



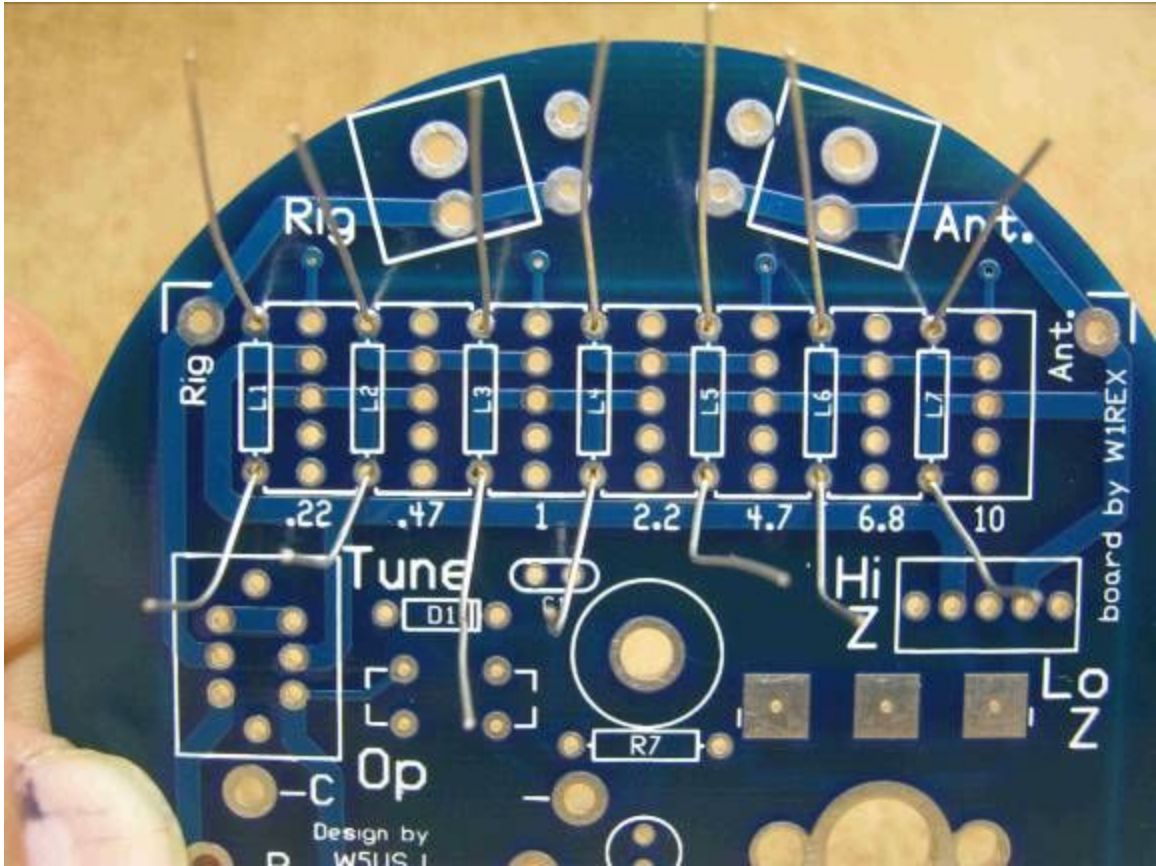
The Tuna Tunah kit...
(A switched inductor antenna tuner)



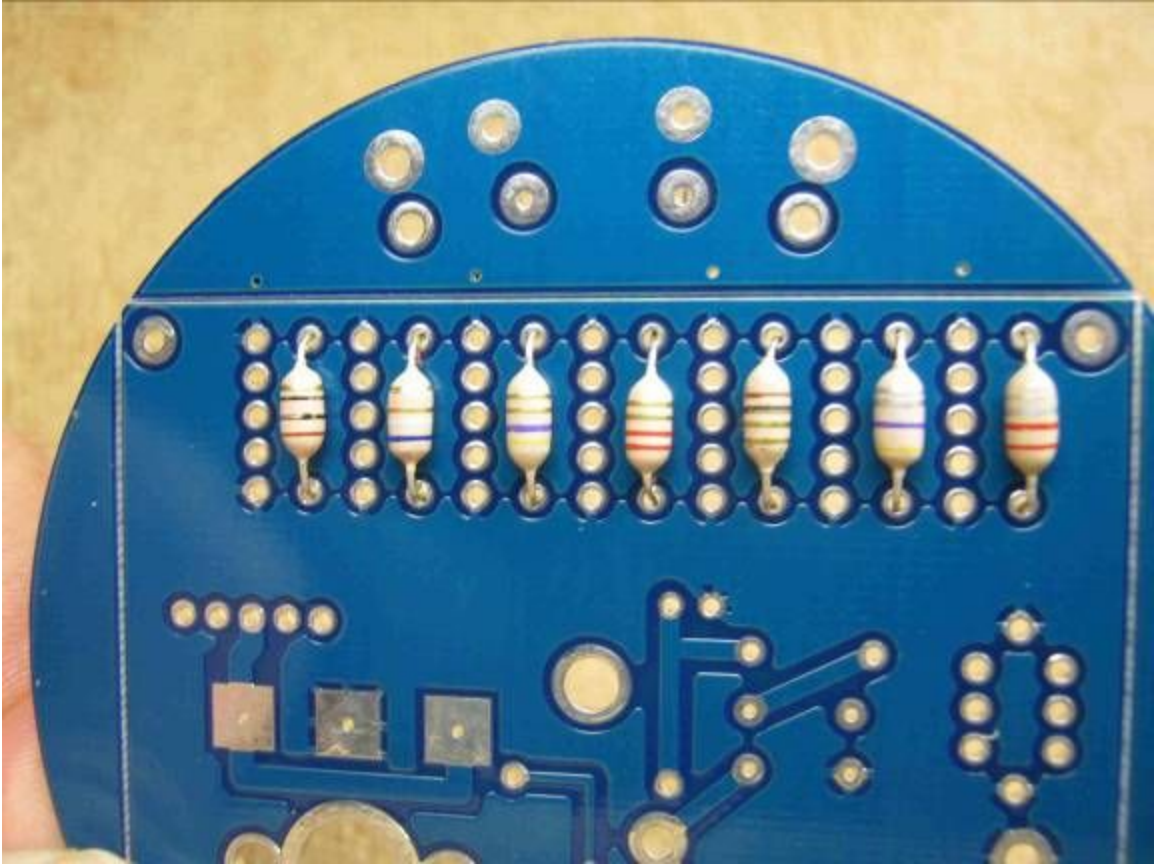
All those parts in my Parts Holder can come inside the Tuna Tunah can...



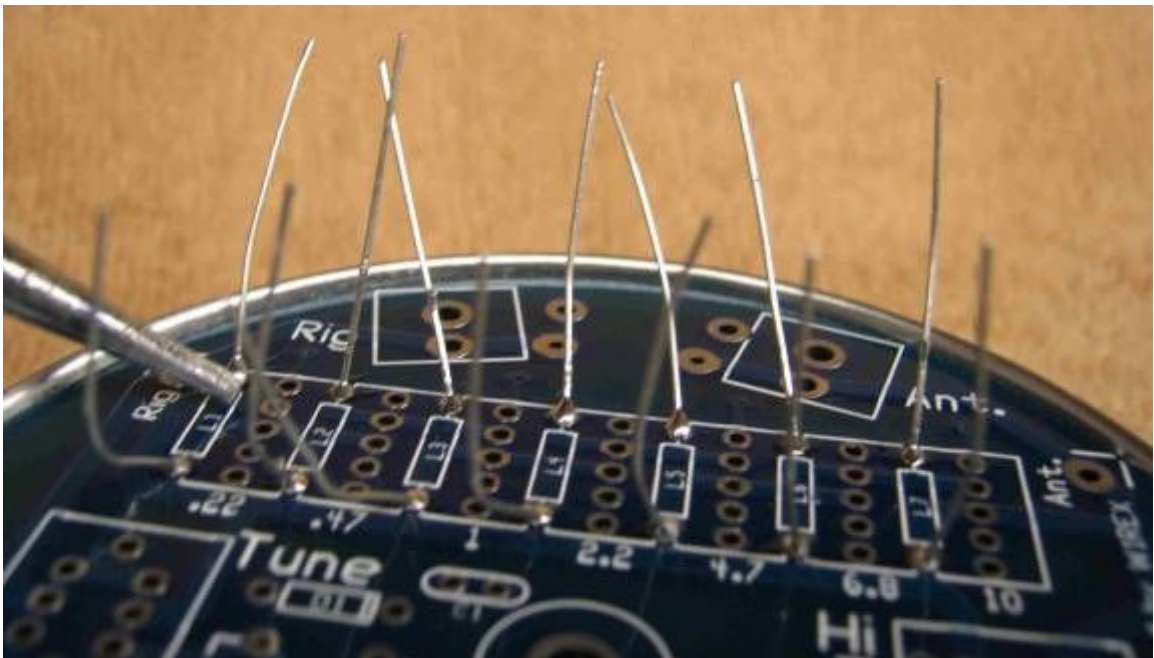
Here is a close-up of the parts all sorted and arranged in my Tuna Construction Zone Parts Holder can...



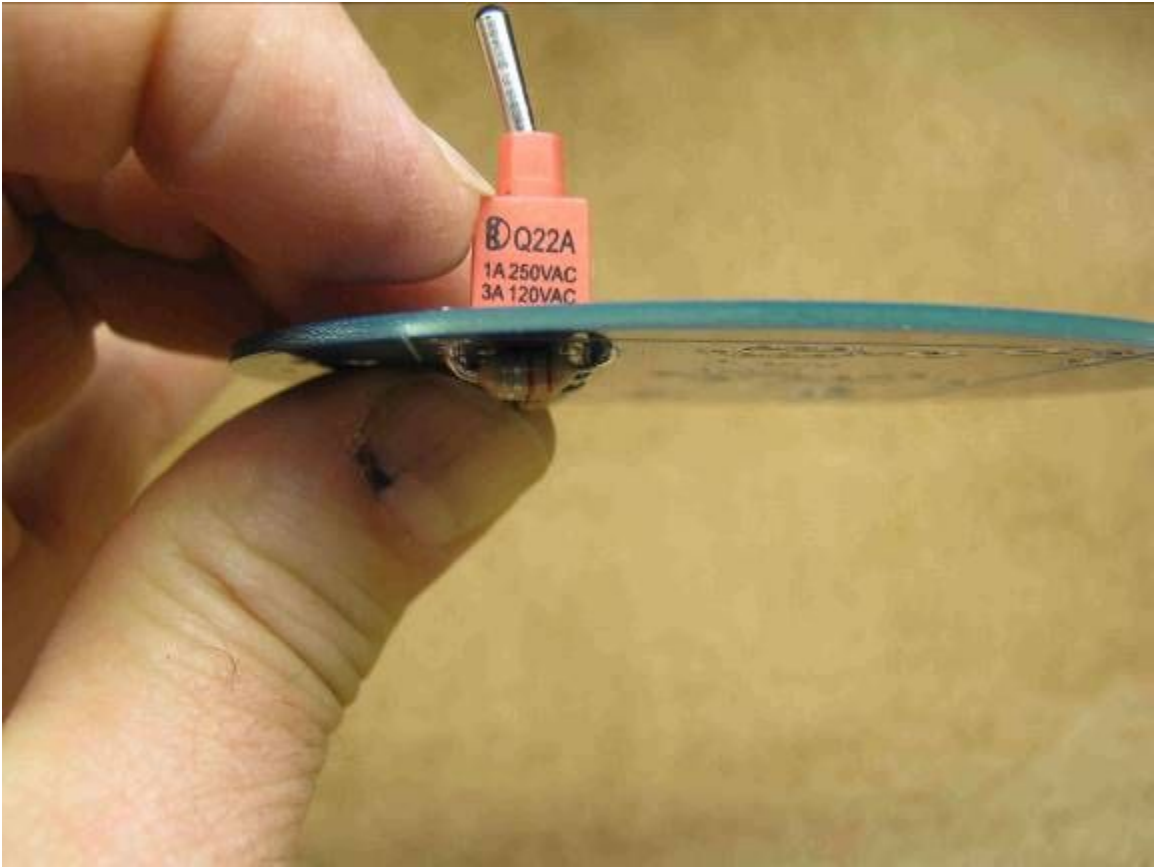
I started by inserting all the chokes. They are mounted on the **underside** of the circuit board.



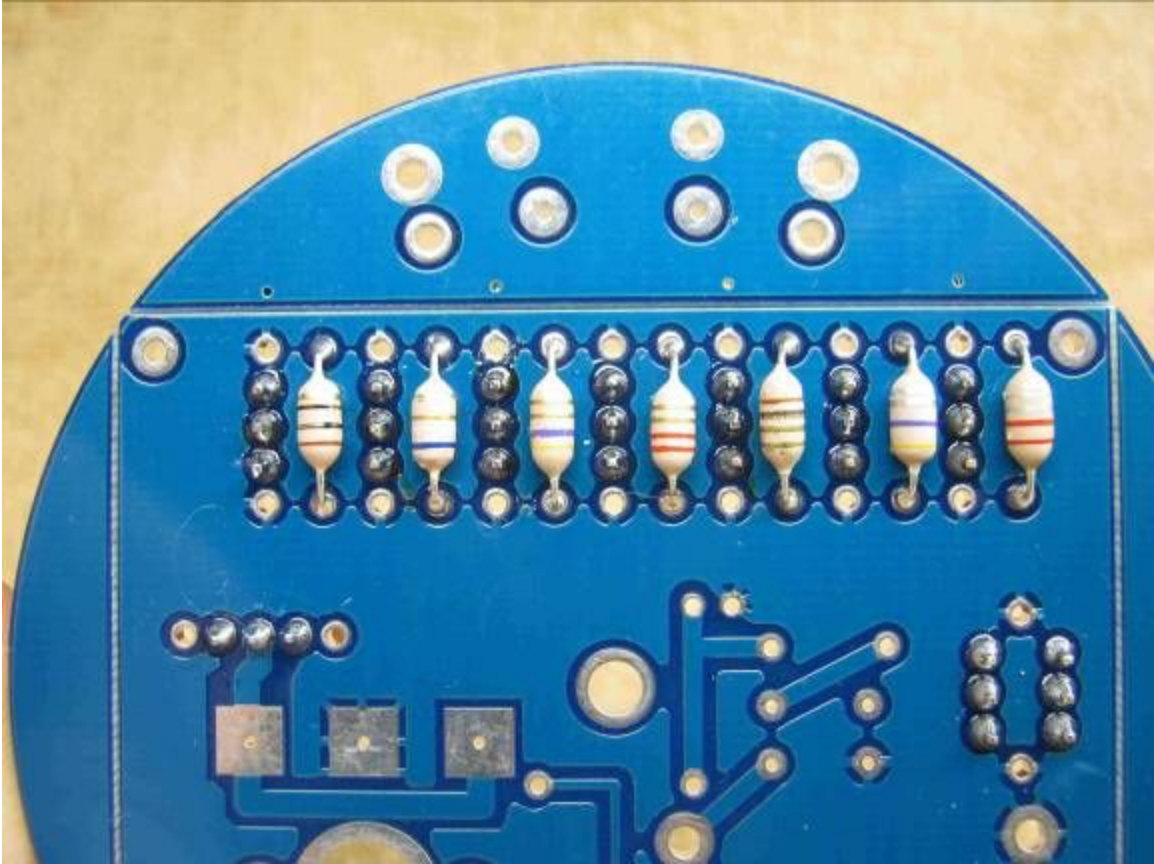
Here they are on the underside...



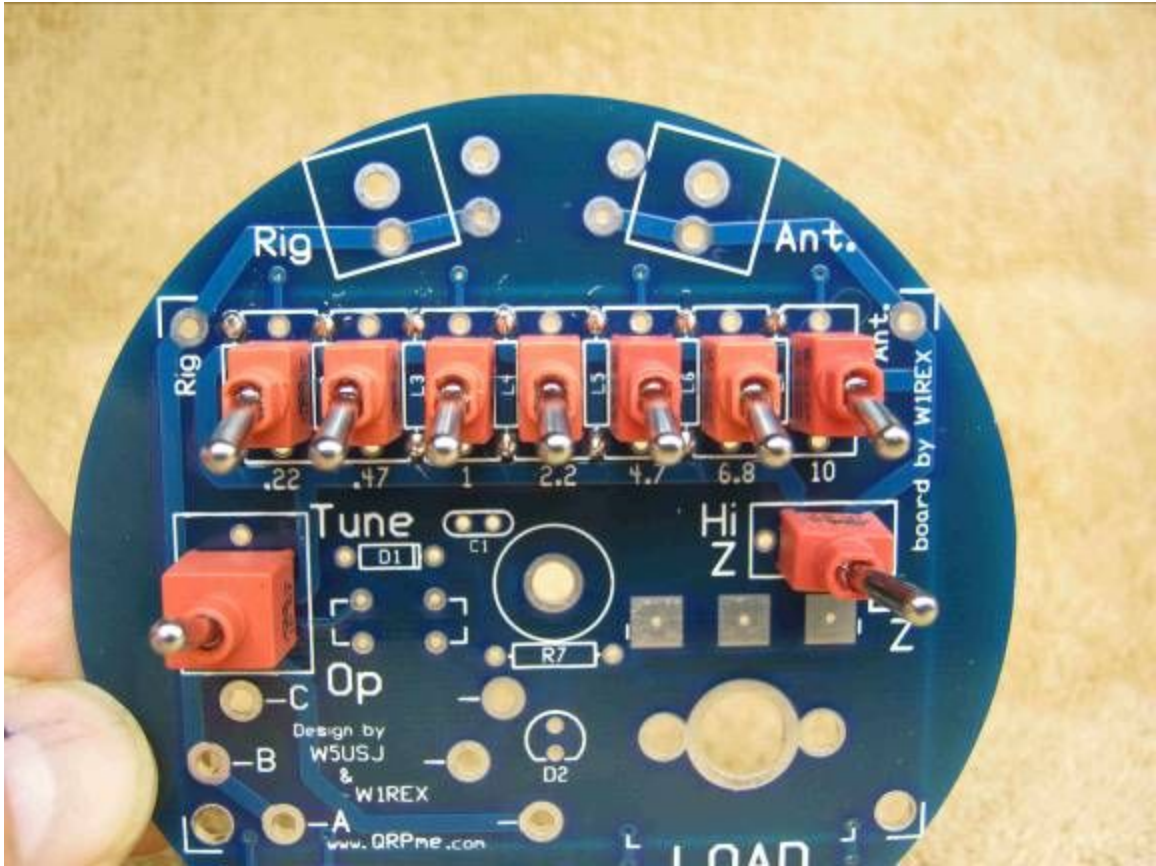
I inserted them all and then soldered the batch..



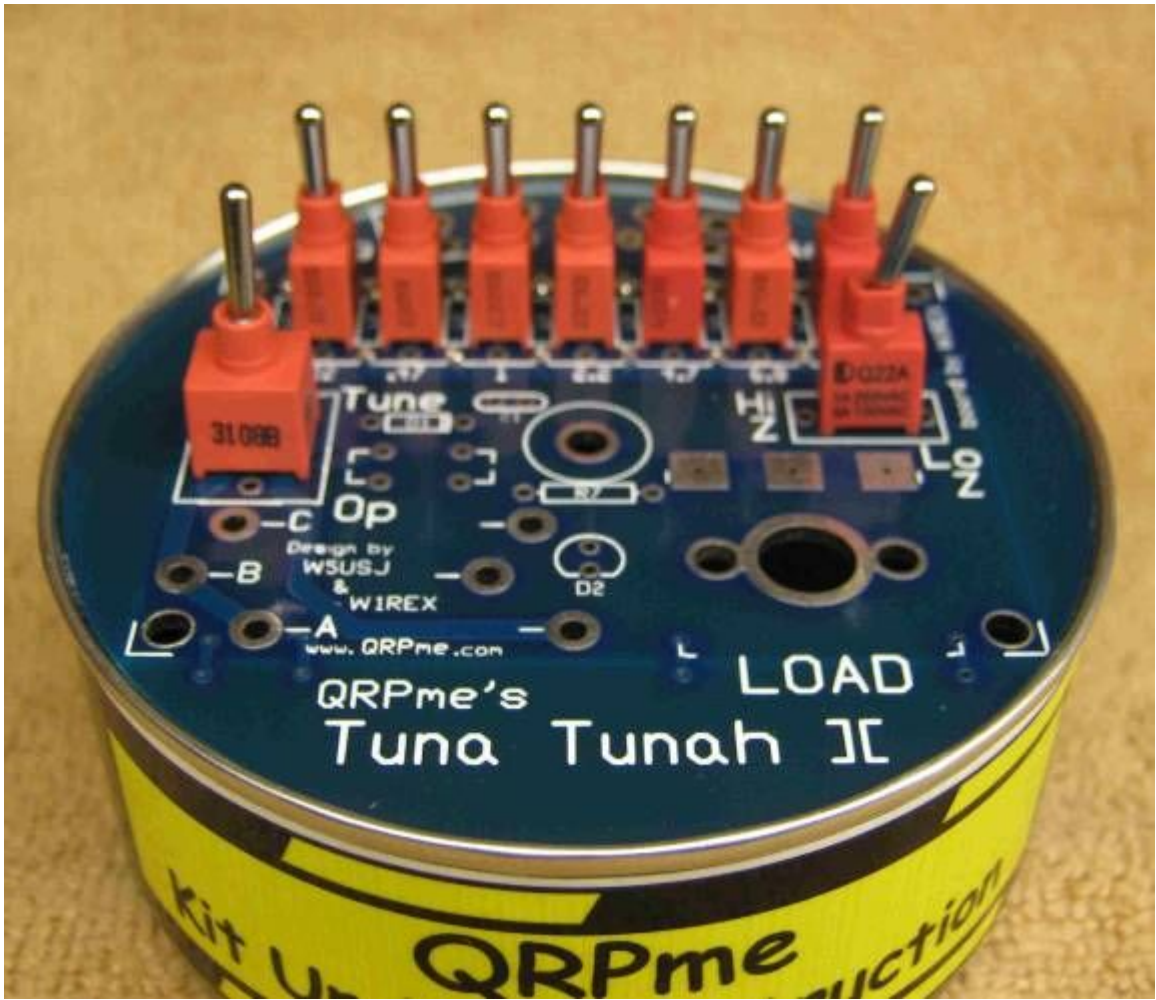
The switches are next. I pinch the switch against the board using my fingernail and then solder a SINGLE pin on the bottom side to hold the switch in place. I did that for ALL the switches...soldering only one pin. Then I went through and soldered a second pin on each switch. Then I repeated the operation a third time. Soldering only one pin on each switch at a time keeps the switch from heating up from too much soldering iron time. Some switch bodies will actually melt and the switch contacts will distort out of position with too much soldering heat applied for too long a time.



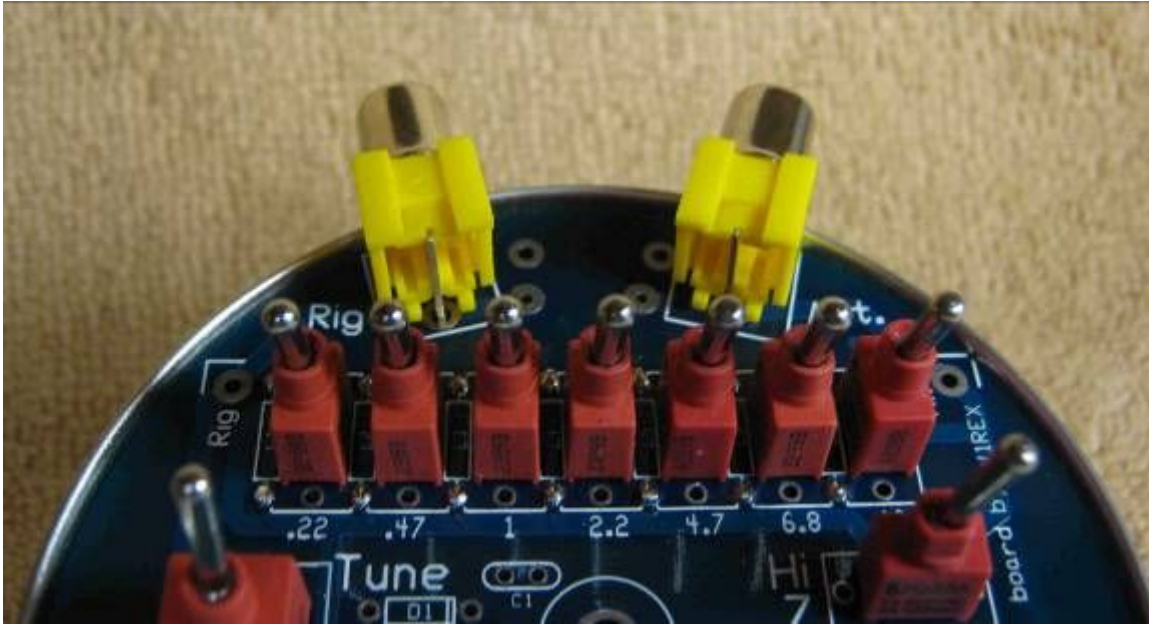
All the switches are soldered in after 3 or 4 rounds of soldering...



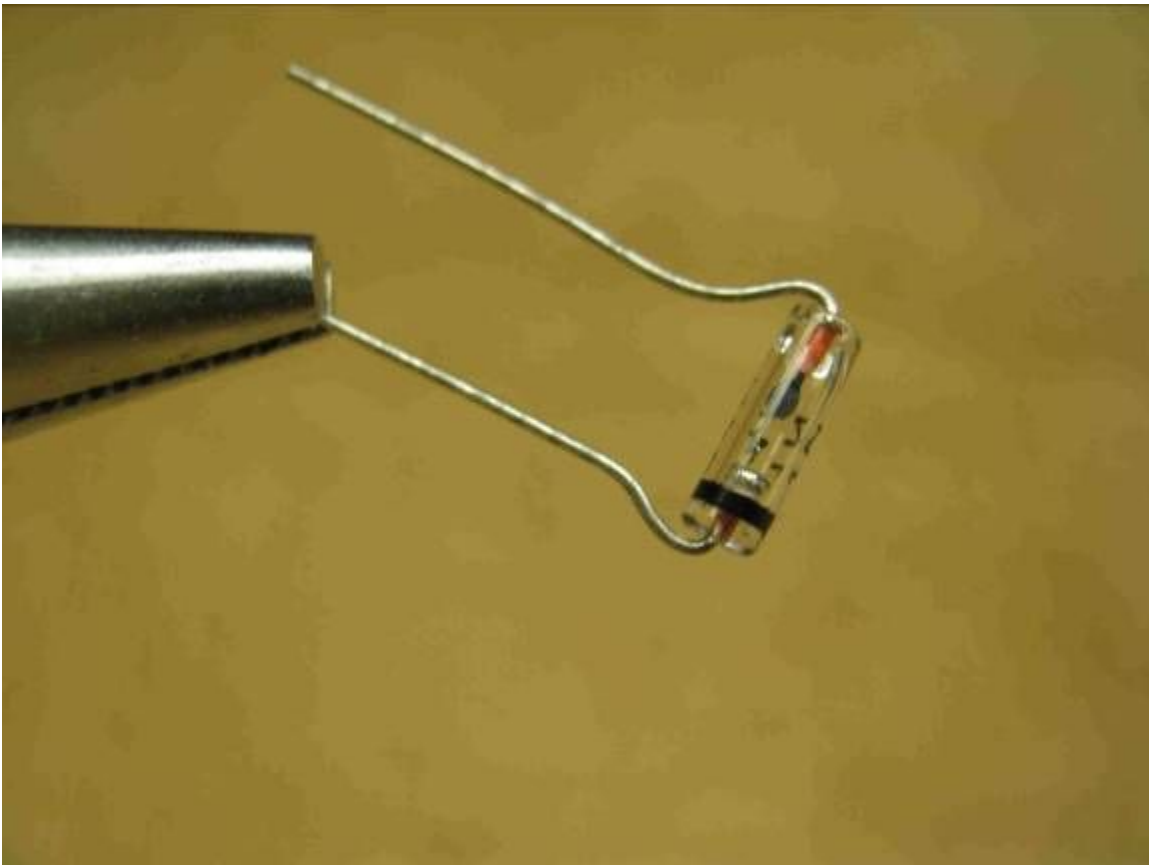
A view of all the switches from the top...



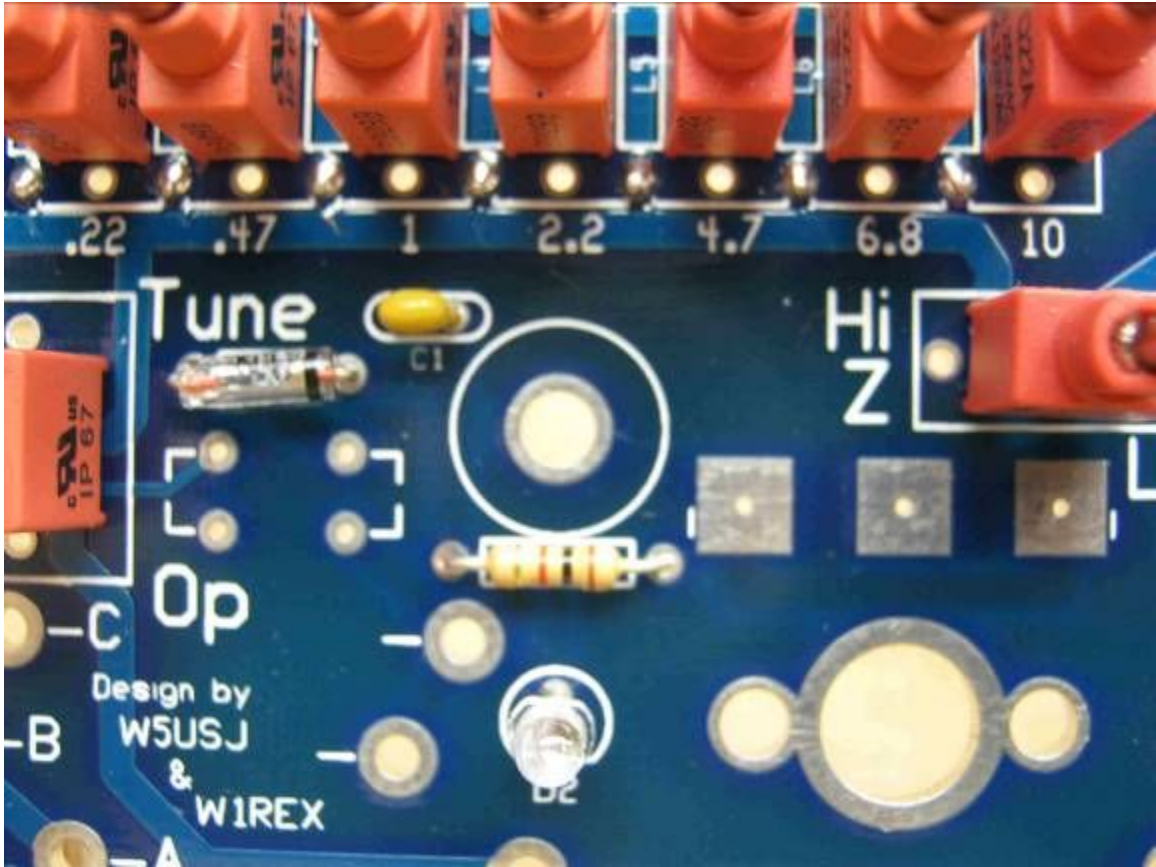
Another view of the switches...



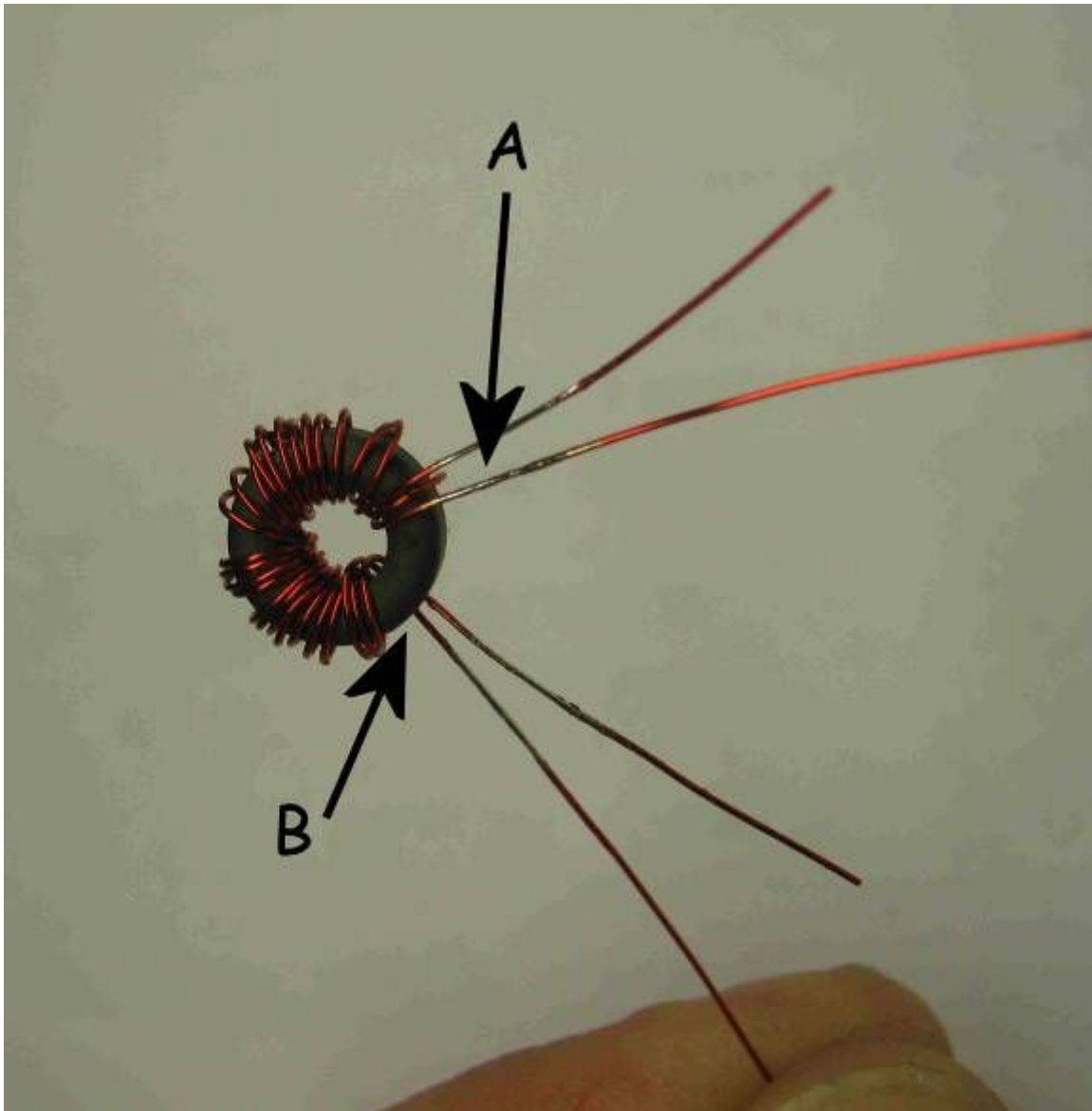
The two RCA connectors are next.



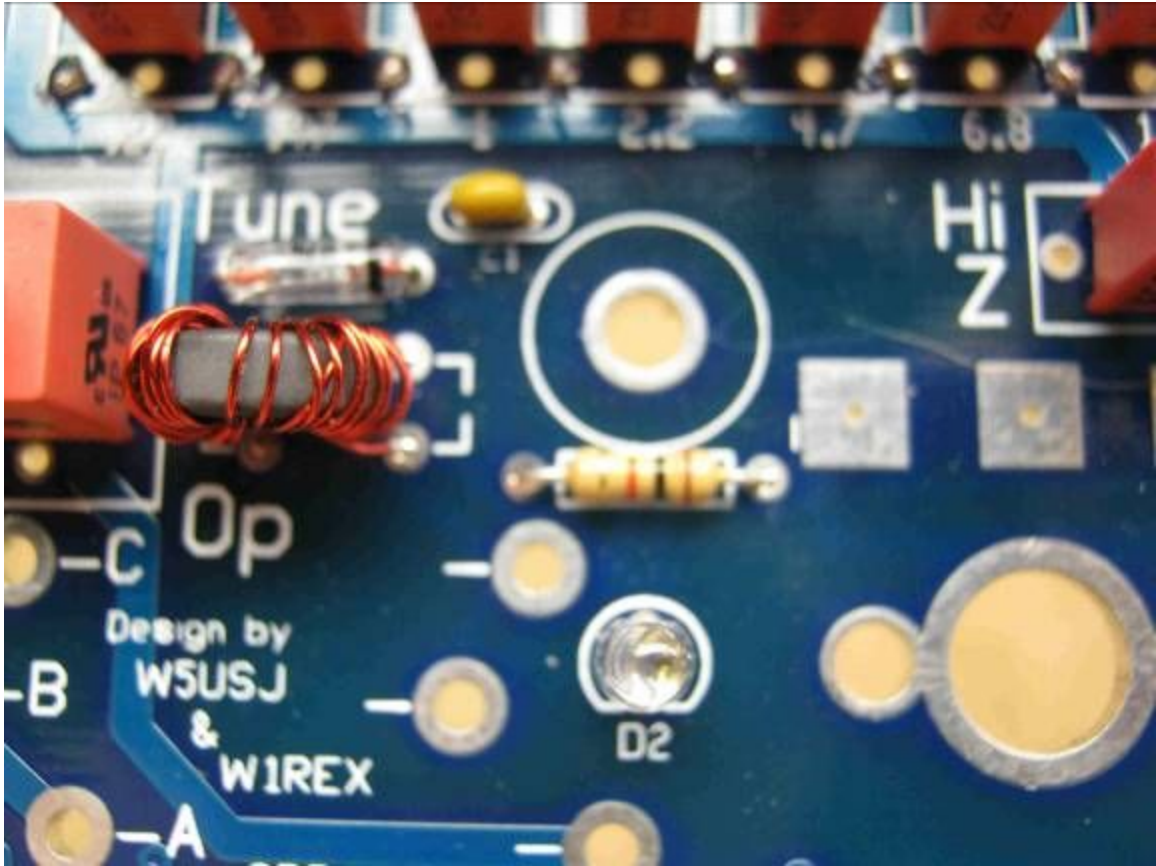
Carefully bend the leads of the 1N34A diode slightly under the diode body.



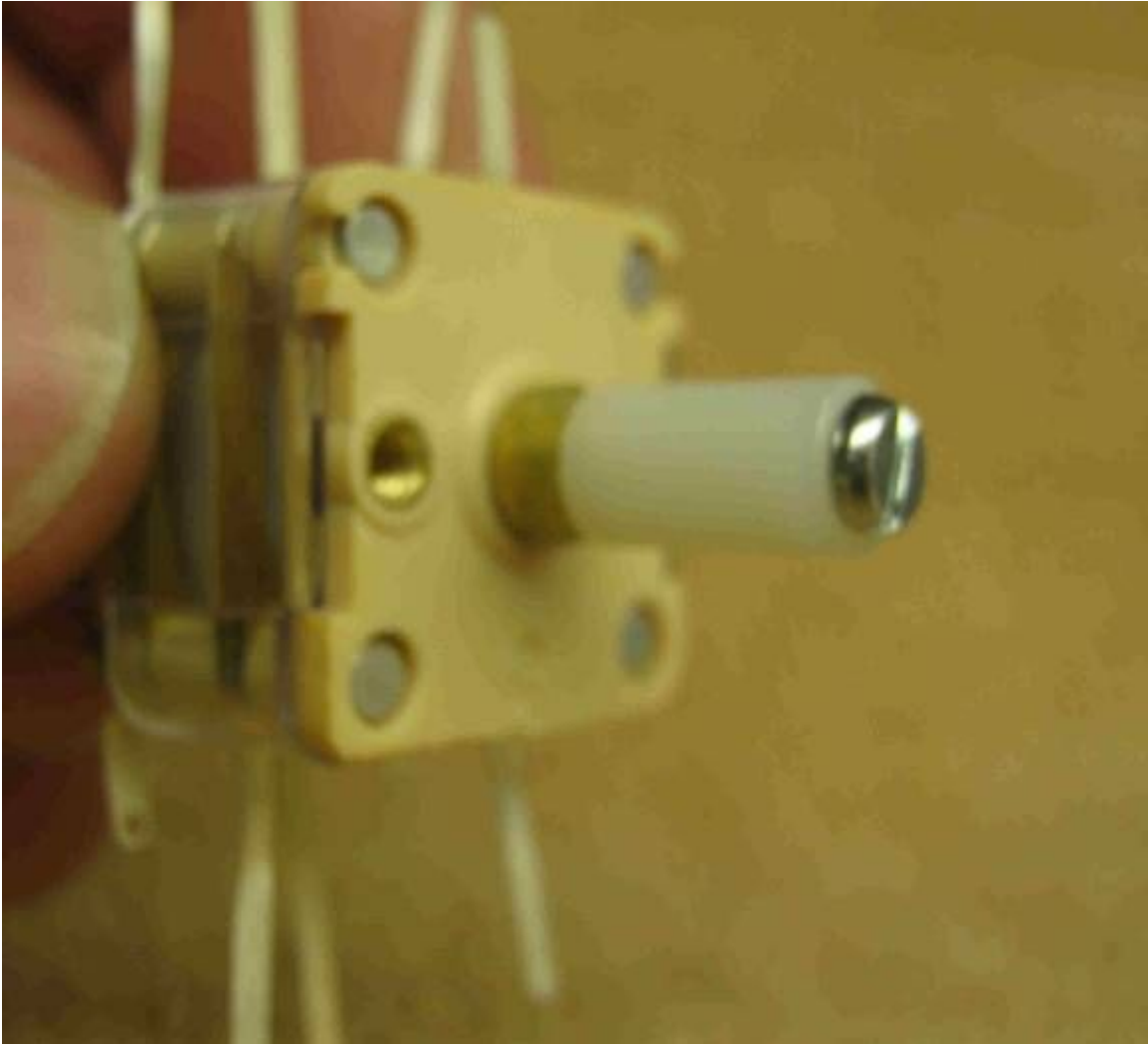
The discrettes: resistor, diode, cap & LED are next.



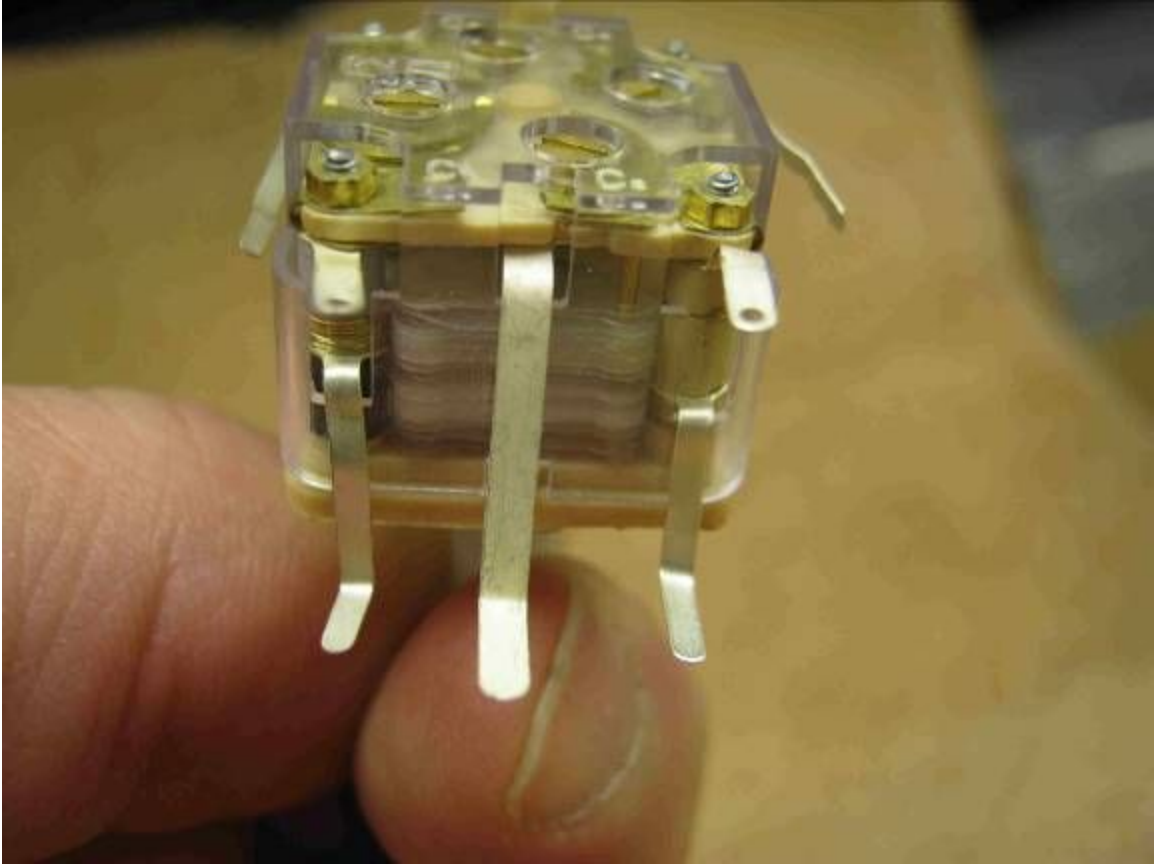
Here is the toughest part of the kit...and it really isn't that tough! First wind 5 primary turns on the little toroid. Cut the excess magnet wire of leaving leads of about 1 inch. These are the primary leads. The wind 25 turns around the toroid starting from the same position and winding in the same direction. You should end up with a toroid transformer like the one pictured above, where 2 leads enter the toroid the same way (A), wind around the toroid and exit the same way (B). You can always identify the primary leads as they are the short ones, while the long leads are the secondaries. You can see where I carefully scraped off the coating from the magnet wire then tinned the leads...while keeping the long/short ID lengths.



Now you solder in the little toroid transformer paying particular attention to lead orientation as shown in the schematic.



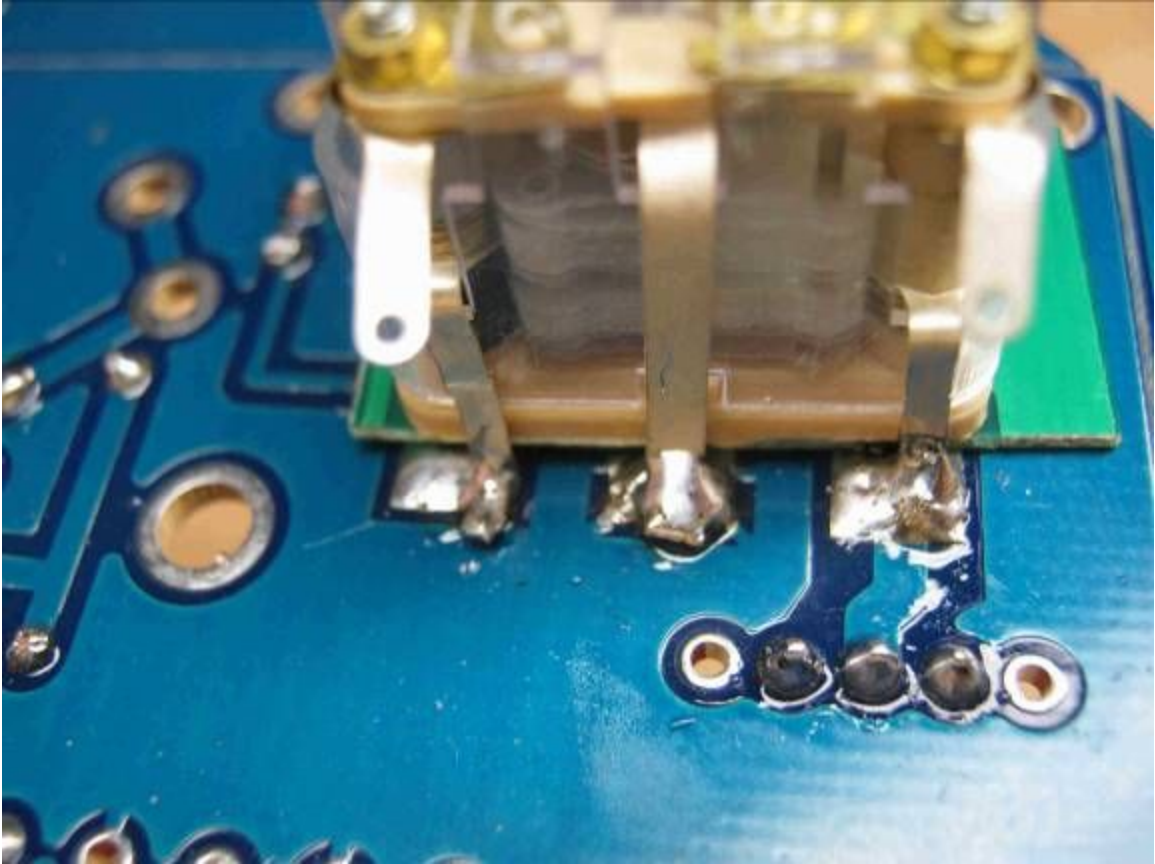
Now mount the 'shaft' to the polyvaricon capacitor using the longest of the 3 little screws.



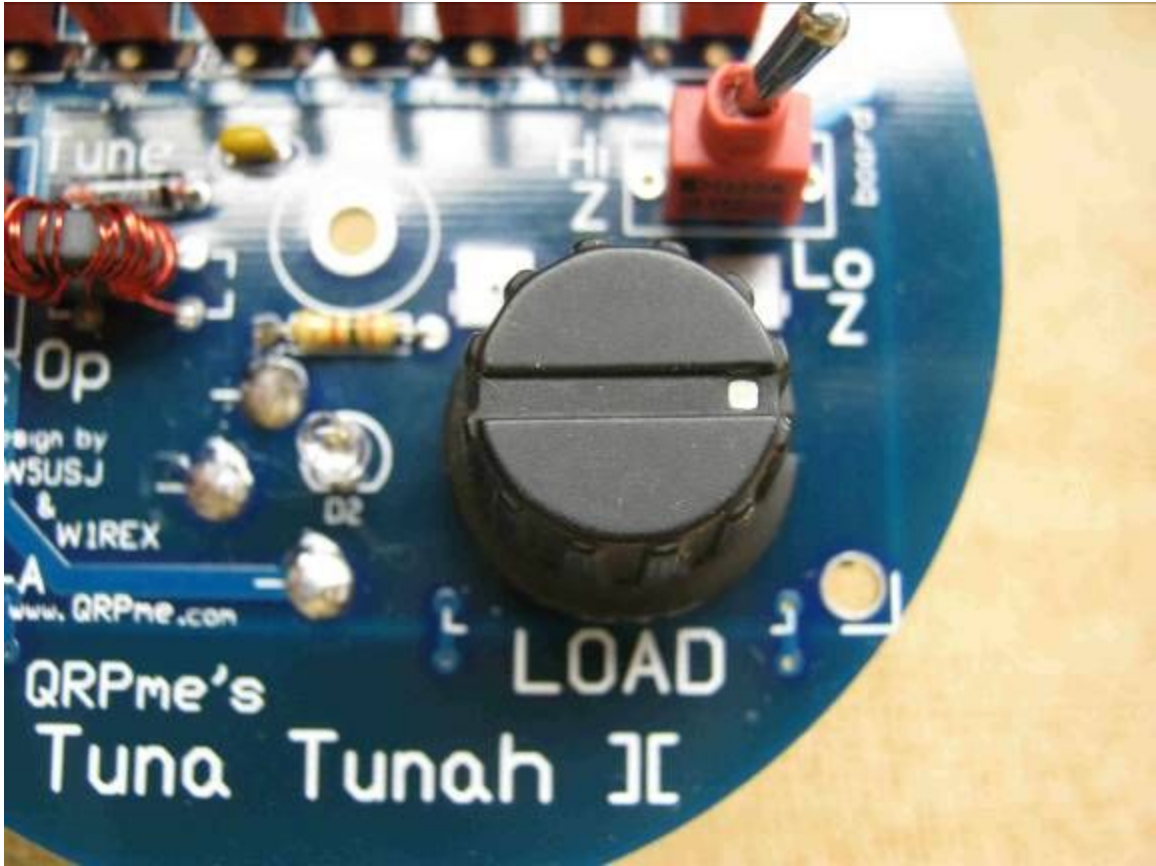
I pre-bent the leads after 'dry-fitting' the capacitor to the board and noting the necessary lead positions and lengths required to reach the solder pads.



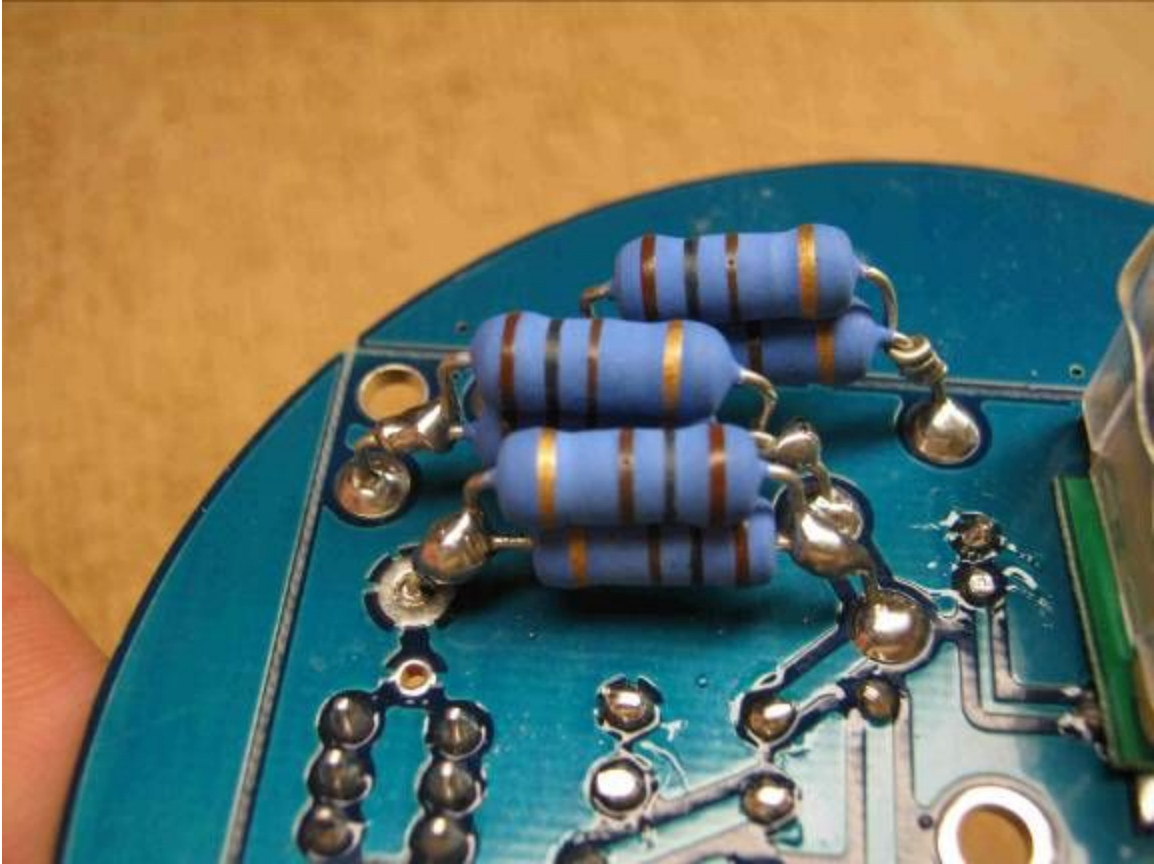
I then mounted the polyvaricon cap using a spacer and the little screws. If you don't use a spacer to 'eat up' a little screw length, the tiny screws will actually go into the capacitor and touch the plates. That's bad. I will probably be supplying some tiny washers to place under the heads of the little bolts to prevent that.



I clipped off the excess leads and soldered them to the pads.



I then attached the knob.



The resistive bridge power resistors are next. When I built my prototype, I didn't have the larger wattage 51 ohm resistors so I paralleled two 2 watt 100 ohm resistors to do the same job. Although by paralleling 2 100 ohm resistors, the resistive bridge is probably closer to the actual 50 ohm legs desired and can handle a little more power...

I soldered the power resistors on the underside of the board, primarily for aesthetic reasons.



Here is a view of the resistor solder job...



Here is the finished Tuna Tunah switched inductor antenna tuner!

FINI!