MFJ-2982 Feather-Lite 80-6 Meter Vertical Antenna

Introduction: The MFJ-2982 is a lightweight 31-foot fiberglass antenna designed to mount on any convenient post, mast, or a suitable wide-stance tripod such as the MFJ-1919. Because it collapses to less than four feet in length, it's the ideal choice for all-band coverage from your RV, campsite, condo, emergency station, or field day location.

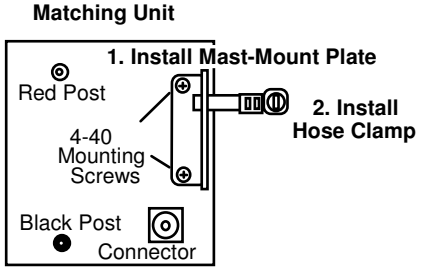
Unlike simple "flagpole" antennas, the MFJ-2982 is a complete antenna system that includes an adjustable base loading coil, effective Guanella balun, and an easy-to-deploy counterpoise. The counterpoise improves efficiency and enhances impedance matching for low-SWR operation on 80, 75, 60, 40, and 17-Meters. In fact, on 17 Meters, the MFJ-2982 functions as a 5/8-wave radiator with gain. The MFJ-2982 also operates on 30, 20, 15, 12, 10, and 6 Meters with an antenna tuner. All components have been power tested to 600-Watt PEP on SSB and CW, but lower power levels are recommended in public areas for bystander safety.

Parts List: Please inventory all items in your kit against the parts list below:

[ ]	1	MFJ-1910 fiberglass mast
[ ]	1	33-foot roll of jacketed antenna wire
[ ]	1	Plastic antenna-wire spooler
[ ]	2	Aluminum antenna mounting brackets
[ ]	5	Hose clamps
[ ]	1	Base matching unit
[ ]	1	Mounting bracket for base matching unit
[ ]	1	Counterpoise kit (PN 13-6160-1)
[ ]	1	Ring Lug
[ ]	1	Spade lug
[ ]	2	4-40 screws with kep nuts

Pre-Assembly of Base Matching Network:

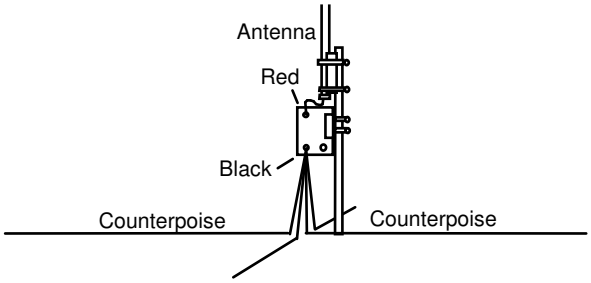
[ ] Unscrew and remove the cover from the matching network box.
[ ] Using 4-40 hardware, install the network box mounting plate as shown.
[ ] Install a hose clamp in the mounting bracket, as shown.



Once the antenna is set up and operating, the network cover may be re-installed without screws to allow for quicker access to the loading coil. The matching unit is generally mounted on the antenna's support pole a foot or so below the antenna base plug.

Important Warning: **When transmitting, high RF-voltages are present. Always cover the loading coil unit to prevent accidental contact and possible RF burns.**

Setting Up the Counterpoise:
[ ] Connect the counterpoise to the black terminal on the loading network box.
[ ] Spread the counterpoise wires out, spaced 90-degrees apart (see diagram):

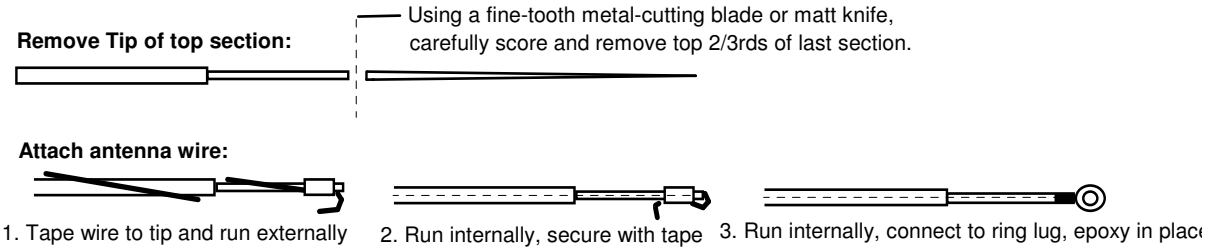


Counterpoise should lie on top of the ground. Do not anchor with a ground rod – it will de-tune the array. The center and far ends of the counterpoise wires may be secured with non-conductive stakes or pins to hold them in place.

Antenna Wire:
[ ] Install the spade lug on one end of the 33 foot antenna wire (will connect to red terminal)

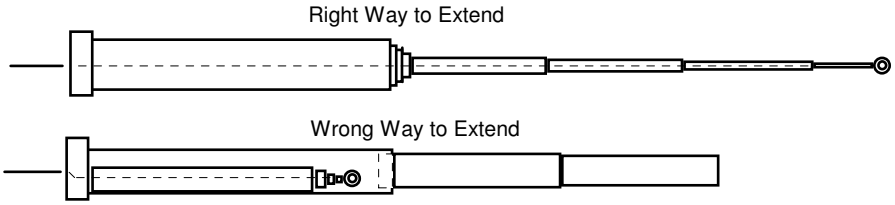
There are three options for installing the 33-foot antenna wire on the telescopic mast. You may (1.) secure it to the tip of the mast with tape and route it down the outside of the pole, (2.) insert it internally through the hollow core of the mast and attach it to the tip with tape, or (3.) insert it internally and attach it to a ring-lug at the tip for connecting a top hat or "T".

Modifying Mast for Running Wire Internally:
[ ] Remove the base plug and drill a ¼" hole near its center to pass the wire.
[ ] Remove the tip of the pole about 20 inches back from the end to expose the hollow opening.
[ ] Route antenna wire through the base plug, through the nested sections, and out the end of the last section. Secure it in place using either method 2 or 3, shown below.



Procedure for Extending the Antenna Pole: During set up, the fiberglass pole must be extended to its full length on the ground before being raised into the vertical plane. Also, each section must be pulled out in sequence -- from the smallest to the largest in diameter. If one or more small-diameter sections accidentally slip down behind larger sections during extension, you'll need to remove the base plug and re-nest them so they "telescope" correctly. To extend:

[ ] Remove the rubber retaining stopper from the top of the collapsed mast to access sections.
[ ] Uncoil the antenna wire from the roll, stringing it out behind the base plug.
[ ] Push the antenna wire into the base cap to force the top section of the antenna to emerge.
[ ] Working from the top down, pull each antenna section out and twist-lock it into place.



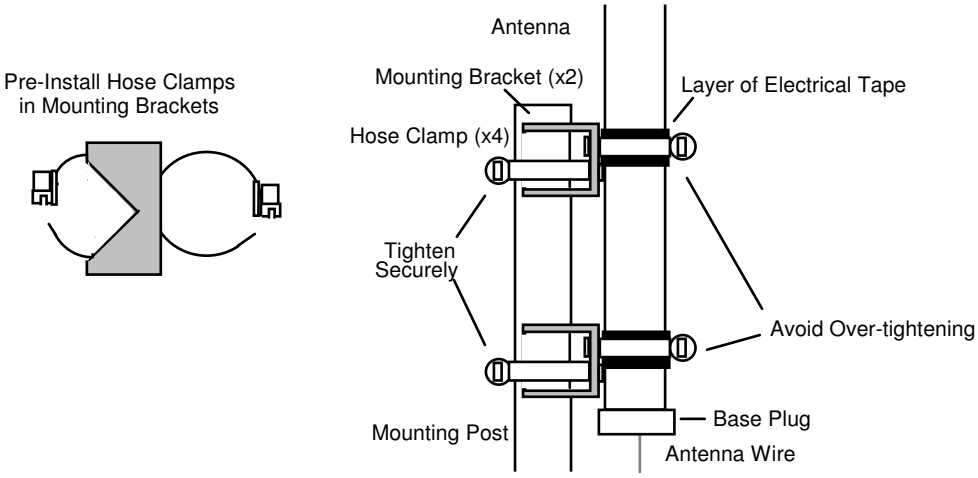
As you extract each section, antenna wire will feed in through the base plug. Make sure nothing blocks the feed. When all sections are extended, about two feet of wire should remain. This pigtail will be connected to the red post on the loading coil box once the antenna is in position. Before raising the antenna, *check each section to ensure it is locked securely.* If any section fails to lock by twisting, install a couple turns of tape around the joint to temporarily secure it.

Important Warning: **Never assemble or raise this antenna where it could fall on power lines. Use the buddy system – have an observer present to assist you.**

Raising the Antenna: When using a fixed vertical mount, the antenna must be extended fully before it can be raised vertically and installed on its mount. If a second person is available, have them steady the pole while you install the hardware.

Installing Mounting Hardware: The MFJ-2982 mounting hardware accommodates any vertical post, mast, or tripod stand up to 2 inches in diameter. To mount the antenna:
[ ] Pre-install the hose clamps in the mounting bracket slots, as shown.
[ ] Install brackets about 1-foot apart on mounting post. Align and tighten clamps securely.
[ ] Lift the antenna into position and install hose clamps around it.
[ ] Tighten clamps sufficiently to hold the antenna in place, but do not over-tighten.

Important Note: *Over-tightening the two antenna-side hose clamps may damage the light-weight fiberglass tube. These clamps only need to be tight enough to prevent the antenna from slipping downward. A layer of electrical tap may be added to help protect the antenna wall.*



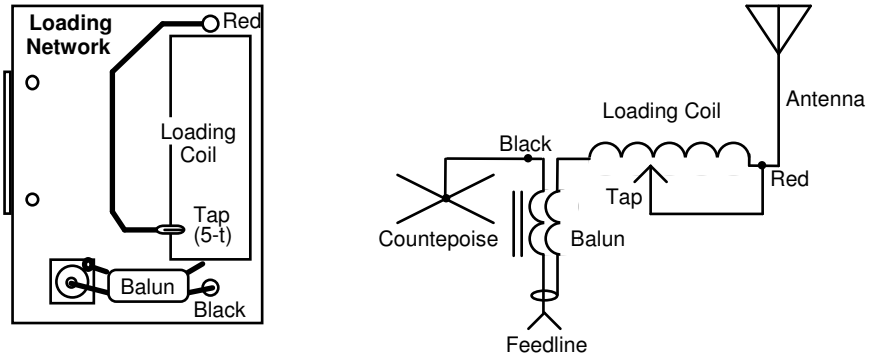
Collapsing Procedure: When taking the antenna down, follow the procedure outlined below. Failure to collapse it correctly could un-nest sections or sever the antenna wire. To collapse:

[ ] Lay the antenna over on the ground
[ ] Attach a temporary stop at the tip to prevent smaller sections from sliding past larger ones
[ ] Unlock each section sequentially, one or two at a time, from smallest to largest.
[ ] Gently extract the antenna wire through the base plug, winding it onto the wire spooler.

As you pull, each section should smoothly slip in and nest in sequence, from smallest to largest. Avoid yanking on the antenna wire if a section binds and stops. Instead, free the sticking section.

[ ] When the pole is fully nested, remove the temporary stop from the end.
[ ] Reinstall the rubber end plug to prevent antenna sections from slipping back out.
[ ] Attach the antenna-wire spooler to the fiberglass pole with elastic bands for transport.

Tuning Instructions: The counterpoise is required for low-SWR operation on 80/75/60/40 and 17 Meters without an external tuner. It may (optionally) also be used on the other bands with a tuner or replaced by a ground rod.



Tap Settings: These settings were compiled on our test range (your settings may vary).

80,75 Meters: Tap for lowest SWR at the top of the coil. Typical minimum SWR 1.2-1.3:1
60 Meters*: Tap approximately 18 turns from the bottom of the coil. Typical SWR 1.1
40 Meters: Tap between at 2-5 turns up for best SWR. Typical minimum SWR 1.3:1
17 Meters: Tap at 5 turns (move as needed for minimum SWR). Typical SWR 1.2:1
20 Meters: Tap midway to reduce SWR (tuner required on this band).
*For computing ERP on 60 meters, assume an antenna gain of –5 dBd.
All Other Bands with Antenna Tuner: Tap at 0 turns to bypass the loading coil.

Troubleshooting:

[ ] *RF feedback*: Provide more physical separation between the feedline and counterpoise wires.

[ ] *Antenna section fails to twist-lock tightly:* Temporarily tape the slipping joint. Degreasing may also resolve a slippage problem.

[ ] *Intermittent changes in SWR:* Remove the box lid and check security of the coil-tap clip. Confirm that it is not shorting intermittently shorting against an adjacent turn.

Missing or Defective Parts: MFJ warrants that all listed items for your MFJ-2982 antenna are included and free from defect. If your bill of materials is missing parts or contains damaged items, contact the factory by phone at (662) 323-5869 to arrange for replacement or write. Our mailing and shipping address is: MFJ Enterprises, 300 Industrial Park Road, Starkville, MS 39759. Please *do not* return any items to MFJ unless explicitly authorized to do by MFJ Customer Service.

Using the MFJ-1919 tripod to support the Feather-lite vertical antenna

The MFJ-1919 makes a nice portable stand to support the feather-lite antennas. Sliding the antenna over the top of the tripod will hold it vertical once the tripod legs have been fully extended. Removing the mast pole and top clamp from the tripod is recommended as it will allow easy access to the matching unit.

Loosen the mast clamp and remove the mast pole. The clamp has a small amount of glue holding it in place. A tap with a hammer will loosen the clamp an it should slide off the tripod. The clamp and mast will not be used and may be discarded or saved for other uses. The Feather-lite antenna will now slide over the remaining mast of the tripod. Make sure the legs are fully extended before allowing the antenna to stand by itself. If windy conditions are present, then the antenna must be guyed or anchored in some way. The tripod is not capable of keeping the antenna vertical in gusty conditions. Do not install the antenna on un-level ground as this will make it more likely to fall. Extend the antenna fully before attempting to install onto the mast. If you wish, you may tip the tripod onto its side and slide the antenna on so that they may be raised together. If you chose to run the antenna wire outside the mast then you may want to twist the wire around the mast in a candy cane fashion. This will prevent the wire from moving in the wind. Do not leave the antenna up for extended periods of time. This antenna is meant for temporary portable use. Swaying of the antenna will loosen the joints over time and may cause some of the sections to fall down inside the others. This may crack the end of a section and cause it to not lock properly in the future.