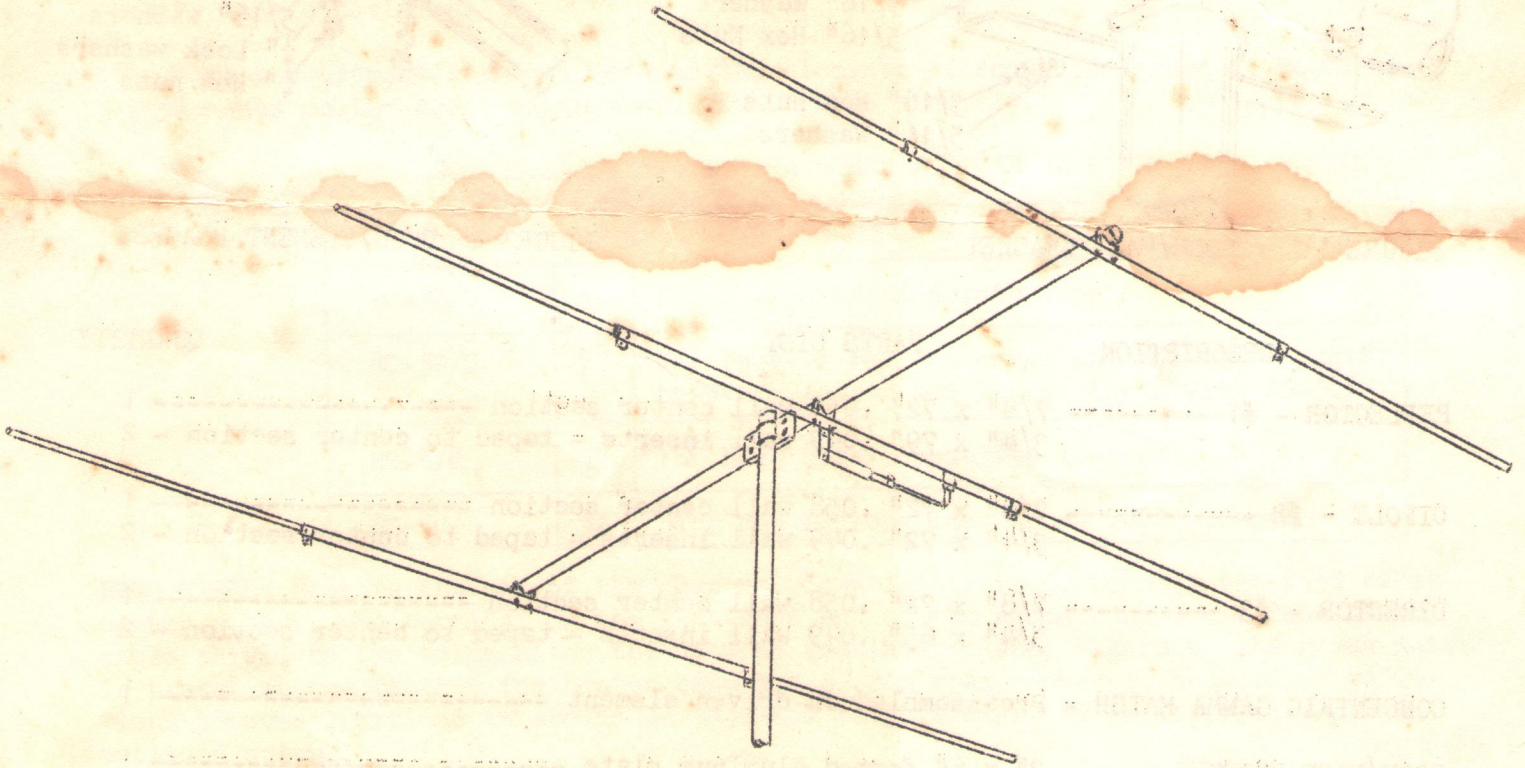


Assembly & Installation Instructions CUSH CRAFT 3 Element 10 Meter Beam

Model No. A28-3



Your CUSH CRAFT 3 element 10 meter beam is engineered and manufactured to give top performance and trouble-free service. The antenna will perform as specified if the instructions and suggestions are followed, and if care is used in assembly and installation.

LOCATION of the antenna is extremely important. Surrounding objects such as trees, power lines, other antennas, or any objects of large mass will have a detrimental effect on the performance of the antenna. Mount the antenna as high and in the clear as possible. When guy wires are used be sure that they are broken several times with strain insulators to avoid guy wire resonance.

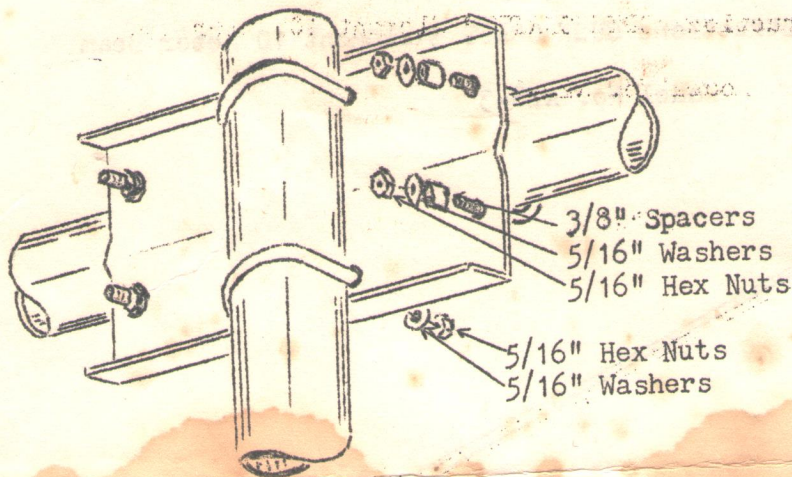


FIGURE 1 BOOM/MAST BRACKET

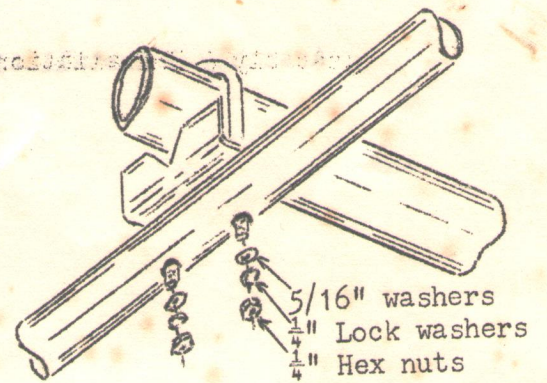


FIGURE 2 BOOM/ELEMENT BRACKET

DESCRIPTION	PARTS LIST	QUANTITY
REFLECTOR - #1 -----	7/8" x 72" .058 wall center section -----	1
	3/4" x 79" .049 wall inserts - taped to center section -	2
DIPOLE - #2 -----	7/8" x 72" .058 wall center section -----	1
	3/4" x 72" .049 wall inserts - taped to center section -	2
DIRECTOR - #3 -----	7/8" x 72" .058 wall center section -----	1
	3/4" x 65" .049 wall inserts - taped to center section -	2
CONCENTRIC GAMMA MATCH -	Preassembled on driven element -----	1
BOOM/MAST BRACKET -----	3" x 6" formed aluminum plate -----	1

PARTS PACKAGE

DESCRIPTION	QUANTITY
Boom/mast brackets - formed aluminum plate -	3
1 1/2" u-bolts -----	3
5/16" Flat washers -----	14
1/4" Lock washers -----	6
1/4" Hex nuts -----	6
1-5/8" u-bolts -----	4
3/8" Aluminum spacers -----	4
5/16" Hex nuts -----	8

DIRECTOR SPACING .15 wavelength

REFLECTOR SPACING .15 wavelength

FORMULA FOR DETERMINING ELEMENT LENGTHS

REFLECTOR 498 FMC DIPOLE 473 FMC DIRECTOR 460 FMC

ASSEMBLY

- (1) The elements are marked at the center: Reflector #1, Dipole #2, Director #3
- (2) The element positions are marked on the boom with black lines and numbers corresponding to those on the elements.
- (3) The element inserts are marked with black lines for center band. Slide the inserts into the center sections, to the black lines on the inserts, and tighten the telescope clamps.
- (4) Assemble the boom/mast bracket (Figure 1) and mount it on the boom to the rear of the dipole position.
- (5) Mount the element/boom brackets on the elements as shown in Figure 2. Mount the elements on the boom, align them, and tighten securely.

RECOMMENDED TRANSMISSION LINES FOR USE WITH THE GAMMA MATCH

COAXIAL CABLE	Z	CONDITIONS
RG-58/U	52	For low power, moderate length
RG-59/U	73	May be used for low power and moderate lengths however, losses are higher than with RG-58/U
RG-8/U	52	For high power, moderate lengths
RG-14/U	52	High power, long lengths of 100' or more

FEED CABLE: Prepare the end of the coax as shown in Figure 3. Connect the feed cable center wire to the terminal on the flattened end of the gamma condenser. Connect the cable shield to the terminal on the element insulator clamp, Figure 4. The gamma match is preset at the factory for center band and 52 ohm coax. However, because of variations between locations it should be adjusted to your sight by following the steps outlined below.

- (1) Insert a standing wave bridge in the coaxial feed line.
- (2) Set generator or transmitter to desired frequency.
- (3) Slide $\frac{1}{2}$ " tubing of gamma match either in or out of insulator to lowest SWR reading, Figure 4.

When the beam is completely assembled and tuned tape all feed line connections and cover with a protective coating such as Krylon spray or equal. It is advisable to cover all fasteners with a protective coating.

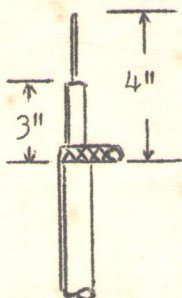


FIGURE 3

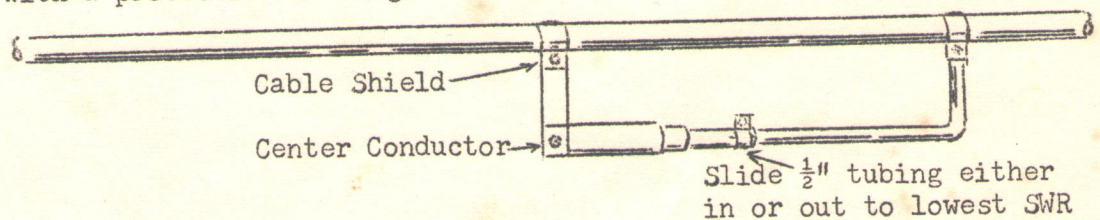


FIGURE 4

LIGHTNING PROTECTION: We recommend using the "BLITZ BUG" Coaxial lightning arrester. When properly installed the "BLITZ BUG" will provide a full time static drain for the antenna system and cable, protecting your equipment from direct lightning strikes. There is no insertion loss from the "BLITZ BUG" to 500 Mc. and it will not increase the SWR on the line.