

INSTALLATION INSTRUCTIONS:

AMB-BKT-Mast-D2.0[®] Super Heavy Duty "L" Antenna Bracket for Antenna Masts

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

These instructions describe how to install the AMB-BKT-Mast-D2.0[®] ("BKT") "L" bracket for small to large mobile HF/V/UHF antennas, for mounting to the top of masts with outside diameters from 1-1/4 to 2 inches. It can support essentially any mobile antenna and even L-A-R-G-E screwdriver or motorized HF antennas! These instructions also describe and illustrate how to install our various options, which even allow you to install up to **THREE (3) antennas!**

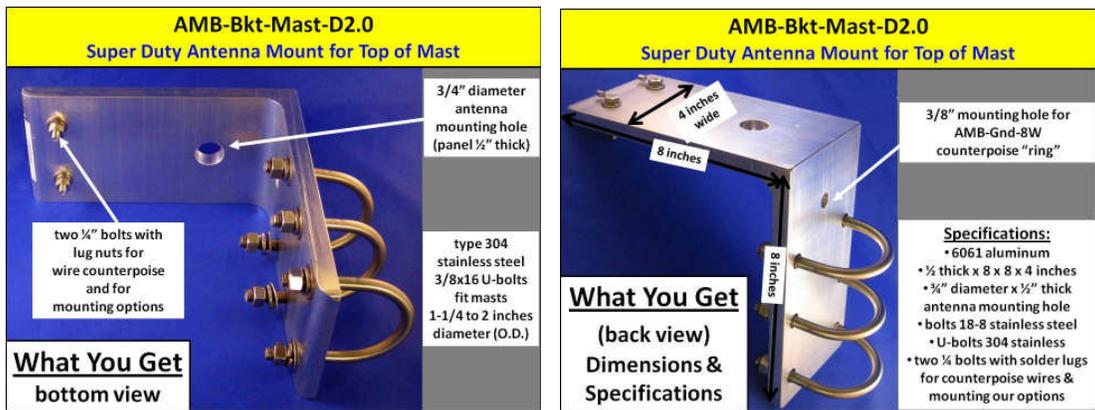


Antennas are mounted into the 3/4" diameter hole using your antenna bolt and insulating washers, your base or one of our several interchangeable antenna bases.

Specifications:

- Buffed 6061 aluminum "L" bracket, 1/2 inch thick x 8 x 8 x 4 inches wide –five powder coat colors optional.
- 18-8 stainless steel hardware: 3/8x16 mounting bolts, 1/4x20 ground point with wing nut.
- Two (2) 1/4" bolts (18-8 stainless steel) with heavy-duty solder lugs (16-12 gauge wire) for attaching counterpoise wires and to attach the optional "AMB-Arm2" second antenna arm (one or two will fit) and SHUNT-100.
- Three (3) 304 stainless steel U-bolts for attaching the BKT to any mast from 1-1/4 to 2" diameter.
- 3/4" diameter hole for antenna mounting (panel thickness 1/2").
- 3/8" hole for mounting the optional AMB-Gnd-8W counterpoise ring which fits up to eight whips or "ham sticks" to form a horizontal counterpoise.

The photos below show what you get standard, with dimensions. Options are listed later in these instructions.





The latest version of these instructions with color photos can be found on our DOWNLOADS web page, as PDF files.

Safety First!

*Be sure that your mast is strong enough and whether it needs guying to support your antenna. If you do not feel that you have the ability to safely install the BKT, please contact us if you would like to return it (within the first two weeks, see Warranty for details). It is up to the user to ensure that everything is installed securely and safely. These instructions are meant to provide general guidelines but cannot provide all of the details on how to safely install your mount and antenna, as each installation is unique. 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 STAY AWAY from overhead wires! **SAFETY FIRST!***

Tools Needed to Install BKT and Options

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

Installation Suggestions

The BKT bolts to the top of an antenna mast with an outside diameter from 1-1/4" to 2", using the included three (3) 3/8 inch U-bolts.

- 1) Before attaching the BKT to your mast, attach your antenna base (yours or one of ours) and any options (see list below). The two 1/4" ground points can be used to attach the optional "AMB-Arm2" second antenna arm, SHUNT-100 or your wire ground counterpoise. See the Options section below and the illustrated photos on the last page for illustrations on mounting.
- 2) Connecting a Ground Counterpoise.
 - a) For HF, you can use a simple wire counterpoise connected to the two (2) provided heavy-duty solder lugs on the 1/4 inch bolts (use 14 gauge or smaller, as 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-Gnd-8W counterpoise ring can fit up to 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 is connected to the ground point bolt near the antenna base and works best if slightly shorter than a 1/4 wavelength. For multi band antennas, the length should be "cut" for the lowest band. This can be made from stiff wire or whip antennas or other radials sticking out from the base of the antenna. Four are recommended, and can be approximately horizontal or sloping away from the antenna up to a 45 degree angle. Our "NMO radial" base does NOT require any additional radials for 2m-70cm and can be used as-is or cut for your specific band, from 135-512 MHz.
- 3) Attach your antenna to the base. Also attach your second/third V/UHF antenna if you installed one or two AMB-Arm2 brackets. **FIRST, DOUBLE CHECK** to be sure that the six (6) BKT U-bolt nuts are firmly tightened and that your mast is securely mounted and its hardware is tight. Double check your mast guy wires, if installed.
- 4) 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 can not be reduced by improved grounding, improving the ground counterpoise, installing ferrite beads or using a load inductor or other device.
- Suggestions and precautions with multiple antennas. The BKT is capable of supporting up to three (3) separate antennas if you purchase two of our AMB-Arm2 brackets. You can use a duplexer/triplexer for running one length of coax from multiple antennas to ONE radio. If you use more than one radio with multiple antennas, use separate runs of coax and be careful not to damage the receiver of one radio while transmitting on another radio, as the RF field is quite strong with closely space antennas. If using one radio with an HF and one or two V/UHF antenna(s) this is not a problem.

AMB-BKT-Mast-D2.0 Options

The following is a summary of the options that will fit the BKT. Illustrations of the these options are shown below and on the last page which shows an example layout.

- AMB-Gnd-8W: Ground counterpoise "ring" bracket for using up to eight (8) of your telescoping whips or tuned "hamstick" or Buddipole™ antennas that have the standard 3/8x24 thread. Can be used in place of a simple wire ground counterpoise connected to the BKT bracket ground point.



(see photos on last page)

- AMB-Arm2: Second antenna bracket for mobile V/UHF antennas, with NMO base and four removable ground radials for 135-512 MHz. The BKT can fit one or two Arm2's, for up to THREE ANTENNAS on ONE BKT!



(see photos on last page)

- SHUNT-100: Adjustable weather resistant shunt load inductor for those installations that have a low impedance on the low bands (160-40m) resulting in a high SWR, especially for antennas mounted near the ground. This is for antennas that need additional inductance. Includes a silver plated coil clip with tightening screw and tin plated solid copper, custom wound, coil.



(see photos on last page)

- Antenna bases: Our bases that will fit the BKT include NMO, NMO groundplane, SO239, VersaBase (for Buddipole™ antennas) and SHF/WiFi panel antennas. See the last page for photos of several of our interchangeable antenna bases that also fit several of our other mounts and brackets. Please note that our 3/8x24 heavy duty stud base will **NOT FIT** the BKT, due to its thickness. For mounting HF and other antennas that are

attached with a 3/8x24 bolt or stud base, you can purchase a bolt and insulating washers from suppliers such as Hi Q Antennas and others. The length of bolt you will need is 1-1/2 – 1/3/4 inches for most antennas. You can even mount Scorpion brand HF screwdriver antennas with their 3/4” base bolt! If you need help please let us know.

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.

To download a current Price List or Product Guide, go to: <http://www.repdesign.us/Download3.html>

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 and Options Illustrations & Installation Examples

These illustrated photos show most of our options for the BKT. Visit our web site for detailed information and photos!

AMB-Bkt-Mast-D2.0
Super Duty Antenna Mount for Top of Mast

Options (partial list)

- SHUNT-100 adjustable coil
- Jumper-shunt 7.5" cable
- Amphenol PL259 TEE
- SHD-SO239-LA2.0/2.5 SO239 "L" adapters
- 3/8x24 mounting bolt & insulating washers for many motorized/screwdriver HF antennas (sold by Hi Q Antennas)

AMB-Bkt-Mast-D2.0
Super Duty Antenna Mount for Top of Mast

Optional AMB-Gnd-8W counterpoise "ring"

Diameter 5 inches
Includes eight (8) sets of 3/8x24 stainless steel couplers for standard whips and "hamsticks" for horizontal counterpoise

(not same scale to fit page)

AMB-Bkt-Mast-D2.0
Super Duty Antenna Mount for Top of Mast

Three of our optional antenna bases interchangeable & also fit some of our other mounts

(VersaBase not included)

"VersaBase" Buddipole™ antennas even longest radials!	SO239 base high quality with nicely machined HD rust proof nuts	NMO base also available with ground plane radials 135-512 MHz
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AMB-Bkt-Mast-D2.0
Super Duty Antenna Mount for Top of Mast

Optional **AMB-Arm2**: second antenna bracket with NMO base & groundplane (135-512 MHz)
→ Can fit TWO for total of **THREE ANTENNAS!**

Mounted on 2" OD Mast
HF screwdriver antenna with other options: SHUNT100, Jumper-shunt, SHD-SO239-LA2.0

Options *not shown* include a SHF and WiFi panel antenna "top cap" that screws onto our "VersaBase". Happy DX!

[all photos taken by Dick Post, N7EMW, via our companion business Creative Design Images]