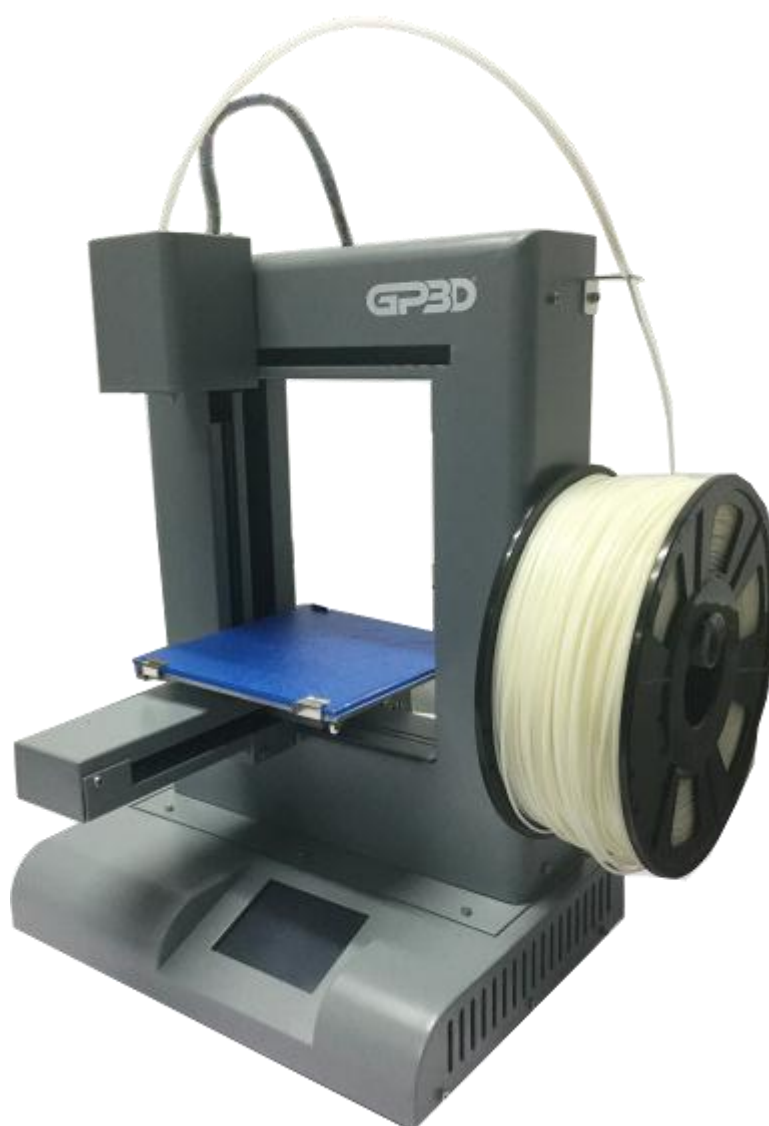




GP3D Root 3D Printer

User Manual



Statements

- This manual includes important information for product installation, use, maintenance, and storage. Please read carefully before use.
- Our company has the right to revise the machine and its manual without notice
- Our company will not be responsible for any loss caused by reference to this manual (including loss of follow-up), and including any loss caused by printing or other publishing error.
- Any unit or individual shall not modify copy or translate this manual without permission.
- This manual is protected by copyright and our company reserves the right of final interpretation.

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Catalog

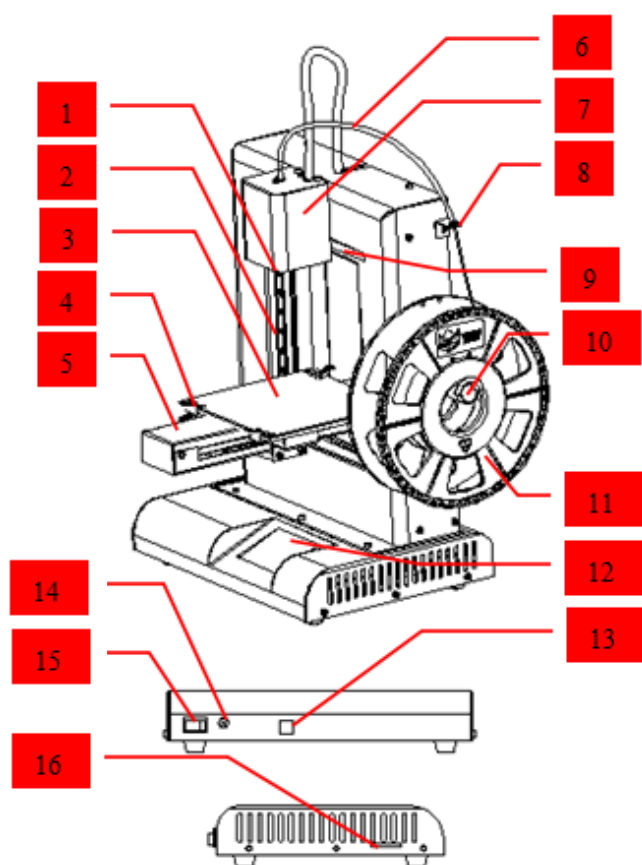
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USE NOTES AND IMPORTANT SAFETY ITEMS

- During printing do not touch the power line, USB data line, or pull out the SD card. Otherwise the printing process will be interrupted.
- To avoid nozzle clogging, do not heat long time when it is not in extruding condition.
- When debugging, the nozzle will extrude filament, so please ensure there is at least 50mm between nozzle and print platform, otherwise the nozzle might clog.
- ⚠ Do not handle into the machine during heating or using. Otherwise collision or scalding due to mobile printing.
- ⚠ Do not place the printer in high humidity, dust, or sunlight.
- ⚠ Do not place the printer on an inclined surface. Printing will be affected and the machine may be damaged or hurt other items.
- ⚠ To avoid burns or scratches, do not separate printed objects without protective gloves.

1. PRODUCT OVERVIEW

1.1 PRODUCT INTRODUCTION



(Figure 1.1-01)

- | | | | |
|-----------|-------------------------------|-------------------|----------|
| 1. Nozzle | 2. Z-axis | 3. Building plate | 4. Clips |
| 5. Y-axis | 6. Teflon tube filament guide | 7. Extruder head | |

- | | | |
|------------------------|------------------|------------------|
| 8. Filament tube guide | 9. X-axis | 10. Spool holder |
| 11. Filament | 12. Touch screen | 13. USB slot |
| 14. Power input | 15. Power Switch | 16. SD card slot |

1.2 technical parameters

• running environment

Use temperature: 5°C~35°C

Relative humidity: 30%~90%

• Electrical Parameters

Power Input: 100 - 240V 47/63Hz 1.6A

Output: 12V/DC 5.3A

Maximum Power: 63.6W

• Print parameter

Printing Size: 150×150×140mm

Layer Thickness: 0.2~0.3mm

Speed: 30—150 cm³/h

• Material parameters

Material diameter: 1.75mm

Material: PLA

Printing Temperature: PLA 220-230°C

• Software parameters

Print software: Germinate_v1_0

File format: STL/GCODE/X3G

Adaptive system: Windows XP/Vista/Win7/8/8.1

• Structural parameters

Printer Size: 298×221×403mm

Packing size: 19.53"(L)×14.80"(W)×14.02"(H)

Net Weight: 16.5 Lbs

Gross Weight: 26.45 Lbs

2. PREPARATION BEFORE USE

2.1 CHECK THE BOX AND PRINTER

Please check that the product is in good condition, such as no surface scratches or damage. Please contact the local dealer or GP3D customer service. If anything is missing from the box please contact GP3D customer service.

2.2 parts installation

2.2.1 Open the tool kit, to find the following items, as shown below.



(Figure 2.2-01)

2.2.2 Assembly of spool holder: Take out the two screws in the middle of the right side of the GP3D Root and fix the spool holder with the screws. Note that the rib is on the upper side.



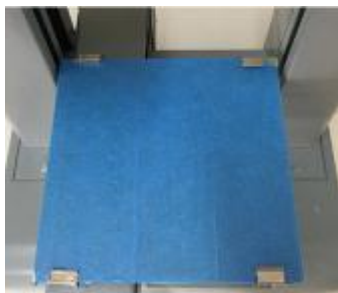
(Figure 2.2-02)

2.2.3 Assembly of filament tube guide: take out the screw at the back of the upper right of the GP3D Root and fix the filament tube guide with the screw.



(Figure 2.2-03)

2.2.4 Fixation of hotbed panel: fix the hotbed panel on the build plate with four clamps.



(Figure 2.2-04)

2.2.5 Preparation of filament rod: the filament free end must be cut to be

flat. Please keep it straight as well.



(Figure 2.2-05)

2.2.6 Hang the feed disk on the spool holder and put the filament through the filament tube guide.



(Figure 2.2-06)

2.2.7 Pass the filament through Teflon tube. As shown below:



(Figure 2.2-07)

2.2.8 Power on: plug the output end of the power adapter into the power interface on the GP3D Root.



(Figure 2.2-08)

3. SOFTWARE INSTALLATION AND INTRODUCTION:

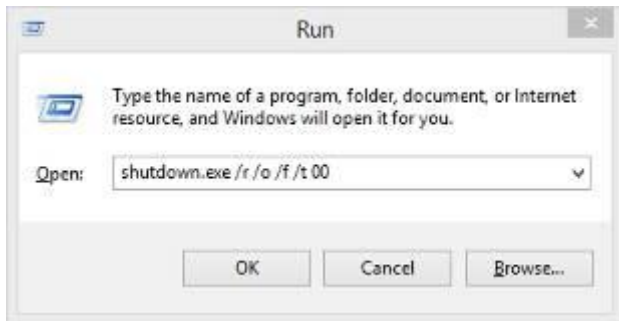
3.1 INTRODUCTION

Please read below carefully before installation:

- * The driver for software is in the SD card. Please copy the driver to your pc.
- * Please shutdown all firewalls or antivirus software before installing Germinate.
- * Please obtain administrator's permission before installation.
- * The below steps should apply to Windows 7.

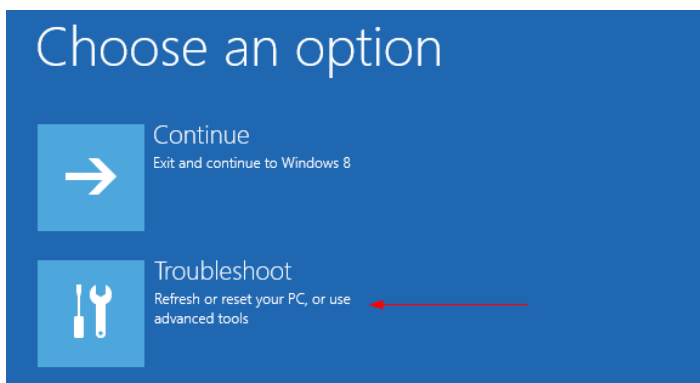
3.1 Disable Driver Signature Enforcement for Windows 8 or 8.1

3.1.1 Press [WIN] and [R] on your keyboard, enter command [shutdown /r /o /f /t 00], and click the [OK] button. (Figure 3.1-01)



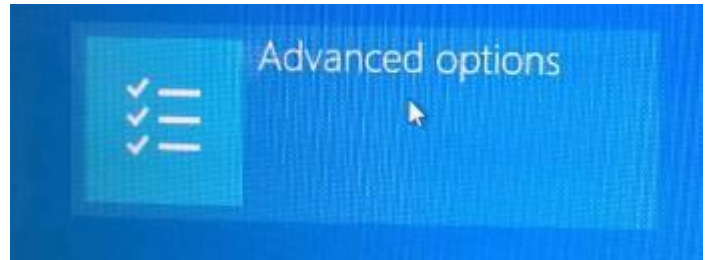
(Figure 3.1-01)

3.1.2 System will restart to a [Choose an option] screen, and then select [Troubleshoot]. (Figure 3.1-02)



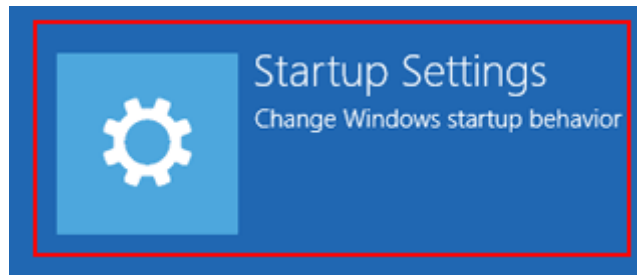
(Figure 3.1-02)

3.1.3 Select [Advanced options] from [Troubleshoot] screen. (Figure 3.1-03)



(Figure 3.1-03)

3.1.4 Select [Startup Settings] from [Advanced options] screen. (Figure 3.1-04)



(Figure 3.1-04)

3.1.5 Click [Restart] button System will restart to [Advanced Boot Options] screen. (Figure 3.1-05)



(Figure 3.1-05)

3.1.6 Select [Disable Driver Signature Enforcement] or press [F7] on your keyboard, then restart. (Figure 3.1-06)

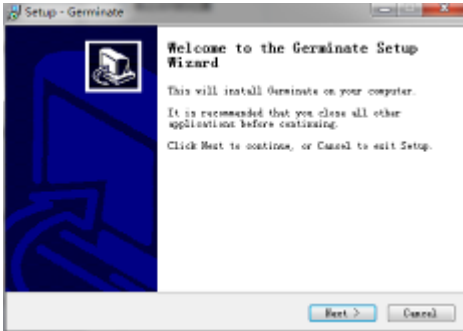


(Figure 3.1-06)

3.2 SOFTWARE INSTALLATION

The following installation of drivers and software is for Windows XP, Win 7, 8 and 8.1 systems.

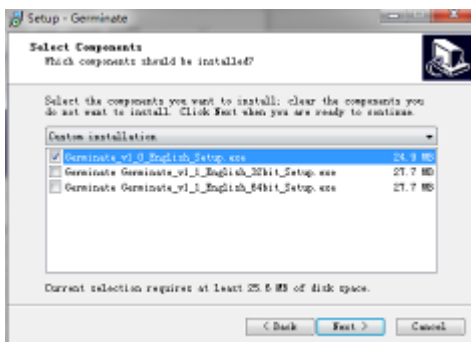
3.2.1 Select a folder, click "next". (Figure 3.2-01)



(Figure 3.2-01)

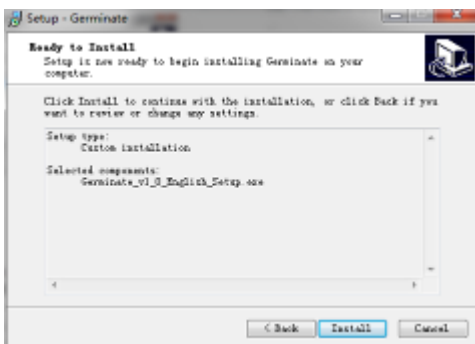
3.2.2 Click "next", and then select "Germinate_V1_0_English.setup.exe".

Select a folder, click "next". (Figure 3.2-02)



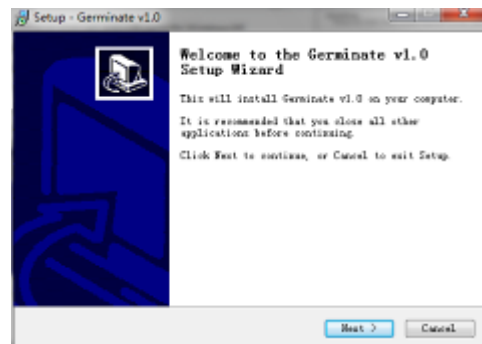
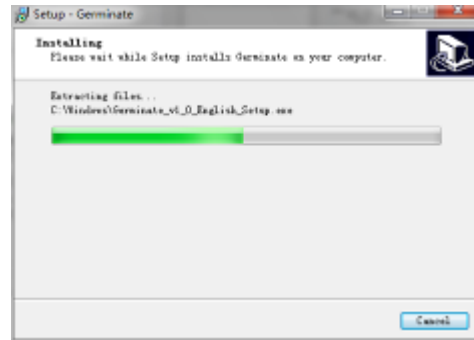
(Figure 3.2-02)

3.2.3 click "Install". (Figure 3.2-03)



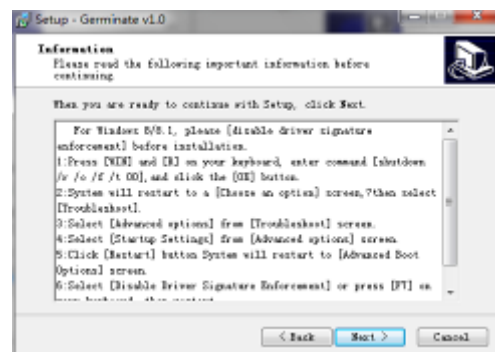
(Figure 3.2-03)

3.2.4 Click "next". (Figure 3.2-04)



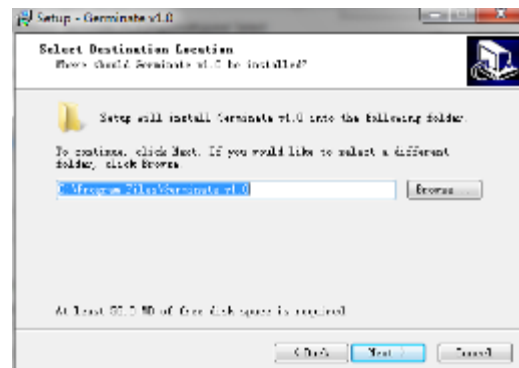
(Figure 3.2-04)

3.2.5 Select "next". (Figure 3.2-05)



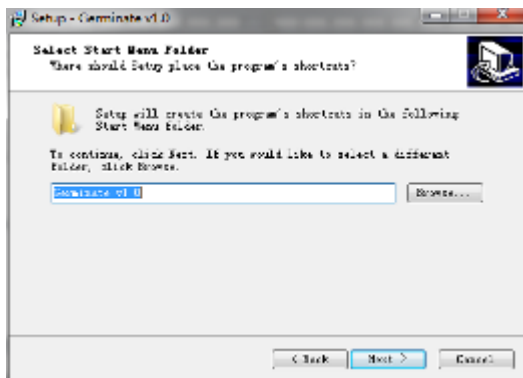
(Figure 3.2-05)

3.2.6 Select "next". (Figure 3.2-06)



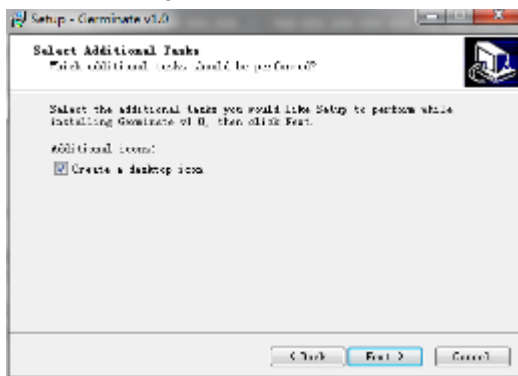
(Figure 3.2-06)

3.2.7 Select "next". (Figure 3.2-07)



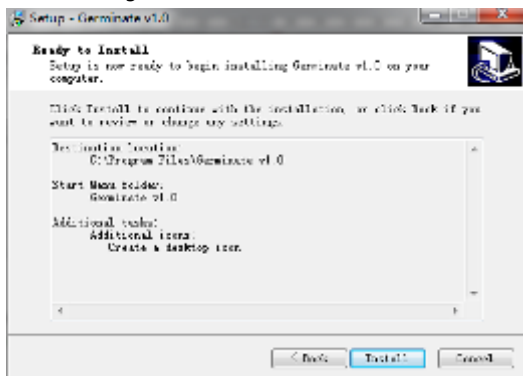
(Figure 3.2-07)

3.2.8 Select "next". (Figure 3.2-08)



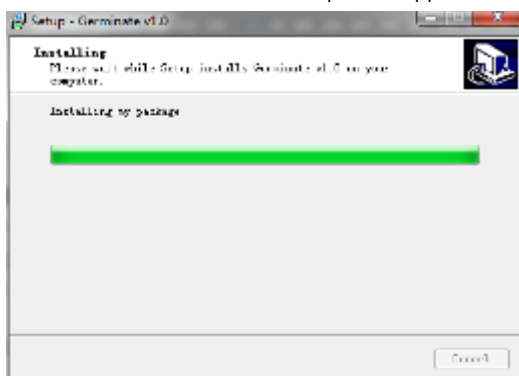
(Figure 3.2-08)

3.2.9 Click "Install". (Figure 3.2-09)



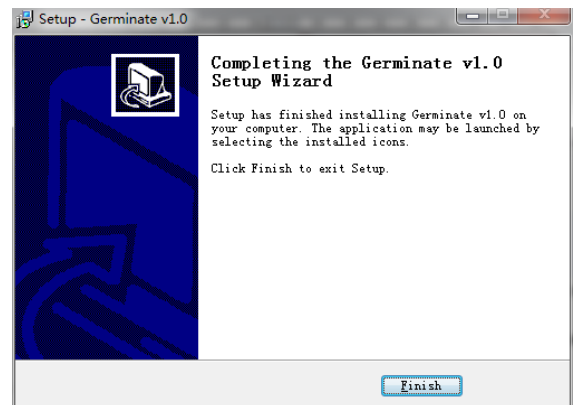
(Figure 3.2-09)

3.2.10 Then need to wait, while installation process appeared below



(Figure 3.2-10)

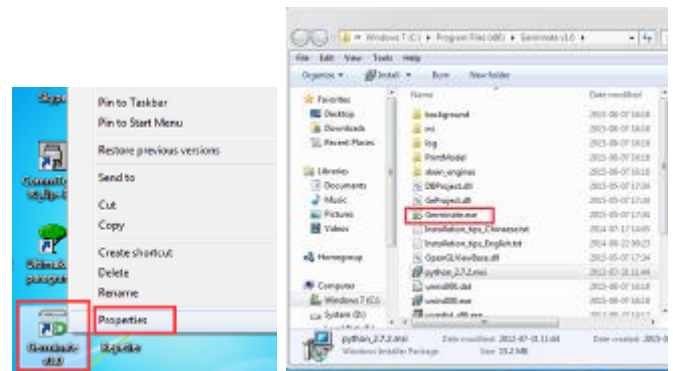
3.2.11 Select "Finish" to complete software installation. (Figure 3.2-08)



(Figure 3.2-11)

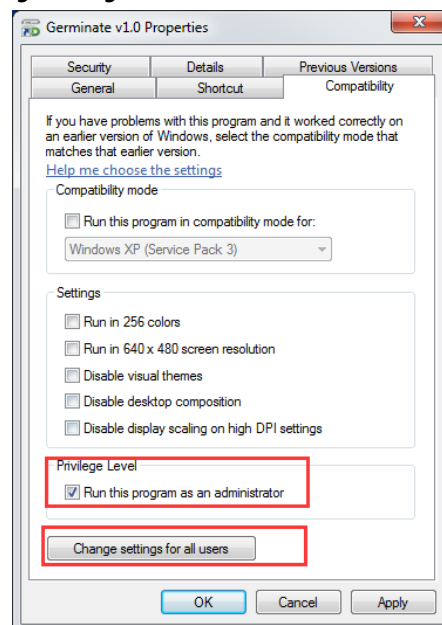
3.2.12 Run as an administrator for Windows 7, 8 or 8.1.

Right-click the desktop icon or Wstk.exe under installation directory.



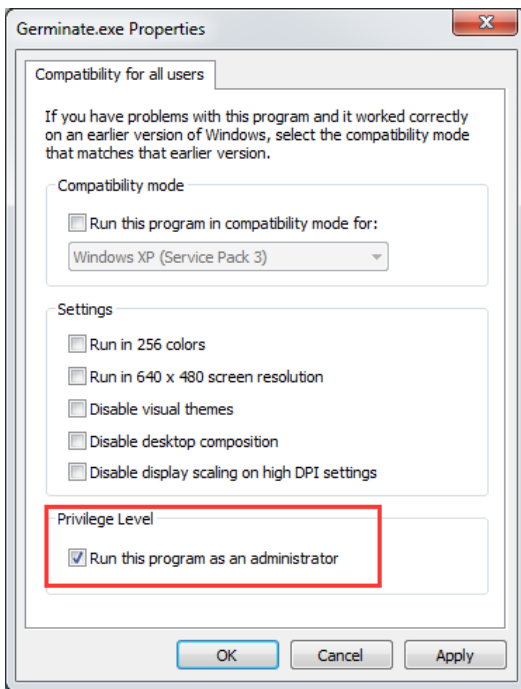
(Figure 3.2-12)

3.2.13 Select "Run this program as an administrator and then click "change settings for all users" like below:



(Figure 3.2-13)

3.2.14 Select "Run this program as an administrator", then "Apply", and then select "OK".



(Figure 3.2-14)

3.3 COMPUTER SLEEPING MODE CHANGES

Attention: To avoid interruption during printing, please turn off the sleeping mode on your pc.

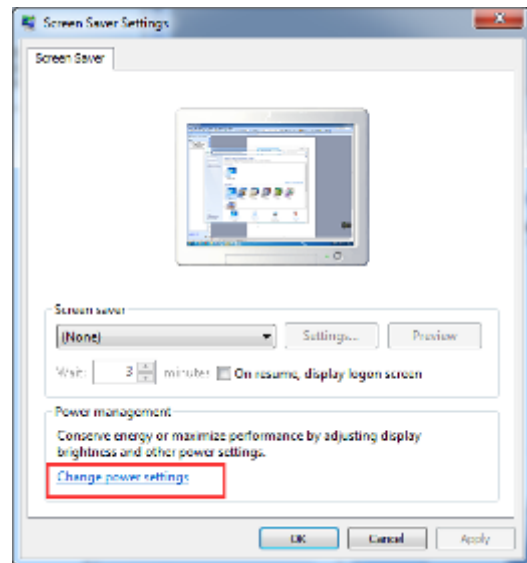
3.3.1 Win8or8.1

Right-click the desktop and select "Personalization", then select "Screen saver". (Figure 3.3-01)



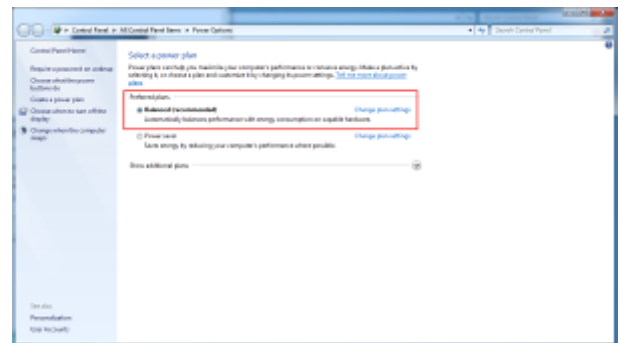
(Figure 3.3-01)

3.3.2 In the pop-up interface, click "Change advanced power settings".



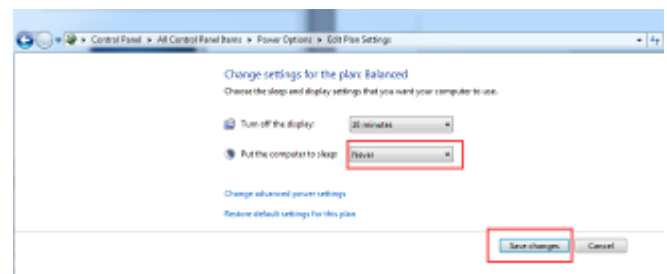
(Figure 3.3-02)

3.3.3 In the pop-up interface of "Advanced settings", click "Change plan settings" in "Balanced".



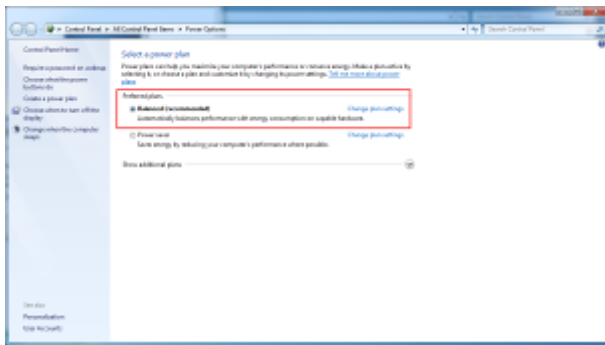
(Figure 3.3-03)

3.3.4 Choose "Never" in the "Put the computer to sleep" drop-down. Then click "save changes".



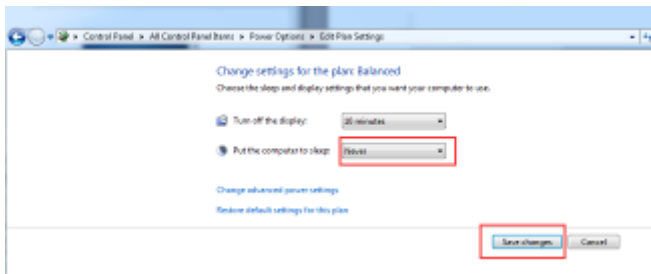
(Figure 3.3-04)

3.3.5 In Windows 7, find "Control Panel", click "Power Options", and then click "Change plan settings".



(Figure 3.3-05)

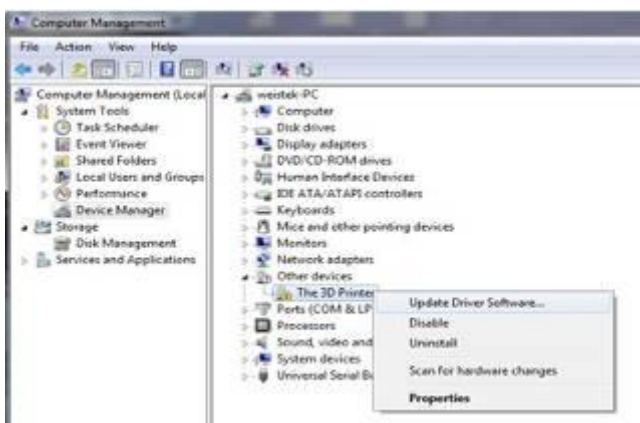
3.3.6 Choose "Never" in the "Put the computer to sleep" drop-down. Then click "save changes".



(Figure 3.3-06)

3.4 WIN8/8.1 DRIVER INSTALLATION

3.4.1 After connecting the 3D printer, the system will install the driver automatically, and check if the installation was successful. Right-click on "Computers", and click "Properties." In the pop-up interface, click "Device Manager". Drop down "Other device". Right-click on "The Replicator". Choose "Update Driver Software."



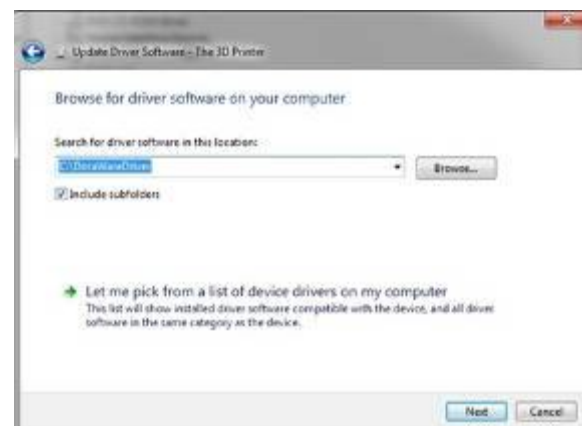
(Figure 3.4-01)

3.4.2 In the pop-up interface, select "Browse my computer for drive software"



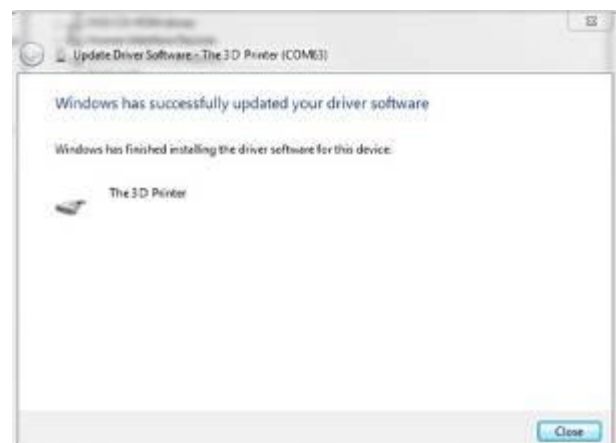
(Figure 3.4-02)

3.4.3 Pop-up as shown below. Select "Browse".



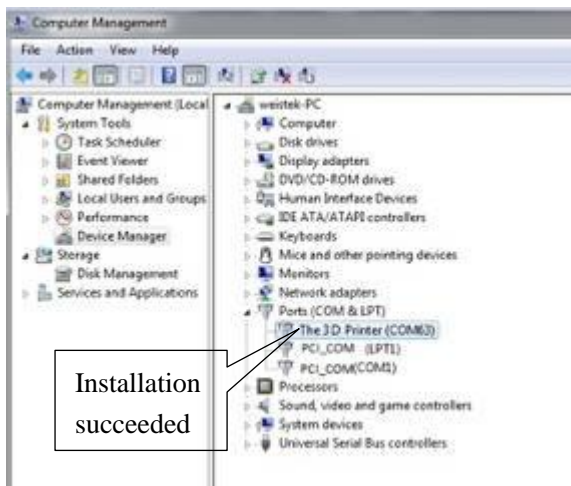
(Figure 3.4-03)

3.4.4 Click "Close". Installation is finished.



(Figure 3.4-04)

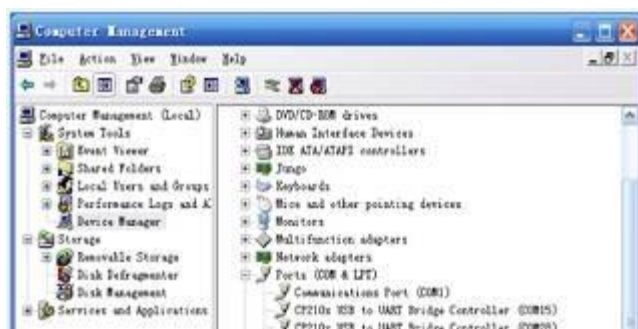
3.4.5 Check if installation succeeds. Click the "+" in front of "Port (COM & LPT)". If the port number is shown, the driver of USB serial port is installed successfully.



(Figure 3.4-05)

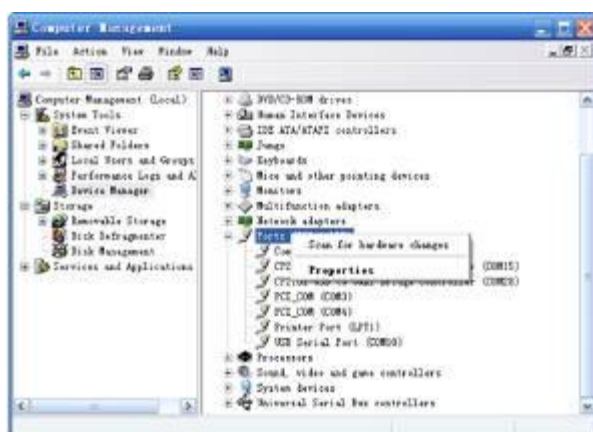
3.5 WIN7 DRIVER INSTALLATION

3.5.1 After connecting the 3D printer, the system will install the driver automatically, and check if the installation was successful. Right-click on "Computers", and click "Properties." In the pop-up interface, click "Device Manager."



(Figure 3.5-01)

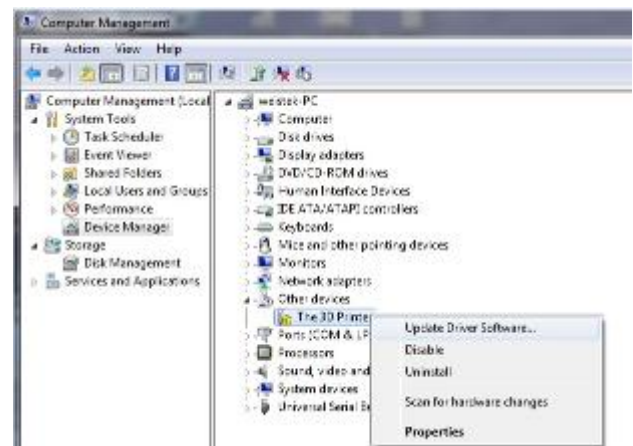
3.5.2 As shown on "Figure 3.5-02", click "+" in front of "Port (COM & LPT)". If the "USB Serial Port" can be seen, and there is no "?" or "!", so the installation was successful.



(Figure 3.5-02)

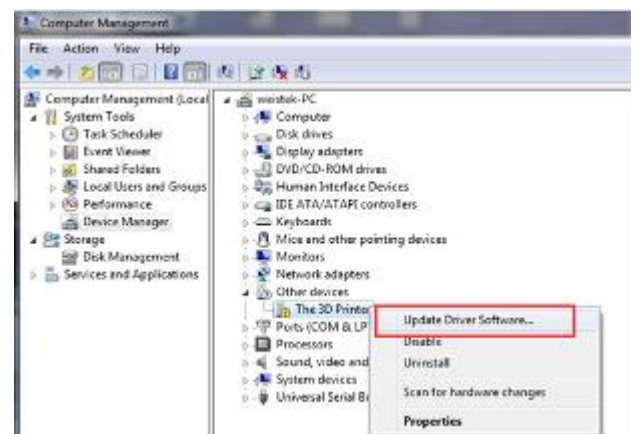
3.5.3 If the installation is not successful, right-click on "Port (COM&LPT)",

and select "Scan for hardware changes". Move to next step for manual installation.



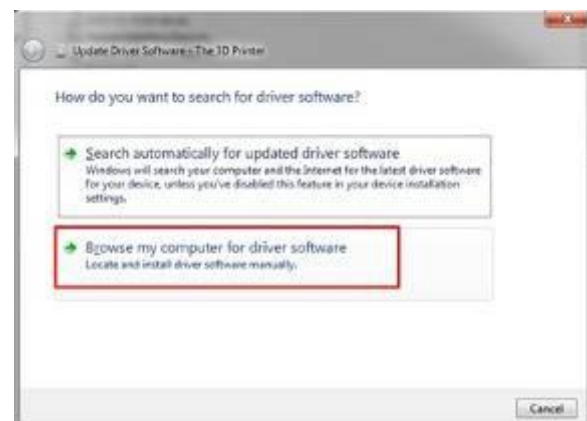
(Figure 3.5-03)

3.5.4 If the installation is still unsuccessful and there is a yellow exclamation mark on "Other devices", right-click on "The Replicator", and select "Update Driver Software".



(Figure 3.5-04)

3.5.5 Click "Browse my computer for driver software". The following steps are the same as 3.4.3~3.4.5.

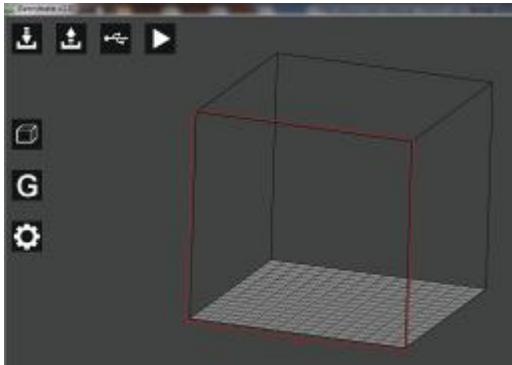


(Figure 3.5-05)

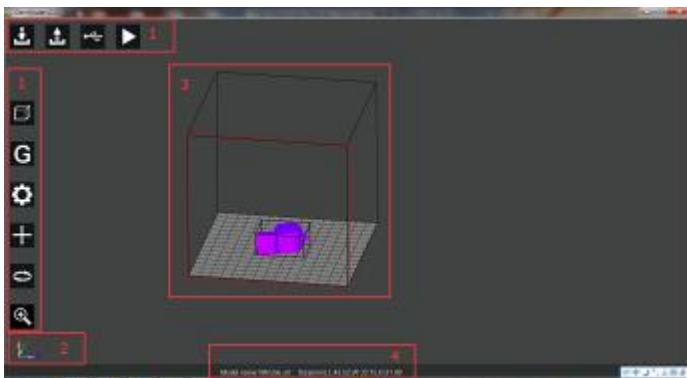
4. INTERFACE AND FUNCTION

4.1. INTERFACE

4.1.1 Turn on the power switch, and double click "Germinate" on the desktop icon to open the software.



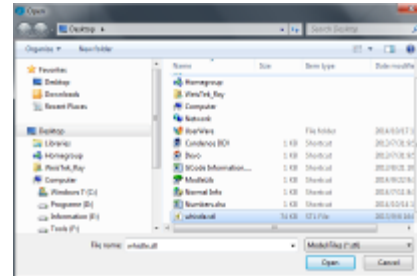
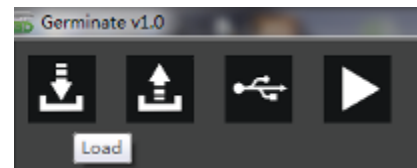
4.1.2 In the software interface, the bar "1" at the top left corner is the function menu. Move the mouse to the menu icon and the corresponding functional description will be displayed; the bar "2" at the lower left corner is schematic three-dimensional coordinates; the middle bar "3" is model display area, and the side with red lines faces the operator; the bottom bar "4" is for status display, indicating the temperature and model information.



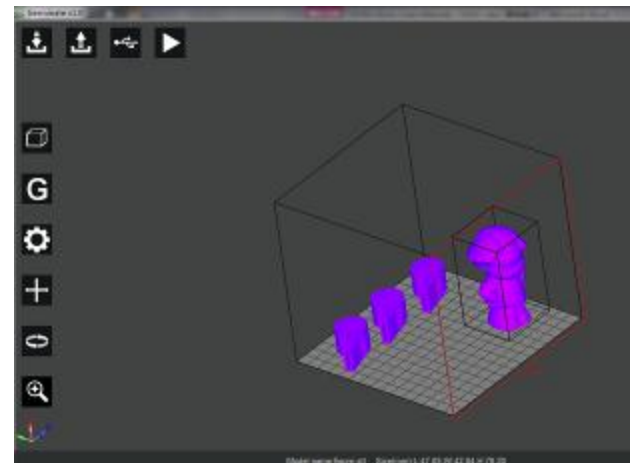
4.1.3 Import model

4.3.3.1 Click the icon "Load", and the dialog pops out to look up the model path. After selecting the model, click "Open". The model with imported software is as shown in Figure 4.3.2.

⚠ Notice: if you want to open a previously generated GCODE file, you need to store the STL file and the GCODE file in the same folder. Import the STL file to open the GCODE file, without a new GCODE.

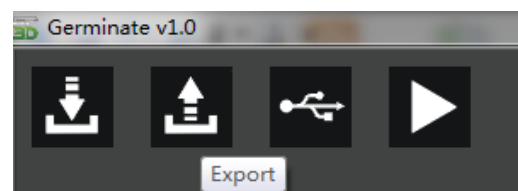


4.1.4 Click "Load" again, and you can import multiple models. ⚠ Notice: Do not import more models than the platform area allows, otherwise the models printed may overlap.

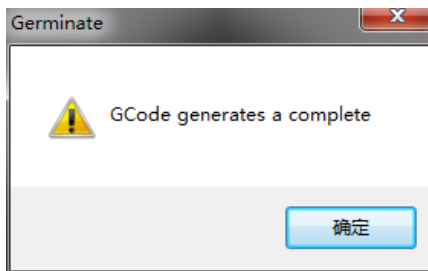
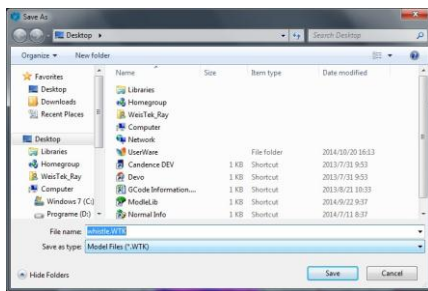


4.1.5 Generate a file

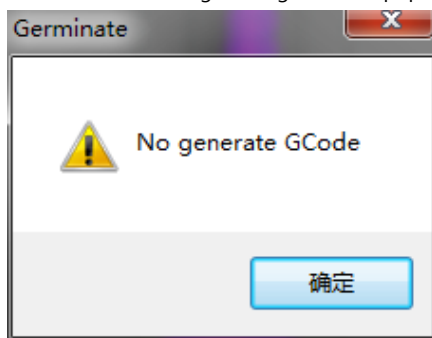
4.3.4.1 Click the icon "Export", and the dialog box to save the file path pops out. Select the save path and click "Save", and software automatically generates the printing from USB flash disk file.



4.1.5.1 ⚠ Notice: do not modify the file extension when you save an offline file, otherwise the printer will not recognize the file.

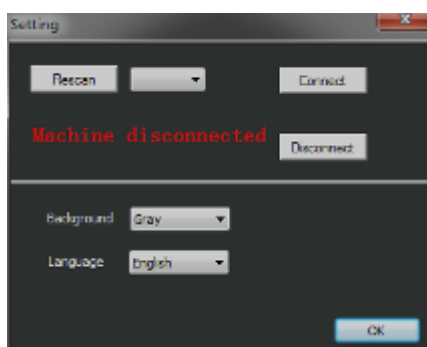
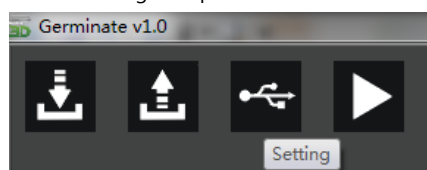


⚠ Notice: if the model does not generate GCODE, click "Export", if it cannot generate a file the following message box will pop out.

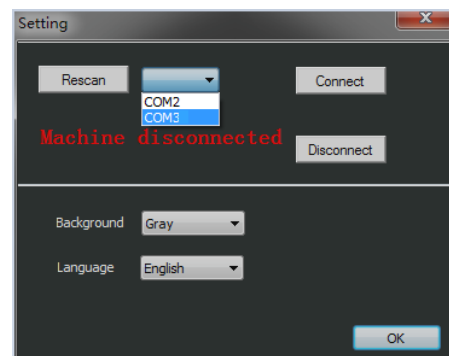


4.1.6 Connect the printer with PC

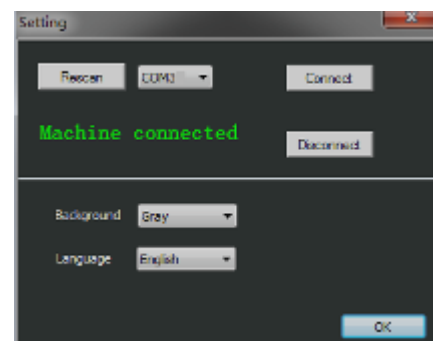
4.1.6.1 Click the icon "Setting" to open the GP3D Root connection dialog.



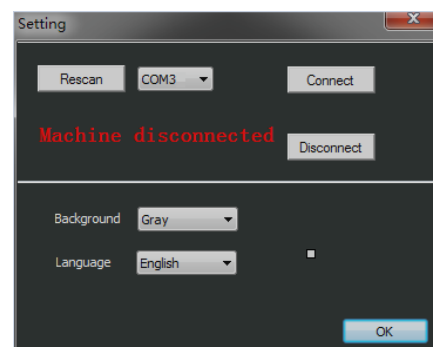
4.1.6.2 Click "Rescan" and "▼", as shown below.



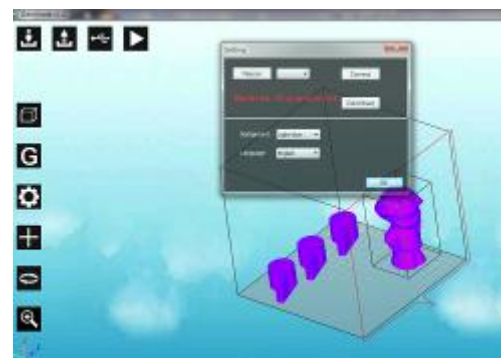
4.1.6.3 Select the corresponding port of the GP3D Root. For example, this GP3D Root is "COM3". Click "Connect".



4.1.6.4 To disconnect the GP3D Root and software, click "Disconnect".

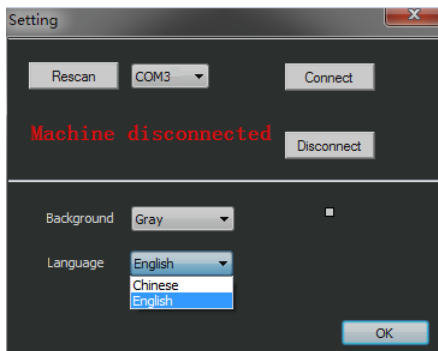


4.1.6.5 To change the background color: click the icon after "background". There are three kinds of background images to choose from.



4.1.6.6 Click the pull-down button after "Language" to choose Chinese or

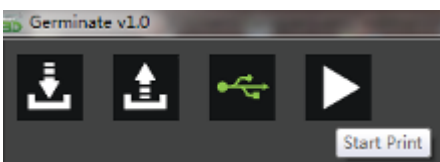
English.



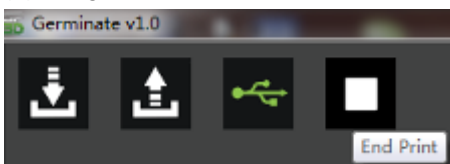
4.1.6.7 After successful connection, the icon in the interface turns green from white, as shown below.



4.1.6.8 After the GCODE file is generated or opened, click the icon "Start Print", and the GP3D Root will start to print.

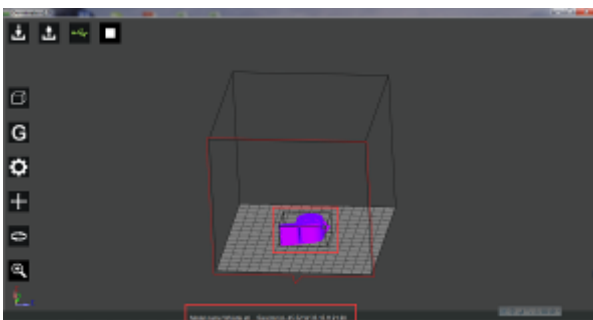


4.1.6.9 To stop printing, click the icon "End Print".



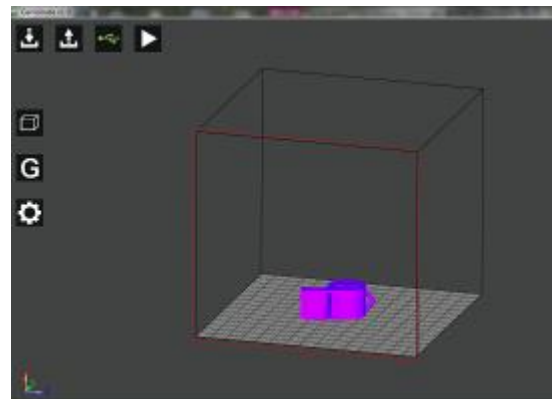
4.1.7 Control models with mouse

4.1.7.1 Click with the left mouse button to select the model, the size of the model is displayed in the status bar at the bottom in terms of the outer wall's length, width and height, and a transparent box will surround the model to show the selected status.

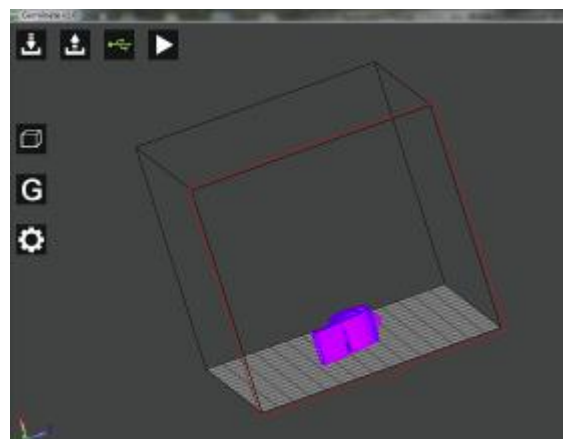


4.1.7.2 After the model is selected, the edit menu icons hidden on the left

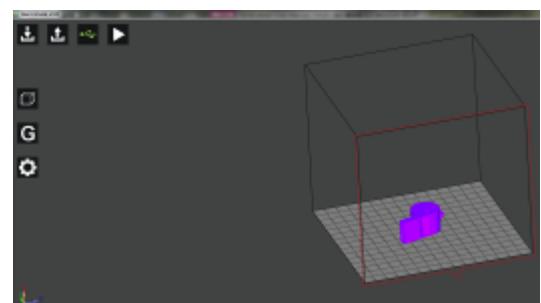
will appear, as shown in Figure 4.3.7.1. If the model is not selected, the icons are hidden.



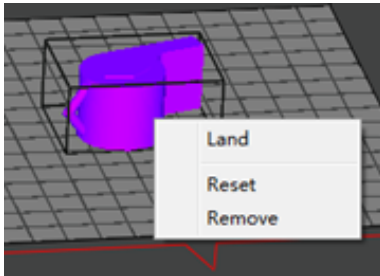
4.1.7.3 Click the right mouse button to move, and the model display frame can be rotated at any angle.



4.1.7.4 Hold the middle mouse button, and you can move the overall model display frame.

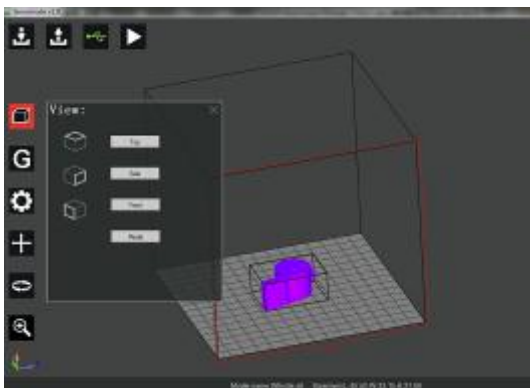


4.1.7.5 Click the model with the right mouse button, and the following menu pops out. Select "Land" and the model will descend to the center of the platform. Select "Reset" to restore the original state of the model. You can also select "Remove" to uninstall the model.

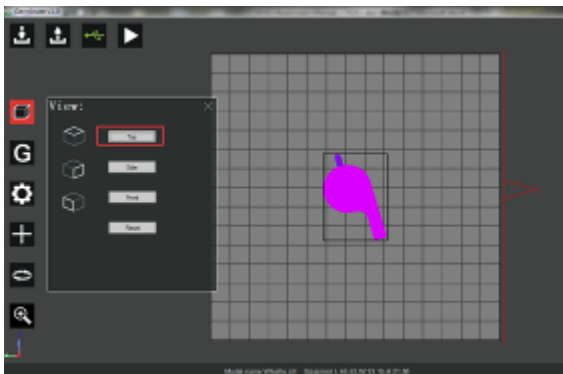


4.1.8 Model view display

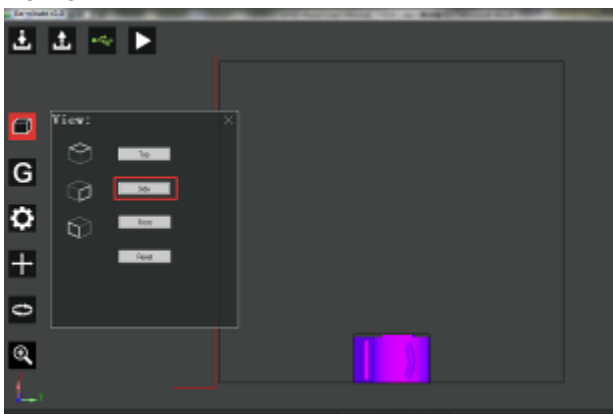
4.1.8.1 After the model is selected, click the menu icon "View". The following figure is the model view display in terms of "Reset".



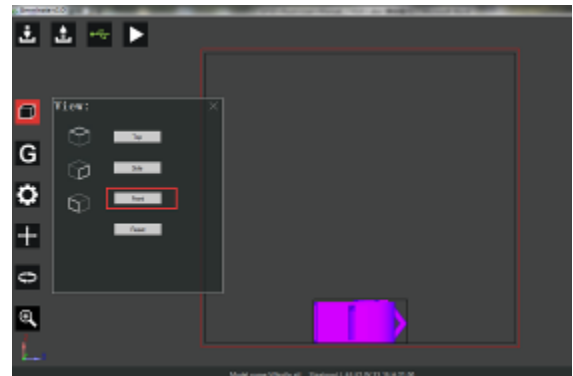
4.1.8.2 Click the menu icon "Top", the model will be displayed at the overlooking angle, as follows.



4.1.8.3 Click the menu icon "Side", the model will be displayed at the right viewing angle, as follows.

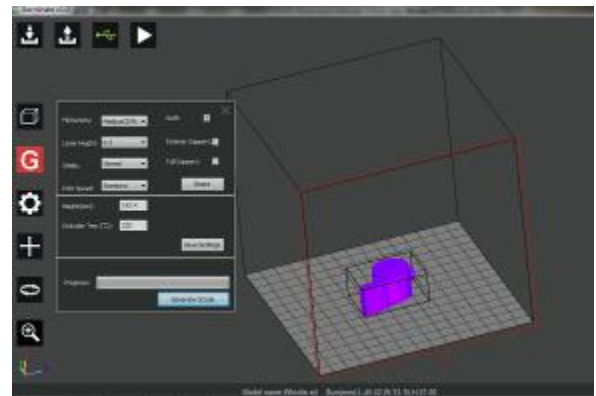


4.1.8.4 Click the menu icon "Front", and the model will be displayed as follows.

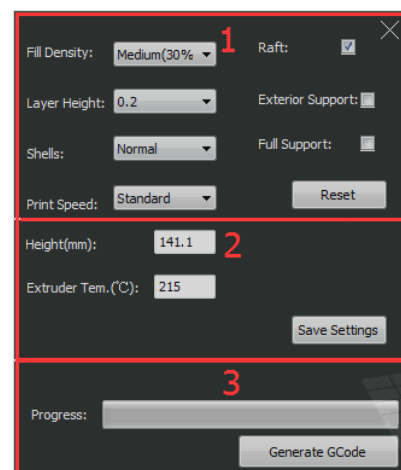


4.1.9 Print parameter settings

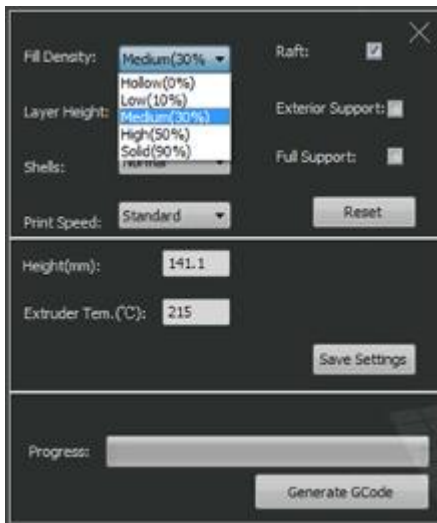
4.1.9.1 Click the icon "GCode" and the setting dialog pops up



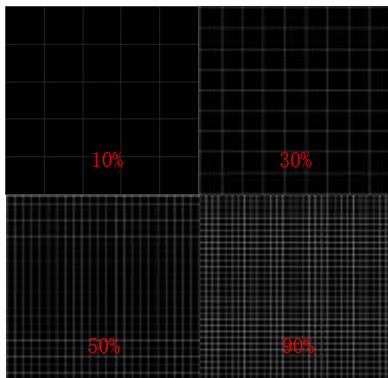
4.1.9.2 The dialog to generate GCode is divided into three parts, the column "1" is to set model parameters, the column "2" is to set GP3D Root parameters and the column "3" is to generate GCODE.



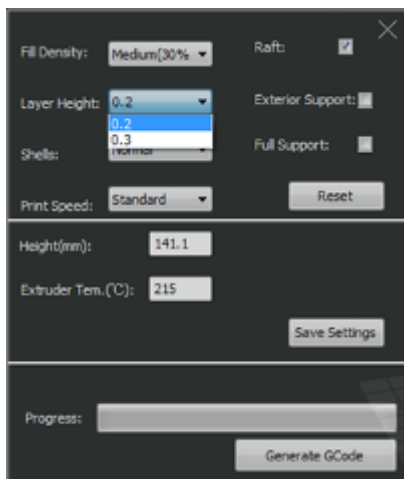
4.1.9.3 Model density refers to the filling density of the model, set by percentage. Click "▼" to select different densities. (The default is medium 30%)



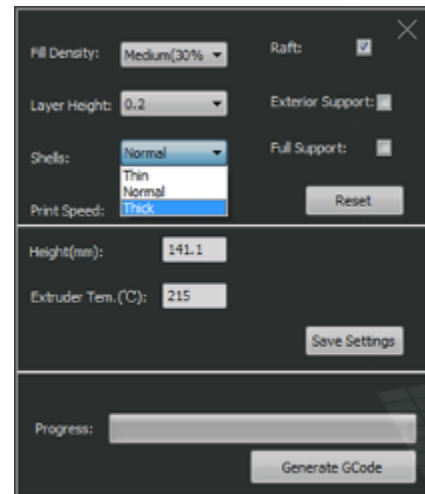
4.1.9.4 Different filling densities will affect the printing time. The greater the density means a longer print duration, and a more solid model. Please select a density according to your needs as shown below.



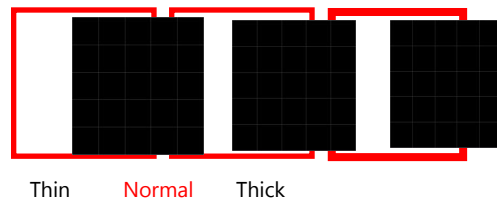
4.1.9.5 Layer thickness refers to the height of each layer of the model. Click "▼" to select 0.2 or 0.3mm, and the default is 0.2mm. The print time at the parameter of 0.3 will be shorter than 0.2, but the model's surface is less accurate.



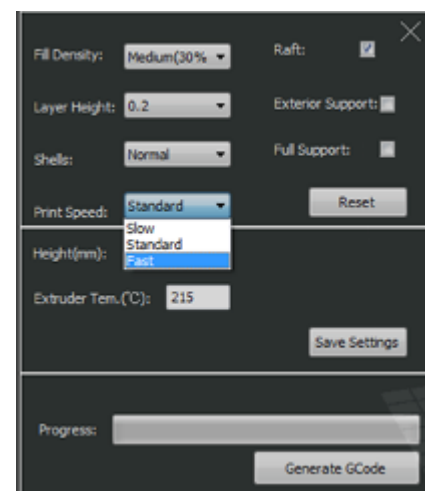
4.1.9.6 Case layers refer to the thickness of the model surface. Click "▼" to select different wall thickness, "Thin, Normal, or Thick".



4.1.9.7 If the model is a cube, with the same filling (10%), the thickness of the red frame represents different effect of "Thin, Normal, or Thick", as shown below.

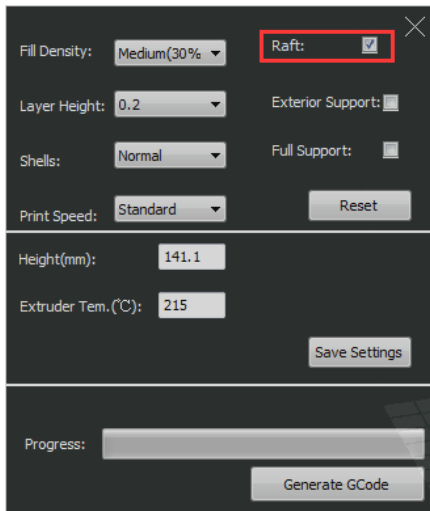


4.1.9.8 Speed means the movement speed of the model during the printing and the speed of the extruder. With different printing speeds, the model consumes different time. The higher the speed means a shorter print time and a less accurate model surface. Please select according to your needs. Click "▼" to select different speeds "slow, standard, or fast".

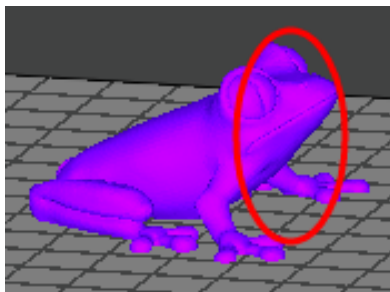


4.1.9.9 In order to make the model better fixed on the build plate, it is recommended to first print the raft and then print the model on the raft

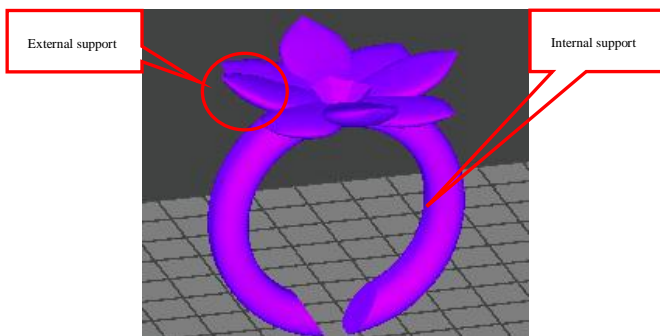
⚠ Notice: If you are not using a raft, only smaller models can be printed. The platform will need to be adjusted and a layer of textured paper needs to be applied to the build plate.



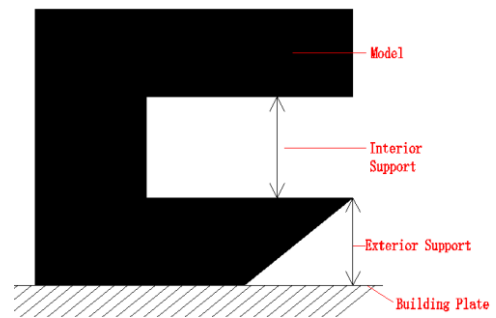
4.1.9.10 Some models require support to complete printing, including external support and overall support. External support refers to additional printing part added to support the overhanging part on the surface of the model. As shown below, the external support is needed between the animal's chin and the platform.



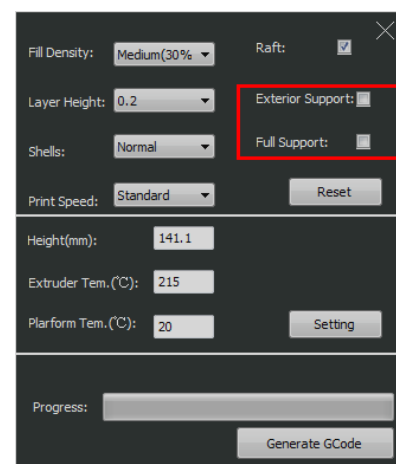
4.1.9.11 Overall support refers to both internal and external support of the model.



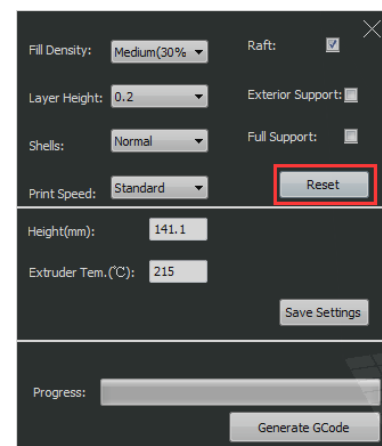
4.1.9.12 Structure of internal and external support of the model



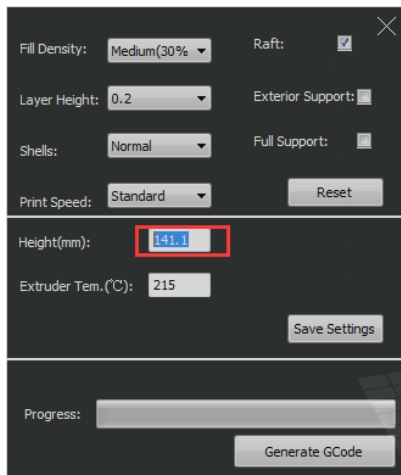
4.1.9.13 In print parameter settings, check Exterior support and Full support, as shown below.



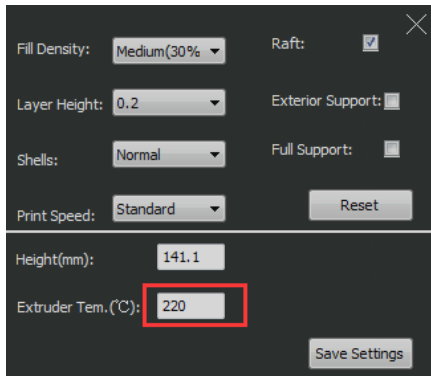
4.1.9.14 If some parameters are modified, but you want to use the original parameters, you can click "Reset" to restore the default settings, as shown below.



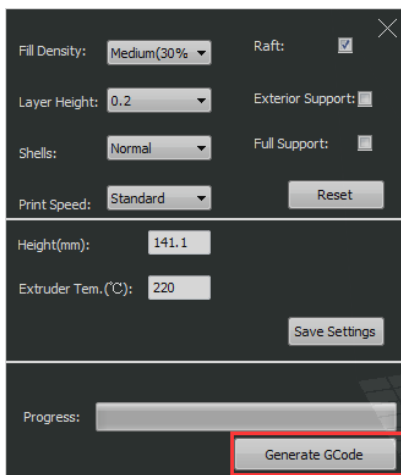
4.1.9.15 Set the print height: directly input Z-axis height in the dialog and click "Setting". This value is height of the generated printing file which can also be set before GP3D Root connection.



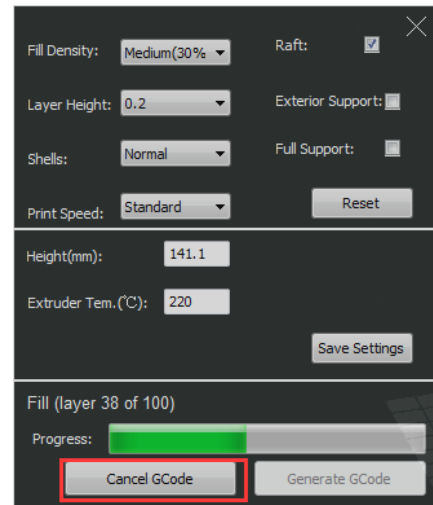
4.1.9.16 Set the nozzle temperature: directly input the temperature in the dialog box and click "Setting". For PLA material, the recommended temperature is 220-230 °C.



4.1.9.17 After the above parameters are set, click "Generate GCode".



4.1.9.18 During GCODE generation, in case of improper parameter settings found, click "Cancel GCode", as shown below.

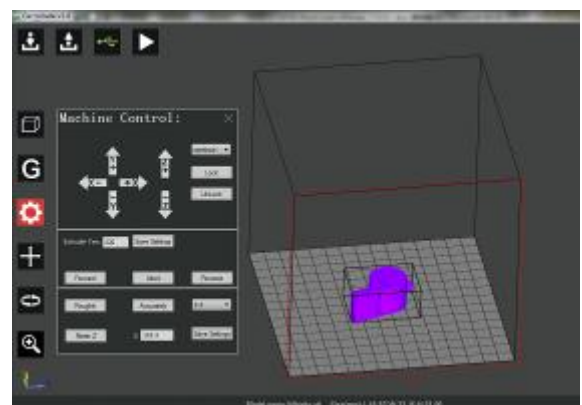


4.1.9.19 After GCODE is generated; the interface pops out as shown below. Click "Ok".

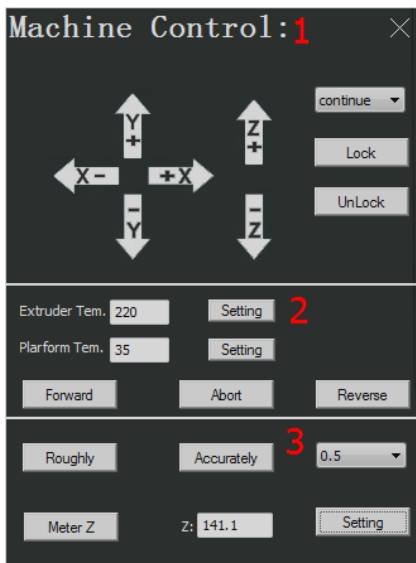


4.1.10 Control the printer

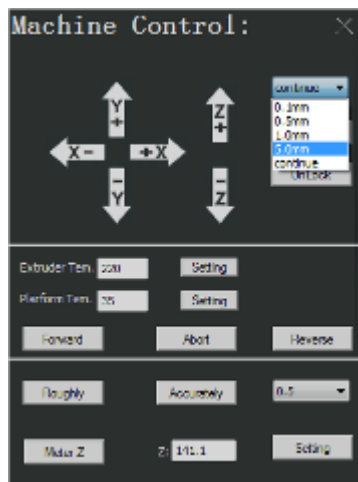
4.1.10.1 Click the icon of GP3D Root control and the control interface pops out.



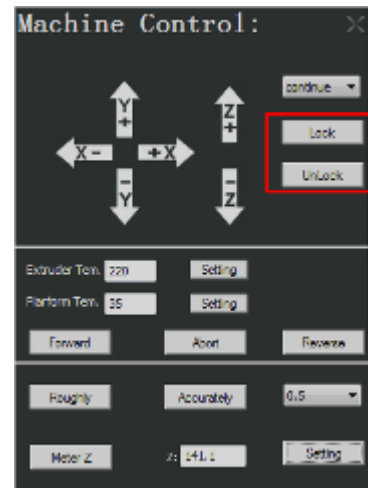
4.1.10.2 GP3D Root control includes three parts: movement control "1", temperature control "2" and Z-axis height setting "3", as shown below.



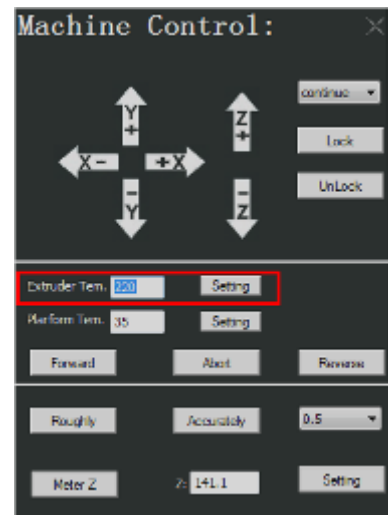
4.1.10.3 Click X/Y/Z and the three axes of GP3D Root will move along the corresponding direction. Click the pull-down window "continue▼" to select the step length of single movement.



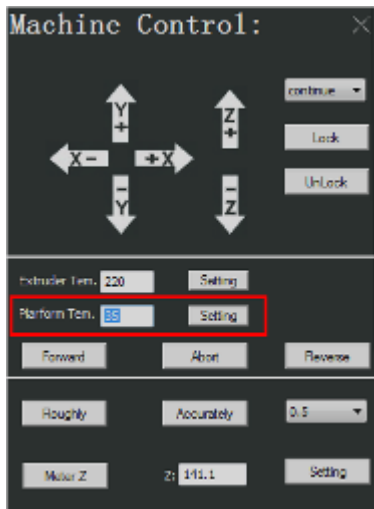
4.1.10.4 After movement to a position, to lock or unlock the motor, you can click "Lock" or "Unlock".



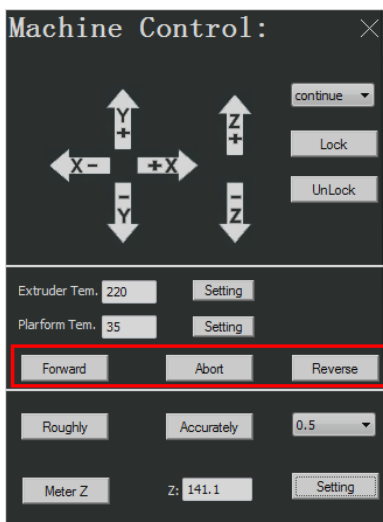
4.1.10.5 Set the nozzle temperature: input the target temperature and click "Setting", and the nozzle begins heating. For PLA material, the recommended temperature is 220-230 °C.



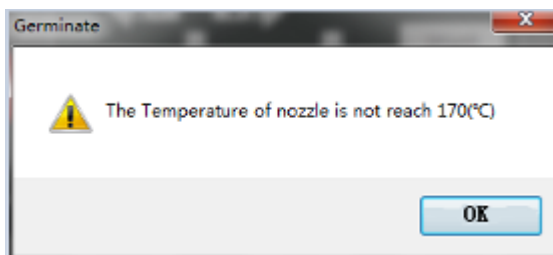
4.1.10.6 Set the platform temperature: directly input the target temperature and click "Setting", and the platform begins heating.



4.1.10.7 After the nozzle temperature reaches the set value, you can click "Forward/Abort/Reverse" to change the material or debug the nozzle.



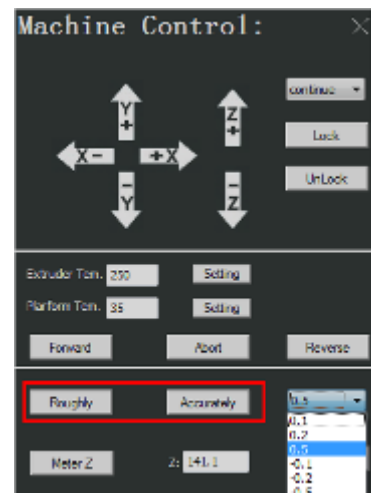
4.1.10.8 Before the nozzle temperature reaches the set value, you cannot feed or return the material. If you click "Forward/Reverse", the following prompt box will pop out.



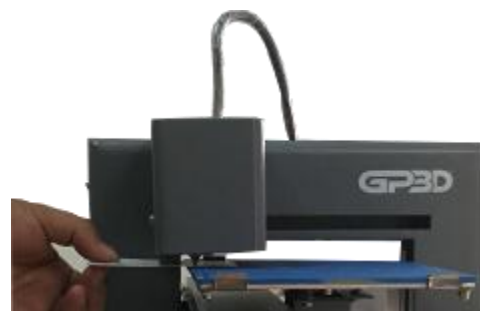
4.1.10.9  **Notice: difference between the temperature setting here**

and "Print parameter settings" in 4.3.8: The temperature setting here is to set the temperature of the GP3D Root when software is connected to the GP3D Root. If the temperature is set at 220 °C as GCODE file is generated but the temperature before printing is set at 230 °C, the printing is carried out at 230 °C. It is the same with the platform temperature setting. The temperature setting in 4.3.9.16 and 4.3.9.17 is to set the temperature as GCODE file is generated, which can be set before software is connected to the GP3D Root.

4.1.10.10 In the part of Z-axis height setting, click "Roughly", and Z-axis platform will automatically descend to the lowest point and then rise close the nozzle nozzles. At this time, according to the distance between the platform and the nozzle, click "▼" after "Accurately" to select the step length of single Z-axis movement. If "0.5" is selected for debugging of this GP3D Root, which is equal to clicking "Accurately", Z-axis moves 0.5mm upwards. The less distance between the platform and the nozzle, the smaller the step length needs to be. If the platform touches the nozzle, choose a negative for the movement downwards, as shown below.

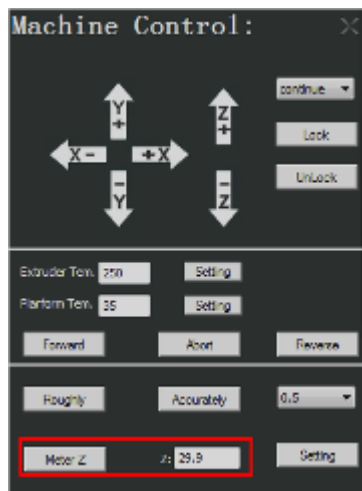


4.1.10.11 To precisely measure the height of Z-axis platform, you can just put a card between the platform and the nozzle, as shown below.

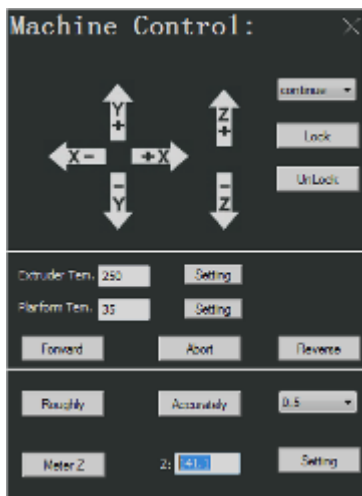


4.1.10.12 Click "Meter Z", and the GP3D Root automatically starts measuring. You can see the increase of the figure in the dialog after "Z:".

After the measuring is complete, click "Setting" to complete the measuring of Z-axis height and the following print will be carried out in terms of this height.



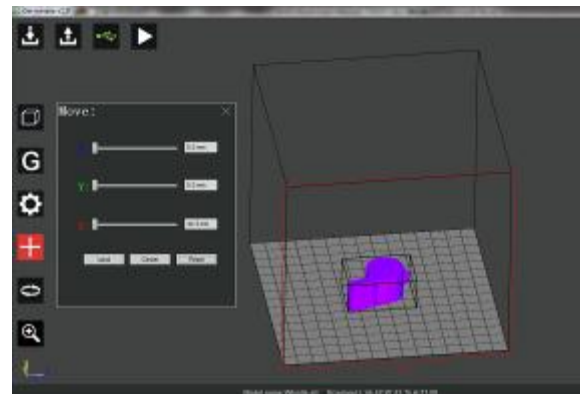
4.1.10.13 After a period of use or if the height of the platform needs to be fine-tuned, you can directly modify the figure in the dialog after "Z:", and click "Setting".



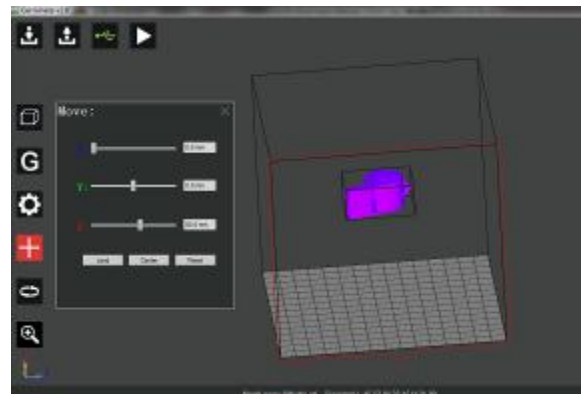
4.1.11 Model movement

4.3.10.1 Sometimes you need to move the model before printing. After the model is selected, click the menu icon of model movement on the left, and the interface pops out.

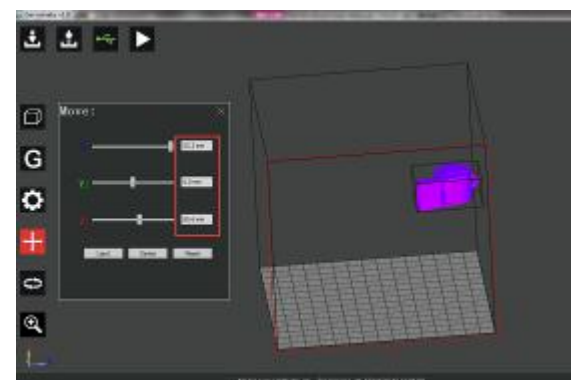
⚠ Notice: only after the model is selected can the menu icon for model movement appear.



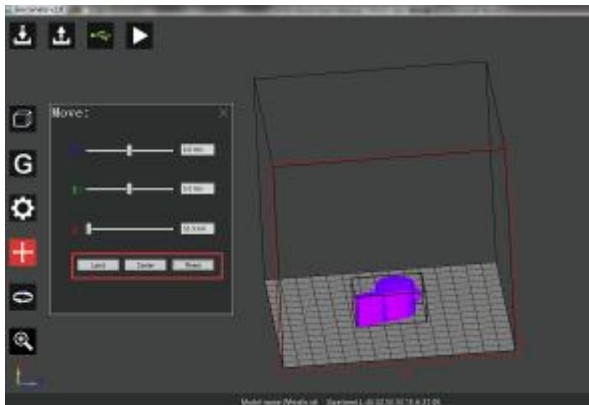
4.1.11.2 The imported model will be automatically placed in the center of the platform. You can move the slider in "X/Y/Z" with the mouse to change its position and the model will move on the platform according to the distance the slider moves.



4.1.11.3 You can also directly input the moving distance in the slider dialog of "X/Y/Z". Notice: if the moving distance is beyond the maximum frame, the model will move to the position of the maximum frame, as shown below.

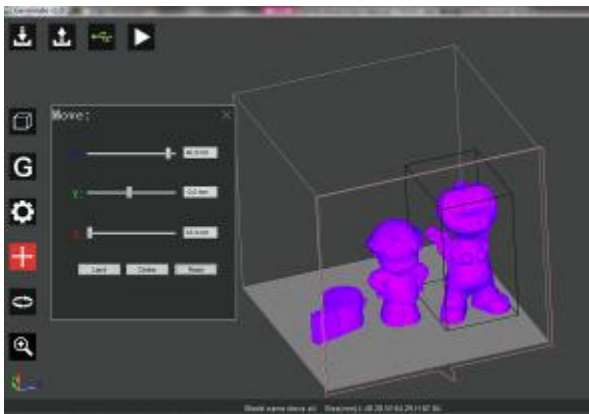


4.1.11.4 After the model is rotated, scaled or moved, if you want to move the model to the center of the platform, click "Land" and "center" or click "Reset" to return to the original state of model printing.



4.1.11.5 If you want to import multiple models or move one model, select the corresponding model with the left mouse button and then move it.

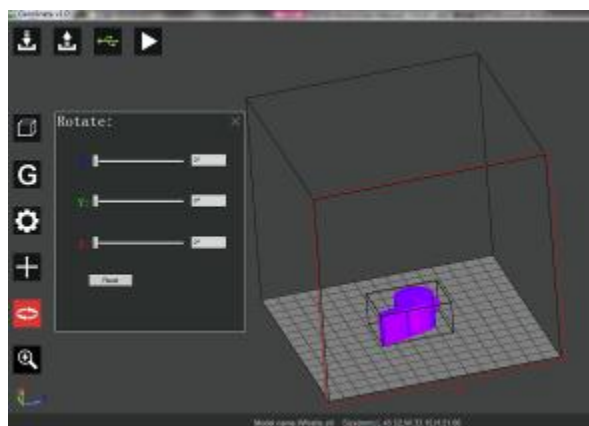
⚠ Notice: Only one model can be selected, multiple models cannot be selected or automatically arranged after import.



4.1.12 Model rotation

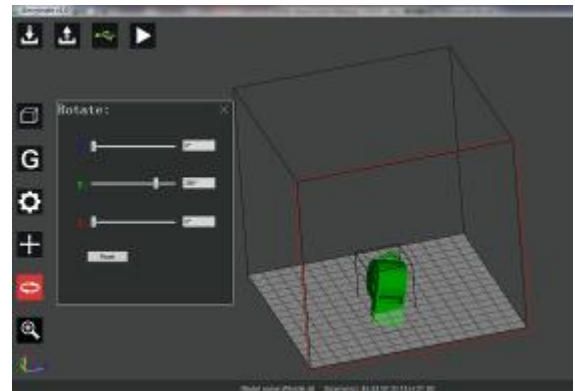
4.1.12.1 Select the model and click the left menu icon for model rotation.

⚠ Notice: the left menu icon of model rotation will not appear before the model is selected.



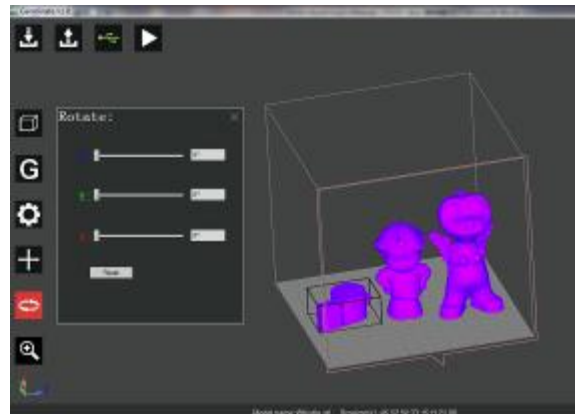
4.1.12.2 To rotate the model along the axial direction, move the slider on the corresponding axis with the mouse or directly input the rotation angle in the dialog box, and click enter. The model's rotation angle will be

displayed in the subsequent dialog. To return to the original state, click "Reset" to restore the original angle of the model.



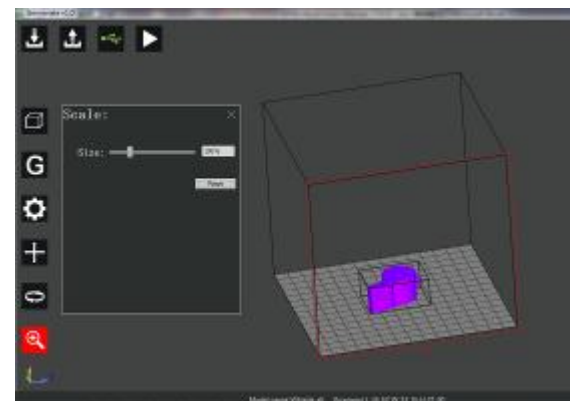
4.1.12.3 To operate one of several models, first select the model with the left mouse button and then the model can be rotated, as shown below.

⚠ Notice: You can only rotate one model each time.



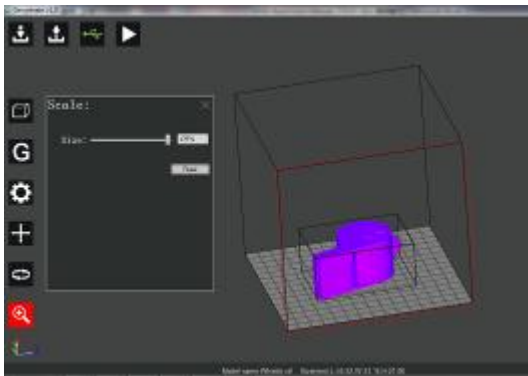
4.1.13 Model zoom

4.1.13.1 Select the model to be zoomed, click the **Scale** menu, and the following interface pops out.



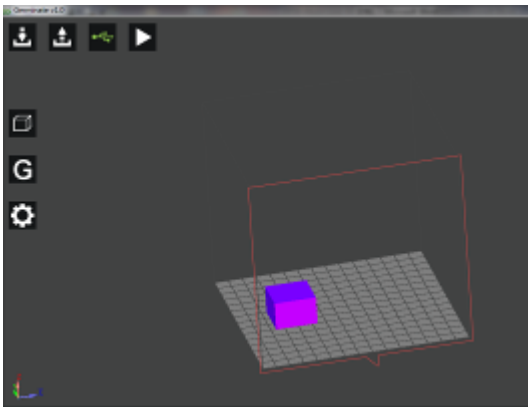
4.1.13.2 Move the slider with the mouse or input directly the zoom scale in the dialog.

⚠ Notice: The maximum size of zooming cannot be larger than the printing size.

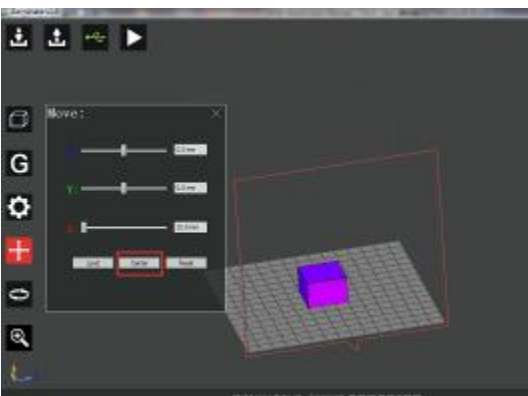


4.2 PRINT FROM PC

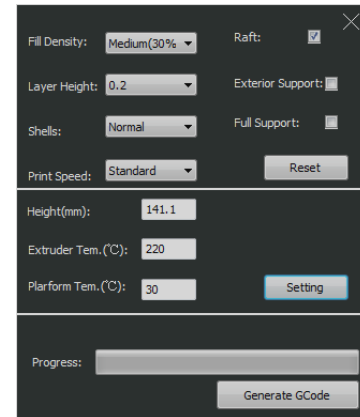
4.2.1 Software features are described above, this section takes the cube model to introduce the whole process of online printing. After connecting software to the GP3D Root, import the cube model, as shown below.



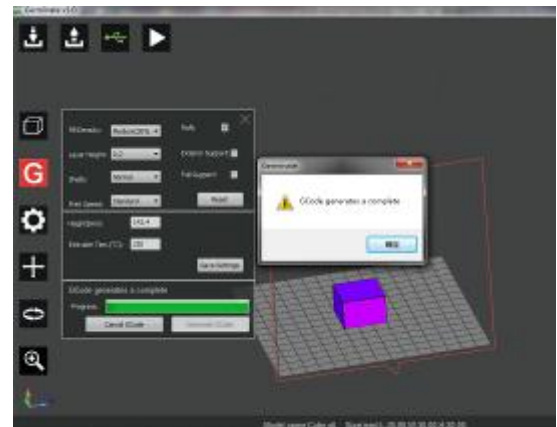
4.2.2 Select the model with the left mouse button, click the left menu button to move the model to the center of the platform, and you can click "center", as shown below.



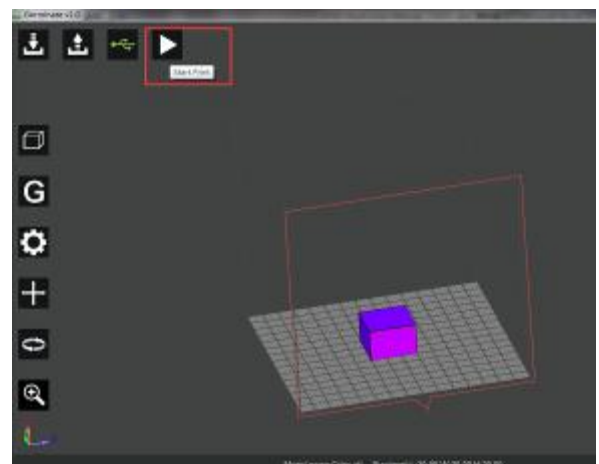
4.2.3 Click the left menu button to generate GCODE (PLA material used for printing), set the nozzle temperature at 220 °C and the platform temperature at 30 °C, and click "Setting", as shown below.



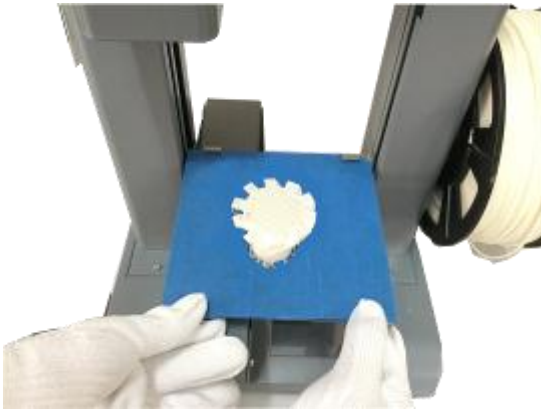
4.2.4 Other parameters are set to default settings. Click "Generate GCODE". After GCODE is generated, click "OK" to close the prompt box popping out.



4.2.5 Click the button "Start Print", and the GP3D Root begins to work, as shown below.



4.2.6 After the model is done printing follow steps in 3.2.8-9 to remove the model.



(Figure 4.2-06)

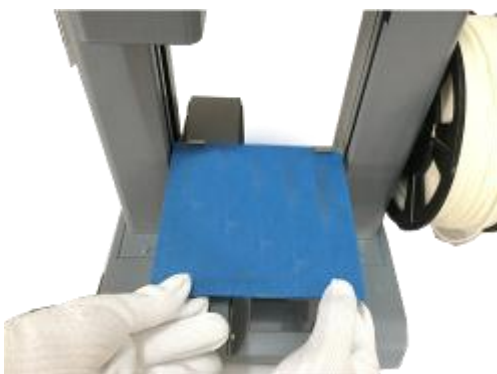
4.2.7 Slide the 4 clips to remove the build plate. Use the scraper to carefully take off the model.

⚠ Be careful ! Please wear gloves to prevent cutting your hand when you are taking down the model from the platform!



(Figure 4.2-07)

4.2.8 After the model is removed from the platform, slide the build plate into place and secure with the 4 clips.



(Figure 4.2-08)

4.3 ATTENTIONS FOR ONLINE PRINTING

4.3.1 Please disable sleep mode on your computer, otherwise the print will be interrupted.

4.3.2 During printing, please do not touch the power cable, USB cable, or SD card, otherwise the print will be interrupted.

4.3.3 Before taking down the model, please remove the build plate first to prevent the plate from being bent.

5. OFFLINE PRINTING

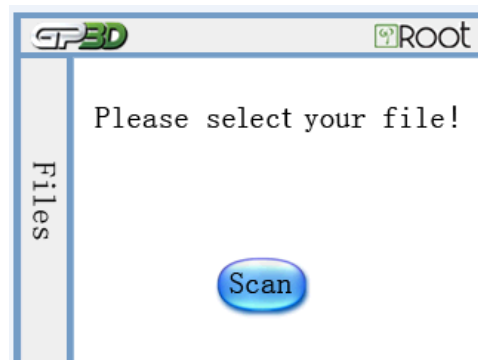
5.1 TOUCH SCREEN INTRODUCTION

5.1.1 Home page will show the GP3D and Root logos. Please tap any part of the display and then find "Files" function.



(Figure 5.1-01)

5.1.2 Select the files to print on the touch screen.



(Figure 5.1-02)

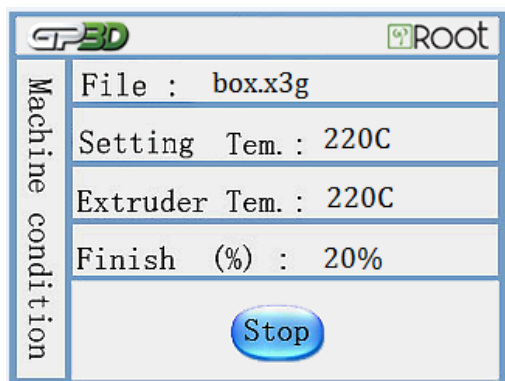
5.1.3 You can save multiple x3g files until the storage reaches 2GB. Touch any file to start printing (Figure 5.1-03)



(Figure 5.1-03)

5.1.4 The touch screen will display file name, setting temperature, extruder temperature, and printing process. Touch [Stop] to stop printing.

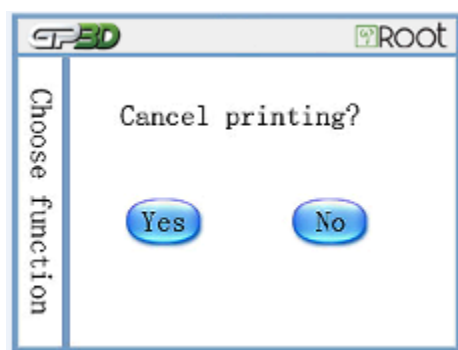
5.1.5 During printing, the page can show setting temperature, and progress percentage. If you need to stop the stop button. (Figure 5.1-05)



(Figure 5.1-05)

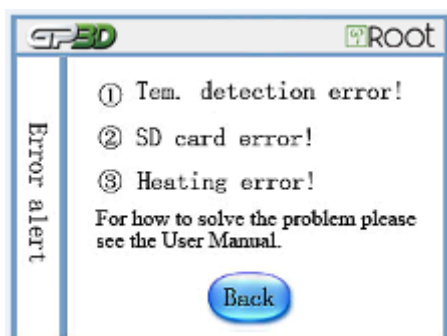
5.1.6 Click [Yes] or [No] to discontinue or continue printing.

(Figure 5.1-06)



(Figure 5.1-06)

5.1.7 An Error alert will show up if anything goes wrong during printing.



(Figure 5.1-07)

5.2 ATTENTION FOR OFFLINE PRINTING

5.2.1 This model can only recognize SD cards up to a maximum of 2GB.

5.2.2 If SD card has been input, but the machine cannot find the SD card, it could be there are too many models on the card or the SD card was inserted before the machine was powered on. To fix this reinsert the SD

card into the machine after deleting some files or turning the machine off.

your computer can read your SD card, but this machine cannot, back up your files and reformat the SD card before trying again.

5.2.3 The printer can only display files ending in the ".x3g" extension.

5.2.4 File names support alphanumeric characters and cannot exceed 19 characters.

5.2.5 Files names cannot contain special characters.

5.2.6 Tapping the screen repeatedly could cause a system crash.

6. AFTER SERVICE ATTENTION

To update software and User Manual, please visit <http://gp3d.com/germinate>. Each GP3D Root has a unique identifier, which is an 11 digits series number. (Figure8-01) Please provide this number along with a description of the error you are experiencing, for more information visit: <http://gp3d.com/printers/claims.html>



(Figure8-01)

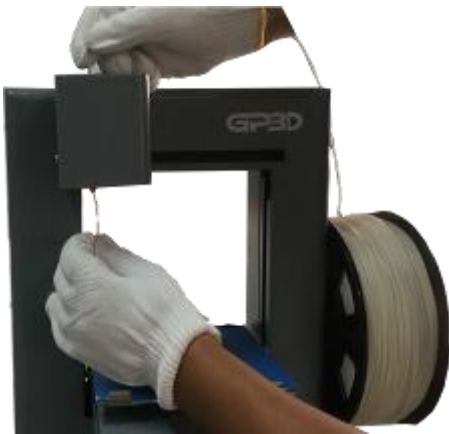
ATTACHMENT 1 MAINTENANCE

Extruder Blocking

WARNING: Always wear protective gloves when working with a heated extruder or build plate!

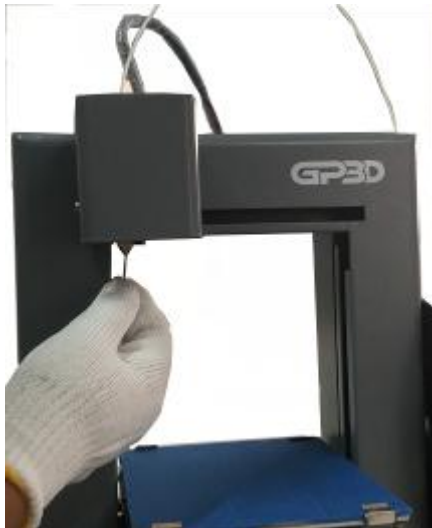
7.1.1 To remove a blockage in the extruder: connect your GP3D Root with your pc, increase the extruder temperature from 220°C by 5-10°C each time, click [Forward], and push the filament by hand to extrude the filament until the filament emerges from the nozzle. (Figure 7.1-01)

7.1.2 If the nozzle is coated by filament, please heat up the extruder temperature at 220°C and clean up the nozzle with a clean towel.



(Figure 7.1-01)

7.1.3 Heat up the extruder temperature to 220°C. Click [Forward] to extrude the filament, use the acupuncture needle in the tool box and insert into the hole of the nozzle to clean the nozzle up and down.



(Figure 7.1-02)

Proper maintenance at regular intervals will extend the service life of the machine and prevent printing errors. The following lists routine maintenance that needs to be performed.

1. Maintenance of the build plate

- 1.1 Take the glass plate off the build plate before you remove the printed models from glass plate. Do not remove the model when it is still on the build plate otherwise the build plate might move. For proper removal steps please see steps 4.2.6-4.2.8.
- 1.2 Clean off any material residue left behind after taking off a print, to leave an even surface for the next print.
- 1.3 After a lot of printing, the plate may be out of position slightly. Reposition the build plate by turning the raised side over to readjust with tweezers.

2. Maintenance of the extruder

- 2.1 Reverse the filament and set the extruder below room temperature if you do not continue printing but are leaving the printer on. The filament dissolves under intense heat and can corrode metal parts of the extruder. Heating for a long time without squeezing out the melted material would cause the carbonized material to block the nozzle or damage it.
- 2.2 Material residues can build up on the nozzle if residues from past prints are not removed. Dirt accumulates after long term heating which may damage the printing. It is recommended to clean it while the extruder is heated. Before the extruder cools down, wipe it repeatedly to remove residue with a piece clean cotton or soft paper held in place with pliers or tweezers. Heat the extruder up to 220° Celsius for cleaning if the extruder cools down.

3. Maintenance of the touch screen

- 3.1 Do not operate the touch screen with hard or sharp objects or you may damage it.
- 3.2 Turn off the power before you clean the touch screen. You can wipe the screen clean with microfiber cleaning cloth or cloth used for cleaning sunglasses. Alternatively you can wet the cleaning cloth with distilled water for wiping if the screen is particularly dirty. Do not wipe the screen too hard and let it air dry.

Attachment 2

1. Level the glass plate to make sure it is horizontal before printing, which is essential for a successful printing.
2. The height of the Z-axis determines how hard it is to remove the print from the plate. It will be hard to remove if the print sticks too close to the plate. If the print is easily removed or a large print is warped or comes adrift from the plate, you will need to raise the plate. Test the height several times to determine a proper height in your particular case.
3. If you find the printing height has to be modified you can do so without regenerating the Gcode file. Connect the 3D printer to your pc, click "machine control" to enter its menu, and then reset the printing height. After you reset the height you have to click "setting" to confirm it, with this step done, the printer prints under the reset height.
4. As the printing starts, it is good practice to check if the nozzle squeezes material out successfully. Any material squeezed out that sticks to the nozzle can be removed with tweezers.