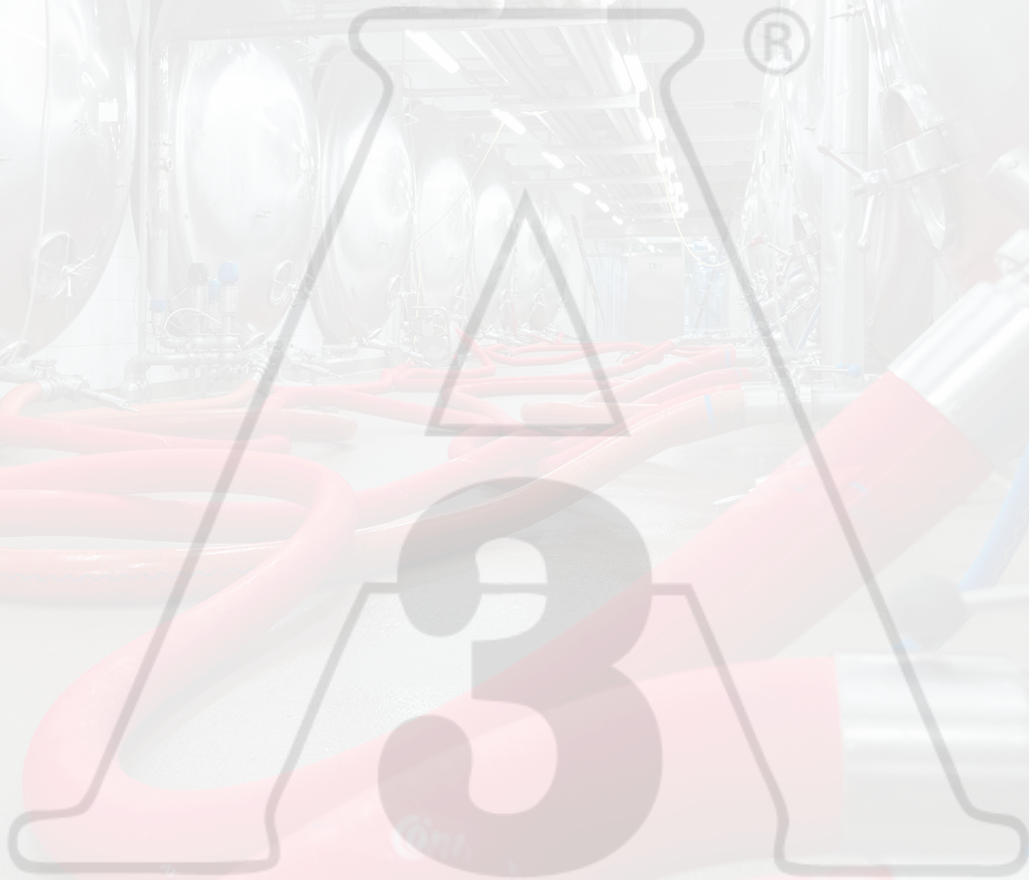




# 3A HOSE

## PRODUCT CATALOG

3A Hoses, 3A Hose Assemblies, & Accessories for the  
Food and Beverage Industries



**Campbell Fittings**

[www.mcgillhose.com](http://www.mcgillhose.com)

## WHAT IS 3A?

# BACKGROUND

The first standards for the hygienic design of equipment used in the dairy industry were introduced in the 1920s and became known as "3-A standards" for the three interest groups that cooperated to improve equipment design and sanitation - regulatory sanitarians, equipment fabricators, and processors.

This collaboration continues today in the not-for-profit corporation 3-A Sanitary Standards, Inc., dedicated to the mission of advancing food safety through hygienic equipment design. The membership consists of three associations: International Dairy Foods Association, Food Processing Suppliers Association, the International Association for Food Protection and representatives of the U.S. Department of Agriculture and the U.S. Food & Drug Administration.

3-A SSI maintains an extensive inventory of design criteria for equipment and processing systems, oversees the 3-A Symbol Authorization program and other voluntary certificates to help affirm the integrity of hygienic processing equipment and systems and provides extensive knowledge resources to support the training and education needs in the rapidly changing food, beverage, and pharmaceutical industries



# ND OF 3A

**T**HE 3-A SYMBOL - Introduced for commercial use in 1956, the 3-A Symbol is a registered mark used to identify equipment that meets 3-A Sanitary Standards for design and fabrication. Voluntary use of the 3-A Symbol on dairy and food equipment conveys assurance that equipment meets sanitary standards, provides accepted criteria to equipment manufacturers for sanitary design, and establishes guidelines for uniform evaluation and compliance by sanitarians.

**T**he requirement for an independent Third Party Verification (TPV) inspection applies to all equipment built to 3-A Sanitary Standards that is licensed to display the 3-A Symbol. A licensee must engage a credentialed inspection professional, a Certified Conformance Evaluator (CCE), to conduct an on-site evaluation of finished equipment and other product attributes to affirm the equipment conforms to provisions of the applicable 3-A Sanitary Standard. Any deficiencies discovered in an inspection must be corrected before the equipment can be authorized to display the 3-A Symbol. Equipment manufacturers that do not comply with the TPV inspection requirement risk losing the authorization to use the 3-A Symbol.

**T**he TPV requirement, combined with easy access to licensee information, has enhanced the level of integrity and recognition of the 3-A Symbol for everyone concerned with the safety of consumers of food, beverages and pharmaceutical products.



## PREMIUM QUALITY

3-A Standards require foods to be appropriate sanitary measures are taken when food/pharma product is conveyed.



## STANDARDS

3-A has a set of standards available to review should you have any questions on how you stack up.

Find them here:  
[www.3-a.org/standards](http://www.3-a.org/standards)



# 3-A HOSES

BY **Continental** 



**T**hese food and beverage transfer hoses are rated by Continental to be able to be used in 3-A certified hose assemblies. Each one of these transfer hoses has unique features/benefits and can be used in different applications.

Continental hoses for the foodstuffs industry are subject to stringent hygiene regulations and numerous standards. To ensure that these are fulfilled, expertise, know-how and uncompromising accuracy are required during the development, designing and production of such elastomer "performers".

Continental beverage hoses are suitable for wine, beer, strong alcoholic beverages as well as fruit juices. They feature a perfectly smooth, plasticizer-free lining that does not leave any odor or taste. Ideal for all common connecting systems, our hoses are resistant to CIP cleaning and all harsh cleaning processes in the beverage industry.

## EXTREMEFLEX™ FOOD GRADE

Plicord ExtremeFlex Food Grade is for both dry food transfer and liquid transfer. A high-tech, flexible corrugated hose with pretzel-like agility and proven performance, all at a great value. Easier to move in and out of tight spaces and around sharp corners.- Easier to lift and carry, so there are fewer workplace injuries.- Easier to connect and disconnect, keeping productivity high. highly demanding service of transferring non-oily liquid products in wineries and breweries.

**CONSTRUCTION TUBE: WHITE CHEMIVIC™ SYNTHETIC RUBBER (FDA/ USDA COMPLIANT AND CONFORMS TO 3-A SANITARY STANDARD 18-03)**  
**COVER: WHITE OR GRAY CHEMIVIC™ CORRUGATED SYNTHETIC RUBBER (WRAPPED IMPRESSION)**

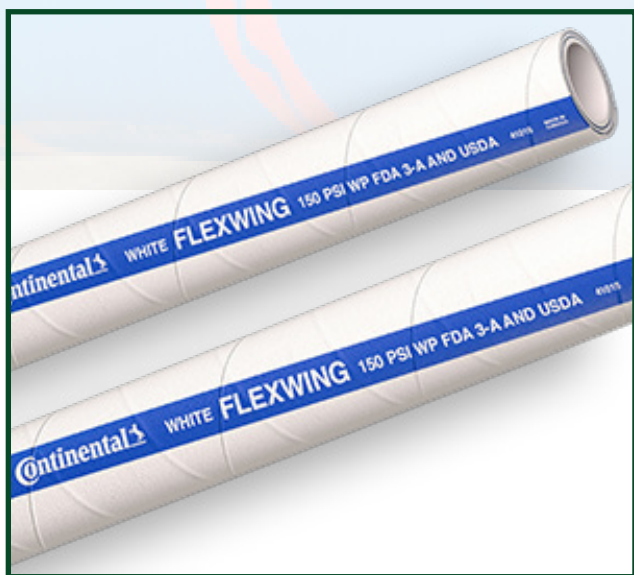




## VINTNER RESERVE CB

Vintner Reserve is primarily for liquid transfer. For handling in-plant and/or tank truck transfer of wine, beer, portable water and other non-oily liquid food-stuffs. The monofilament helix is rust proof and is a crush-resistant alternative to traditional softwall or steel wire reinforced hoses.

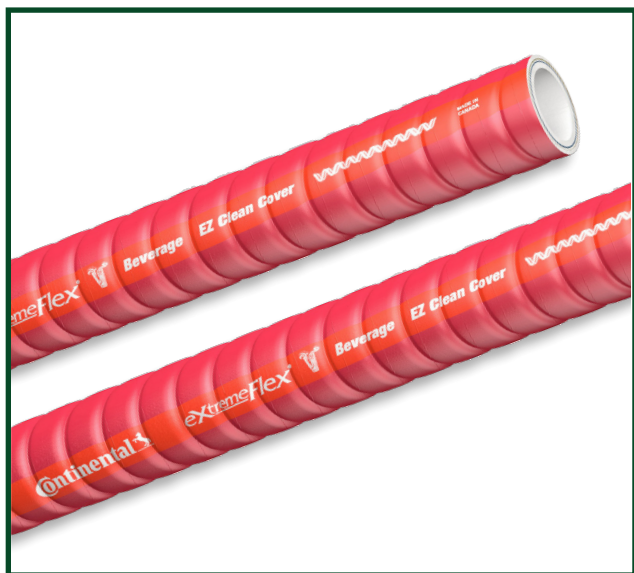
**CONSTRUCTION TUBE: WHITE CHLOROBUTYL (FDA / USDA COMPLIANT AND CONFORMS TO 3-A SANITARY STANDARD 18-03)**  
**COVER: GRAY EPDM SYNTHETIC RUBBER (WRAPPED)**



## WHITE FLEXWING

White Flexwing is for both dry food transfer and liquid transfer. A highly flexible hose for gravity flow, pressure, or suction service transferring oily and non-oily edibles from tank truck and in-plant services.

**CONSTRUCTION TUBE: CHEMIVIC SYNTHETIC RUBBER (FDA/USDA COMPLIANT & CONFORMS TO 3-A SANITARY STANDARD 18-03)**  
**COVER: CHEMIVIC SYNTHETIC RUBBER (WRAPPED IMPRESSION)**



## EXTREMEFLEX™ BEVERAGE (EZ CLEAN COVER)

Plicord ExtremeFlex Beverage Red with EZ Clean Cover is primarily for liquid transfer. For beer, wine, distillery and beverage (edible liquid) transfer processing facilities. Ideal for applications requiring flexible and/or tight bend connections. Non-phthalates compound

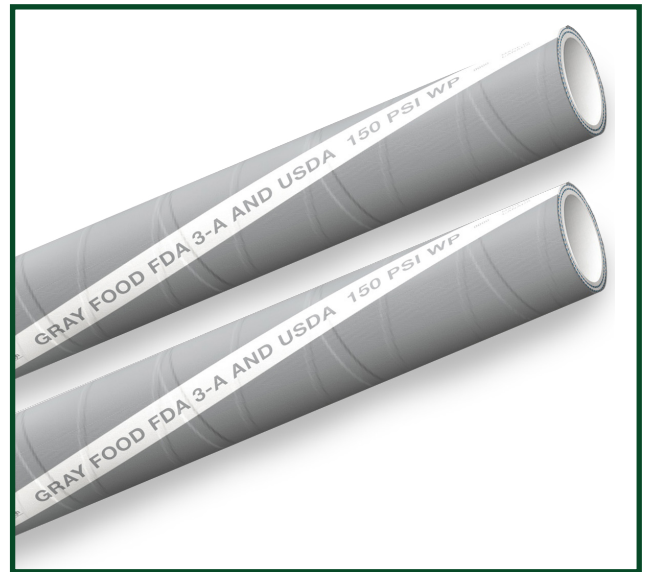
**CONSTRUCTION TUBE: WHITE CHLOROBUTYL (FDA/USDA COMPLIANT & CONFORMS TO 3-A SANITARY STANDARD 18-03)**  
**COVER: CORRUGATED RED EZ CLEAN UHMWPE COVER (SEMI-SMOOTH FINISH).**

CGill  
HOSE & COUPLING

## GRAY FOOD

Gray Food is for both dry food transfer and liquid transfer. A flexible hose for gravity flow, pressure, or suction service and in-plant service, transferring edibles from tank truck.

**CONSTRUCTION TUBE: CHEMIVIC™ SYNTHETIC RUBBER (FDA/USDA COMPLIANT & CONFORMS TO 3-A SANITARY STANDARD 18-03)**  
**COVER: CHEMIVIC SYNTHETIC RUBBER (WRAPPED IMPRESSION)**



## DRINKLINE (2023)

A quality discharge hose designed specifically for the highly demanding service of transferring non-oily liquid products in wineries and breweries

**TUBE: WHITE CHLOROBUTYL RUBBER (FDA/USDA COMPLIANT AND CONFORMS TO 3-A REQUIREMENT STANDARDS 18-03)**  
**COVER: RED EPDM WITH A WHITE SPIRAL STRIPE (WRAPPED IMPRESSION)**



## PURPLE SNAKE (LIMITED AVAILABILITY IN 2024)

Purple Snake is primarily for liquid transfer. The ideal hose for breweries, wine-presses, bottlers and many other installations in the brewing, beverage and spirits industry. Flexibility, pressure resistance and long service life even under extreme working conditions. The new, optimized lining conforms to foodstuffs regulations and is absolutely neutral to taste and odor. Tube is suitable for pure alcohol up to 98%. The hose is resistant to conventional cleaning agents & disinfectants. Easily cleaned conventionally or CIP installations.

**TUBE: WHITE, EPDM, (FDA COMPLIANT, CONFORMS TO 3-A SANITARY STANDARD 18-03 & XXI OF BFR REQUIREMENTS)**  
**COVER: RED EPDM, FABRIC PATTERNED SPECIAL COVER, RESISTANT TO OZONE, WEATHER, UV AND ABRASION**



# 3-A HOSE ASSEMBLIES

FABRICATED WITH

## TRICLAMPS

BY



**Campbell Fittings**



### CAMPBELL FITTINGS 3-A CERTIFICATION

THIS CERTIFICATE IS AWARDED TO

## MCGILL HOSE & COUPLING

In recognition of successfully completing  
Campbell Fittings 3-A 62-02 Training.

OCTOBER 1, 2023



Jeff Giuliani  
Regional Sales Manager

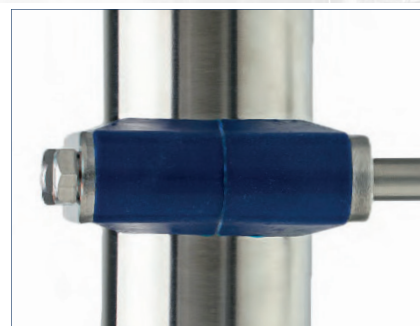
# SANITARY HANGING SYSTEMS

BY:



**Syntiro  
Dynamics**

Hygienic Pipe Hanging Systems for Stainless Steel Pipe,  
PVC Coated Pipe, EMT Conduit and Instrumentation Lines

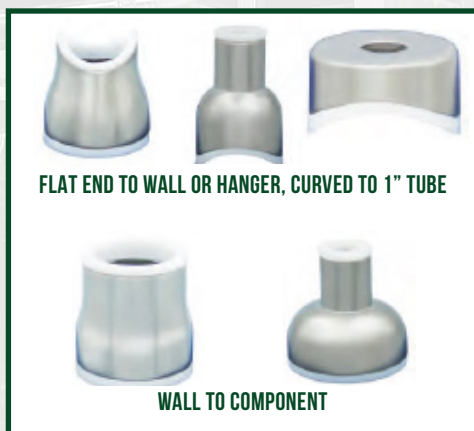


**NO EXPOSED THREADS**



**ZERO CAULK - ENGINEERED SOLUTIONS**





## ZERO CAULK OFFSET SPACERS

### SILICONE RUBBER GASKETS SEALS TO WALL'S SURFACE & MOUNTED DEVICE

- NEW Silver Ion additive is blended in the FDA grade Silicone Rubber Gaskets, impeding bacterial, mold & fungus from forming on the gasket
- FDA's Food Safety Modernization Act requires everything mounted in process areas to be offset from all surfaces
- Zero Caulk - surface sealing gaskets, eliminates caulking
- Caulk over time with exposure will breakdown and crack
- Cracks/harborage sites are all potential pathogen growth zones



## ZERO CAULK UNIVERSAL CUP MOUNT

**WORKS W/INSULATED WALL PANELS OR BLIND SIDE WALLS - IDEAL FOR OPEN SIDE WALLS. BRACKET'S S/S CUP OR BOOT ENCASES THE RIVET NUT AS THE SILICONE RUBBER GASKET SEALS TO THE MOUNTING SURFACE. BRACKET ALSO IS ABLE BE MOUNTED TO OPEN SIDE WALLS W/BOLTS & LOCK NUTS.**

- NEW Silver Ion additive is blended in the FDA grade Silicone Rubber Gaskets, impeding bacterial, mold & fungus from forming on the gasket.
- ZCUP's mounting rod allows universal mounting of any style hangers or process area accessories
- Zero Caulking eliminates the need for inspection/replacement, creating maintenance uptime



## PROCESS HEX HANGER

- Drainable Exterior
- Wipe down cleanable
- No exposed threads
- Self-draining of riser lines
- Carriage bolt locks into hardware frame's square hole, allowing a single tool to tighten acorn nuts.
- Carriage bolts are reversible, allowing rounded drainable surfaces to be positioned on hanger's topside
- Hex shape is familiar to most installers - no installation learning curve



## ZERO PUDDLE SILICONE RUBBER INSERTS

### REMOVED FLAT SPOTS ON RISER HANGER'S TOPSIDE

Offered in: Tube OD Sizes, Scheduled Pipe, PVC Coated Conduit, Electrical Metallic Tubing (EMT) and copper tube

When supporting riser/vertical lines:

- The inserts sloped/convex sides eliminate flat surfaces
- Facilitating drainage
- Eases cleaning and wipe downs - creating uptime
- Available on all CSD & PHH Style hangers

# SPECIALTY SANITARY FITTINGS

BY: **q.c.** Advanced™  
Couplings Limited

## HELPING THE FOOD, PHARMACEUTICAL & PROCESS INDUSTRIES WITH A FOCUSED PROGRAM OF RESEARCH, INNOVATION & DEVELOPMENT

As leading manufacturers of stainless steel clamp type tube connections, Advanced Couplings is proud to have earned a reputation for the high quality and precision of our products in very demanding applications. Using the latest in manufacturing technology such as 3-D CAD & CNC production tools, we are able to offer a complete service to our customers through concept, design, manufacturing & testing.

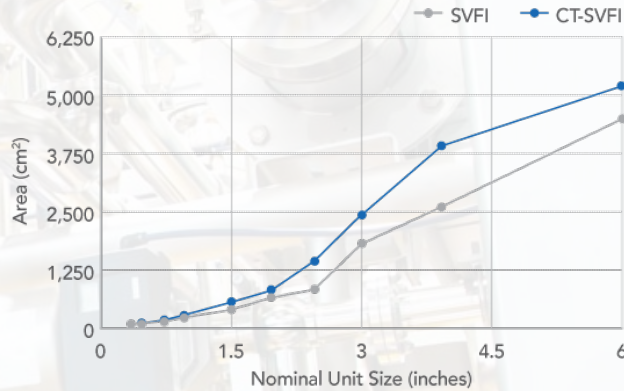
### HIGHLIGHTED PRODUCT:



## ACL® CT-SVFI – SHX Clamp Type Sterile Visual Flow Indicator

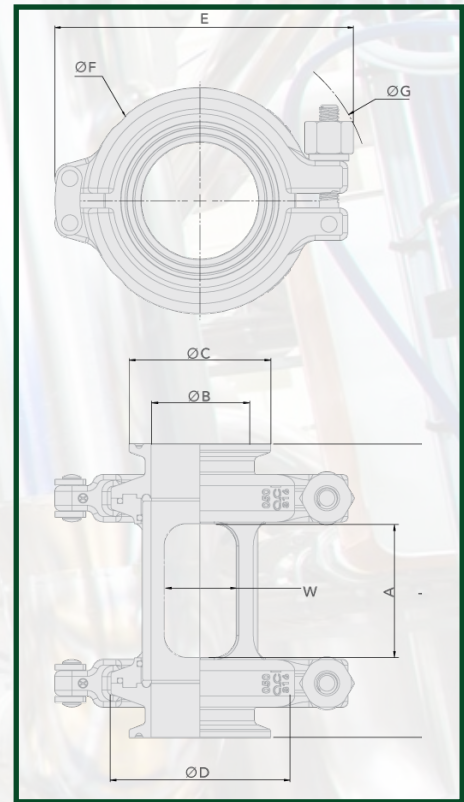
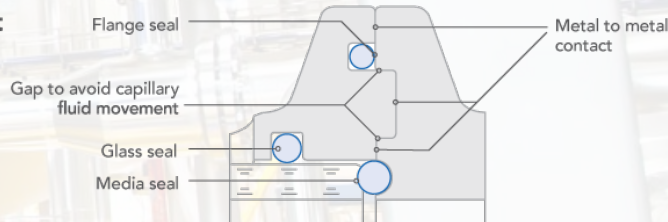
The CT-SVFI is a novel sight glass that has been designed with hygienic processing in mind. The glass/o-ring/flange end is sealed utilizing a sanitary clamp. As there is a mechanical stop, the gasket cannot be over compressed. The use of a clamp connection reduces the need for tools to assemble or disassemble the sight glass. Additional seals provide a secondary barrier to prevent the ingress of contaminants to the seal location.

## Viewing Window Area – SVFI v CT-SVFI



The CT-SVFI has been designed to ensure the largest viewing area possible whilst maintaining the mechanical integrity of the component.

## Seal Layout



## Clamp Type Sterile Visual Flow Indicators

Nominal size (inches)	DIMENSIONS (mm)										Working pressure (BAR)	Mass (kg)
	Window A x W	ID ØB	Mating flange ØC	Integral flange ØD	Length L	Width E	Minor OD ØF	Major OD ØG	Number of windows	Integral clamp size		
½	24 x 8	9.40	25.0	34.0	76.0	85.0	46.3	106.0	4	DN10/15/20	20.0	0.58
¾	29 x 13	15.75	25.0	50.5	87.0	102.0	62.2	114.0	4	1" - 1.5"	17.5	0.90
1	34 x 16	22.10	50.5	50.5	90.0	102.0	62.2	114.0	4	1" - 1.5"	8.5	1.01
1½	48 x 26	34.80	50.5	64.0	105.0	123.0	77.7	127.0	4	2"	8.0	1.19
2	55 x 36	47.50	64.0	77.5	120.0	140.0	91.2	139.0	4	2.5"	7.0	1.53
2½	72 x 33	60.20	77.5	91.0	151.0	150.0	104.7	157.0	6	3"	6.5	1.90
3	108 x 36	72.90	91.0	106.0	175.0	165.0	119.7	171.0	6	3.5"	6.5	2.51
4	135 x 48	97.38	119.0	130.0	200.0	191.0	143.7	194.0	6	4.5"	4.0	3.47

### ADVANTAGES:

- Design is aseptic due to the addition of external o-ring
- Labyrinth design with capillary fluid barriers to halt external media migrating to process side
- Gasket compression controlled with metal to metal contact
- Assembly / disassembly is very simple
- No large screw threads to clean –less COP time
- Force is applied in one direction to the gasket

### APPLICATIONS:

- Pharmaceutical
- Food
- Dairy
- Chemical Processing
- Can be welded in place and also easily disassembled

### COMPLIANCE:

- FDA CFR 21 177.2600 & USP VI <87> <88> Certified gaskets
- Surface finish according to ASME- BPE
- Controlled gasket extrusion to ASME-BPE CAT2
- Borosilicate glass 3.3 pressure rating calculated according to CRN (FOS 10:1)

## HIGHLIGHTED PRODUCT:



## ACL® CT-Bubble Trap Clamp Type Bubble Trap

The CT-Bubble Trap has been developed to incorporate the best features of the ACL Bubble Trap and the CT-SVFI. The glass/o-ring/flange end is sealed utilising a sanitary clamp. As there is a mechanical stop, the gasket cannot be over-compressed. The use of a clamp connection reduces the need for tools to assemble or disassemble the bubble trap. Additional seals provide a secondary barrier to prevent the ingress of contaminants to the seal location.

### ADVANTAGES:

- Design is aseptic due to the addition of external o-ring
- Labyrinth design with capillary fluid barriers to halt external media migrating to process side
- Gasket compression controlled with metal to metal contact
- Assembly / disassembly is very simple
- No large screw threads to clean –less COP time
- Force is applied in one direction to the gasket

### APPLICATIONS:

- Pharmaceutical processing (chromatography columns)
- Food
- Dairy
- Chemical Processing (seal pot)

### COMPLIANCE:

- FDA CFR 21 177.2600 & USP VI <87> <88> Certified gaskets
- Surface finish according to ASME- BPE
- Controlled gasket extrusion to ASME-BPE CAT2
- Borosilicate glass 3.3 pressure rating calculated according to CRN (FOS 10:1)

Bubble Trap Ø (inches)	Rec. Fill Volume (litres)	Flow Rate (LPM)	Operating Pressure		Base Inlet/Outlet Tri-clamp Ferrule Sizes					Lid Controls (2 Ports) Tri-clamp Ferrule Sizes					Lid Controls (3 Ports) Tri-clamp Ferrule Sizes				
			Borosilicate 3.3 Bar (PSI)	Acrylic Bar (PSI)	1/2"	3/4"	1"	1 1/2"	2"	1/2"	3/4"	1"	1 1/2"	2"	1/2"	3/4"	1"	1 1/2"	2"
3"	0.5	2	7.0 (101)	7.5 (109)	•	•				•	•				•	•			
	0.7	3			•	•				•	•				•	•			
	1	4			•	•				•	•				•	•			
4"	1	4	6.0 (87)	7.0 (102)	•	•	•			•	•	•	•		•	•	•		
	2	8			•	•	•			•	•	•	•		•	•	•		
	3	12			•	•	•			•	•	•	•		•	•	•		
6"	2	8	5.5 (80)	6.0 (87)		•	•	•		•	•	•	•	•	•	•	•	•	
	3	12				•	•	•		•	•	•	•	•	•	•	•	•	
	4	16				•	•	•		•	•	•	•	•	•	•	•	•	
	6	24				•	•	•		•	•	•	•	•	•	•	•	•	
	8	32				•	•	•		•	•	•	•	•	•	•	•	•	
8"	6	24	5.0 (73)	5.0 (73)			•	•	•	•	•	•	•	•	•	•	•	•	
	8	32					•	•	•	•	•	•	•	•	•	•	•	•	
	10	40					•	•	•	•	•	•	•	•	•	•	•	•	
	12	48					•	•	•	•	•	•	•	•	•	•	•	•	
10"	12	48	3.5 (51)	4.0 (58)			•	•	•	•	•	•	•	•	•	•	•	•	•
	16	64					•	•	•	•	•	•	•	•	•	•	•	•	•
	20	80					•	•	•	•	•	•	•	•	•	•	•	•	•

## Seal Layout



## Sizing Guide

The most important feature of any bubble trap installation is the selection of the correct size trap. There are two over-riding factors that ultimately dictate which size bubble trap you require:

- Flow Rate (Q) - Flow rate of the media entering the bubble trap, measured in liters per minute (LPM).
- Operating Pressure - Pressure inside the system when entering the bubble trap. When these two factors are known a bubble trap can easily be selected from the table below.

Note: ACL stocks a variety of 'CT' sizes from 1/2" to 8" with variable pressure ratings and fill volumes.

## Ratings/Configurations

It should be noted that each separate diameter size of bubble trap overlaps the previous size, this is particularly useful as the small diameter longer length bubble trap will always have a higher pressure rating than its larger sized diameter alternative. The data in the table below is derived from the underlying principal that the media should remain inside the bubble trap for a minimum of 15 seconds (residence time) and is generated from the basic formula:

$$Rt = Rfv / Q \times 60$$

Where:  
 Rt = Residence Time (greater than 15 seconds)  
 Rfv = Recommended Fill Volume (Litres)  
 Q = Flow Rate (Litres per minute - LPM)

Note: If your exact flow rate is not shown in the table below, the bubble trap sized for the nearest flow rate larger/quicker than yours must be selected. This will guarantee the residence time will exceed the 15 second minimum.

## ACL Quality Assurance:

The ACL Quality Management System is certified according to EN ISO 9001:2015. We ensure that our suppliers also maintain a certified Quality Management System. Materials used in the fabrication of the CT-Bubble Trap are European sourced and conform to AD2000 W2 and PED. This ensures the highest level of reliability and safety.



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