

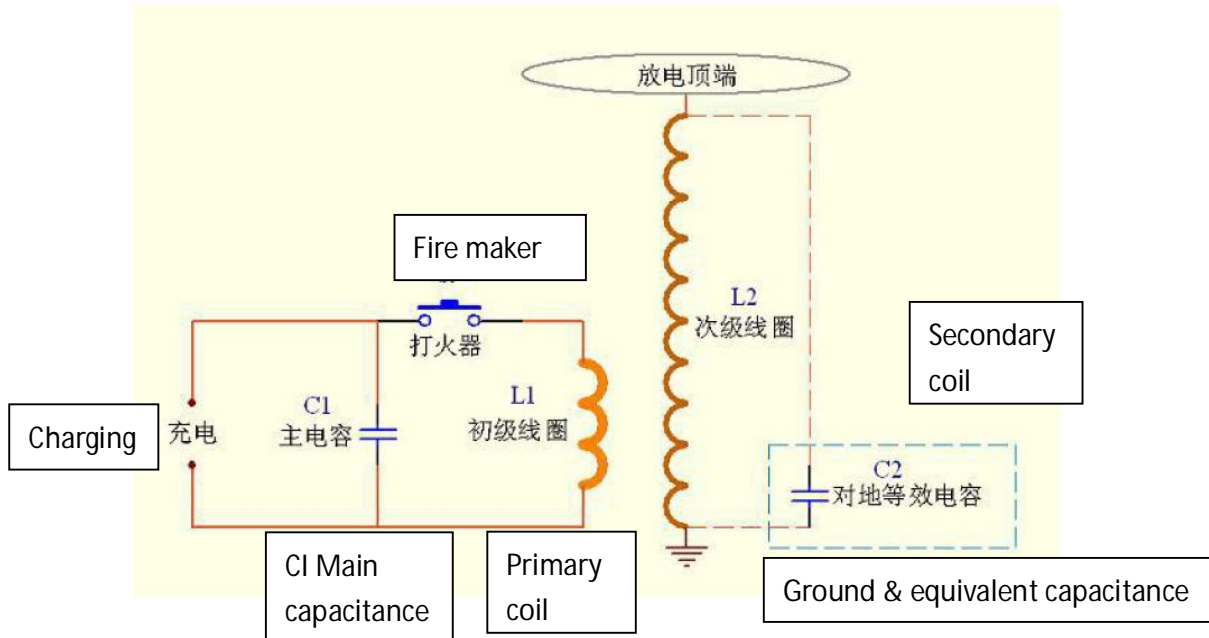
# Tesla coil kit assembling instructions.

The course of making Tesla coil kit and spark interval.

Requirement of power source: 12-36V 35-60W

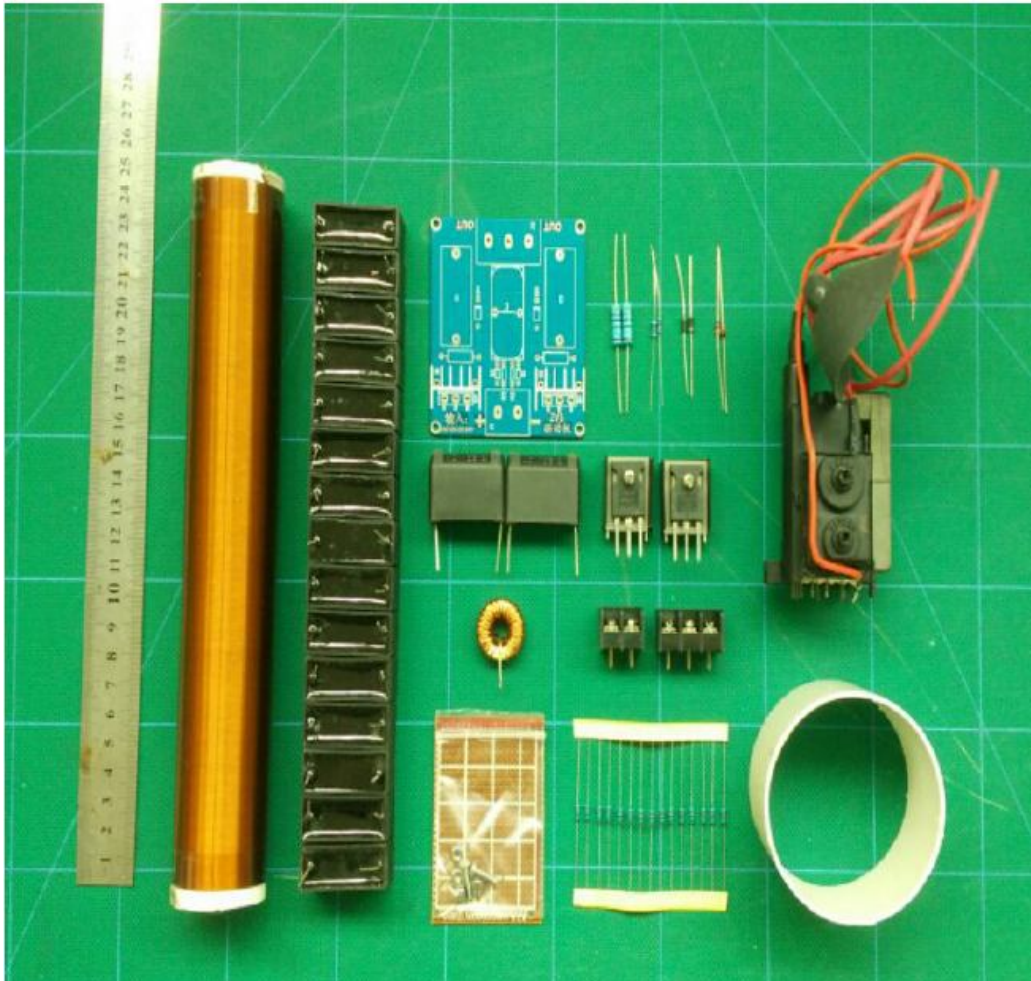
Circuit diagram

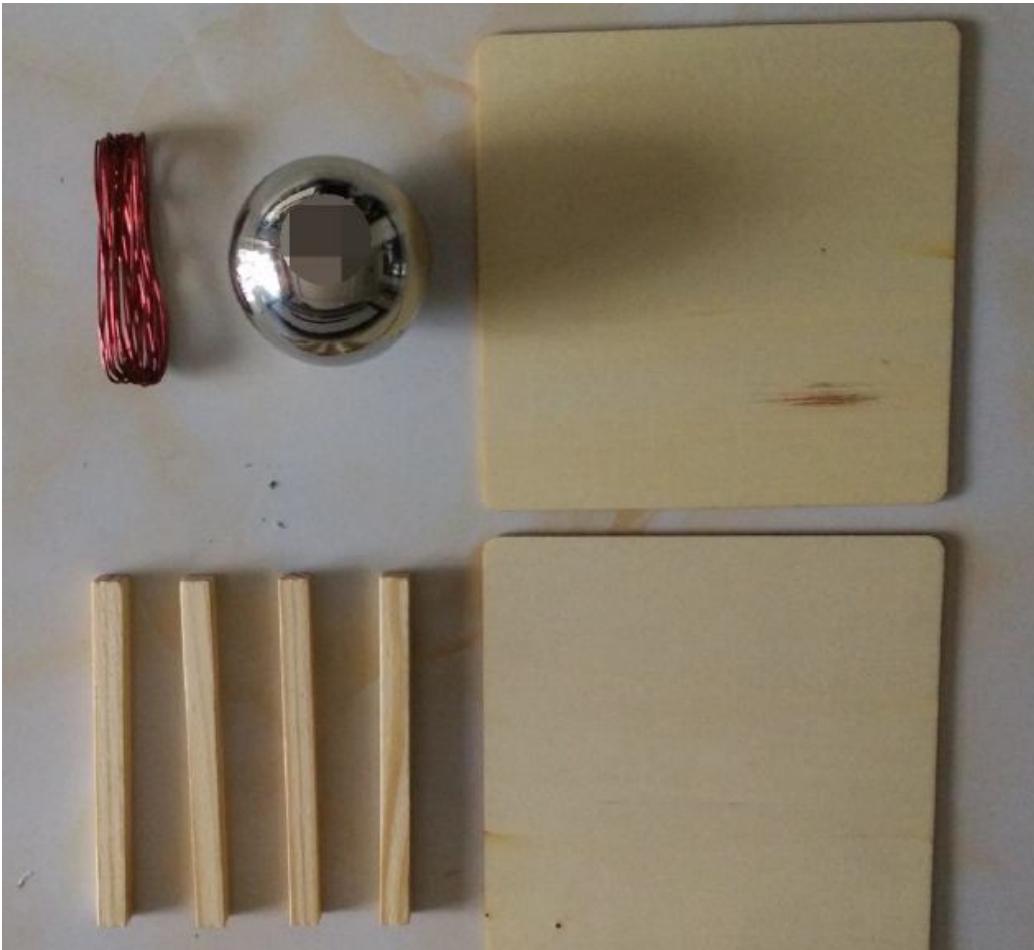
Discharging top



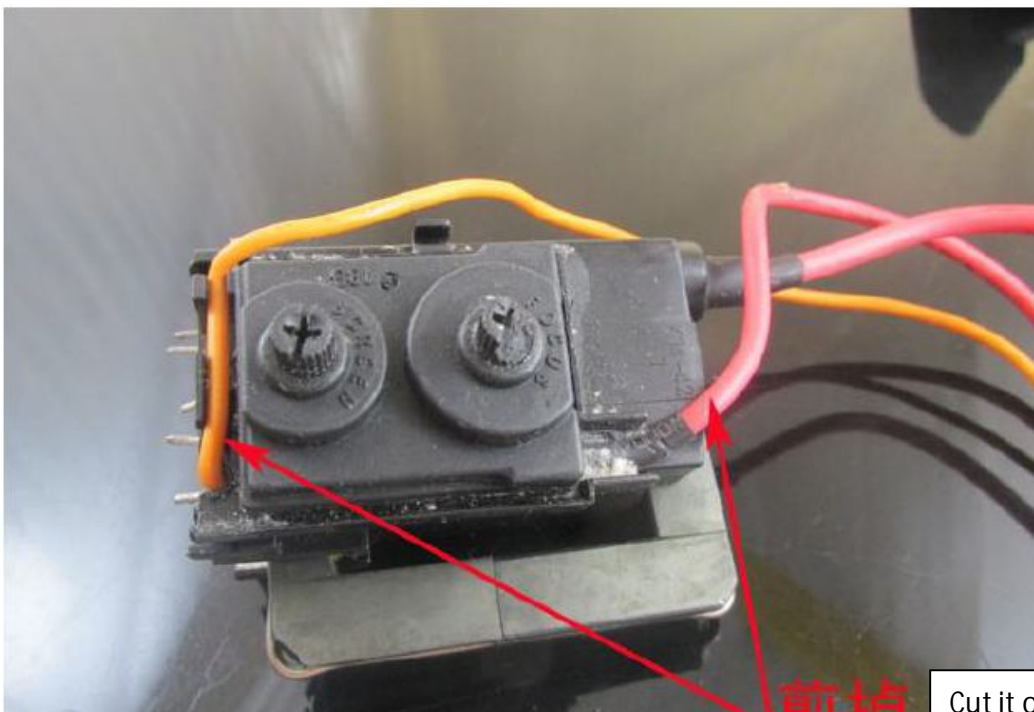
Material in need

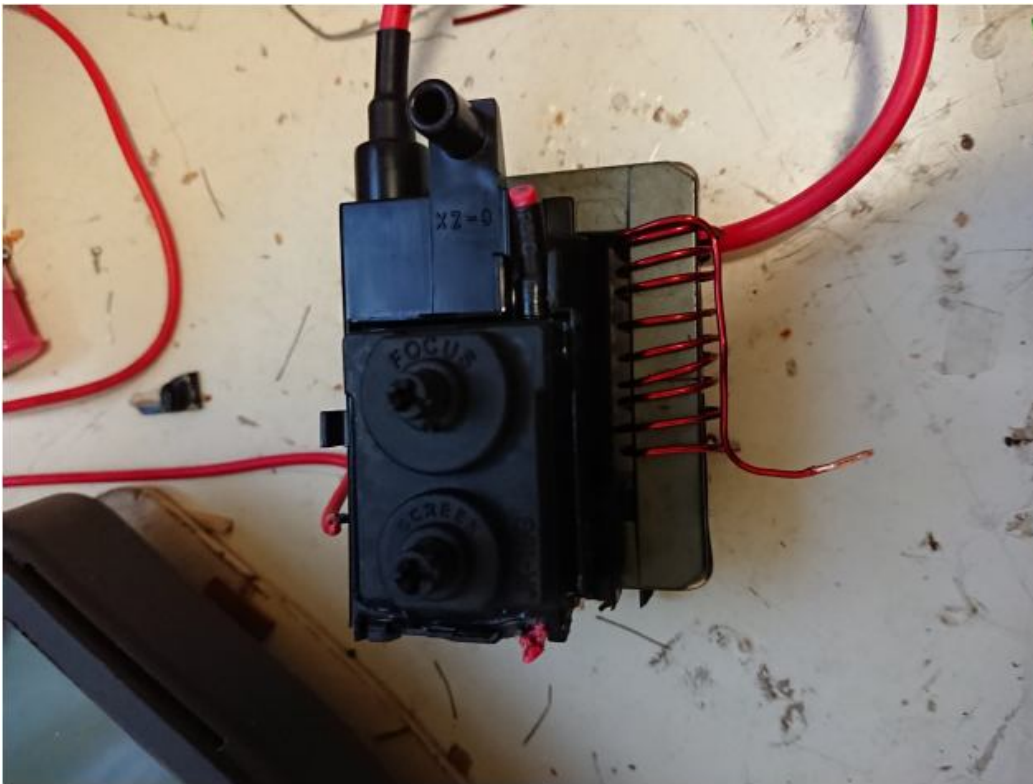
(All the capacitance are not polarity sensitive, but the diode and power source are)





High pressure pack: If the magnetic core is broken, you could use the 502 glue to stick it together and it won't affect the usage.

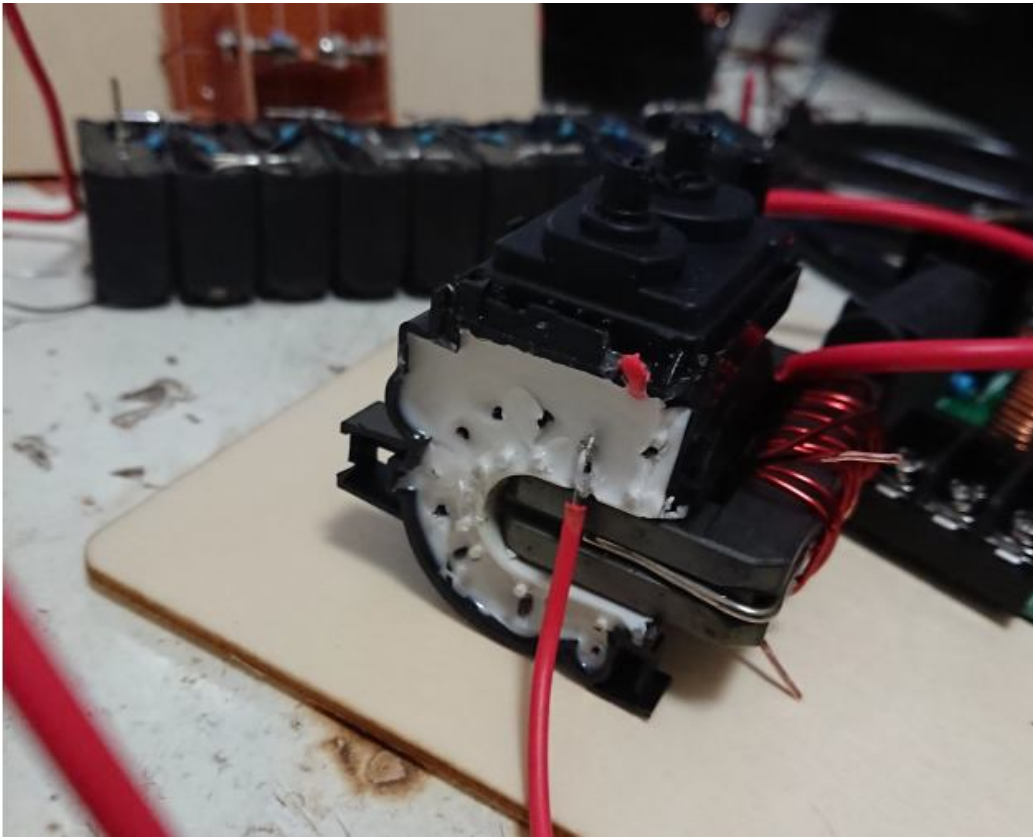




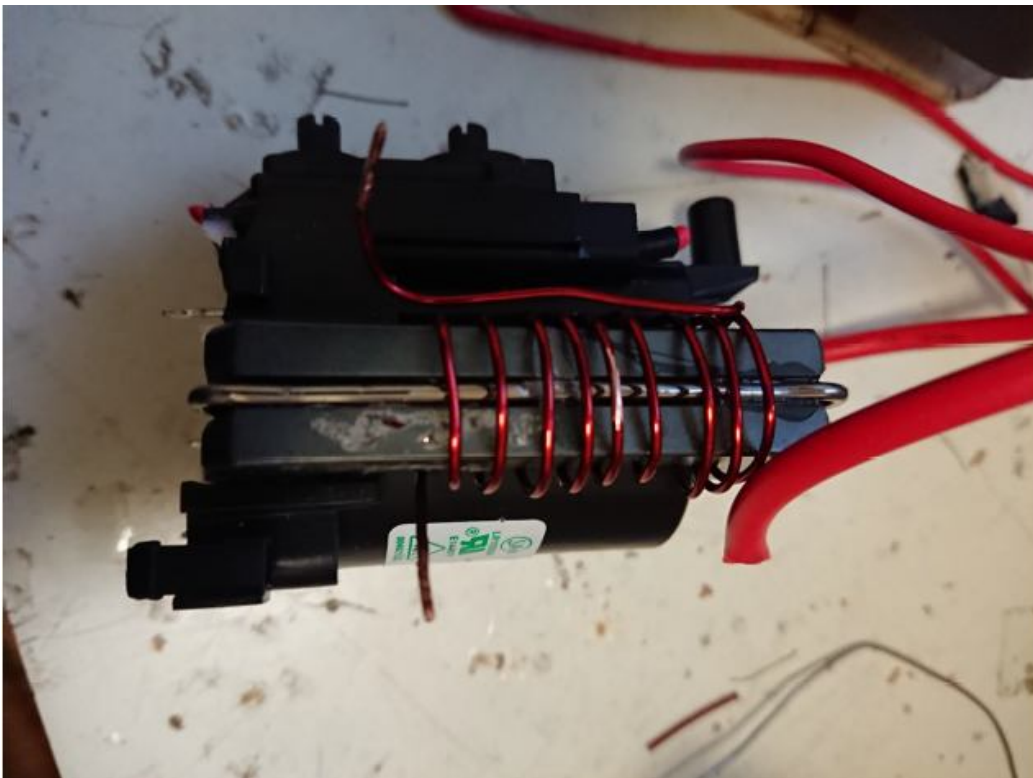
Pull up all the pins, except the second one. (Please refer to the picture. Attention: please remove those near the rotary knob. If it fails to be pulled off, you could infill the pin with the glue for insulation)

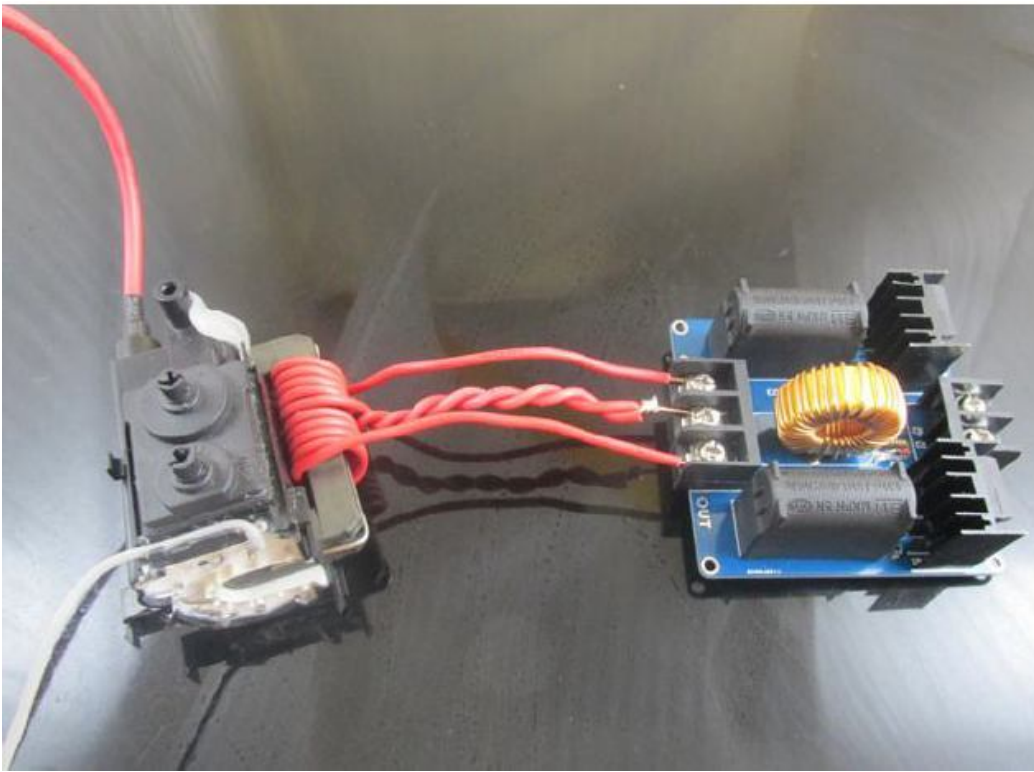


Solder another wire to keep the second pin. (For linking capacitance)



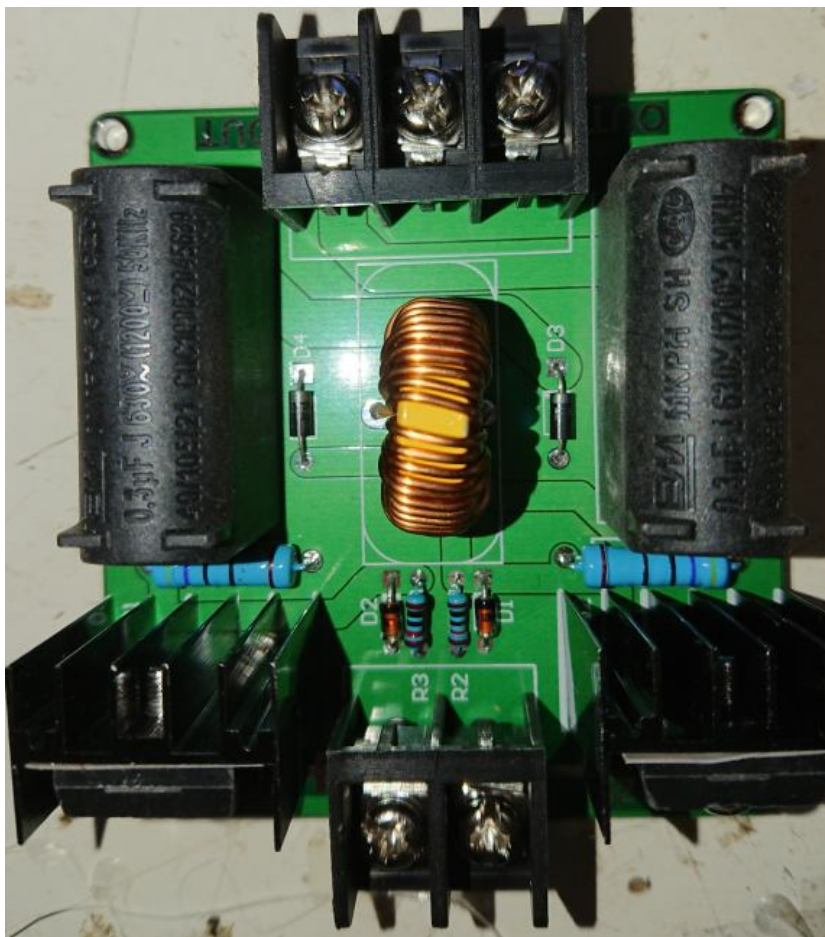
Convolve the magnetic core with 10 pieces of coil with copper wire. When comes to the fifth coil, please scrape the paint and connect another wire. Please refer to the ZVS circuit diagram for ZVS wiring.

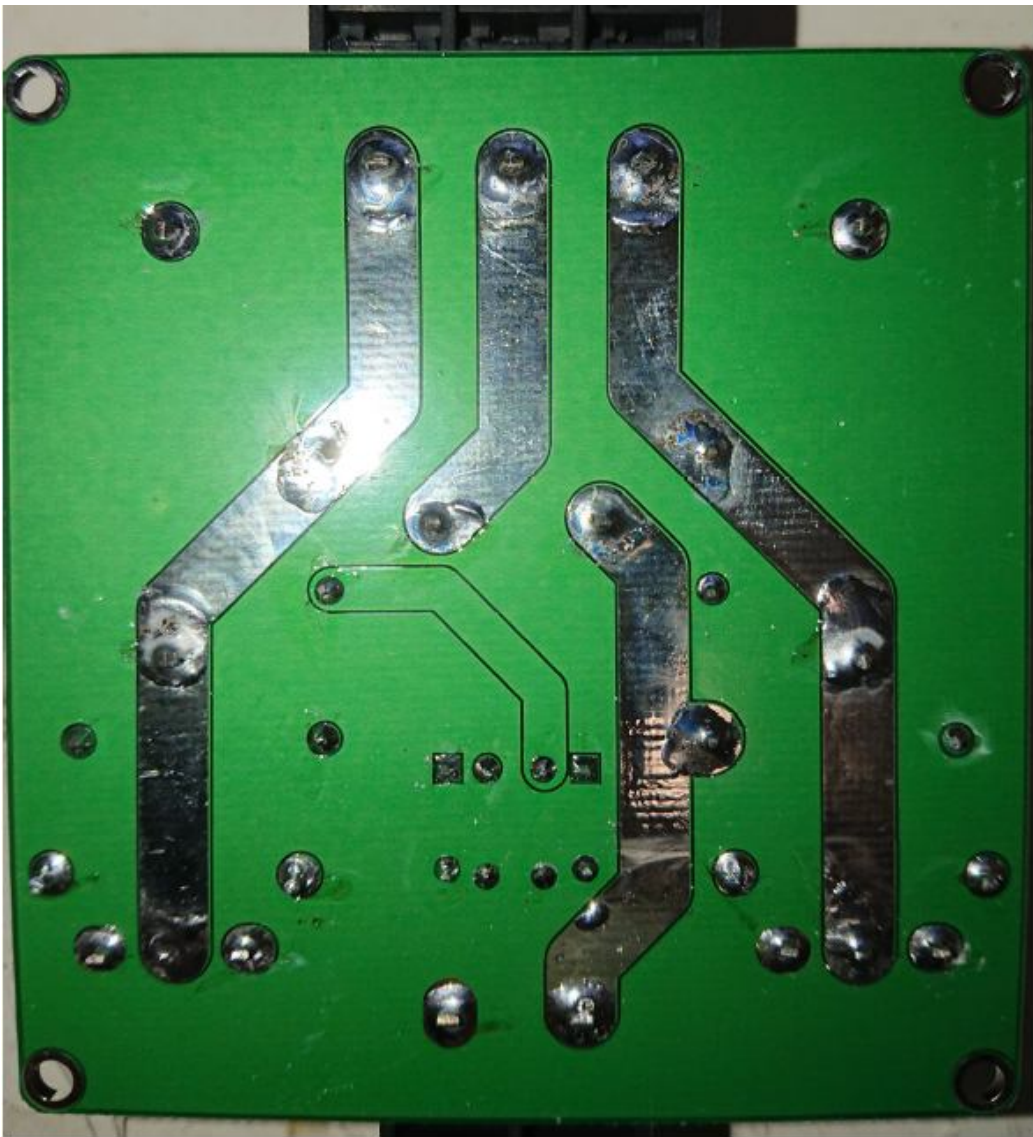




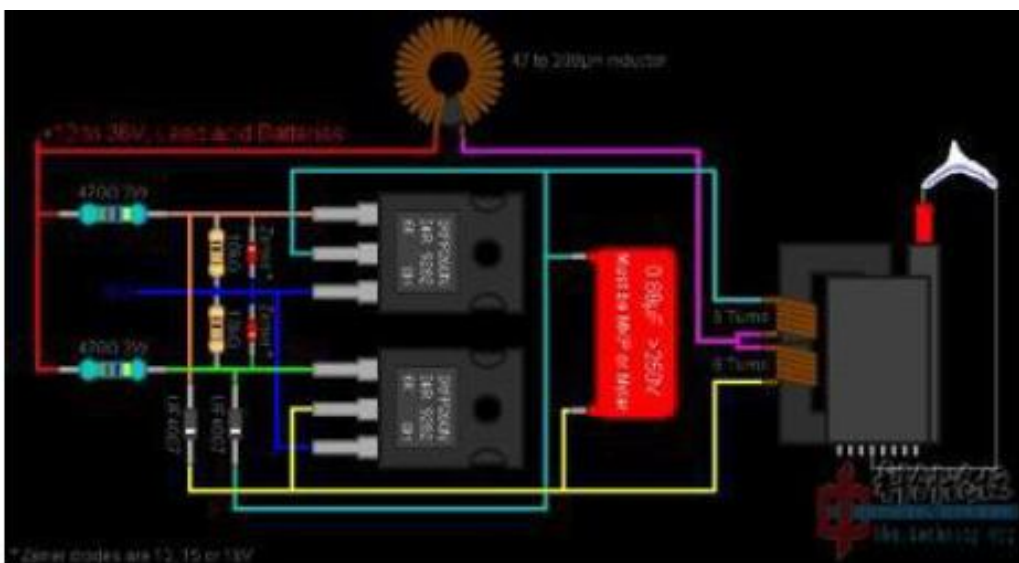
How to make the ZVS?

Please insert the elements to relevant PCB board with tin soldering on the back and remove the extra long pins.

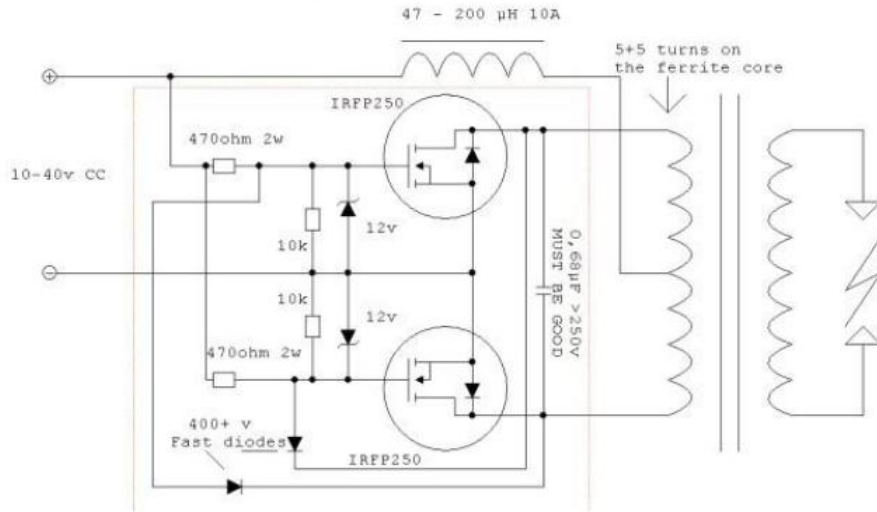




ZVS circuit board

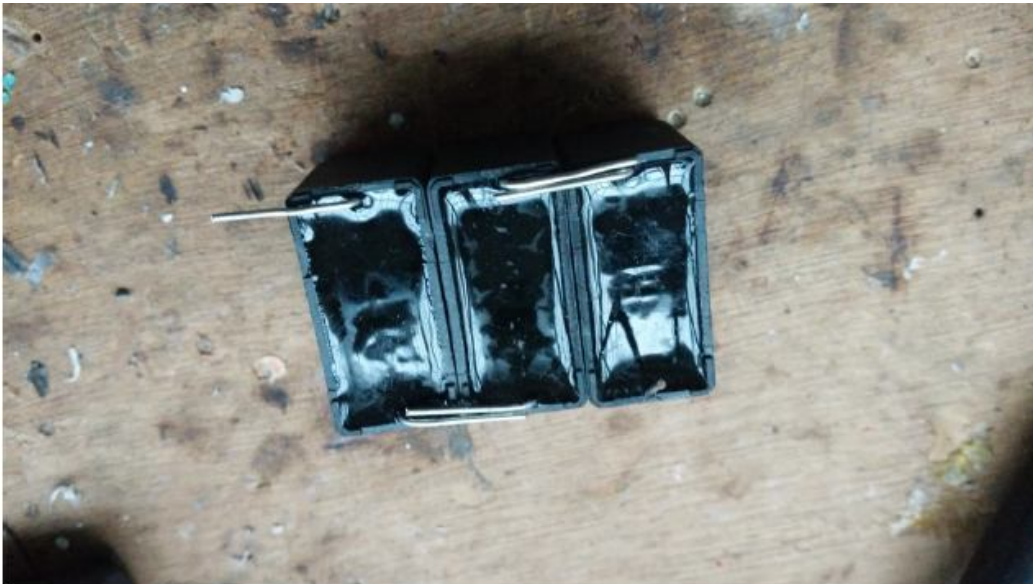


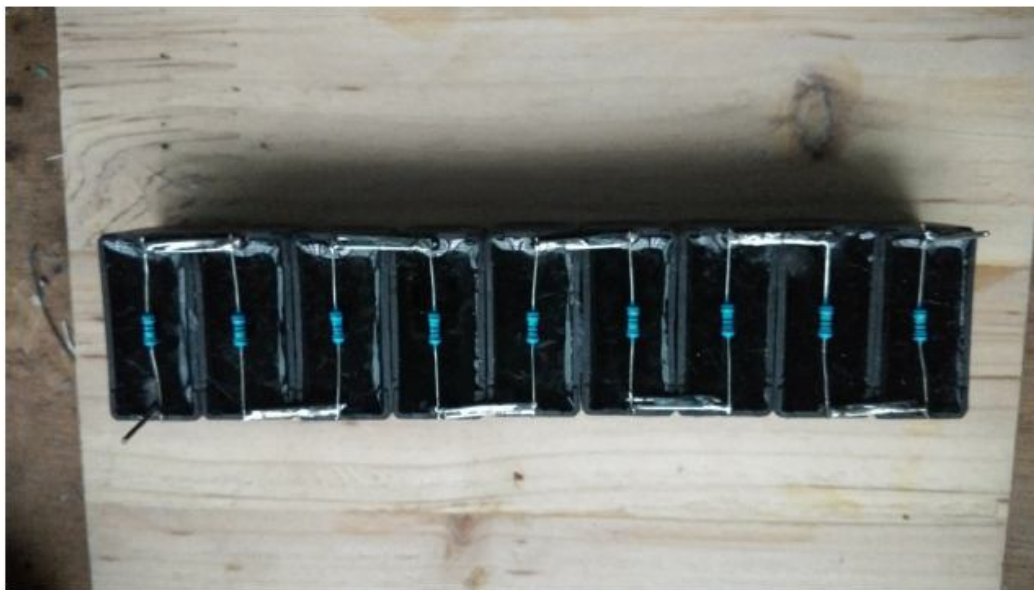
# Flyback Driver



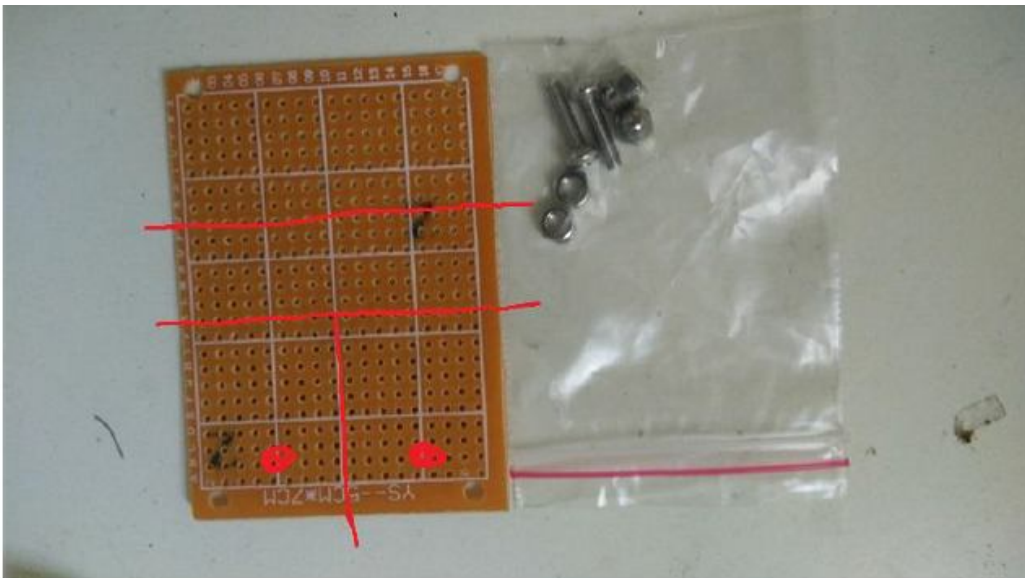
After finish the ZVS, please don't forget to do the arc test (By using the top red thick wire to link the second pin)!!! Don't connect the capacitance until the arc test succeeds, Please use the insulated tongs to clamp the red thick wire during the arc testing for safety concern!!!

The capacitor (do not focus on the polarity). Use 10pcs 0.3 $\mu$ f1200V MKPH. Install in series. Each capacitor connect a 1M resistance in parallel.

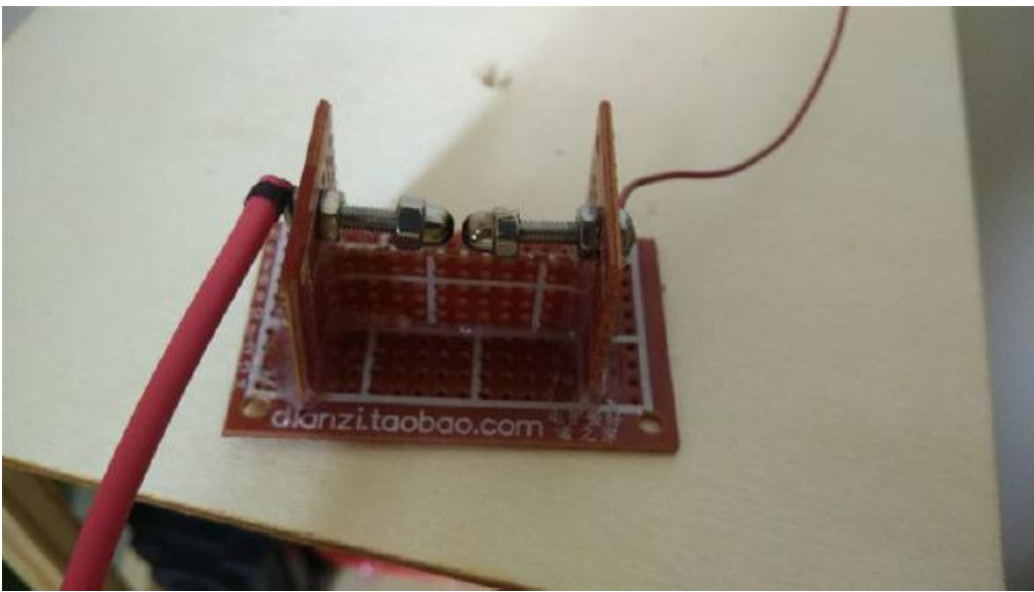




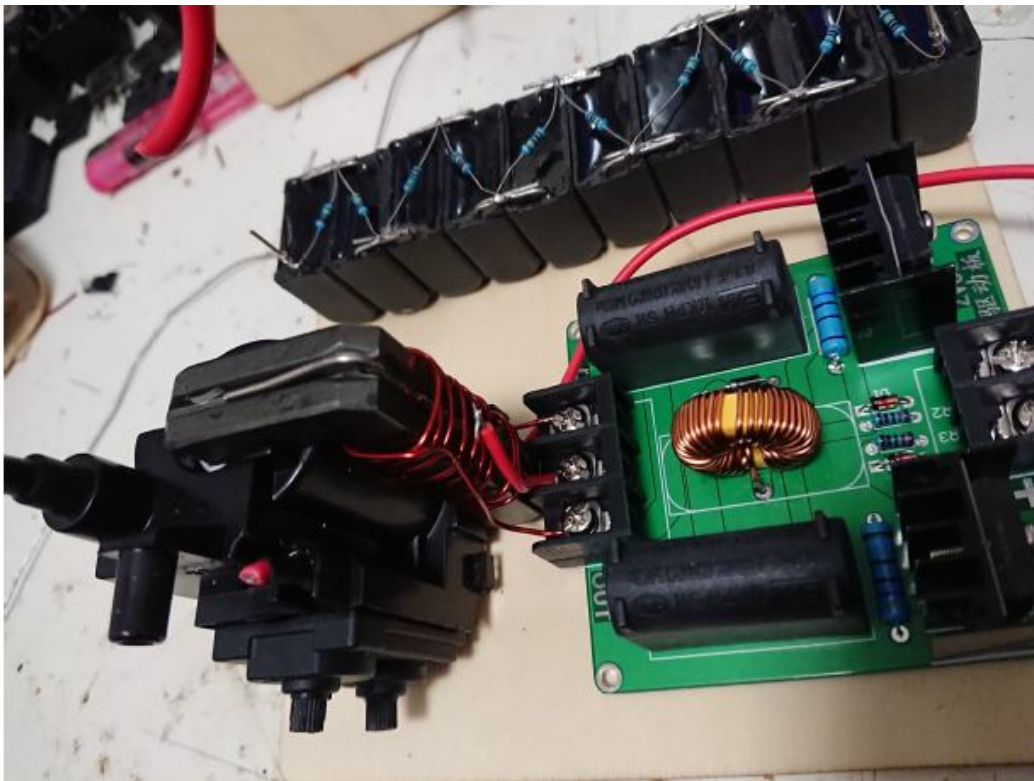
The Spark Gap. Cut the peg board along the red line and drill a 3mm hole to install the screws with the aid of a glue gun.

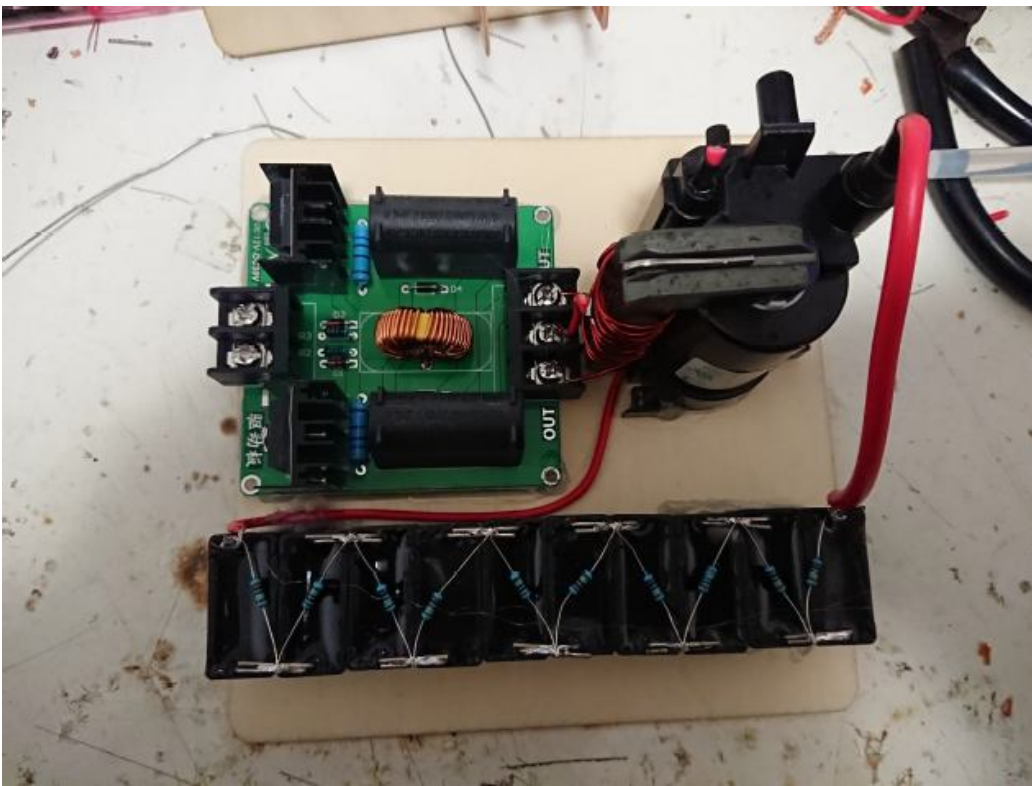






Fix the board, pillars, ZVS, FBT and capacitor groups with glue. The output FBT can connect the capacitor randomly without focusing on the polarity.



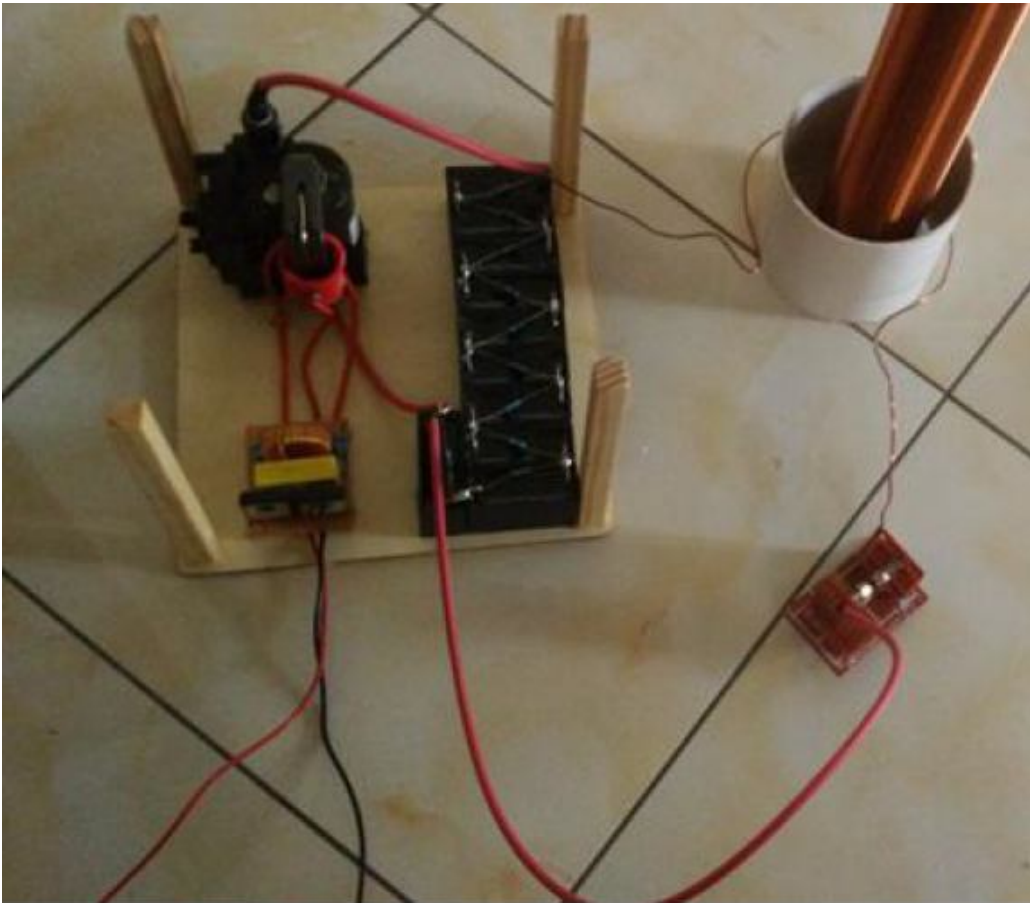


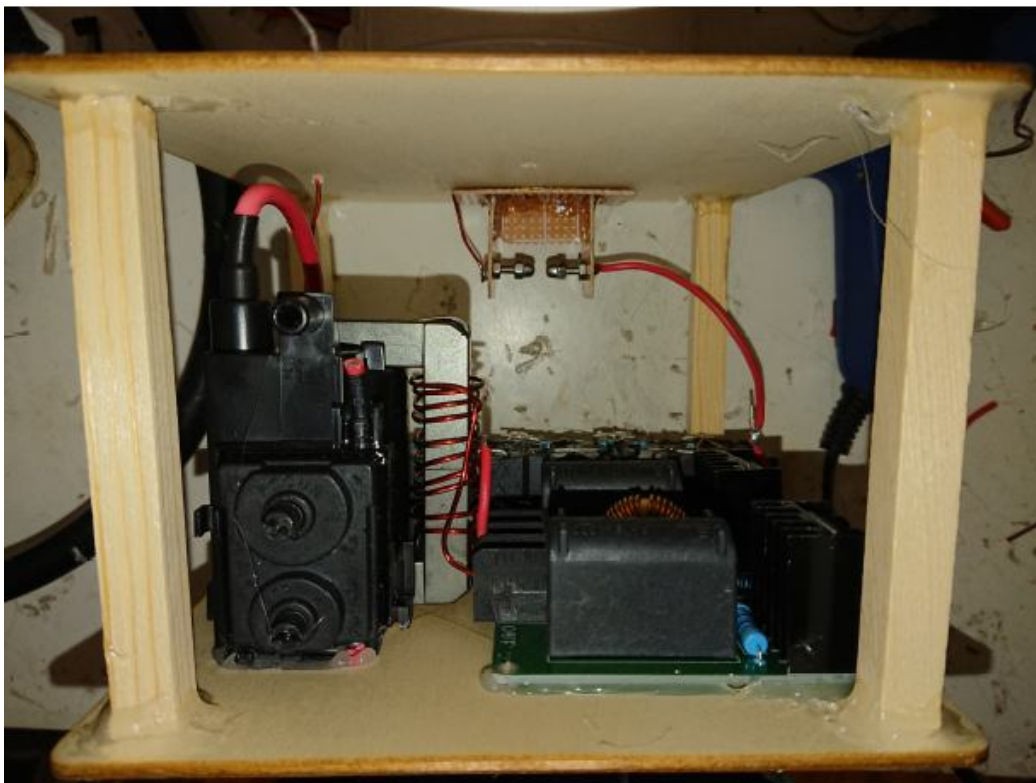
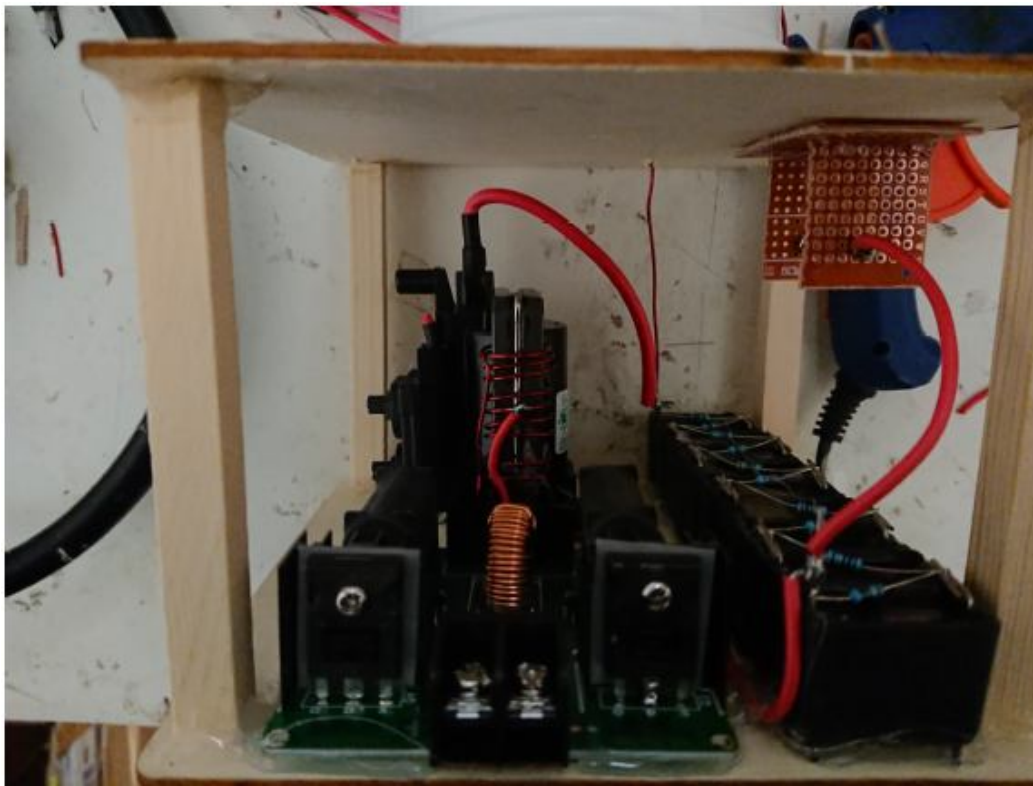
Primary stage. Please fix the primary frame on the middle of the second layer board and then drill a hole on the middle of the frame for the secondary ground lead to go through. Then convolve the primary frame with copper wire with one and a half coil and remain a certain wire for further adjustment. (Attention, the primary wire must stick on the primary frame and leave no interval between the wire and the frame.) There is no connection between the primary convolving and secondary convolving.

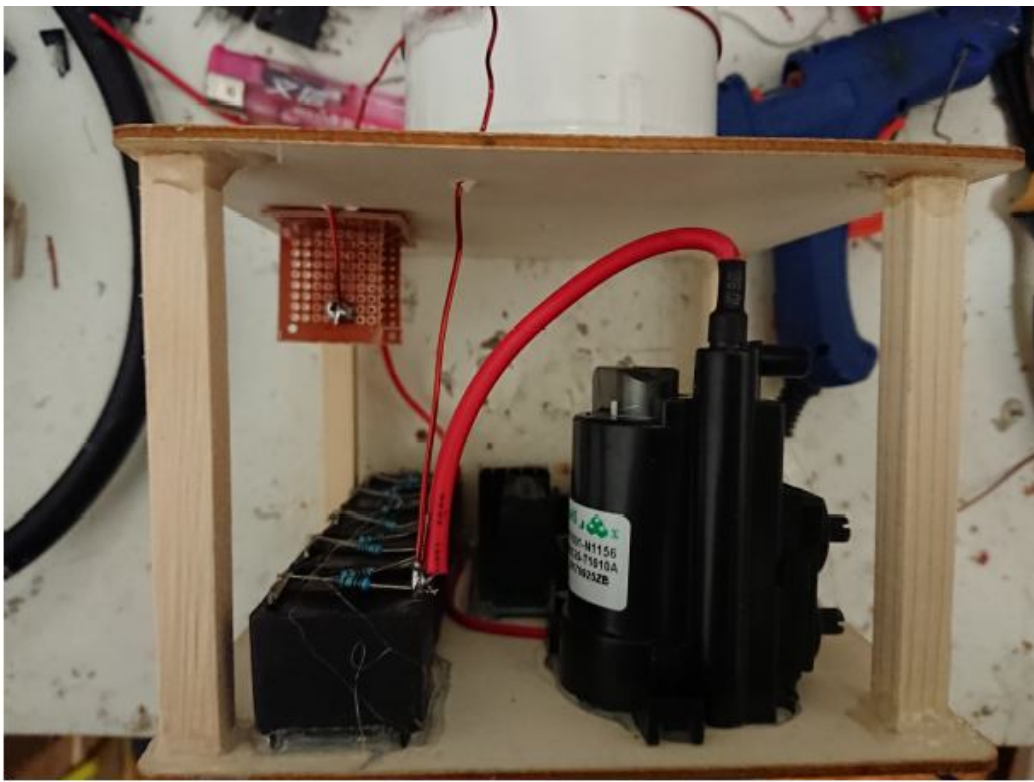


Connect each part with wires and extend the copper wire on the bottom of secondary coils. Make ground connection through the hole on the middle of the board. Please keep a distance away the wires inside the equipment when making ground connection.

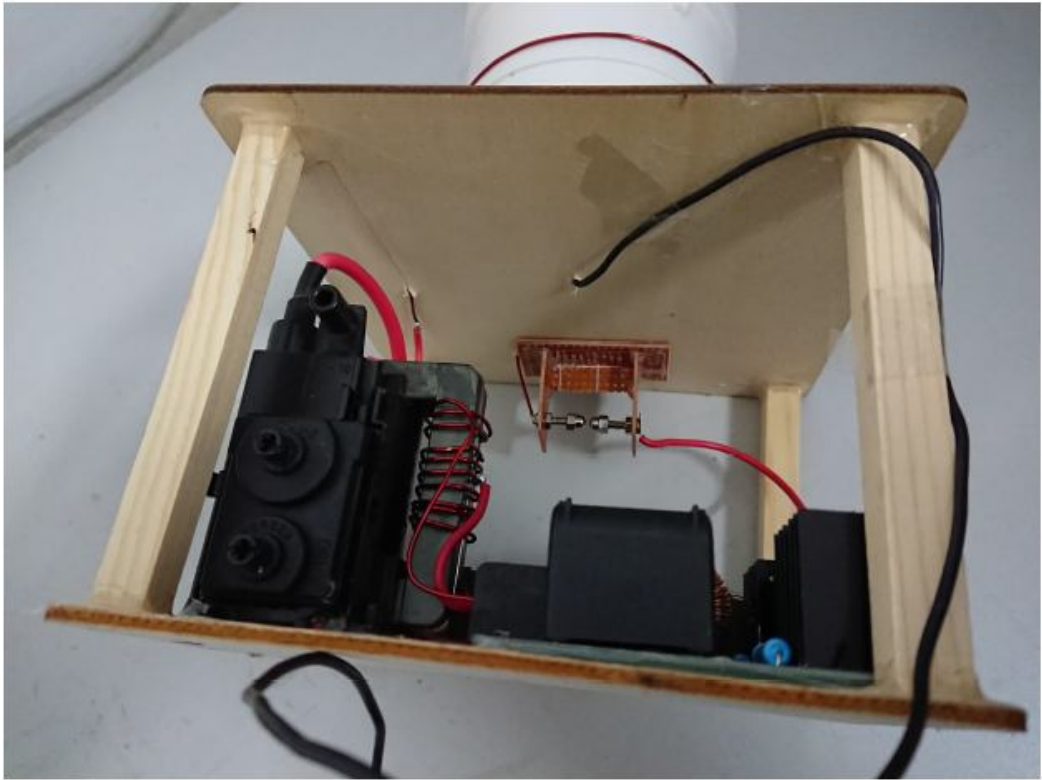
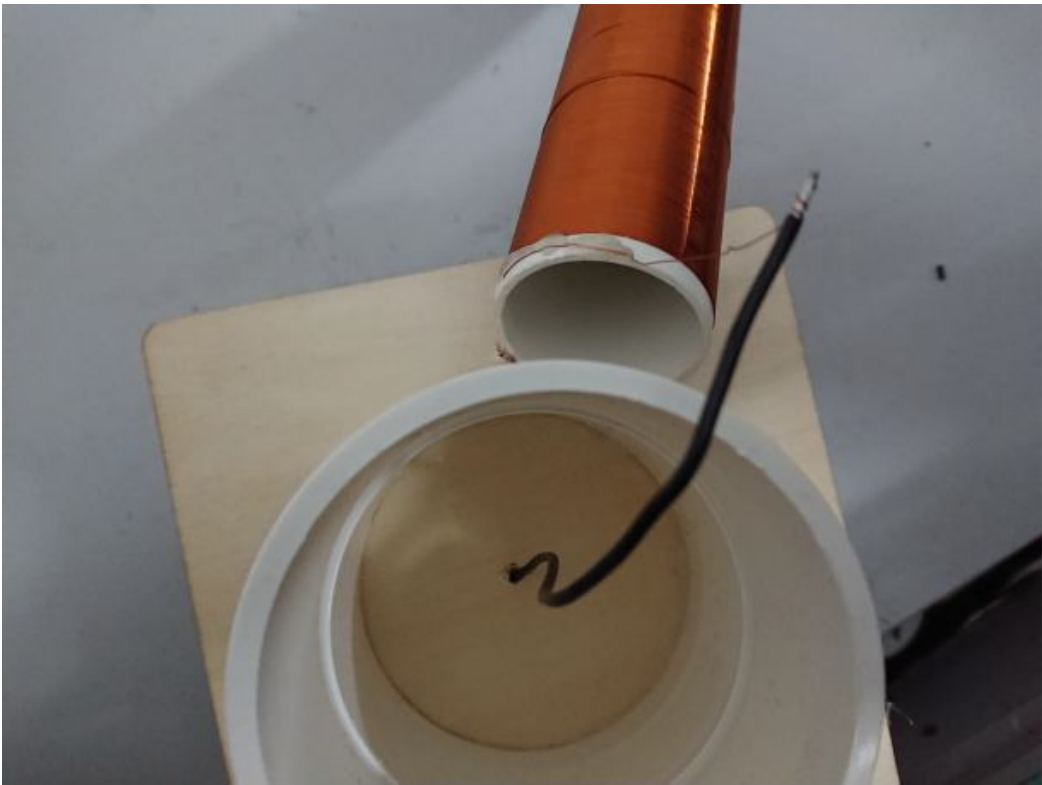
The preparation of power-on test. Please refer the picture below. (Please make ground connection before the power on!!! The primary should place on the exact middle of the primary while keep horizontal without tilting. The primary ground connection can't approach any primary or wires. Don't approach the socket or wooden floor when making ground connection)

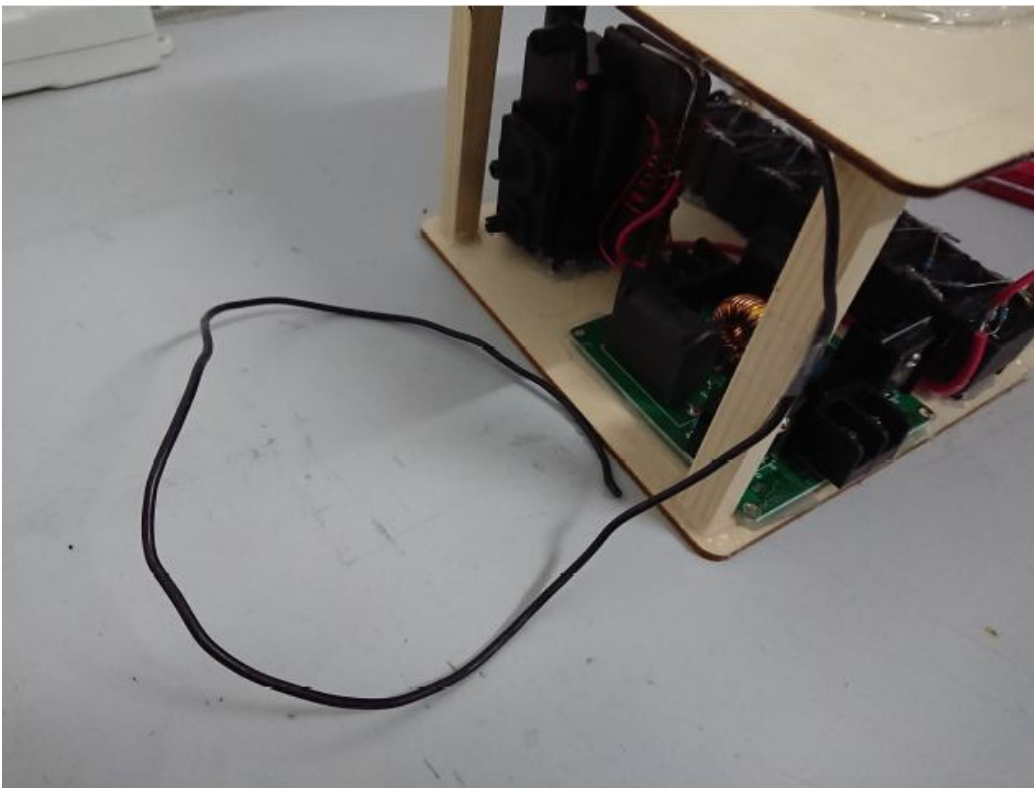






The layout of ground connection





The normal performance of the Spark Gap is with dazzlingly bright spark and loud noise. You could mantle the Spark Gap to isolate from the air for noise reduction. (It is better to power on in the dark for the convenient observation of primary SSTC. If the above situation occurs, you could start installation. Slightly adjust the distance of the head of the Spark Gap for 1-2mm normally. Primary: Under one and a half coils to two coils, reduce the amount of primary coils by 1cm until it reaches the perfect performance, Finish it according to the primary coil amount of the graph of the finished product. Please refer to the picture below. The interval of Spark Gap should at around 2mm. Please be assured that the power is off when doing any manual adjustment!!!)





To check the discharging performance.



The SSTC reaches 10cm+. (A buyer has adjust it to 15cm!)

It is able to light the light cross the air. Wireless powering. The power is around 35-65W. Should take your own power source. (DC 12V-36V 35W-60 W) Before the power is on, the secondary should have ground connection (floor or wall)!