

MACXLine® Rigid Coaxial Transmission Lines



Line and Flange Information	
Type Number	MACX675B-(1,2,3,6)
Line Size	6-1/8"
Flange Diameter, in (mm)	8-1/8 (206)
Bolt Circle Diameter, in (mm)	7-3/8 (187)
Number of Holes	12
Hardware Size	3/8"

Hardware Torque Specifications

Hardware Size	Torque Value*
1/4" (6 mm)	7 lb-ft (9 N·m)
5/16" (8 mm)	12 lb-ft (16 N·m)
3/8" (10 mm)	21 lb-ft (28 N·m)
1/2" (13 mm)	46 lb-ft (62 N·m)
5/8" (16 mm)	76 lb-ft (103 N·m)

* Specified torque values may be affected by use of anti-seize compounds.

Read the Instructions Thoroughly Before Assembly

Vertical Installation

The captivated inner connector, flange insulator and protective covers provide support for the inner conductor of each line section during the hoisting operation.

Note: Do not attach hoisting sling to line section flanges.

Transmission Line Installation

Transmission line installation may begin at either end of the proposed vertical run. Installations originating at the top (antenna end) of the vertical run will require at least one rigid hanger at the top (depending on its length) and will require proper positioning of the bottom miter elbow to allow for both expansion and contraction of the rigid line over the anticipated operational temperature range. Installations originating at the bottom (transmitter end) of the vertical run must use one or more rigid hangers for support. Additional miter elbows and field flanged sections will probably be required to ensure alignment with the antenna input flange. **Note:** Rigid hangers used at the bottom portion of the vertical run for increased support during installation must be removed after installation of top rigid hanger(s) to prevent serious damage to antenna and/or transmission line.

Refer to Figure 1. Remove the protective cover from the end of the line section and retain the supplied O-ring seal.

Note: One O-ring is supplied per line section and may be located under either protective end cover or in a separately supplied hardware kit.

Apply a thin coating of silicone grease to the supplied O-ring to temporarily secure the O-ring in position during assembly. **Note:** Ensure both the seal and flange groove are free of dirt and remove excess silicone grease from the contact surfaces to ensure pressure tight seal.

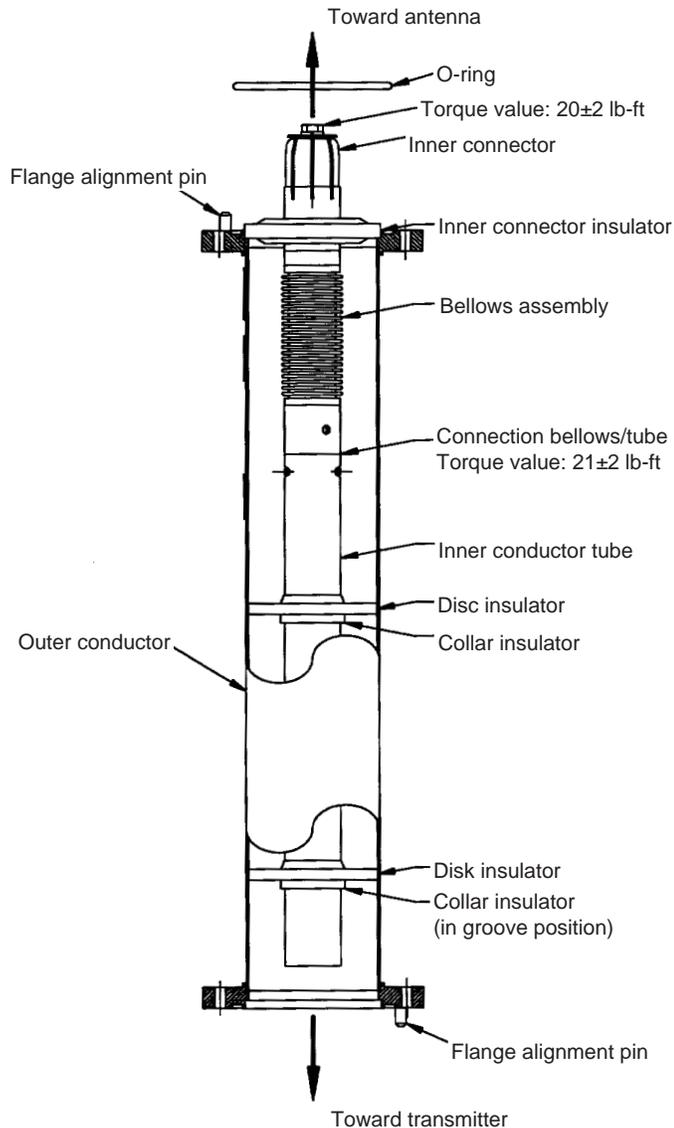
The bellows end of the line, as designated by the red arrow label on the outer conductor, must be installed toward the antenna. **Note:** Bottom protective end cap may be temporarily secured to the flange while hoisting the transmission line assembly to secure line section inner conductor.

Remove the protective cover from the end of the line section. Align pins with corresponding flange alignment holes and join mating sections. Firmly push line sections together ensuring O-ring seal remains in place, inner connector slides into inner conductor and inner conductor insulator seats properly in mating flanges.

Install and alternately snug mounting hardware at 180° intervals while maintaining a uniform gap between flanges. Perform final torquing sequence in a circular pattern. Do not overtighten. When properly installed, a small uniform gap should be noted around the flange circumference. **Note:** The use of anti-seize compound on all stainless hardware is recommended to prevent galling. If hardware becomes galled during the tightening procedure, remove damaged hardware by sawing or breaking and install replacement hardware to ensure proper electrical contact between mating surfaces.

Refer to the supplied installation instructions and install appropriate hangers (rigid or spring types) as line sections are being installed using proper number and type of hangers correctly spaced. Differential line expansion is compensated by bellows and spring hanger assemblies. **Note:** Do not support more than one section of line on flange joint without using hangers.

Ensure all exposed horizontal runs are well protected from accumulated or falling ice and possible damage from other falling objects.



Pressurization

Maximum pressurization values [normally less than 10 lb/in² maximum (70 kPa)] are determined by the lowest rated system component and should not be exceeded. The transmission line is rated at 10 lb/in² maximum. Consult applicable pressurization specifications on other system components (usually much lower) to determine maximum system pressurization limit (generally 3 psi with antenna, 1/2 psi with rectangular wave guide).

After the installation is complete, pressurize the line and check all flange connections for leakage. Use a commercial leak detector or liquid detergent over joints and check for evidence of bubbles. Unbroken soap film over the entire joint for several minutes indicates absence of noticeable leaks.

The transmission line must be pressurized at all times to prevent changes in ambient temperature from causing condensation to occur and seriously impair system efficiency. If moist air has entered the system, it must be purged by removing the gas port plug located on the gas barrier or behind the antenna input flange. An alternative method is to pressurize and let air escape at the transmitter end of the line for one hour. Repeat the procedure several times allowing one hour each time for air to mix. After purging, replace the gas port plug and repressurize the line. Pressurization can be accomplished by manual or automatic means depending upon the quantity of line in use at the station and whether or not the site is attended. A dry air hand pump is satisfactory for attended sites using relatively small quantities of line. Automatic electric dehydrators are recommended for unattended sites or where large quantities of line are used. A compressed air cylinder can also be used. A regulating tank in the pressurization system can be used to provide low pressure outputs. **Note:** Line assemblies are not hermetically sealed and may exhibit a low leakage rate; consequently, line installations not using an automatic air supply must be periodically inspected. Dry air or nitrogen is normally used for pressurizing. When pressurization equipment is connected to the gas port on a gas barrier, or whenever pipe fittings are reassembled, threads must be covered with PTFE tape to ensure a leakproof connection.

