

MACXLine®

6-1/8" Rigid Coaxial Transmission Line



Description

Transmission line is designed to provide a high power signal path between transmitter combiner and broadcast antenna. Corrugated bellows are provided at one end of the inner conductor to compensate for differential expansion between inner and outer conductor as the transmission line is heated during operation. A lockout screw and handle is factory installed to lock the bellows assembly at its maximum travel. The lockout screw is engaged for shipping and aids in the proper insertion of the inner conductor into the inner conductor tube. Remove and discard the locking screw/handle after installation of each section.

MACXLine installation requires at least three people for proper insertion of the inner connector (utilizing the lockout screw). Begin installation at the transmitter (bottom-up installation). Install the transmission line with the bellows/bullet end toward the antenna. The red arrow label indicating "this end up" identifies outer conductor direction, see Figure 1.

Spring hangers allow the line to move for expansion and contraction during temperature changes. Rigid and spring hangers support the entire transmission line.

Components

MACXLine components include straight-line sections, elbows, and hangers.

Straight line sections (Types MACX650-1, -2, -3, -6) are furnished in standard lengths of 20, 19.75, 19.5, and 19 feet. They include bullet/bellows and flanges welded on both ends. Special lengths are available for multiple

channel applications. Special lengths between 20 and 5 feet (Type MACX650-42) have flanges welded on both ends and include bullet/bellows. Special lengths less than 5 feet (Type MACX650-40) have flanges welded on both ends and do **not** include bullet/bellows. All of these MACX650 straight sections include inner conductor, outer conductor, flange insulator, flange hardware, silicone grease and an O-ring to seal the flange.

The elbow inner conductor is shipped in two parts for easy assembly in the field. Flanges are swivel type to aid in alignment with straight sections. Each elbow is supplied with one bullet type inner connector for mating with a straight section.

Hangers are provided for vertical spring support, horizontal spring support, lateral rigid support and vertical or horizontal section rigid support.

NOTICE

The installation, maintenance, or removal of antenna systems 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.

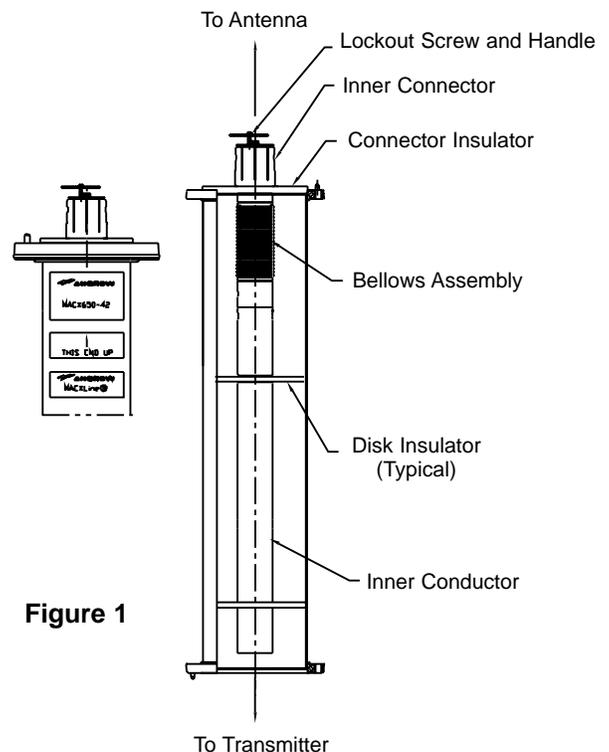


Figure 1

Direction of Installation

Installation originating at the bottom (transmitter end) of the vertical run must use one or more rigid hanger supports to anchor transmission line. Continue to install transmission line using vertical or horizontal spring hangers using proper type and correct spacing.

Caution: Do not support more than one section of line on flange joint without using hangers. Ensure all horizontal runs of transmission line are protected from falling ice and debris to prevent possible damage. Rigid hangers used at the bottom of vertical runs for support during installation must be removed after installing top rigid hangers to prevent serious damage to antenna and/or transmission line. See Figure 2 for typical ancillary component usage.

Installing Full Sections (MACX650-1, -2, -3, -6, -40, -42).

- 1 Remove protective cover from line section flange.
- 2 Apply a thin coating of silicone grease to O-ring and secure in flange groove. Use care to insure O-ring and flange groove are free of dirt before installing O-ring in groove.
- 3 Remove excess silicone grease from flange contact surface to insure good electrical contact and pressure seal.
- 4 Remove lockout screw/handle from previously installed section. Align inner connector bullet from previously installed section with inner conductor, see Figure 3. Mate bullet with inner conductor and keep aligned. Align flange pin with corresponding flange alignment hole and mate flanges. Verify flange insulator is properly seated in appropriate flange groove. Firmly push flanges together while checking that O-ring remains in correct position.

5 Install all flange hardware and alternately snug hardware at 180° locations, see Figure 4. Maintain a uniform gap between flanges. Perform final torque sequence, in the same pattern as above, to a torque value of 21 lb-ft. When properly installed, a small uniform gap should be visible around flange circumference.

Note: Use anti-seize compound on all stainless steel hardware to prevent galling. If hardware becomes galled during tightening procedure, remove damaged hardware and install replacement hardware to insure proper electrical contact between flange surfaces.

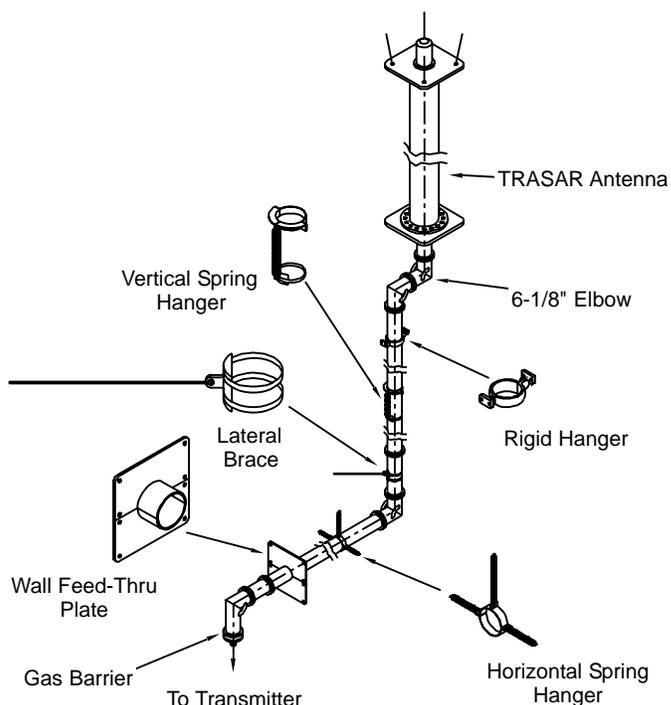


Figure 2

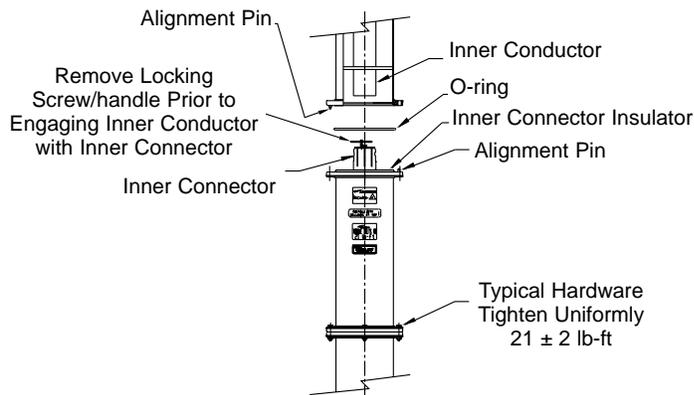


Figure 3

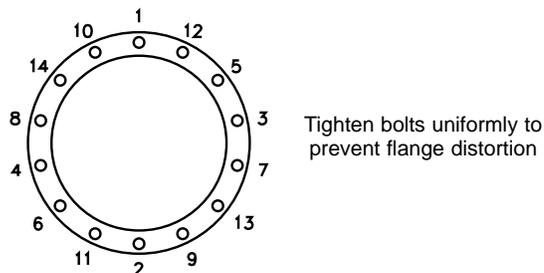


Figure 4



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