV120 H3	S 8M	7.1	1.5	8mm SUPERLOK					14.2	14.2	9.4	28.5	56.1	51.0	28.5
	S 6	7.1	3.0	1/4" FEMALE NPT		31.8	31.8	63.6							
	F 4N	7.1	2.6	3/8" FEMALE NPT		38.9	38.9	77.8							
	F 6N	7.1	2.6	3/8" ISO FEMALE											
	F 6R	7.1	6.0	3/8" SUPERLOK											
SBV120 H4	S 6	10.3	6.0	10mm SUPERLOK					17.5	17.5	9.4	38.1	71.8	75.0	75.0
	S 10M	10.3	6.3	1/2" FEMALE NPT		39.6	39.6	79.2							
	F 8N	10.3	6.3	1/2" ISO FEMALE		50.0	50.0	100							
	F 8R	10.3	12.0	12mm SUPERLOK											
	S 12M	10.3	12.0	1/2" SUPERLOK											
S 8	10.3	6.4	3/4" SUPERLOK												

※ Dimensions shown with **SUPERLOK** nuts measure in the finger-tight, where applicable.

※ All dimensions are for reference only, subject to change

**SBV120H Series : 3-Way (Switching Valve)**



**Table of dimensions**

Order Number		Orifice	Cv	End Connections		Dimensions (mm)										
Series	Part No.			Inlet	Outlet	A	A1	B	D	E	F	G	H	I	W	
SBV120 H13	S	1	1.3	0.08	1/16" SUPERLOK		21.3	20.6	42.6	7.1	8.7	6.4	15.0	36.0	29.0	15.0
	S	3M	2.4	0.15	3mm SUPERLOK		25.4	24.6	50.8							
	S	2		0.15	1/8" SUPERLOK		20.6	20.6	41.2							
	F	2N	3.2	0.3	1/8" FEMALE NPT		27.7	26.9	55.4							
	S	6M		0.35	6mm SUPERLOK											
	S	4	0.35	1/4" SUPERLOK												
SBV120 H23	F	4N	4.8	0.75	1/4" FEMALE NPT		26.2	26.2	52.4	9.4	11.2	4.8	19.8	43.7	38.5	19.8
	F	4R			1/4" ISO FEMALE											
	MS	4N-4	0.8	1/4" MALE NPT	1/4" SUPERLOK	25.4	30.2	55.6								
	S	6M	0.9	6mm SUPERLOK		30.2	30.2	60.4								
	S	4		1/4" SUPERLOK												
	S	8M	0.8	8mm SUPERLOK		31.0	31.0	62.0								
SBV120 H33	F	4N	7.1	1.7	1/4" FEMALE NPT		31.8	31.8	63.6	14.2	14.2	9.4	28.5	56.1	51.0	28.5
	F	6N		3/8" FEMALE NPT												
	F	6R		3/8" ISO FEMALE												
	S	6		2.0	3/8" SUPERLOK		38.9	38.9	77.8							
	S	10M			10mm SUPERLOK											
SBV120 H43	F	8N	10.3	3.5	1/2" FEMALE NPT		39.6	39.6	79.2	17.5	17.5	9.4	38.1	71.8	75.0	38.1
	F	8R			1/2" ISO FEMALE											
	S	12M		4.6	12mm SUPERLOK		50.0	50.0	100							
	S	8			1/2" SUPERLOK											
	S	12		3.8	3/4" SUPERLOK											

※Dimensions shown with SUPERLOK nuts measure in the finger-tight, where applicable.

※All dimensions are for reference only, subject to change

## Pressure Rating

Valve	2-Way Straight Pattern psig (bar)	2-Way Angle Pattern psig (bar)	3-Way Switching psig (bar)
SBV120H1	2500 (172)	2500 (172)	2500 (172)
SBV120H2	3000 (206)	2500 (172)	2500 (172)
SBV120H3	2500 (172)	1500 (103)	1500 (103)
SBV120H4	2500 (172)	1500 (103)	1500 (103)

## Flow Data at 70°F (21°C)

### Straight Type

Cv	Pressure Drop to Atmosphere(Δp)psi					
	10	50	100	10	50	100
	Air Flow, SCFM			Water Flow, US GPM		
0.50	6.9	19.1	33.9	1.6	3.5	5.0
0.60	8.3	23.0	40.7	1.9	4.2	6.0
0.90	12.0	34.0	61.0	2.8	6.4	9.0
1.2	17.0	46.0	81.0	3.8	8.5	12.0
1.5	21.0	57.0	100.0	4.7	11.0	15.0
1.6	22.0	61.0	110.0	5.0	11.0	16.0
2.4	33.0	92.0	160.0	7.6	17.0	24.0
2.6	36.0	99.5	176.0	8.2	18.0	26.0
3.0	41.5	115.0	203.0	9.5	21.0	30.0
6.0	83.0	230.0	407.0	19.0	42.0	60.0
6.3	87.2	241.0	427.0	19.9	44.5	63.0
6.4	88.6	245.0	434.0	20.2	45.3	64.0
12	166.0	459.0	814.0	38.0	85.0	120.0

### Angle Type & 3-Way

Cv	Pressure Drop to Atmosphere(Δp)psi					
	10	50	100	10	50	100
	Air Flow, SCFM			Water Flow, US GPM		
0.30	4.2	11.5	20.3	0.9	2.1	3.0
0.35	4.8	13.4	23.7	1.1	2.4	3.5
0.75	10.0	29.0	51.0	2.3	5.3	7.5
0.80	11.0	31.0	54.0	2.5	5.6	8.0
0.90	12.0	34.0	61.0	2.8	6.3	9.0
1.5	20.6	57.4	102.0	4.7	11.0	15.0
1.7	23.5	65.0	115.0	5.3	12.0	17.0
20.	27.7	76.5	136.0	6.3	14.0	20.0
3.5	48.4	134.0	237.0	11.0	25.0	35.0
3.8	52.6	145.0	258.0	12.0	27.0	38.0
4.6	63.7	176.0	312.0	15.0	33.0	46.0

## Ordering Information

Example : **SBV120H1** **A** - **S** **6M** - **SS**

1                      2            3                      4                      5

### 1. Valve Series

- SBVH120H1 ■ SBVH120H2 ■ SBVH120H3 ■ SBVH120H4

### 2. Pattern Designator

- BLANK : 2-Way Straight (Standard) ■ A:2-Way Angle ■ 3:3-Way

### 3. End Connection Type

- S : SUPERLOK Tube Fitting ■ F : Female Thread ■ M : Male Thread ■ MS : Male Thread to SUPERLOK Tube Fitting

### 4. End Connection Size

-Tube O.D Designation

Tube O.D (inch)	1/16	1/8	1/4	3/8	1/2
Designation	1	2	4	6	8
Tube O.D (mm)	3	6	8	10	12
Designation	3M	6M	8M	10M	12M

- Pipe Thread Designation

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

### 5. Material Designator

- SS(BLANK) : 316 Stainless Steel ■ B : BRASS