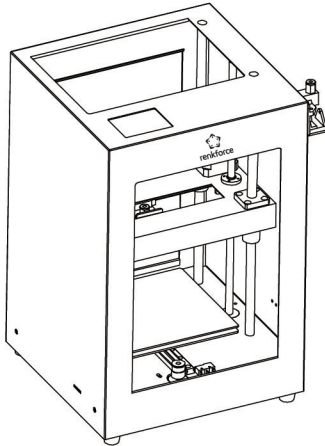




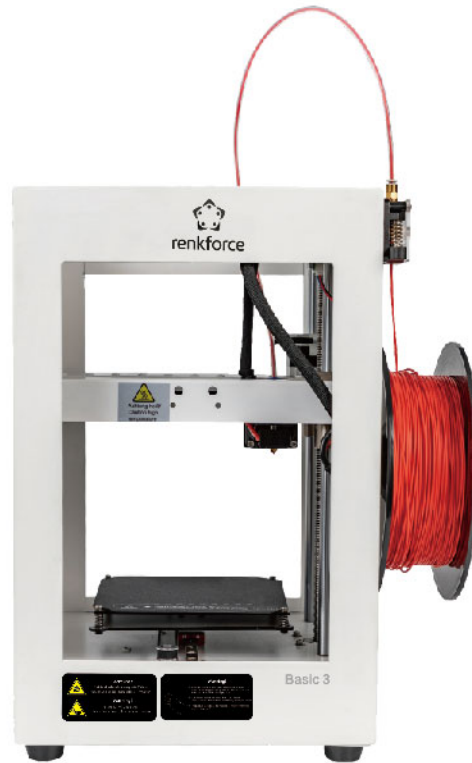
renkforce

User Manual



3D Printer Basic 3
Easy solution of 3D model creation

☆ Please read the User Manual before using this product.



Basic 3

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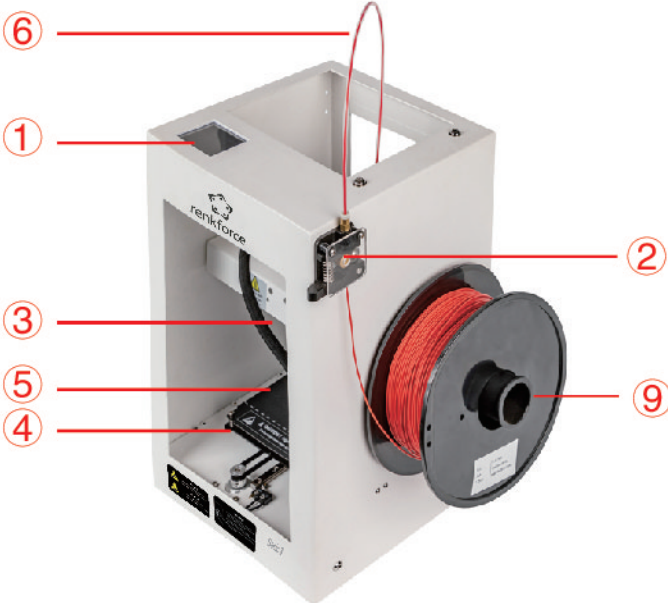
a) 1.1 Accessories list

Picture	Name	Qty.	Unit
	Adaptor and AC cable	1	PCS
	MicroSD Card 4GB	1	PCS
	Allen Key within 2.5mm dia.	1	PCS
	Card reader	1	PCS
	Flexible magnetic BuildMat	1	PCS
	Spool holder	1	PCS
	Ejector Rod 1.8*150mm	1	PCS
	Small needle 0.3*75mm	2	PCS
	filament tube	1	PCS

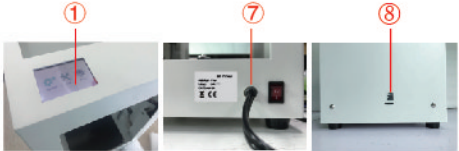
PS: The pictures are for reference only, and the actual distribution is the standard.

b) Product introduction

2.1 Appearance introduction



- ① Touch Screen
- ② Feed Module
- ③ Extruder Module
- ④ Print bed
- ⑤ Flexible magnetic BuildMat
- ⑥ Filament tube
- ⑦ Power Jack
- ⑧ microSD card Slot
- ⑨ Spool holder



2.2 Technology Specification

Model type	Basic 3
Build volum	120*120*180mm
Printing Speed	20mm/s~100mm/s
Nozzel Diameter	0.2mm/0.3mm/0.4mm; 0.2mm and 0.3mm is optional, not come with the device.
Heated Bed	Non-heated
Language	English/German
File input format	.gcode
Software compatibility	Windows 7 or later, Mac OS 10.6.8 or later
Power supply	65W
Dimension without spool	265*240*388mm
Printing technology	FDM
Printing materials	φ 1.75mm PLA,PLA Compounds
Printing temperature	Max 260℃
Touch Screen	2.8" Full color touch screen
Connectivity	microSD card
Slicing software	cura
Voltage	100-240V~
Operating conditions	Tem. 15-32℃, Humidity 30-90%

C) Preparation before printing

3.1 Menu preview

System/Tool/Printing



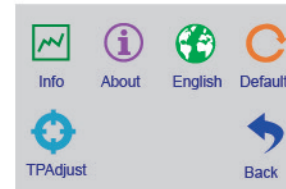
- The touch screen is on when the power supply is connected and turn on the device.
- You can touch the screen for operation.
- Don't touch the screen with the sharp articles.



The user can check the printing status, equipment information, factory settings, the screen calibration by touching system icon.



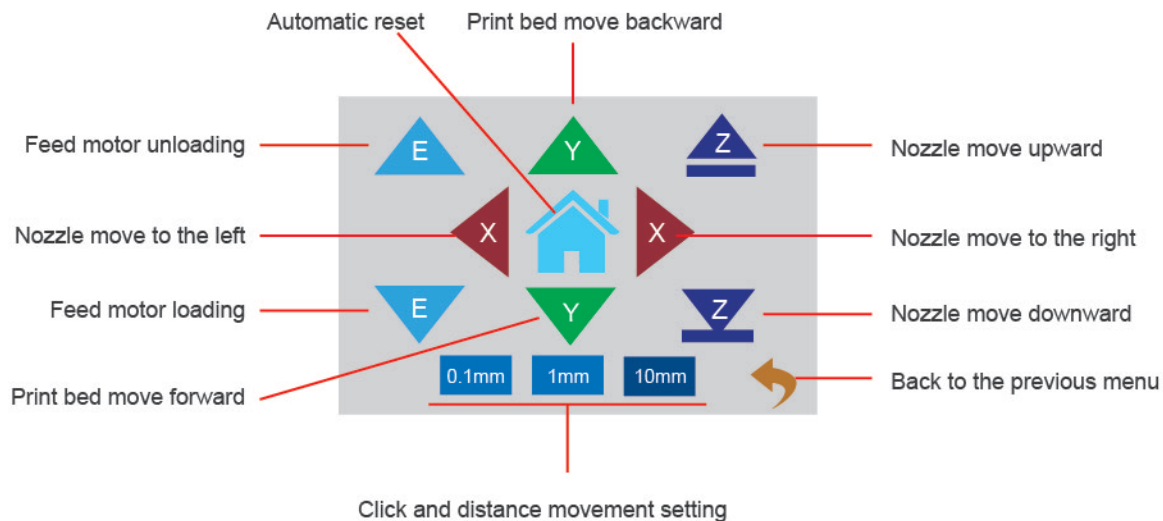
The user can realize manually controlling, preheating, filament loading/unloading, leveling, air volume adjustment, emergency stop by touching tool icon.



Tool/Manual interface



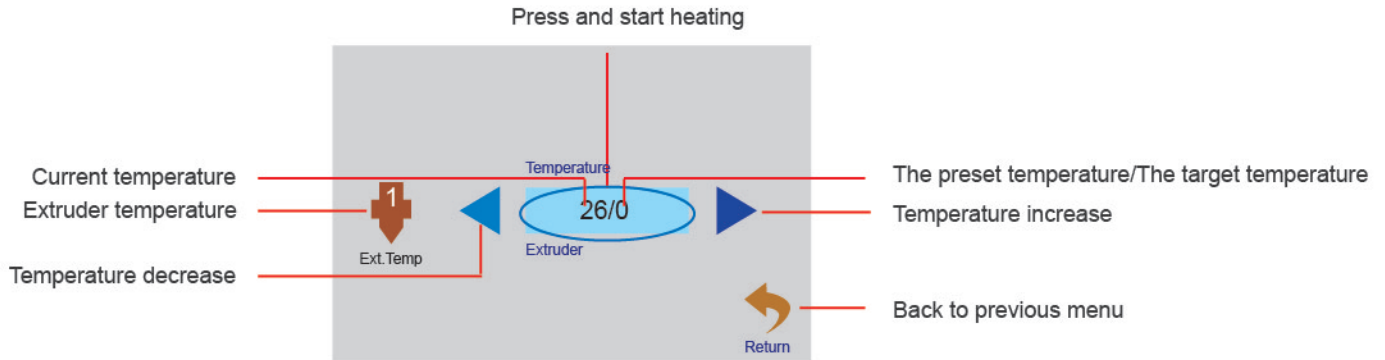
The user can manually reset or control the print bed and extruder position.



Tool/Preheating interface



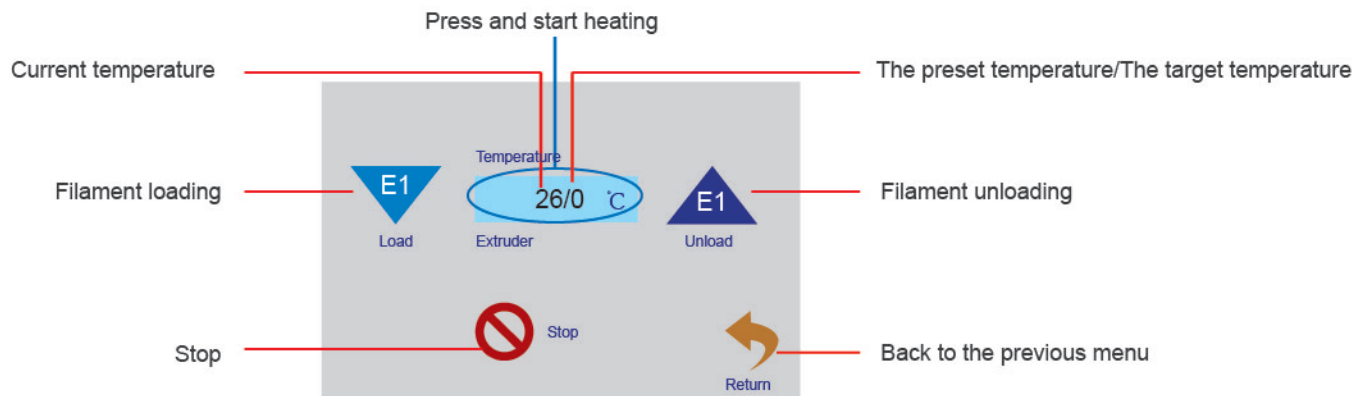
The user can control the temperature of extruder by touching preheat icon.



Tool /Filament loading/ Unloading



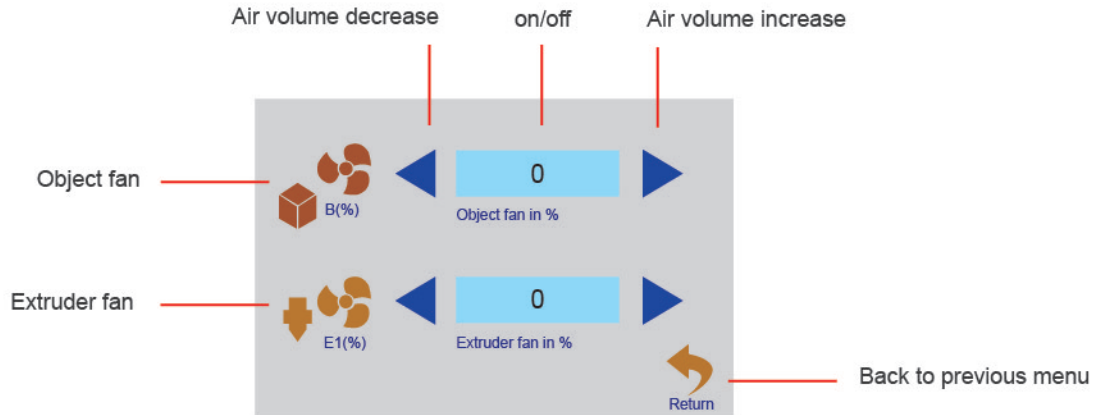
The User can load and unload the filament.



Tool/Air fan



The user can control on/off also cooling fan air volume of the extruder fan and object fan.



Tool/Levelling



The user can calibrate the print bed by the menu of level.
Refer to 3.2 for detailed instructions.



The user can click emergency stop icon to turn off all motors in case of emergency.

Printing menu



Select the file to start printing.

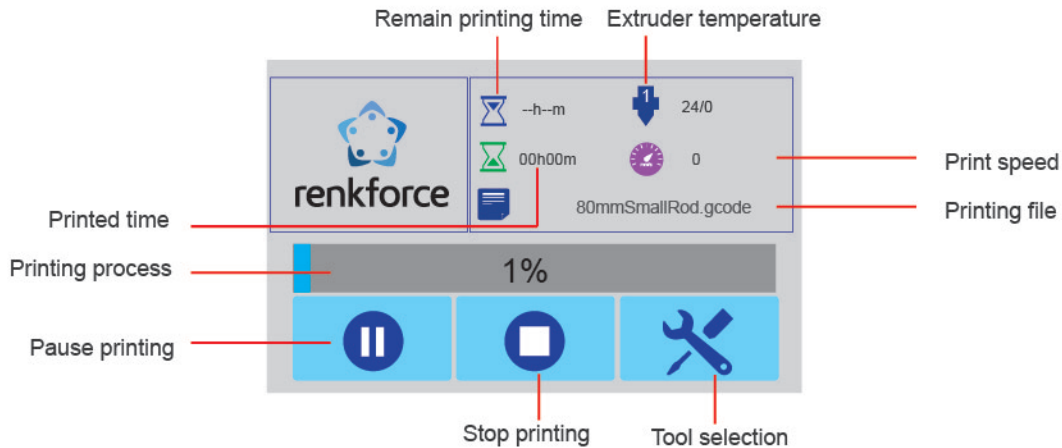
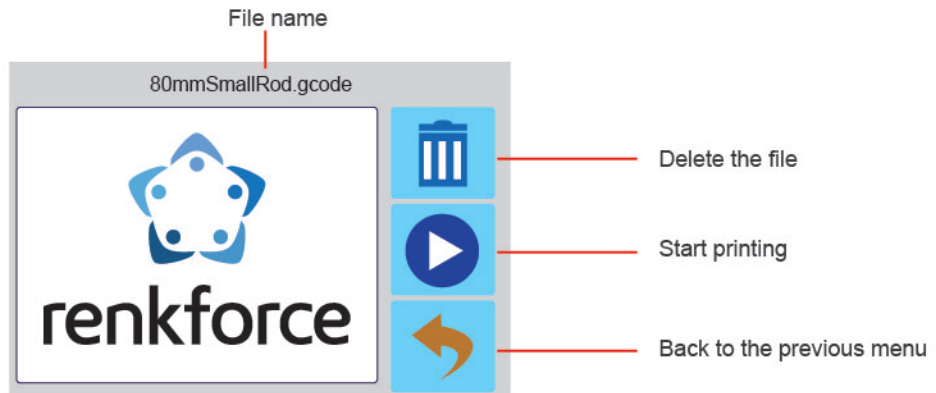
Select the file to access to printing interface



Page up and down

Back to the previous menu

Printing Menu





The user can adjust the print parameter by the tool menu.

The screenshot shows a grey menu interface with the following items:

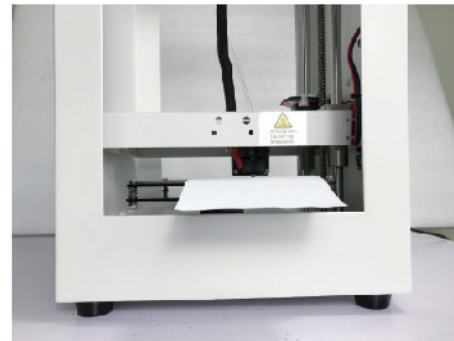
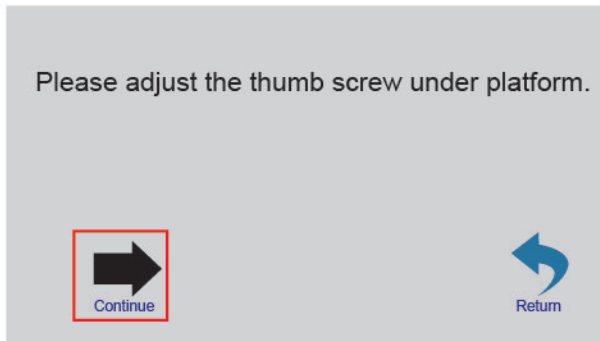
- Print speed percentage**: Represented by a green speedometer icon with 'mm/s' and '(%)', set to 100.
- Nozzle cooling fan**: Represented by a green fan icon and 'B (%)', set to 100.
- Nozzle temperature**: Represented by a brown arrow icon with a '1' and '(°C)', set to 190.
- A percentage of the filament output**: Represented by a blue icon of a filament spool and '(%)', set to 100.
- Back to the previous menu**: Represented by a brown curved arrow icon.

3.2 The calibration of print bed

The print bed has been calibrated and well levelled out of the factory, but some deviation will be occurred during transportation, so it is better that the user can do the print bed levelling before printing.

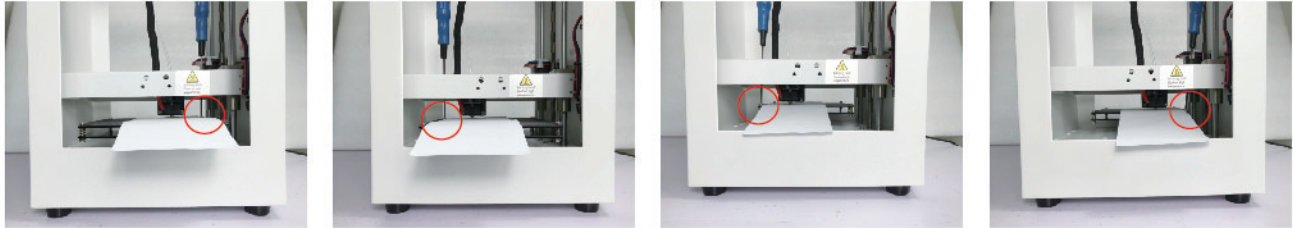


1. Put one small piece of paper under the nozzle, enter "level" icon under "tool" menu, and press the arrow as below, the nozzle will move to the first position on the right behind the BuildMat.



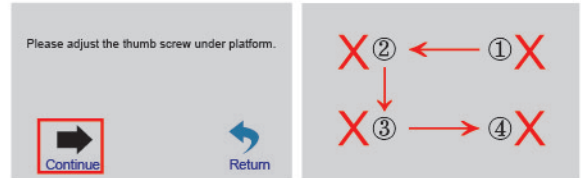
2. Calibration button

- ☆Slide the paper back and forth between the nozzle and BuildMat, if the paper can't be moved, the user can clockwise rotate the screw with the Allen Key until there is slight resistance between the nozzle and the paper.
- ☆If the paper can be slid easily between the nozzle and BuildMat. The user can anticlockwise rotate the screw with the Allen Key until there is slight resistance between the nozzle and the paper.



Caution: Don't let the nozzle move downward so low, or it will damage the BuildMat or nozzle.

3. Click next step(as shown to the right), the print head move to the left behind the front of the BuildMat, do it as 2nd step.
4. Click next step(as shown to the right), the print head move to the left front of the BuildMat, do it as 2nd step.
5. Click next step(as shown to the right), the print head move to the right front of the BuildMat, do it as 2nd step.
6. After you finish the 4 steps, the leveling is done.

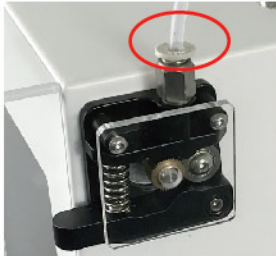


3.3 Filament loading / unloading

3.3.1 Filament loading for extruder

1. Install the filament tube

Press the pneumatic connector and ensure the filament tube has been tightly inserted into the connector.

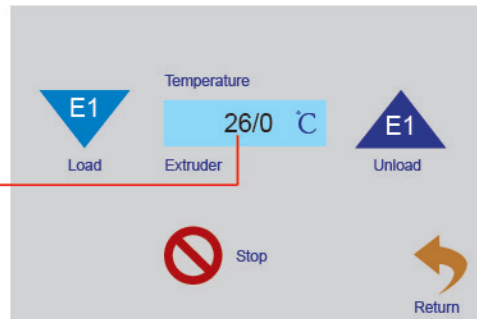


2. Filament feeding

2.1 Enter tool menu and click filament icon.

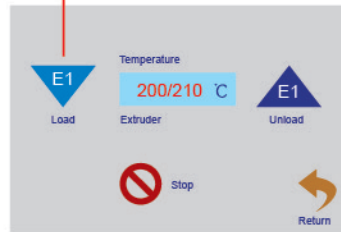
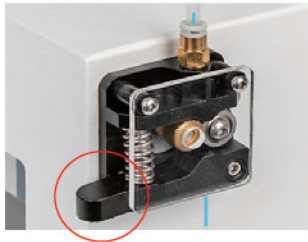


① Click on the temperature to preheat the extruder.

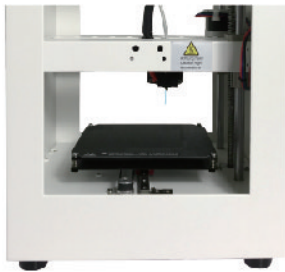


2.2 Cut the filament with an angle, press the release arm, and push the filament into the filament tube, then press the load icon, when it will be feeding automatically.

② When it comes to preset temperature and the filament has been inserted into the filament tube, click the load icon.



2.3 Once the filament melts and comes out smoothly from the nozzle, click pause icon.

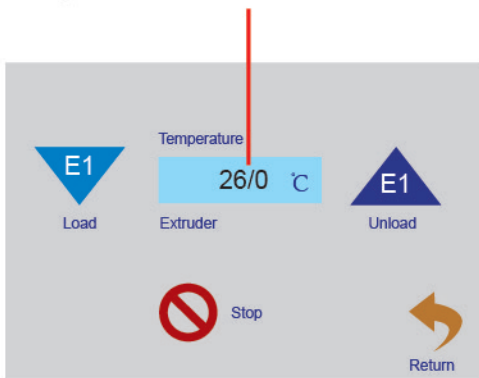


3.3.2 Filament unloading of extruder

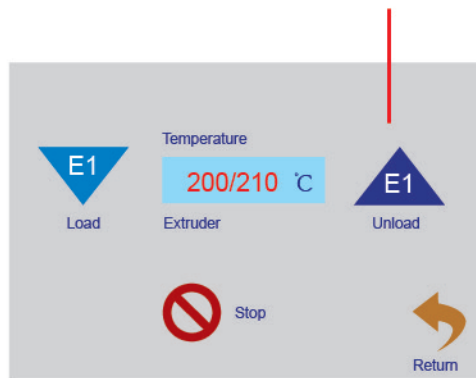


Enter tool menu and click filament icon

- ① Click on the temperature to preheat the extruder.

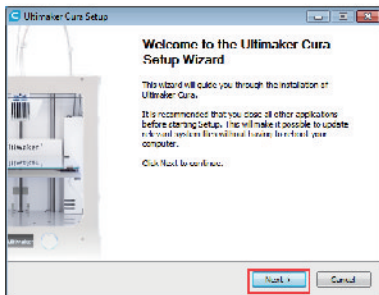


- ② When it comes to the preset temperature, click the unload icon, the feed motor begins to unload automatically, and the user can take out the filament.

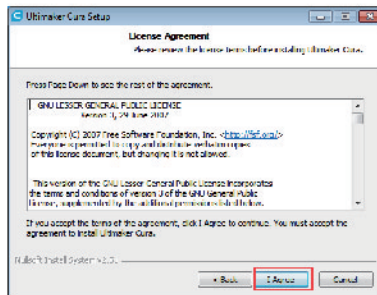


3.4 Print from "Cura" software

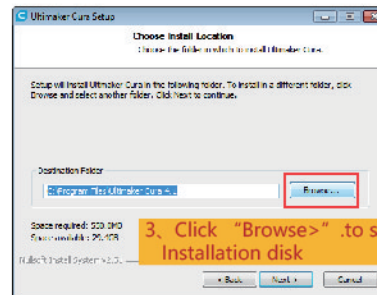
3.4.1 (1) Setup of the Software-Windows®



1. Click "Next >"

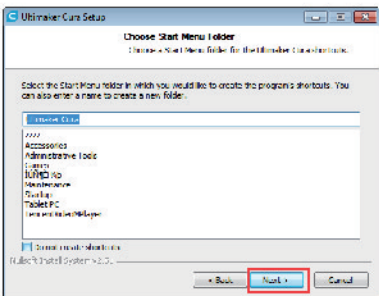


2. Click "I accept"

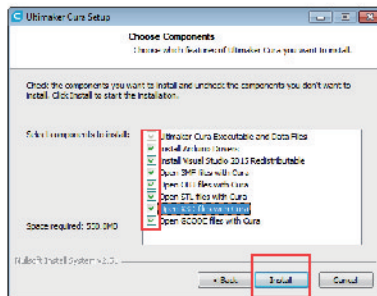


3. Click "Browse >" to select the Installation disk

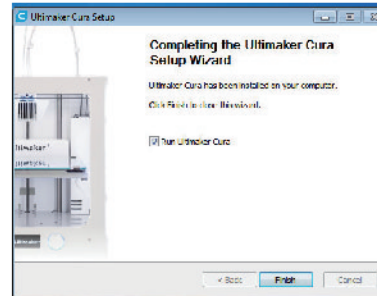
4. Click "Next >"



5. Click "Next >"

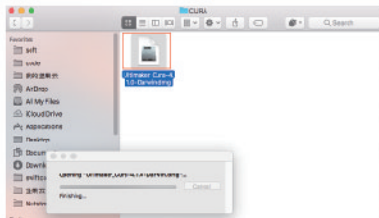


6. Click "install >"

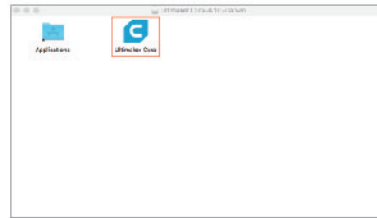


7. Click "finish >"

(2) Setup of the Software-Mac



1. Double click the icon.



2. Double click the icon.



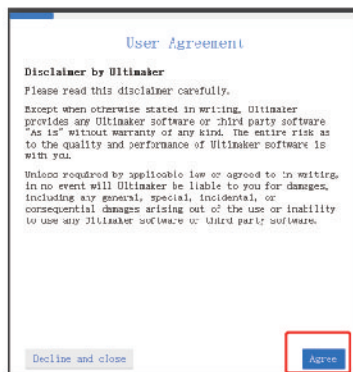
3. Software processing.

3.4.2 Start software- Windows® & Mac

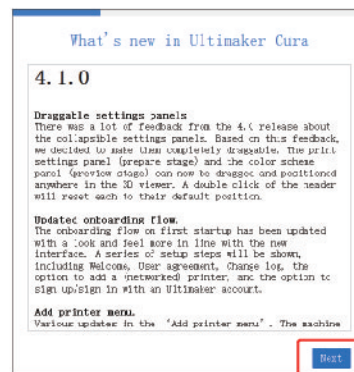
After installation, the “Configuration Wizard”, which will guide you through the set up process of the 3D printer, appears



1. Click “Get started”.



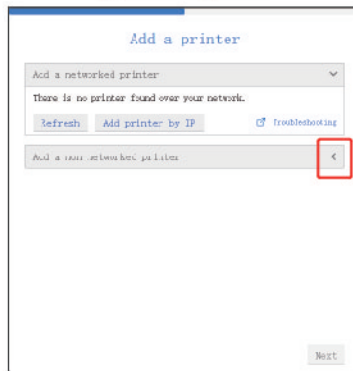
2. Click “Agree”.



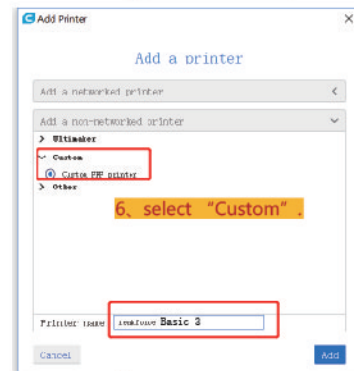
3. Click “Next”.



4. Click “Next”.



5. Click “Next”.



7. Fill in the printer name “renkforce Basic 3”.

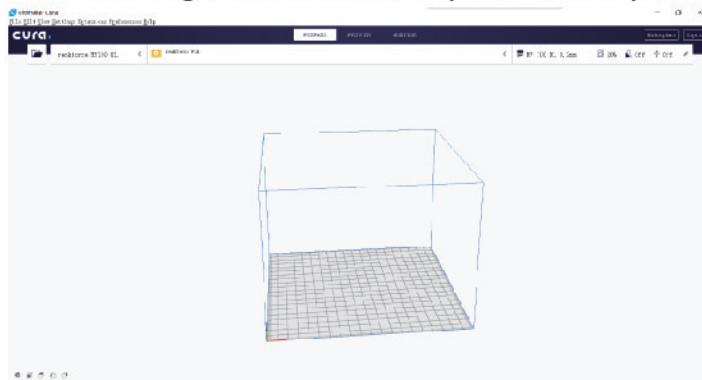
8. Input parameters as shown

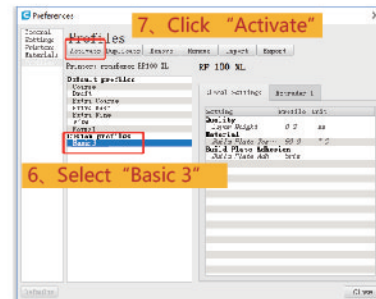
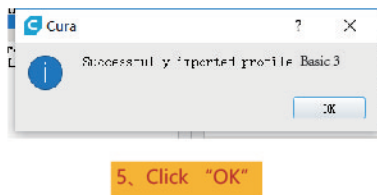
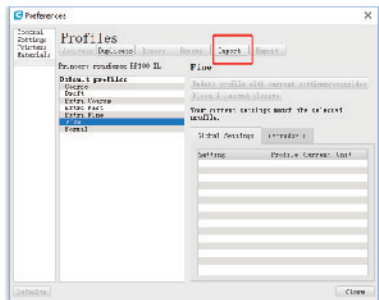
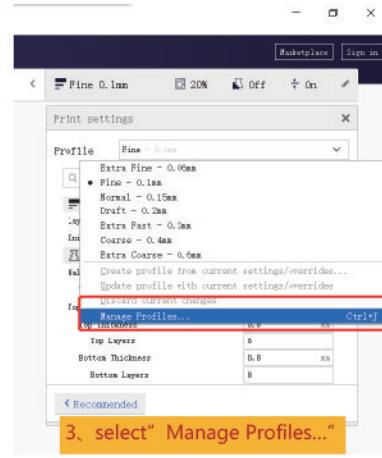
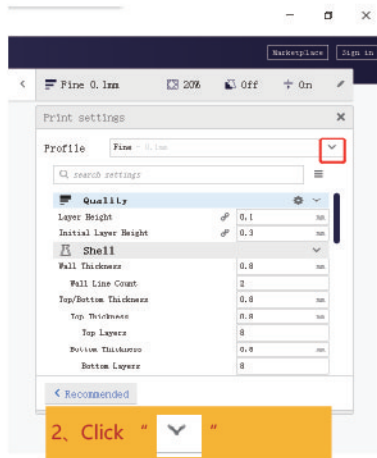
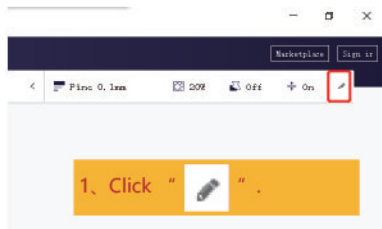
9. Finish



3.4.3 Software setting- Windows® & Mac

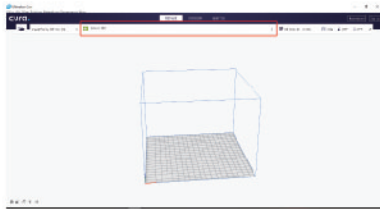
After starting the software, import related parameters of the printer



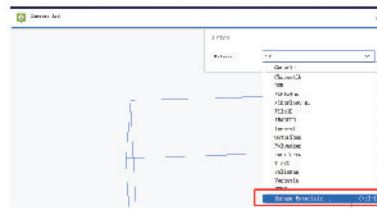


3.4.4 Load material configuration file – Windows®

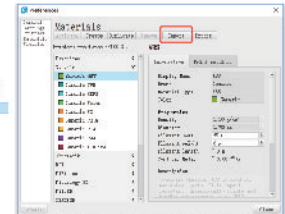
In order to ease the process of setting parameters for different materials (Wood/Elastic/Copper/PLA), you can load pre-configured material configuration files from the SD card.



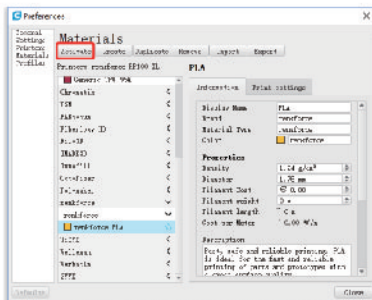
1. Click " < "



2. select " Manage Materials..."

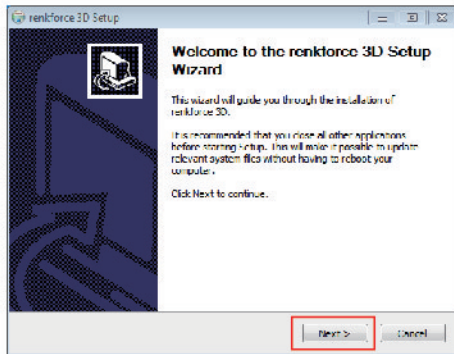


3. Click "Import" select the file in SD card (Select a filament configuration file for the filament used by you in the selection window and confirm your selection)

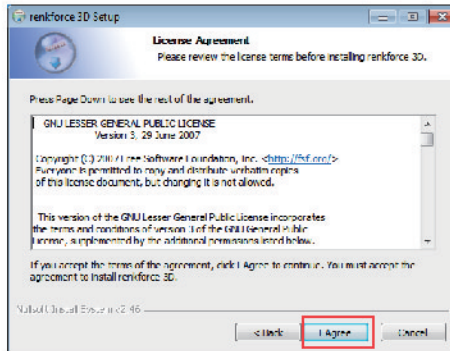


4. Click "Activate"

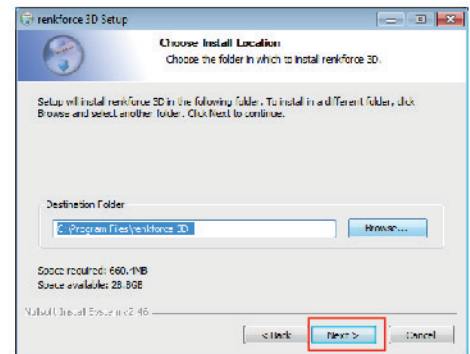
3.5 Print from “renkforce 3D setup”



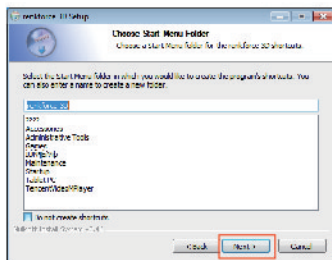
1. Click “Next >”



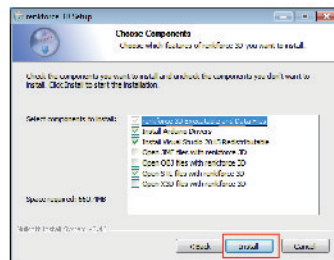
2. Click “I Agree”



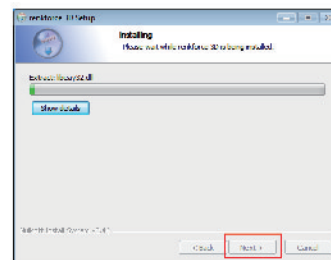
3. Click “Next >”



4. Click “Next >”



5. Click “Install”



6. Click “Next >”

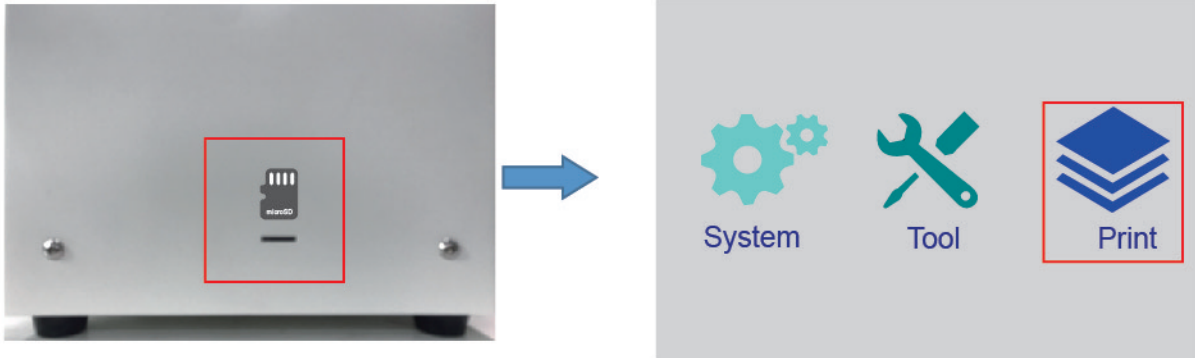


7. Click “Basic 3”

d) Print 3D model

4.1 Printing

1. Save the ".gcode" files in MicroSD card.
2. Insert MicroSD card into the printer and select the file you want to print.
3. The printer will print the 3D model automatically, and it will give you voice alarm when the printing has finished and enter into "standby" status.

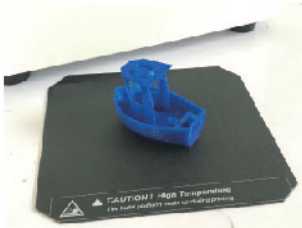


4.2 Removal of the finished prints

1. When the printing is finished, the user can take out the flexible BuildMat.



2. Remove the finished prints from the BuildMat by hand, no any tools needed. Now the user finish the printing and get what they want.



Cleaning and maintenance



Never use aggressive detergents, rubbing alcohol or other chemical solutions, as these could damage the casing or even impair the functioning of the product.

Never submerge the product in water.



Danger of burns! Do not touch the hot nozzle directly with bare hands.

a) Clean the device

- Use a dry, soft cloth or brush to clean the outside of the 3D printer.

b) Clean the nozzle

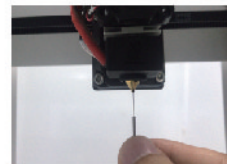
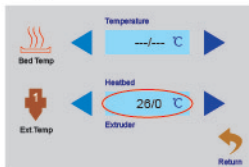
Cleaning of the outside of the nozzle

- Use a dry, soft cloth or similar to carefully wipe off the nozzle after each print; if there is still some residue left in the nozzle, pour some anhydrous alcohol over the cloth to wipe off the residue.
→ The nozzle still has to be hot for this. If this is not the case, heat up the extruder nozzle first.

Cleaning of the inside of the nozzle

- Heat up the nozzle then load and unload filament repeatedly until the filament flow is as expected.

If the nozzle continues not to extrude enough material after this procedure, unload filament and use the small needle to clean the nozzle. Push up the small needle through the nozzle then push up and down repeatedly until the nozzle is clean and no any impurity inside any more.



c) Clean the inside of the extruder

Heat up the nozzle to the preset temperature, press the pneumatic connector and take out the filament tube,, and push down the ejector rod through the heatsink then pull up and down repeatedly until the heatsink & metaltube is clean and the impurity comes out.



d) Clean the magnet mate

Scrape off the residue on the magnet mate with a knife gently.

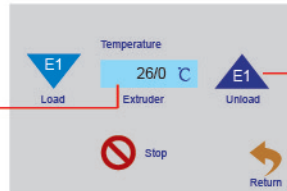
e) Unload filament

- Ensure the nozzle temperature reaches 170 °C or above.



Enter tool menu and click filament icon

① Click on the temperature to preheat the print head



② When it comes to the preset temperature, click E1, the feed motor begins to unload automatically, and the user can take out the filament.

→ If the filament material is either wood or metal, cut it and replace it with PLA filament first as described in section “3.3 Filament loading/unloading” on page 16, then unload the PLA filament. The PLA filament removes possible residue left behind by the wood or metal filament.

f) Store the 3D printer

- Unload the filament.
 - Move the power switch into the off position O and disconnect the printer from the mains voltage. Let the printer cool down to room temperature.
 - Clean the printer if you are not going to use it for an extended period of time.
- 29 • Store it in a dry, dust-free location out of the reach of children.

Troubleshooting

Problem	Possible Solution
The 3D printer does not work after switching on. The display remain dark.	Check the connection of the mains line. Check the mains socket. Is it properly supplied with current?
MicroSD card can't be read by the 3D printer	Remove the microSD card and insert it again. Switch the 3D printer off and on again. Replace another micronSD card
The printing object has defects.	Check the nozzle temperature settings. It must match the filament material and print object. Experiment with the temperature settings. Only start printing when the nozzle has reached temperature. Keep a reasonable distance between the print bed and nozzle, not too close not too far away. Remove any excessive filament on nozzle before each print.
The filament supply breaks off or there is not enough filament material supplied.	Check the filament spool. It must turn easily. Check whether the filament is trapped somewhere on its way from spool to extruder. Check whether the filament is properly inserted through the filament tube. Check whether the temperature of the nozzle is too low for filament material used. Check whether the extruder is clogged. Clean the extruder (for details refer to chapter c) "Clean the extruder" on page 28. Check whether the nozzle is clogged. Clean the nozzle(for details refer to chapter "b) Clean the nozzle" on page29).

Problem	Possible Solution
Printings stops during the process.	Wrong data of ".gcode" files. Poor connect between microSD card and 3D printer.
The printed object does not adhere to the build bed.	Nozzle temperature is too low. Increase nozzle temperature. There are residues on the build bed that prevent adhesion of the object. Clean the print bed (for details refer to chapter „d) Clean the print bed“ on page 14). Print speed may be too high. Reduce speed. The nozzle is too far from the print bed, calibrate the build bed again. Add the raft to the print object.
The printed object cannot be removed from the build bed.	Wait until the printed object and magnet mate has cooled down. Tip up the object with a knife gently, and remove it with your hands. Then increase the distance between build bed and nozzle. Refer to "The calibration of print bed".
LCD display shows undecipherable content or remains blank.	Restart the 3D printer.
Nozzle cools down unexpectedly.	Select < Preheat > to reheat the nozzle and have further action within following 5 minutes for example load/unload filament, printing etc.
Moving path of nozzle is blocked.	Always remove any excessive filament on nozzle before each print.
Nozzle is clogged.	Clean the inside of the nozzle, for details refer to “b) Clean the nozzle“ on page 28. Clean the extruder,for details refer to "c) Clean the inside of the extruder" on page 29. Replace the extruder unit (available under item no. 2269325).

Problem	Possible Solution
Extruder takes wrong direction during printing.	Check whether the filament spool moves smoothly on its holder.
Filament becomes stuck during unloading.	Load and unload filament.
The extruder does not heat up or does not stop heating.	Restart the 3D printer. Select < Preheat > and wait for 2 minutes, and check whether any changing on the temperature.
	Thermistor and heater are malfunctioning. Replace the thermistor and heater (available under item no. 2269451 & 2269452).
"Temp sensor error and not enough power" is shown on the display, touch screen is without any function and 3D printer does not work.	Switch off the 3D printer. Loosen 4pcs screws under the LCD screen a little bit and see whether the problem is solved.
	Thermistor and heater are malfunctioning and cannot detect the extruder temperature correctly Replace the thermistor and heater (available under item no. 2269451 & 2269452).

Disposal



Electronic devices are recyclable waste and must not be placed in household waste. At the end of its service life, dispose of the product according to the relevant statutory regulations.



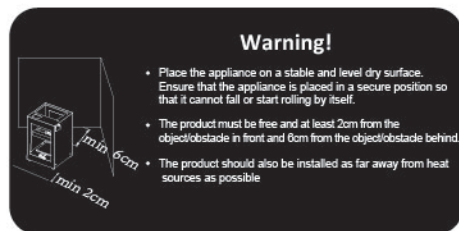
CAUTION ILLUSTRATION



Don't touch the print head during preheating or printing.



Don't put hands inside during machine operating.



Place the printer in a safety scope before usage.