



## Modified Portable MFJ-1835/1836 Cobweb Antenna

The MFJ-1835 Cobweb Antenna is an inexpensive way to easily get on 20, 17, 15, 12 and 10 Meters (the MFJ-1836 adds 6 Meters). Its lightweight and being non-directional make it easy to mount using simple masts for portable operations. Unfortunately as shipped the antenna is not very portable, even disassembled, as the shipping box is over 6 ½ feet long. Once assembled the distance across two elements is almost 14 feet and it not easy to partially disassemble to transport.

My goal was to make it a portable antenna, but without changing the supplied fiberglass poles if I wanted to later do a permanent installation. One of the best things about this conversion project is the low cost (<\$20) and readily availability of all the parts.

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### Materials needed

- 1/2 in. x 10 ft. PVC Schedule 40 Conduit (Lowes 5 each at \$1.90 = \$9.50)
- #6-32 x 1-1/4-in Round-Head Machine Screws and Matching Nuts (10-Count \$1.25 or \$2.05 for stainless)
- #10 x 0.5-in Zinc-Plated Self-Drilling Interior/Exterior Sheet Metal Screws with hex heads (Ace Hardware- 50-Count \$5.25 you will only need 20)
- #10 x 1/2-in Stainless Steel Flat Washer (Ace Hardware- 36-Count \$2.00, you will only need 20)

### Tools needed

- Small Tubing Cutter- to cut PVC conduit
- Sandpaper to slightly reduce size of end and remove sharp edge and burrs from cut conduit
- Drill and bits
- Nut driver for the ¼ and ⅜ inch nuts
- Tape measure
- Marking — “sharpie” type marker and medium nail
- Vaseline or light grease

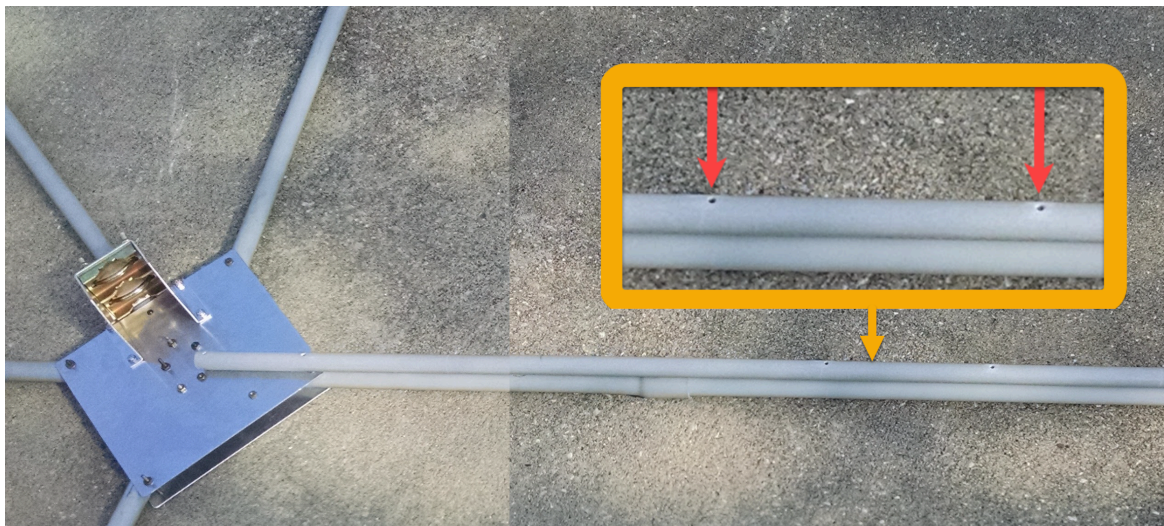
### Steps

- Measure and Cut Conduit 30” section with flared end x 5
- Measure and Cut Conduit 47” section x 4
- Measure and Cut Conduit 17” section x 1
- Use sandpaper to remove any sharp edges or burrs of cut conduit ends

- Using one of the MFJ fiberglass masts as a template drill two aluminum plate mounting holes through flared sections of conduit (on the opposite end from flare) x 4
- Repeat with matching mount conduit.
- Insert 1 ¼ " Machine Screws through conduit sections to attach to aluminum plates as described in MFJ instructions (do not put nuts on yet) x 4



- Prepare the four sections of the straight conduit by sanding the first 2" inches to slightly decrease diameter and apply a small amount of Vaseline to easily insert into flared ends (make sure all four are inserted approximately the same depth).
- After inserting mark each conduit and flare with a letter (A, B, C, D) to facilitate later reassembly.
- Repeat with the short section used for mounting the matching box.
- Temporarily place one of the MFJ fiberglass poles on the two protruding screws from the step above and align over the newly inserted conduit. Insert the nail through existing holes on the fiberglass pole and gently tap to mark the conduit.

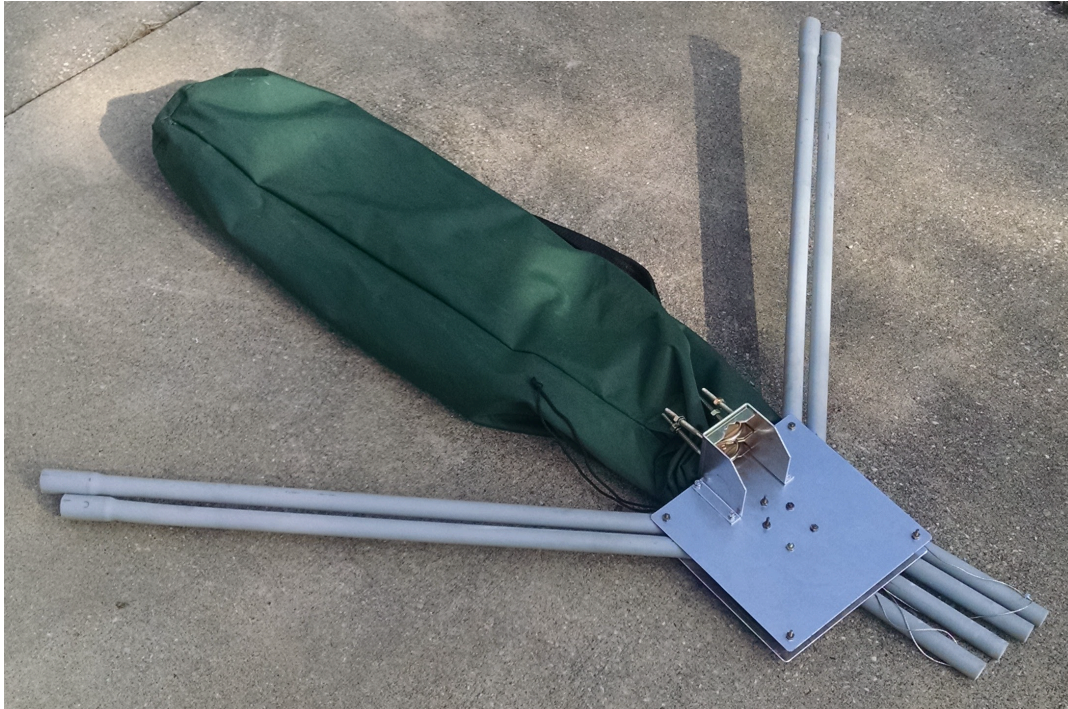


- Set MFJ fiberglass poles aside for safe storage.
- Put nuts and washers on protruding screws from aluminum mounting plate step above and tighten.
- Use drill with nut driver head to start one metal screw and washer at each of the marked spots on conduit, do not tighten.



- Mark holes for matching box on short conduit section, drill hole and mount per MFJ instructions.
- Mount all wires on machine screws under washers and tune per MFJ instructions.
- Gently tighten all the machine screws
- When ready to transport, remove conduit ends from the flared end (start with a conduit with a matching box).
- Once all sections have been pulled out, carefully bring them together being careful to not kink/tangle wires. Insert into a box or carry bag.
- On the hub assembly remove the outer mounting screw from the two conduit sections furthest from matching box conduit. Loosen inner screws on the same two bolts. Gently rotate two sections along the remaining two to reduce size of hub assembly for transporting.





- The last two pictures show both the hub and elements packed for transport. If necessary you can remove aluminum plates and fit everything in an even smaller package.
- To reassemble reverse step 19. Layout 5 conduits with wires and a matching box. Place the hub assembly in the middle and reinsert all conduit ends making sure not to tangle wires. Insert matching section last

## Update

After a few years, the original wires used by MFJ have deteriorated and I need to replace them. Here are the lengths for wire elements:

Number of wires	Band	Length (feet)	Length (inches)	Length (cm)
2	6M	5	60	152.40
2	10M	9	108	274.32
2	12M	11	132	335.28
2	15M	12	144	365.76
2	17M	14	168	426.72
2	20M	18	216	548.64