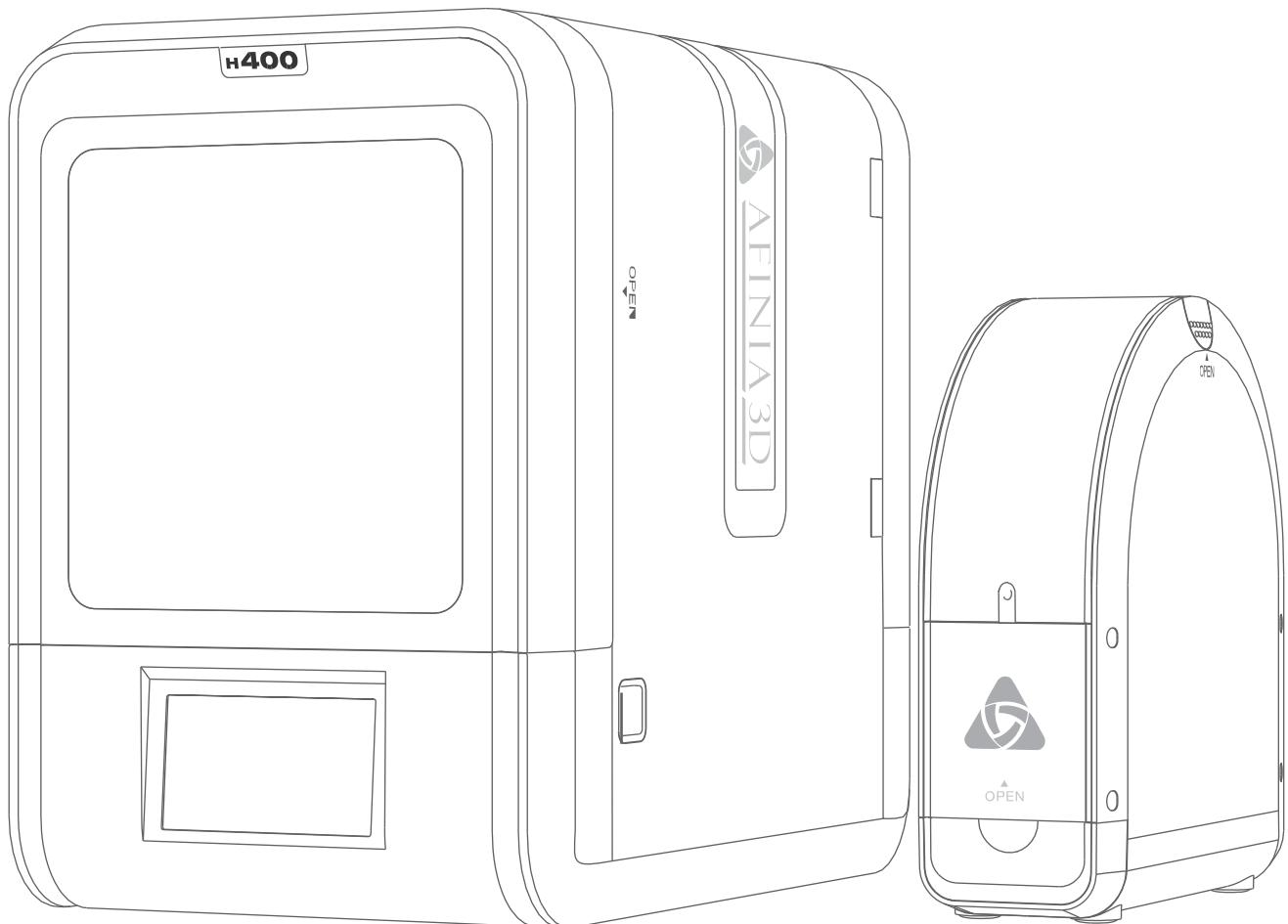


H400

User Manual

V 0.1



Download the full user manual at www.afinia.com/support

Index

Chapter 1 Product Description

Chapter 2 Prepare for Your First 3D Print

Chapter 3 Machine Settings

Chapter 4 Print Settings

Chapter 5 Calibration and Other Options

Chapter 6 Techniques and Troubleshooting

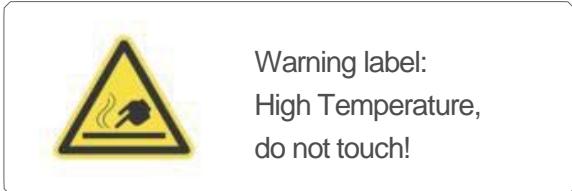
Safety Precautions

1\ The Afinia H400 3D printer requires the power adapter provided by the original manufacturer, otherwise the machine could become damaged or cause a hazard. Please keep the power adapter away from water and out of high temperature environments.

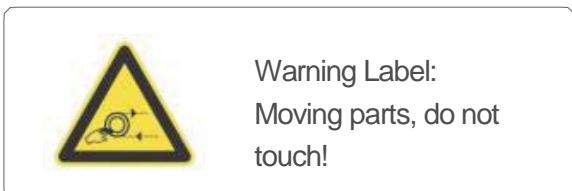
2\ During printing, the nozzle of the printer will reach 260°C and the print platform could reach over 70°C. Please do not touch these parts with your bare hands while they are hot—not even with the heat resistant gloves included with the machine—as the temperature could damage the gloves and injure your hands.

3\ During printing, the printhead and other mechanical parts move at high speeds. Touching these parts while they are moving could cause injuries.

4\ Please wear goggles when removing the supporting material from models and detaching models from the perf board.



Warning label:
High Temperature,
do not touch!



Warning Label:
Moving parts, do not
touch!

5\ When printing with ABS and PLA, the plastics will create a light odor. Please run the printer in a well-ventilated environment. We also suggest you put the printer in an environment with a stable temperature as unwanted cooling could cause adverse effects to the print quality. When the printer is extruding filament, make sure there is enough space between the print head nozzle and the platform. Otherwise the nozzle could become blocked.

Printing Environment

As light odor will be produced during printing, please run the printer in a well-ventilated environment and keep the doors closed on the printer.

The Afinia H400's ideal working temperature is between 15°C and 30°C with a relative humidity between 20–50%. Printing at temperatures out of this range could cause adverse effects to the printing process. When using the "Extrude" function, keep at least 50mm between the nozzle and the platform. If too close, the nozzle may become blocked.

Afinia 1-Year Limited Warranty

Below is the one-year limited warranty included with this Afinia product. Afinia prides itself on its outstanding product line and its technical support. If for some reason, your product fails, Afinia, a division of Microboards Technology, LLC, stands behind its warranty and assures you the best service possible in a quick and timely manner.

Afinia warrants to the original purchaser that this product is free from defects in material and workmanship.

Afinia will for one year, at its option, repair or replace at no charge for parts and labor from the date you purchased the product from an authorized Afinia reseller. Nozzles and Cell/Perf Boards are warranted for ninety (90) days.

- Warranty registration must be completed within 30 days of receipt of the product in order to validate the warranty.
- Afinia, a division of Microboards Technology, LLC, reserves the right to determine the validity of all warranty claims.
- Warranty is void if the product serial number has been altered or removed.
- Warranty is void if the product has been misused or damaged or if evidence is present that the product was altered, modified, or serviced by unauthorized service people.

The above stated warranty is exclusive and replaces all other warranties, express or implied, including those of merchantability and fitness for a particular purpose. Afinia, a division of Microboards Technology, LLC, will not be liable for any other damages or loss, including breach of warranty or negligence.

This product has been thoroughly tested and inspected at the factory prior to shipment. Nevertheless, inspect your product completely for any damage or loss of parts that may have occurred during shipment. Notify the delivering carrier promptly if damage claims are to be filed.

Afinia reserves the right to modify or update its product without obligation to replace any equipment delivered prior to any such change.

Compliance FCC CE ROHS

FCC ID:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

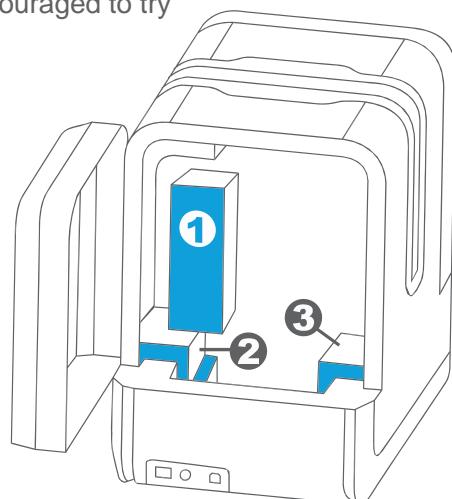
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Unpacking

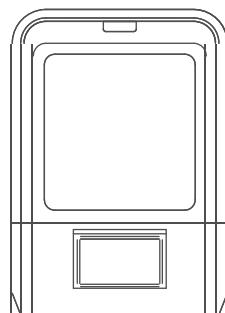
Remove the cushioning foams from the inside the printer before use.



Rear View

Package Content

1-1



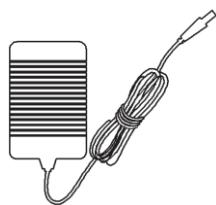
Afinia H400



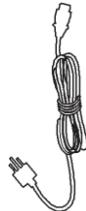
Spool and Toll Holder



Protective Gloves



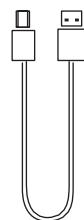
Power Adapter



Power Cable



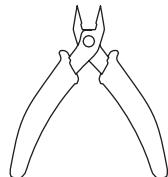
Scraper



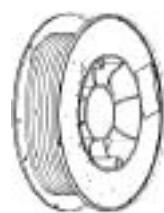
USB Cable



Hex Keys
2.0mm, 2.5mm



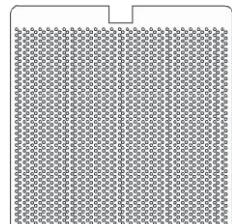
Plier



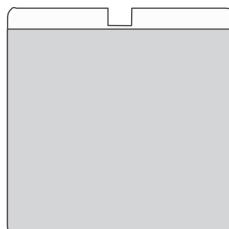
ABS Filament



Nozzle Wrench



Perforated Print Board
(Perf Board)



Flex Print
Board



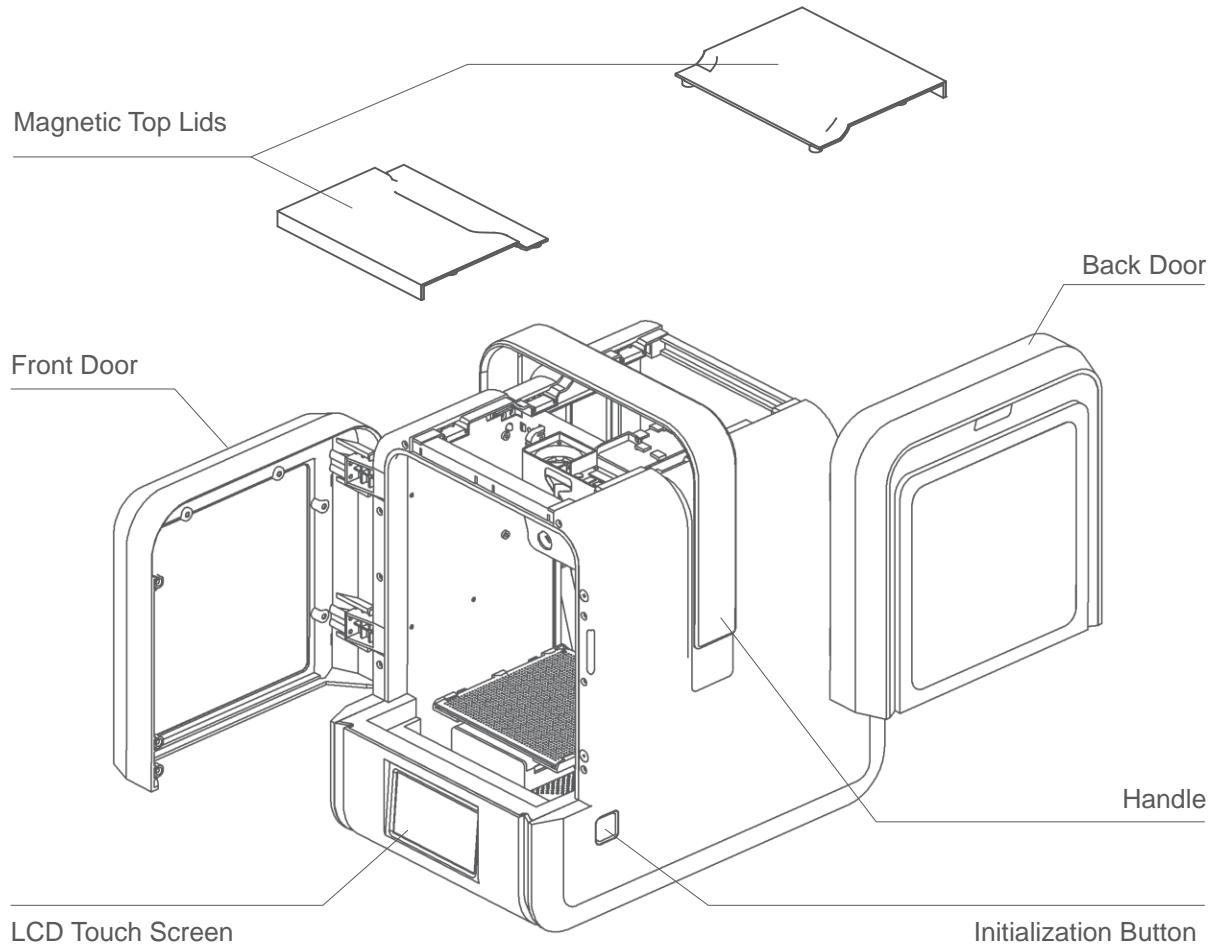
Print Head Nozzle

If anything is missing, please contact your local distributor or at support@afinia.com

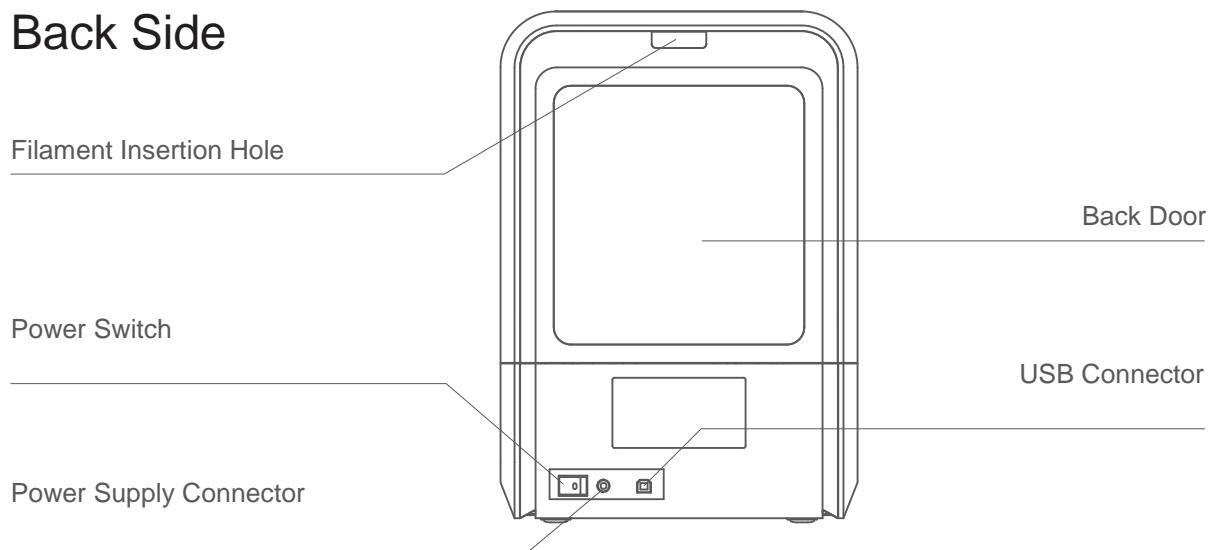
Product Description

1-2

Front Side

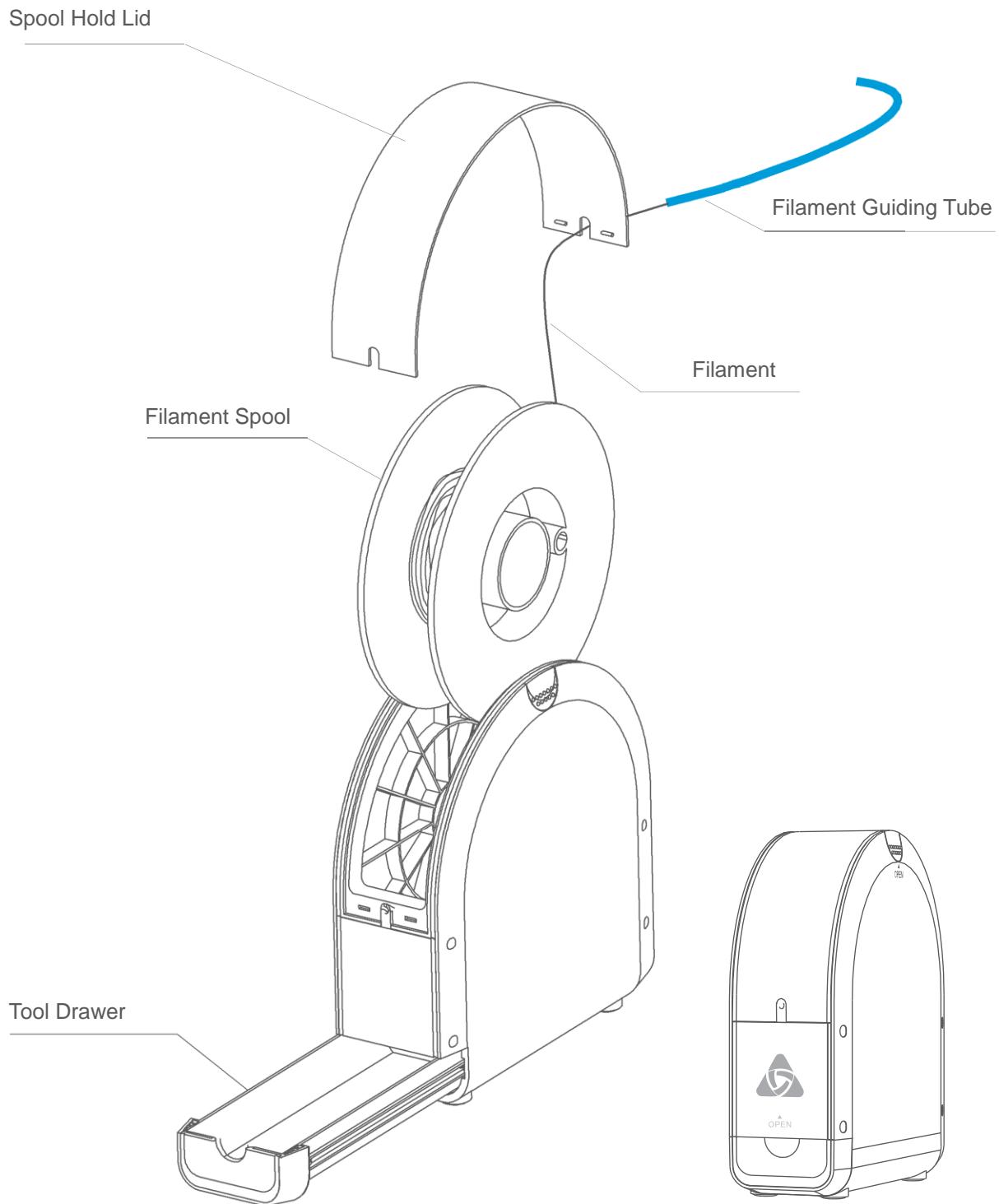


Back Side



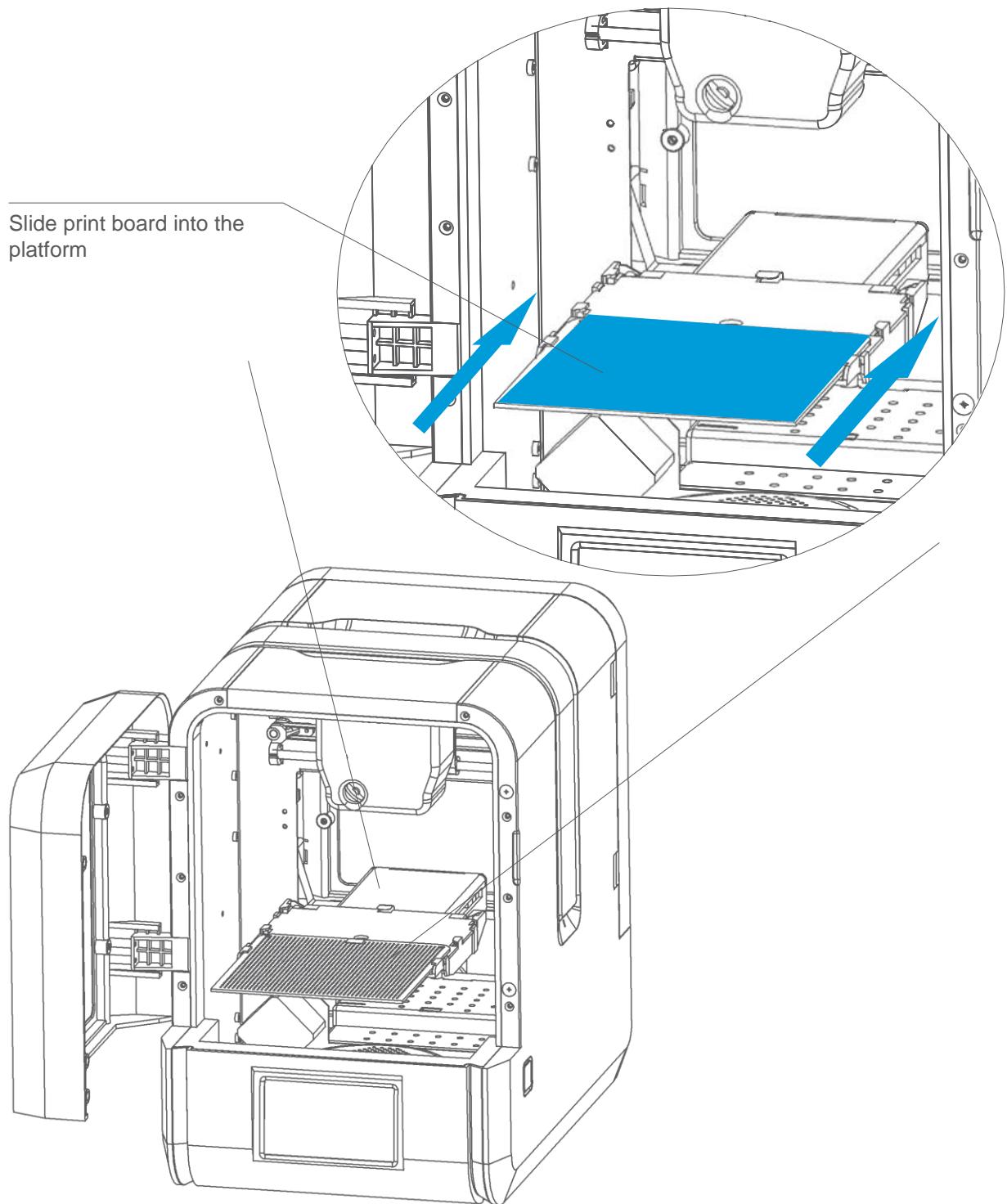
Filament Spool Holder

1-3



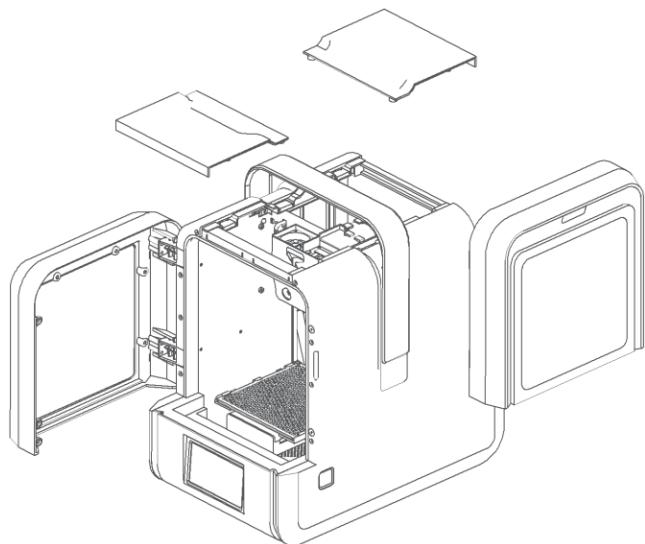
Installation of Print Board

2-1

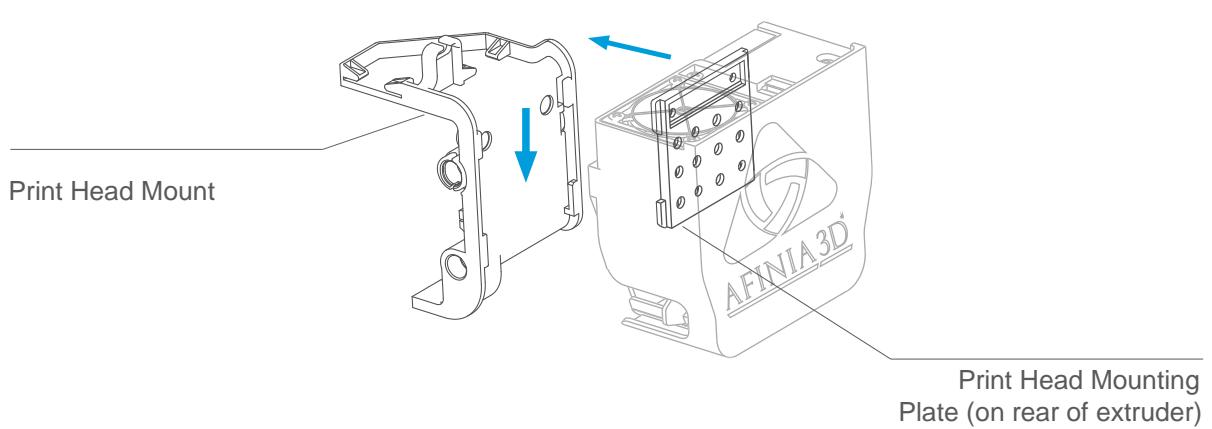
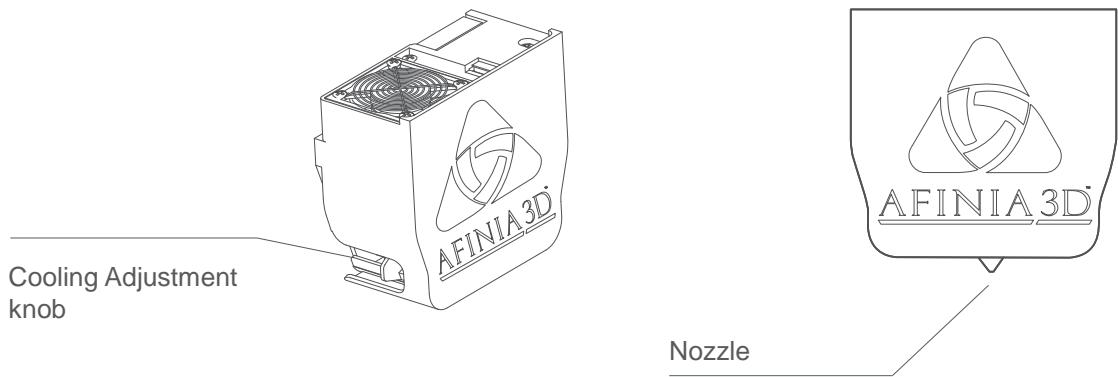


Print Head Installation

2-2

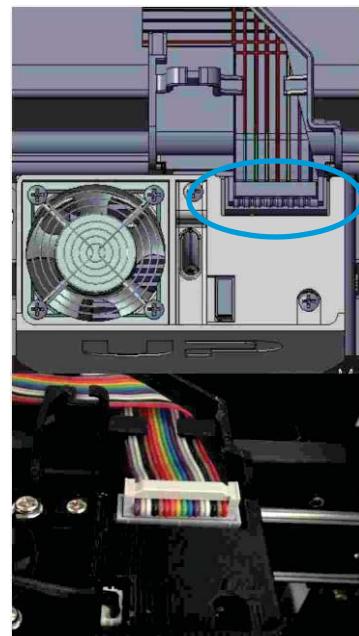
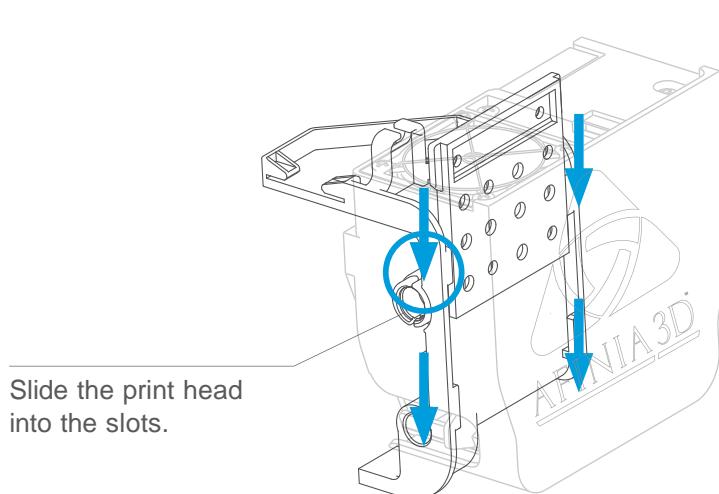


Open front door, back door
and top covers

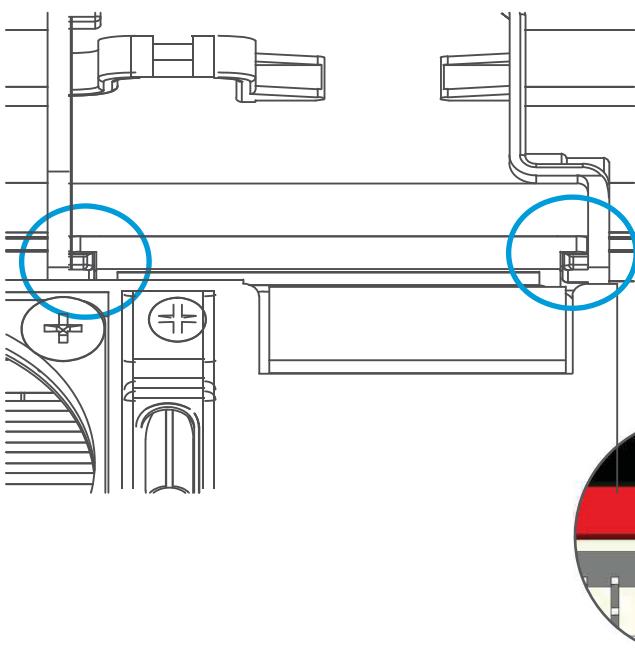


Print Head Installation

2-3



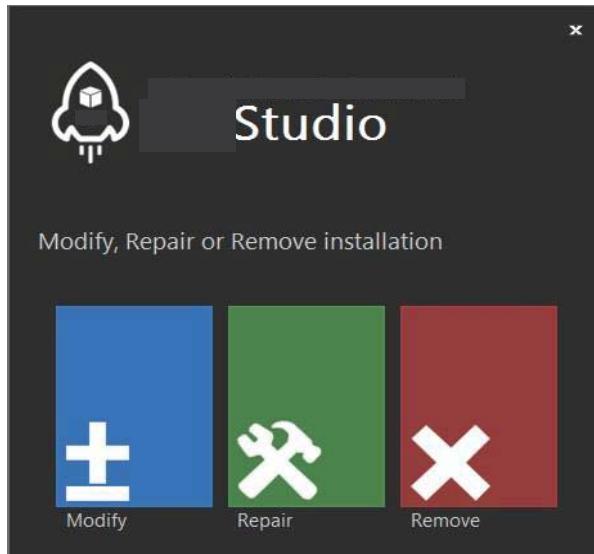
Plug in the print head cable.



Install Studio Software

2-4

Download the Studio software by going to www.afinia.com/support/downloads, then install it on your computer.



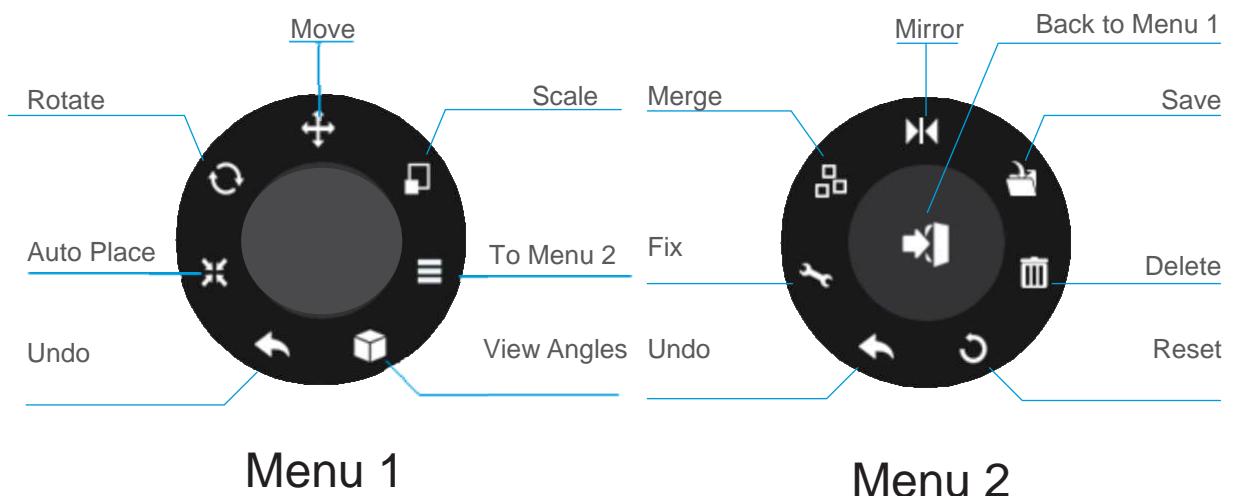
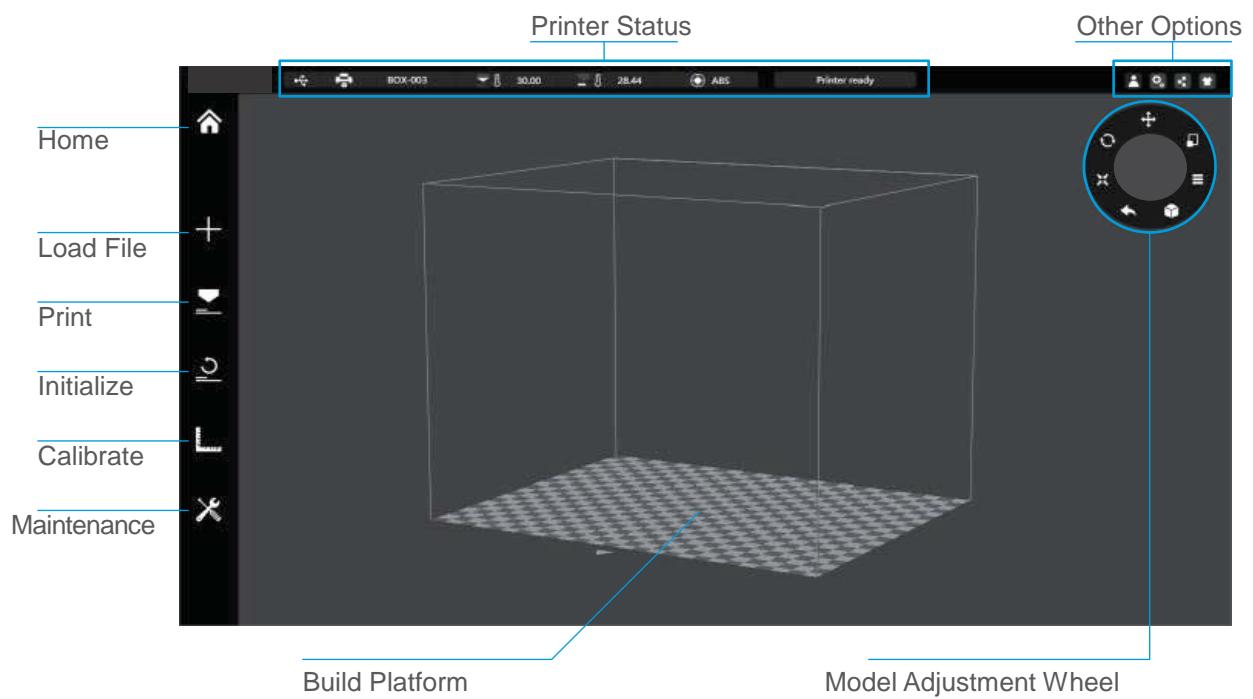
Minimum hardware requirements

Intel Pentium 4 or better CPU 4GB RAM
Display card support OpenGL 2.0



Software Interface

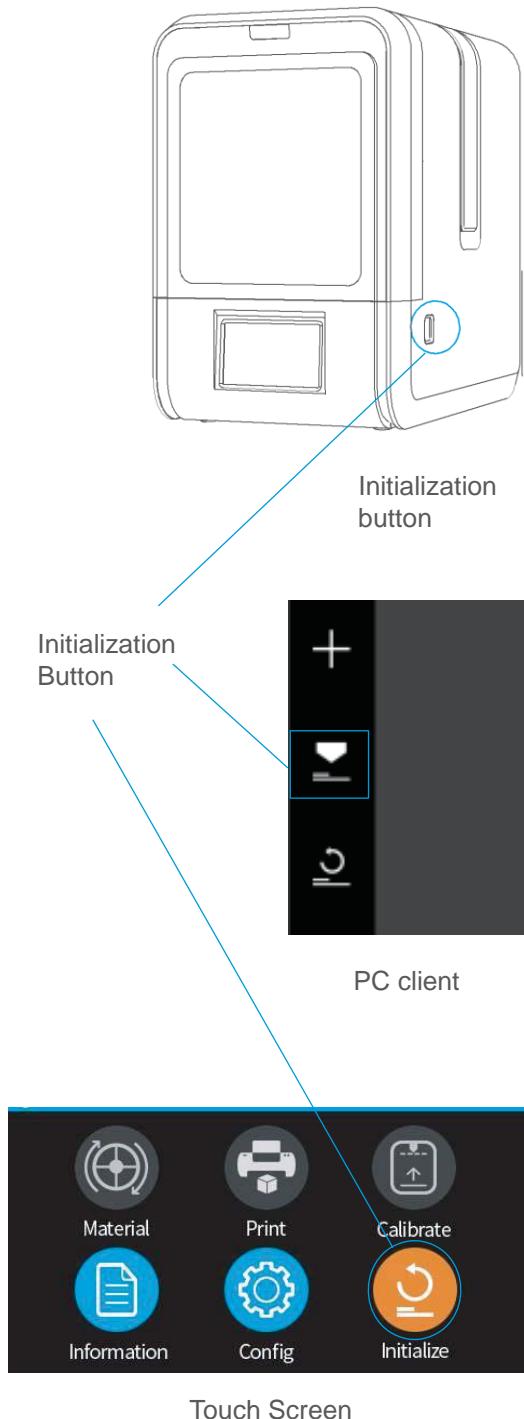
2-5



Initialization is required for every time the machine is switched on. During initialization, the print head and print platform move slowly and hit the endstops of the XYZ axes. This is essential as the printer needs to find the endpoint of each axis. Many software options will light up and become available for use only after initialization.

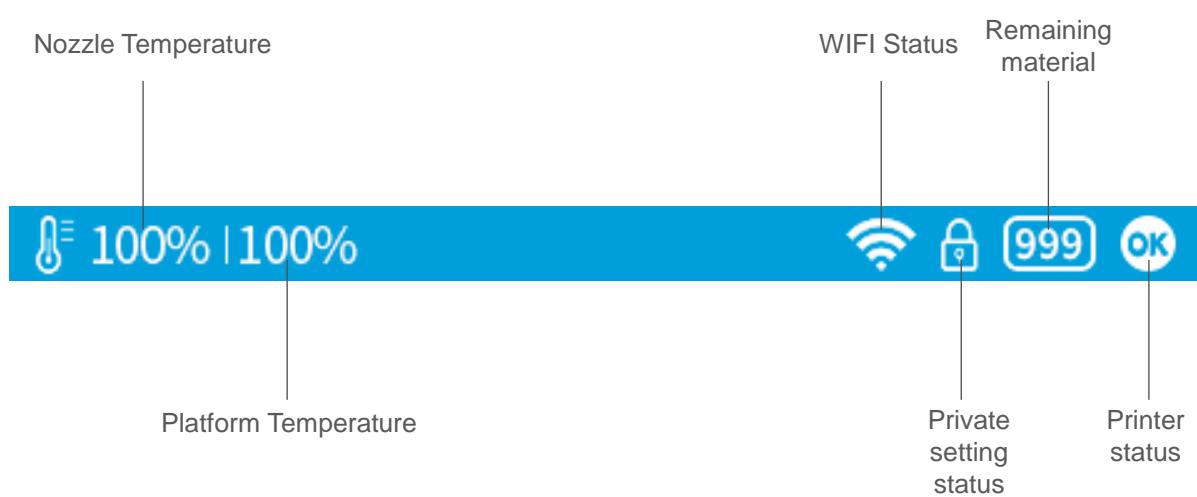
There are three ways to initialize your printer:

1. Hold the initialization button on the printer.
2. Clicking the "Initialize" option in the software menu (shown above).
3. When the printer is idle, press the initialize button on touch screen.



Touch Screen Control

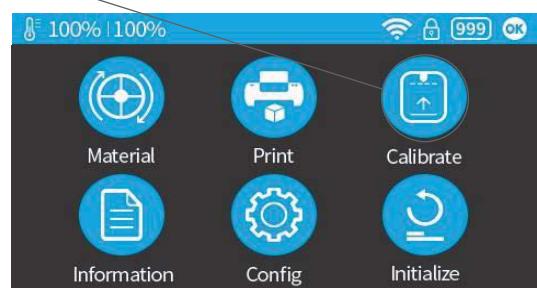
2-7



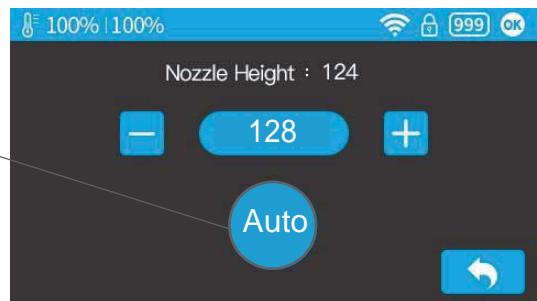
Prepare for Printing - Update Nozzle Height 2-8

The printer was calibrated before leaving the factory, but users are recommended to update the nozzle height value using the automatic nozzle height detection function on the touch screen before the first print.

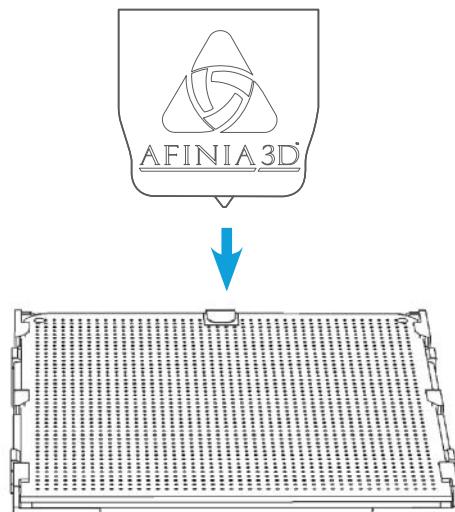
Press the "Calibrate" button to enter Nozzle Height setup page.



Press the "Auto" button to start the automatic process.

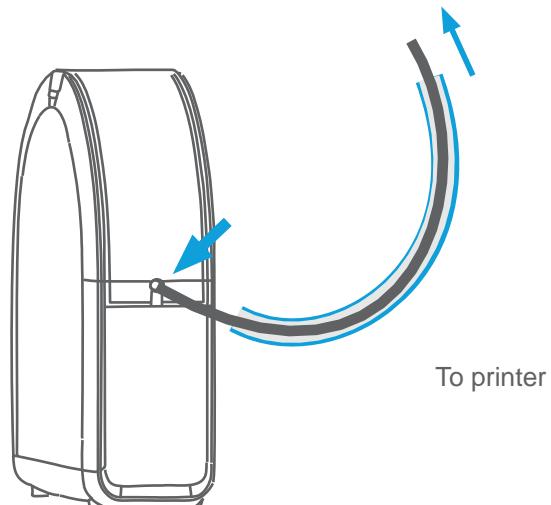


During nozzle height detection, the print head nozzle will touch the nozzle detector to make the measurement.

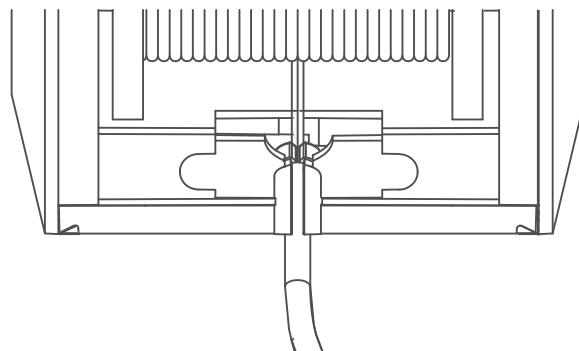


Prepare for Printing - Load Filament 2-9

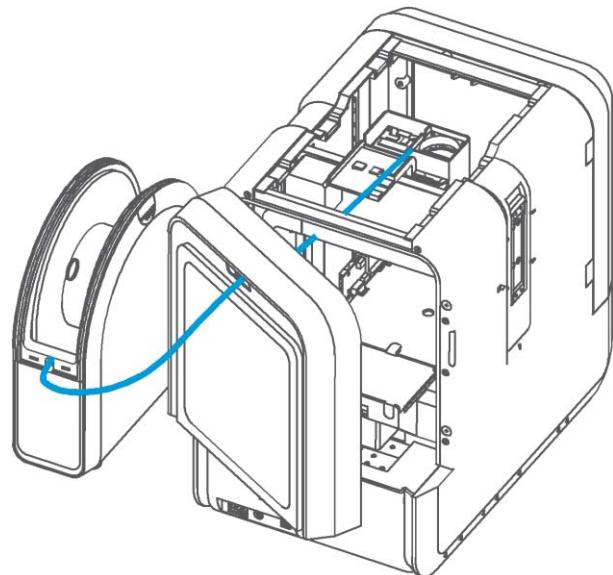
Install the filament and guiding tube shown in blue.



Push the guiding tube into the rubber ring as shown above.

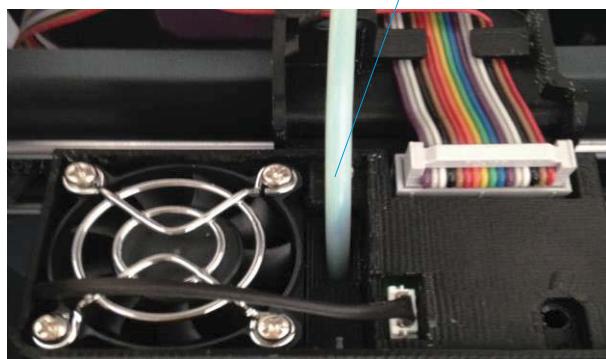


Prepare for Printing - Load Filament 2-10

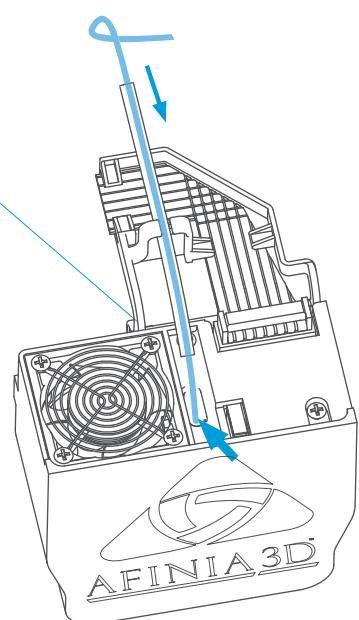


Back Side

Filament Guiding Tube
insert into the filament
entrance.

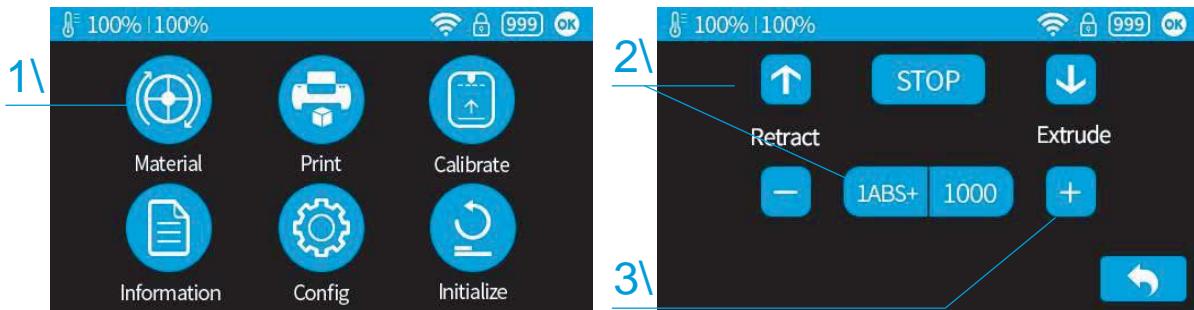


From spool



Prepare for Printing - Load Filament 2-11

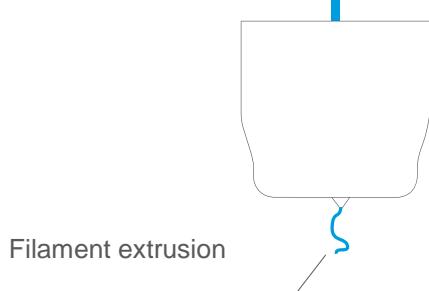
1\ Insert the filament from the spool into guiding tube; arrange the guiding tube as shown in previous page. Press the Material button on the touch screen.



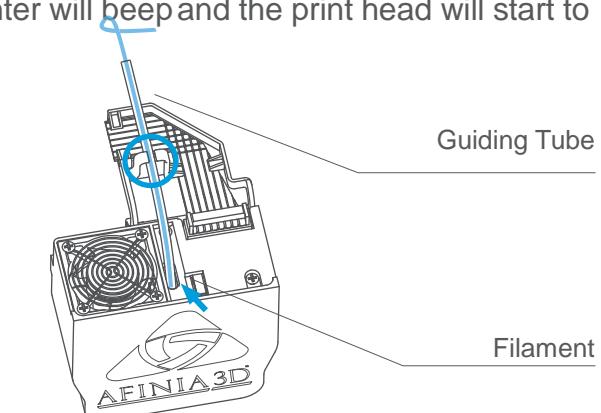
2\ Choose the printing material as ABS by press the Wheel button to switch between different materials input the filament weight by using the +/- buttons.

3\ Click "Extrude." The print head will start to heat up, within 3 minutes. Its temperature will reach 260°C, then the printer will beep and the print head will start to extrude.

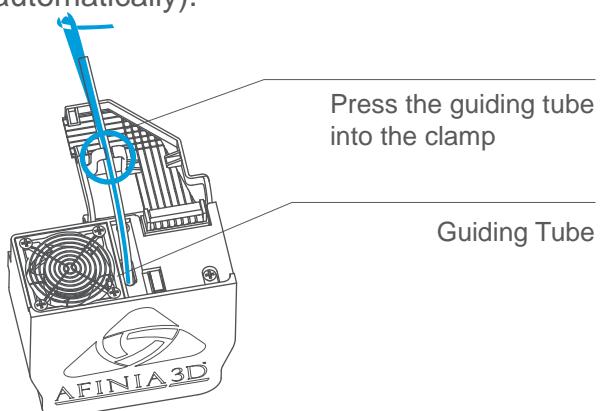
4\ Gently insert the filament into the small hole on the print head. The filament will be fed into the print head automatically when it reaches the extruder gear inside the print head.



5\ Check the nozzle for plastic extrusion. If plastic is coming out from the nozzle, the filament is loading correctly and the printer is ready for printing (the extrusion will stop automatically).

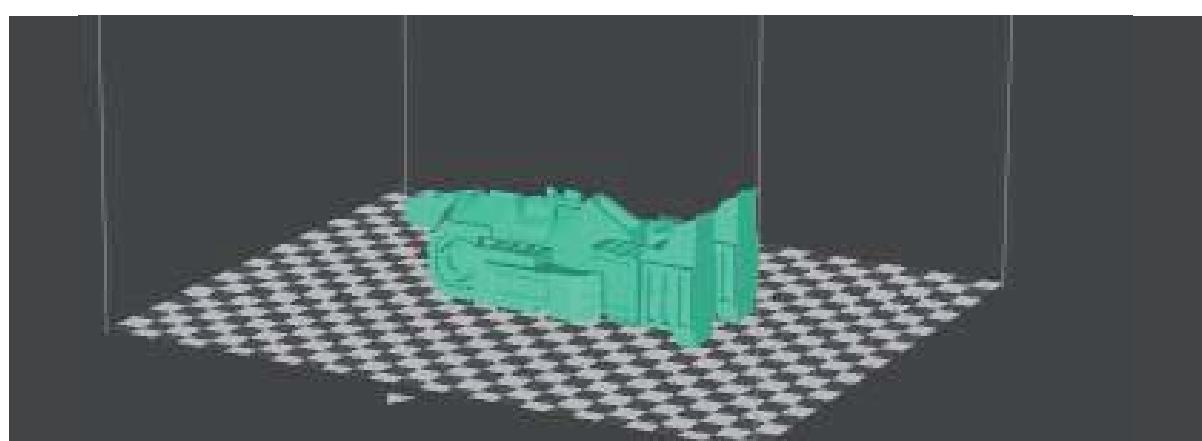
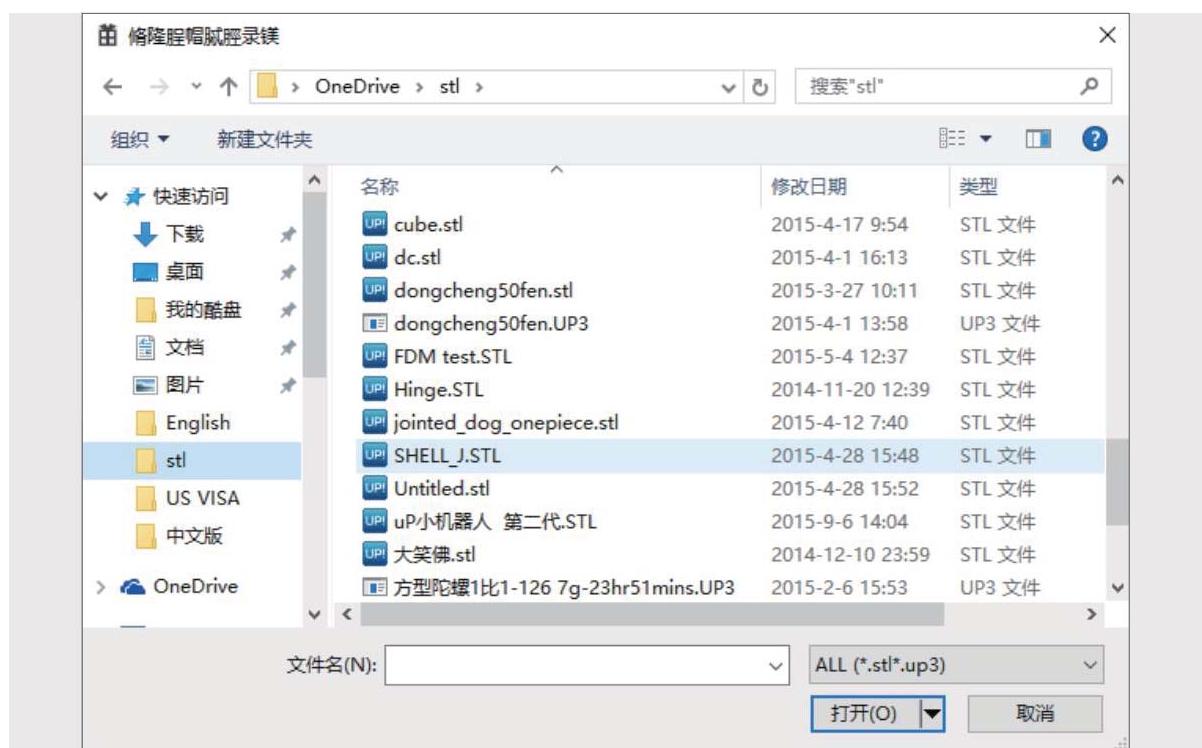


6\ Finally insert the guiding the tube in to the filament entrance and press the tube into the holding clip on the print head mount.



Loading a 3D Model

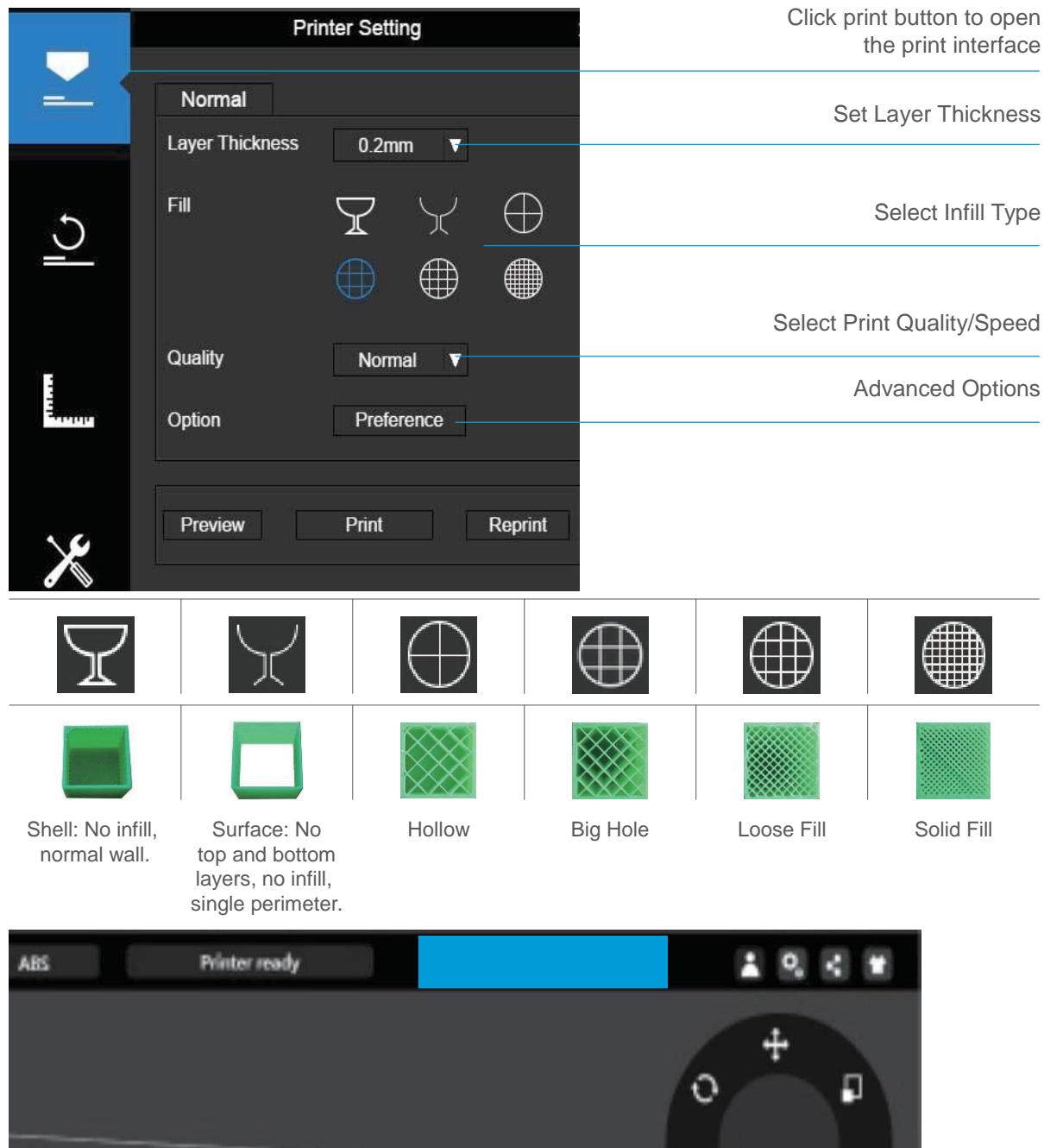
2-12



Print a Model

2-13

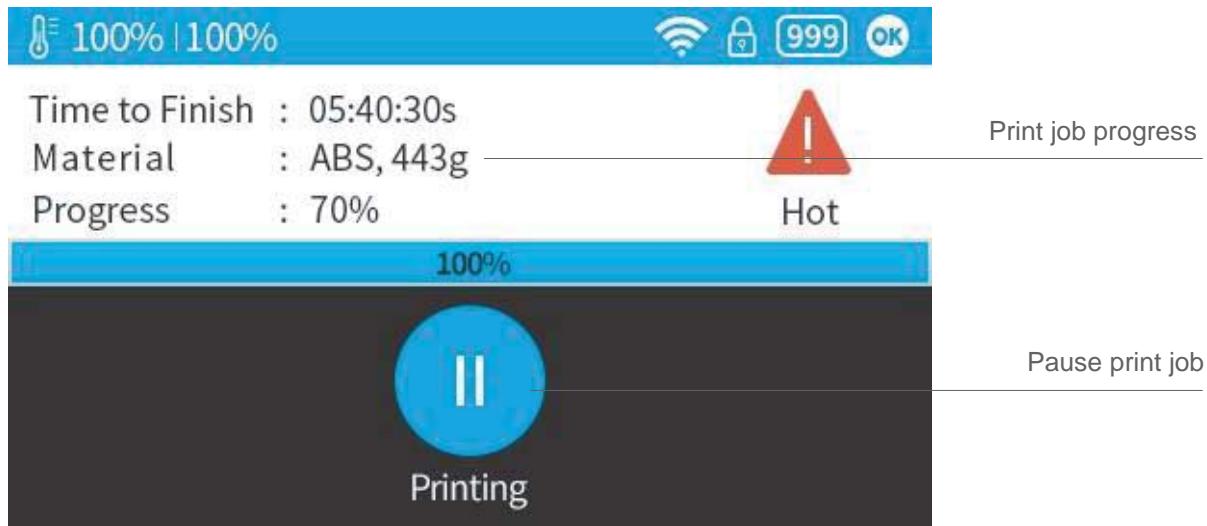
Make sure printer is connected to computer through USB or WIFI (go to section 3-1 for details about WIFI setting) and load a model.



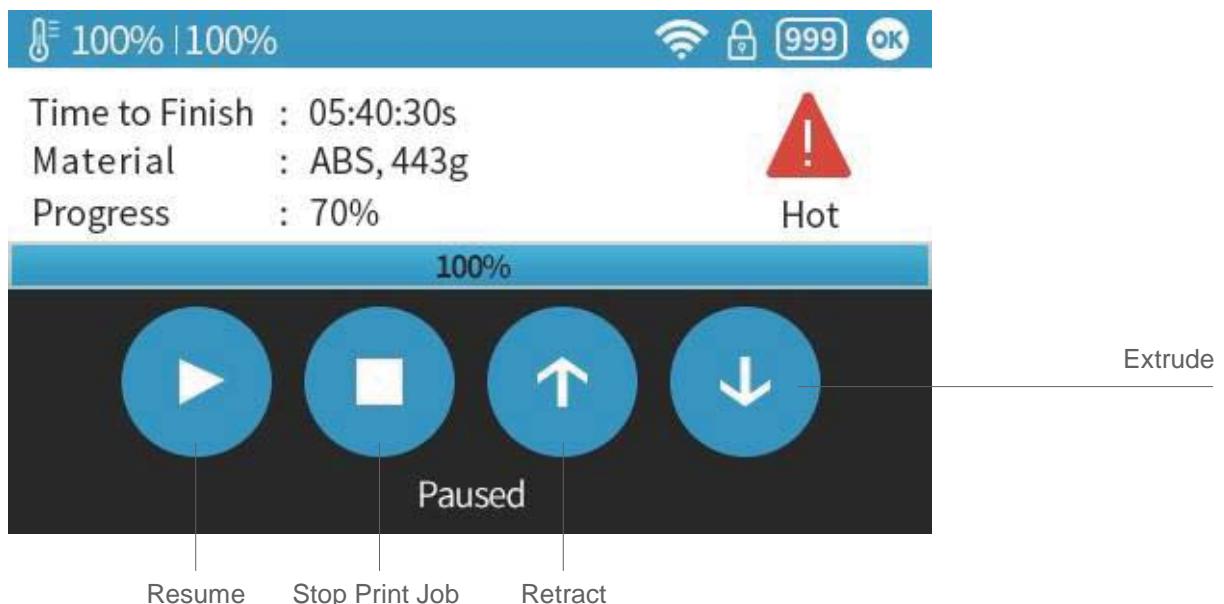
When the software is slicing or sending data to the printer, the progress is displayed on the status bar on top of the software interface. Do not unplug the USB cable as this will disrupt the data transfer and result in a print failure. The USB cable can be unplugged after the data transfer is finished.

Printing Progress

2-14



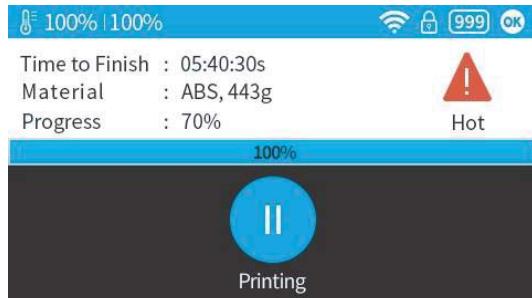
After pressing the pause button, the nozzle will be paused but the temperature is maintained at the printing temperature. While paused, the following control buttons will appear to allow users to resume, stop, or change filament.



Please note that stopping is irreversible, the current print job cannot be restarted.

Change Filament During Printing

2-15



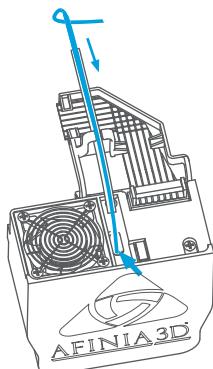
1\ During printing the process the "Pause" button will cause the printing job to become paused.



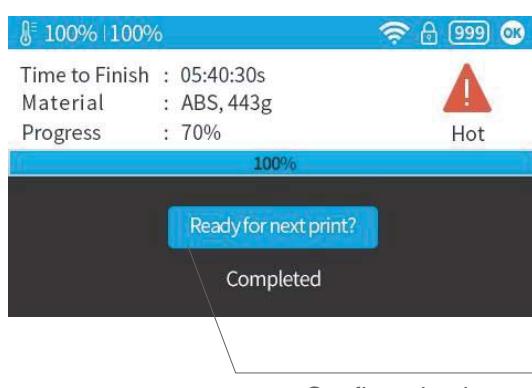
2\ When print head stops moving and the platform lowers, Press the "Retract" button to remove the filament.

Press the "Extrude" button to load the new filament

Press the "Resume" button to resume printing.



After removing the filament, insert the new filament into the print head as described in section 2-11.

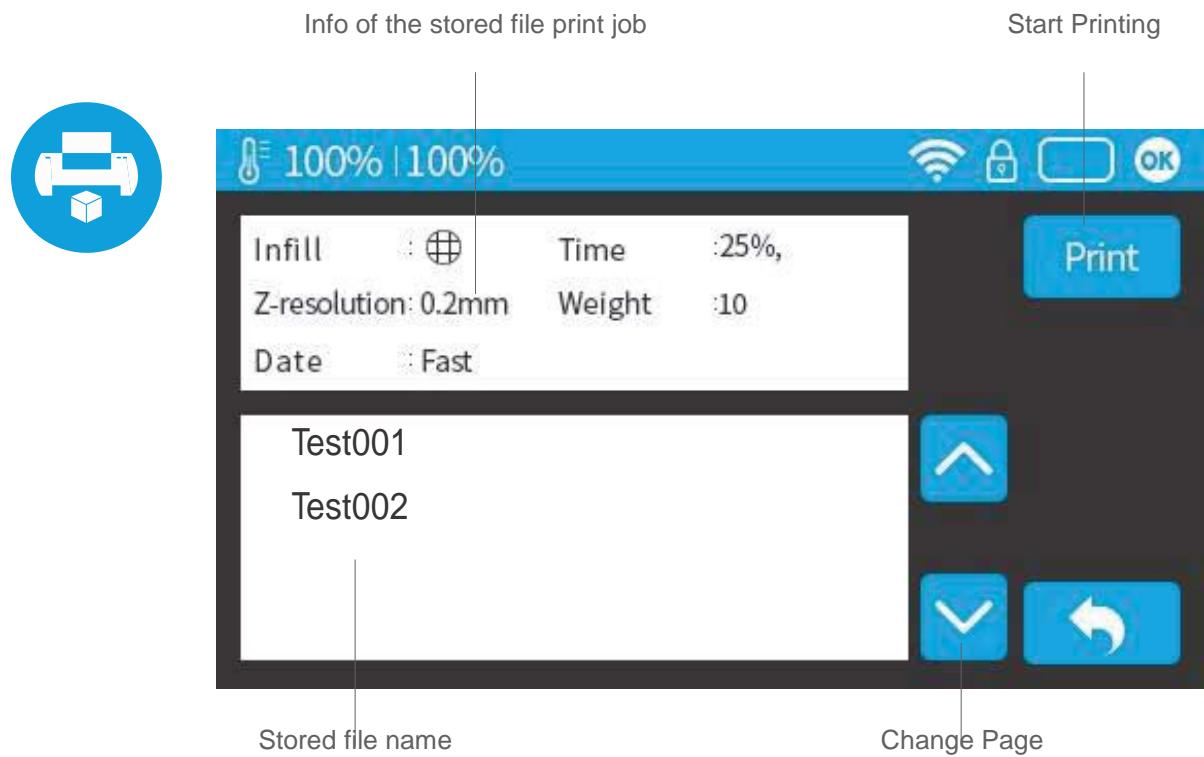


Print Job Finished

Printer ready confirmation:

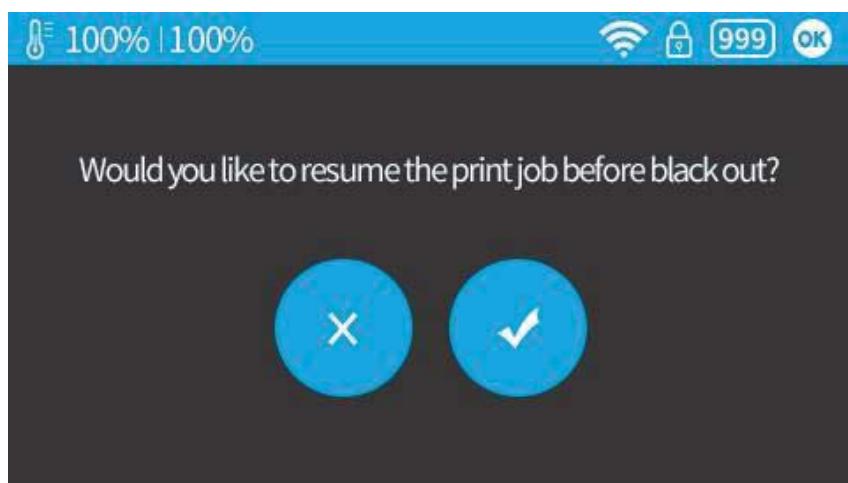
After the print job has completed, the user needs to press the "Ready for next print?" button to confirm the printer is ready. The user should make sure the previous print job is removed from the platform before pressing the button. The printer cannot start a new print job until the ready status is confirmed.

Reprint or Printing Stored Print Jobs 2-16



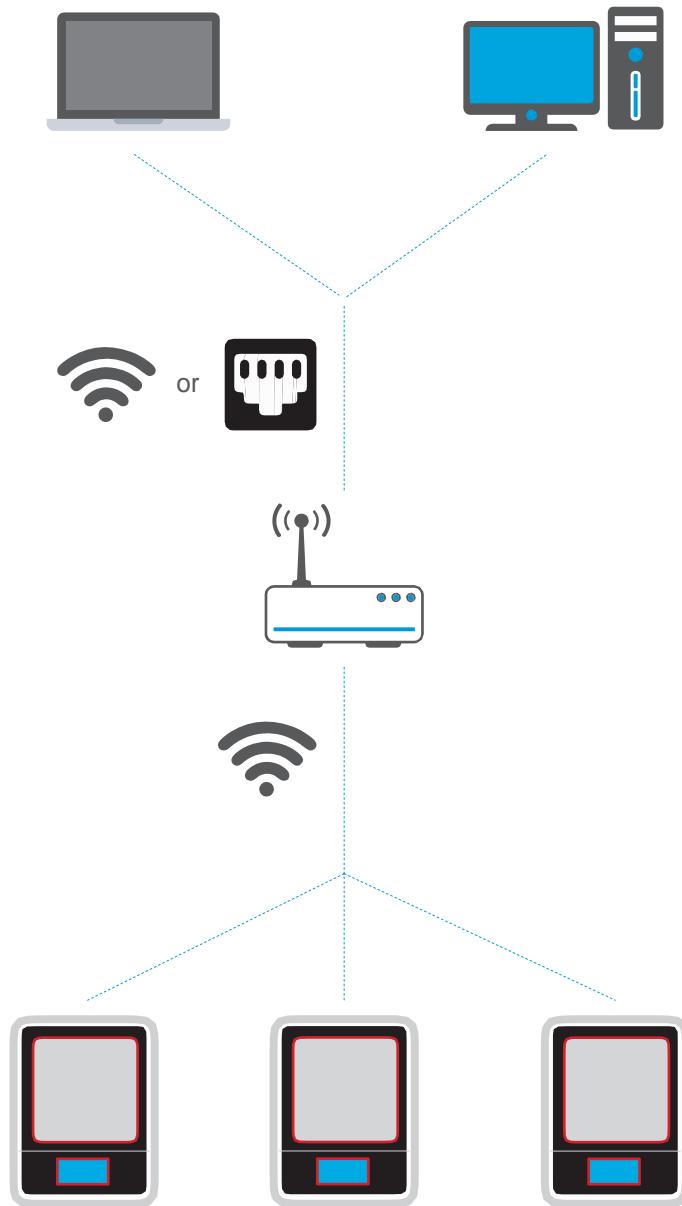
Black Out Recovery

If electricity is lost during printing, the print job can be continued after resuming power. **NOTE:** Do not remove the print job from the platform after the power failure. When the machine turns on again, initialize the printer. The printer will ask whether the user would like to recover the interrupted print job.



WIFI Setup through Touch Screen.

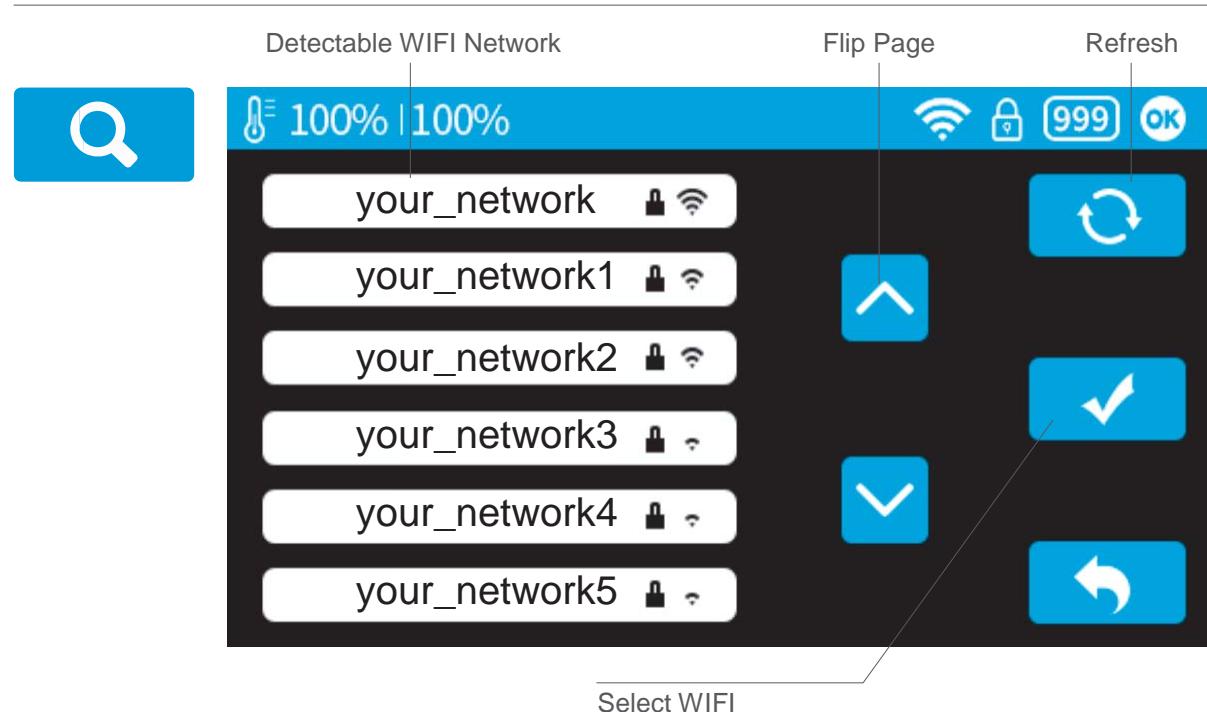
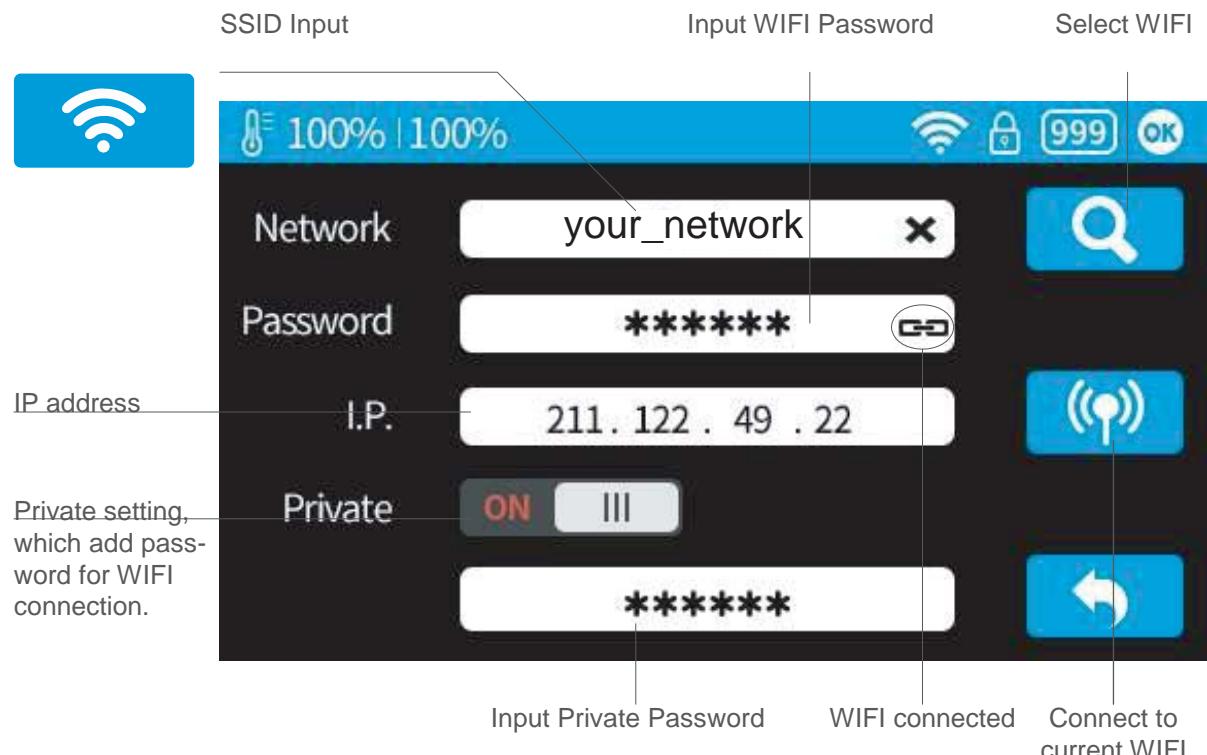
3-1



Connecting to the Afinia H400 through WIFI requires a Wireless Local Area Network (WLAN). Computers, devices, and printers must connect to the same WIFI network (same SSID) in order to communicate.

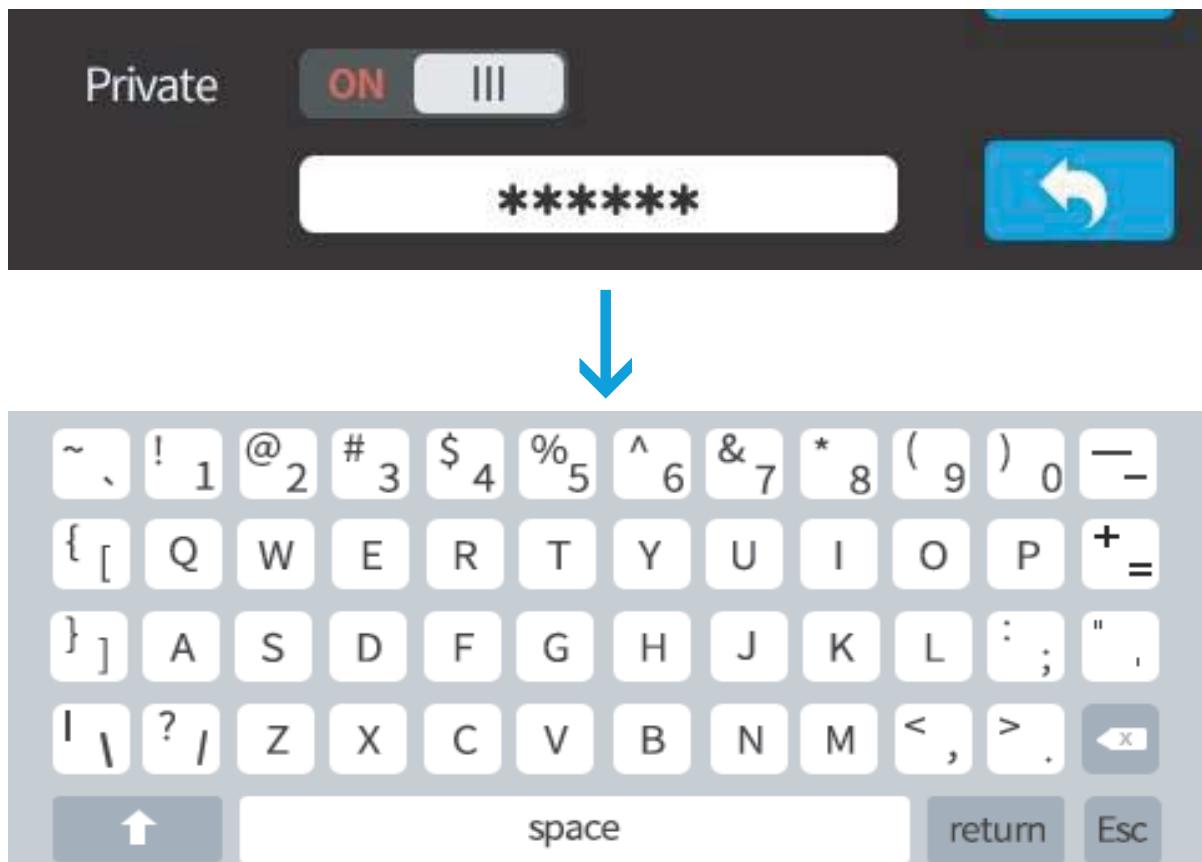
In order to achieve stable WIFI connection, users are recommended to connect under a capacious WIFI environment. A crowded network or an area with a large number of different networks can cause interruption during data transfer.

WIFI Setup through Touch Screen. 3-2



Setup Private WIFI Access

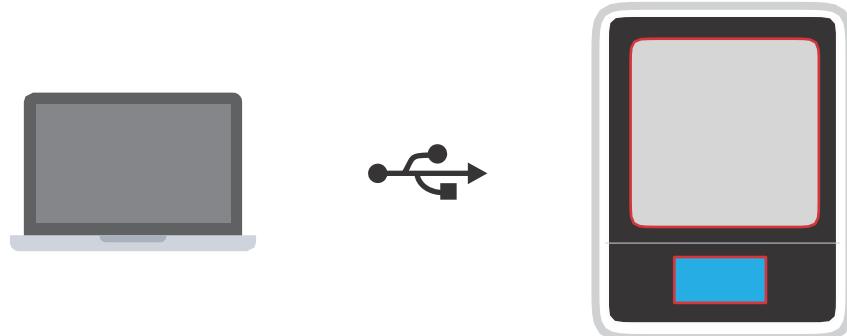
3-3



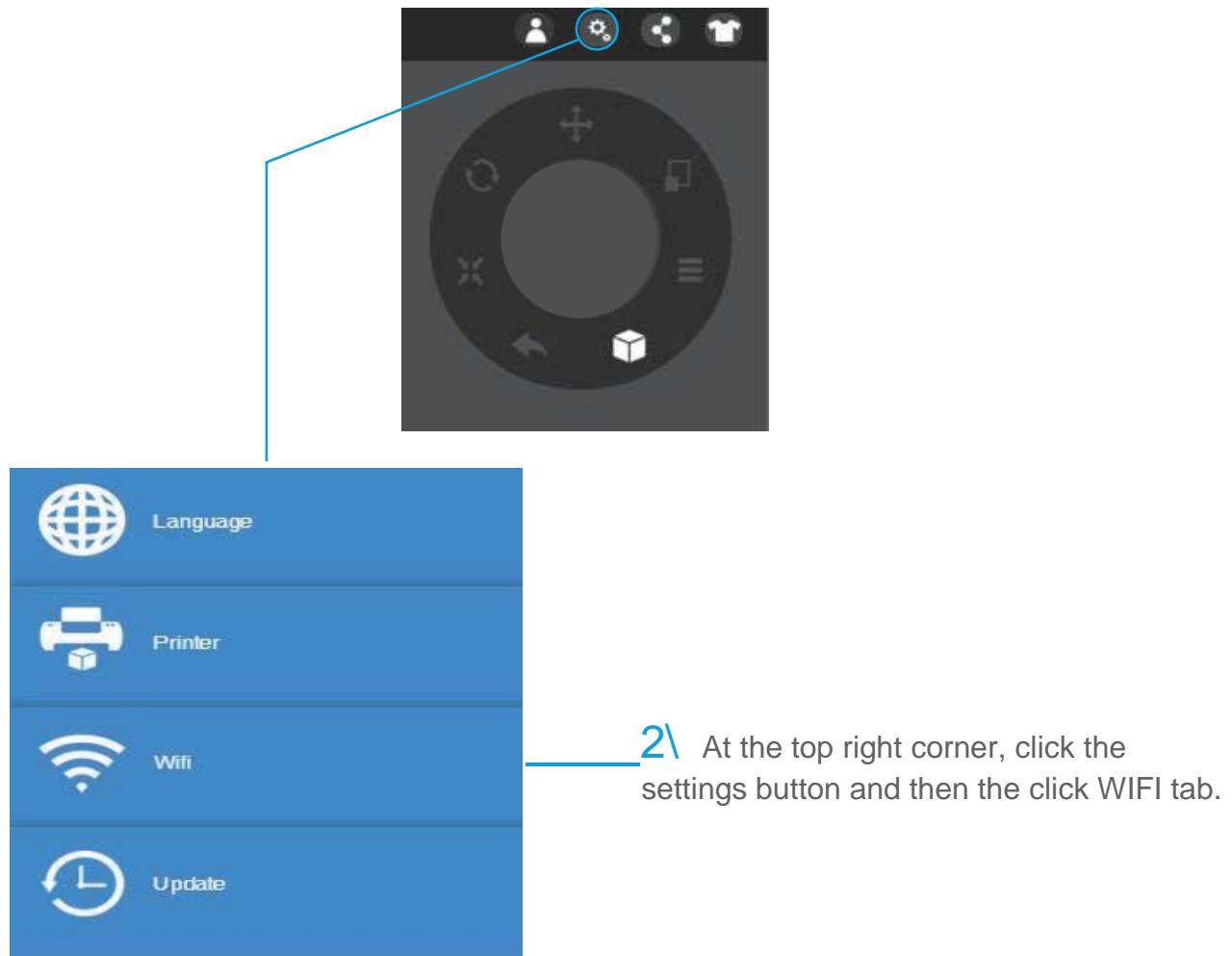
If you turn on the private function in WIFI setting, a password field will appear to allow password setup. This password will be required for WIFI connection to the printer to prevent unauthorized usage through the WIFI Network. Please note that anyone who can access the printer through USB or the touch screen could change the private password.

WIFI Setup (Software)

3-4



1\ Connect the H400 to a computer through USB.



2\ At the top right corner, click the settings button and then the click WIFI tab.

WIFI Setup (Software)

3-5

3\ Click network to choose an available network (user can also use the touch screen panel to setup a WIFI connection).



The screenshots illustrate the WiFi setup process. The top screenshot shows the initial configuration screen with a single network selected. The bottom screenshot shows the list of available networks, with an arrow pointing to the selected network 'your_network'.

Top Screenshot (Initial Configuration):

USB Printer	H400 - 40001234
NetWork	your_network
Mask	255.255.255.0
IP.	192.168.5.155
DNS	0.0.0.0
Gate	192.168.5.1
Private	OFF

Bottom Screenshot (Available Networks):

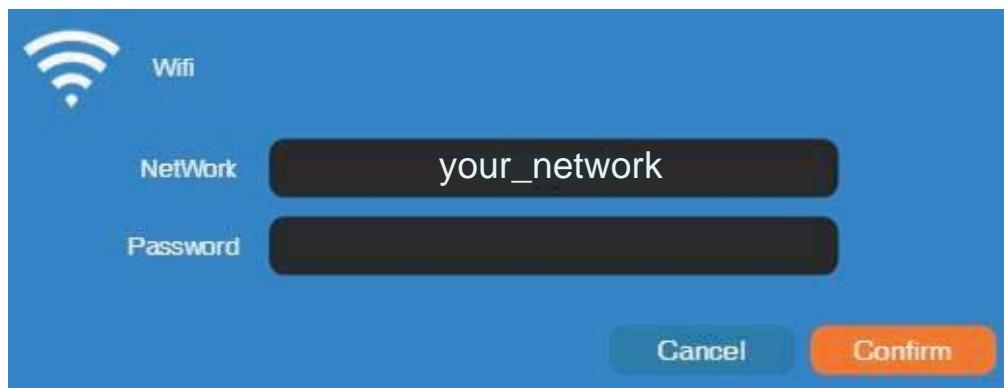
USB Printer	H400 - 40001234
NetWork	your_network
Mask	255.255.255.0
IP.	1703D
DNS	CMCC
Gate	Viru01
Private	dcci2.4GHz
	huhusu

Choose your network from the drop down list.

WIFI Setup (Software)

3-6

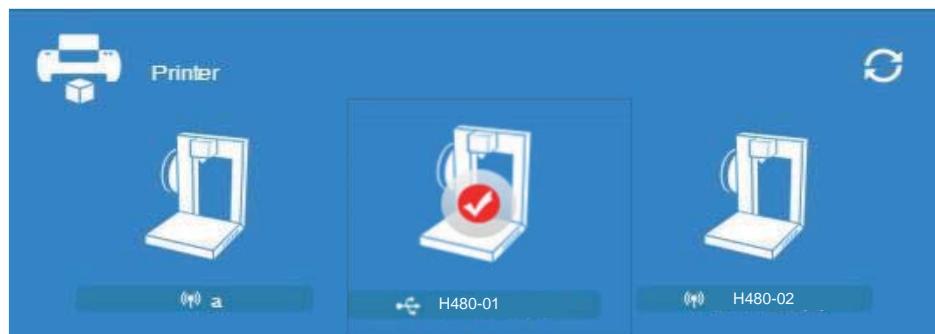
4\ Input the password for the WIFI network.



5\ If "Private" is set to ON, a private password could be optionally added to limit printer WIFI access to trusted users. Please note that the password is a weak protection that can be accessed and changed by anyone who can connect the machine through USB.



6\ Printer Tab



Disconnect USB and choose available printers on the network to operate through WIFI.