Field Cut MACXLine® Rigid Coaxial Line

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5 to 20 Foot Lengths

ERI Type MACX450-39, MACX450-39W, MACXB675-39 and MACX675B-39W

Description

Typed MACX450-39, MACX450-39W, MACX675B-39 and MACX675B-39W Rigid Coaxial Transmission Line sections are used for field trimming to a nonstandard length between 5 and 20 feet. These products each include an outer conductor with one flange attached, a fixed flange (for silver brazing attachment), a 20 ft inner conductor section with bullet and bellows assembly, insulators, and hardware kit.

For outer conductor lengths between 109-120 inches and 170-200 inches, a special procedure is required to transfer the bellows to the other end of the inner conductor. This ensures that any cut will be outside those areas on the inner conductor, marked with black ink, where cutting is not permitted. This procedure is facilitated using ERI Tool Kit, Type Number MACX-TK.

Cutting outer conductor lengths outside these two ranges does not require a special procedure.

NOTICE

The installation, maintenance, or removal of antenna systems and transmission line requires qualified, experienced personnel. ERI installation instructions have been written for such personnel. Antenna 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

- Hacksaw
- Utility Knife
- Cutting Guide or Miter Box
- Torque wrench, 65 lbf-in to 21 lbf-ft, 3/8" square drive*
- Strap Wrench for 1-1/2" to 2" diameter pipes*
- 5/32" Hex Key, 3/8" square drive*
- 5/16" Hex Key, 3/8" square drive*

*These tools are available in ERI Tool Kit, Type MACX TK.

Assembly Procedure

1. Determine exact flange-to-flange length of transmission line required and deduct 3/8" for MACX450-39 or 7/16" for the MACX675B-19. This is the distance from the contact face of the flange on the outer conductor to the cut position. See Figure 3.

   Wrap piece of straight-edged paper around tubing at cutting point on outer conductor to aid in scribing. Scribe line completely around outer conductor tubing at cutting point to help in making square cut.
2. Cut tubing with hacksaw. Make certain cut is square to permit flange to seat properly.
3. Remove all burrs and clean end of tubing with garnet cloth. Do not use emery cloth or steel wool. Keep all foreign matter from entering tubing.

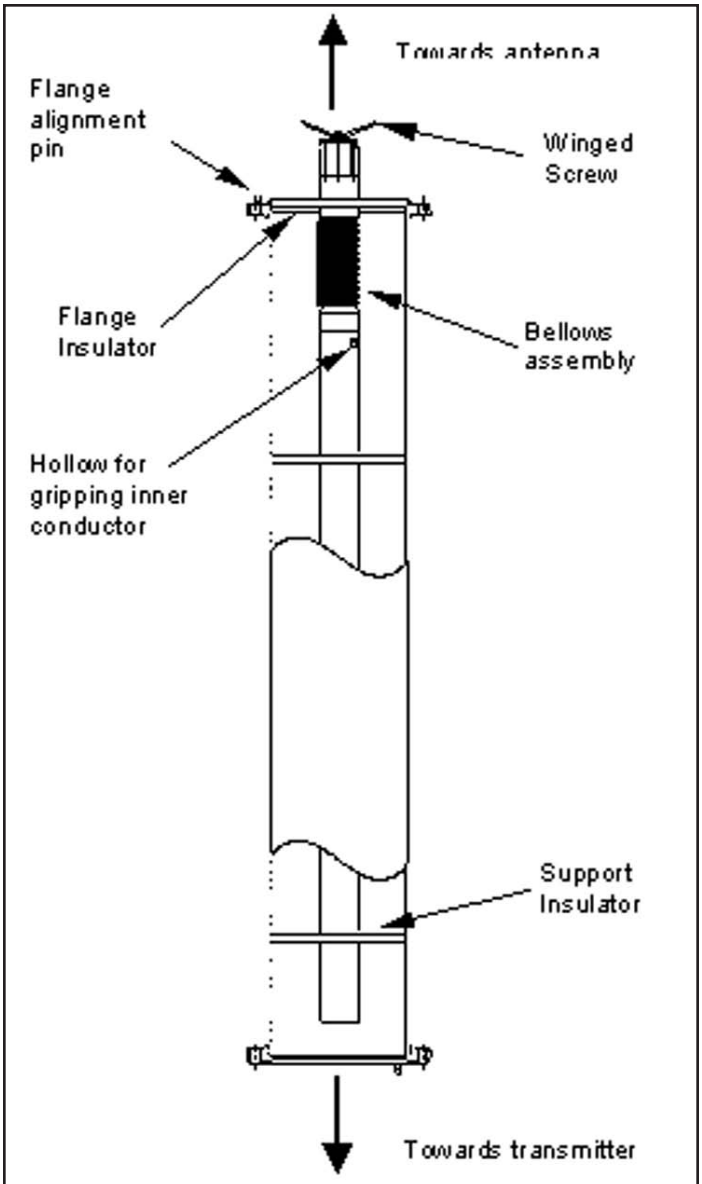

Figure 1

4. Insert silver solder ring into solder groove of fixed ring or flange. Add silver solder flux to solder groove and to cleaned end of tubing. Seat fixed ring or flange onto tubing 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.
5. Measure length of outer conductor from flange face to flange face.
6. Subtract 1-3/78" from outer conductor measured length. This is the required length of the inner conductor. Refer to Figure 3. If the outer conductor length is outside the ranges 109-120 inches and 170-200 inches, skip step 8 and go to step 9.

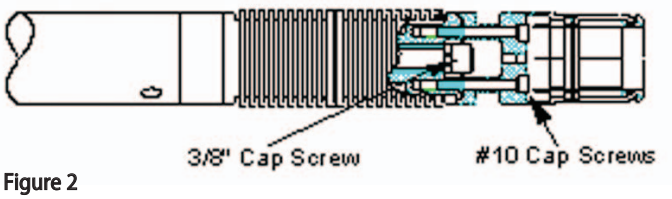

Figure 2

7. For the length ranges requiring the special procedure, move the bellows assembly to the other end of the inner conductor, as follows:
   a. Remove the winged screw from the inner connector.
   b. Undo the six #10 socket head cap screws and detach the inner connector.
   Note: To prevent the inner conductor rotating while loosening or tightening cap screws, use only the ERI special Clamp Wrench or a strap wrench, and only at the indicated location - see Figure 1. Do not use a pipe wrench, channel locks, vise grips, or pliers to hold the inner conductor tube as they will cause unacceptable damage to the inner conductor.
   c. Undo the ?" socket head cap screw, being careful not to damage the bellows.
   Note: if any of the washers becomes lost, replace them only with hi-collar types intended for socket head cap screws.
   d. Transfer the bellows assembly to the other end of the inner conductor and re-attach the bellows using the ?" cap screw and its spring washer, having ensured the mating surfaces are clean. Tighten the bolt to 21±2 lbf-ft torque using an accurate, high quality torque wrench.
   e. Re-attach the inner connector using the six #10 cap screws and their split washers. Tighten to 65±5 lbf in torque.
   f. Re-insert the winged screw and hand-tighten fully.
9. Using the winged screw, ensure that the bellows are fully extended, and mark the inner conductor where it should be cut.
10. Cut the inner conductor at the marked position using a Cutting Guide or miter box and hacksaw. Do not use a tube or pipe cutter - these will turn in the cut edge and cause line failure. Remove all burrs from the cut edge. Remove and discard the winged screw for types -10 and -20. For types -10W and -20W, refer to Installation Instructions 273344 for removal.
11. Install insulators as shown in Figure 1.
12. Carefully insert the trimmed inner conductor into the outer conductor with the bellows toward the antenna end of the outer conductor. Ensure that the flange insulator is fully inserted into the flange.

The transmission line section is now ready for installation. Refer to ERI Installation Instructions 273338 and 2373344

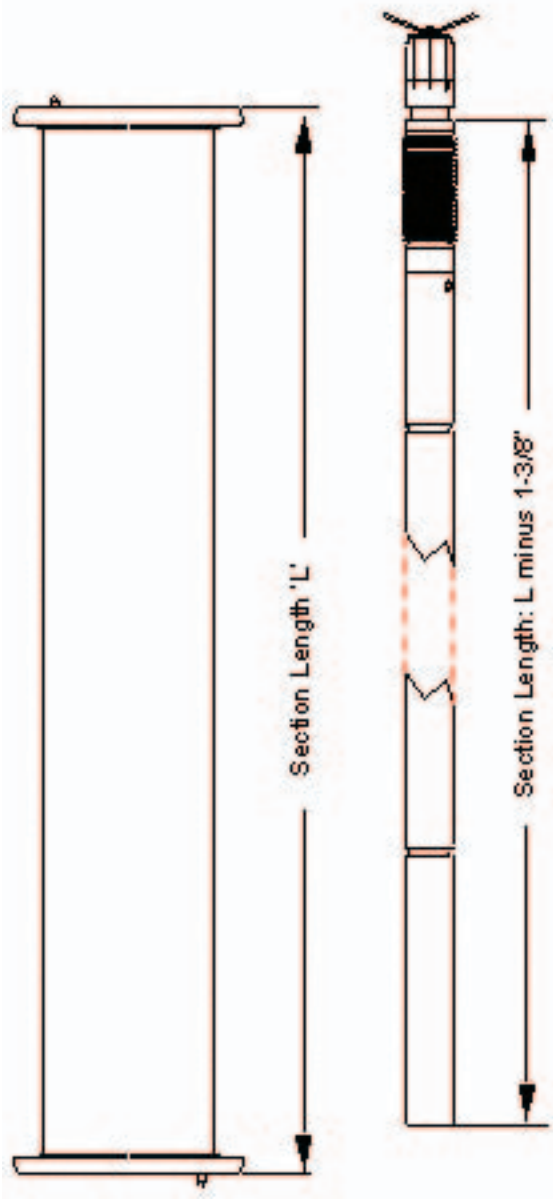

Figure 3