

# SBV120H Ball Valves

## One-piece Type

### 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

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

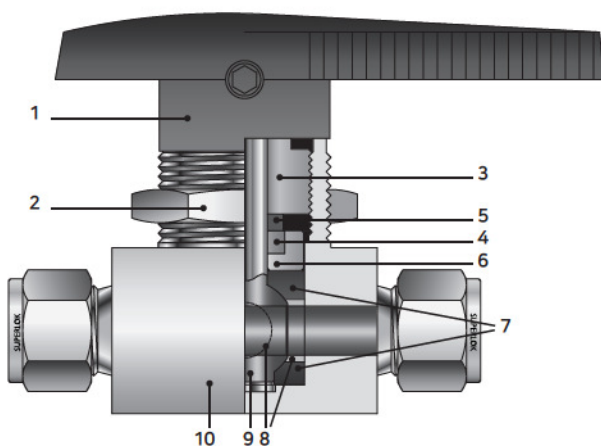
### Testing

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



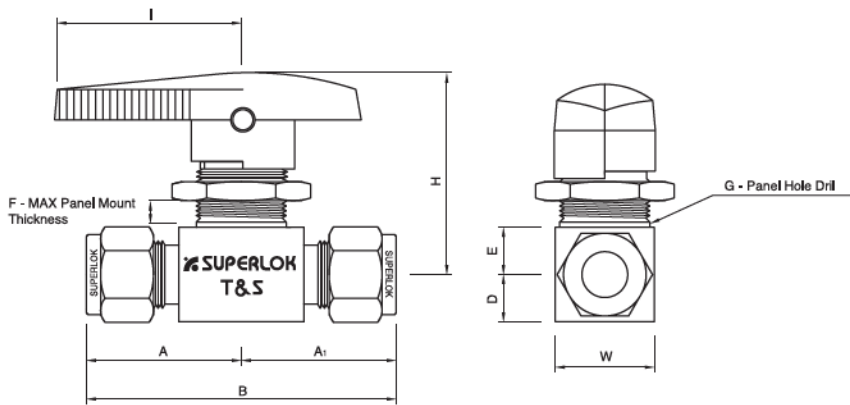
No.	Component	Material Grade / ASTM Specification	
		Stainless Steel	Brass
1	Handle	Zinc	
	Set Screw	Stainless Steel	
2	Panel Nut	Stainless Steel	Brass
3	Packing Bolt	SS316 / A276	Brass / B16
*4	Packing	PTFE	
5	Upper Packing Gland	SS316 / A276	
6	Lower Packing Gland		
*7	Upper&Lower Ball Seat	PTFE	
*8	Side Disc	SS316 - Sintered	
	Side Ring		
*9	Ball Stem	SS316 / A276	
*10	Body	SS316 / A182	Brass / B16

\* Wetted components

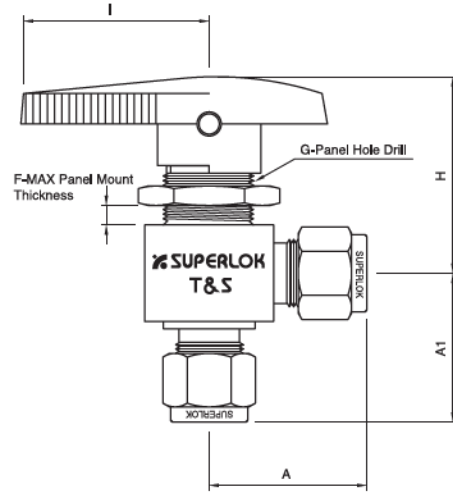
## Table of Dimensions

### 2-Way (On-off Valve)

STRAIGHT TYPE



ANGLE TYPE

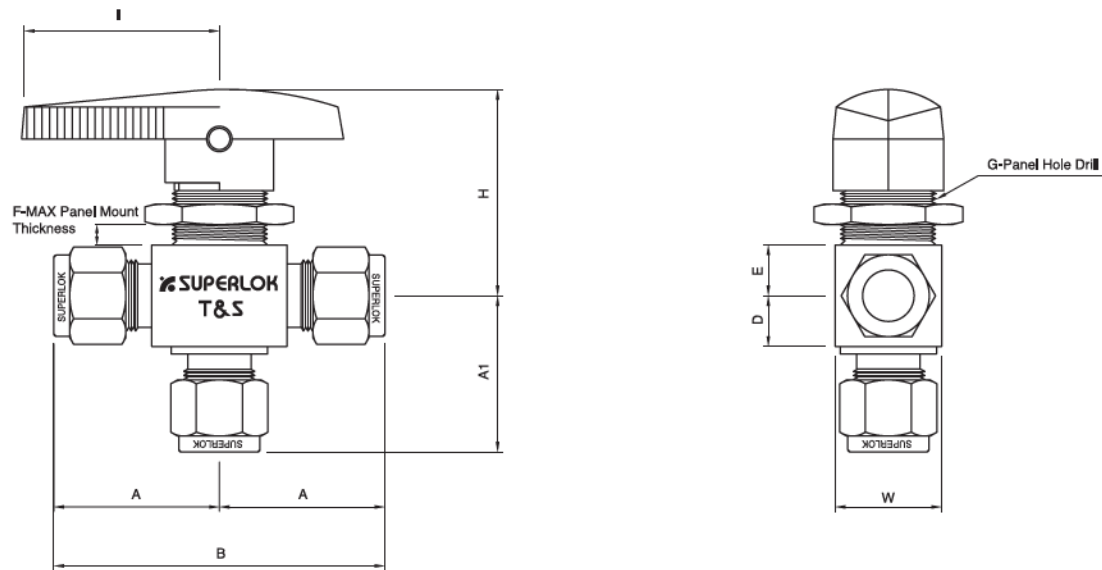


Part No.	Orifice	Cv	End Connections		Dimensions										
			Inlet	Outlet	A	A1	B	D	E	F	G	H	I	W	
SBV120 H1	S1	1.3	0.1	1/16" SUPERLOK		21.3	21.3	42.6	8.7	8.7	6.4	15.0	36.0	29.0	17.4
	S3M	2.4	0.2	3mm SUPERLOK		25.4	25.4	50.8							
	S2		0.2	1/8" SUPERLOK											
	F2N	3.2	0.5	1/8" FEMALE NPT		20.6	20.6	41.2							
	S6M		0.6	6mm SUPERLOK		27.7	27.7	55.4							
	S4		0.6	1/4" SUPERLOK											
F4N	0.9		1/4" FEMALE NPT		26.2	26.2	52.4								
SBV120 H2	F4R	4.8	0.9	1/4" ISO FEMALE		25.4	25.4	50.8	10.0	10.0	4.8	19.8	43.7	38.5	20.0
	M4N		1.2	1/4" MALE NPT		25.4	25.4	50.8							
	M4N-S4		1.6	1/4" MALE NPT	1/4" SUPERLOK	25.4	30.2	55.6							
	S6M		1.4	6mm SUPERLOK		30.2	30.2	60.4							
	S4		1.4	1/4" SUPERLOK											
	S8M		1.5	8mm SUPERLOK		31.0	31.0	62.0							
	S6		1.5	3/8" SUPERLOK		32.5	32.5	65.0							
	F6N		7.1	3.0	1/4" FEMALE NPT		31.8	31.8							
F6R	2.6	3/8" FEMALE NPT													
S6	2.6	3/8" ISO FEMALE													
S10M	6.0	3/8" SUPERLOK		38.9	38.9	77.8									
S10M	6.0	10mm SUPERLOK													
SBV120 H4	F8N	10.3	6.3	1/2" FEMALE NPT		39.6	39.6	79.2	17.5	17.5	9.4	38.1	71.8	75.0	39.0
	F8R		6.3	1/2" ISO FEMALE											
	S12M		12.0	12mm SUPERLOK		50.0	50.0	100							
	S8		12.0	1/2" SUPERLOK											
	S12		6.4	3/4" SUPERLOK											

- 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.

## Table of Dimensions

### 3-Way (Switching Valve)



Part No.	Orifice	Cv	End Connections		Dimensions									
			Inlet	Outlet	A	A1	B	D	E	F	G	H	I	W
SBV120 H13	S1	1.3	1/16" SUPERLOK		21.3	20.6	42.6	8.7	8.7	6.4	15.0	36.0	29.0	17.4
	S3M	2.4	3mm SUPERLOK		25.4	24.6	50.8							
	S2		1/8" SUPERLOK		20.6	20.6	41.2							
	F2N	3.2	1/8" FEMALE NPT		20.6	20.6	41.2							
	S6M		6mm SUPERLOK		27.7	26.9	55.4							
S4	1/4" SUPERLOK		27.7	26.9	55.4									
SBV120 H23	F4N	4.8	1/4" FEMALE NPT		26.2	26.2	52.4	10.0	10.0	4.8	19.8	43.7	38.5	21
	F4R		1/4" ISO FEMALE		26.2	26.2	52.4							
	M4N-S4	1/4" MALE NPT   1/4" SUPERLOK		25.4	30.2	55.6								
	S6M	6mm SUPERLOK		30.2	30.2	60.4								
	S4	1/4" SUPERLOK		30.2	30.2	60.4								
SBV120 H33	S8M	7.1	8mm SUPERLOK		31.0	31.0	62.0	14.3	14.2	9.4	28.5	56.1	51.0	28.5
	F4N		1/4" FEMALE NPT		31.8	31.8	63.6							
	F6N		3/8" FEMALE NPT											
	F6R		3/8" ISO FEMALE		38.9	38.9	77.8							
	S6		3/8" SUPERLOK											
S10M	10mm SUPERLOK		38.9	38.9	77.8									
SBV120 H43	F8N	10.3	1/2" FEMALE NPT		39.6	39.6	79.2	17.5	17.5	9.4	38.1	71.8	75.0	38.1
	F8R		1/2" ISO FEMALE											
	S12M	12mm SUPERLOK		50.0	50.0	100								
	S8	1/2" SUPERLOK												
	S12	3/4" SUPERLOK		50.0	50.0	100								

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- Dimensions shown with SUPERLOK nuts finger-tight, where applicable.

## 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 Atmospher ( $\Delta p$ ), 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 Atmospher ( $\Delta p$ ), 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

- (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 Designator

Tube OD (inch)	1/16	1/8	1/4	3/8	1/2	3/4
Designator	1	2	4	6	8	12
Tube OD (mm)	3	6	8	10	12	
Designator	3M	6M	8M	10M	12M	

#### Pipe Thread Designator

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

### 5. Material

- SS(Blank) = 316 Stainless Steel
- B = BRASS

※ For special sizes and configurations, please consult BMT (SUPERLOK) sales representative.