Tarheel Antennas, Inc.

Instruction Manual for the Little Tarheel HP Continuous Coverage HF Antenna

PROUDLY MADE IN THE

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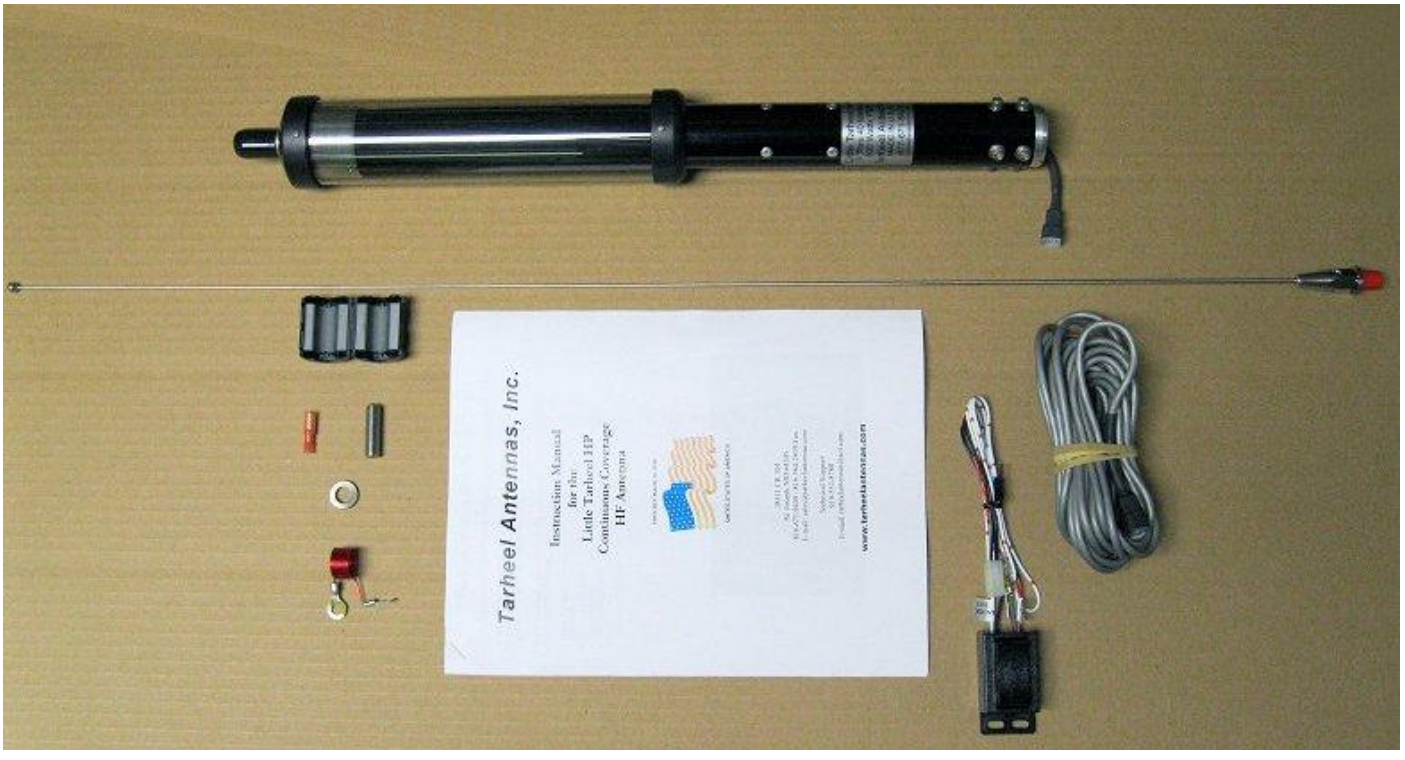
Thank you for purchasing the Little Tarheel

When properly installed this antenna will provide continuous coverage as follows:

6.4 MHz to 54 MHz with a 32" whip (supplied with the antenna)
5.3 MHz to 38 MHz with a 56" whip
3.4 MHz to 18 MHz with a 12' portable whip

Before proceeding with the installation, make sure you have received everything. You should have the following:

1 - Little Tarheel-HP Antenna
1 - 32" Whip
1 - 3/8" x 24 TPI Stud
1 - Matching Coil
1 - 20 ft. Control Cable
1 - Ferrite Core
1 - Manual Control Switch



Installation

Before installation of this antenna there are a few things you might have to consider. To get peak performance you need to mount the antenna as high as possible on the vehicle, also try to separate it as much as possible from other antennas that might be on the vehicle.

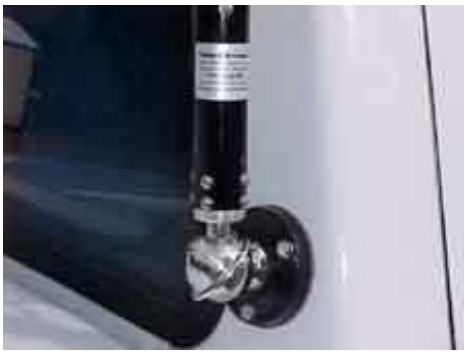


Photo 1

We designed this antenna around using a mount that directly mounts to ground, like a ball mount (Photo 1) or Diamond K400 (Photo 2) mount. These types of mounts work well.

Photo 2

Included with the antenna is a ferrite core that needs to be mounted on the control wire as close as possible to the antenna. Loop the wire through the choke at least 3 times. This choke (Photo 3) does two things, first it helps reduce antenna motor noise during tuning, second it decouples the control wire from the antenna; without this core, the antenna will be untunable.

The next thing is the tuning coil (Photo 4). This coil must go from the antenna base to the immediate ground. Included are miscellaneous connectors for different mounting options. You will need to scrap away the enamel for the connectors then crimp and solder for best results. On a loaded mobile antenna you'll need this so the antenna will match the coax.

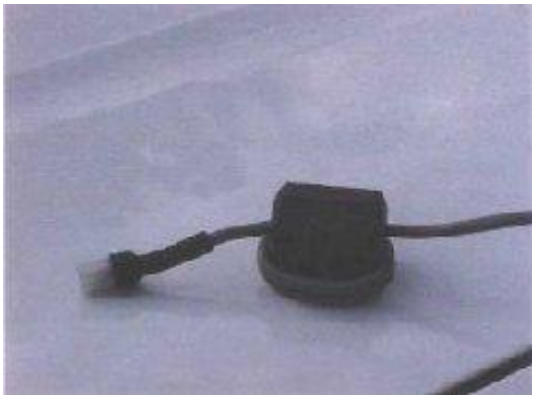


Photo 3

Next is the control box and control cable. We preassemble everything here so you'll have a plug and play system. If for some reason you need to cut the wires, the color codes are as follows:

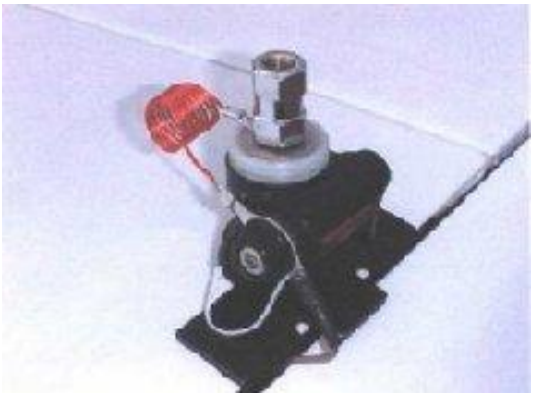


Photo 4

Control Switch
Red - Positive 12vdc (1 amp slow blow or 2 amp fast blow fuse)
White - Negative 12 vdc
Black - Motor Control
Black with tracer - Motor Control

Antenna
Red - Motor Control
Black - Motor Control
White - Sensors (for automatic control boxes)
Green - Sensors (for automatic control boxes)

The Sensor wires are not used with the manual control box that comes with the antenna.

Initial Tune Up

For the initial tune up a SWR analyzer is nice to have if you have access to one. If not, make all your adjustments with low power. Now, lower your antenna until it reaches the end stop and go to 6 meters and check your SWR, you might have to raise the antenna a small amount to come into 6 meters, next go to 10 meters and check your SWR, it should be low. Next, you can go to 15 meters and raise the antenna until you get a SWR dip there. Then 20, then so on.

Keep in mind that 6-20 meters are close together. If the SWR doesn't go below 1.5 on these bands the ground is most likely the problem, remember the ground needs to right at the base of the antenna.

Now you need to go to the middle of 20 meters and check your SWR. Record that and then go to 40 meters and do the same. Your standing wave should be below 1.5 on both bands. If it is below 1.5 on both bands no adjusting is needed on the matching coil. However, if the SWR is above 1.5 on 20 meters and low on 40 meters this means there is too much inductance from the matching coil. This can easily be corrected by simply spreading the matching coil until a low SWR is attained on 20 and 40 meters. If you have spread the coil approximately 1 1/2 inches wide and the SWR has not dropped on 20 meters you might need to remove a turn or two from the coil. However, keep in mind if you had to go to this extreme to tune, your ground path is most likely too far away or you have other antennas too close to this antenna.

If properly installed this antenna will have a standing wave below 1.5 from 7 to 54 MHz. We know that every antenna installation is unique and it is impossible to describe all the scenarios in this manual. However, if you are having problems with this initial tuning please call.

WARNING: When using the SDC-102 controller make sure to reduce the stall current value in the controller to between (020 to 030). Not changing the factory default current from (075) to (020 to 030) when using auto park the antenna or holding the up or down more than 10 seconds with the antenna all the way up or down could burn up the motor in the Little Tarheel HP.

Operation

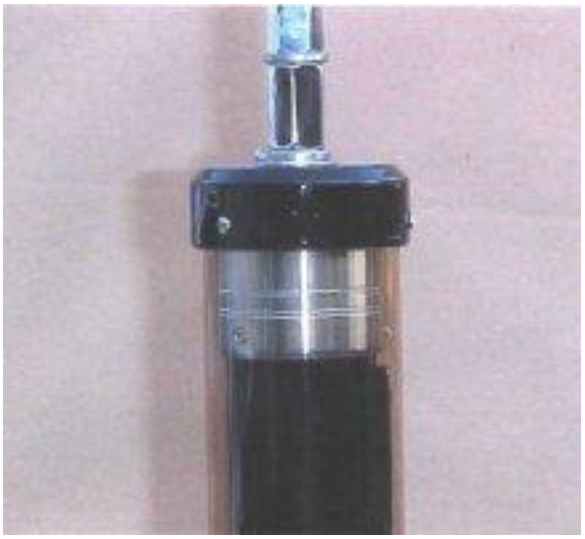
Remember that when the coil is all the way in its resonant on the high bands and all the way out on the low bands. It will take a little time to get use to this style of antenna, some mark the antenna with tape to mark the approximate location of the bands, some just listen to the noise level increase on the radio's receive when it's close to resonant. When you fine tune you need to transmit a low carrier (AM, FM, CW) at 5 to 10 watts and watch the SWR meter till the dip.

Running an Amplifier

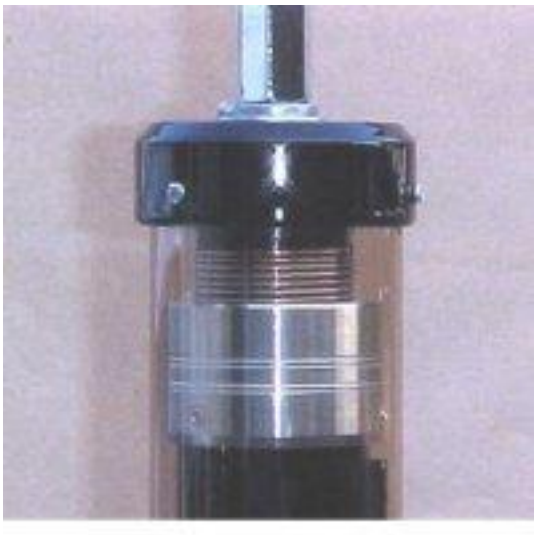
This antenna is designed to handle up to 500 watts P.E.P. **SSB Only**.
Carrier modes (AM,CW, FM and RTTY) are limited to 125 Watts PEP Maximum.
Do not exceed these ratings. Always do the initial tuning with low power, and then apply the amplifier if needed.

Relative Tuning Positions

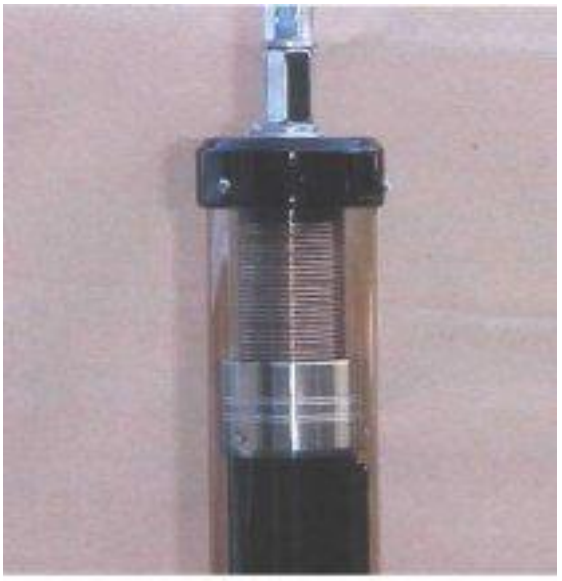
The following photos will show you relative tuning positions of the Little Tarheel Antenna.



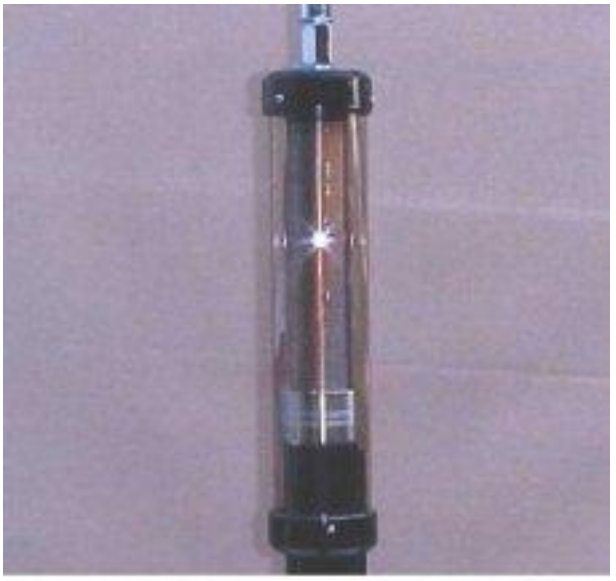
Little Tarheel in 6 meter position



Little Tarheel in 10 meter position with 32" whip



Little Tarheel in 20 meter position with 32" whip



Little Tarheel in 40 meter position with 32" whip

Maintenance

Very little maintenance is required for your Tarheel Antenna. You should have years of trouble free service from this antenna. You've made a large investment for a mobile antenna. Here is a tip to help take care of your investment.

We use an automotive finish on this antenna so whenever you wash and wax your vehicle raise your antenna and wash and wax the shaft and the bug shield (Lexan tube), with wax on your antenna the bugs will have a harder time sticking to it.

Warranty & Guarantee

The antenna comes with a one year guarantee for quality and workmanship. If for any reason (other than damage due to negligence, improper use or unauthorized disassembly) your Tarheel Antenna fails to perform due to quality or workmanship Tarheel Antennas will at our discretion either repair or replace at no charge for parts or labor. A return authorization number is required before warranty work can be performed.

The coil and contact assembly (fingerstock) have a lifetime warranty to the original owner. Your antenna needs to be sent in to the manufacturer for any warranty repairs.

IF for the 1st 30 days if for any reason you are not completely satisfied, return the antenna undamaged for a full refund less the shipping charges. The antenna has a ONE YEAR NO MATTER WHAT WARRANTY to the original owner**.** If for any reason (**other than damage due to unauthorized disassembly, negligence, improper use, or use of Non-recommended Controllers**) your Tarheel Antenna fails to perform due to quality or workmanship Tarheel Antennas, Inc. will at our discretion either repair or replace at no charge for parts or labor. Shipping charges are your (the customer's) responsibility to and from Tarheel Antennas' repair shop. We here at Tarheel Antennas hope you enjoy one of the best performing, best built, best looking motorized antennas available.

Please pass along any suggestions you may have to make our antenna better. All suggestions are appreciated. Also when you have your antenna installed please send us pictures.

Thanks,
Tarheel Antennas