HORI 3D Printer User Guide

Beijing Huitianwei Technology Co., Ltd.

Content

safety precautions

Before you install and use HORI 3D printer, be sure to read the following. Please do not use any methods not described in the user's manual to use the printer, Try to avoid personal injury and property damage.The printer is just used for commercial purposes.

1. When moving the printer, pay attention to gently, avoid touching the inside of the printer configuration, can carry two people, if necessary;
2. This printer is suitable for placement in a ventilated, cool, dry and less dusty environment;
3. When you use the printer, pay attention to heat, avoid placing on a thick rug or placed against the wall;
4. Do not put the printer near flammable materials or high heat;
5. Do not put the printer over a large vibration or other unstable environments；
6. Do not pile heavy objects on the printer;

○ Use the power standardized
1. Please use the power adapter supplied with the printer;
2. Do not plug the power cord when your hands are wet;
3. When using your plug, make sure fully inserted into the socket;
4. Do not deliberately pull, twist printer lines, to avoid causing open or short circuit;

○ Note that in the printing process
1. Do not use the printer without the supervision of person;
2. During and immediately after printing is finished, avoid touching the printer's internal structure and print, to prevent burns;
3. If the printer while printing when smoke, abnormal noise, immediately turn off the power switch, the printer stops working and contact our customer service;

○ Often do product maintenance
1. Please do not use any methods not described in the user's manual to remove or modify the printer，to avoid damage to the printer or other more serious security incidents;
2. Periodically in case of power failure, the printer clean with a dry cloth to wipe away dirt and bonding printed material. If you must use a damp cloth to clean, do not use flammable solvents, flammable solvents avoid contact with the printer's internal circuit causing a fire or electric shock;

Section 1   Overview

1.1 Printer Introduction

HORI 3D printer by The Beijing Huitianwei Technology Co., Ltd. launched fast desktop 3D printer. It can work for you any sample model that you can come up with in a short time, in a timely manner fresh your creative spark. In the hands of the engineer, it can create a lot of prototypes mother, pregnant with an eventual mass production of finished products; In the family, which can simplify the manufacturing methods of personalized objects, releasing individual user of creative thinking; Easy to use leaving the kids like to use it, to create their own dream of love   toys, exercise intelligence and creative thinking in the entertainment. With the help of HORI 3D printer, you just need to have some very simple software on your ideas can become a reality, it changed in the past inventions privileged situation just a few people.

HORI 3D printer is mainly based on the principles of FDM (Fused Deposition Modeling) technology. After printing material (PLA) sent through the catheter to the intelligent control of the nozzle, heating, and final deposition modeling. Molding materials having high strength and high stability, Can perform tapping, drilling, color, etc, quickly generate and use. HORI 3D printer mechanical structure is simple and reliable 3D printer, the movement member flexible.

Thank you for using HORI 3D printer, HORI 3D printer with large print volumes, Ultra-fast print speed, Ultra-high print accuracy，The extruder is designed, in the process of sustained and stable conveyance of the print material, make the printing process more fluid.

The following documentation can help you understand the structure of HORI 3D printer for easy commissioning and maintenance。End of the manual provides a number of solutions to common problems for your quick reference. HORI 3D printer in use in the process, if you encounter any problems, please contact us, we are happy to serve you.

We hope you have fun!

1.2 Packing list

Name	Number	Name	Number
3D printer	×1	PLA	×1
Power cable	×1	USB	×1
Wrench	×1	Take Modeling Tools	×1
Phillips screwdriver	×1	CD-ROM	×1
Instructions	×1	Certificate	×1
Warranty Card	×1	Warranty card	×1

1.3 Product description

1. Introduction

Thank you for purchasing HORI 3D printer. The 3D printer is easy to use, available on-line printing and SD card offline prints two printing methods for your convenience. It can be used for personal interests in research, teaching, hand model design and other fields.

2. Trademark

Chinese logo "弘瑞", English logo "HORI", Beijing Huitianwei Technology Co., Ltd. trademark registered in China.

3. Manufacturers

Beijing Huitianwei Technology Co., Ltd.
Bldg. 2-26C, Internation Pioneer Park, Xinxi Road 2#, Shangdi, Haidian Dist., Bejing, China
en.hori3d.com
+8610-82893385

4. Disclaimer

The 3D printer is a non-industrial equipment, for the mass consumer, the company does not guarantee the effect of the final model, and can not be used to measure validation.

5. Operating system

The 3D printer control software CURA, can support the following operating systems
Windows xp full range
Windows 7 full range
Windows 8 full range
Windows 10 full range

The description of "HORI H1" Case，Introduction HORI series 3D printer's operating procedures, as well as operation and demonstration of the process of using the common problem.HORI customers to buy other models can be assured that the operation is much the same.

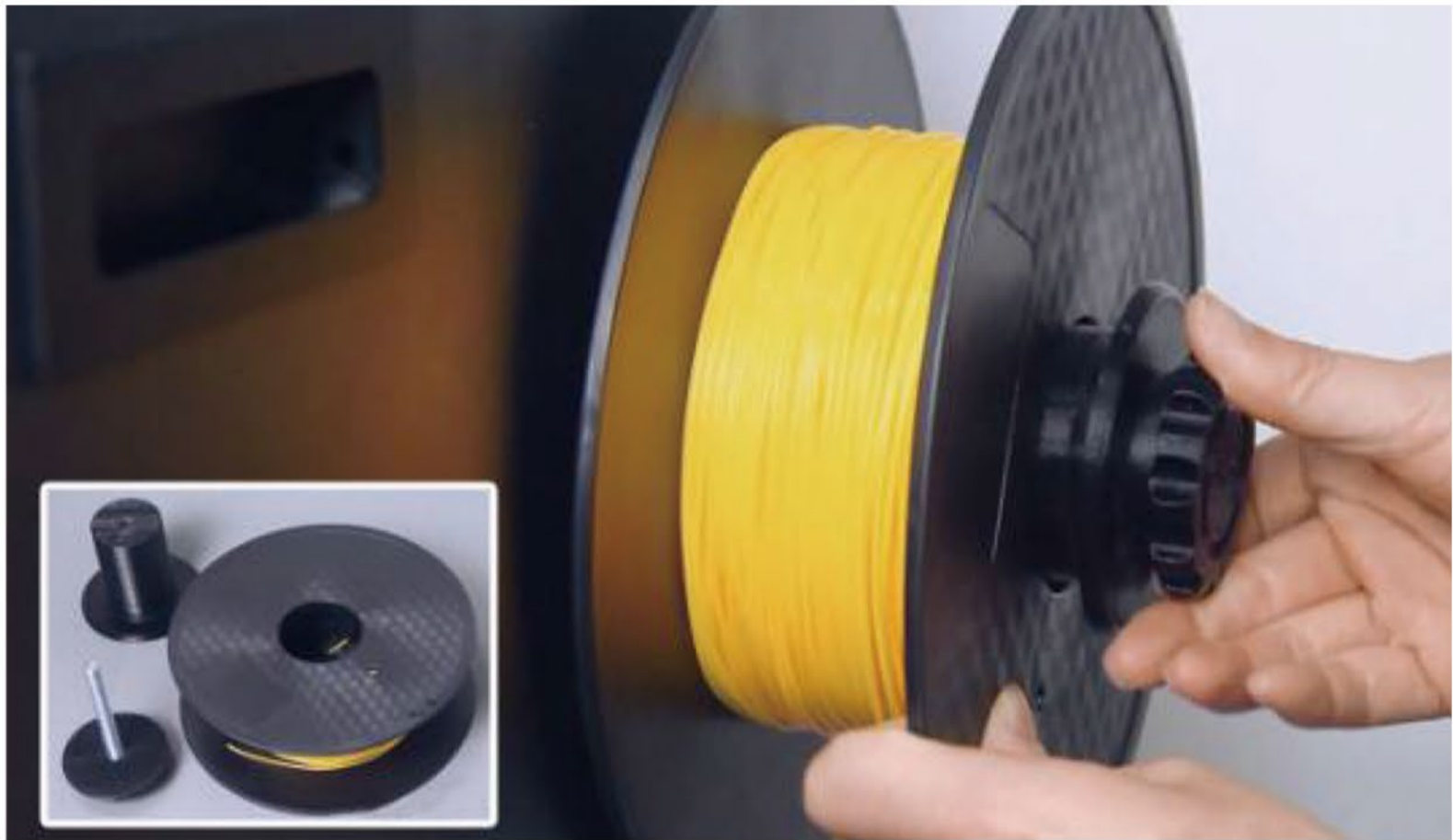## Section 2   Installation Printer

First step，open the box, remove the HORI series 3D printers, and cut off the tie, remove the tape (Figure 2-1, Figure 2-2);

（Figure 2-1）

（Figure 2-2）

(Figure 2-3)

The third step, plug in the power , turn on the switch (Figure 2-4);

(Figure 2-4)

The fourth step, ①clicking move button, ②clicking the orange button on the right (Figure 2-5);

(Figure 2-5)

The sixth step, the left of the printer to find the SD card slot, insert the SD card(Figure 2-6);

(Figure 2-6)

The seventh, the printer is installed.
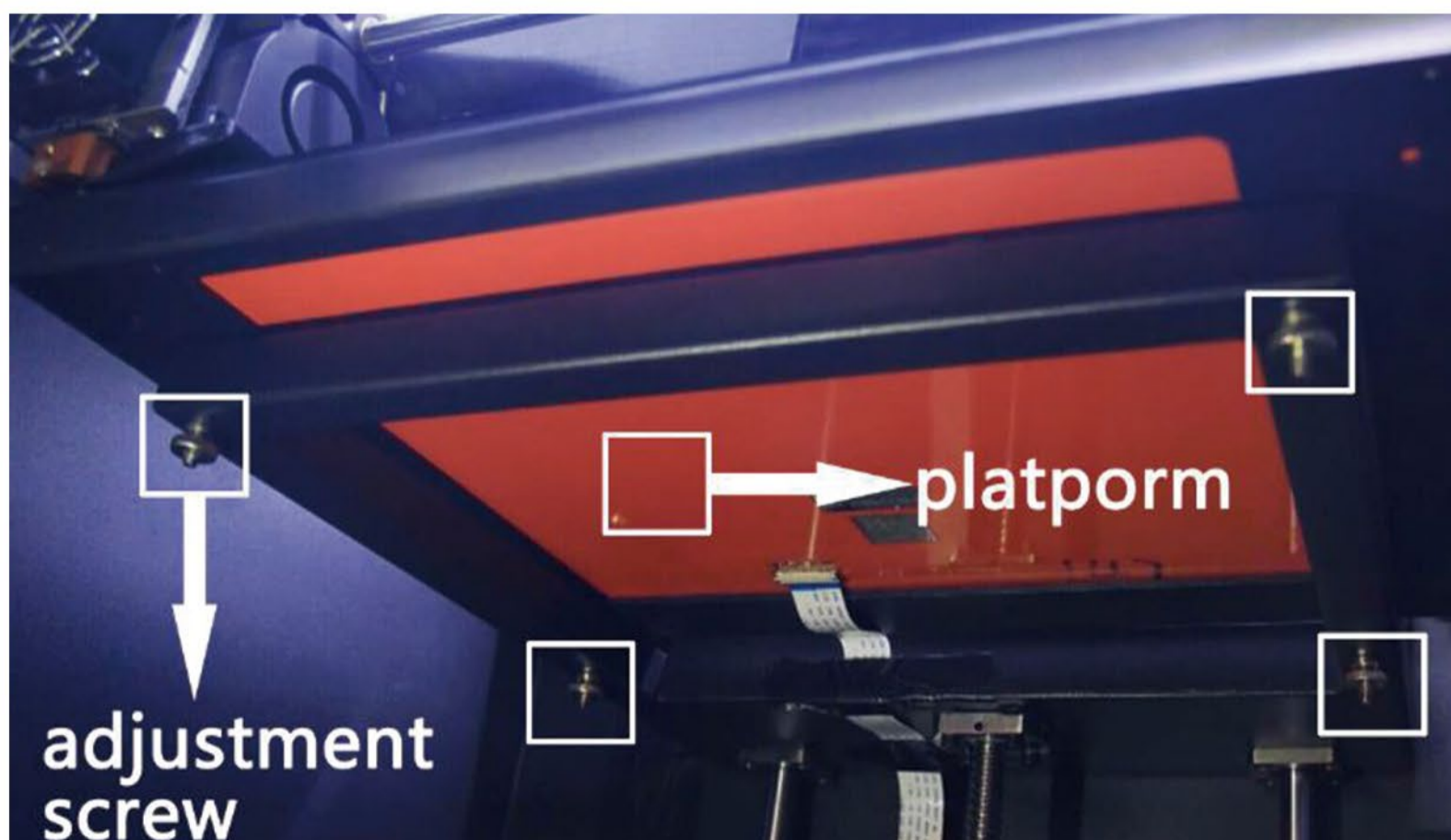
Section 3   Understanding printer

3.1 Buttons and parts Introduction

○ Printer side: key, SD card slot, USB port, power port (Figure 3-1);
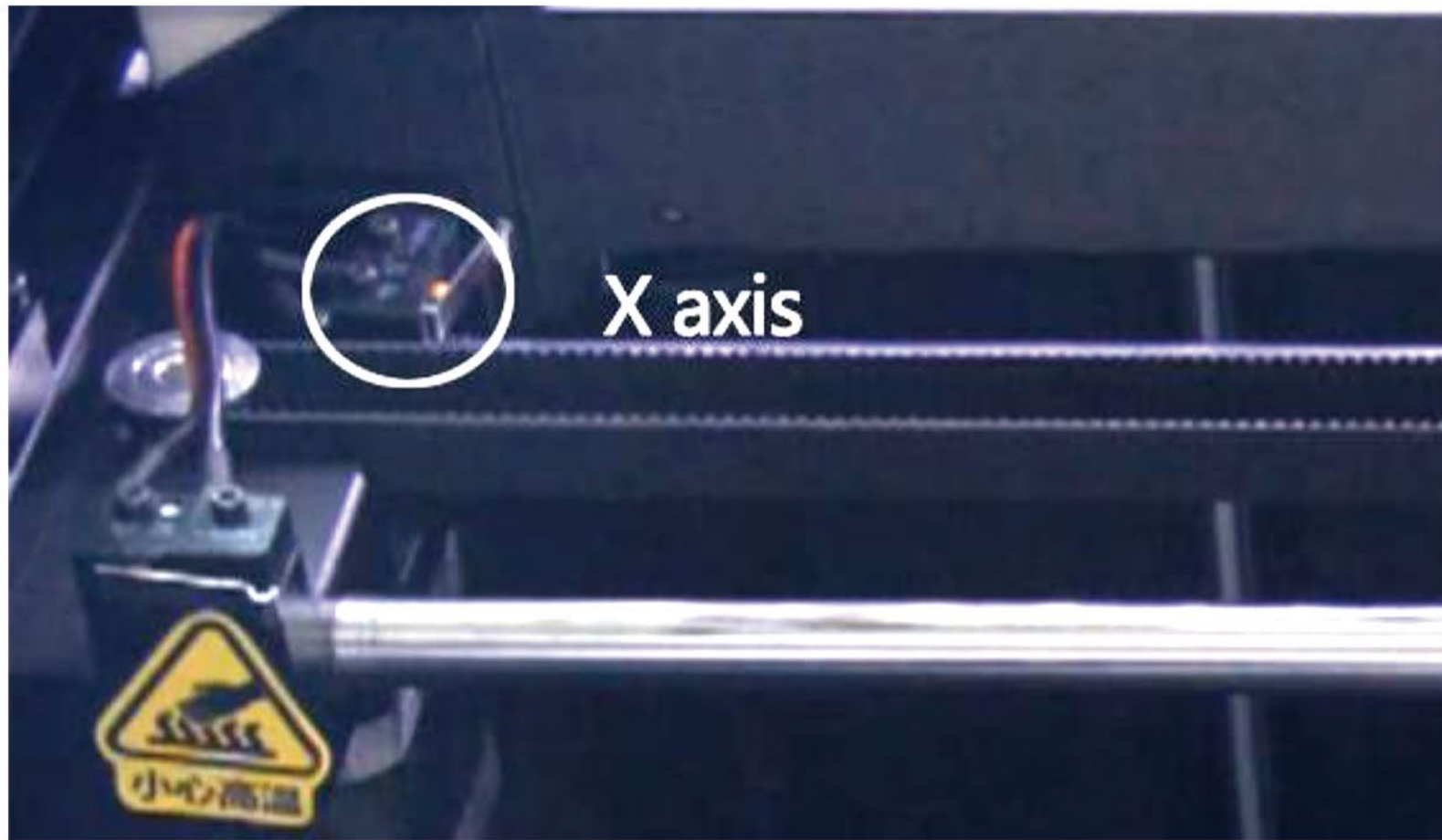

(Figure 3-1)

○ Print platform: the platform, the platform-specific tape (surface blue), the bracket and the adjustment screw (Figure 3-2);

(Figure 3-2)

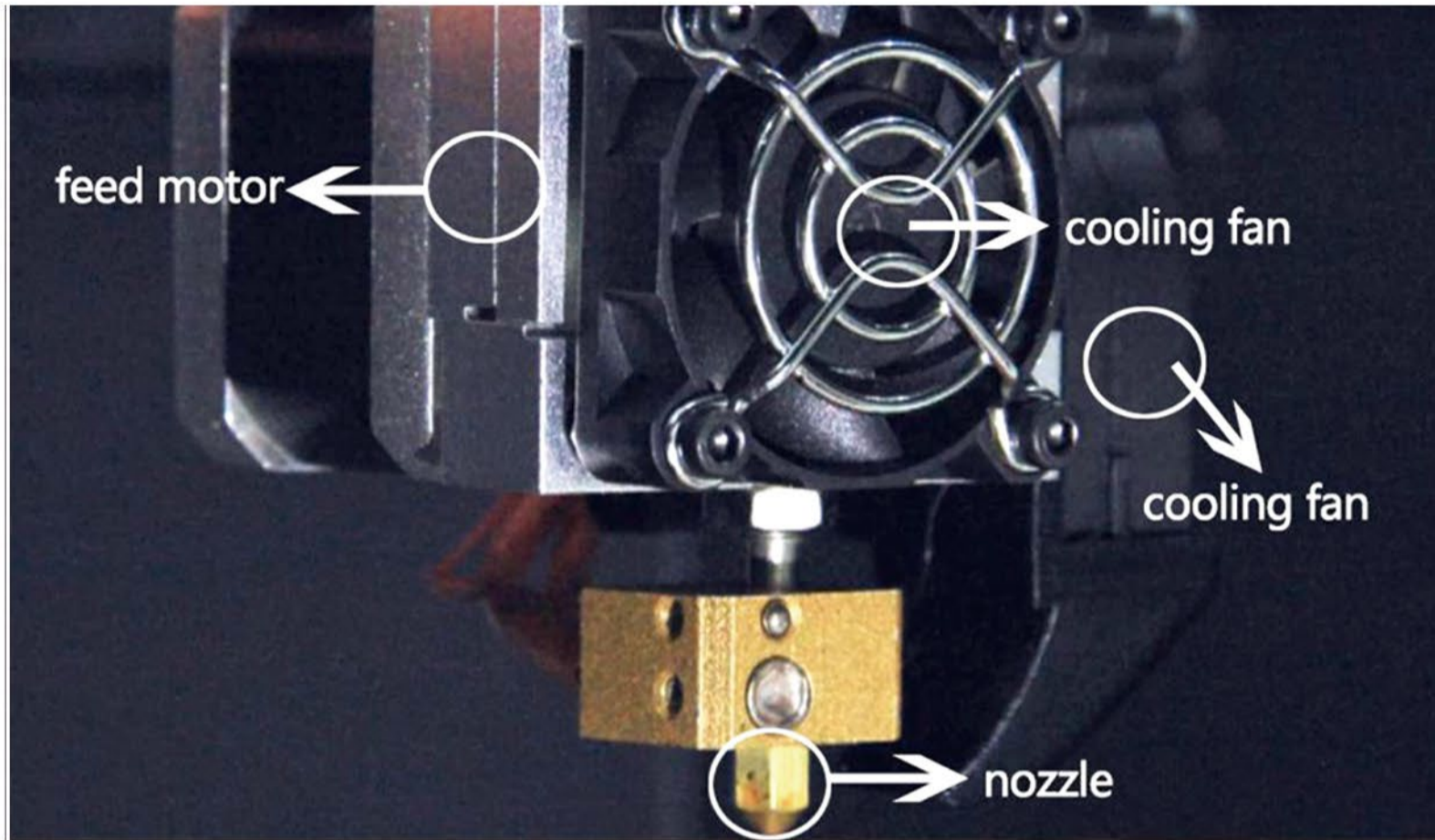○ Limit switches: X axis (Figure 3-3), Y-axis (Figure 3-4), Z-axis inside;

(Figure 3-3)

(Figure 3-4)

○ Print Head: feed motor, nozzle, cooling fan, cooling fan composition (Figure 3-5);
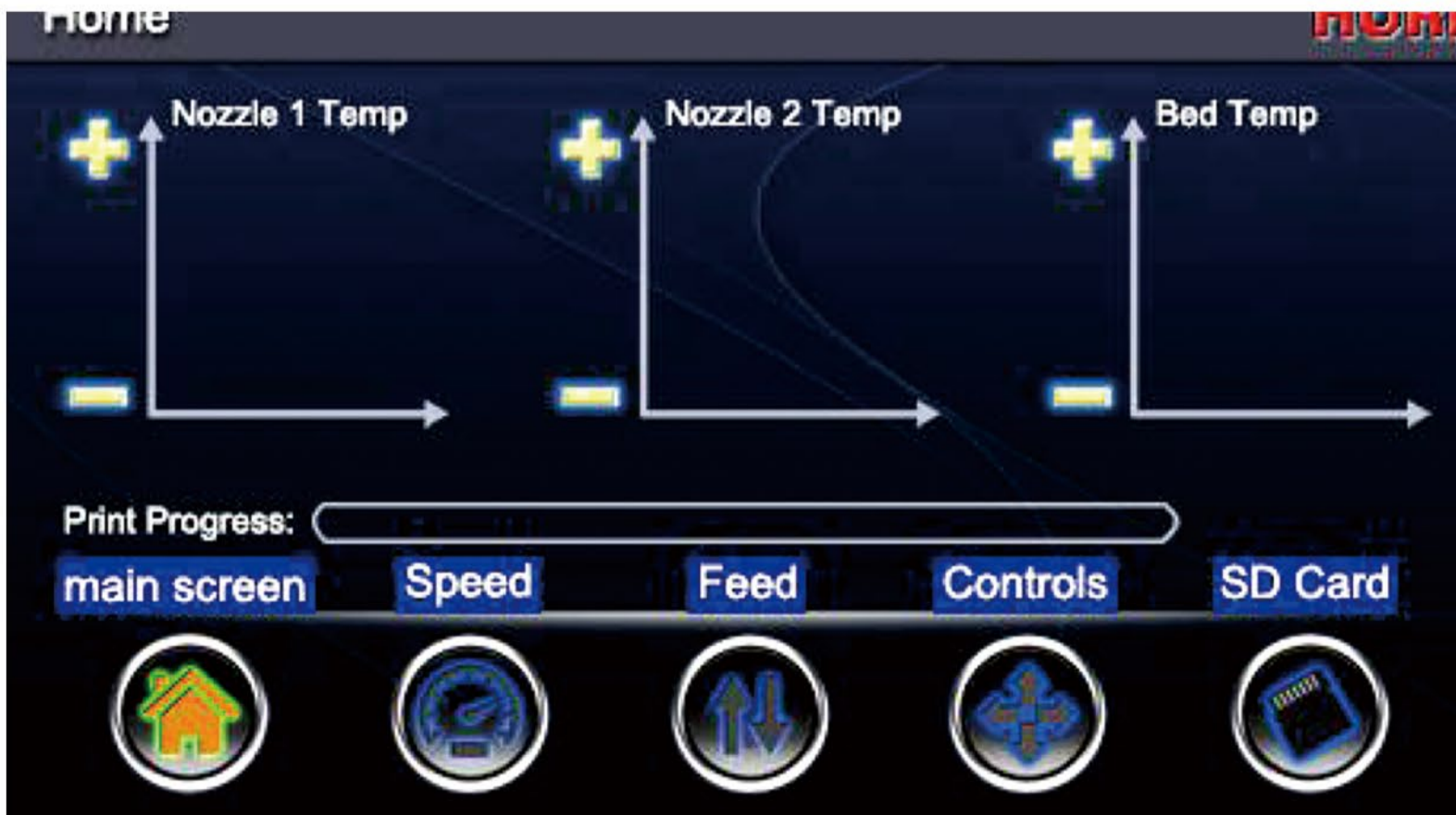

(Figure 3-5)

3.2 The main interface presentation

○ The main screen: The top three is a graph showing temperature monitoring，reflect real-time temperature of the respective components, yellow line real-time temperature, red line real-time temperature. click the plus or minus sign to the left of coordinates, temperature corresponding components directly change.（System Settings Click once plus or minus, increase or decrease the temperature 5°）。

Print progress bar: display SD card offline printing schedule, When the online print progress displayed on the computer (Figure 3-6).

(Figure 3-6)

○ The Speed screen: The three tables used to monitor and control "print speed", "fan speed", "Material Flow", percentage "Print Speed" and "Material flow" here are relative values, parameter setting watch our video CURA software (Figure 3-7)

(Figure 3-7)

○ The Feed screen: nozzle, material, material selection retreat (Figure 3-8).

(Figure 3-8)

○ Controls screen

Manual control displacement of printhead and platforms, and materials retreat feed. (Figure 3-10);

（1）Unlock Motor：When checked, the print head can be directly pushed to the desired position, on the contrary, when unchecked, can not freely move, this

time to the position of the print head can only move the screen by the arrow;

（2）Mobile Unit: Press once on the right arrow, member of the arrow axis moving unit;

（3）Arrow：Arrow to the right, according logo below, control different parts of the printer. XY axis control the print head is about to move back and forth, Z axis control printing platform moves up and down;

（4）Orange icon: X, Y axis center of the orange icon is X, Y-axis zero button, Z axis center of the orange icon is X, Y, Z-axis zero button. This is the home key, that Click on this button will homing triaxial, Back to the system settings coordinate zero;

（5）E axis: Controls the printhead feed and return materials.

(Figure 3-9)

○ SD Card：The middle section of the SD card ready model file，click on one of the files,there will be three symbols on the left, the first means "beginning" print, the second means, "pause" printing, the third means, "Stop" Print (Figure 3-10).
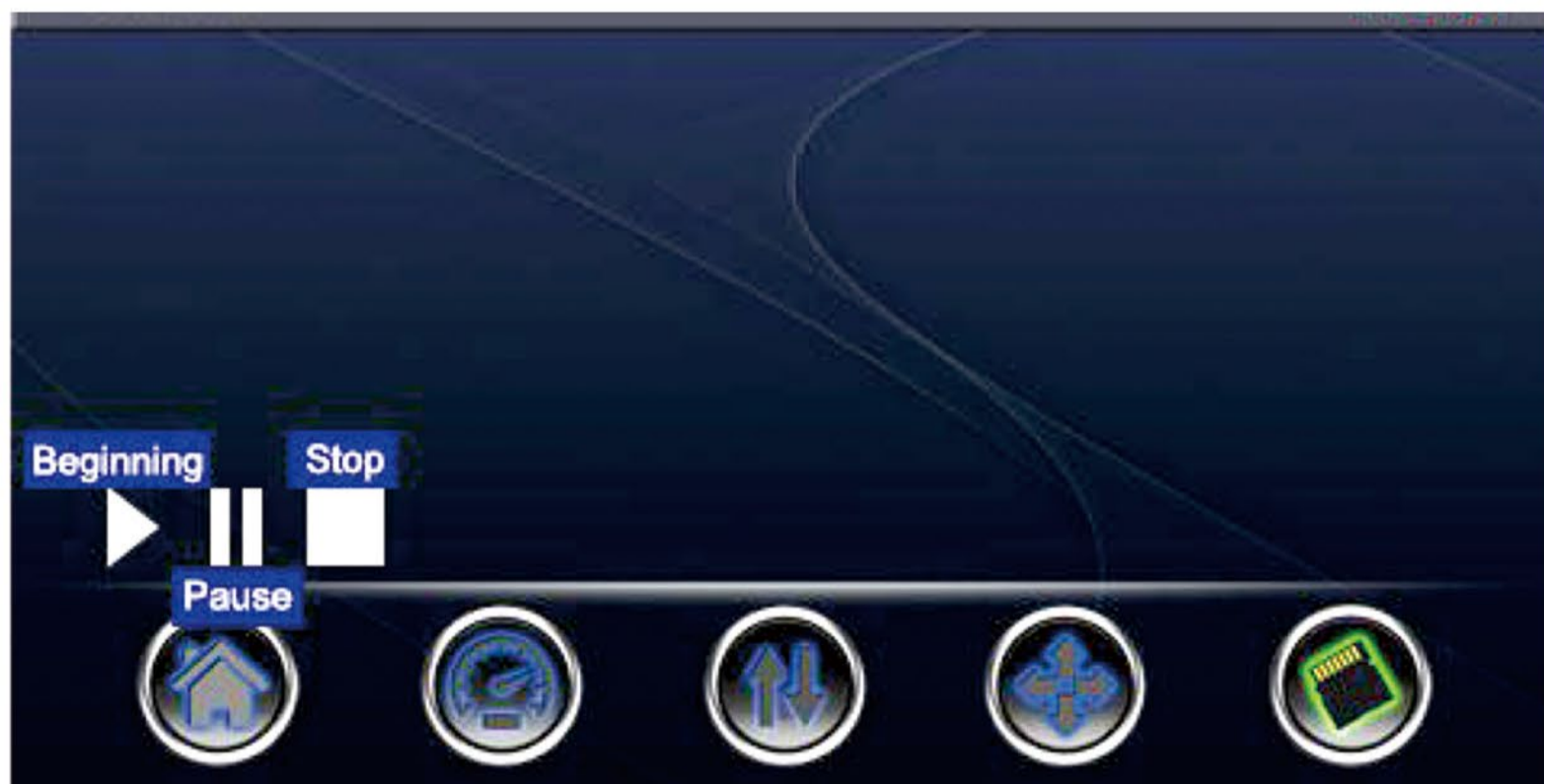
(Figure 3-10)

Section 4   Print Operation Process

○ Feed: The material through the motor into the print head, so crowded feed nozzle print, This process is referred to as the feed.
Feed specific operation:
The first step, press and hold down spout blue plastic sheet, forced to pull out fixed tube white(Figure 4-1);

(Figure 4-1)

The second step, the tray is placed on the stand, the material through the white fixed tube, then the material is inserted into the inlet, and feel the material is gear bite (Figure 4-2 and 4-3);

(Figure 4-2)

(Figure 4-3)

The third step, click on the screen of the " Feed" button, click "One Click Feed" button (Figure 4-4);
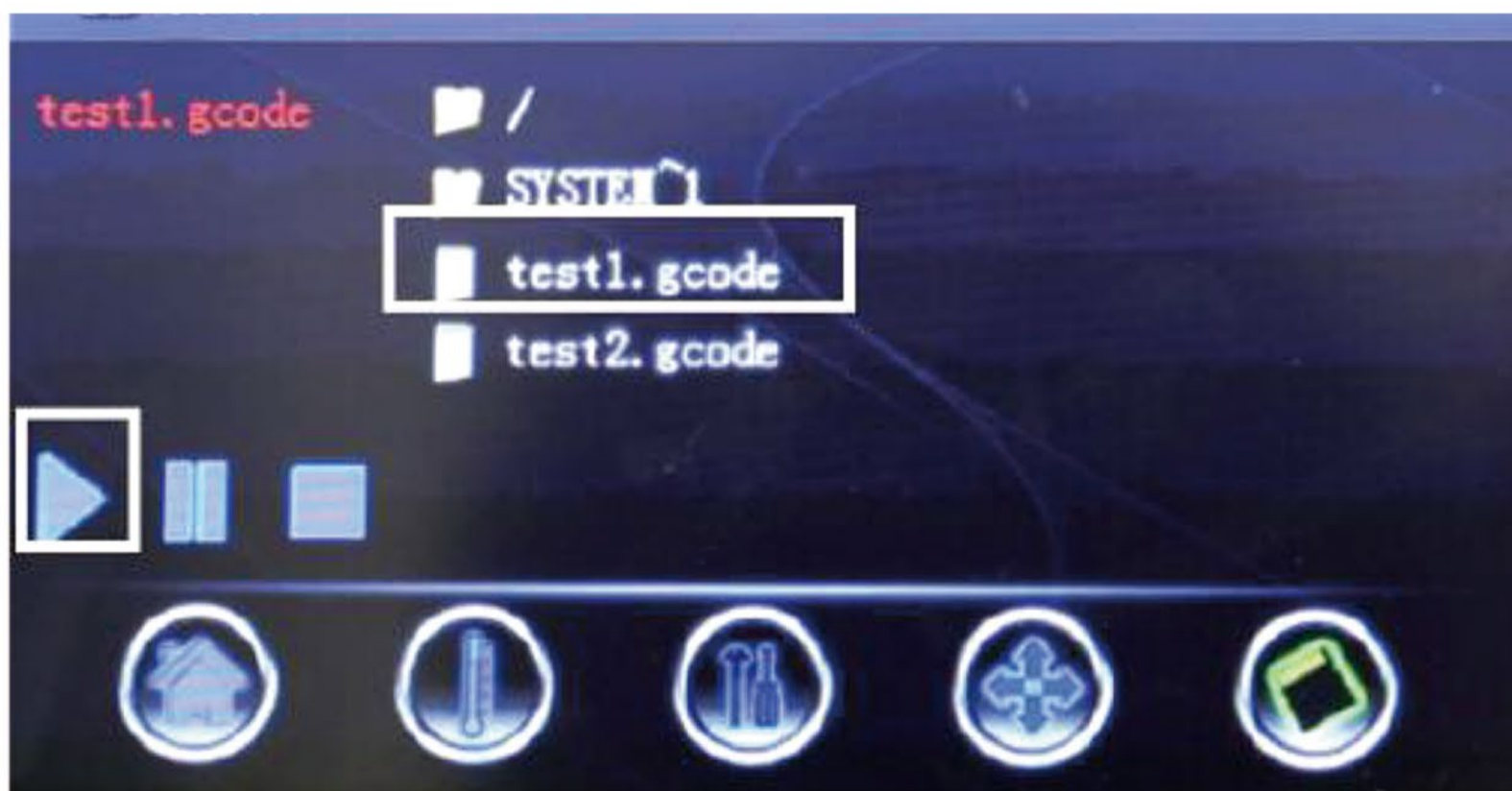

(Figure 4-4)

The fourth step, the printer automatically warming, after reaching the melting temperature automatically feed, this process touch screen is locked,does not respond to any operation. Beginning the discharge nozzle, the machine will beep, this time represents the feed operation is completed, touch screen automatically unlock. Finally, the white fixed tube inserted back in place, such feed will be completed (Figure 4-4);
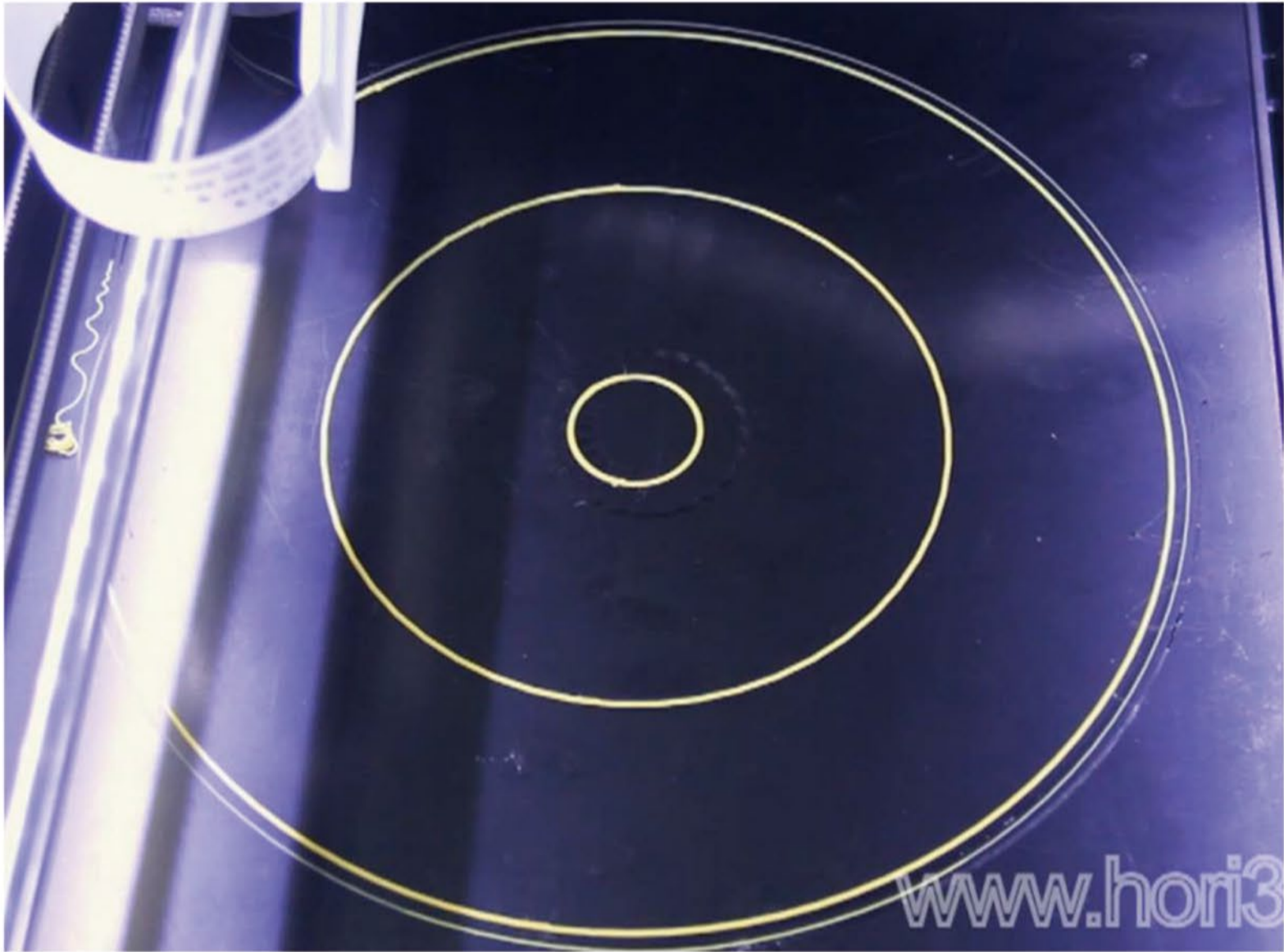
(Figure 4-5)

Before printing the other models, we first print two test files HORI division to observe whether the printer each member to work properly.

The first step, on the touch screen to select "SD card" button, click "test1.gcode" File, click "Start printing". Before printing, the print head has a heating process, The main screen of the touch screen you can see the heating curve(Figure 4-6);

(Figure 4-6)

The second step, when the print head starts to print, draw three circles of different radii on the platform, click on "SD Card", click "stop printing" (Figure 4-7,4-8). draw a circle on the viewing platform is securely bonded to three, material is uniformly perfect circle,if not, first operation back tone platform, here then printing operation;
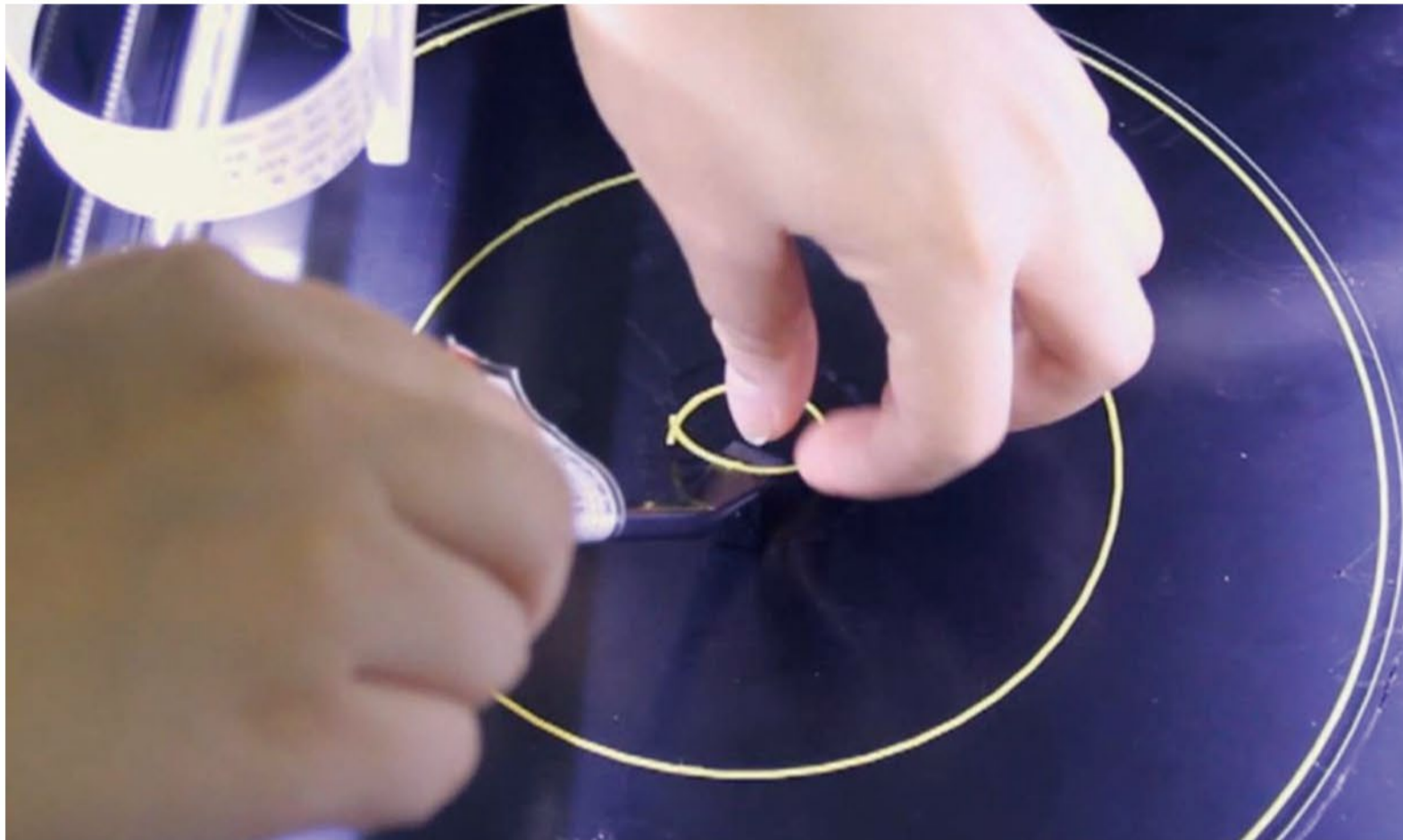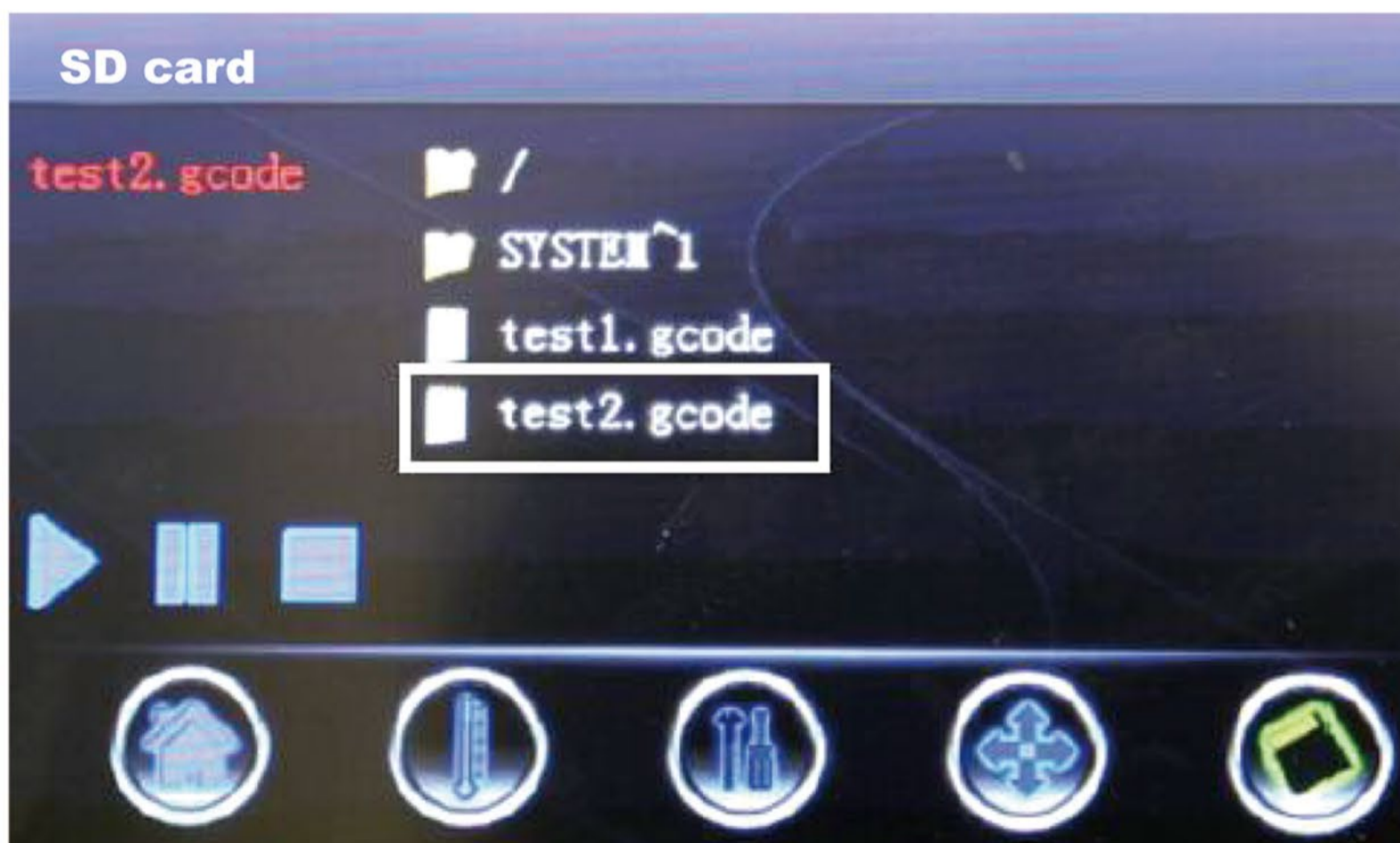
(Figure 4-7)

(Figure 4-8)

In the case of, cleanup material platform, click on "SD Card" button, click "test2.gcode" file, click "Start printing". This waiting time can be small vase printing is complete. If you print out a small vase structural symmetry, smooth surface, you can print another model (Figure 4-9,4-10). Model before printing operation, please watch this CURA software company released a video.

(Figure 4-9)

(Figure 4-10)

Section 5   Common Problem

○ **Tuning Platform**

Transfer platform to be operated knob: There are four fixed point below the platform, the four is to control the platform level and adjust the balance point, these four points at the bottom, it is what we need to "leveling knob"（Outside leveling knob is hot melt adhesive stick (Figure 5-1)，this is to prevent the transport process because knob and affect highly Platform. Platform at the factory has been adjusted to the best state, under normal circumstances do not need regulation.

(Figure 5-1)

○ **Why you will need to adjust the platform**

Z-axis coordinate print head is not going to change, coordinate platform has an upper and lower limit, when you reach the platform uppermost limit, if the distance from the nozzle of inappropriate words, we have to fine-tune the height of the platform to control the distance between the platform and the nozzle.

○ **What is the correct distance from the nozzle and platforms**

Between the platform and the nozzle is placed a piece of A4 paper, turn the nozzle is moved to the top of the platform four fulcrum, parallel drag out the paper, if you feel resistance, but it will not tear the paper, this distance is correct. Remember that you must be a distance of four fulcrum are correct, in order to ensure the proper platform from the nozzle.

○ **Effect of distance error of print**

Figure 5-2, circle the material platform intermittent part, is due to the distance between the nozzle and the platform is too small, the nozzle squeeze material cause; The boundary circle Shoulong, is due to the nozzle and platform distance is too large, the extruded material can cement on the platform, following the nozzle moving due.
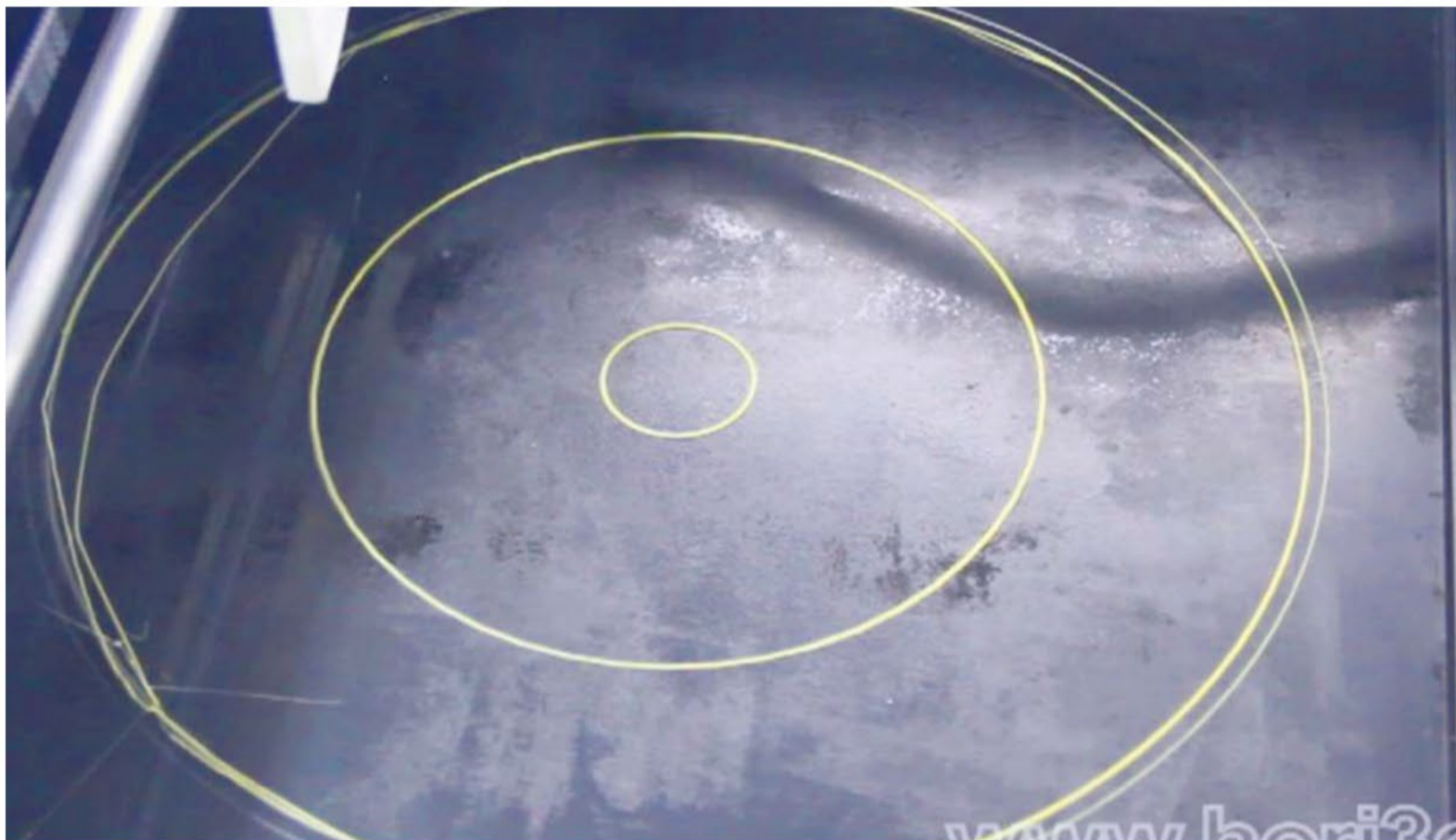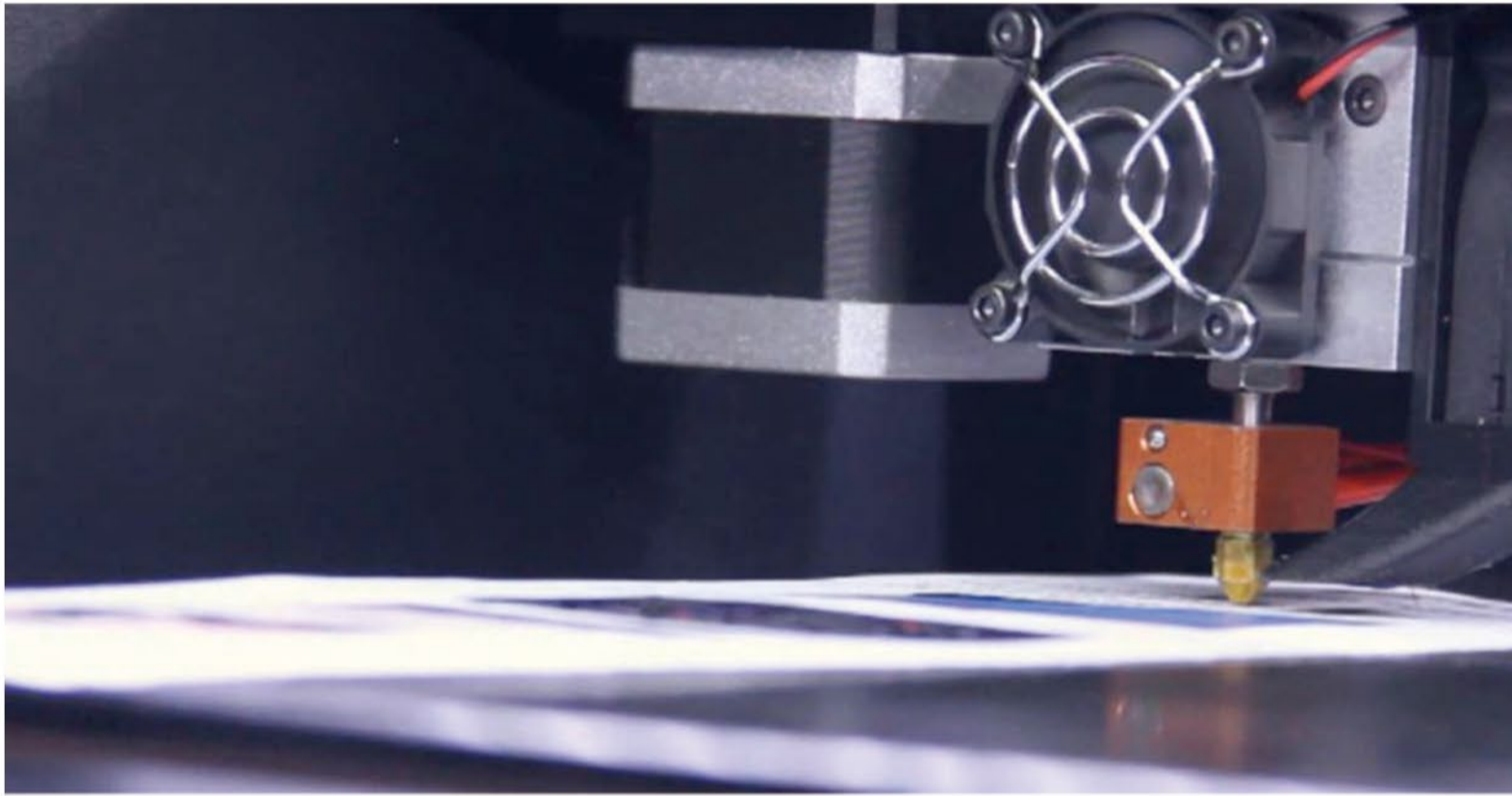

(Figure 5-2)

○ **Transfer platform specific operation**

The first step, click the " Controls" button, click the down arrow Z axis, the mobile platform down a little distance (Figure 5-3), then spread a sheet of A4 paper on the platform, then click on the "home" key three-axis homing (Figure 5-4);
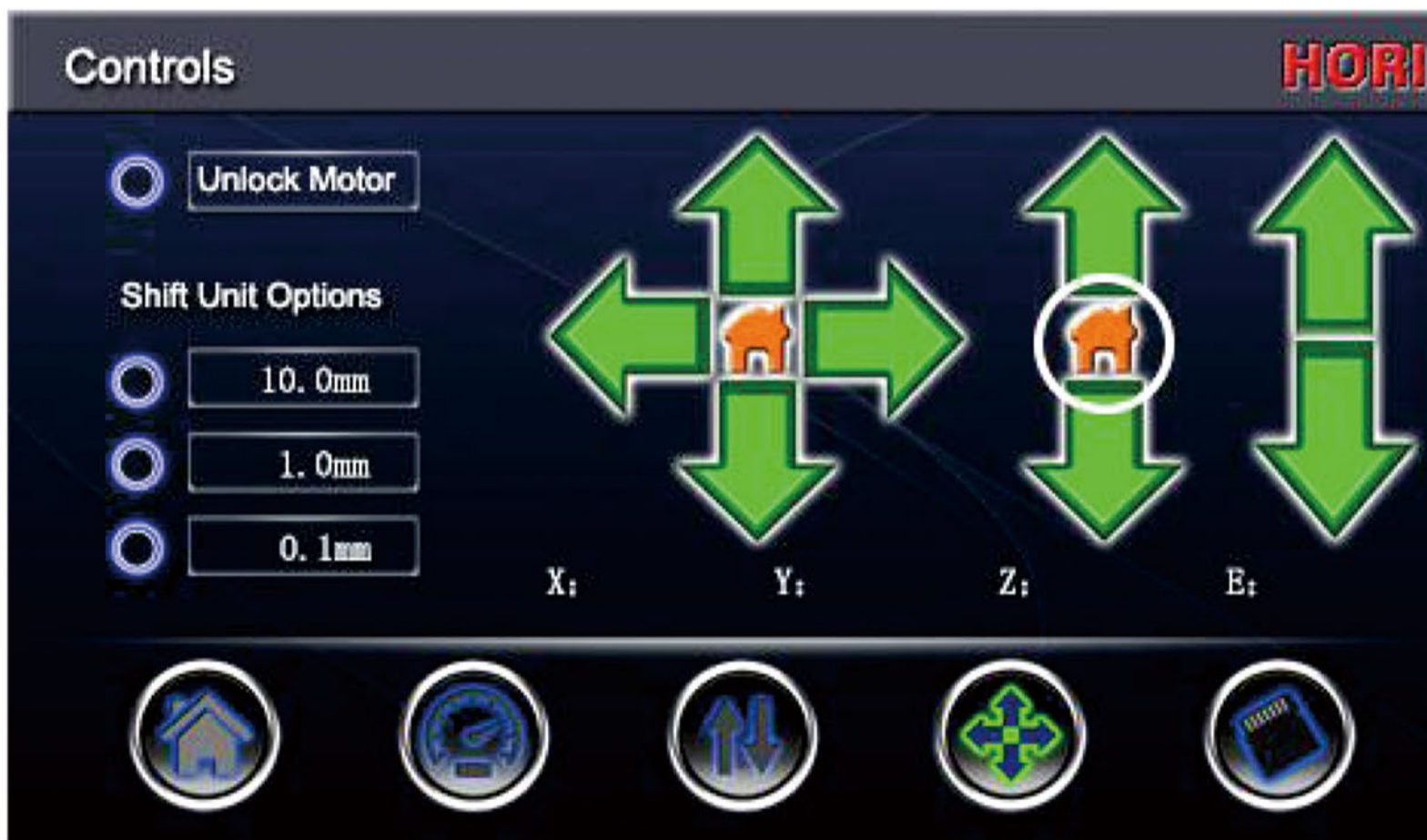

(Figure 5-3)

(Figure 5-4)

Third step, Click the Z-axis "home" key to platform homing(Figure 5-6);

(Figure 5-6)

The fourth step, enter " Feed" interface, click the "2" button, at this time the print head is automatically moved to the corresponding position (Figure 5-7);

(Figure 5-7)

The fifth step， parallel drag paper, if the paper is easily withdrawn, then that distance is too large, From the right to left twist knob, release spring， reduce the distance between the platform and the print head, repeated testing, until the correct distance criteria; Conversely, if the paper is difficult to drag, then that distance is too small, from the left to the right twist knob, widen the distance of the nozzle and the platform, repeated testing to the appropriate date (Figure 5-8,5-9);

(Figure 5-8)

21
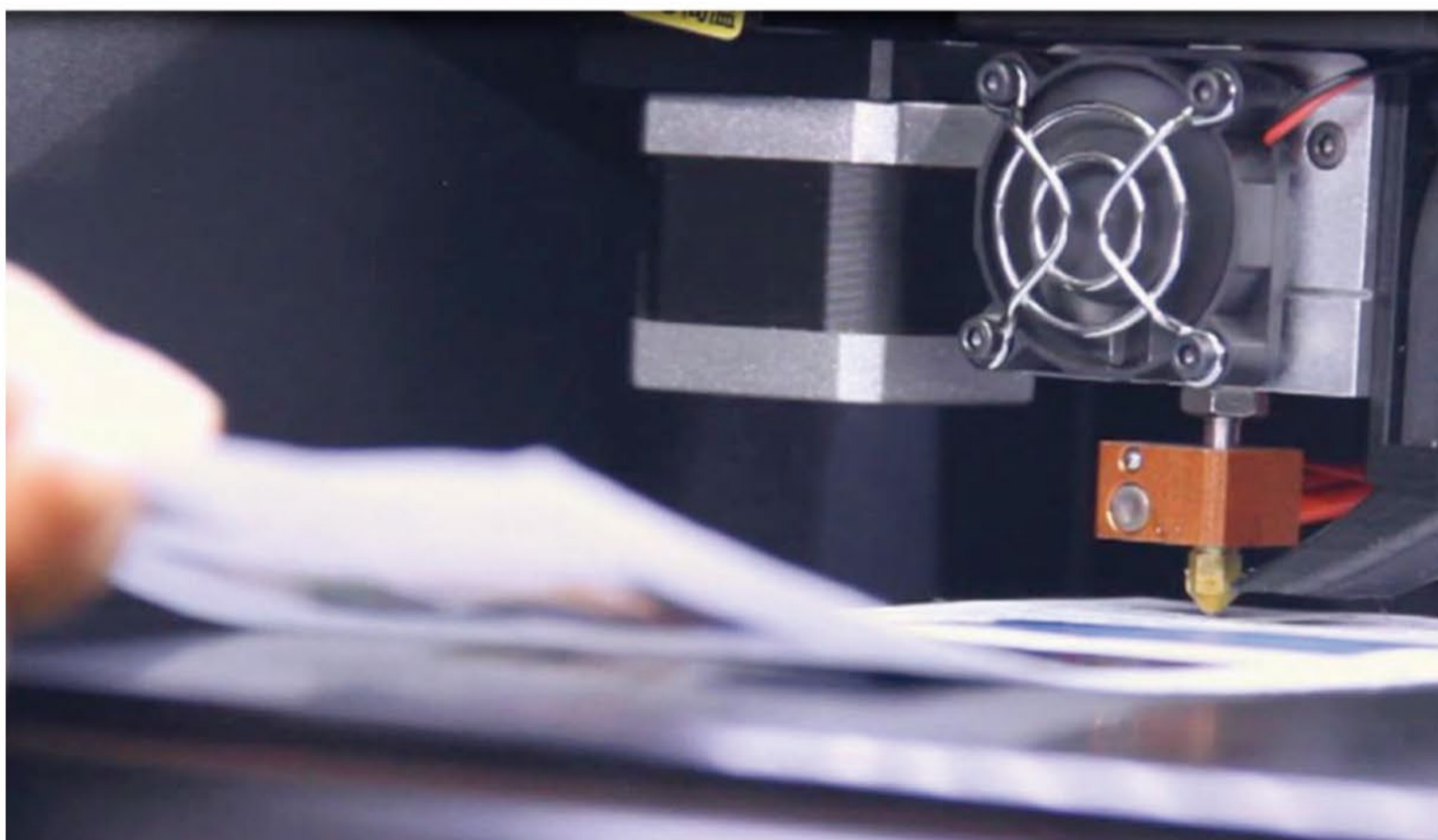
(Figure 5-9)

It's just a point of operation, click the button on the screen of the other three figures, repeated fourth, fifth step operation, calibration points respectively.

It should be stressed, when adjusting one point, it may have an impact on other points, therefore, we recommend when the four points are adjusted again, click the " Controls" button, click on "home" key to platform homing, repeat fourth to the sixth step operation, re round of testing to ensure the accuracy of the distance.

When the four points have been adjusted, print a test file again, click on "SD Card" button, click "test1.gcode" file, click to start printing, print out the three circles observe whether the firm fit, the material is uniformly perfect circle, if so, then the platform has been adjusted, you can print the other, if not, then return to the first step to re-start adjusting operating platforms.

○ **Refueling operation**
The first step, press and hold down spout blue plastic sheet, pull out the white securing tube (Figure 5-10);

(Figure 5-10)

The second step, Click on the screen "Feed" button, Click "Extract" button (Figure 5-11,5-12), at this point the machine will automatically heat up, after reaching the melting temperature automatically back material, this process touch screen is locked, this means stripper operation is completed, the touch screen is unlocked, pull up material, remove tray;
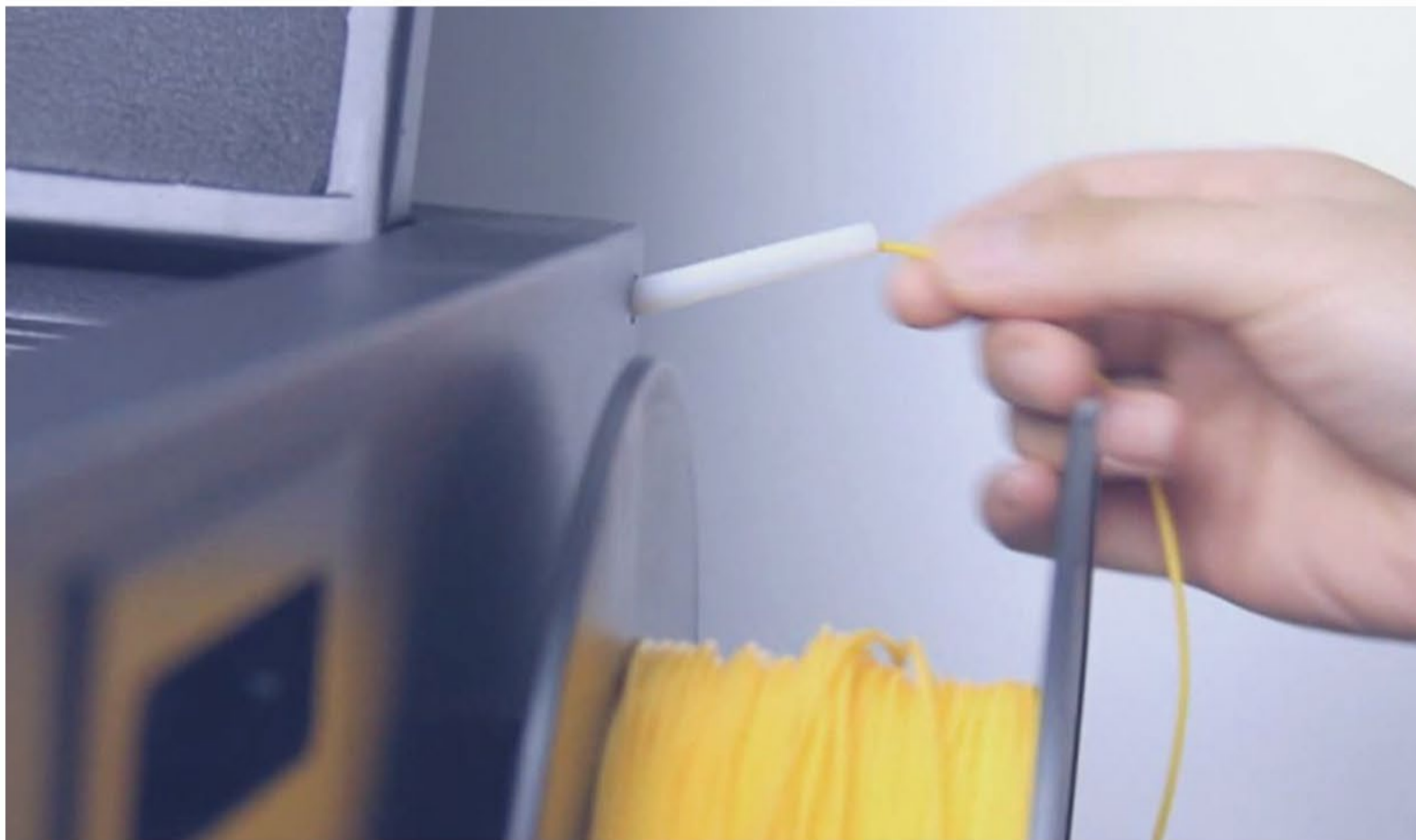

(Figure 5-11)

23
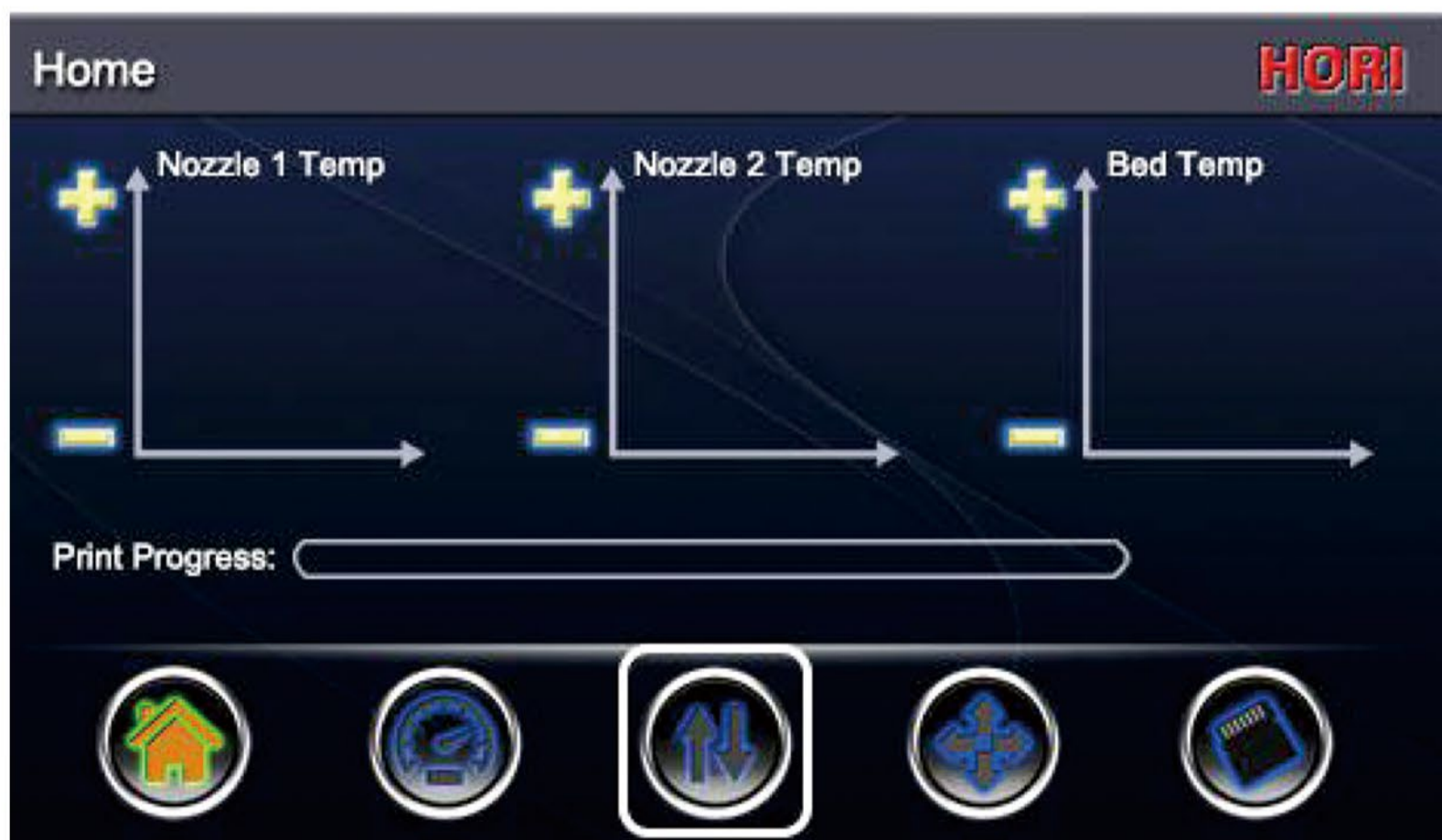
(Figure 5-12)

Third step, install the new reel, the material through the white fixed catheter，
the material is forced into the inlet,can feel the material is gear bite, click on the
screen "Feed" button, click " Insert" button (Figure 5-13,5-14,5-15).

(Figure 5-13)

(Figure 5-14)

(Figure 5-15)

At this point the machine will automatically heat up, when the machine beeps, indicates the feed operation is completed, the touch screen is unlocked, finally, back into the white fixed tube (Figure 5-16);

(Figure 5-16)

The fourth step, the refueling operation is completed.

○ **Demolition, armored head operation**
Here's head refers to the print head, but we just need to disassemble part of it.

○ **Why dismantle head**
When we refueling improper operation, or when there is a problem of the material itself, Some material has the potential to melt jam in the print header, resulting print no filling or insufficient quantity, this time on the need to be removed to be cleaned.

○ **Some parts require disassembly**
Viewed from the front, the print head from the outside inwards are: cooling fan, black fins, cover feeder, feeding of gear in the metal layer, general clogged material on the winding gear in the vicinity of the feeding, so we need to turn detached from the outside inwards.
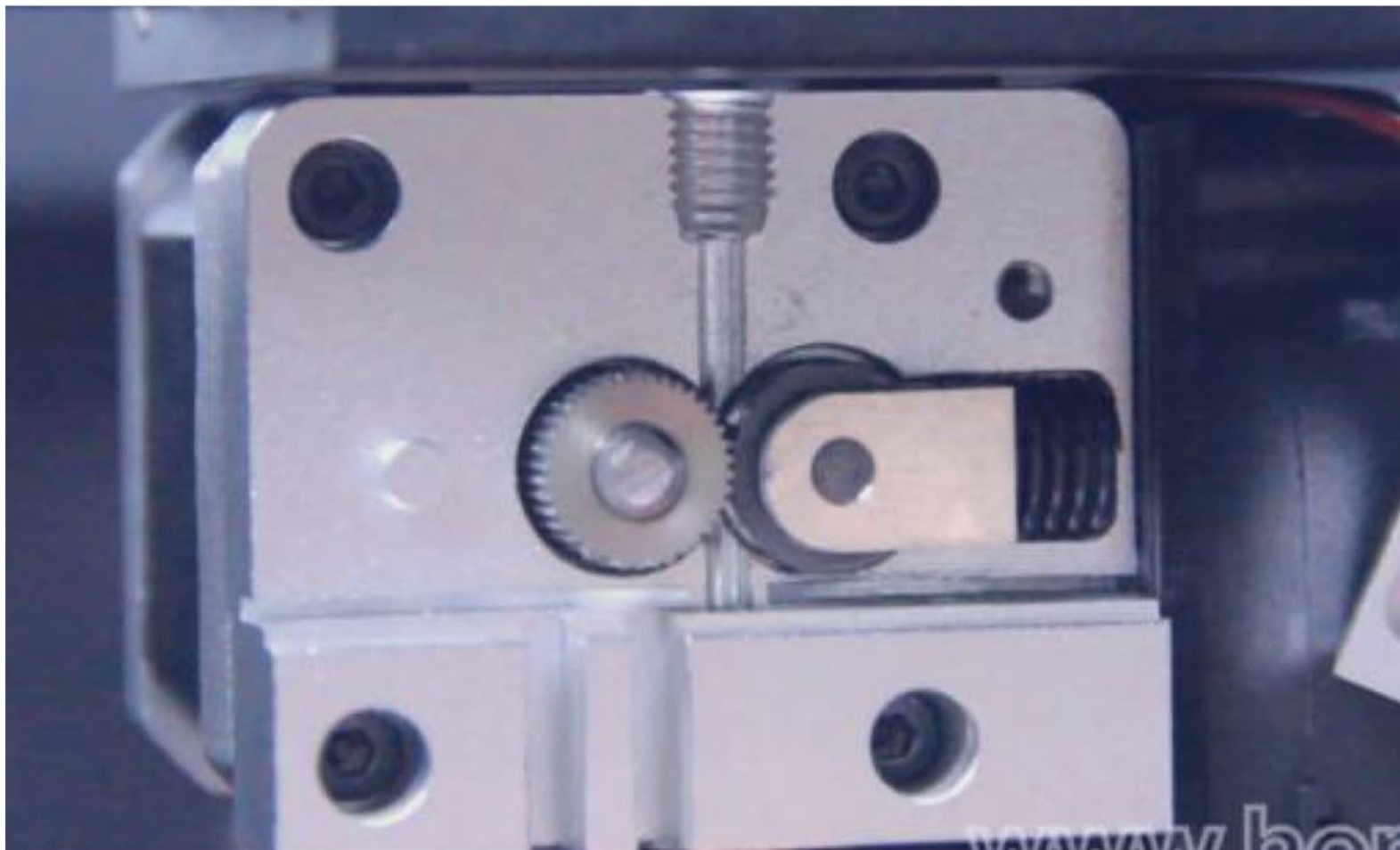
○ **Demolition, armored head operation specific**
The first step, remove the four corners of the fan screws with a Phillips screwdriver, remove the fan (Figure 5-17);
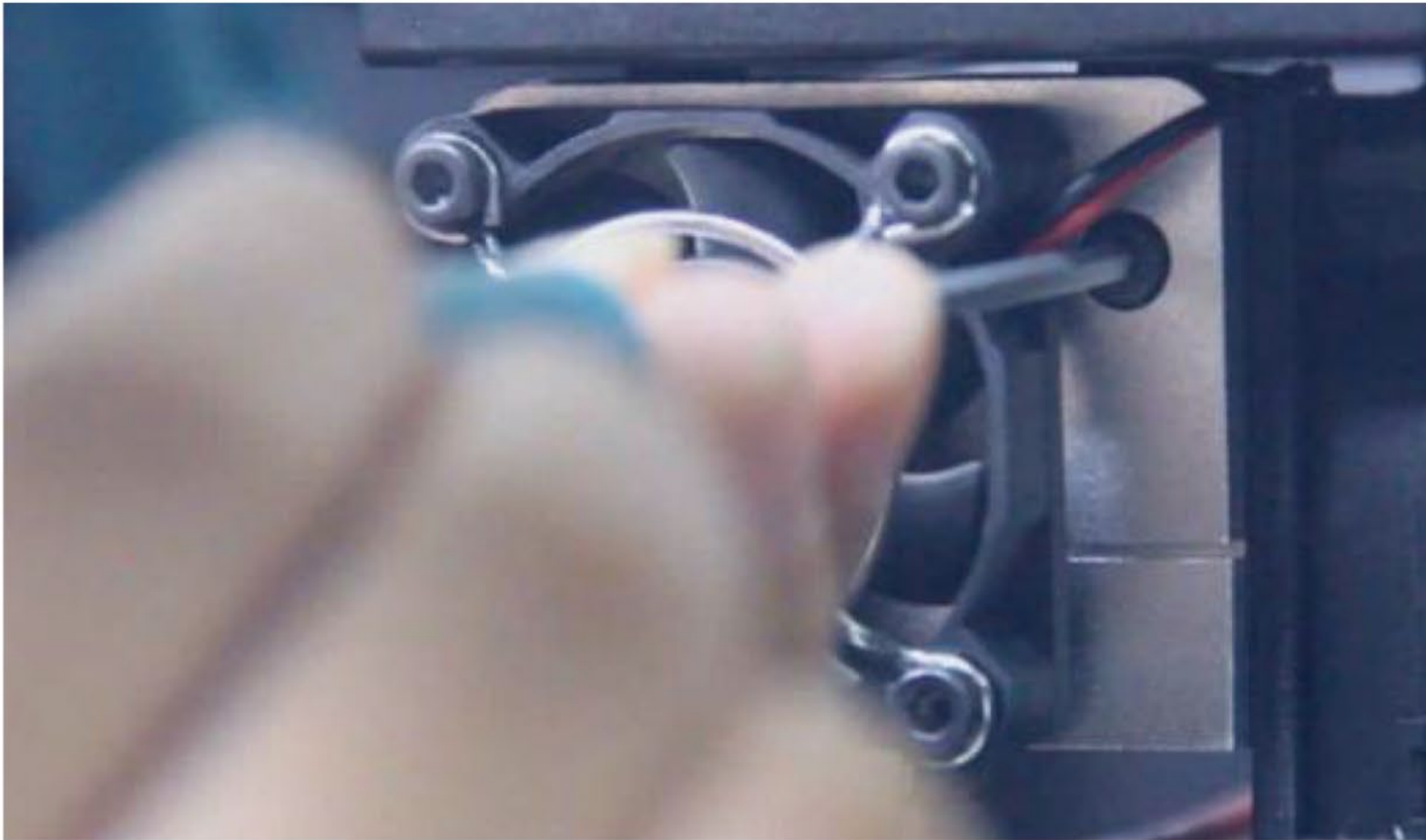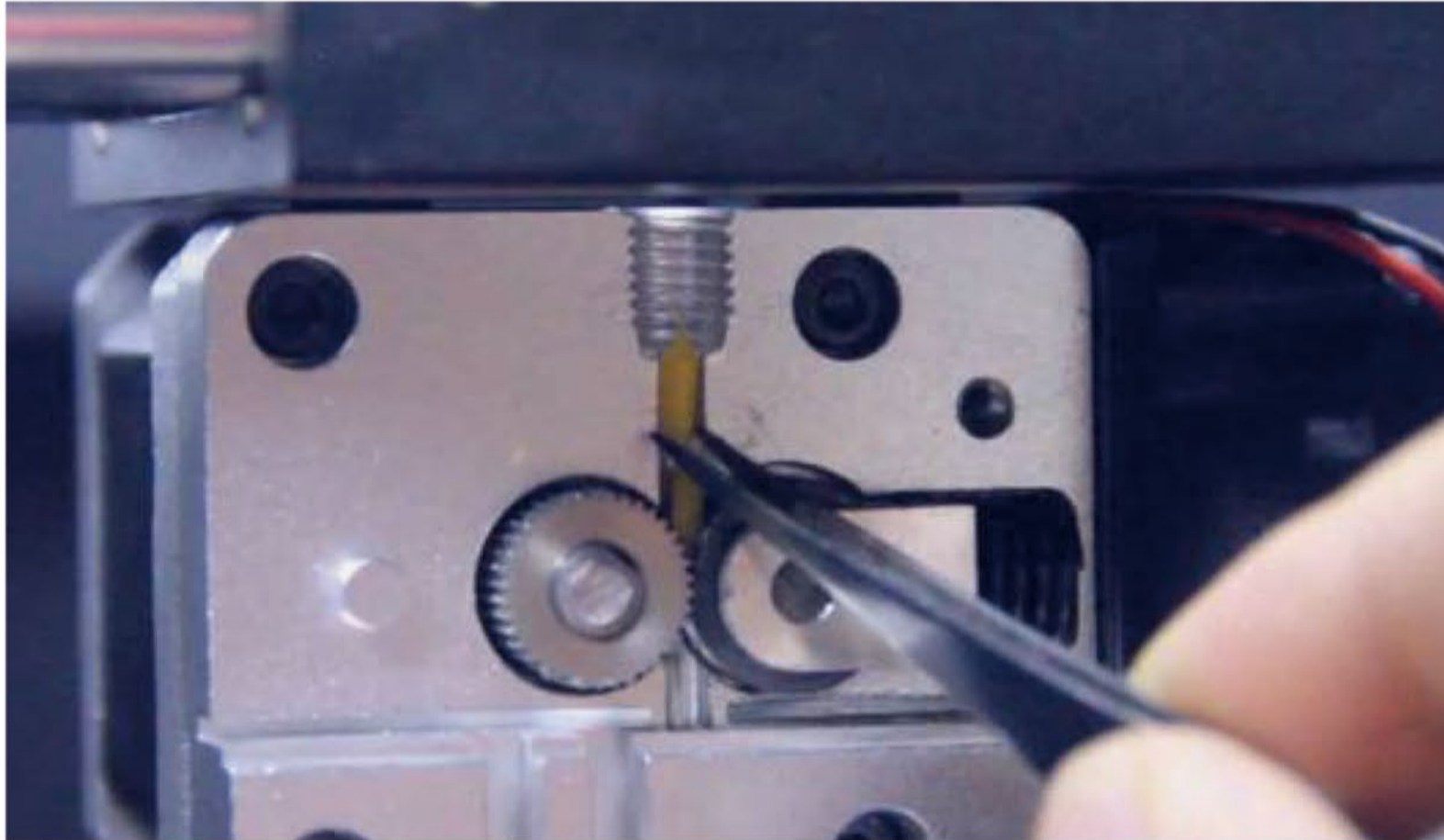
(Figure 5-17)

The second step, with distribution wrench to remove the two screws on the black fins, demolition fins (Figure 5-18);

(Figure 5-18)

Third step, remove the top two screws, remove the cover feeder, you can see

the feeding gear up, then you can clean up the feed material near the gear (Figure 5-19);
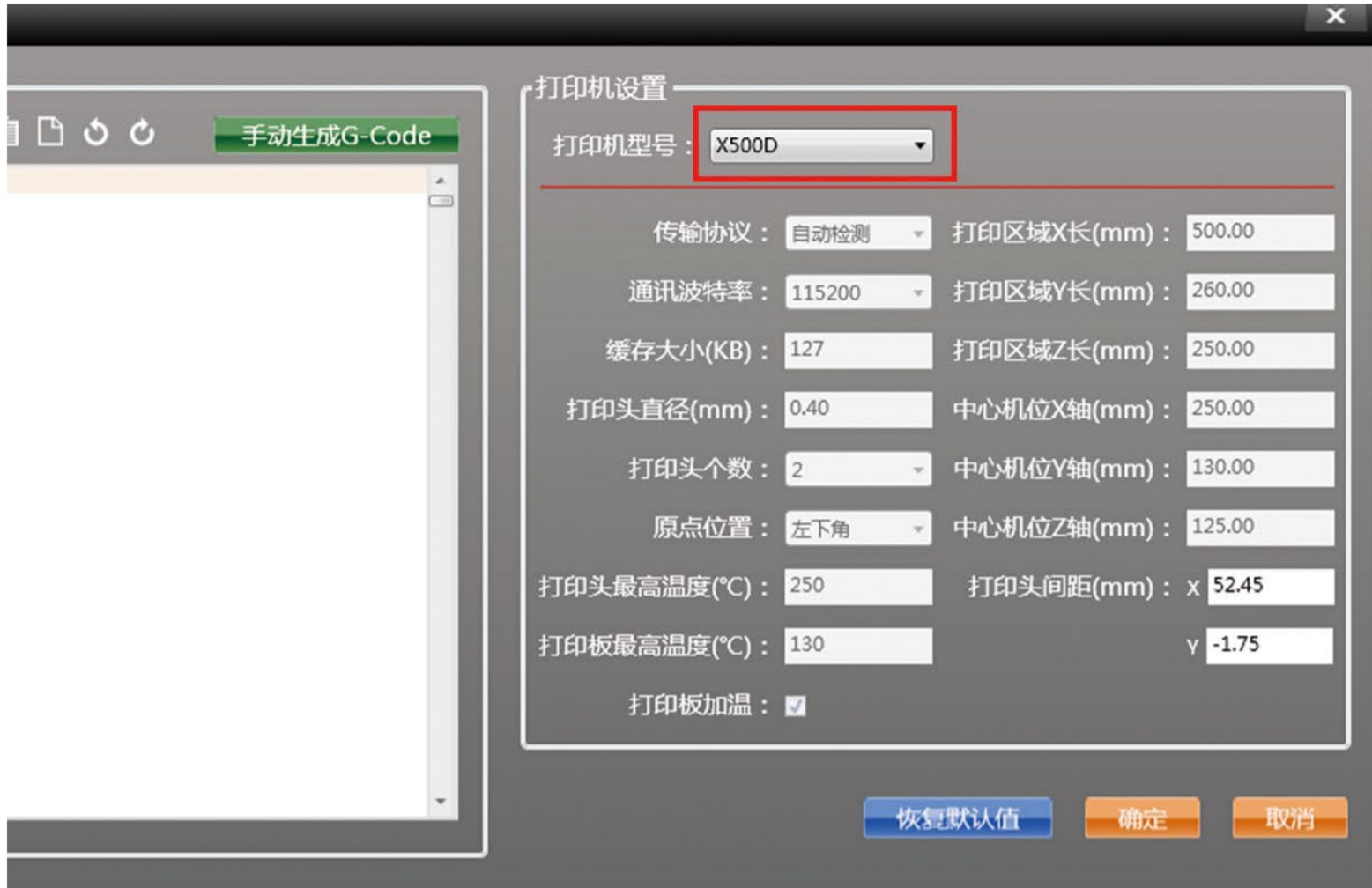

(Figure 5-19)

Such demolition operation is finished demo, install the print head on the reverse operation.

○ **Slicing instruction for the double nozzle**

1.Slice

The nozzle height of dual nozzle 3D printer has been adjusted in the factory, label on the print platform shows X axis and Y axis spacing of the two printheads.

The first step, open the HORI 3D print slice software, click on the factory mode settings button, select the dual nozzle printer model, the end of the printer model with D is on behalf of the dual nozzle (Figure 5-20);
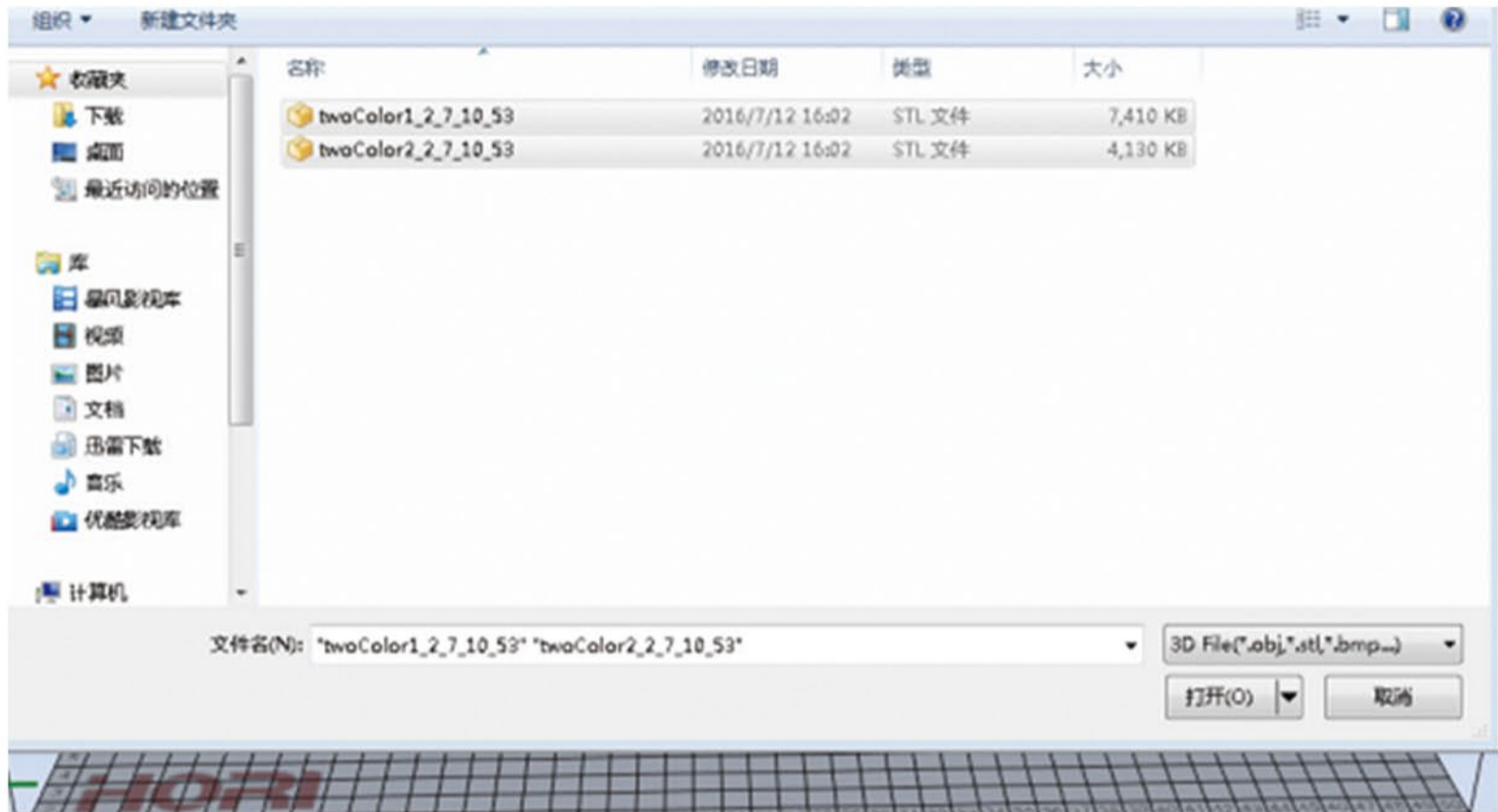
(Figure 5-20)

The second step, read spacing X and Y data on the print platform label, set the value in the slice software, click to confirm (Figure 5-21);
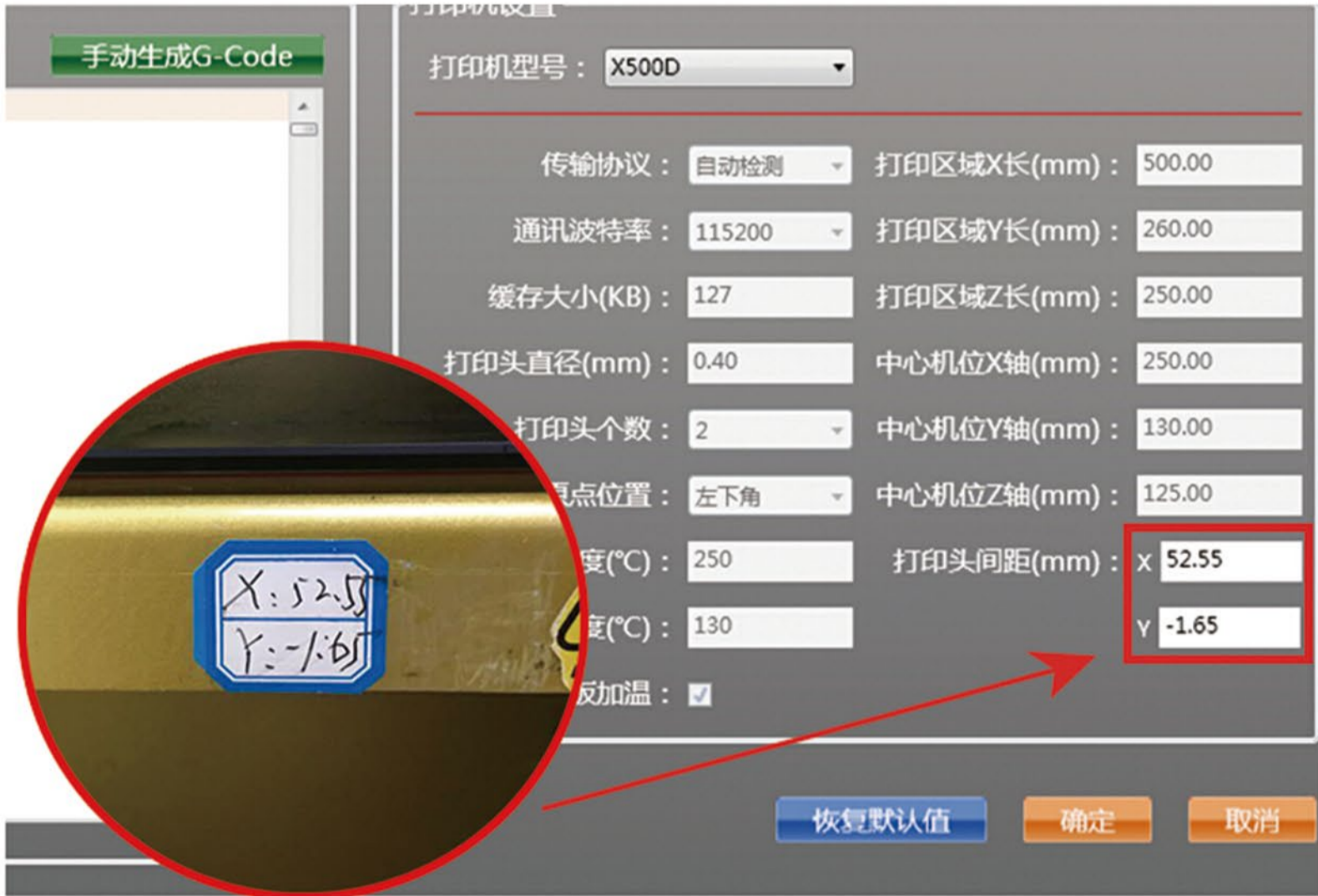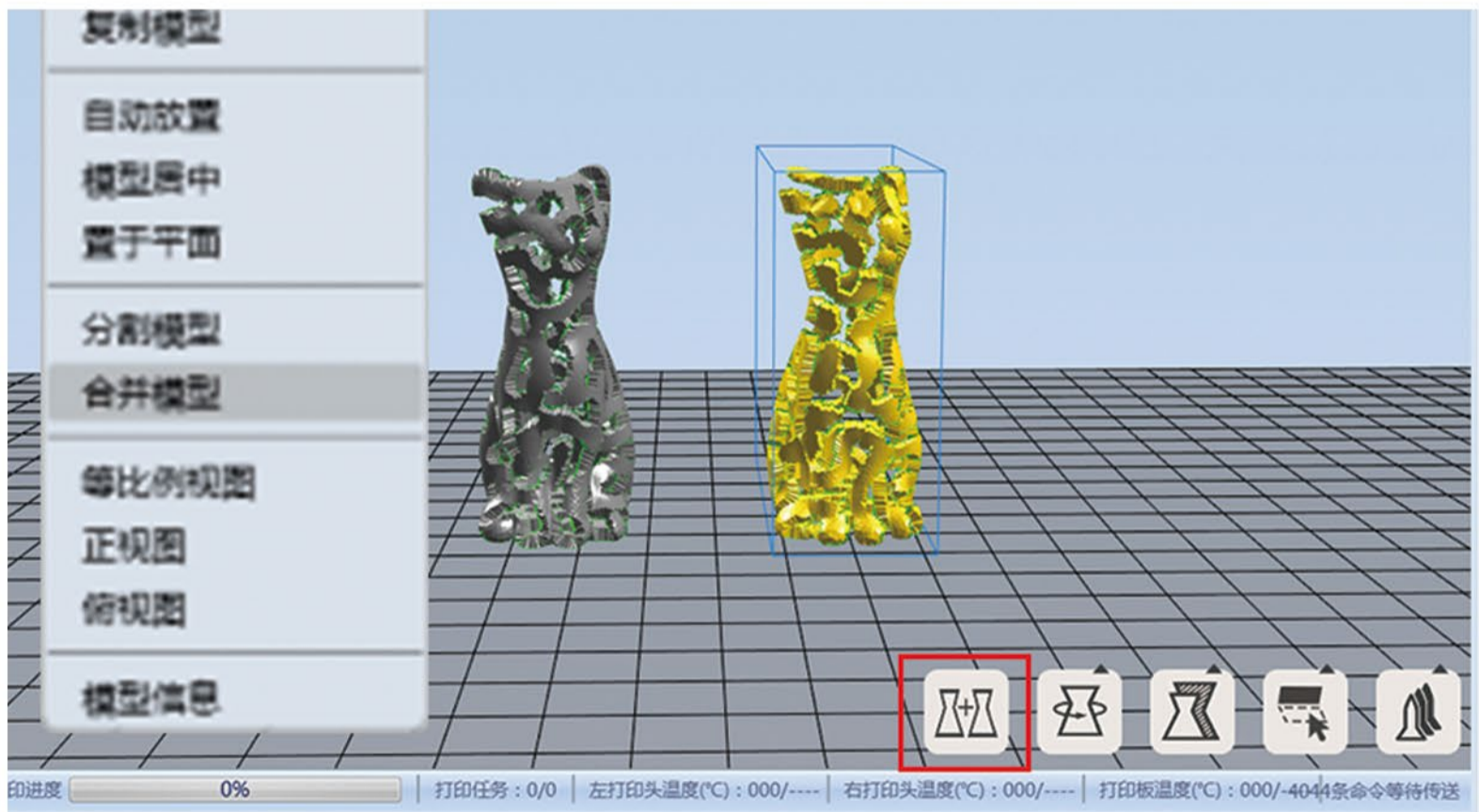

(Figure 5-21)

The third step, click the load model button, select the double headed model file, click on the open button, load the double headed print model (Figure 5-22);

(Figure 5-22)

The fourth step, right click on the merge model or click on the merge icon to merge the model(Figure 5-23)
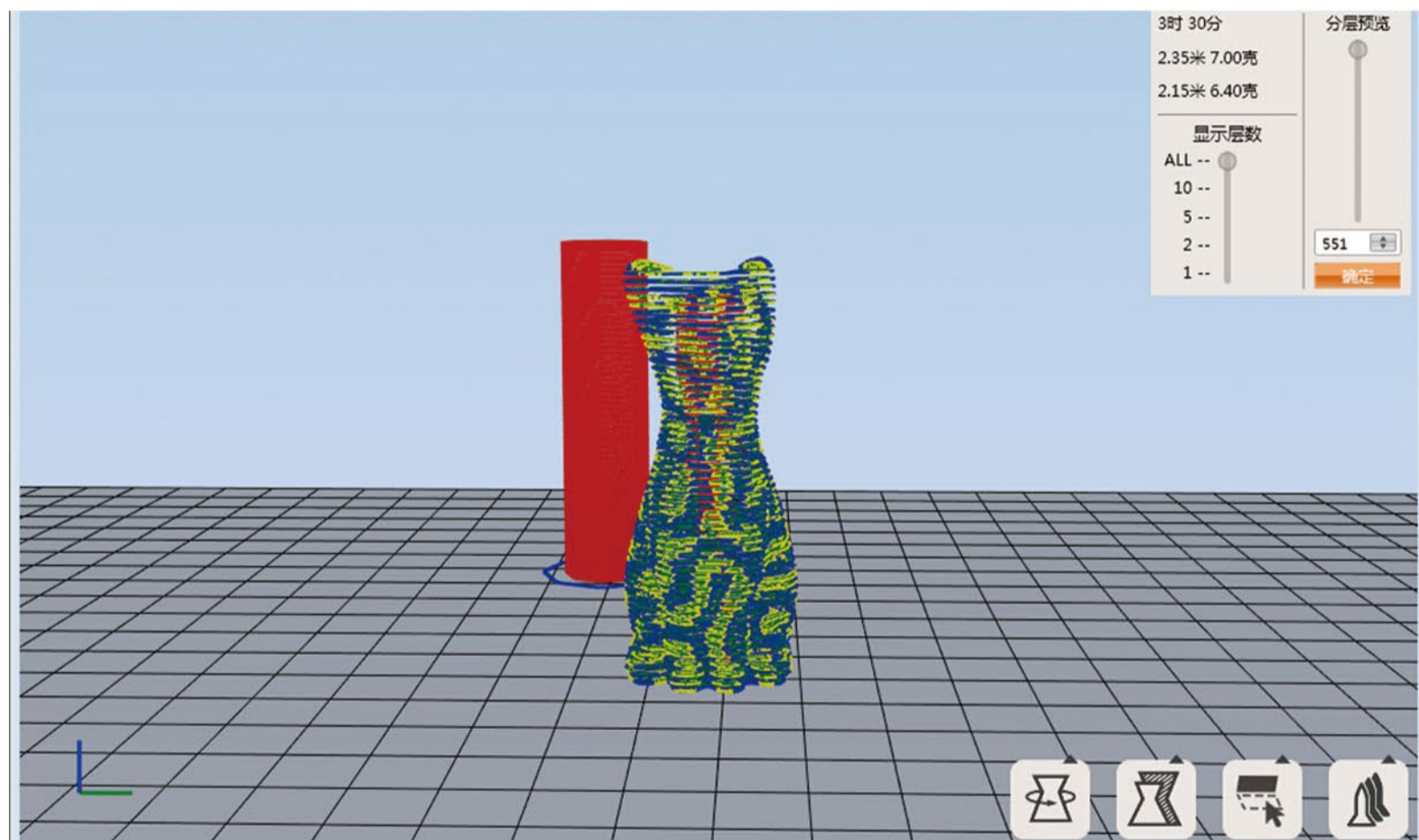

(Figure 5-23)

The fifth step, click the slice set button, according to your need to set the printing mode, printing materials, printing speed and other parameters (figure 5-24);

(Figure 5-24)

The sixth step, click the slice button, cut the slice data and send to the SD card, you can print it(Figure 5-25);
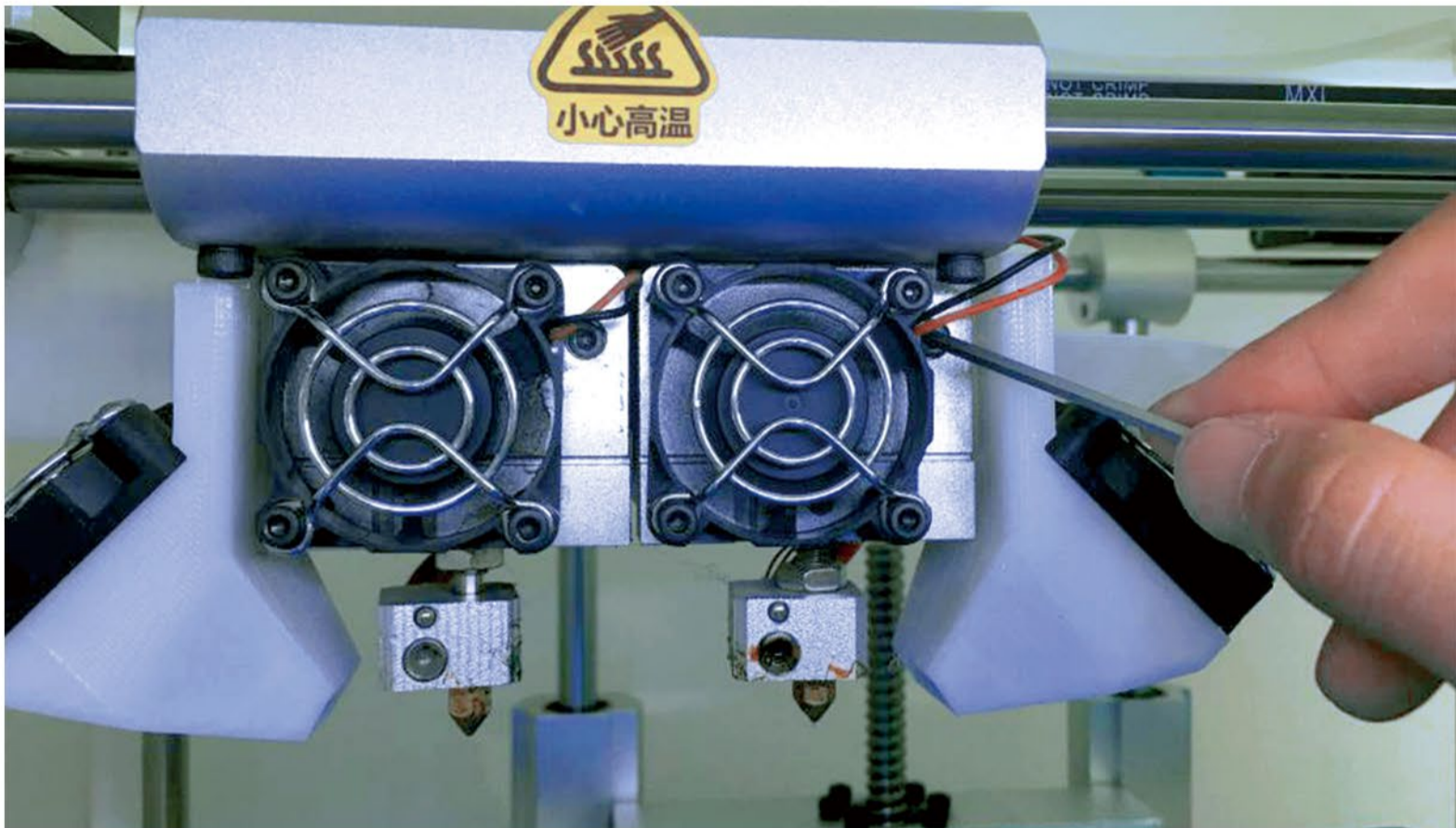

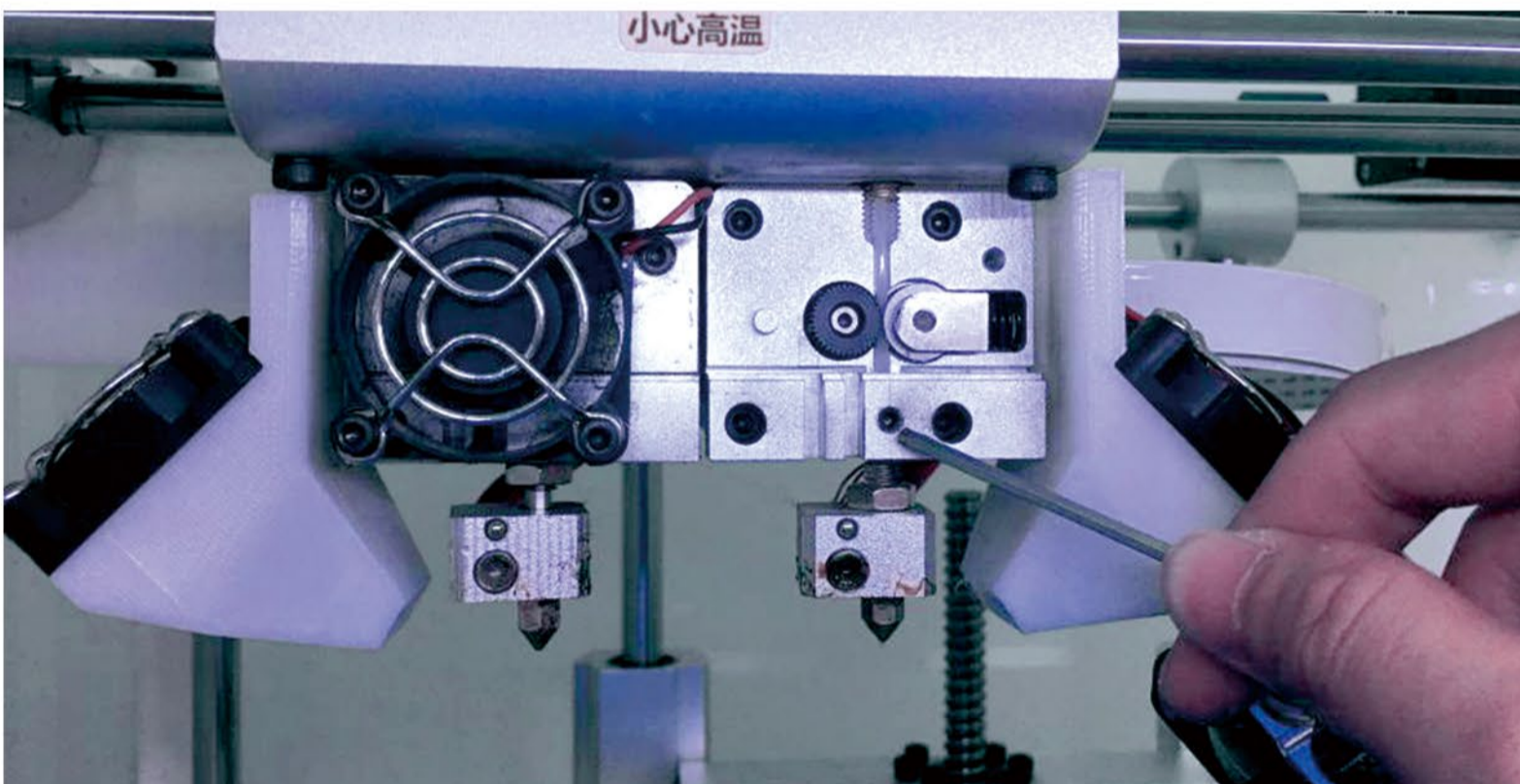(Figure 5-25)

2. Adjust height of the nozzle

The height of two nozzles is not same.

Turn off the printer, use 2.5 mm Allen wrench to move fan on the feeder on the right side(Figure 5-26);
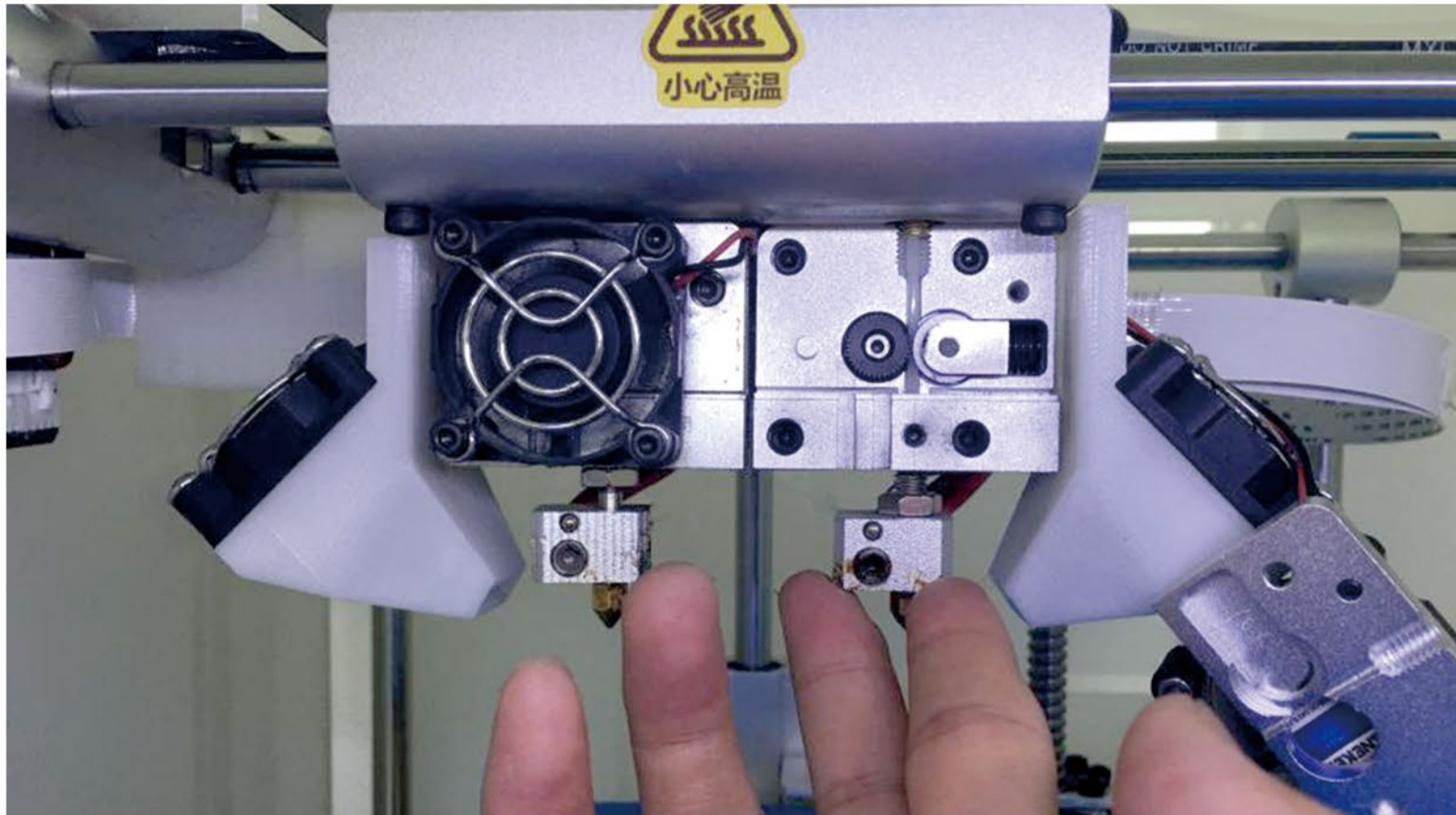
(Figure 5-26)

The second step, use 2 mm Allen wrench to loosen fastening screw of the throat(Figure 5-27);
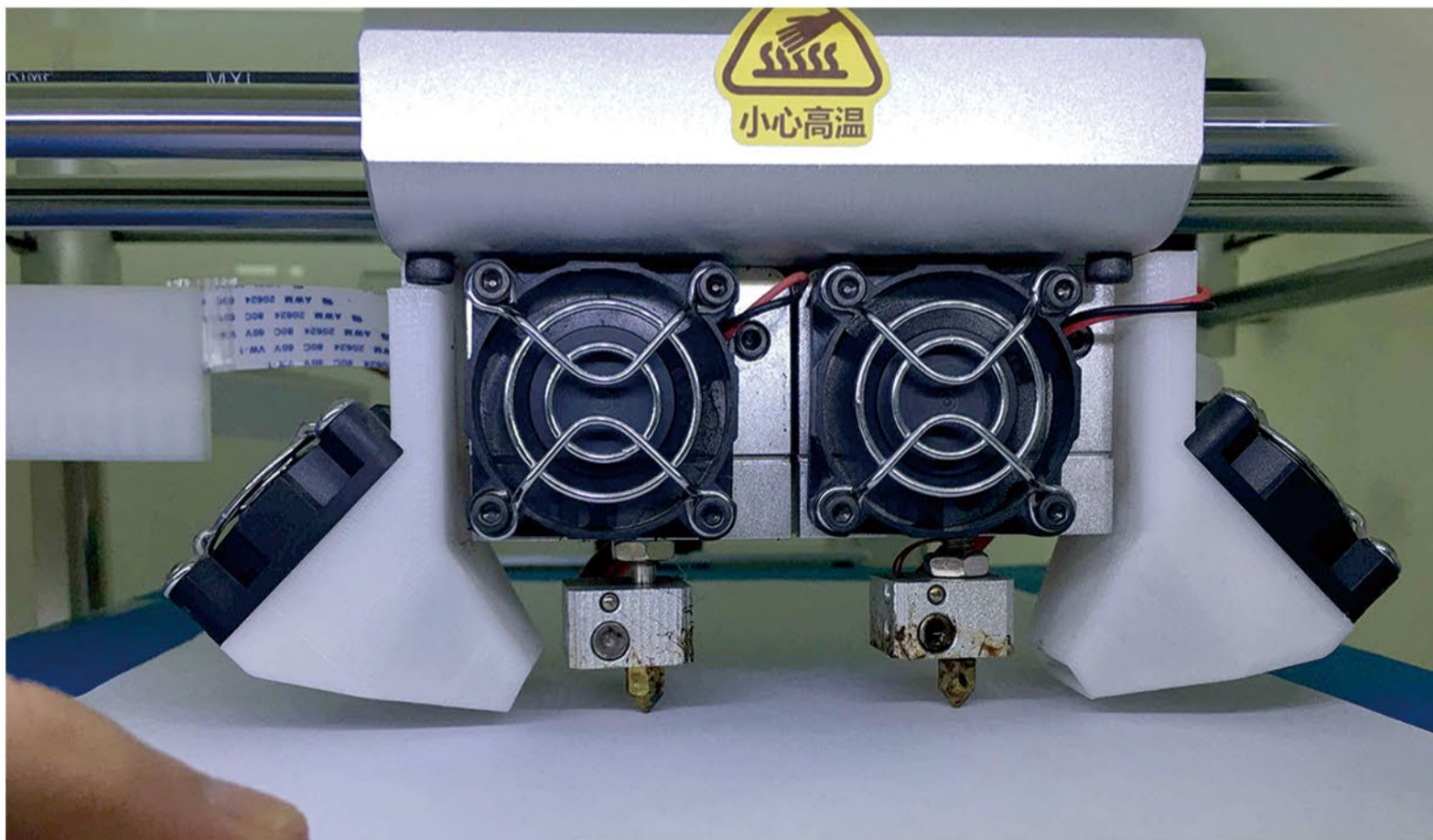

(Figure 5-27)

The third step,push heating head up, use 2 mm Allen wrench to tighten the throat slightly to make heating head not down (pay attention to the heating block temperature to avoid scalding)(Figure 5-28);

(Figure 5-28)

The fourth step, adjust platform by left side nozzle, after the platform adjustment,then adjust platform by left side nozzle again while loosening the fastening screw of the right throat to make heating head down, use A4 paper to test two printheads'tightness and make tightness same, test each platform leveling point,then tighten fastening screw of the throat(Figure 5-29);
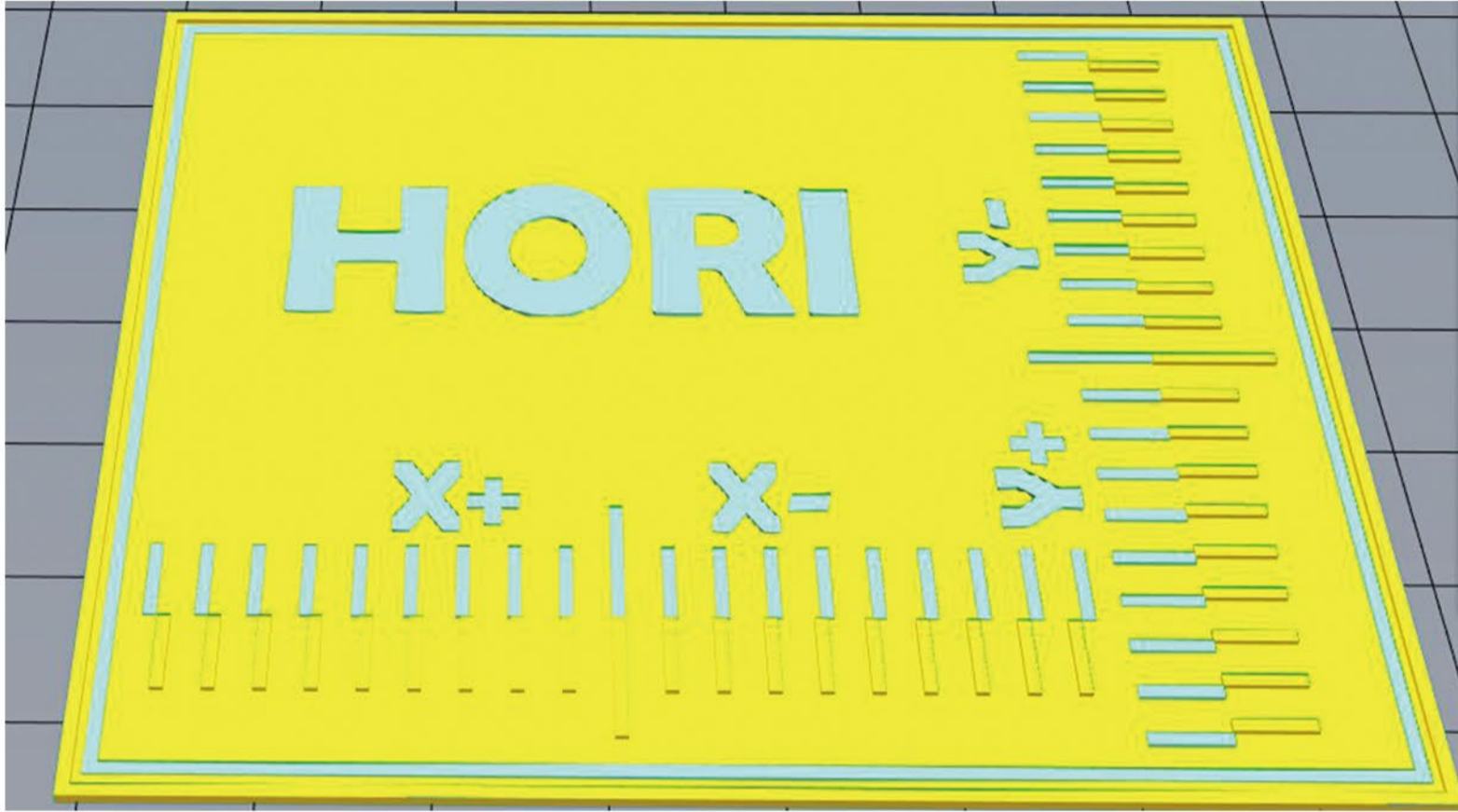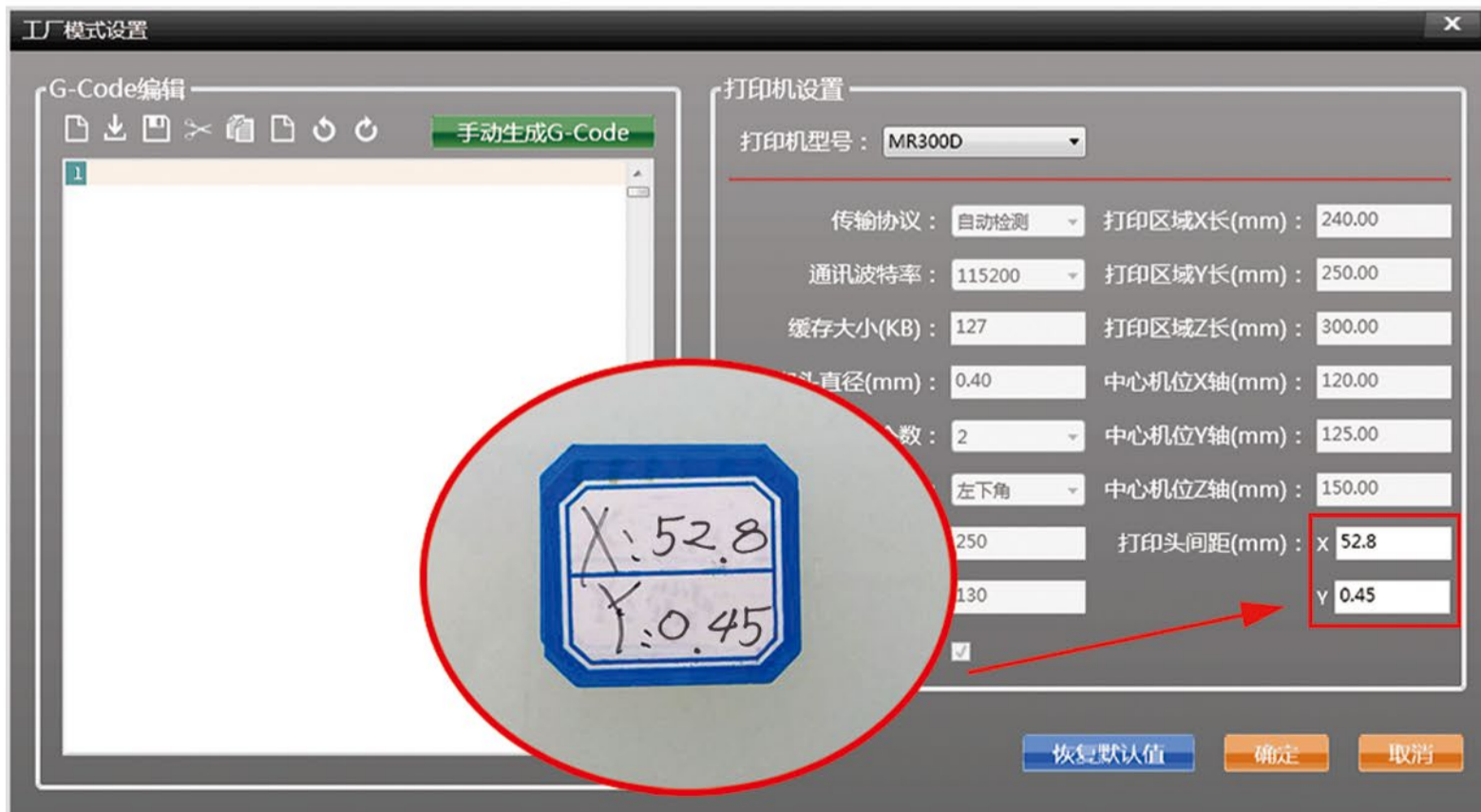

(Figure 5-29)

3.Measure the deviation

After adjusting the height of two nozzles, the distance between the printheads will be changed,it needs to measure the deviation.

The first step, load the HORI double headed calibration model into the HORI 3D print slicing software(Figure 5-30);

(Figure 5-30)

The second step, set printer model and printhead spacing of X axis and Y axis in the slice software , due to the adjustment of the deviation will not be great, set the printhead spacing according to the existing platform label value, such as X:52.8mm, Y:0.45mm(Figure 5-31);

(Figure 5-31)

The third step, save the slicing data, send it to the SD card to print, the file name can be changed to 52.8 0.45.gcode for the next time to modify the data （figure 5-32）;

(figure 5-32)

The fourth step,Observe printout of the calibration model, find out up and down aligned line on the X axis , count from the middle line , calibration model in each a small lattice is 0.1mm, in the X+ direction ,X=52.8mm+N *0.1mm. In the X -direction X=52.8mm-N *0.1mm, get printhead X axis spacing. Y axis is in the same way. Get X=53.2mm,Y=0.05mm.(Figure 5-33);
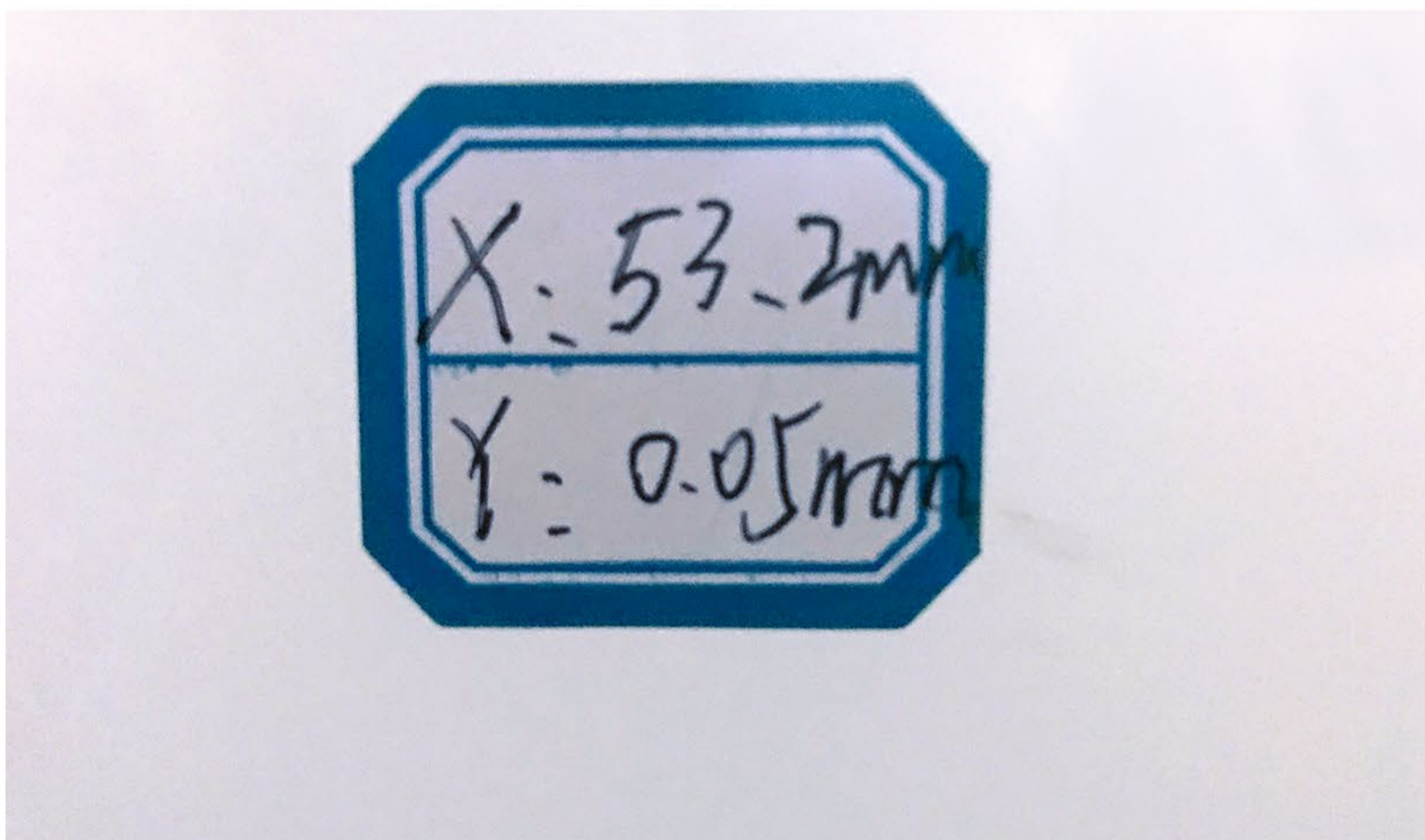

(Figure 5-33)

The fifth step,set the calculated printhead X axis and Y axis spacing into slicing software , slice and print again , if there is deviation still, repeat the first step to the fourth step calibration until printout of the model calibration X axis and Y axis middle line alignment(Figure 5-34);

(Figure 5-34)

The sixth step,Label the adjusted spacing of the X axis and Y axis spacing on the printer platform.(Figure 5-35).
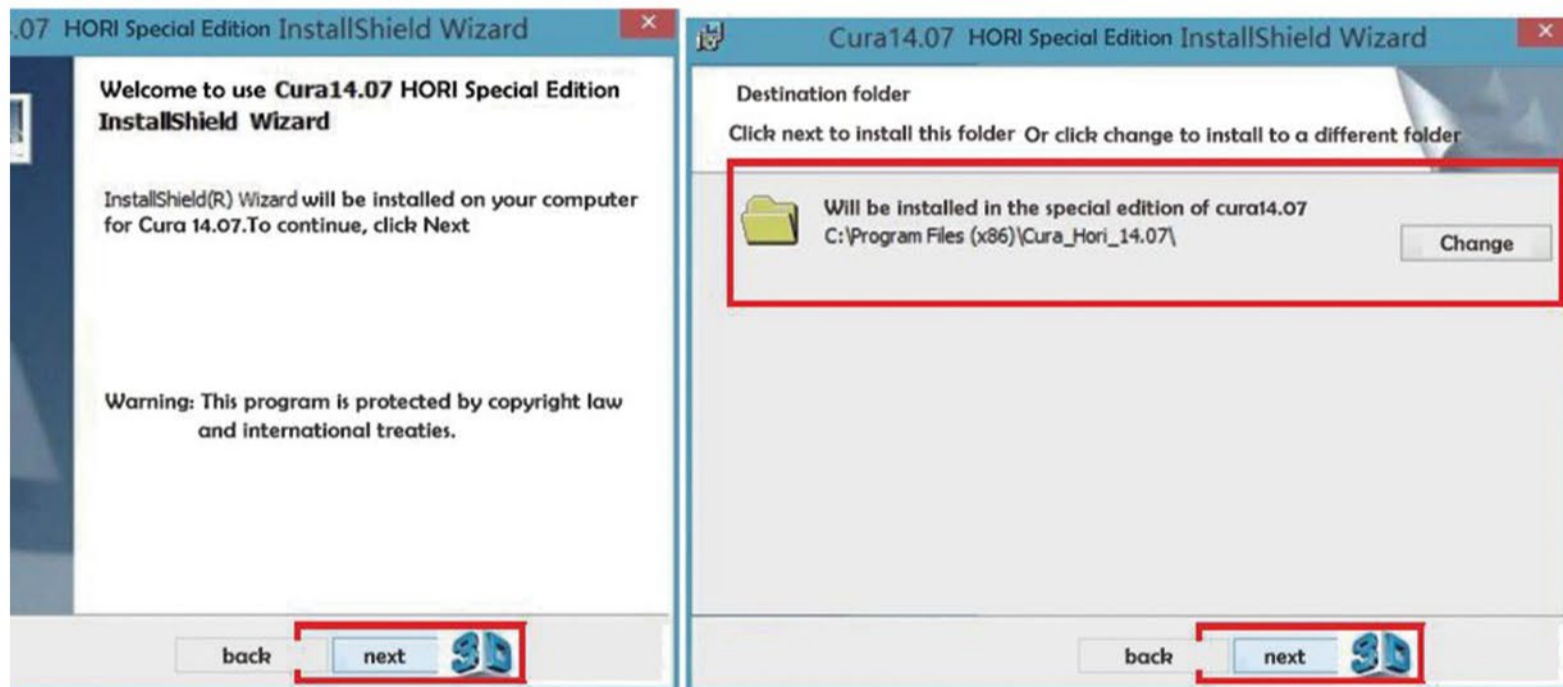

(Figure 5-35)

Section 6   Software

6.1 Software Installation

HORI CD-ROM containing the printing necessary software-HoriPrinterSoftware

First, we double-click the icon to install the software;

The second step, click "Next" to continue, select the appropriate installation directory to install, Then click "Next" (Figure 6-1);

(Figure 6-1)

Third step, click the "Install" button, wait for the software installation is complete(Figure 6-2);
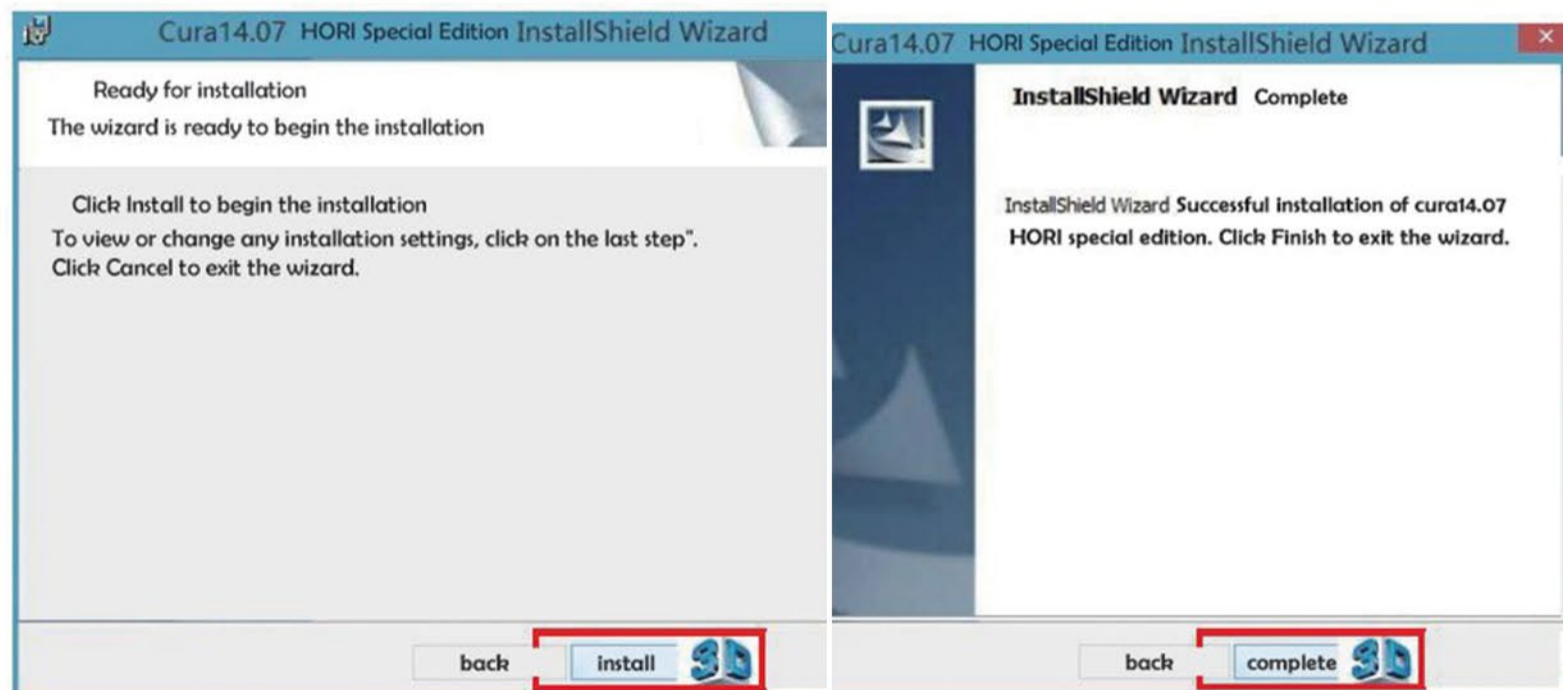
(Figure 6-2)

Attention: During installation, computer anti-virus software and other security software may be false positives, please temporarily turn off the antivirus software before continuing the installation.

6.2 Software Introduction

HoriPrinterSoftware is an intelligent front-end display, resize, slicing and printing software. Responsible for slicing the model file generated GCODE code, control operation of the printer, is critical for the printing process. More importantly, it is very easy to use, has a user-friendly interface, simple setup, very fast, even if the first time can quickly get started. HoriPrinterSoftware the latest version is a very fast speed slicing, no need to wait, in the process you look at the model of the completed sections have been quietly in the background, you can even feel (Figure 6-3).
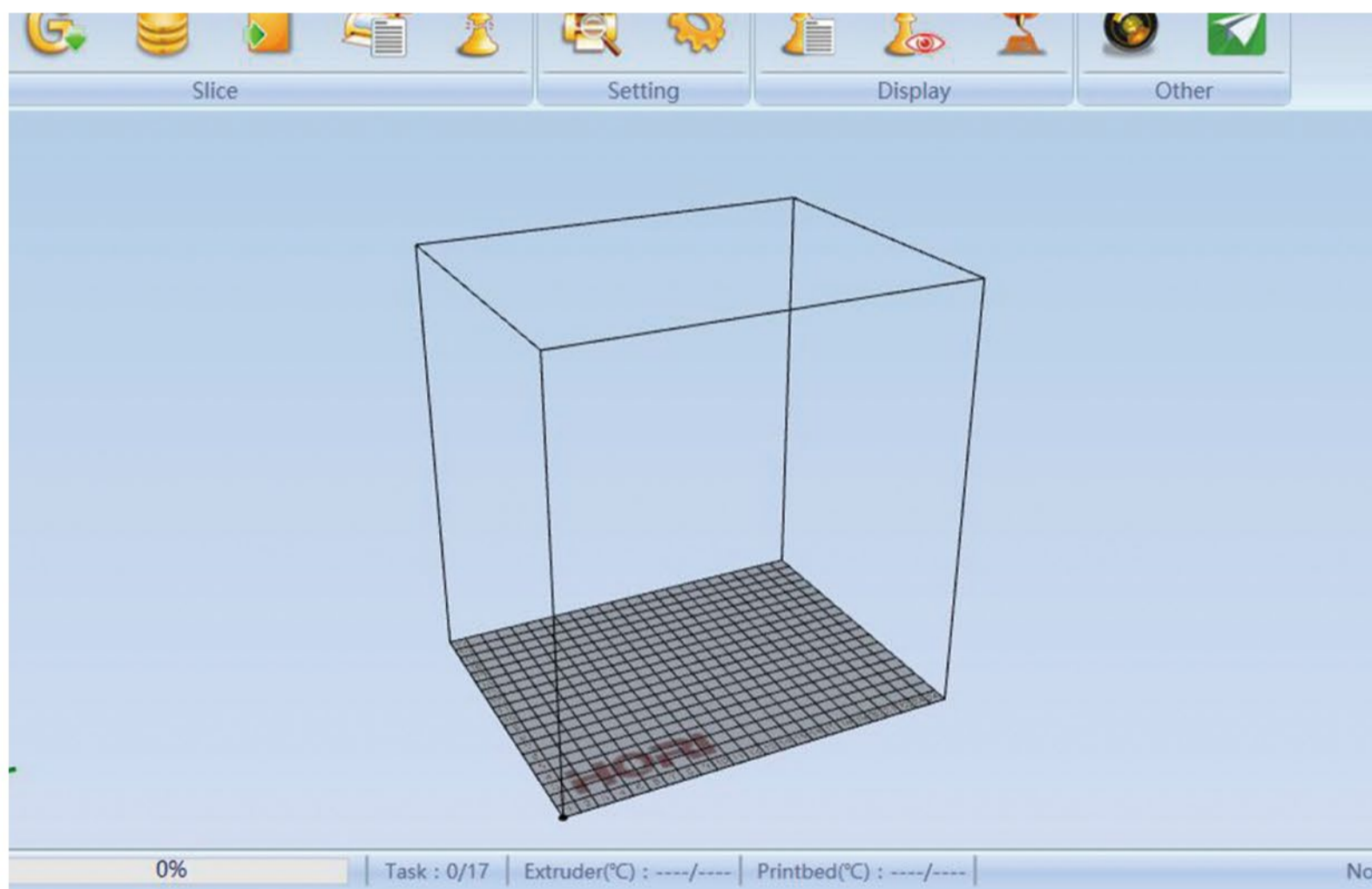
(Figure 6-3)

Attention: For the use of the software please visit HORI network (http://www.hori3d.com/).

Section 7   Power-Off Printing Function

In order to handle heavy printing works or power supply lackage, some models of HORI was equiped with Powew-Off Printing function, which enables designers to get a continuous printing service when the power is cut off. All models, equiped with Power-Off Printing function, include a battery inside, which will be automatically charged when the power is connected, and supply power when the electricity was cut off.

We take model HORI Z500 as sample for your understanding.

First step, turn on the Power-Button as other model does.

Second step, turn on the Start-Button on the front control panel.

Then, the Power-Off Printing will be started automatically.

Security Statement

The manual will be modified when the product upgrades, which are necessary, then we do not tend to notice. Please pay attention to our official website http://www.hori3d.com, you can get the user manual in the site the latest version. Please read the instructions carefully before use. As a result of improper use, or use beyond the limits of all the dangers and losses caused Beijing Huitianwei Technology Co., Ltd.Department does not assume any liability.

Prior written consent of the Company, no person shall this manual (in whole or in part) to modify, scanning, copying or translation, or they will bear legal responsibility. The final interpretation of Beijing Huitianwei Technology Co., Ltd.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

    (1) This device may not cause harmful interference, and

    (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

HORI 3D Printer