



## MAX OPTIMIZER

HAM ♦ CB ♦ COMMERCIAL  
FIBERGLASS OMNIDIRECTIONAL BASE STATION ANTENNA

### CB/Ham Radio Base Station Antenna

Your Solarcon CB/Ham Base Station Antenna comes in three easy-to-assemble sections and covers far above and below traditional CB channels. You can also use your antenna for international, commercial and 10-meter amateur radio operation with up to 2000 watts. Twin ring tuning makes it easy to tune the input to the antenna for the optimum standing wave ratio (SWR) over a range of frequencies. The antenna is designed as a  $\frac{5}{8}$  wave end fed variable mutual transductance tuned antenna. The Optimizer section allows you to maximize performance in either the 11 meter CB band or the 10 meter band.

### BEFORE YOU BEGIN

Before you begin installation, read this manual and the separate Consumer Product Safety Commission information sheet. For your safety and convenience, plan each step of the installation in advance.

**WARNING:** When you install an outdoor antenna, use extreme caution. If the antenna starts to fall, let it go! It could contact overhead power lines. If the antenna touches the power line, contact with the antenna, mast, cable or guy wires can cause electrocution and death. Call the power company to remove the antenna. Do not attempt to remove it yourself!

**SOLARCON, INC.**

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## ASSEMBLING THE ANTENNA

We recommend you assemble the antenna on the ground in a flat, open area. Follow these steps to assemble the antenna using the supplied hardware.

1. Determine if you are going to use section (O) optimizer.
  - a. If you want to optimize your antenna for 11 Meter CD band use section (O)
  - b. If you want to optimize your antenna for 10 Meter band do not use section (O)
2. If using section (O) assemble antenna in order using parts  
(B) Top Section, (A)  $\frac{3}{8}$ " Lock Washer, (O) Optimizer Section, (A)  $\frac{3}{8}$ " Lock Washer, (C) Mid Section, (D)  $\frac{1}{2}$ " Lock Washer, (E) Bottom Section
3. If NOT using section (O) assemble antenna in order using parts  
(B) Top Section, (A)  $\frac{3}{8}$ " Lock Washer, (C) Mid Section, (D)  $\frac{1}{2}$ " Lock Washer, (E) Bottom Section

## MOUNTING THE ANTENNA

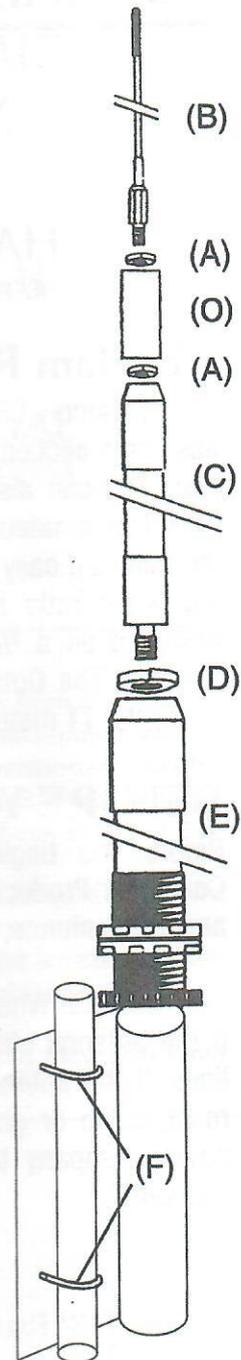
Using the supplied hardware, you can easily mount your antenna to a mast (not supplied), a building's vent pipe or other stationary object.

**Note:** For the best performance, mount your antenna at least 9 feet above the roof of the nearest building and 18 feet above or away from any metal object or structure.

1. Place the supplied U-bolts (F) through the holds in the bracket at the bottom section of the antenna.
2. Slide a lock washer over the end of each U-bolt.
3. To fasten the U-bolts in place, tighten the supplied hex nuts.
4. Slide antenna assembly over mast or other mounting location and tighten nuts on U-bolts securely.

### Caution:

- Do not use caulk or silicone sealant around any part of your antenna, otherwise moisture might not drain properly from around the antenna. This could damage the antenna or cause it to work improperly.



## TUNING THE ANTENNA

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Follow these steps to prepare your antenna and tune it with an SWR meter (not supplied) for use with radio equipment.

**Note:** Your antenna is pretuned to the middle of the CB band (27.205 MHz) for the lowest SWR (standing wave ratio) for use with a CB. No tuning is necessary to use your antenna with a CB.

1. Using an SWR meter, check the SWR at the top and bottom of the band.

### Notes:

- If you are using a watt meter, the meter should read full output power at the transmitter, and (after calibration) in the SWR position, SWR should be low (preferably 2:1 or less).
  - The best place to check SWR is at the antenna's coaxial connection. You can also check SWR at the transmitter's coaxial connection.
2. If the SWR is higher at the top of the band than it is at the bottom, turn both tuning rings (A)  $\frac{1}{4}$ - to  $\frac{1}{2}$ -turn counterclockwise to raise them.



## TROUBLESHOOTING

If you are unable to obtain an acceptable SWR reading from your antenna, follow these suggestions to see if you can eliminate the problem. If you are unable to eliminate the problem, contact your dealer for assistance.

- Be sure the SWR equipment is working properly — check the SWR meter's owner's manual for assistance in operating it.
- Be sure the antenna's grounding location is grounded properly.
- Be sure the antenna is installed at least 9 feet above the roof of the nearest building and 18 feet above or away from any other metal objects in the area.
- Check the coaxial cable and all of its connections. Be sure the cable is not pinched, shorted, broken or kinked.
- Be sure any excess coaxial cable is not coiled, causing excess SWR.
- Check the equipment installation sequence, and be sure the amplifier is not installed with INPUT and OUTPUT connections reversed.
- Be sure that no water is standing around the base of the antenna and that no caulk or silicone sealant has been used around the bottom of the antenna.

## TIPS FOR ELIMINATING RFI

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Your transceiver and antenna system might cause TV or radio frequency interference (RFI) even when it is operating properly. To determine whether your system is causing the interference, turn off the transceiver connected to the antenna. If the interference goes away, your system is causing it. Try one or more of the following suggestions to eliminate the interference.

- Be sure the mast or mounting location is grounded properly.
- Purchase a high quality, low pass filter
- Check the transceiver to be sure it is operating properly.

If you are unable to eliminate the interference, contact your dealer for assistance.

## **WARNING!**

INSTALLATION OF THIS PRODUCT  
NEAR POWER LINES IS DANGEROUS.  
FOR YOUR SAFETY, FOLLOW ALL  
INSTALLATION DIRECTIONS.

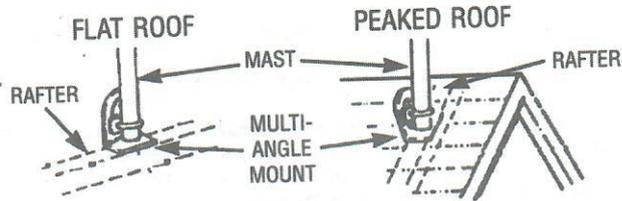
## TIPS ON HOW TO SAFELY INSTALL YOUR ANTENNA

IN ACCORDANCE WITH  
THE RECOMMENDATIONS  
OF THE  
U.S. CONSUMER PRODUCT  
SAFETY COMMISSION.

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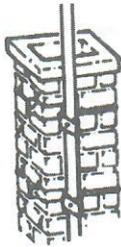
THESE SAFETY RECOMMENDATIONS  
ARE FOR USE  
WITH CITIZENS BAND  
BASE STATION ANTENNAS.



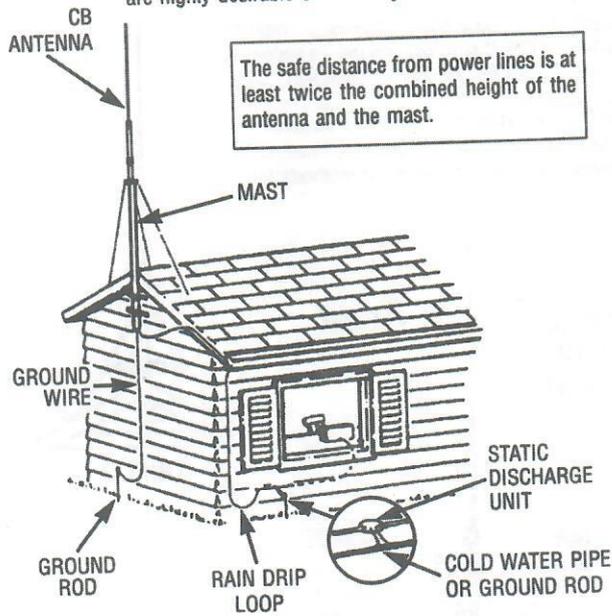


THE SAFE DISTANCE FROM POWER LINES IS AT LEAST TWICE THE COMBINED HEIGHT OF THE ANTENNA AND MAST.

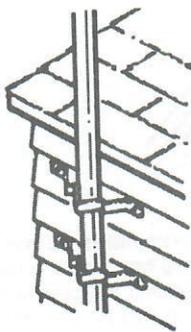
**CHIMNEY MOUNTING METHOD**



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 includes a 5- or 10-foot 1 1/4 inch 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. **NOTE:** Guy wires are highly desirable on chimney mounts.



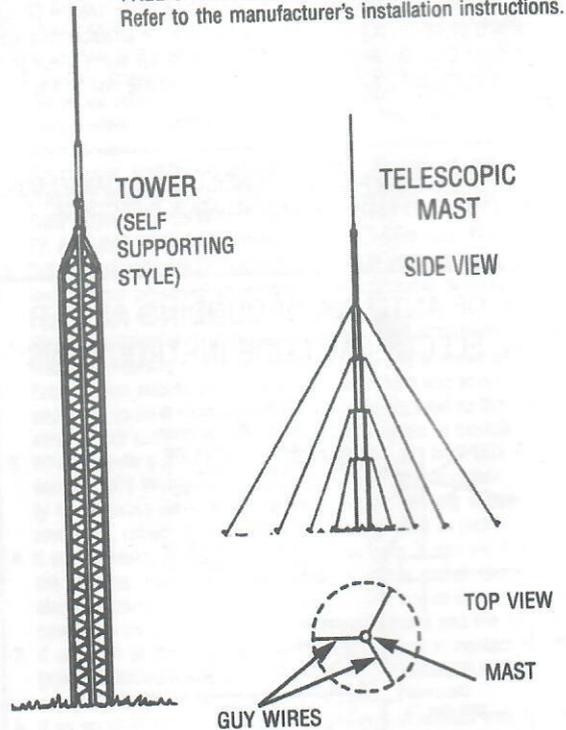
The safe distance from power lines is at least twice the combined height of the antenna and the mast.



**SIDE-OF-HOUSE MOUNTING METHOD**

Where roof overhang is not excessive, the side of the house provides a convenient mounting location. Position the brackets over a stud if possible, one above the other, and space them two or three feet apart. For metal siding, first mark mounting holes, then drill pilot holes through the siding to accept mounting screws. (CAREFUL! There are wires in that wall!)

THESE MOUNTING STRUCTURES CAN BE FREE STANDING OR ALONG SIDE OF A BUILDING. Refer to the manufacturer's installation instructions.



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

**WARNING: DO NOT INSTALL THE ANTENNA NEAR POWER LINES. FOR YOUR SAFETY, FOLLOW ALL INSTALLATION INSTRUCTIONS. CONTACT BETWEEN THIS ANTENNA AND A POWER LINE IS DANGEROUS AND MUST BE AVOIDED.**

**WARNING: UNDER SOME CONDITIONS, THIS ANTENNA MAY NOT PREVENT ELECTROCUTION. USERS SHOULD KEEP THIS ANTENNA AWAY FROM ANY OVERHEAD ELECTRIC POWER LINES. IF THE ANTENNA CONTACTS A POWER LINE, ANY INITIAL PROTECTION COULD FAIL AT ANY TIME. IF THE ANTENNA NEARS ANY OVERHEAD POWER LINES, IMMEDIATELY LET GO, STAY AWAY AND CALL YOUR UTILITY COMPANY.**

## PRODUCT RETURN PROCEDURE

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If your MAX Optimizer Antenna fails to perform properly, please return it to us so that we can examine, repair or replace it if necessary. Please send this return information sheet with the antenna to the factory at the address set out below. If we do not have complete and accurate information about you, including a valid address and telephone number, we cannot resolve your problem to your satisfaction. Also, if we do not receive the antenna from you, we will not be able to properly analyze and correct the problem.

Name: \_\_\_\_\_

Street address: \_\_\_\_\_

City: \_\_\_\_\_

State: \_\_\_\_\_ Zip: \_\_\_\_\_

Daytime phone ( \_\_\_\_\_ ) \_\_\_\_\_ - \_\_\_\_\_

Describe the problem: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Date of purchase: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

Dealer: \_\_\_\_\_

Dealer's city & state: \_\_\_\_\_ , \_\_\_\_\_

Please attach a copy of your sales receipt if available and ship (freight prepaid – no C.O.D.s) via U.P.S. or parcel post to:

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**INSIST ON THE ORIGINAL,  
PATENTED, TUNABLE**

**MAX OPTIMIZER**

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FIBERGLASS OMNIDIRECTIONAL BASE STATION ANTENNA

**MADE IN THE U.S.A.**

**Solarcon, Inc. Limited Warranty**

This product is warranted against defects for 90 days from date of purchase from authorized dealers. Within this period, we will repair it without charge for parts or labor. This warranty does not cover transportation costs, nor does it cover a product subjected to misuse or accidental damage. (See product return procedure printed on the inside back cover of this manual.)

EXCEPT AS PROVIDED HEREIN, SOLARCON, INC. MAKES NO EXPRESS WARRANTY AND ANY IMPLIED WARRANTIES ARE LIMITED IN DURATION OF THE WRITTEN LIMITED WARRANTIES CONTAINED HEREIN. Some states do not permit limitation or exclusion of implied warranties; therefore, the aforesaid limitation(s) or exclusion(s) may not apply to the purchaser.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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