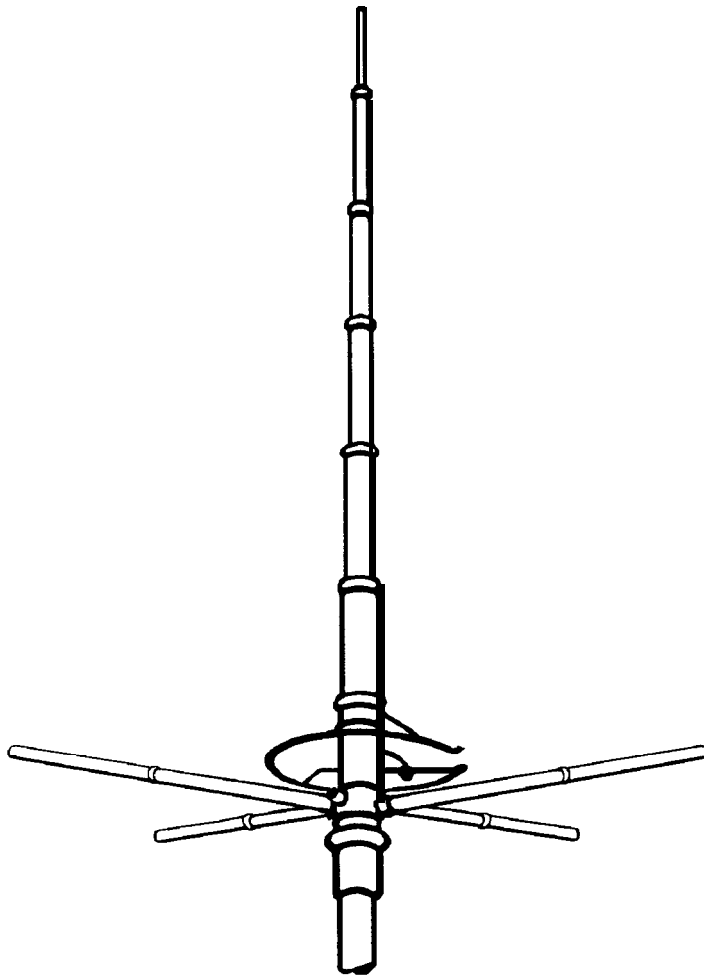


# ASSEMBLY INSTRUCTIONS



## 5/8 WAVE COMMERCIAL GROUND PLANE WITH RADIALS



V58

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*Maco Manufacturing Co. - Division of Majestic Communications, Inc.  
4091 Viscount - Memphis, Tennessee 38118 (901) 794-9494*

# MACO ALPHA V58

## PARTS LIST

NOTICE: ALL PARTS ARE MADE OF AIRCRAFT GRADE 6063 T-5 MATERIAL

<u>PART</u>	<u>QTY</u>	<u>O.D.</u>	<u>SIZE</u>	<u>LENGTH</u>	<u>DESCRIPTION</u>	<u>CHECKLIST</u>
T47P	4	5/8"	.047"	36"	Alum. Tubing slotted both ends	_____
T43P	1	7/8"	.047"	48"	Alum. Tubing slotted one end	_____
T18P	1	3/4"	.047"	48"	Alum. Tubing slotted one end	_____
T15P	1	5/8"	.047"	48"	Alum. Tubing slotted one end	_____
TO1	5	1/2"	.047"	72"	Alum. Tubing	_____
R03P	1				Cast Alum. Spider	_____
BA1P	1				Base Assembly	_____
R01P	2	3/8"	.035"	17-7/8"	Hoop Rings	_____

## HARDWARE BAG

P08P	1			5 1/2"	Bracket w/ SO239 connector w/ wire	_____
R02P	1		1/2x1/8"	7 3/4"	Alum. Strap	_____
C01	1		3/8"		Stainless Steel Hose Clamp	_____
W58	9		5/8"		Extruded Alum. Clamp	_____
w34	1		3/4"		Stainless Steel Hose Clamp	_____
W78	1		7/8"		Extruded Alum. Clamp	_____
C13P	1		1.845"		Clamp Ring	_____
W10P	2				Stainless Steel Hose Clamp	_____
s21	14		1	o-2-1 1/2"	Machine Screws	_____
s45	1		IO-24	1"	Machine Screw	_____
s24	2		5/16"	2"	Hex Bolts	_____
N11	15		IO-24	1"	Square Nuts	_____
NO1	2		5/16"		Hex Nuts	_____
N26	5		#10		Flat Washers	_____
N12	5		#10		Lockwashers	_____
PL2	5		.437"		Plastic Cap - Black	_____
NO2	1		5/16"		Lockwasher	_____
	1				Set of Instructions	_____

WHEN ORDERING REPLACEMENT PARTS, ALWAYS GIVE PART NUMBER AND DESCRIPTION.

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.

# 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 RO 1 P to bracket P08P (ref. Detail 1E) and the other end to strap R02P using IO-24 x 1/2" hardware S21, N26, N11, N12.

Position the aluminum clamp CO 1 on the hoop ring assembly approximately where shown (ref. Detail 1 F) and attach the wire as shown using # 1 O-24 hardware S 11, 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 CO 1 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, T15P, use a felt tip marker and ruler, and mark 6" from the unslotted end. Mark the TO 1 P 4" from one end. Now using the clamps and hardware as shown (ref. Detail 2A) slide the unslotted 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 objects close enough to the antenna to cause the SWR to be affected. For frequencies falling between those shown on the chart, it is suggested that interpolation be used to get the starting point for adjusting. Note: The bottom means the very bottom!

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.

MACO MANUFACTURING, 4091 VISCOUNTAVE., MEMPHIS, TN 38118

For parts or information call (901) 794-9494.

ASSEMBLY INSTRUCTIONS

(continued)

The C 13P clamp is round when received. It must be made egg shaped enough to allow the nut NO 1 to go between the clamp C13P and the BA1P base assembly.

The base section can be mounted two ways:

On a mast with an outside diameter of up to 1 3/8", first position clamp ring C13P on the base and install the 5/16 x 1" hex bolt and nut S24, NO 1 as shown. Turn the bolt down firmly onto the mast (ref. 2D).

On a mast with an inside diameter from 1 1/2" to 1 3/4", first position the clamp ring C13P with the 5/16 x 1" bolt and nut, S24, NO 1, as shown, over the base. Slide the base into your mast about 6" and tighten the bolt down onto the base.

ADJUSTING THE STANDING WAVE RATIO (SWR)

There are only two possible adjustments to change from those in the instructions. One is the position of the clamp CO1 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 covered.

The other 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.

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.

FREQUENCY TO LENGTH CHART for V58 26-33 Mhz Antenna

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

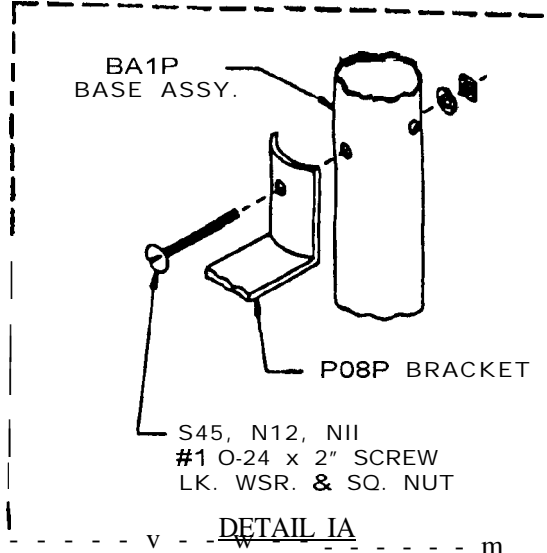
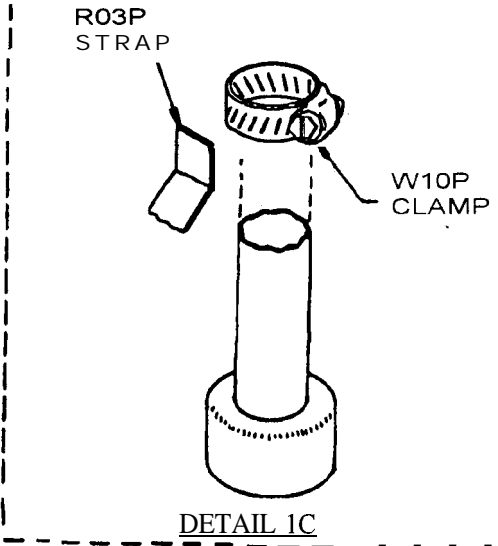
FREQ Mhz	OVERALL LENGTH
26.0	248"
27.0	240"
28.0	232 5/8"
29.0	225 3/4"
30.0	215 1/4"
31.0	209 1/8"
32.0	203 1/2"
33.0	198 1/4"

**NOTE:**

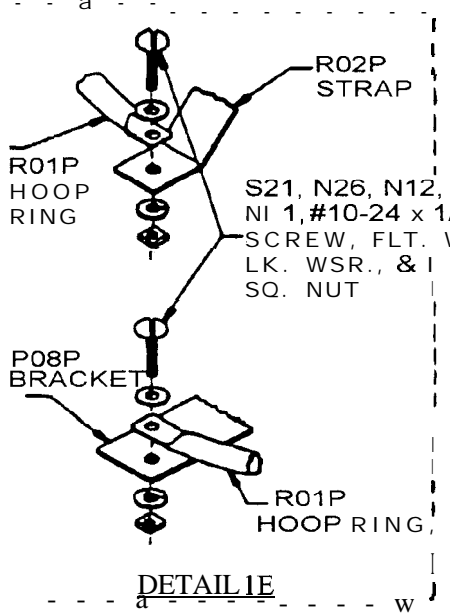
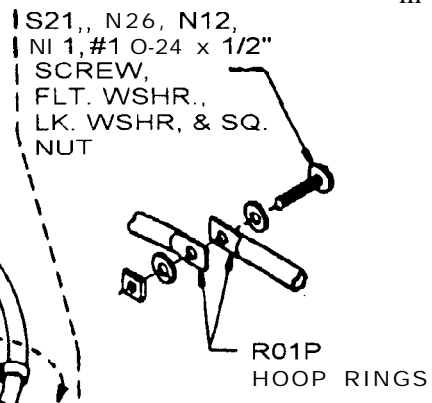
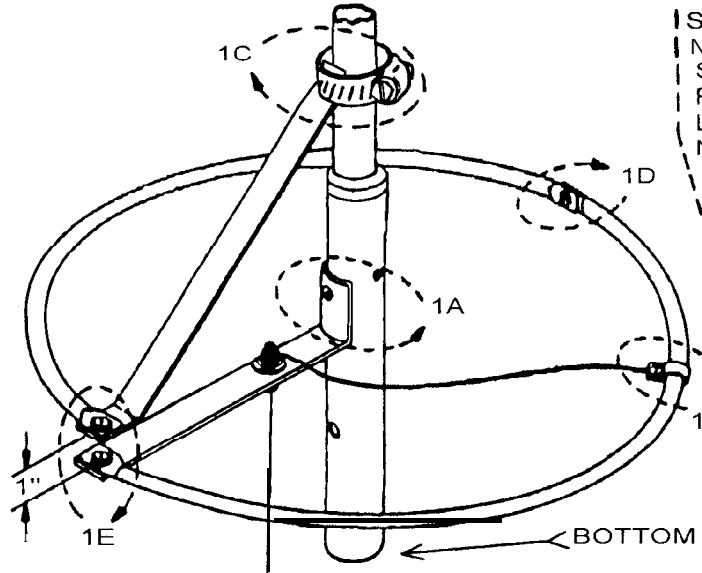
**These measurements are for the overall length of the antenna. This means the top is where the plastic cap goes and the bottom is below the hole for the mounting bracket C13P.**

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

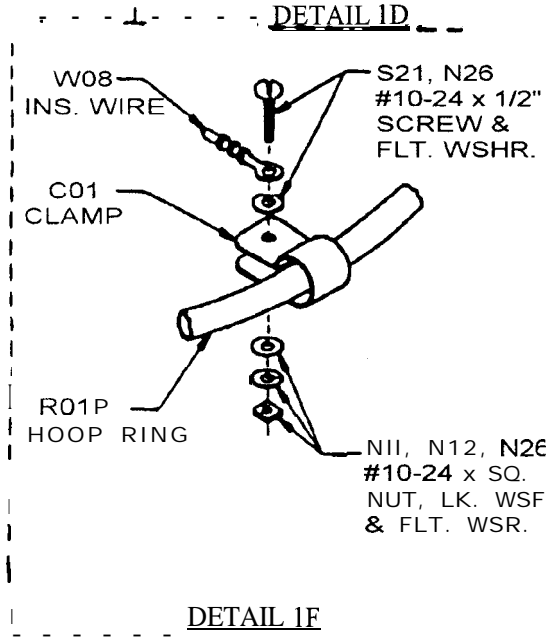
NOTE: To use at other frequencies 25-50 mhz, change the length.



BASE ASSEMBLY



NOTE: Wire is soldered to connector, SO239W



V5/8

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ALPHA V58

FIGURE 1

