

INSTALLING THE OUTBACKER®

OUTREACH-500

INTRODUCTION

Thank you for purchasing the OUTBACKER®. Please take a few moments to carefully read these instructions **before** installing your antenna. This will ensure that your mobile setup works and works well!

Like all the OUTBACKER® range, your antenna is constructed of a very tough, yet flexible, fiberglass core. This core is then helically wound with copper wire, which is hand-tuned to the various "tap" points. A coating of clear epoxy resin is then applied. Finally a layer of colored polyurethane is applied as a protection against the elements. All fittings on the antenna are solid brass and nickel-plated. The 3/8" x 24tpi stud is made of tough, high-strength, stainless steel.

DESCRIPTION OF COMPONENTS

1. FIBERGLASS MAIN SHAFT - Location of helical coils. Base mounting stud is stainless steel with standard 3/8" x 24 threads.
2. BAND SOCKETS - Non-corrosive and silver-plated sockets are clearly engraved with band markings. These sockets are used for selecting a band of operation.
3. WANDER LEAD - Insulated length of stranded wire with banana plug on each end. Used for 75m through to 6m operation. One end should be plugged into the WL socket and the other into the desired band socket. Must be wound (counter- clockwise) from the bottom up, with coils evenly spaced and neither taut, nor hanging loosely.

***Remove WL completely from antenna for 80m operation.**

NB :- See Specifications for WANDER LEAD replacement lengths.

4. STINGER / TIP / TUNING ROD or SPIKE - Stainless steel rod which extends up to 120cm out of antenna shaft. Used for fine tuning SWR.
5. KNURLED LOCKING NUT - Located at the top of the antenna shaft. Used for holding STINGER in place - **finger tighten only!**

MOUNTING YOUR OUTBACKER®

To obtain successful antenna performance, correct mounting of your OUTBACKER® is of utmost importance. Your OUTREACH-500 should not be used with the OUTBACKER® OB360 mount. For mobile use we recommend the OUTBACKER® OSB heavy-duty spring mount.

Trunk Lip and Hatch Mounting are not recommended for antenna over 1.2M in length.

Check your mount and antenna occasionally to ensure everything remains snug.

OUTBACKER® assumes no liability for antennas lost as a result of loose mounts, or hardware.

INSTALLATION

Your OUTBACKER® antenna can be installed on cars, trucks, RVs and for fixed operation (condos, apartments, etc.). As with any antenna system, there are no specific rules to follow. However, here are some helpful suggestions.

1. Mount as high as possible, and as far away from other vertical metal areas as possible. If mounting in a condo, use a metal balcony rail where possible, or three-inch wide copper foil (minimum 6M length) for counterpoise.
2. The optimum mounting location for any mobile, is dead center of the vehicle roof. However, since this is not usually practical for most HF antennas, mount your antenna on the driver's side trunk of the vehicle to avoid tree limbs, etc.
3. Use high-grade 52-ohm RG-58cu coax, or similar, with at least 95% shield. Marine grade coax is the best. Do not use foam coax as it will deform in heat and absorb moisture. Avoid solid center conductor-type coax as it breaks easily. **DO NOT SPLICE THIS "RUN" OF COAX.** It should be a single, unbroken length from transceiver to antenna mount. Use Coax Seal to protect cable where its wires separate at mount.
4. A solid electrical ground is an absolute necessity for proper and successful antenna performance. This is the most important yet often overlooked step in all mobilizing antenna installations. DO NOT

IGNORE THIS STEP AND DO NOT ASSUME THE NEGATIVE LEAD OF A POWER CABLE GIVES AN ADEQUATE GROUND CONNECTION. IT DOES NOT!

Install a wide ground strap between a bolt connected to your auto's frame and the ground lug on your HF radio. A ground/frame bolt is usually located behind your auto's dash. Another ground/frame bolt is also used to secure the front seats in place (look under seat for shiny bolt). A large alligator clip on this ground strap will permit quick connection to rig (and easy rig removal). Using an ohmmeter to check your installation, temporarily disconnect the groundstrap from the radio, and connect the ohmmeter between the end of the ground strap and the outer casing of the PL-259 antenna plug on the TX end of the antenna feedline. If the resistance is above .7 ohms, recheck/re-scrape all ground connection points until "poor connection point(s)" are found. THIS STEP ENSURES YOU RADIATE "A KILLER" SIGNAL!

NB: trunk lip mounting is **not** recommended for the OUTREACH-500.

5. It is recommended that you run your coax as far away from the ECM (Engine Control Module) and existing vehicle electrical systems as possible and that you ground your tailpipe at the tip to help reduce spark plug noise, etc.

**If your OUTBACKER[®] antenna is to be used in conjunction with
The Alpha Delta OUTPOST[™], please read instruction
sheet enclosed with the Tripod on purchase.**

TUNE-UP AND OPERATION

After following the proper mounting and grounding procedures, which are crucial, as mentioned earlier, you are now ready for antenna tune-up.

NB:- The OUTREACH-500 is a multi - piece model. Be sure to screw each section together tightly, before attempting any of the following tuning operations.

1. Route the feed-line to your transceiver, making sure the antenna is properly grounded to the vehicle body at the antenna base.
2. Extend the STINGER from the mainshaft, to the scribe point (3" from the bottom of the STINGER.)
 - a. For operation on 40m, tune your transmitter to 7.090MHz.
 - b. Key the transmitter and read the SWR measured at the transmitter.
If SWR reads greater than 2:1, go to Step C. If less than 2:1, go to Step D.
 - c. If SWR is greater than 2:1, tune your transmitter to 7.135MHz and check the SWR there. If the SWR increases at this frequency, this indicates the antenna is too long and is resonating "low." You will want to shorten the STINGER about 6cm, by loosening the KNURLED LOCKING NUT and making the adjustment. Then re-tighten **with fingers only**. If the SWR decreases at this frequency, your antenna is too short and you will need to lengthen the STINGER by following the same procedures as for shortening. Continue this process until the SWR, as measured at the transmitter, is as low as possible at your desired operating frequency, on 40m.
 - d. Provided your SWR is sufficiently low, (less than 2:1 at the middle of the 40m phone band), in most cases all that is necessary to do when changing bands, is to move the top banana plug on the WANDER LEAD, into the desired socket for 20m, 17m, 15m, etc. Be sure to wrap the WANDER LEAD evenly and counter clockwise, but not too tightly against the shaft. You can make fine-tuning adjustments by moving the STINGER up or down.
3. 80m. operation is obtained by complete removal of the WANDER LEAD. It will also be necessary to use the STINGER to adjust for lowest SWR on the desired operating frequency. You must adjust the STINGER for the lowest SWR on 80m. With the STINGER set at the scribe point, the resonant frequency is approximately 3.650MHz. To raise the resonant frequency, push the STINGER in.

The length of the wander lead should not be altered for any reason

TROUBLESHOOTING

EXTREMELY HIGH SWR - Check all connections for opens, or shorts. Make sure the WANDER LEAD extends from the WL socket for your desired band of operation. Make sure the WANDER LEAD is evenly spaced as it wraps around the antenna, counter clockwise, from the bottom up. Again, remember, do not wrap too tightly. Also, remember that a quarter wave vertical needs a large span of metal/ground beneath it to act as a counterpoise.

MODERATELY HIGH SWR - Make sure the antenna is not unusually close (parallel) to any metal such as the trunk, or side of an RV (see INSTALLATION). Recheck the integrity of your grounding. Try retuning the STINGER at the desired operating frequency. Remember there are more important aspects of mobile installations than having a 1:1 SWR. It is okay and fully acceptable if your SWR should vary from 1:1 to 1:8. Pay special attention to grounding and antenna placement.

CARE AND MAINTENANCE

All OUTBACKER® antenna are fitted with a rubber "O" ring inside the tip to prevent water entering the mainshaft, however, condensation will accumulate on the inside of the shaft, do not be alarmed. This condensation will not harm the antenna, nor will it cause inferior performance. Just remove the KNURLED LOCKING NUT and shake out any water. Check your antenna after heavy rain.

To clean your antenna, wash it with warm, soapy water and wipe dry with a soft cloth. Apply a thin coating of non-abrasive, car wax. Buff the antenna to a shine. Do not use cleaners with an acetone base as this will strip the shiny coating.

SPECIFICATIONS

Model: OUTREACH-500

Band Coverage: 80m-75m-12m-1 Om-15m-40m-30m-20m-17m-6m

Feed Impedance:48-52 Ohms

Power : 600 watts (pep) 500 Watts key down for 15 sec.

Construction: Brass - Stainless Steel - Urethane, 1 /4 wave helical.

Mounting: 3/8" x 24tpi (UNF) Male thread (Stainless Steel)

Wander Lead Length: WL for the OUTREACH-500 is 67" plug tip to tip

Supplied with your OUTBACKER® antenna

Part# Qty Description

1 x Main shaft(Black) - the OUTREACH-500 has a multi-piece main shaft

OBWL 1 x Wander lead (WL stands for wander lead)

OBSP120 1 x 46" long tuning spike (installed at manufacture)

Please quote Part# when ordering replacements.

Optional

OBSB Heavy Duty fixed mount.

OBADP 3/8" unf to 1 IT bsw Stainless steel adaptor.

Should you discover your OUTBACKER® antenna has been damaged in transit, please notify your supplier, or write to the manufacturer within seven days. Claims made more than 7 days after delivery will not be recognized.

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OUTBACKER®! the renowned HF Amateur Mobile Antenna - bridging the gap in worldwide communications.