

# **WELDING INSTRUCTIONS**

## **FOR ATTACHING CONNECTORS TO DRAIN CLEANING CABLES**

(For Cup-type Connectors)

**WELDING** – Electric Arc  
E-7108 Coated Electrode  
1/8" Diameter  
50 Volts  
115 Amps

1. Clean surface dirt, grease, oil and corrosion from end of auger where welds will be made in notches of connector.
2. Insert auger into connector and hold in place with one notch up.
3. Wrap a wet cloth or a piece of felt around the cable as close as possible to your weld. This will prevent the high temperature in the welding area from spreading into the cable causing the cable to become brittle. Keep the wet cloth on until the connector has cooled. Do not quench.
4. Strike arc and hold so the weld penetrates the auger coil partway then puddles up to melt the walls of the notch.
5. Stop when the puddle is about flush or a little above the surface of the connector.
6. Rotate snake and repeat on opposite side.

### **SAFETY NOTE**

Do not clean the cable with a chlorinated hydrocarbon solvent like trichlorethylene and then weld. The electric arc in the presence of the solvent vapors will produce phosgene, a poisonous gas.

**SILVER SOLDERING** – (Very good, but more expensive)

Easy-Flo 35 (Handy & Harmon) or equal  
Handyflux (Handy & Harmon) or equal

1. Clean the outside surfaces of the snake thoroughly with solvent to remove grease and oil and then with a wire wheel. The inside of the connector should be free of surface soil and corrosion.
2. Wrap a wet cloth or piece of felt around the cable as close as possible to your weld. This will prevent the high temperature in the welding area from spreading into the cable causing the cable to become brittle. Keep the wet cloth on until the connector has cooled. Do not quench.
3. Using solder manufacturer's recommendations and a suitable torch, heat auger with connector in place to 800° - 1000°F and flux thoroughly.
4. Continue heating to 1125° - 1295° and add silver solder until it flows into the space between the connector and outer surface of the auger coils.
5. The solder should be the "viscous" acting type, not the "thin and runny" type.

# WELDING INSTRUCTIONS

## FOR ATTACHING CONNECTORS TO DRAIN CLEANING CABLES

(For Butt-Weld Connectors)

1. For stick electrode welding the following is recommended:
  - E-7018 Weld Electrode
  - 1/8" Diameter
  - 50 Volts
  - 115 Amps
2. Cut the cable with an abrasive saw or disc at 90°. If the cut is not square, make it square by grinding.
3. Clean surface dirt, grease, oil and corrosion from the end of the cable where the weld will be made.
4. Clamp the cable in a vise vertically with 1 to 2 inches of the cable extending upward.
5. Wrap a wet cloth or piece of felt around the cable as close as possible to your weld. This will prevent the high temperature in the welding area from spreading into the cable causing the cable to become brittle. Keep the wet cloth on until the connector has cooled. Do not quench.
6. Hold the butt-weld connector (same diameter as cable) directly on top of the cable with the weld prep end down.
7. Strike the arc in the groove formed between the weld prep and the end coil of the cable.
8. Move forward when the puddle is a little below or about flush with the surface of the connector. Try to penetrate only halfway through the cable coil, except at the end where the coil tapers to nothing and it is not possible to do so. Stop after welding about 1/4".
9. Make sure the connector is square with the cable and move 180° around the cable. Rotate the cable if necessary.
10. Now start welding. It's only necessary to weld in two or three spots. Remember not to penetrate more than halfway through the cable coil.

(As an alternative, the cable and the connector can be individually clamped into a piece of angle (iron) in a horizontal position. The welding can be accomplished in a manner similar to that described above. Do not clamp the connector tight enough to damage it particularly when it is hot.)
11. It is important that the weld fuses into **half** of the coil when the coil is at its full diameter, not less and not more. Use enough amperage to get good penetration.
12. The weld area will be red when welding is complete. Allow the weld to cool slowly. Do not quench or try to cool the weld rapidly.
13. The weld should be more or less flat, that is, without a crown that could make travel through a power feed difficult. If necessary, grind flat, being careful not to touch cable.

### SAFETY NOTE

Do not clean the cable with chlorinated hydrocarbon solvent like trichlorethylene and then weld. The electric arc in the presence of the solvent vapors will produce phosgene, a poisonous gas.