

"SETTING THE STANDARD"



Ottawa Products Co.

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## Installation Guide

### Universal Sure-Seal Exhaust Clamp™

This guide is for reference only. Actual torque values and location of the clamp should be determined by the user.

#### For Rigid Tubing:

**Tubing with notches/slots:** Install clamp on the expanded/swaged end of the connection so that one of the rings is approximately  $\frac{1}{4}$ " to  $\frac{1}{2}$ " from the end of the tubing and on the notches. This assumes the notch length is approximately 1.0" to 1.50" in length. The other ring may be on the unnotched section on the expanded end of the tubing.

**Tubing with no notches/slots:** Install clamp on expanded/swaged end of tube allowing a maximum of  $\frac{1}{4}$ " to  $\frac{1}{2}$ " from the end of the tube. Different gauge and materials may require more or less torque. It may be necessary to use a higher-than-standard torque to seal this type connection depending on material and fit. A true seal on joints without notches is difficult with any style clamp, but can be accomplished in many applications without blow by or leaks.

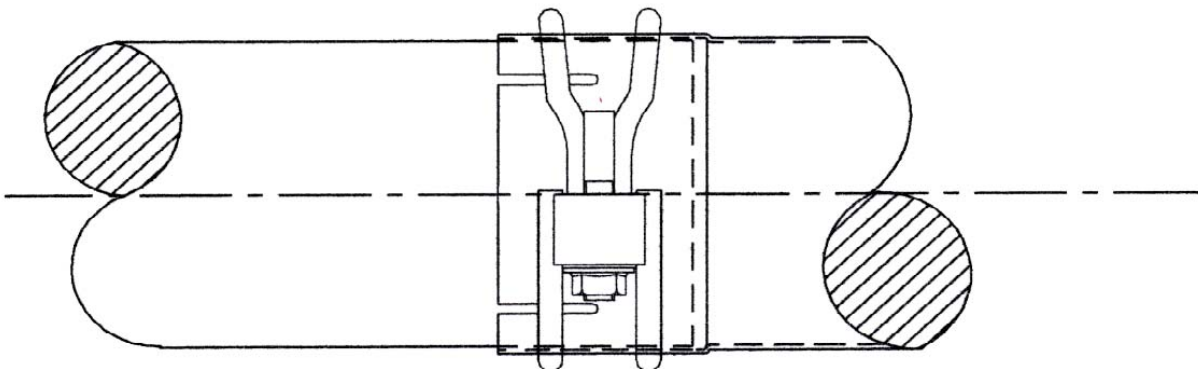
Recommended torque for installation on standard carbon steel tubing with slots C1008 16ga. (.065) is about 35-40 ft. lbs of torque.

The Universal Sure-Seal Clamp™ has been tested to a maximum torque much higher than published bolt torque standards recommend before stud failure. While a higher than standard amount of torque is not recommended, the exact torque for your application can only be fully determined by the user and may be higher than current standards recommend.

**Please Note:** Because of the variances of tolerances by various manufacturers of exhaust tubing products i.e. expansion I.D.'s and burrs left by the notching operation, exact torque specifications can only be determined accurately by the user on a application by application basis.

\*Installation of the Universal Sure-Seal Exhaust Clamp™ with an air ratchet or similar tool is recommended.

#### APPROXIMATE LOCATION OF SURE-SEAL CLAMP ON TYPICAL RIGID TUBE-TO-TUBE CONNECTION.



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#### For Flexible Metal Hose to Rigid Tubing:

Installation on Flexible Metal Hose; With any joint connection using flexible metal tubing, it is important to use a quality vendor for the flex to insure that you are getting close-tolerance, snug-fitting, quality flexible tubing.

Install clamp on flex ¼" to ½" past the end of the flex. This is assuming the rigid tubing is inside the flex tubing a minimum of 3" inches. This is so the clamp & flex make good contact with the rigid tube when clamp is torqued. The Universal Sure-Seal Clamp™ creates a mechanical seal, that is it will close/reduce the I.D of flex to create a seal on the connection. Torque requirements on flex will vary depending on the material and fit; however, 35-40 ft. lbs. of torque will usually seal the connection. If torqued properly, the connection will seal and the joint connections can be removed after installation at a later time if the need would arise. Please note that rust and soot between the flex and rigid tubing may make removal of the connection difficult no matter what style clamp has been used over a long period of time.

A word about clamping flexible tubing: Some manufacturers claim that using a clamp other than a band-style clamp will cause failure of the flex. That is the flex will come apart at the clamp connection point. The actual cause for the majority of failures is more often where the tubing ends inside of the flex no matter what style clamp you are using. The vibration of the flex with the end of the rigid tubing inside the flex can create a fracture point over a long period of time. With current band-style clamps that are in the market, the thin stainless material of the clamp will also flex at this fracture point and, depending on the style and fit of that clamp, can also cause failure of the flexible tubing. Poor quality, poorly manufactured flexible tubing is also a major contributing factor for the flex tubing failure. Again, it is highly recommended to use a quality vendor for the flexible tubing.

\*Installation of the Universal Sure-Seal Exhaust Clamp™ with an air ratchet or similar tool is recommended.

#### APPROXIMATE LOCATION OF SURE-SEAL CLAMP ON TYPICAL FLEX TO RIGID TUBE CONNECTION.

