

INSTALLATION INSTRUCTIONS:

AMB-BKT-2[®] Heavy Duty "Dual L" Tilting Antenna Bracket, Five Optional Antenna Bases

Thank you for your purchase; we appreciate your business and interest in our products.

These instructions describe how to install the AMB-BKT-2[®] ("BKT") "dual-L" bracket for mobile HF/V/UHF antennas, for mobile, fixed-base, temporary/QRP or EMCOMM purposes. It can support essentially any V/UHF mobile antenna and smaller HF antennas up to small screwdriver or motorized types. The BKT now comes *without any antenna base* to install "your base" that will fit a 3/4 hole or our five (5) interchangeable bases shown below. Our newest base fits the Buddiople™ Versatee for their dipole HF antennas, even with long radials.

The BKT easily bolts to any horizontal surface, such as the top of a truck bed wall, horizontal part of rear tire carriers on the back of SUVs, railings, benches, etc. One 3/8 bolt is provided or you can use a 3/8 wood screw if mounting the BKT to a wood railing or other surface. If mounted on a non-metallic surface, we have options for a ground counterpoise.

Specifications

- 6061 aluminum dual "L" brackets, each 1/4 inch thick x 4 x 4 x 2 inches wide.
- 18-8 S.S. hardware: two 3/8x16 mounting bolts (upper 1.0" & lower 1.5" long), 1/4x20 ground bolt/wing nut.
- Mounting hole for antenna bases: 3/4 inch diameter, panel thickness 1/4 inch.
- The BKT now comes without a base, to fit your own, and can be ordered with five of our bases.
- Antenna bases (optional): interchangeable, include nicely machined rust proof nuts, made of aluminum and stainless steel components (where applicable) – all compatible ones are shown in the photos immediately below.
- Options: see Step 2 on pages 2-3.

The following photos show the BKT in buffed aluminum (five powder coat finishes also available) with our five optional antenna bases that fit the BKT. Other photos are included below.



Options

- **AMB-Arm2:** 2nd antenna arm, NMO antenna base with four ground plane radials (135-512 MHz) – *see Step 2*.
- **AMB-GND-1 & 8:** ground counterpoise "rings" for up to eight (8) telescoping whips or "tuned" whips ("hamstick" & "wonderlead" antennas) with a 3/8x24 threaded base, to form a horizontal counterpoise for HF – *see Step 2*.

Version Update: We've added our "VersaBase" (for Buddiople™ antennas) and "NMO radial base" (135-512 MHz) as additional bases that will fit the BKT. The BKT can now be ordered without any base or any of our five bases. The latest version of these instructions with color photos can be found on our **DOWNLOADS** web page, as PDF files.

Examples of Compatible Antennas

The AMB-BKT-2 will support the following types of antennas:

- Essentially any VHF-UHF mobile antenna, from 1/4 wave 6m through gain type mobile 2m-70cm.
- Small to medium HF antennas:
 - "Ham sticks"
 - "Hustler" loading coil type
 - "Outbacker" wonder lead type
 - Buddipole™ dipoles and Buddistick™ verticals
 - 9 foot "CB" whips
 - Manually tunable type, such as MFJ 1624, Super Antennas MP1, etc.
 - Small HF screwdriver types, such as High Sierra "Sidekick", Tarheel "Little Tarheel", Super Antennas MP2, etc.
 - Small to medium motorized HF types, such as Hi Q series #2 motorized HF, etc.
- ***IF YOUR ANTENNA IS NOT LISTED or you're not sure, please contact us for excellent customer support!***

Safety First!

*Use caution if you are installing your antenna on a vehicle, balcony or other location where the antenna could fall on someone or cause damage if it were to come off. It is solely up to the user to determine the suitability of the BKT with their antenna and mounting situation. As with any antenna installation, be careful around thunderstorms and lightning, and you may want to remove your antenna or disconnect the coax BEFORE a storm appears - remember that if you can hear thunder you can be struck by lightning! Also, don't install any antenna near, under or above power wires! These instructions are meant to provide general guidelines but can not provide all of the details on how to safely install your mount and antenna, as each installation is unique. If you feel that you cannot safely install your antenna on the BKT, you are not sure, or it does not meet your needs, you may return it for a refund within two weeks (see Warranty for details). **SAFETY FIRST!***

Tools Needed to Install BKT and Options

No special tools are required. A wrench is needed to tighten the mounting bolts and antenna bases.

Installation Steps

- 1) The BKT bolts to your mounting surface using one 3/8 inch, 1.5 inch long, bolt (included). If mounting to a wood surface you can also use a wood "lag bolt" (not provided); be sure it is mounted sturdy enough for your antenna.
 - a) The BKT consists of two "L" brackets.
 - The upper "L" bracket has a 3/4 inch diameter hole (panel thickness 1/4 inch) for mounting one of our antenna bases or "your base", a 1/4 inch hole ground bolt that can also be used for mounting some of our options, and a 3/8 inch hole for bolting to the lower "L" bracket using the provided 3/8 hardware.
 - The lower "L" bracket has two 3/8 holes for bolting to a horizontal surface (3/8x16 bolt provided) and for bolting to the upper "L" bracket. This can be mounted either way; the holes are spaced differently by design.
 - b) First, decide where you will be mounting the BKT. Be sure that there is clearance for your antenna and you know how to run the coax to your radio. Also be sure that this location is strong enough to support your antenna. The 3/8 bolt between the upper and lower "L" brackets allows you to tilt the antenna if so desired, such as to clear an overhanging roof.
 - c) Be sure to use flat washers (provided) on both sides of the "L" brackets, and use lock washers (provided) under each nut. Securely tighten the nuts; check periodically to be sure that the hardware and antenna base are not loose.
- 2) Options Installation (**SKIP if none used**): Install the optional AMB-GND-1 & 8 or AMB-Arm2 (if used) – both are for **fixed base use ONLY**. → See the installation steps on the next page.

- a) The **AMB-GND-1 & 8** counterpoise ring brackets (“GND”) mount into the upper 3/8 inch hole in the top “L” bracket, just below the antenna base. You may need to mount the lower “L” bracket “upside down” so it does not block this hole. Model “1” has four couplers and Model “8” has eight couplers – both fit 3/8x24 threaded antennas. They are designed for fixed base but **NOT for mobile use while moving** (the BKT can be used mobile). The GND is used in place of a simple wire ground counterpoise that is connected to the BKT’s ¼ inch ground bolt.

The three photos below show the BKT and the Model 1 and 8 GNDs. The left photo shows where to mount the GND on the upper “L”, with the provided 3/8x24 hex bolt and coupler. The bolt with lock washer goes into the GND, from the inside, then into the “L”. On the other side of the “L”, screw in the coupler (hex part that antenna whips screw into).



- b) The **AMB-Arm2** allows you to use **TWO antennas on one BKT**. It comes with an NMO antenna base and four removable ground radials for 135-512 MHz. It is designed for fixed base but is **NOT for mobile use while moving**. The bracket is 13 inches long with a ¼ inch hole for mounting into the ¼ inch ground bolt on the BKT. The two photos below show what you get.



- 3) Next, attach the antenna base of your choice as outlined below. Your antenna screws onto the base. You can use more than one base as they are easily interchangeable if you have antennas requiring different types of bases.

- a) The **3/8x24 stud base** has an insulating washer with a small lip - the lip is placed into the 3/4 inch hole on top of the BKT. The top part of the base (part that the antenna screws into) rests against this insulating washer so the antenna does not short to ground. The large lock washer is placed between the insulating washer and the top. The bottom SO239 connector contacts the bottom of the BKT “L” for the ground connection. Designed for fixed base AND mobile uses.
- b) The **NMO** and **SO239** bases have large stainless steel washers and heavy-duty nut(s), and will fit any hole from 5/8 to 3/4 inches in diameter. Designed for fixed base AND mobile uses.
- c) The **NMO radial base** has the same features as the other NMO base (see 3-b) plus it has four removable stainless steel groundplane radials that are installed with the provided Allen wrench. Note that the hole to mount the NMO radial base is drilled offset from the center, so you can access the Allen screws without having to remove the base – simply loosen the base to rotate the base to install or remove each radial. It is designed for fixed base but **NOT for mobile use while driving**.
- d) The “**VersaBase**” attaches to the BKT with the 3/8 inch stainless steel hardware and wing nut, for quick installation and removal. It will fit the Buddipole™ Versabase for their dipole HF antennas (**Versatee not included**). It is designed for fixed base but **NOT for mobile use while driving**.

4) Connecting a Ground Counterpoise.

- a) For HF, you can use a simple wire counterpoise connected to the provided heavy-duty solder lug on the ¼ inch bolt with wing nut (use 14 gauge or smaller, even small gauge flat cable works). Use at least four or more wires that can be cut to the band or simply use at least four 10 foot long radials which can work on 20m and above. Use

longer radials for the lower bands. Our optional AMB-BKT-1/8 counterpoise rings can fit up to four or eight 3/8x24 stud telescoping whips to form a horizontal counterpoise; whips are available (and will work) up to 12 feet long. The counterpoise, whichever you use, will work best if elevated ABOVE GROUND and not laid on the ground unless you can install MANY radials. A counterpoise even 5 or more feet above the ground works fine, but the higher the better. The counterpoise should be somewhat horizontal but can slope away from the antenna. A counterpoise that is mostly vertical may not work well.

- b) For V/UHF (6m and above), the counterpoise (groundplane radials) are connected to the ground point bolt near the antenna base and works best if slightly shorter than a 1/4 wavelength. For single band antennas, the length should be "cut" for the band; for multi band antennas cut the radials for the lowest band. These can be made from stiff cut from the 1/4 inch ground bolt. Four "radials" are recommended, and can be approximately horizontal or sloping away from the antenna up to a 45 degree angle. Instead of a "homemade" groundplane you can use our "NMO radial base" as it comes with four removable stainless steel radials for 2m-70cm and can be used as-is or cut for your specific band, from 135-512 MHz.

5) Antenna and coax suggestions.

- Coax connection. Generally, RG-58 size coax works fine for portable or fixed-base installations where the length of the coax is typically less than 25 feet, especially if you run under 500 watts. You can use any coax you desire.
- SWR adjusting device (if needed) for HF antennas, especially those mounted near the ground, to reduce the SWR to an acceptable level at the antenna resonance point on 160m and 80m, and maybe also on 40m. You may need a shunt load inductor, UNUN, or additional capacitance to reduce the SWR. Some of these devices need to be installed at the antenna and if so should be weather resistant (like our **SHUNT-100**).
- Ferrite bead filters to reduce HF antenna tuning problems and to help prevent RFI in devices connected to your radio. For the HF bands, use Mix 31 or other types that are designed to filter the entire HF band. Do NOT use unknown ferrites as they may not work at HF frequencies! You may want to install at least 3 ferrites, closely spaced, over your coax / antenna motor cable as close to your antenna as possible. One of these should have the coax wound 2-3 times around one of the ferrites (improves filtering at the lower frequencies). Also install ferrites in a similar fashion on your motor/turns counter cable, and install one ferrite on the coax near your transceiver. Some installations may require 10 or more ferrites on EACH cable, at the antenna end of the cables. A white paper on this topic can be downloaded for free from our web page: <http://www.repdesign.us/Download.html>
- Tuning an HF screwdriver / motorized antenna. You can tune your antenna using a DPDT, center off, manual switch or one of the automatic tuning devices that powers your antenna motor and stops at the resonance point. Do not confuse these with "antenna tuners", which add capacitance / inductance to match the antenna to the radio - generally speaking these should NOT be used with "resonant" antennas except to fine tune an SWR that is slightly too high and cannot be reduced by improved grounding, improving the ground counterpoise, installing ferrite beads or using a load inductor or other device.
- Using untuned "whip" antennas. You can use a "CB" whip or longer whip/mast (NOT grounded) which would only be resonant on one band. To operate other bands you will need some type of antenna tuner.

Spare parts, accessories, downloads and related products.

Let us know if you need spare parts or are looking for something that we do not yet provide – your idea could become a new product! As a specialty company, we are looking for unique ideas to serve the amateur and two-way radio community.

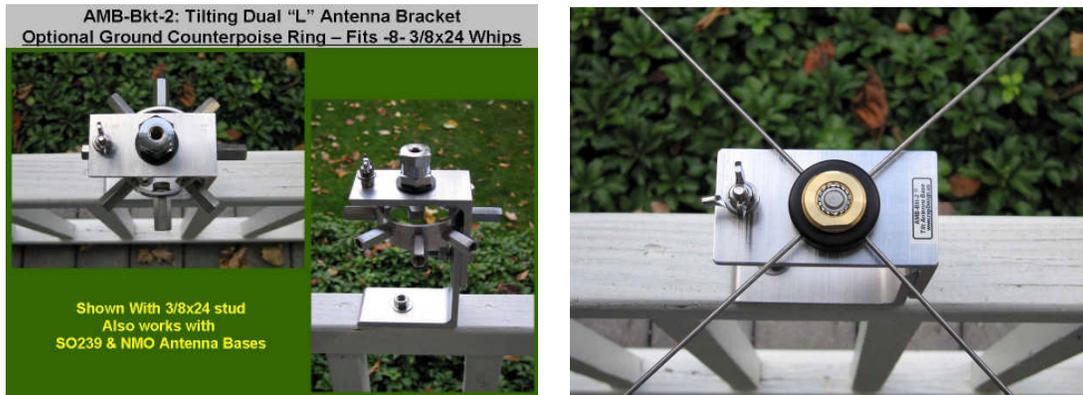
Warranty Summary

All products include a two (2) week "return for any reason" and six (6) month manufacturing defects limited warranty. If you should need to return your product please contact us IN ADVANCE to obtain a return authorization number. Please refer to the complete warranty terms that are enclosed with your order; this is also included on our web site.

Product Photos & Installation Examples

The photos and illustrations on the next page show some examples of the AMB-Bkt-2 mounted in fixed base and mobile applications. There are many more possibilities!

FIXED BASE APPLICATIONS. The two photos below show the BKT bolted to a wooden deck railing with our optional 3/8x24 stud base and AMB-Gnd-8 counterpoise ring bracket. This setup allows you to tilt the antenna to clear an overhanging roof.



The photo below shows a Buddipole™ dipole in “L” configuration, with our VersaBase and the optional AMB-Arm2 with multiband V/UHF antenna. Note that the mount shown is our CLAMP-150 but the two “L” bracket on the CLAMP are exactly the same as the AMB-Bkt-2 (“BKT”). The BKT would have to be bolted to the deck railing.



MOBILE APPLICATION. The photo below is courtesy of AC7NA, showing the AMB-Bkt-2 mounted on his pickup truck rack.

