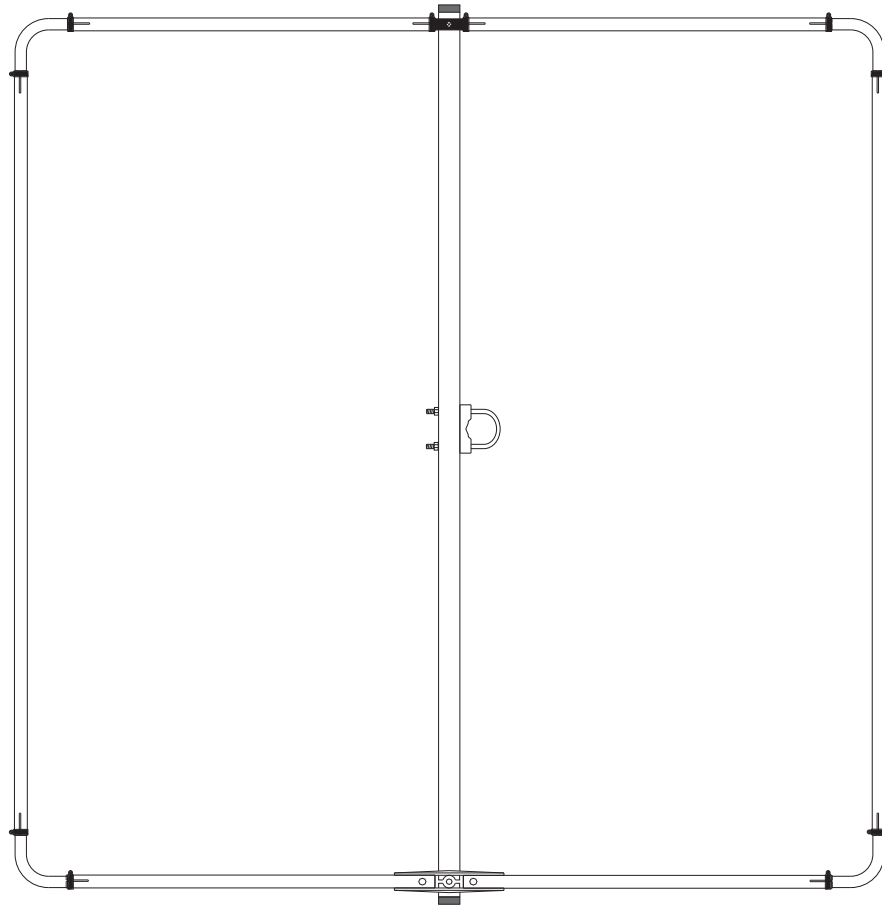


# ASQ-6

## Six Meter Squalo

### INSTRUCTION MANUAL



CAUTION: Read All Instructions Before Operating Equipment

**Cushcraft**  
Amateur Radio Antennas

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Starkville, MS 39759 USA  
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## **GENERAL DESCRIPTION**

The Cushcraft ASQ6 is a horizontally polarized antenna for fixed and mobile 6-Meter operation on SSB, CW, and legacy AM. The omni-directional pattern is also well suited for DX beacons and spotting.

## **Choosing a location**

For best performance on receiving and transmitting, mount the antenna in a clear location above or away from buildings, towers, feedlines, utility wires, and other antennas. While your own ingenuity and particular circumstances will determine the final mounting method, we'll pass along a few ideas for both permanent installation and portable operation.

**Never** mount this antenna in a location that will permit unsuspecting people to come in contact with the antenna elements.

**Never** mount this antenna where a mechanical failure might allow the antenna to contact power lines or other utility wires.

**Always** ground the feedline at the point where it enters a building to a good earth ground for lightning protection.

**WARNING** **Always mount this antenna so that it is out of reach of adults and children. The elements can cause injury and/or severe RF burns.**

# **WARNING**

***WHEN INSTALLING YOUR SYSTEM, TAKE EXTREME CARE TO AVOID ANY ACCIDENTAL CONTACT WITH POWER LINES OR OVERHEAD OBSTRUCTIONS. FAILURE TO EXERCISE THIS CARE COULD RESULT IN SERIOUS OR FATAL INJURY***

## Permanent Installation

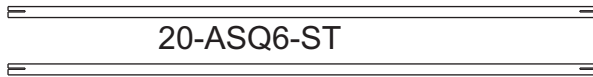
The ideal installation is a rigid pole or roof mount that puts the antenna completely in the clear. If the ideal installation is not possible, choose the best compromise. TV mast, heavy-duty rigid electrical conduit, and steel water pipes are suitable mast materials. The use of soft or thin wall mast is not recommended.

## Portable Operation

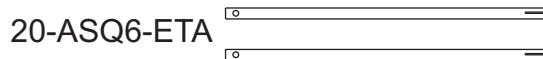
The ASQ6 may be used for portable or mobile operation. The light weight and small size allows it to be installed almost anywhere. Keep in mind that metal objects close to the antenna will affect tuning and radiation patterns.

## Antenna Elements

The ASQ6 uses a minimum amount of components. Listed below are the elements used to assemble the antenna.



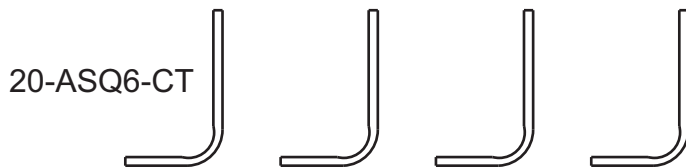
Long tubes (2 pcs)



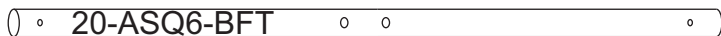
Short tubes with holes



Short tubes without holes



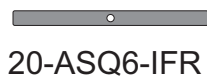
Corner tubes (4 pcs)



Boom tube



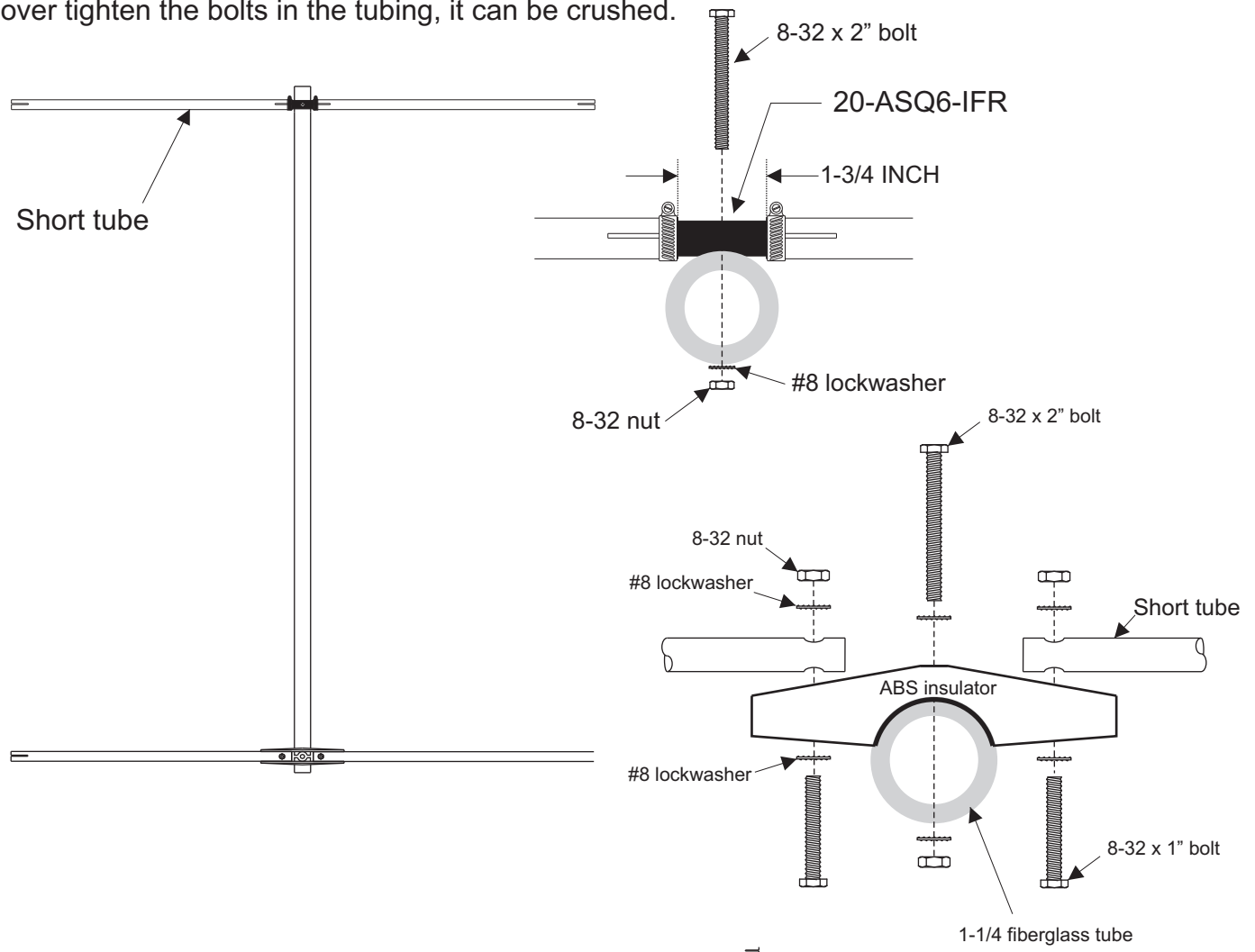
Balun



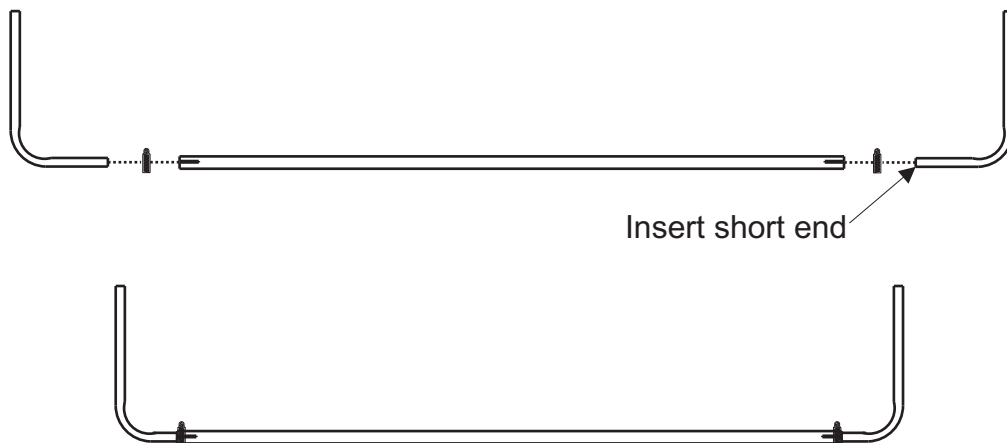
Insulators

# Antenna Assembly

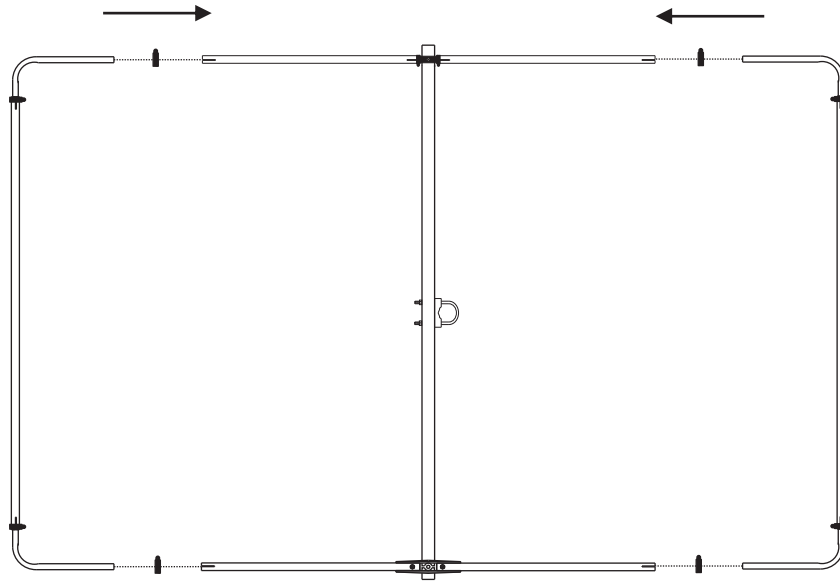
Assemble the antenna on a flat level surface. Avoid assembly over grass as you may drop some of the parts and never find them again. Attach the short tubes to the boom using the hardware in the figure below. Snug all the hardware as assembled. Do not over tighten the bolts in the tubing, it can be crushed.



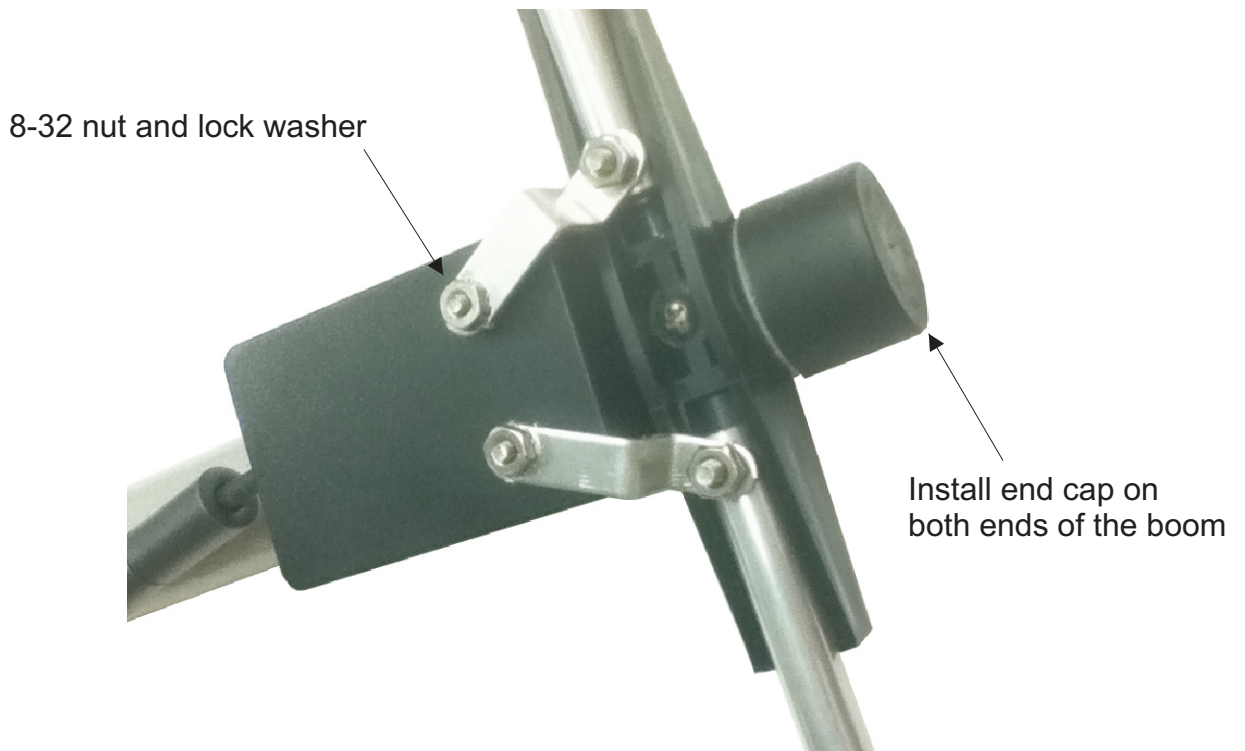
Insert the short ends of the corner tubes into the long tubes. Slide a hose clamp over the tube but do not tighten at this time.



Slide a hose clamp over each short tube. Insert the side assemblies into the main section. Adjust the length of the side section so that it will slide into the short tubes easily. Snug the hose clamps so that the tubing does not move. Install the U-bolt into the boom using the hardware included



Attach the balun assembly to either of the insulators, it does not matter. Remove the nuts holding the tubes and use them to secure the brackets as shown. Use cable ties or electrical tape to secure the coax to the boom



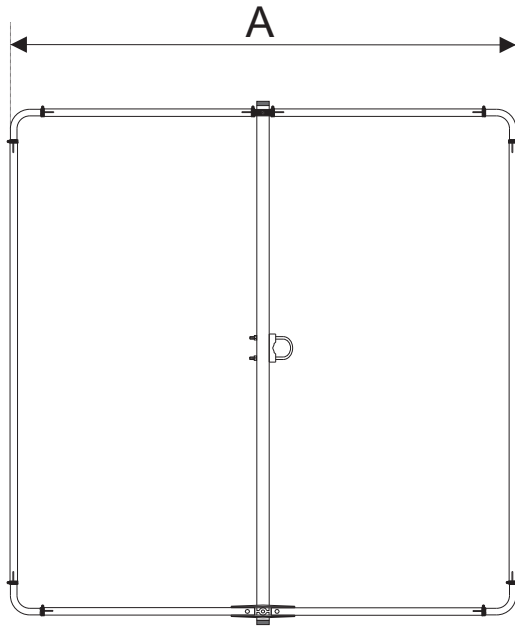
## SWR Check

Resonance can be checked with an MFJ-256 or MFJ-269. Alternately a transceiver and SWR meter can be used. Resonance may be changed by adjusting the diameter of the loop. If the resonance point is too low, make the loop smaller (Decrease "A"). If the resonance point is too high, make the loop larger (Increase "A").

Dimension "A" will determine the final operating frequency of the antenna.

32 inches will tune the antenna approximately to the calling freq on 50.125 MHz.

Remember that nearby objects including yourself can affect the tuning of the antenna.



## ANTENNA MOUNTING

The ASQ6 is very light and should easily mount on any portable or permanent mast. No matter how secure you think the antenna is, NEVER mount it in a location where it could fall into or come in contact with power lines.

## Grounding Considerations

Although this antenna is designed to operate efficiently without the requirement of an earth ground, safety grounding must still be provided to protect equipment, property and persons from the hazards of lightning strikes and other weather related electrical discharges. In addition, the coaxial cable feeding the antenna should have the shield grounded to eliminate the risk of any indoor equipment failure allowing hazardous voltages that could create a shock hazard. Adequate protection can be accomplished by grounding the shield of the coax to a good earth ground where it enters the building, or directly burying the cable in the earth for several feet before it enters the building. For maximum lightning protection, the coaxial cable should be totally disconnected from the station during threatening weather conditions.



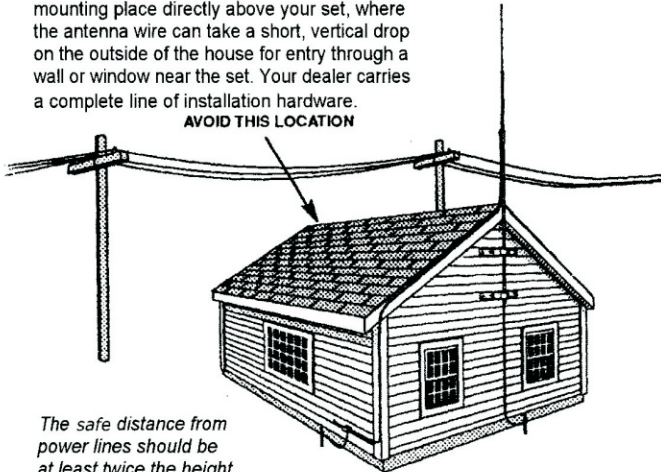
## SITE SELECTION

Before attempting to install your antenna, think where you can best place your antenna for **safety** and performance.

To determine a safe distance from wires, power lines and trees:

1. Measure the height of your antenna.
2. Add this length to the length of your tower or mast, and then
3. Double this total for the minimum recommended safe distance.

If you are unable to maintain this safe distance, **STOP! GET PROFESSIONAL HELP.** Many antennas are supported by pipe masts attached to the chimney, roof or side of the house. Generally, the higher the antenna is above the ground, the better it performs. Good practice is to install your antenna about 5 to 10 feet above the roof line and away from power lines and obstructions. Remember that FCC limits your antenna height to 60 feet. If possible, find a mounting place directly above your set, where the antenna wire can take a short, vertical drop on the outside of the house for entry through a wall or window near the set. Your dealer carries a complete line of installation hardware.

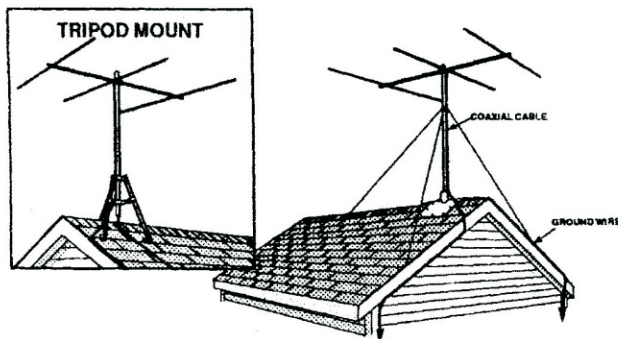


The safe distance from power lines should be at least twice the height of the antenna and mast combined.

## CHOOSE A PROPER SUPPORT AND MOUNTING METHOD

However you decide to mount and support your antenna always make sure that safety is your first concern. Some of the more common installation methods are illustrated below.

### ROOF MOUNTED



### ROOF MOUNTING

The swivel feature of "universal" type mounting brackets makes a convenient antenna mount for flat or peaked roofs. One clamp type bracket is used with 3 or 4 guy wires equally spaced around the mast and anchored to the roof or eaves by eyebolts. Apply roofing compound around the base of the bracket, screws and eyebolts for moisture sealing.

## TELESCOPING MAST

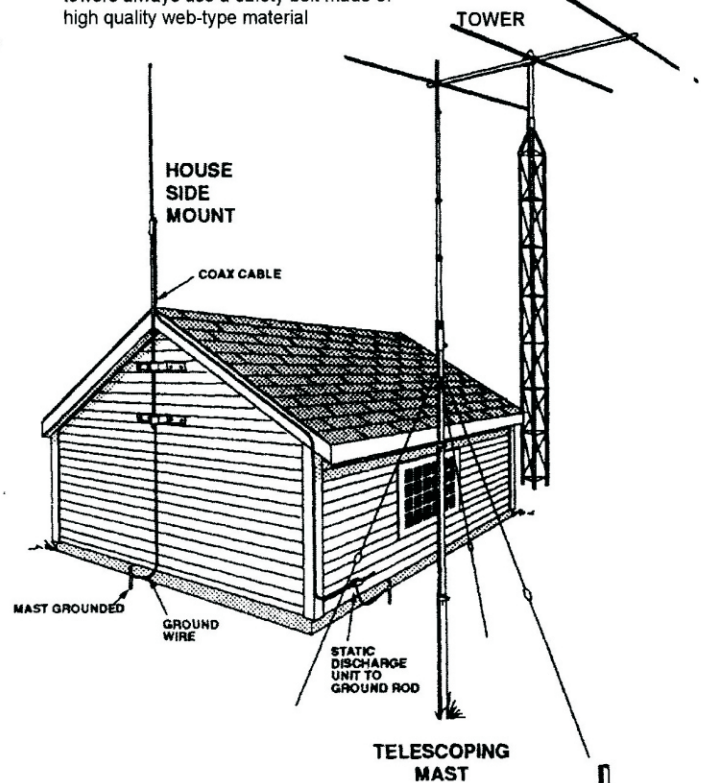
Guy wires should be equally spaced in at least three directions. Use at least three guy wires for each 10 foot section of mast.

## SIDE OF HOUSE MOUNTING

The safe distance from power lines is at least twice the height of antenna and mast combined. Where roof overhang is not excessive, the side of the house provides a convenient mounting. Position the brackets over a stud if possible, one above the other, and space two or three feet apart. For metal siding, first mark mounting holes, then drill pilot holes through the siding to accept mounting screws.

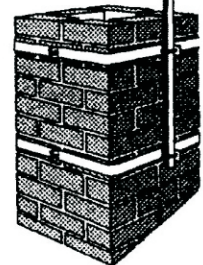
## TOWER

Tower safety is paramount to a good installation and requires that you take location, tree growth, soil depth and proximity to buildings into consideration. Tower foundations must be securely based on a solid concrete/tower mounting plate. An alternative is to sink a 4-6 foot section of tower into a concrete base for an extremely rugged mount. Proper guying is essential to a safe weather-resistant installation that must handle severe wind loading and is best accomplished with preformed guy grips, torque brackets and turnbuckles. When working on towers always use a safety belt made of high quality web-type material



## CHIMNEY MOUNTING

The chimney is often an easy and convenient mounting place. But the chimney must be strong enough to support the antenna in high winds. Do not use a chimney that has loose bricks or mortar. A good chimney mount makes use of a 5 or 10 foot, 1-1 1/4" diameter steel mast, and a heavy duty two strap clamp-type bracket. Install the upper bracket just below the top course of bricks, and the lower bracket two or three feet below the upper bracket. For maximum strength, space the brackets as far apart as possible.



## PARTS LIST

1	20-ASQ6-ETA	Element tube A 7/16 x .028 x 11 with hole -----	2
2	20-ASQ6-ST	Side tube 7/16 x .028 x 22 -----	2
3	20-ASQ6-BFT	Boom tube 1-1/4 x 27-1/2 FG tube -----	1
4	20-ASQ6-CT	Corner tube 3/8 90 degrees -----	4
5	80-ASQ6-MB	Balun Box -----	1
6	20-ASQ6-ETB	Element tube B 7/16 x .028 x 11 with slots -----	2
7	465420	Insulator, feed ABS -----	1
8	20-ASQ6-IFR	Insulator, End FG -----	1

### 17-ASQ6-HK

9	030407	Hose Clamp #4 -----	10
10	010011	8-32 Hex Nut -----	6
11	758-9199	U-bolt Set 1-3/4 -----	1
12	010120	8-32 x 2" screw -----	2
13	010229	8-32 x 1" screw -----	2
14	011941	Split washer #8 -----	6
15	100432	Barrel Connector -----	1
16	050013	Cap, tube 1-1/4 -----	2
17	735-1006	Bracket, Balun -----	2

### **LIMITED WARRANTY**

Cushcraft Amateur Radio Antennas, 308 Industrial Park Rd., Starkville, MS 39759, warrants to the original consumer purchaser for one year from date of purchase that each Cushcraft antenna is free of defects in materials or workmanship. If, in the judgment of Cushcraft, any such antenna is defective, then Cushcraft Amateur Radio Antennas will, at its option, repair or replace the antenna at its expense within thirty days of the date the antenna is returned (at purchasers 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 Amateur Radio Antennas shall not be liable for any incidental or consequential damages that 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 that vary from state to state. This warranty does not extend to any products that have been subject to misuse, neglect, accident or improper installation. Any repairs or alterations outside of the Cushcraft factory will nullify this warranty.