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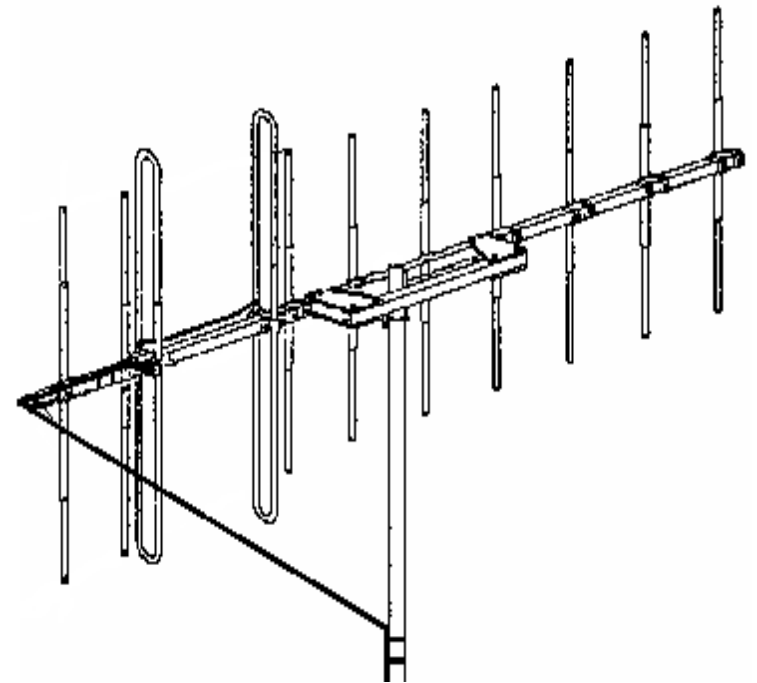
390995 Rev. D

INSTRUCTION BOOKLET

Y112B-130V

Customized Non-Uniform Multidirectional Antenna

YAGI ANTENNA



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A N T E N N A

Please Note: A qualified structural engineer should be consulted prior to mounting an antenna on a tower or support structure.

1-GENERAL DESCRIPTION

The Y112B-130V is a eleven element yagi covering the frequency range 118 MHz - 137 MHz. The antenna is designed for vertical polarization and is supplied with a fiberglass support mast. The base of the fiberglass support mast has an integrated coupling designed to mount onto a customer supplied metal mast pipe.

2-THEORY OF OPERATION

The driven section of the Y112B-130V consists of two folded dipoles interconnected and phased by two parallel 1/4 in. (.64 cm) diameter aluminum transmission lines. The balanced terminals of the rear dipole are connected through an internal cable to an "N" type connector mounted at the grounded side of the dipole. This internal "balun" effectively chokes off the surface currents normally associated with a balanced feed and eliminates transmission line radiation. The entire antenna is maintained at d.c. ground potential so that a ground wire connected to the cable fitting will drain off static build-up and provide lightning protection.

8-SAFETY PRECAUTIONS

To protect your antenna and receiver from lightning damage, you should ground your equipment.

1. To ground the antenna attach a ground wire under the nut of the 1/4-20 x 2¼ in. long hex head screw at the end of the crossarm see Figure 7. Use nylon cable ties (not provided) to fasten the ground wire to RG-213/U cable. Run the ground wire along the RG-213/U to a ground rod, driven at least 4 feet into the ground.
2. Keep the antenna and cable a safe distance from any power lines.

7-DOWNLEAD

1. Recommended cable is RG-213/U.
2. Thread the connector onto the dipole fitting.
3. Use provided s.s. cable ties to secure the cable to side of the crossarm.
4. Lay the cable around the cable mounting bracket and use cable ties to attach it to base of the mast. See Figure 7.

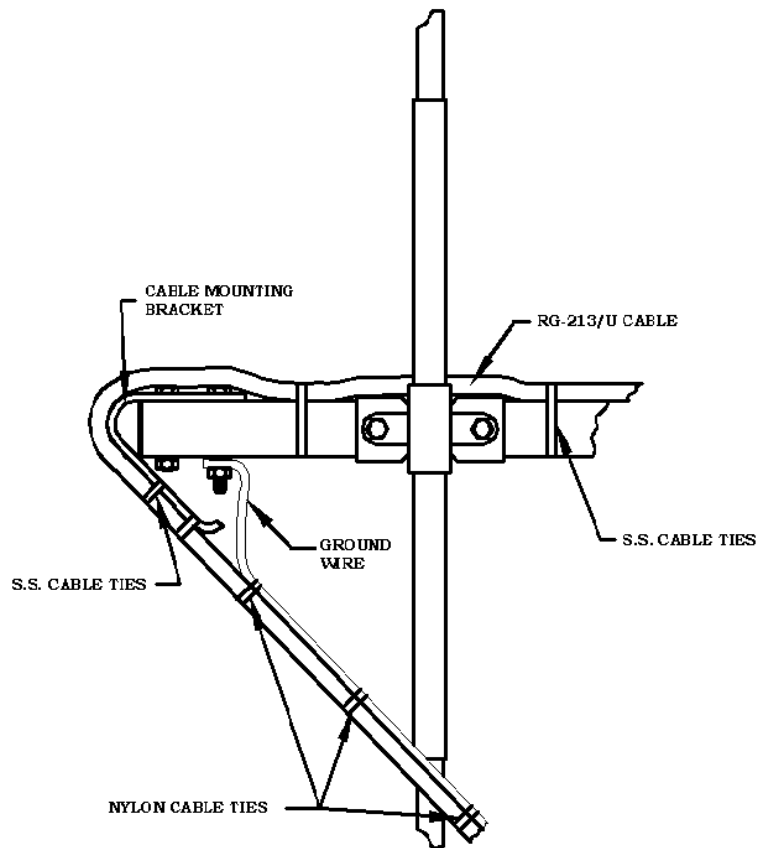
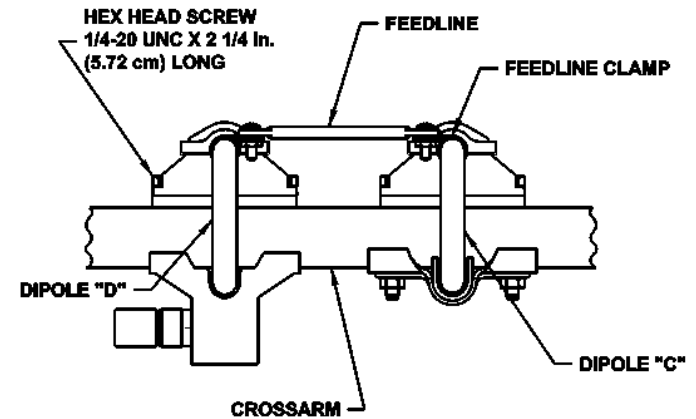


FIGURE 7

3-ANTENNA ASSEMBLY

The dipoles and elements are match marked to the supporting crossarm. The dipole insulators and parasitic elements mount to the same side of the crossarm.



1. Next, starting with dipole "C" assemble dipole "C" and "D", to their marked locations on the crossarm as shown in Figure 1.. Use the 1/4-20 x 2 1/4" hex head screws.
2. The feedlines connecting the dipoles "C" and "D" are attached as shown in Figure 2 using the four feedline clamps and the #10-32 x 5/8" long round head screws. The feedlines must have a center to center spacing of 1/2 inch as shown in Figure 2. Attach the feedlines to the top of the feedline clamps. There must be bare metal to metal contact between the feedlines and the dipoles.

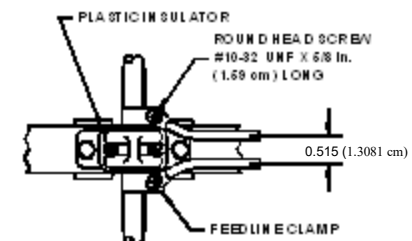


FIGURE 2

- The parasitic elements are mounted onto the crossarm at its match-marked location with 1/4-20 x 2 1/4" long hex head screws, as shown in Figure 3. Use a reinforcing clip at each screw location.

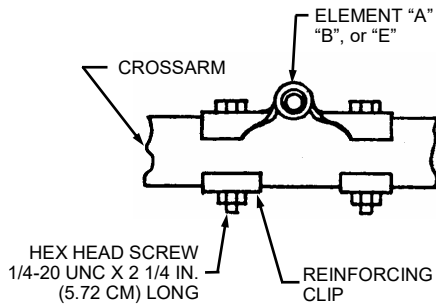


FIGURE 3

4-ANTENNA MOUNTING

The antenna mounting clamp is assembled to the crossarm at the unmarked holes between the fifth and sixth parasitic element from the front of the antenna.

- Assemble the mounting casting to the dipole-fitting side of the crossarm as shown in Figure 4, using the mounting clamp and the 3/8-16 x 2 1/4" long hex head screws.
- Loosely assemble the two 3/8" diameter U-bolts into the mounting casting.
- Secure the capped end of the fiberglass support mast (supplied) so that the top is a couple of inches above the crossarm.

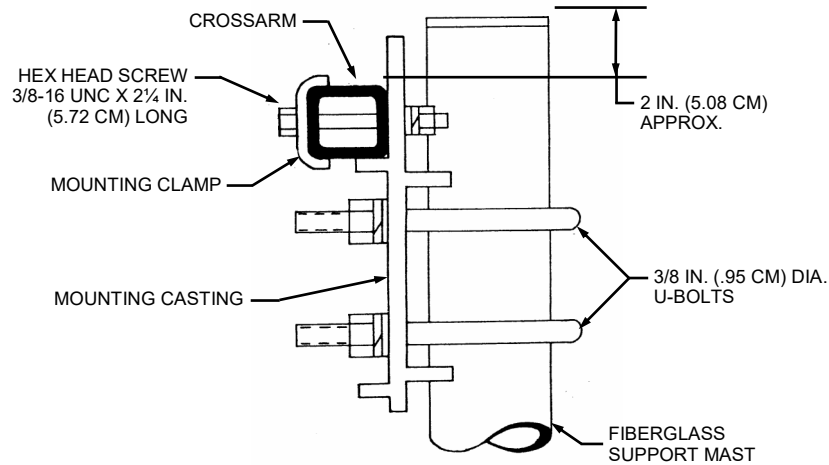


FIGURE 4

5-BRACE ASSEMBLY

The crossarm brace is attached to the mast side of the crossarm (see Figure 5) using eight 1/4-20 x 2 1/4" long hex head screws.

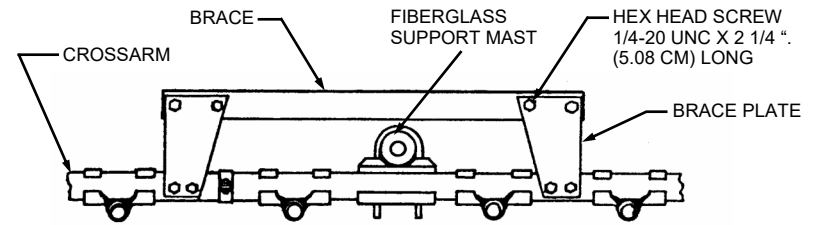


FIGURE 5

6-MOUNTING ASSEMBLY

- Install 6 Clamping Bolts and Hex Nuts to the antenna base per Fig.1.
- Slide the Antenna Base onto the Mounting Mast.
- Tighten the Clamping Bolts while keeping antenna plumb and centered on the Mounting Mast.
- Tighten Hex Nuts against the antenna base.

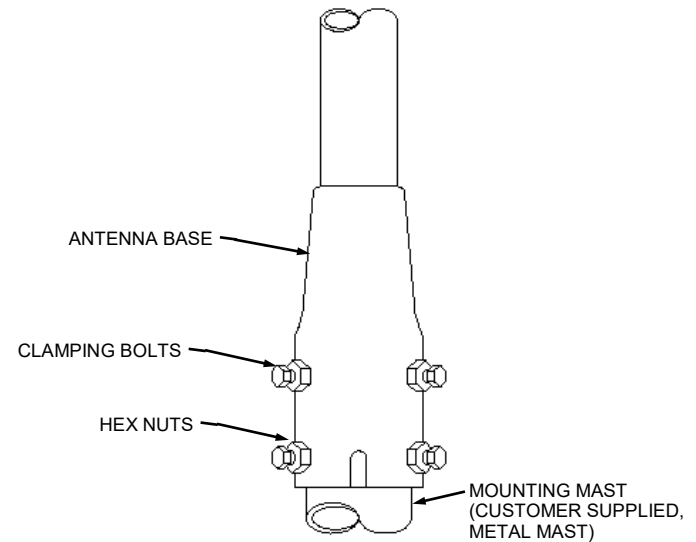


FIGURE 6