

Type MACX650-39

Field Cut Straight Sections for MACXLine® Rigid Coaxial Transmission Lines



Description

Type MACX650-39 MACXLine Field Cut Straight Sections are used for non-standard length between 5 and 20 feet. MACX650-39 consists of: an outer conductor with one flange attached, fixed flange, and a 20 ft inner conductor section with bullet-bellows assembly, insulators, and hardware.

The inner and outer conductors are field cut to the desired length to suit the rigid line system layout. After trimming the outer conductor, the fixed flange is soldered on. The inner conductor, which is cut to match, has provision for attaching the bullet-bellows assembly to either end. This feature eliminates the need to solder a stub to the inner conductor when the length requirement conflicts with support insulator locations. The inner conductor is marked with black ink to designate specific areas where cutting requires a special bellows relocation procedure. This procedure applies only to section flange-to-flange lengths of 161-1/8" to 165-1/8" and 81-7/8" to 85-7/8".

Notice

The installation, maintenance, or removal of transmission line systems requires qualified, experienced personnel. ERI installation instructions have been written for such personnel. Transmission line systems should be inspected once a year by qualified personnel to verify proper installation, maintenance, and condition of equipment.

ERI disclaims any liability or responsibility for the results of improper or unsafe installation practices.

Tools Required

- hack saw, 7/16" wrench for 1/4-20 hex head bolt;
- 5/32" Allen wrench for #10-32 socket head screw;
- 3/8" hex key 1/2" square drive (provided) for 1/2"-13 socket head cap screw;
- torque wrench capable of at least 25lb-ft torque;
- strap wrench or pipe wrench to hold 2-5/8" tube; 1/2" square drive ratchet or breaker bar; and
- high flow oxy-acetylene or oxy-MAPP gas heating (propane is insufficient).

- 1 Remove the inner conductor from the section being careful not to damage the bellows during handling.
- 2 Determine exact flange-to-flange length of transmission line required, then subtract 7/16", which is the allowance for the solder-on-Flange.
- 3 Wrap piece of straight-edge paper around outer conductor at cutting point and scribe a cutting line all the way around outer conductor.
- 4 Cut tubing with hacksaw. Make certain cut is square to permit flange to seat properly.
- 5 Remove all burrs and clean end of outer conductor with garnet cloth. Do not use emery cloth or steel wool. Keep all foreign matter from entering tube.
- 6 Insert silver solder ring into solder groove of fixed flange. Add silver solder flux to solder groove and to the cleaned end of tube (outside of the conductor and the end face but not inside). Seat flange onto outer conductor and solder assembly with even heat around area permitting even flow of silver solder. Remove excess flux from assembly with hot water, then clean assembly again with garnet cloth (do not use emery cloth).
- 7 Measure exact flange-to-flange length of flanged outer conductor with new flange attached.

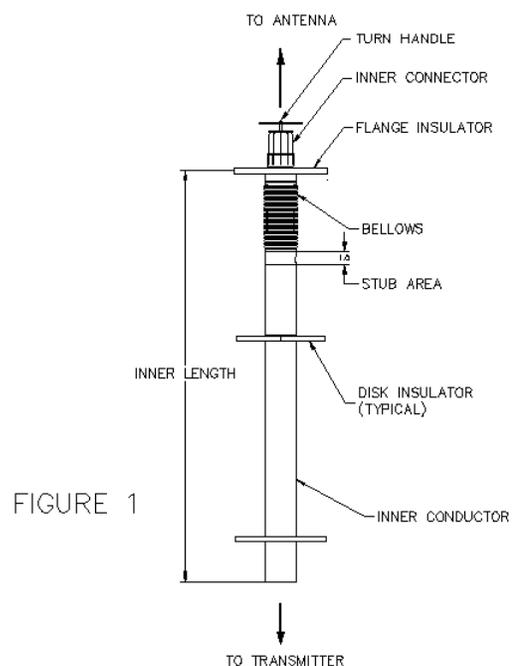


FIGURE 1

Procedure For Inner Conductor

- 1 If the measured flange-to-flange length of the outer conductor is between 161-1/8" and 165-1/8" or between 81-7/8" and 85-7/8", proceed to "Special Procedure" described below. Otherwise, proceed to Step 2 below.
- 2 Subtract 1.16 inches (for inner cutback) from the outer conductor measured length (flange-to-flange) in Step 1. This is the required length of the inner conductor from the midpoint of the flange insulator to the end of the inner conductor tube. See Figure 1.
- 3 Wrap piece of straight-edge paper around outer conductor at cutting point and scribe a cutting line all the way around outer conductor.
- 4 Cut tubing with hacksaw. Make certain cut is square to permit flange to seat properly.
- 5 Remove all burrs and clean end of outer conductor with garnet cloth. Do not use emery cloth or steel wool. Keep all foreign matter from entering tube.
- 6 Insert silver solder ring into solder groove of Fixed Flange. Add silver solder flux to solder groove and to the cleaned end of tube (outside of the conductor and the end face but not inside). Seat flange onto outer conductor and solder assembly with even heat around area permitting even flow of silver solder. Remove excess flux from assembly with hot water, then clean assembly again with garnet cloth (do not use emery cloth).
- 7 Carefully insert inner conductor into outer conductor. Ensure the flange insulator is fully seated. Remove "turn handle and lockout screw" from the front of the bullet prior to installing the finished section.

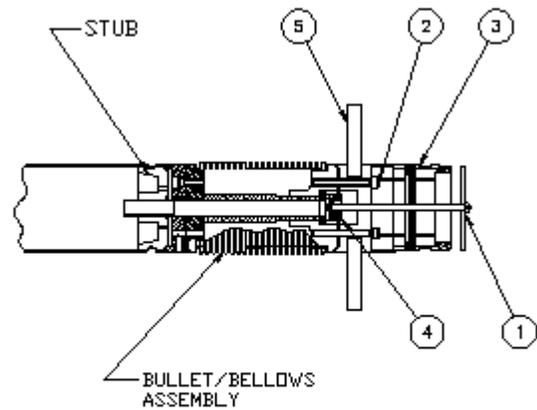


FIGURE 2

Special Procedure

This procedure is used only when measured length is either between 161-1/8" and 165-1/8" or 81-7/8" and 85-7/8" inches. To invert the bullet-bellows assembly to the inner conductor, refer to Figure 2 and steps below.

- 1 Remove item 1, "turn handle", and items 2 (#10-32 x 4" long socket head cap screws) and item 3 (inner conductor).
- 2 Carefully grip the inner conductor tube with pipe or strap wrench taking care not to crush the tube by clamping only over the Stub area (see Figure 1). Loosen item 4 with 3/8" hex key and breaker bar provided.
- 3 Reassemble the bellows on the other end of the inner conductor tube. Take care not to gouge the inner conductor tube at the stub if using a pipe wrench. This area must be cleaned up with garnet cloth if gouged. The assembly must be secured by tightening item 4 to 20-25 lb-ft (240-300 lb-in).
- 4 Re-attach item 3 (inner connector) in reverse order of Step 1 to 4.5 to 5.5 lb-ft. or 55 to 65 lb-in.
- 5 Proceed to Step 2 of "Procedure for Inner Conductor".

