

# 210 SERIES TWO PIECE TYPE

**SBV210 Series**

## Features

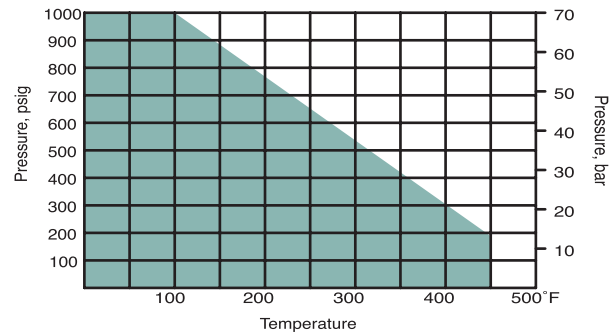
- Compact design
- Tight and smooth, low torque and easy operation
- Butterfly and lever handle available
- Variety of End Connections
- Each and every valve is tested at the factory



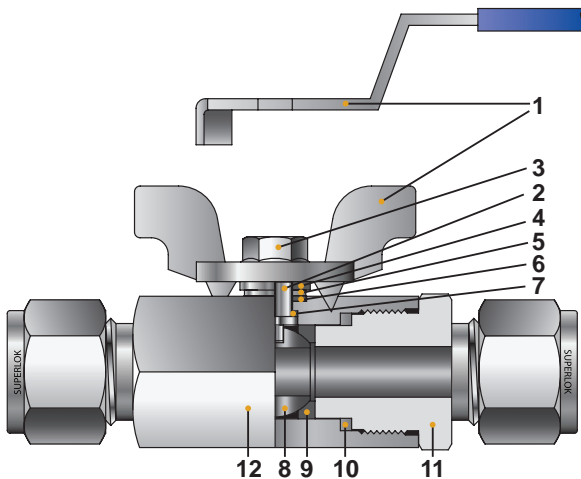
## Specifications

<b>Pressure rating</b>	1000psig (69bar)@70°F (21°C)
<b>Body material</b>	316 stainless steel and Brass
<b>Port Connections</b>	1/4" to 1" and 6mm to 16mm
<b>Orifice</b>	5.0mm to 16.0mm

## Pressure-Temperature Ratings

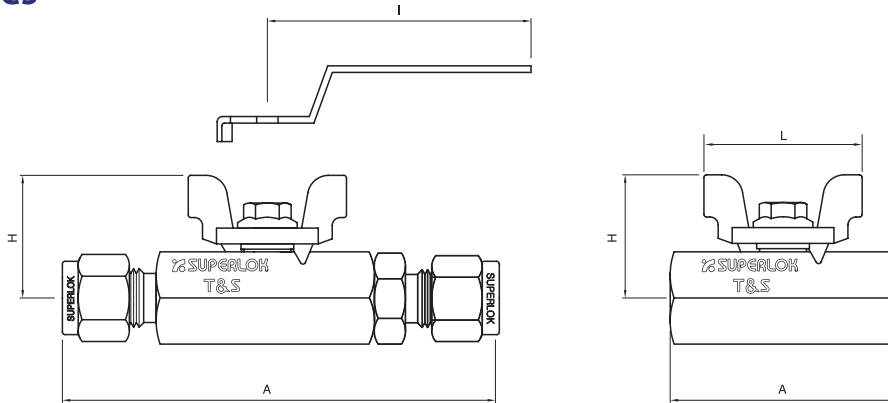


## Materials of Construction



No.	Component	Material Grade / ASTM Specification	
		Stainless Steel	Brass
1	Handle	SS304 Lever handle with PVC color coated Zinc butterfly handle with nickel plated	
2	Stem	SS316 / A479	
3	Lock Nut	Stainless Steel	
4	Upper Stem Washer	SS304 / A479	
5	Lower Stem Washer		
6	Upper Stem Seal	PTFE	
7	Lower Stem Seal		
8	Ball	SS316 / A479	
9	Seat	PTFE	
10	Connector Seal		
11	End Connector	SS316 / A479	Brass / B16
	Insert(for Female Thread)	SS316 / A479	
12	Body	SS316 / A479	Brass / B16

**SBV210 Series**

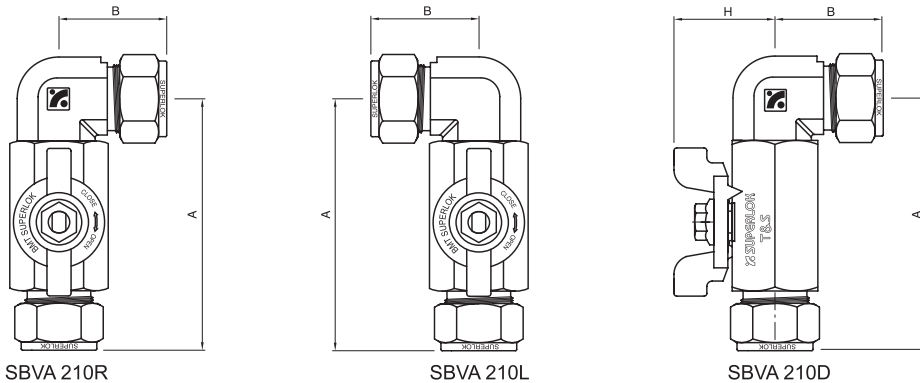


**Table of dimensions**

Order Number		Orifice (mm)	Cv	End Connections	Dimensions (mm)				
Series	Part No.				A	H	I	L	
SBV210	S	6M	5.0	1.25	6mm SUPERLOK	79.8	23.0	60.0	30.0
	S	4		1.25	1/4" SUPERLOK	79.8			
	F	4N		1.4	1/4" FEMALE NPT	42.8			
	S	10M	7.5	2.6	10mm SUPERLOK	91.5	31.0	90.0	48.0
	S	6		2.5	3/8" SUPERLOK	91.5			
	F	6N		2.6	3/8" FEMALE NPT	46.6			
	S	12M	9.0	9.5	12mm SUPERLOK	101.4	34.0	90.0	50.0
	S	8		9.5	1/2" SUPERLOK	101.4			
	F	8N		9.5	1/2" FEMALE NPT	55.0			
	S	16M	12.5	10.6	16mm SUPERLOK	107.6	39.0	100.0	55.0
	S	10		10.6	5/8" SUPERLOK	107.0			
	S	12		12.7	3/4" SUPERLOK	107.0			
	F	12N	12.7	3/4" FEMALE NPT	61.3				
	S	16	16.0	17.5	1" SUPERLOK	131.0	45.0	100.0	68.0
	F	16N		17.5	1" FEMALE NPT	76.0			

All dimensions are for reference only, subject to change

**SBVA210 Series**



**Table of dimensions**

Order Number		Orifice (mm)	End Connections	Dimensions (mm)			
Series	Part No.			A	B	H	
SBVA210	S	4	5.0	1/4" SUPERLOK	65.3	30.5	23.0
	S	6	7.5	3/8" SUPERLOK	77.5	36.1	31.0
	S	8	9.0	1/2" SUPERLOK	87.9	38.1	34.0
	S	12	12.5	3/4" SUPERLOK	93.8	39.9	39.0
	S	16	16.0	1" SUPERLOK	115.3	49.0	45.0

All dimensions are for reference only, subject to change

# SWING - OUT BALL VALVES

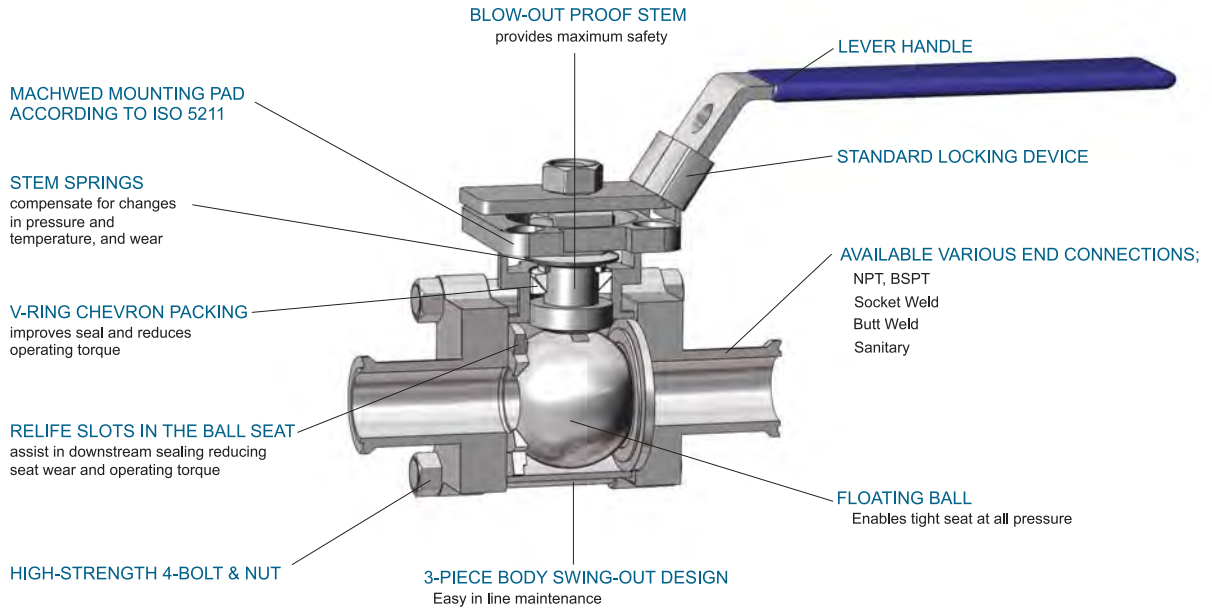
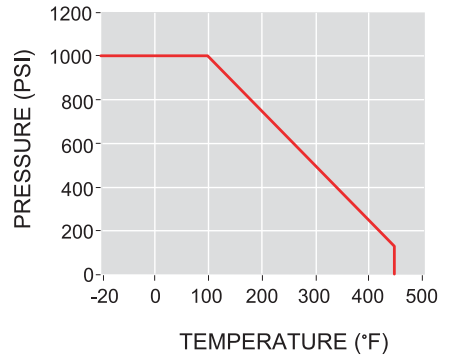
## SWB 310 SERIES

### SPECIFICATION

- Pressure Rating up to 1000 psig (69 bar) at 100 °F (37 °C)
- Temperature Range from -20 °F (-28 °C) to 450 °F (232 °C)

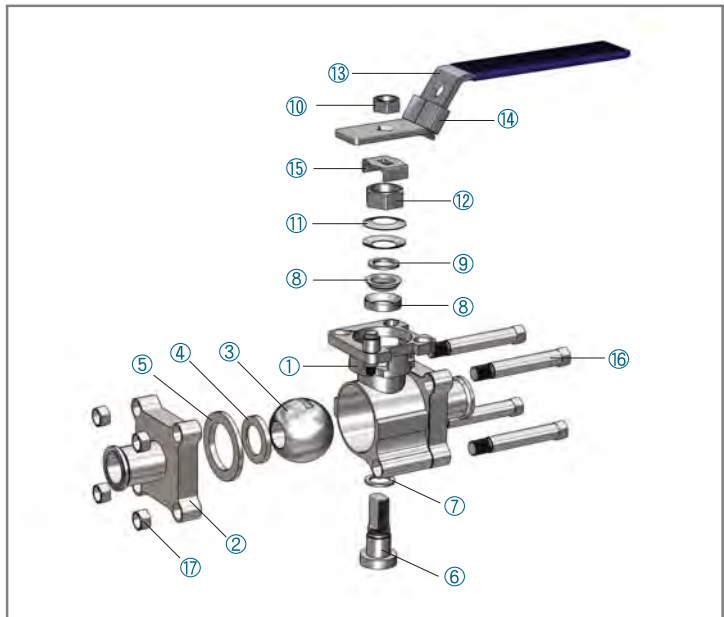
### TESTING

- Each valve is tested with nitrogen at 1000 psig (69 bar) to maximum allowable leak rate of 0.1 SCCM.
- Hydrostatic shell test is performed at 1.5 times the working pressure.



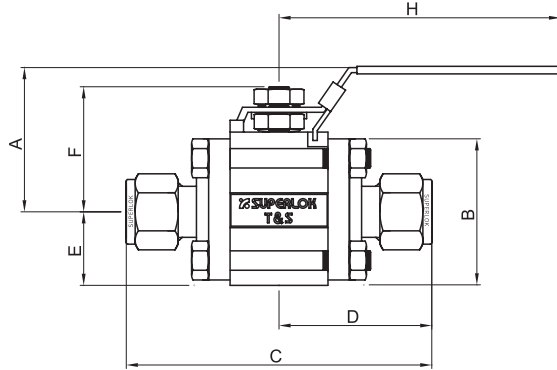
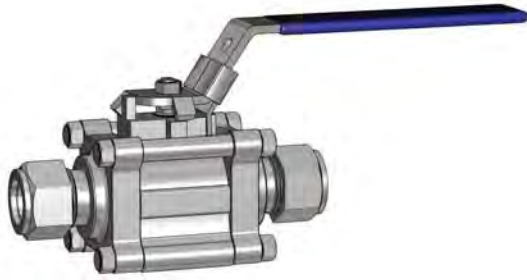
### MATERIALS OF CONSTRUCTION

Component	Material	Q' TY	
1	Body	ASTM A351GR/CF8M	1
2	End Cap	ASTM A351GR/CF8M	2
3	Ball	SS316	1
4	Ball Seal	PTFE	2
5	Flange Seal	PTFE	2
6	Stem	SS316	1
7	Stem Seal	PTFE	1
8	Upper/Lower Packing	PTFE	1
9	Packing Gland	SS304	1
10	Handle Nut	STRAIN HARDNED 316	1
11	Disc Spring	SS304	2
12	Stem Nut	SS304	1
13	Handle	SS304	1
14	Locking Device	SS304	1
15	Stem Nut Lock	SS304	1
16	Flange Bolt	SS304	4
17	Flange Nut	SS304	4



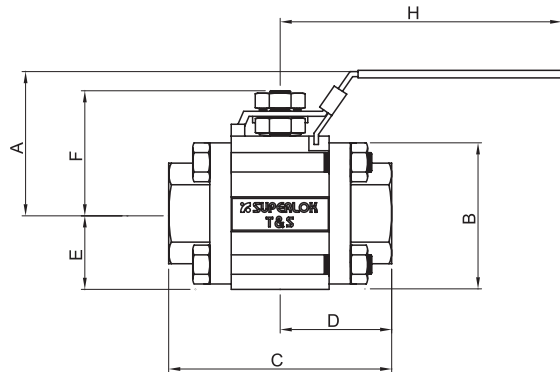
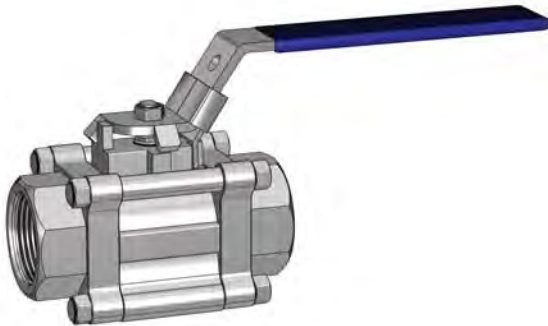
# SWING - OUT BALL VALVES

## TABLE OF DIMENSIONS



### ■ SUPERLOK TUBE END CONNECTION

Ordering Number		Ori ce in. (mm)	Cv	End Connection	Dimension (mm)							
Series	Part NO.				A	B	C	D	E	F	H	
SWB3201	S	4	0.188 (4.8)	1.2	1/4 " Superlok	47.7	33.0	80.8	40.40	16.75	31.8	57.2
		6	0.281 (7.1)	3.8	3/8 " Superlok							
		6M	0.188 (4.8)	1.2	6mm Superlok							
		8M	0.250 (6.4)	2.5	8mm Superlok							
		10M	0.281 (7.1)	3.8	10mm Superlok							
SWB3202	S	8	0.411 (10.4)	7.5	1/2 " Superlok	64.8	44.5	103.8	51.90	22.25	44.2	111.0
		12	0.516 (13.1)	13.6	3/4 " Superlok							
		12M	0.411 (10.4)	7.5	12mm Superlok							
SWB3203	S	16	0.875 (22.2)	40.0	1 " Superlok	79.0	62.0	136.7	68.35	31.0	61.9	149.4
		25M			25mm Superlok							



### ■ FEMALE PIPE THREAD END CONNECTIONS

Ordering Number		Ori ce in. (mm)	Cv	End Connection	Dimension (mm)							
Series	Part NO.				A	B	C	D	E	F	H	
SWB3201	F	0.281 (7.1)	3.8	1/8 " Female NPT	47.7	33.0	55.4	27.70	16.75	31.8	57.2	
				4N								1/4 " Female NPT
				4R								1/4 " Female PT
SWB3202	F	0.516 (13.1)	12.0	3/8 " Female NPT	64.8	44.5	68.9	34.45	22.25	44.2	111.0	
				8N								1/2 " Female NPT
				8R								1/2 " Female PT
SWB3203	F	0.875 (22.2)	40.0	3/4 " Female NPT	79.0	62.0	92.0	46.0	31.0	61.9	149.4	
				12N								1 " Female NPT
				16N								3/4 " Female PT
				12R								1 " Female PT

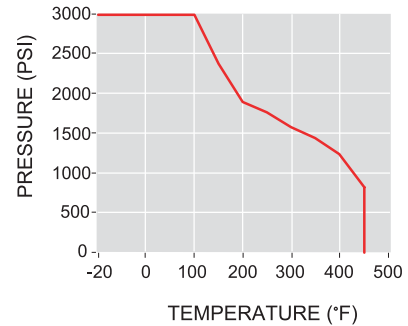
# SWING - OUT BALL VALVES

## PRESSURE/TEMPERATURE RATING

### ■ PEEK SEATS : OPTION

Series	Pressure - Temperature Rating	
	Temperature °F (°C)	Working Pressure psig (bar)
SWB 320	-20 to 100 (-28 to 37)	3000 (206)
	150 (65)	2420 (166)
	200 (93)	1870 (128)
	250 (121)	1770 (121)
	300 (148)	1600 (110)
	350 (176)	1430 (98.5)
	400 (204)	1260 (86.8)
	450 (232)	800 (55.1)

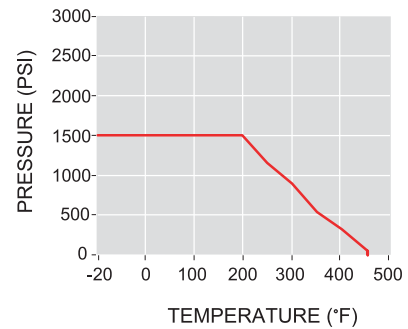
To order option item, add P to the end of ordering number.



### ■ VIRGIN PTFE SEATS : OPTION

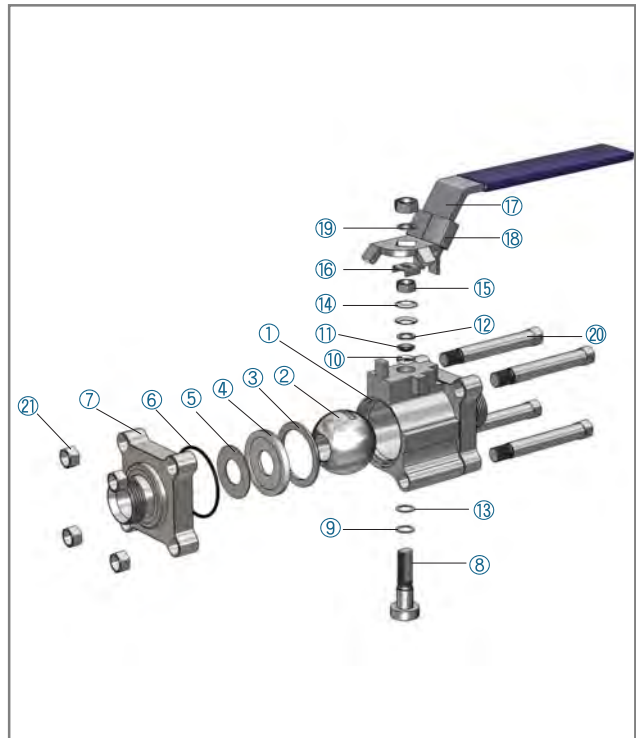
Series	Pressure - Temperature Rating	
	Temperature °F (°C)	Working Pressure psig (bar)
SWB 320	-20 to 100 (-28 to 37)	1500 (103)
	150 (65)	1500 (103)
	200 (93)	1500 (103)
	250 (121)	1150 (79.2)
	300 (148)	800 (55.1)
	350 (176)	560 (38.5)
	400 (204)	330 (22.7)
	450 (232)	100 (6.8)

To order option item, add V to the end of ordering number.



### ■ MATERIALS OF CONSTRUCTION

Component	Valve Body Materials		QTY
	Material / ASTM Specification		
1	Body	CF8M / A351	1
2	Ball	SS 316 / A479	1
3	Support ring	SS 316 / A479	2
4	Seats	Reinforced PTFE	2
5	Seat spring	Strain Hardened 316 SS / A240	2
6	Flange seal	PTFE	2
7	Flange	CF8M / A351 or SS 316 / A479	2
8	Stem	SS 316 / A479	1
9	Stem bearing	Alloy X750	1
10	Lower packing	Reinforced PTFE	1
11	Upper packing		1
12	Packing support	PEEK	1
13	Packing gland	SS 316 / A479	1
14	Stem spring	Strain Hardened 316	2
15	Packing nut	Stainless Steel	2
16	Stem nut lock		1
17	Handle		1
18	Locking device		1
19	Tooth washer		1
20	Flange bolt	SS304	4
21	Flange nut	SS304	4



# SWING - OUT BALL VALVES

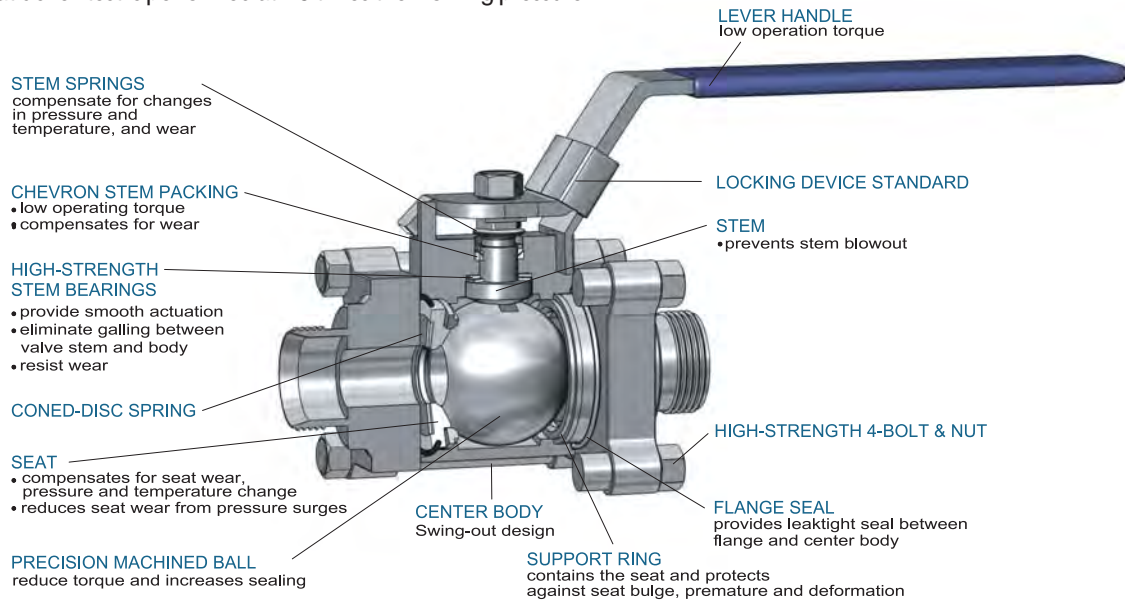
## SWB 320 SERIES

### SPECIFICATION

- Pressure Rating up to 3000 psig (206 bar) at 100 °F (37 °C)
- Temperature Range from -20 °F (-28 °C) to 450 °F (232 °C)

### TESTING

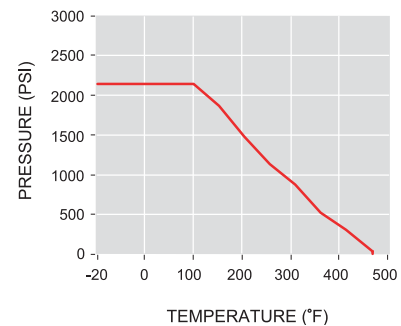
- Each valve is tested with nitrogen at 1000 psig (69 bar) to maximum allowable leak rate of 0.1 SCCM.
- Hydrostatic shell test is performed at 1.5 times the working pressure.



### PRESSURE/TEMPERATURE RATING

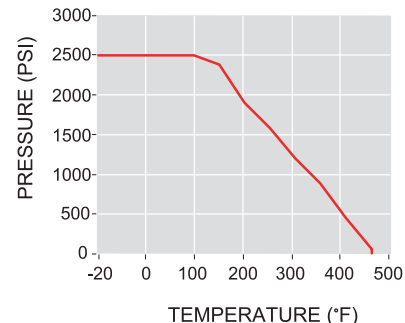
#### ■ REINFORCED PTFE SEATS (R-PTFE) : STANDARD

Series	Pressure - Temperature Rating	
	Temperature °F (°C)	Working Pressure psig (bar)
SWB 320	-20 to 100 (-28 to 37)	2200 (151)
	150 (65)	1850 (127)
	200 (93)	1500 (103)
	250 (121)	1150 (79.2)
	300 (148)	800 (55.1)
	350 (176)	560 (38.5)
	400 (204)	330 (22.7)
	450 (232)	100 (6.8)



#### ■ CARBON / GLASS PTFE SEATS : OPTION

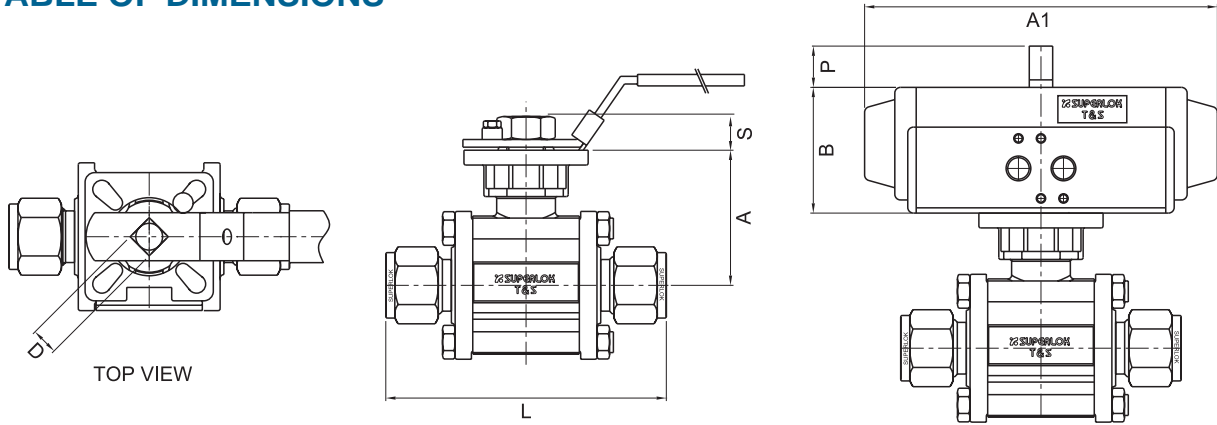
Series	Pressure - Temperature Rating	
	Temperature °F (°C)	Working Pressure psig (bar)
SWB 320	-20 to 100 (-28 to 37)	2500 (172)
	150 (65)	2430 (167)
	200 (93)	1870 (128)
	250 (121)	1620 (111)
	300 (148)	1240 (85.4)
	350 (176)	860 (59.2)
	400 (204)	480 (33.0)
	450 (232)	100 (6.8)



To order option item, add C to the end of ordering number.

# SWING - OUT BALL VALVES

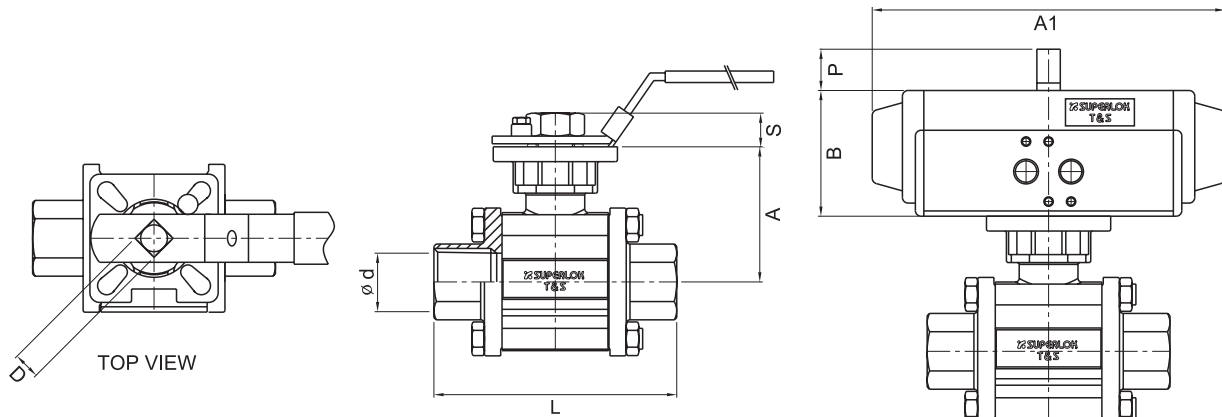
## TABLE OF DIMENSIONS



ROTATING PNEUMATIC ACTUATORS  
(DOUBLE ACTING TYPE)

### ■ SUPERLOK TUBE END CONNECTIONS

Ordering Number			SIZE	Dimension (mm)							
Series	Part NO.			A	S	D	L	A1	B	P	
SWB	3101	SW	4	1/4 " SUPERLOK	39.0	8.5	9	72.6	188	67	20
			6	3/8 " SUPERLOK				74.2			
			8	1/2 " SUPERLOK				75.6			
	3102		12	3/4 " SUPERLOK	43.0	86.0					
	3103		16	1 " SUPERLOK	53.0	11.4	104.0				



ROTATING PNEUMATIC ACTUATORS  
(DOUBLE ACTING TYPE)

### ■ FEMALE PIPE THREAD END CONNECTIONS

Ordering Number			SIZE	Dimension (mm)								
Series	Part NO.			A	S	D	ø d	L	A1	B	P	
SWB	3101	F	4N	1/4 "	39.0	8.5	9	11.5	63.5	188	67	20
			6N	3/8 "				12.5				
			8N	1/2 "				15.0				
	3102		12N	3/4 "	43.0	20.0	72.5					
	3103		16N	1 "	53.0	11.4	25.0	81.0				
	3104		24N	1-1/2 "	70.0	14.0	11	38.0	108.0	234	86	
	3105		32N	2 "	78.0	13.7	14	50.0	121.5			

# 360 SERIES THREE PIECE HIGH-PRESSURE TYPE SBVH360 Series

## Features

- Compact design
- High flow rate with maximum orifice
- Variety of End Connections
- Anti blow-out stem design
- Each and every valve is tested at the factory
- Fire safety design available



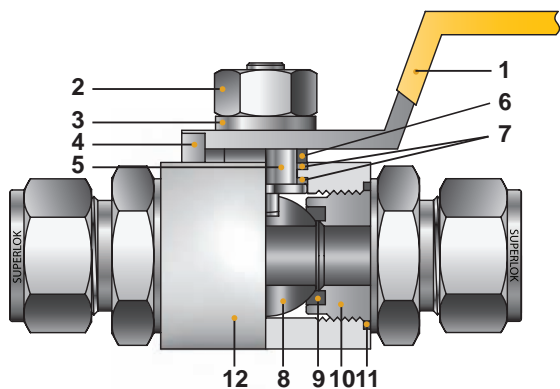
## Specifications

<b>Pressure rating</b>	6000psig (414bar)@70°F (21°C)
<b>Temperature rating</b>	-22 to 265°F (-30 to 130°C) with PVDF seat -65 to 500°F (-54 to 260°C) with PEEK seat
<b>Body material</b>	316 stainless steel and Brass
<b>Port Connections</b>	1/4" to 1" and 6mm to 25mm
<b>Orifice</b>	10.0mm to 19.0mm

## Testing

- Each Valve is tested with nitrogen at 1000psig(69bar) to maximum allowable leak rate of 0.1 SCCM.
- Hydrostatic shell test is performed at 1.5 times of the working pressure. (OPTION)

## Materials of Construction



No.	Component	Material Grade / ASTM Specification
		Stainless Steel
1	Handle	SS304 Lever handle with PVC color coated
2	Lock Nut	Stainless Steel
3	Spring Washer	
4	Pin	
*5	Stem	
6	Stem Washer	SS304 / A479
*7	Stem Packing	PTFE
*8	Ball	SS316 / A479
*9	Seat	PVDF (Standard)
*10	End Connector	SS316 / A479
*11	Connector Seal	PTFE
*12	Body	SS316 / A479

Wetted components are marked "\*"



# Pressure & Temperature Rating

## 2-Way Straight

Valve Series	Materials			Pressure Rating @-54°C to 21°C (-65°F to 70°F)	Temperature Rating
	Seat	Stem Packing	End Connector Seal		
3601	PVDF	PTFE		6000psig (413bar)	-30°C to 130°C(-22°F to 265°F)
	PCTFE				-30°C to 150°C(-22°F to 355°F)
	PEEK				-54°C to 230°C(-65°F to 446°F)
3602 & 3603	PVDF			5000psig (344bar)	-23°C to 191°C(-10°F to 375°F)
	PCTFE				
	PEEK				6000psig (413bar)

## 2-Way Angle & 3-Way

Valve Series	Materials			Pressure Rating @-54°C to 21°C (-65°F to 70°F)	Temperature Rating
	Seat	Stem Packing	End Connector Seal		
3601	PVDF	PTFE	VITON	4000psig(275bar)	-30°C to 130°C(-22°F to 265°F)
	PCTFE				-30°C to 150°C(-22°F to 355°F)
	PEEK				-54°C to 230°C(-65°F to 446°F)
3602 & 3603	PVDF			3000psig(206bar)	-23°C to 191°C(-10°F to 375°F)
	PCTFE				
	PEEK				4000psig(275bar)

## Ordering Information

Example : **SBVH3602 - S - 12 - PE - SS**

1
2
3
4
5

### 1. Valve Series

- 2-Way straight
■ 2-Way Angle
■ 3-Way : Bottom Inlet Port
■ 3-Way : Side Inlet Port
- SBVH3601
- SBVH3601-A
- SBVH3601-3B
- SBVH3601-3S
- SBVH3602
- SBVH3602-A
- SBVH3602-3B
- SBVH3602-3S
- SBVH3603
- SBVH3603-A
- SBVH3603-3B
- SBVH3603-3S

### 2. End Connection

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

### 3. Connection Size

-Tube O.D Designation

Tube O.D (inch)	1/4	3/8	1/2	5/8	3/4	1
Designation	4	6	8	10	12	16

- Pipe Thread Designation

Size(inch)	1/4	3/8	1/2	3/4	1
Screwed BSPT	4N	6N	8N	12N	16N
Screwed NPT	4R	6R	8R	12R	12R

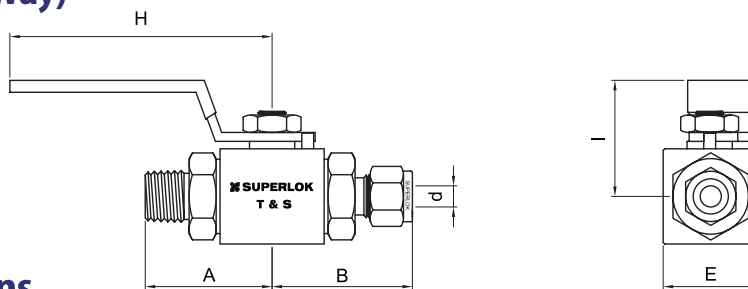
### 4. Seat Material Designator

- Nil: PVDF(Standard)
■ PC: PCTFE
■ PE: PEEK

### 5. Material Designator

- SS : 316 Stainless Steel
■ M : ALLOY (Monel)

**SBVH360 SERIES (2-Way)**



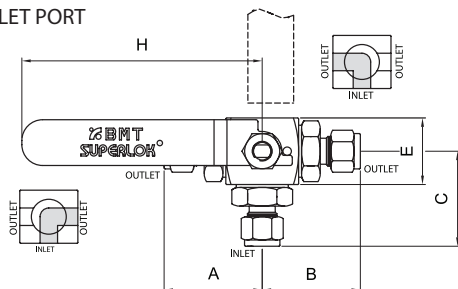
**Table of dimensions**

Order Number		Orifice	Cv	End Connections	Dimensions (mm)				
Series	Part No.				A	B	I	H	d (min)
SBVH3601	S	4	1.2	1/4" SUPERLOK	45.7	45.7	91.4	105	4.8
	S	6		3/8" SUPERLOK	47.5	47.5	94.4		7.1
	S	8		1/2" SUPERLOK	49.8	49.8	99.6		10.0
	F	4N	7.5	1/4" FEMALE NPT	37.0	37.0	74.0		
	F	6N		3/8" FEMALE NPT	38.0	38.0	76.0		
	F	8N		1/2" FEMALE NPT	41.5	41.5	83.0		
	M	4N	3.7	1/4" MALE NPT	42.1	42.1	84.2		7.1
	M	6N		3/8" MALE NPT	42.1	42.1	84.2		9.65
	M	8N		1/2" MALE NPT	47.0	47.0	94.0		10.0
SBVH3602	F	8N	10.0	1/2" FEMALE NPT	45.5	45.5	91.0	125	12.7
	F	12N		3/4" FEMALE NPT	51.0	51.0	102.0		
	M	12N		3/4" MALE NPT	52.5	52.5	105.0		
	S	10		5/8" SUPERLOK	54.0	54.0	108.0		
	S	12		3/4" SUPERLOK	54.0	54.0	108.0		
SBVH3603	F	12N	30.0	3/4" FEMALE NPT	54.0	54.0	108.0	149	20.0
	F	16N		1" FEMALE NPT	62.5	62.5	125.0		
	S	12	19.0	3/4" SUPERLOK	61.9	61.9	123.8		15.74
	S	16	30.0	1" SUPERLOK	66.4	66.4	132.8		20.0
	M	12N	19.0	3/4" MALE NPT	59.0	59.0	118.0		15.74
	M	16N	30.0	1" MALE NPT	63.8	63.8	127.6		20.0

All dimensions are for reference only, subject to change

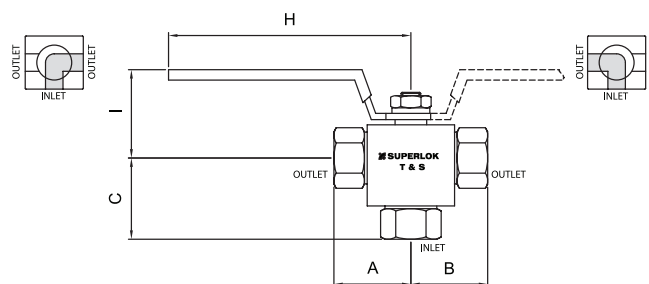
**SBVH360-3S SERIES (3-Way)**

SIDE INLET PORT



**SBVH360-3B SERIES (3-Way)**

BOTTOM INLET PORT



**Table of dimensions**

Order Number		Orifice	End Connections	Dimensions (mm)					
Series	Part No.			A	B	I	H	C	
SBVH3601-3B & SBVH3601-3S	S	4	10.0	1/4" SUPERLOK	45.7	45.7	91.4	105	53.3
	S	6		3/8" SUPERLOK	47.2	47.2	94.4		54.8
	S	8		1/2" SUPERLOK	49.8	49.8	99.6		54.0
	F	4N		1/4" FEMALE NPT	37.0	37.0	74.0		36.5
	F	6N		3/8" FEMALE NPT	38.0	38.0	76.0		40.0
	F	8N		1/2" FEMALE NPT	41.5	41.5	83.0		44.0
SBVH3602-3B & SBVH3602-3S	S	10	12.7	5/8" SUPERLOK	54.0	54.0	108.0	125	65.3
	S	12		3/4" SUPERLOK	54.0	54.0	108.0		65.3
	F	8N		1/2" FEMALE NPT	45.5	45.5	91.0		49.5
	F	12N		3/4" FEMALE NPT	51.0	51.0	102.0		55.0
SBVH3603-3B & SBVH3603-3S	S	12	19.0	3/4" SUPERLOK	61.9	61.9	123.8	149	69.8
	S	16		1" SUPERLOK	66.4	66.4	132.8		69.8
	F	12N		3/4" FEMALE NPT	59.0	59.0	118.0		56.5
	F	16N		1" FEMALE NPT	63.8	63.8	127.6		60.6

# Forged High Pressure Ball Valves

## SBVF360 Series

### Introduction

- SUPERLOK SBVF360 Series ball valves provide quick quarter turn operation in a compact design providing positive shutoff in applications up to 6,000psig (413bar).
- A selection of valve body, seat, and seal materials provide a wide range of pressures and temperatures at which the valve may be used.

### Features

- High flow capacity in a compact design
- Micro - finished ball provides a positive seal
- Low operating torques
- Positive handle stops
- Panel mountable
- Handle indicates flow direction
- Each and every valve is tested at the factory



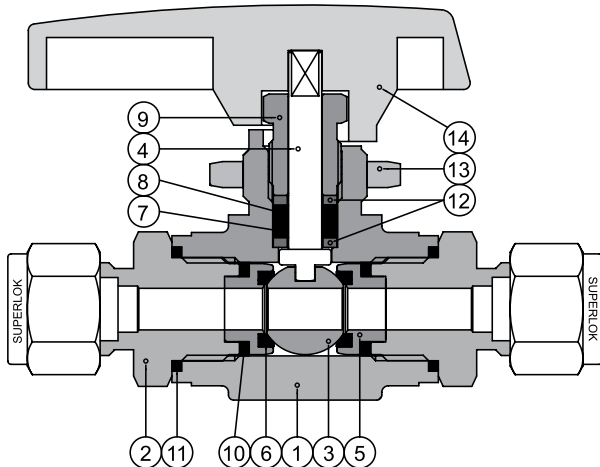
### Specifications

<b>Pressure rating</b>	6000psig (413bar)@70°F (21°C) with standard PCTFE seat
<b>Temperature rating</b>	-65 to 350 °F (-54 to 177°C) with standard PCTFE seat
<b>Body material</b>	316 stainless steel
<b>Body configurations</b>	Two - way and Three - way
<b>Port connections</b>	1/16" to 3/4" and 4mm to 16mm Variety of end connection.

### Testing

- Each Valve is tested with nitrogen at 1000psig (69bar) to maximum allowable leak rate of 0.1 SCCM.
- Hydrostatic shell test is performed at 1.5 times of the working pressure. (OPTION)

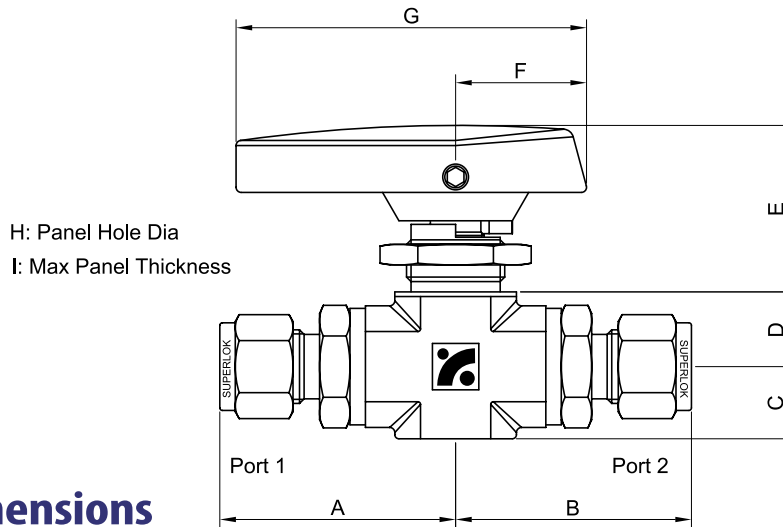
### Materials of Construction



Component		Material Grade / ASTM Specification
*1	Body	SS316 / A182
*2	End Connector	SS316 / A479
*3	Ball	SS316 / A276
*4	Stem	SS316 / A479
*5	Seal Retainer	SS316 / A479
*6	Ball Seal	Standard PCTFE (PTFE,PEEK)
*7	Lower Packing	PTFE
*8	Upper Packing	PTFE
9	Packing Bolt	SS316 / A479
*10	Retainer Back up Seal	PTFE
*11	Connector Seal	PTFE
*12	Stem Washer	SS316 / A276
13	Panel Nut	SS316 / A276
14	Handle	Phenolic

\*Wetted components

## Two - way SBVF360 Series



**Table of dimensions**

Order Number		Orifice Inch(mm)	Cv	End Connections Port1 / Port2	Dimensions Inch(mm)								
Series	Part No.				A	B	C	D	E	F	G	H	I
SBVF 3601	S-2	0.093(2.4)	0.21	1/8" SUPERLOK	1.36 (34.5)	1.36 (34.5)	0.39 (10.0)	0.41 (10.5)	0.93 (23.5)	0.71 (18.0)	1.85 (47.0)	0.64 (16.3)	0.13 (3.3)
	F-2N			1/8" FEMALE NPT	1.07 (27.2)	1.07 (27.2)							
	M-2N			1/8" MALE NPT	1.18 (29.9)	1.18 (29.9)							
	S-4			1/4" SUPERLOK	1.48 (37.6)	1.48 (37.6)							
	M-4N			1/4" MALE NPT	1.35 (34.3)	1.35 (34.3)							
SBVF 3602	S-3M	0.086(2.2)	0.18	3mm SUPERLOK	1.37 (34.8)	1.37 (34.8)	0.55 (14.0)	0.57 (14.5)	1.27 (32.3)	1.0 (25.4)	2.68 (68.0)	0.77 (19.6)	0.25 (6.4)
	S-4	0.189(4.8)	1.04	1/4" SUPERLOK	1.74 (44.2)	1.74 (44.2)							
	F-4N	0.250(6.4)	2.34	1/4" FEMALE NPT	1.51 (38.4)	1.51 (38.4)							
	M-4N			1/4" MALE NPT	1.62 (41.1)	1.62 (41.1)							
	S-6			3/8" SUPERLOK	1.80 (45.7)	1.80 (45.7)							
	M-6N	3/8" MALE NPT	1.62 (41.1)	1.62 (41.1)									
	S-6M	0.189(4.8)	1.04	6mm SUPERLOK	1.75 (44.5)	1.75 (44.5)							
S-8M	0.250(6.4)	2.34	8mm SUPERLOK	1.78 (45.2)	1.78 (45.2)								
S-10M			10mm SUPERLOK	1.81 (46.0)	1.81 (46.0)								
SBVF 3603	F-6N	0.406(10.3)	6.42	3/8" FEMALE NPT	1.95 (49.5)	1.95 (49.5)	0.69 (17.5)	0.76 (19.3)	1.62 (41.1)	1.09 (27.7)	2.92 (74.2)	0.90 (22.9)	0.38 (9.7)
	F-8N			1/2" FEMALE NPT	2.15 (54.6)	2.15 (54.6)							
	S-8			1/2" SUPERLOK	2.34 (59.4)	2.34 (59.4)							
	M-8N			1/2" MALE NPT	2.22 (56.4)	2.22 (56.4)							
	S-12			3/4" SUPERLOK	2.33 (59.2)	2.33 (59.2)							
	S-12M	0.375(9.5)	5.57	12mm SUPERLOK	2.33 (59.2)	2.33 (59.2)							
	S-16M	0.406(10.3)	6.42	16mm SUPERLOK	2.33 (59.2)	2.33 (59.2)							

\* Dimensions based on SUPERLOK nuts finger-tight. Dimensions are reference only, subject to change.

# Technical Data

## Seats and Body Materials vs Temperature and Pressure Rating

Seat Material	Temperature Rating	Pressure Rating @ 100°F (38°C)		Pressure Rating @ Max. Temperature	
		Stainless Steel	Brass	Stainless Steel	Brass
PCTFE	-65 to 300°F (-54 to 148°C)	6000psig (413bar)	3000psig (207bar)	1000psig @300°F (68.9bar @148°C)	700psig @300°F
PEEK	-65 to 450°F (-54 to 232°C)	6000psig (413bar)	3000psig (207bar)	700psig @400°F (48bar @200°C)	(48bar @200°C)
PTFE	-65 to 300°F (-54 to 148°C)	1500psig (103bar)	1500psig (103bar)	250psig @300 °F (17.2bar @148°C)	

## Flow Rate with 1000psig (69bar) Inlet Pressure

### Two - Way

Cv	Pressure Drop ΔP(psig)					
	Water @60°F (16°C) scfm			Air @60°F (16°C) gpm		
	10	50	100	10	50	100
0.06	0.2	0.4	0.6	5.9	13.2	18.7
0.18	0.6	1.3	1.8	17.7	39.6	56.0
0.21	0.7	1.5	2.1	20.7	46.2	65.4
0.93	2.9	6.6	9.3	91.5	204.7	289.5
1.04	3.3	7.4	10.4	102.4	228.9	323.7
2.34	7.4	16.5	23.4	230.3	515.0	728.3
5.57	17.6	39.4	55.7	548.2	1225.9	1733.7
6.42	20.3	45.4	64.2	631.9	1413.0	1998.3

\*To determine m<sup>3</sup> / hr, multiply GPM by 0.227 and SCFM by 1.69

### Three - Way

Cv	Pressure Drop ΔP(psig)					
	Water @60°F (16°C) scfm			Air @60°F (16°C) gpm		
	10	50	100	10	50	100
0.06	0.2	0.4	0.6	5.9	13.2	18.7
0.18	0.6	1.3	1.8	17.7	39.6	56.0
0.21	0.7	1.5	2.1	20.7	46.2	65.4
0.63	2.0	4.5	6.3	62.0	138.7	196.1
0.70	2.2	4.9	7.0	68.9	154.1	217.9
0.87	2.8	6.2	8.7	85.6	191.5	270.8
3.46	10.9	24.5	34.6	340.6	761.5	1077.0
3.62	11.4	25.6	36.2	356.3	796.7	1126.8

\*To determine m<sup>3</sup> / hr, multiply GPM by 0.227 and SCFM by 1.69

## Ordering Information

# SBVF3602 - MS - 6N - 6 - PT - SS

1

2

3

4

5

### 1. Valve Series

- Two - Way
- SBVF3601
- SBVF3602
- SBVF3603
- Three - Way
- SBVF3601 - 3B
- SBVF3602 - 3B
- SBVF3603 - 3B

### 2. Port Type

- Two - Way
- Three - Way
- : Port 1 x Port 2
- : Port 1 x Port 2 x Port 3
- S : SUPERLOK Tube Fitting
- M : Male Thread
- F : Female Thread

### 3. Port Size

- Two - Way
- Three - Way
- : Port 1 x Port 2
- : Port 1 x Port 2 x Port 3

### - Pipe Thread Designation

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

### - Tube O.D Designation

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

### 4. Seat Material

- PC : PCTFE
- PE : PEEK
- PT : PTFE

### 5. Body Material

- SS : 316 Stainless Steel
- B : Brass

### ■ Examples

- ex1) SBVF3602 - S - 6 - PC - B  
- SBVF3602 : 2-Way / [Port1]SUPERLOK x [Port2]SUPERLOK / Port Size : 3/8" x 3/8"  
Seat Material : PCTFE / Body Material : Brass
- ex2) SBVF3602 - 3B - S - 6 - PC - SS  
- SBVF3602-3B : 3-Way / [Port1&2&3]SUPERLOK / Port Size : [Port1&2&3]3/8"  
Seat Material : PCTFE / Body Material : 316 Stainless Steel
- ex3) SBVF3602 - 3B - FSS - 4N - 6 - 6 - PC - SS  
- SBVF3602-3B : 3-Way / [Port1]Female Thread x [Port2&3]SUPERLOK / Port Size : [Port1]1/4"NPT x [Port2&3]3/8"  
Seat Material : PCTFE / Body Material : 316 Stainless Steel

BMT CBVF-1(08.12.24)

# 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)

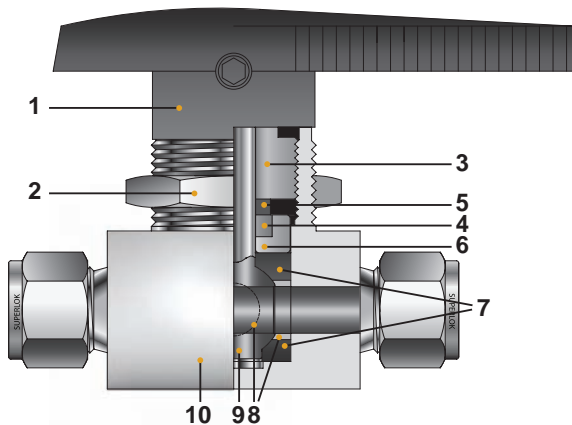
### Testing

- 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

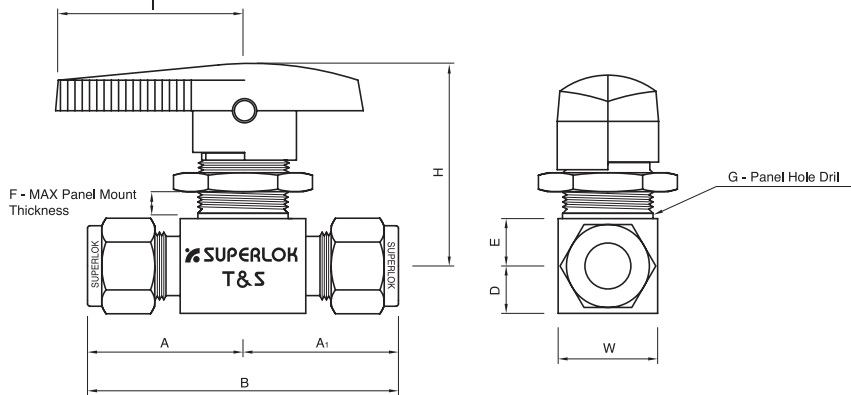


No.	Component	Material Grade / ASTM Specification	
		Stainless Steel	Brass
1	Handle	Phenolic	
	Set Screw	Stainless Steel	
2	Panel Nut	Stainless Steel	Brass (optional)
3	Packing Bolt	SS316 / A479	Brass / B16 (optional)
*4	Packing	PTFE	
5	Upper Packing Gland	SS316 / A479	
6	Lower Packing Gland		
*7	Upper&Lower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

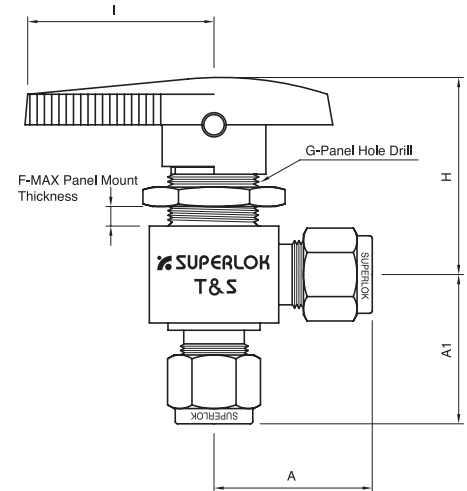
• Wetted components are marked "\*"

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

STRAIGHT TYPE



ANGLE TYPE

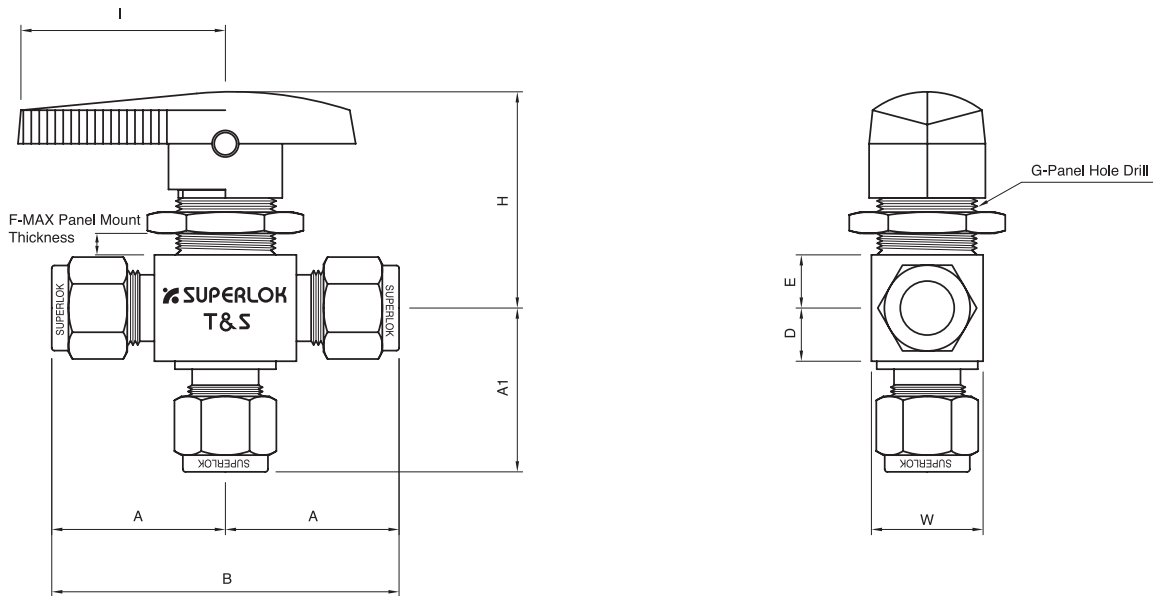


**Table of dimensions**

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	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	0.6			6mm SUPERLOK														
	S 4		1/4" SUPERLOK																
SBV120 H2	F 2N	4.8	1.2	1/8" FEMALE NPT		25.4	25.4	50.8	9.4	11.2	4.8	19.8	43.7	38.5	19.8				
	F 4N			0.9	1/4" FEMALE NPT		26.2	26.2								52.4			
	F 4R				1/4" ISO FEMALE														
	M 4N	1.2	1/4" MALE NPT		25.4	25.4	50.8												
	MS 4N-4		1.6	1/4" MALE NPT	1/4" SUPERLOK	25.4	30.2	55.6											
	S 6M	2.4		6mm SUPERLOK		30.2	30.2	60.4											
	S 4		1/4" SUPERLOK																
	S 8M	1.5	8mm SUPERLOK		31.0	31.0	62.0												
	S 6		3/8" SUPERLOK		32.5	32.5	65.0												
SBV120 H3	F 4N	7.1	3.0	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			2.6	3/8" FEMALE NPT														
	F 6R				3/8" ISO FEMALE														
	S 6			6.0	3/8" SUPERLOK											38.9	38.9	77.8	
	S 10M				10mm SUPERLOK														
SBV120 H4	F 8N	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	75.0				
	F 8R			1/2" ISO FEMALE															
	S 12M			12.0	12mm SUPERLOK											50.0	50.0	100	
	S 8				1/2" SUPERLOK														
	S 12			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		38.9	38.9	77.8								
	S	6		3/8" SUPERLOK												
	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 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 Designator

■ Nil: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 : 316 Stainless Steel ■ B : BRASS

## Pressure Rating

Vlave	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 Designator

■ Nil: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 : 316 Stainless Steel ■ B : BRASS