EQKIT

Tools you need:

①Iron (30W)　④Tweezers
②Solder wire
③Multimeter　⑤Wire cutters

Precautions::

①Check part values & quantities against part list
②Always meter resistor values before soldering
③Understand all part polarities and orientations

MS-500G Magnetic suspension kit instructions

Rev. 1.0　2018.01.17　Produced by YiQi

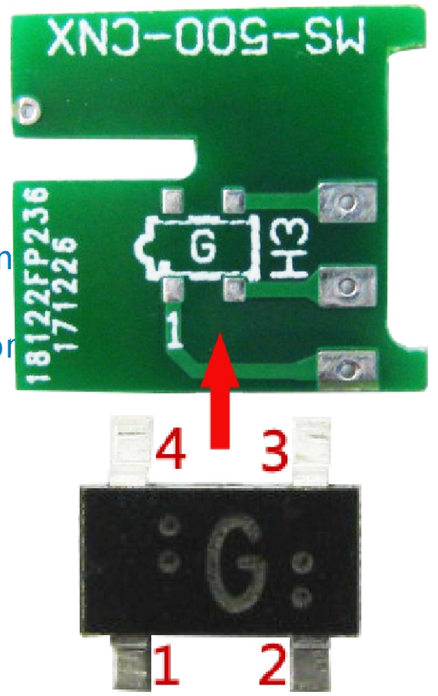
1.Install attitude sensor to CNX :

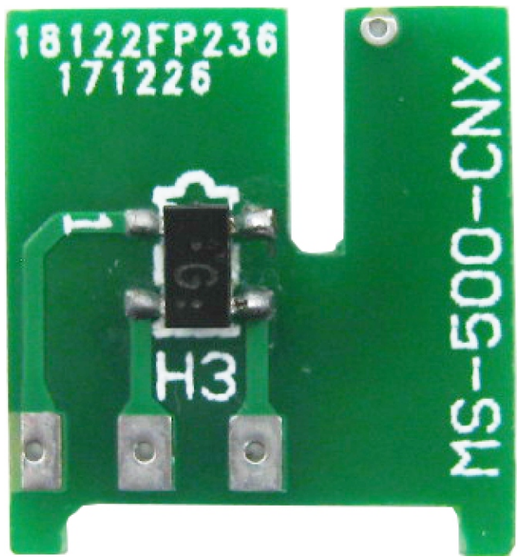
As shown, a sensor with the letter "G" is installed on the H3 of the circuit board.

①It is important to note that the installation direction of the "G" on the sensor element should be in accordance with the installation direction of "G" on the circuit board

②Install it strictly according to the position of the printed circuit board.
Prohibit installation offset!

③Each pin of the element must be welded firmly !





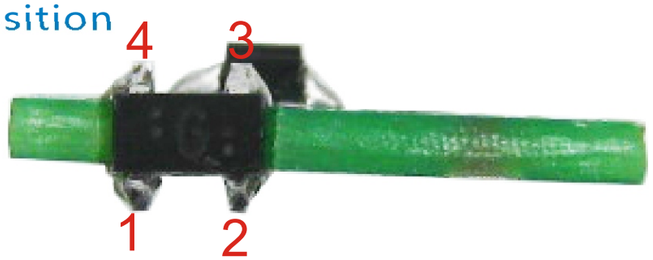
2.Install attitude sensor to CNY :

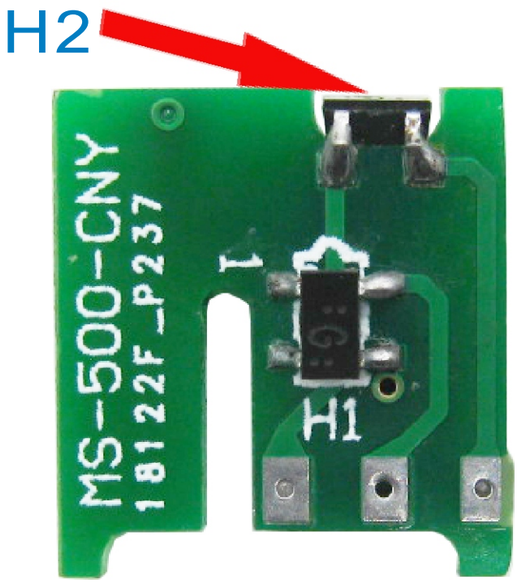
As shown, a sensor with the letter "G" is installed on the H1 and H2 of the circuit board.

①It is important to note that the installation direction of the "G" on the sensor element should be in accordance with the installation direction of "G" on the circuit board

②Install it strictly according to the position of the printed circuit board.
Prohibit installation offset!

③Each pin of the element must be welded firmly !





MS-500G Magnetic suspension component list

NO.	Name	Parameter	QTY
R11. R37. R38	RES	200R	3
R13. R20. R21. R22. R28 R29. R30. R41. R42	RES	1K	9
R3. R9	RES	1.2K	2
R1. R7	RES	2K	2
R4. R10	RES	3.3K	2
R23. R24. R31. R32. R33 R34. R35. R36. R39. R40	RES	5.1K	10
R18. R19. R26. R27	RES	10K	4
R2. R8	RES	15K	2
R17. R25	RES	330K	2
R5. R6. R12. R14. R16	RES	1M	5
C7. C8. C9. C10	CAP	222P	4
C1. C2. C11. C12 C13. C15. C16	E-CAP	10uF	7
C3. C4. C5. C6	E-CAP	220uF	4
L1. L2. L3. L4	Inductance	12*18	4
D1. D2	Diode	1N4148	2
LED1	LED	5mm Seven color	1
Q3. Q5. Q11. Q13	Triode	D882	4
Q4. Q6. Q12. Q14	Triode	B772	4
Q2. Q8. Q10. Q16	Triode	S8050	4
Q1. Q7. Q9. Q15	Triode	S8550	4
VR1. VR2	Adj-RES	100K	2
U2. U3	IC	LM324	2
U1	IC	CD4066	1
U1. U2. U3	IC socket	DIP-14	3
J1	IC socket	5.5mm	1
H1. H2. H3	Hall sensor	G	3
——	Magnet	100mm*10mm	1
——	PCB	500G-CNX	1
——	PCB	500G-CNY	1
——	PCB	500G-MAIN	1
——	Iron	21*6*1	4
——	Suspended object	50*14mm	1
——	Screw	SilveryM3*8	12
——	Screw cap	M3	8
The following are plastic shells and accessories			
——	Plastic shell	Black or transparent	1
——	Spacer	M3*4	4
——	Spacer	M3*13	4
——	Screw	M3*12	4
——	Screw	M3*8	4

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Tools you need:

①Iron (30W) ④Tweezers
②Solder wire
③Multimeter ⑤Wire cutters

Precautions::

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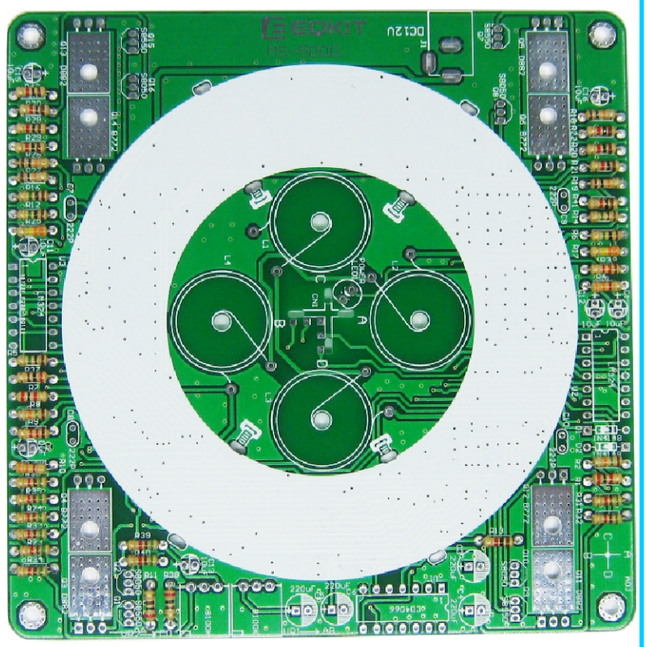
②Always meter resistor values before soldering
③Understand all part polarities and orientations

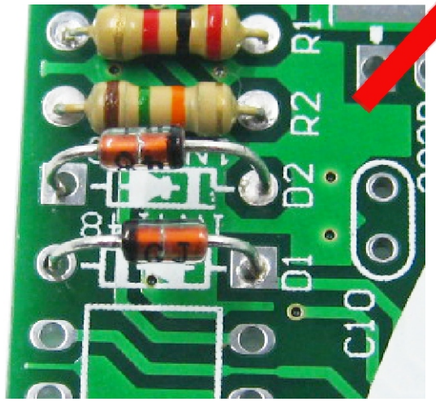
3.Install RES:

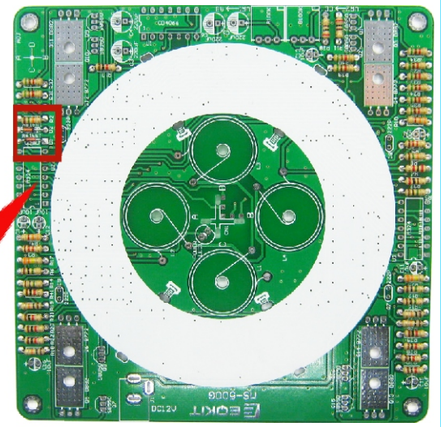
Refer to the shipping list and install all the resistors on the circuit board



4. Install diode :

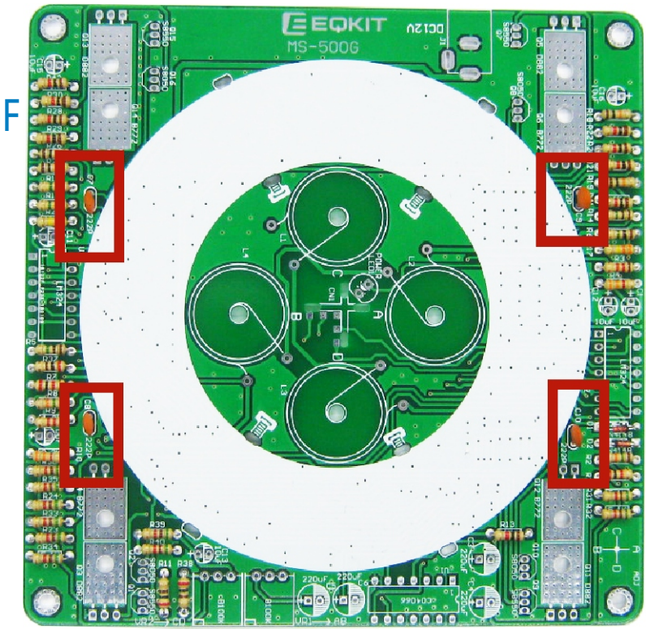
the 1N4148 diode is installed to D1 and D2.Pay attention to differentiating the positive and negative poles of the diode





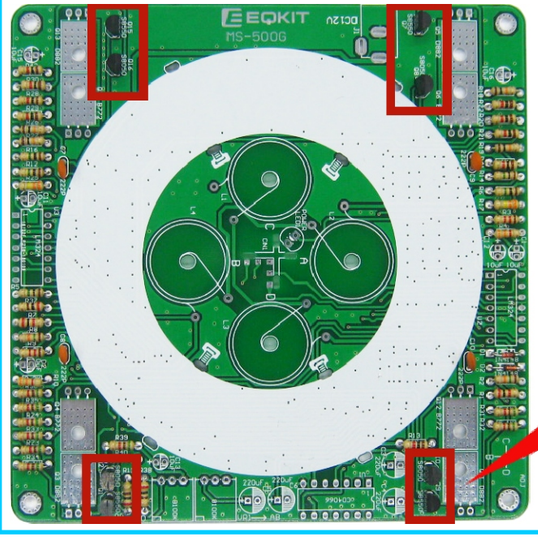
5. Install CAP :

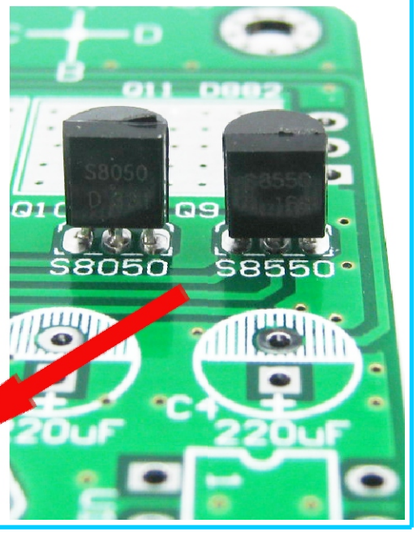
C7.C8.C9.C10=222pF



6. Install Triode S8050 and S8550 :

Q2.Q8.Q10.Q16=S8050
Q1. Q7. Q9. Q15=S8550





MS-500G Magnetic suspension component list

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R18.R19.R26.R27	RES	10K	4
R2.R8	RES	15K	2
R17.R25	RES	330K	2
R5.R6.R12.R14.R16	RES	1M	5
C7.C8.C9.C10	CAP	222P	4
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U2.U3	IC	LM324	2
U1	IC	CD4066	1
U1.U2.U3	IC socket	DIP-14	3
J1	IC socket	5.5mm	1
H1.H2.H3	Hall sensor	G	3
——	Magnet	100mm*10mm	1
——	PCB	500G-CNX	1
——	PCB	500G-CNY	1
——	PCB	500G-MAIN	1
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②Solder wire
③Multimeter ⑤Wire cutters

Precautions::

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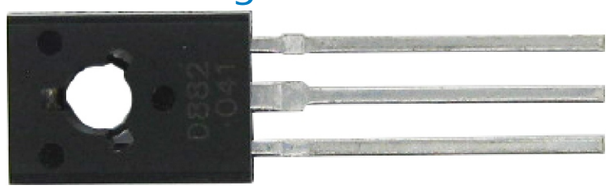
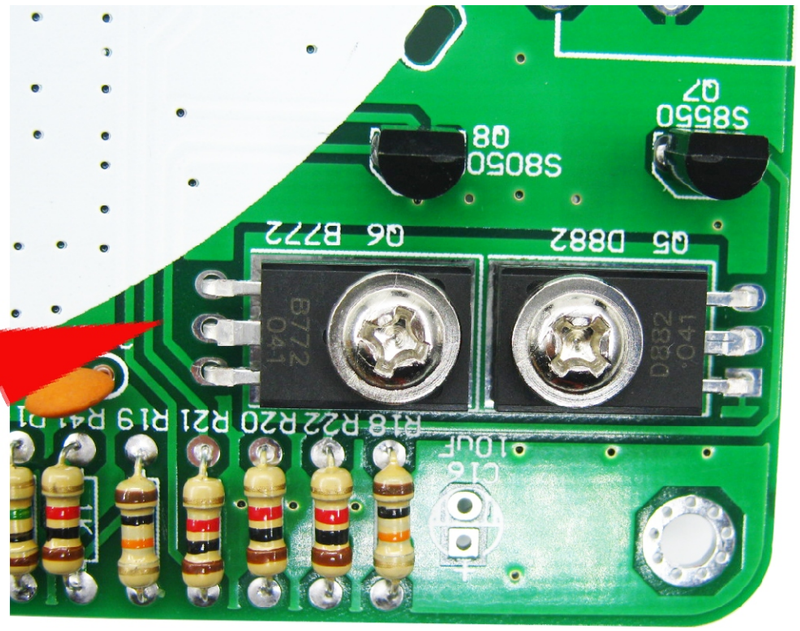
7. Install High power triode :

Q3.Q5.Q11.Q13=D882
Q4.Q6.Q12.Q14=B772

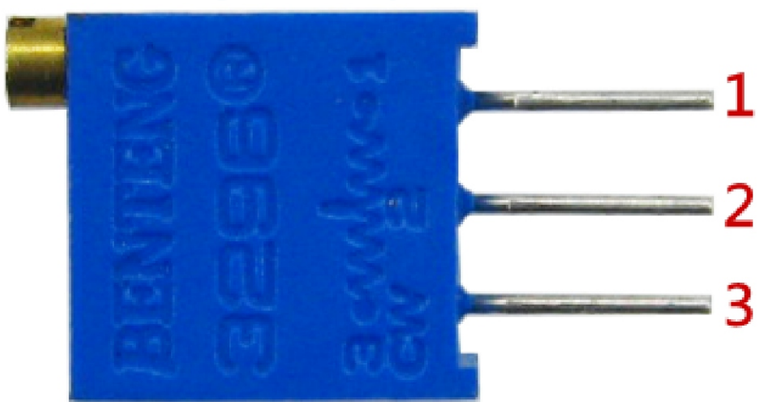
Installation order
①Machined triode
②Install triode
③Fixing triode with screws
④Final rewelding triode

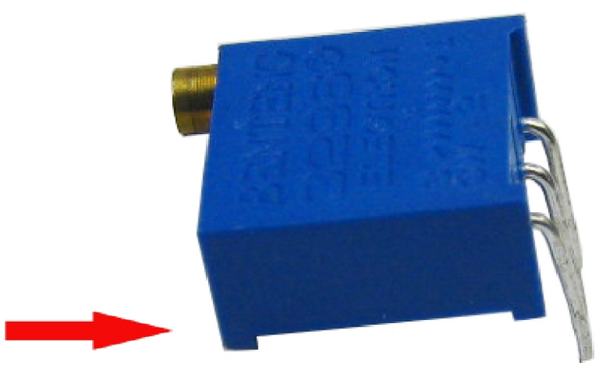


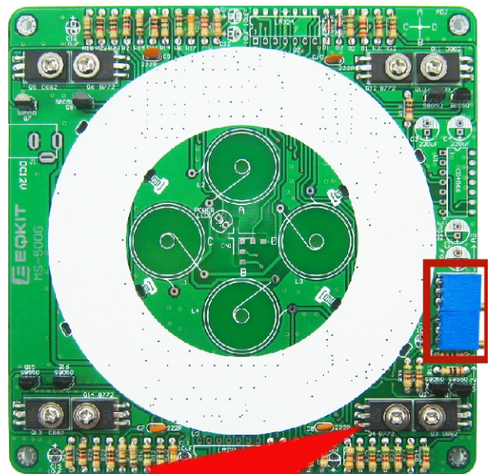


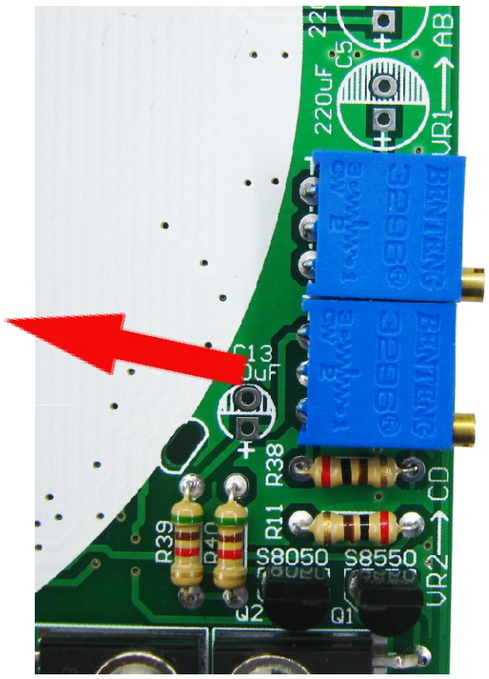
8. Install adjustable resistance:

①Use the multimeter to measure and adjust the pin1.pin2 and the pin2.pin3 , so that the resistance between the two groups of pins is roughly equal
②Bend the pin to 90 degrees:
③Welding the Adj resistors to VR1 and VR2









Tools you need:

①Iron (30W) ④Tweezers
②Solder wire
③Multimeter ⑤Wire cutters

Precautions::

①Check part values & quantities against part list
②Always meter resistor values before soldering
③Understand all part polarities and orientations

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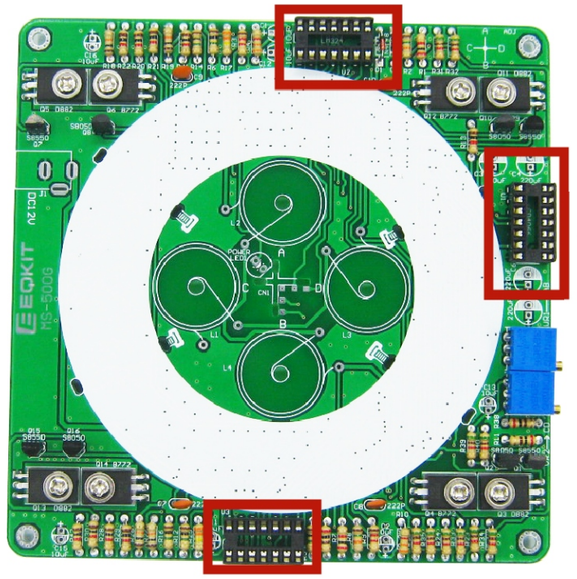
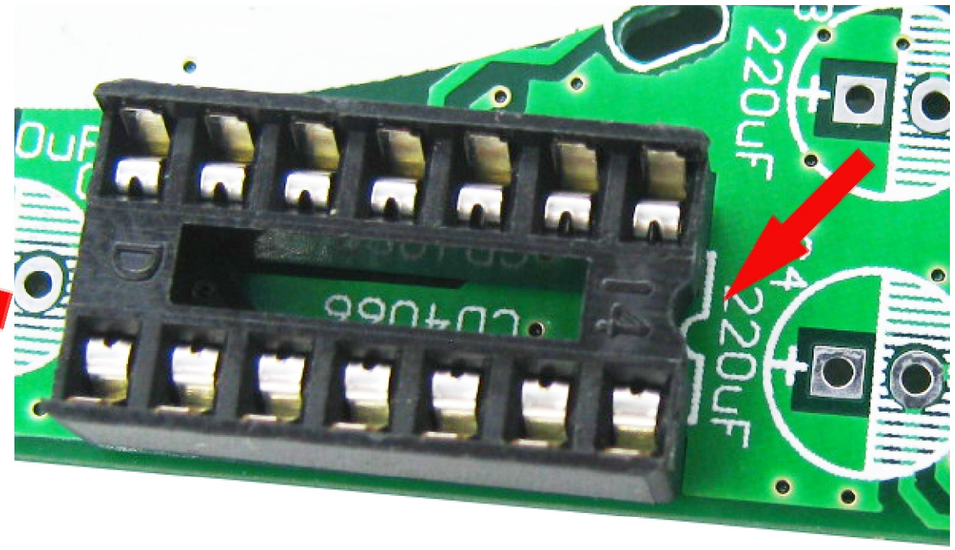
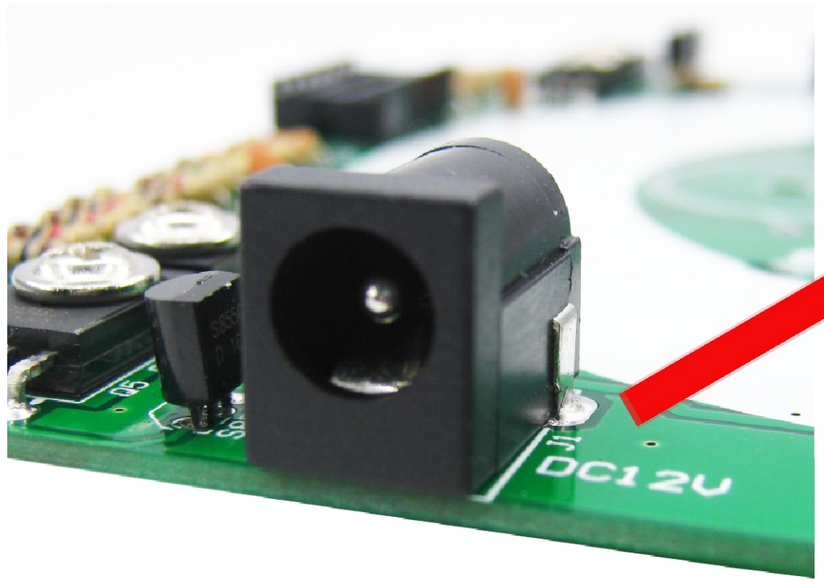
9. Install IC connector:

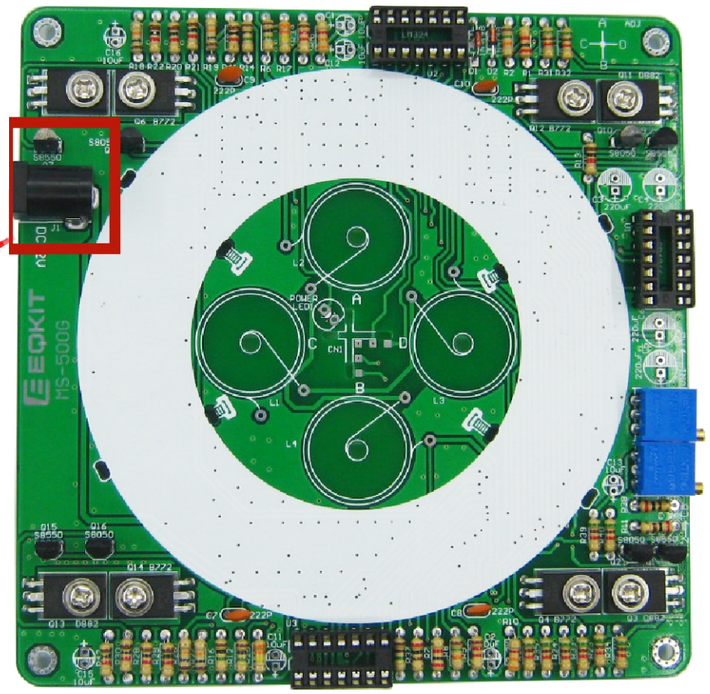
Install three IC connectors to U1, U2, and U3,The direction of the IC connector corresponds to the direction of the circuit board identification





10. Install the DC power input interface:





Tools you need:

①Iron (30W) ④Tweezers
②Solder wire
③Multimeter ⑤Wire cutters

Precautions::

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②Always meter resistor values before soldering
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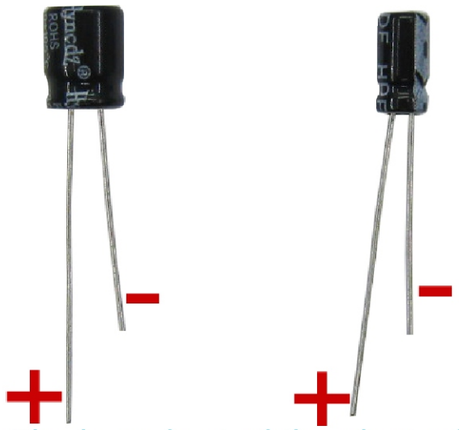
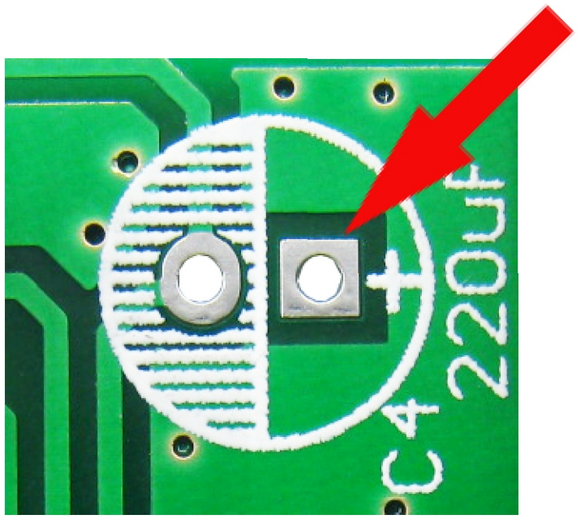
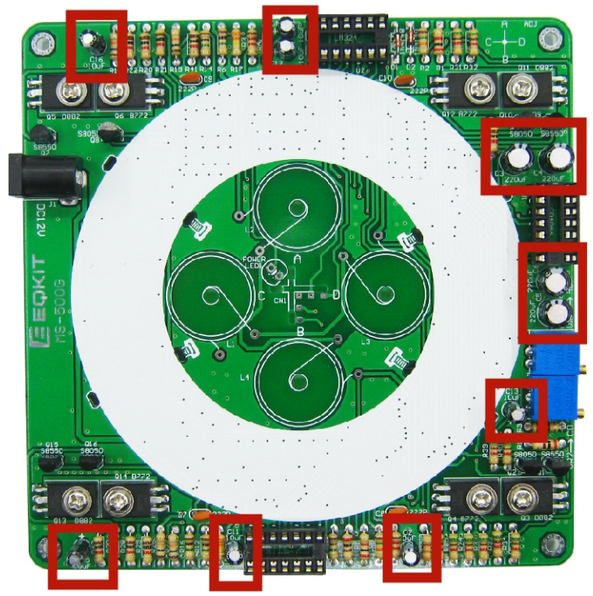
11.Installation of electrolytic capacitors :



The long foot of the electrolytic capacitor is the positive pole



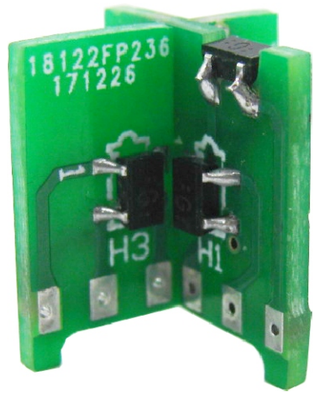
The positive electrode of the electrolytic capacitor is welded on the square solder pad



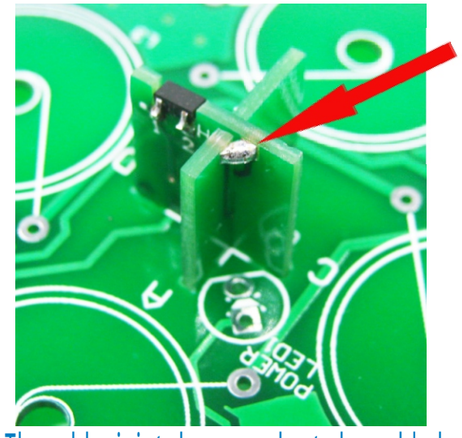
C3, C4, C5, C6=220uF
Other capacitors 10uF

12. Install the sensor to the main board :

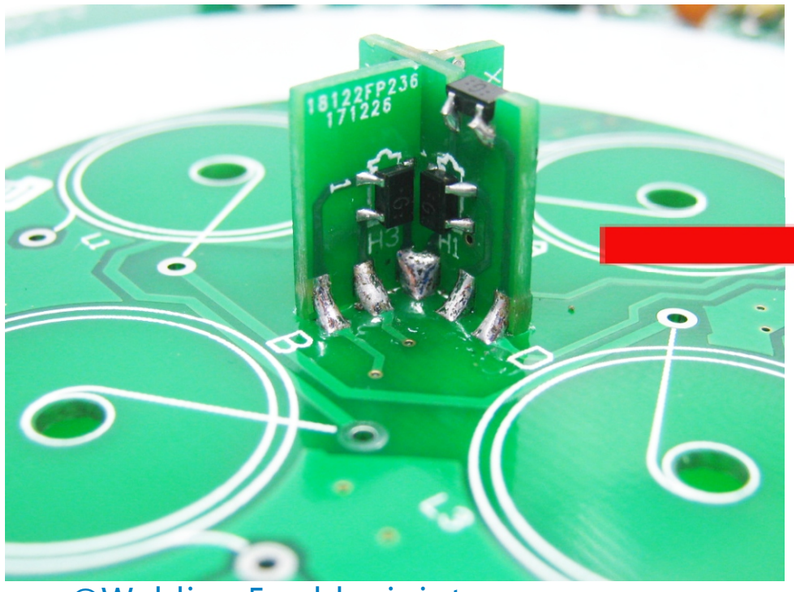
Two sensors are stuck together into cross interactions
Then the sensor is mounted on the main board.



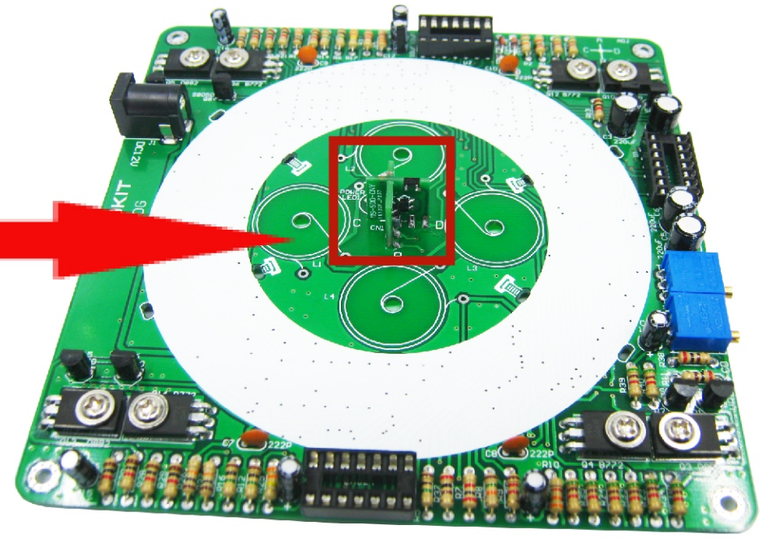
①CNX and XNY cross together



④The solder joints here are also to be welded !



③Welding 5 solder joints ,
The two solder joints in the middle should be connected together.



②Thre e blocks of circuit board should be per pen dicular to each other during installation and welding

Tools you need:
①Iron (30W) ④Tweezers
②Solder wire
③Multimeter ⑤Wire cutters

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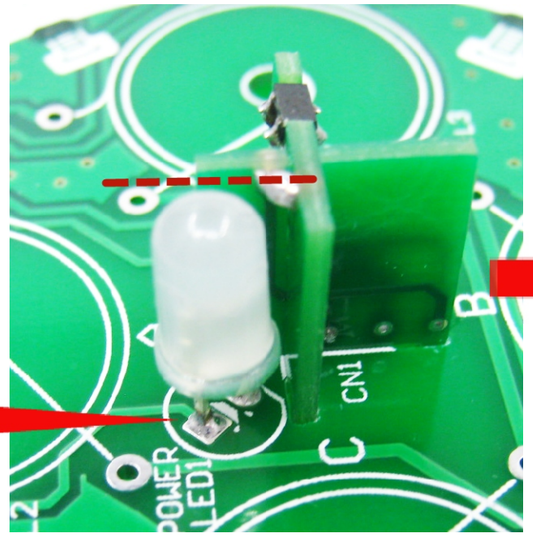
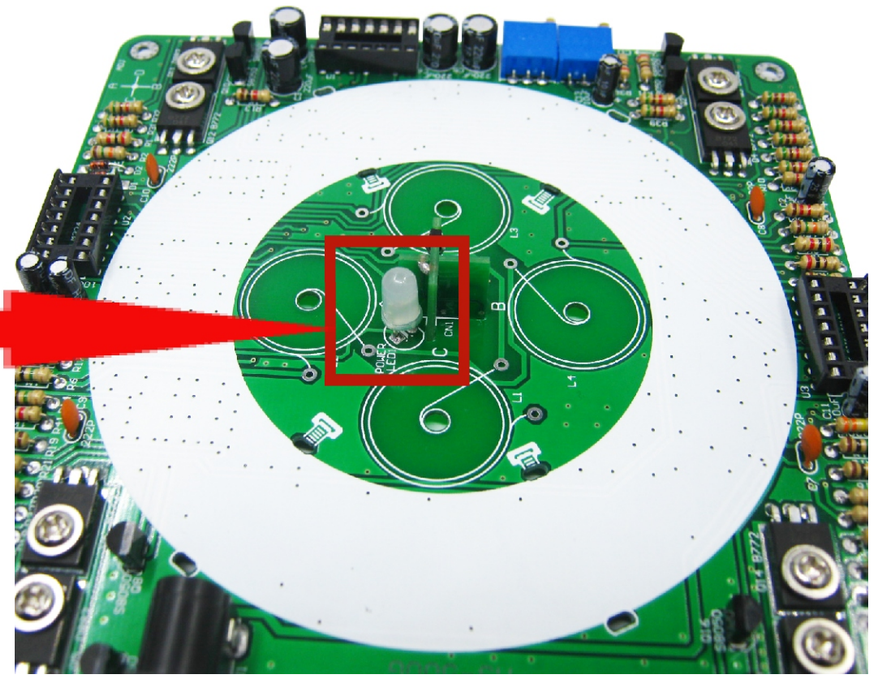
13. Install LED to LED1:Pay attention to the distinction between positive and negative poles

The height of the LED is in accordance with the height of the circuit board

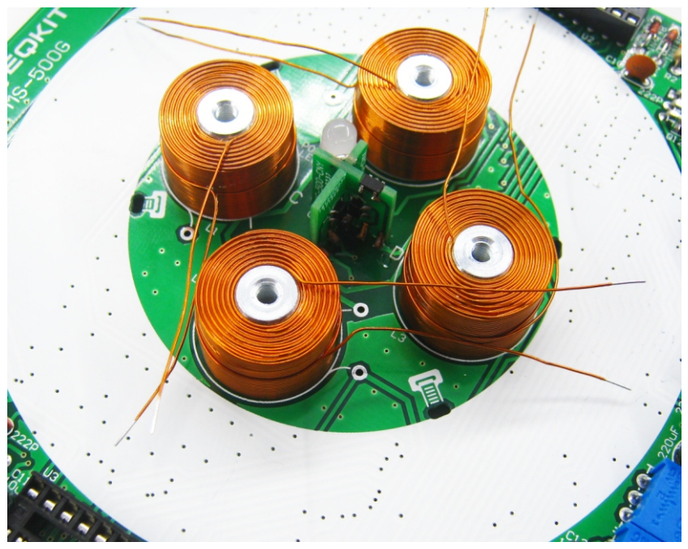
Long pin is a positive pole
Welding to a square pad



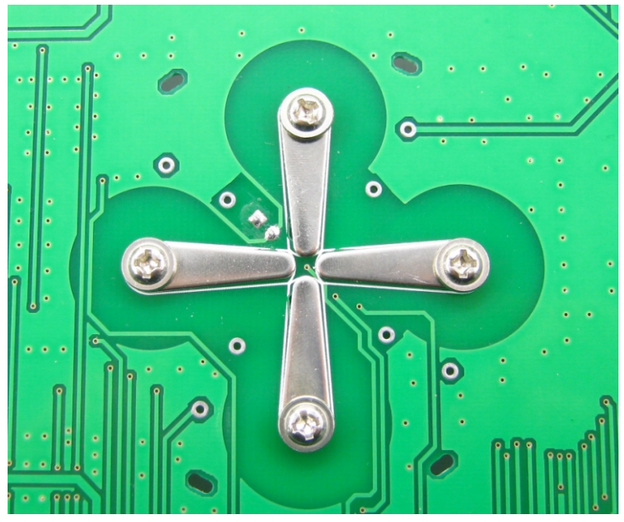
The height of the LED is in accordance with the height of the sensor



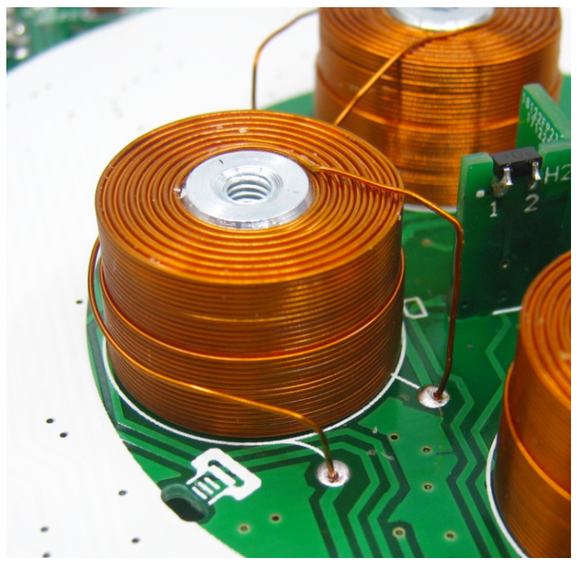
14. Install inductor:



①.Put the inductor on the circuit board
Inductor cable tap drawing from the top



②Wear a silver screw from the back into the iron sheet and fix the inductor on the circuit board
The iron sheet must be installed with each other straight!



③. Insert the inductor into the weld plate and then weld it.

Tools you need:

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②Solder wire
③Multimeter　⑤Wire cutters

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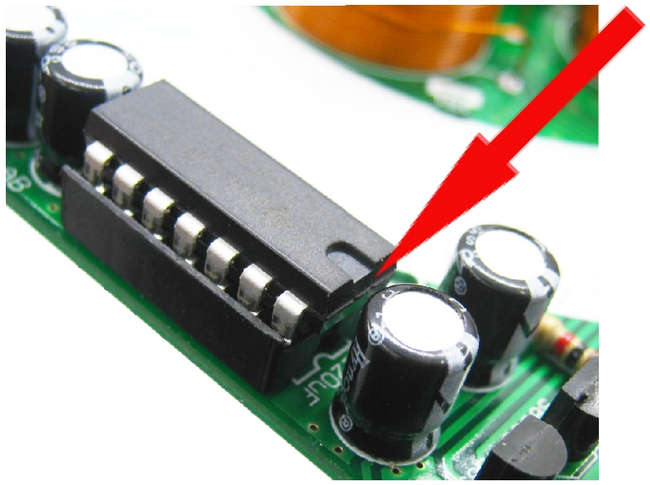
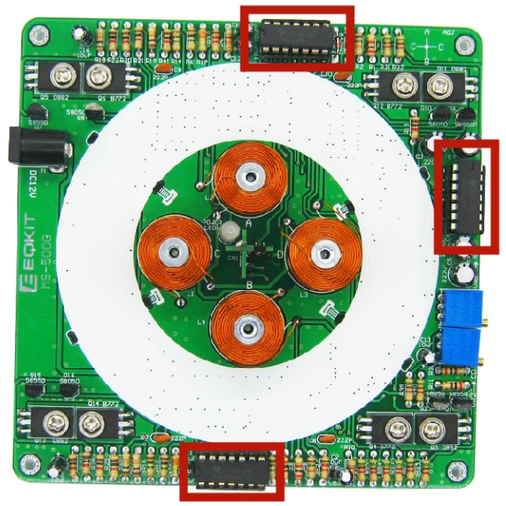
15. Install IC: U1=CD4066, U2,U3=LM324

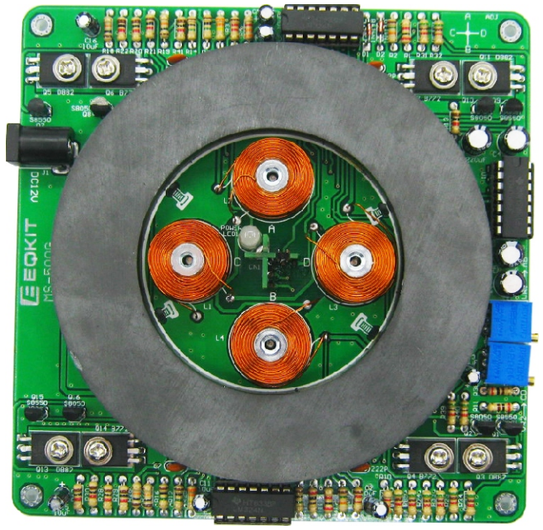
When installing, the direction of IC should correspond to the direction of the printed circuit board





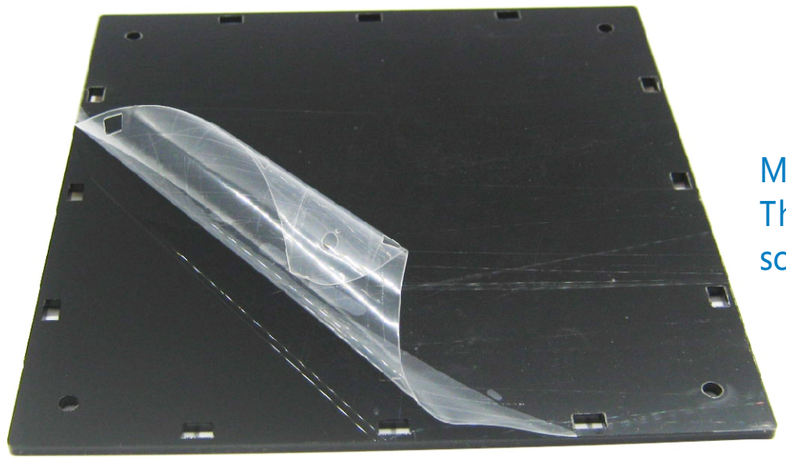
16. Install magnet :

Remove double side glue protection paper



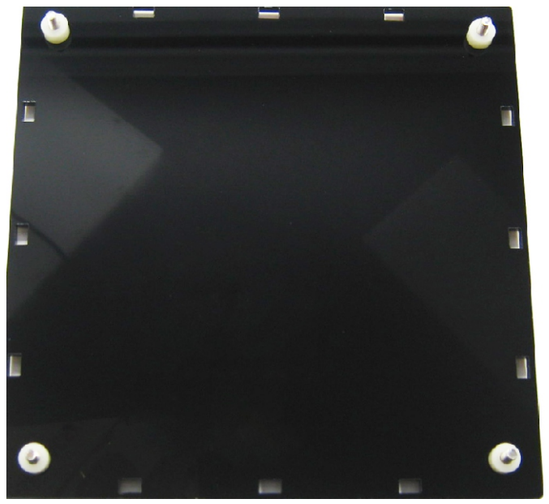
And then stick the magnet on the circuit board !

17. Install the shell :

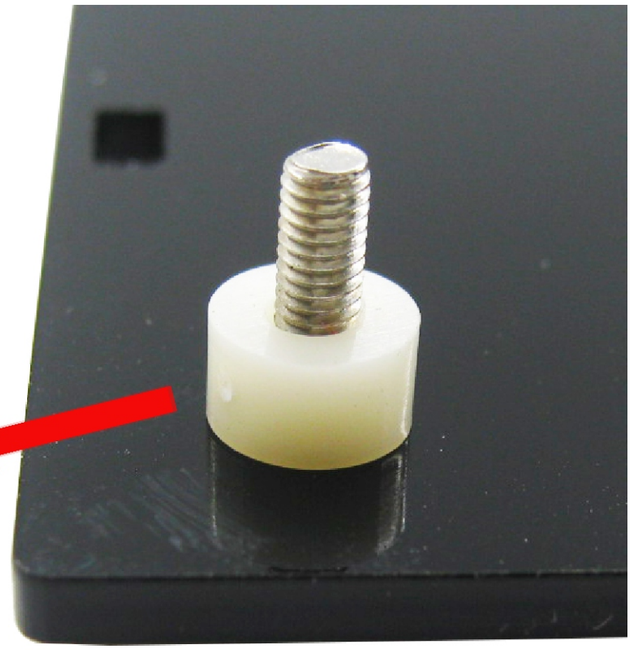


①Tear off the protective film of the bottom plate

M3*12 Screw
The longest screw in the list.



②Use M3*12 screws from underneath the bottom plate
And then put the 4 millimeter spacer.



Tools you need:

①Iron (30W)　④Tweezers
②Solder wire
③Multimeter　⑤Wire cutters

Precautions::

①Check part values & quantities against part list
②Always meter resistor values before soldering
③Understand all part polarities and orientations

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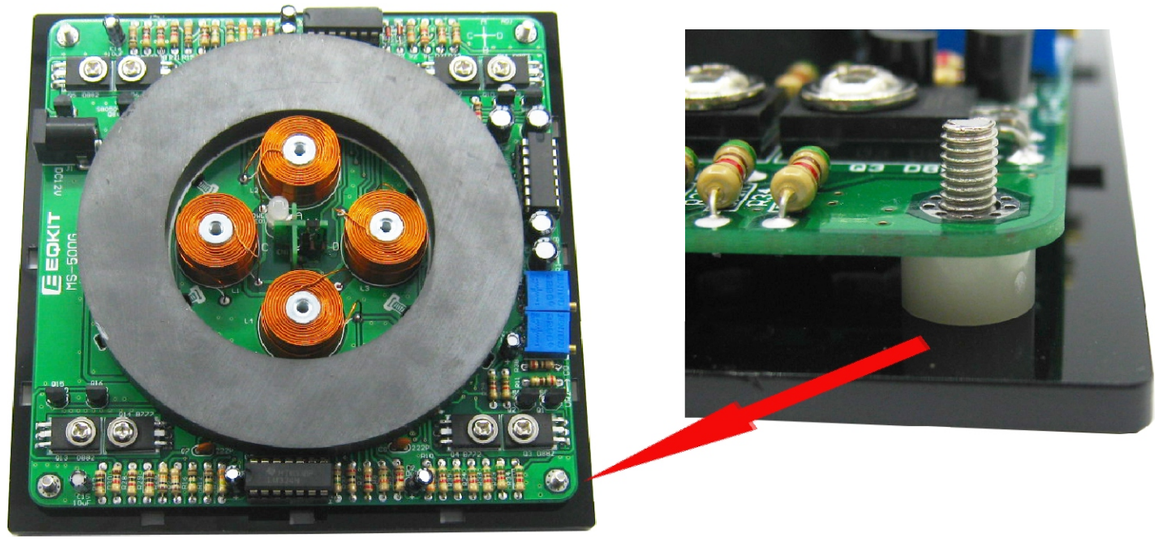
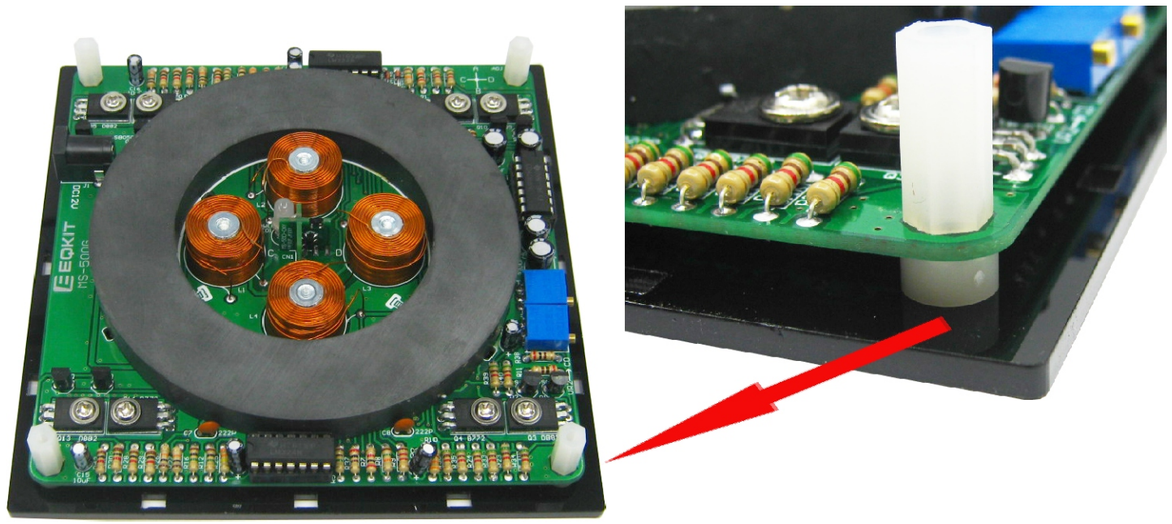
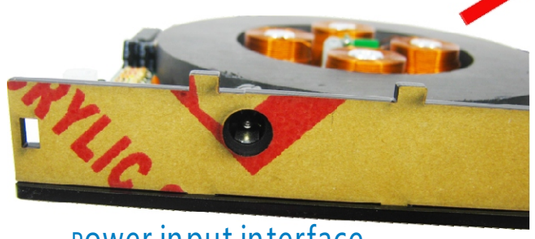


③The circuit board is on top

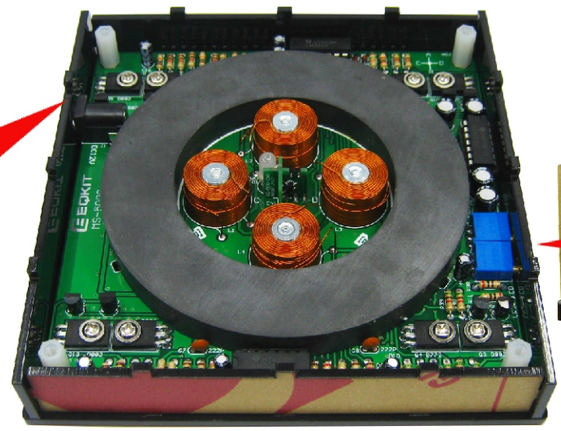


④Then the six - angle double connector is mounted on the screw

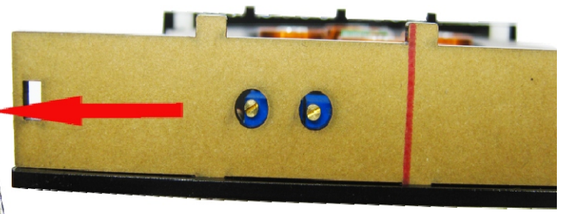
⑤Tear off the protective film



Power input interface



⑥Install the plate
Check whether each interface is correct



Adjustable resistance hole

Tools you need:
①Iron (30W) ④Tweezers
②Solder wire
③Multimeter ⑤Wire cutters

Precautions::
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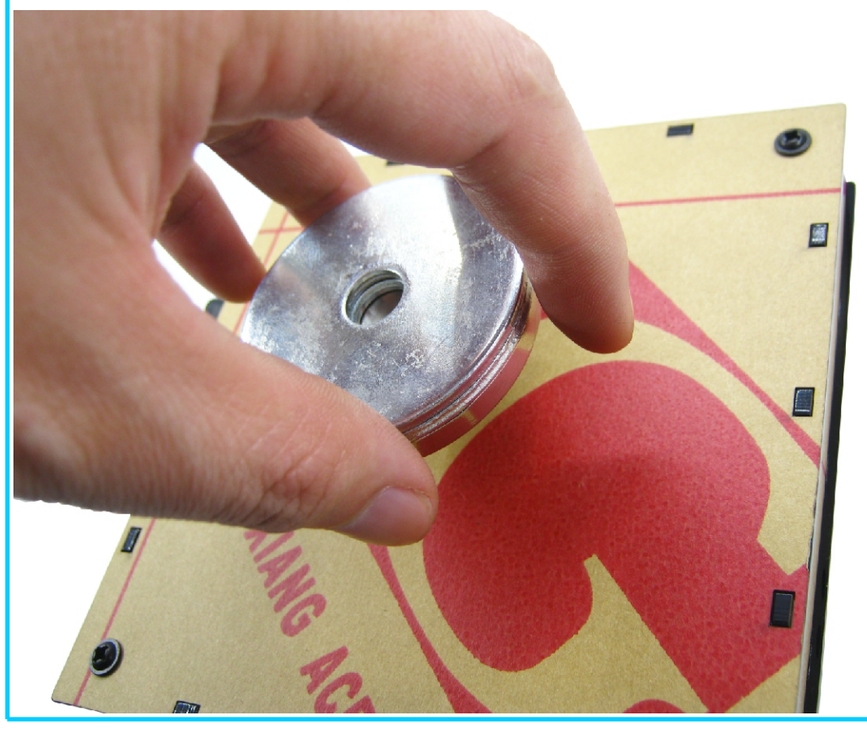
⑦Tear off the protective film of the upper cover

⑧Lock the upper cover with 4 PCS M3*8 black screws

postscript : If the shell you bought is transparent
So here's a silver screw



18. Whole machine debugging :

The first time to debug magnetic levitation ,
Magnetic levitation is easy to fall on the shell,
So we need a piece of thick paper plate pad on the shell

一. Connect the 12V power supply.To be in standby state because of the absence of magnetic levitation ,
The power indicator is not bright at this time , The standby current is about 35mA ± 5mA.

二. Move the magnet at the top of the circular hole and move slowly from up to bottom.
At this time the power light is on and the circuit starts to work

三. At this point, if the magnet can't be suspended , This needs to be adjusted for VR1 and Vr2
The adjustment method is as follows:

Tools you need:

①Iron (30W)　④Tweezers
②Solder wire
③Multimeter　⑤Wire cutters

Precautions::

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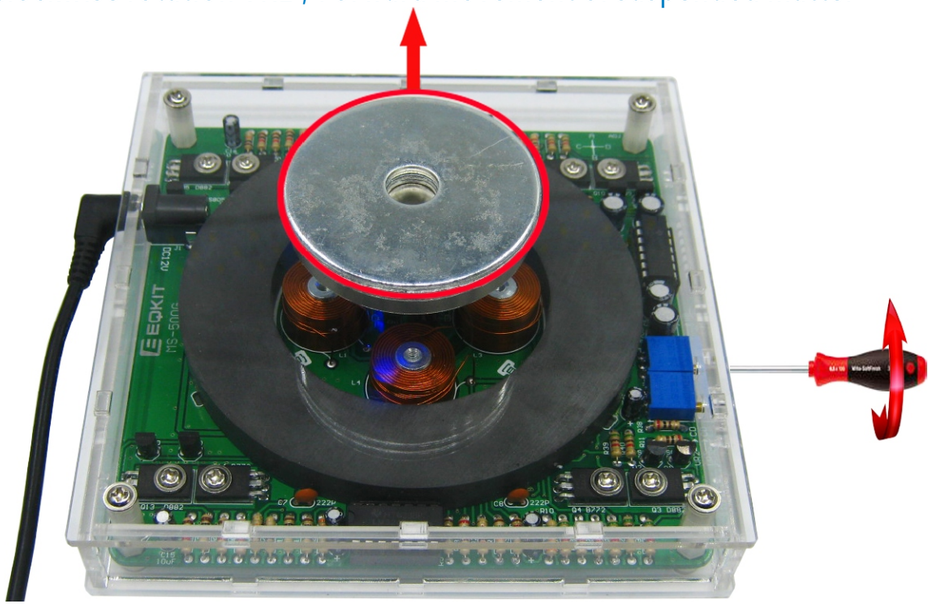
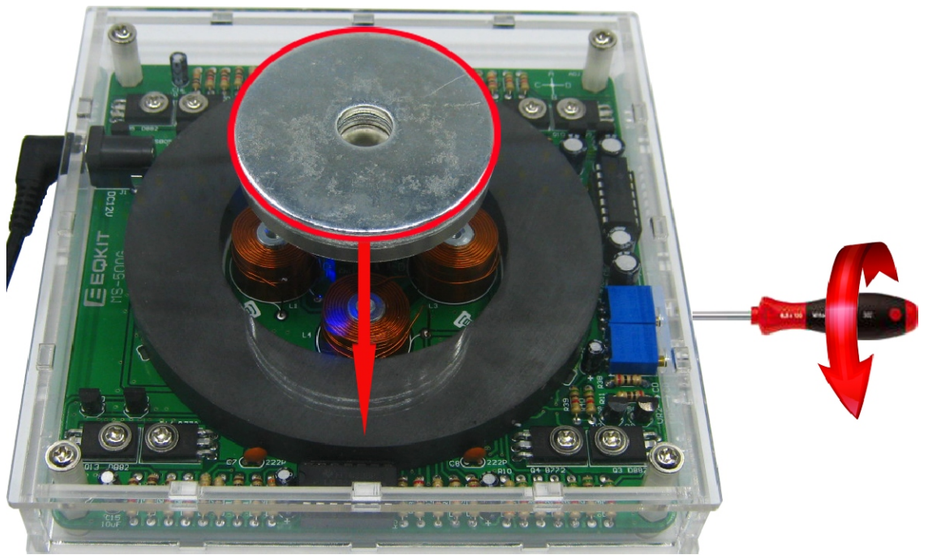
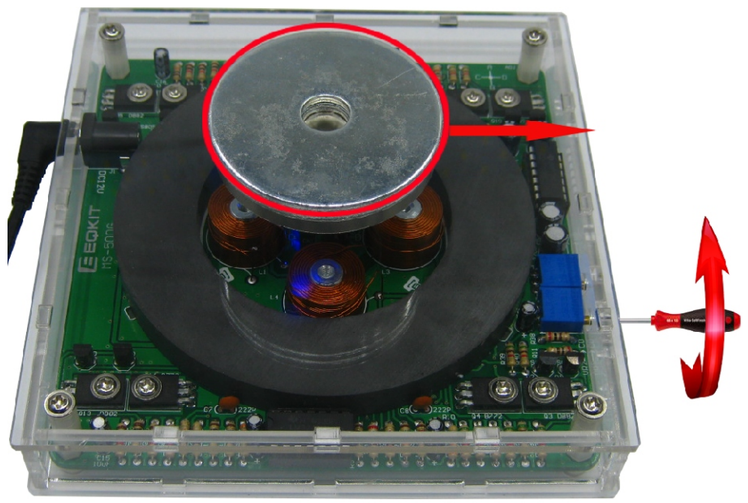
Clockwise rotation VR1 , Forward movement of suspended matter



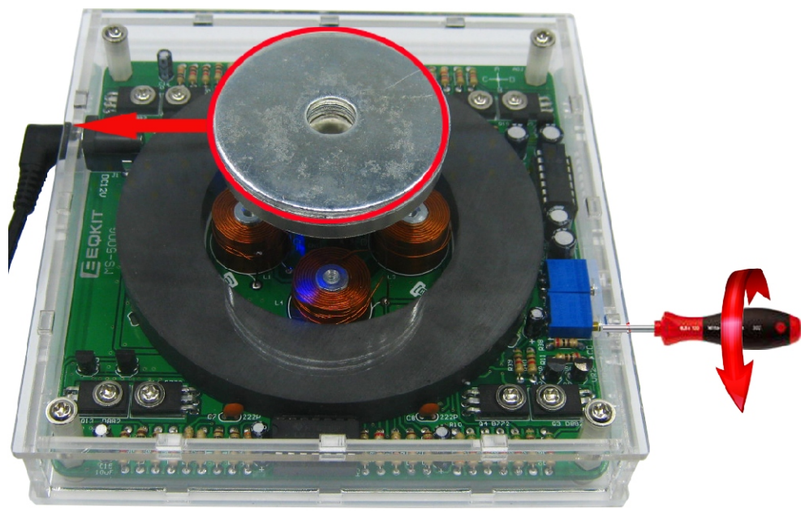
Counter clockwise rotation Vr1 , Rearward movement of suspended matter



Clockwise rotation VR2,Movement of suspended matter to the right



Counter clockwise rotation VR2,The suspended matter moves to the left



Tools you need:

①Iron (30W)　④Tweezers
②Solder wire
③Multimeter　⑤Wire cutters

Precautions::

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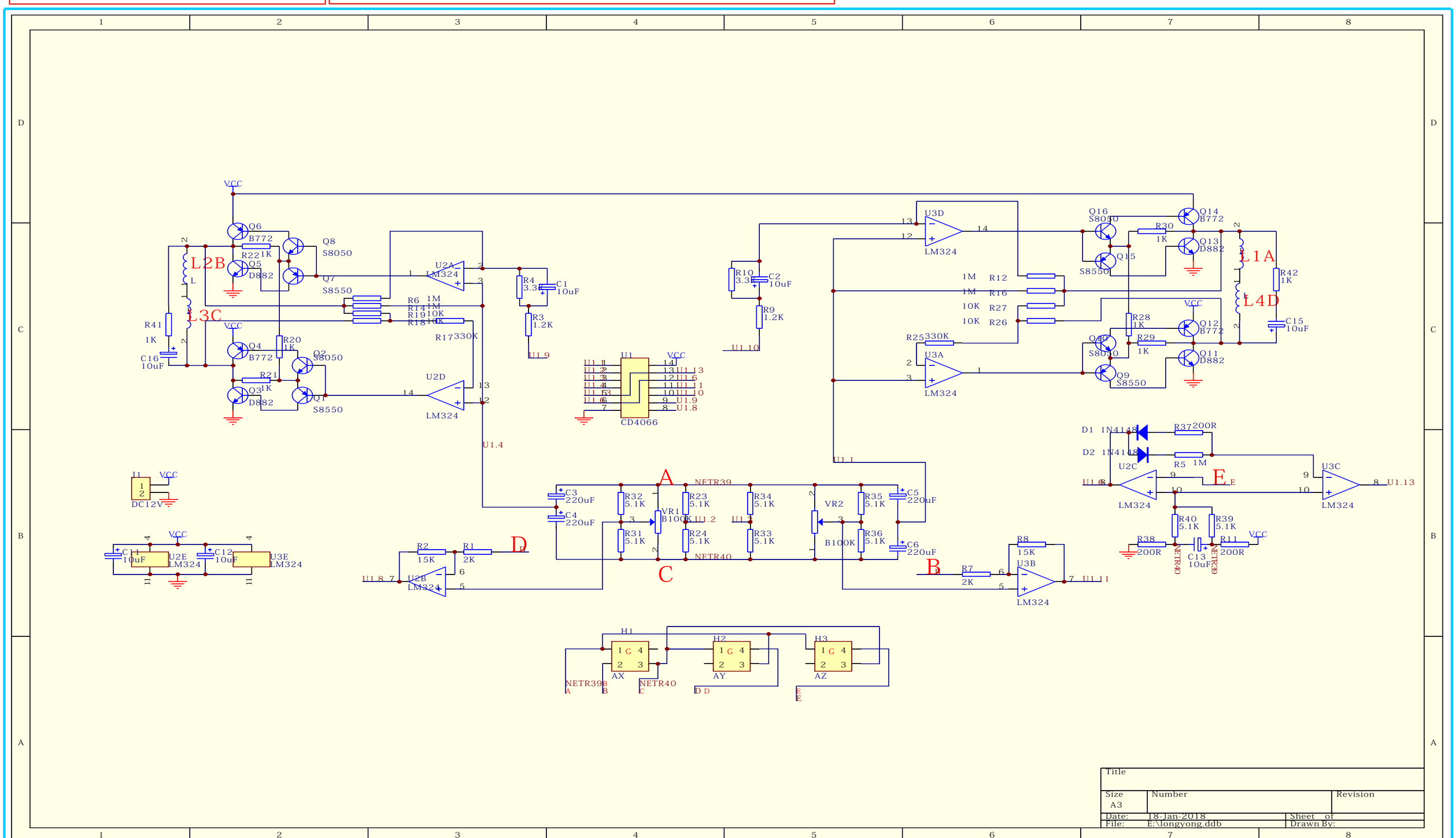

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