

WIDELine™

6-1/8" Rigid Coaxial Transmission Line



Description

WIDELine™ 6-1/8" coaxial transmission line is designed and manufactured to provide a high reliability, broad band, low VSWR, high power, signal path between a TV transmitter combiner and broadcast antenna. Bellows at the upper end of the inner conductor compensate for differential thermal expansion between inner and outer conductors to prevent bullet wear. A wing screw is factory installed to lock the bellows assembly at its maximum travel during shipping and installation. This screw ensures proper bedding of each section's inner conductor on the lower bullet thus minimizing its VSWR contribution. Remove and discard this screw, after installation of the section.

Components

WIDELine™ components consist of straight-line sections, elbows, and hangers.

Straight-line sections (Types MACX650-42W-length, MACX650-45W-length and MACX650-40W-length) are provided as site specific, fixed flange, custom lengths. Each section is supplied fully assembled including protective end covers and separate flange hardware, silicone grease, and a flange O-ring.

Elbows are shipped with all the necessary parts to interface with other WIDELine components of the same size. Refer to the WIDELine Elbow Installation Instructions.

Hangers. Spring hangers provide lateral restraint, support the transmission line, and accommodate differential expansion and contraction. Rigid hangers provide vertical section support. 3-point horizontal spring hangers accommodate vertical movement in the horizontal run caused by differential expansion and contraction of the vertical run. Lateral braces provide additional vertical or horizontal section restraint.

Direction of Installation

Important: Start installation at the bottom end (transmitter building). Follow the sequence of straight sections and elbows specified on the site document provided by Eri Corporation. Install each section with the integral bellows/bullet end toward the antenna. The red arrow label indicating "This end up" identifies outer conductor direction, see Figure 1.

Installation

Three people are required for proper assembly of WIDELine™. For the vertical run, use one or more rigid hangers to support the transmission line during installation. Continue to install transmission line sections using vertical or horizontal spring hangers of the correct type and spacing.

Caution: Do not support more than one section of line on a 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 immediately after installing the top rigid hangers to prevent serious damage to antenna and/or transmission line. See Figure 2 for typical ancillary component usage.

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.

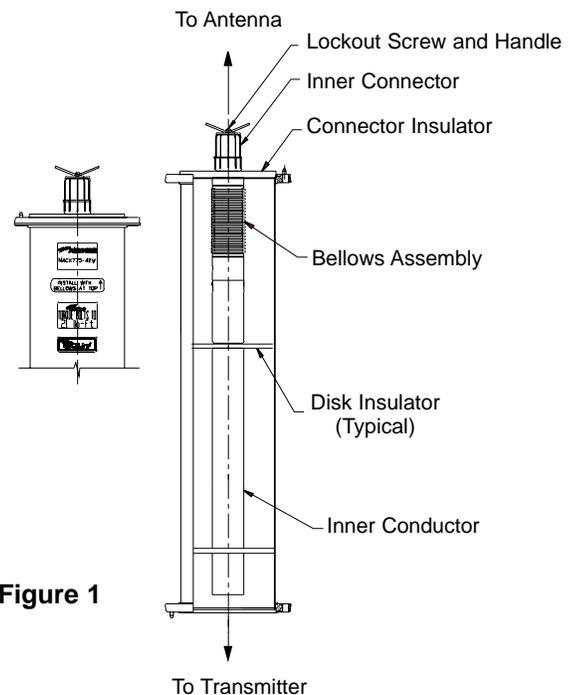


Figure 1

Installing Assembled Sections

Caution: Do not pre-assemble two or more sections on the ground. Install sections one at a time. Otherwise, proper bedding of the inner conductor onto the bullet of the preceding section cannot be achieved.

For the first section only:

- 1 Remove protective cover from line section lower (no bullet) flange.
- 2 Press a captivated inner connector (Type ACX650-19) as far as possible into the inner conductor, with its locking screw head facing out. Make sure there is no gap between the inner conductor and the bullet shoulder. Tighten the screw in accordance with the inner connector Installation Instructions Bulletin.

For all other sections:

- 1 Remove wing screw and protective cover from previously installed section. Remove protective cover from line section lower (no bullet) flange.
- 2 Apply a thin coating of silicone grease to O-ring and secure in flange groove. Use care to ensure 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 ensure good electrical contact and pressure seal.
- 4 Align inner connector bullet of 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, while maintaining a uniform gap between flanges. Perform final torque sequence in a similar pattern as above to a torque value of 21 lb-ft (28 N·m). 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 ensure proper electrical contact between flange surfaces.

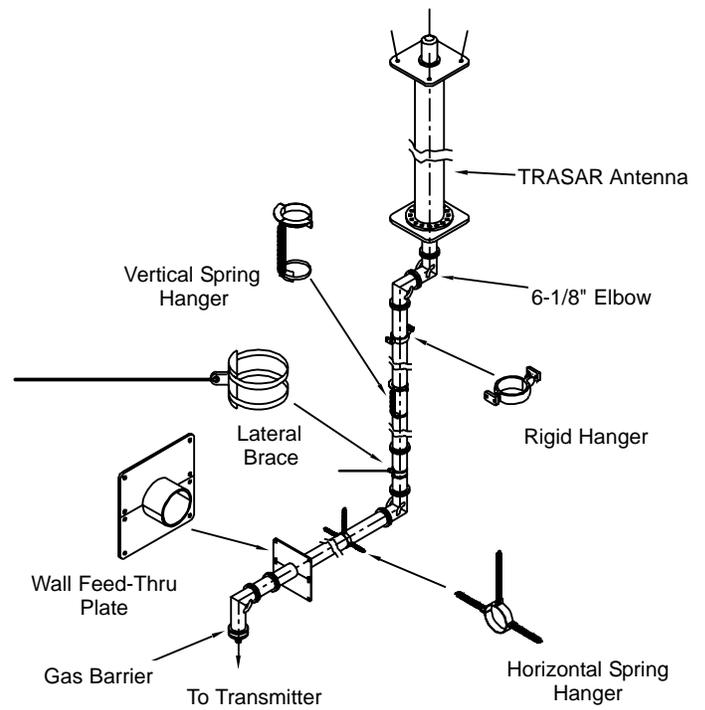


Figure 2

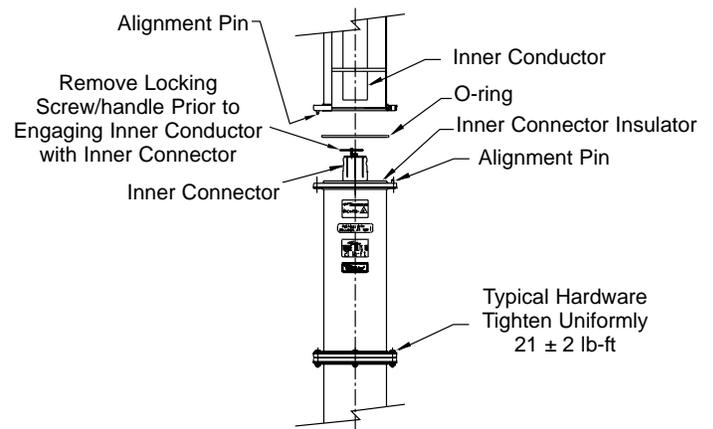


Figure 3

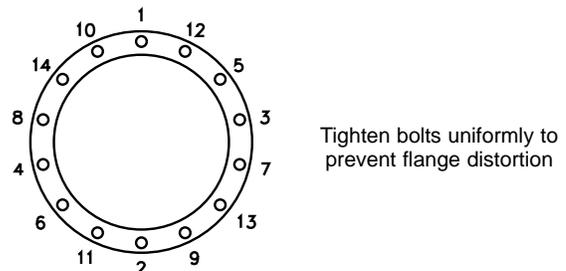


Figure 4



Electronics Research, Inc.

7777 Gardner Road, Chandler, Indiana 47610 USA
Tel: +1 (812) 925-6000 | Fax: +1 (812) 925-4030 | www.ERInc.com

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