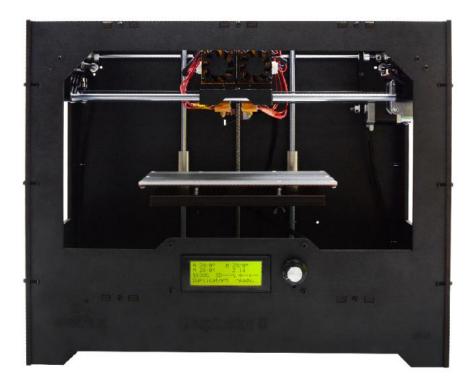
Geeetech Duplicator 5 3D printer User Manual



Safety Instructions	
1. Software Resources	
1.1 Repetier-Host	
1.2 Driver	
1.3 Arduino IDE	
2. Connect the Printer	
3. Printer Setting	9
3.1 Printer Speed	9
3.2 Number of Extruder and Nozzle Diameter	
3.3 Printer Shape	
4. Printer Function Test	
4.1 Use Repetier-Host to Test	
4.1.1 Motor Direction Test	
4.1.2 Heating Test	
4.1.3 Extruder Test	
4.2 Use LCD Control Panel to Test	
4.2.1 LCD Menu Introduction	
4.2.2 Motor Direction Test	
4.2.3 Heating Test	
5. Hotbed Leveling	
6. Slice Settings	
6.1 Printing Setting	
6.2 Filament Setting	
6.3 Printer Setting	
6.4 Other Settings	
7. Begin Printing	
7.1 Print with one extruder	
7.1.1 Load Print Model	

Contents

7.1.2 Slicing	. 57
7.2 Print with Dual-extruder	. 64
7.3 Stand-alone printing with SD Card	. 70
7.3.1 Save	. 70
7.3.2 Print	. 71
FAQ	. 72
8.1 How to upload firmware?	. 72
8.2 How to change the motor direction in firmware?	. 73
8.3 User manual of Repetier-Host	. 74
8.4 Possible causes for motor's non-action	. 75
8.5 Extruder does not work normally	. 75
8.6 The hotbed or extruder can not be heated	. 75
8.7 LCD error: MAX/MIN TEMP error	. 75
8.8 No information or displaying black square on LCD	. 75
8.9 Time.h/endstop hit or other abnormalities	. 75
	 7.2 Print with Dual-extruder 7.3 Stand-alone printing with SD Card

Safety Instructions

Building the printer will require a certain amount of physical dexterity, common sense and a thorough understanding of what you are doing. We have provided this detailed instruction to help you assemble it easily.

However, ultimately we cannot be responsible for your health and safety while you are building or operating the printer. Therefore, be sure you are confident in what you are doing prior to commencing with building or buying. Read the entire manual to enable you to make an informed decision.

Building and operating involves electricity and all necessary precautions should be taken and adhered to. The printer runs on 24V supplied by a certified power supply, so you shouldn't ever have to get involved with anything over 24V. Please bear in mind that there can still be high currents involved and even at 24V they shouldn't be taken lightly.

Check the power input of the power supply unit. You can choose either 110V or 220V according to the power regulation in your country.

High temperatures are involved in 3D Printing. The extrusion nozzle of the hot end can run at about 230 °C, the heated bed runs at 110 °C and the molten plastic extruded will initially be at around 200 °C. Therefore, special care and attention should be taken when you are handling these parts of the printer during operation.

We wouldn't suggest you to leave your printer running unattended, or at least until you are confident to do so. We are not responsible for any loss, damage, threat, hurt or other negligent result caused by either building or using the printer.

4

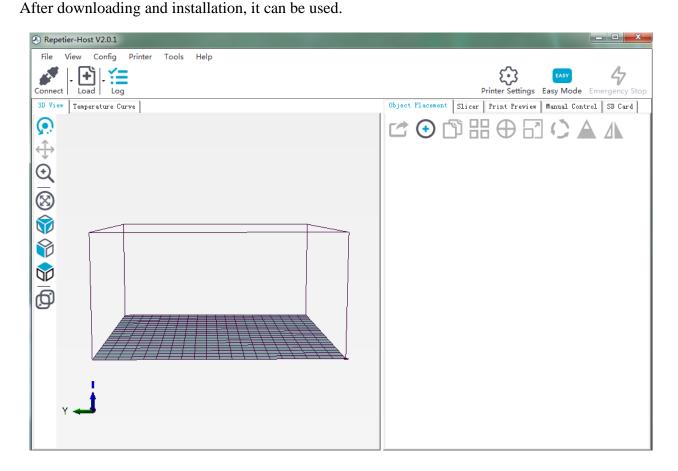


1. Software Resources

1.1 Repetier-Host

We use the latest Repetier-Host 2.0.1 as the control software for Duplicator 5. Here is the link for downloading it:

https://www.repetier.com/download-now/



1.2 Driver

Connect the printer to computer with USB cable; the USB driver installer will automatically appear. If not, you can download FT232RQ here, the driver of GT2560:

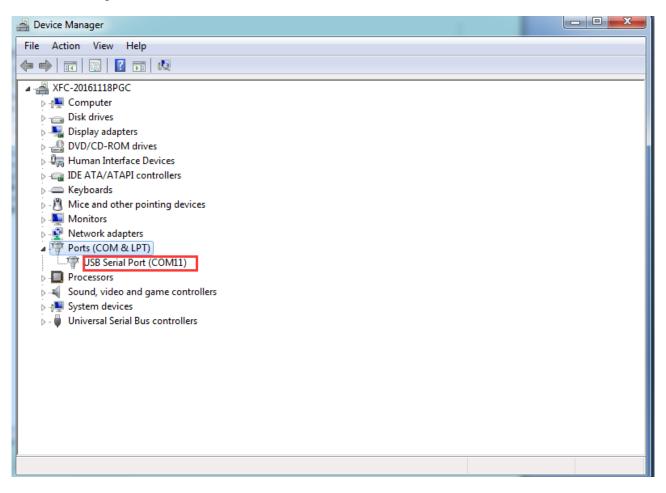


www.geeetech.com

http://www.ftdichip.com/Drivers/VCP.htm

Upon downloading and installing, you can find the corresponding serial port in the Windows

"Device Manager":



1.3 Arduino IDE

In the process of using the printer you may need to re-upload the firmware, and the software you need to use is Arduino IDE. About how to upload firmware <u>please refer to FAQ</u>.

2. Connect the Printer

After the above software is installed, we can connect the printer to the computer. Plug the USB into



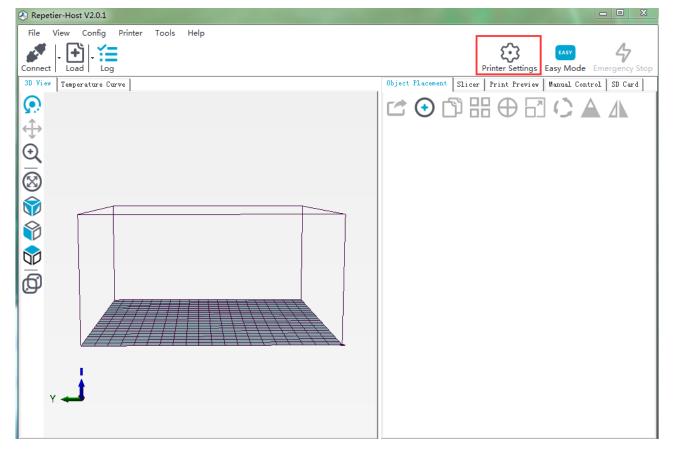
www.geeetech.com



the computer, start Repetier-Host, click the

Printer Settings icon in the top right corner, and the

dialog box of [printer settings] will appear.



First, enter "Duplicator 5" into the text box to name the printer.

Then, select the corresponding COM port for the printer and set the baud rate as 250,000 in the drop-down menu.

Click [Apply] after the setting.

The following pictures show the whole setting details.



www.geeetech.com

Repetier-Host V2.0.1 - two_color_cube_2 + 1
iconnect Load - D Icon <
View Temperature Curve Object Placement Slicer Print Preview Manual Control SD Card
Printer Settings Printer: Duplicator 5 Connection Printer Extruder Printer Shape Scripts Advanced Connector: 串口连接 Port: COMN11 Baud Rate: 250000 Transfer Protocol: Autodetect
Printer: Duplicator 5
Connection Printer Extruder Printer Shape Scripts Advanced
Connector: 串口连接 ・ Help
Port: COM11 -
Baud Rate: 250000 -
Transfer Protocol: Autodetect
A reset on Emergency Send emergency command and reconnect
Receive Cache Size: 127
Communication Timeout:) [5]
Use Ping-Pong Communication (Send only after ok)
The printer settings always correspond to the selected printer at the top. They are stored with every OK or apply. To create a new printer, just enter a new printer name and press apply. The new printer starts with the last settings selected.
w in Log: O Commands 🔘 Infos 🔘 Warn
:00:07.152 <slic3r> Done. Process took :00:07.152 <slic3r> Filament required: 0K Apply Cancel</slic3r></slic3r>
UA ADDIV Lancel
接: Duplicator 5 Extruder 1: 0.0°C/Off Extruder 2: 0.0°C/Off Bed: 0.0°C/Off Idle Idle :::



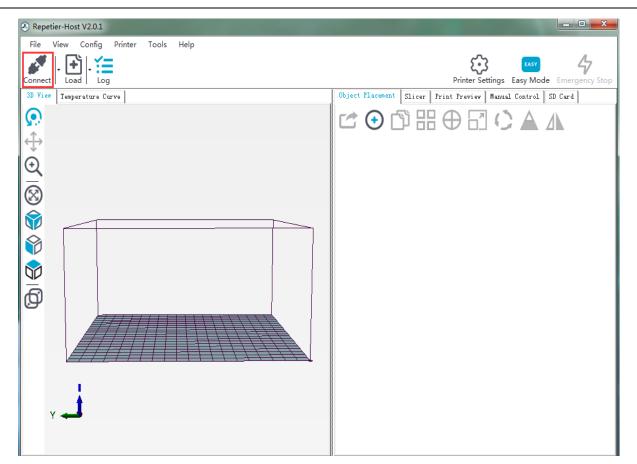
After setting, click the Connect button in the top left corner of Home Page. When the button turns



green and changes into **Disconnect**, the printer connection is successful.



www.geeetech.com



3. Printer Setting

3.1 Printer Speed

Set the running speed of printer as 1000 in the [printer settings] in order to avoid the collision caused by high speed during the test. After the follow-up tests are completed, it can be changed back to the original value. (Note: The speed of Z-axis should not be too high. 200 is OK.)

Travel feed rate: 1000mm/min

Z-Axis feed rate: 200mm/min



www.geeetech.com

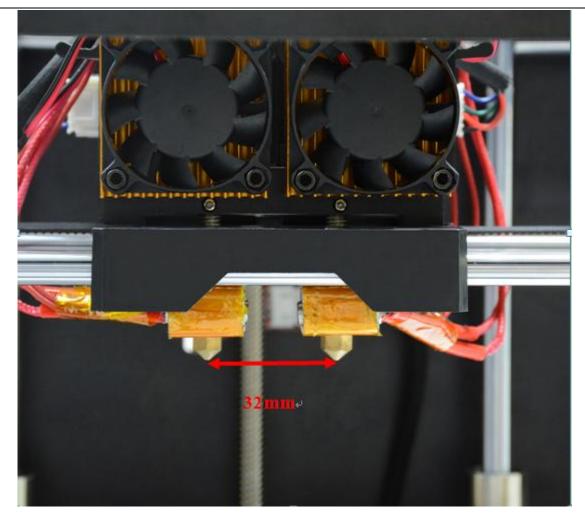
rinter Settings			
Printer: Duplicator 5		· 🖞	
Connection Printer Extruder Print	r Shape Scripts A	dvanced	
Travel Feed Rate: 100) [mm/m	in]	
Z-Axis Feed Rate: 200	[mm/m	in]	
Manual Extrusion Speed: 2	20	[mm/s]	
Manual Retraction Speed: 30	[mm/s	:]	
Default Extruder Temperature: 200	°c		
Default Heated Bed Temperature: 55	°c		
✓ Check Extruder & Bed Temperature ■ Remove temperature requests from I Check every 3 seconds. Park Position: X: 0 Y: 1	Z min: O	[mm] rk Position after Job/	(m. a)
 Send ETA to printer display Disable Extruder after Job/Kill 	_	rk fosition after job/ Heated Bed after Job/K	
✓ Disable Motors after Job/Kill		has SD card	
Add to comp. Printing Time 8 [5] .s 🗖 Y-Axis 🖡	Z-Axis 🔲 Flip X a	nd Y
	OK	Apply Ca	ncel

3.2 Number of Extruder and Nozzle Diameter

The number of extruder is set as 2. The diameter of print head is set according to the actual size, here is 0.4mm.

The distance between two extruders on X direction is 32mm, then set offset X -16 and 16mm. (You can also set it, depending on actual measurement)







www.geeetech.com

Printer Settings	
Printer: Duplicator 5	
Connection Printer Extruder	Printer Shape Scripts Advanced
Number of Extruder: Number of Fans:	2 ·
- Max. Bed Temperature:	230 110
Max. Volume per second Frinter has a Mixing Extrude	12 [mm ³ /s] er (one nozzle for all colors)
-Extruder 1	
Name:	
	[mm] Temperature Offset: 0 [° C]
Color: Offset X: 16	Offset Y: [mm]
-Extruder 2	
Name:	
Diameter: 0.4	[mm] Temperature Offset: 0 [° C]
Color:	
Offset X: -16	Offset Y: 0 [mm]
	OK Applv Cancel

3.3 Printer Shape

Here the printer shape of Duplicator 5 is Classic Printer;

For home position, choose Min;

The printer's maximum printing volume 230 * 150 * 150 (length / width / height).

If the object which is being printed is not in the center of the hot bed, you can adjust the following two values to compensate for the distance deviation of X / Y direction:

Bed Left



www.geeetech.com

Bed Right

Printer Settings	
Printer: Duplicator 5	- <u>-</u>
Connection Printer Extruder Printer Shape Scripts Advan	iced
Printer Type: Classic Printer 🔹	<u>^</u>
Home X: 250 Home Y: 150 Home Z: 0	
X Min O X Max 250 Bed Left: 20	_
Y Min O Y Max 150 Bed Front: O	
Print Area Width: 230 mm	Ξ
Print Area Depth: 150 mm	
Print Area Height: 150 mm	
The min and max values define the possible range of extruder co These coordinates can be negative and outside the print bed. Be	d
left/front define the coordinates where the printbed itself sta changing the min/max values you can even move the origin in the	
the print bed, if supported by firmware.	
X Wax	
E	
OK	Apply Cancel

After setting, click Apply>OK.

Now we have finished the relevant settings for Duplicator 5.

4. Printer Function Test

When we are testing Duplicator 5, we can test through LCD control panel or on the control software

--- Repetier-Host. The following parts display detailed testing procedures.



www.geeetech.com

4.1 Use Repetier-Host to Test

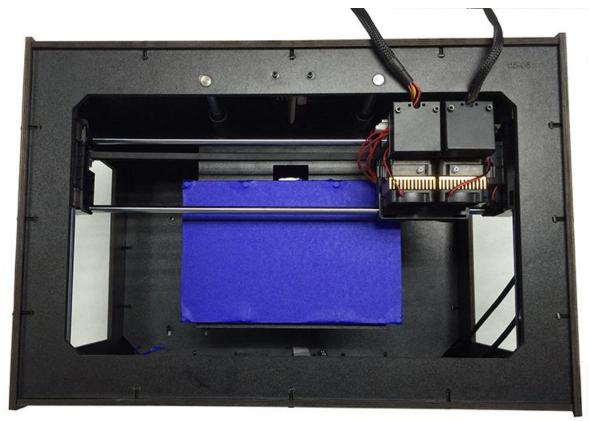
4.1.1 Motor Direction Test

Manually set the motors of X / Y / Z axis in the middle of each direction to avoid accidental collision during the test. Always be prepared for emergency stop. There is emergency stop button at

4

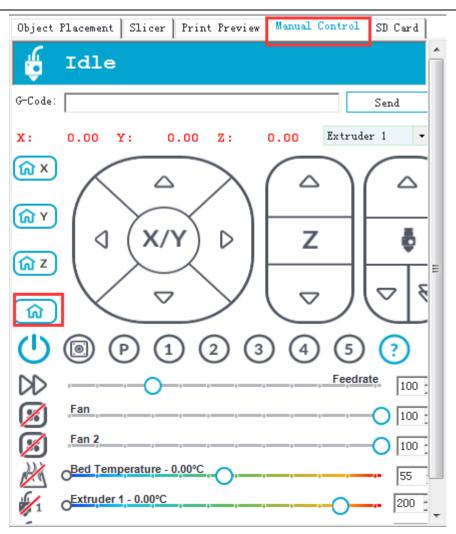
the top right corner Emergency Stop, or you can cut off the power.

Start Repetier-Host and connect the printer. Click Home button, then all three axes will move towards the endstop. After hitting the endstop, they will move back for a short distance and then stop the movement. The origin location should be in the right front corner of the printer platform.





www.geeetech.com



Note: The origin of the coordinates is at the front left corner of the building platform. Therefore, when X/Y/Z axis is homed, there coordinates are X=230mm, Y=150mm, Z=0mm.

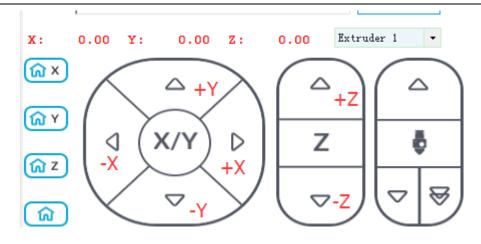
In this way, the positive direction of X axis is from left to right, i.e. +1mm means the motor moves toward the X axis endstop at 1mm.

The positive direction of Y axis is from outside to inside, i.e. +1mm means the motor moves toward the Y axis endstop at 1mm.

The positive direction of Z axis is from up to down, i.e. +1mm means the motor moves away from the Z axis endstop at 1mm (move down).



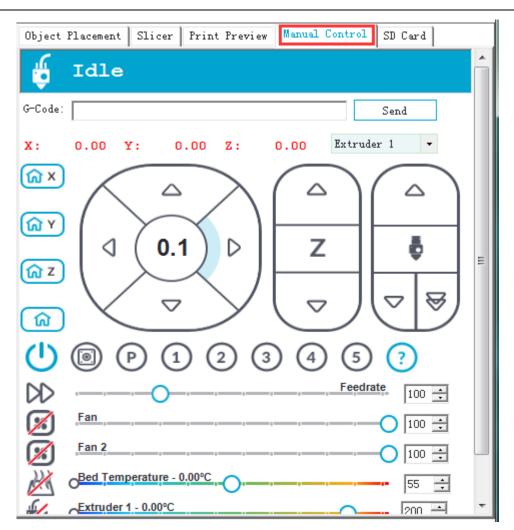
www.geeetech.com



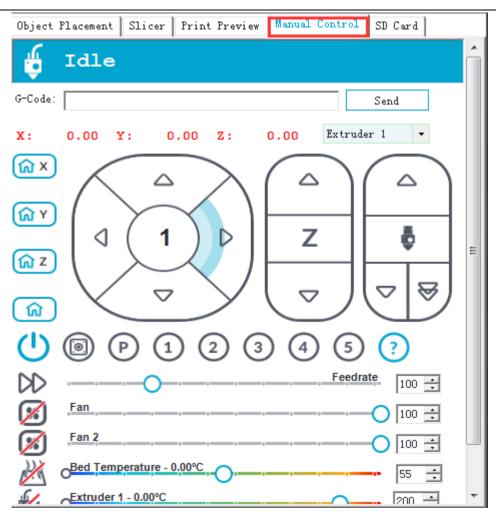
If the moving direction is reversed, you can change the motor direction in the firmware. (please refer to FAQ).

In them manual control mode, the number in the middle of the panel represents the moving distance and direction every time. Click the button every one time, the motor moves at 0.1mm, 1mm, 10mm or 50mm.

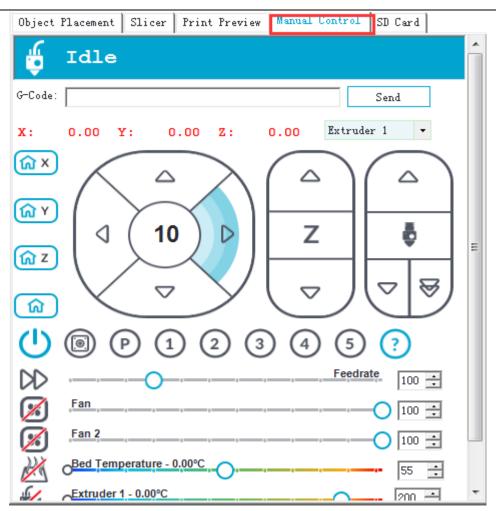






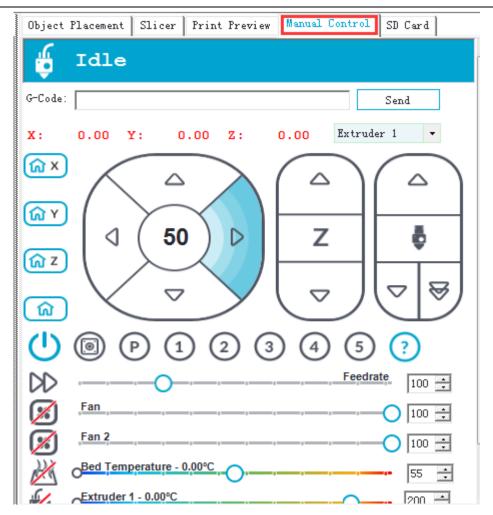








www.geeetech.com

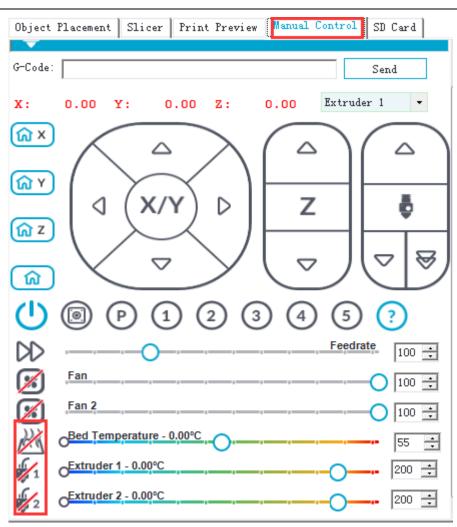


In the printing, we recommend 1mm to avoid errors.

4.1.2 Heating Test

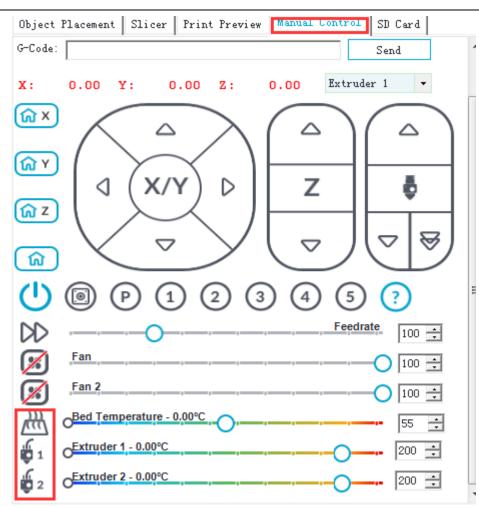
Click the heating button of the hot bed \swarrow and the extruder \checkmark . The slash will disappear and you will see the temperature rising up.







www.geeetech.com

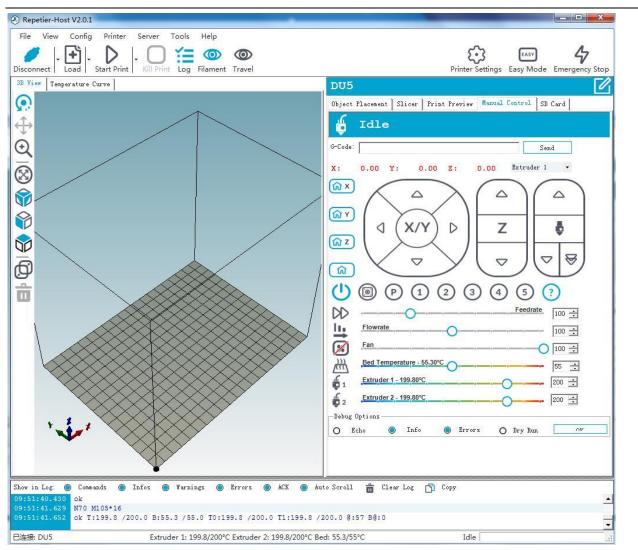


Meanwhile, you can see the real-time temperature at the bottom of Repetier-Host.

If the hot bed or extruder can not be heated, please refer to \underline{FAQ}_{\circ}



www.geeetech.com



4.1.3 Extruder Test

Please note: The extruder will not begin to work until the temperature reaches above 170 °C.

Heat the extruder to 200 $^{\circ}$ C, and then insert the filament into the hotend via push-in fitting. When you are pushing the filament, press the handle with one hand and push the filament with the other hand.

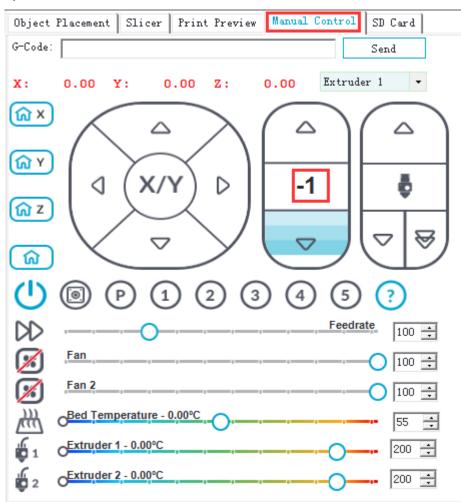
Please note that the filament must be in the slot of the idler wheel, otherwise feeding will not be fluent.

After the homing operation, it is suggested to move the building platform down. Please click the



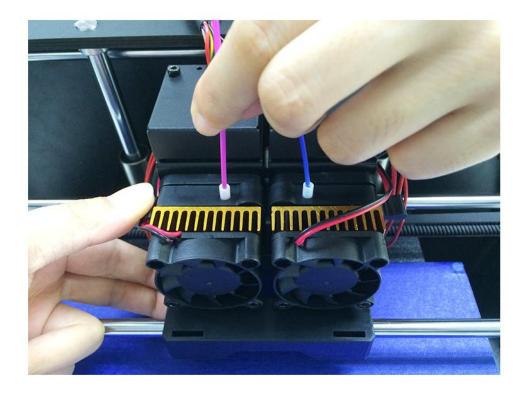
www.geeetech.com

button to modify the coordinate of Z axis.



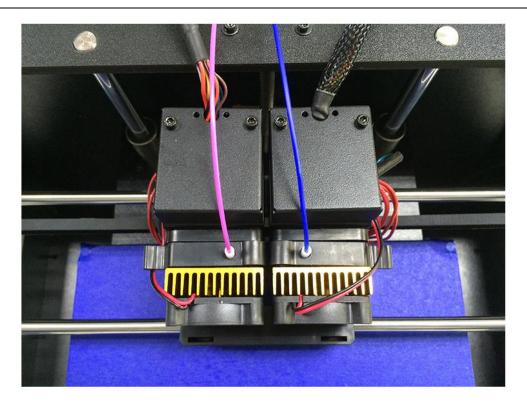








www.geeetech.com

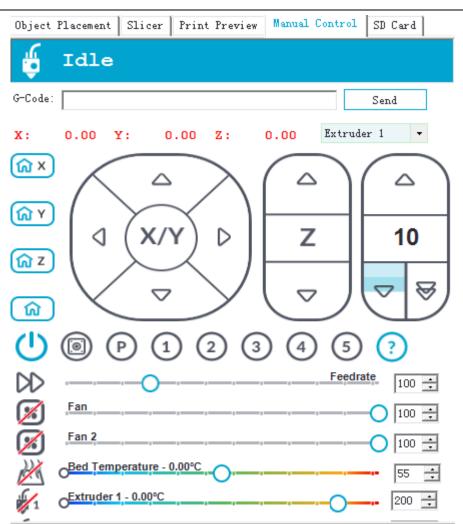


After pushing the filament into the bottom of hotend, you can use the feeding button on Repetier-Host (as shown in following picture) to do manual feeding. To avoid clogging, please choose the feeding rate button \checkmark at 1mm or 10mm (as shown in the following picture). The right side button \checkmark is used for rapid feeding, seldom used. If the nozzle can extrude filament smoothly, the extruder is working well. If not, please refer to

FAQ.



www.geeetech.com



Note: If the moving direction of the motor is reversed, which means you find the filament going backwards when you click to feed downwards, please change the motor direction of the extruder in the firmware to solve the problem. This method also applies to the abnormal cases for X/Y/Z axis motor.

4.2 Use LCD Control Panel to Test

4.2.1 LCD Menu Introduction

Functions of LCD rotary knob:

- 1. Press the knob: confirm or enter sub-menu
- 2. Rotate the knob: roll to choose options or change parameters

LCD homepage:



www.geeetech.com

- 1. Extruder temperature: current temperature/target temperature
- 2. Hotbed temperature: current temperature/target temperature
- 3. Current coordinates of X/Y/Z
- 4. Feed rate: current printing rate
- 5. Current rate of printing process

Note: Rotate the knob during printing will change the feedrate in real time.



Press the knob to enter the next level menu:

- 1. Prepare: Preparing work before printing
- 2. Control: Setting of temperature and motion parameters of the printer
- 3. Status display of SD card



www.geeetech.com



Main functions of Prepare menu:

- 1. Disable steppers: unlock the motor so that you can move them freely.
- 2. Auto home: automatically homing of each axis
- 3. Preheat PLA: manually preheat the hotbed and the extruder before printing PLA
- 4. Preheat ABS: manually preheat the hotbed and the extruder before printing ABS
- 5. Move axis: manually move each axis and each extruder





www.geeetech.com



Main functions of Control menu:

 Temperature: You can change the temperature of the hotbed and the extruder in real time in printing process. Meanwhile you can set the temperature of Preheat PLA and Preheat ABS.
 Motion: setting of the motion parameters in the firmware. You need choose store memory to save

after altering the setting.

3. Store memory: to save the altered parameters.



www.geeetech.com



For other detailed functions, please read the following introduction of function tests.

4.2.2 Motor Direction Test

After learning about the functions of the LCD control panel, press the knob to enter sub-menu and choose [**Prepare**]:

≠Info screen		
Prepare		5
Control	÷	
No SD card	÷	

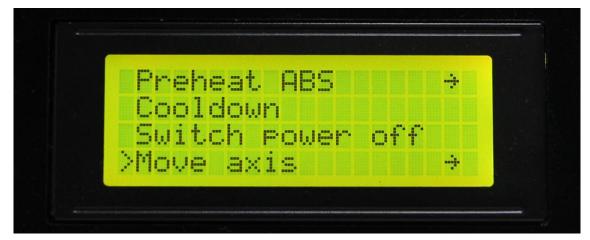
Choose Auto home in menu to do home operation:



www.geeetech.com



If you want to move the motor, choose **Move axis**:



Choose Move 1mm:

(Note: the extruder can support three options: Move 10mm, Move 1mm and Move 0.1mm. We recommend you to choose "Move 1mm".)



www.geeetech.com



Choose the axis that you want to move by using Move X/Y/Z options. Turning the knob can make each axis move left and right or back and forth.

#Move	axis	#
Move	X	÷
Move		÷
Move		÷

After testing each axis, you can choose Prepare>Auto home in the menu to make it back to home position.



If you want to manually move the motor, you can unlock the motor. Unlocking method:



www.geeetech.com

Prepare>Disable steppers:





After unlocking the motor, you could move the extruders manually.

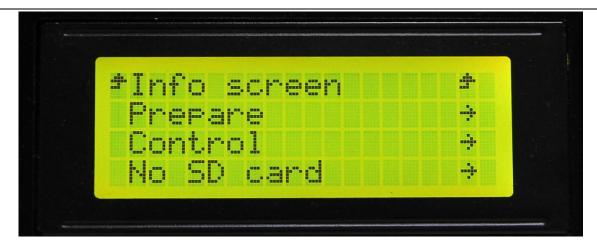
4.2.3 Heating Test

In the Control menu, you can select temperature setting of hotbed and extruder.

Choose control:



www.geeetech.com



Choose temperature:

≄ Main	
Temperature	
Motion	
Filament	

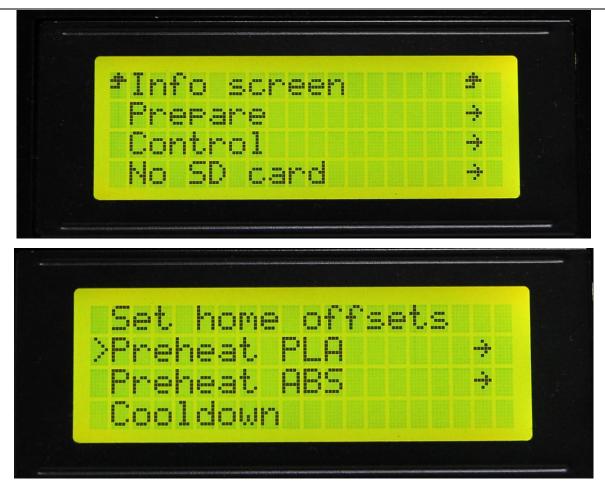
Select the temperature you want to set:



After setting, you can choose **Prepare> Preheat PLA** to preheat the hot bed and extruder.



www.geeetech.com



So far, functional tests of the printer are done.

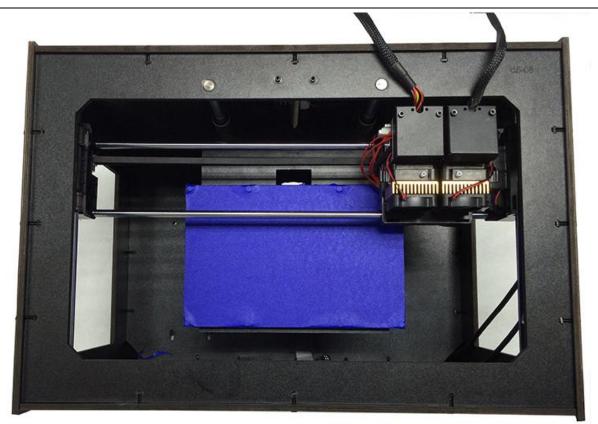
5. Hotbed Leveling

Before printing, we need to do hotbed leveling. Only after this step can quality of printed parts get improved. Otherwise the un-leveling gap between the hotbed and extrusion head will affect the filament adhering to the hotbed thus cause poor print quality or even not printing.

(1) Initially, home the printer.

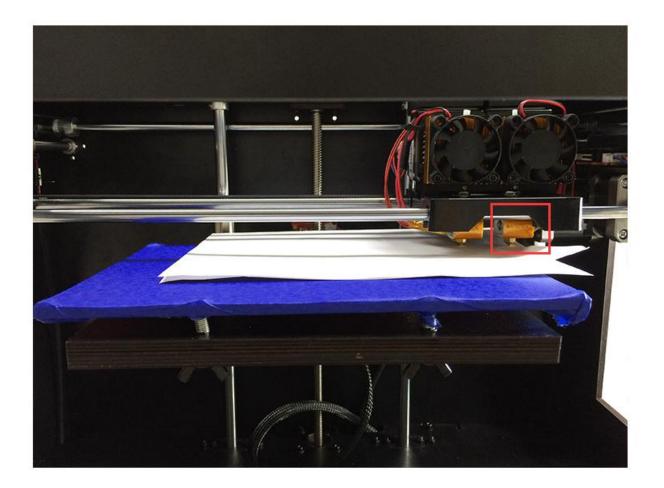


www.geeetech.com

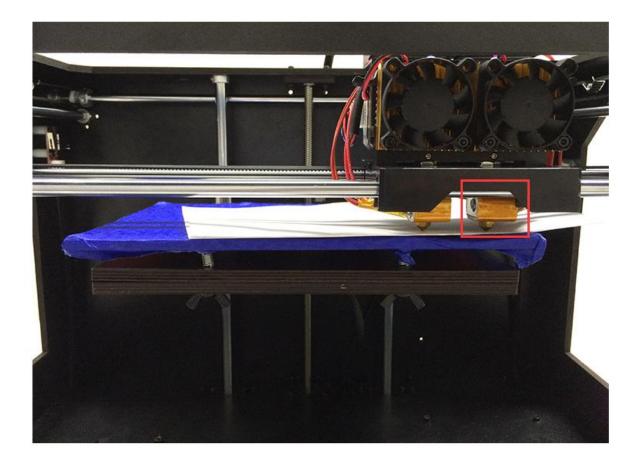


(2) Disable the stepper motors (and fine-tune the wing nut at each corner to level the distances between the extrusion head and four corners. During adjustment, you can put a piece of A4 paper (half fold it) between the nozzle and hotbed. If you can feel a bit friction when you pull the paper back and forth, the distance is proper.

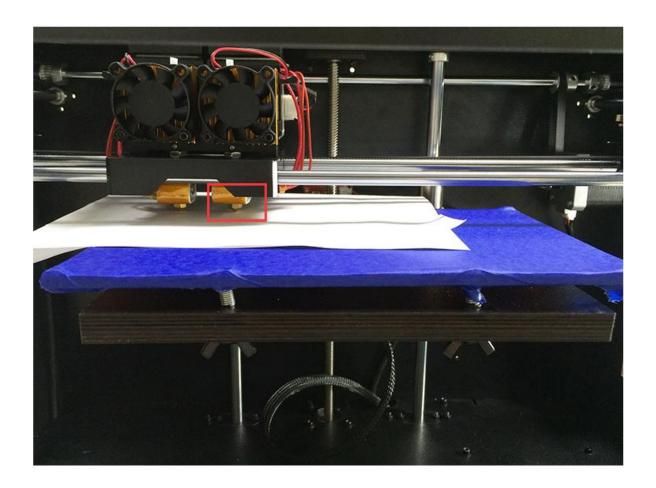




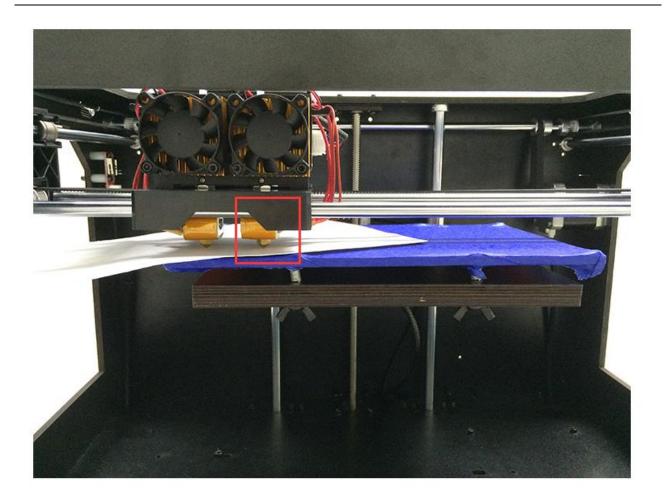












- If the friction is moderate, it means that the distance between the nozzle and building platform is adequate.
- If there is an obvious gap, it means the distance between the nozzle and the build platform is too far. Under this condition, the extruded filament will not be closely attached to the building platform. You need to rotate the wing nut at the leveling point anti-clockwise to reduce the distance.
- If you can't see any gap, it means the distance between the nozzle and building platform is too close. Under this condition, the filament can't be extruded out or can even be jammed. You need to rotate the wing nut at the leveling point clockwise to increase the distance.
- (3) Dual-extruder leveling. Duplicator 5 uses MK8 dual-extruder, so you only need to adjust the two set screws when leveling the extruder, as marked in following picture. You can take one hotend as a reference when you are doing the adjustment. Loosen the corresponding set screw



www.geeetech.com

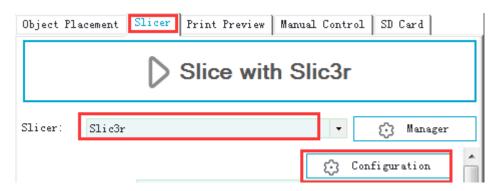
clockwise to increase or decrease the height of the other hotend.



With the above three steps, we have finished the leveling job. It is suggested to move the nozzle to the center of the building platform to test whether the building platform is level.

6. Slice Settings

With one more step, we can start printing. Set the slicing parameters such as filament diameter, printing speed, layer height, etc. to achieve better print quality. Open slic3r, a piece of slicing software built in Repetier-Host. The following picture shows the operation flow.





www.geeetech.com

Click [configuration] and you will see the following interface:

💋 Slic3r File Window Help				
Print Settings Filament Settings	Printer Settings			
My Settings	Layer height Layer height: First layer height:	0.3 0.4	mm mm or %	•
 iii Support material ⊙ Speed ♡ Multiple Extruders Advanced iiii Output options 	Vertical shells Perimeters: Spiral vase:	3	(minimum)	в
Notes	Horizontal shells Solid layers:	Top: 3	Bottom: 3	
	Quality (slower slicing) Extra perimeters if needed: Avoid crossing perimeters: Detect thin walls: Detect bridging perimeters:	V V V		
				+
Version 1.2.9 - Remember to check	for updates at http://slic3r.org/			

6.1 Printing Setting

Set layer height and the first layer height in the Print setting tab. Generally speaking, layer height can be set as 0.05 -0.3mm. Considering the printing accuracy and speed, 0.2mm is the most appropriate layer height. The first layer height is set as 0.3mm.



www.geeetech.com

💈 Slic3r				
File Window Help				
Print Settings Filament Settings	Printer Settings			
My Settings (modified - ===================================	Layer height Layer height: First layer height:	0.2	mm mm or %	·
 in Support material ⊙ Speed ♡ Multiple Extruders 	Vertical shells Perimeters: Spiral vase:	3	(minimum)	E
Notes	Horizontal shells Solid layers:	Top: 3	Bottom:	3
	Quality (slower slicing) Extra perimeters if needed: Avoid crossing perimeters: Detect thin walls: Detect bridging perimeters:			
	•	m		
Version 1.2.9 - Remember to chec	k for updates at http://slic3r.org/			

It is convenient to set the printing speed according your need.



www.geeetech.com

🖉 Slic3r		10		
File Window Help				
Print Settings Filament Settings	Printer Settings			
My Settings (modified 🔻 🗒 🤤	speed for print moves			
Layers and perimeters	Perimeters:	45	mm/s	
Infill	Small perimeters:	15	mm/s or %	
Skirt and brim	External perimeters:	40%	mm/s or %	
Support material Support Material Support	Infill:	50	mm/s	
V Multiple Extruders	Solid infill:	45	mm/s or %	E
Advanced	Top solid infill:	45	mm/s or %	
Output options	Support material:	45	mm/s	
Notes	Support material interface:	100%	mm/s or %	
	Bridges:	40	mm/s	
	Gap fill:	20	mm/s	
	Speed for non-print moves			
	Travel:	100	mm/s	
	Modifiers			
	First layer speed:	25	mm/s or %	-

After modifying these parameters in [Print Settings], click the save button to name your setting.

💋 Slic3r				
File Window Help				
Print Settings Filament Settings	Printer Settings			
My Settings (modified 👻 📄 🔵	Speed for print moves			
Layers and perimeters	Perimeters:	45	mm/s	
Infill	Small perimeters:	15	mm/s or %	
Skirt an Save preset	eters:	40%	mm/s or %	
Suppor Speed Save print settings	as:	50	mm/s	
Wultiple Duplicator 5		45	mm/s or %	=
Advanc OK	Cancel	45	mm/s or %	
Output	Jal:	45	mm/s	
Notes	Support material interface:	100%	mm/s or %	
	Bridges:	40	mm/s	
	Gap fill:	20	mm/s	
	Speed for non-print moves			
	Speed for non-print moves			
	Travel:	100	mm/s	
	Modifiers			
	woomers			
	First layer speed:	25	mm/s or %	-
Version 1.2.9 - Remember to chec	k for updates at http://slic3r.org/			



Click [OK] to finish the setting.

6.2 Filament Setting

Set filament diameter and print temperature in the [Filament settings] tab. Filament we use here is 1.75mm PLA. Usually the temperature of the extrusion head is $195-210^{\circ}$ C, and the temperature of hotbed is $60-70^{\circ}$ C. Here we set them as 200° C and 65° Crespectively.

💋 Slic3r			
File Window Help			
Print Settings Filament Settings	Printer Settings		
Duplicator 5 PLA conf 🔻 📙 🤤	Filament		
Filament	Color:		
Cooling	Diameter:	1.75 mm	
	Extrusion multiplier:	1	
	Temperature (°C)		
	Extruder:	First layer: 200	Other layers: 200
	Bed:	First layer: 65	Other layers: 65
	•		4
Version 1.2.9 - Remember to chec	k for updates at http://slic3r.org/		

6.3 Printer Setting

Set printer's hardware parameters in the Printer setting> General tab.

Bed shape: Rectangular

Size: 230*150



www.geeetech.com

💈 Slic3r				x
File Window Help				
Print Settings Filament Settings	Printer Settings			_
Duplicator 5 PLA conf 👻 🗒 🥥	Size and coordinates			
General 1 Custom G-code Extruder 1	Bed shape:	2		
Extruder 2	Z offset:	0 mm		
Bed Shape				Ξ
Shape 3				
Rectangular	•			
Settings				
	« 230 y: 150	^	st	
	c: 0 y: 0			
		•(0.0)		_
		OK Cancel		
	G-code flavor:	RepRap (Marlin/Sprinter/Repetier) 🔻		
	Advanced Use relative E distances:			~
Version 1.2.9 - Remember to chec	 ✓ k for updates at http://slic3r.org/ 			•

Number of extruders: 2



www.geeetech.com

💋 Slic3r			
File Window Help			
Print Settings Filament Settings	Printer Settings		
Duplicator 5 PLA conf 👻 🗒 🥥	Size and coordinates	^	ì
General Custom G-code Extruder 1 Extruder 2	Bed shape:	¢Set	
y Extruder 2	Z offset:	0 mm	
	Capabilities Extruders:	2	
	OctoPrint upload		
	Host or IP:	GBrowse	
	API Key:		
	Firmware G-code flavor:	RepRap (Marlin/Sprinter/Repetier) 🔻	
	Advanced Use relative E distances:		-
	 Ose relative E distances: 	4	
Version 1.2.9 - Remember to chec	k for updates at http://slic3r.org/		-

Set the diameter of the nozzles as 0.4mm (you can set this value according your actual need).

Offset on X direction: Extruder 1: -16mm, Extruder 2: 16mm



💋 Slic3r			
File Window Help			
Print Settings Filament Settings Printer Sett	ings		
Duplicator 5 PLA conf 👻 🗐 😔 Size			
General Nozzle di	ameter:	0.4	mm
Extruder 1 Y Extruder 2	for multi-extruder printer	rs)	
Extruder	offset:	x: 16 y: 0	mm
Retraction	n		
Length:		3.5	mm (zero to disable)
Lift Z:		0	mm
Speed:		50	mm/s
Extra leng	gth on restart:	0	mm
Minimum	travel after retraction:	2	mm
Retract o	n layer change:		
Wipe whi	le retracting:		
Retraction	n when tool is disabled (a	advanced settings	for multi-extruder setups)
Length:		10	mm (zero to disable)
Extra leng	gth on restart:	0	mm
Version 1.2.9 - Remember to check for update	es at http://slic3r.org/		



www.geeetech.com

💋 Slic3r			
File Window Help			
Print Settings Filament Settings	Printer Settings		
Duplicator 5 PLA conf 🔻 📙 🤤	Size		
🚍 General 🌼 Custom G-code	Nozzle diameter:	0.4	mm
Extruder 1	- Position (for multi-extruder printe	rs)	
	Extruder offset:	x: -16 y: 0	mm
	Retraction		
	Length:	3.5	mm (zero to disable)
	Lift Z:	0	mm
	Speed:	50	mm/s
	Extra length on restart:	0	mm
	Minimum travel after retraction:	2	mm
	Retract on layer change:		
	Wipe while retracting:		
	Retraction when tool is disabled (advanced settings	for multi-extruder setups)
	Length:	10	mm (zero to disable)
	Extra length on restart:	0	mm
Version 1.2.9 - Remember to chec	k for updates at http://slic3r.org/		

Do remember to save your settings and rename them.

Click the save button and name your setting.

6.4 Other Settings

In addition to the above parameter settings, parameters like the speed of the printer are also very important to print quality. It requires user's long-term using experience and exploration. Here we'd like to give you a setting for reference, click to download the config. Link https://www.geeetech.com/wiki/images/0/02/Duplicator_5_PLA_config.zip.

You can import it into slic3r to view it through the following steps.



www.geeetech.com

Open slic3r>File>Load Config:

💋 S	lic3r			• X
File	Window Help			
	Load Config	Ctrl+L		
	Export Config	Ctrl+E		
	Load Config Bundle Export Config Bundle		0.2 mm	
	Quick Slice	Ctrl+U t:	0.35 mm or %	
	Quick Slice and Save As	Ctrl+Alt+U		
	Repeat Last Quick Slice	Ctrl+Shift+U		
	Slice to SVG	Ctrl+G	3 (minimum)	
	Repair STL file			
	Preferences	Ctrl+,		
-	Quit	Solid layers:	Top: 3 Bottom: 3	
		Quality (slower slicing) Extra perimeters if needed: Avoid crossing perimeters: Detect thin walls: Detect bridging perimeters:	V 	
		Advanced		
		Seam position: External perimeters first:	Aligned 🔻	

Find "Duplicator 5 PLA config.ini" file in the dialog box and open it.



www.geeetech.com

💈 Slic3r				- • X
File Window Help				
Print Settings Filament Settings	Printer Settings			
Duplicator 5 PLA conf 👻 🗒 🤤	Layer height			^
Layers and perimeters	Laver height:	0.2	mm	
Ir 💋 Select configuration to	load:			— X
	i ▶ DU5 Repetier打印	机设置 🕨 17.7.7	▼ 4 搜索 17.7.7	ş
 ② S ④ S ④ I ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● A ● ● A ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●				0
 	Duplicator 5 PLA config			
文件	名(N): Duplicator 5 PL	A config	 ✓ INI files *.ini 打开(<u>O</u>) 	▼ 取消
Version 1.2.9 - Remember to check	for updates at http://	slic3r.org/		

Then you can successfully import the config.ini file. Click the Save button to rename it as [Duplicator 5 PLA config] and save it.

Click the save button in [**Print Settings**].



www.geeetech.com

💋 Slic3r			
File Window Help			
Print Settings Filament Settings	Printer Settings		
Duplicator 5 PLA conf 🖣 🔚 🕒	Layer height		^
Layers and perimeters	Layer height:	0.2	mm
Infill Skirt ar Save preset	ht:	0.3	mm or %
Save print settings Save print settings Duplicator 5 PLA Advanc OK Output Notes		3	iminimum)
	Horizontal shells		
	Solid layers:	Тор: 3	▲Bottom: 3 E
	Quality (slower slicing)		
	Extra perimeters if needed: Avoid crossing perimeters: Detect thin walls:		
	Detect bridging perimeters:	. M	
	Seam position:	Aligned -	
	External perimeters first:		.
	•		4
Version 1.2.9 - Remember to chee	k for updates at http://slic3r.org/		

Click the save button in [Filament Settings].



www.geeetech.com

💋 Slic3r				x
File Window Help				
Print Settings Filament Settings	Printer Settings			
Duplicator 5 PLA conf	Layer height			-
Layers and perimeters	Layer height:	0.2	mm	
Infill Skirt ar Save preset	ht:	0.3	mm or %	
 in Suppor Speed ♥ Multipl Advanc Output Ok Ok OK 		3	(minimum)	
Notes	Horizontal shells			
	Solid layers:	Top: 3	Bottom: 3	E
	Quality (slower slicing)			_
	Extra perimeters if needed: Avoid crossing perimeters: Detect thin walls: Detect bridging perimeters:			
	Advanced Seam position: External perimeters first:	Aligned •		
	External perimeters first:			
Version 1.2.9 - Remember to chee	ck for updates at http://slic3r.org/			

Click the save button in [**Printer Settings**].



www.geeetech.com

💋 Slic3r		
File Window Help	p traine ant	
	Printer Settings	
Duplicator 5 PLA conf 👻 📄	Size and coordinates	
Genera Save preset		Set
First Save printer setting		555 Sec
F Extrude Duplicator 5 PLA c	Cancel	0 mm
	Cancel	
	Capabilities	E
	Extruders:	2 *
	O to Drint unlined	
	OctoPrint upload	
	Host or IP:	Browse
	API Key:	
	Firmware	
	G-code flavor:	RepRap (Marlin/Sprinter/Repetier) 🔻
	Advanced	
	Use relative E distances:	-
	(4
Version 1.2.9 - Remember to check	c for updates at http://slic3r.org/	

7. Begin Printing

So far, all the preparatory work is completed. The next step is to import the model file for slicing and printing. For 3D printer, the file format of the model is generally .stl file. You can download 3D models for free and print those models which are shared online. Certainly you can also design your own creative objects for printing.



www.geeetech.com

7.1 Print with one extruder

If you are new to 3D printing, you can try to print with only one extruder first. After getting familiar with the whole process, you can try to use dual-extruder. Here we print a simple plate. You can download the model file here: <u>plate.stl.</u>

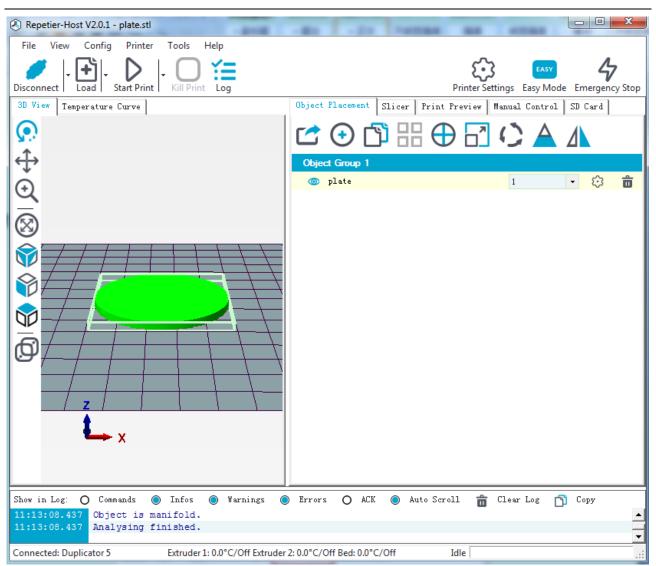
7.1.1 Load Print Model

In the main interface of Repetier-Host, click the Load button Load . Choose the file you download and open it.

Repetier-Host V2.0.1	
File View Config Printer Tools Help Disconnect Load Start Print Kill Print Log	Printer Settings Easy Mode Emergency Stop
	Object Placement Slicer Print Preview Manual Control SD Card
 	Name Date modified Type I two_color_cube 2017/7/13 17:47 File folder 汉色打印 2017/7/13 16:24 File folder ② plate 2015/12/3 9:41 Repetier-F
Show in Log: O Commands O Infos O Warnings 11:10:49.766 End file list 11:10:49.766 echo:Active Extruder: 0	Errors O ACK O Auto Scroll Clear Log O Copy
Connected: Duplicator 5 Extruder 1: 0.0°C/Off Ext	uder 2: 0.0°C/Off Bed: 0.0°C/Off Idle:



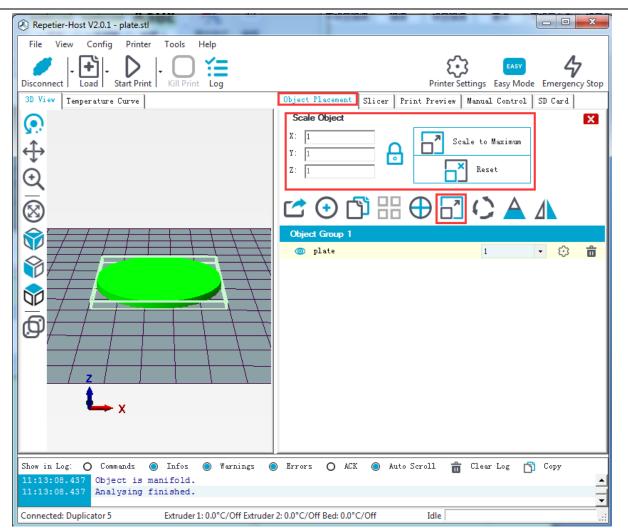
www.geeetech.com



7.1.2 Slicing

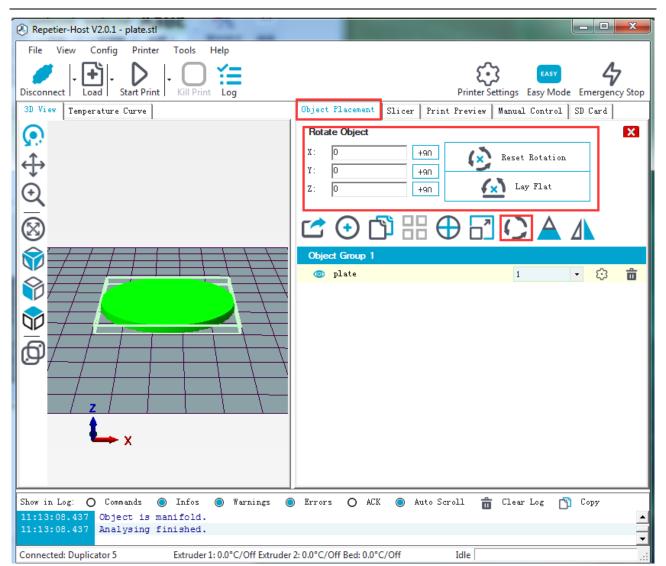
After the file is loaded, you can use the following buttons to zoom in or zoom out the model, or rotate it.







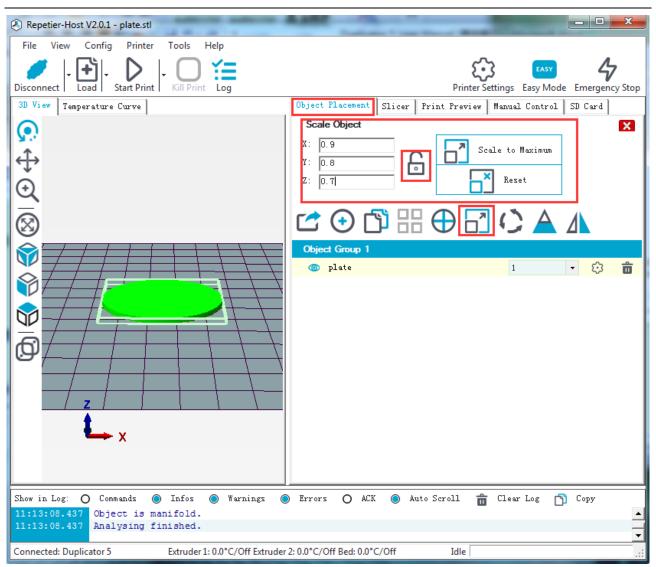
www.geeetech.com



You can also use the [unlock] button to scale the object in different proportion.



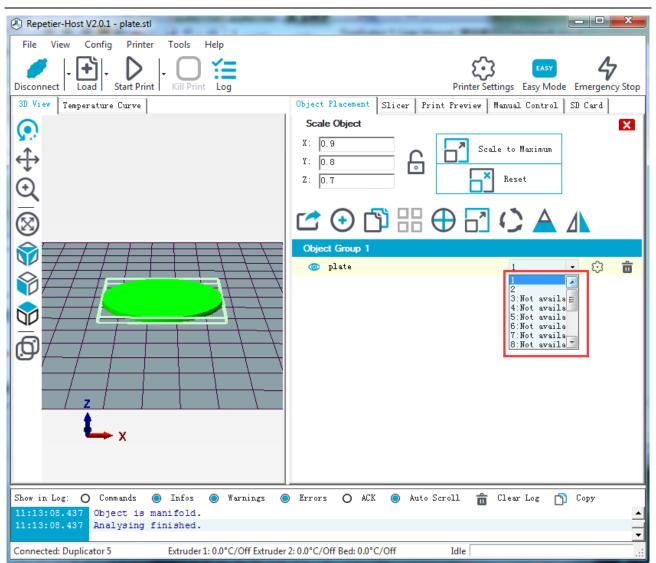
www.geeetech.com



Choose the extruder.



www.geeetech.com



After scaling the model, you can choose the slicing parameters which have been imported previously in the drop- down menu, and click **Slice with slic3r**.



www.geeetech.com

Object Placement Slicer Print Preview Manual Control SD Card			
Slice with Slic3r			
Slicer: Slic3r		▼ 🞲 Manager	
		Configuración	
Print Setting:	Duplicator 5 PLA config		
Printer Settings:	Duplicator 5 PLA config	•	
Filament Settings:			
Extruder 1:	Duplicator 5 PLA config	-	
Extruder 2:	Duplicator 5 PLA config	•	
✓ Try to preserv	e model positions		
Override Slic3r Settings			
🗗 Copy Print Settings to Override			

In this way, .gcode file which can be recognized by the printer is generated. Besides, the estimated printing time and filament needed are available.



Repetier-Host V2.0.1 - plate	1	
File View Config Printer Tools Help		Printer Settings Easy Mode Emergency Stop
3D View Temperature Curve	Object Placement Slicer Print P Print Colors: © Extruder	Preview Manual Control SD Card Edit G-Code Save for SD Print Speed
	Printing Statistics Estimated Printing Time: Layer Count: Total Lines: Filament needed: Filament Extr.1: Filament Extr.2:	11m:47s 10 6089 900 mm 900 mm 0 mm
	Visualization Show Travel Moves Show complete Code Show Single Layer Show Layer Range First Layer: Last Layer:	
Show in Log: O Commands O Infos O Warnings O 11:24:55.457 <slic3r> Done. Process took 0 minu: 11:24:55.458 <slic3r> Filament required: 899.6m</slic3r></slic3r>		11 💼 Clear Log 🛐 Copy
Connected: Duplicator 5 Extruder 1: 0.0°C/Off Extruder	2: 0.0°C/Off Bed: 0.0°C/Off	Idle .

	D				
Last step, click	Start Print	hutten en	D	Print	hutton to mint
Last step, click		button or			button to print.



www.geeetech.com

Repetier-Host V2.0.1 - plate File View Config Printer Tools Help Image: Start Print Image: Start Print Image: Start Print Image: Start Print Start Print Image: Start Print Image: Start Print Image: Start Print	Diject Placement Slicer Print Preview Manual Control SD Card
	Save to File Save for SD Print Colors: Extruder Speed Printing Statistics Estimated Printing Time: 11m:47s Layer Count: 10 10 Total Lines: 6089 Filament needed: 900 mm Filament Extr.1: 900 mm Filament Extr.2: 0 mm
	Visualization Show Travel Moves Show complete Code Show Single Layer Show Layer Range First Layer: Last Layer: O
Show in Log: O Commands Infos Warnings Infos Karnings Infos Karnings Connected: Duplicator 5 Extruder 1: 0.0°C/Off Extruder 2	1 (2.2 cm3)

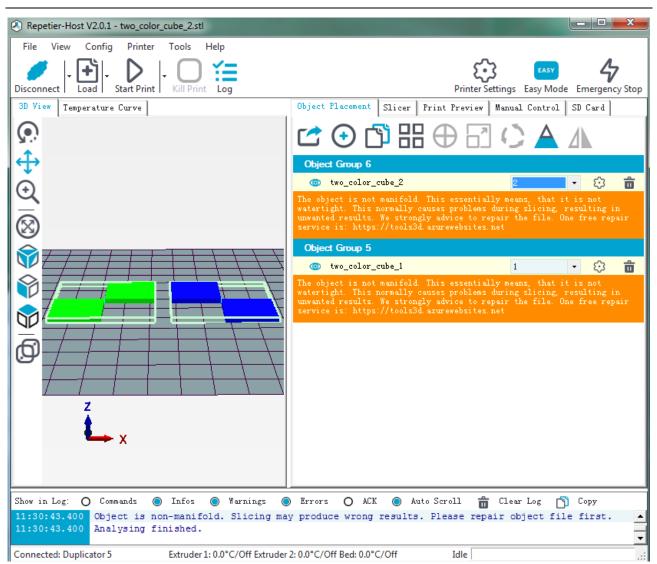
7.2 Print with Dual-extruder

Actually, dual-extruder printing is to load two separate objects, and then separately print them with the assigned extruder. Thus you can print objects with two colors. Click <u>here</u> to download .stl files which can be used for dual-extruder printing: <u>two_colour_cube.stl</u>.

After you download the model, load it to Repetier-Host, as shown in the following picture:



www.geeetech.com

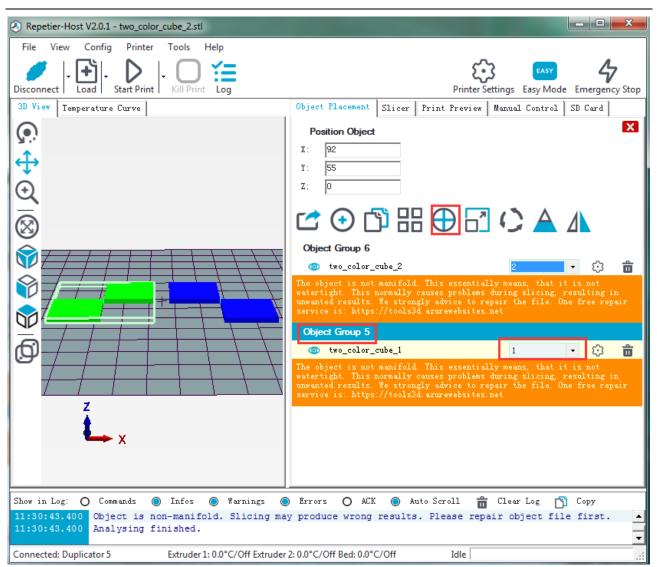


The two models loaded are separate. At first, we adjust their locations to combine them together.

Click Object Group 5, choose object 5, and then click centering button



www.geeetech.com



The object is now in the middle of the hotbed. Put object 6 in the middle of hotbed in the same way. See the final model in the following picture.



www.geeetech.com

Repetier-Host V2.0.1 - two color cube 2.stl	
 Repetier-Host V2.0.1 - two_color_cube_2.stl File View Config Printer Tools Help Disconnect Load Start Print Kill Print Log 	Printer Settings Easy Mode Emergency Stop Object Placement Slicer Print Preview Manual Control SD Card
	Position Object ▲ X: №15 Y: 55 Z: 0
	Object Group 6 two_color_cube_2 2 The object is not manifold. This essentially means, that it is not watertight. This normally causes problems during slicing, resulting in unwanted results. We strongly advice to repair the file. One free repair service is: https://tools3d.azurewebsites.net
	Object Group 5 two_color_cube_1 The object is not manifold. This essentially means, that it is not watertight. This normally causes problems during slicing, resulting in unwanted results. We strongly advice to repair the file. One free repair service is: https://tools3d.azurewebsites.net
↓ ×	
	Errors O ACK Auto Scroll Clear Log Copy y produce wrong results. Please repair object file first.

Remember to assign an extruder for each object:

Object Group 6	
🐵 two_color_cube_2	2 🔹 🕄 🧰
The object is not manifold. This essential watertight. This normally causes problems unwanted results. We strongly advice to re service is: https://tools3d.azurewebsites.	during slicing, resulting in epair the file. One free repair
Object Group 5	
🐵 two_color_cube_1	1 🔹 😳 🧰
The object is not manifold. This essential watertight. This normally causes problems unwanted results. We strongly advice to re service is: https://tools3d.azurewebsites.	during slicing, resulting in epair the file. One free repair

You can choose the slicing parameters which have been imported previously in the drop- down

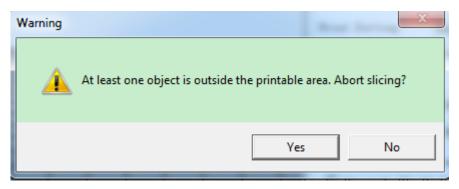


www.geeetech.com

menu, and click Slice with slic3r.

Repetier-Host V2.0.1 - two_color_cube_2.stl	
File View Config Printer Tools Help	Printer Settings Easy Mode Emergency St
0 View Temperature Curve	Object Placement Slicer Print Preview Manual Control SD Card
<u>ن</u>	Slice with Slic3r
	Slicer: Slic3r • 🕄 Manager
	Configuration
5	Print Setting: Duplicator 5 PLA config 🔹 🔹
	Printer Settings: Duplicator 5 PLA config +
	Filament Settings:
	Extruder 1: Duplicator 5 PLA config •
	Extruder 2: Duplicator 5 PLA config •
	Try to preserve model positions
₽	Override Slic3r Settings
	Enable Support
Z	Enable Cooling
1	Layer Height: 0.2 mm 20%
u → x	Infill Density
	Infill Fattern: honeycomb -
	Solid Infill Patter rectilinear

If there is a warning, you can neglect it and choose [No].

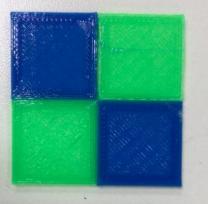




www.geeetech.com

Repetier-Host V2.0.1 - two_color_cube_1 + 1	
File View Config Printer Tools Help	
Disconnect	Printer Settings Easy Mode Emergency Sto
3D View Temperature Curve	Object Placement Slicer Print Preview Manual Control SD Card
\odot	▶ Print 🕑 Edit G-Code
4	Save to File
	Colors: @ Extruder @ Speed
<u>S</u>	Printing Statistics
	Estimated Printing Time: 15m:50s Laver Count: 10
	Total Lines: 4664
	Filament needed: 1185 mm
	Filament Extr.1: 597 mm Filament Extr.2: 588 mm
	Visualization
	 Show Travel Moves Show complete Code
Z	Show Single Layer
i i i i i i i i i i i i i i i i i i i	C Show Layer Range
🛶 x	First Layer:
	Last Layer: 0
Show in Log: O Commands O Infos O Warnings (💿 Errors 🔿 ACK 💿 Auto Scroll 🕋 Clear Log 🛐 Copy
11:38:04.176 <slic3r> Done. Process took 0 minu</slic3r>	utes and 0.499 seconds
11:38:04.176 <slic3r> Filament required: 1184.6</slic3r>	
Connected: Duplicator 5 Extruder 1: 0.0°C/Off Extruder	er 2: 0.0°C/Off Bed: 0.0°C/Off Idle

Click Start Print to begin printing. The finished printout is shown as bellow:





7.3 Stand-alone printing with SD Card

If you want to print stand-alone, please save the .gcode file in the SD card.

Note: The printer only recognizes .gcode file in the SD card, and the file can not be placed in any

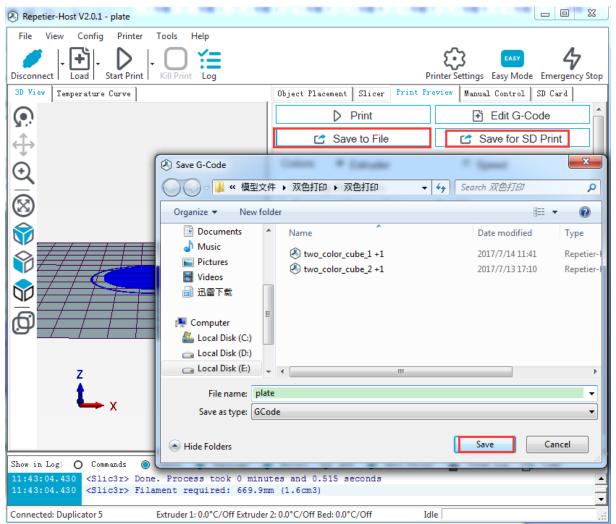
folder!

The operation flows are as follows.

7.3.1 Save

Click [Save to File] or [Save for SD Print], and select the [save] button in the dialog box for SD

card printing.





www.geeetech.com

7.3.2 Print

Insert the SD card into the SD card slot on the back of the LCD control panel. Choose the

corresponding .gcode file to print.

Press the knob on LCD control panel, rotate the knob to enter the main menu and choose [Print from SD] option.



Choose the corresponding .gcode file for printing.



Heating.



www.geeetech.com



When heating is completed, the printer starts to print automatically.

8. FAQ

If you encounter any problems during printing, you can visit our forum:

<u>http://www.geeetech.com/forum/</u>, and there are detailed solutions in the forum. Common problems are as follows:

8.1 How to upload firmware?

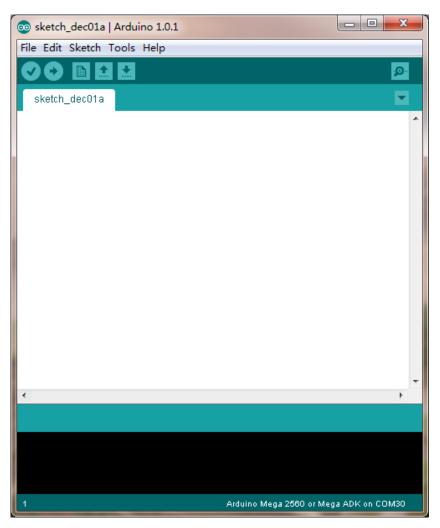
The motherboard of the printer is already burned with firmware when it leaves the factory. If you have firmware problem when using the product and need to upload firmware, please use the



www.geeetech.com

Arduino IDE to burn a new firmware. Arduino1.0.1 is recommended. Here is the download link:

https://www.arduino.cc/en/Main/OldSoftwareReleases#1.0.x



The way of uploading firmware, please refer to:

http://www.geeetech.com/forum/viewtopic.php?f=13&t=17181

Firmware download, please refer to:

http://www.geeetech.com/forum/viewtopic.php?f=10&t=17046

Common parameters settings of firmware, please refer to:

http://www.geeetech.com/forum/viewtopic.php?f=13&t=17194

8.2 How to change the motor direction in firmware?

In the configuration.h tab of firmware, find the following codes. Change the true of corresponding



www.geeetech.com

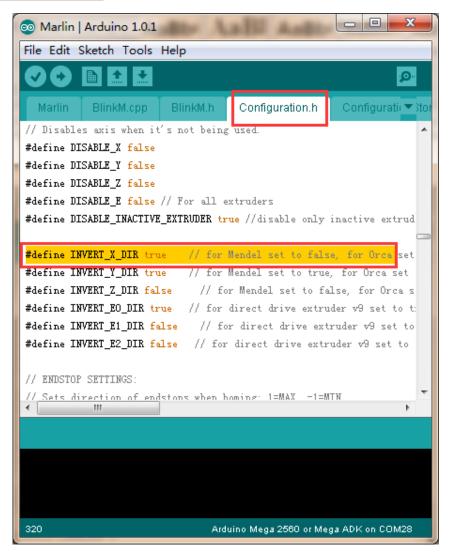
axis into false or false into true, and save the firmware and burn into the printer. (Since you don't know the firmware which has been burned by mother board is true or false, it may be necessary to burn both of the two parameters.)

#define INVERT_X_DIR true

#define INVERT_Y_DIR false

#define INVERT_Z_DIR true

#define INVERT_E0_DIR false



8.3 User manual of Repetier-Host

For detailed user manual of Repetier-Host, please refer to Wiki:



www.geeetech.com

http://www.geeetech.com/wiki/index.php/Repetier-Host

8.4 Possible causes for motor's non-action

http://www.geeetech.com/forum/viewtopic.php?f=13&t=17038

8.5 Extruder does not work normally

http://www.geeetech.com/forum/viewtopic.php?f=13&t=17097

8.6 The hotbed or extruder can not be heated

http://www.geeetech.com/forum/viewtopic.php?f=13&t=17039

8.7 LCD error: MAX/MIN TEMP error

http://www.geeetech.com/forum/viewtopic.php?f=13&t=17030

8.8 No information or displaying black square on LCD

http://www.geeetech.com/forum/viewtopic.php?f=13&t=17040

8.9 Time.h/endstop hit or other abnormalities

http://www.geeetech.com/forum/viewtopic.php?f=13&t=17037