Franklin Fueling Systems

APT™ Electrofusion Ducting

Installation Guide

Franklin Fueling Systems • 3760 Marsh Rd. • Madison, WI 53718 USA
Tel: +1 608 838 8786 • 800 225 9787 • Fax: +1 608 838 6433 • www.franklinfueling.com

Safety

Important!

APT™ and UPP™Systems must only be installed by fully trained and certified installers.

Failure to follow installation instructions will invalidate warranty and installer certification!

Electrofusion Safety

- This equipment is designed to be installed in association with volatile hydrocarbon liquids such as gasoline and diesel fuel. Installing or working on this equipment means working in an environment in which these highly flammable liquids may be present. Working in such a hazardous environment presents a risk of severe injury or death if these instructions and standard industry practices are not followed. Read and follow all instructions thoroughly before installing or working on this, or any other related equipment.
- Welding unit must be a Franklin Fueling Systems UPP™ welder.
- Welding Units must never be operated in hazardous locations or zones with flammable vapors.
- Ensure Welding Units are connected to a power supply that meets the requirements detailed in the user manual and are within the requirements of any local authority or regional legislation.

Chemical Safety

- When using chemicals (such as Acetone) during the installation of these products, be sure to follow all safety guidelines given on the chemical containers themselves or on any accompanying literature.

Confined Space

- Before entering a containment sump, check for the presence of hydrocarbon vapors. If these vapors are inhaled they could cause dizziness or unconsciousness, and, if ignited, hydrocarbon vapors could explode causing serious injury or death.
- While working in the sump, continually monitor the atmosphere in the sump. If vapors reach unsafe levels, exit the sump and ventilate it before continuing work. Always have a second person standing by for assistance when working in, or around, a containment sump.

Such working conditions are dangerous and all local health and safety guidelines for working in such environments should be followed.

Material Handling

Protective Equipment

- Ensure the correct Personal Protective Equipment (PPE) is used at all times in line with local health and safety requirements.

Material Safety Data

- Ensure all safety data is accessed and used while installing APT™ Systems.

Heavy items

- Heavy items should be handled using suitable lifting equipment operated by authorised personnel.

Tools Needed

- Hole saw (5½ " diameter)
- UPP™ Electrofusion Welder
- Scraper
- Acetone or IsoPropyl Alcohol
- Clean lint free cloth
- Welding clamps
- Marker
- Common Screwdriver / nut driver for band clamps
- Torque screwdriver / wrench
- Cutting tool, knife or saw

Note: The Electrofusion Entry Seal is only one of several entry seal options available to connect APT ducting to a containment sump.
Other entry seals that may be used with APT ducting are the Rigid Entry Boot (RDEB-XXX-SC) or the Ducted Entry Boot (DEB-XXX-X)"

Entry Seal Assembly Procedure

The Electrofusion Entry Seal is used only with dispenser sumps and tank chambers manufactured in polyethylene.

General Rules

- ALL entries into sumps and chambers must be perpendicular to entry face.
- For all electrofusion entry seals, follow the same welding steps as for pipe fittings, i.e. Cut, scrape, clean, mark and weld. Refer to Franklin Fueling Systems™ manual 408001007 for Electrofusion Welding Instructions.

Installing an electrofusion entry seal

1. Identify location on sump wall where piping penetration is required to properly enter the sump with no stress and mark your center spot to be cut.
2. Cut hole in sump wall. Use correct size hole saw for fitting (See Table 1 below).

Seal Code	Hole-saw	Dia. (mm)	Dia. (in.)	Clamp	Clamp Color
304-110-TP	HS5	140	5½	304-CLAMP	Yellow

Table 1: Entry Seal/Hole Saw Compatibility Table

3. Mark area under seal.

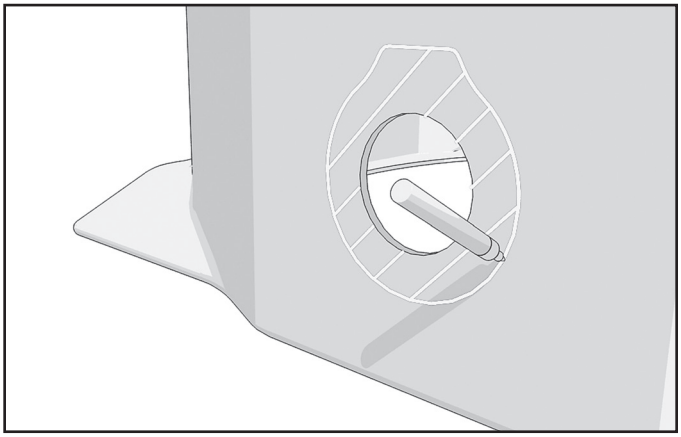


Figure 1: Cut hole and Mark Area of Entry Seal

4. Scrape around fusion area. Use scraper provided in UPP tool kit.

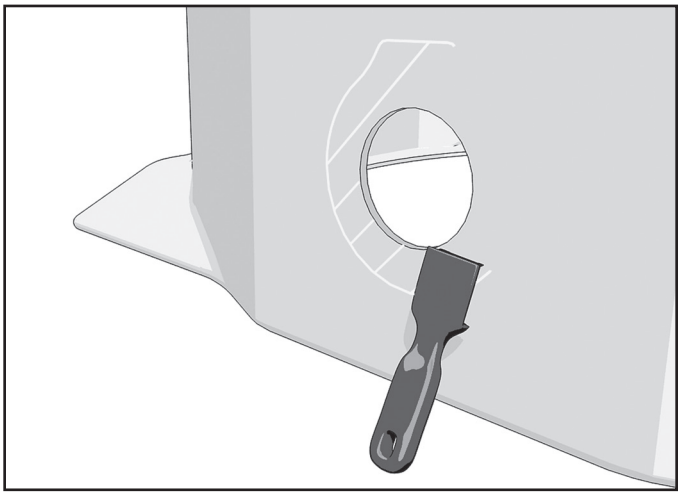


Figure 2: Scrape the area

Clean the fusion area on sump and EIF seal with Acetone or IsoPropyl Alcohol; this removes oils, fingerprints and moisture.

Caution **Inhalation of vapors and skin contact with acetone or IsoPropyl Alcohol can cause irritation. Use only with adequate ventilation. Wear nitrile gloves when cleaning with solvents.**

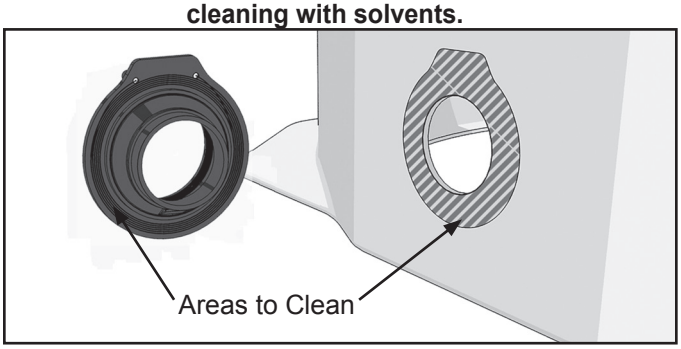


Figure 3: Clean Welding Areas with Acetone

5. Clamp seal to sump. The inboard and outboard clamp bars should be oriented 90º to each other. Test tightness against sump wall all around the seal using a 0.013" feeler gauge (0.33 mm). A business card is about this thickness. Re-align seal with sump until all gaps are removed. Slightly increase tightness of clamp if needed.

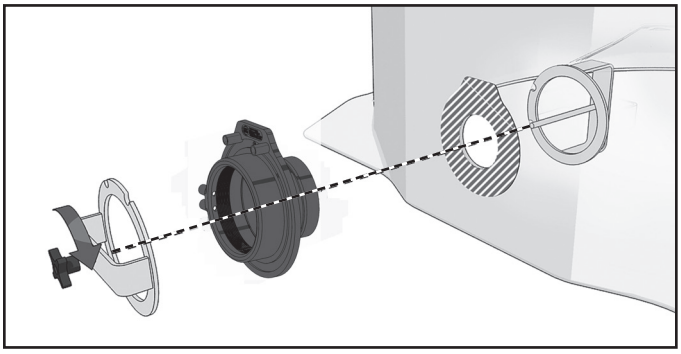


Figure 4: Clamp Seal to Sump With Cross Bars 90º to Each Other

6. Connect welder and weld. You may weld up to 3 fittings at the same time, (up to a total weld index number of 10).
7. Mark the time of the weld near the fitting.

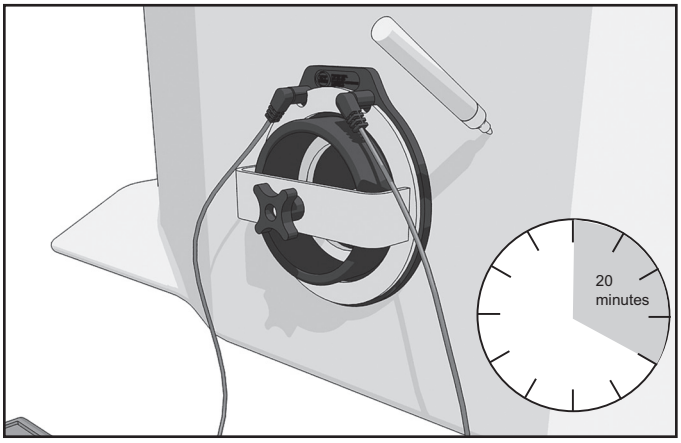


Figure 5: Mark Time of Weld

8. Allow joint to cool to ambient temperature: approximately 20 minutes.

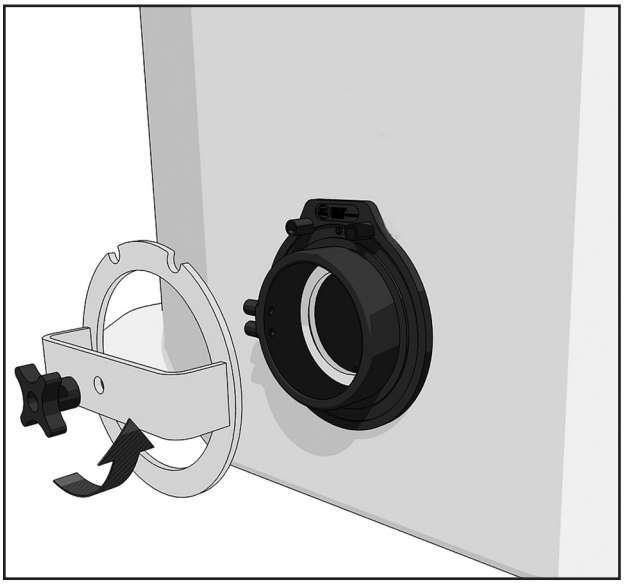


Figure 6: Remove Clamp

9. Remove clamp after period of cooling.

Installing Ducting

The duct end is scraped, cleaned and electrofusion welded in the entry fitting.

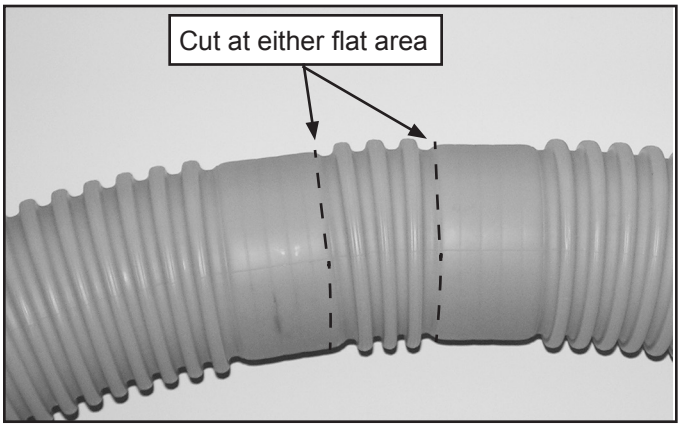


Figure 7: Cut Ducting at End of Non-Corrugated Area

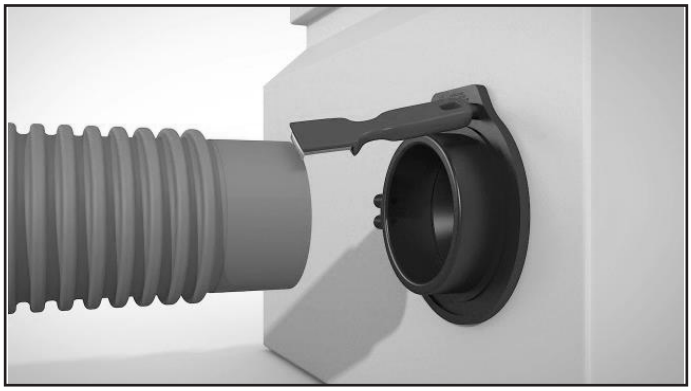


Figure 8: Scrape Ducting

Figure 9: Clean Ducting using Acetone

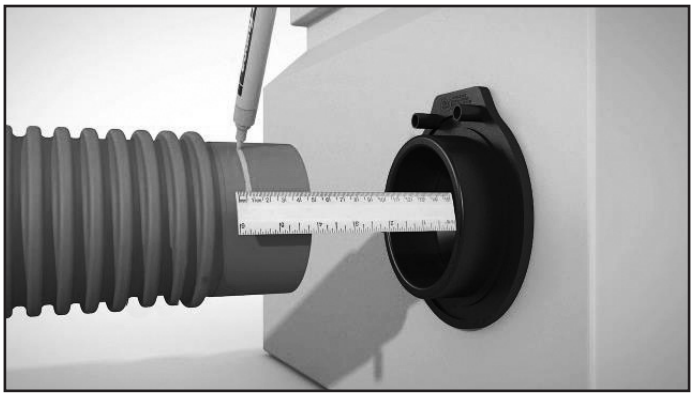


Figure 10: Mark Insertion Depth on Duct Around the Pipe Circumference

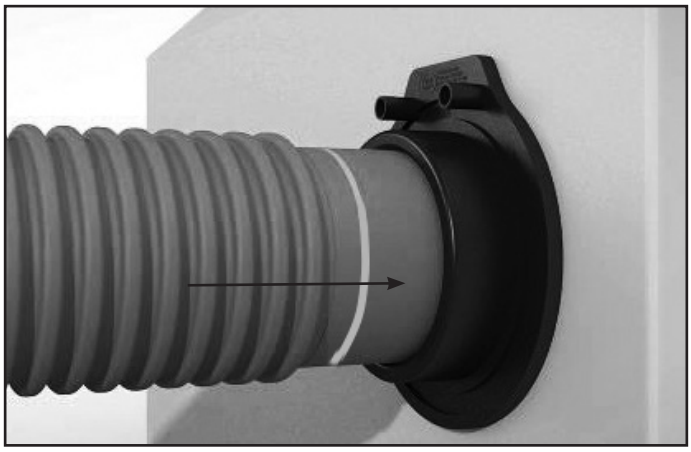


Figure 11: Insert Ducting into Entry Seal

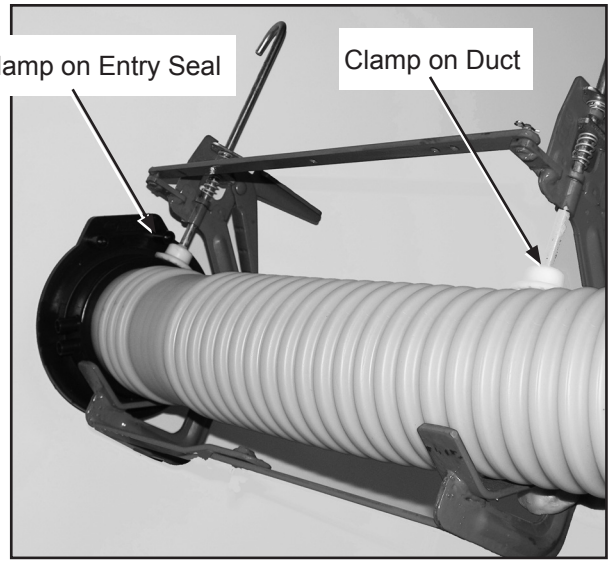


Figure 12: Place Clamp to Hold Duct

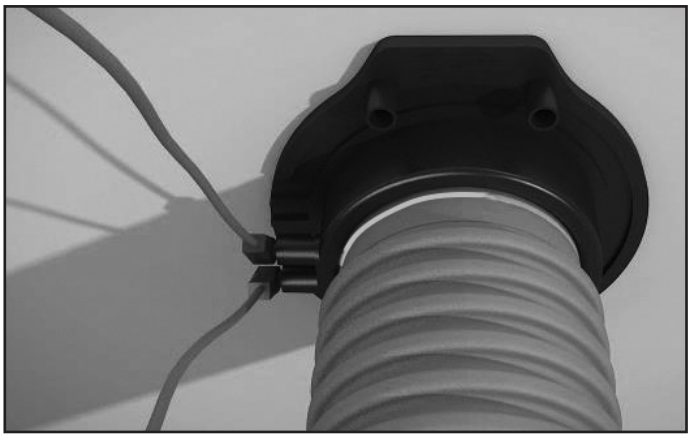


Figure 13: Attach Welding Leads and Perform Welding Operation (Clamp removed for clarity)

Note: Allow the weld to cool for 20 minutes before installing the XP pipe.

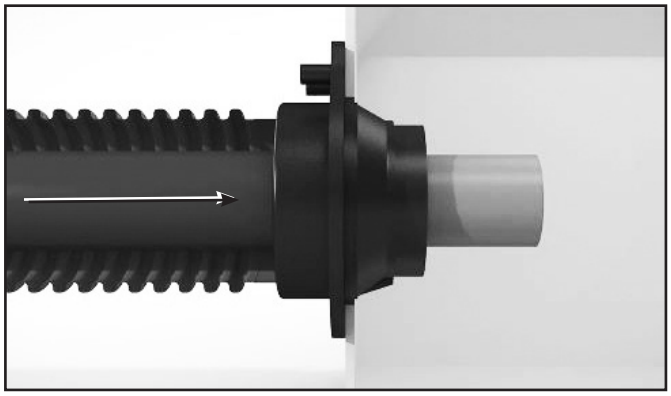


Figure 14: Insert Primary Piping

Note: It is very important that the duct runs are as straight and even as possible (no slack).
Measure the XP piping run with a tape measure inside the ducting and held tight between the termination points (collars) of the XP fitting (Figure 17).

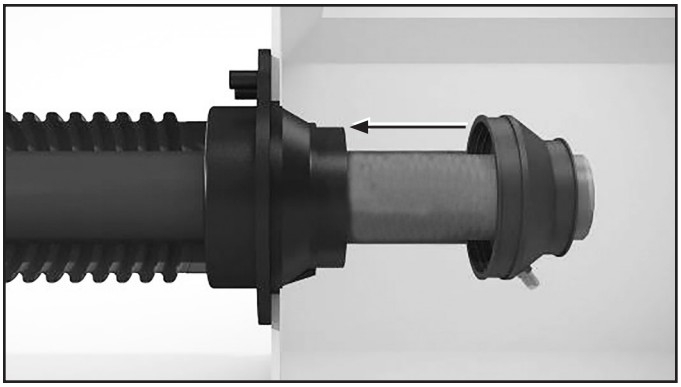


Figure 15: Install Boot

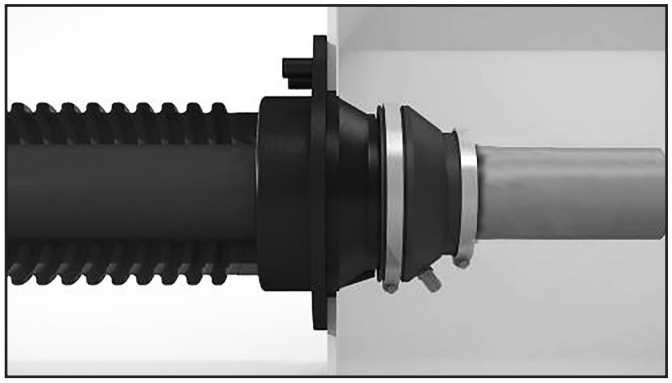


Figure 16: Secure With Band Clamps

Torque the band clamps to 25 inch-pound (3 N-m).

Duct Pressure Testing

1. Make sure all test boots are in place and the band clamps are tightened to specifications
2. Pressurize the ducting to between 2 and 4 PSI (0.14 and 0.28 bar).
3. After the pressure has stabilized, disconnect the air supply and monitor the system for leakage.
4. The line needs to remain pressurized for 30 minutes with no pressure loss detected for the ducting to pass.

More detailed instructions on to how to perform this test can be found in our TRK-200 Test Regulator Kit Installation Instructions (document # 771-115-00, available on franklinfueling.com under Pipe & Containment-Tools-XP Tools).

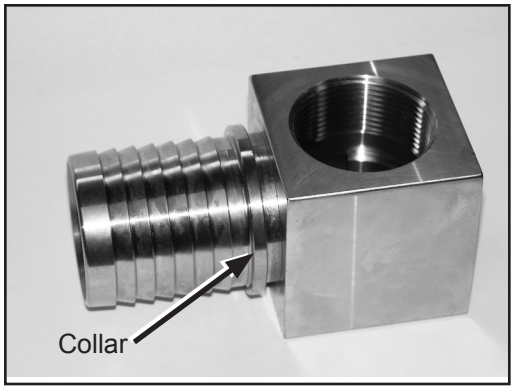


Figure 17: XP Termination Point

Entry Seal Information

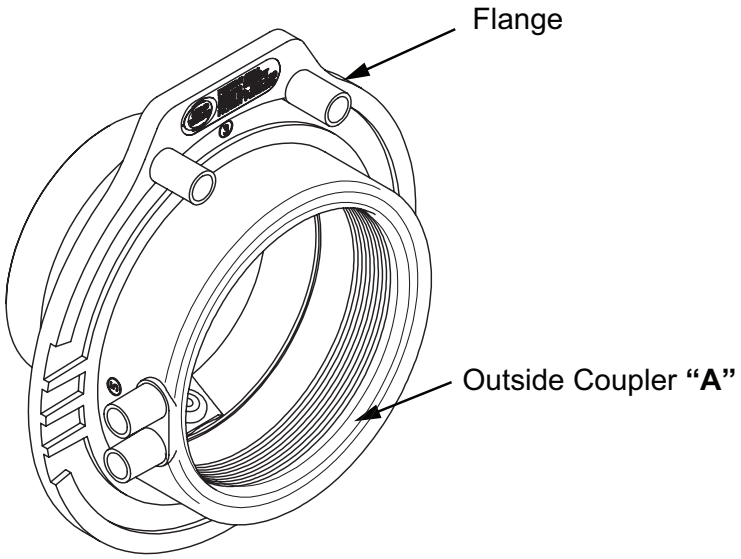
Product Code	Description	Resistance (Ohms)	Weld Index Value
304-110-TP	Electrofusion Seal with coupler + TP	10 (Flange) 18 (Coupler A)	3 (Flange) 5 (Coupler A)

Table 3: Entry Seal Resistance and Weld Index Values

Note: Coupler weld leads are red.

Note: Weld current for all fittings is 4 Amps.

Note: Weld pin size for all fittings is 4 mm.



Unused Page

Franklin Fueling Systems

www.franklinfueling.com

3760 Marsh Road • Madison, WI 53718, U.S.A.
Tel: +1 608 838 8786 • Fax: +1 608 838 6433
Tel: USA & Canada 1 800 225 9787 • Tel: México 001 800 738 7610

Franklin Fueling Systems GmbH
Rudolf-Diesel-Strasse 20 • 54516 Wittlich, GERMANY
Tel: +49-6571-105-380 • Fax: +49-6571-105-510