



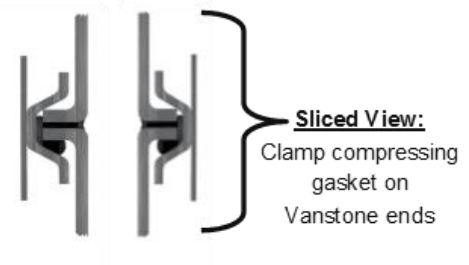
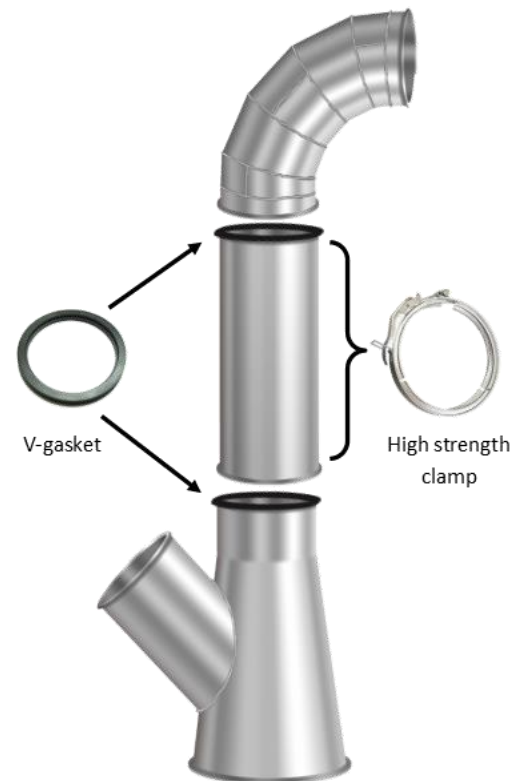
The Airtight Clamp-Connect System

US Tubing's Clamp-Connect tubing is airtight, thanks to fully welded seams and fittings, and a clamp and gasket joining system. The pipes are joined by a stainless steel clamp that compresses a V-shaped gasket between two perfectly flat 5/16" Vanstone edges. A bolt on the clamp is then tightened to further compress the gasket to form an extremely tight seal.

Our pipes, branches, elbows and custom fittings, from 4" to 18", are made with the same modular, clamp-and-gasket sealing system. And they all ship from our North Carolina factory in days, not weeks. The system is available in galvanized, stainless or painted steel and we offer a variety of finishes and coatings.

US Tubing is suitable for any application where bolted flanges are typically used to eliminate leakage or contamination, including:

- Dilute phase positive pressure or vacuum conveying
- Process pipe carrying steam or other gases
- Gravity spouting
- Food or pharma applications
- Mist or dust extraction
- Outdoors where vacuum systems can draw in rainwater or snow melt
- Long runs where even minor leakage at each joint saps system performance
- Cleanrooms



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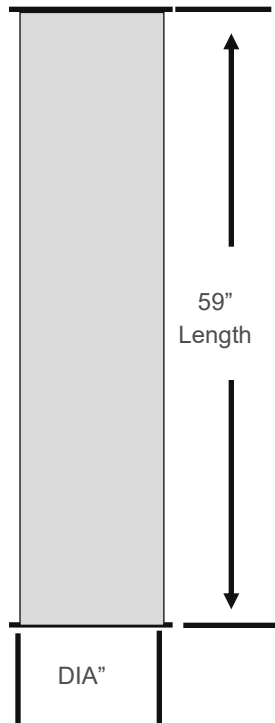


Bid Specifications

Pipe

[US Tubing's](#) Clamp-Connect tubing is airtight, thanks to fully welded seams and fittings, and a clamp and gasket joining system. Diameters are nominal measurements. Exact diameters are determined by factoring for the gauge of the metal. Pipe is provided in standard 59" sections. Custom lengths are available.

Gauges and Welds (/s—Stitch Welded, /t—TIG Welded, /st—Stich or TIG, /tu—Tubed)



Part # Prefix	DIA"	Standard Gauge/	Gauge/ Weld	Gauge/ Weld	Gauge/ Weld	GAL	SS
TTP04C	4	24/s	20/st	16/tu	14/tu	Yes	Yes
TTP05C	5	24/s	20/st	NA	14/tu	Yes	Yes
TTP06C	6	24/s	20/st	16/tu	14/tu	Yes	Yes
TTP07C	7	22/s	20/st	16/t	14/t	yes	yes
TTP08C	8	22/s	20/st	16/t	14/t	Yes	Yes
TTP09C	9	22/s	20/st	16/t	14/t	Yes	Yes
TTP10C	10	22/s	20/st	16/t	14/t	Yes	Yes
TTP12C	12	22/s	20/st	16/t	14/t	yes	yes
TTP14C	14	20/st	16/t	NA	14/t	Yes	Yes
TTP16C	16	20/st	16/t	NA	14/t	Yes	Yes
TTP18C	18	20/st	16/t	NA	14/t	Yes	Yes



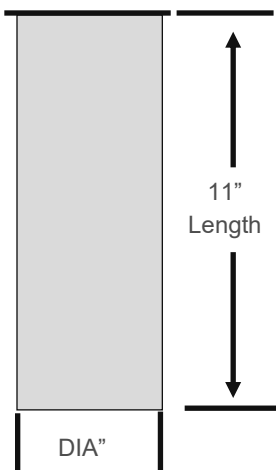
Bid Specifications

Adjustable Sleeve

[US Tubing's](#) Clamp-Connect tubing is airtight, thanks to fully welded seams and fittings, and a clamp-and-gasket joining system. Diameters are nominal measurements. Adjustable sleeve lengths are provided in standard 4" and 11" lengths. Custom lengths are available.

Gauges and Welds (/s—Stitch Welded, /t—TIG Welded, /st—Stich or TIG, /tu—Tubed)

Part # Prefix	DIA"	Standard Gauge/	Gauge/ Weld	Gauge/ Weld	Gauge/ Weld	GAL	SS
TTP04C	4	24/s	20/st	16/tu	14/tu	Yes	Yes
TTP05C	5	24/s	20/st	NA	14/tu	Yes	Yes
TTP06C	6	24/s	20/st	16/tu	14/tu	Yes	Yes
TTP07C	7	22/s	20/st	16/t	14/t	yes	yes
TTP08C	8	22/s	20/st	16/t	14/t	Yes	Yes
TTP09C	9	22/s	20/st	16/t	14/t	Yes	Yes
TTP10C	10	22/s	20/st	16/t	14/t	Yes	Yes
TTP12C	12	22/s	20/st	16/t	14/t	yes	yes
TTP14C	14	20/st	16/t	NA	14/t	Yes	Yes
TTP16C	16	20/st	16/t	NA	14/t	Yes	Yes
TTP18C	18	20/st	16/t	NA	14/t	Yes	Yes





Bid Specifications

Adapters

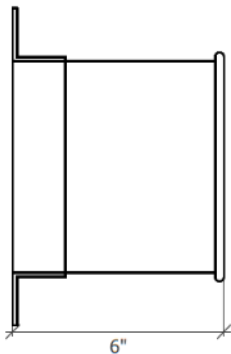
[US Tubing's](#) Clamp-Connect tubing is airtight, thanks to fully welded seams and fittings, and a clamp and gasket joining system. Adapters have a 5/16" flanged end and then transition to a variety of connection ends on the opposing end. Lengths can vary but are approximately 6" for most diameters.

Hose Adapters adapt the duct to flex hose. An expanded bead is knurled onto the adapter. A worm clamp tightens the hose to the adapter and the expanded bead keeps it from sliding off.

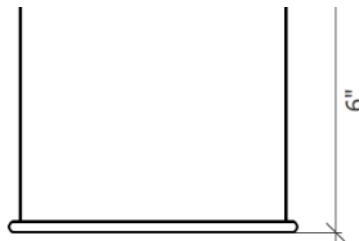
Machine Adapters are made to adapt the duct to a machine. This adapter typically slides over the machine outlet and is affixed to the machine with tech screw or welding.

Flanged Adapters are adapters that are flanged on one end and rolled lipped on the other.

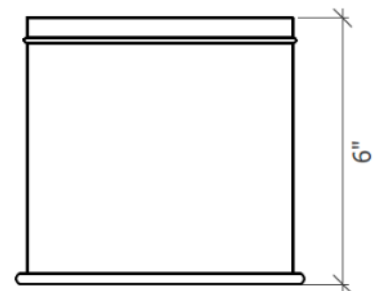
Flange Adapters



Machine Adapters



Hose Adapters





Bid Specifications

Elbows, Tubed



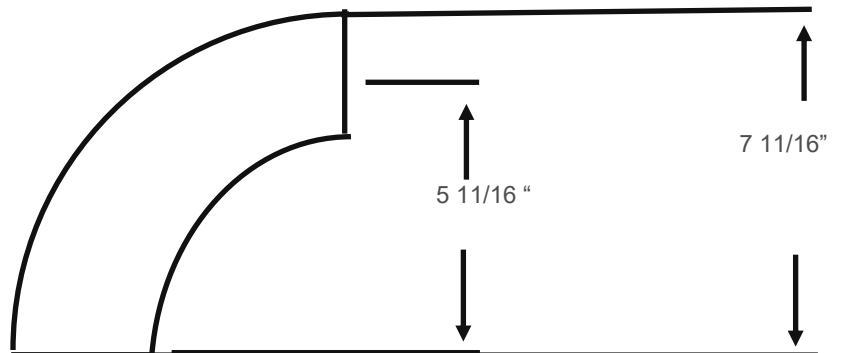
[US Tubing's](#) Clamp-Connect tubing is airtight, thanks to fully welded seams and fittings, and a clamp and gasket joining system.

Tubed Elbows are constructed from non-seamed tubing that is mechanically bent. The elbows are available in 90, 60, 45 or 30 degrees, in 16, 14 or 11 gauge and in galvanized or SS.

The ends are fabricated with an 5/16" flange for the clamp-connect system or a welded angle ring flange. Tubed elbows are generally considered in applications for oil mist because they have no seam. Additionally they are widely used for paper trim for the same reason. They are the only SS option in sizes 4"-6".

Standard (1.5 x D) or Long Radius (2.5 x D)

Dia	GA
4"	16
5"	14
6"	14
8"	14



Example shown: 4" 90 degree Elbow 1.5 CLR



Bid Specifications

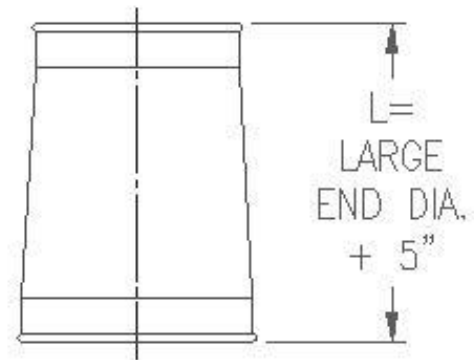
Reducers

US Tubing's Clamp-Connect tubing is airtight, thanks to fully welded seams and fittings, and a clamp and gasket joining system.

Reducers typically have two 5/16" flange ends for use with the Clamp-Connect system.

Gauges and Welds (/s—Stitch Welded, /t—TIG Welded, /st—Stitch or TIG)

Dia	GAWeld	GAWeld	GAWeld
4"	22/s	20/st	NA
5"	20/st	18/st	NA
6"	20/st	18/st	NA
7"	18/st	16/t	14/t
8"	18/st	16/t	14/t
9"	18/st	16/t	14/t
10"	18/st	16/t	14/t
12"	18/st	16/t	14/t
14"	18/st	16/t	14/t
16"	18/st	16/t	14/t
18"	18/st	16/t	14/t





Bid Specifications

Clamp



US Tubing's Clamp-Connect tubing is airtight, thanks to fully welded seams and fittings, and a clamp and gasket joining system.

Clamps are available in a over center handle for negative pressure applications only or quick release t-bolt for positive or negative pressure systems.

The clamp consists of A 0.031 (0.7874 mm) thick strap band into which is spot-welded a v-shaped retainer 0.50 (1.27 mm) thick.

The retainer is divided into three segments to allow for easier clamp installation and removal.

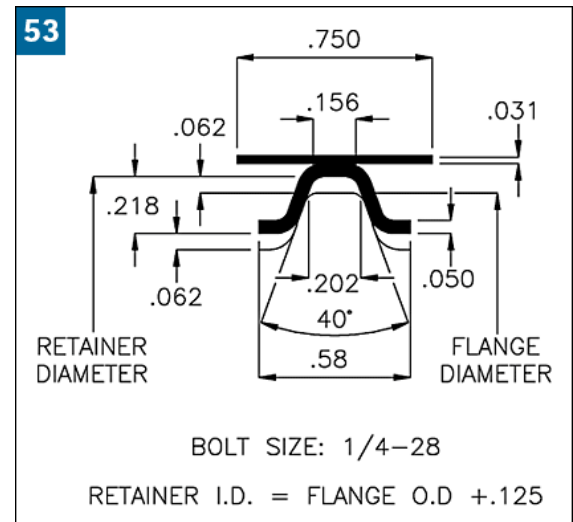
NOTE: There are two styles of clamps:

Standard Over-Center Clamps have an easy-to-use, tool-free handle for opening and closing the clamp. **IMPORTANT:** Standard Over-Center Clamps are not for use on positive-pressure systems, **ONLY** pressure-neutral and vacuum systems.

◆Requires a 3/8" deep socket wrench to tighten the bolt, compressing the gasket between the two pipe ends. The bolt should be tightened until the gasket begins to dimple slightly under the latch.

Dual Pressure Clamps are similar to Standard Over-Center Clamps, but the absence of a tool-free handle decreases the chance for a clamp to be opened unintentionally. These clamps are appropriate for both positive and negative systems.

◆Requires a 7/16" deep socket wrench to tighten the bolt, compressing the gasket between the two pipe ends. The bolt should be tightened until the gasket begins to dimple slightly under the latch.





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Bid Specifications - Angle Rings

Angle Ring Products List						
ID	Material	Material Type	Holes	Punch Size	Bolt circle	Net Weight Per Piece
3-1/16	10 Ga. Pressed	HR	6	9/32	4-5/16	0.70
4-1/16	10 Ga. Pressed	HR	6	9/32	5-5/16	0.85
5-1/16	10 Ga. Pressed	HR	6	9/32	6-5/16	1.20
6-3/32	1 x 1 x 1/8 HR Angle	HR	6	9/32	7-5/16	1.40
7-1/8	1-1/4 x 1-1/4 x 1/8 HR Angle	HR	6	3/8	8-1/2	2.00
8-1/8	1-1/4 x 1-1/4 x 1/8 HR Angle	HR	6	3/8	9-9/16	2.25
9-1/8	1-1/4 x 1-1/4 x 1/8 HR Angle	HR	6	7/16	10-5/8	2.50
10-1/8	1-1/2 x 1-1/2 x 1/8 HR Angle	HR	6	7/16	11-13/16	3.25
11-1/8	1-1/2 x 1-1/2 x 1/8 HR Angle	HR	6	7/16	12-3/4	3.50
12-1/8	1-1/2 x 1-1/2 x 1/8 HR Angle	HR	8	7/16	14	4.00
13-1/8	1-1/2 x 1-1/2 x 1/8 HR Angle	HR	8	7/16	15	4.25
14-1/8	1-1/2 x 1-1/2 x 1/8 HR Angle	HR	8	7/16	16	4.75
15-1/8	1-1/2 x 1-1/2 x 3/16 HR Angle	HR	8	7/16	17	7.50
16-1/8	1-1/2 x 1-1/2 x 3/16 HR Angle	HR	8	7/16	18	8.00
17-1/8	1-1/2 x 1-1/2 x 3/16 HR Angle	HR	8	7/16	19	8.25
18-1/8	1-1/2 x 1-1/2 x 3/16 HR Angle	HR	8	7/16	20	8.50
19-1/8	1-1/2 x 1-1/2 x 3/16 HR Angle	HR	12	7/16	20-3/4	8.75
20-1/8	1-1/2 x 1-1/2 x 3/16 HR Angle	HR	12	7/16	21-3/4	9.50
21-1/8	1-1/2 x 1-1/2 x 3/16 HR Angle	HR	12	7/16	22-3/4	10.25
22-1/8	1-1/2 x 1-1/2 x 3/16 HR Angle	HR	12	7/16	23-3/4	10.75
23-1/8	1-1/2 x 1-1/2 x 3/16 HR Angle	HR	12	7/16	24-7/8	11.25
24-1/8	1-1/2 x 1-1/2 x 3/16 HR Angle	HR	12	7/16	25-7/8	11.50
25-1/8	1-1/2 x 1-1/2 x 3/16 HR Angle	HR	16	7/16	26-7/8	12.10
26-1/8	2 x 2 x 3/16 HR Angle	HR	16	7/16	28-3/8	16.50
27-1/8	2 x 2 x 3/16 HR Angle	HR	16	7/16	29-3/8	16.75
28-1/8	2 x 2 x 3/16 HR Angle	HR	16	7/16	30-3/8	18.00
29-1/8	2 x 2 x 3/16 HR Angle	HR	16	7/16	31-3/8	18.75
30-1/8	2 x 2 x 3/16 HR Angle	HR	16	7/16	32-3/8	19.50
31-1/8	2 x 2 x 3/16 HR Angle	HR	16	7/16	33-3/8	19.75
32-1/8	2 x 2 x 3/16 HR Angle	HR	16	7/16	34-3/8	20.00

Clamp-Connect or Flange-Connect Options!



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US Tubing General Description and Technical Specifications

General Description: The US Tubing modular ducting is manufactured in Kernersville, North Carolina. The system consists of straight pipes and fittings where each part has an integral 5/16" (7.9 mm) 90-degree Vanstone edge or "lip" on each end. A gasket fits over one of the Vanstone ends at each joint and the two pipes or fittings are joined together using a stainless steel clamp with a v-shaped band. The clamp compresses the two pipe ends and the gasket together to provide an airtight seal. The Vanstone edge is turned directly onto all fittings. All seams are fully welded as "standard" but spot or stitch welds with epoxy seams are an option.

Materials

Metal:

Galvanized Steel – G-90 to ASTM A 653 Type B Chem Dry. Working temperature less than 390 degrees Fahrenheit.

Stainless Steel –ASTM A240 Type 304 and T316—Working temperature maximum for 304 (intermittent) 800 degrees. Working temperature maximum for 316 (intermittent) 870 degrees.

Carbon Steel – HRP&) to ASTM A1011 Pickled and Oiled. Working temperature maximum 650 degrees Fahrenheit.

Clamps:

All clamps are made of type 301 Annealed Stainless Steel AMS 5901, 517 or 5518.

Gaskets:

The standard gaskets are made primarily from Ethylene-propylene Ethylidene Norbornene Terpolymer.

The material is compliant to FDA requirements.

Working Temperature up to 300 degrees Fahrenheit for brief periods.

Optional higher temperature and chemical resistant gaskets or available.

Construction Methods

Straight Pipes

The standard length for a straight pipe is 59.25" (1505 mm)

All seams on straight pipes and branches are fully welded on standard US Tubing products to eliminate leakage.

The standard thickness is 16 gauge, except for 5" diameter where the standard is 14 gauge.

Optional 14, 18 and 20 gauge thicknesses are available.

Elbows

8" and smaller elbows are made from extruded tubes with Vanstone collars fully welded onto each end.

Standard 3" and 4" diameters are constructed from 16-gauge metal tube.

Clamp-Connect or Flange-Connect Options!



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Elbows (cont.)

5" diameter are constructed from 14 gauge metal.

Standard 6"-8" diameters are constructed from 14 gauge tube.

Optional welded segments, epoxy sealed gore locked and stitch welded elbows are available in lighter gauges.

The standard for elbows larger than 8" diameter, is fully welded segments.

16 gauge is standard, but optional 14 and 18 gauge thickness is available.

Optional epoxy sealed gore-locked elbows are available.

Fittings

Standard fittings are fully welded and the Vanstone flange is turned directly onto the ends to eliminate the need for collars (and the possible leaks associated with them). As an option, spot welded fittings with epoxy-sealed seams are also available.

The standard angle for the "C" dimension or tap into a branch is 45-degrees, but 30-degree taps are available upon request.

The standard thickness for fittings is 16 gauge, though 14 gauge and 18 gauge thicknesses are available.

Clamps

The clamp consists of A 0.031 (0.7874 mm) thick strap band into which is spot welded a v-shaped retainer 0.50 (1.27 mm) thick.

The retainer is divided into three segments to allow for easier clamp installation and removal.

NOTE: There are two styles of clamps:

Standard Over-Center Clamps have an easy-to-use, tool-free handle for opening and closing the clamp.

IMPORTANT: Standard Over-Center Clamps are not for use on positive-pressure systems, **ONLY** pressure-neutral and vacuum systems.

- ◆ Requires a 3/8" deep socket wrench to tighten the bolt, compressing the gasket between the two pipe ends. The bolt should be tightened until the gasket begins to dimple slightly under the latch.

Dual Pressure Clamps are similar to Standard Over-Center Clamps, but the absence of a tool-free handle decreases the chance for a clamp to be opened unintentionally. These clamps are appropriate for both positive and negative systems.

- ◆ Requires a 7/16" deep socket wrench to tighten the bolt, compressing the gasket between the two pipe ends. The bolt should be tightened until the gasket begins to dimple slightly under the latch.





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Installation Guide

A Few Tips to Make Your Installation Go Smoothly:

- Handle the ducting carefully to avoid damaging the Vanstone edges. Bent or damaged edges can result in system leakage.
- Lay your complete system out on the ground in the order it will be installed. This allows you to:
 - ⇒ Check to see if any system changes or obstructions will necessitate additional parts. If additional parts are needed, contact your US Tubing distributor immediately so that we can get the necessary parts to you quickly.
 - ⇒ Organize and identify all parts at ground-level for a much faster installation.
- Do as much work as possible at ground-level. This includes:
 - ⇒ Attaching a gasket to one end of each pipe section.
 - ⇒ Clamping two pieces together on the ground and then connecting these assemblies to complete the system.
 - ⇒ Be sure and tighten the adjustable clamp bolts before lifting these assemblies.

Tools Required:

- A reciprocating saw or similar tool to cut ducts to length.
- A power or manual wrench with a 3/8" deep socket for systems with the Over-Center Clamp and Handle (negative pressure only) or a 7/16" deep socket for standard Quick-Connect Clamp (positive or negative pressure).
- WD 40 or similar lubricant
- Tape measure

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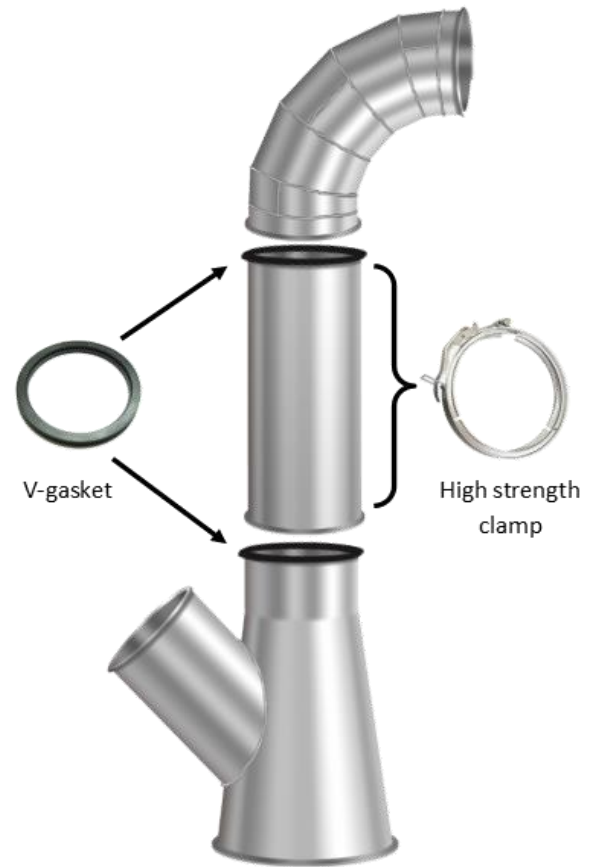
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Installation Instructions

1. Fit the gasket over **ONLY** one of the connecting flanges. The split in the gasket slides over the flange and the standing ribs of the gasket should be facing outward so that they clamp between the two pieces. **NOTE: The gasket is supposed to be very snug.**
2. Abut the next piece of pipe against the gasket. There is only one gasket at each joint. (**Installation Tip:** Spray the inside of the clamps with WD-40, similar lubricant or use dish soap to coat the outside of the gaskets. This prevents the clamps from grabbing the gasket and causing it to dimple when the clamp is tightened.)
3. Place the clamp over and around the two ends of the connection. Make sure the v-shaped profile of the clamp fully encloses the end of each pipe and the gasket.
4. Slide the “T” end of the “T-bolt” into the slot on the other end of the clamp. **NOTE: There are two styles of clamps:**
 - a. The **Standard Over-Center Clamp** has a latch handle. It is intended only for use on pressure-neutral or vacuum systems.
 - b. The **Dual Pressure Clamp** does not have a handle and is appropriate for either positive or vacuum systems.
5. Close the clamp using either the handle on the standard over-center clamp or the latch on the dual pressure clamp.
 - a. For the standard over-center clamp (with handle) use a 3/8” deep socket wrench to tighten the bolt, compressing the gasket between the two pipe ends. The bolt should be tightened until the gasket begins to dimple slightly under the latch. The maximum torque on this connection must not exceed 50 inch-pounds (5.7 Newton-Meters). **NOTE: IF the gasket begins to bunch before the torque pulls the ends of the pipe together snugly, apply a lubricant such as WD-40 to the outside of the gasket before joining the pipes together.** This allows the clamp to slide over the gasket more easily. Once the clamp is closed, snap the wire retaining clip over the clamp handle to prevent accidental opening.
 - b. For the dual pressure clamp, use a 7/16 deep socket wrench to tighten the bolt, compressing the gasket between the two pipe ends. The bolt should be tightened until the gasket begins to dimple slightly under the latch. The maximum torque on this connection must not exceed 75 inch-pounds (8.5 Newton-Meters). **NOTE: IF the gasket begins to bunch before the torque pulls the ends of the pipe together snugly, apply a lubricant such as WD-40 to the outside of the gasket before joining the pipes together.** This allows the clamp to slide over the gasket more easily.



US Tubing Adjustable Sleeve

NOTE: Adjustable sleeves provide for easy field fitting where less than 5' of duct is required. Use of a sleeve is for negative systems only and can blow out under positive pressure.

1. Measure the length needed to complete a shorter than 5' connection. For example, if you need 7' of pipe between two branches. As the standard pipe is 5' in length, you will need a 5' section and a two-foot length. Therefore,
2. Take a 5' section and cut it slightly shorter than you need. In this case where we need 2'. Cut it a little shorter than 24". (You can use a reciprocating saw, nibblers, or a grinding wheel). **IMPORTANT:** There are two lengths of sleeves: 11" long and 4" long. The shorter sleeve allow for shorter (under 11") requirements but also has less adjustment so cut carefully AND wisely.
3. Remove any sharp edges.
4. Take the cut piece of pipe and slide it into the adjustable sleeve. **NOTE:** Do not use your 4" sleeves where a 11" will work. They should be reserved for shorter sections—if needed.
5. Slide the sleeve up and down on the pipe until the assembly is the length that you desire.
6. Roll the O-ring (comes with the sleeve) off the sleeve and onto the pipe and then roll it up against the Vanstone edge of the sleeve and clamp. **NOTE:** If the pipe assembly is too long or too short, un-clamp, adjust, and re-clamp.
7. Tighten the adjustable bolt on the clamp to compress.

While extremely tight, the adjustable sleeve is not guaranteed as leak-free for mist or coolant systems. In the event that this part does leak, the customer has two options:

1. Use an off-the-shelf caulk to seal the part.
2. Send US Tubing an exact measurement of the telescoping piece. We will send you an exact length segment that can be snapped in to replace the telescoping adjustable sleeve section. The replacement part will not leak.



Installation Tips For Mist Collection Systems

Horizontal Runs

- Install horizontal runs at a slight incline (preferably towards the collector) to allow liquids to drain out of the duct.
- Install adjustable inserts upstream (in reference to air movement) of the cut pipe for improved airflow and drainage.
- Ensure the duct is properly supported as liquids pooling in the duct can be extremely heavy.
- On long horizontal runs or where it is not possible to hang the duct with an incline to allow drainage, install taps or drains to keep liquids from pooling on low spots.



Vertical Runs

- Install the adjustable sleeves below the cut sections of the pipe. This allows any liquids running down the inside of the pipe to flow all the way back to the machine without impediment.

Notes on Adjustable Sleeve

- When installing the adjustable sleeve, ensure drainage flows in the direction from the cut pipe towards the adjustable sleeve.
- Make sure that the clamp connecting the adjustable sleeve to the cut pipe fully encloses the o-ring seal. Tighten the adjustable bolt on the clamp to compress the o-ring between the cut pipe and the adjustable sleeve.
- Once the exact lengths are determined, some installers prefer to measure the entire adjustable section and contact US Tubing for a made-to-order single length of pipe. An exact length of solid pipe offers the maximum leak security.

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Contact Us

Give us a call for more information about our services and products!