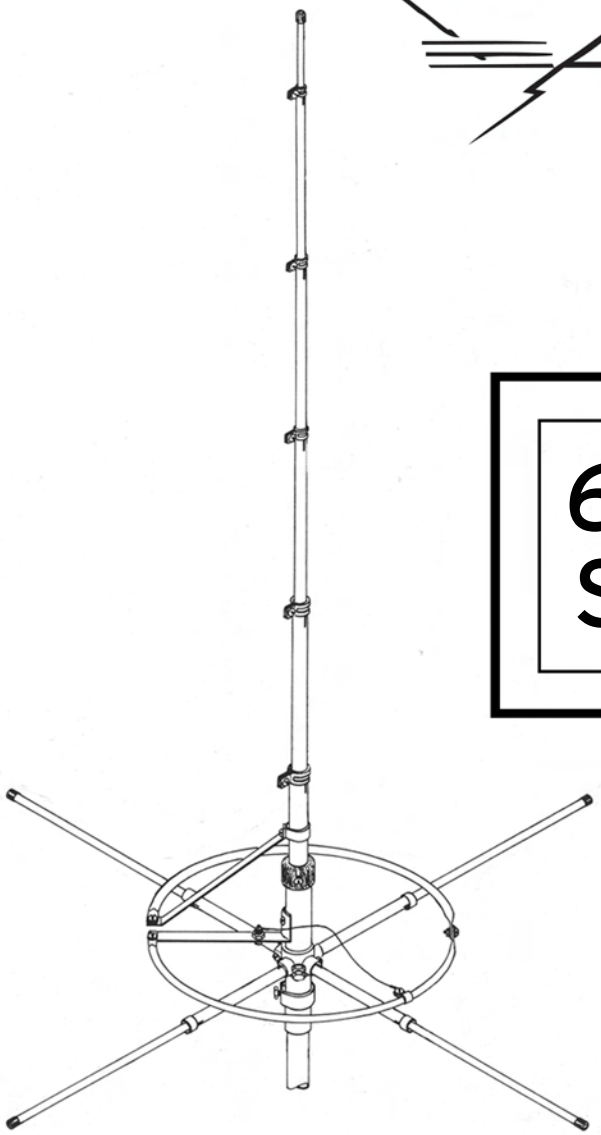
Assembly Instructions



6 Element - 11 Meter
Switchable Polarity

V5/8

www.macoantennas.net

(815) 244-3500

MaCo Antennas, A Division of Charles Electronics, LLC
302 S. East Street, Mt. Carroll, IL 61053

PACKING LIST

MACO ALPHA V58

PART	QTY	O.D.	SIZE	LENGTH	DESCRIPTION	CHECKLIST
T47P	4	5/8”	.047”	36”	Aluminum Tubing	_
T43P	1	7/8”	.047”	48”	Aluminum Tubing	_
T18P	1	3/4"	.047”	48”	Aluminum Tubing	_
T15P	1	5/8”	.047”	48”	Aluminum Tubing	_
T01	5	1/2"	.047”	72”	Aluminum Tubing	_
BA1P	1				Base Assembly	_
R01P	2	3/8”	.035”	17 7/8”	Hoop Rings	_
					HARDWARE BAG	
R03P	1				1-hole Cast Aluminum Spider	_
P08P	1	5 ½”			Bracket w/SO239 and wire	_
R02P	1	½”x1/8”x 7 ¾”			Aluminum Strap	_
C01	1	3/8”			Stainless Steel Clamp	_
W58	9	5/8”			Extruded Aluminum Clamp	_
W34	1	¾”			Extruded Aluminum Clamp	_
W78	1	7/8”			Extruded Alum. Clamp (hose clamp)	_
C13P	1	1.845”			Clamp Ring	_
W10P	2				Stainless Steel Hose Clamp	_
S21	16	10-24 ½”			Machine Screws (2 extra included)	_
S23	1	3/8”-16 x 1”			Hex Bolt	_
S24	1	5/16” x 1”			Hex Bolt	_
N11	16	10-24			Square Nuts (2 extra included)	_
N01	1	5/16”			Hex Nut	_
N26	5	#10			Flat Washers (1 extra included)	_
N12	5	#10			Lock Washers (1 extra included)	_
N19	1	3/8”			Hex Nut	_
PL2	5	.437”			Plastic Cap – Black	_
N20	1	3/8”			Lock Washer	_
	1				Instruction Sheet	_
	1				warranty sheet	_
	1				Safety sheet	_

Please note: In an effort to keep the price on MaCo Antennas down, we have decided not to clean up all the burrs and rough edges on the parts. We recommend that you deburr and clean up each part with files, sandpaper, etc. so that they go together easily. We are aware this needs to be done but have elected not to do it to save you the money we would have to add to the price of the kit for this service.

Revised 04/08

MACO ALPHA V58

26 - 33 MHZ Base Station Antenna

ASSEMBLY INSTRUCTION

FIGURE 1 BASE ASSEMBLY

Install the P08P Bracket to the base assembly BA1P with #10-24 x 1 7/8 hardware S45, N11, N12 (ref. Detail 1A). It should make a 90 degree angle with the base assembly. If not, bend the P08P until it does.

Fasten one end of the strap R02P (ref. Detail 1C) to the vertical end of the base section using the stainless steel worm drive clamp supplied. Tighten snugly but not too tight as this may have to be adjusted.

Next join the two hoop rings together (ref. Detail 1D) using #10-24 x 1/2" hardware S21, N26, N11, N12.

Now fasten one end of the hoop ring R01P to bracket P08P (ref. Detail 1E) and the other end to strap R02P using 10-24 x 1/2" hardware S21, N26, N11, N12.

Position the aluminum clamp C01 on the hoop ring assembly approximately where shown (ref. Detail 1F) and attach the wire as shown using #10-24 hardware S11, N26, N11, N12; do not tighten. Now measure from the center of the screw (ref. Detail 1D) around the outside of the ring 6 1/4" toward the P08P end of the hoop ring assembly until the edge of the clamp C01 is against the mark; tighten snugly. Now make the final adjustment of R02P so that the distance between the ends of the rings is 1". This is a vertical separation of 1". (Ignore the screws in this measurement) and tighten the clamp firmly.

FIGURE 2 BASE ASSEMBLY

To install the vertical elements, # T43P, T18P, TI5P, and T01P use a felt tip marker and ruler, and mark 6" from one end. Mark the T01P 4" from one end. Now using the clamps and hardware as shown (ref. Detail 2A) slide the ends into the larger sections to the mark and tighten clamps. Install the plastic cap PL2 on the top. THE OVERALL LENGTH MUST BE SELECTED FROM THE FREQUENCY CHART ON THE NEXT PAGE AND ADJUSTED TO THIS MEASUREMENT. Shorten at top Clamp W10P. This is important to assure low SWR; however, the chart length is not sacred and may be changed to allow for variations in construction. For frequencies falling between those shown on the chart, it is suggested that interpolation be used to get the starting point for adjusting. Note: Overall length is the distance from the top of part T01P to the bottom of part BA1P. This is important as variations in base construction may cause the length at which the selected frequency has low SWR to vary. Usually the actual length will be shorter than the chart.

To install the radials, first put the aluminum bracket R03P spider on the base section BA1P as shown in Detail 2B. Install the 5/16 x 1 hex bolt, nut, and washer in the bracket. The bracket is positioned so that there is 1/2" clearance between the top of the spider and the bottom of the bracket P08P. This position puts the top edge of the R03P spider just where the base section stops tapering and gets back to full size. Now tighten the bolt and lock nut. Next take the four T47P radials and the four clamps W58 with #10-24 x 1/2 screws, hardware S21, N11; and place the clamps with hardware installed over the end of the tubing up on a bracket stub and tighten. Now repeat with the other three radials.

Next take the four T01P radials and using a marking pen, mark 4" from the end on all four radials. Now using clamps W58 and #10-24 x 1/2 screws with hardware S11 and N11; insert the marked end to the mark and tighten the clamps (ref. Detail 2C). Install the four Black
Plastic Caps PL2 on the ends. Exact length is not critical.

ASSEMBLY INSTRUCTIONS
(continued)

The C13P clamp is round when received. It must be made egg shaped enough to allow the nut N01 to go between the clamp C13P and the BA1P base assembly.

MOUNTING THE BASE SECTION

On a mast with an outside diameter of up to 1 1/4", position clamp ring C13P on the base and install the 5/16 x 1" hex bolt and nut S24, N01 as shown. Insert mast pipe 6" into the base and tighten.

ADJUSTING THE STANDING WAVE RATIO (SWR)

There are only two possible adjustments. The main adjustment is the length of the antenna. This should be changed at the top of the base section. Loosen clamp W10P and adjust. It is recommended that you work in 1/4" increments so as to tell if you are going in the right direction.

The other adjustment is the position of the clamp C01 on the ring. It is recommended that if the SWR is about the same on both ends of the band, this adjustment be left alone. Adjust only to try to get the same SWR at both ends of band equal. This adjustment only moves the SWR a small amount.

REMEMBER THIS ANTENNA REACTS TO EVERYTHING IT CAN SEE; THIS MEANS THAT TREES, POWER LINES, BUILDINGS, AND OTHER ANTENNAS AT THE SAME HEIGHT WILL AFFECT THE SWR. THE V5/8 CAN BE TUNED MOUNTED 6 FEET OR SO ABOVE THE GROUND AND SHOULD NOT CHANGE WHEN PERMANENTLY INSTALLED.

FREQUENCY TO LENGTH CHART for V58 26-33 Mhz Antenna

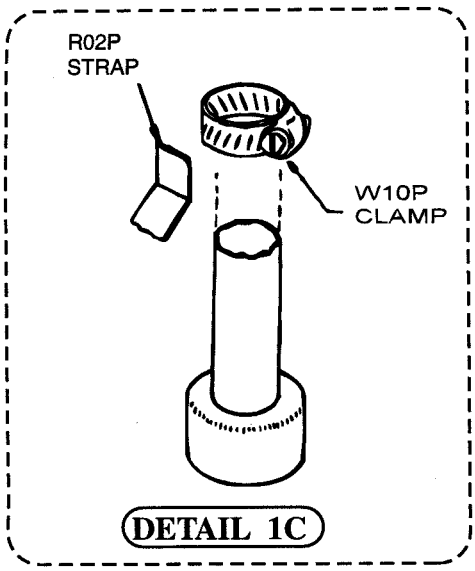
THIS CHART MUST BE USED TO SELECT THE OVERALL LENGTH FOR THE ANTENNA.

FREQ Mhz	OVERALL LENGTH
26.0	248"
27.0	240"
28.0	232 5/8"
29.0	225 3/4"
30.0	215 1/4"
31.0	209 1/8"
32.0	203 1/2"
33.0	198 1/4"

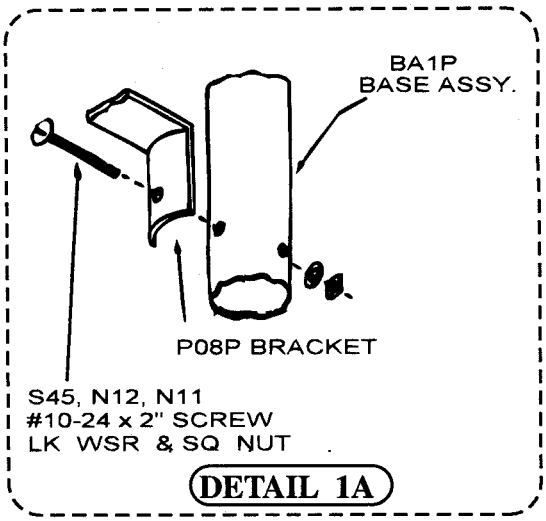
NOTE:
These measurements are for the overall length of the antenna. This means the top is where the plastic cap goes and the bottom is below the hole for the mounting bracket C13P.

IF THIS ADJUSTMENT IS NOT MADE THE ANTENNA WILL NOT WORK CORRECTLY!

NOTE: To use at other frequencies 25-50 mhz, change the length.

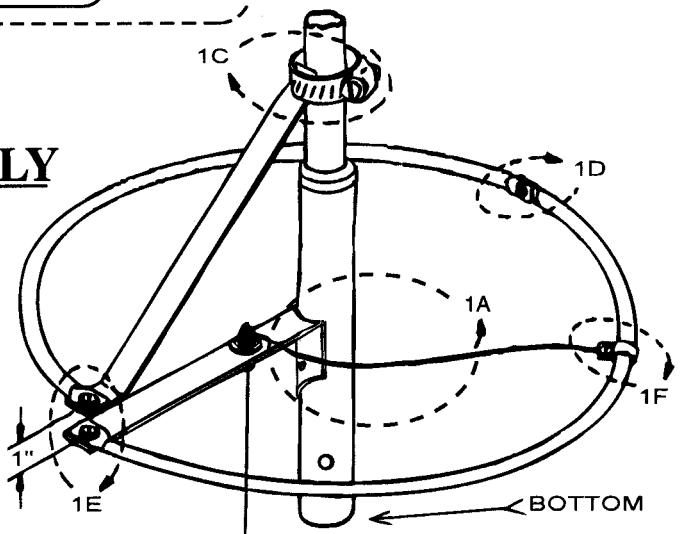


DETAIL 1C

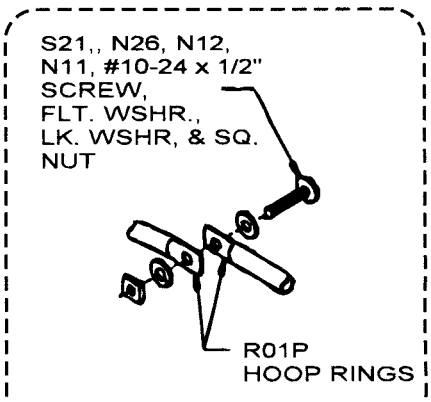


DETAIL 1A

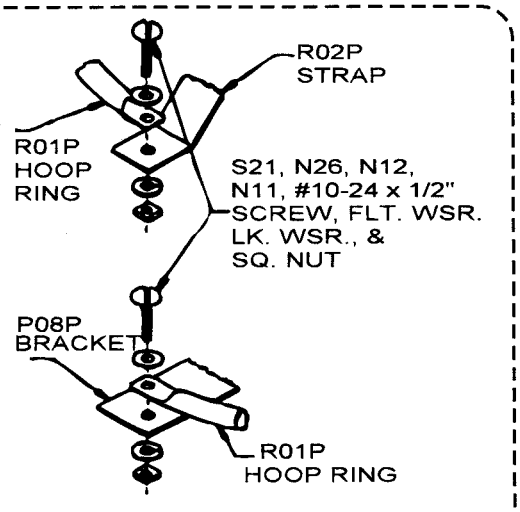
BASE ASSEMBLY



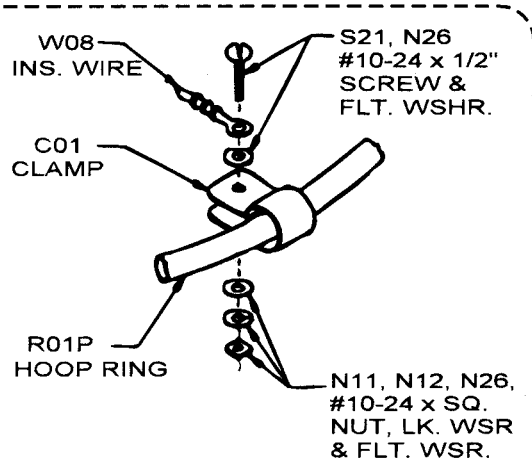
NOTE: Wire is soldered to connector, SO239W



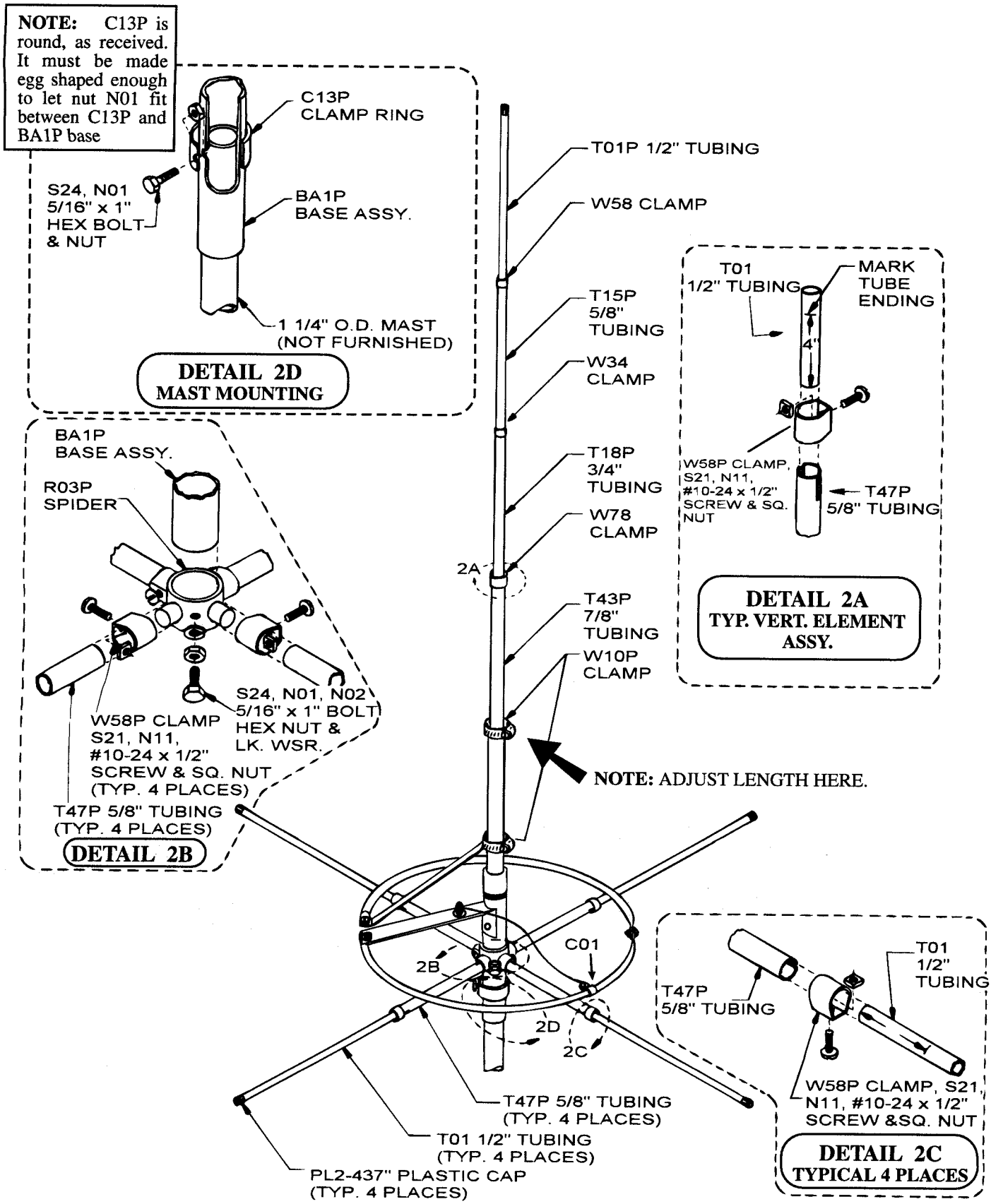
DETAIL 1D



DETAIL 1E



DETAIL 1F


NOTE: C13P is round, as received. It must be made egg shaped enough to let nut N01 fit between C13P and BA1P base
C13P CLAMP RING
S24, N01 5/16" x 1" HEX BOLT & NUT
BA1P BASE ASSY.
1 1/4" O.D. MAST (NOT FURNISHED)
DETAIL 2D MAST MOUNTING
T01P 1/2" TUBING
W58 CLAMP
T15P 5/8" TUBING
W34 CLAMP
T18P 3/4" TUBING
W78 CLAMP
T43P 7/8" TUBING
W10P CLAMP
2A
T01 1/2" TUBING
MARK TUBE ENDING
4"
W58P CLAMP, S21, N11, #10-24 x 1/2" SCREW & SQ. NUT
T47P 5/8" TUBING
DETAIL 2A TYP. VERT. ELEMENT ASSY.
BA1P BASE ASSY.
R03P SPIDER
S24, N01, N02 5/16" x 1" BOLT HEX NUT & LK. WSR.
W58P CLAMP S21, N11, #10-24 x 1/2" SCREW & SQ. NUT (TYP. 4 PLACES)
T47P 5/8" TUBING (TYP. 4 PLACES)
DETAIL 2B
NOTE: ADJUST LENGTH HERE.
2B
C01
2D
2C
T47P 5/8" TUBING (TYP. 4 PLACES)
T01 1/2" TUBING (TYP. 4 PLACES)
PL2-437" PLASTIC CAP (TYP. 4 PLACES)
T01 1/2" TUBING
T47P 5/8" TUBING
W58P CLAMP, S21, N11, #10-24 x 1/2" SCREW &SQ. NUT
DETAIL 2C TYPICAL 4 PLACES

Caution:

TAKE CARE TO AVOID ANY CONTACT WITH OVERHEAD POWERLINES WHEN RAISING, INSTALLING, OR REPAIRING YOUR ANTENNA, TOWER, OR ROTOR. DEATH WILL OCCUR!

Installing and rigging towers, masts and antennas require specialized skills and experience. Information supplied by MACO assumes that all products will be installed by personnel having these skills and have installed similar products before. No one should attempt to install towers or masts without these knowledgeable skills.

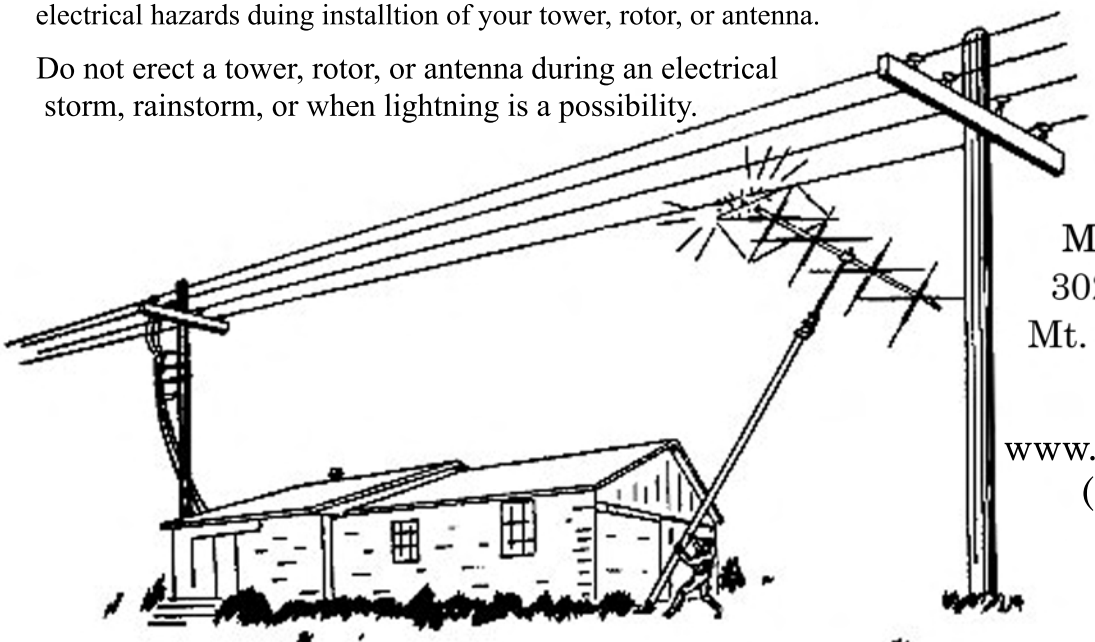
MACO assumes no liability if faulty or dangerous installation practices are used. There are available, trained and experienced personnel to assist in installation, maintenance, or dissassembly. Contact your local installer if consultation or assistance is required.

All tower and antenna installations should be throughly inspected at least twice a year by qualified, experienced, and trained personnel to insure proper performance and safety standards.

Electrical Warning

An additional warning precaution is given to be careful of surrounding high voltage power wires and other electrical hazards duing installtion of your tower, rotor, or antenna.

Do not erect a tower, rotor, or antenna during an electrical storm, rainstorm, or when lightning is a possibility.



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