

# 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)

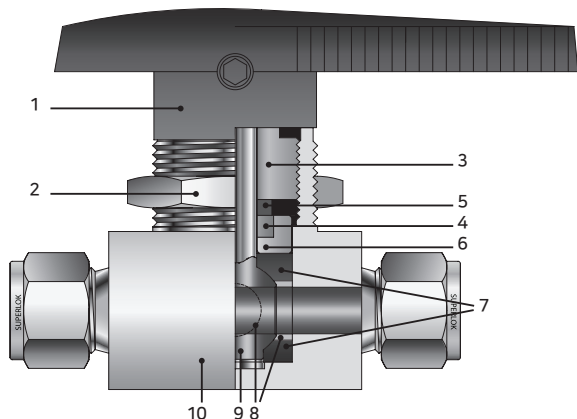
### Testing

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

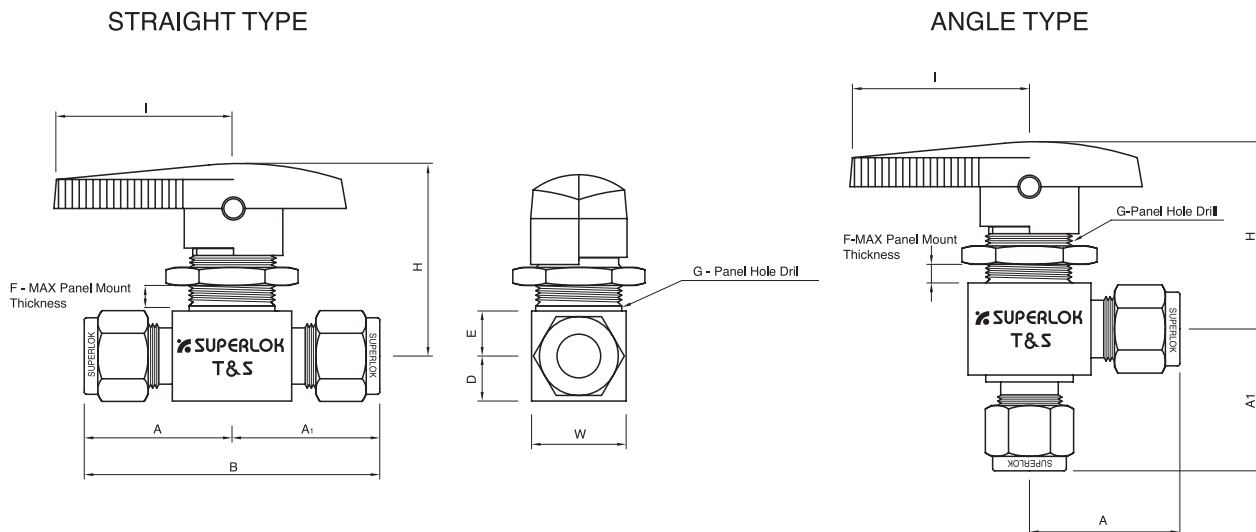


No.	Component	Material Grade / ASTM Specification	
		Stainless Steel	Brass
1	Handle	Nylon	
	Set Screw	Stainless Steel	
2	Panel Nut	Stainless Steel	Brass
3	Packing Bolt	SS316 / A276	Brass / B16
*4	Packing	PTFE	
5	Upper Packing Gland	SS316 / A276	
6	Lower Packing Gland		
*7	Upper&Lower Ball Seat	PTFE	
*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)

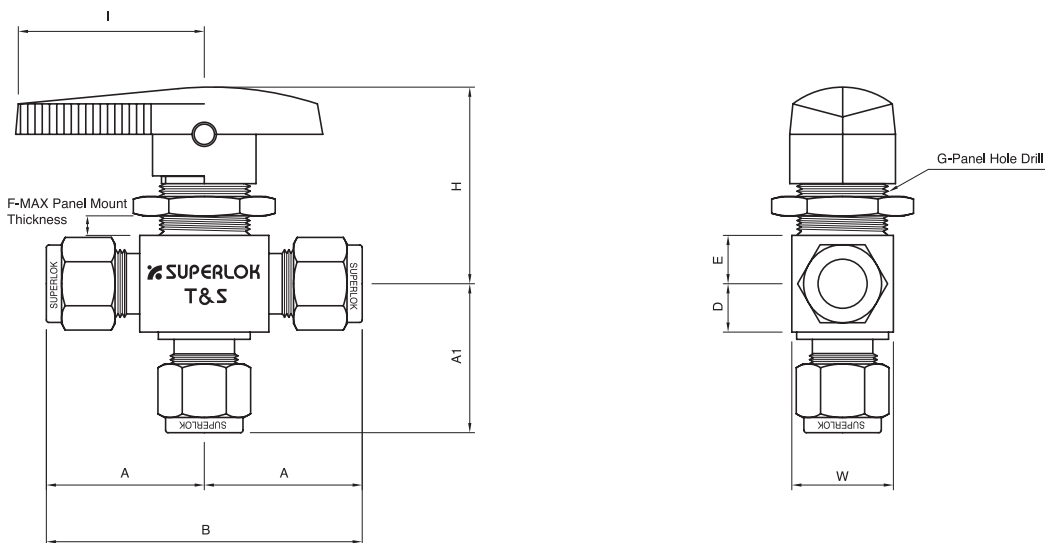


Part No.	Orifice	Cv	End Connections		Dimensions										
			Inlet	Outlet	A	A1	B	D	E	F	G	H	I	W	
SBV120 H1	S1	1.3	0.1	1/16" SUPERLOK		21.3	21.3	42.6	8.7	8.7	6.4	15.0	36.0	29.0	17.4
	S3M	2.4	0.2	3mm SUPERLOK		25.4	25.4	50.8							
	S2	0.2	1/8" SUPERLOK		20.6	20.6	41.2								
	F2N	0.5	1/8" FEMALE NPT												
	S6M	3.2	0.6	6mm SUPERLOK		27.7	27.7	55.4							
S4	0.6	1/4" SUPERLOK		10.0	10.0	4.8	19.8	43.7	38.5	20.0					
SBV120 H2	F2N	1.2	1/8" FEMALE NPT								25.4	25.4	50.8		
	F4N	0.9	1/4" FEMALE NPT								26.2	26.2	52.4		
	F4R	0.9	1/4" ISO FEMALE								25.4	25.4	50.8		
	M4N	1.2	1/4" MALE NPT												
	M4N-S4	4.8	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									
SBV120 H3	F4N	7.1	3.0	1/4" FEMALE NPT		31.8	31.8	63.6	14.3	14.2	9.4	28.5	56.1	51.0	28.5
	F6N		2.6	3/8" FEMALE NPT											
	F6R		2.6	3/8" ISO FEMALE											
	S6		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	0.08	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	0.15	3mm SUPERLOK		25.4	24.6	50.8								
	S2		0.15	1/8" SUPERLOK		20.6	20.6	41.2								
	F2N	3.2	0.3	1/8" FEMALE NPT		27.7	26.9	55.4								
	S6M		0.35	6mm SUPERLOK												
S4	0.35	1/4" SUPERLOK														
SBV120 H23	F4N	4.8	0.75	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		25.4	30.2	55.6								
	M4N-S4			0.8	1/4" MALE NPT	1/4" SUPERLOK	30.2	30.2								60.4
	S6M			0.9	6mm SUPERLOK		31.0	31.0								62.0
	S4			0.8	1/4" SUPERLOK											
S8M	0.8	8mm SUPERLOK														
SBV120 H33	F4N	7.1	1.7	1/4" FEMALE NPT		31.8	31.8	63.6	14.3	14.2	9.4	28.5	56.1	51.0	28.5	
	F6N			3/8" FEMALE NPT												
	F6R			3/8" ISO FEMALE												
	S6			3/8" SUPERLOK												
	S10M			10mm SUPERLOK												
SBV120 H43	F8N	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	
	F8R			1/2" ISO FEMALE												
	S12M			12mm SUPERLOK												
	S8			1/2" SUPERLOK												
	S12			3/4" SUPERLOK												

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## 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

### 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