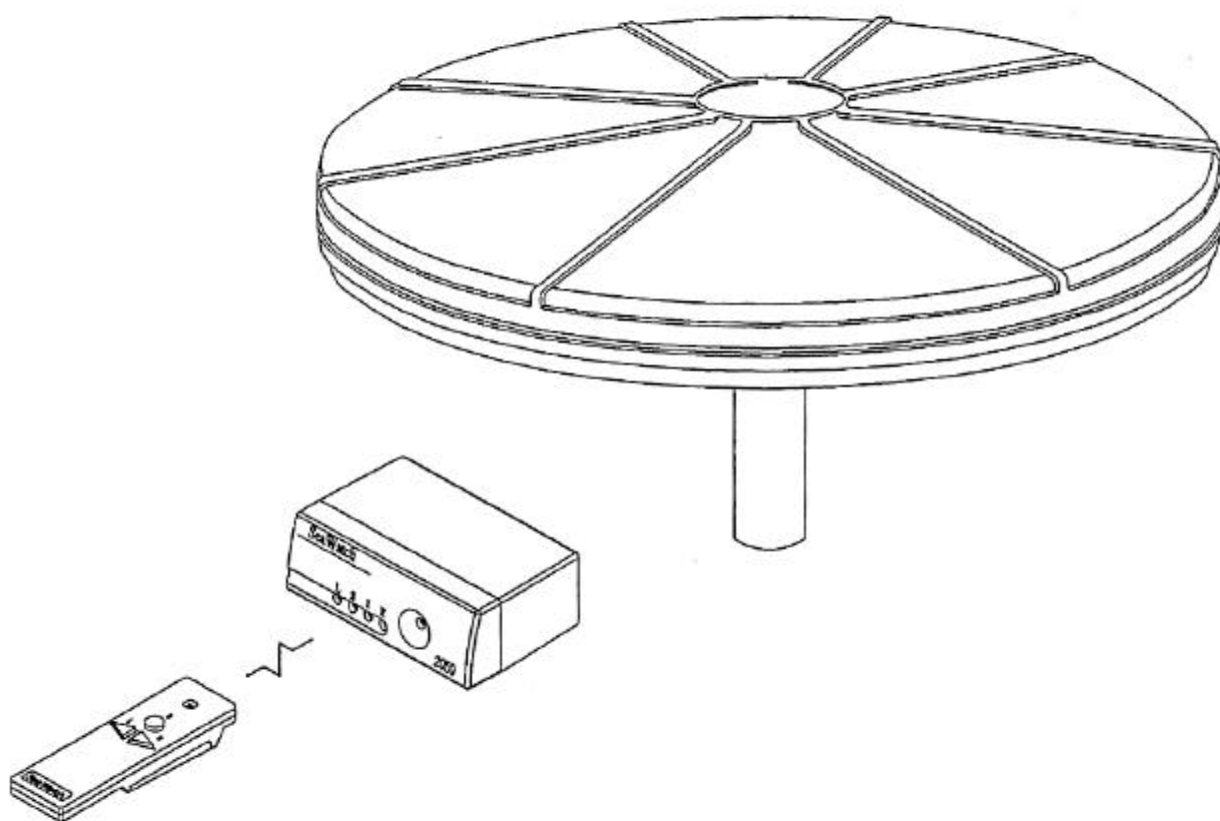


*Shakespeare*

SINCE 1897

**SeaWatch®**

OWNER'S MANUAL



AMPLIFIED UHF/VHF TV ANTENNA  
for Indoor-Outdoor Home & Recreational Use

**STYLE 2050 TV ANTENNA**

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## SAFETY INSTRUCTIONS

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1. Read Instructions ..... All safety and operating instructions should be read before the antenna is installed and operated.
2. Heed Warnings..... All warnings on the antenna and in the operating instructions should be adhered to.
3. Power Sources ..... The antenna should be connected to a power supply only of the type described in the operating instructions or as marked on the antenna.
4. Power and Protection..... Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the antenna.
5. Power Lines ..... An outdoor antenna should be located as far away from power lines as possible.
6. Nonuse Periods ..... The power cord of the antenna should be unplugged from the outlet when left unused for a long period of time.
7. Damage Requiring Service ..... The antenna should be serviced by qualified service personnel when:
  - a. The power supply cord has been cut or damaged; or
  - b. The antenna has been dropped, or the enclosure is damaged; or
  - c. The antenna does not appear to operate normally or exhibits a marked change in performance.
8. Antenna Grounding ..... Make sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges.
9. Servicing..... The user should not attempt to service the antenna beyond that described in the operating instructions. If you feel the antenna needs repair, please contact the Shakespeare Service Department at: 800-800-9008.

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## DESCRIPTION

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The SeaWatch 2050 is a complete TV antenna system designed for use in the marine environment. The system features a unidirectional antenna, special solid state amplifier, and an electrical rotating mechanism, all housed inside a patented weather-resistant plastic "radome". The remote control power supply is designed to operate from 12 VDC or 120 VAC.

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## ITEMS SUPPLIED

The following items are included in the SeaWatch 2050 system:

- (1) Radome unit with VHF and UHF antenna elements, amplifier, and rotator
- (1) Receiver unit
- (1) Remote control transmitter (3 "AAA" batteries not included)
- (1) 12 VDC wall mounting adapter
- (1) 30' combination coaxial / 3-wire rotator cable
- (1) Mounting hardware
- (1) Mast mount

**CAUTION:**  
DO NOT PLUG POWER SUPPLY INTO A 120-VOLT OUTLET UNTIL ALL ELECTRICAL AND ANTENNA CONNECTIONS HAVE BEEN MADE. DOING SO MAY SHORT OUT THE RECEIVER UNIT AND VOID YOUR WARRANTY.

**Caution:** During the installation of the SeaWatch 2050 antenna, make sure the antenna and mast cannot accidentally come in contact with any power line. CONTACT WITH POWER LINES COULD RESULT IN SERIOUS INJURY OR DEATH!

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## Antenna Installation for Boats

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For best performance on a boat, the 2050 antenna should be mounted as high as practical and as far away from metal objects as possible. If the interior areas of the boat are substantially enclosed or surrounded by metal surfaces, an exterior mounting location must be selected. For boats with metal roofs, the antenna should be mounted at least six inches above the roof surface. Best reception will normally be obtained if the antenna is mounted above the boat's highest deck or cabin structure.

It is possible that mounting locations other than those mentioned above will provide satisfactory reception. It is recommended that several be tried to find the one that provides the optimum performance before permanent installation is made.

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## Coaxial Cable / Rotator Wire Connections

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**Caution:** Be sure the center wire of the coax is in the hole of the connector before tightening the "F" connector!

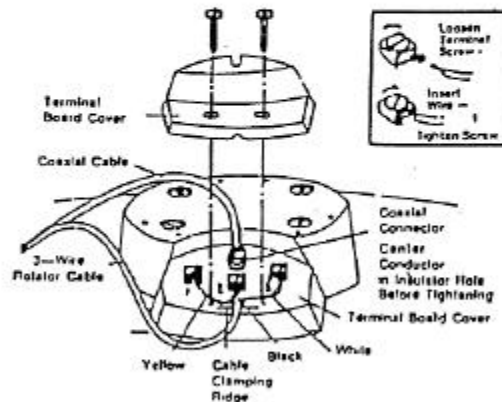


Figure 1 Connections to Antenna Terminal Board

## Mounting Position

For proper operation, the antenna must always be mounted with the radome in a horizontal position. In exposed outdoor locations it should be mounted with its top side up.

### Note:

Do not attempt to unscrew the metal inserts because these hold the internal mechanism in place.

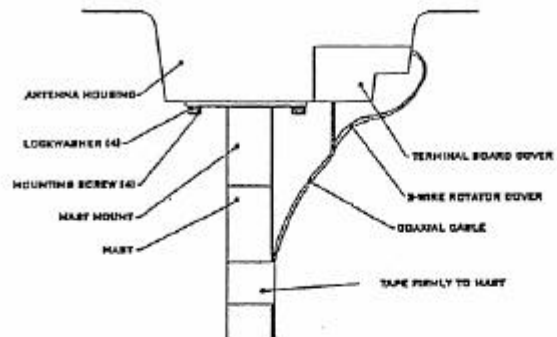
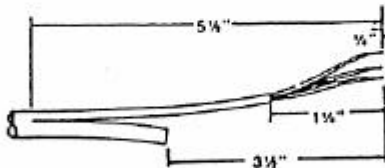


FIGURE 2. MAST MOUNTING

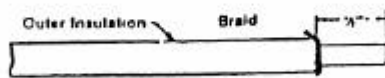
## Cable Installation

Tape the combination coaxial / 3-wire rotator cable to the mast as shown in Fig. 2. Run the cable to the TV set location, securing it every 3 or 4 feet with suitable cable clamps or U-shaped staples. Clamps or staples should not press tightly against or cut through the cable. Excessive bending of the cable may weaken the TV signal.

**Step 1:** Separate coaxial and rotator cables for a length of 5 1/4". Strip back outer insulation from 3 rotator leads 1 1/4" from ends. Strip inner insulation from ends exposing 1/4" bare wire.



**Step 2:** Cut coaxial cable 3 1/2" shorter than rotator cable.

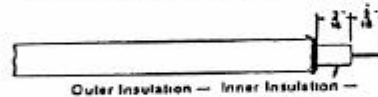


**Step 3:** Remove 1/4 inch of outer insulation.

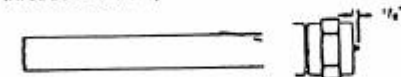
**Step 5:** Cut off exposed aluminum foil.

**Step 4:** Comb braid out straight. Bend back and cut short as shown.

**Step 6:** Remove 5/16 inch of inner insulation. Take care not to nick center conductor.



**Step 7:** Insert prepared end of cable into connector until center conductor protrudes approximately 1/4 inch as shown. (Caution: Do not allow the inner insulation to protrude into the connector's threaded section.)



**Step 8:** Using a crimping tool or a pair of pliers as shown, crimp the connector locking ring.

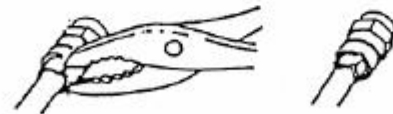


Figure 3. Installation of Connector to Shortened Cable

The cable requires a 13/32" diameter hole to pass through a wall or floor. To make it easier to insert the cable through the hole, fold the rotator cable back against the coaxial cable so that the coaxial "F" connector goes through the hole first.

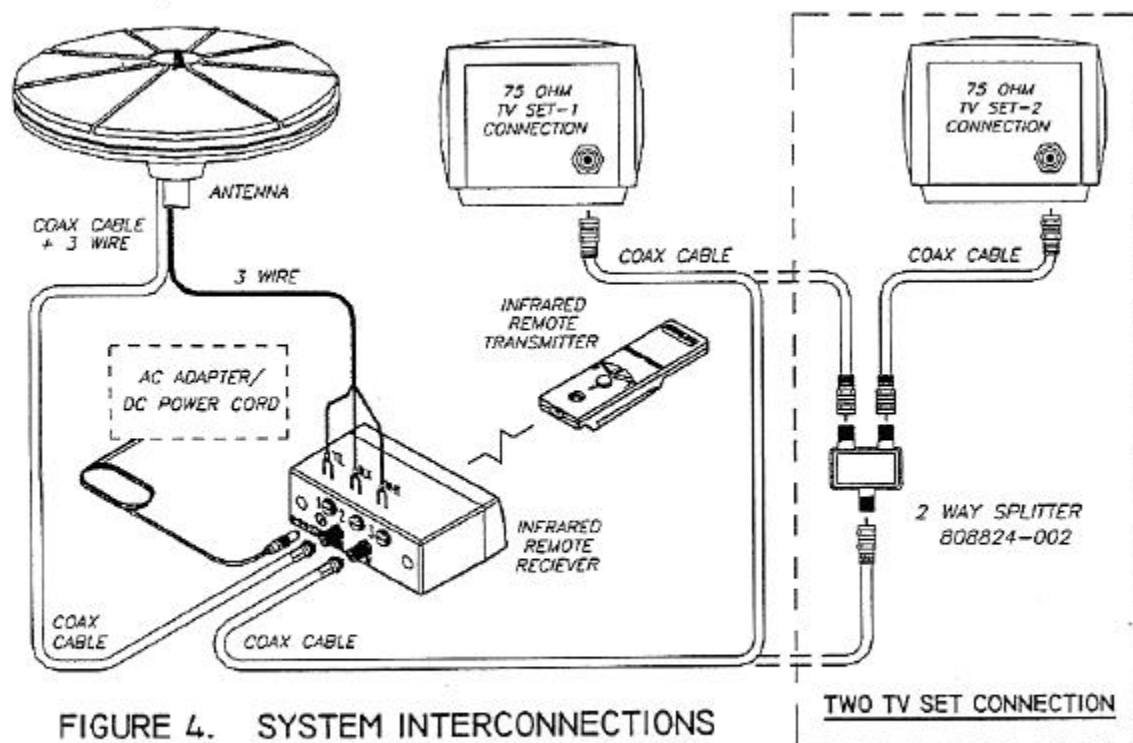


FIGURE 4. SYSTEM INTERCONNECTIONS

#### TWO TV SET CONNECTION (Figure 4)

To connect two or more TV sets to the SeaWatch 2050 Antenna system, see Figure 4. A universal remote extender (not included) can be used for remote control of antenna rotation from the various TV set locations. A distribution amplifier may be required if more than 2 TV's are connected to the SeaWatch 2050.

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#### Coaxial Cable / 3-Wire Rotator Wire Connections (Fig. 4)

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**NOTE: IF THE ANTENNA IS AT ITS ROTATION LIMIT AND POWER IS APPLIED OR LOST, THERE IS A 10 SECOND TIME LAPSE FOR THE RECEIVER TO RESET.**

With the TV set on and a station tuned in, rotate the antenna by pressing the left or right rubber button on the remote control. Pressing the left button will turn the antenna in a counterclockwise direction. Pressing the right button will turn the antenna in a clockwise direction. While the actual movement of the antenna cannot be seen, the indicator lights on the receiver unit will light accordingly. Clockwise rotation of the antenna lights the right green indicator on the receiver, and counterclockwise rotation lights the left green indicator.

Once the antenna has reached its clockwise or counterclockwise rotation limits, the right or left red stop indicator will light, respectively. The directional indicator (right or left) and the stop indicator (right or left) will remain lit until the operator presses the stop button on the remote or reverses the antenna rotation. The antenna rotation can be reversed at any time, simply by pressing the opposite directional button. To stop the antenna's rotation when you have achieved the best picture on the TV, simply press the stop button on the remote.

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#### Maintenance

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The SeaWatch 2050 Antenna System is designed for long life and requires no routine maintenance. Should the unit ever require service, circuit description and a troubleshooting guide are included here for the guidance of the TV technician.

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#### Circuit Description

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The SeaWatch 2050 consists of six operating units: antenna, amplifier, rotator drive, receiver, remote control transmitter, and a 12Vdc wall mount adapter.

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## Antenna Orientation

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Because of the built-in rotator, antenna orientation is not critical. A double arrowhead is molded into the outer rim of the radome housing to indicate the antenna's center of rotation.

For non-fixed locations such as boats, the antenna may be installed with the double arrowheads facing in any direction. Optimal TV reception may be obtained from any location by orienting the antenna with its built-in rotator.

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## Receiver Unit Installation

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The receiver unit interfaces the antenna with the TV via the remote control. The receiver is placed near the TV, making sure there are no obstructions to interfere with remote operations. The front panel of the receiver consists of four indicators and the Infrared Receiver Window.

- Left GREEN indicator.....indicates that the antenna is rotating in a counterclockwise direction
- Left RED indicator.....indicates that the antenna has reached its counterclockwise rotation limit
- Right GREEN indicator.....indicates that the antenna is rotating in a clockwise direction
- Right RED indicator.....indicates that the antenna has reached its clockwise rotation limit
- INFRARED receiver window..... allows the remote control to communicate with the receiver

The rear panel of the receiver consists of three terminal connectors, two coaxial connectors, and a 12Vdc jack.

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## Coaxial Cable / 3-Wire Rotator Wire Connections (Fig. 4)

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Attach the coaxial connector to the threaded receptacle on the power supply unit, using care to center the inner conductor in the hole before tightening the nut. Slip the rotator cable through the strain relief clamp. **Connect the yellow wire to Terminal 1, the black wire to Terminal 2, and the white wire to Terminal 3.**

If the TV set is "Cable ready", the coaxial cable "F" connector may be attached directly to the TV. If the TV is not "Cable ready" an optional band separator must be used.

Insert the 12Vdc wall mount adapter into the DC jack, located on the rear of the receiver. Now, plug the wall mount adapter into a 120 volt AC outlet, and the SeaWatch 2050 Antenna System is ready for operation.

### NOTE: For 12-Volt DC Operation

Using the DC power cord supplied. Insert the plug of the power cord into the mating DC jack in the receiver unit. Attach the red wire to the positive terminal and the black wire to the negative terminal of the DC source used. The DC power cord supplied with the antenna contains an in-line protective fuse.

**CAUTION:** For continuous protection against fire hazard, replace fuse only with the same type 0.8 ampere/ 250 volt rated fuse!

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## Circuit Description (cont.)

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The VHF section of the antenna is a circular, slot tuned, broadband unidirectional traveling wave antenna. The UHF section is a broadband, multi-element array. The VHF signal is combined with the UHF signal and amplified. The amplified UHF/VHF signal then travels down a coaxial cable to the receiver and through C3 to the TV.

The receiver provides DC voltages for the system. Nine volts DC for amplifier power is supplied via U4, L1, and the coaxial cable. The receiver also provides 5Vdc at JP2 pin 1 to energize the rotator motor in a clockwise direction. For a counterclockwise directional movement, 5Vdc is applied at JP2 pin 3.

A small DC motor turns the antenna. The common ground return circuit is via the coaxial cable shield. An end-stop switch opens the motor circuit when the antenna has rotated to its end position.

The receiver unit lamps are used to indicate antenna rotation direction and when the antenna has reached its stop limits. Remote transmitter S1 and S3 activate the left or right rotation lamp circuits by way of Infrared. When the motor has reached its clockwise (right) or counterclockwise (left) limit, 5Vdc or ground is applied to the stop limit lamp via JP2 pin 3, respectively.

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## Troubleshooting

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### SYMPTOM

Antenna will not rotate; direction indicator lamps do not light.

Antenna will not rotate; at least one indicator lamp lights properly

Antenna at end-stop; will not rotate

Receiver unit direction indicator lamps do not light in proper sequence

One receiver unit direction indicator lamp does not light

Remote control indicator lamp does not light

Weak picture; no noticeable difference in picture when antenna is rotated

### PROBABLE CAUSE

- A. Power adapter not plugged in
- B. Power adapter defective
- C. Defective receiver unit
- D. Defective remote control

- A. Open or incorrectly connected 3-wire rotator cable
- B. Defective motor
- C. Defective end-stop switch
- D. Defective receiver unit
- E. Defective remote control

- A. End-stop switch defective
- B. End-stop diodes D1 or D2 defective

- A. Open or incorrectly connected 3-wire rotator cable

- A. Defective lamp

- A. Low batteries
- B. Defective remote control

- A. Defective amplifier transistor
- B. Open connection between antenna and amplifier
- C. Open or shorted coaxial lead-in cable
- D. Open or shorted amplifier coax wrap-around cable inside antenna housing
- E. L1 in receiver unit open
- F. Defective U4 in receiver unit

### *Note:*

*With amplifier and receiver properly connected, voltage between L1 in receiver and ground should be 9 to 10 VDC. A higher voltage may indicate a shorted coaxial cable or short on the amplifier board.*



**Warning: Installation of this product near power lines is dangerous. For your safety, follow the installation directions. In accordance with the recommendations of the U.S. Consumer Product Safety Commission.**

Follow these rules and live:

1. Perform as much antenna assembly on the ground as possible.
2. Watch out for overhead power lines. Check the distance to the power lines before you start installing - We recommend you stay a minimum of twice the maximum length of the antenna assembly away from all power lines.
3. Do not use a metal ladder.
4. Remember, even the slightest touch of an antenna to a power line can cause a fatal shock.
5. Don't try to do the job on a windy day.
6. Have a friend as a spotter when you're on the roof, they can see things you can't.
7. If you start to drop an antenna, get away from it and let it fall.
8. If any part of the antenna should come in contact with a power line - Call your local power company; don't try to remove it yourself! They will remove it safely.
9. Mast, lead-in and metal guy wires are all excellent conductors of electrical current. Keep them away from power lines too.
10. Be sure family and friends understand the danger of touching an overhead power line. Tell them never to try to remove any object in contact with a power line - CB, TV antenna or anything else.
11. Make sure that the antenna mast assembly is properly grounded.

### General Installation Instructions For Mast Mounted Antennas

1. Assemble your new antenna on the ground at the installation site. Keep separate assembly instructions that come with it.
2. On the ground, clamp the antenna to the mast, pull enough TV lead-in and connect to antenna.
3. To insure that a mast does not fall the "wrong way" if it should get away during installation or takedown, durable non-conductive ropes should be secured at each ten foot level as the mast is raised. The boss stands in a position where he can yank or pull the ropes if the need arises to deflect the falling mast away from hazards (such as power lines) into a "safe fall" (such as a yard or driveway). The ropes are tied taut at the base of the mast after installation and in place at the various levels.
4. Install selected mounting brackets.
5. If you are going to use a guy wire installation instead of a mounting bracket:
  - Install guy anchor bolts
  - estimate length of guy wire and cut
  - attach to mast using guy ring
6. Carefully take antenna and mast assembly to mounting bracket and insert. Tighten clamp bolts. In case of guyed installation, it will be necessary to have at least a second person hold the mast upright while the guy wires are attached and tightened to the anchor bolts.
7. Install self-adhering "Danger" label package in antenna hardware kit.

### If an accident should occur with power lines

1. Don't touch the person in contact with the antenna and power line, or you too may be electrocuted.
2. Use a dry board, stick, or rope, to push or pull the victim away from the antenna.
3. If the victim has stopped breathing, administer artificial respiration until help arrives.
4. Have someone call for medical help.

Recommended by the National Consumer Product Safety Council

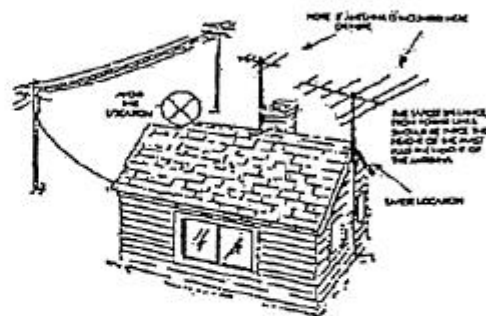
### Where to install your antenna (site selection)

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. Most antennas are supported by pipe masts attached to the chimney, roof, or side of a house. Generally, the higher the antenna is above ground, the better it performs. Good practice is to install your vertical antenna about 5 to 10 feet above the roof line and away from power lines and obstructions. Remember that the 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.



### Do's and Don'ts for installing Antennas

If you're not sure about a careful, safe installation, - don't try to do it yourself. Call for professional help.

Measure the maximum length of the antenna and mast assembly and then stay at least twice that distance away from power lines.

For mast support, use only 1 1/2" diameter or larger antenna mast sections. Lengths over 10 feet should be guyed at least each 10 foot section.



## LIMITED WARRANTY

### STYLE 2050 TV ANTENNA

#### KEEP FOR YOUR RECORDS

Shakespeare warrants that if anything goes wrong with your antenna within one year of date of purchase, and it is our fault, we will repair the unit or replace it at no cost.

This warranty excludes all costs arising from installation, removal, reinstallation or set-up, transportation to and from the dealer, and damages due to misuse or neglect.

In addition indirect, incidental, or consequential damages are not covered. Some states do not allow the exclusion or limitation of indirect, incidental, or consequential damages, so the above limitation may not apply to you.

To obtain warranty service, please do the following:

1. Take the unit to the dealer from which it was purchased or any Shakespeare antenna dealer.
2. Present your bill of sale or other evidence of the date on which the unit was first purchased.

**It is necessary that you retain your bill of sale or proof of purchase in order to obtain warranty service.**

#### Out-of-warranty repair service

In the event your antenna should fail after the 1 year limited warranty period, Shakespeare will either repair the non-functioning unit, or replace it with a remanufactured unit. The cost of repair or replacement shall not exceed \$69.95 unless you are otherwise notified. The unit will be returned C.O.D.

When returning the unit for repair, package unit properly to prevent damage and ship prepaid to:

Shakespeare Co.  
19845 US. Hwy. 76  
Newberry, SC 29108  
Attn.: Service

The logo features the word "Shakespeare" in a stylized, cursive script font. A registered trademark symbol (®) is located at the top right of the word. The logo is centered between two thick, solid black horizontal bars.

SINCE 1897

19845 US. Hwy. 76, Newberry SC 29108  
Phone: (800) 800-9008 Fax: (803) 276-8940