

# Trunnion Ball Valves

## SBT Series

### Introduction

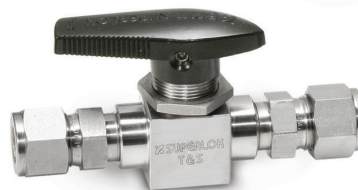
SUPERLOK High Pressure Ball Valves provide reliable shut-off or switching functions. The upper and lower trunnion bearings enhance the resistance of the trunnions against seizure, and increase the valve life in extreme applications. The compact and rugged design employs spring-loaded seats for high cycle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

### Features

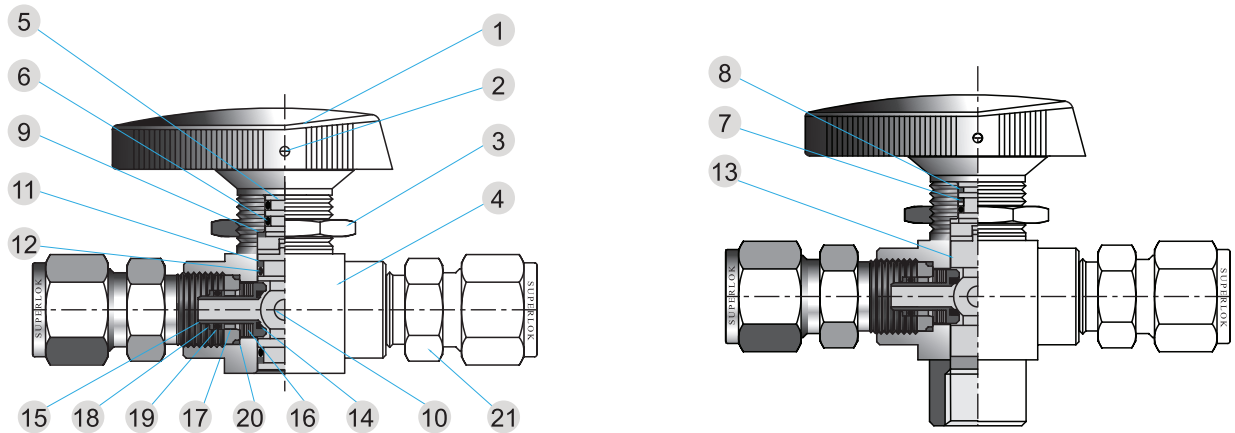
- PEEK trunnion bearings for longer cycle life
- Two-way and three way designs
- Blow-out resistant two-piece ball/stem
- Low operating torque
- Panel mountable to 9.7mm thickness
- Handle indicates direction of flow
- Positive handle stops
- 100% factory tested
- Compact, maximum flow design

### Specifications

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



## Materials of Construction

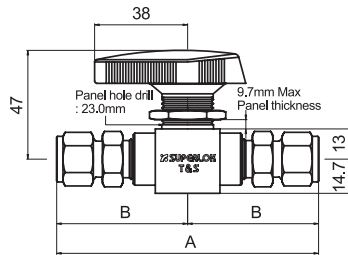


Component	BT Series (6,000psig)		BTH Series (10,000psig)	
	2-Way	3-Way	2-Way	3-Way
	Material Grade/ASTM Specification		Material Grade/ASTM Specification	
1	Handle		Phenolic with brass insert	
2	Set screw		Stainless steel	
3	Panel nut		SS316/A276	
*4	Body		SS316/A276	
*5	Stem		SS316/A276	
*6	Stem O-ring		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	

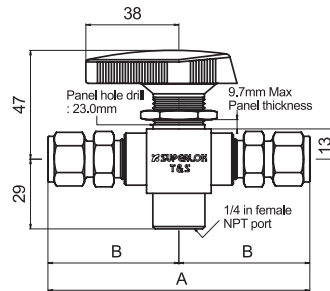
\* Wetted components

## Table of Dimensions

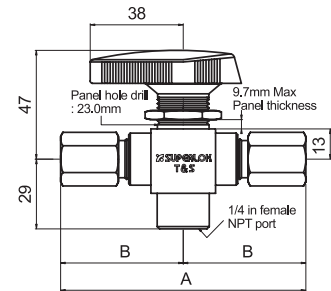
## BT Series 2-Way



## BT Series 3-Way



## BTH Series 3-Way



## 2 WAY VALVE ORIFICE : 4.8mm

Part Number		End Connection	CV	Dimensions	
BT series	BTH series	Inlet & Outlet		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: 3.8 mm

Part Number		End Connection	CV	Dimensions	
BT series	BTH series	Inlet & Outlet		A	B
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 and Drawings are for reference only and are subject to change without prior notice.
- Unless otherwise specified, all dimensions are in millimeters.
- Sizes, pressure classes, and end connections not listed are available upon request.
- Dimensions shown with SUPERLOK nuts finger-tight, where applicable.

## 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 1000psig (68bar). 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 (optional).
- Optional testing is available upon request.

## Ordering information

Example :	<b>SBT2</b>	-	<b>S</b>	<b>8M</b>	-	<b>PT</b>
	<b>1</b>		<b>2</b>	<b>3</b>		<b>4</b>

\* 316 Stainless Steel is Standard Body Material.

### 1. Valve Series

- SBT2       SBTH2  
 SBT3       SBTH3

### 2. End Connection

- S = SUPERLOK Tube Fitting  
 F = Female Thread

### 3. Connection Size

Fractional Tube	Connection Size (inch)	1/8	1/4	3/8	1/2
	Designator	2	4	6	8
Metric Tube	Connection Size (mm)	6	8	10	12
	Designator	6M	8M	10M	12M
Thread (inch)		1/4	3/8	1/2	
Screwed NPT		4N	6N	8N	
Screwed BSPT		4R	6R	8R	

### 4. Seat Material

- (Blank) = PCTFE (Standard)  
 PT = PTFE  
 PE = PEEK

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