

Routine maintenance of the machine

1. Lubricating movement of the shaft

Motion axes regular cleaning; apply oil to ensure smooth movement of the machine, increasing the life of the machine.

2. General Precautions

1) Heating of the extruder should not exceed 260 °C

2) When printing supplies, do not exceed the predetermined temperature of some supplies, so as not to clog the nozzle carbide consumables, such as the carbonization of PLA can happen when it is in high temperature.

3) PLA heat bed temperature is 50 °C -70 °C; ABS heat bed temperature is 60 °C -90 °C

(put

high temperature glass and add their own smear glue), PC and ABS are similar; the

need to slow down the speed of a flexible material, the temperature should be selected right;

3. Printing Platform Maintenance

Printing platform is made

of the aluminum, to be posted on textured paper or self-install

high-temperature glass and other print better, apply glue or posting high viscosity textured paper, the model is difficult to remove, do not disassemble violently model, the platform cooling then take the lateral percussion, etc. pickup better.

4. Dustproof of the machine

When not often using the machine, please dust regularly to the machine

5. Supplies storage

when supplies no use for a long time, sealed it well in plastic bags to prevent moisture.

6. Machine Placement

Place it flat solid in dry place to prevent the machine in humid environment.

1. No Solid Objects Printed Out

The hollow and solid models of printing are not related to printing software, but it depends on the drawn graphics (which are solid then its solid, if it is hollow drawing then play is hollow). Whether the graphics are solid or hollow is no relationship with the filling rate , the drawn graphic itself is solid and that will play out in solid.

2. How to deal with it when no wire out because of nozzle clogging.

- 1) Check the temperature. ABS print nozzles at a temperature between 220 °C -240 °C, PLA print nozzle temperature between 185 °C -220 °C.
- 2) Check whether the nozzle plug. Nozzle temperature heating , ABS heated to 230 °C, PLA is heated to 200 °C, after fix the silk, hand pushing a little harder to see if the nozzle wire, if the wire out, the nozzle no clog, if no wire , then take out the nozzle cut or replace the nozzle to clean the nozzle .
- 3) Check whether the working table from the nozzle is too close. If it was, then adjust the distance between the nozzle and the working table, which can just lay down a sheet of A4 paper as appropriate.
- 4) Check whether motor gear has too much powder, then clean up.

3. The model not sticky to the working platform

- 1) When printing ABS material, generally use glue or other sticky glue for the working platform, printing PLA, then masking tape to help bonding.
- 2) The nozzle too far away from the table, then adjust the distance between the nozzle and the platform by just a piece of A4 paper.
- 3) Temperature is too high or too low. ABS Printing working platform's temperature should be about 110 °C, PLA at a temperature of around 55 °C.

4) About printing supplies, then change supplies provider.

4. Model dislocation when printing

- 1) The nozzles are forcibly blocked in the process of printing. Firstly, hands away from the working nozzle when printed. Secondly, if it has a positive tumors on the top of the model diagram prints, the next print will be repeated to increase volume cutting, to some extent, the product of hard cut tumor blocks the normal movement of the nozzle , step motor lost cause misalignment .
- 2) The direction of the dislocation motion resistance is too large then goes to check whether the friction bearing too large, and shaft too lagged, or driven wheel can rotate smoothly.
- 3) Slicing model error. Now the most common software is Cura and Repetierboth. Most are open source, so that the stability of professionalism of the software cannot be guarantee, as well as the design of each model is not necessarily a perfect fit software, so the first print dislocation model diagram no need change, but just re-slicing model diagram, change a good location for the software to print in GCode format.
- 4) Model sheet problems. After replacing the slicing, model still misplaced, then change the previous model diagram to do print experiment, if correct, then you need to re-make drawings.

5. Sintering, drawing on the model after finishing printing

When printing, the parameter need to set up, lower the nozzle temperature 5-10 degrees, the nozzle wire speed can be adjusted to 80 to try, no wire out then speed to 100.

6. No molding print out, the wire out looks like bad

This situation indicates the pitch of the print head and the bottom platform too far, distance calibration platform and nozzle diameter at a distance of a thick sheet of A4 paper better.

7. The machine's display is garbled, the video blurred or no content displayed in the process of printing

If the machine work well in the process of printing, please do not do anything and just let the printer to continue printing. Click the button to return back on it, or after the printing is finished, shut down, and then boot, will return to normal. This may be an indoor power line connected to the printer is not grounded wire (and ground Unicom) cause, consider moving the machine to the ground connection is normal room. It is also possible that the weather is dry, the video caused by static electricity. This has no effect on the machine itself. If video, print model have been a mistake, be shut down and then restart the machine.

8. The nozzle no silk , silk hand to press down to the wire

First retreat wire , the nozzle was heated to about 230 degrees to clean the nozzle, the nozzle until the temperature reaches 230 which will be automatically out the residue , and then check whether the motor gear wear due to prolonged use of the gear portion , such as gear wear consider replacing motor gear .

9. Extruder makes the sound of “da da”

Check if the wire material is not inserted well, if so, and take the feed wire out, then check whether there is next broken wires inside motor gear, and clean it up to re-enter the wire . If not, see if it is too much resistance,

lead to the material out no smooth, check whether the nozzle blocking material, check the motor cable is damaged due to pulling, you can try adjusting the A4988 drive voltage with 0.8-1.1V.

10. The printer does not start; the display shows two rows of bar codes

Restart the printer (unplug the power cord, connect and turn on) to see if it can get back to normal. If not, then press the reset button underneath the printer circular knob, the system RESET bit.

11. During printing, the display shows the NA, then the printer stops working

First, displaying NA is because the nozzle can not be heated. So you can check wires plug under the nozzle heater is loose, if still no heat, then contact sales for the professional documents to make a heater wire comprehensive examination, if still unable heating, it needs to replace the nozzle heater wires.

12. Tumors on the outer surface of finished printing model

(1) Nozzle temperature is too high, supplies melt fast, resulting in tumors overflow printing layer.

(2) Supplies too much traffic, then see if the nozzle is set correctly, if so, then consider the slice software supplies the flow settings, usually the default value of 100%. So lower it to 80% to print.

(3) supplies limited diameter no setting error, slicing software has setting for supplies limited diameter, each open source software with different the default value in size of 1.75mm and 3.00mm. Use 1.75mm diameter limit in the software as "1.75" in the slicing software, 3.00mm then choose "2.85, 2.95."

13. Surface generally very poor after FDM printing support

- (1) Printing support in the expert settings Repetier-Host / Cura in the debugging, debugging support density, try to adjust it to support small density, 10% for the right. Distance between the support and the model entities increased in order to facilitate removal of support.
- (2) After removal of the support, the supporting surface print poorly, now you can use a little dressing grinding tools, and then with a towel dipped in acetone (to keep the air circulation) wiping process. Please wear gloves and do not wipe too long so as not to affect the appearance of the model and size.

14. Stretch seriously

The print head moves in a non-printing state, the print head may stretch. Mainly it's related with the print-head structure, temperature, supplies, Withdrawing the length and speed and so on.

Most printers have Withdrawing function , be sure to start this function in stratified software, adjust the length and speed Withdrawing , some supplies could be considered appropriate to reduce the temperature , with the proper viscosity supplies, print-head squeeze wire proximity effect is more remote much better effect.

15. Sinking surface

The surface sinks, even with holes. Usually it is out of the small packing density, cooling problems, or the surface not thick enough and so on.

Filling density is generally not less than 15%, when printing on the upper surface, please set the cooling fan to the highest speed to ensure that at least the upper surface of layer 3 thickness.

16. Cracks of tall model

Cracks on the side are mainly in accordance with supplies quality, supplies larger line resistance, the model height and so on. Materials of High top models cool faster than the material at the bottom --- since the heating temperature of the bed can not be delivered to high position. Thus, the bonding of the top material is reduced. Improve the extruder temperature, preferably improve 10°C. Print bed temperature increase 5-10°C.

17. Lost layer

Due to skip some of the layers, it results in a gap. The printer failed to provide the required layers of the plastic material in the printing. This is called the (temporary) is not extruded. May filaments (for example, there are differences in diameter), volume problems filaments, wire wheel or nozzle clogging.

Friction of printing bed caused by a temporary stuck. This is due to the vertical rods not fully aligned with the linear bearing.

Problems about Z shafts or bearings: Rod distorted, dirty, or excessive grease.

Find rod and bearing problems, and resolve. For example, if too much oil, then wipe off.

If you suspect rod and bearing are not aligned, consult the printer user guide for the correction mode.

Not find out the reason would be more difficult. Check the volume and filament wire feeding system. Print a test to see if there is not to reproduce the problem --- it helps to find problems

18. Elephant legs

Bottom of the model (i.e., the first layer) is wider than the size of the design, a hint of the flange. To avoid Alice, often flattened first layer of material, which tends to highlight the bottom - thus become the "elephant legs." With the model may also increase the weight of the first layer of material is formed and squeeze. If the bottom has not been cured (particularly if the printer has a heated bed of the case), it is possible to form this problem. To avoid edge lifting and elephant legs, a little difficult. In order to minimize the bottom of the model projections, the proposed leveling printing bed, printing head slightly away from the print bed (but not too far, otherwise the model will not be adhered) . In addition, a slight reduction in print bed temperature.

If a 3D model is designed on your own, to dig a little chamfer at the bottom of the model. From 5 mm and 45 degree chamfer began to experiment until the best results.

19. Alice

A corner or more warps at the bottom of the model, it cannot be attached to the horizontal printing platform. Also it will lead to the top of the structure transverse cracks appear, while Alice is a common problem, often it occurs in the first layer of plastic due to cooling and contraction. Model edge thus rolled up.

Using heated print bed, maintaining the temperature of the plastic, it will not cure - called "glass transition temperature." The first layer of material may be attached to the flat bed printing.

In the print bed evenly coated with a thin layer of glue to increase the adhesion of the first layer of material.

Make sure the print bed perfectly level.

You may need to increase the cushion structure, to reinforce the adhesion of the printing platform.

Even if the printer has a heated bed , it is recommended to use glue or textured paper , printing and leveling bed .

20. Printing supplies difference.

With 3D printing increasingly mature, the market FDM printing supplies enriched, all kinds of new colors, allowing users to add various types of production dazzled. However, printer supplies and suitability is particularly important. Printing supplies need to do comparative experiments on the market, not too much, three will be a home for your printer, you need to consider if it is not a replacement printer.

Some people say, "Letting the printer to adapt supplies is nonsense, while the main stream is that the printer can be perfectly compatible with a variety of supplies on the market." I can only answer: whether domestic or imported FDM printer, you must buy supplies tested to verify the use in the domestic market as your stable supplier of consumables, headache after all, is your own.

21. Printer accuracy problems

Printer precision have a major consideration of positioning accuracy, supplies, temperature, cooling, speed, model, parameter settings, etc. , so in the case of high precision is required, needs a lot of consideration, which much related with human control. The main way to improve accuracy is to use the same machine, supplies, printing temperature, more stable low speed printing, optimization of printer parameters, adjusting the model size, up to about 0.01mm-0.05mm accuracy. The control requires their own experience.

22. The decline in printer performance

In general, some parts of 3D printer are consumables, such as, built-in Teflon extruder generally require periodic replacement period of between eight months and 1.5 years (the print temperature below 210 degrees for long-term use, over 230 degrees then using a relatively short period). Belt wear, usually a period of 1.5 years to 2 years and then ask for replacement. Therefore, you must to change replacement of consumed parts regularly and do some machine maintenance.