

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.

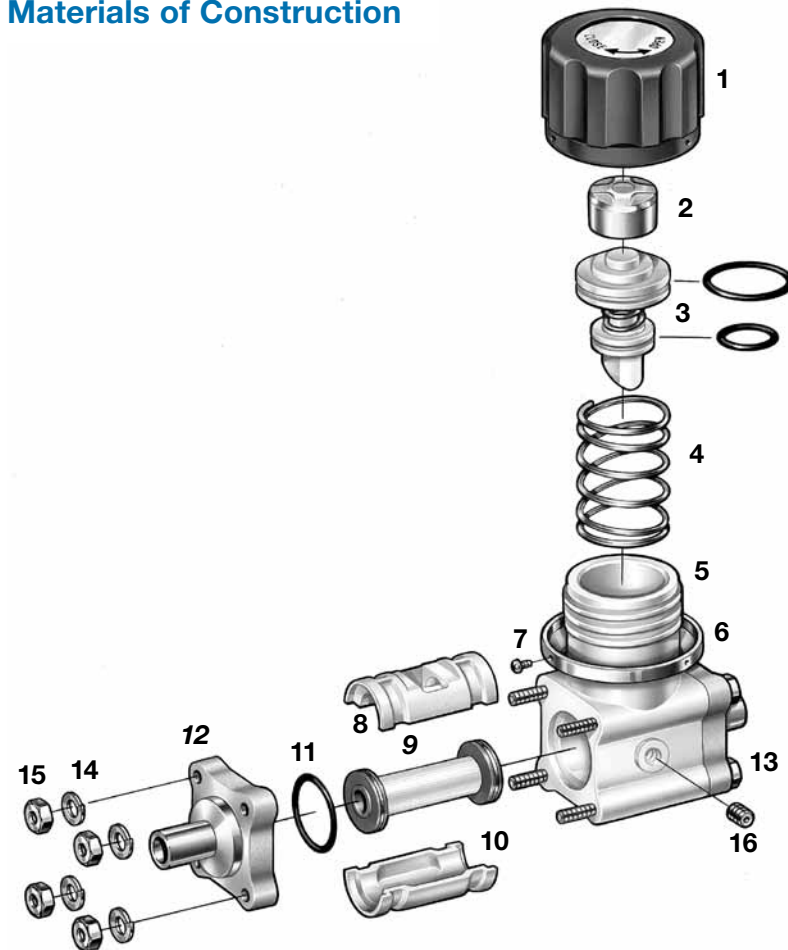
- Swagelok TS series sanitary fitting end connections offer an average surface finish of 15 µin. (0.38 µm) R_a . See the Swagelok *Biopharm Fittings—TS Series* catalog, MS-03-13, for more information.
- Valve offers excellent drainability when properly oriented.
- Compact, three-piece construction allows 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



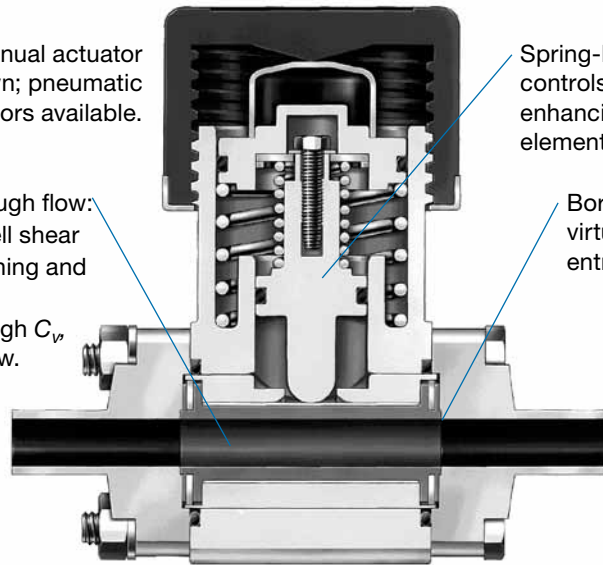
Manual actuator shown; pneumatic actuators available.

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 ^①	0.370 (9.4)	12	0 to 285 (-17 to 140) ^①	50 (3.4)	300° F (148°C) at 0 psig with valve open
High-pressure				125 (8.6)	

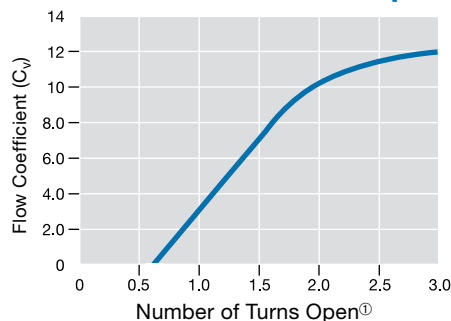
^① The low-temperature rating of standard valves with optional Aflas® pinch tube elements is 50°F (10°C).

Component	Material Grade/ ASTM Specification
1 Handle	PEEK
Label	Aluminum
2 Actuator bearing	Stainless steel
3 Stem, piston	PEEK
Stem spring(s) ^① , 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)	316L SS/A479, A182, or A276; CF3M/A351
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*.

^① 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 cm³/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 × 10⁻⁵ std cm³/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

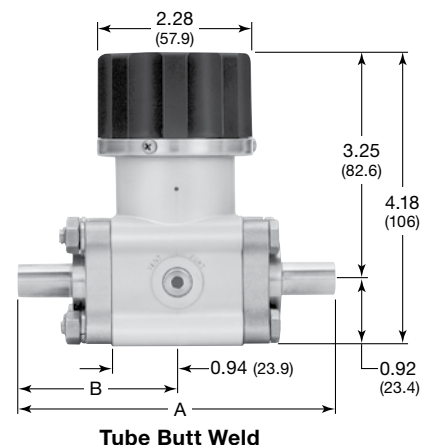
To order a valve with an optional pinch tube element, replace **S** in the ordering number with **E** for EPDM or **F** for Afias.

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



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 ^①	4.96 (126)	2.48 (63.0)
	12 × 1 mm	SS-A3STBC12MM	4.62 (117)	2.31 (58.7)
"B" type VCO [®] fitting ^②	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

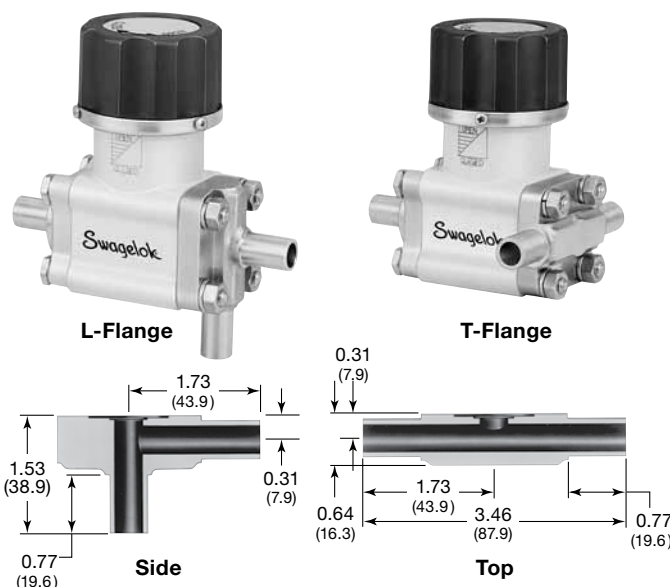
L-flange and T-flange end configurations minimize the dead leg between the pinch shutoff and steam purge ports to facilitate inline steam cleaning.

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

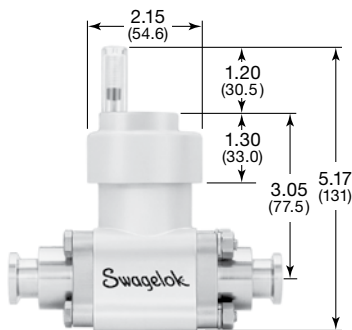
Actuator Pressure Required at System Pressure

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

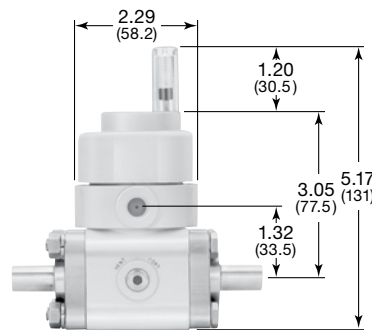
Valve	Normally Open	Double Acting	Normally Closed, Standard	Normally Closed, High-Pressure
	Minimum Actuator Pressure, psig (bar)			
Standard	35 (2.5)	25 (1.8)	50 (3.5)	—
High-pressure	50 (3.5)	40 (2.8)	—	85 (5.9)

Dimensions

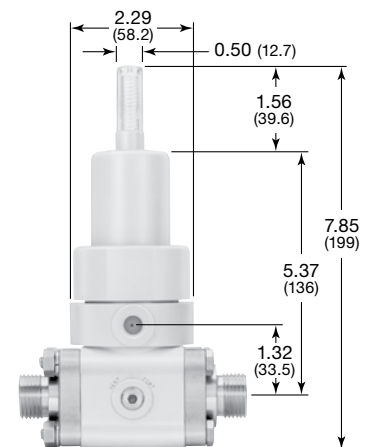
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Normally Open



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 or contact your authorized Swagelok representative.