3D Printer User Manual

I. Packing List

- 1*Complete machine

- 1*Tool kit:

  - SD card (G code for testing contained)
  - Trial filament*3m
  - 1*M8*10mm wrench/5mm hexagon wrench
  - 1*Cutting nippers
  - 1*USB line
  - 1*3MM/2.5MM/2MM/1.5MM/ hexagon wrench
  - 1*Cradle+　M6*10 Screw* 4、Nut *4、Shim* 4
  - 1* CD
  - power line
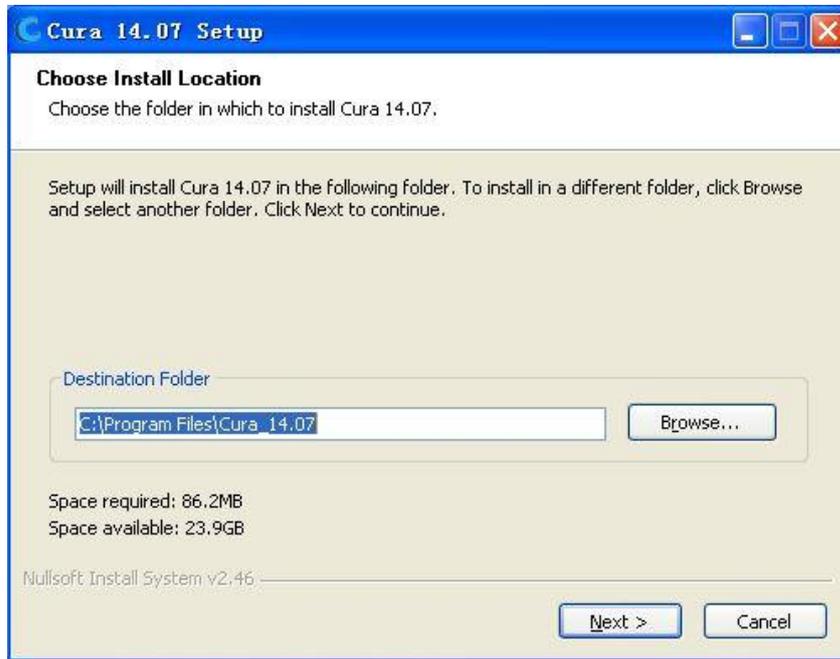
II. Conditions for Software Installation

The OS support windows XP, windows7, and windows 8. Please note, ghost version operating system could possibly generate problems, like disconnecting, flash back, error messages and etc. In that case, please re-install the system.
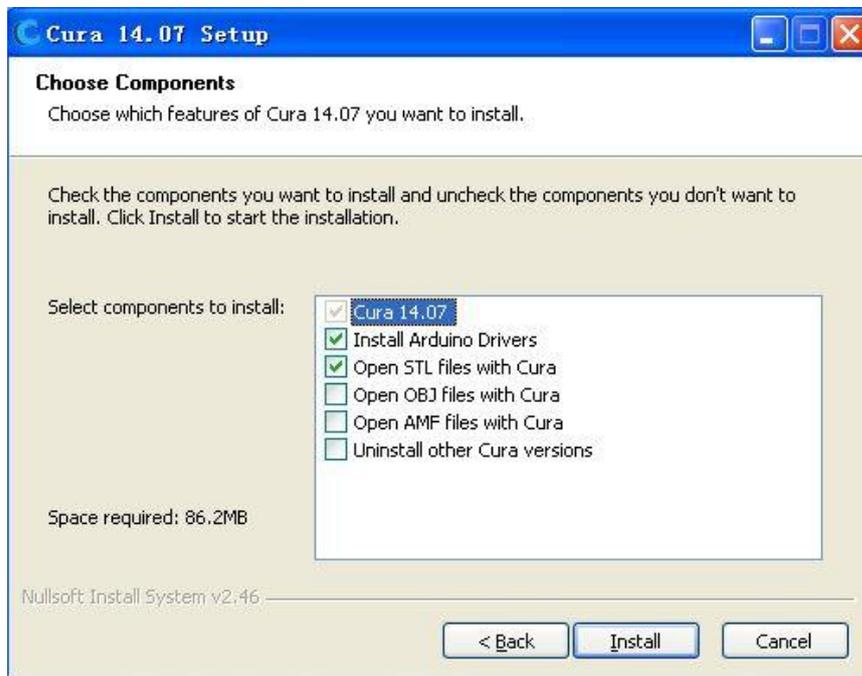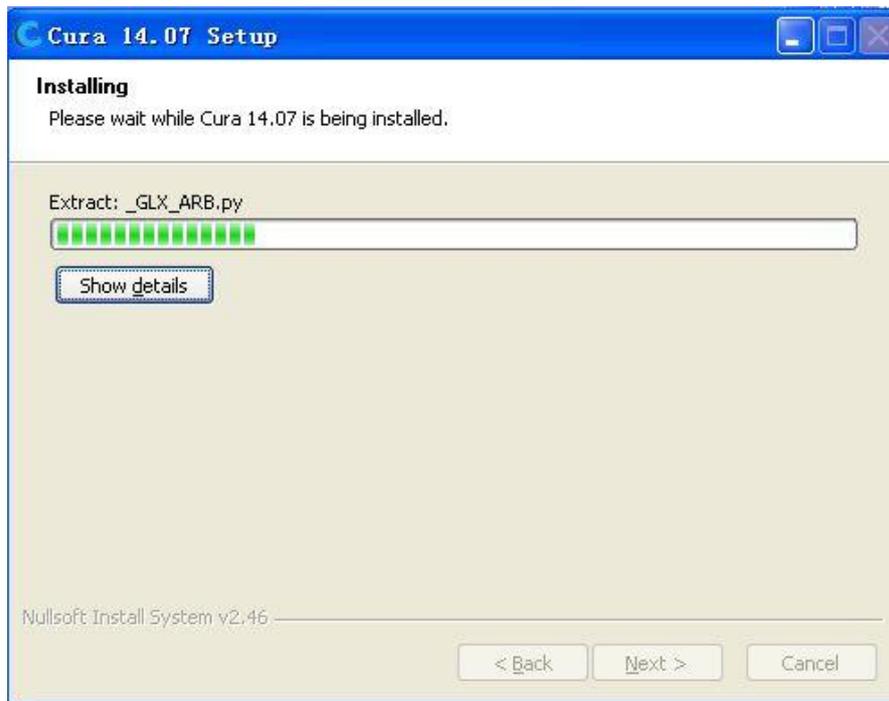
III. CURA Installation
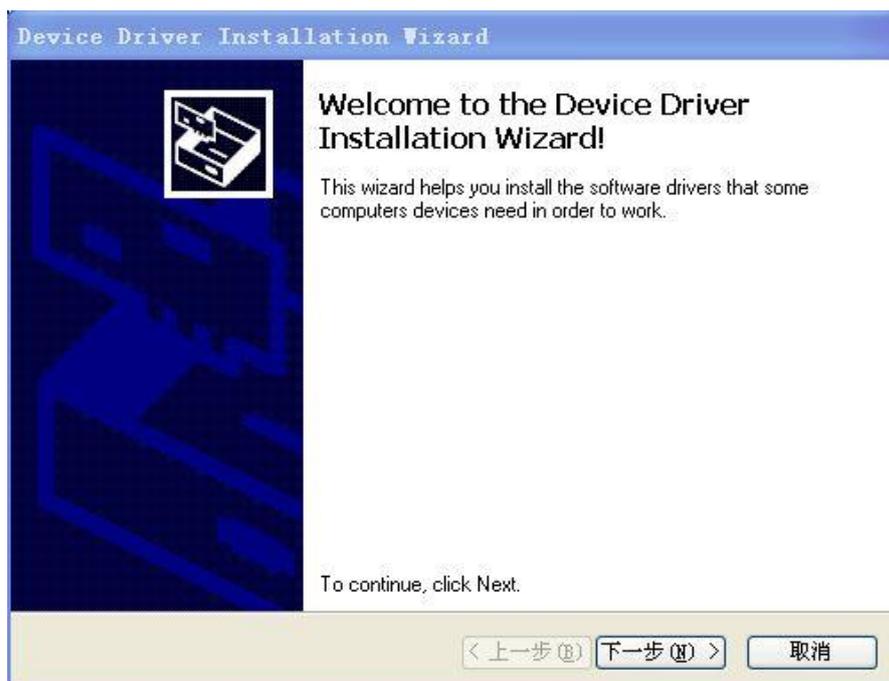
1.Cura installation

2.Open the CD file in, click [C Cura_14.07.] .

3.Choose installation path. We suggest default setting, then click "next".

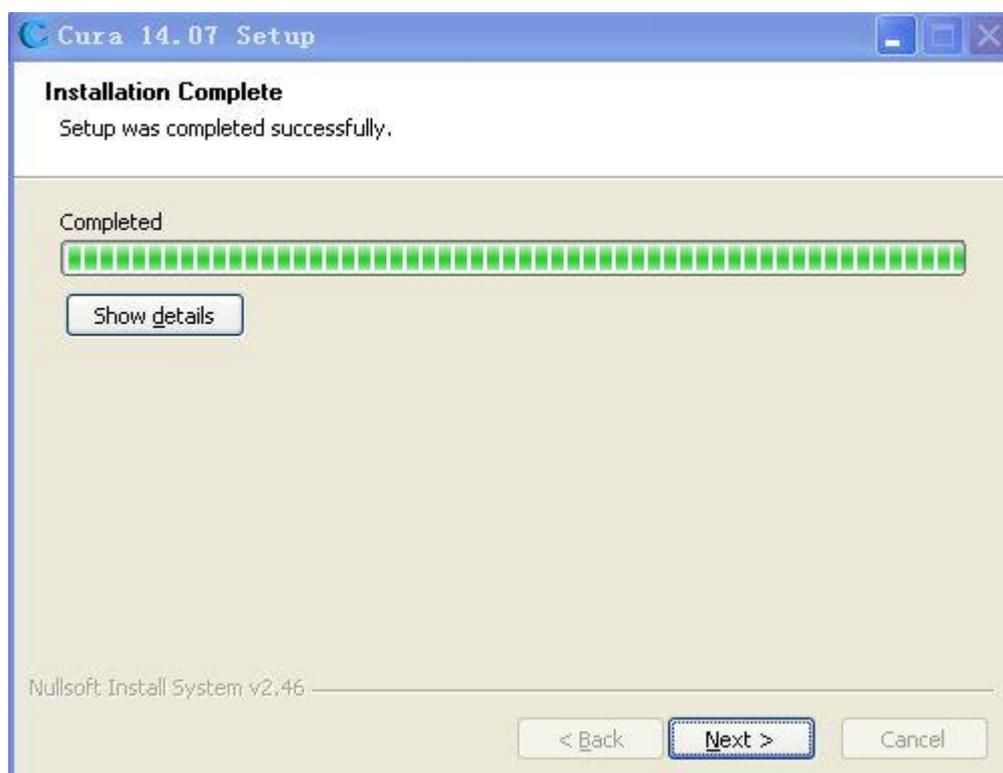4.Choose the driver and related files. We suggest default setting, then click "install".

5.Click "next".

6.Click "Finish".

7.Click "Next".

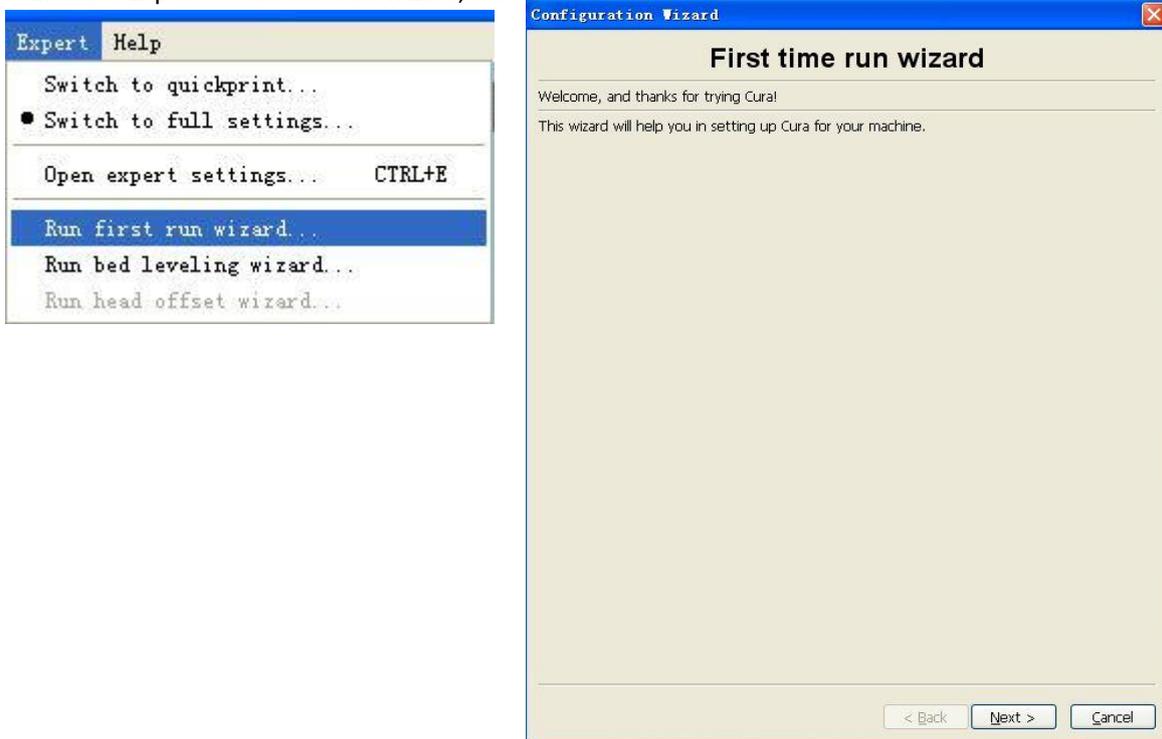8.Click "Finish", the driver installation finished.

IV. CURA Description
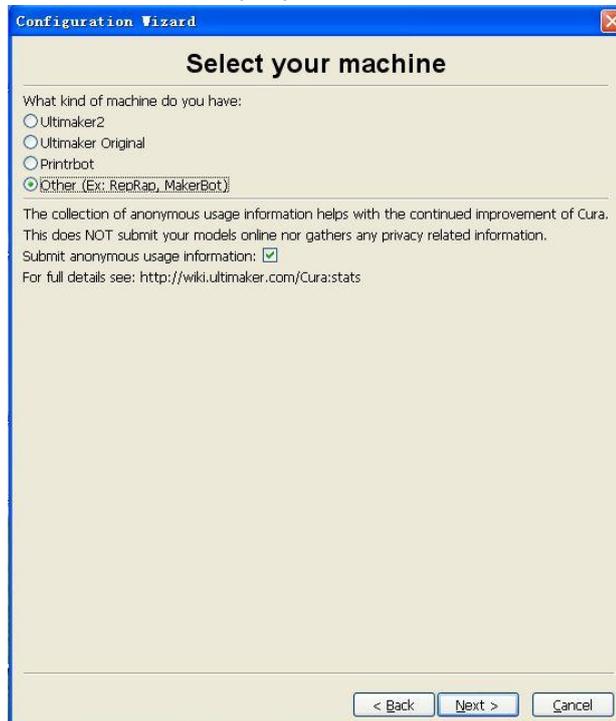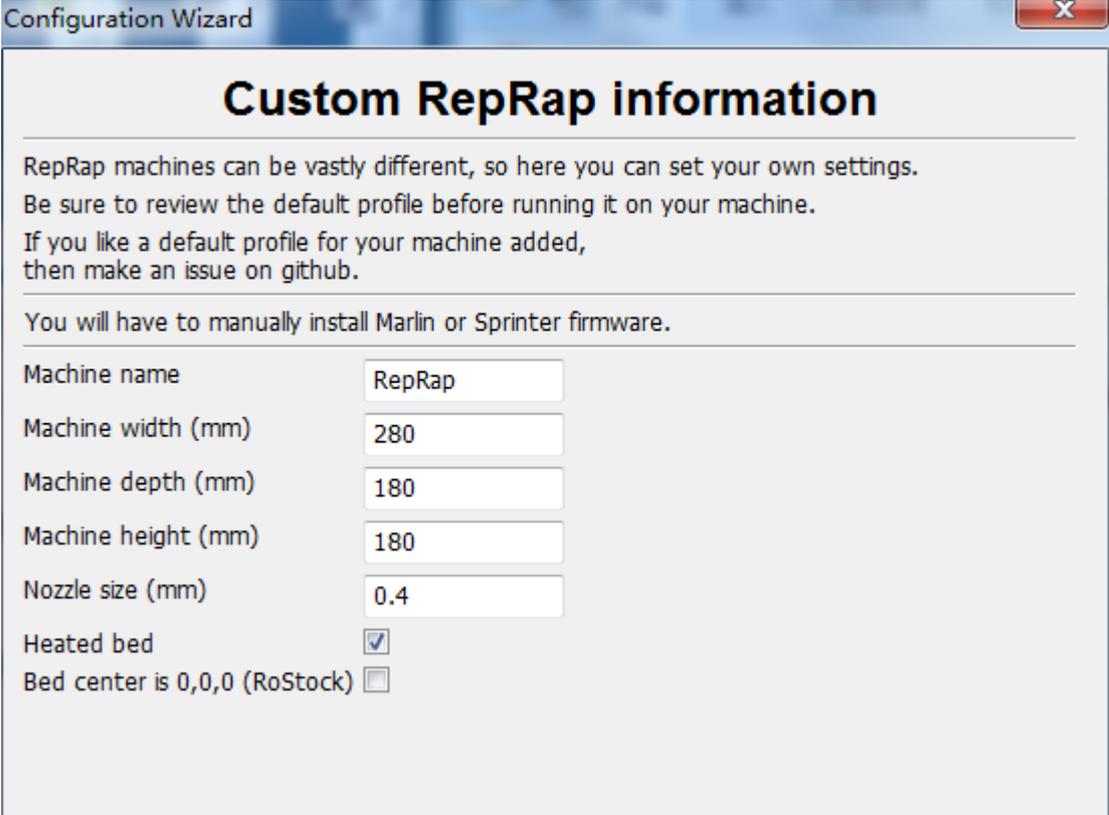
1.Open the software "Cura".

2. Click "Expert" - Run first run wizard,then "next".

2.(Select your machine) ,choose "Other(ex:RepRap,MakerBot)"， click<Next>.

3.Other machine information ,choose "Custom...".

Custom RepRap information

RepRap machines can be vastly different, so here you can set your own settings.

Be sure to review the default profile before running it on your machine.

If you like a default profile for your machine added,
then make an issue on github.

You will have to manually install Marlin or Sprinter firmware.

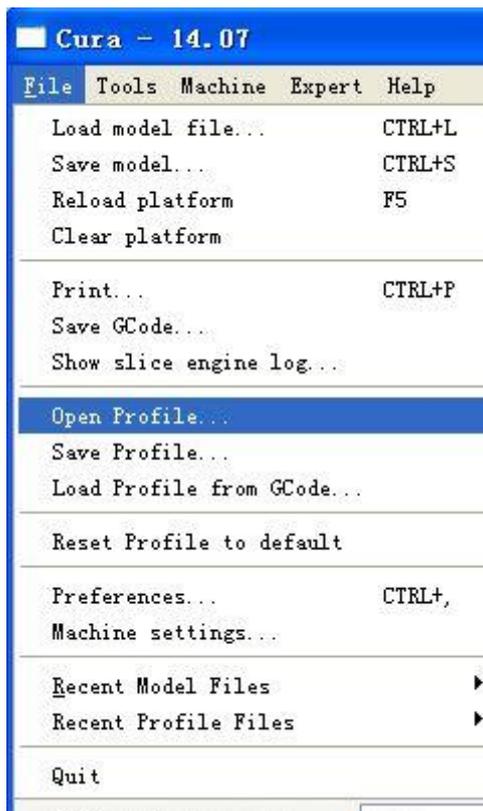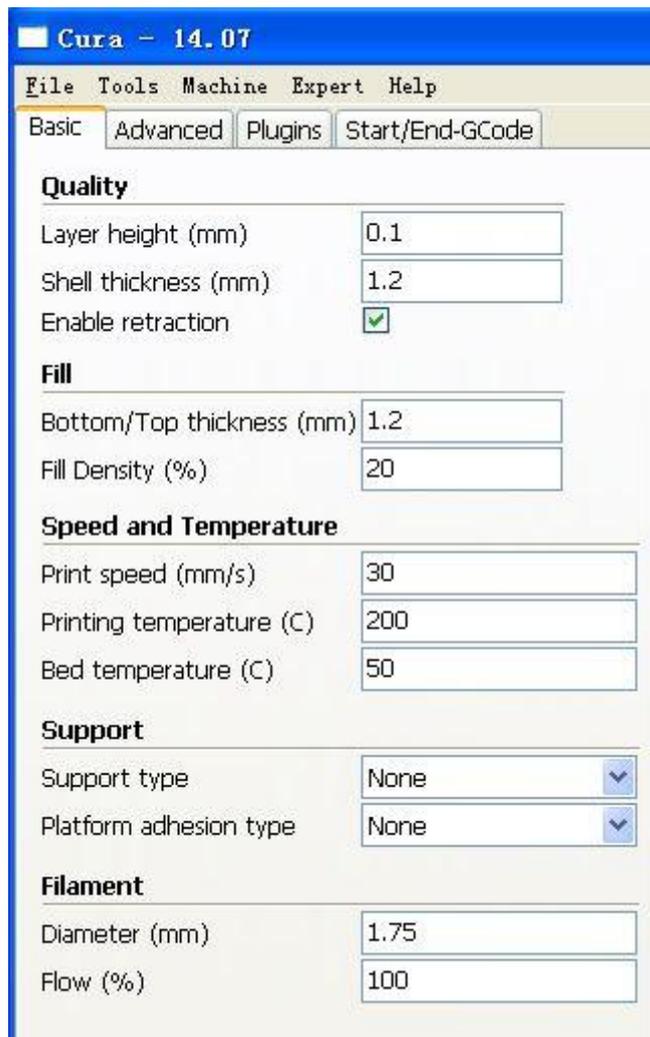|	
Machine name	RepRap
Machine width (mm)	280
Machine depth (mm)	180
Machine height (mm)	180
Nozzle size (mm)	0.4
Heated bed	☑
Bed center is 0,0,0 (RoStock)	☐

4.Click "Finish".
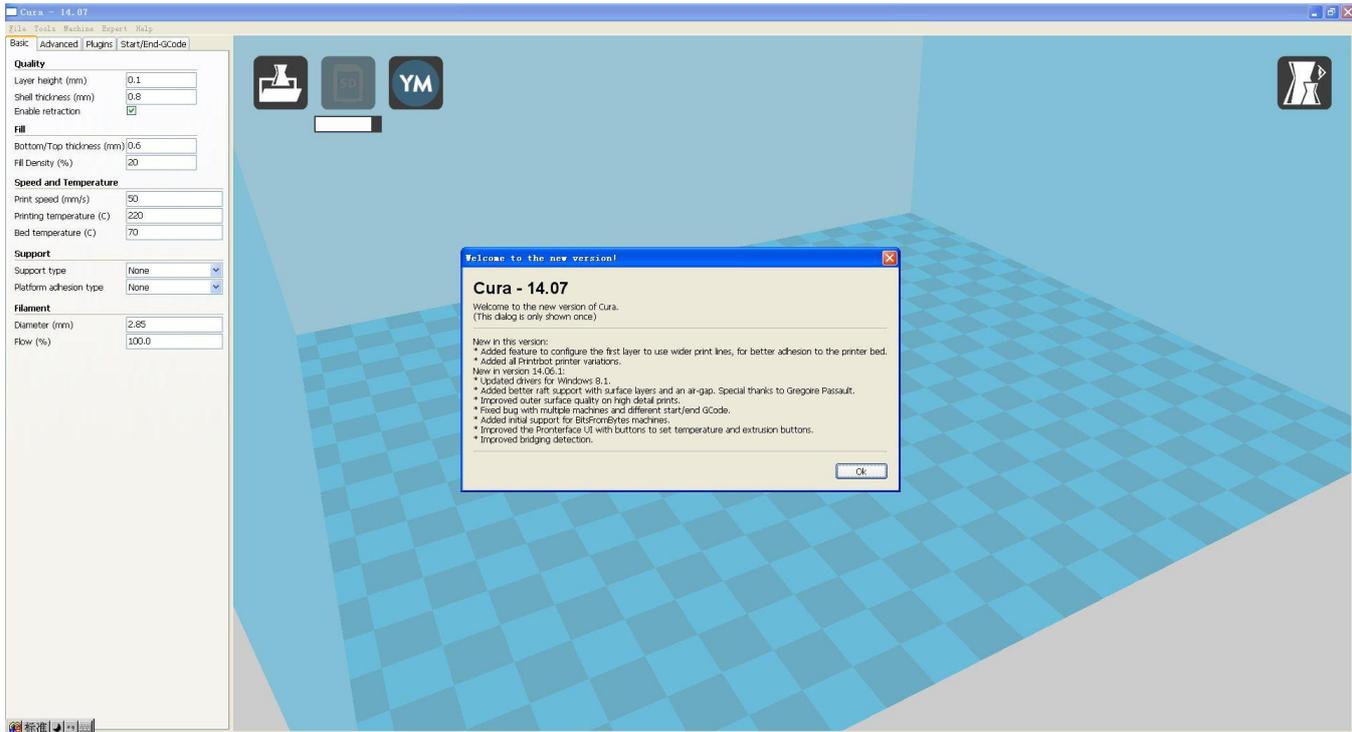
5.Open the configuration file，click <File > ─<Open Profile>

6.Choose <myramps1.4.ini> where you saved in your computer.

7.Load the configuration file first,set all the parameters as below.

Basic information

Advanced information

Cura – 14.07

File Tools Machine Expert Help

Basic Advanced Plugins Start/End-GCode

Machine

Nozzle size (mm)	0.4

Retraction

Speed (mm/s)	40.0
Distance (mm)	4.5

Quality

Initial layer thickness (mm)	0.3
Initial layer line with (%)	100
Cut off object bottom (mm)	0.0
Dual extrusion overlap (mm)	0.15

Speed

Travel speed (mm/s)	50
Bottom layer speed (mm/s)	20
Infill speed (mm/s)	0.0
Outer shell speed (mm/s)	0.0
Inner shell speed (mm/s)	0.0

Cool

Minimal layer time (sec)	5
Enable cooling fan	✔

Plugins information

Start/End GCode
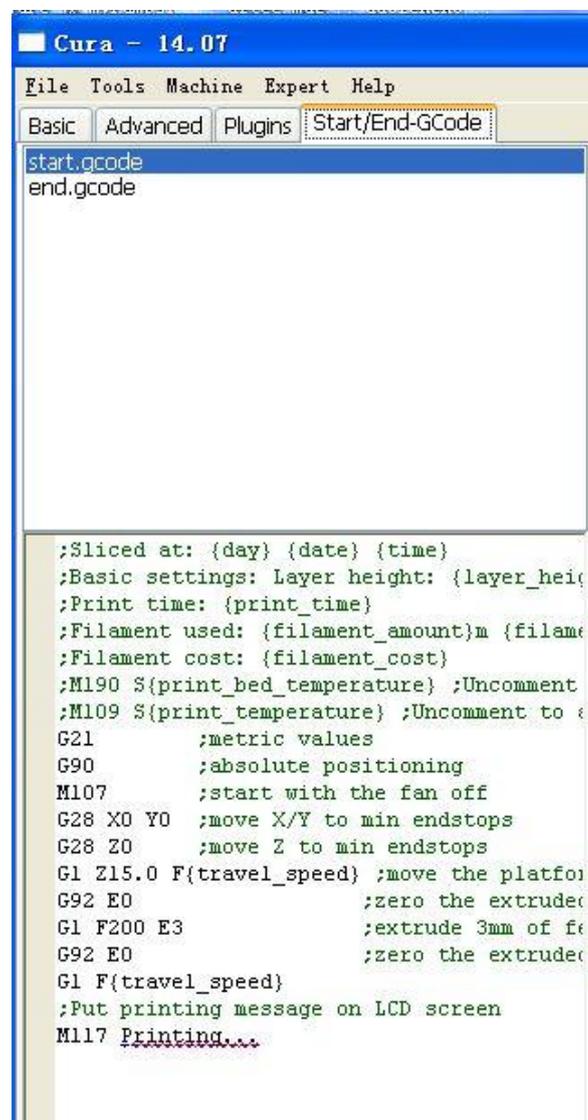
We recommend user to follow the parameters strictly. Users will be able to initiate new attempts after taking better understanding of this machine. To print large sized models, you can set the speed a bit faster and vice versa.

Warning: We urge users to keep the parameters unchaged, or possible printer damage and fault would occur!

V. Cura STL Model Setting

1. Open "CURA". Load an STL file.
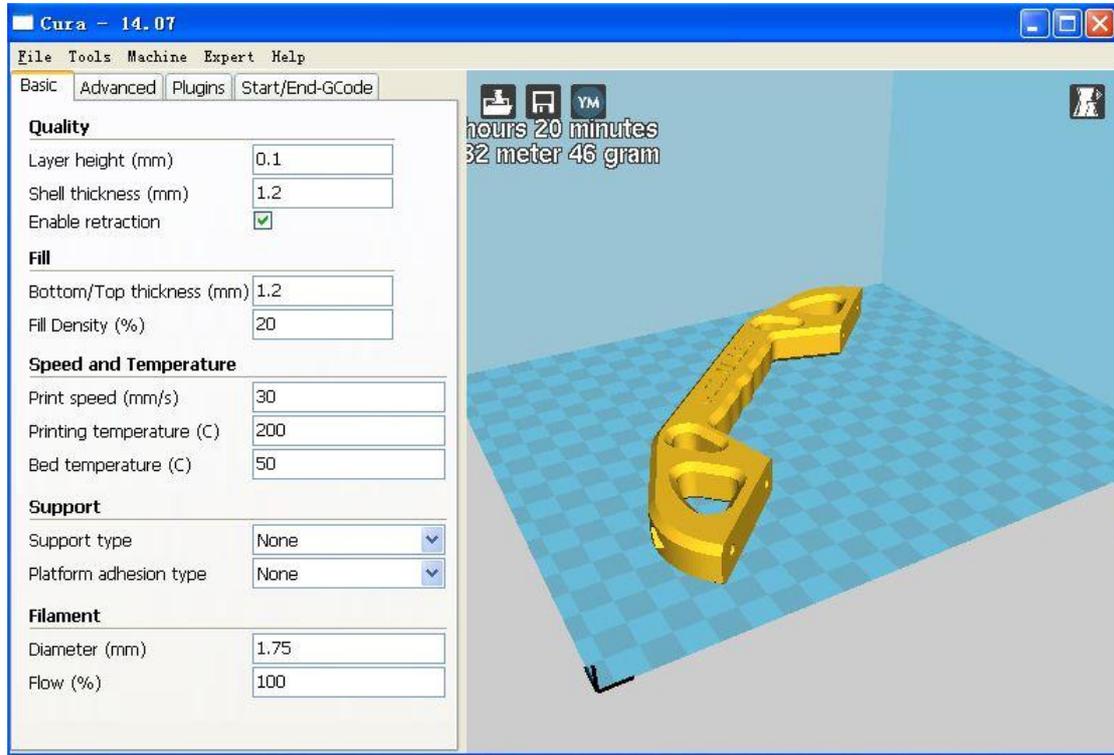
2. Click the model in the platform, then three icons will display at the bottom.
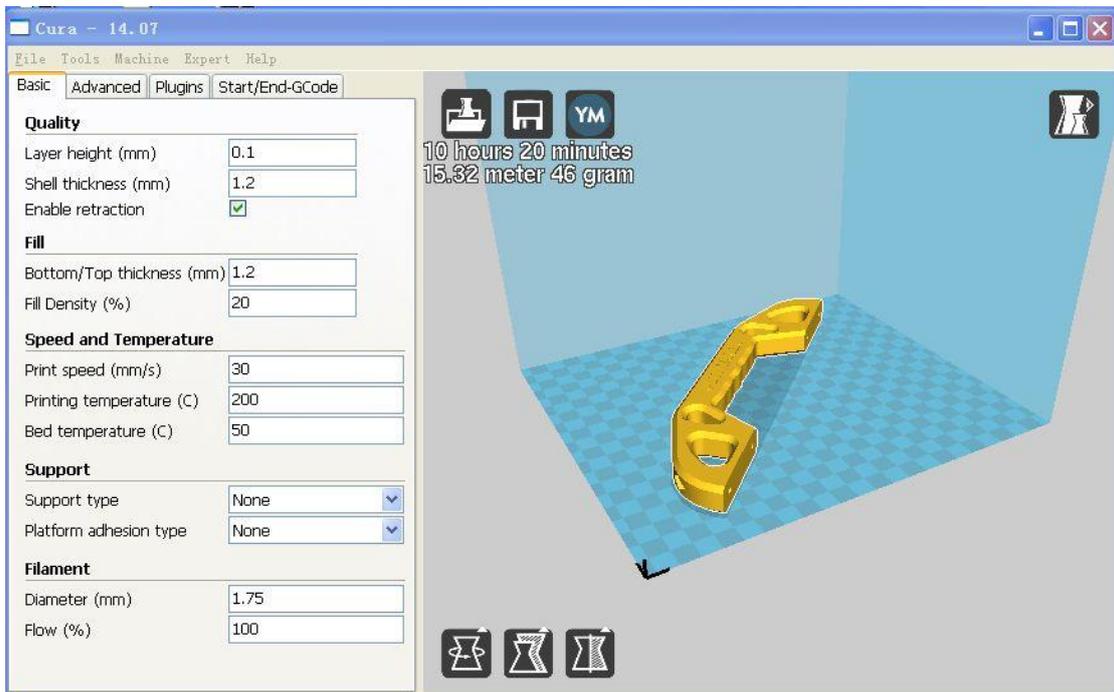
3. Click "Rotate" to find three dimensional circles. The green one stands for X axis rotating, the yellow one for Y axis rotating, and the red one Z axis rotating. Put the model into an appropriate position.
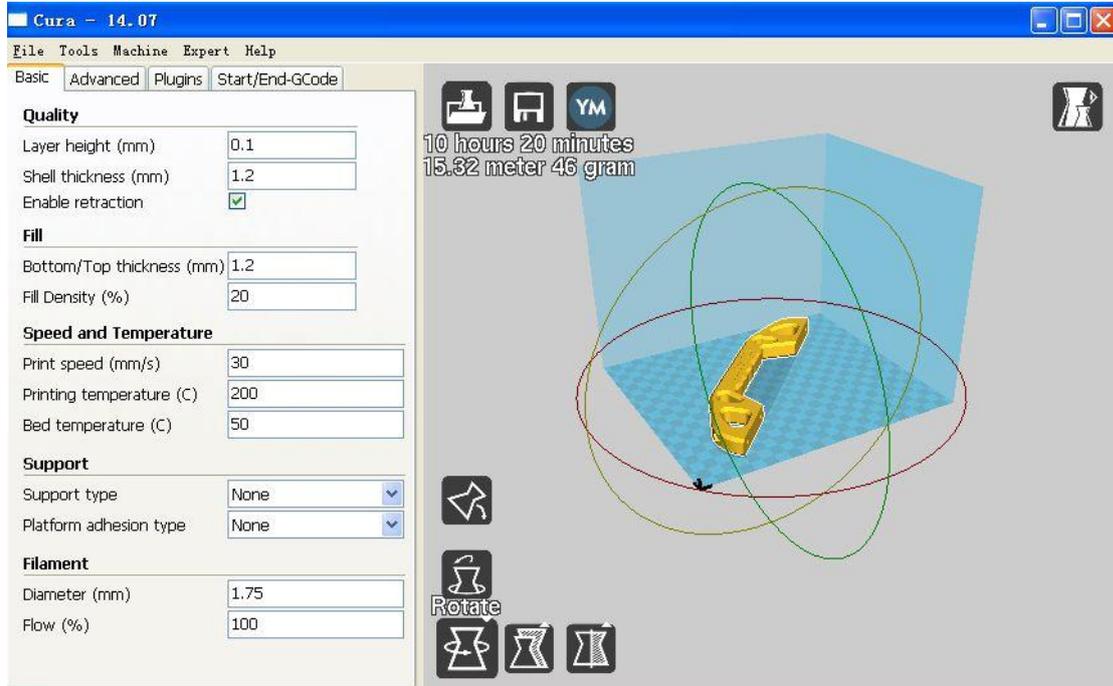
4. Click "Scale" to show the size of model. Please adjust it at your demands. Make sure the model size is within the scope of the platform, or unsuccessful printing may occur.
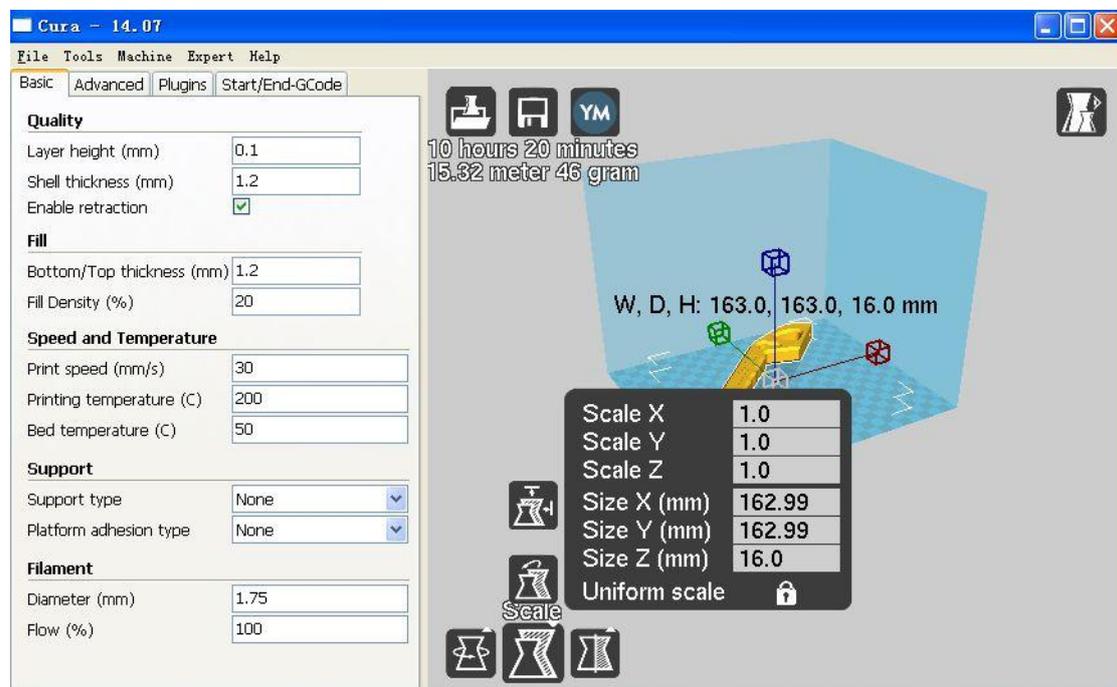
5. Click "Mirror", the mirror image of the model will be displayed.
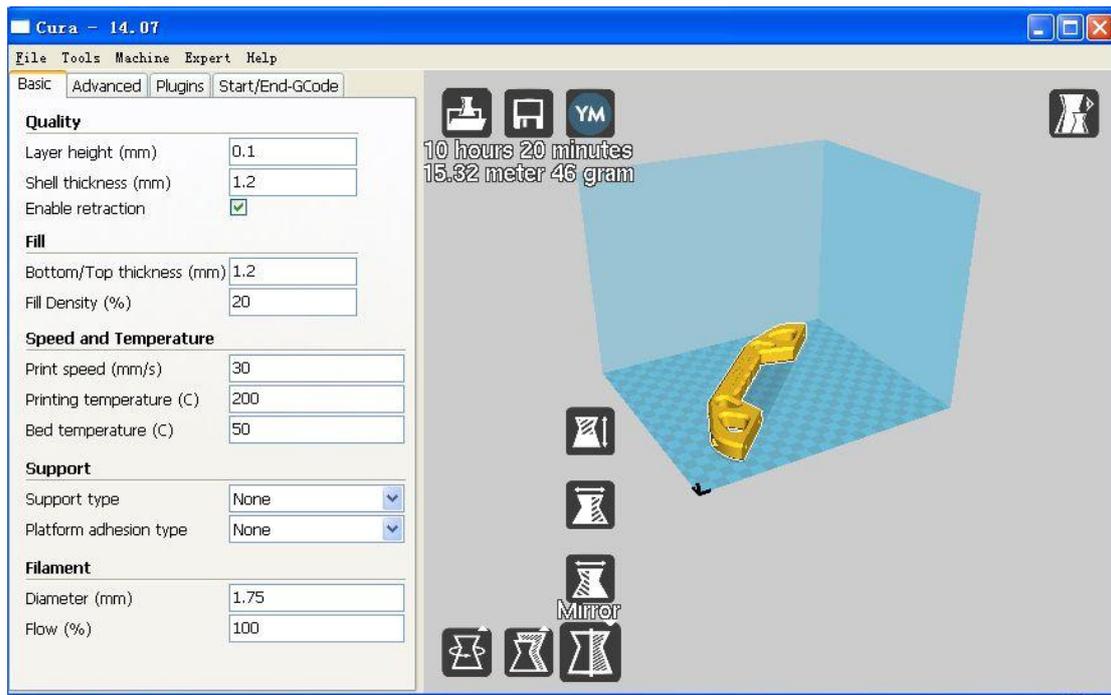
The "Mirror" show

Normal View
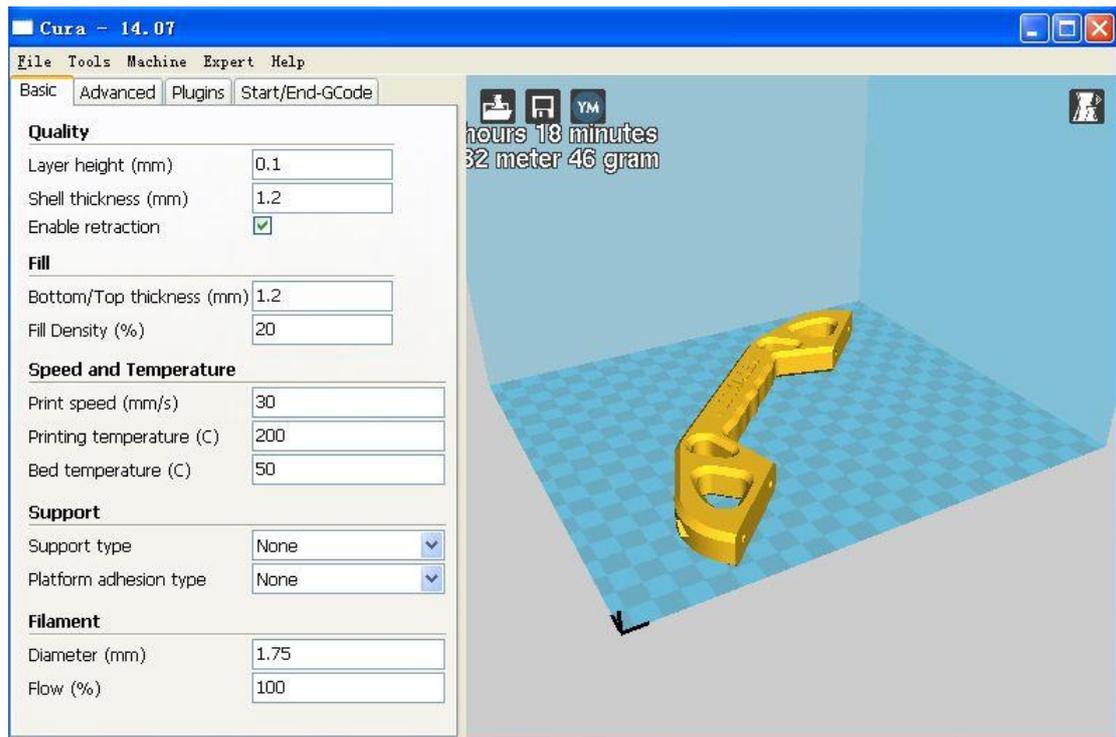
Overhang View
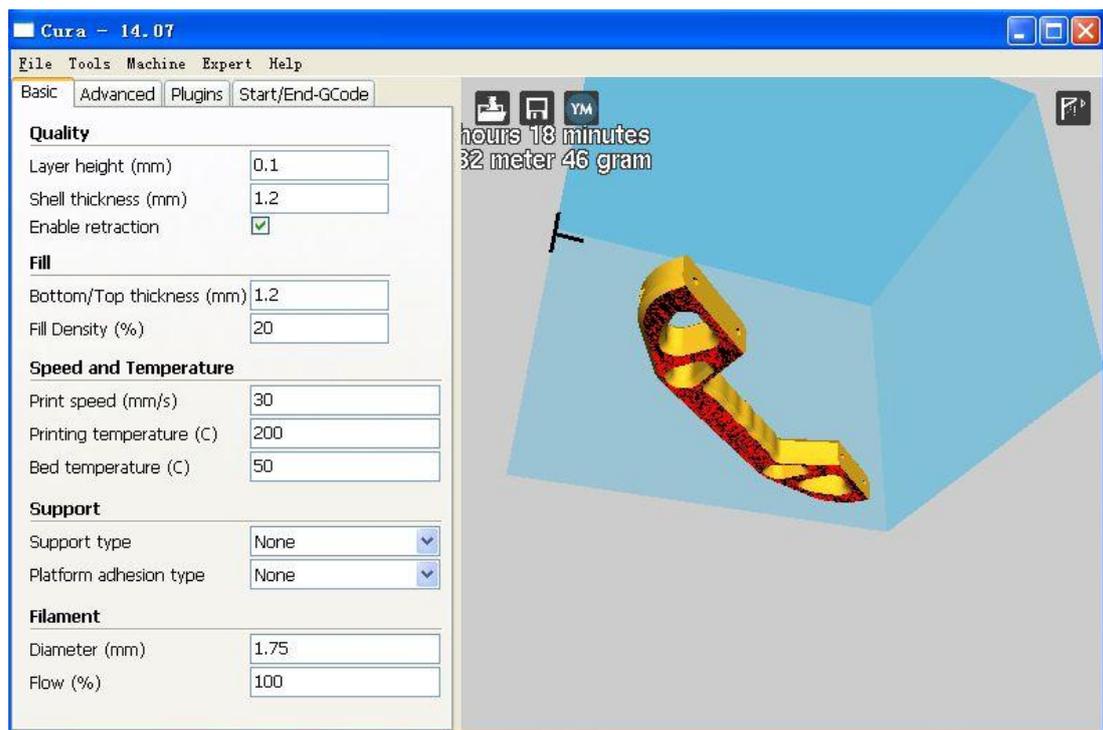
Transparent View

X ray View

Layers View

IV. **CURA Online Printing**

1.Open Cura. Load the STL file and set the specific parameter (more information could be found at "STL model setting")
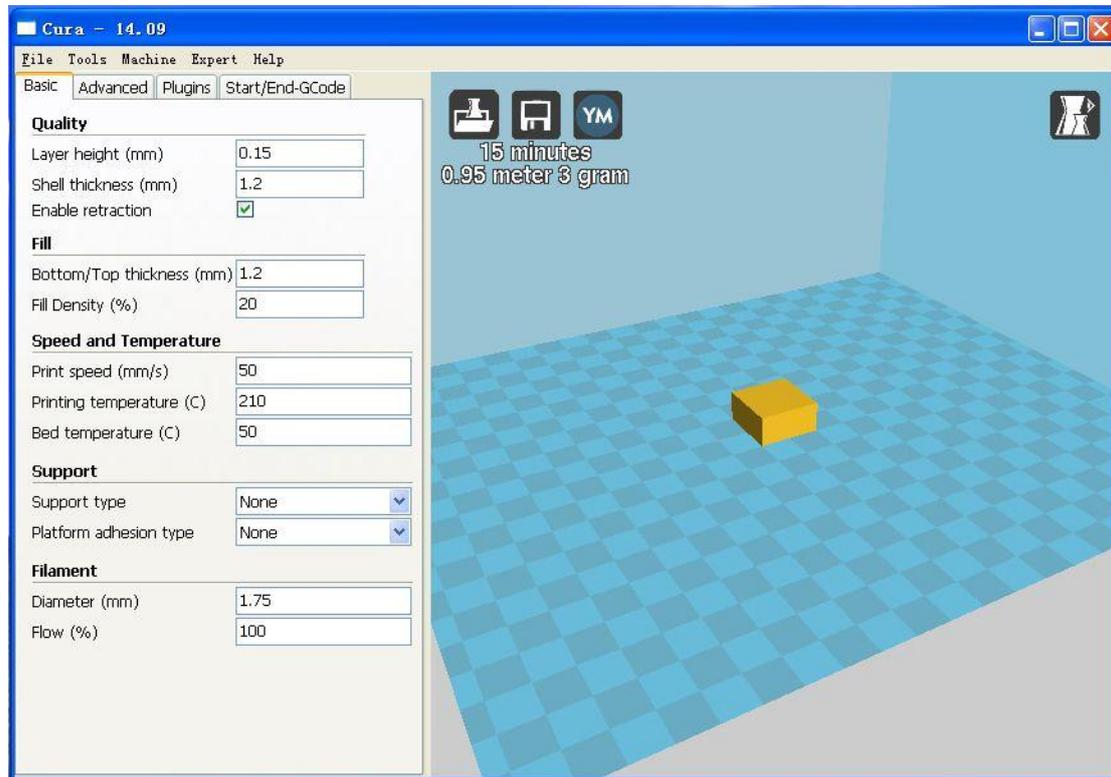
2. Go to "machine setting"
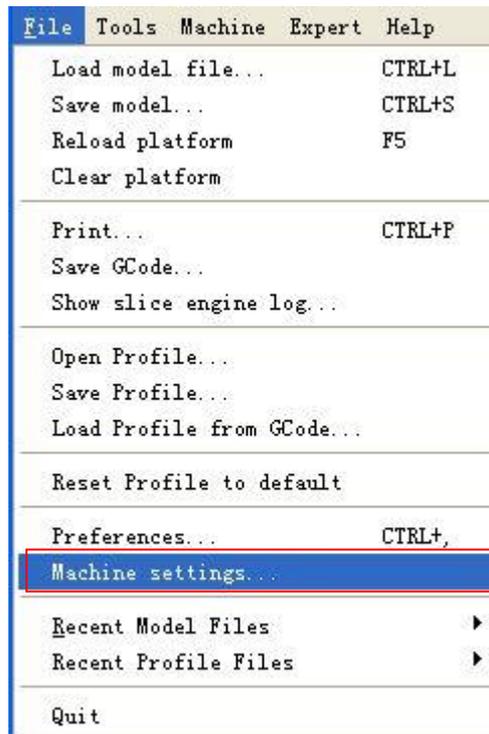
3.Renew and change the serial port and baudrate.
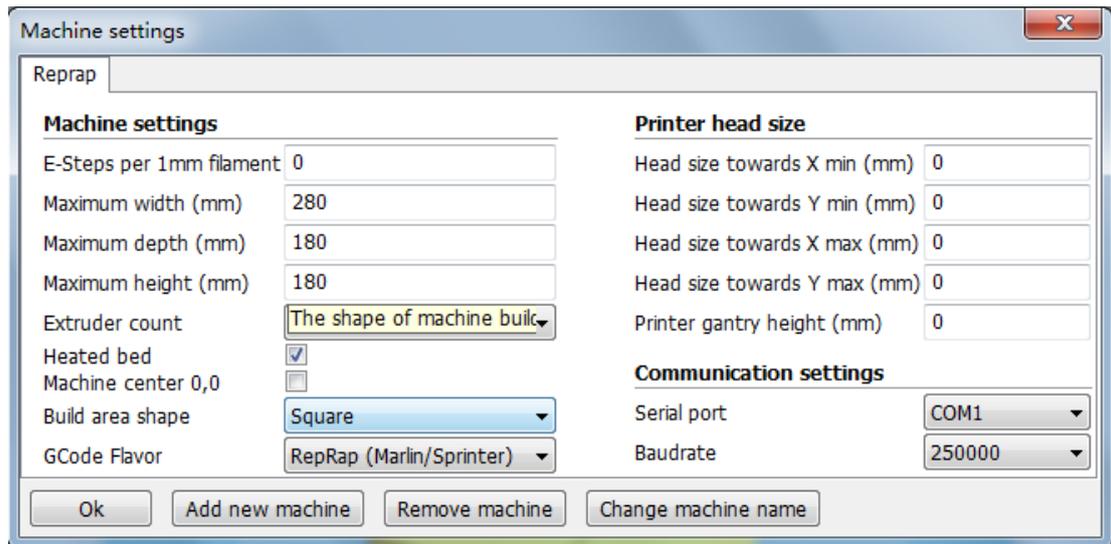
4. Click "OK". With the display of the sign " ", it means the printer is well connected.

5.Click " ".

6. Click "Print".

7. When the temperature reaches the set figure, the printer will start to work.

VI. Trail Run

1. Open "Cura".
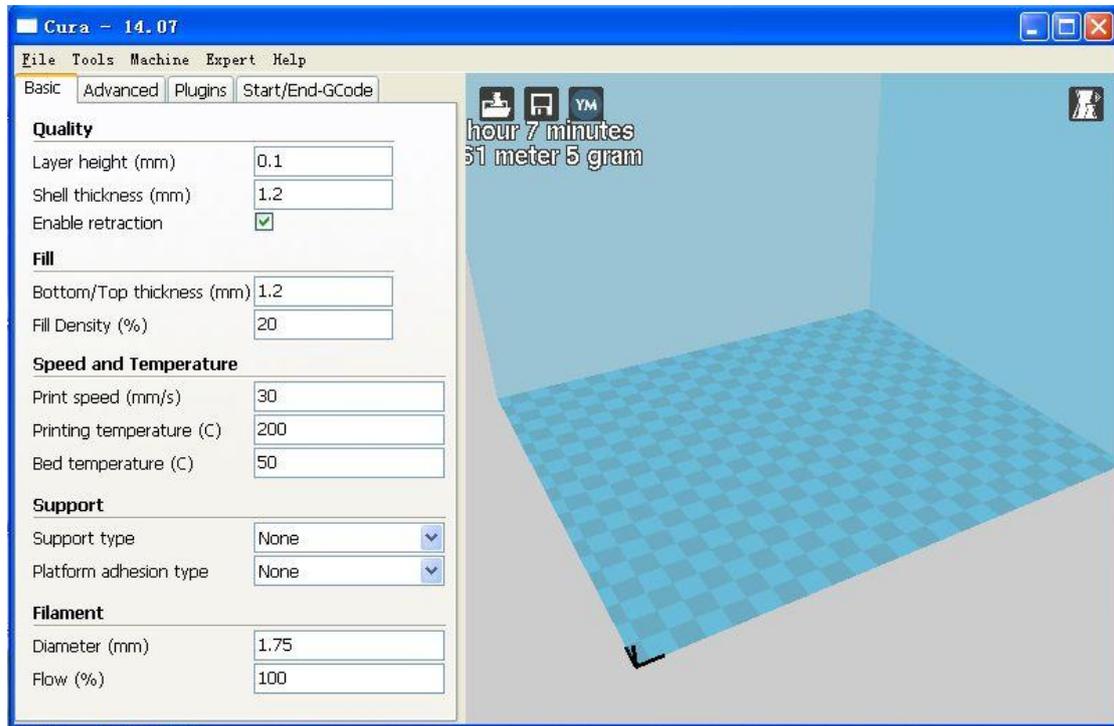
2. Load the stl file
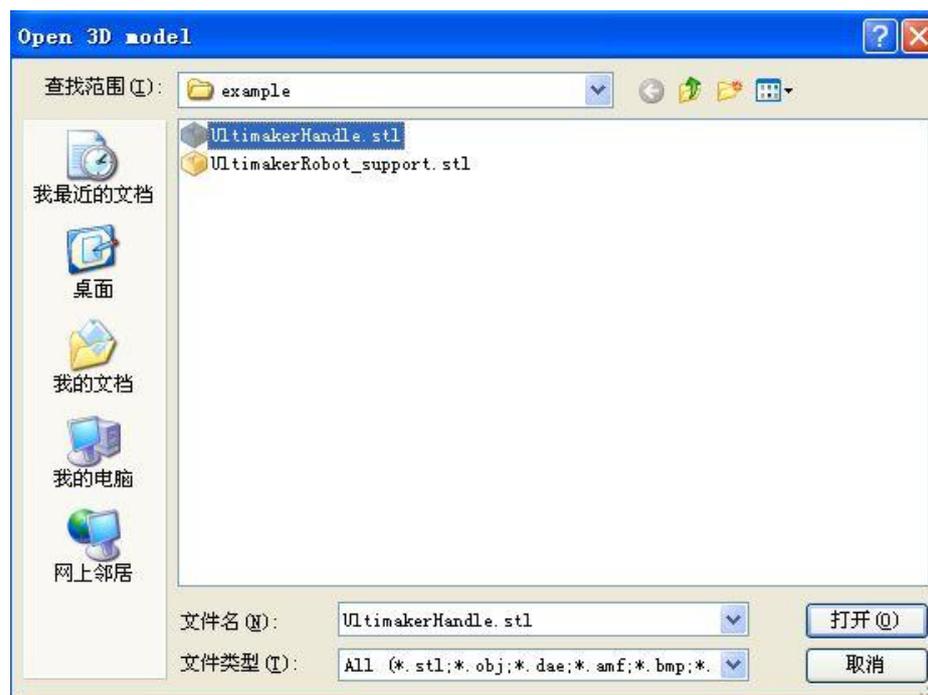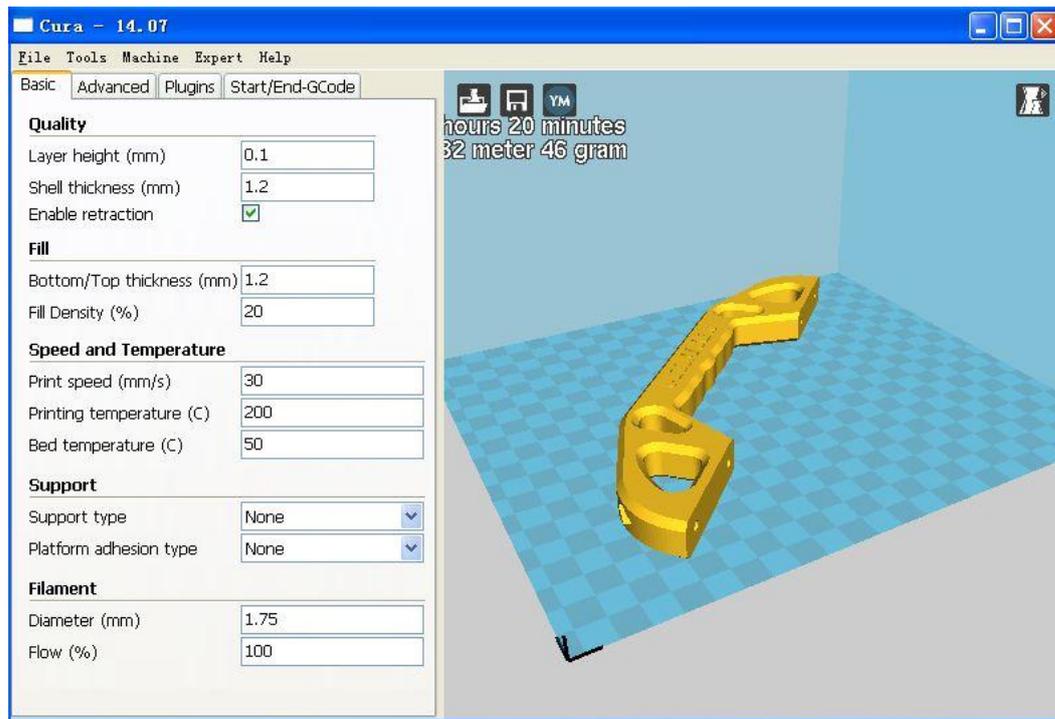
3. After loaded，Cura will generate the effect picture automatically, then save as gcode.

Click to save,

or choose "File"- "Save GCode".
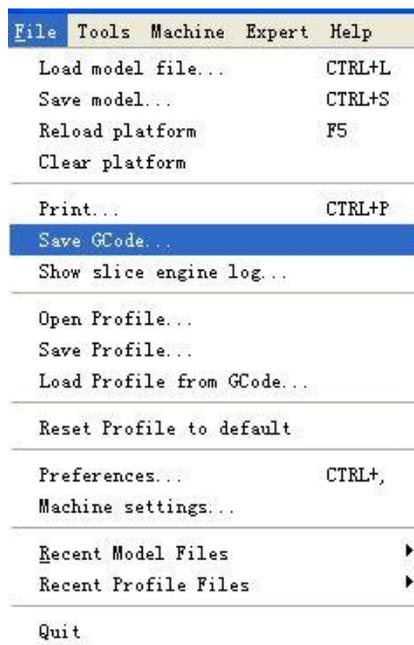
4. Copy the gcode file to your SD card, then insert the SD card, choose the Gcode file you want to print, press to start printing.

VII. Display Menu

Detailed main menu chart.
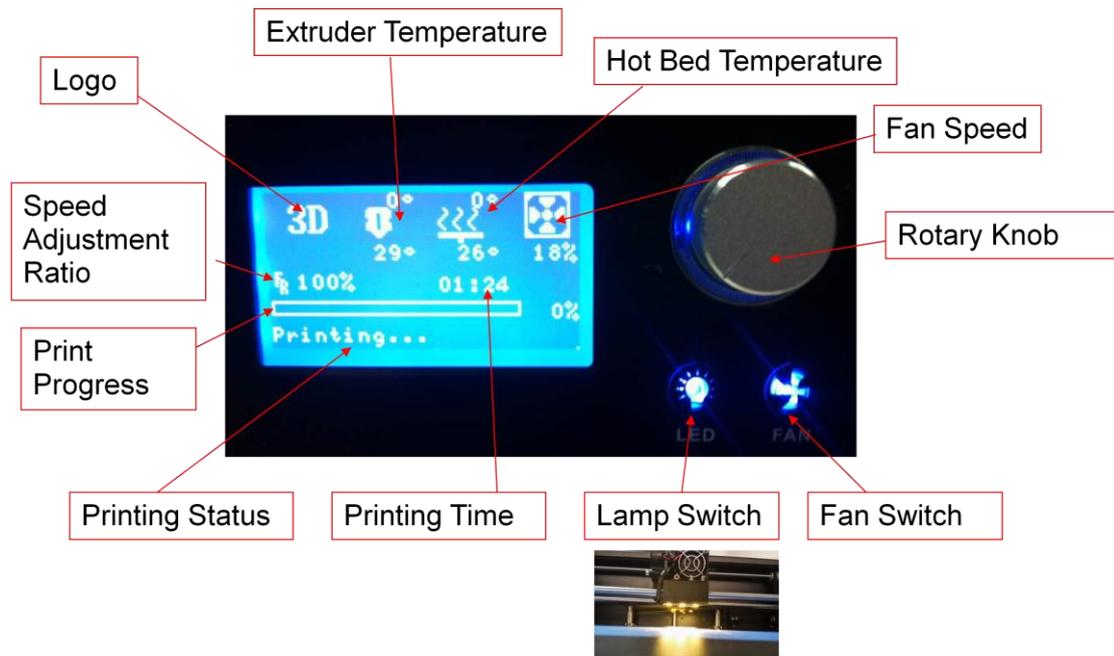
General information screen displays the status of the printer, including temperature, print status and progress in percent.

Press the knob to confirm and jump to the main menu

The main menu gives three options

- Prepare

  including home, preheat PLA, ABS, switch off the motor, shaft and the extruder movement, cooling, and power-off.

- Control

  General adjust the temperature, fan, motor acceleration.

- Print from SD

  means to print a gcode file from an SD card.
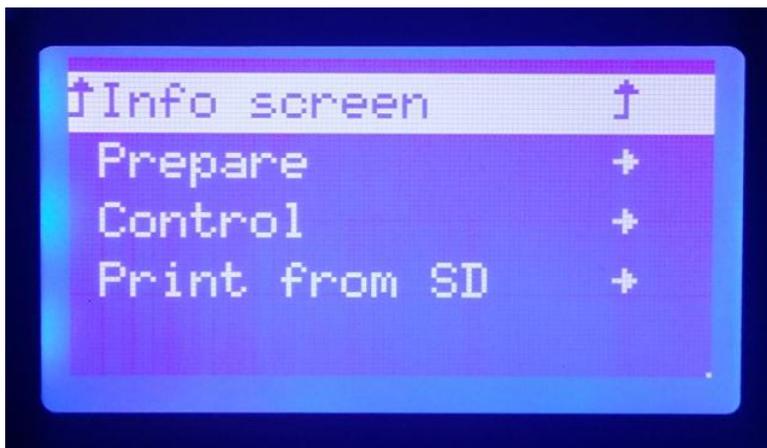
Enter Ready Menu

- Disable steppers

    To shut down the motor stepper motor

- Auto home

    To reset the printer and the motor will be reset.

- Preheat PLA/ ABS

    Preheat the hot bed and extruder to a specified temperature
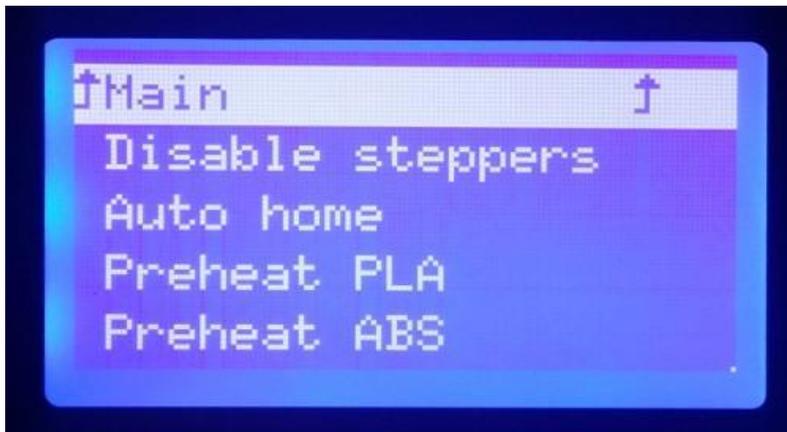
- Cool

    To turn off the heating bed and the extruder.

- Switch power off

    To turn off the motor, heating bead and the extruder.

- Move axis

    To control the rotation of the stepping motor, including the rotation of motor for X axis, Y axis, Z axis and the extruder.

```
Preheat PLA
Preheat ABS
Cooldown
Switch power off
Move axis              +
```
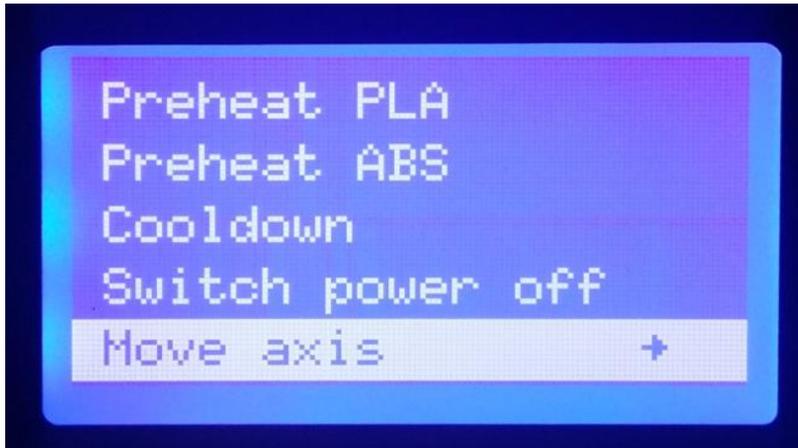
- Moving axis (move X, move Y, move Z) or extrusion motor (extruder)

```
Move axis              ↕
Move X                 +
Move Y                 +
Move Z                 +
Extruder               +
```
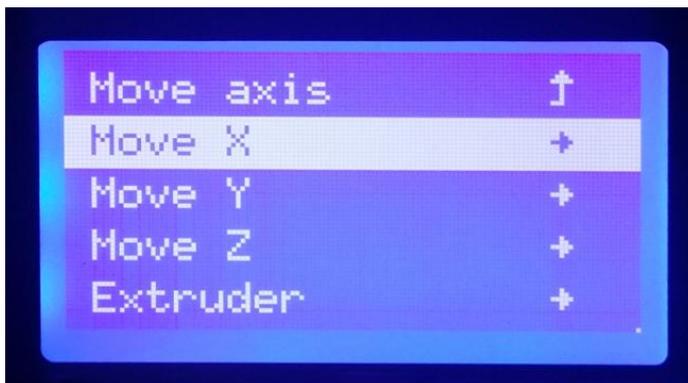
- Move the X,Y,Z axis.
  To set the distance of one single rotation. 3 options include 10mm, 1mm, 0.1mm.

```
Prepare                ↕
Move 10mm              +
Move 1mm               +
Move 0.1mm             +
```
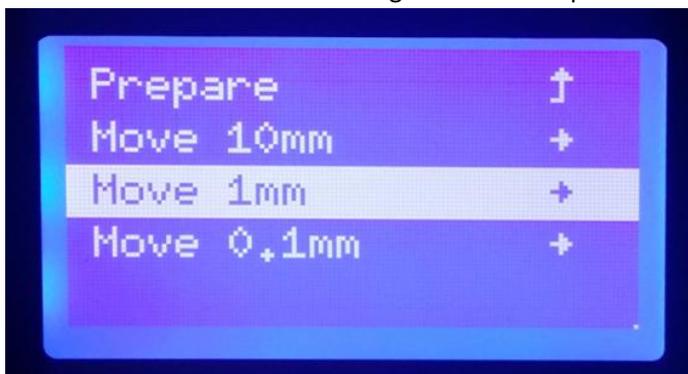
- Motor rotation control interface, unit (mm)

- Control

  Includes sub-menu of Temperature and Motion
- Restore Default Setting

- Temperature

  To control the temperature of the extruder, hot beds, fans, etc. Please keep default.
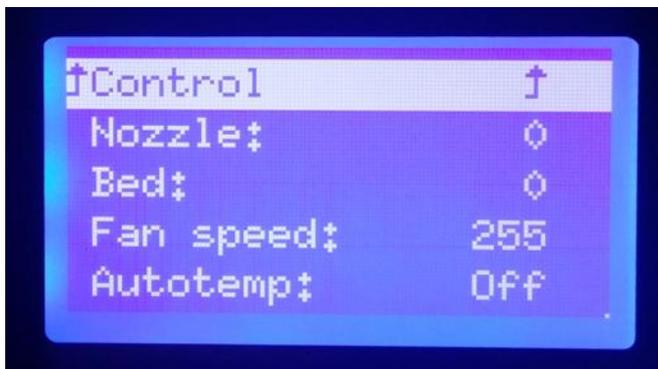
- Motion

  To control values of the stepper motor acceleration and etc. Please keep default.
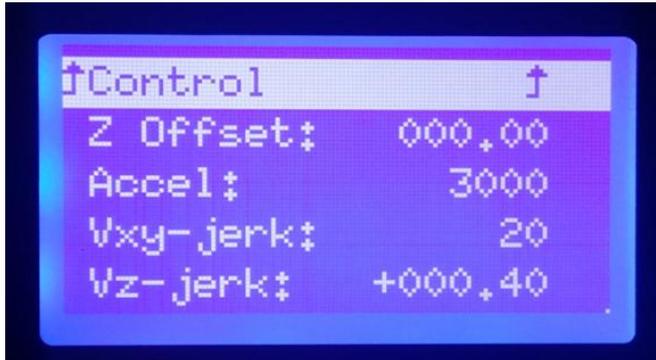
- In the main menu, select <Print from SD>
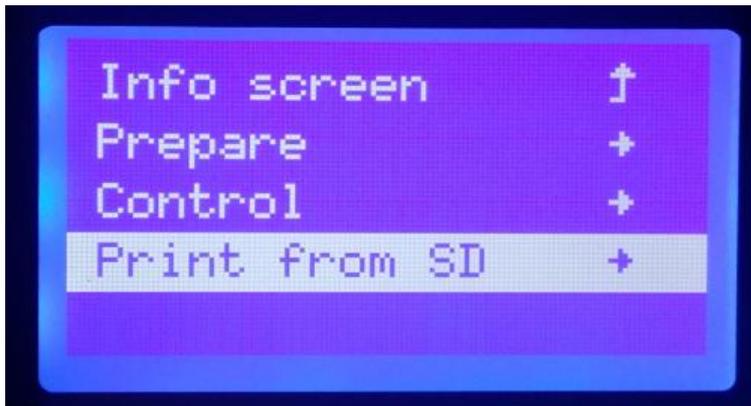
Read out gcode file (English display default), Turn the switch, select the model file you want to print. After confirm, the printer starts to heat up.
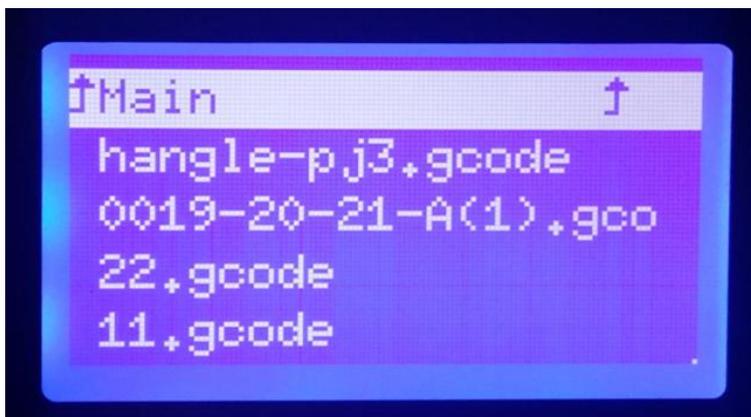
VIII. Machine Setting

1. Put the filament on the holder of the machine. Insert the filament into the pipe.
Turn the filament holder clockwise to lead the filament extrude the pipe.
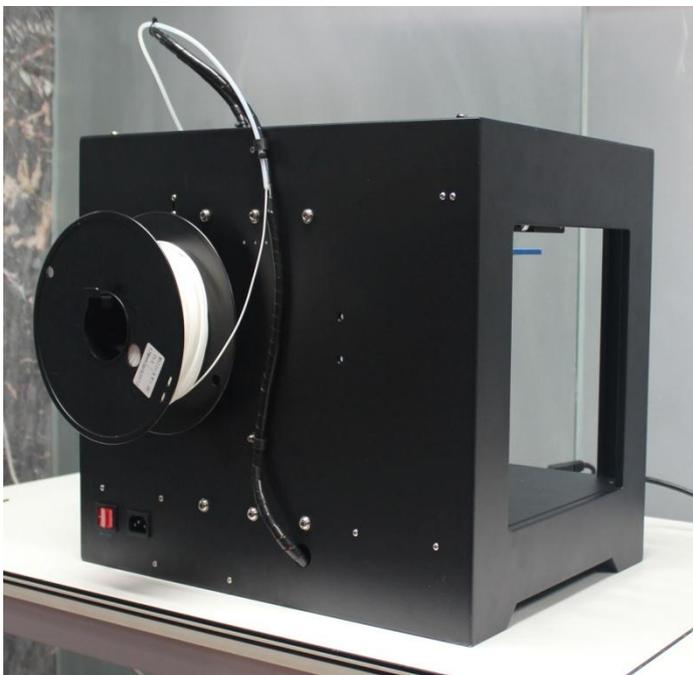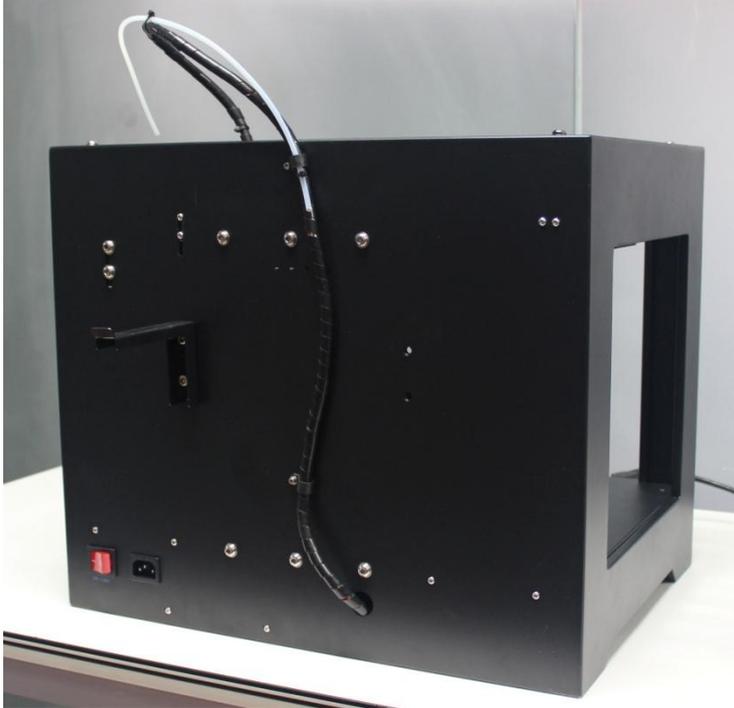
2. Hot Bed Adjustment

Try to adjust the hot bed before your first printing. Rise up the hot bed in the dashboard till it hit the limit switch on the platform. Adjust the distance between the extruder and hot bed in the four directions via relative screws on the four directions corner. Take a piece of carbon copy paper to test the distance between the extruder and the hot bed. Adjust correspondingly if necessary.
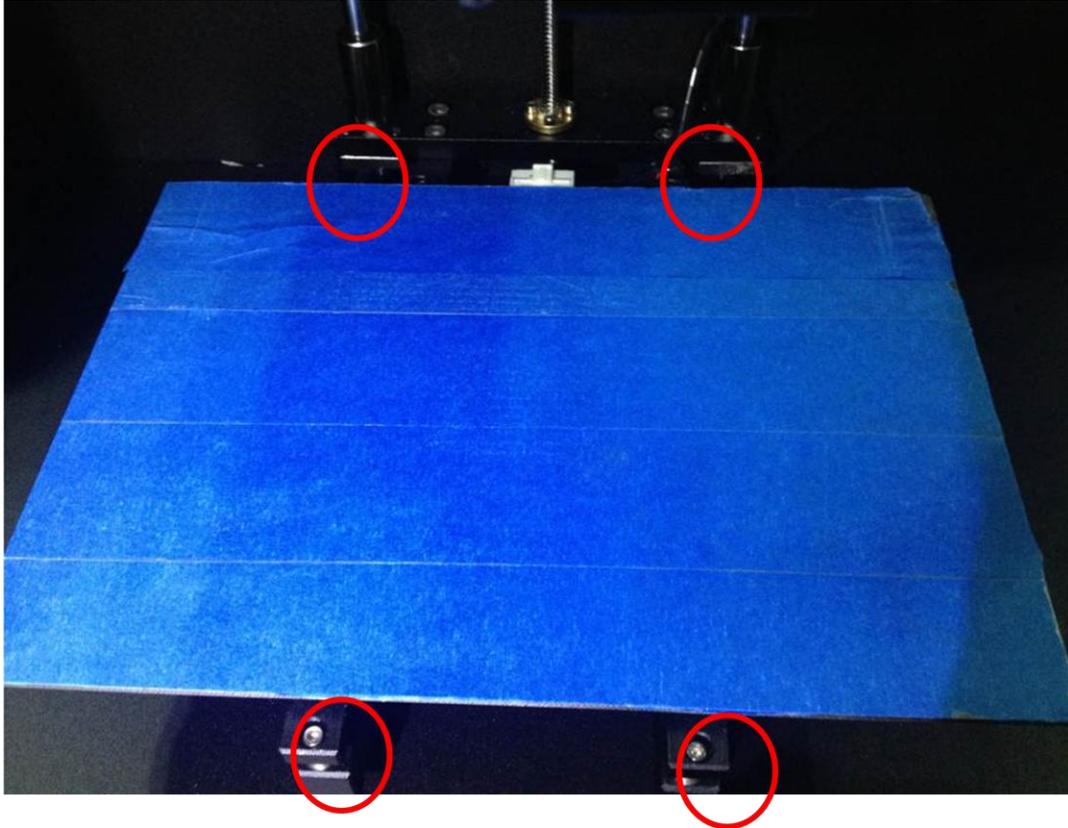
IV. Common Problems and Solutions

Phenomenon	Reason	Solution
Extruder Slips	filament is too thin	cut away a little
Nozzle jammed	Heating tube jammed	dismantle the heating components, heat it to 220 degrees centigrade, retrieve the filament material using tweezers
Abnormal temperature	thermocouple damaged	To replacement the thermocouple
Printing misaligned	screws loosed	tighten screws
The edge of the printing sample unwrapped	Hot bed base is too high	adjust height
G code transfer failed	Missing machine type and extruder number, or save path incorrect	choose machine type, extruders number. And modify the storage path
Filament sticks on the nozzle	Extruder drags on the printed item	Reset values
Extruding filament failure	Problems with the model	fix model first, translate code and reset the values
Install driver or software failed	System configuration error	Reinstall operation system
Printing sample does not adhere to the platform	the distance between nozzle and platform is too long	Shorten the distance of the two.

X. Maintenance

Generally, this 3D printer does not need special maintenance. It has a long service life. Any way, mechanical parts that undergo frequent use will have fair wear and tear.

1.Maintain XYZ bar: If there abnormal noise and unusual trembling found during printing, you need to clear the slide bar. The diameter of the slide bar is 8mm, make sure it slides smoothly without any trembling. Lubricating oil can help clear the slide bar to reduce friction and minimize the wear between annular tubes and the slide bar.

2. When dissolved under high temperatures, the plastic filament will not easily become plasticized again after cool. If there is any blockage in the tube, you can unchoke the tube with tools such as iron wires. However, we recommend your to clear all any surplus material after finishing printing every time.

3. If the belt becomes slack, apparently it is too loose.

In general, the belt needs to minimize the looseness, but not too tight which will produce pulley pressure to the motor shaft. After putting the belt, turn the pulley to check if there is too much resistance. If the belt makes relatively loud sound, it indicates the belt is tight. In order to test whether the belt is too loose or not, rotary the motor pulley manually forward and backward. If the table moves back and forth symmetrically, it means the belt pressure is OK. If the backward moving delays, it says the belt is too loose. Another appropriate method is to download and print a cylindrical test data, if one side is flat, it shows this side of the corresponding shaft belt is too loose.

XI. Warning:

- The printer should be kept beyond the reach of children.
- High temperature in nozzle. Do NOT touch!
- BestSub urges you to use this machine in accordance with relevant laws and regulation of your country and region. Users shall take full responsibility of the results of all printing items independently produced thereby.
- Please be aware that melting of PLA or ABS filament of the machine will produce some special smell which could possibly be sensitive to some group of people. Keep the printing environment well ventilated. Once feel uncomfortable while using the machine, stop the printing and go to the doctors immediately.
- The machine is designed to compact open sources. Design, modeling and printing tools in internet are applicable with the this machine.
- The machine shall be fed with recommended the filament of PLA and ABS material. Users are not supposed to use other materials randomly. BestSub shall not be liable for any loss causing by using other materials.
- BestSub will update instructions and warnings at its own disposal. We reserve the rights and will not inform any user.