



Pure-Fit® Tube Clamps

Standard and large size tube clamps for the most demanding applications.

Pure-Fit® TC Standard Size Tube Clamps

Pure-Fit® TC Tube Clamps represent a new generation of clamping technology for the pharmaceutical industry. They feature an outer body with no sharp edges, eliminating the potential for snags, scratches and punctures; a press-down locking system that is fully encapsulated to guard against untimely or unwanted release; a side release mechanism that facilitates secure, single-handed installation and operation; and an integral bore hole for absolute lock-out capabilities. Pure-Fit® TC's innovative design allows for complete flow stoppage, and the clamp can be installed over the tube in the normal fashion or put together after the tube is already part of a completed assembly.

Characteristics

Pure-Fit® TC Tube Clamps are constructed from high performance thermoplastic materials (PVDF or polypropylene), and come in two standard sizes (3/8" and 3/4") to accommodate a wide range of tubing products.

Compatibility

Pure-Fit® TC Tube Clamps are autoclavable and gamma sterilizable and has met the requirements of USP <88> Class VI, and/or USP <87>, and/or ISO 10993-5.

Pure-Fit® TCL Large Tube Clamps

Pure-Fit® TCL Large Tube Clamps provide the same innovative clamping technology as Pure-Fit® TC, but are designed to accommodate large diameter and thick wall tubing applications. Pure-Fit® TCL is compatible with standard, braided (reinforced) and multilayer tubing. In addition to providing complete fluid stoppage, Pure-Fit® TCL can be utilized in the flow position and features an integral bore hole for absolute lock-out capabilities.

Features/Benefits

- Provides complete fluid stoppage
- Smooth edges and corners help prevent punctures and ruptures
- Can be installed on or over tubing on finished assemblies
- High degree of leverage accommodates tubing with different durometers
- Can be utilized in the flow position
- Integral bore hole for lock-out capabilities
- Clamps made of PVDF or PBT can be autoclaved or gamma sterilized
- Clamps made of PP can only be gamma sterilized

Typical Applications

- Biopharmaceutical manufacturing
- Pharmaceutical processes
- Media process systems
- Bioreactors and fermentor
- Peristaltic pump sets

Characteristics

Pure-Fit® TCL is constructed from high-performance thermoplastic materials (PVDF or PBT). Pure-Fit® TCL is available in two sizes to accommodate a wide range of thick wall tubing and can be used with up to 2.0" O.D. tubing.

Compatibility

Pure-Fit® TCL is fully autoclavable and gamma sterilizable and has met the requirements of USP <88> Class VI, and/or USP <87>, and/or ISO 10993-5.

Pure-Fit® TC and TCL Typical Physical Properties**

Property	PP*	PVDF*	PBT*
Tensile Strength, psi (MPa) ASTM D638-91	4,800 (33.1)	7,440 (51.3)	7,977 (55)
Flexural Modulus, psi (MPa) ASTM D790-92	145,000 (999.7)	285,869 (1,971)	388,788 (2,681)
Hardness (Shore D) ASTM D2240-91	189 (87)	380.4 (138)	318.2 (159)
Heat Deflection ASTM D648-82 °F (°C) @66 psi °F (°C) @264 psi	189 (87)	167 (75)	125.6 (52)
Water Absorption (%) ASTM D570-81	0.01	0.05	0.15
Maximum Recommended Working Temperature °F (°C)	200 (93)	266 (130)	338 (170)

*PP=Polypropylene; PVDF=Polyvinylidene difluoride; PBT=Polybutylene terephthalate

**Raw material physical properties

Pure-Fit® TC Selection Guide

Part Number	Material	Tubing Range, O.D. (Inches)	Minimum, Wall Section (Inches)
PFTC375	Polypropylene	1/8 - 3/8	.030
PFTC375PVDF	PVDF	1/8 - 3/8	.030
PFTC750	Polypropylene	3/8 - 3/4	.060
PFTC750PVDF	PVDF	3/8 - 3/4	.060

Pure-Fit® TCL Selection Guide

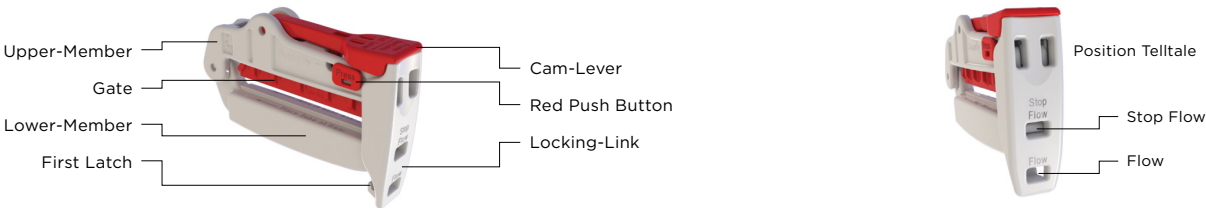
Part Number	Material	Tubing Range, O.D. (Inches)	Minimum, Wall Section (Inches)
PFTCL150	PVDF	3/4 - 2	1/16 - 1/8
PFTCL150-PBT	PBT	3/4 - 2	1/16 - 1/8
PFTCL250	PVDF	3/4 - 2	1/8 - 1/4
PFTCL250-PBT	PBT	3/4 - 2	1/8 - 1/4

Pure-Fit® TCL Clamping Properties

The tests below were conducted using Saint-Gobain Life Sciences silicone tubing, Sani-Tech® STHT®-C-500-5 (0.5” ID x 0.88” OD x 0.19” wall) and Tygon® 3350 ½ x 5/8, and braid-reinforced silicone hose Sani-Tech® STHT®-R-0500 (0.5” ID x 0.875” OD x 0.187” wall)) and Sani-Tech® STHT®-R-0375 (0.375” ID x 0.625” OD x 0.125” wall).

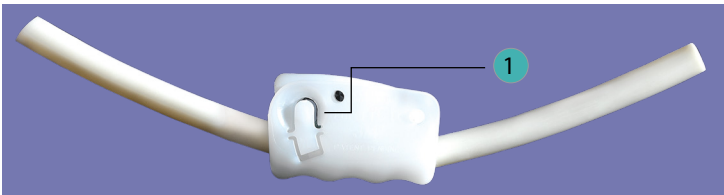
Each clamp was tested to evaluate the upper and lower limits of the clamp holding force with liquid, in the “stop flow” position (cam lever closed). The lower limit was evaluated with “test to Burst” on single-wall tubing: tubing bursts before clamp failure. The upper limit was tested with “test to 90 PSI” on braided thick-wall tubing: no leaks were recorded.

Clamp (PVDF or PBT)	Tubing type	Tubing description	Test criteria	Results
PFTCL150	Silicone - Braided	Sani-Tech® STHT-R-0375	Test to 90 PSI	pass
PFTCL150	Silicone - Single wall	Tygon 3350 (1/2 x 5/8)	Test to Burst	pass
PFTCL250	Silicone - Braided	Sani-Tech® STHT-R-0500	Test to 90 PSI	pass
PFTCL250	Silicone - Single wall	Sani-Tech® STHT-C-500-5	Test to Burst	pass

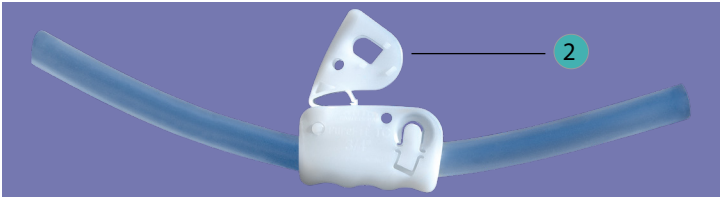


How To Operate Pure-Fit® TC Standard Clamp

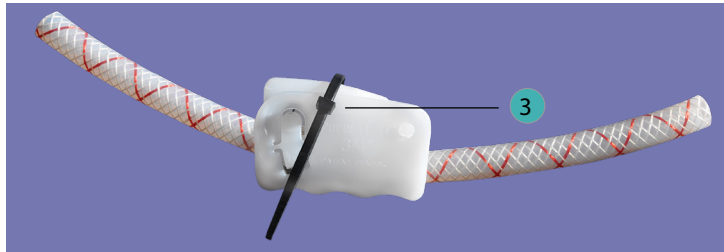
- 1 Squeeze to release.



- 2 Press down to lock.

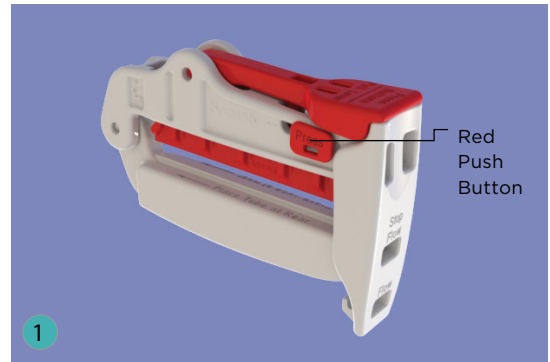


- 3 Thread cable tie through bore hole for total lock out.

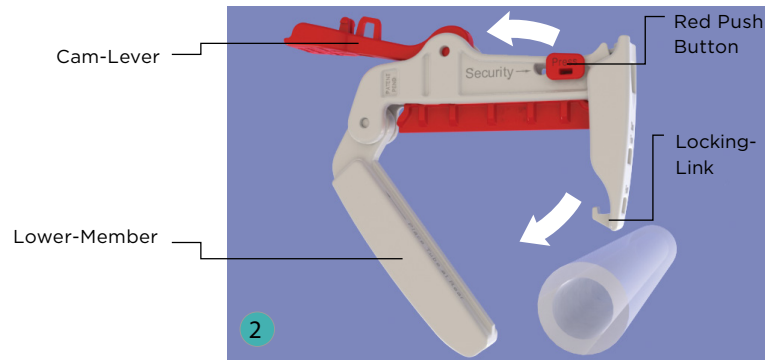


How To Operate Pure-Fit® TCL Clamp

- 1 Starting from the closed position, simultaneously press and hold the two Red Push Buttons.

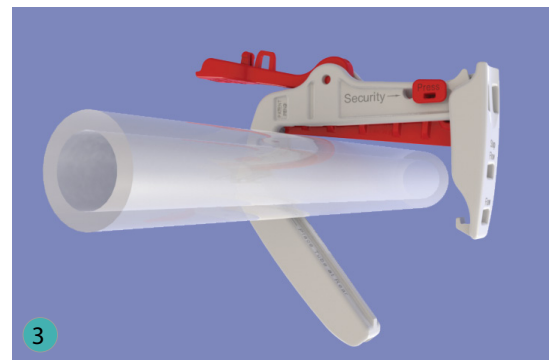


- 2 While pressing the Red Push Buttons, pull the Cam-Lever back toward the hinge of the clamp.

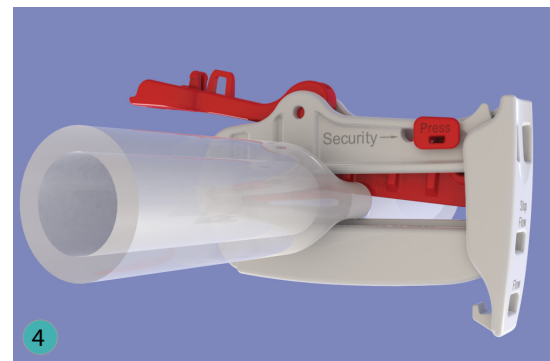


- 2 Pull the Lower-Member away from the Locking-Link.

- 3 Position the tube in the gate, as close as possible to the hinge of the clamp.



- 4 Push Lower-Member to the desired position ("Flow" or "Stop Flow").



- 4 Rotate the Cam-Lever to the closed position.

- 5 The tubing is now held in the "Flow" position or locked in the "Stop Flow" position (rendering shows "Stop Flow" position).





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