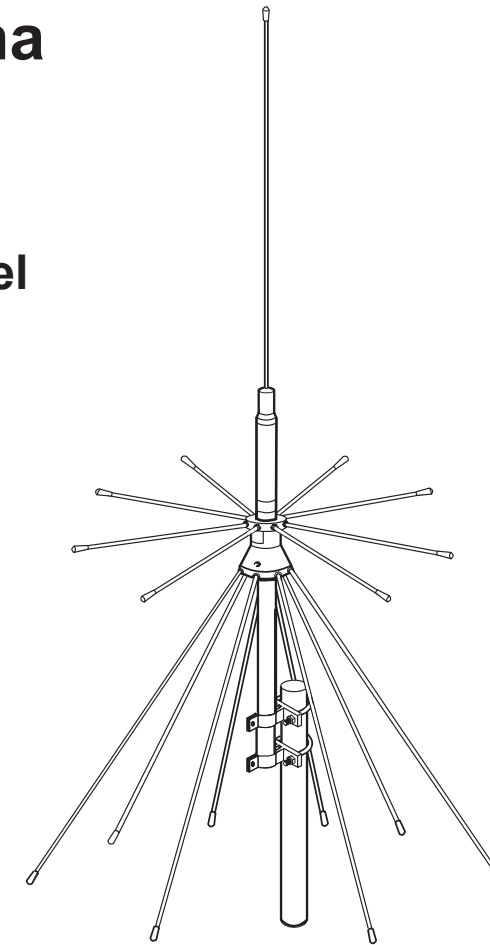


# Outdoor Scanner-Ham Discone Antenna

25-1300 MHz

Model  
ST4



- Compact Design—**  
allows flexibility when choosing an installation site
- Low wind Resistance and Lightweight—**  
allows higher mast mounting
- Resonator and Tunable Whip—**  
for best 50 MHz performance
- Easy Assembly and Connection—**  
uses rugged stainless steel hardware, radiator rods,  
and standard supplied SO-239 terminal and attaches  
to PL-259 cable connector (not supplied)

This discone scanner and ham base station antenna is our most efficient omni-directional antenna system, combining a disc antenna with electrically matched radiators. You can use it to receive and transmit a wide range of signals, including amateur radio, aircraft and other special services, on your scanner or other receiver. The antenna is designed to provide high efficiency when receiving and transmitting signals on selected frequencies.

Your antenna receives VHF and UHF frequencies between 25 MHz and 1300 MHz (1.3 GHz), and transmits effectively at 50, 144, 220, 440, 900, and 1296 MHz. It handles a maximum transmitting output power of 200 watts and provides a standing wave ratio (SWR) efficiency of 1.5:1 or better over the receiving and transmitting spectrum. It is 44-inches high overall, and fits on masts up to 1-1/2-inches in diameter.

## BEFORE YOU BEGIN

Read this manual and the separate Consumer Product Safety Committee "Safety Instructions".

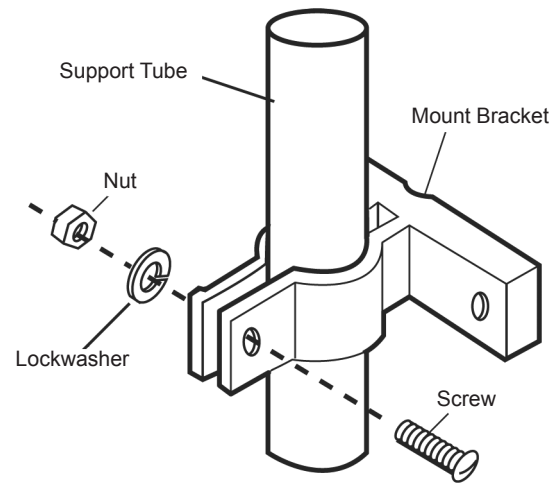
**WARNING:** When you start to install an antenna, use extreme caution. If the antenna starts to fall, let it go! It could contact overhead power lines. IF the antenna touches the power line, contact with the antenna, mast, cable, or guy wires can cause electrocution and death. Call the power company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

For your safety and convenience, plan each step of the installation. Organize the parts and check them against the following list.

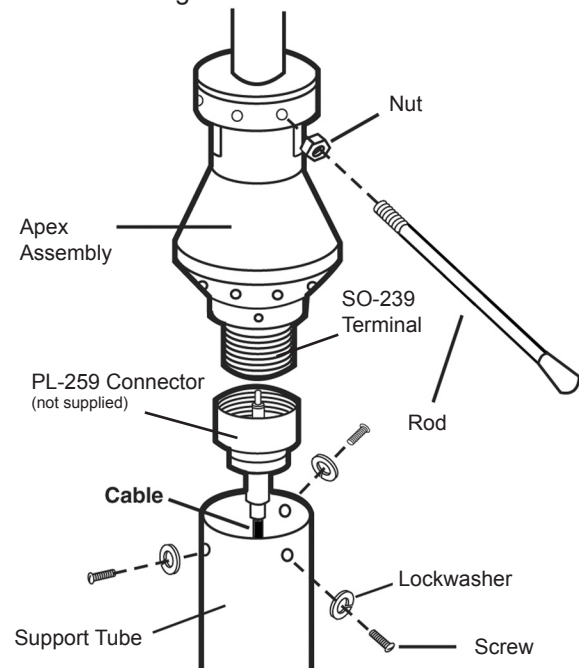
**You need a suitable length of RG-58 coaxial cable fitted with a PL-259 connector at each end, mast mounting hardware, and a small wrench with a 5/16-inch opening (not supplied).**

## ASSEMBLING THE ANTENNA

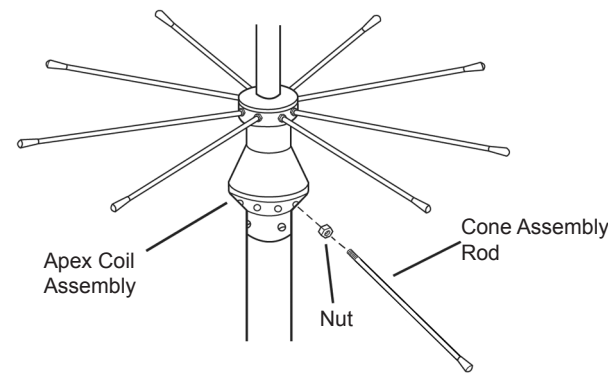
1. Install the two mount brackets on the support tube using one 8-32 x 1/2-inch screw, one #8 lockwasher and one 8-32 nut for each bracket. Do not fully tighten it yet.
2. Position one bracket at the midpoint of the tube. Position the other bracket at the bottom of the tube.



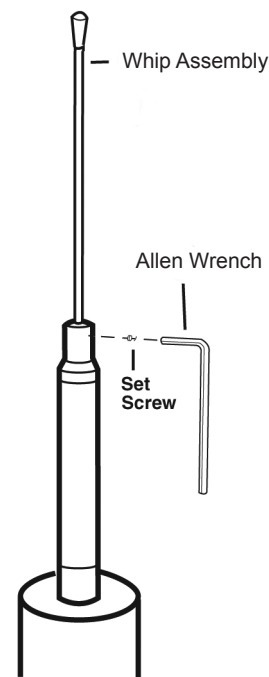
3. Slide one end of the RG-58 coaxial cable with PL-259 connectors through the support tube. Connect the PL-259 connector to the SO-239 terminal on the apex assembly.
4. Install the apex assembly into the end of the support tube and secure it with three 4-40 x 3/16 screws and lockwashers.
5. Screw one 8-32 nut onto the threaded end of each of the eight disc element rods.
6. Screw each disc element rod into the holes around the upper disc of the apex assembly, and hand tighten each rod. Rotate each 8-32 nut until it fits snugly against the disc. Then use a 5/16-inch wrench to tighten each nut against the disc surface to secure each



7. Screw one 8-32 nut onto the threaded end of each of the eight cone assembly rods.
8. Screw each cone assembly rod into the base of the cone section of the apex assembly, and hand tighten each rod. Next, use a wrench to tighten each nut against the cone surface to secure each rod.
9. Insert the whip assembly into the top of the coil assembly.
10. **Note:** Never use a wrench on the black plastic insulator part of the apex assembly.



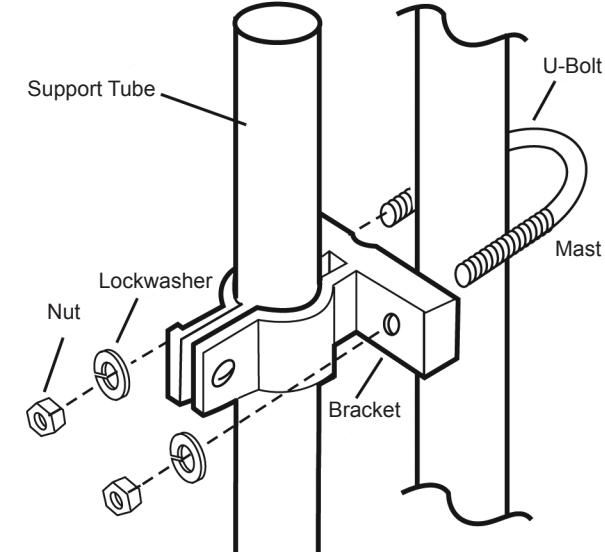
11. To secure the whip assembly, use the (supplied) allen wrench to tighten the set screw.
12. Place the two mounting brackets against the chosen



section of the antenna mast, and secure each bracket with a U-bolt, two 1/2-inch split lockwashers, and two 1/4-20 hex nuts. When each bracket is in the correct position, tighten the nuts fully.

13. Use the appropriate mast mounting hardware (not supplied) to secure the coaxial cable to the antenna mast, leaving some slack in the cable. Mount the mast section to your chosen mount, following and instructions that come with the mount.

14. Route the rest of the cable to your receiver or trans-



mitter. Attach the supplied yellow Danger Label to the mast at eye level, as a safety reminder.

## TUNING THE ANTENNA

1. To ensure your antenna works with a minimum standing wave ratio (SWR) on all channels in the 6-meter amateur radio band, we allowed extra whip length for proper tuning.
2. To properly tune your antenna, you need a SWR meter, available at your local electronics store.
3. Connect the SWR meter between the transceiver and the antenna cable, as described in the meter's instructions.
4. Measure the SWR on the lowest and highest channels.
5. If the SWR reading on the lowest channel is higher than that specified in the meter's instructions,

lengthen the antenna by loosening the set screw and pulling the whip out of the coil about 1/8-inch.

If the SWR reading on the highest channel is higher than that specified in the meter's instructions, remove the whip from the coil and cut 1/8-inch from its lower end. You can cut the whip with a hacksaw or large wire cutters. You can also use a file to make a small groove around the whip and then break off the piece.

6. Measure the SWR again and repeat the adjustment, if necessary. Cut off only 1/8-inch at a time, checking the s/SWR each time.

## FREQUENCY CURVES

