

Equipment Instructions & Installation Notes

Electrode installation is comprised of: mechanical support & electrical supply. Refer to General Arrangement Drawing (Bulletin #997102), Typical TECTRAN Electrode Installation (Bulletin #997101), Mechanical (Bulletin #997106), and Electrical (Bulletin #997107) in Section 13 of the Operating and Maintenance Manual.

A. Suggested Installation Sequence

After the caustic cleaning of the ED tank, the Electrodes can be installed **immediately before the tank is filled with paint**. The less time the Electrodes are in the tank before the paint fill, the less likely they will be damaged.

1. If the Electrode Holders are packed in a crate, carefully remove the lid and any hold-down blocks. Completely remove any exposed nails or screws that might puncture or damage the Electrode Holders. Remove the Electrode Holders. Carefully inspect the Electrode Holders and report any defects immediately to UFS Corporation. Electrode Holders & Electrodes with manufacturing defects will be replaced free of charge by UFS Corporation, upon return of the defective item. (Note: Items that are sent back to the Factory for inspection must be sent prepaid and require prior authorization. Contact your sales & service representative or ask for customer service.)
2. Mount each Electrode Holder to the strut channels with two clamps. The Electrode Holders should be spaced over the entire length of the painting zone as per the installation layout, blueprint, or drawing. Generally, the bottom of the PVC Collar is placed at the low normal liquid level. Be sure every Electrode has 75 mm (3") radial clearance from any obstruction attached to or protruding through the ED tank wall. Please consult UFS Corporation and your paint supplier for advice.
3. If you purchased Cable Leads from another supplier, proceed to step 4. If you purchased Cable Leads from UFS, the Cable Lead Pigtail half of the Cable Lead will generally already be connected to the Electrode. In some cases it needs to be rotated away from the Electrode and tightened. If the Pigtail is supplied loose, connect its round lug to the upper hole in the Electrode with the stainless hardware set provided by UFS. Wipe any dust, dirt or grime off the surface of the Electrode.
4. **LOWER THE ELECTRODE INTO THE ELECTRODE HOLDER SLOWLY. DO NOT DROP IT IN!** Dropping the Electrode into the Electrode Holder can damage the Holder. Generally, the Tab of the Electrodes extends out the top of the Electrode Holder approximately 20 mm (0.75 in) (Refer to the TECTRAN Electrode drawing in Section 13 of the Operating and Maintenance Manual for this dimension). If the Electrode projects farther than this, it is not properly seated in the bottom PVC Cap of the Electrode Holder. It is important to seat the Electrode properly to prevent erosion of the bottom edge of the Electrode due to high current concentration. Jiggle and twist the Electrode back and forth until it slips into place.

For applications in which the ED tank is not inside an enclosure, use a Splash Guard (P/N 175001 or 175011) to cover the top of the Electrode Holder. Do not glue the Splash Guard to the Electrode Holder, but point it away from any mist/spray or toward the rim of the tank.

5. If Cable Leads were purchased from UFS, plug the red connector (quick electrical connection) of the Cable Lead Long Half into the red connector of the pigtail. Connect the electrical cable to the upper hole in the Electrode Tab with the 5/16" SS nut, bolt, and compression washer set provided. (To make it easier to install the electric cable to the Electrode Tab, use a screwdriver through the lower hole in the Electrode Tab.) Push together the two halves of the drip shield to protect the plastic housings.
6. To reduce the number of connections to the bus bar, UFS recommends ganging 3-5 cable leads together with a bolt-style copper lug. (Request Set Screw Lug assemblies, available from UFS). Begin with the first Electrode and count back to the fifth Electrode. The lineal distance between the first and the fifth Electrode must be less than approximately twice the length of the entire Cable Lead. If the lineal distance is too great, then you must either order longer Cable Leads or use more Set Screw Lugs. Attach the Set Screw Lug to the bus bar with stainless hardware and the compression washer (supplied by UFS). Repeat the counting process in order to locate the position of the next Set Screw Lug. Repeat this until all the Electrodes have been grouped together.
7. Before the unfinished end of the Long Half Cable Lead is trimmed, allow about 300 mm (12 in) of slack in the Cable Lead so the Electrode's position can be adjusted in the future. Strip back the insulation from the unfinished end of the Long Half of the Cable Lead and place it into the Set Screw Lug. Gang together up to five (5) Cable Leads into each Set Screw Lug.

B. Post Installation Check List

- A. Is the bottom of the PVC Collar of the Electrode Holder positioned at the specified distance below the rim of the ED tank?
- B. Is each Electrode Holder in its proper location? Does each Electrode hang plumb? Are the clamps properly tightened? Is there a 75 mm (3") gap between the Electrode Holder and object attached to or protruding from the wall of the ED tank? Is the Electrode fully seated?
- C. Is each Electrode Tab connected to the bus bar? Are the electrical connections tight and properly insulated? Is there proper slack in the Cable Leads?
- D. Finally, carefully review the General Arrangement drawing supplied by UFS, make any necessary changes and return to UFS so the "as built" drawing for your system can be made and then returned back to you.

C. Mechanical

Mechanical support is accomplished with common 41 mm (1.625 in) square metal strut channels and clamps, as shown in Drawing No. 997101. Metal two-piece galvanized conduit clamps make installation easy. Two-piece plastic clamps are also available. Fiberglass strut channels are available too. These usually require special plastic clamps.

The strut channels typically are mounted with a 20 mm (0.75 in) gap between their backs and the tank's inside wall. The open side of the strut channel is pointing towards the center of the ED tank. The bottom strut channel is mounted immediately above the tank rim (its bottom edge is

flush with the ED tank rim) and the bottom of the upper strut channel is usually 150 mm (6 in) above the ED tank rim. The strut channels should have vertical supports (e.g., steel angle iron) every 1500 mm (5 feet). [*Note: Fiberglass strut channels require more supports, contact your fiberglass strut supplier for specific instructions.*]

See Bulletin #997106 for some more examples of typical installation details.

D. Electrical

Electrical installation involves connecting power from the local bus bar to each Electrode with an appropriate cable lead and the UFS-supplied stainless steel 5/16" -18 threads per inch (English) bolt, nut, and compression washer. The cable lead should be sized by the ED system designer, with the expected current draw of each Electrode, as specified by the paint supplier, taken into account.

See Bulletin #997107 for some more examples of typical installation details.