

INSTALLATION INSTRUCTIONS:

BKT-ToyotaTrac-2[®] Slide-In Antenna Mount for Toyota Tacoma & Tundra

Trucks with Accessory Track & FACTORY COVER

Thank you for your purchase; we appreciate your business and interest in our products. Happy DX and have safe fun!

These instructions describe how to install the BKT-ToyotaTrac-2[®] (“Trac-2”) slide-in antenna mount for Toyota Tacoma & Tundra pickup trucks with the Toyota “utility slide track”, without drilling. The “Trac-2” differs from the BKT-ToyotaTrac-1 by having a horizontal antenna mounting plate that sticks out between the bed wall and cover gasket.



The TRAC-2 does NOT come with any antenna base and one is needed for your antenna. The TRAC-2 will support small to large V/UHF mobile antennas and smaller HF antennas – see list below. In addition to amateur radio antennas, it is well suited for commercial, GMRS, MURS and emergency response antennas and many CB (11m) antennas.

The TRAC-2 is compatible with three of our high quality antenna bases, as shown on **page 2**: 3/8x24 stud, NMO & SO239. They are interchangeable so if you buy another type of antenna you only have to order another base for your TRAC-2! Each has an SO239 bottom for connecting your PL259 coax plug.

Multiple TRAC-2s can be installed if you have more than one antenna, but *do not exceed the capacity of the Toyota “accessory track”*.

TRAC-2 Specifications

- **Material of construction:** 6061 T-6 aluminum.
- **Hardware:** 18-8 stainless steel 3/8 inch bolts; two heavy duty solder lugs for grounding/counterpoise.
- **Finishes:** Standard hand buffed aluminum. Optional black powder coat. On powder coat finishes we mask off the critical areas around the holes to provide an excellent bare metal to bare metal contact for good grounding.
- **Compatible Toyota pickups:** Tacoma & Tundra (L bracket has two sets of holes for fitting either truck)
- **Mounting Method:** slide in, no holes to drill. You will need to remove some of the five screws that hold the utility track to the bed wall, and loosen the others, so you can slide in the track plate.

Compatible Antennas

The “TRAC-2” will fit a variety of HF/V/UHF antennas listed below. The Toyota “utility track” may not support larger antennas than those listed below.

- Essentially any mobile VHF – UHF (6m and above), including GMRS, MURS and commercial bands.

- **Small HF:** “ham sticks”, Hustler loading coil, Outbacker “wonder lead”, manually tuneable (Super Antennas MP1, MFJ-1624), etc.
- **Smallest HF screwdriver:** High Sierra Sidekick, Tarheel Little Tarheel, Super Antennas MP2, Yaesu ATAS100/120, etc.
- **CB radio** (11m band): mobile antennas including 9 ft. whips.

The following antennas are NOT recommended. We have not been able to fully test the capacity of Toyota’s factory “utility track” but our observations when designing the TRAC-2 indicated that it might not support larger antennas under heavy wind loading and under dynamic driving forces.

Safety First

It is entirely the responsibility of the user to determine if an antenna is safe or not, and it is up to the user to safely install the mount. If you are not sure you can return it for a refund.

If you do not feel that you have the ability to safely install the TRAC-2 to your vehicle and antenna, please contact us if you would like to return it (within the first two weeks, see Warranty for details). 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. Be sure that your antenna cannot come into contact with power wires – especially if using longer whips. It is the user's responsibility to install a safe antenna and to ensure that the mount and the Toyota “utility track” can safely support their antenna. 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. Safety is always job one, performance is the next priority.

What You Need to Install the "TRAC-2"

To install the TRAC-2 you will need a Torx T-27 screwdriver or tip (to remove the ¼” Toyota utility track bolts), standard 9/16” or 14 mm wrench, and pliers. You may need additional tools for your specific antenna and mounting situation. The installation is simple. Since the truck has a composite bed, for HF antennas you may need to install wires across the bed to form a counterpoise (see our suggestions below).

Options

The following options are compatible with the TRAC-2.

- **Powder coated paint:** High quality and very strong black powder coat - paint powder is baked onto the part. The critical areas around the holes are masked off to provide an excellent ground connection!
- **Interchangeable antenna bases:** 3/8x24 stud, NMO and SO239 - shown in the photos below. All have an SO239 connector on the bottom to plug in your coax. The NMO and SO239 include unique nicely machined heavy duty rust proof nuts and stainless steel washers to fit the standard ¾ inch holes in the TRAC-2 and other mounts we have.

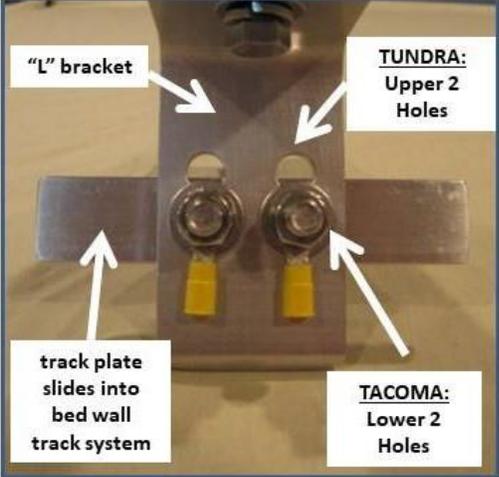


Installation and Maintenance

READ ALL OF THE FOLLOWING INSTRUCTIONS STEPS before you mount anything, to help ensure that your selected mounting location is the best one for your installation.

STEP 1: The following illustration shows how to install the BKT-2 into the Toyota utility track system.

“Track Plate” Mounting
BKT-ToyotaTrac-2
Tacoma & Tundra Use SAME MODEL “Trac-2”
But use DIFFERENT PAIR of mounting holes on “L” bracket





TO INSTALL TRACK PLATE

[NOTE: It is general best to mount antennas on the driver's side (less likely hit overhanging trees, etc. on road side).]

1. Remove rear track system plug (plug shown unscrews, some have plastic plugs which slide rearward out of track)
2. Remove rear 2-3 (of 5) screws that hold the track and remove or loosen the others to pull track away from bed wall just enough to slide in track plate.
3. Place two 3/8x16 bolts (the longer bolts) on the track plate BEFORE sliding into track system.
4. Slide the track plate to the desired antenna location (be sure away from cover hinges/mechanisms).
5. Place the “L” bracket over the bolts, and on EACH bolt place one flat washer, one spiral lock washer and a nut.
6. Tighten nuts securely (can use a screwdriver or plyers to hold bolt head inside track system so bolt does not turn while tightening nut).

➔Put your installation notes below:

STEP 2: Install the horizontal antenna mounting arm to the “L” bracket that is bolted to the Toyota accessory track. This step also explains how to align the antenna arm so it is against the top of the bed wall but not too tight, and how to align it if necessary. We have attempted to make the design adjustable to fit most Tacoma’s and Tundra’s.

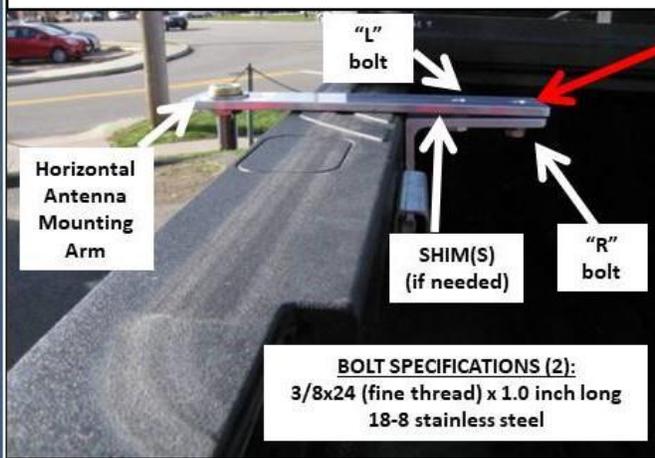
Installing & Adjusting Horizontal Antenna Arm

BKT-ToyotaTrac-2

Purpose: align antenna arm so it is flat against bed wall for best fit to bed cover.

HORIZONTAL ANTENNA ARM INSTALLION (after “L” bracket is installed on “track plate”):

1. After tightening the two track plate bolts in the previous step, be sure horizontal antenna arm is against top of bed wall and there is NO gap between the antenna arm and top of bed wall (cover gasket will seat better) – if not loosen these bolts slightly and try realigning, then tighten bolts (if still a gap or arm too tight on bed wall see step 3 below).
2. Install the two 3/8x24 SS hex (shorter) bolts from the bottom of the “L” bracket, and into the bottom of the horizontal antenna arm.
3. **NOTE FOR TUNDRA:** For best alignment you may need to place 1 shim (narrow flat washers) between the “L” bracket and the horizontal antenna arm to raise and tilt it slightly. 1st try only on LEFT BOLT. If needed place a second shim on the RIGHT BOLT. Do NOT place more than 2 shims on any one bolt as the screws will not extend enough into the treads on the horizontal antenna arm.



CAUTION: BOLT ENDS INTO ANTENNA ARM:

Once tightened the two bolts that screw into the bottom of the antenna arm must be flush with the top of antenna arm.

1. They must NOT stick ABOVE the antenna arm over 1/16 inch (0.5mm) or will hit bottom of bed cover. Best if flush.
2. If using SHIMS (narrow flat washers), be sure bolt ends are FAR ENOUGH INTO the antenna arm THREADS, must be closer than one thread from end. If needed you can use longer 3/8x24 (“fine thread”) 1.0 inch long stainless steel bolts and use extra SS flat washers under the bolt head on the bottom of the “L” bracket to space the bolt ends.
3. Do NOT OVERTIGHTEN the bolts as the threads are in aluminum and if the threads are stripped the arm will have to be replaced. You can not mount bolts from the top as they will hit the bed cover.

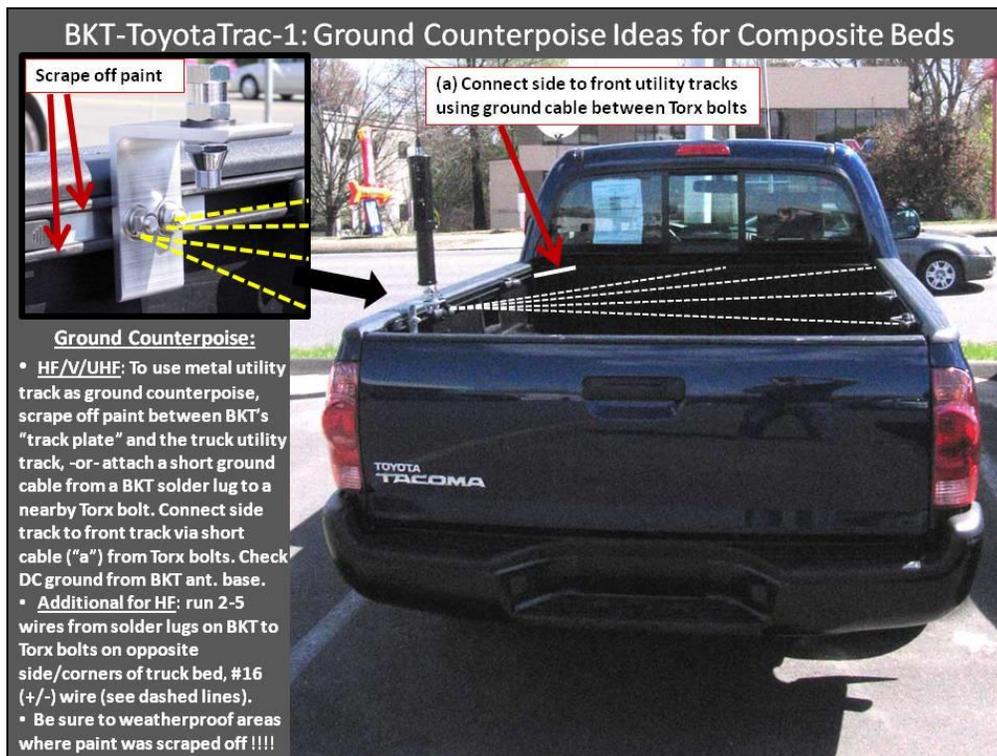
STEP 3: Install antenna base, using one of ours or an aftermarket that can mount into a 3/4 inch diameter hole with a panel thickness of 1/4 inch.

STEP 4: Grounding and Counterpoise Suggestions

Most antennas require a ground counterpoise (“groundplane”) for your antenna, since the Tacoma has a composite bed. The metal Toyota utility track WILL provide a counterpoise for V/UHF frequencies and part of a counterpoise for HF frequencies. There are three utility tracks on the Tacoma and they are NOT electrically connected together: left, front and right bed walls. You will need to do one or more of the following steps if your antenna requires a groundplane (“counterpoise”), as almost all mobile antennas do (see the “**counterpoise**” illustration below).

- Do the following for ALL antennas (HF/V/UHF). This should provide a sufficient groundplane for V/UHF antennas and part of a HF counterpoise. Note that the track counterpoise will provide a stronger signal, theoretically, in the front to back directions. To use the metal utility track as a counterpoise, you will need to ensure a good metal contact (“DC ground”) between the TRAC-2’s buffed aluminum “track plate” and the utility track. The utility track is painted and therefore will NOT automatically provide the ground connection, unless you do the following:

- Scrape off paint where the TRAC-2 track plate touches the utility track along the full length of the TRAC-2's track plate, -OR-
 - If the TRAC-2 is located next to a Torx bolt that fastens the utility track to the composite bed wall, run the shortest length of braid from one of the TRAC-2's solder lugs to the Torx bolt, using another ¼" solder lug (not included) under the Torx bolt head. You will need to remove paint around the Torx bolt hole. Weather proof this area by using "coax seal" putty or non corrosive RTV sealer (type without a vinegar odor) or automotive sealer – you can place this where you removed paint before attaching and tightening the Torx bolt and the TRAC-2 bolts as the sealer will "squeeze" around the parts if tightened BEFORE the sealer starts to dry.
 - Check for a DC ground (0.0 to 0.1 ohms) between the antenna base ground and the truck's utility track, on the end farthest from the TRAC-2.
- For HF antennas you may need an additional counterpoise if the "utility tracks" do not provide this sufficiently. Run 2 to 5 insulated or bare wires, nominally #16 (+/-) wire gauge, from one or two of the provided solder lugs on the TRAC-2 to the opposite side of the bed (**see illustration below**). You can use almost any hookup wire, bare or select an insulation color that matches your truck or compliments the color of your truck! You can fasten the ends of these wires to the ¼ inch Torx bolts on the utility track on the opposite side of the bed, using solder lugs (additional ones are not provided with the TRAC-2 but are available at most hardware stores, and we can provide these as well). By grounding these to the opposite track you will add additional counterpoise.



- Additional/optional grounding. The following grounding idea may not be required if you followed the counterpoise ideas above, unless you have engine or car computer noise in your radio or the other ideas are not working on all bands. If so, you may want to run heavy ground cables or metal/copper foil at multiple locations along the utility track under the TRAC-2, from the Toyota utility track to the truck's metal frame/body that is closest to the track. It should be noted that **ONLY** using this ground method (without our other counterpoise ideas) will **NOT** form a sufficient groundplane and may cause problems with tuning your antenna since this would result in your antenna being elevated above the ground plane. You want the groundplane to be more or less horizontal and located just below the base of your antenna.

STEP 5: Connect coax to your radio. It is suggested to use RG58 size coax, with at least 95% shielding.

You will need to provide the coax and related parts/cables to connect your antenna, and if installing a motorized / screwdriver antenna, to your controller or manual up/down switch. Some basic considerations are provided below but do not cover every detail you may need to get your antenna working. There are some good web sites and books by the ARRL and others that provide detailed information on installing HF antennas. We provide some links on our web site LINKS page.

- Coax connection. Generally, RG-58 size coax works fine in mobile installations where the length of the coax is typically less than 25 feet, especially if you run under 500 watts. Be sure to use good quality, highly shielded coax (at least 97% shielded). Times Microwave, and others, make 100% shielded RG58 size coax (e.g. LMR-200).
- 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 or more of these should have the coax wound 2-3 times around one of the ferrites (improves filtering but lowers the filtered frequency range). Also install ferrites in a similar fashion on your motor/turns counter cable, and install one ferrite on the coax near your transceiver. Also install one ferrite on EACH cable that connectors your radio to an automatic tuner. 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 your antenna. These suggestions apply to HF screwdriver and motorized antennas. You can tune your antenna using a DPDT, center off, manual switch or one of the automatic tuning devices. 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 in rare cases to fine tune an SWR that is slightly too high and can not be reduced by improved grounding or using a load inductor. Screwdriver / motorized antenna auto tuning devices run the antenna motor and stop at the point of resonance. There are several available and users report good and bad results. It is best to do your research when deciding on which method (manual or automatic) is best for your setup and which automatic device may work best for you, based on comments from others.

Maintenance

The TRAC-2 requires little maintenance as it is made from 6061/T6 aluminum and 18-8 stainless steel parts. If exposed to road deicing materials or sea water be sure to rinse it with water after exposure, as you would your own vehicle. This is more important for the unfinished, bare aluminum, as the powder coated version is very resistant to weather conditions. You can "buff" the bare aluminum version with #0000 (very fine) steel wool - but be sure to completely remove any steel wool debris so it does not short out your antenna - this can be done by vacuuming or wiping with a damp rag.

Periodically check to be sure that all bolts on the TRAC-2, utility track "Torx" bolts, antenna base and antenna are tight and have not come loose. I generally check antennas on my own vehicle periodically or before the start of a long trip.

Spare Parts, accessories and downloads

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 radio community.

Let us know if you would like to post photos or comments about your installation on our web site – we would only do so upon your approval.

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.**