



# 3D printer DIY Kit Troubleshooting

Ver: 3.0

If you find any issue using the 3d printer DIY Kit, please following this document to check. If the problem still can't be solved, please feel free to contact with us, thank you!

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## 1. No response when Power ON

1. Check the LCD cable is connect well, EXP1 on LCD screen has connected to EXP1 on the control board and EXP2 on LCD screen has connected to EXP2.
- 2.[for ZRIB Board]Check whether the LED2 of control board will flash on second; if the LED stay off please proceed to next step; Or you need to replace LCD wiring or LCD module.
- 3.[for ZRIB Board only] Check PW\_SEL jumper is well inserted, it is inserted in the position of VREG.
- 4.Please check the LED of power supply. If it lights please see the step 5, else please see step 6.

5	a. Check whether DC power wire connect well.
	b. Check the DC wire terminal, maybe it isn't connect well with the wire.
	c. Disconnect the DC power wire connects to control board. Power ON and using a multi-meter to test the voltage of the V+ and V-(or COM). If the voltage is lower than 11V, please replace the power supply.
	d. Check the DC power wire to control board. Using a multi-meter to test the voltage of the V+ and V-(or COM). If the voltage is lower than 10V, please check whether the control board is shorted.
6	a. Check whether the switch 220V/110V has been set to correct position.
	b. Check whether the AC power turned on.
	c. Check whether the AC power cord is connected well. And the sequence of L,N and GND is correc.
	d. Replace a new AC power cord and test again.
	e. Replace the power supply and test again.

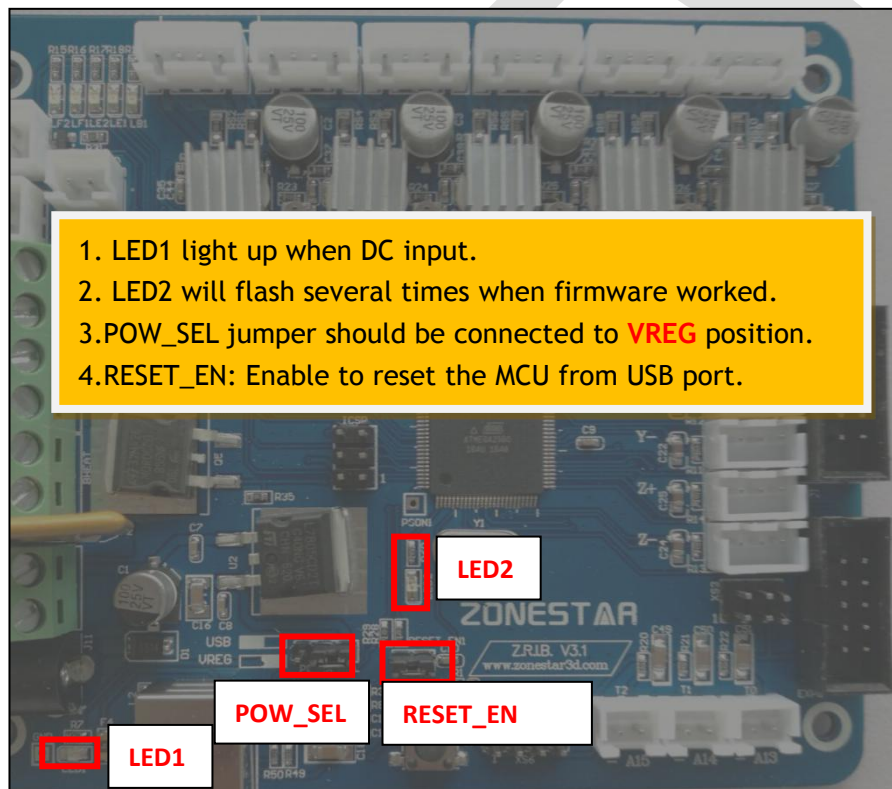
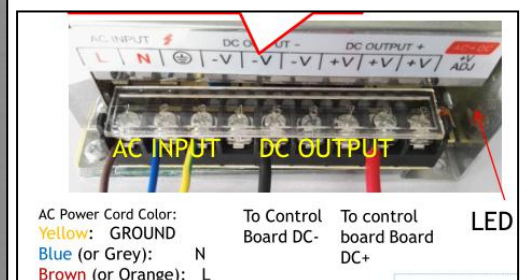


Fig 1.2



## 2. Problem on keypad and LCD screen.

### 2.1. LCD backlight turns on but display nothing

1. Check whether the LCD cable connected well, pay attention to distinguish EXP1 and EXP2 connectors.
2. Exchange the two LCD cables and test again.
3. Upload firmware to control board and test again.
4. Replace a new LCD cable and test again.

### 2.2. LCD display normal but the button (knob) is not responding.

1. Check whether the LCD cable connect well.
2. Check whether keypads have been broken.
3. Check whether the devices on PCBA (keypad, socket, resistance) have bad soldering well. If yes please re-soldering it or replace it.

### 2.3. LCD screen is not clear.

1. Adjust the contrast of LCD screen( adjust the VR1 on the back of keypad carefully) (**Fig 2.3.2**).
2. Adjust the LCD contrast on the LCD Menu.(Only for OLED 128x64)

### 2.4. LCD show error characters.

1. Check whether the LCD cable connect well.
2. Upgrade the newest firmware.
3. Wrap the LCD cable with aluminum foil.
4. Don't tie the LCD cable with other wires(special motor cable), just let it alone.

## 3. Problem with the motor

### 3.1. Motor of X、Y or Z doesn't work

1. Check whether the motor cable connected well.
2. Replace with another motor and test again.
3. Exchange motor cable, motor and motor drive module with other working channels to Confirm the reason.

### 3.2. Motor direction of X、Y or Z are not correct

1. Upgrade the newest firmware.
2. Refer to the installation guide to modify motor wire to change the **direction**.

### 3.3. Abnormal noise when motor working.

**WARNING!!! If the motor sounds abnormal noise, please do not allow the motor to work for more than 3 seconds before you fixed the issue, otherwise it may damage the control board.**

1. Power off, and move X/Y/Z axis manually, make sure they can move smoothly.
2. Check whether the motor cable connect well, bad connection of stepper motor's cable may lead abnormal noise **even damage the control board**.
3. Replace with another motor cable and test again.
4. Replace with another motor and test again.
5. If drive modules is replaceable, replace with another motor driver module.
6. Exchange motor cable, motor and motor drive module with other working channels to Confirm the reason.

### 3.4. X、Y or Z can only turns in one direction

This problem is usually caused by three reasons:

1. ENDSTOP's issue: if the ENDSTOP always on, it will cause the motor can move only to MAX.
2. Motor wire's issue: if one of the 4 wires connected to the motor is disconnected, it will cause this issue. But usually it will cause abnormal noise too.
3. Motor's issue: You can exchange with another axis to check it.
4. Control board or motor drive module is damaged, or motor drive module don't connect well with control board.

### 3.5. Extruder motor doesn't work.

1. Check whether the temperature of extruder is over 170°C.
2. Refer to section 3.1.

### 3.6. Extruder motor work but doesn't feed filament

1. Adjust the temperature of extruder to 250°C and test again.
2. Check the jbscrew of gear on the extruder, make sure the gear is lock on the motor shaft.
3. Check the elasticity of the pressure head.
4. Clean the nozzle. *Please refer to "how to clean nozzle guide".*
5. Replace nozzle and throat. *Please refer to "how to re-assemble hotend guide"*

## 4. Problem on extruder(Hotend)

### 4.1. Extruder(Hotend) doesn't warming or heats up slowly

1. Check current temperature of extruder(s) and heatbed. If shows 0 degree or def on LCD. It means the control board can't measure temperature. Please check whether the temperature sensor connected well.
2. Check whether the heater wire and the heat bed power wire connect well.
3. [For ZRIB Board] Check whether the LE1 (LE2) LED lights up when heating the hotend(extruder) or LB1 LED will light up when heating the heatbed.
4. Disconnect the heater pipe from the control board. test two ends of heater by a multimeter (using resistance setting), if resistance is over 20 OHM, it means the heater pipe is broken.

### 4.2. Extruder can't reach to the setting temperature

1. Check the blowing fan is on or not when extruding, if on please turn it off first.
2. Check whether the heater wire connected well or not.
3. Disconnect the heater pipe from the control board, test the two ends of heater by a multi-meter(using resistance setting), if resistance is over 20 OHM, it means the heater pipe is broken.
4. Refer to the guide "How to tune PID parameter" todo (only for marlin firmware).

### 4.3. Temperature of extruder bounced with large range when heating

1. Check whether the thermistor (temperature sensor) has fallen out from the heated block.
2. Check whether the E0 TEMP/E1 TEMP is connected well.
3. Replace with a new thermistor (temperature sensor) and test again.

### 4.4. The extruder motor sounds "Ka-Ka" noise when printing.

1. The problem only occurs on printing the first 1 or 2 layers:
  - a. Increase a little the distance from the nozzle to heat bed.
  - b. Set the first layer thickness to a bigger value when slicing.
  - c. Level the heat bed again.



**2. Occasionally sounds "Kaka" when printing, but print quality is OK:**

- a. Decrease the flow speed and print speed when printing.
- b. Set to higher nozzle temperature.

**3. Always sounds the noise and there is broken line or less filament on the printed object:**

- a. Set to higher nozzle temperature and lower print speed and test again.
- b. Refer to section 3.6

## **5. Problem on heat bed**

### **5.1. Heat bed doesn't heat**

1. Check both the temperature of extruder and heat bed when power on. If it shows 0°C (or def) on LCD. It means the control board can't measure temperature. Please check whether the temperature sensor is connected well or not.
2. Check whether hotbed heater is connected well or not.
3. Check if LB1 LED on the control board will light or not when heating.
4. Measure the voltage of HOTBED terminal on the control board by using the multi-meter. The voltage should be 5~12V when heating and 0V without heating.
5. Connect the heat bed power wire to the power supply V+ and V-(COM) terminal directly, and check if the heat bed heats, if not please check whether the power wire is disconnected from the heat bed.

### **5.2. When heat bed starts heating, the control board restart automatically**

1. Check the choices of power supply 220V/110V, whether it's according to the local city.
2. Check that DC power wires are connected well or not.
3. Connect the heat bed to the DC output terminal of power supply, measure the voltage by multi-meter. If voltage less than 11V. There maybe something wrong with the heatbed or power supply.

### **5.3. Heat bed heating but can't reach to the setting temperature**

1. Check one by one following 5.2.
2. Make sure the ambient temperature is over 25 degrees, and don't let the fan blow into the heat bed.
3. Apply insulation cotton under the hot bed to reduce heat loss.
4. Increase the power supply DC voltage to about 14V: There is a potentiometer near to the wire terminal of power supply, you can rotate it to adjust the output voltage.

## **6. Problems on off-line printing(Print from SD card)**

### **6.1. Documents in SD card cannot be found.**

1. Check if the LCD cable is connected well.
2. Re-insert SD card and restart power supply, repeat it to check.
3. If there is a SD card adapter, replace one and test again.
4. Unplug SD card, clean the pad of SD card (you can clean it by an eraser) and test again.
5. Clean the socket of SD card on the control board and try again.
5. Format the SD card and try again.
6. Replace with a new SD card and try again.

### **6.2. Automatic stop when print from SD card (Display "SD card read error" on LCD screen).**

1. Check if the LCD cable is connected well, if yes swap the two LCD cables and try again.
2. Don't tie the LCD cable with others wires, just let it alone.

3. Check if the SD card touch well with SD card socket.
4. Replace with a new SD card (or SD card adapter) and test again.
5. Wrapping LCD cable with aluminum foil and try again.
6. If the frame of printer is metal, isolate the power supply with metal frame and test again.
7. Reset control board and try again.
8. Format the SD card and copy the files and try again.
9. Change to a smaller gcode file and try again.
10. Upload to the newest firmware and test again.

### **6.3. Cannot start to print from SD card**

1. Reset the printer and try again.
2. Format the SD card, and copy the test gcode file and try again.
3. Slice again to generate gcode file for testing.

## **7. Problem on connecting with computer**

### **7.1. Cannot connect to PC**

1. Ensure the printer is powered on.
2. Restart your computer, and reset your printer and try again.
3. Check that USB cable is connected well or not.
4. Check the device manager of computer operating system to see it there is “USB Serial converter /USB to UART bridge” when the USB cable plug in and it will disappear when the USB cable pull out.
5. Re-install the driver(driver is stored in the SD card).
6. Replace the USB cable and test again.
7. Check whether the baud rate of serial is 115200 bps.
8. Test in another PC again.

## **8. Why the filament can't stick on the heat bed.**

1. Paste high temperature adhesive tape on the heat bed or using 3D print heat bed glue before printing.
2. The distance between the nozzle to heat bed is very important, please refer the guide to adjust the orig of Z-axis and level the hotbed.
3. Some types of filament need higher temperature heat bed, usually PLA is 50~60 degree, HIPS/ABS/PC is about 80~105 degree.

## **9. How to adjust the nozzle's height of dual extruder printer.**

1. You need to keep the two nozzles at the same height(error is less than 0.15mm), otherwise it will lead print quality problems, or print failures. Although we have adjusted the height from the factory. However, there may be problems in transportation or after a period of use.
2. The installation guide has a detailed page that tells you how to adjust the height of the nozzle. If you can't find it, please download it from our cloud disk .
3. We also uploaded a video tutorial to our YouTube channel, please feel free to visit and watch it.

## **10. Z aixs lead screw don't parallel to the lead rod**

1. Because there is a small gap between the lead screw and copper nut, so they are not parallel before you install them to

the printer. **This has nothing to do with the quality of the product.**

2. You can loosen the copper nut and adjust the position of Z axis motor(s) to try to keep the lead screw and the lead screw are parallel when you assemble the printer, and then tighten the copper nut again.

## 11. The ball drop from the linear bearing when inserting the lead rod

1. Please carefully and slowly insert the lead rod to the linear bearing, otherwise it may damage the bearing.

2. Because there are many ball in the linear bearing, lose one or two ball didn't affect the printer work. But the noise may be higher when printing.

3. All linear bearings in the printer can be replaced, if you want to replace it, please purchase from our store.

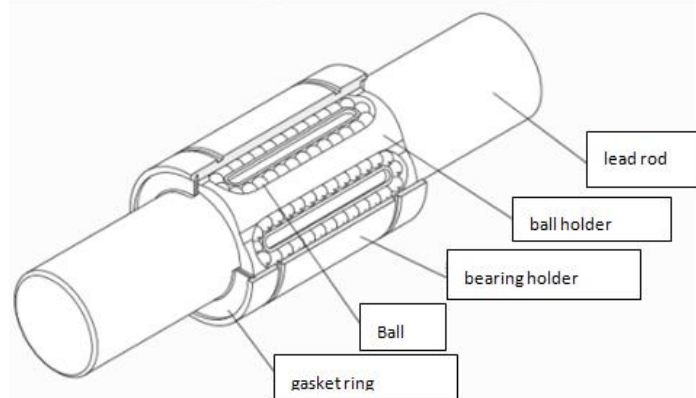


Fig 14

## 12. How to solve the unstable extrusion(Fig 17.1)

1. Set to higher extruder temperature and lower print speed and test again.

2. Clean the nozzle (Fig 9.4) and test again.

3. Check whether the filament roll can rotate and filament can be fed into the extruder smoothly(Fig17.2).

4. Refer to 4.4 to check if the nozzle is blocked.

5. Layer height is not suitable the nozzle diameter when slicing, recommend layer height is 0.15-0.36mm. The extrusion width shall be within the range of 100%-105% of the nozzle size.



Fig 17.1



Fig 17.2



### 13. 【dual extruder printer】 How to fix the oozing issue

1. Set to the lower extruder temperature when slicing.
2. Add extruder fan speed when slicing.
3. Add oozing filament erasing tower or oozing shell when slicing.
4. More solutions please search from website and Youtube channel.
5. Upgrade to a mixing color hotend, please purchase from our store:<https://zonestarcto.aliexpress.com/>

### 14. Lost steps or staggered when printing.

1. Check whether the pulley fixed on the motor shaft (locked the jbscrew again).
2. Check whether the hot end(X axis mechanism) and heat bed(Y axis mechanism) can move smoothly. Add some oil on the bearing if necessary.
3. Properly adjust the belt tension, too tighter will lead to big movement resistance and too looser lead to slip.
4. Check whether the filament roll can rotate and filament can be fed into the extruder smoothly.
5. Reduce print speed and test again.
6. Adjust the drive current of motor, please refer the installation guide.



### 15. 【dual extruder printer】 Both of the printed object don't combine properly

1. If you haven't set the correct offset between the nozzle 1 (extruder 1) and nozzle 2(extruder 2), the printed object can't combine correctly.
2. There are 2 ways to solve the problem:
  - a. Refer to "Debug extruder position" guide to set the extruder offset, this guide is stored in the SD card, also you can download from this link: <https://drive.google.com/drive/folders/0B9Z1DbrxfqbpbVoxSjVZYjNrTjQ>  
Directory: (model number)/Release Document/Debug Extruder position
  - b. You can set the offset when you slicing, about how to set it, please refer to the guide of the slicing software.



## 16. How to modify the EEPROM parameter by Repetier-host:

1. Download repetier-host and connect to your printer.

repetier-host download: <https://www.repetier.com/download-now/>

repetier-host user guide: <https://www.repetier.com/tutorials/>

2. refer to the blow vide guide to modify the EEPROM parameter:

<https://drive.google.com/file/d/0B9Z1DbrxfqbpUjBzVXZqeUpieE/view>

## 17. How to adjust the origin position

Refer the section 24 to modify the below parameter of EEPROM in MCU,

**X min pos:** decrease it if the origin is on the left of real origin of hotbed, otherwise increase it.

**Y min pos:** decrease it if the origin is on the front of real origin of hotbed, otherwise increase it.

## 18. How to fix the object size issue

Refer the section 24 to modify the below parameter of EEPROM in MCU,

**X-axis steps per mm:** decrease it if the printed object is bigger than real in x axis, otherwise increase it.

**Y-axis steps per mm:** decrease it if the printed object is bigger than real in Y axis, otherwise increase it.

**Z-axis steps per mm:** decrease it if the printed object is bigger than real in Z axis, otherwise increase it.