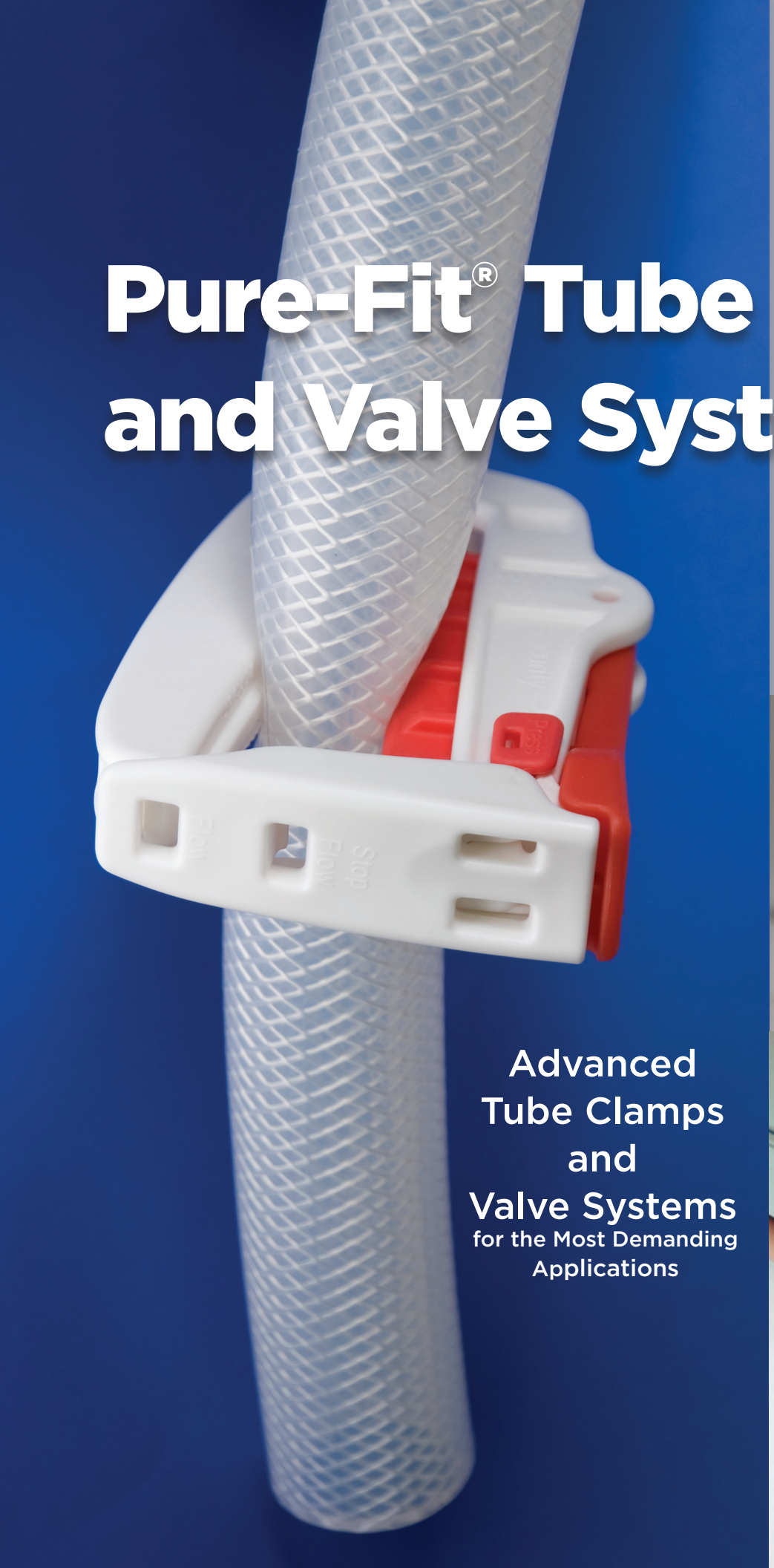
SAINT GOBAIN

Pure-Fit® Tube Clamps and Valve Systems



Advanced Tube Clamps and Valve Systems

for the Most Demanding Applications

Pure-Fit TC
Standard Size Tube Clamps
Pure-Fit® TC

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.

Pure-Fit® TC 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.

Pure-Fit® TC Compatibility

Pure-Fit® TC Tube Clamps are autoclavable and sterilizable and meet USP Class VI criteria. They have been physically tested to meet the most demanding applications.

Pure-Fit® TC Features/Benefits

- Provides complete fluid stoppage
- Smooth edges and corners help prevent punctures and ruptures
- Can be installed on or over tubing or finished assemblies
- High degree of leverage accommodates tubing with different durometers
- Can be utilized in the flow position
- Single-hand installation capability for ease of operation
- Unique top locking mechanism and side release prevent unwanted openings
- Integral bore hole for lock-out capabilities
- Available in PVDF or polypropylene
- Custom colors and identification available
- All materials animal derivative-free
- Autoclavable and sterilizable (autoclave not recommended for polypropylene clamps)

Pure-Fit TCL
Large Tube Clamps
Pure-Fit® TCL

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 multi-layer 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.

Pure-Fit® TCL Characteristics

Pure-Fit® TCL is constructed from animal derivative-free PVDF. 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.

Pure-Fit® TCL Compatibility

Pure-Fit® TCL is fully autoclavable and sterilizable and meets USP Class VI criteria.

Pure-Fit® TCL Features/Benefits

- Compatible with large diameter, thick wall, reinforced and multilayer tubing
- Provides complete fluid stoppage
- Smooth edges and corners help prevent punctures and ruptures
- Can be installed on or over tubing or 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
- Available in PVDF
- Custom colors and identification available
- All materials animal derivative-free
- Fully autoclavable and sterilizable

Pure-Fit
Tru Valve System
Pure-Fit® Tru Valve

The Pure-Fit® Tru Valve is an innovative valve design that allows the operator to install the system over standard flexible tubing or a finished assembly system. The superior lightweight construction allows the fluid flow to be accurately controlled with a calibrated scale on both sides to assist with validation protocols. The Pure-Fit Tru Valve was not only designed to meter fluid flow, but also as an effective, secure method to close off and lock out a tubing system during a steam-in-place (SIP) cycle.

Characteristics

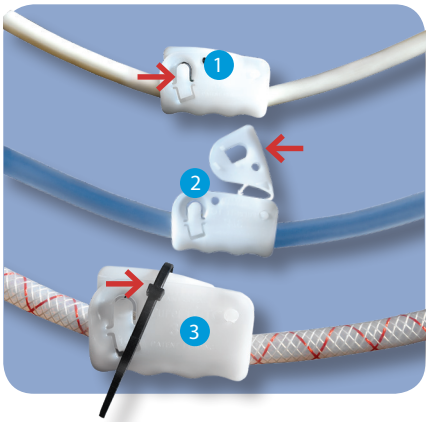
The Pure-Fit® Tru Valve is constructed from lightweight borosilicate reinforced nylon material and is also autoclavable and sterilizable utilizing gamma irradiation.

Pure-Fit Tru Valve System Features/Benefits

- Simple to operate and install
- Offers total flow variability
- Butterfly mechanism allows installation over tubing and finished assembly
- Secure "tamper proof" lockout positioning
- Excellent temperature application range
- Lightweight, robust design won't unbalance your tubings
- Can be autoclaved or gamma irradiated
- Suitable for all flexible tubing materials

Pure-Fit® TC and TCL Typical Physical Properties

Property	Polypropylene	PVDF
Tensile Strength, psi (MPa) ASTM D638-91	4,800 (33.1)	6,300 (43.4)
Flexural Modulus, psi (MPa) ASTM D790-92	145,000 (999.7)	290,000 (1,999.5)
Hardness (Shore D) ASTM D2240-91	72	78
Heat Deflection ASTM D648-82 °F (°C) @66 psi °F (°C) @264 psi	 189 (87) —	 266 (130) 221 (105)
Water Absorption (%) ASTM D570-81	0.01	0.03
Maximum Recommended Working Temperature °F (°C)	200 (93)	275 (135)



1 Squeeze to release.

2 Press down to lock.

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

Pure-Fit® TC Selection Guide

Part Number	Material	Tubing Range, O.D. (Inches)	Minimum, Wall Section (Inches)
PFTC375PP	Polypropylene	1/8 – 3/8	.030
PFTC375PVDF	PVDF	1/8 – 3/8	.030
PFTC750PP	Polypropylene	3/8 – 3/4	.060
PFTC750PVDF	PVDF	3/8 – 3/4	.060

Pure-Fit® TCL Selection Guide

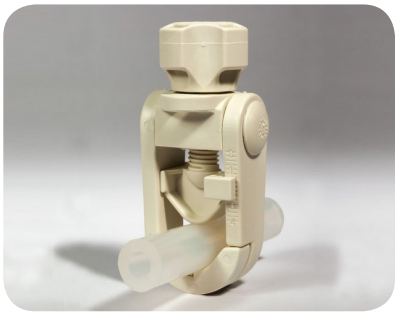
Part Number	Material	Tubing Range, O.D. (Inches)	Tubing Range, Wall (Inches)
PFTCL150	PVDF	3/4 – 2	1/16 – 1/8
PFTCL250	PVDF	3/4 – 2	1/8 – 1/4

Pure-Fit® Tru Valve

Part Number	Material	Tubing Range, od (inches)
TV-C-75	Reinforced Nylon	1/8-5/8

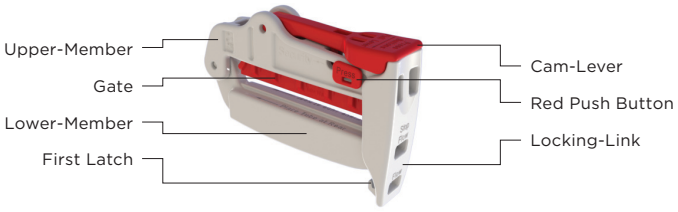
Pure-Fit® TC, TCL, and Tru Valve Typical Applications

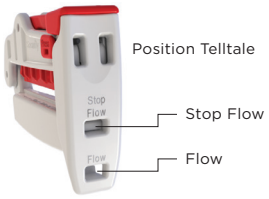
- Biopharmaceutical markets
- Pharmaceutical processes
- Product sampling
- Bioreactors and fermentor
- Peristaltic pump sets
- Assemblies and tubing set
- Drug delivery and discovery
- Aseptic fluid transport
- Media process systems
- Sterile bag systems
- Laboratory functions
- Medical systems



Pure-Fit® TCL Clamping Properties

The tests below were conducted using Saint-Gobain Performance Plastics' standard silicone tubing, Sani-Tech® STHT-C-500-4 (0.5" ID x 0.75" OD x 0.125" wall) and Sani-Tech® STHT-C-1000-6 (1.00" ID x 1.5" OD x 0.25" wall), 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-1000 (1.00" ID x 1.375" OD x 0.187" wall).





	STHT-C-500-4 0.5" ID x 0.75" O.D. x 0.125" Wall	STHT-R-0500 0.5" ID x 0.875" O.D. x 0.187" Wall	STHT-C-1000-6 1.00" ID x 1.5" O.D. x 0.25" Wall	STHT-R-1000 1.00" ID x 1.375" O.D. x 0.187" Wall
Pure-Fit® TCL part number	PFTCL150 (white)	PFTCL250 (red)	PFTCL250 (red)	PFTCL250 (red)
Clamp holding force Pressure with Liquid, psi	55*	101.83	76.50	40
Drop testing of liquid-filled assembly from a distance of 5 feet				
"Flow" Position, Cam Lever Closed	Pass	Pass	Pass	Pass
"Stop Flow" Position, Cam Lever Closed	Pass	Pass	Pass	Pass
"Stop Flow" Position, Cam Lever Closed, Pressurized	Pass	Pass	Pass	Pass
Average % free flow				
Free Flow, No Clamp	100%	100%	100%	100%
"Flow" Position, Cam Lever Closed	100%	100%	76%	76%
"Stop Flow" Position, Cam Lever Opened	100%	75%	53%	53%
"Stop Flow" Position, Cam Lever Closed	0%	0%	0%	0%
Flow rates, time to empty, sec.				
Free Flow, No Clamp	58.58	58.58	8.73	8.73
"Flow" Position, Cam Lever Closed	58.50	44.38	11.50	11.50
"Stop Flow" Position, Cam Lever Opened	58.55	58.57	16.47	16.47
"Stop Flow" Position, Cam Lever Closed	No flow	No flow	No flow	No flow

* determined by tubing

Pure-Fit® Tru Valve Technical Data

- The Tru Valve Clamp should be placed 1" or less from the face of the molded Tri-Clamp (TC) connection; care should be taken to ensure this is the maximum possible distance. The above tubing sizes were subjected to 100 PSI for 60 minutes at 65°F. No failure was seen on multiple testing.
- These connections can be subjected to SIP at maximum 35 PSI.
- The Tru Valve Clamp is autoclavable (steam) and can be gamma irradiated.
- The clamp is to be used with security ties/labels that can be placed and validated as set on either a closed or preset flow. This ensures that the restricted flow position or secure closure is tamper-proof, a significant advantage when ensuring compliance to a Standard Operating Procedure (SOP) is necessary.
- The reusable borosilicate reinforced nylon Tru Valve is designed to suit all tubing to .700" OD.

Pure-Fit® Tru Valve Flow Characteristics

3/16" ID TUBING						*Open	*Open
Clamp Setting	3	2.75	2.5	2.25	2	1.75	1.5
ML/MIN.	0	33	333	800	1000	1333	1333
1/4" ID TUBING						*Open	*Open
Clamp Setting	3	2.5	2.25	2	1.75	1.5	1.25
ML/MIN.	0	42	893	1429	1515	1515	1515
3/8" ID TUBING						*Open	*Open
Clamp Setting	2.5	2.25	2	1.75	1.5	1.25	1
ML/MIN	0	57	625	1613	2000	3030	3030

Flow in ML/MIN, all data is for guidance only; please confirm flow data when assessing application. Testing was completed on a 10Ltr bag. Calibration is in segments of .25 of a full division.
*The open flow rate may vary dependent on head pressure.

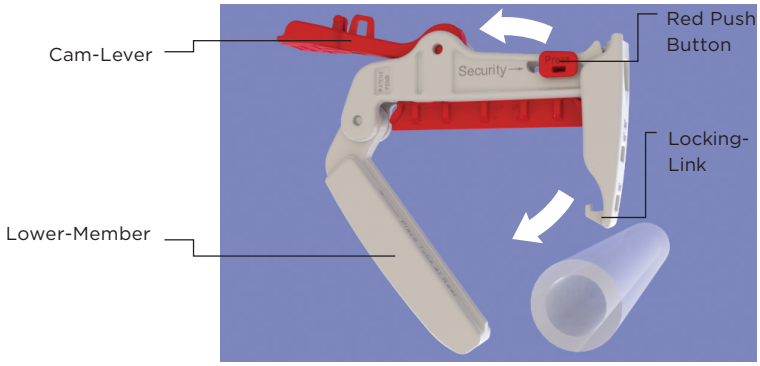
How to Operate Pure-Fit® TCL

1

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

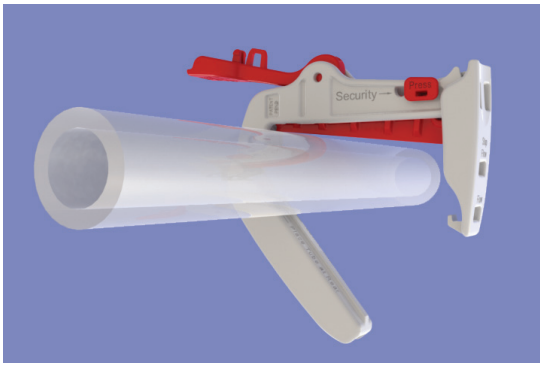
2

- While pressing the Red Push Buttons, pull the Cam-Lever back toward the hinge of the clamp.
- Pull the Lower-Member away from the Locking-Link.



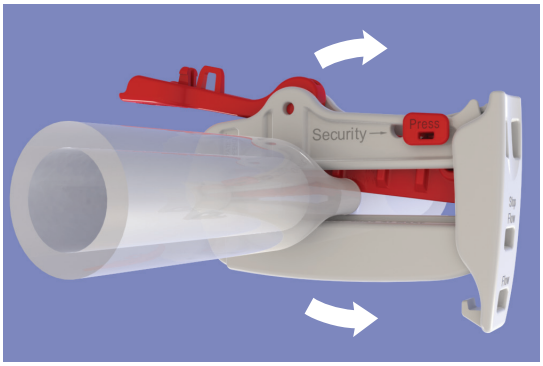
3

- 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”).
- 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).