Debug and Print

catalogue

1 Software Introduction

Need software as follows:

A:**arduino**,it's the firmware working environment.

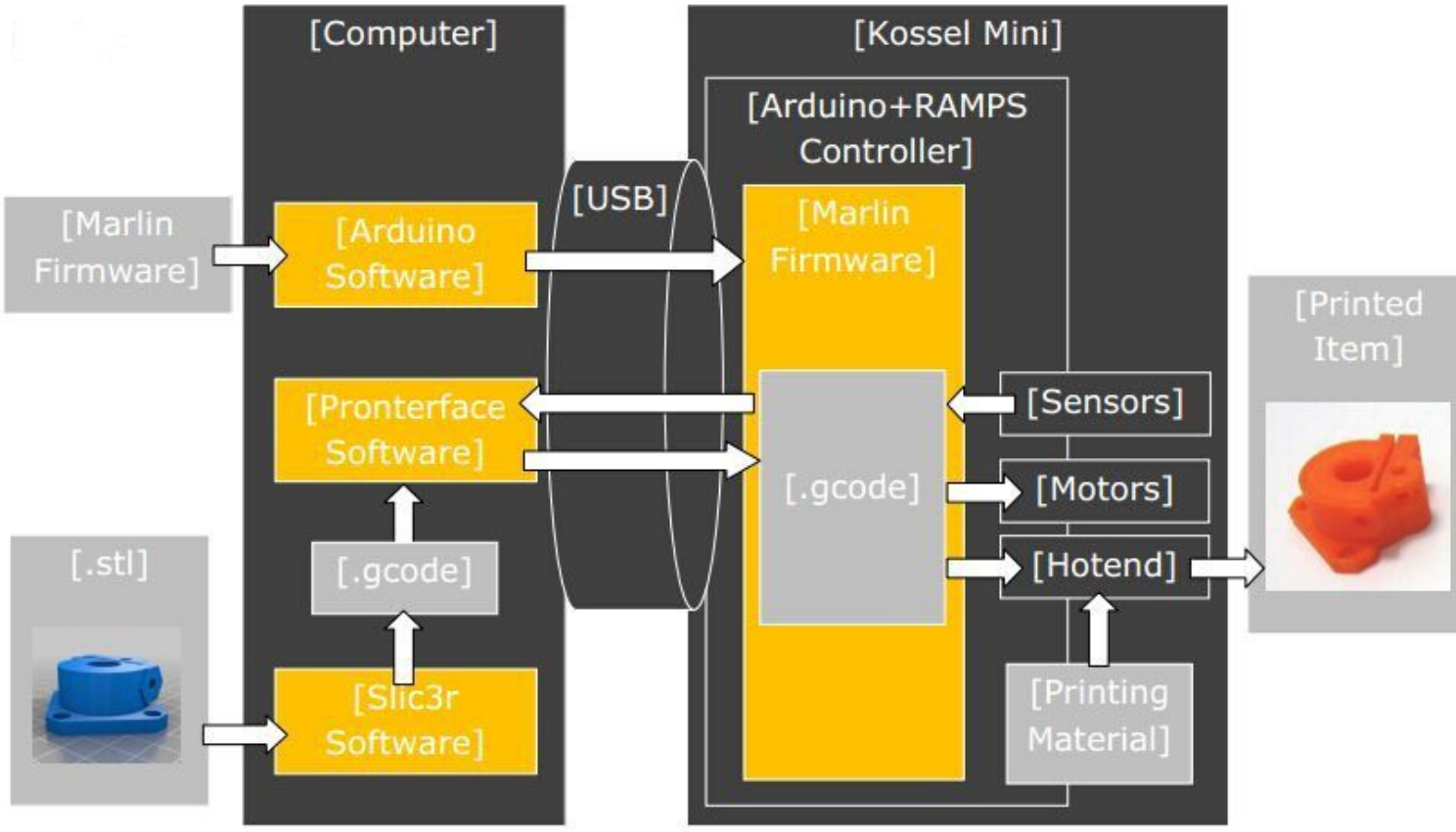
B:**Marlin**,it's the firmware,need flash firmware to motherboard.

C:**pronterface**,it's the PC software to control the printer.unzip the file "Printrun-Win-Slic3r-03Feb2015",will find it and run it.

D:**RepetierHost**,it's also PC software,similar to pronterface,could slice the model simple operate, when printing,it's good to use.

2 Flashing firmware to motherboard

the printer working principle as the pic show



[Kossel Mini Firmware and Computer Software Operations Overview]

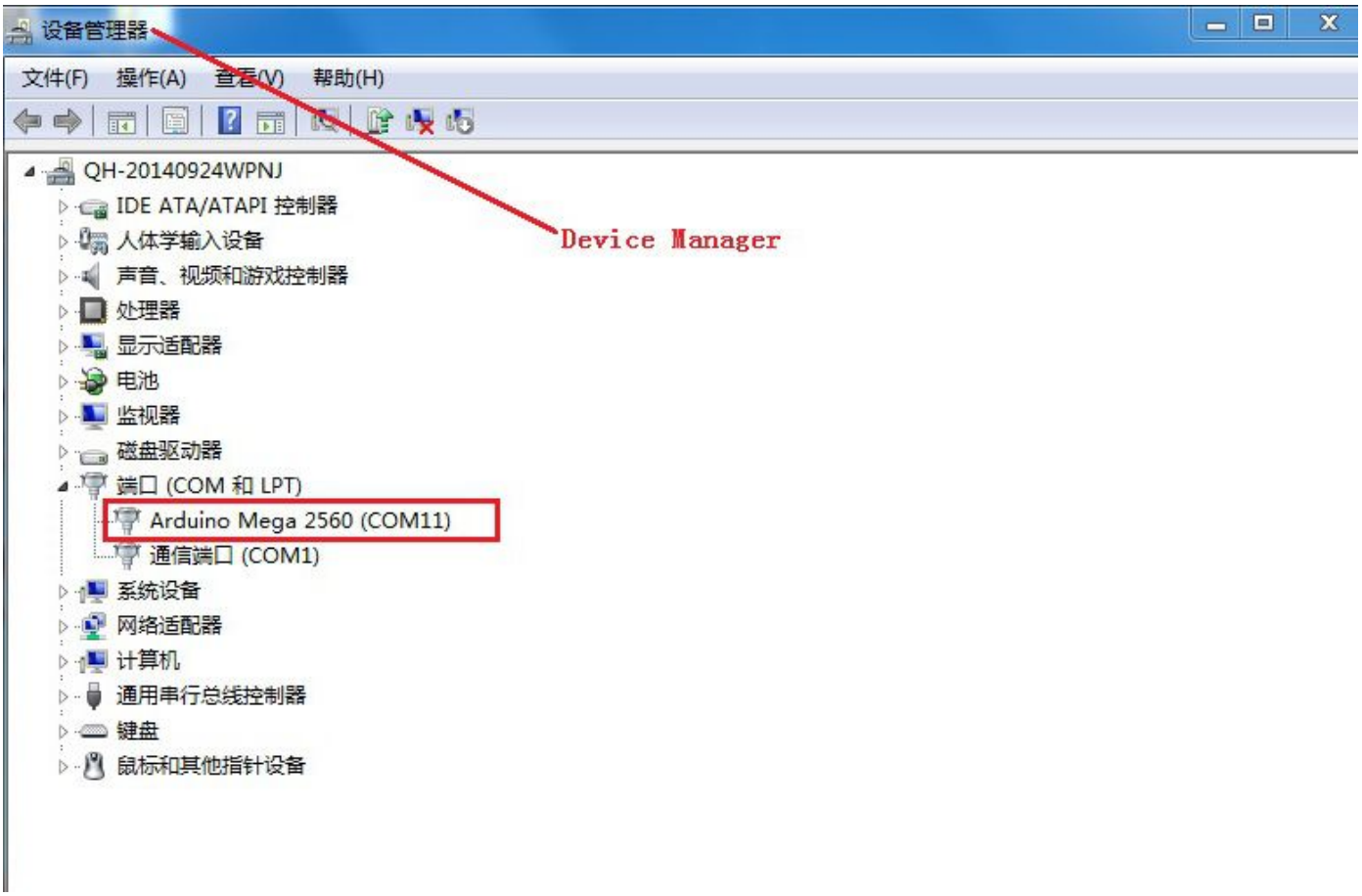
This Guide will use Software and Firmware setup as shown above to calibrate/fine-tune/operate the Kossel Mini and eventually, first test print.

(1) Install and Connect

Install Arduino Software in the computer by executing the .exe file. You could install the Arduino from the sd card,also could download the software from the link as follow:

Arduino [http://arduino.cc/en/main/software]

Once completed, connect the computer to Kossel Mini USB port.in Device Manager,Verify the COM Port Number assigned for Arduino Mega 2560 (eg. COM11) as follow shown.

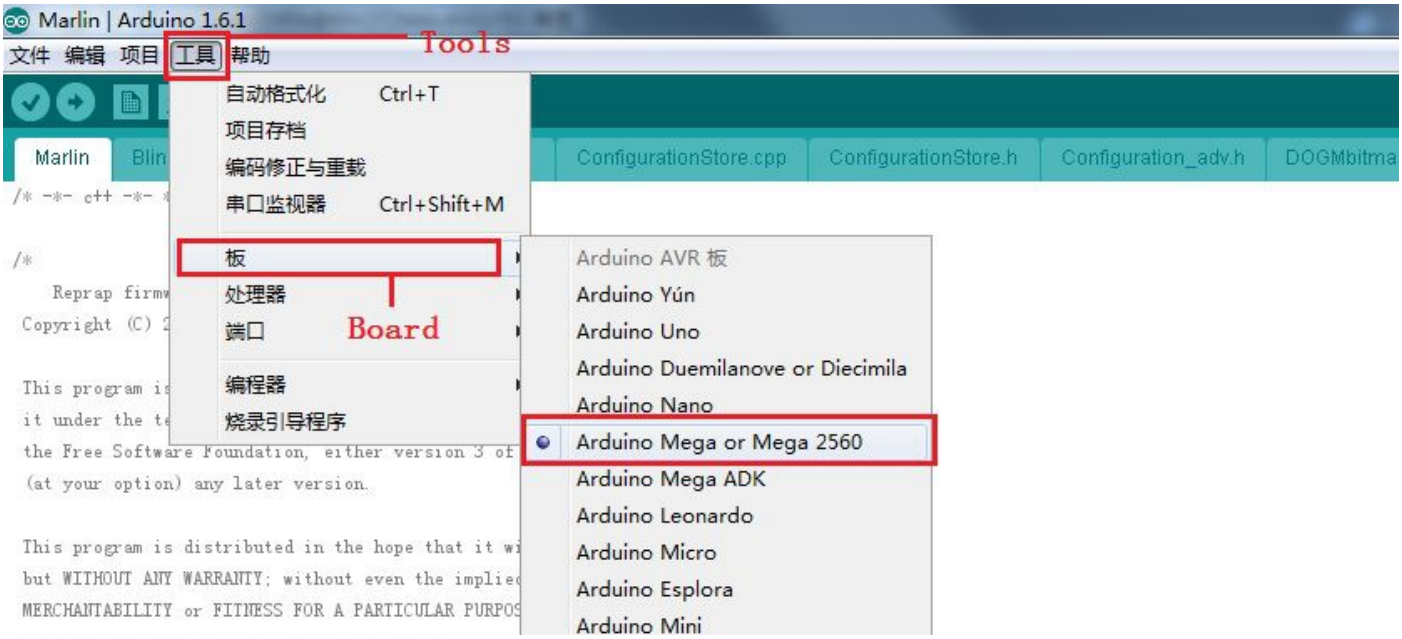


If your PC could not connect the motherboard, need a step to install the driver.

If your computer could not find the driver. pls do as fllow: unzip the ”drivers” in the software file, and if your computer is 32 bit, install the file “ dpinst-x86”, if your computer is 64 bit, install the file “ dpinst-amd64 ”, in a word ,ensure usb connection is ok,if you could find the ” Arduino Mega 2560” in Device Manager, it’s ok .

(2) Open Marlin Firmware Sketch using Arduino Software

Unzip the file”Marlin”,run file [Marlin.ino]. Go to 工具（Tools）->板（Board）, select Arduino Mega 2560 as below pic shown .



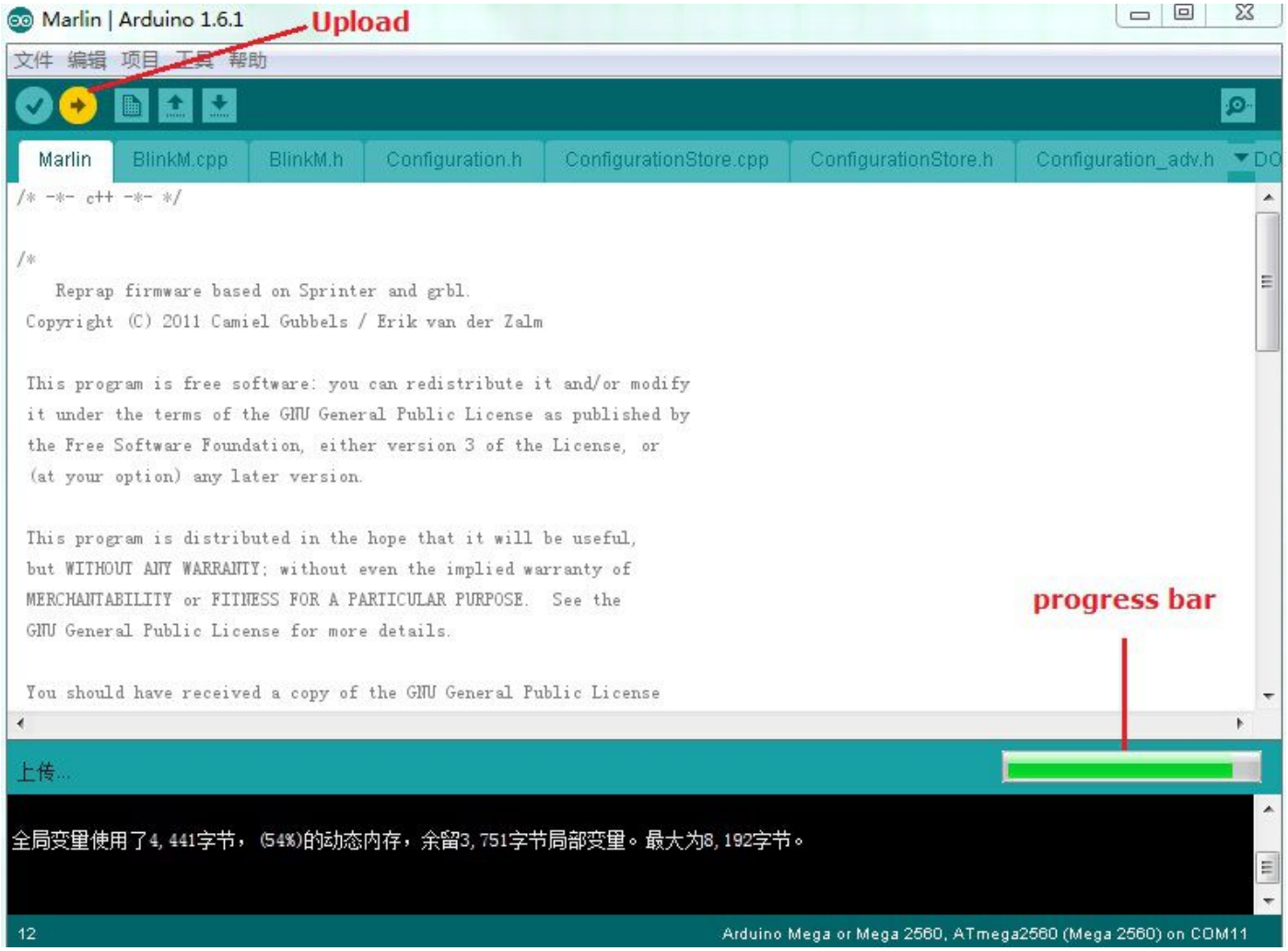
(3) Select the COM Port

Go to 工具（Tools）->端口（Serial Port）, select the COM Port(e.g 11) as per assigned in Step(1).

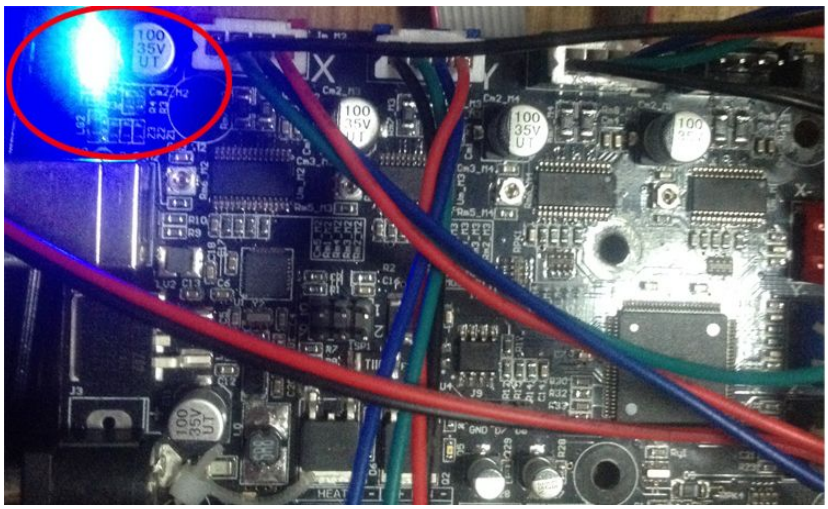
The 编程器（Programmers）-> USBtinyISP

(4) Upload Firmware to Kossel Mini

Click the 上传（Upload） button to upload the Marlin Firmware Sketch to Kossel Mini Controller Board. Once upload successful, message "Done".



During the progress of flashing firmware,the Arduino panel appear a green progress bar the blue light will continues to blink,as the pic show.

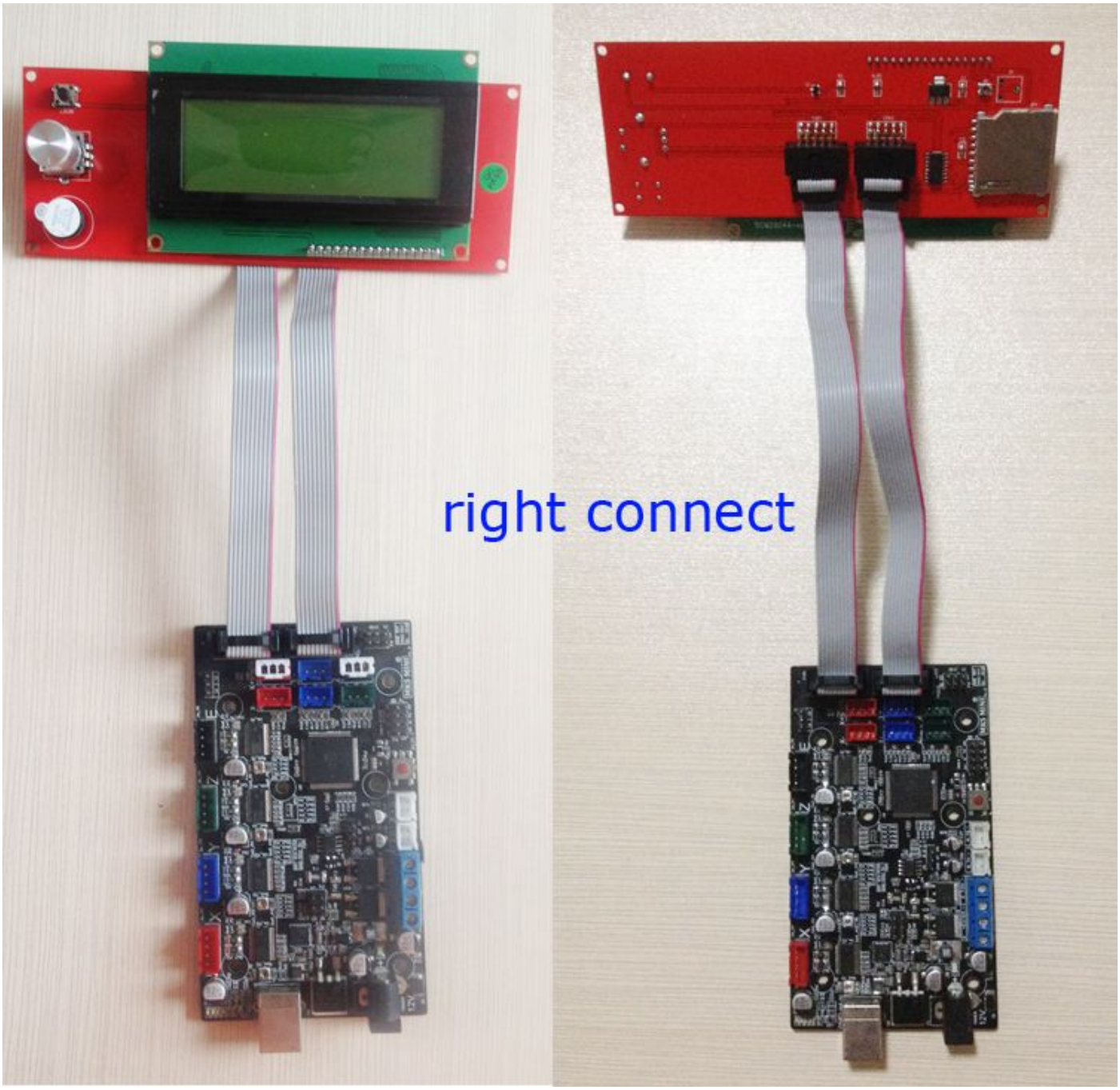


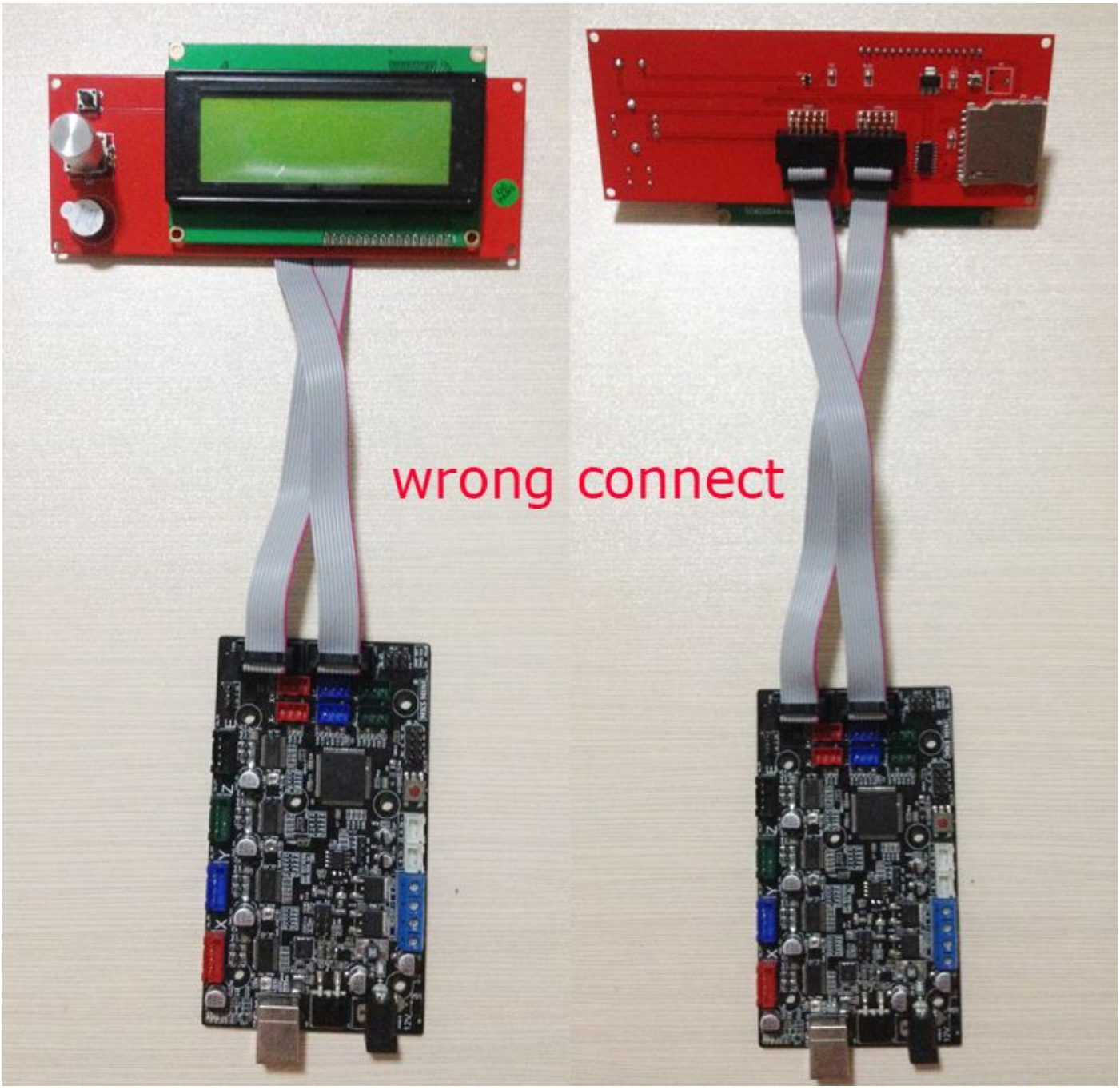
Important Note

When out of factory, we have flashed the firmware and test the motherboard,guarantee the motherboard is no problem.

Important Note

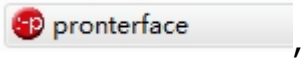
Keep right lcd line connect to motherboard, or will not flash firmware.



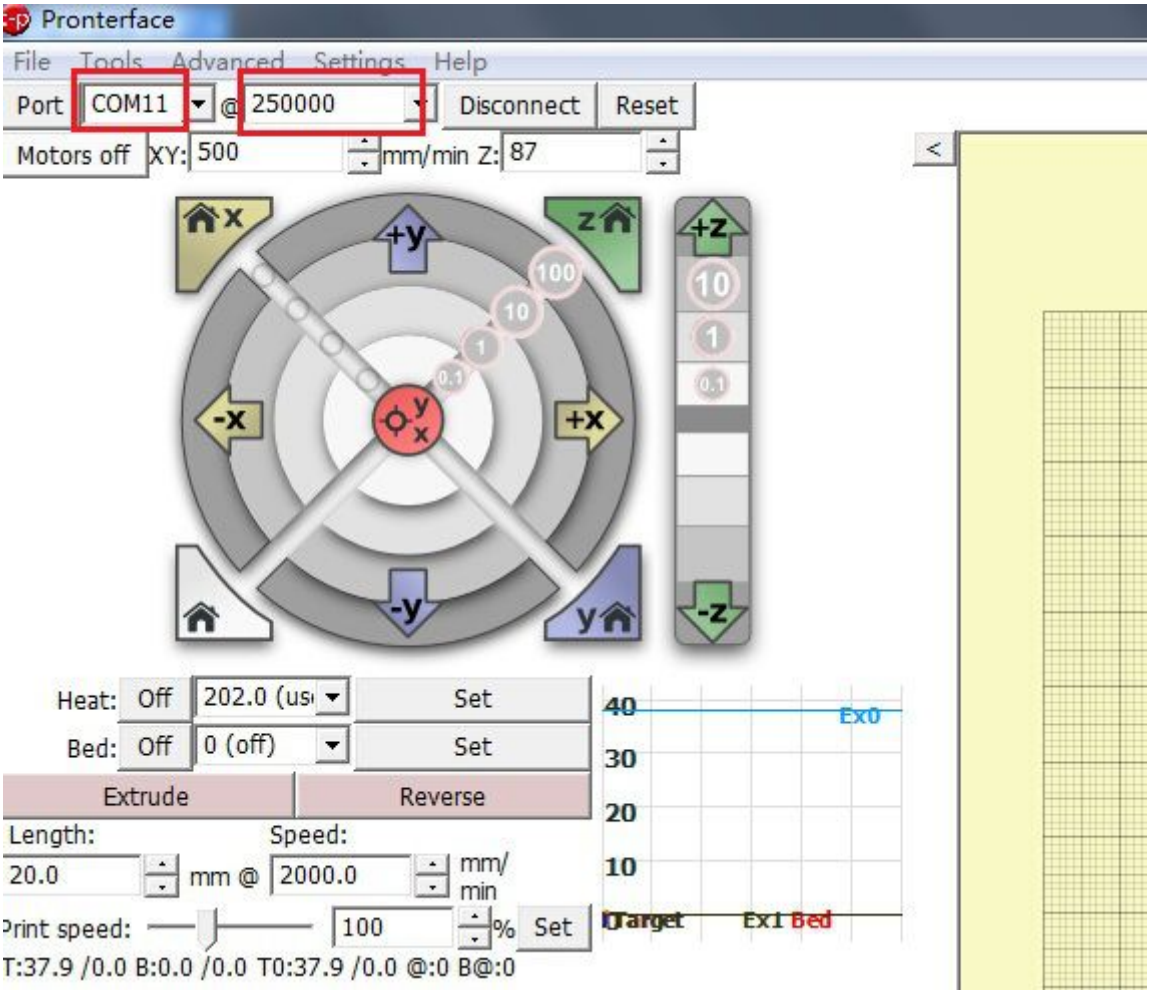

wrong connect

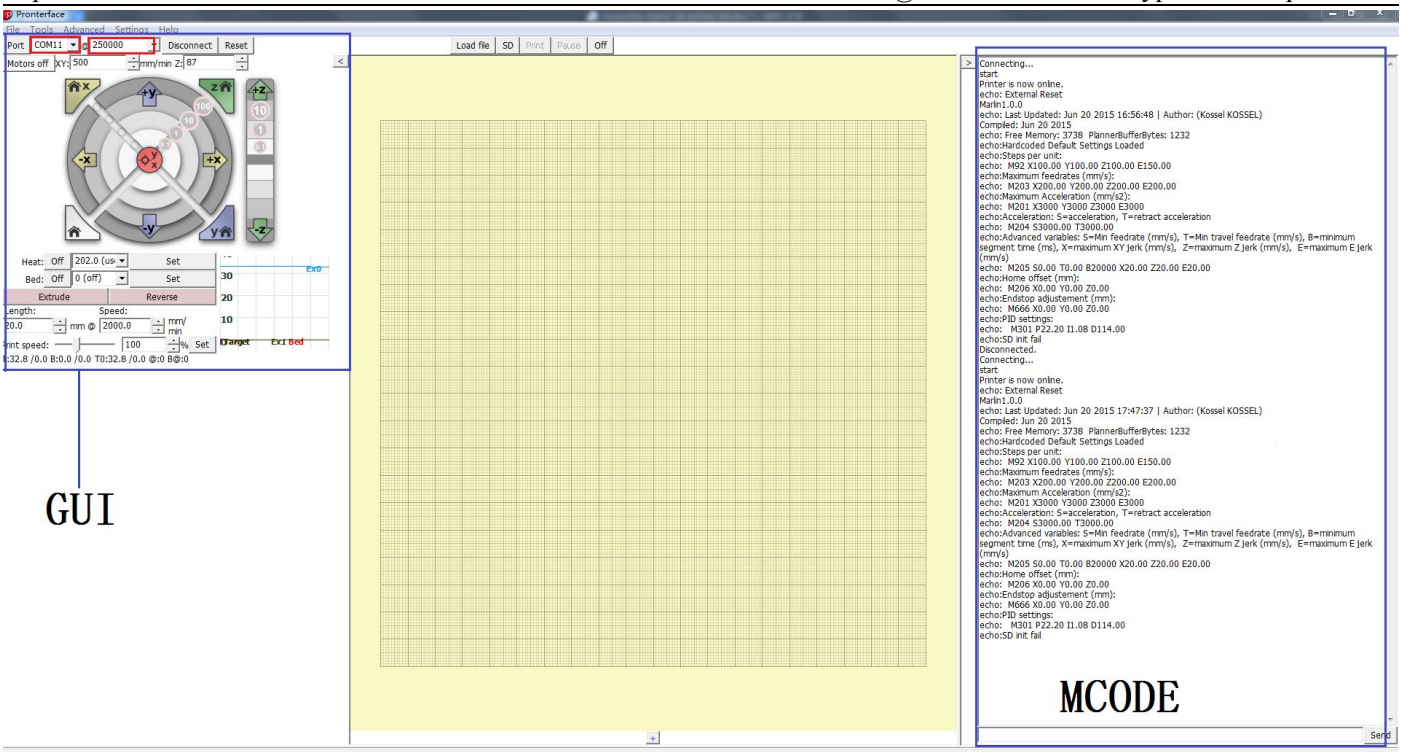
(5) Connect Pronterface to Kossel Minie displayed

Find the file"Printrun-Win-Slic3r-03Feb2015",unzip it, run the "pronterface.exe" .



, Set COM Port as per assigned in Step (1), and Baud Rate to 250000, then click "Connect".Once connection successful, messages will be shown as below. Ignore message "SD init fail" as LCD Controller Board with SD Card not available.





3 Control the printer

(1) the GUI and MCODE both could control the printer.

[MCODE]-Enter the command [GUI]-Interface graphics operations

[Sample Output],in the command bar,enter M119.

Observation: x_max, y_max, z_max

Carriage in contact with Endstop Switch => ”TRIGGERED”
Carriage NOT in contact with Endstop Switch => ”open”

Observation: z_min

Auto Level Probe in contact with Switch (Deployed) => “open”

Auto Level Probe NOT in contact with Switch (Retracted) =>"TRIGGERED"

(2) Verify Nozzle/XYZ Carriages Homing

[GCODE] G28 or [GUI] 

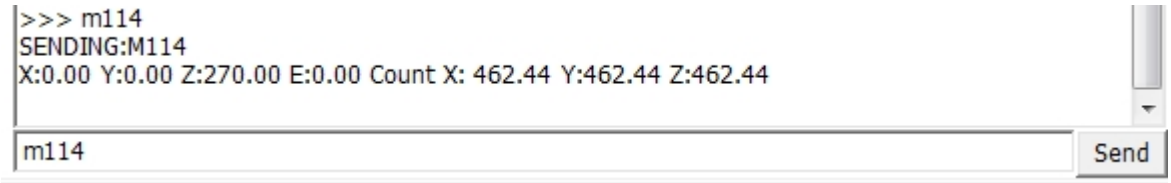
Observation: Nozzle/XYZ Carriages Movements
All XYZ Carriages will travel towards respective Endstops and slightly back off after in contact with respective Endstop switch.

Important Note

Nozzle/Carriage Homing also means to park the Nozzle tip at Cartesian Coordinate [0,0, MANUAL_Z_HOME_POS]. In this case, [0,0,270]After Power Cycle or Reset, Controller Board will lost track of Nozzle's Cartesian Coordinates/Carriages' position. It is essential to send GCODE [G28] or using GUI "HOME" button to update again current Nozzle coordinates.

(3) Verify Current Coordinates/Position

[MCODE] M114
[Sample Output]



Observation: X:0.00Y:0.00Z:270
Indicate the current Cartesian coordinates of Nozzle Tip when HOME. "Z:270" corresponds to "#define MANUAL_Z_HOME_POS 270" in [Configuration.h] of Marlin. This info will be referred during Calibration.
Observation: Count X: 462.44Y:462.44Z:462.44
Indicate the current linear position of Carriages on their respective Towers

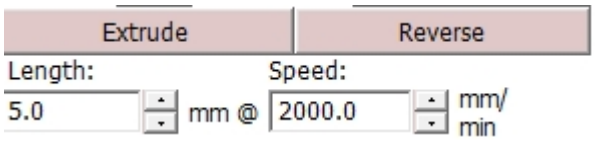
Important Note

If output is "X:0.00Y:0.00Z:0.00E:0.00 Count X: 0.00Y:0.00Z:0.00", Controller Board have lost track of positions. Need to home all Axis again.

If the three motors absolutely no reaction,Check the power supply is normal or not.
If one of the motor does not move,check the targeted motor and limit switch Interface loose or not, or check whether the line is broken.
If the motor is increased does not automatically stop when hit limit switch, check the x y z motors and limit switch correspondence or not.

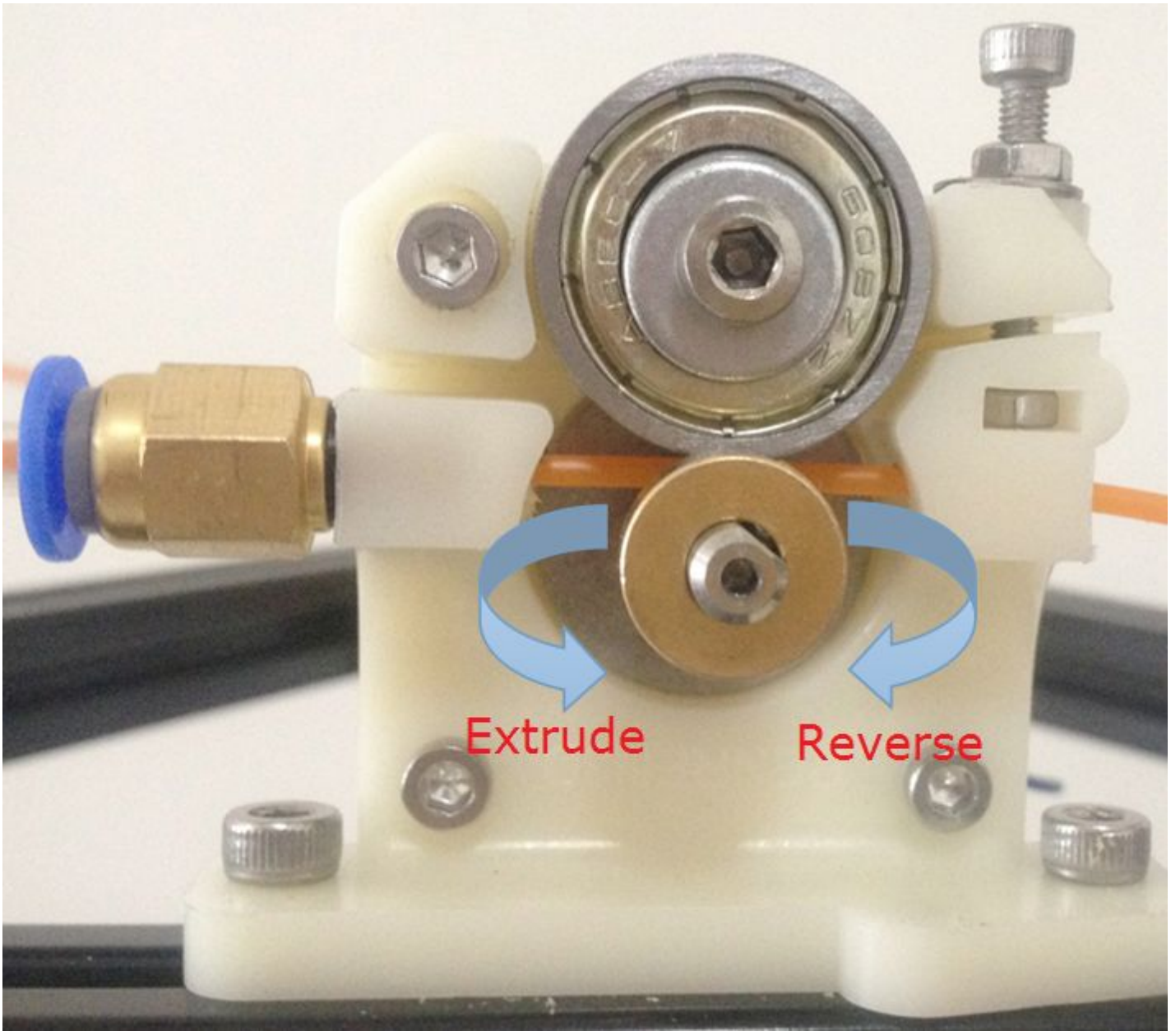
(4) Verify Extruder Motor Extrude and Reverse Motion

[MCODE] M302 and [GUI]



Observation: Extruder Motor Drive Gear Rotation

After sending MCODE [M302], then Click on the icon"Extrude" or " Reverse", verify Extruder
Motor Drive Gear Rotation as below:
Extrude => Counter Clockwise Rotation
Reverse => Clockwise Rotation



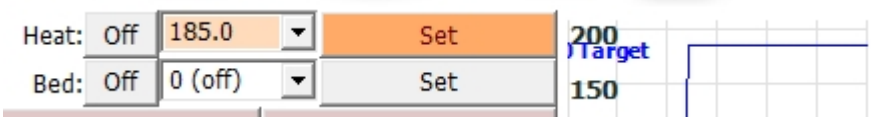
Important Note

"#define EXTRUDE_MINTEMP 175" will prevent Extruder Motor from any motions when Nozzle temperature is below 175C. Hence, MCODE [M302] needed to enable cold extrusion before this verification is possible.

(5) Verify Hotend Temperature

The off mean close the heart,the set mean open the heat.

[GUI]



[Caution]

Important Note

Before proceed for Hotend Temperature verification, ensure already verified. At this stage, do not leave the Hotend unattended during Temperature verifications, especially when heating above 185C. Click "Off" to cancel heating of Hotend once Temperature verification completed.

Observation: Hotend Target Temperature Sustainable

Select 185 (PLA) and click "Set". Verify that temperature is sustainable (at least 15mins) after reaching 185C. Then follow by similar verification for 230C. In case failed to attain target temperature after continuous heating:
1. Make sure the FAN airflow not directed to Hotend's heat block
2. Make sure Heater and Thermistor wires terminated properly

Observation: No Overheating at Effector

Continuous cooling by the FAN airflow should keep the Effector (PLA material) below 100C.

4 Control the printer by Repetier-host

When control the printer, the software Repetier is also ok,the Repetier could carry out The same task as Pronterface . you could both use Pronterface and Repetier, Coordinate to control the printer,it's effective and complementary.

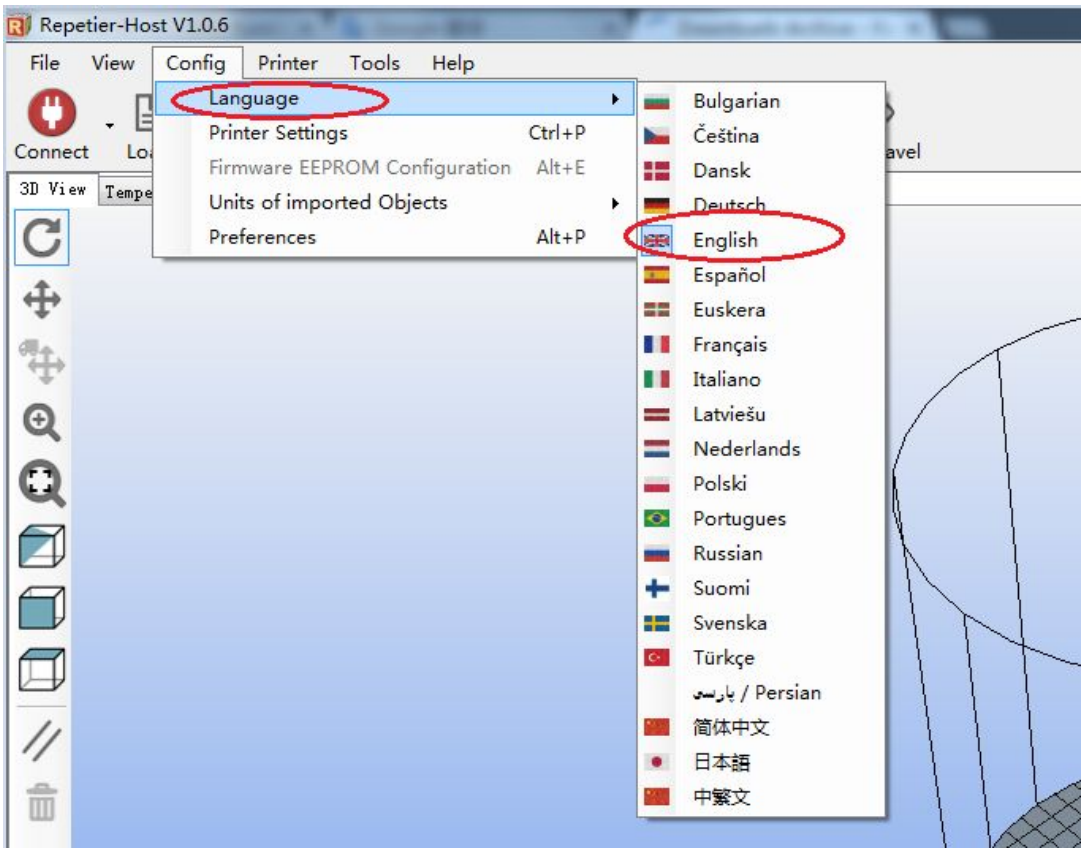
(1) Software Installation

Install the "software,setupRepetierHost_1_0_6", the software could be download on the link:http://www.repetier.com/download/

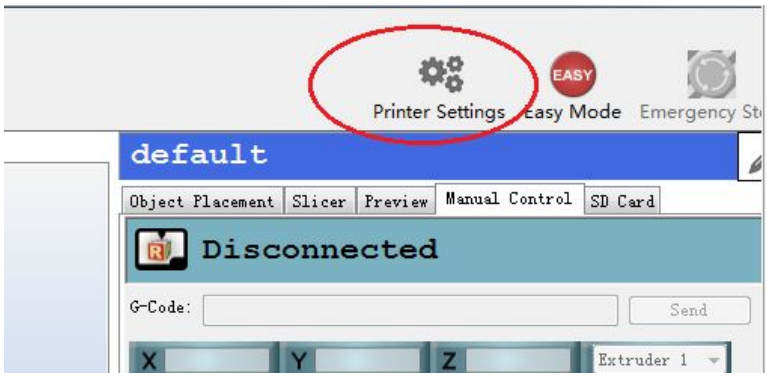
About the more info about the Repetire, pls go the the link :
http://www.repetier.com/documentation/repetier-host/

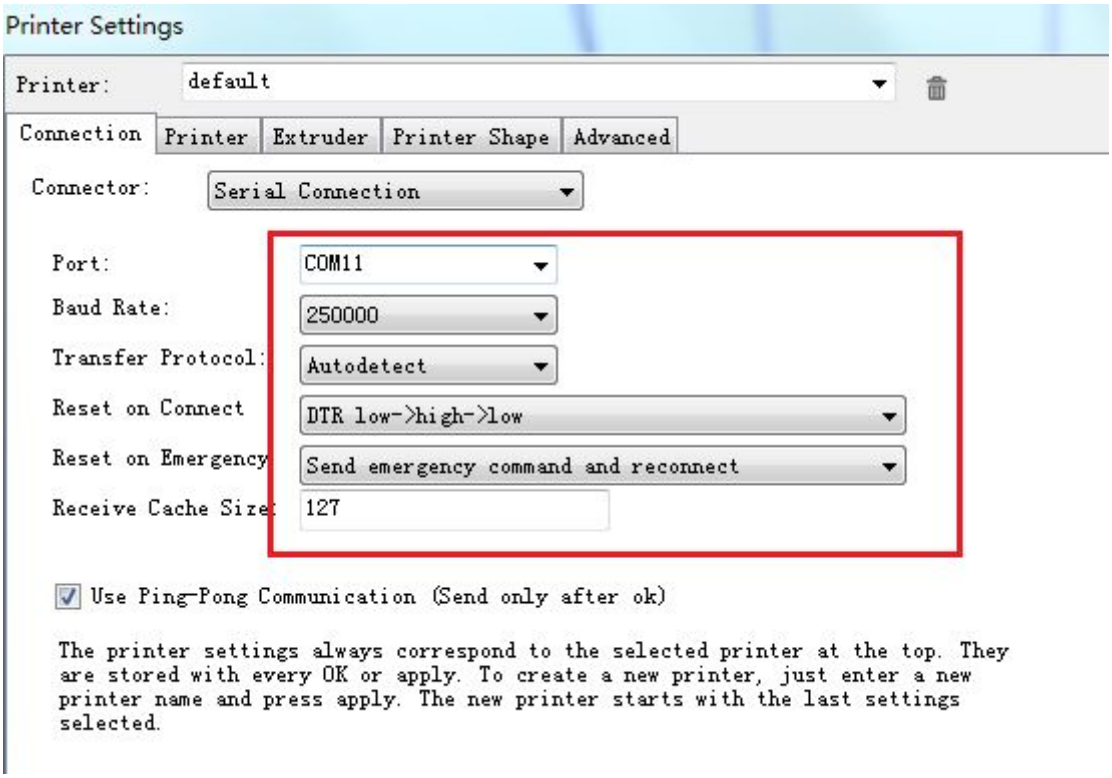
(2) Language Settings

Set the language,Config-Language-choose the suit language.

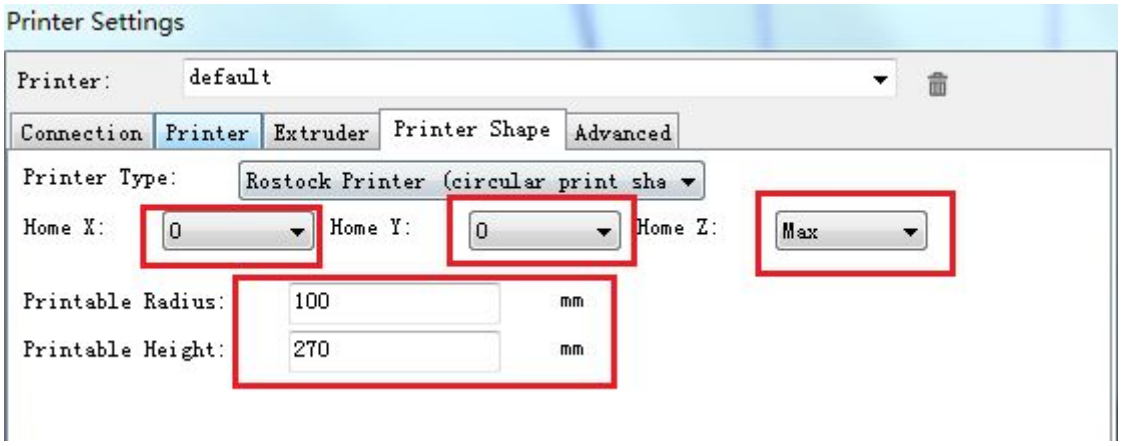


(3) Printer settings

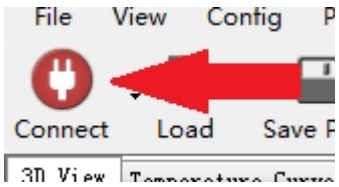




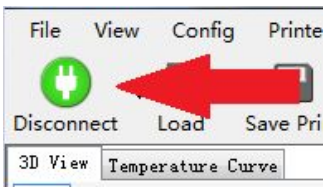
IN the printer shape,choose the Rostock printer,the home X is 0,the home Y is 0,the home Z is Max.the Radius could be setted 100 and the height could be setted 270 Temporarily. this two data could be modify late.



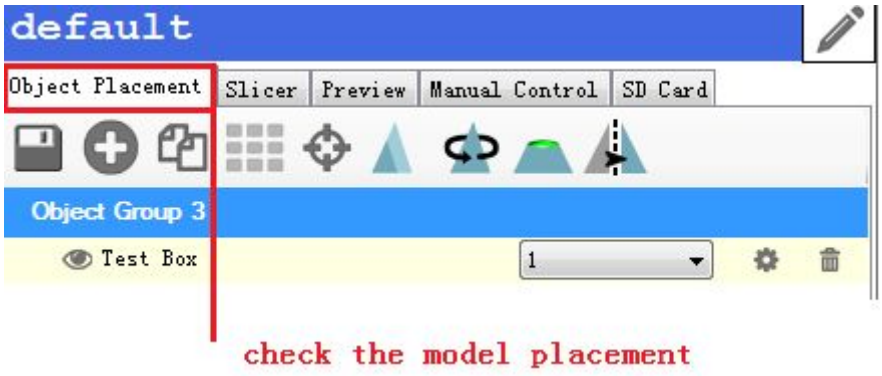
(4) Connect the printer

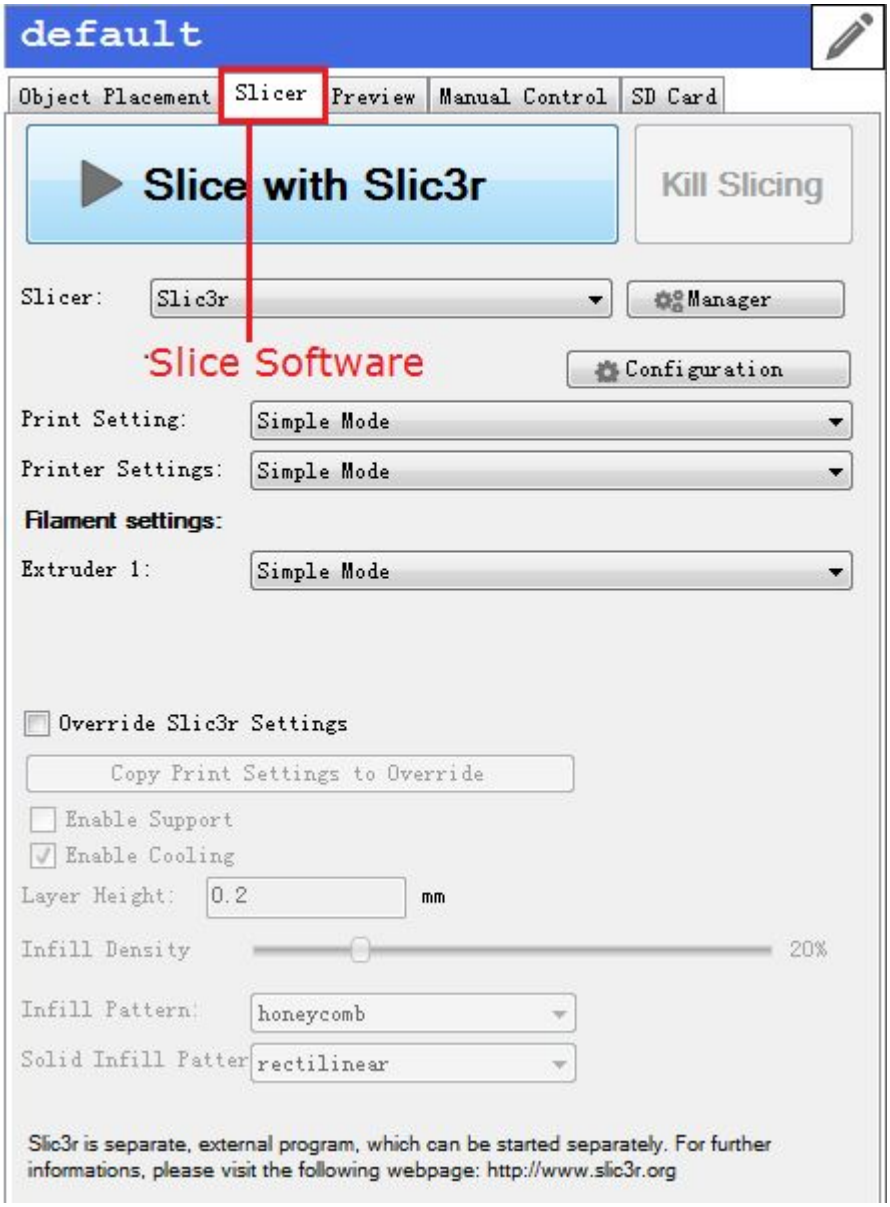


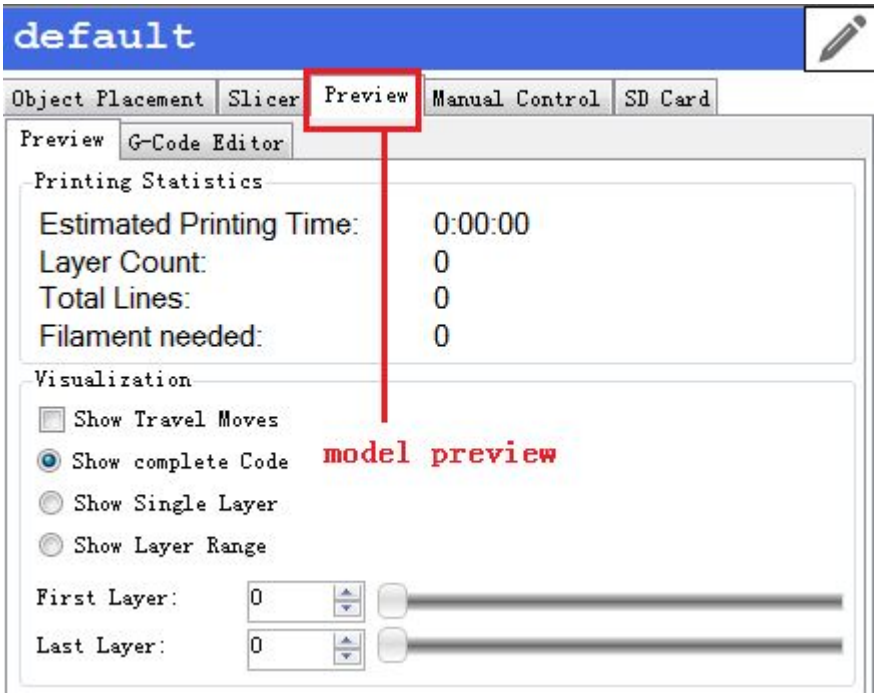
afer connect

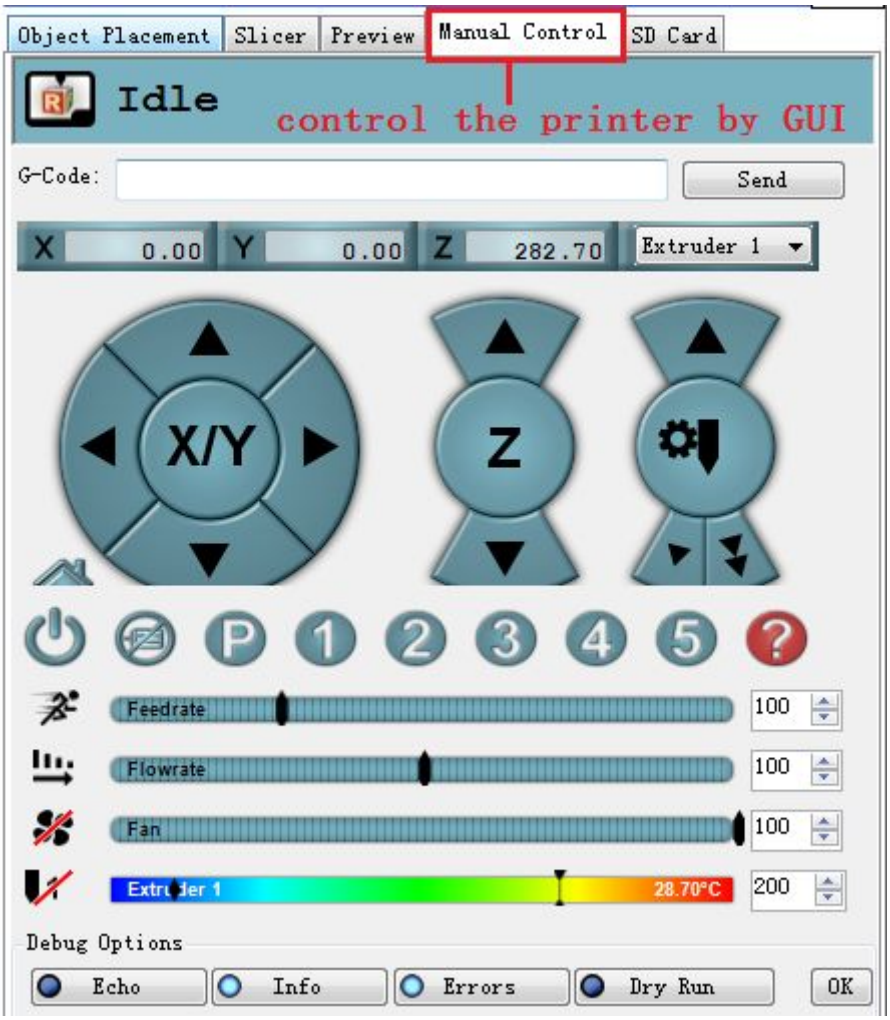


(5) Panel Introduction

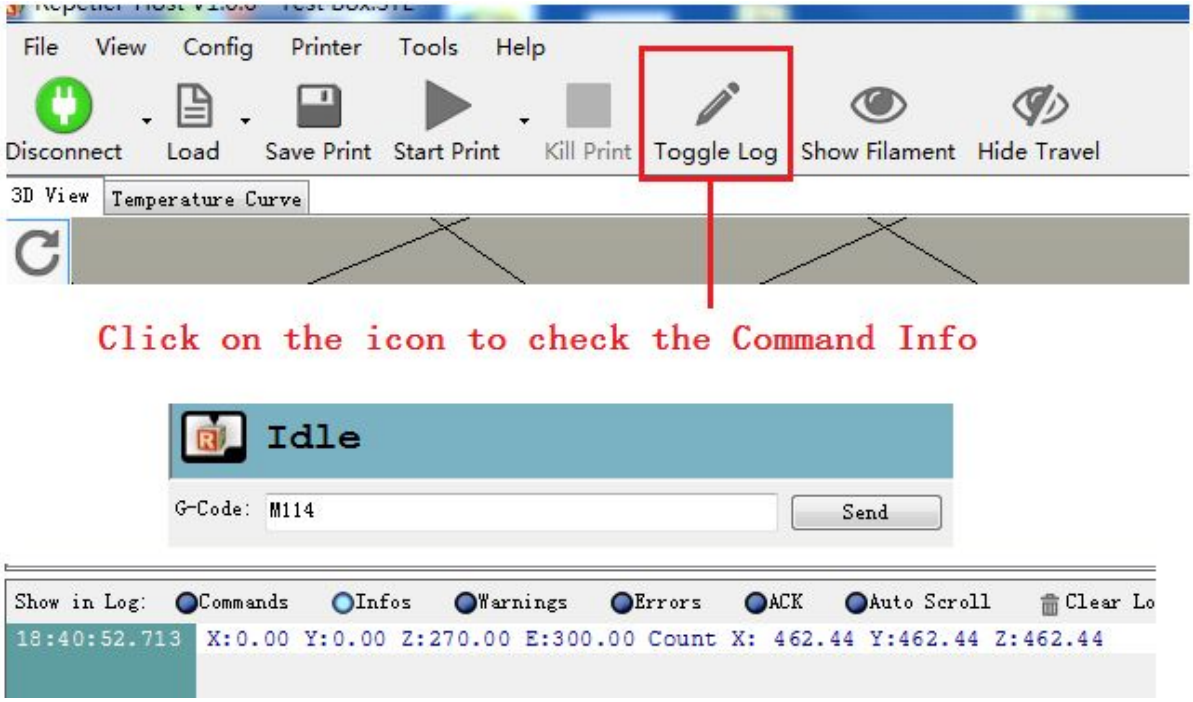


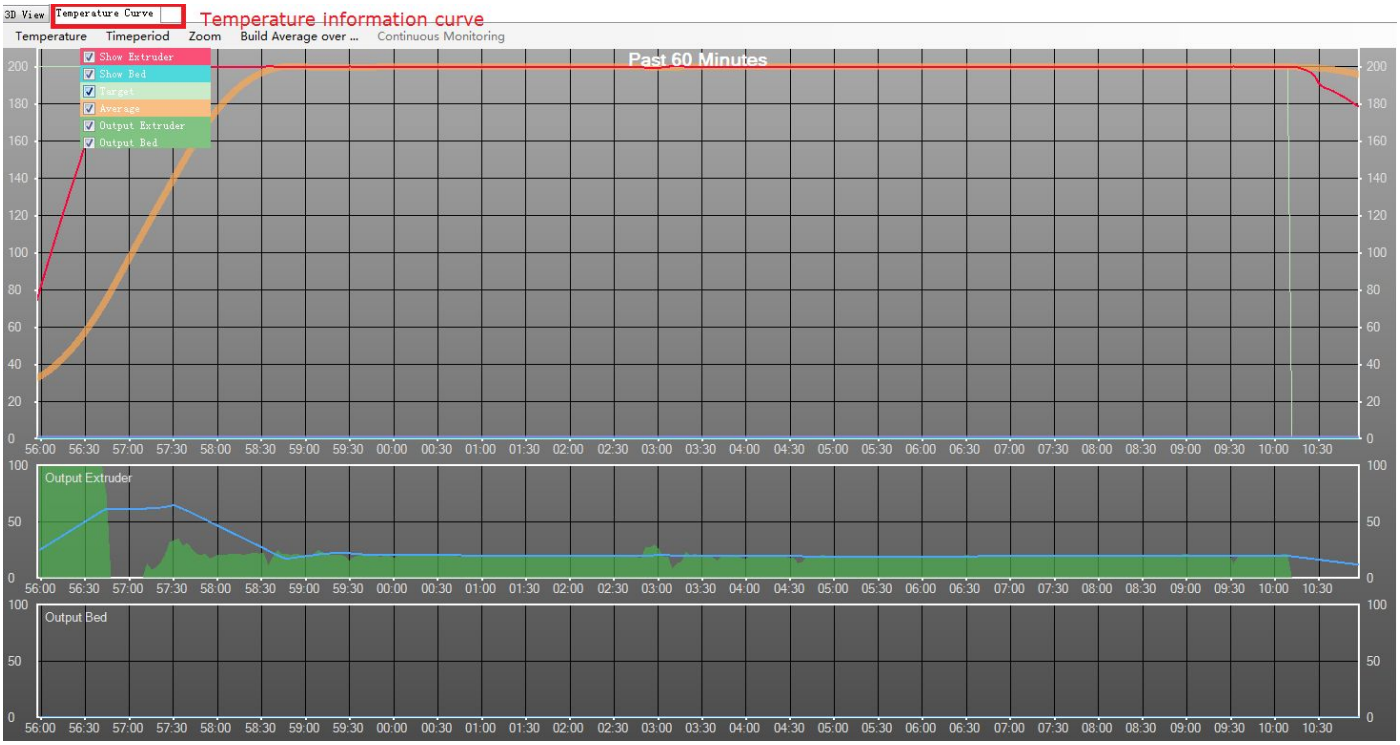


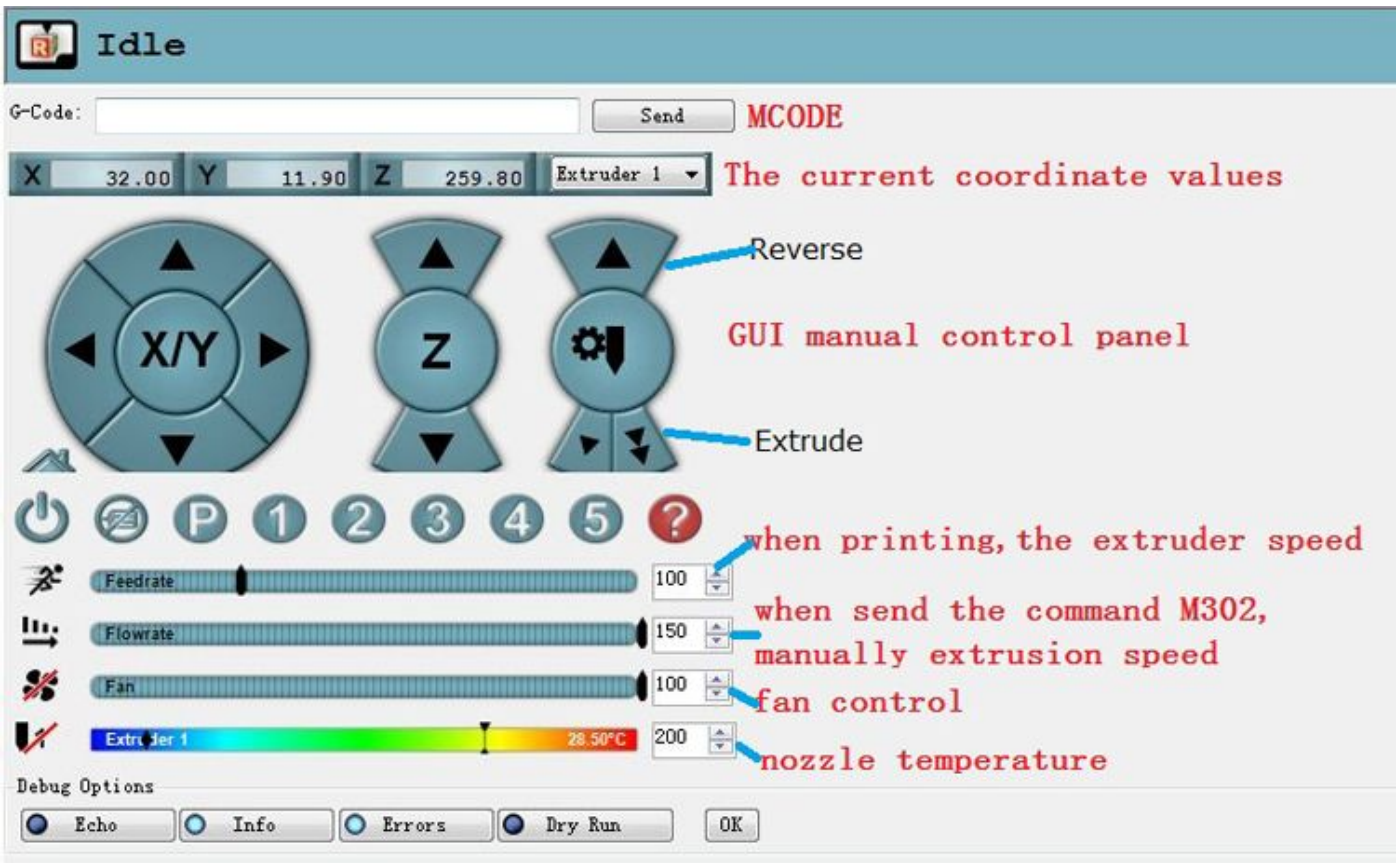

default
Object Placement
Slicer
Preview
Manual Control
SD Card
Preview
G-Code Editor
Printing Statistics
Estimated Printing Time:
0:00:00
Layer Count:
0
Total Lines:
0
Filament needed:
0
Visualization
Show Travel Moves
Show complete Code
Show Single Layer
Show Layer Range
model preview
First Layer:
0
Last Layer:
0


Object Placement
Slicer
Preview
Manual Control
SD Card
Idle
control the printer by GUI
G-Code:
Send
X
0.00
Y
0.00
Z
282.70
Extruder 1
X/Y
Z
P
1
2
3
4
5
Feedrate
100
Flowrate
100
Fan
100
28.70°C
200
Debug Options
Echo
Info
Errors
Dry Run
OK

Click the "Toggle Log", in the Repetire bottom,could appear the status info or not.e.g send M114,could appear current coordinate information.





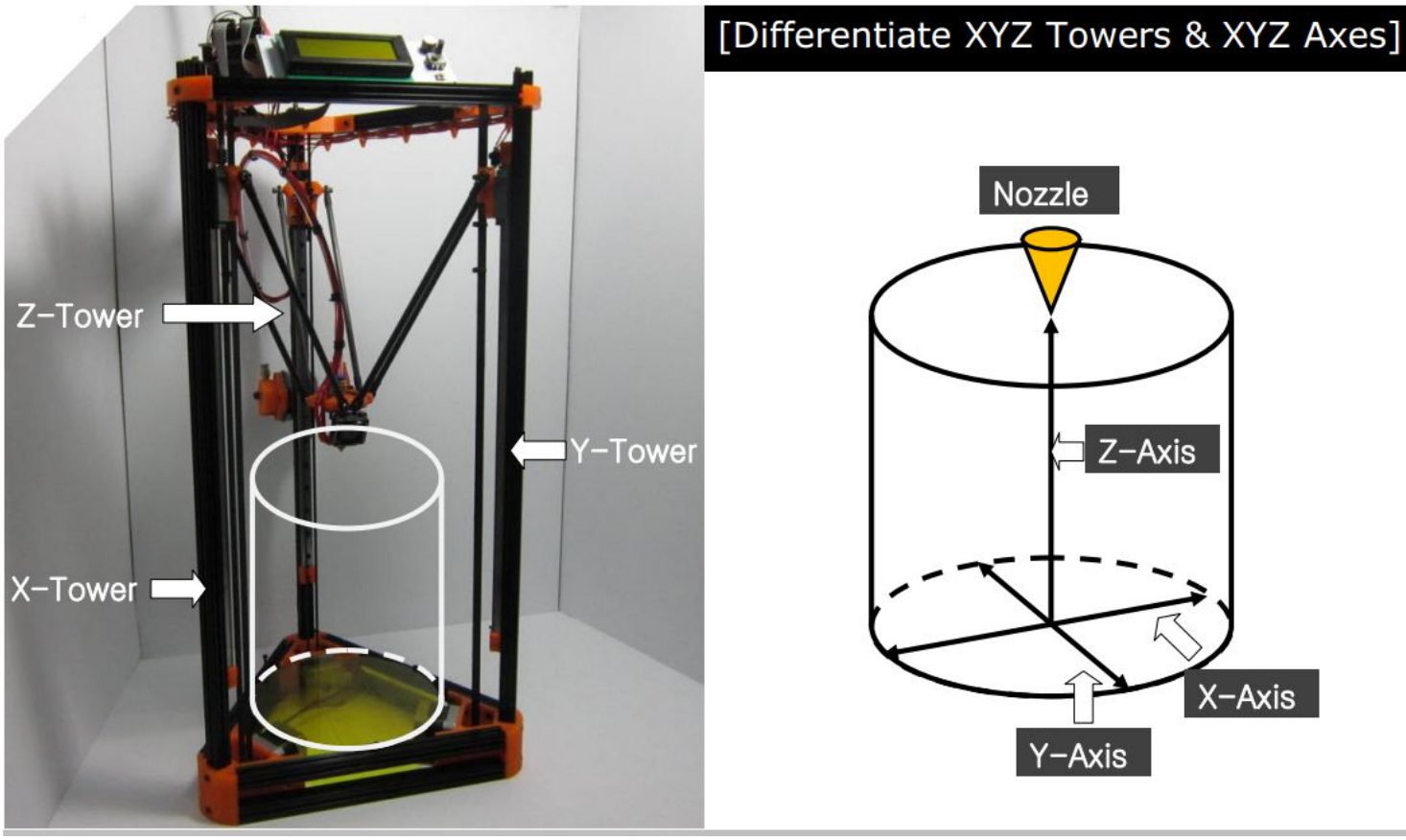

Idle
G-Code:
Send
MCODE
X 32.00
Y 11.90
Z 259.80
Extruder 1
The current coordinate values
Reverse
X/Y
Z
GUI manual control panel
Extrude
P 1 2 3 4 5
when printing, the extruder speed
Feedrate
100
when send the command M302,
Flowrate
150
manually extrusion speed
Fan
100
fan control
Extruder 1
28.50°C
200
nozzle temperature
Debug Options
Echo
Info
Errors
Dry Run
OK

5 Calibration and Fine-Tuning

Note: There will be no identical Kossel Mini units. The provided Firmware contains calibrated settings for a working unit built by Blomker Industries. It will be more on fine tuning the values to match your built unit if you are using Marlin Firmware.

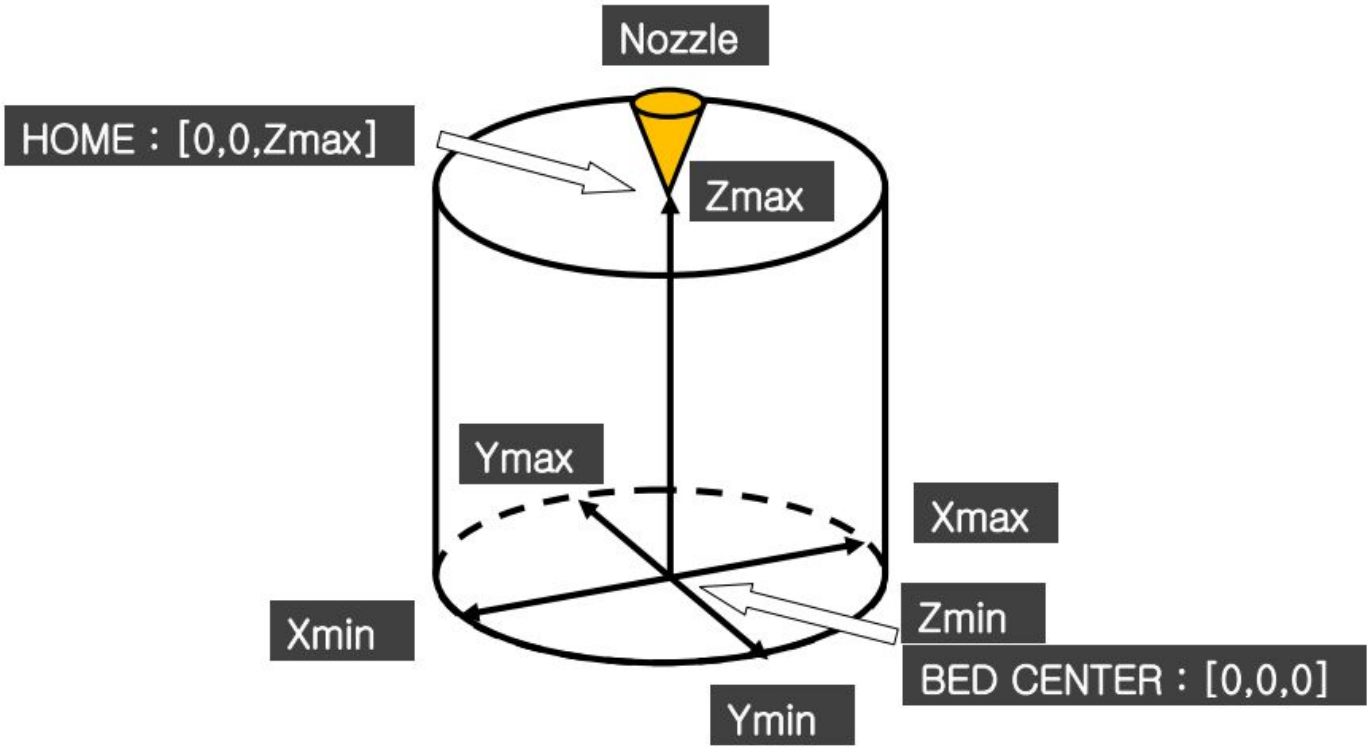
(1) Differentiate XYZ Towers & XYZ Axes

To calibrate a Delta Printer like Kossel Mini, it is essential to distinguish XYZ Axes from XYZ Towers. In essence, Delta Printer makes coordinated movements of XYZ Carriages on their respective Towers, which will translate to movement of Nozzle (Print Head) in Cylindrical/ Cartesian print space, consist of XYZ Axes and Coordinates.



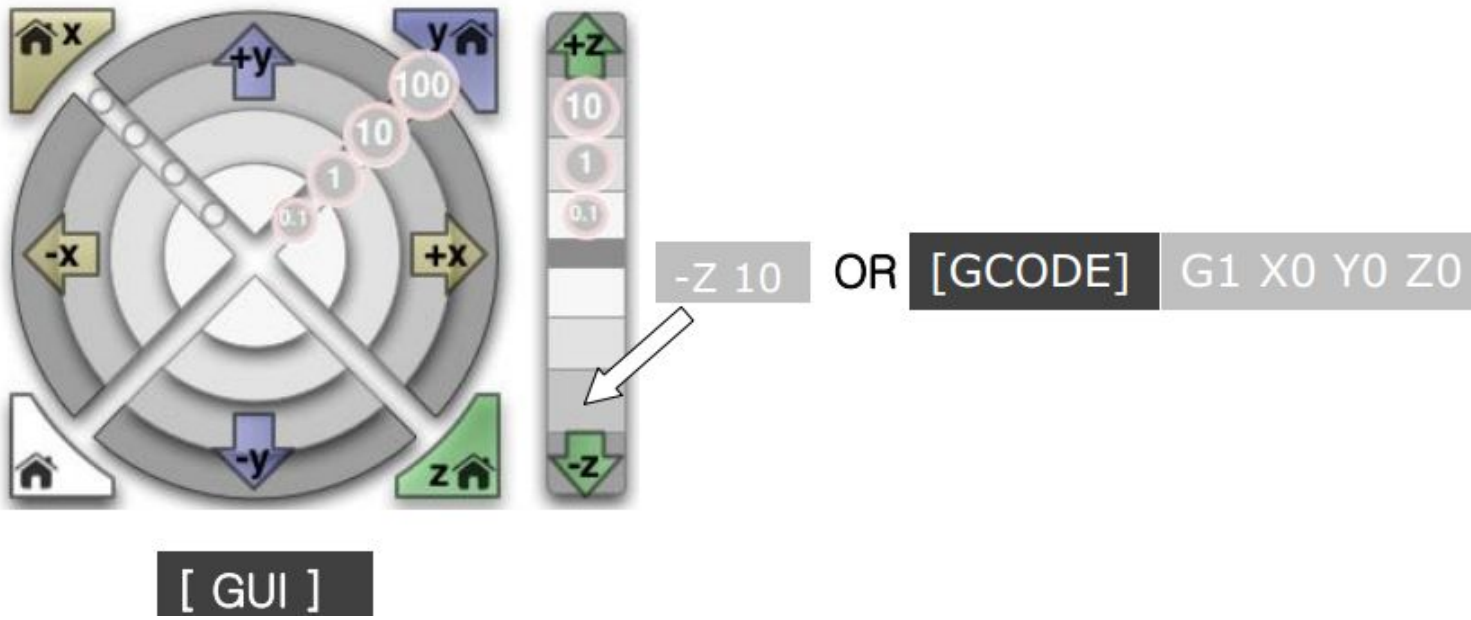
(2) XYZ Axes and Coordinates

Unit of XYZ Coordinates are in [mm].
Boundaries/Radius of the Cartesian print space are specified by Min & Max parameters of XYZ Axes in [Configuration.h] of Marlin Firmware.
Two key Coordinates needed during Calibrations are the HOME Coordinate **[0,0,Zmax]** and Center of Bed **[0,0,0]**.



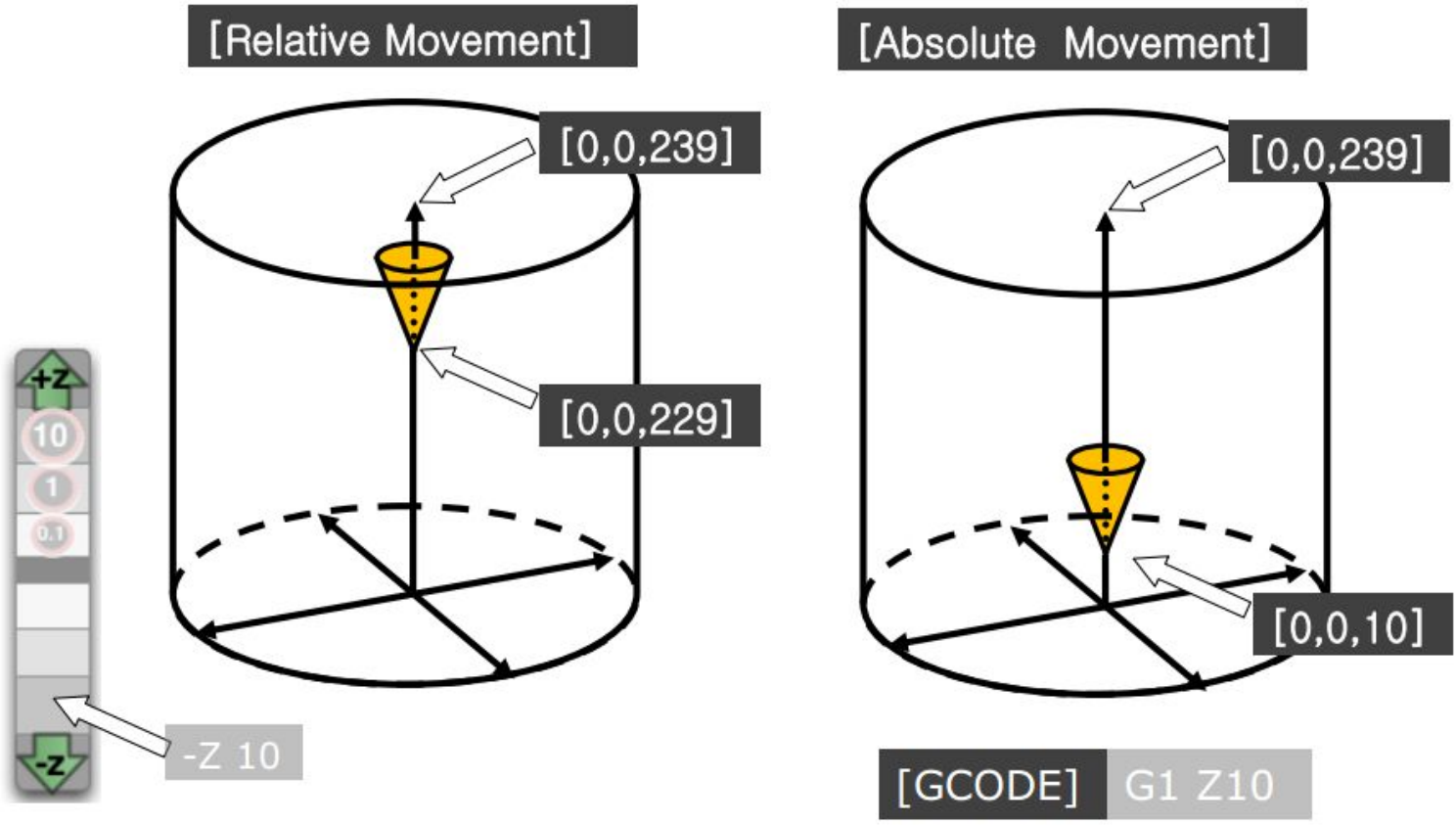
(3) Nozzle Movement Control

Nozzle movements are controlled by means of sending GCODE G1 + XYZ Coordinates (in mm), or using GUI + Distance of Movement (in mm).
For GUI method, minus (-) sign meaning to move towards Min direction of the Axis. As for GCODE, it represents the negative coordinates (<0), which in this case, we will only have positive and negative X or Y coordinates. Z Axis will only have positive coordinates (>0)



(4) Relative vs Absolute Movement

If initial position of Nozzle is at HOME position, illustrations above demonstrate the difference between movement by GUI + Distance of Movement and GCODE + Coordinates. Good understanding and combo usage of both methods can help to shorten calibration time, especially during Z-Axis and Bed Auto Leveling Calibration



(5) Delta Kinematics Key Dimensions

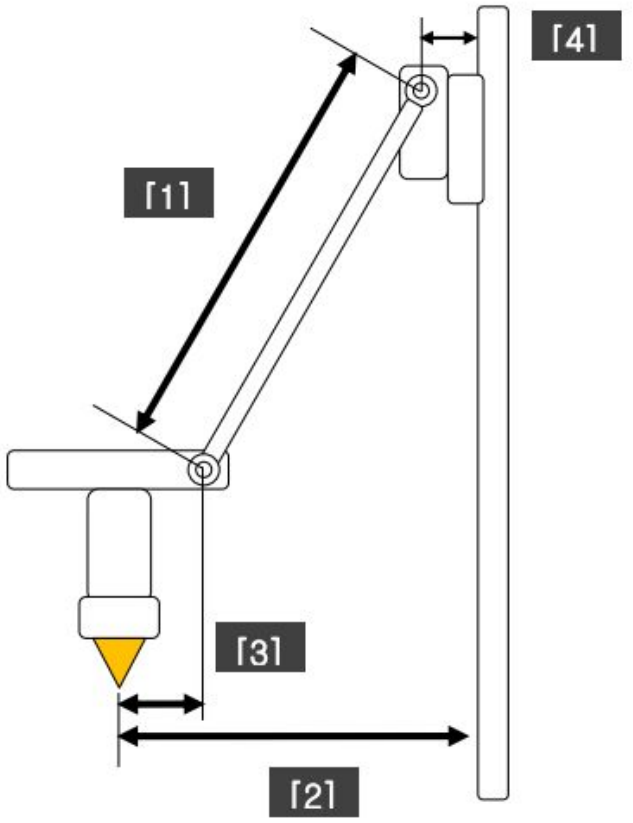
Delta Kinematics is the algorithm in firmware which translates XY Coordinates in the Cartesian plane to the required linear positions of XYZ Carriages on respective Towers. The key dimensions below in [Configuration.h] are required by the Delta Kinematics for accurate representation of the Nozzle position in XY plane. Send GCODE G28 to home the XYZ Carriages before taking measurement from the as built

```
// Center-to-center distance of the holes in the diagonal push rods
#define DELTA_DIAGONAL_ROD 218.0// mm

// Horizontal offset from middle of printer to smooth rod center.
#define DELTA_SMOOTH_ROD_OFFSET 151// mm

// Horizontal offset of the universal joints on the end effector.
#define DELTA_EFFECTOR_OFFSET 24.0 // mm

// Horizontal offset of the universal joints on the carriages.
#define DELTA_CARRIAGE_OFFSET 22.0 // mm
```



(6) Max Print Height/Print Bed Center Calibration Procedures

The maximum print height is the key parameters for the delta 3d printer, Print Height/Print Bed Centre Calibration procedures using Pronterface are as below:

1. Send GCODE G28 to home the Nozzle.
2. Send MCODE M114 to check Z Height at HOME position. Z:270 corresponds to MANUAL_Z_HOME_POS 270 in [Configuration.h]
3,Modify the MANUAL_Z_HOME_POS from 270 to 290(this data is a example,as reference),flashing firmware to the motherboard,Send GCODE G28 to home the Nozzle
4. Send GCODE G1 Z20 to move the Nozzle close to the Print Bed
5, Put a piece of A4 paper on the glass.
6. Use GUI to move nozzle 1mm towards Print Bed
7. Repeat 6 till gap between Nozzle and Print Bed less than 1mm
8.Repeat 6 but move 0.1mm towards Print Bed9. Repeat 8 till Nozzle is 0.1mm above Print Bed. at the same time, each movement of the nozzle, twitch once paper, until the nozzle just does not move the paper crushed paper drawn position, or fixed pumping, then move up to 0.1mm can be twitching. This Nozzle position will be defined as Print Bed Centre [0,0,0]
10. Send GCODE M114 to check the current Z value.
11. New MANUAL_Z_HOME_POS value = Old MANUAL_Z_HOME_POS value – current Z value. This new value will defined the Max Print Height. (for example,the Coordinate values is 5.8, so the actual maximum print height is 290-5.8=284.2mm)
12. Update #define MANUAL_Z_HOME_POS __?__ with the new value. Then reupload

the updated Marlin firmware,Flashing firmware again to the motherboard.(notice, when reupload the firmware again,pls disconnect the Pronterface)

(7) Manual leveling

About manual leveling , in the follow explanation, there is a example as reference. Because the printer is diy product and difference for everyone assembly printer , so the data should be setted according to your specific situation. In the example, the maximum print height is 194.7mm, when you make leveling for your printer, set the data as your printer,thank you.

A, manual leveling

1, Enlarge the maximum print height（Beyond the actual print height can be）
For example, this is just one example，as reference,#define MANUAL_Z_HOME_POS 194.7, Will be changed to 200.7.
Equivalent that the vertical print height enhance the 6mm to leveling preparation.In this case the nozzle will maybe hit the glass, when debugging pay attention!

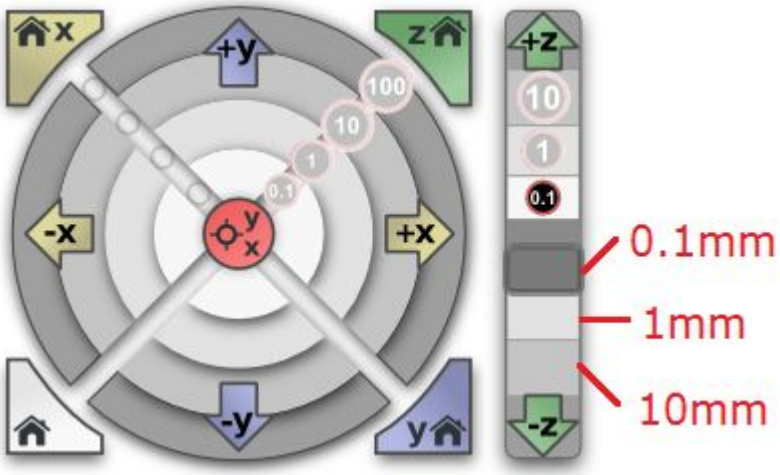
2，Again flashing firmware
3，Put a piece of A4 paper on the glass

4,After pronterface connection, click  Reset. Or G28 return to home.

5, At the command line, 

enter [G1 Z10] or [G1 X0 Y0 Z10]also ok.
Due to the Z-axis direction (vertical direction) actually 194.7, after changed 200.7, Z10 actual position from glass surfaces 4mm.

That is to say: Nozzle mobile 200.7-10 = 190.7mm, The actual height of 194.7 -190.7 = 4mm
(This is only an example of the data, as a reference, the machine data according to their installed situation)
6,Enter [M114] Check that the coordinates should appear X0 Y0 Z10.
7,Enter [G1 X0 Y66 Z10],At this time, Nozzle moving to the glass surface boundary
The nozzle from the glass surface, theory value is 4 mm.
8,Software controls the nozzle along the Z axis down,nozzle as far away from the paper magnitude larger,every 1mm, until nozzle quick hit A4 paper.
9,Then every time down the nozzle 0.1mm, at the same time, each movement of the nozzle, twitch once paper, until the nozzle just does not move the paper crushed paper drawn position, or fixed pumping, then move up to 0.1mm can be twitching.



10，Enter [M114], view the nozzle coordinates when there is resistance (or fixed pumping) , at this time, write down coordinate value [X0 Y66 Za]
11, G28 return to home
12,Enter [G1 X-57 Y-33 Z10]
13,Repeat steps 4-10, write down the coordinates [X-57 Y-33 Zb]
14,G28 return to home
15, Enter [G1 X57 Y-33 Z10]
16,Repeat steps 4-10, write down the coordinates [G1 X57 Y-33 Zc].
17,Compare the value Za Zb Zc, by adjusting the height of the stopper frame or the height of the screw, every time adjustment, repeat the above steps until 3 values the same. remember this case Z is Zz, leveling end!

For example,after three measurements, get the following data Za = 6.5 Zb = 6.8 Zc = 6.2. Three points are not flat,Need to adjust the leveling screws on the block, or loose or tight, so you need to try. After each finished adjusting screw then again need to step 4-10, Repeat steps 4-10 until after the measured Za = Zb = Zc.
Make leveling is a complex process, need to be patient, in this process,Also could get some pleasure, you will get a better understanding of the technology and printer, but if you dont have the strict requirement for accuracy, keeping the almost Equal is also ok.

B, Adjust curvature

1, click  Reset or G28 return to home.
2, Enter [G1 Z10]
3, Carry out the above operation step 8、9, every down 0.1mm, until you feel the twitch of resistance, or pumping does not move, then move up to 0.1mm can be twitched.
4, Enter [M114], Check that the coordinate [X0 Y0 Zm]
5, Compare the value Zz and Zm, the origin value Zm is not equal to Zz, that is to say Zm≠Zz= Za = Zb = Zc. Then you need adjust Delta_Radius in the firmware.

If Zz <Zm (that nozzle higher in the center) Then increase the value
#define DELTA_SMOOTH_ROD_OFFSET

If Zz >Zm (that nozzle lower in the center) Then reduce the value
#define DELTA_SMOOTH_ROD_OFFSET

When increase or reduce, the change value should be little,about 0.x mm.
6, After changed, disconnect the Pronterface connection, then UPLOAD and Flashing firmware.
7, Repeat these steps until two values are equal
Because rhe production of precision for everyone is not the same, Perhaps Zz quite difficult to Zm ,keeping the Zz and Zm almost Equal,in this case,The distal end is not very flat only.

C, change the maximum print height

Make the maximum print height , replace Zm value ,Update #define MANUAL_Z_HOME_POS, then reupload the updated Marlin firmware,

E.g where " #define MANUAL_Z_HOME_POS " ? you could find it, do as the pic show.


```
#define XY_TRAVEL_SPEED 2000          //Automatic leveling speed of movement, increasing the speed increase,  decrease speed redu

#define Z_RAISE_BEFORE_PROBING 80  ////Before the first pre-test point,  Z-axis height raised,  the height should ensure that th
#define Z_RAISE_BETWEEN_PROBINGS 5  //The next pre-test point, Z-axis height raised

#define Z_SAFE_HOMING
#ifdef Z_SAFE_HOMING

  #define Z_SAFE_HOMING_X_POINT (X_MAX_LENGTH/2)
  #define Z_SAFE_HOMING_Y_POINT (Y_MAX_LENGTH/2)

#endif


#define ACCURATE_BED_LEVELING
#ifdef ACCURATE_BED_LEVELING
  #define ACCURATE_BED_LEVELING_POINTS 3 //Automatic level
  #define ACCURATE_BED_LEVELING_GRID_X ((RIGHT_PROBE_BED_
  #define ACCURATE_BED_LEVELING_GRID_Y ((BACK_PROBE_BED_P
  #define NONLINEAR_BED_LEVELING
#endif

#endif

// The position of the homing switches
#define MANUAL_HOME_POSITIONS  // If defined, MANUAL_*_HOME_POS below will be used
#define BED_CENTER_AT_0_0  // If defined, the center of the bed is at (X=0, Y=0)

//Manual homing switch locations:
// For deltabots this means top and center of the cartesian print volume.
#define MANUAL_X_HOME_POS 0
#define MANUAL_Y_HOME_POS 0
#define MANUAL_Z_HOME_POS 270//306.6 // For delta: Distance between nozzle and print surface after homing.
//Because there will be differences for each machine installation, need your own measurement, after setting finished remember to
```

(8) Automatic leveling

The Automatic leveling GCODE is G29, before the Automatic leveling,pls guarantee the maximum print height is ok , avoid to the nozzle hit the glass . After the Automatic leveling,when printing, the program will make up the height automaticly.

Automatic leveling program as the follow pictrue show:

```
//================== Kossel Self-leveling configuration ====================

#define ENABLE_AUTO_BED_LEVELING // Auto-leveling feature is turned on or not.

#ifdef ENABLE_AUTO_BED_LEVELING


  #define DELTA_PROBABLE_RADIUS  (DELTA_PRINTABLE_RADIUS-50)//Here the probe is set to leveling the range of movement,Increasing the lev
  //如: #define DELTA_PROBABLE_RADIUS  (DELTA_PRINTABLE_RADIUS-60)

  #define LEFT_PROBE_BED_POSITION -DELTA_PROBABLE_RADIUS
  #define RIGHT_PROBE_BED_POSITION DELTA_PROBABLE_RADIUS
  #define BACK_PROBE_BED_POSITION DELTA_PROBABLE_RADIUS
  #define FRONT_PROBE_BED_POSITION -DELTA_PROBABLE_RADIUS

  #define X_PROBE_OFFSET_FROM_EXTRUDER 0.0
  #define Y_PROBE_OFFSET_FROM_EXTRUDER 0.0
  #define Z_PROBE_OFFSET_FROM_EXTRUDER 0.5//Automatic leveling settings,too high reduce,low increases

  #define Z_RAISE_BEFORE_HOMING 4       // Configuration of before homing, Z-axis height raised,the height must be ensured in the range

  #define XY_TRAVEL_SPEED 2000         //Automatic leveling speed of movement,increasing the speed increase, decrease speed reduction

  #define Z_RAISE_BEFORE_PROBING 80  ////Before the first pre-test point, Z-axis height raised, the height should ensure that the level
  #define Z_RAISE_BETWEEN_PROBINGS 5  //The next pre-test point,Z-axis height raised

  #define Z_SAFE_HOMING
  #ifdef Z_SAFE_HOMING

    #define Z_SAFE_HOMING_X_POINT  (X_MAX_LENGTH/2)
    #define Z_SAFE_HOMING_Y_POINT  (Y_MAX_LENGTH/2)

  #endif
```

Important Note

If the nozzle could not move to bottom and start Automatic leveling, check whether the automatic leveling limit switch effectively rebound.

6 How to print

Important Note

A,before printing,need set maximum print height, for everyone when assembly,the location of the limit switches is different, so the maximum print size is also different.the maximum print height is very important parameter. After set the max height,then flash the firmware again.

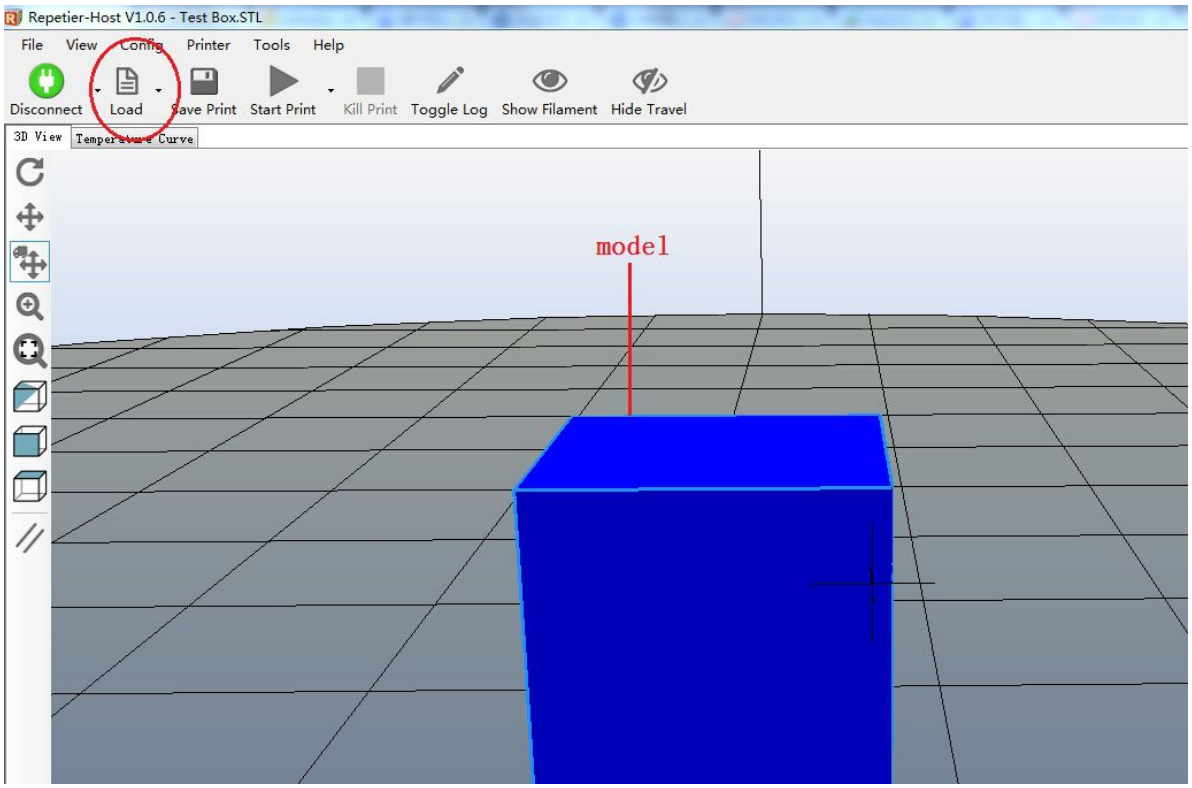
B,when printing,guarantee the fan working.the command to start fan is M106. Before start printing,the fan also work automatically with the temperature increase.

C,when first printing or when you are not familiar to the printer.we recommend you not set Reverse filament,to avoid the nozzle block. And when you are familiar to the printer and understand it well, you could make the advanced settings.

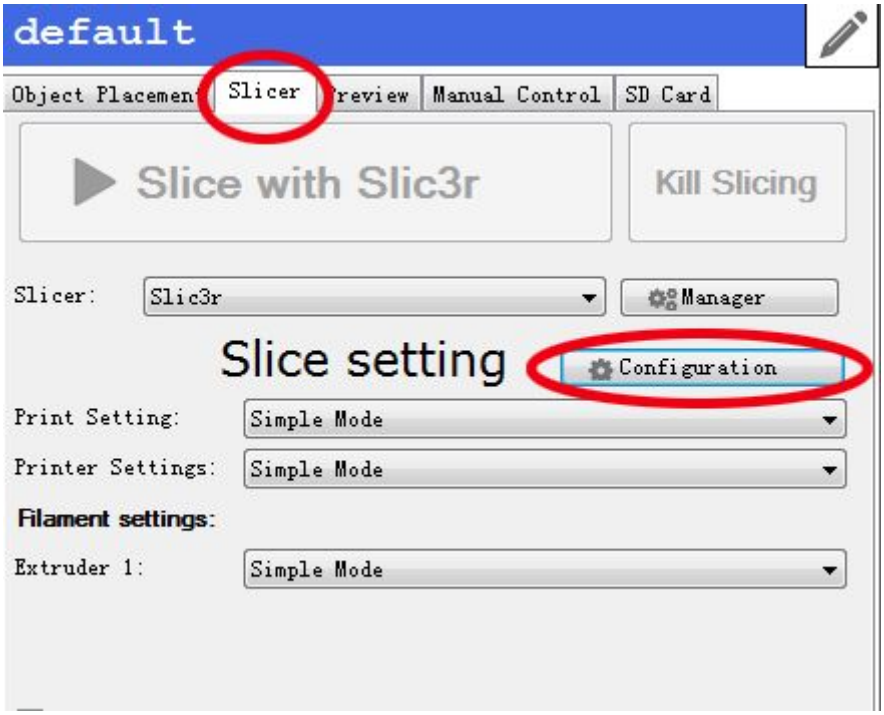
D,we recommend you use the software "Repetier"when printing,it's intelligent and efficient.

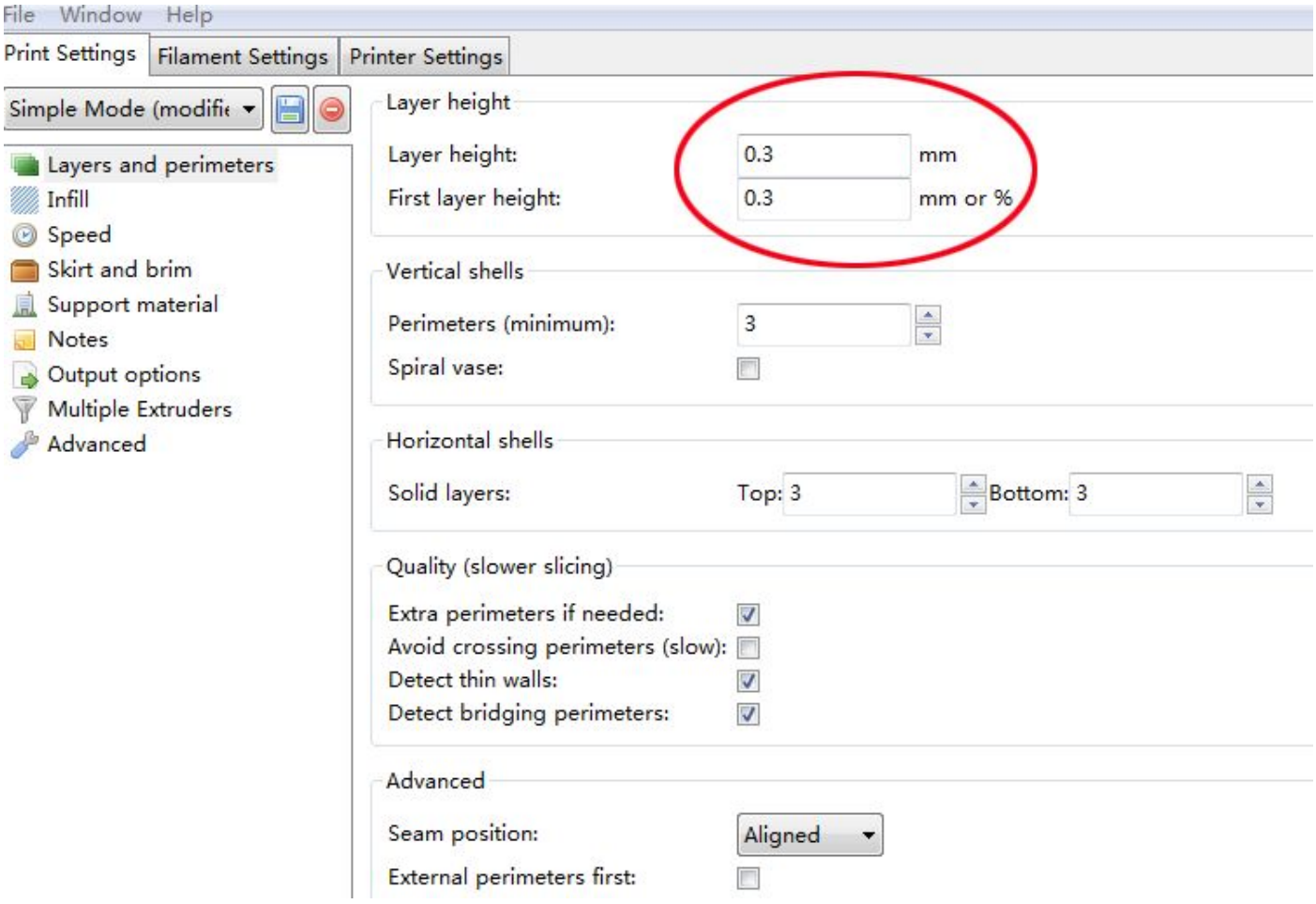
E,the temperature is a important parameter, for PLA filament, the working temperature is 190℃-210℃, you could adjust it,and the temperature should not too high.too high temperature maybe lead to Nozzle clogging.

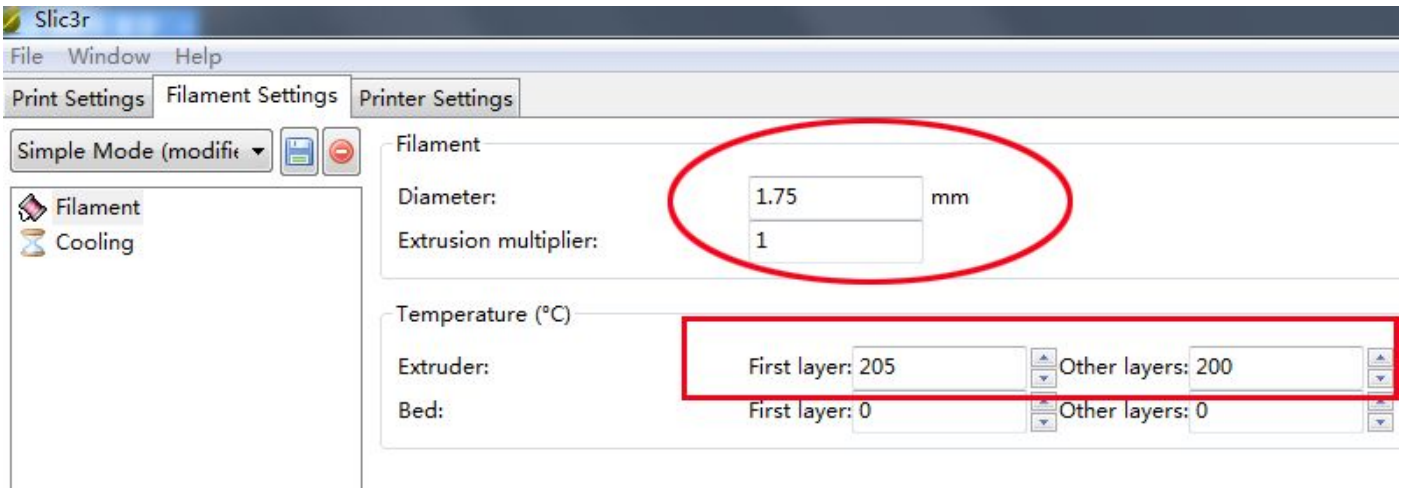
(1) Loading Model



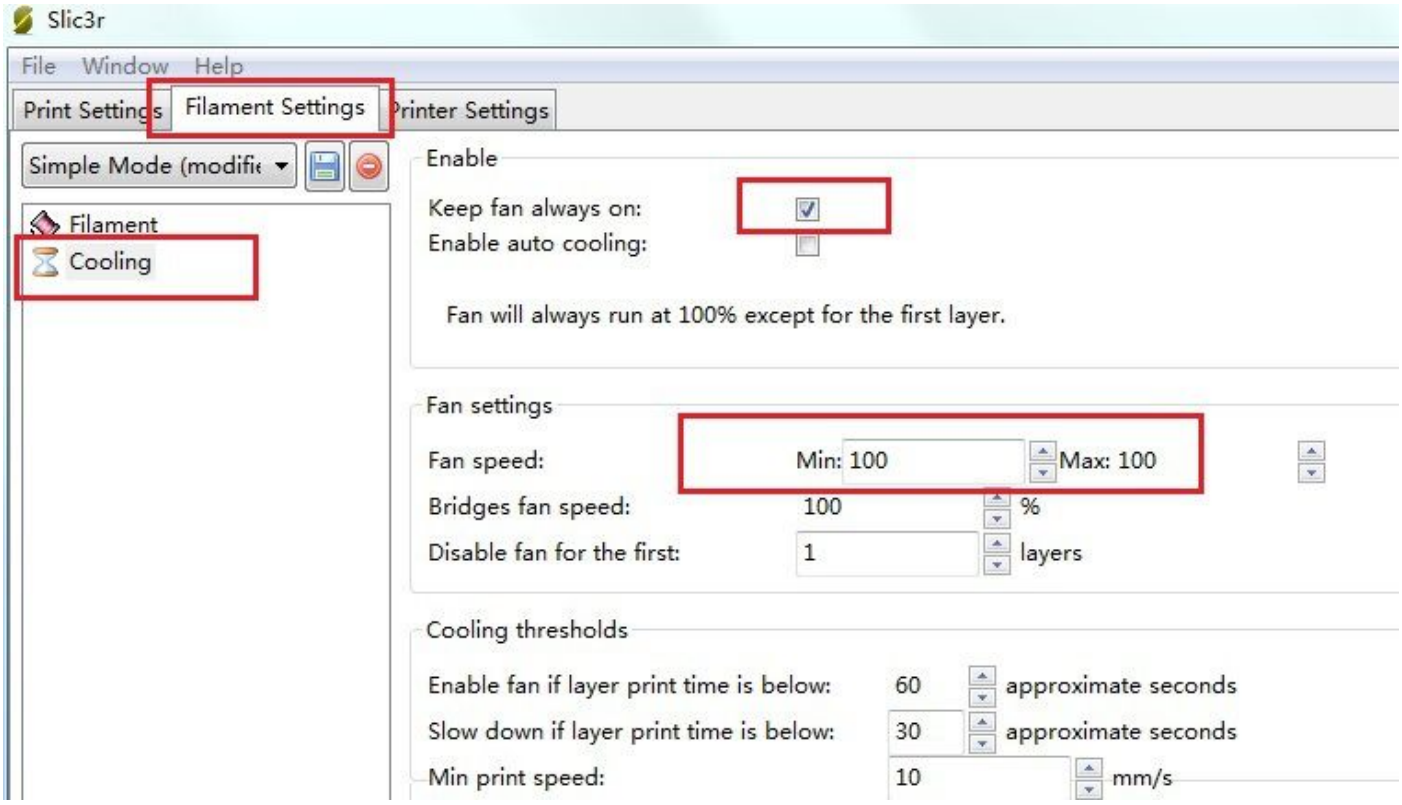
(2) Slice Setting



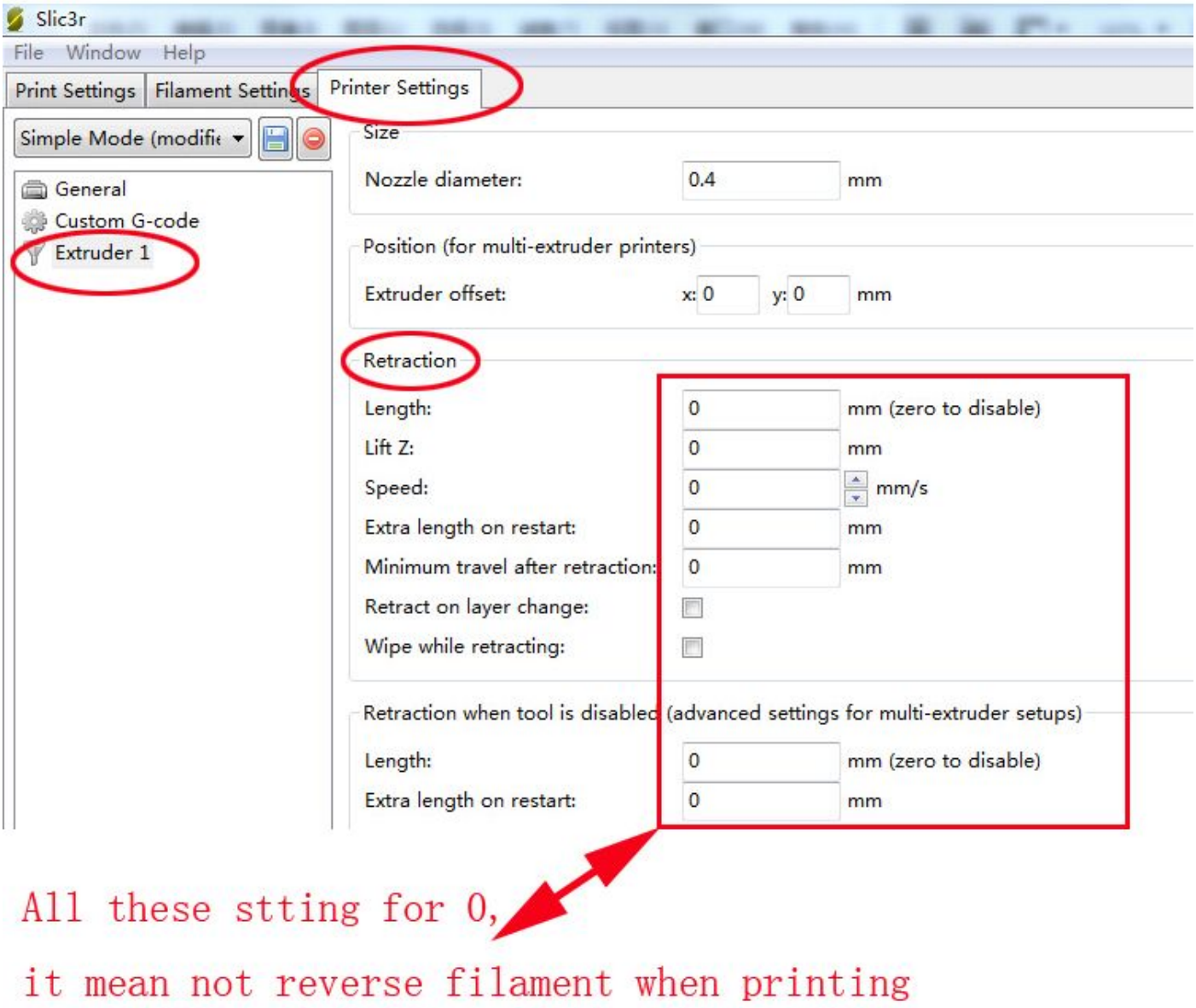




when first printing or when you are not Familiar to the printer.we recommend you not set Reverse filament,to avoid the nozzle block.All these stting for 0,it mean not reverse filament when printing. When you are familiar to the printing work,could add to set the reverse.



This setting for fan,could keep fan always work. The 100% fan speed could adjust.



All these stting for 0,

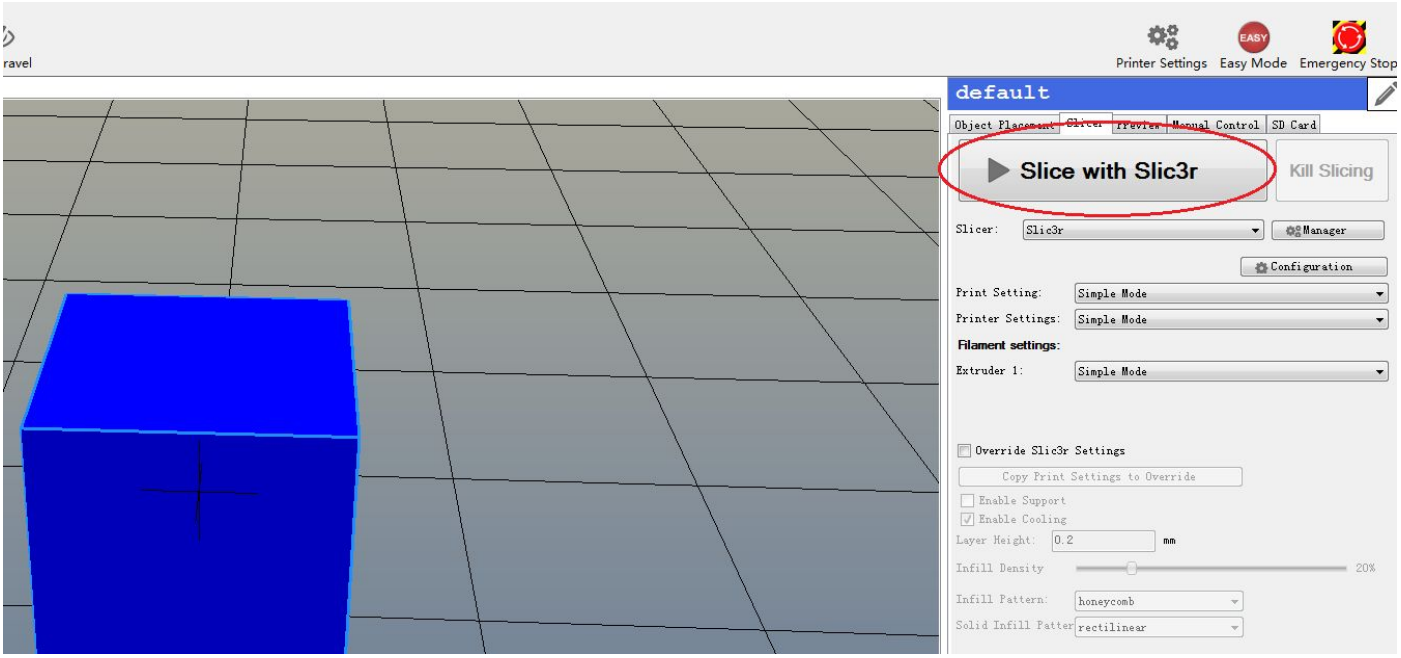
it mean not reverse filament when printing

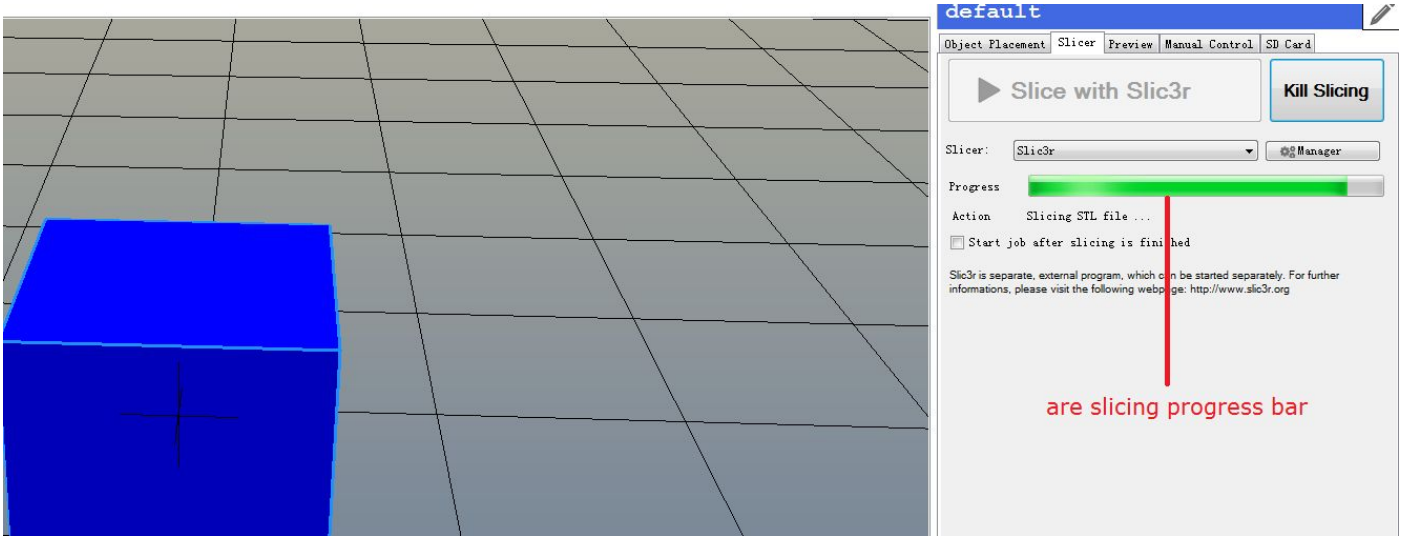
About more info about the slic3d software,pls go to the link as follow.

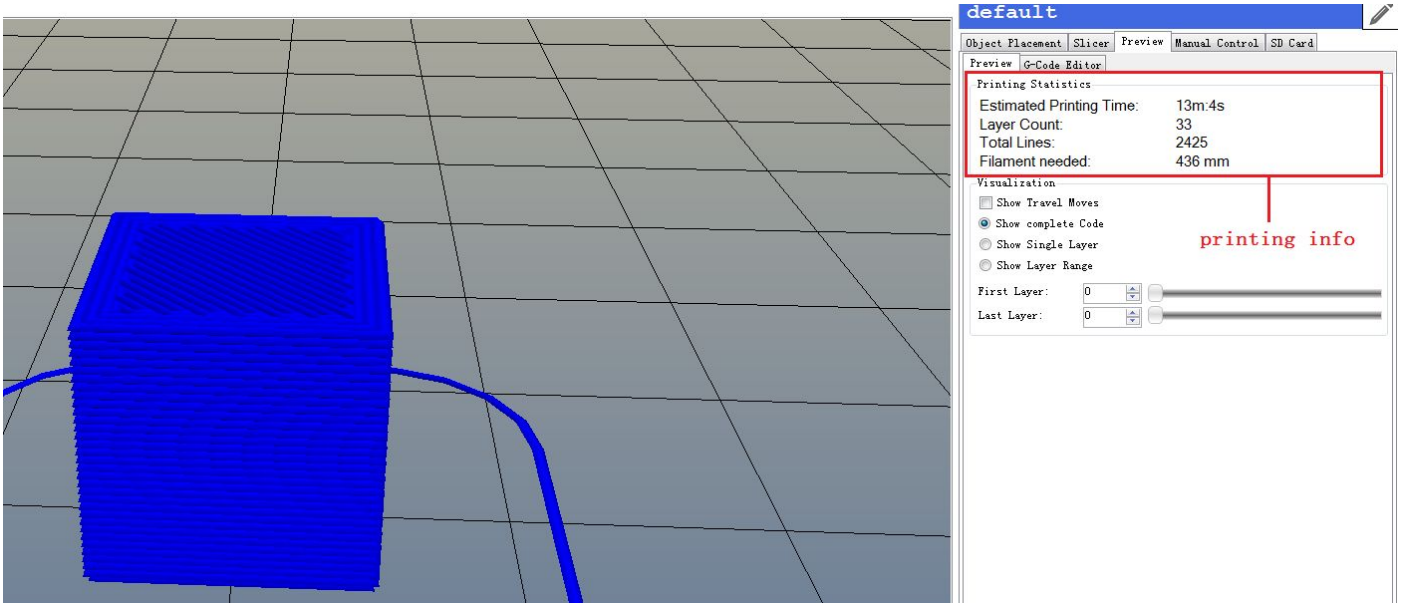
http://manual.slic3r.org/intro/overview

(3) Slice the model

After the setting for slice,click the "Slice with Slic3r",during the slice,will appear green progress bar,after slice,will appear the printing time and need filament info.

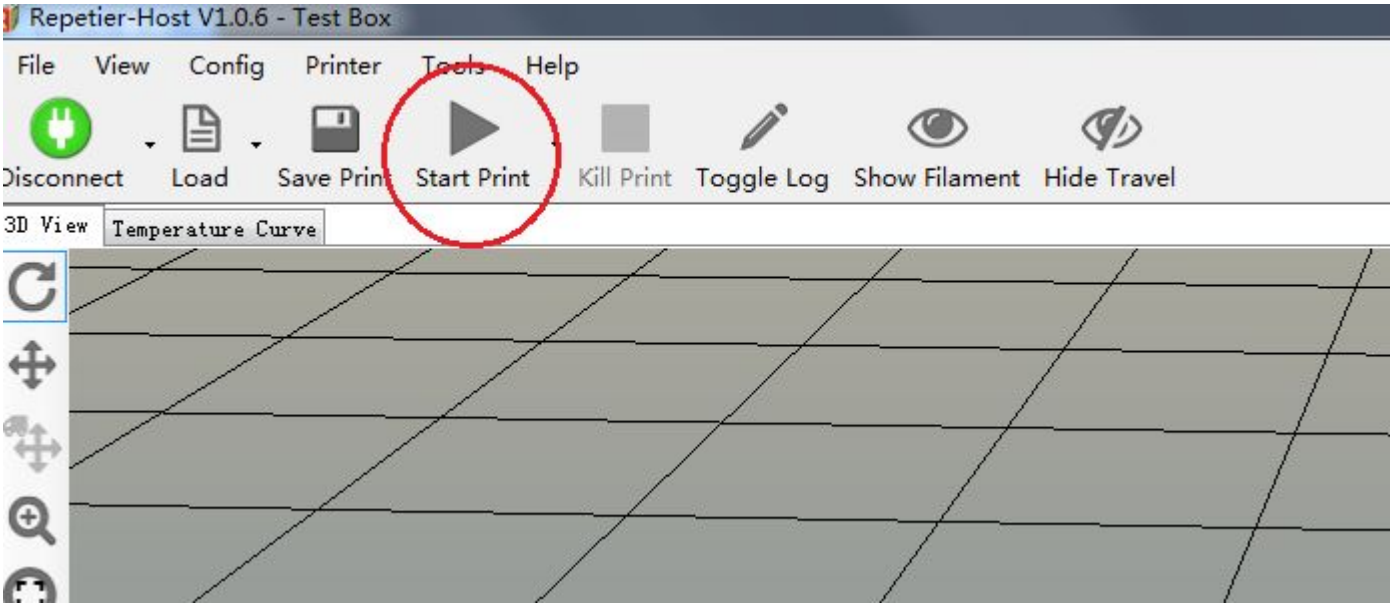

Printer Settings
Easy Mode
Emergency Stop
default
Object Placement
Slicer
Preview
Manual Control
SD Card
Slice with Slic3r
Kill Slicing
Slicer:
Slic3r
Manager
Configuration
Print Setting:
Simple Mode
Printer Settings:
Simple Mode
Filament settings:
Extruder 1:
Simple Mode
Override Slic3r Settings
Copy Print Settings to Override
Enable Support
Enable Cooling
Layer Height:
0.2
mm
Infill Density
20%
Infill Pattern:
honeycomb
Solid Infill Patter
rectilinear

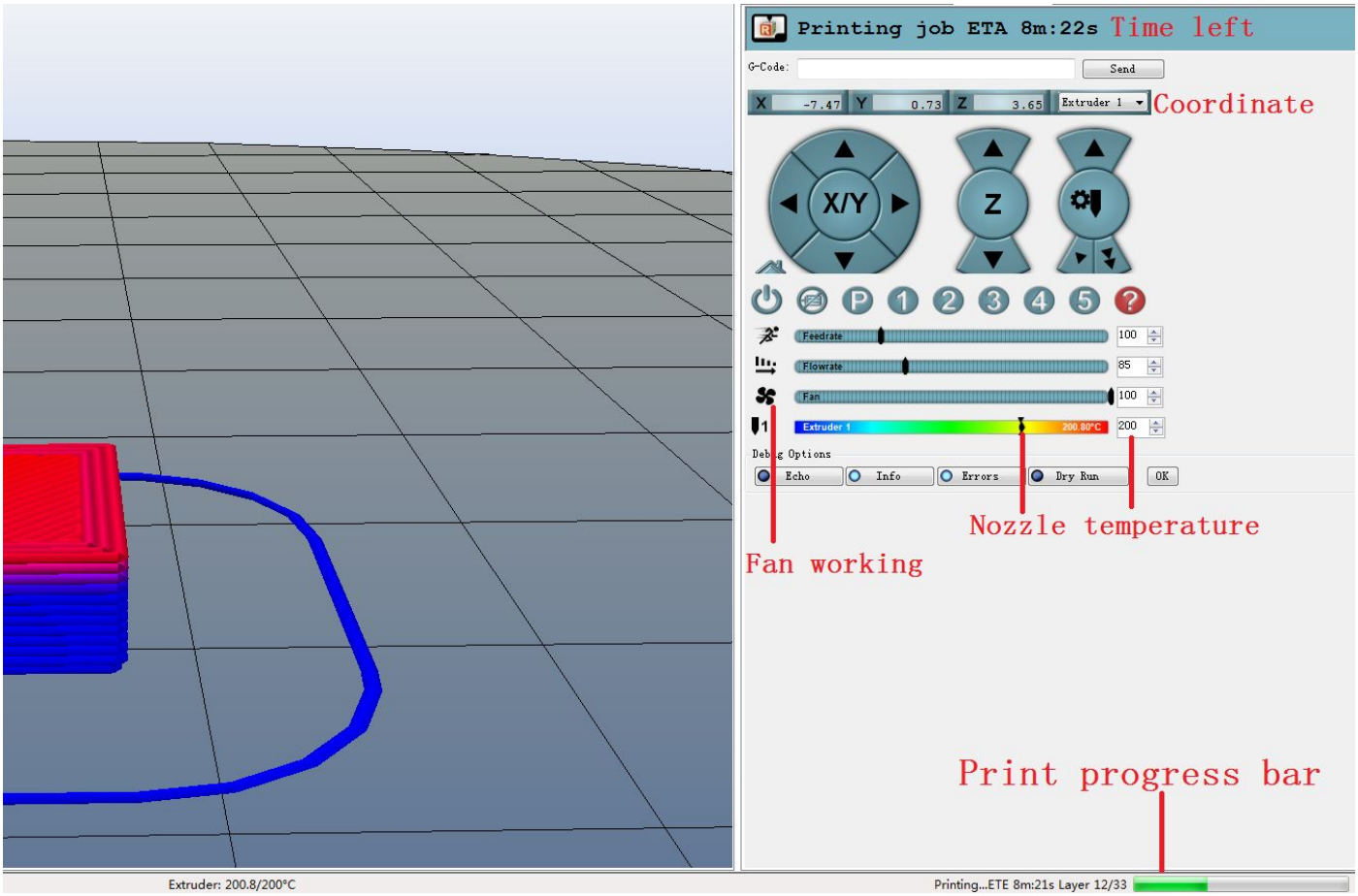

default
Object Placement
Slicer
Preview
Manual Control
SD Card
Slice with Slic3r
Kill Slicing
Slicer:
Slic3r
Manager
Progress
Action
Slicing STL file ...
Start job after slicing is finished
Slic3r is separate, external program, which can be started separately. For further informations, please visit the following webpage: http://www.slic3r.org
are slicing progress bar

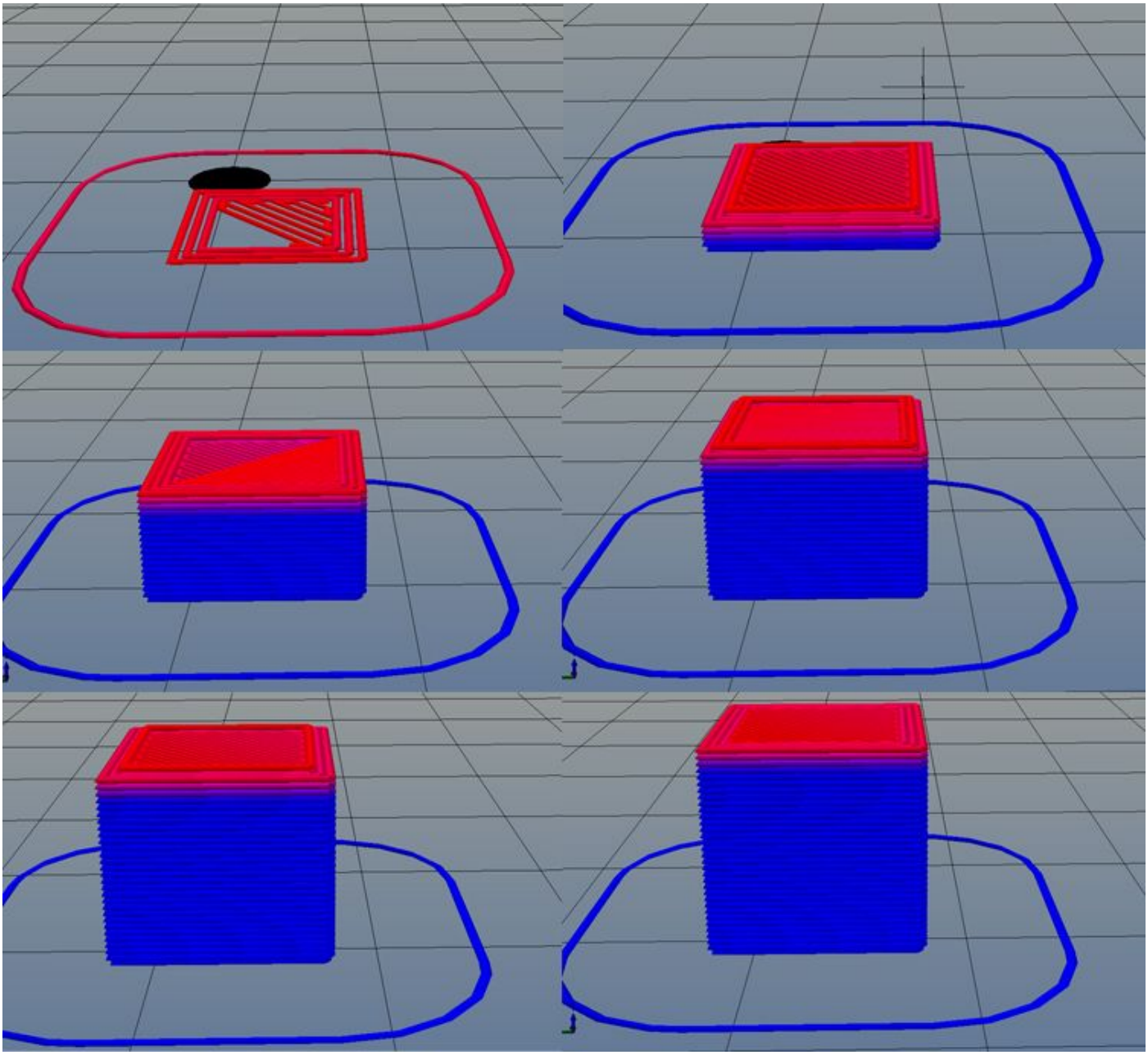

default
Object Placement
Slicer
Preview
Manual Control
SD Card
Preview
G-Code Editor
Printing Statistics
Estimated Printing Time:
13m:4s
Layer Count:
33
Total Lines:
2425
Filament needed:
436 mm
Visualization
Show Travel Moves
Show complete Code
Show Single Layer
Show Layer Range
printing info
First Layer:
Last Layer:

(4) printing

Complete sliced,could start printing,click the "Start print",will print the model, the panel display printing progress.







Software latest Updates

Alternatively, you can check for any latest updates in the future and download them individually if needed:
Arduino [http://arduino.cc/en/main/software]
Printrun-Pronterface [http://koti.kapsi.fi/~kliment/printrun]
Slic3r [http://slic3r.org/download]
jcrocholl Marlin [https://github.com/jcrocholl/Marlin]
Repetier [http://www.repetier.com/download/]

This Guide will use the following Software & Firmware Package for Kossel Mini.
For Windows User [http://www.blomker.com/KosselMini_Windows.zip]
For Mac User [http://www.blomker.com/KosselMini_Mac.zip]

7 Extrusion not well or wire ring true problem analysis

When using 3D printer might find the wire ring true situation, the specific cause of this state of affairs may be divided into the following categories:

1. Insufficient wire feed amount, or the temperature is not enough

2. Wire wheel bearing too tight or too loose

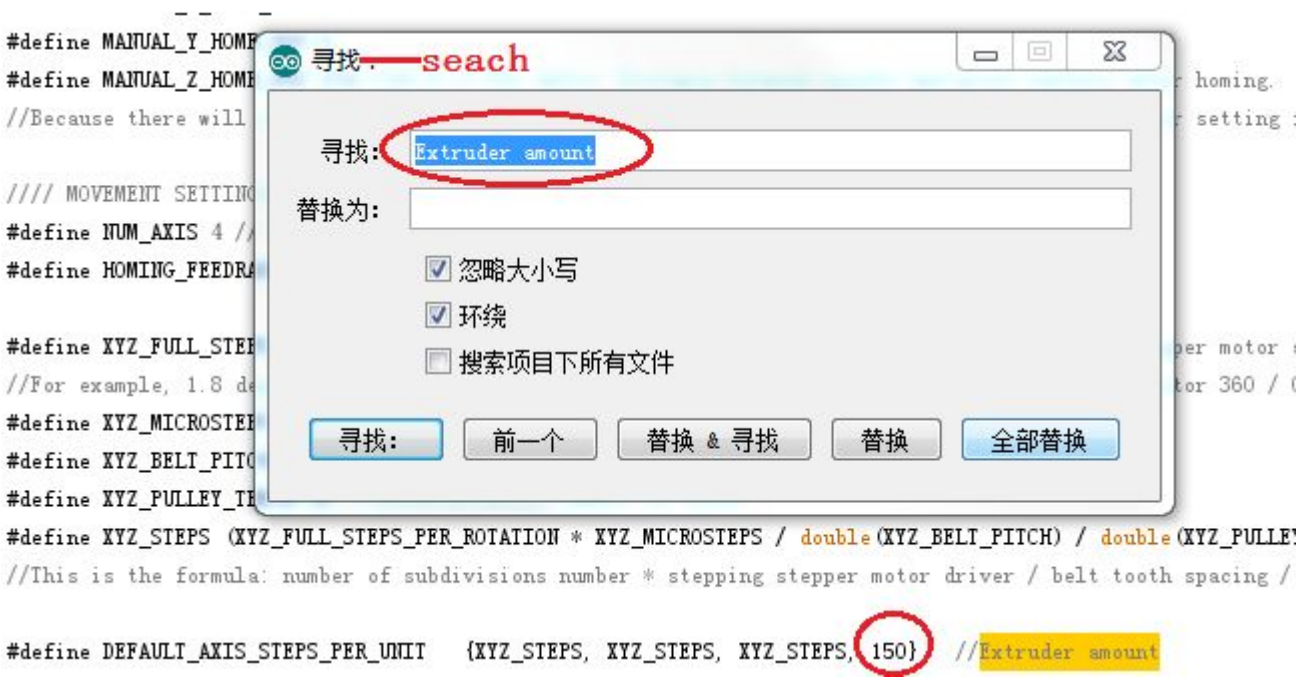
3 .Nozzle clogging

4. placement tetrafluoroethylene tube length is too long or the wire feeder place is not reasonable

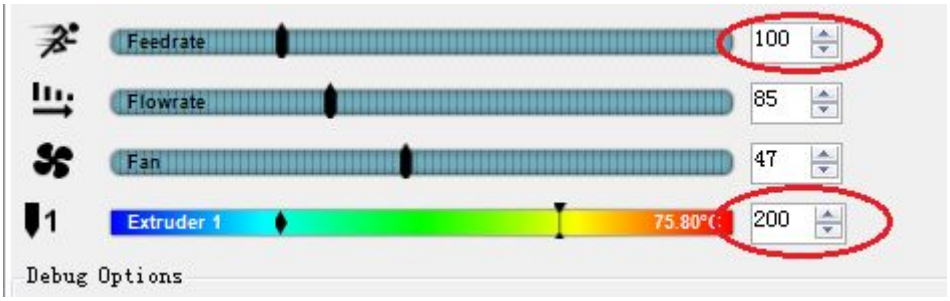
Please refer to the specific problem-solving method behind ~~~~

1. Insufficient wire temperature is not enough to adjust the amount or method:

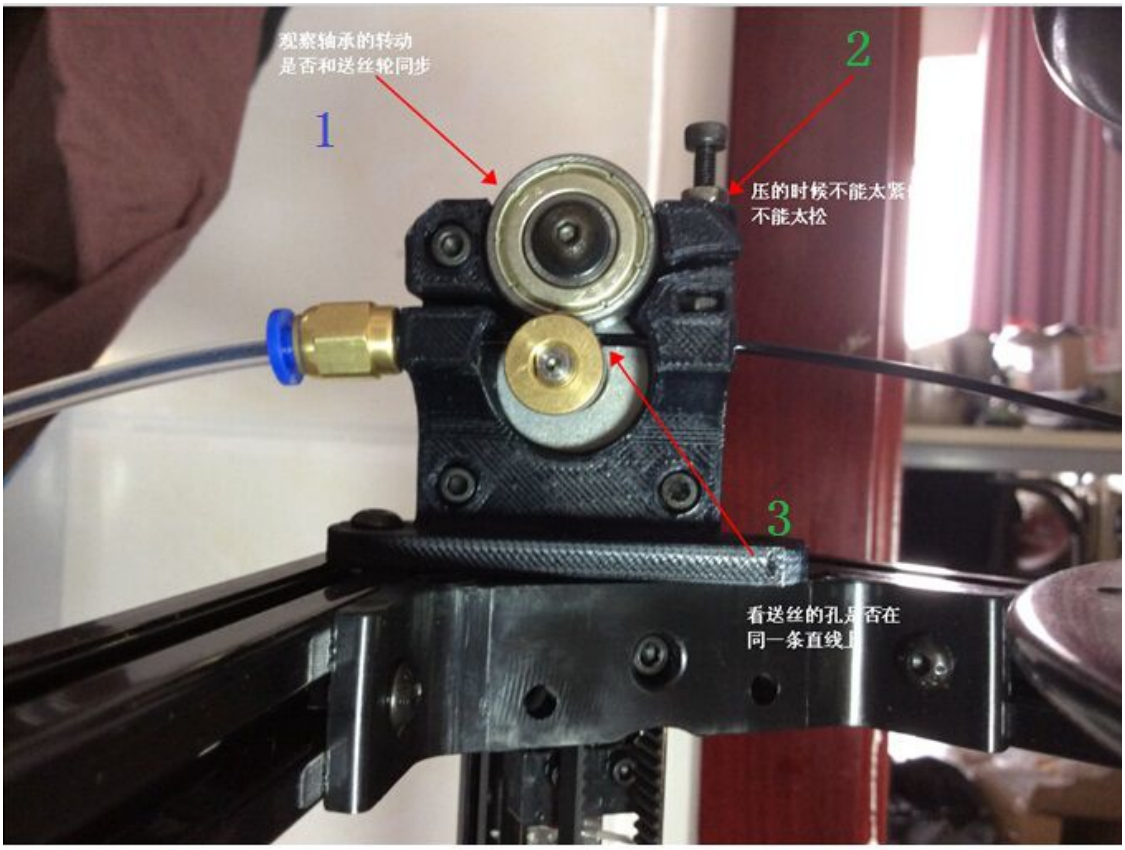
（1）Adjust wire feed amount in Firmware



（2）Adjust the temperature and the amount of wire in Repetier software



2. wire wheel bearing too tight or too loose



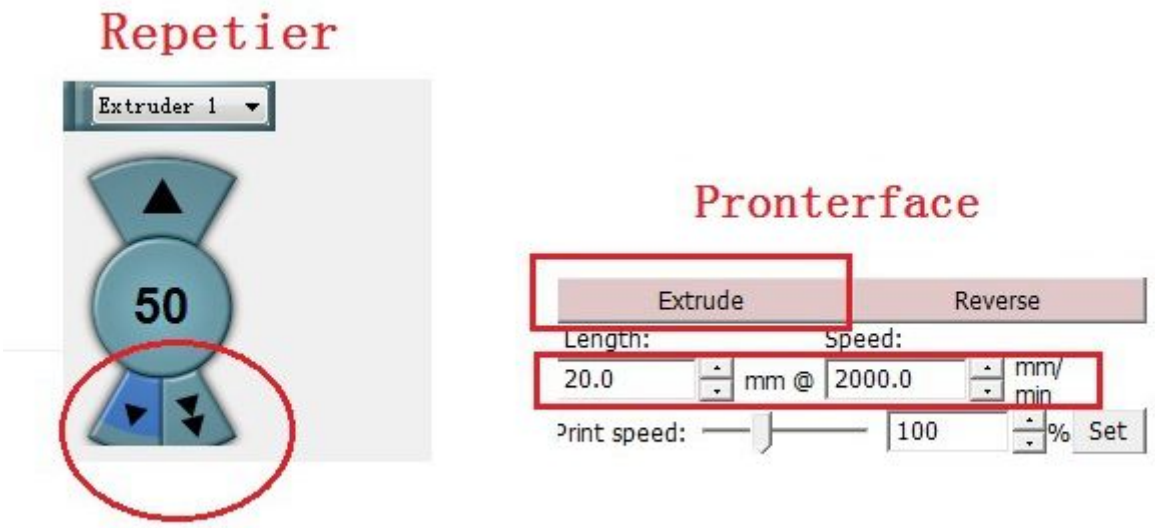
1. Check whether bearings and wire feeder rotate at the same time or not
2. Screws press not too tight or too loose
3. Check whether the wire feeder holes and slots are in the same line or not

3 Nozzle clogging

To solve problem of nozzle clogging , there are three ways to do,as reference.

First,on the basis of the original temperature, the temperature was raised 20 ℃ and stable for 20 minutes, in the software Repetier or Pronterface, choose the

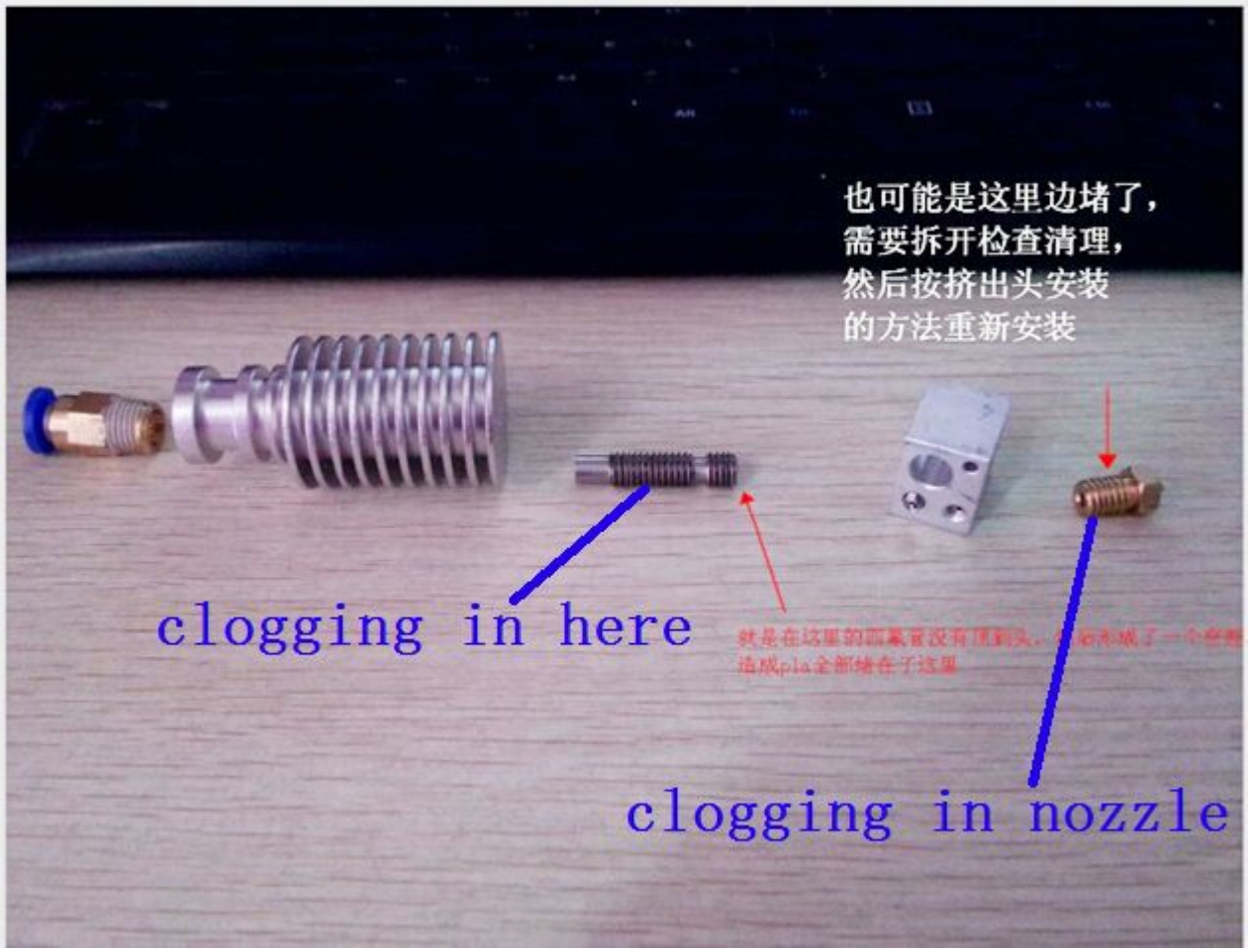
feed wire manually,the speed and length could adjust, repeatedly operation until smooth,this way could have a try,maybe good use,maybe not.before extrude GUI operation ,pls send MCODE M302.



Second,check whether the nozzle clogging.

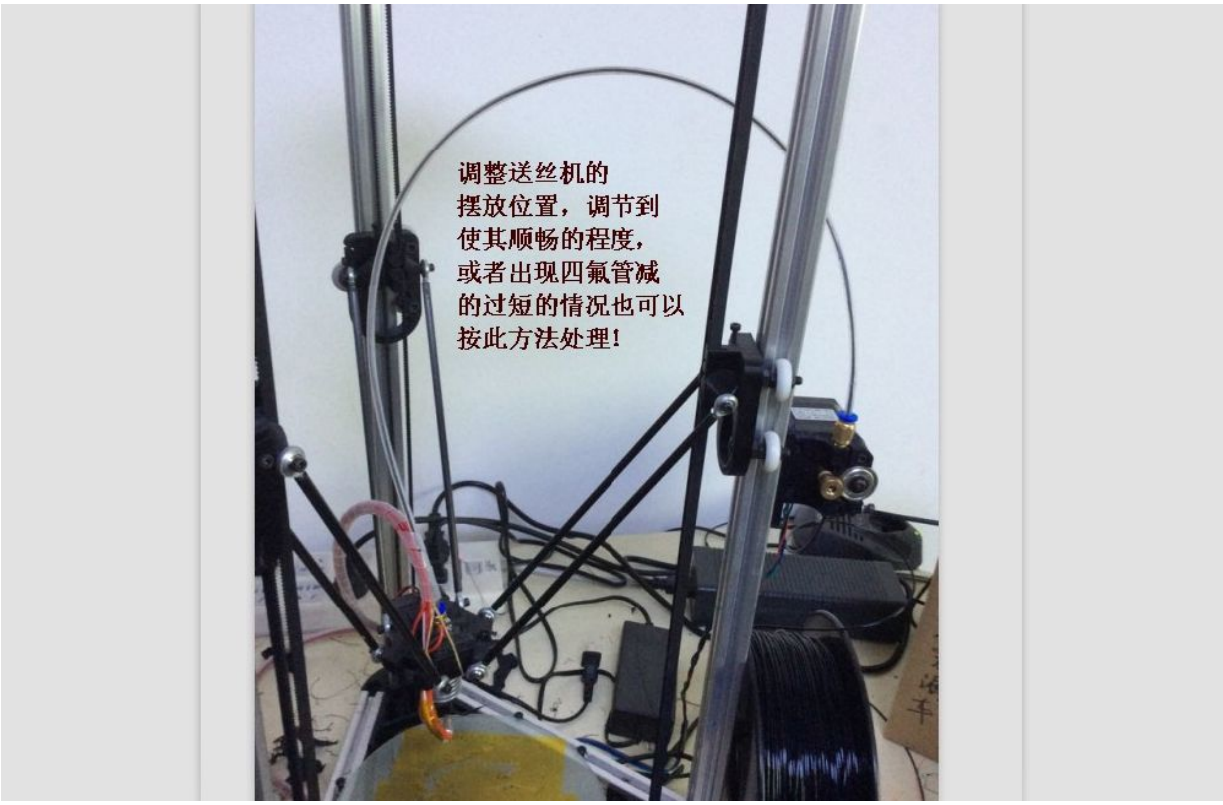
entere the wire manually, to see whether smooth

Third, open and clean up, the gas stove or fire machine heating, clean the inside, or replace the nozzle.we provide spare nozzle.reassembled in some parts with 704 (silicone rubber), with reference to the specific installation methods install manual.



4. placement tetrafluoroethylene tube length is too long or the wire feeder place is not reasonable. The wire feed motor position can be adjusted according to your needs.

Placing wire feeder There are many ways to choose, free to play according to their own,Note that when the main wire wire not too far away from the wire feeder, or likely to produce resistance wire ~!



Finally, the last .....Adjust the wire feeder current, Can not,Do not try. . .