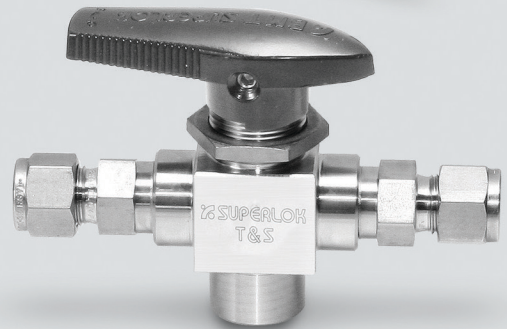
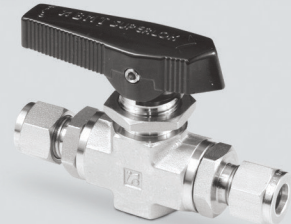
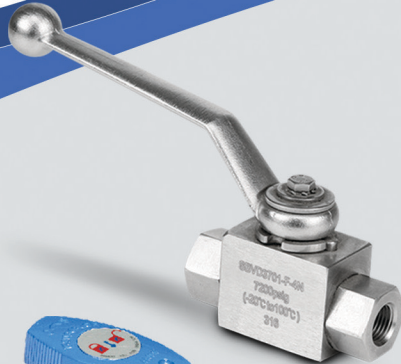
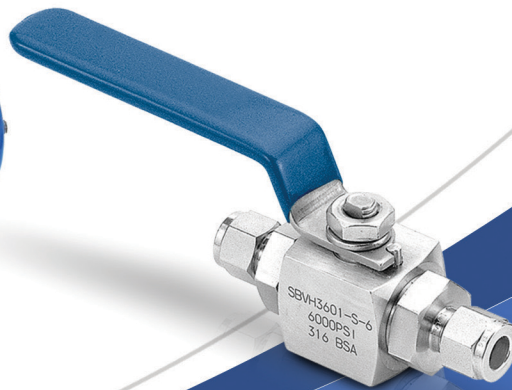
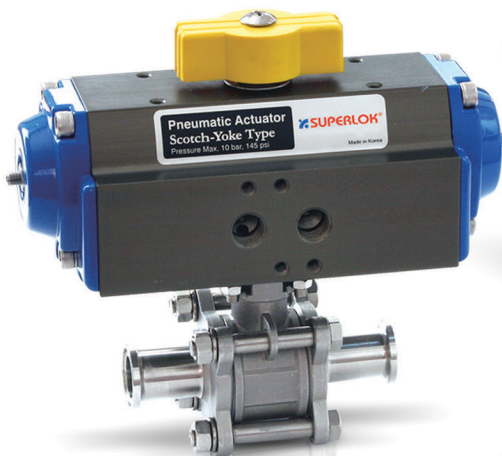


Instrumentation Ball Valves

Ball Valves | Key Operation Ball Valves

Ball Valve to DIN Standard | Swing-Out Ball Valves

Trunnion Ball Valves | Forged High Pressure Ball Valves



Ball Valve SBV120H Series

120 Series One-Piece Type

Features

- Simple design with one-piece body.
- Low torque and easy operation.
- One-piece ball stem.
- Panel mountable.
- Various end connections available.
- Straight, Angle and 3-Way flow patterns.
- Every valve is factory tested.



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" and 0.406" (1.3mm to 10.3mm)

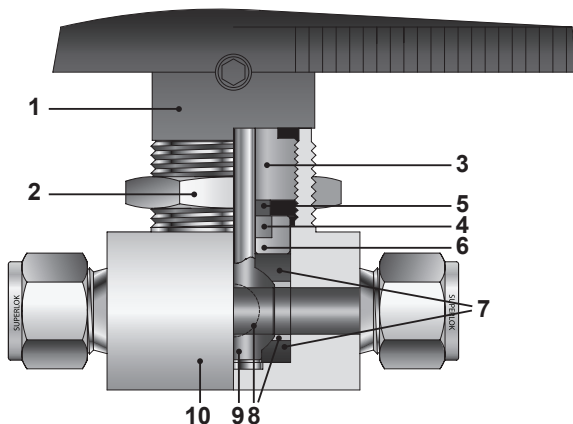
Testing

- 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

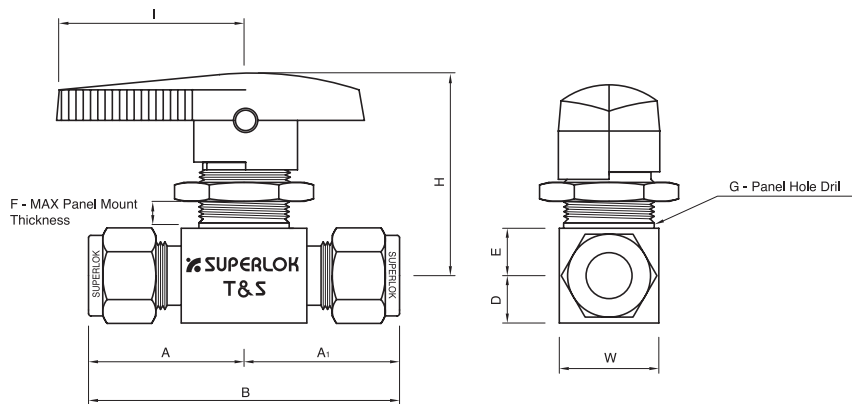


No.	Component	Material Grade / ASTM Specification	
		Stainless Steel	Brass
1	Handle	Zinc	
	Set Screw	Stainless Steel	
2	Panel Nut	Stainless Steel	Brass
3	Packing Bolt	SS316 / A276	Brass / B16
*4	Packing	PTFE	
5	Upper Packing Gland	SS316 / A276	
6	Lower Packing Gland		
*7	Upper&Lower Ball Seat	PTFE	
*8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

※ Wetted components are marked "※"

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

STRAIGHT TYPE



ANGLE TYPE

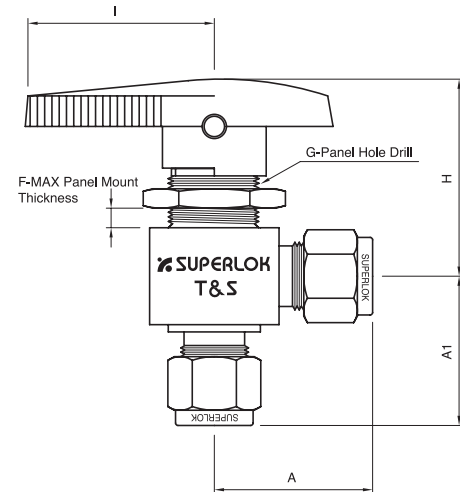


Table of Dimensions

Part Number	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	7.1	8.7	6.4	15.0	36.0	29.0	15.0							
	S3M	2.4	0.2	3mm SUPERLOK	25.4	25.4	50.8														
	S2	0.2	1/8" SUPERLOK																		
	F2N	0.5	1/8" FEMALE NPT	20.6	20.6	41.2															
	S6M	3.2	0.6	6mm SUPERLOK	27.7	27.7	55.4														
	S4	0.6	1/4" SUPERLOK																		
SBV120 H2	F2N	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							
	F4N		0.9	1/4" FEMALE NPT	26.2	26.2	52.4														
	F4R		0.9	1/4" ISO FEMALE																	
	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														
SBV120 H3	F4N	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							
	F6N		2.6	3/8" FEMALE NPT																	
	F6R		2.6	3/8" ISO FEMALE																	
	S6		6.0	3/8" SUPERLOK																	
	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	75.0							
	F8R		6.3	1/2" ISO FEMALE																	
	S12M		12.0	12mm SUPERLOK																	
	S8		12.0	1/2" SUPERLOK																	
	S12		6.4	3/4" SUPERLOK																	

• Dimensions shown with SUPERLOK nuts are measured in the finger tight position.
 • All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change.

SBV120H Series : 3-Way (Switching Valve)

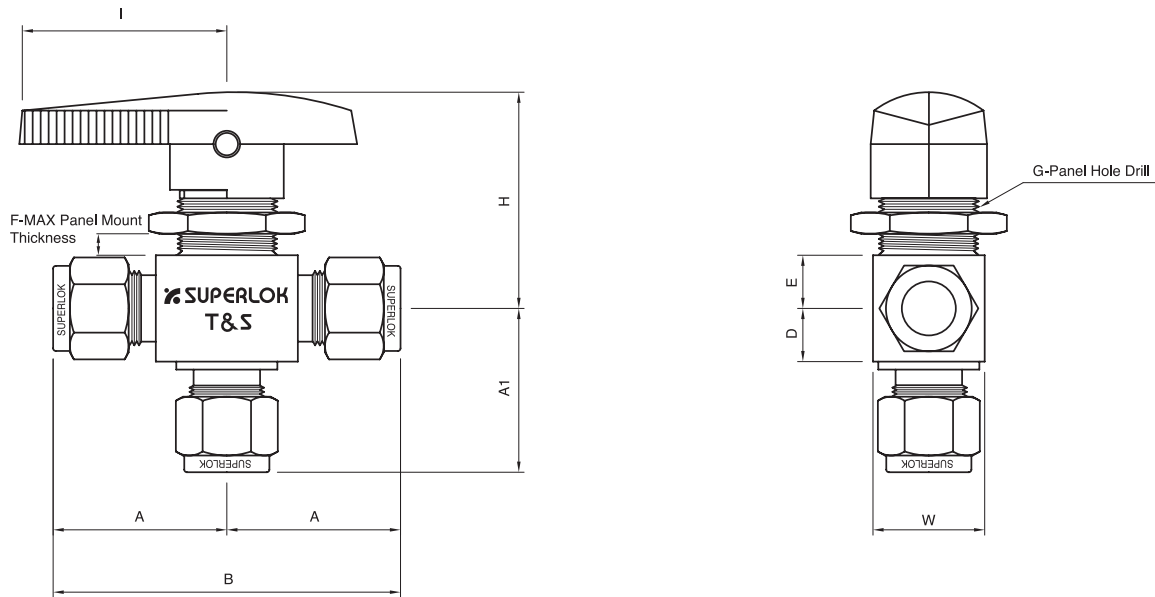


Table of Dimensions

Part Number	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	7.1	8.7	6.4	15.0	36.0	29.0	15.0				
	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		26.2	26.2	52.4											
	S4		0.35	1/4" SUPERLOK		25.4	30.2	55.6											
SBV120 H23	F4N		4.8	0.75	1/4" FEMALE NPT		30.2	30.2	60.4	9.4	11.2	4.8	19.8	43.7	38.5	19.8			
	F4R	0.75		1/4" ISO FEMALE		31.0	31.0	62.0											
	M4N-S4	0.8		1/4" MALE NPT	1/4" SUPERLOK	31.8	31.8	63.6											
	S6M	0.9		6mm SUPERLOK		14.2	14.2	9.4	28.5								56.1	51.0	28.5
	S4	0.8		1/4" SUPERLOK		38.9	38.9	77.8											
SBV120 H33	S8M	7.1	0.8	8mm SUPERLOK		39.6	39.6	79.2	17.5	17.5	9.4	38.1	71.8	75.0	38.1				
	F4N		1.7	1/4" FEMALE NPT		50.0	50.0	100											
	F6N		1.5	3/8" FEMALE NPT															
	F6R		1.5	3/8" ISO FEMALE															
	S6		2.0	3/8" SUPERLOK															
SBV120 H43	S10M	10.3	2.0	10mm SUPERLOK															
	F8N		3.5	1/2" FEMALE NPT															
	F8R			1/2" ISO FEMALE															
	S12M		4.6	12mm SUPERLOK															
	S8			1/2" SUPERLOK															
S12	3.8	3/4" SUPERLOK																	

- Dimensions shown with SUPERLOK nuts are measured in the finger tight position.
- All dimensions in millimeters unless specified as "inch". Dimension 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
2.0	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

Ball Valve SBV210 Series

210 Series Two-Piece Type

Features

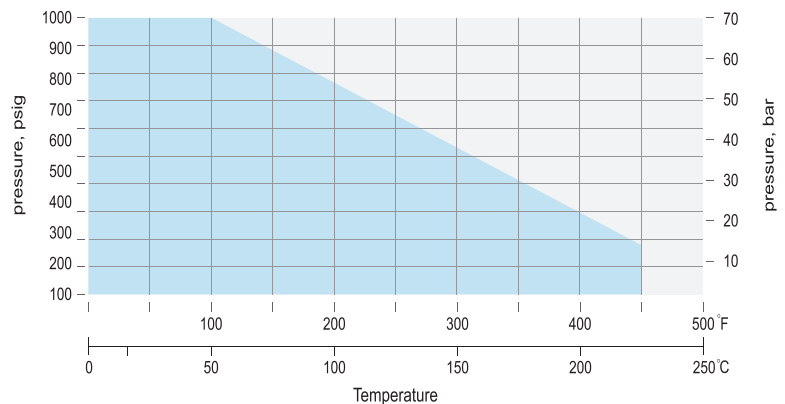
- Compact design.
- Low torque and easy operation.
- Butterfly and lever handle available.
- Various end connections available.
- 100% factory tested.



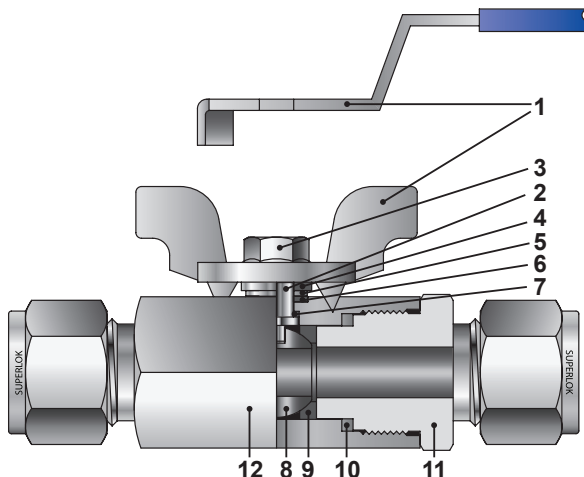
Specifications

Pressure rating	1000psig (69bar)@70°F (21°C)
Body material	316 stainless steel and Brass
Port Connections	1/4" to 1" and 6mm to 16mm
Orifice	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 / A276	
3	Lock Nut	Stainless Steel	
4	Upper Stem Washer	SS304 / A276	
5	Lower Stem Washer		
6	Upper Stem Seal	PTFE	
7	Lower Stem Seal		
8	Ball	SS316 / A276	
9	Seat	PTFE	
10	Connector Seal		
11	End Connector	SS316 / A276	Brass / B16
	Insert(for Female Thread)	SS316 / A276	
12	Body	SS316 / A276	Brass / B16

SBV210 Series

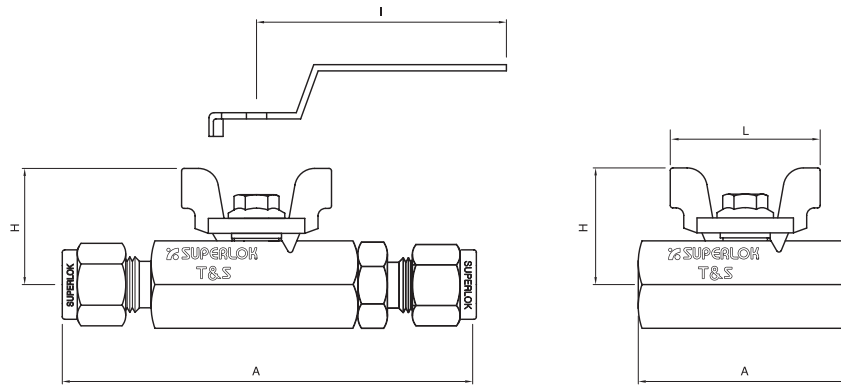


Table of Dimensions

Part Number	Orifice	Cv	End Connections	Dimensions				
				A	H	I	L	
SBV210	S6M	5.0	1.25	6mm SUPERLOK	79.8	23.0	60.0	30.0
	S4		1.25	1/4" SUPERLOK	79.8			
	F4N		1.4	1/4" FEMALE NPT	42.8			
	S10M	7.5	2.6	10mm SUPERLOK	91.5	31.0	90.0	48.0
	S6		2.5	3/8" SUPERLOK	91.5			
	F6N		2.6	3/8" FEMALE NPT	46.6			
	S12M	9.0	9.5	12mm SUPERLOK	101.4	34.0	90.0	50.0
	S8		9.5	1/2" SUPERLOK	101.4			
	F8N		9.5	1/2" FEMALE NPT	55.0			
	S16M	12.5	10.6	16mm SUPERLOK	107.6	39.0	100.0	55.0
	S10		10.6	5/8" SUPERLOK	107.0			
	S12		12.7	3/4" SUPERLOK	107.0			
	F12N		12.7	3/4" FEMALE NPT	61.3			
	S16		17.5	1" SUPERLOK	131.0			
F16N	17.5	1" FEMALE NPT	76.0	45.0	100.0	68.0		

SBVA210 Series

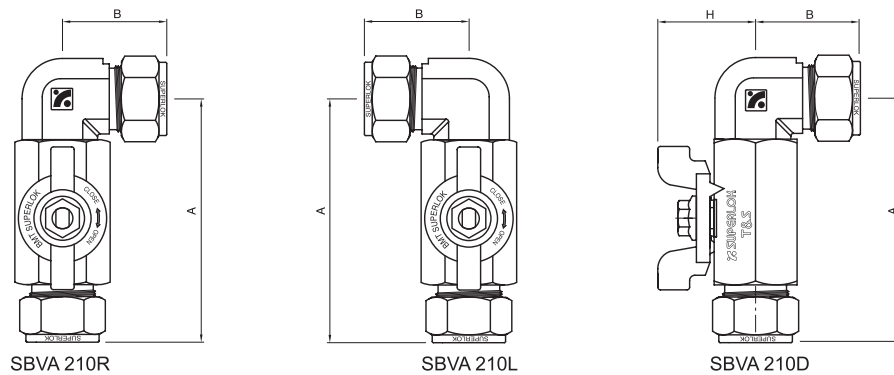


Table of Dimensions

Part Number	Orifice	End Connections	Dimensions			
			A	B	H	
SBVA210	S4	5.0	1/4" SUPERLOK	65.3	30.5	23.0
	S6	7.5	3/8" SUPERLOK	77.5	36.1	31.0
	S8	9.0	1/2" SUPERLOK	87.9	38.1	34.0
	S12	12.5	3/4" SUPERLOK	93.8	39.9	39.0
	S16	16.0	1" SUPERLOK	115.3	49.0	45.0

SBVT210 Series

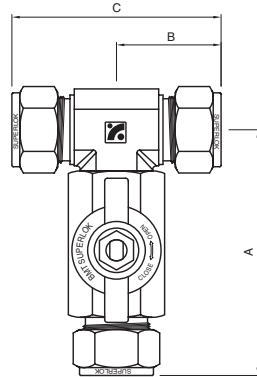


Table of Dimensions

Part Number	Orifice	End Connections	Dimensions			
			A	B	C	
SBVT210	S4	5.0	1/4" SUPERLOK	65.3	30.5	61.0
	S6	7.5	3/8" SUPERLOK	77.5	36.1	72.2
	S8	9.0	1/2" SUPERLOK	87.9	38.1	76.2
	S12	12.5	3/4" SUPERLOK	93.8	39.9	79.8
	S16	16.0	1" SUPERLOK	115.3	49.0	98.0

• All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change.

Ordering Information

Example :

SBV210 - S 8 - BH - SS

1
2
3
4
5

1. Valve Series

SBV210
SBVA210
SBVT210

2. End Connection

S : SUPERLOK Tube Fitting
F : Female Thread

3. End Connection Size

Tube O.D Designation

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

Pipe Thread Designation

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

4. Handle Designator

BLANK : Butterfly Handle (Standard)
BH : Bar Handle

5. Material Designator

SS(BLANK) : 316 Stainless Steel
B : BRASS

Ball Valve SBVH360 Series

360 Series Three-Piece High-Pressure Type

Features

- Compact design.
- High flow rate with maximum orifice.
- Various end connections available.
- Anti blow-out stem design.
- Every valve is factory tested.
- Fire Safe design available.



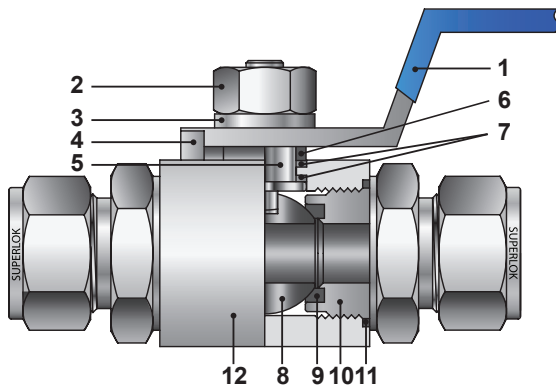
Specifications

Pressure rating	6000psig (414bar)@70°F (21°C)
Temperature rating	-22 to 355°F (-30 to 150°C) with PCTFE seat -65 to 500°F (-54 to 260°C) with PEEK seat
Body material	316 stainless steel and Brass
Port Connections	1/4" to 1" and 6mm to 25mm
Orifice	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	SS316 / A276
*5	Stem	
6	Stem Washer	SS304 / A276
*7	Stem Packing	PTFE
*8	Ball	SS316 / A276
*9	Seat	PCTFE (Standard)
*10	End Connector	SS316 / A276
*11	Connector Seal	PTFE
*12	Body	SS316 / A276

※ Wetted components are marked "*"

SBVH360 Series (2-Way)

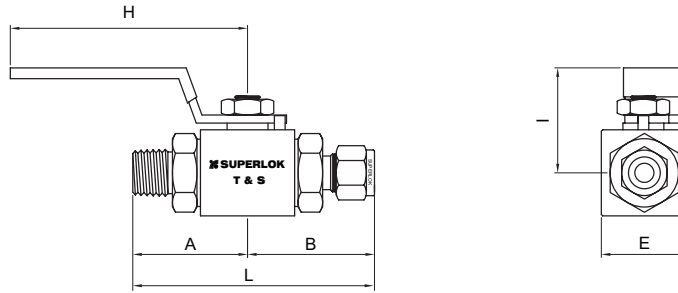
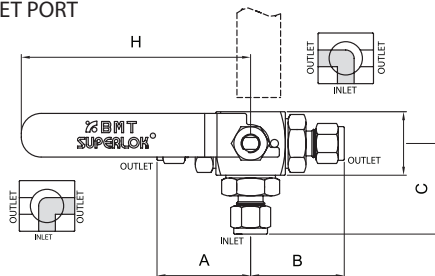


Table of Dimensions

Part Number	Orifice	Cv	End Connections	Dimensions					
				A	B	L	H	I	E
SBVH3601	S4	1.2	1/4" SUPERLOK	45.7	45.7	91.4	115	38.5	32.0
	S6	3.7	3/8" SUPERLOK	47.5	47.5	94.4			
	S8	7.5	1/2" SUPERLOK	49.8	49.8	99.6			
	F4N		1/4" FEMALE NPT	37.0	37.0	74.0			
	F6N		3/8" FEMALE NPT	38.0	38.0	76.0			
	F8N	1/2" FEMALE NPT	41.5	41.5	83.0				
	M4N	3.7	1/4" MALE NPT	42.1	42.1	84.2			
	M6N	7.2	3/8" MALE NPT	42.1	42.1	84.2			
M8N	7.5	1/2" MALE NPT	47.0	47.0	94.0				
SBVH3602	F8N	10.0	1/2" FEMALE NPT	45.5	45.5	91.0	165	51.9	40.0
	F12N		3/4" FEMALE NPT	51.0	51.0	102.0			
	M12N		3/4" MALE NPT	52.5	52.5	105.0			
	S10		5/8" SUPERLOK	54.0	54.0	108.0			
	S12		3/4" SUPERLOK	54.0	54.0	108.0			
SBVH3603	F12N	30.0	3/4" FEMALE NPT	54.0	54.0	108.0	165	57.0	50.0
	F16N		1" FEMALE NPT	62.5	62.5	125.0			
	S12	19.0	3/4" SUPERLOK	61.9	61.9	123.8			
	S16	30.0	1" SUPERLOK	66.4	66.4	132.8			
	M12N	19.0	3/4" MALE NPT	59.0	59.0	118.0			
	M16N	30.0	1" MALE NPT	63.8	63.8	127.6			

SBVH360-3S Series (3-Way)

SIDE INLET PORT



SBVH360-3 Series (3-Way)

BOTTOM INLET PORT

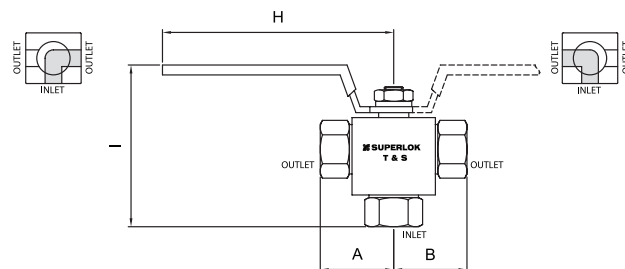


Table of Dimensions

Part Number	Orifice	End Connections	Dimensions				
			A	B	I	H	C
SBVH36013 & SBVH36013S	S4	1/4" SUPERLOK	45.7	45.7	91.4	115	53.3
	S6	3/8" SUPERLOK	47.2	47.2	94.4		
	S8	1/2" SUPERLOK	49.8	49.8	99.6		
	F4N	1/4" FEMALE NPT	37.0	37.0	74.0		
	F6N	3/8" FEMALE NPT	38.0	38.0	76.0		
	F8N	1/2" FEMALE NPT	41.5	41.5	83.0		
SBVH36023 & SBVH36023S	S10	5/8" SUPERLOK	54.0	54.0	108.0	165	65.3
	S12	3/4" SUPERLOK	54.0	54.0	108.0		
	F8N	1/2" FEMALE NPT	45.5	45.5	91.0		
	F12N	3/4" FEMALE NPT	51.0	51.0	102.0		
SBVH36033 & SBVH36033S	S12	3/4" SUPERLOK	61.9	61.9	123.8	165	69.8
	S16	1" SUPERLOK	66.4	66.4	132.8		
	F12N	3/4" FEMALE NPT	59.0	59.0	118.0		
	F16N	1" FEMALE NPT	63.8	63.8	127.6		

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				10000psig (689bar)
3602 & 3603	PVDF			5000psig (344bar)	-23°C to 191°C(-10°F to 375°F)
	PCTFE			6000psig (413bar)	
	PEEK				

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				6000psig(413bar)
3602 & 3603	PVDF			3000psig(206bar)	-23°C to 191°C(-10°F to 375°F)
	PCTFE			4000psig(275bar)	
	PEEK				

Ordering Information

Example :

SBVH3602 - S 12 - PE - SS

1
2
3
4
5

1. Valve Series

2-Way straight

SBVH3601
SBVH3602
SBVH3603

2-Way Angle

SBVH3601A
SBVH3602A
SBVH3603A

3-Way : Bottom Inlet Port

SBVH36013
SBVH36023
SBVH36033

3-Way : Side Inlet Port

SBVH36013S
SBVH36023S
SBVH36033S

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 NPT	4N	6N	8N	12N	16N
Screwed BSPT	4R	6R	8R	12R	12R

4. Seat Material Designator

BLANK : PCTFE(Standard)
PV : PVDF
PE : PEEK

5. Material Designator

SS(BLANK) : 316 Stainless Steel
M : ALLOY (Monel)

Key Operation Safety Ball Valves

Promotes safe system operation by preventing accidental or unauthorized cycling of valves in sensitive or hazardous applications.

SBVL210 Series Low Pressure Key Operation Ball Valves

Features

- Locking handle in On and Off positions
- Compact design
- Low operating torques
- Various end connections available



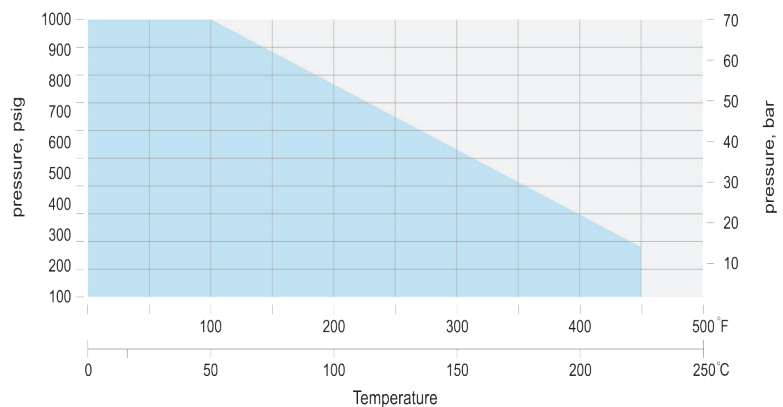
Specifications

- Pressure rating: 1000psig (69bar) @100°F (38°C)
- Body material: 316 stainless steel body
- Port Connections: 1/4" to 1" and 6mm to 25mm
- Orifice: 5.0mm to 16.0mm

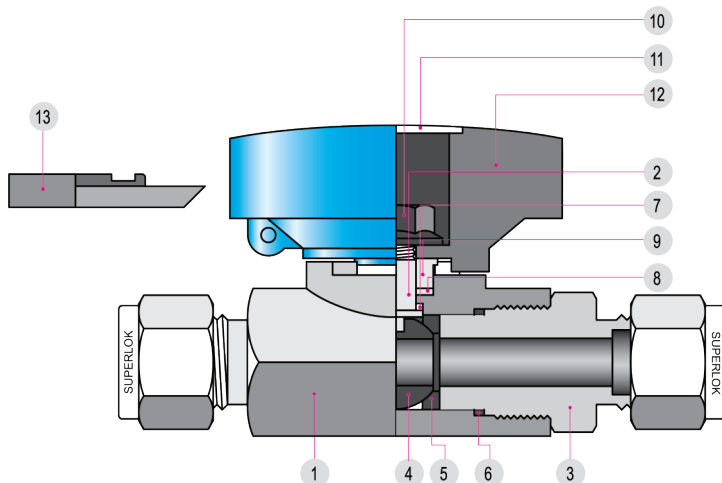
Testing

- Every valve is tested with nitrogen at 1000psig (69bar)
- Max. allowable leak rate: 0.1 cm³/min
- Shell testing is performed on demand.

Pressure-Temperature Rating



Materials of Construction



No.	Component	Material Grade ASTM Specification
*1	Body	A185-F316/A276-316/A351-CF8M
*2	Stem	A276-316
*3	End Connector	A276-316
*4	Ball	A276-316
*5	Ball Seal	PTFE
*6	Connector Seal	PTFE
*7	Lower Stem Seal	PTFE
*8	Upper Stem Seal	PTFE
*9	Stem Washer	A276-304
10	Nut	Stainless Steel
11	Handle Cap	Aluminum
12	Handle	Aluminum
13	Master Key	Zinc

- Wetted components are marked "*"

SBVL210 Series

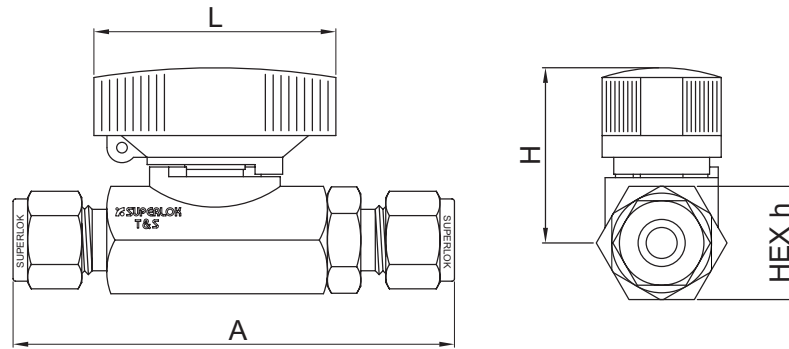


Table of Dimensions

Part Number	Orifice	Cv	End Connection	Dimensions				
				h	A	H	L	
SBVL 210	S6M	5.0	1.25	6mm SUPERLOK	18.0	79.8	32.3	42.0
	S4			1/4" SUPERLOK				
	S10M	7.0	2.5	10mm SUPERLOK	22.2	91.5	35.6	50.0
	S6			3/8" SUPERLOK				
	S12M	9.0	9.5	12mm SUPERLOK	27.0	101.4	37.6	50.0
	S8			1/2" SUPERLOK				
	S16M	12.5	12.7	16mm SUPERLOK	31.8	107.0	40.4	60.0
	S12			3/4" SUPERLOK				
	S25M	16.0	17.5	25mm SUPERLOK	38.1	131.0	43.5	60.0
	S16			1" SUPERLOK				

- Dimensions are based on SUPERLOK nuts in the finger tight position.
- All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change.

Ordering Information

Example: SBVL 210 - S8 - RD - OT

1
2 3
4
5

1. Valve Series

SBVL210

2. End Connection

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

3. End Connection Size

Tube O.D Designation

Tube O.D (inch)	1/4	3/8	1/2	3/4	1
Designation	4	6	8	12	16
Tube O.D (inch)	6	10	12	16	25
Designation	6M	10M	12M	16M	25M

4. Handle Color

Blank : Blue (Standard)
 RD : Red
 BK : Black

5. Valve Type

Blank : Standard Type
 OT : Key to Open
 CT : Key to Close
 ST : Special Order

Pipe Thread Designation

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

Lock-out Configurations

- **Standard:** Valve requires master key in the handle to cycle Open or Closed.
- **Key to Close:** Valve can be cycled to the Open position without master key but requires the master key to cycle to the Closed position.
- **Key to Open:** Valve can be cycled to the Closed position without master key but requires the master key to cycle to the Open position.

Key Operation Safety Ball Valves

SBVL360 Series High Pressure Key Operation Ball Valves

Features

- Locking handle in On and Off positions.
- High flow capacity in a compact design.
- Low operating torque.
- Positive handle stops.
- Various end connections available.



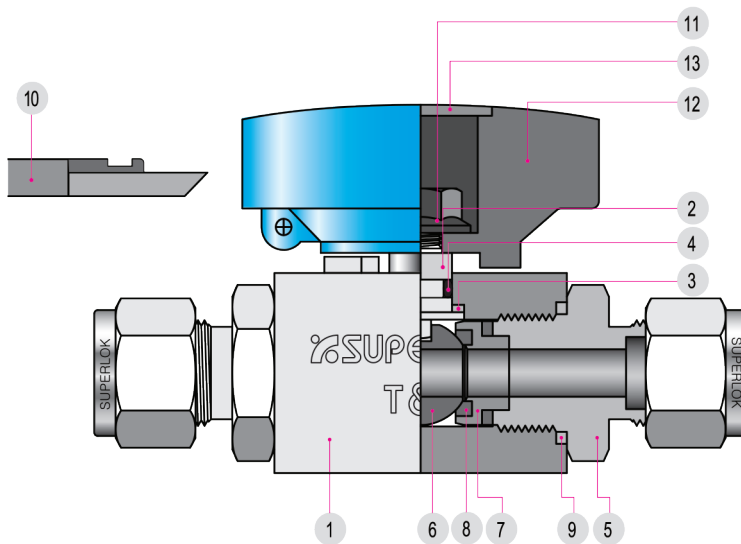
Specifications

- Pressure rating: 6000psig (413bar) @70°F (21°C) with standard PCTFE seat.
- Temperature rating: -65 to 350F (-54 to 177C) with standard PCTFE seat.
- Body material: 316 stainless steel body.
- Port Connections: 1/4" to 3/4" and 6mm to 25mm.

Testing

- Every valve is tested with nitrogen at 1000 psig (69 bar).
- Max. allowable leak rate: 0.1 cm³/min.
- Shell testing is performed on demand.

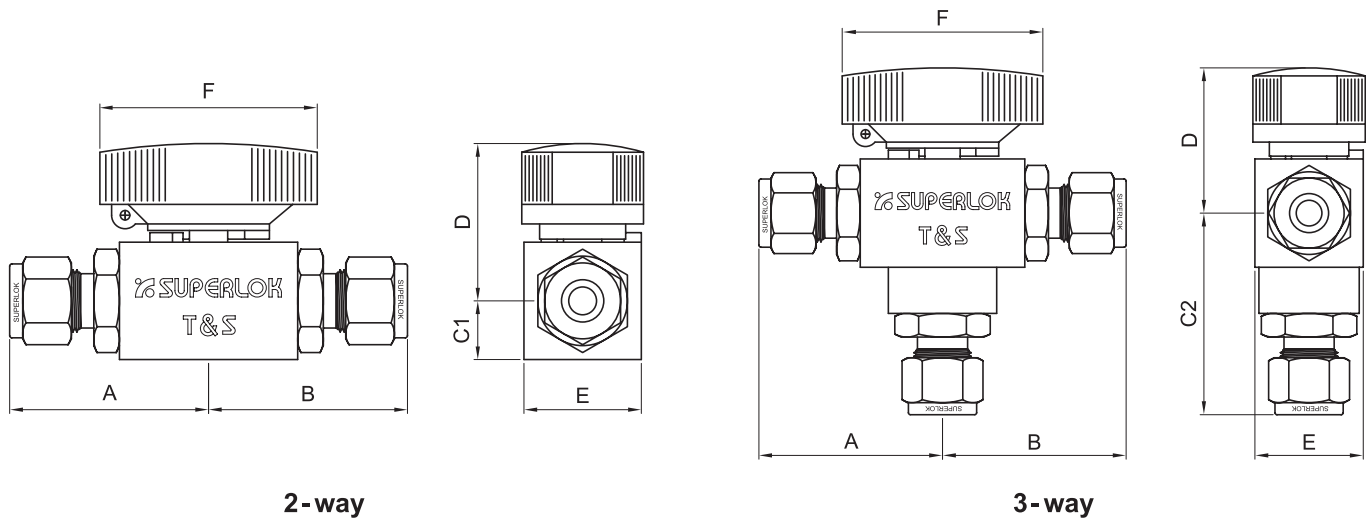
Materials of Construction



No.	Component	Material Grade ASTM Specification
*1	Body	A276-316 / A351-CF8M
*2	Stem	SS316 / A276
*3	Thrust Washer	PEEK
*4	O-Ring	NBR
*5	End Connector	A276-316
*6	Ball	A276-316
*7	Seal Retainer	A276-316
*8	Ball Seal	PCTFE
*9	Connector Seal	PTFE
10	Master Key	Zinc
11	Nut	Stainless Steel
12	Handle	Aluminum
13	Handle Cap	Aluminum

- Wetted components are marked "*"

SBVL360 Series



2-way

3-way

Table of Dimensions

Part Number	Orifice	Cv	End Connection	Dimensions							
				A	B	C1	C2	D	E	F	
SBVL3601 or SBVL36013	S6M	4.8	1.04	6mm SUPERLOK	43.8	43.8	12.0	43.8	33.7	24.0	42.0
	S4			43.8	43.8	43.8					
	F2N			34.0	34.0	34.0					
	M4N			40.2	40.2	40.2					
SBVL3602 or SBVL36023	S8M	6.4	2.34	8mm SUPERLOK	45.2	45.2	13.5	53.2	36.2	27.0	50.0
	S10M			46.0	46.0	54.0					
	S6			45.7	45.7	53.7					
	F4N			38.4	38.4	46.4					
	M4N			41.1	41.1	49.1					
	M6N			41.1	41.1	49.1					
SBVL3603 or SBVL36023	S12M	10.3	6.42	12mm SUPERLOK	59.2	59.2	16.0	69.2	41.5	32.0	60.0
	S16M			59.2	59.2	69.2					
	S8			59.4	59.4	69.4					
	S12			59.2	59.2	69.2					
	F6N			49.5	49.5	59.5					
	F8N			54.6	54.6	64.6					
	M8N			56.4	56.4	66.4					

- Dimensions are based on SUPERLOK nuts in the finger tight position.
- All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change.

Technical Data

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 (413 bar)	3000psig (207 bar)	1000psig@300°F (68.9bar@148°C)	700psig@300°F (48bar@200°C)
PEEK	-65 to 450°F (-54 to 232°C)	6000psig (413 bar)	3000psig (207 bar)	700psig@400°F (48bar@200°C)	
PTFE	-65 to 300°F (-54 to 148°C)	1500psig (103 bar)	1500psig (103 bar)	250psig@300°F (17.2bar@148°C)	

Ordering Information

Example : **SBVL 3602 - S6 - PE - RD - OT**

1
2 3
4
5
6

1. Valve Series

2-Way	3-Way
SBVL3601	SBVL36013
SBVL3602	SBVL36023
SBVL3603	SBVL30233

2. End Connection

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

3. End Connection Size

Tube O.D Designation

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

4. Handle Color

Blank : PCTFE
 PE : PEEK
 PT : PTFE

5. Handle Color

Blank : Blue (Standard)
 RD : Red
 BK : Black

6. Valve Type

Blank: Standard
 OT: Key to Open
 CT: Key to Close
 ST: Special Order

Pipe Thread Designation

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

Lock-out Configurations

- **Standard:** Valve requires master key in the handle to cycle Open or Closed.
- **Key to Close:** Valve can be cycled to the Open position without master key but requires the master key to cycle to the Closed position.
- **Key to Open:** Valve can be cycled to the Closed position without master key but requires the master key to cycle to the Open position.

Ball Valve to DIN Standard

SBVD 370 Series

Features

- Pressure rating : 7200psig (500bar)
- Temperature rating : -20°C to 100°C with POM and NBR standard.
- Compact design with max orifice.
- Conforms to DIN standard.
- Every valve is factory tested.



Technical Data

Materials of Construction

Component	Specification			
	Valve Body Materials			
	SS316		Carbon Steel	
	ASTM	DIN	ASTM	DIN
Body				
End Connector	A479 / SS316	17440 / 1.4571	A108 / 12L14	1651 / 9SMn28K
Stem				
Ball	316 Stainless Steel			
Ball Seals	POM-MoS ₂ (Standard)			
Stem & Connector Seals	NBR (Standard)			
Handle	SS316		Carbon Steel	
Locking Device	Stainless Steel			

Temperature Rating

Stem and Connector Seals

Materials	Temperature Rating
NBR	-30°C to 100°C
Viton	-25°C to 200°C
EPDM	-50°C to 130°C

Ball Seals

Materials	Temperature Rating
POM - MoS ₂	-30°C to 100°C
PTFE	-54°C to 232°C

Specification

Locking Device

- Available as an option

Indicator on Washer

- Allows easy identification of flow direction

Stem & Connector Seals

- NBR (standard), Viton, and EPDM (optional)

Orifice

- Maximized for minimal pressure drop
- Ranges from DN 4 to DN 25
- Available up to DN 80 upon request

Ball Seats

- Available in POM-MoS2 (standard) and PTFE (optional)

Handle

- Available in cast stainless steel (standard) and zinc plated carbon steel (optional)

Variety of End Connections

- Include DIN 2353 "L" & "S" series Male & Female DIN/ISO/BSP and NPT

Body Construction

- Machined from bar stock
- Available in stainless steel and zinc plated carbon steel

Floating Ball

- Machined from bar stock
- Available in stainless steel and hard chrome plated carbon steel

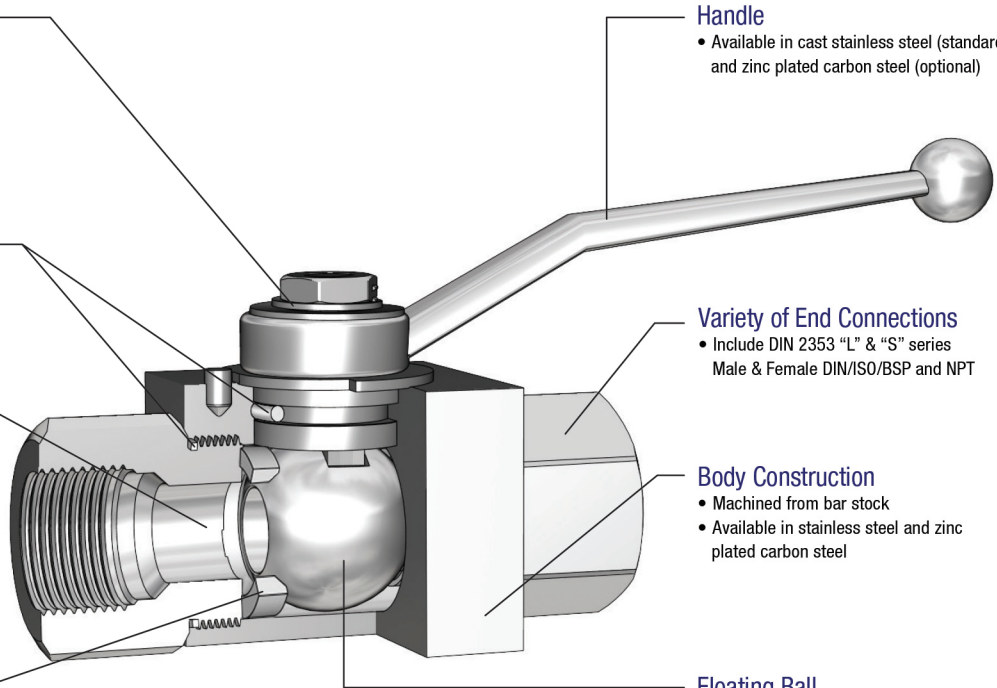


Table of Dimension

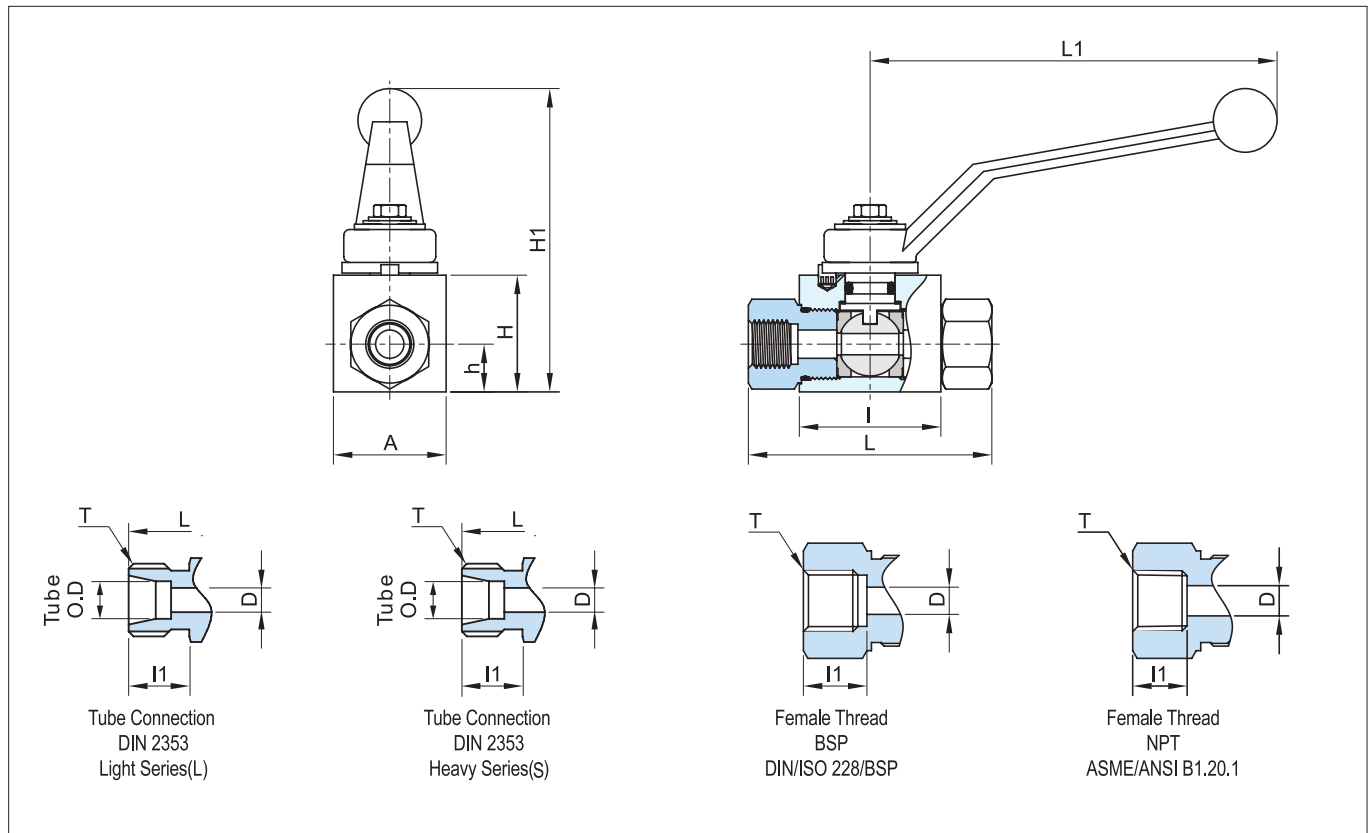


Table of Dimension

DIN 2353 Light Series (L)

Part Number	Tube O.D.	Max Orifice D	*PB	A	H	H1	h	l	l1	L	L1	Thread T	
SBVD3701	D-06L	6	4	500	26	33	83	13.5	40	10	73	115	M12 x P1.5
	D-08L	8	6	500	26	33	83	13.5	40	10	73	115	M14 x P1.5
SBVD3702	D-10L	10	8	500	32	40	88	17.5	45	11	87	115	M16 x P1.5
	D-12L	12	10	500	32	40	88	17.5	45	11	87	115	M18 x P1.5
SBVD3703	D-15L	15	12	400	40	46	96	19.0	51	12	91	160	M22 x P1.5
	D-18L	18	15	400	40	46	96	19.0	51	12	91	160	M26 x P1.5
SBVD3704	D-22L	22	20	315	55	57	112	24.5	60	14	105	200	M30 x P2.0
	D-28L	28	25	315	58	65	120	29.5	70	14	118	200	M36 x P2.0
SBVD3705	D-35L	35	32	315	76	86	150	40.5	80	16	145	250	M45 x P2.0
	D-42L	42	38	315	100	103	170	50.0	85	16	150	250	M52 x P2.0

DIN 2353 Heavy Series (S)

Part Number	Tube O.D.	Max Orifice D	*PB	A	H	H1	h	l	l1	L	L1	Thread T	
SBVD3701	D-08S	8	4	500	26	33	83	13.5	40	12	76	115	M16 x P1.5
	D-10S	10	6	500	26	33	83	13.5	40	12	76	115	M18 x P1.5
SBVD3702	D-12S	12	8	500	32	40	88	17.5	45	12	89	115	M20 x P1.5
	D-14S	14	10	500	32	40	88	17.5	45	14	93	115	M22 x P1.5
SBVD3703	D-16S	16	12	400	40	46	96	19.0	51	14	96	160	M24 x P1.5
	D-20S	20	15	400	40	46	96	19.0	51	16	100	160	M30 x P2.0
SBVD3704	D-25S	25	20	315	55	57	112	24.5	60	18	113	200	M36 x P2.0
	D-30S	30	25	315	58	65	120	29.5	70	20	130	200	M42 x P2.0
SBVD3705	D-38S	38	32	315	76	86	150	40.5	80	22	147	250	M52 x P2.0

Female DIN/ISO 228/BSP

Part Number	Max Orifice D	*PB	A	H	H1	h	l	l1	L	L1	Thread T	
SBVD3701	F-2G	4	500	26	33	83	13.5	40	10.0	69	115	1/8" PF
	F-4G	6	500	26	33	83	13.5	40	14.0	69	115	1/4" PF
SBVD3702	F-6G	10	500	32	40	88	17.5	45	14.0	74	115	3/8" PF
SBVD3703	F-8G	15(12)	400	40	46	96	19.0	51	16.5	83	160	1/2" PF
	F-10G	15	400	40	46	96	19.0	51	16.0	83	160	5/8" PF
SBVD3704	F-12G	20	315	55	57	112	24.5	60	18.0	95	200	3/4" PF
	F-16G	25	315	58	65	120	29.5	70	20.0	113	200	1" PF
SBVD3705	F-20G	32	315	76	86	150	40.5	80	22.0	120	250	1 1/4" PF
	F-24G	38	315	100	103	170	50.0	85	24.0	130	250	1 1/2" PF

Female NPT (ANSI/ASME B1.20.1)

Part Number	Max Orifice D	*PB	A	H	H1	h	l	l1	L	L1	Thread T	
SBVD3701	F-2N	4	500	26	33	83	13.5	40	13.0	69	115	1/8" NPT
	F-4N	6	500	26	33	83	13.5	40	17.0	69	115	1/4" NPT
SBVD3702	F-6N	10	500	32	40	88	17.5	45	17.4	80	115	3/8" NPT
SBVD3703	F-8N	15(12)	400	40	46	96	19.0	51	25.0	104	160	1/2" NPT
	F-10N	15	400	40	46	96	19.0	51	25.0	104	160	5/8" NPT
SBVD3704	F-12N	20	315	55	57	112	24.5	60	23.1	102	200	3/4" NPT
	F-16N	25	315	58	65	120	29.5	70	27.8	119	200	1" NPT
SBVD3705	F-20N	32	315	76	86	150	40.5	80	28.3	120	250	1 1/4" NPT
	F-24N	38	315	100	103	170	50.0	85	28.0	130	250	1 1/2" NPT

NOTE

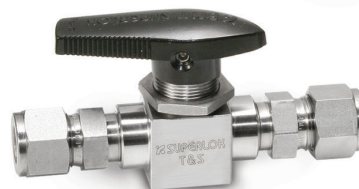
* : PB in bar with a safety factor of 1.5.

Trunnion Ball Valves

BT Series

Introduction

SUPERLOK High Pressure Ball Valves provide reliable shut-off or switching functions. The upper and lower trunnion bearings enhance the resistance of the trunnions against seizure, and increase the valve life in extreme applications. The compact and rugged design employs spring-loaded seats for high cycle life and low operating torques at pressures up to 10,000 psig (689 bar).



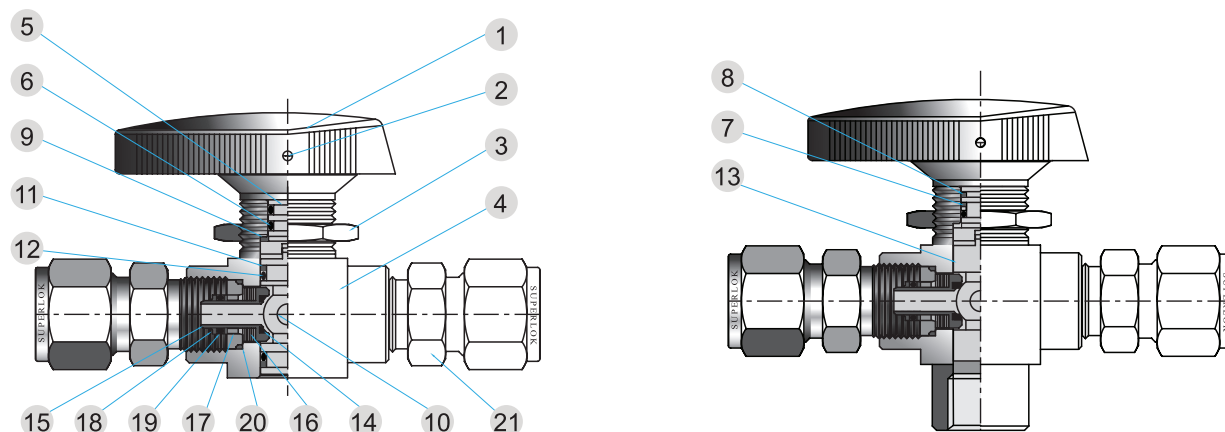
Features

- PEEK trunnion bearings for longer cycle life.
- Two-way and Three-way designs.
- Blow-out resistant two-piece ball/stem.
- Low operating torque.
- Panel mountable to 9.7mm thickness.
- Handle indicates direction of flow.
- Positive handle stops.
- 100% factory tested.
- Compact, maximum flow design.

Specifications

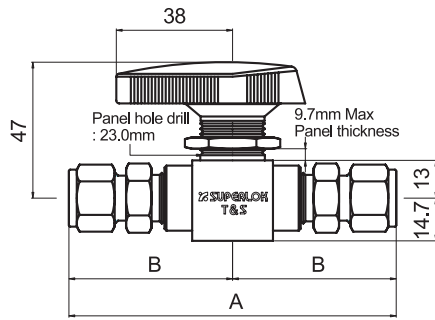
Temperature rating	0°F to 450°F (-17°C to 232°C)
Body material	Stainless steel
Body configurations	Two-way and Three-way
Pressure rating	10,000 psig (689 bar) with PEEK Seats
	6,000 psig (414 bar) with PCTFE Seats
Port connections	1/8" to 1/2" and 6mm to 12mm SUPERLOK Tube Fitting or Female NPT end connection

Materials of Construction

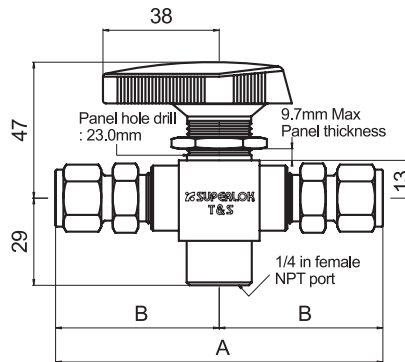


Component	BT Series (6,000psig)		BTH Series (10,000psig)	
	2-Way	3-Way	2-Way	3-Way
	Material Grade/ASTM Specification		Material Grade/ASTM Specification	
1	Handle		Phenolic with brass insert	
2	Set screw		Stainless steel	
3	Panel nut		SS316/A276	
4	Body		SS316/A276	
5	Stem		SS316/A276	
6	Stem O-ring		Viton	
7	Stem backup ring 1		-	PEEK
8	Stem backup ring 2		-	PTFE
9	Stem bearing		PEEK	
10	Trunnion ball		SS316/A276	
11	Trunnion backup ring		R-PTFE	-
12	Trunnion O-ring		Viton	-
13	Trunnion bearing		-	PEEK
14	Ball seat		PCTFE / PTFE / PEEK	
15	Seat retainer		SS316/A276	
16	Seat spring		Stainless steel	
17	Seat guide		SS316/A276	
18	Retainer backup ring		R-PTFE	
19	Retainer o-ring		Viton	
20	Connection seal		PTFE	
21	End Connection		SS316/A276	

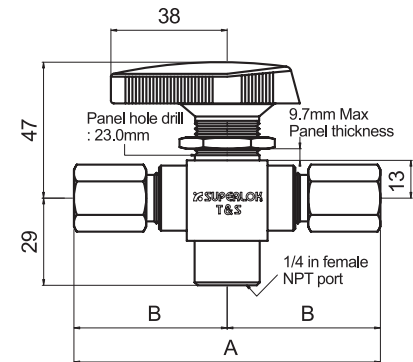
BT Series 2-Way



BT Series 3-Way



BTH Series 3-Way



2-WAY VALVE ORIFICE : 4.8mm					
BT Series Order Number	BTH Series Order Number	End Connection Inlet & Outlet	CV	Dimensions	
				A	B
SBT2-F2N	SBTH2-F2N	1/8" Female NPT	1.2	74.7	37.3
SBT2-F4N	-	1/4" Female NPT	1.0	74.7	37.3
-	SBTH2-F4N	1/4" Female NPT	1.0	99.8	50.0
SBT2-S4	SBTH2-S4	1/4" SUPERLOK	1.6	105	52.6
SBT2-S6	SBTH2-S6	3/8" SUPERLOK	1.4	112	55.6
SBT2-S8	SBTH2-S8	1/2" SUPERLOK	1.0	117	58.4
SBT2-S6M	SBTH2-S6M	6mm SUPERLOK	1.6	105	52.6
SBT2-S8M	SBTH2-S8M	8mm SUPERLOK	1.5	105	52.6
SBT2-S10M	SBTH2-S10M	10mm SUPERLOK	1.3	112	55.9
SBT2-S12M	SBTH2-S12M	12mm SUPERLOK	1.0	117	58.4
3-WAY VALVE ORIFICE : 4.8mm					
SBT3-F2N	SBTH3-F2N	1/8" Female NPT	0.75	74.7	37.3
SBT3-F4N	-	1/4" Female NPT		74.7	37.3
-	SBTH3-F4N	1/4" Female NPT		99.8	50.0
SBT3-S4	SBTH3-S4	1/4" SUPERLOK		105	52.6
SBT3-S6	SBTH3-S6	3/8" SUPERLOK		112	55.6
SBT3-S8	SBTH3-S8	1/2" SUPERLOK		117	58.4
SBT3-S6M	SBTH3-S6M	6mm SUPERLOK		105	52.6
SBT3-S8M	SBTH3-S8M	8mm SUPERLOK		105	52.6
SBT3-S10M	SBTH3-S10M	10mm SUPERLOK		112	55.9
SBT3-S12M	SBTH3-S12M	12mm SUPERLOK		117	58.4

- Dimensions are shown with SUPERLOK nuts in the finger-tight position.
- All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change.

Technical Data

Seat Material	Temperature Rating °F(°C)	Pressure Rating at 100°F(37°C)	
		psig (bar)	
Stainless Steel			
BT Series			
PCTFE	0 to 250 (-17 to 121)	6000 (413)	
PEEK	0 to 450 (-17 to 232)	1500 (103)	
PTFE			
BTH Series			
PEEK	0 to 450 (-17 to 232)	6000 to 10,000 (413 to 689) depending on end connection	

Pressure-Temperature Ratings

BT SERIES

Material		316SS		
Seat Material		PCTFE	PTFE	PEEK
Temperature °F(°C)	Working Pressure, psig(bar)			
0 (-17) to	100 (37)	6,000 (413)	1,500 (103)	6,000 (413)
	150 (65)	3,000 (206)	1,125 (77.5)	5,800 (399)
	200 (93)	2,000 (137)	750 (51.6)	5,000 (344)
	250 (121)	1,000 (68.9)	625 (43.0)	4,100 (282)
	300 (148)	-	500 (34.4)	3,200 (220)
	350 (176)	-	375 (25.8)	2,300 (158)
	400 (204)	-	250 (17.2)	1,400 (96.4)
	450 (232)	-	125 (8.6)	500 (34.4)

BTH SERIES

Material		316SS				
End Connections	F2, F4 S4, S6MM	S10MM	S6, S8MM	S8	S12MM	
Temperature, °F(°C)	Working Pressure, psig(bar)					
0 (-17) to	100 (37)	10,000 (689)	8,400 (578)	7,500 (516)	6,700 (461)	6,600 (454)
	150 (65)	7,500 (516)	7,500 (516)	7,500 (516)	6,700 (461)	6,600 (454)
	200 (93)	5,000 (344)	5,000 (344)	5,000 (344)	5,000 (344)	5,000 (344)
	250 (121)	4,100 (282)	4,100 (282)	4,100 (282)	4,100 (282)	4,100 (282)
	300 (148)	3,200 (220)	3,200 (220)	3,200 (220)	3,200 (220)	3,200 (220)
	350 (176)	2,300 (158)	2,300 (158)	2,300 (158)	2,300 (158)	2,300 (158)
	400 (204)	1,400 (96.4)	1,400 (96.4)	1,400 (96.4)	1,400 (96.4)	1,400 (96.4)
	450 (232)	500 (34.4)	500 (34.4)	500 (34.4)	500 (34.4)	500 (34.4)

Testing

- Every valve is factory tested with nitrogen at 1000 psig (68 bar). Seats and body seals are required to have less than 0.1 SCCM leakage.
- Hydrostatic shell test is performed at 1.5 times the working pressure as an option.
- Optional testing is available upon request.

Ordering information

Example : SBT2 - S 8M - PT

1 2 3 4

1. Valve Series

2. End Connection Type

3. Connection Size

4. Seat Material Designator (PT : PTFE, PC : PCTFE, PE : PEEK)

Nil : Standard Body Material (316 Stainless steel)

Swing - Out Ball Valves

SWB 320 Series & SWB 310 Series



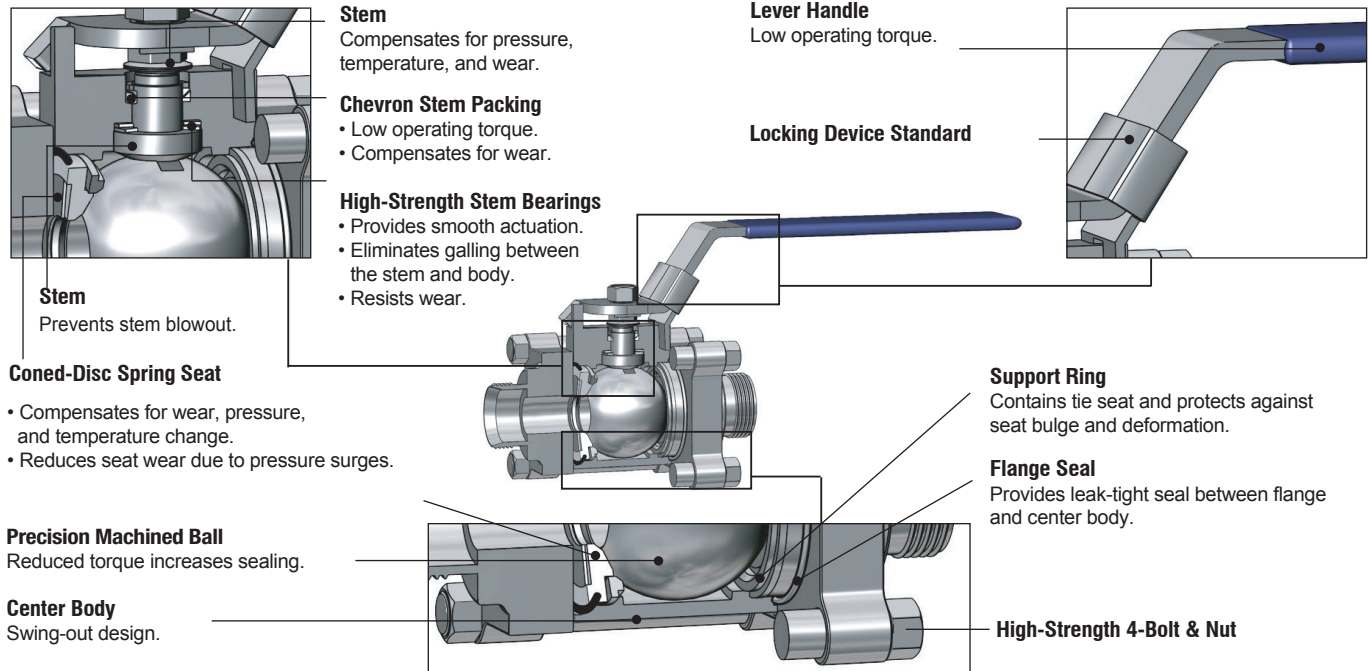
SWB 320 Series

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)

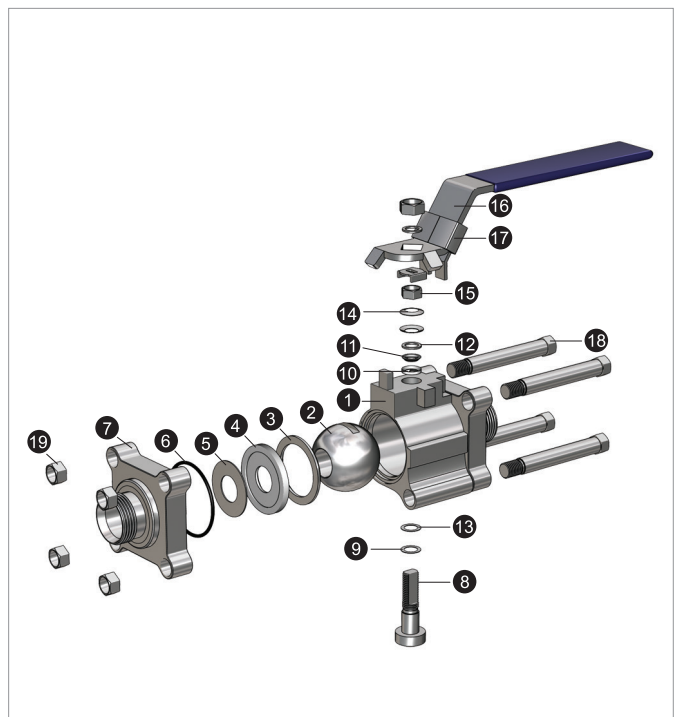
Testing

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.



Materials of Construction

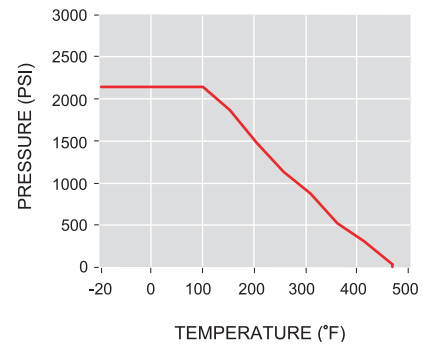
Component	Valve Body Materials	Q'TY	
	Material / ASTM Specification		
1	Body	CF8M / A351	1
2	Ball	CF8M / A351	1
3	Support Ring	SS316 / A276	2
4	Seats	Reinforced PTFE	2
5	Seat Spring	Strain Hardened 316 SS / A240	2
6	Flange Seal	PTFE	2
7	Flange	CF8M / A351	2
8	Stem	SS316 / A276	1
9	Stem Bearing	PEEK	1
10	Lower Packing	Reinforced PTFE	1
11	Upper Packing	Reinforced PTFE	1
12	Packing Support	SS316 / A276	1
13	Packing Gland	SS316 / A276	1
14	Stem Spring	Stainless Steel	3
15	Packing Nut	Stainless Steel	2
16	Handle	Stainless Steel	1
17	Locking Device	Stainless Steel	1
18	Flange Bolt	A193/B8M	4
19	Flange Nut	A194/8M	4



Pressure/Temperature Rating

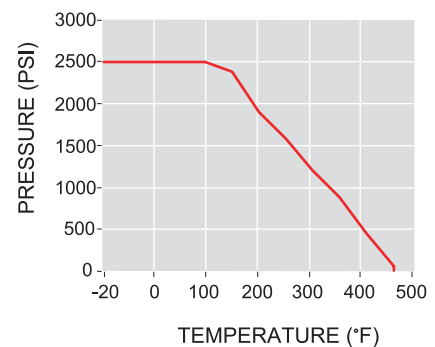
Reinforced PTFE Seats (R-PTFE) : Standard

Series	Pressure - Temperature Rating	
	Temperature °C (°F)	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

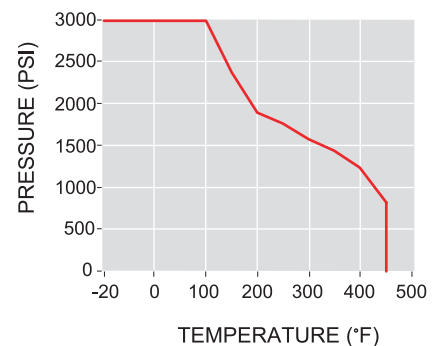
Series	Pressure - Temperature Rating	
	Temperature °C (°F)	Working Pressure psig (bar)
SWB 320	-20 to 100 (-28 to 37)	2500 (172)
	150 (65)	2430 (167)
	200 (93)	1870 (128)
	250 (121)	1620 (111)
	300 (148)	1240 (85.4)
	350 (176)	860 (59.2)
	400 (204)	480 (33.0)
	450 (232)	100 (6.8)



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

PEEK Seats : option

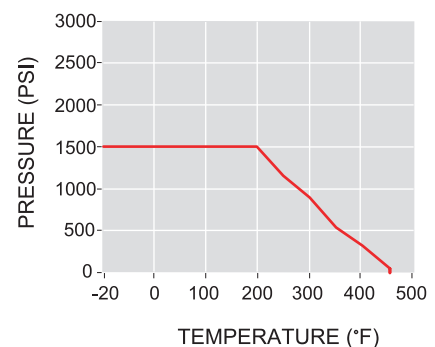
Series	Pressure - Temperature Rating	
	Temperature °C (°F)	Working Pressure psig (bar)
SWB 320	-20 to 100 (-28 to 37)	3000 (206)
	150 (65)	2420 (166)
	200 (93)	1870 (128)
	250 (121)	1770 (121)
	300 (148)	1600 (110)
	350 (176)	1430 (98.5)
	400 (204)	1260 (86.8)
	450 (232)	800 (55.1)



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

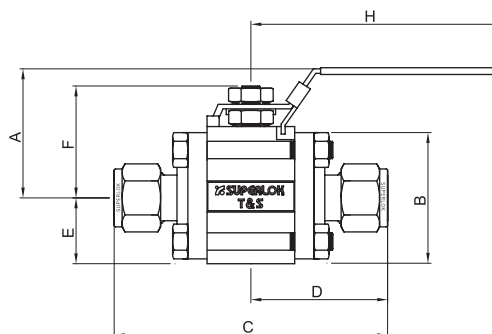
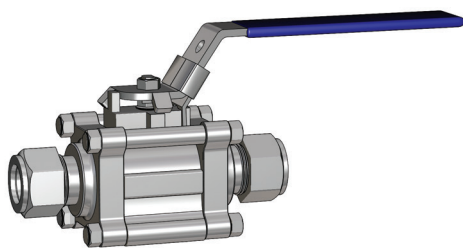
Virgin PTFE Seats : option

Series	Pressure - Temperature Rating	
	Temperature °C (°F)	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)



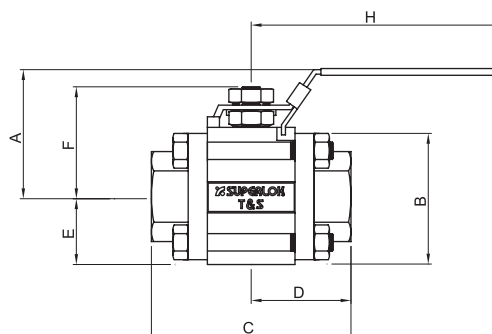
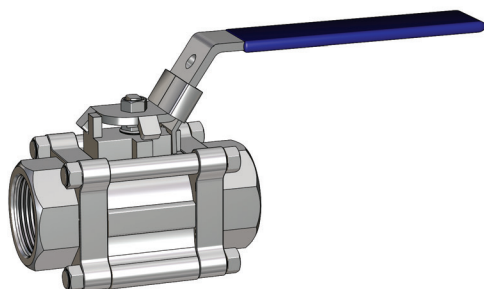
To order option item, add V to the end of ordering number.

Table of Dimensions



SUPERLOK Tube End Connection

Part Number	Orifice in.(mm)	Cv	End Connection	Dimension							
				A	B	C	D	E	F	H	
SWB3201	S4	0.188 (4.8)	1.2	1/4 " Superlok	47.7	33.0	80.8	40.40	16.75	31.8	57.2
	S6	0.281 (7.1)	3.8	3/8 " Superlok							
	S6M	0.188 (4.8)	1.2	6mm Superlok							
	S8M	0.250 (6.4)	2.5	8mm Superlok							
	S10M	0.281 (7.1)	3.8	10mm Superlok							
SWB3202	S8	0.411 (10.4)	7.5	1/2 " Superlok	64.8	44.5	103.8	51.90	22.25	44.2	111.0
	S12	0.516 (13.1)	13.6	3/4 " Superlok							
	S12M	0.411 (10.4)	7.5	12mm Superlok							
SWB3203	S16	0.875 (22.2)	40.0	1 " Superlok	79.0	62.0	136.7	68.35	31.0	61.9	149.4
	S25M			25mm Superlok							
SWB3204	S24	1.250 (31.8)	100	1-1/2 " Superlok	102.0	77.7	192.6	96.3	38.9	79.8	232.0
SWB3205	S32	1.500 (38.1)	130	2 " Superlok	106.0	88.1	252.0	126.0	44.2	85.3	232.0

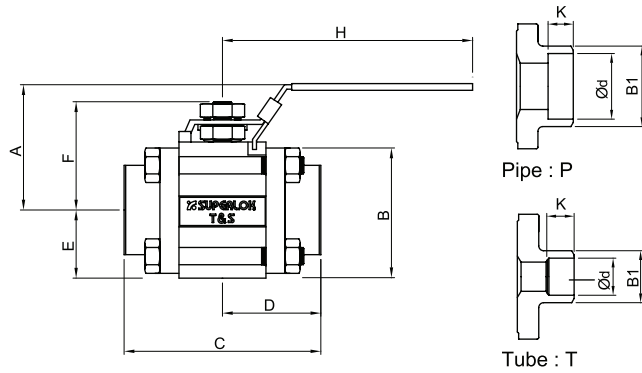
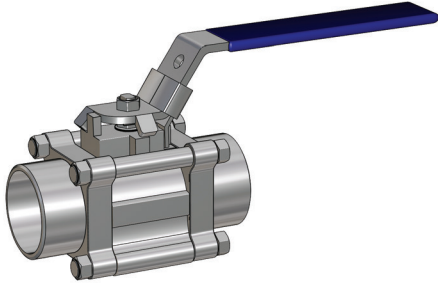


Female Pipe Thread End Connections

Part Number	Orifice in.(mm)	Cv	End Connection	Dimension							
				A	B	C	D	E	F	H	
SWB3201	F2N	0.281 (7.1)	3.8	1/8 " Female NPT	47.7	33.0	55.4	27.70	16.75	31.8	57.2
	F4N			1/4 " Female NPT							
	F4R			1/4 " Female PT							
SWB3202	F6N	0.516 (13.1)	12.0	3/8 " Female NPT	64.8	44.5	68.9	34.45	22.25	44.2	111.0
	F8N			1/2 " Female NPT							
	F8R			1/2 " Female PT							
SWB3203	F12N	0.875 (22.2)	40.0	3/4 " Female NPT	79.0	62.0	92.0	46.0	31.0	61.9	149.4
	F16N			1 " Female NPT							
	F12R			3/4 " Female PT							
	F16R			1 " Female PT							
SWB3204	F20N	1.250 (31.8)	90	1-1/4 " Female NPT	102.0	77.7	112.2	55.6	38.9	79.8	232.0
	F24N		100	1-1/2 " Female NPT							
	F24R	100	1-1/2 " Female PT								
SWB3205	F32N	1.500 (38.1)	130	2 " Female NPT	106.0	88.1	125.4	62.7	44.2	85.3	232.0
	F32R			2 " Female PT							

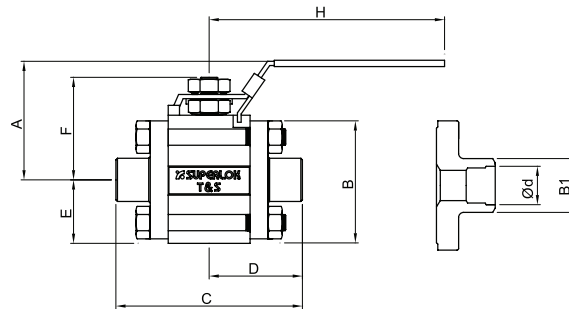
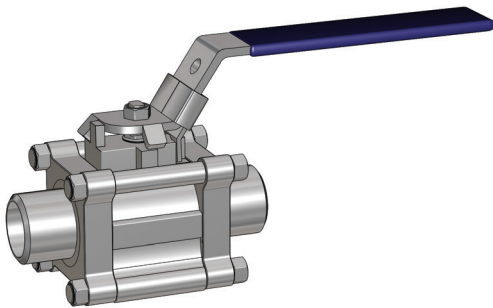
• All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change.

Table of Dimensions



Socket weld end connections

Part Number	Orifice in.(mm)	Cv	End Connection	Dimension										
				ød	B1	A	B	C	D	E	F	H	K	
SWB3201	SW4T	0.188 (4.8)	1.2	1/4 " Socket Weld	6.50	13.70	47.7	33.0	55.4	27.70	16.75	31.8	57.2	7.1
	SW6T	0.281 (7.1)	3.8	3/8 " Socket Weld	9.70	17.10								7.9
SWB3202	SW8T	0.411 (10.4)	7.5	1/2 " Socket Weld	12.90	21.30	64.8	44.5	68.9	34.45	22.25	44.2	111.0	9.7
	SW12T	0.516 (13.1)	13.6	3/4 " Socket Weld	19.20	26.70								11.2
	SW8P	0.516 (13.1)	15.0	1/2 " Socket Weld	21.80	31.20								9.7
SWB3203	SW16T	0.875 (22.2)	40.0	1 " Socket Weld	25.65	33.40	79.0	62.0	92.0	46.00	31.00	61.9	149.4	16.0
	SW12P		36.0	3/4 " Socket Weld	27.20	42.16								12.7
	SW16P		42.0	1 " Socket Weld	33.90	45.30								
SWB3204	SW20T	1.125 (28.6)	80.0	1-1/4 " Socket Weld	32.00	42.20	102.0	77.7	112.2	55.6	38.9	79.8	232.0	15.7
	SW24T	100.0	1-1/2 " Socket Weld	38.30		19.1								
	SW20P	1.250 (31.8)	90.0	1-1/4 " Socket Weld	42.70	62.20			114.4	57.2				12.7
	SW24P	100.0	1-1/2 " Socket Weld	48.80		116.4			58.2					
SWB3205	SW32T	1.500 (38.1)	130.0	2 " Sokect Weld	51.10	70.10	106.0	88.1	125.4	62.7	44.2	85.3	232.0	19.1
	SW32P			61.20	75.10	86.8		43.2			16.0			



Butt weld end connections

Part Number	Schedule	Orifice in.(mm)	Cv	End Connection	Dimension															
					ød	B1	A	B	C	D	E	F	H							
SWB3201	BW4P	0.188 (4.8)	1.2	1/4 " Butt Weld	10.40	13.70	47.7	33.0	52.4	26.20	16.75	31.8	57.2							
SWB3202	BW8P			17.10	21.30	64.8								44.5	68.9	34.45	22.25	44.2	111.0	
SWB3203	BW12P			22.45	26.67															79.0
SWB3203	BW16P	0.875 (22.2)	40.0	1 " Butt Weld	27.90	33.40			88.9	44.45										
SWB3201	BW4P	0.188 (4.8)	1.2	1/4 " Butt Weld	9.20	13.70	47.7	33.0	52.4	26.20	16.75	31.8	57.2							
SWB3202	BW8P			15.80	21.30	64.8								44.5	68.9	34.45	22.25	44.2	111.0	
SWB3203	BW12P			20.93	26.67															47.7
SWB3203	BW16P	0.875 (22.2)	40.0	1 " Butt Weld	26.60	33.40			88.9	44.45										
SWB3201	BW4P	0.188 (4.8)	1.2	1/4 " Butt Weld	7.70	13.70	79.0	33.0	52.4	26.20	16.75	31.8	57.2							
SWB3201	BW6P			0.281 (7.1)	3.8	3/8 " Butt Weld								10.70	17.10					
SWB3202	BW8P			0.411 (10.4)	7.5	1/2 " Butt Weld								13.90	21.30	64.8	44.5	68.9	34.45	22.25
SWB3202	BW12P	0.516 (13.1)	13.6	3/4 " Butt Weld	18.80	26.70	79.0	62.0	88.9	44.45	31.00	61.9	149.4							
SWB3203	BW16P	0.875 (22.2)	40.0	1 " Butt Weld	23.90	33.40														
SWB3204	BW24P	1.125 (28.6)	100	1-1/2 " Butt Weld	42.70	48.30	102.0	77.7	113.2	56.60	38.90	79.8	232.0							
SWB3205	BW32P	1.500 (38.1)	130	2 " Butt Weld	54.80	60.30	106.0	88.1	121.4	60.70	44.20	85.3								
SWB3204	BW24P	1.125 (28.6)	100	1-1/2 " Butt Weld	40.90	48.30	102.0	77.7	113.2	56.60	38.90	79.8	232.0							
SWB3205	BW32P	1.500 (38.1)	130	2 " Butt Weld	52.50	60.30	106.0	88.1	123.4	61.70	44.20	85.3								
SWB3204	BW24P	1.125 (28.6)	100	1-1/2 " Butt Weld	38.10	48.30	102.0	77.7	115.8	57.90	38.90	79.8	232.0							
SWB3205	BW32P	1.500 (38.1)	130	2 " Butt Weld	49.30	60.30	106.0	88.1	129.6	64.80	44.20	85.3								

• All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change.

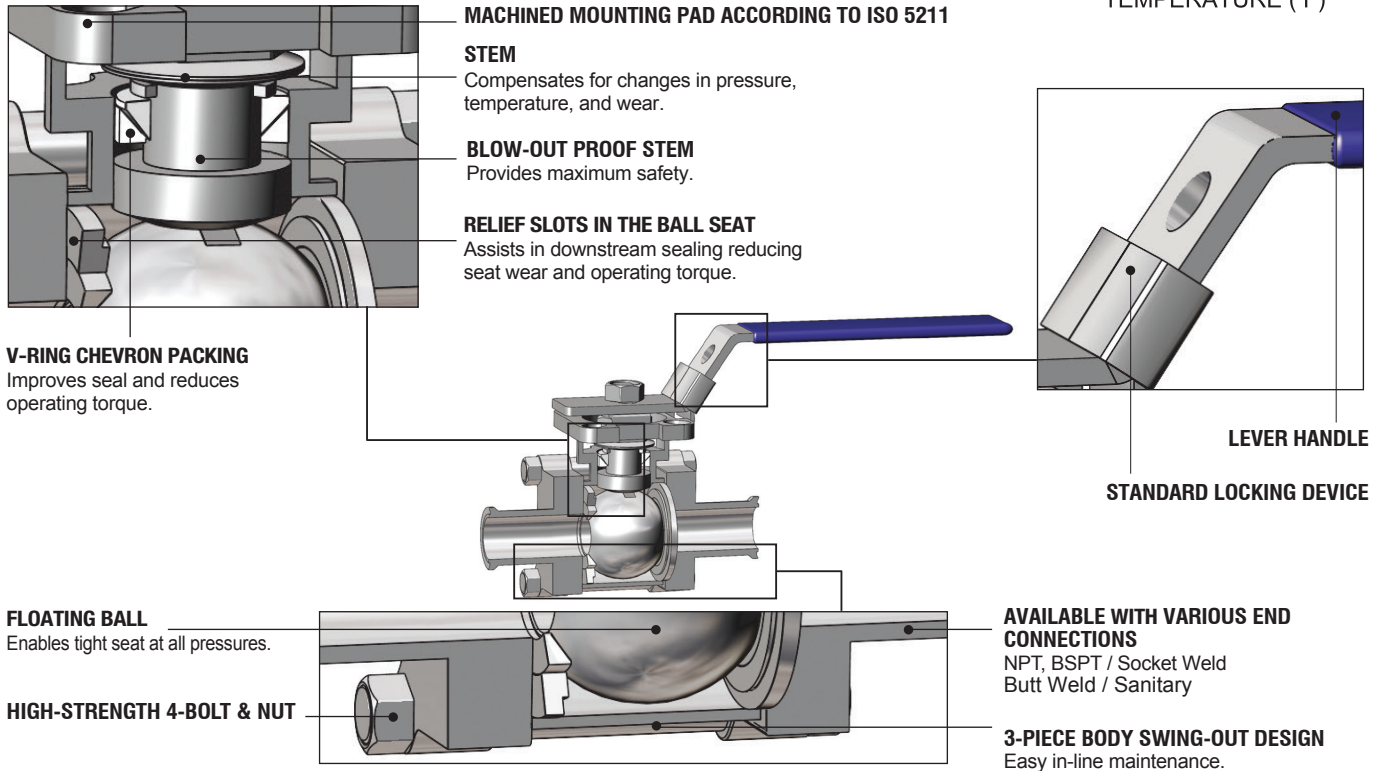
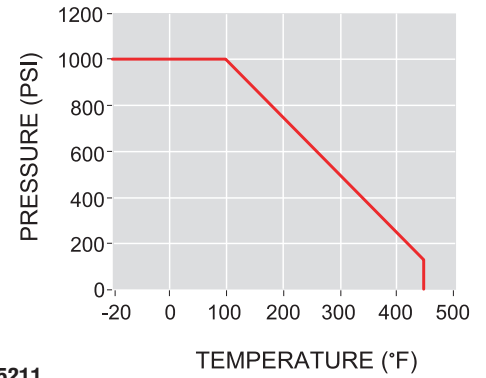
SWB 310 Series

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	Materials	Q'TY	
1	Body	ASTM A351GR/CF8M	1
2	End Cap	ASTM A351GR/CF8M	2
3	Ball	SS 316	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

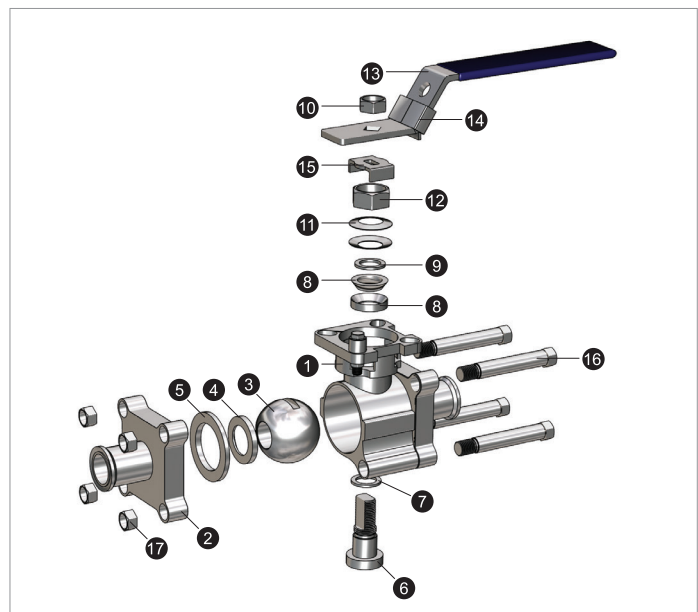
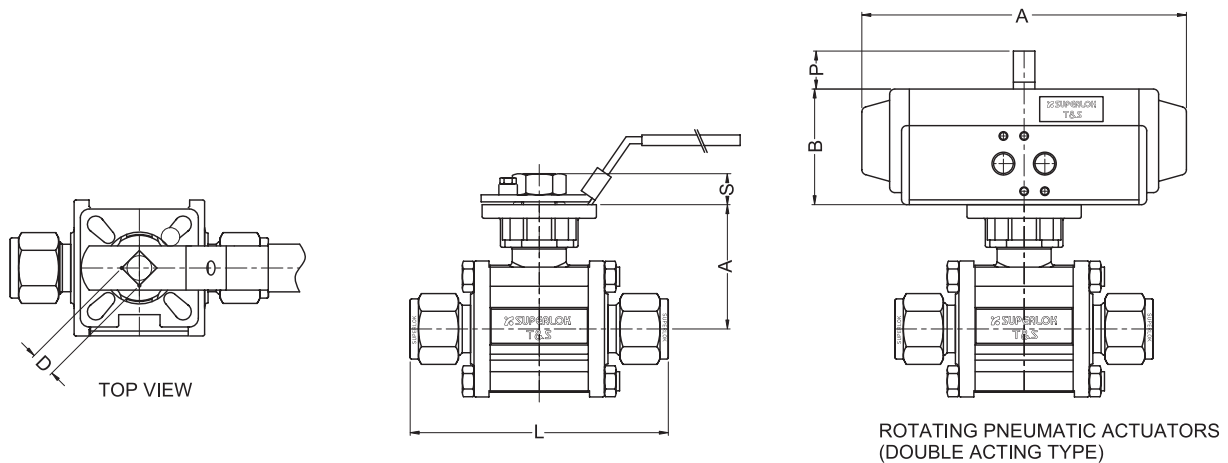


Table of Dimensions



SUPERLOK Tube End Connection

Part Number	Size	Dimension							
		A	S	D	L	A1	B	P	
SWB3101	S4	39.0	8.5	9.0	72.6	188.0	67.0	20.0	
	S6				74.2				
	S8				75.6				
	F4N(R)				63.5				
	F6N(R)								
	F8N(R)								
	SW4P								
	SW6P								
	SW8P								
	BW4P				62.5				
	BW6P				65.5				
BW8P	89.0								
SA8	9.0								
SWB3102	S12	43.0	8.5	9.0	86.0	188.0	67.0	20.0	
	F12N(R)				72.5				
	SW12P				76.2				
	BW12P				102.0				
	SA12				9.0				
SWB3103	S16	53.0	11.4	9.0	104.0	188.0	67.0	20.0	
	F16N(R)				81.0				
	SW16P				86.0				
	BW16P				124.0				
SA16	11.0								
SWB3104	F24N(R)	70.0	14.0	11.0	104.0	234.0	86.0	20.0	
	SW24P				119.0				
	BW24P				141.0				
	SA24				14.0				
SWB3105	F32N(R)	78.0	13.7	14.0	121.5	234.0	86.0	20.0	
	SW32P				131.4				
	BW32P				162.0				
	SA32				14.0				

Oval handle

Oval handles are available by adding "OH" to the end of the part number (ex: SWB3202-S12-OH).

Actuator

Available supplied with pneumatic actuator with features shown in option 5 below (ex: SWB3202-F6N-P3).

Ordering Information

Example: **SWB3202 - S 12 - PE - OH - SS**

1
2
3
4
5
6

1. Valve Series

SWB3201 SWB3101
 SWB3202 SWB3102
 SWB3203 SWB3103
 SWB3204 SWB3104
 SWB3205 SWB3105

2. Port Type

S : SUPERLOK Tube Fitting
 M : Male Thread
 F : Female Thread
 SW : Socket Weld
 BW : Butt Weld
 SA : SANITARY

3. Port Size

Tube O.D Designation

Tube O.D (inch)	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
Designation	4	6	8	12	16	20	24	32
Tube O.D (mm)	6	8	10	12	20	25	32	38
Designation	6M	8M	10M	12M	20M	25M	32M	38M

Pipe Thread Designation

Size (inch)	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
Screwed BSPT	2R	4R	6R	8R	12R	16R	20R	24R	32R
Screwed NPT	2N	4N	6N	8N	12N	16N	20N	24N	32N

Socket Weld & Butt Weld Designation

Size (inch)	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
Tube	4T	6T	8T	12T	16T	20T	24T	32T
Pipe	4P	6P	8P	12P	16P	20P	24P	32P

4. Seat Material

BLANK : GLASS15% PTFE (T1)
 PE : PEEK
 PT : PTFE
 T2 : GLASS25% PTFE
 T3 : CARBON15% PTFE
 T4 : CARBON25% PTFE

5. Option

OH : Oval Handle
 Actuator
 - P1 : Single Acting - 90° Turn
 - P2 : Single Acting - 180° Turn
 - P3 : Double Acting - 90° Turn
 - P4 : Double Acting - 180° Turn

6. Body Material

SS : 316 Stainless Steel

Examples

ex1) SWB3103 - SA16 - SS

SWB3103 Series / [Port1]SANITARY x [Port2]SANITARY / Port Size: 1" x 1"
 Seat Material: R-PTFE / Body Material: 316 Stainless Steel

ex2) SWB3201 - S6 - T4 - SS

SWB3201 Series / [Port1]SUPERLOK x [Port2]SUPERLOK / Port Size: 3/8" x 3/8"
 Seat Material: Carbon PTFE / Body Material: 316 Stainless Steel

Forged High Pressure Ball Valves

SBVF360 Series

Features

- Compact design.
- Low operating torque.
- Panel mountable.
- Floating ball design.
- Two-way and Three-way types.
- Handle direction indicates flow direction.



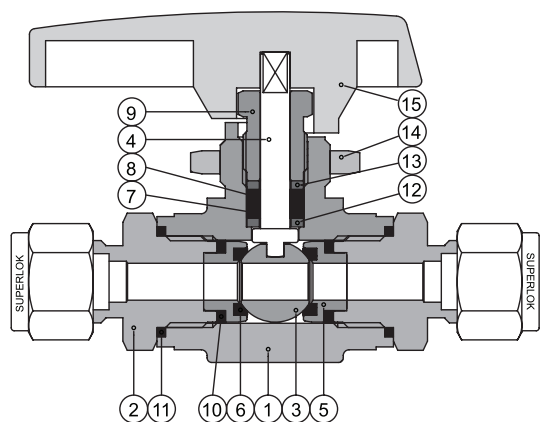
Specifications

Temperature Ratings	316 Stainless Steel	: -65°F to 1200°F (-53°C to 648°C)
	PCTFE	: -65°F to 200°F (-53°C to 93°C)
	PTFE	: -65°F to 350°F (-53°C to 177°C)
	PEEK	: -65°F to 450°F (-53°C to 232°C)
	NBR	: -40°F to 250°F (-40°C to 120°C)
	VITON	: -15°F to 450°F (-26°C to 232°C)
Orifice Size	From 0.086" to 0.406" (2.2mm to 10.3mm)	
Flow Coefficients (Cv)	From 0.18 to 6.42	
End Connection Size	From 1/8" to 3/4", 3mm to 16mm	
Pressure Ratings at 100°F(37°C)	316 Stainless Steel	: 6000 psig (413 bar)
	BRASS	: 3000 psig (207 bar)

Testing

- Every valve is tested with nitrogen at 1000 psig (69 bar).
- Max. allowable leak rate: 0.1 cm³/min.
- Shell testing is performed upon request.

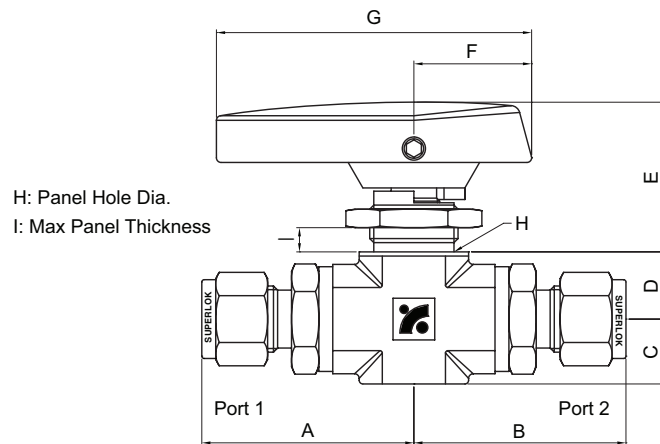
Materials of Construction



Component	Material Grade / ASTM Specification	
	Stainless Steel	Brass
*1 Body	ASTM A182-F316	ASTM B283
*2 End Connector	ASTM A276-316	ASTM B16
*3 Ball	ASTM A276-316	
*4 Stem	ASTM A276-316	
*5 Seal Retainer	ASTM A276-316	
*6 Seat	Standard PCTFE (PTFE, PEEK)	
*7 Lower Packing	PTFE	
*8 Upper Packing	PTFE	
9 Packing Bolt	ASTM A276-316	
*10 O - Ring	VITON	
*11 Connector Seal	PTFE	
*12 Thrust Washer	PEEK	
13 Stem Washer	ASTM A276-316	
14 Panel Nut	ASTM A276-316	
15 Handle	Aluminum	

*Wetted components are marked "**"

SBVF Series



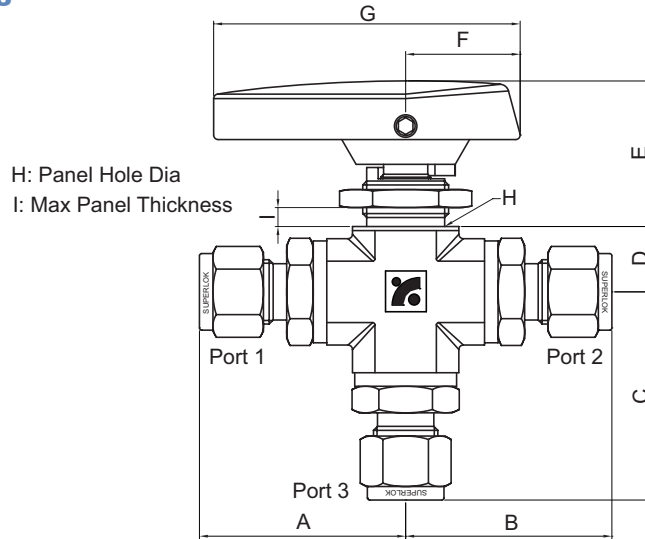
Two-Way Type

Table of Dimensions

Part Number	Orifice In.(mm)	Cv	End Connections Port1 / Port2	Dimensions									
				A	B	C	D	E	F	G	H	I	
SBVF 3601	S2	0.093(2.4)	0.21	1/8" SUPERLOK	34.5	34.5	10.0	10.5	23.5	18.0	47.0	16.3	3.3
	S4	0.165(4.2)	0.93	1/4" SUPERLOK	37.6	37.6							
	S3M	0.086(2.2)	0.18	3mm SUPERLOK	34.8	34.8							
	M2N	0.165(4.2)	0.93	1/8" MALE NPT	29.9	29.9							
	M4N	0.165(4.2)	0.93	1/4" MALE NPT	34.3	34.3							
	F2N	0.165(4.2)	0.93	1/8" FEMALE NPT	27.2	27.2							
SBVF 3602	S4	0.189(4.8)	1.04	1/4" SUPERLOK	44.2	44.2	14.0	14.5	32.3	25.4	68.0	19.6	6.4
	S6	0.250(6.4)	2.34	3/8" SUPERLOK	45.8	45.8							
	S6M	0.189(4.8)	1.04	6mm SUPERLOK	44.5	44.5							
	S8M	0.250(6.4)	2.34	8mm SUPERLOK	45.2	45.2							
	S10M	0.250(6.4)	2.34	10mm SUPERLOK	46.0	46.0							
	M4N	0.250(6.4)	2.34	1/4" MALE NPT	41.1	41.1							
	M6N	0.250(6.4)	2.34	3/8" MALE NPT	41.1	41.1							
	F4N	0.250(6.4)	2.34	1/4" FEMALE NPT	38.4	38.4							
SBVF 3603	S8	0.406(10.3)	6.42	1/2" SUPERLOK	59.4	59.4	17.5	19.3	41.1	27.7	74.2	22.9	9.7
	S12	0.406(10.3)	6.42	3/4" SUPERLOK	59.2	59.2							
	S12M	0.375(9.5)	5.57	12mm SUPERLOK	59.2	59.2							
	S16M	0.406(10.3)	6.42	16mm SUPERLOK	59.2	59.2							
	M8N	0.406(10.3)	6.42	1/2" MALE NPT	56.4	56.4							
	F6N	0.406(10.3)	6.42	3/8" FEMALE NPT	49.5	49.5							
	F8N	0.406(10.3)	6.42	1/2" FEMALE NPT	54.6	54.6							

- Dimensions are based on SUPERLOK nuts in the finger tight position.
- ISO Tapered Threads are available upon request.
- All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change.

SBVF 3 Series



Pressure Ratings with port3 as inlet :
Please see Specifications of page 300

Pressure Rating with port 1 or port 2 as inlet :
150 psig (10bar) at 100°F(37°C)

Table of Dimensions

Part Number	Orifice In.(mm)	Cv	End Connections Port1 / Port2 / Port3	Dimensions									
				A	B	C	D	E	F	G	H	I	
SBVF 36013	S2	0.093(2.4)	0.21	1/8" SUPERLOK	34.5	34.5	36.5	10.5	23.5	18.0	47.0	16.3	3.3
	S4	0.165(4.2)	0.63	1/4" SUPERLOK	37.6	37.6	39.6						
	S3M	0.086(2.2)	0.18	3mm SUPERLOK	34.8	34.8	36.8						
	M2N	0.165(4.2)	0.63	1/8" MALE NPT	29.9	29.9	31.9						
	M4N	0.165(4.2)	0.63	1/4" MALE NPT	34.3	34.3	36.3						
	F2N	0.165(4.2)	0.63	1/8" FEMALE NPT	27.2	27.2	29.2						
SBVF 36023	S4	0.189(4.8)	0.70	1/4" SUPERLOK	44.2	44.2	47.7	14.5	32.3	25.4	68.0	19.6	6.4
	S6	0.250(6.4)	0.87	3/8" SUPERLOK	45.8	45.8	49.3						
	S6M	0.189(4.8)	0.70	6mm SUPERLOK	44.5	44.5	48.0						
	S8M	0.250(6.4)	0.87	8mm SUPERLOK	45.2	45.2	48.7						
	S10M	0.250(6.4)	0.87	10mm SUPERLOK	46.0	46.0	49.5						
	M4N	0.250(6.4)	0.87	1/4" MALE NPT	41.1	41.1	44.6						
	M6N	0.250(6.4)	0.87	3/8" MALE NPT	41.1	41.1	44.6						
	F4N	0.250(6.4)	0.87	1/4" FEMALE NPT	38.4	38.4	41.9						
SBVF 36033	S8	0.406(10.3)	3.62	1/2" SUPERLOK	59.4	59.4	68.1	19.3	41.1	27.7	74.2	22.9	9.7
	S12	0.406(10.3)	3.62	3/4" SUPERLOK	59.2	59.2	67.9						
	S12M	0.375(9.5)	3.46	12mm SUPERLOK	59.2	59.2	67.9						
	S16M	0.406(10.3)	3.62	16mm SUPERLOK	59.2	59.2	67.9						
	M8N	0.406(10.3)	3.62	1/2" MALE NPT	56.4	56.4	65.1						
	F6N	0.406(10.3)	3.62	3/8" FEMALE NPT	49.5	49.5	58.2						
	F8N	0.406(10.3)	3.62	1/2" FEMALE NPT	54.6	54.6	63.3						

- Dimensions are based on SUPERLOK nuts in the finger tight position.
- ISO Tapered Threads are available upon request
- All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change.

Technical Data

Flow Rate with 1000psig (69bar) Inlet Pressure

Two-Way

Cv	Pressure Drop ΔP , psig (bar)			Pressure Drop ΔP , psig (bar)		
	10 (0.7)	50 (3.5)	100 (6.9)	10 (0.7)	50 (3.5)	100 (6.9)
	Water Flow @ 60°F (16°C), gpm (m³/hr)			Air Flow @ 60°F (16°C), scfm (m³/hr)		
0.93	2.9 (0.7)	6.6 (1.5)	9.3 (2.1)	92.4 (156.2)	200.3 (338.3)	272.0 (458.9)
2.34	7.4 (1.7)	16.5 (3.8)	23.4 (5.3)	231.7 (391.5)	494.2 (834.7)	657.0 (1107.9)
6.42	20.3 (4.6)	45.4 (10.3)	64.2 (14.6)	637.1 (1076.8)	1373.6 (2320.3)	1852.3 (3124.8)

Three-Way

Cv	Pressure Drop ΔP , psig (bar)			Pressure Drop ΔP , psig (bar)		
	10 (0.7)	50 (3.5)	100 (6.9)	10 (0.7)	50 (3.5)	100 (6.9)
	Water Flow @ 60°F (16°C), gpm (m³/hr)			Air Flow @ 60°F (16°C), scfm (m³/hr)		
0.63	2.0 (0.5)	4.5 (1.0)	6.3 (1.4)	62.7 (106.0)	137.1 (231.7)	188.4 (317.9)
0.87	2.8 (0.6)	6.2 (1.4)	8.7 (2.0)	86.7 (146.6)	190.5 (321.8)	263.2 (444.4)
3.62	11.5 (2.6)	25.6 (5.9)	36.2 (8.2)	360.6 (609.5)	789.7 (1343.5)	1087.4 (1836.6)

Ordering Information

Example : **SBVF3602 - M6N - S6 - PE - SS**

1
2 3
2 3
4
5

1. Valve Series

Two - Way	Three - Way
SBVF3601	SBVF36013
SBVF3602	SBVF36023
SBVF3603	SBVF36033

2. Port Type

S : SUPERLOK Tube Fitting
M : Male Pipe Thread
F : Female Pipe Thread

3. Port Size

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

Pipe Thread Designation

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

4. Seat Material

Blank : PCTFE
PE : PEEK

5. Body Material

SS : 316 Stainless Steel
B : Brass

Examples

ex1) SBVF3602 - S6 - B

2-Way valve / Port1: SUPERLOK 3/8" / Port2: SUPERLOK 3/8" / PCTFE Seat / Brass body

ex2) SBVF36023 - S6 - PE - SS

3-Way valve / Port1, 2, 3: SUPERLOK 3/8" / PEEK Seat / 316 Stainless steel body

ex3) SBVF36023 - S6 - F4N - SS

3-Way valve / Port1, 2: SUPERLOK 3/8" / Port 3: 1/4" NPT Female / PCTFE Seat / 316 Stainless steel body

ex3) SBVF36023 - S4 - S6 - F4N - SS

3-Way valve / Port 1: SUPERLOK 1/4" / Port 2: SUPERLOK 3/8" / Port 3: 1/4" NPT Female / PCTFE Seat / 316 Stainless steel body