

# Pinch Valves



## A Series

- Straight-through flow for enhanced draining and cleaning
- Working pressures up to 125 psig (8.6 bar)
- Temperatures up to 285°F (140°C)
- Easy conversion between manual and pneumatic actuation

## Features

Swagelok® pinch valves offer positive control of fluids in sterile pharmaceutical and biotechnical applications. Red silicone and EPDM pinch tube elements comply with 21CFR Part 177.2600.

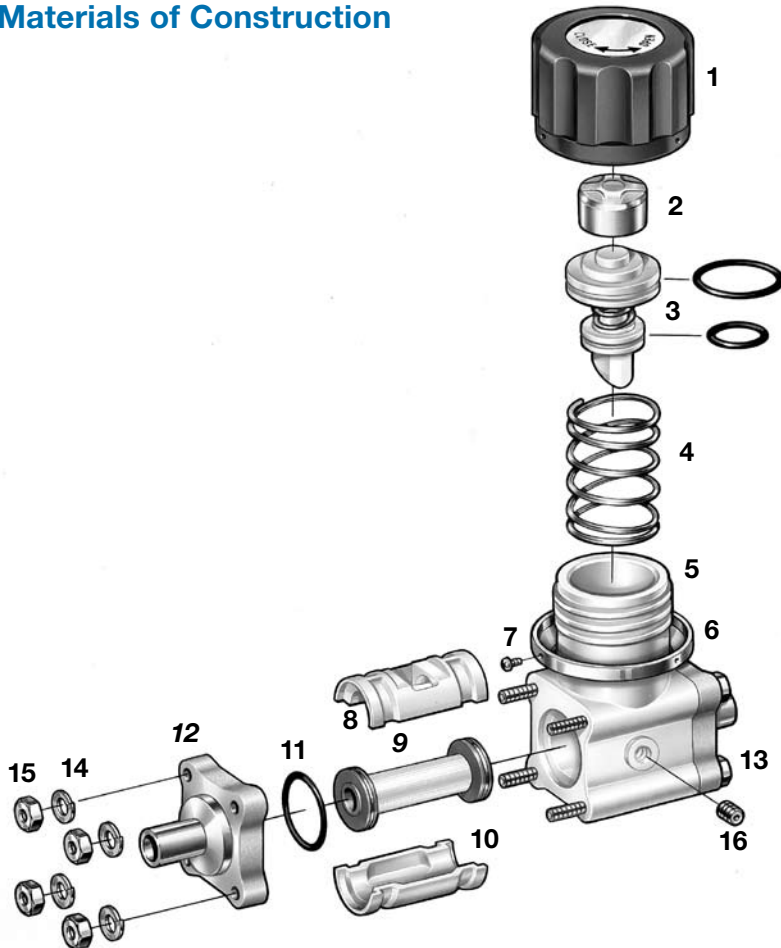
- Swagelok TS series sanitary fitting end connections offer an average surface finish of 15 µin. (0.38 µm)  $R_a$ . See the Swagelok *Biopharm Fittings—TS Series* catalog, MS-03-13, for more information.
- Valve offers excellent drainability when properly oriented.
- Compact, three-piece construction allows space-efficient system layout.
- Lightweight (1.75 lb [0.79 kg]), high-strength PEEK body provides low thermal conductivity and resists corrosion.
- Valve offers secondary packing/body seal with telltale leakage detection port (see **Vent Port**).

## Vent Port



A 1/8 in. female NPT leak detection/vent port with snubber plug enables monitoring of the pinch element. To vent to a drain, replace the plug with a fitting for plumbing. Keep the vent port at atmospheric pressure for the pinch element to function properly.

## Materials of Construction



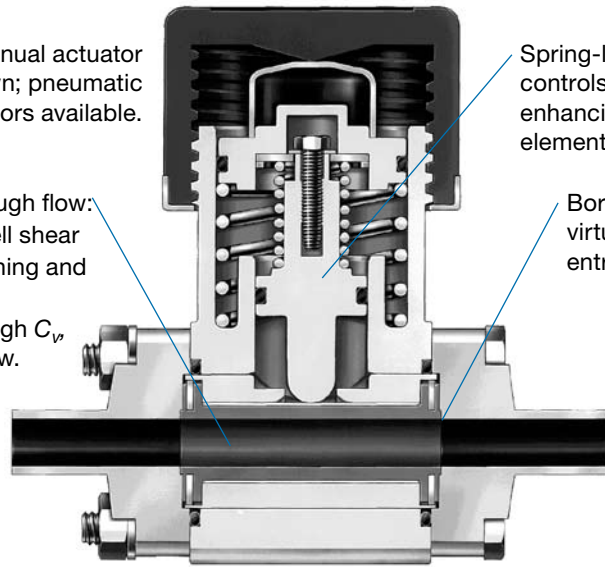
Manual actuator shown; pneumatic actuators available.

Straight-through flow:

- reduces cell shear
- eases draining and cleaning
- provides high  $C_v$  uniform flow.

Spring-loaded stem controls closing force, enhancing pinch tube element service life.

Boreline seals virtually eliminate entrapment areas.



## Technical Data

Valve	Orifice in. (mm)	$C_v$	Temperature Rating °F (°C)	Working Pressure psig (bar)	Autoclave Rating
Standard <sup>①</sup>	0.370 (9.4)	12	0 to 285 (-17 to 140) <sup>①</sup>	50 (3.4)	300° F (148°C) at 0 psig with valve open
High-pressure				125 (8.6)	

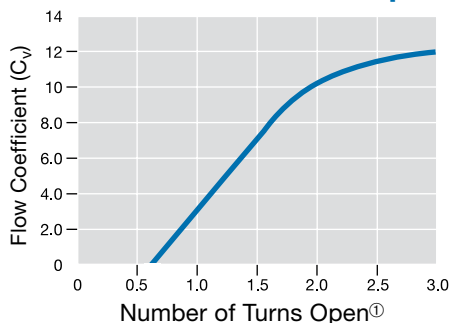
<sup>①</sup> The low-temperature rating of standard valves with optional Aflas® pinch tube elements is 50°F (10°C).

Component	Material Grade/ ASTM Specification
1 Handle	PEEK
Label	Aluminum
2 Actuator bearing	Stainless steel
3 Stem, piston	PEEK
Stem spring(s) <sup>①</sup> , spring retainer, stem screw, retaining ring	Stainless steel
Bearing	PTFE-coated stainless steel
O-rings	EPDM
4 Piston spring	Stainless steel
5 Body	PEEK
6 Handle stop	Stainless steel
7 Handle screws (3)	
8 Upper casing	PEEK
9 Pinch tube element	<i>Red silicone</i>
Support rings (2)	316 SS/A167
Tube reinforcement	Nylon
Cover	PTFE
10 Lower casing	PEEK
11 O-rings (secondary, flange seals, 2)	EPDM
12 Flanges (2)	<i>316L SS/A479, A182, or A276; CF3M/A351</i>
13 Body bolts (4)	316 SS, B8M/A193
14 Lock washers (4)	316 SS
15 Body nuts (4)	316 SS, 8M/A194
16 Snubber plug	316 SS
Lubricant	Silicone-based

Wetted components listed in italics.

<sup>①</sup> Standard valves—1 spring; high-pressure valves—2 springs.

### Flow Coefficient at Turns Open



① From fully closed handle position.

### Testing

Every Swagelok pinch valve is factory tested with nitrogen at its maximum pressure rating to a maximum leak rate of 0.04 std cm<sup>3</sup>/min at the seat and shell. Body seals are tested with helium at 10 psig (0.68 bar) to a maximum leak rate of 1 × 10<sup>-5</sup> std cm<sup>3</sup>/s.

### Cleaning and Packaging

Every Swagelok pinch valve is cleaned and packaged in accordance with Swagelok *Standard Cleaning and Packaging (SC-10)*, MS-06-62.

### Ordering Information and Dimensions

Dimensions, in inches (millimeters), are for reference only and are subject to change.

#### Standard Valve

Select an ordering number.

#### Valve with Optional Pinch Tube Element

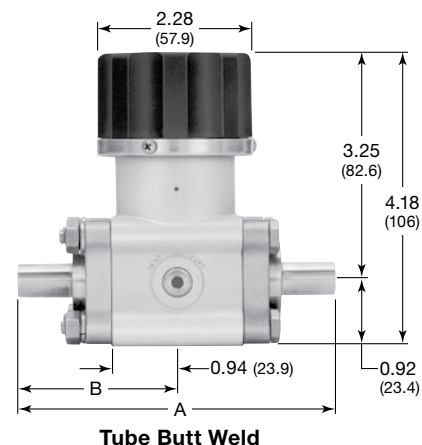
To order a valve with an optional pinch tube element, replace **S** in the ordering number with **E** for EPDM or **F** for Afias.

Example: SS-A3**E**TBM8

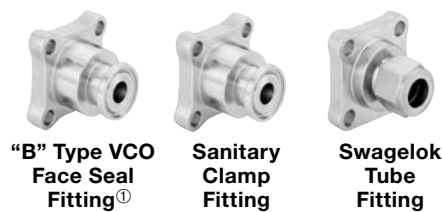
#### High-Pressure Valve

To order a valve with a standard red silicone or optional EPDM pinch tube element and a pressure rating up to 125 psig (8.6 bar), add **H** to the ordering number.

Example: SS-**H**A3STBM8



Tube Butt Weld



End Connections		Ordering Number	Dimensions, in. (mm)	
Type	Size		A	B
Tube butt weld	1/2 × 0.049 in.	SS-A3STBLM8	4.62 (117)	2.31 (58.7)
	1/2 × 0.065 in.	SS-A3STBM8		
	3/4 × 0.065 in.	SS-A3STBM12 <sup>①</sup>	4.96 (126)	2.48 (63.0)
	12 × 1 mm	SS-A3STBC12MM	4.62 (117)	2.31 (58.7)
"B" type VCO <sup>®</sup> fitting <sup>②</sup>	1/2 in.	SS-A3SBVCO8	4.18 (106)	2.09 (53.1)
TS series sanitary fitting	1/2 in.	SS-A3STS8	5.00 (127)	2.50 (63.5)
Sanitary clamp fitting	1/2 in.	SS-A3SSC8	5.00 (127)	2.50 (63.5)
Swagelok tube fitting	1/2 in.	SS-A3SS8	5.30 (135)	2.65 (67.3)
	12 mm	SS-A3SS12MM		

① Vertical mounting required for drainability.

② L-rings must be ordered separately. See the Swagelok "B" Type VCO L-ring Face Seal Fittings catalog, MS-02-40.

### Options

#### Steam Ports

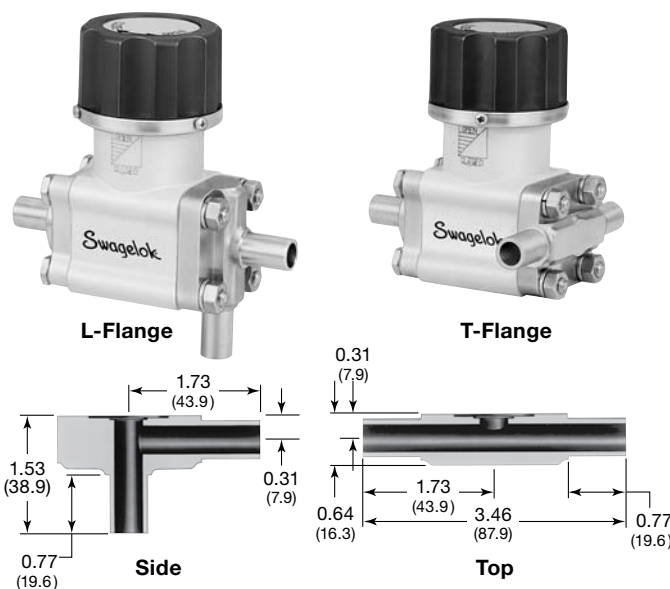
L-flange and T-flange end configurations minimize the dead leg between the pinch shutoff and steam purge ports to facilitate inline steam cleaning.

To order, add a designator to the valve ordering number.

Example: SS-A3STBLM8-**TTBLM88**

Flange Type	Tube Butt Weld Size	Designator
L-flange	1/2 × 0.049 in.	-LTBLM8
	1/2 × 0.065 in.	-LTBM8
	12 × 1 mm	-LTBC12MM
T-flange	1/2 × 0.049 in.	-TTBLM8
	1/2 × 0.065 in.	-TTBM8
	12 × 1 mm	-TTBC12MM

Dimensions, in inches (millimeters), are for reference only and are subject to change.



## Accessories

### Valve Body Seal Kits

Kits include pinch element assembly, four O-rings, lubricant, Material Safety Data Sheet, and instructions.

Pinch Element Material	Kit Ordering Number
Aflas	FZ-91K-A3
EPDM	EP-91K-A3
Red silicone	SI-91K-A3

## Pneumatic Actuators

### Features

- Are compact, lightweight—1.9 lb (0.86 kg) total
- Operate with low-pressure shop air
- Include position indicator feature
- Are available factory assembled or in kits for field assembly.

### Materials of Construction

Component	Material
Cap, union nut, air clamp	PEEK
Springs, pins	Stainless steel
O-rings	EPDM
Position indicator	Polycarbonate, stainless steel, PTFE, PES

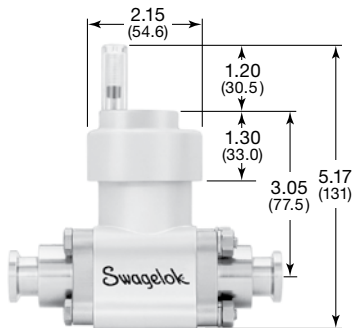
### Actuator Pressure Required at System Pressure

Maximum actuator pressure rating for all models is 125 psig (8.6 bar).

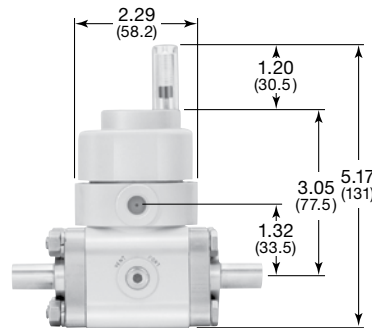
Valve	Normally Open	Double Acting	Normally Closed, Standard	Normally Closed, High-Pressure
	Minimum Actuator Pressure, psig (bar)			
Standard	35 (2.5)	25 (1.8)	50 (3.5)	—
High-pressure	50 (3.5)	40 (2.8)	—	85 (5.9)

### Dimensions

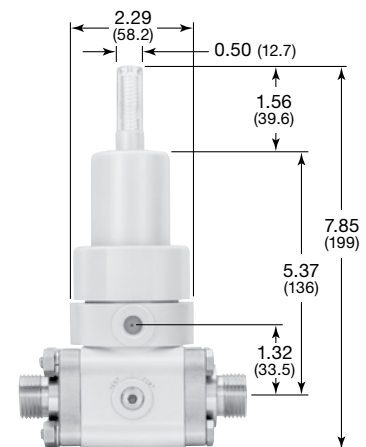
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Normally Open



Double Acting



Normally Closed, Standard and Normally Closed, High-Pressure

### Ordering Information

Add an actuator designator to the valve ordering number.

Example: SS-A3STBLM8-O

### Pneumatic Actuator Kits

Kits include actuator, lubricant, and instructions. Select a kit ordering number.

Actuator Model	Actuator Designator	Kit Ordering Number
Normally open	-O	MS-A3K-O
Double acting	-D	MS-A3K-D
Normally closed, standard	-C	MS-A3K-C
Normally closed, high-pressure	-CHP	MS-HA3K-CHP

### Safe Product Selection

When selecting a product, the total system design must be considered to ensure safe, trouble-free performance. Function, material compatibility, adequate ratings, proper installation, operation, and maintenance are the responsibilities of the system designer and user.

**Caution: Do not mix or interchange parts with those of other manufacturers.**

### Warranty Information

Swagelok products are backed by The Swagelok Limited Lifetime Warranty. For a copy, visit [swagelok.com](http://swagelok.com) or contact your authorized Swagelok representative.