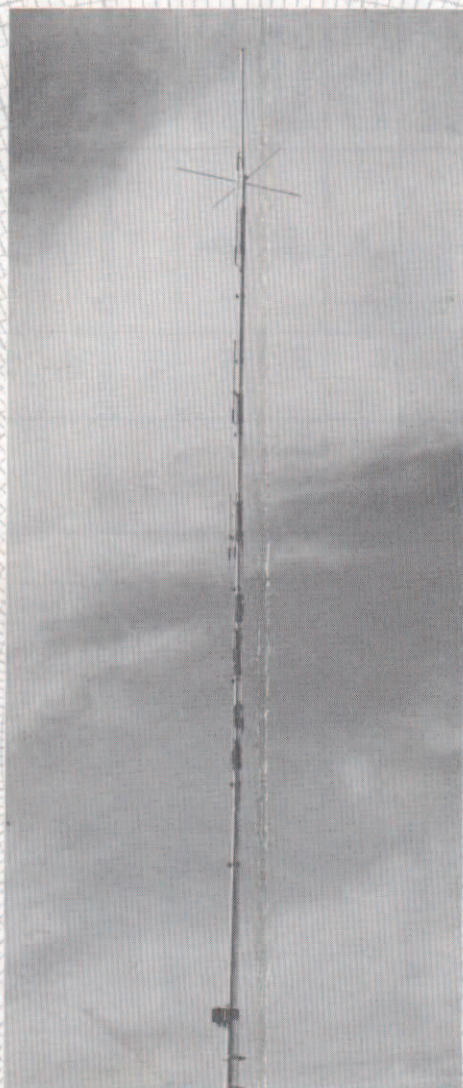


ASSEMBLY & INSTALLATION INSTRUCTIONS



AP8 POWERWAVE 8 BAND VERTICAL



cushcraft
CORPORATION

THE ANTENNA COMPANY

951341 (9/87)

FIGURE 2

Coaxial Feed Input Connector

AA

90

84

85

83

105

84

85

104

104

83







105

Radials

Coat with Silicone (116)

Coaxial Feeding

115

010231	231		Machine Screw 8-32 x 1 3/4" (4.4 cm)	2
010010	10		Lock Washer #8	2
010011	11		Hex Nut 8-32	2
190028	28		Aluminum Half Washer	2
190026	26		Formed Al Bracket 7/8" (2.2 cm) w/#8 Hole	2
XHR			Aluminum Rod 7/16" x 25" (.5 x 63.5cm)	2

LIMITED WARRANTY

CUSHCRAFT CORPORATION, P.O. BOX 4680, MANCHESTER, NEW HAMPSHIRE 03108, WARRANTS TO THE ORIGINAL CONSUMER PURCHASER FOR ONE YEAR FROM DATE OF PURCHASE THAT EACH CUSHCRAFT ANTENNA IS FREE OF DEFECTS IN MATERIAL OR WORKMANSHIP. IF, IN THE JUDGEMENT OF CUSHCRAFT, ANY SUCH ANTENNA IS DEFECTIVE, THEN CUSHCRAFT CORPORATION WILL, AT ITS OPTION, REPAIR OR REPLACE THE ANTENNA AT ITS EXPENSE WITHIN THIRTY DAYS OF THE DATE THE ANTENNA IS RETURNED (AT PURCHASER'S EXPENSE) TO CUSHCRAFT OR ONE OF ITS AUTHORIZED REPRESENTATIVES. THIS WARRANTY IS IN LIEU OF ALL OTHER EXPRESSED WARRANTIES. ANY IMPLIED WARRANTY IS LIMITED IN DURATION TO ONE YEAR. CUSHCRAFT CORPORATION SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES WHICH MAY RESULT FROM A DEFECT. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS OR EXCLUSIONS OR LIMITATIONS OF INCIDENTAL OR CONSEQUENTIAL DAMAGES. SO THE ABOVE LIMITATION AND EXCLUSION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE. THIS WARRANTY DOES NOT EXTEND TO ANY PRODUCTS WHICH HAVE BEEN SUBJECT TO MISUSE, NEGLIGENCE, ACCIDENT OR IMPROPER INSTALLATION. ANY REPAIRS OR ALTERATIONS OUTSIDE OF THE CUSHCRAFT FACTORY WILL NULLIFY THIS WARRANTY.

SPECIFICATIONS

Frequency Range, Meters	80, 40, 30, 20, 17, 15, 12, 10
SWR	Less than 2:1
	80 > 70 kHz
	40 > 150KHz
Traps	Powerwave Circuit
Height, ft (m)	< 26 (7.92)
Mount, in (cm)	Sleeve, 1.75 (4.5)
Wind Survivability, mph (kph)	80 (130) plus
Radiator, in (cm)	1.375 (3.5) 6063-T832 alum.
Connector	SO239



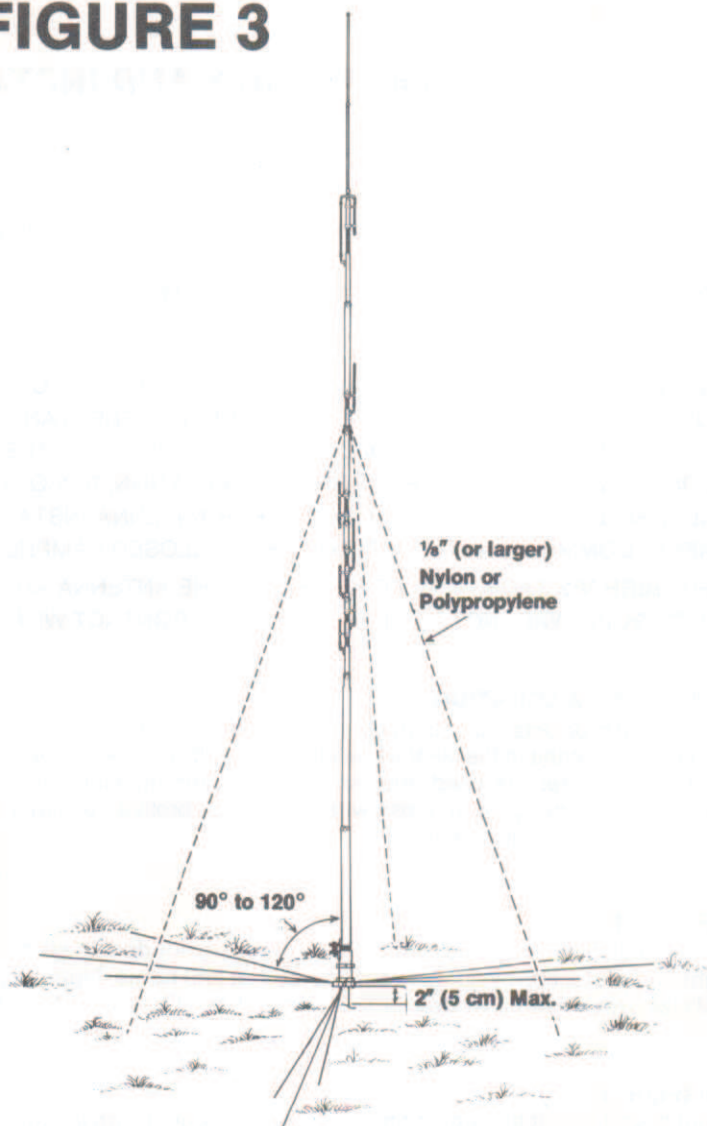
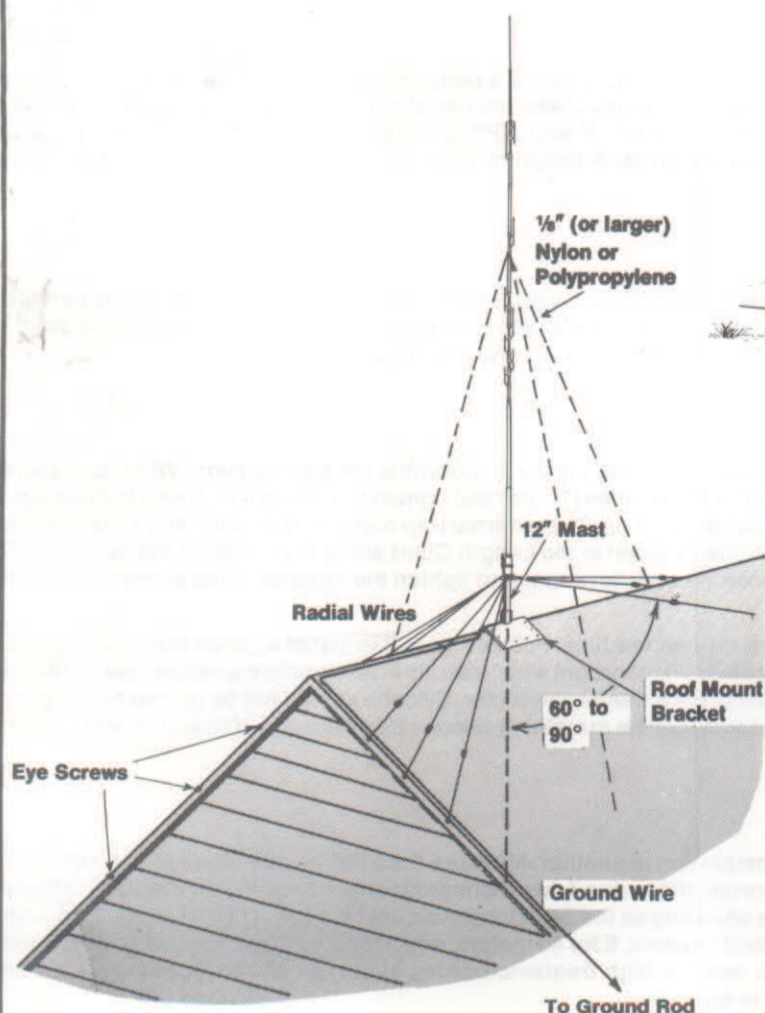
THE ANTENNA COMPANY
48 Perimeter Road, P.O. Box 4680
Manchester, NH 03108

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

GROUND MOUNTED RADIAL LENGTH CHART

FREQUENCY MHz	LENGTH Ft-In (m)	FREQUENCY MHz	LENGTH Ft-In (m)
3.500	56-2 (17.12)	18.118	10-10 (3.3)
3.750	52-5 (15.98)	21.000	9-5 (2.87)
4.000	49-2 (14.99)	21.225	9-4 (2.84)
7.000	28-1 (8.56)	21.450	9-2 (2.79)
7.150	27-6 (8.38)	29.940	7-10 (2.39)
7.300	26-11 (8.2)	28.000	7-0 (2.13)
10.125	19-5 (5.92)	28.500	6-11 (2.11)
14.000	14-0 (4.27)	29.000	6-10 (2.08)
14.175	13-10 (4.22)	29.500	6-8 (2.03)
14.350	13-8 (4.16)		

FIGURE 3



ROOF MOUNTED RADIAL LENGTH CHART

FREQUENCY MHz	LENGTH Ft-In (m)	FREQUENCY MHz	LENGTH Ft-In (m)
3.500	75-4 (22.96)	18.118	14-6 (4.42)
3.750	70-3 (21.41)	21.000	13-0 (3.96)
4.000	65-11 (20.09)	21.225	12-10 (3.91)
7.000	40-4 (12.29)	21.450	12-8 (3.86)
7.150	39-6 (12.04)	24.940	11-2 (3.4)
7.300	38-8 (11.79)	28.000	9-3 (2.82)
10.125	26-4 (8.03)	28.500	9-2 (2.79)
14.000	18-11 (5.77)	29.000	8-11 (2.72)
14.175	18-8 (5.69)	29.500	8-9 (2.67)
14.350	18-5 (5.61)		

The Cushcraft APR18 Radial Kit is designed for use with the AP8. If you build your own radial system, cut your radials using the appropriate radial length chart. You should use at least 3 radials per band. The more you have, the better your antenna will work. In many instances, ground mounted installations will only require radials for 80 and 40 meters in order to work on all bands. If your radials are too long for the area available, do not cut them. Form them as necessary to fit the space available.

AP8 ASSEMBLY AND INSTALLATION INSTRUCTIONS

Your Cushcraft AP8 is designed to give trouble-free service. The antenna will perform as specified if the instructions are followed and care is used in assembly.

We have included pictorials to insure that non-English speaking users can easily assemble the AP8.

WARNING: THIS ANTENNA IS AN ELECTRICAL CONDUCTOR, CONTACT WITH POWER LINES CAN RESULT IN DEATH, OR SERIOUS INJURY. DO NOT INSTALL THIS ANTENNA WHERE THERE IS ANY POSSIBILITY OF CONTACT WITH OR HIGH VOLTAGE ARC-OVER FROM POWER CABLES OR SERVICE DROPS TO BUILDINGS. THE ANTENNA, SUPPORTING MAST AND/OR TOWER MUST NOT BE CLOSE TO ANY POWER LINES DURING INSTALLATION, REMOVAL OR IN THE EVENT PART OF THE SYSTEM SHOULD ACCIDENTALLY FALL. FOLLOW THE GUIDELINES FOR ANTENNA INSTALLATIONS RECOMMENDED BY THE U.S. CONSUMER PRODUCT SAFETY COMMISSION AND LISTED IN THE ENCLOSED PAMPHLET.

VERY HIGH VOLTAGES ARE DEVELOPED IN THE ANTENNA AND RADIAL SYSTEM DURING USE. INSTALL THE ANTENNA SUCH THAT PEOPLE WILL NOT BE ABLE TO COME IN CONTACT WITH IT WHILE YOU ARE TRANSMITTING.

SELECTING A LOCATION

Surrounding objects such as trees, powerlines, etc. will have an affect on the antenna's performance. To minimize the effect of these, mount the antenna in the clear as much as possible. For roof mounting or windy areas, the use of non-metal guy wires is recommended. If metal guy wires are used, they should be broken up with stain insulators. If your AP8 is mounted within 25 feet of any guy wires supporting a nearby tower, those wires should be broken up with insulators. A length of eight feet (2.4 meters) or less is sufficient for the length between insulators.

GROUNDING

In all installations, the base of the AP8 should be grounded. We recommend the Cushcraft LAC series of lightning arresters as part of the lightning protection system of your equipment and home. Figure 3 gives the dimensions for either roof or ground mounted radials. If a full size ground radial system is not practical, the Cushcraft APR13 radial kit would be a good alternative.

ASSEMBLY

Identify and layout the tubing and traps in the order shown in Figure 1. Using Figure 2, assemble the base section. When completed, place clamp 412 over the top of the base tube. Insert tubing section AB 4 inches (10 cm) and tighten the clamp 412. Using the same procedure, assemble the rest of the radiator. The arrows on the traps all point up. The external trap capacitors should alternate on the left and right sides of the antenna. Use care in making the measurements given in the Length Chart along the length of the antenna. (For Novice band coverage, select the center settings.) Place the antenna over its mount and tighten the mounting ring screws. Attach the ground radials to the bracket as shown in Figures 2 and 3.

We have provided a weatherproof boot for the PL259 connector on your feedline. Follow Figure 2 to install it. Insert the antenna end of your coax through the small end of your connector boot. Many cables are very tight which results in an excellent weather seal. Attach the PL259 to the end of your coax. Spread the silicone on the threads of the antenna connector. Silicone should not be placed on the center pin. Screw the PL259 connector onto the antenna input connector. Apply the remaining silicone to the outside of the connector. Slip the boot over the connector.

FINAL ADJUSTMENT

These final adjustments compensate for variations from one installation to another. Measure the SWR on 10 meters. If not centered in the band or too low for the desired operating position, then shorten dimension A two inches and check the SWR. If the SWR is higher, make the same adjustment in the opposite direction. Continue adjusting as the SWR improves until the lowest SWR is reached. Using the same technique, adjust B for 15 meters, C for 20 meters, D for 30 meters, E for 40 meters, and F for 80 meters. Twelve and seventeen meters will not have to be adjusted. NOTE: Changes that you make in high frequencies may effect the lower frequencies. It is only necessary to adjust the antenna on bands where you intend to operate.