

CCD Board Set

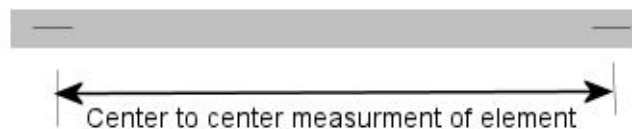
Thank you for purchasing the board set. This should make building your CCD enjoyable and much faster than any other form of construction.

The boards are constructed of UV resistant material and should last you many years of QSOs. They have been tested in very strong and sustained winds and some pretty violent lightning storms and survived just fine. Just in case, we supply you with 2 extra boards.

Tips for construction:

After building many of these I've found the following to be helpful.

- The large holes are designed for 14 gauge wire but any size under that should work.
- Mount the caps on the boards first making sure to keep the larger holes open for the wire later.
- Build a jig that consists of a board with two slots, one on each end spaced exactly the distance needed for the band you're building it for. Refer to ccdantennas.com for measurements. The slots should be in line with each other on the jig so that they will slip into the slots in line as they will be when hanging in the air.



- Place the first board in the right slot. Cut a section of wire about 6 inches longer than the exact measurement and place that in the left hole. Place the end of the wire from your spool in the right hole.
- Before soldering bend the wires so they are feed in line with the board. Especially if you are using stranded wire because the solder will wick into the strands and make the wire very hard to bend later. So, basically, put the wire through the holes and bend to line up with the board before soldering.
- To keep from stressing the boards by cutting the soldered wire after the fact it's important to make them the right length from the start. In each case when putting wire into the holes the amount needed should be all you have showing out the solder pad side. You may have to place items on the wires to hold them in place as you solder them.
- Because the wire can handle much more heat than the solder pads I've found that applying heat to the wire only still conducts enough heat to the pad to create a complete solder connection.

- Once your first board is complete remove it from the right slot and place it in the left one on the jig. Examine each board after soldering to make sure the hole and wire have made a good and complete connection. Especially when using stranded wire. Leave no strands unsoldered as this will allow for corrosion. Place something heavy on the board to hold it in the left slot.
- Place the next board in the right slot. Pull the wire taught from the left board and cut the wire with just enough left to bend into the hole leaving 1/16th to 1/8th inch coming out the pad side. Again, you want to try to avoid having to cut the wire after soldering it.
- Take the wire from the spool and put the end in just enough to solder and make sure you bend it first.
- As each board is completed it goes to the left slot until you have completed 23 on each leg.
- The last board needs to have about 6" of extra wire to allow for the end and/or center insulator connection.

If you are using stranded wire, especially if you use 14 gauge, you may find the wire needs to be perfectly round in order to fit the hole in the board. I found using a wire nut is handy to make the wire round after cutting it. Just twist it on and then off again and it should be perfect.

I've found that the CCD actually works best without a balun. It won't be as wide but it will have a distinct place on the band where it's resonant. It should be at or below 3:1 just about anywhere on any band.

Once you have it in place there is no need to adjust it. Actually, there is no way to adjust it since each of the 46 sections create the main resonance and not how long the ends are as you'd find with a dipole. It will depend on the value of capacitor you use on where the center frequency is. Unfortunately the standard values don't always allow the antenna to be where we'd like them in a perfect world.

You will find that the CCD is a quiet antenna much like a loop, and that how high you mount it will make little difference. Because it's a quiet antenna the signals will seem stronger than a dipole...and in a sense they are compared to the noise. You can also mount it at some pretty strange angles, under eaves, in the attic, and even near metal objects and have very little interaction with those objects.

73 and have fun!!

Dave
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