

USER MANUAL



APPLICABLE TO
NBEE

DISCLAIMER



Please read and understand the contents of this installation and user manual.

Failure to read the manual may lead to personal injury, inferior results or damage to the printers. Always make sure that anyone who uses the 3D printer knows and understands the contents of the manual to make the most out of your printer.

The conditions or methods used for assembling, handling, storage, use or disposal of the device are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, injuries, damage, or expense arising out of or in any way connected with the assembly, handling, storage, use or disposal of the product. The information in this document was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness.

Intended use

NBEE Series 3D printers are designed and built for liquid crystal display (LCD) based on Stereo lithography Apparatus (SLA) modeling for various high quality photopolymer resins within a commercial/business environment. The combination of precision and speed makes the NBEE Series 3D printers the perfect machines for concept models, functional prototypes, and also the production of small series.

UNIZ does not warrant that the operation of the Hardware Product will be uninterrupted or error-free. UNIZ is not responsible for damage arising from failure to follow instructions relating to the Hardware Product's use.

UNIZ's warranty does not apply: a) To damage caused by use with non-UNIZ products including third-party resins; b) To damage caused by accident, abuse, misuse, flood, fire, earthquake, or other external causes; c) To damage caused by operating the Hardware Product outside the permitted or intended uses described by UNIZ; d) To damage caused by service (including upgrades and expansions) performed by anyone who is not a representative of UNIZ; e) To a Hardware Product or part that has been modified to alter functionality or capability without the written permission of UNIZ; f) To consumable parts, unless damage has occurred due to a defect in materials or workmanship; g) To cosmetic damage, including but not limited to scratches, dents; or h) If any UNIZ serial number has been removed or defaced. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE OR COUNTRY TO COUNTRY. UNIZ's RESPONSIBILITY FOR HARDWARE DEFECTS IS LIMITED TO REPAIR OR REPLACEMENT SERVICE AS DETERMINED BY UNIZ IN ITS SOLE DISCRETION.

User Manual Vision: V1.8

TABLE OF CONTENTS

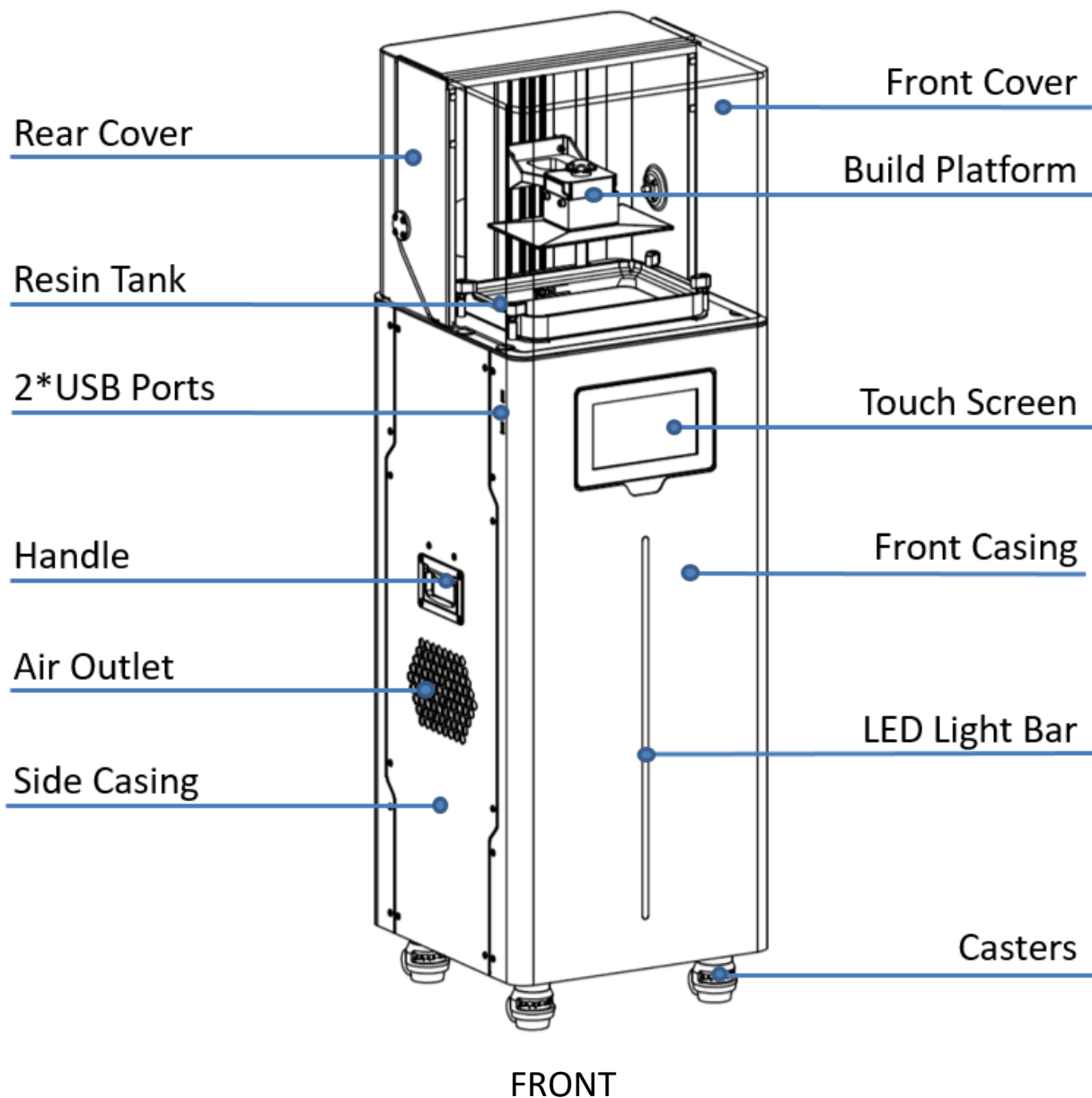
- A NBEE 3D PRINTER..... 1
- MEET THE PRINTER.....1
- SPECIFICATIONS3
- B GET STARTED.....4
- UNBOXING4
- GET THE ACCESSORIES.....5
- SOFTWARE PREPARATION.....6
- C INTERFACE INFORMATION 7
- MAIN INTERFACE.....7
- PRINT8
- TOOLS10
- SETTINGS.....13
- D USAGE AND MAINTENANCE..... 16
- PRINTER PLACEMENT AND LEVELING16
- BUILD PLATFORM17
- RESIN TANK21
- CHANGE LCD PROTECTIVE FILM.....24
- SUGGESTIONS26
- E DEFINITIONS.....27
- F CONTACT US.....28

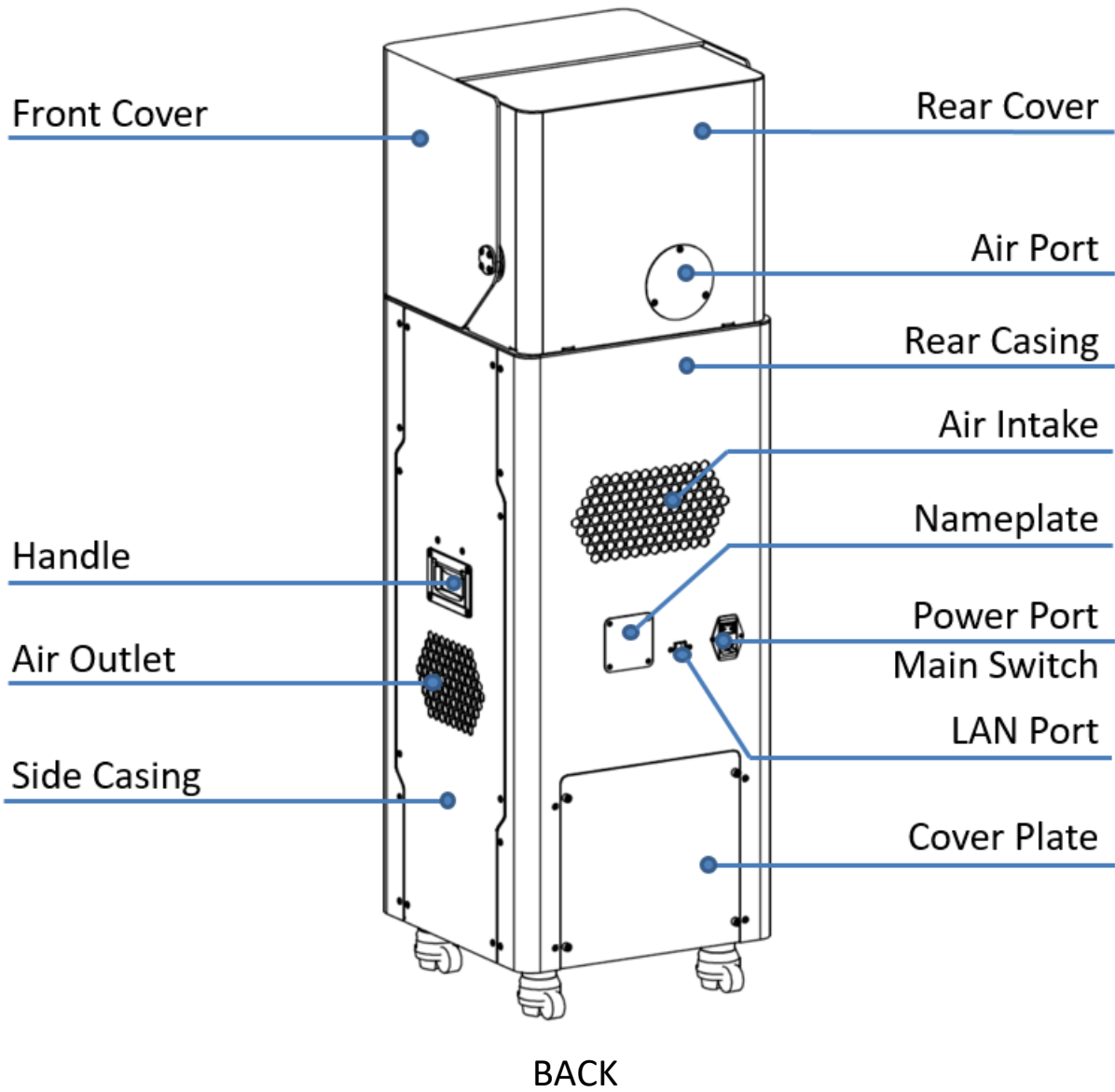
A NBEE 3D PRINTER

This user manual is designed to help you start your **NBEE 3D printer** experience. Learn everything about using your printer by following the instructions in this user manual and experience how easy it is to produce great quality prints.

You might be familiar with other types of 3D printers. Regardless, it is still essential that you read this manual carefully in order to make the most out of your printer.

MEET THE PRINTER





SPECIFICATIONS

NBEE		
PRINTING	Printing Technology	LCD Stereo Lithography
	Build Volume	192 × 120 × 180mm 7.5" × 4.7" × 7.1"
	XY Resolution	49.8μm
	Maximum Accuracy*	±10μm
	Layer Thickness (Z resolution)	10-200μm(25, 50, 100μm recommended)
	Separation Mechanism	Stereo-Polymer Multi-layer Film Peel
	Support	UNIZ Smart Support Technology
	Printing Speed**	6 full arches printed in 5 minutes
HARDWARE	Dimension/Weight	380 × 380 × 1230 mm [W×H×D] 15" × 15" × 49", 60KG/132LB
	Operating Temperature	18–28° C (64–82° F)
	Operating Humidness	30%–70%
	Power Requirement	100-120V~, 5A /220-240V~, 2.5A 50/60Hz
	Optical System	4 th Generation Collimated Light Source
	Mechanical	Cast Aluminum & CNC, Sheet Metal
	Connectivity	USB Flash Drive, Wi-Fi, Ethernet
	Control Pannel	7" Touch Screen
	Slice Format	zslr

* Maximum accuracy is only achievable at integer multiples of smallest pixel sizes.

**The printing efficiency is based on the test model, it may differ from one to another.

B GET STARTED

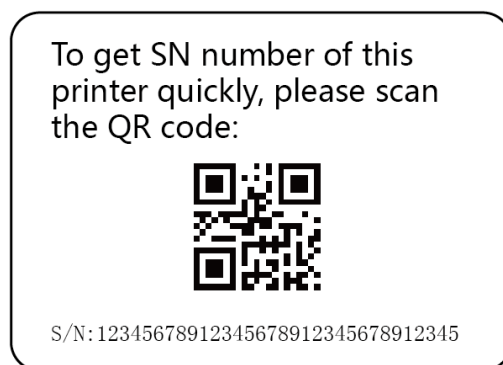
After receiving your printer, you're ready to unpack it and set it up! Carefully unpack your printer and set it up according to the following instructions.

UNBOXING

The printer comes in reusable, durable packaging that has been specially designed to protect your printer in transport. To properly unpack your printer, please follow the steps described below.

START UNBOXING

You can scan the QR code on the packaging box to get the SN number of your printer, the following is an example:



OPEN IT UP

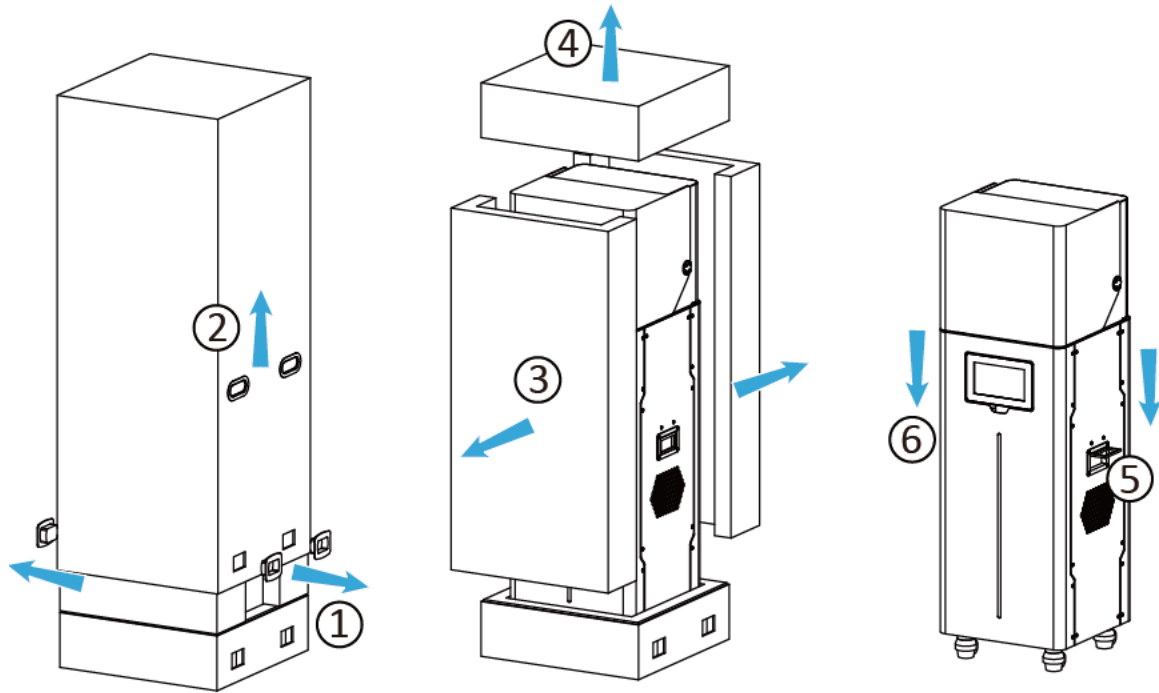
- ① Remove the four handle locks around the bottom of the box.
- ② Use the holders to lift the upper box up, and leave it to the side.

REMOVE THE FOAM PACKAGING

- ③ Remove the front and back foam.
- ④ Remove the top foam.

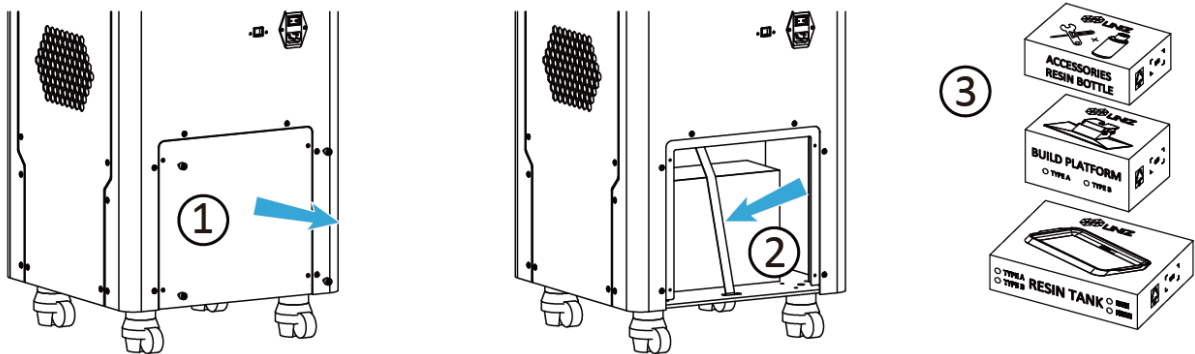
TAKE THE PRINTER OUT

- ⑤ Remove the plastic wrap, then flip out the two handles on the sides of the printer.
- ⑥ Hold both handles and lift the printer out of the bottom foam, leave it aside and flip the handles back.



GET THE ACCESSORIES

- ① Remove the four screws on the back of the printer and the bottom back cover plate.
- ② Remove the packing strap.
- ③ Take out the accessory box, resin box, and Build Platform box.



- ④ The accessory box contains essential accessories including power cord and flash drive etc.

SOFTWARE PREPARATION

Open web browser and input <https://www.uniz.com/software>.

Choose the software according to your corresponding system and download the UNIZ DENTAL installation file.

INSTALLATION

Windows

UNIZ DENTAL supports Windows 7 and above. Please follow these steps:

1. Double click the installation program.
2. Check the user agreement, and then follow the prompts to finish the installation.

Mac

UNIZ DENTAL supports Mac OS X 11.4 and above. Please follow these steps:

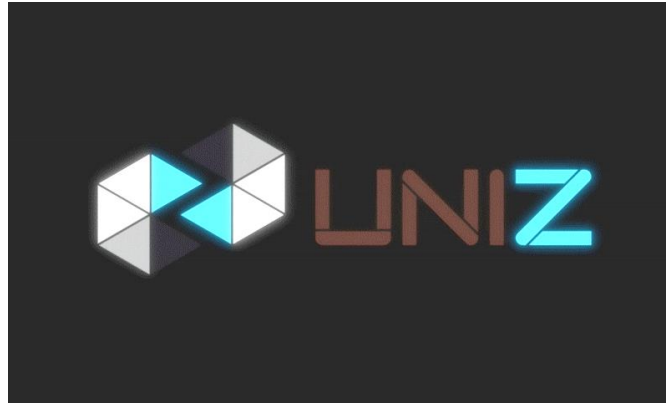
1. Double click the installation program.
2. Agree to the user agreement.
3. Drag UNIZ to your Applications folder.

Note: Once your computer is connected to the Internet, UNIZ DENTAL will detect new versions automatically and prompt whether you wish to update.

C INTERFACE INFORMATION

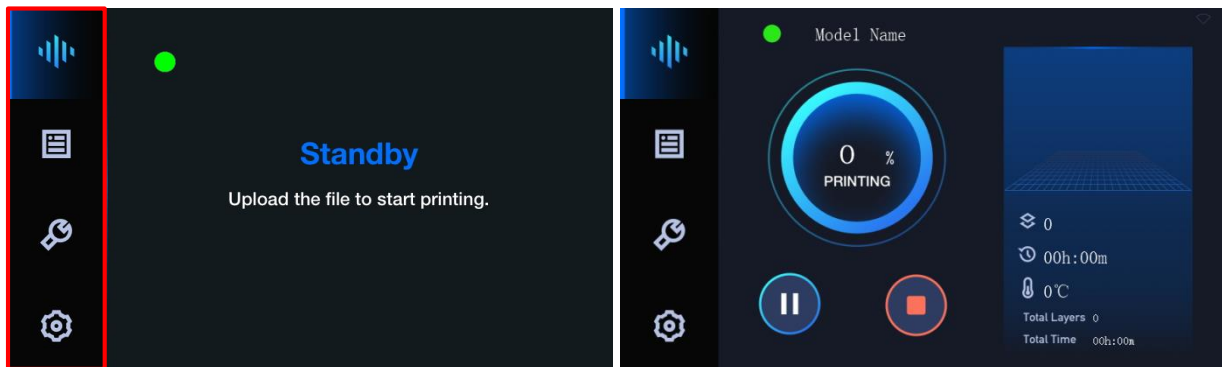
You may check the information of your printer, control the printer, and start printing projects using the touch screen on the front of NBEE.

Power on and wait until the animation ends.



MAIN INTERFACE

There are four main functions: Standby/Print, File List, Tools, Settings.



There is an indicator light on the Standby/Print interface.


- Solid green means the printer is ready for printing.
- Blinking green means the print is in progress.
- Blinking red means the print program is stopping and the platform is moving upwards.

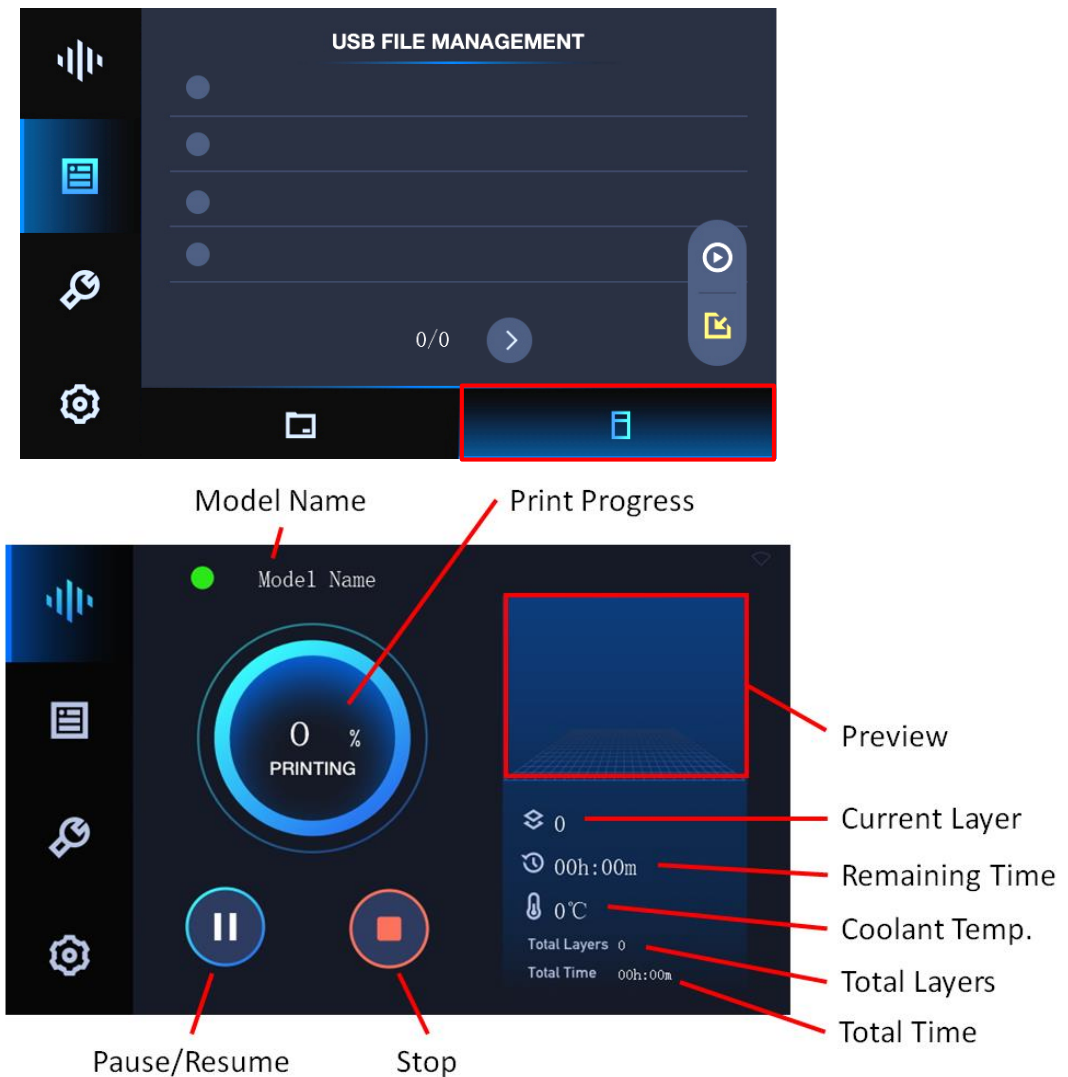
Notes:

1. Some functions have 1~3 pages to introduce the details. Please read carefully and follow the instructions.
2. Some interfaces need to input all checkboxes to the next step.

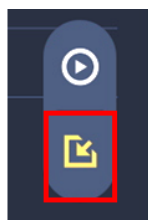
PRINT

PRINT WITH FLASH DISK


NBEE supports flash drive printing. You may use UNIZ Dental to slice the model on your PC then save it to your flash drive to print. Plug the flash drive into the USB port on the left of the printer, then choose the slice you want to print and click the **Start** button . The printer will enter into the print details interface.

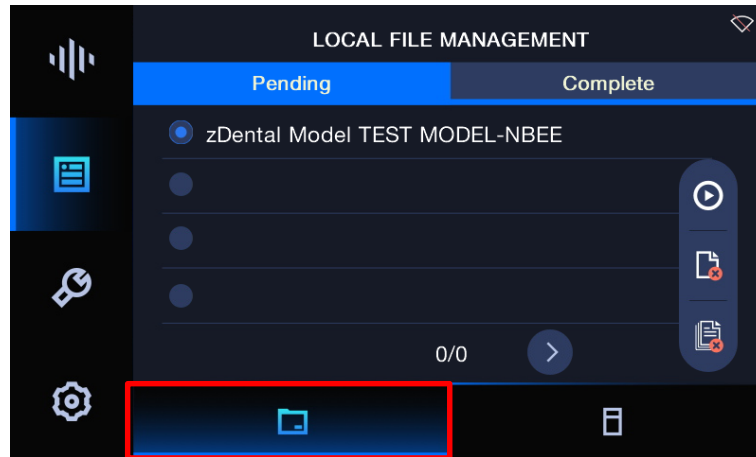


In this interface, you may check the preview and printing parameters of the print. Also you may pause/resume or stop the printing program by clicking the buttons at the bottom. You may also select a slice file and use the **COPY** function to copy the file to the printer.

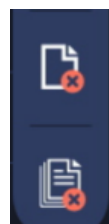


PRINT LOCAL FILES

The files printed on the printer will be shown in this interface. You will see the sliced files stored locally on the printer, divided into two directories: 'Pending' and 'Complete'. Select the file you want to print, then click the start print button , and the printer will enter the print details page. Once the locally stored file has been finished printing, it will be moved to the 'Complete' interface.



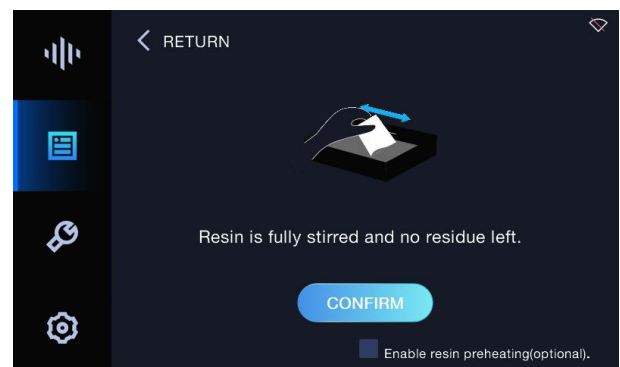
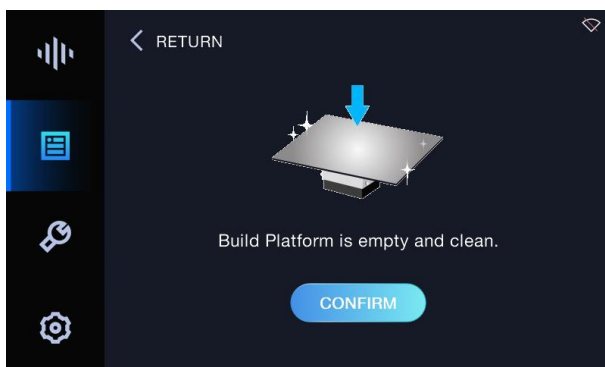
You can also select a sliced file and click the delete function button to remove the locally stored file individually or delete all of them.



Delete the selected file

Clear local files

Before starting the print, please check the status of the Build Platform and the Resin Tank to avoid print failures or even printer damage due to insufficient resin, unevenly mixed resin, or solid debris. Additionally, to ensure the machine can print normally in low-temperature environments, the system will ask whether to enable the resin preheating function before starting the print job. This function requires some preparation time, and we recommend using the printer in a suitably warm indoor environment.

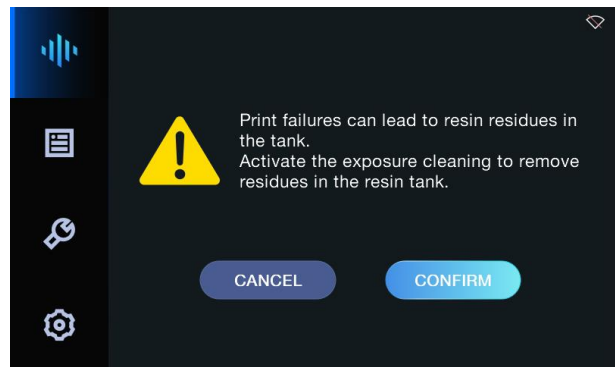
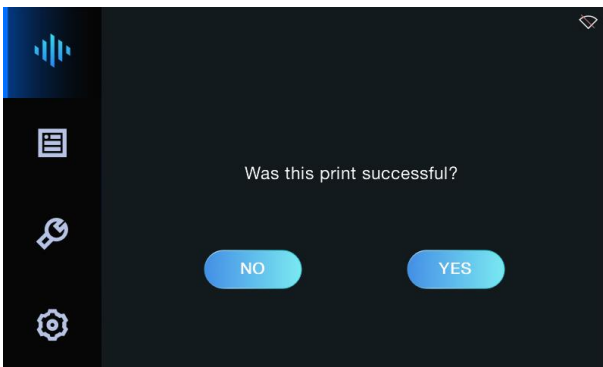


The printer will measure the **coolant temperature**. If it is **below 25°C**, the system will start preheating until the coolant is **25°C and retain heat for 100s**, unless the preheating is manually cancelled by clicking **CANCEL PREHEATING**, then it will stop heating and start printing. If the coolant temperature is **higher than 25°C**, the system will start heating **and hold for 100s**, then stop heating and the printing task will start.

Note: The heater will stop working when a printing task start, regardless of whether the preheating function is enabled.



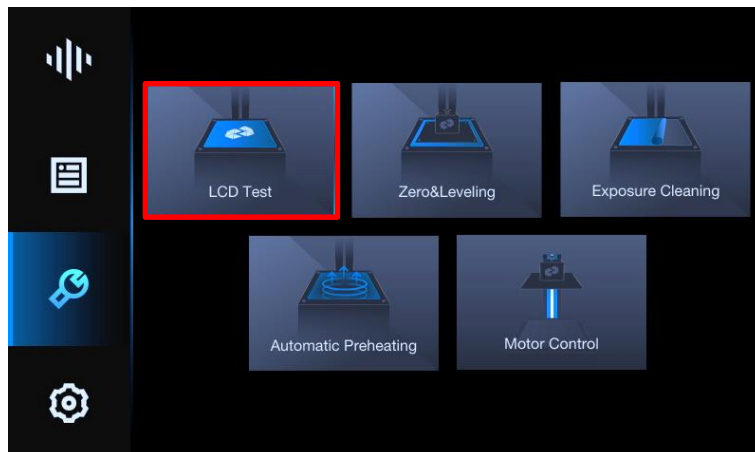
After the print is finished, the system will ask whether the print was successful. Please make a judgment based on the actual printing situation. If the print fails, to avoid solid residues damaging the Resin Tank Film or the LCD screen, system will recommend using the exposure cleaning function to clean the solid residues in the Resin Tank.



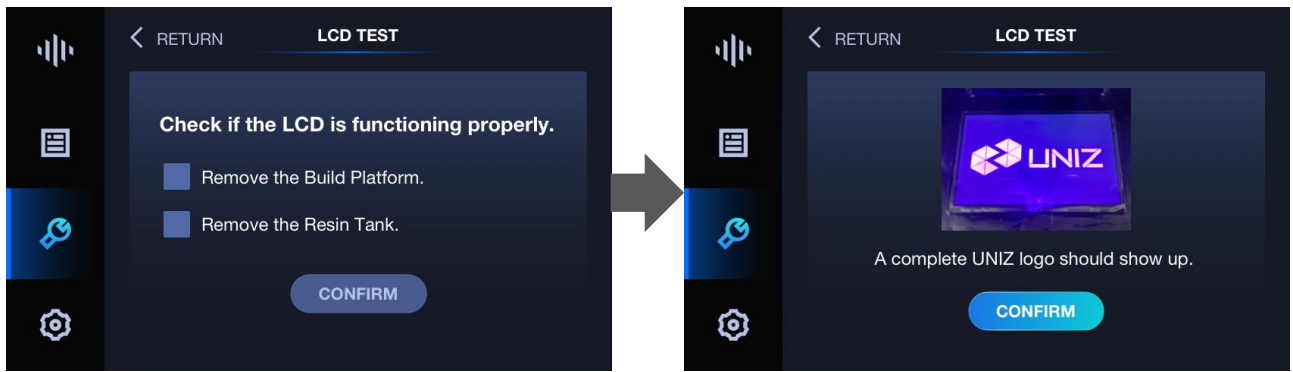
TOOLS

LCD TEST

The LCD TEST function is to ensure the proper functioning of LCD.

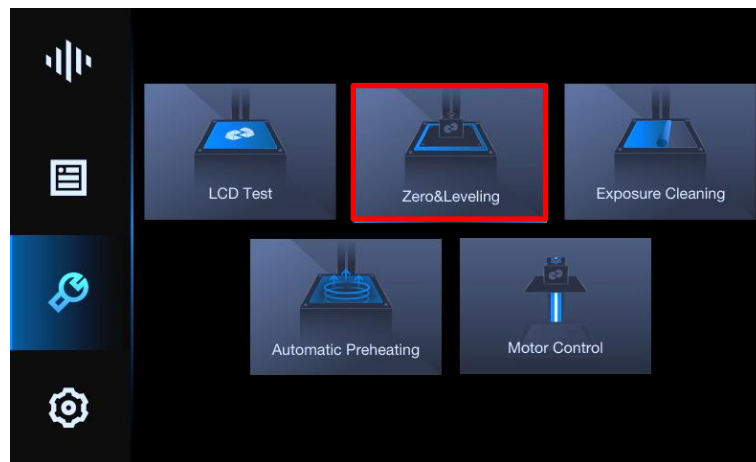


Click **LCD TEST** you will see the UNIZ Logo appears on the LCD screen.



RESET Z-AXIS ZERO POSITION AND LEVEL THE BUILD PLATFORM

When changing a new Build Platform or when the printing model does not stick onto the Platform, please reset z-axis zero position and leveling the Build Platform. You will use a regular printer paper and the Hexagon Wrench inside the accessory box coming with your printer.

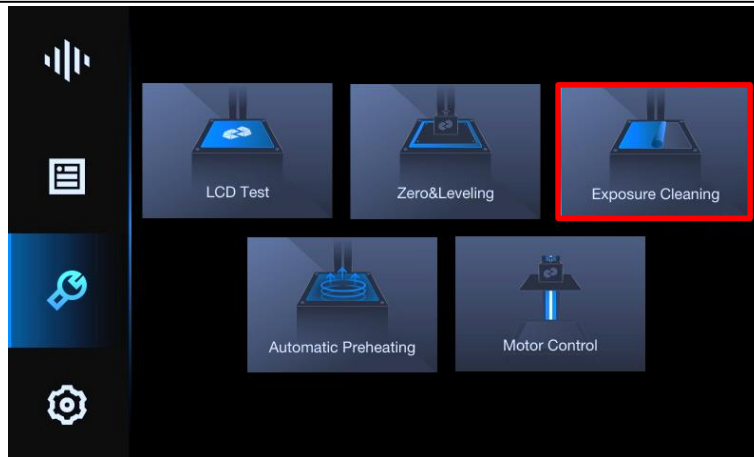


After leveling, please put the paper under the Build Platform and reset it again. When the leveling is completed, you can feel the frictional force between the Platform and the paper.

Note: Please refer to Chapter D for details.

EXPOSURE CLEANING

When a failed print occurs, resulting in some residues left in the bottom of the Resin Tank, you will need to expose the Resin Tank to clean the residue. After that, please wear nitrile gloves and take the solidified piece out.

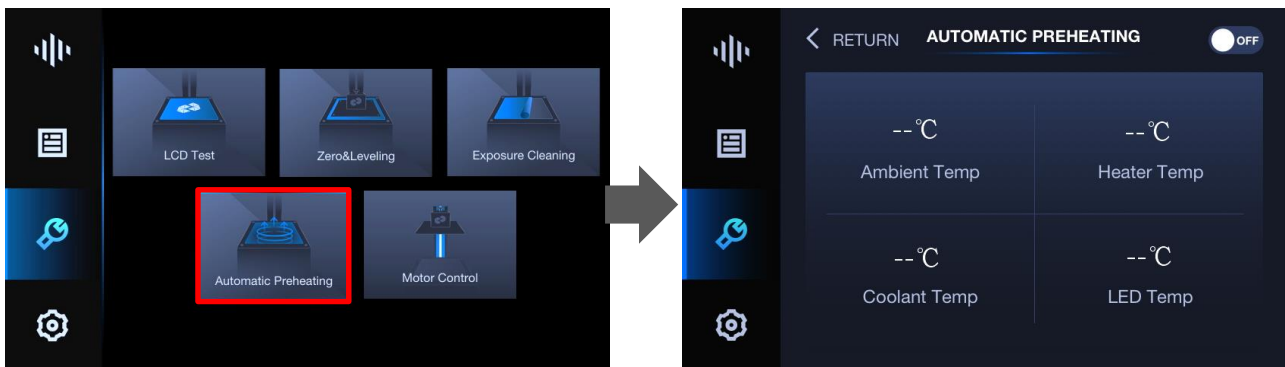


Note: Detailed operation procedures are described below in Chapter D.

AUTOMATIC PREHEATING

To keep the printer able to print at all time, you may enable the auto preheating feature to keep the resin at a suitable temperature.

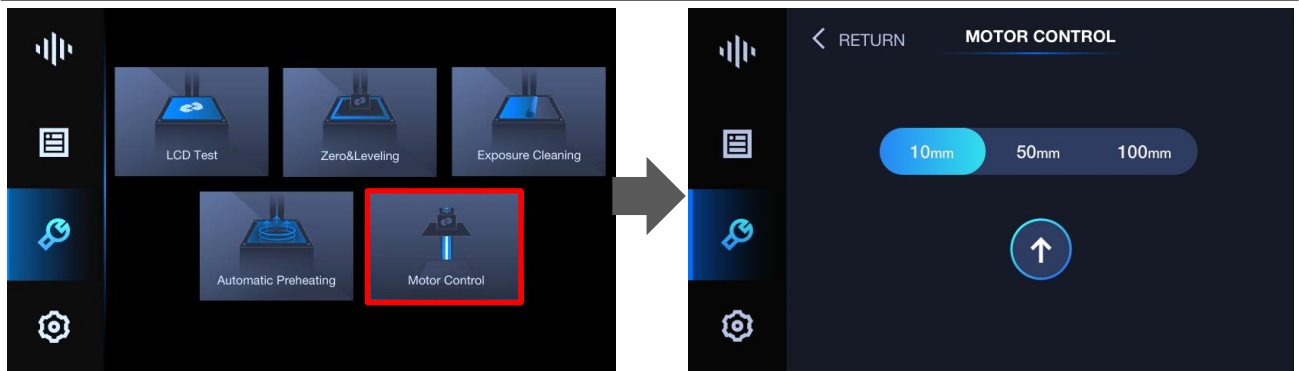
1. Auto preheating is disabled by default, and remain the same status to the last use.
2. When the coolant temperature is below 25°C, it will be heated to 25°C~30°C with the LCD liquid circulation system.
3. Once enabled, the printer will automatically starts heating when power on to save preparation time.
4. Ambient Temp and LED Light Board Temp are for your reference only, preheating function does not involve these parameters.



Note: Only enable Automatic Preheating when there is resin in the resin tank.

MOTOR CONTROL

To move the Build Platform upwards, choose a distance (10/50/100mm) first, and then click the arrow. Please do not click too fast and mind the distance between the Platform and the top position.

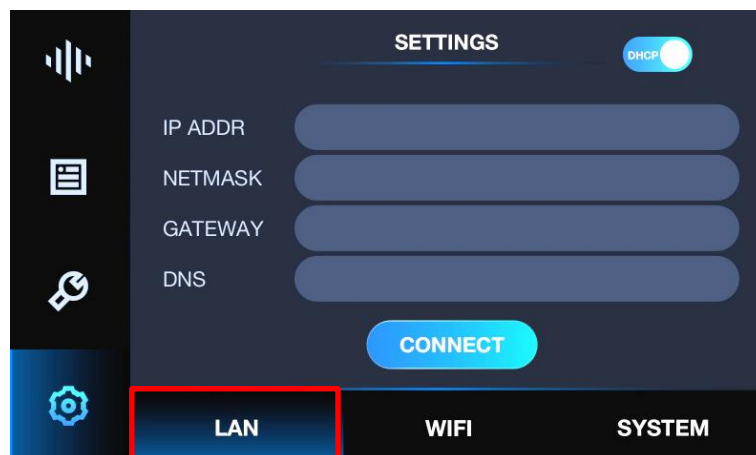


SETTINGS

SET LAN

Connect the printer with your router via an Ethernet cable. Go to the SETTINGS menu. Click **LAN** button. Set to AUTO mode. Then the printer will get the IP address automatically.

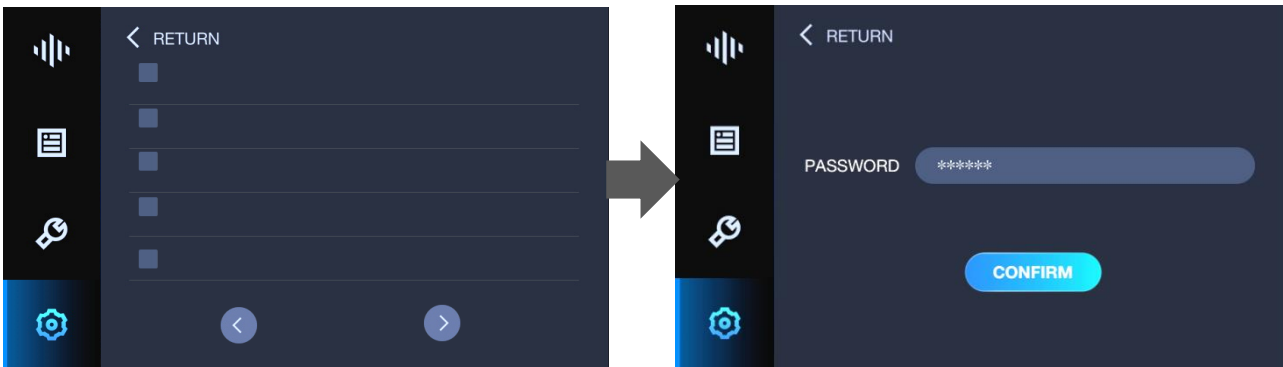
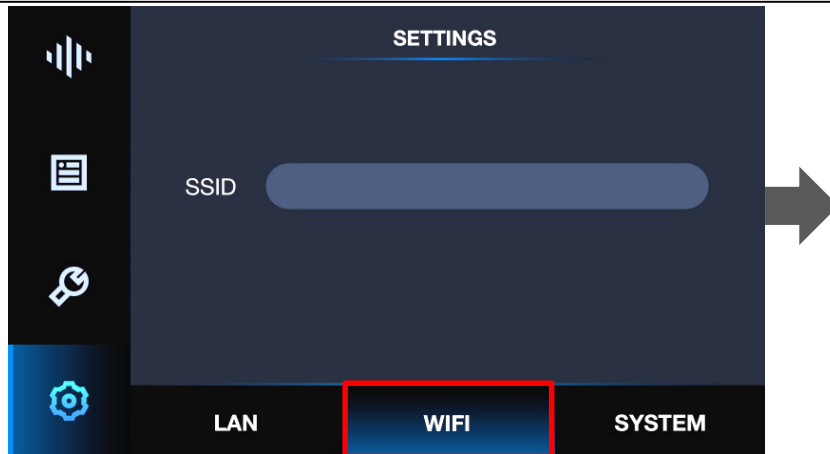
If you set AUTO mode off, you will need to type IP address, Netmask, Gateway and DNS manually. Then click **CONNECT**. When you could see the Ethernet icon at the top right corner of the screen, it means the printer in connected with network.



SET WIFI

Please insert the USB-WiFi coming with the printer into the USB port on the left side of the printer.

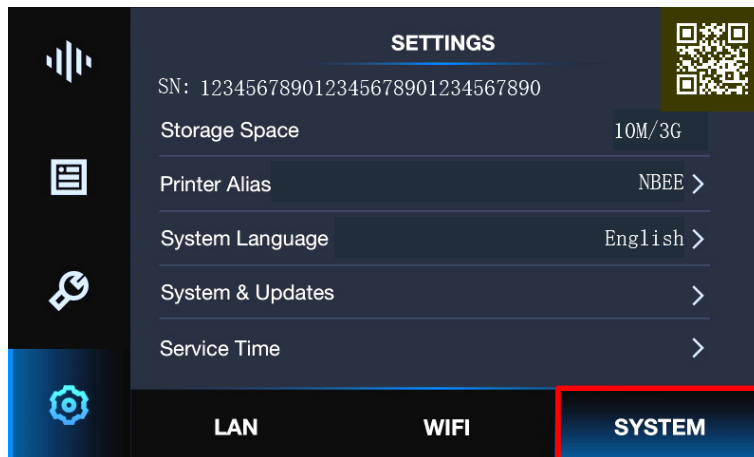
You could connect the printer with your router via Wi-Fi. Go the SETTINGS menu. Click **WIFI/SSID**, there will be a list of available Wi-Fi. Choose the Wi-Fi network and enter the password. Click **CONFIRM**. When you see the IP address shown, it means the printer is connected well to the Wi-Fi network. There should be a Wi-Fi icon appearing at the top right corner of the screen.



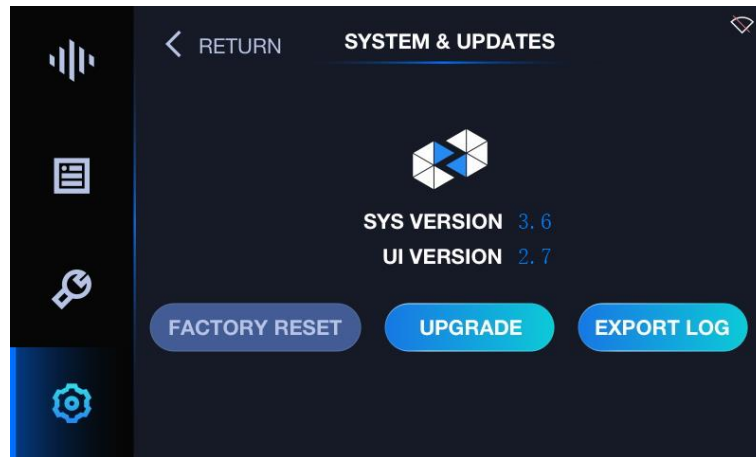
SYSTEM

Enter **SETTINGS** menu and click **SYSTEM**.

1. If you need to get the SN number, you may use a QR code scanner.
2. You can also set the printer alias and system language in this interface.



3. If you need to check the current firmware version, upgrade firmware, or perform Factory Reset, please click **System&Updates**.

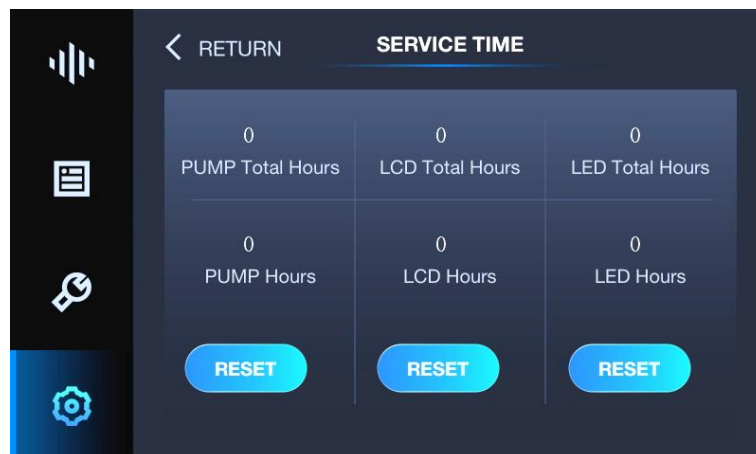


Note:

- a. Factory Reset only resets LAN and alias, but will not modify light calibration or firmware version, local files, nor the work time of LCD/LED/PUMP.
- b. Install an USB drive and click **EXPORT LOG**, it will export the print log file into the USB drive.
- 4. Click **Service Time** to access the work time record, here you may check the total work time of the three main components of the printer: LCD, LED, and PUMP.

The first line shows the total accumulated work time, including all previously replaced parts.

The second line shows the work time of the current part, and you should reset the second line timer once you replaced any component.



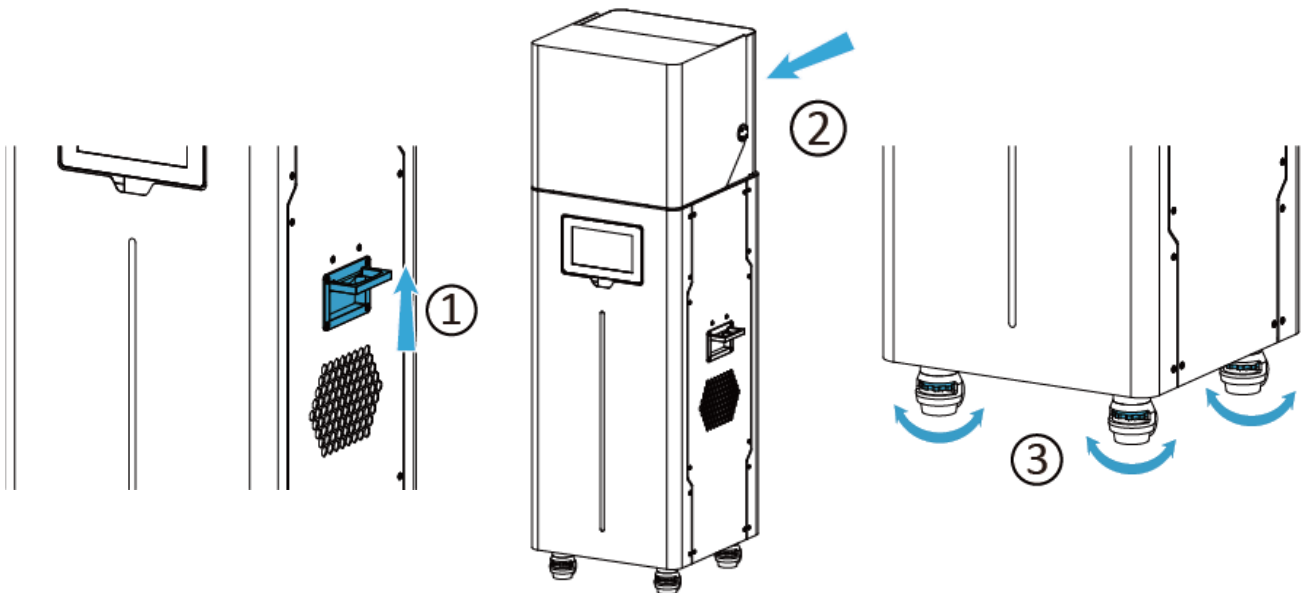
D USAGE AND MAINTENANCE

In order to get a great work with NBEE 3D printer, it is important to maintain it correctly. In this chapter the most important maintenance tips are described. It is recommended to read them carefully in order to achieve the best results with your printer.

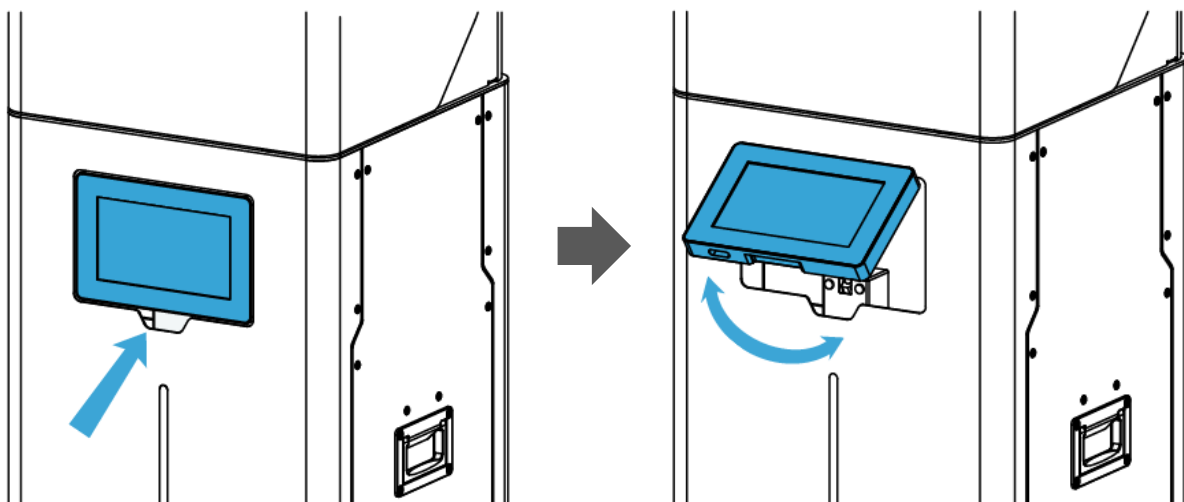
PRINTER PLACEMENT AND LEVELING

If you need to move the printer to a new location, please pull out the handles at the two sides. Slowly pull the printer while holding the upper cover to prevent it from flipping. Place the printer on a steady horizontal floor.

To level the printer, turn the leveling screw on the four wheels to extend the leveling feet until all four feet touch the floor and hold the printer steady.



The touch screen of NBEE can be flipped up as shown in the following figure. It is recommended to return the screen to the upright position while moving the printer.

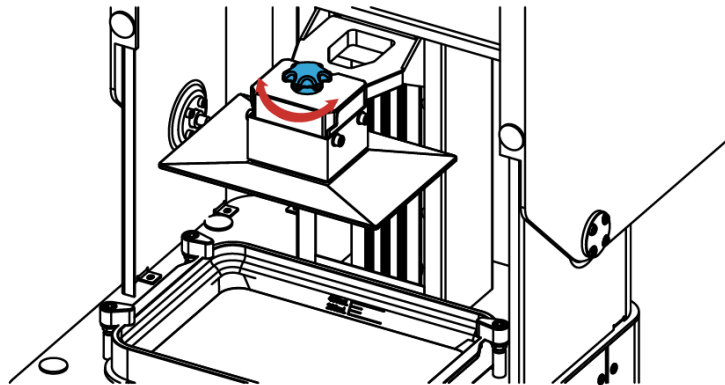


BUILD PLATFORM

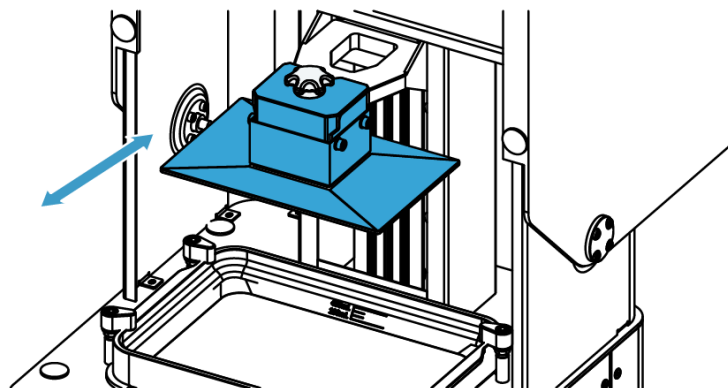
The Build Platform is the platform where the first layer of the model burns in-to, its levelness and roughness are crucial to successful prints.

INSTALLATION AND REMOVAL OF BUILD PLATFORM

1. Turn the platform locking screw clockwise to lock (Turn the platform locking screw counter-clockwise to unlock).



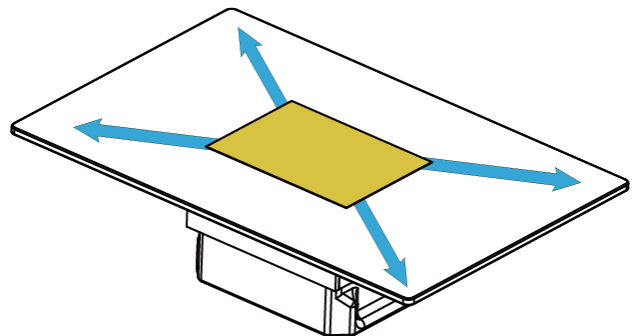
2. Install or remove the platform.



SANDING BUILD PLATFORM

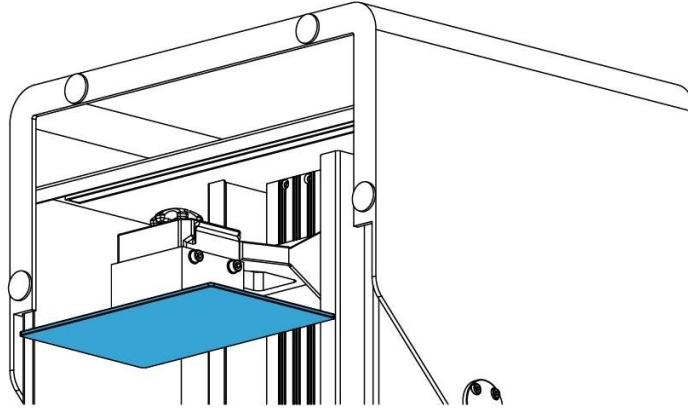
The surface of the Platform will be smooth after a long time of use, resulting in poor model adhesion and printing failures. To fix this problem, users need to sand the platform.

1. Clean the platform surface with alcohol.
2. Sand the surface into a grid shape with the sandpaper delivered with the machine.
3. Clean the platform with alcohol and a soft cloth again to make sure there is no residue left.

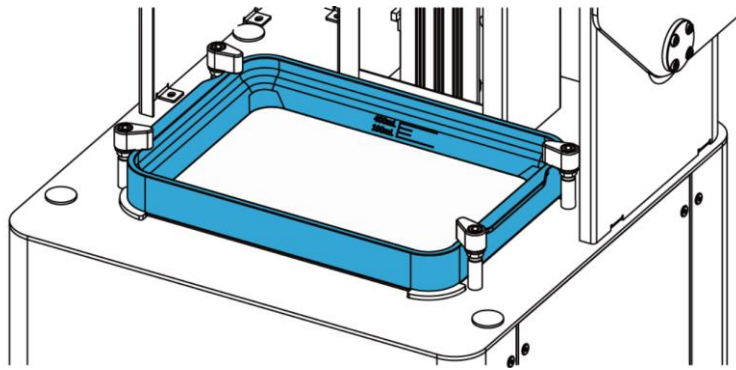


RESET Z-axis ZERO POSITION AND LEVEL THE BUILD PLATFORM

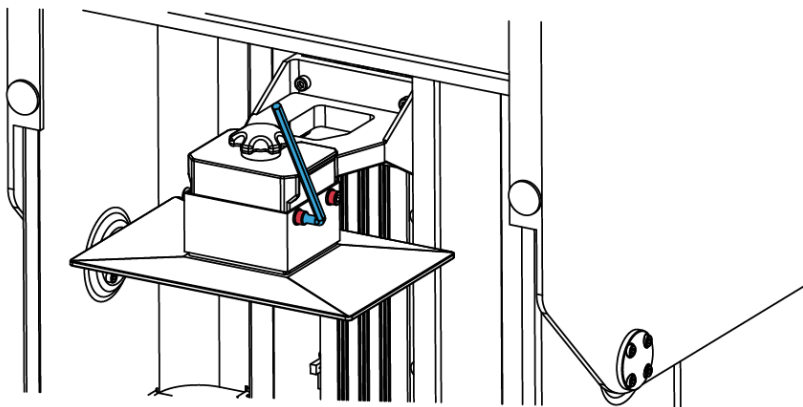
1. Prepare an empty Resin Tank and the M5 Hexagon Wrench in the accessory box coming with the printer.
2. Make sure the bottom of Platform is clean and dry.



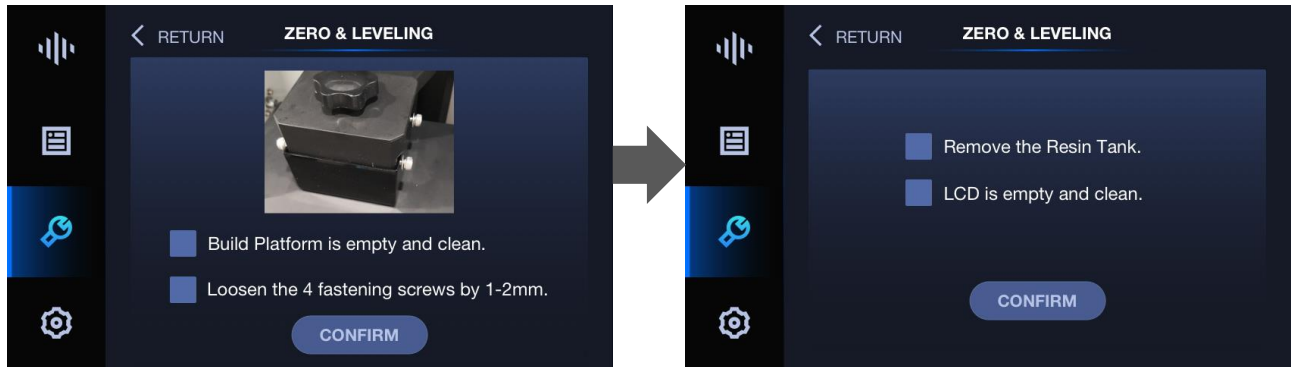
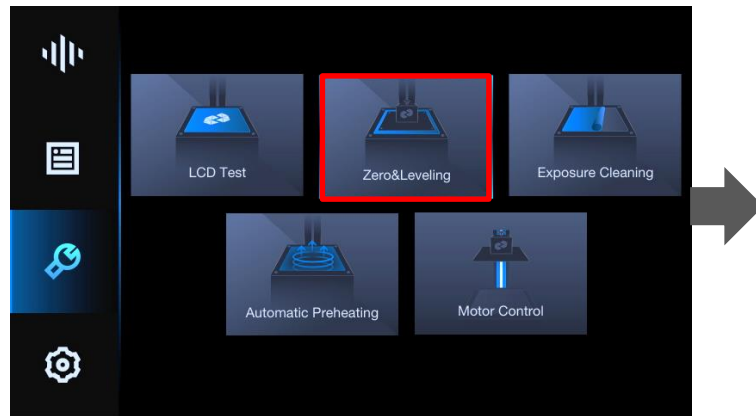
3. Install the empty Resin Tank and turn four blocks to lock it.



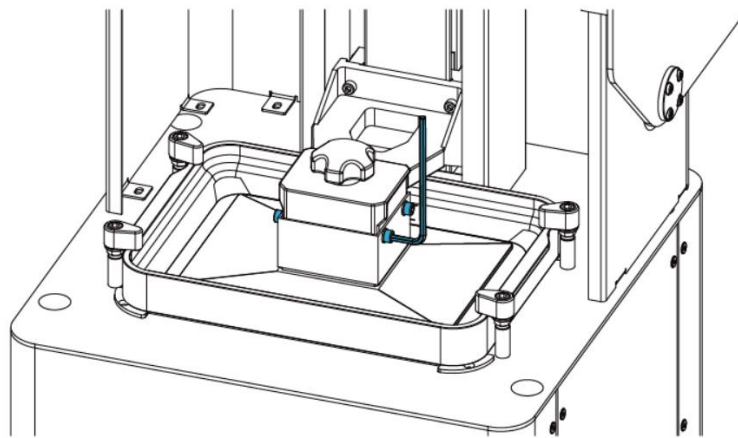
4. Loosen the four screws with M5 Hexagon Wrench by turning counter-clockwise.



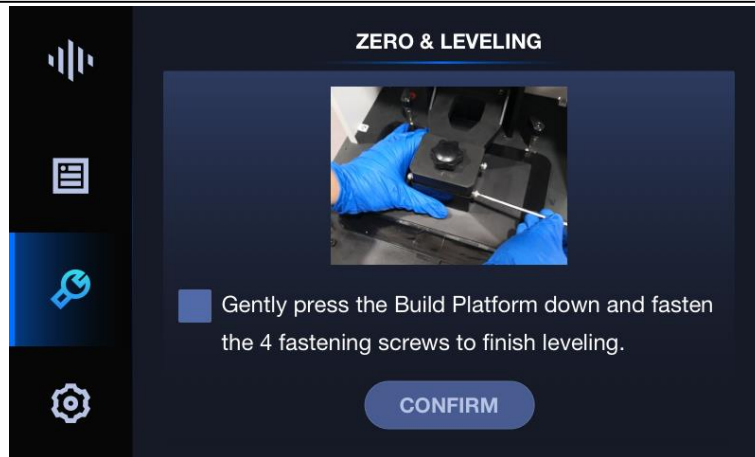
5. Click **TOOLS/ZERO&LEVELING**, read the instructions and check each item before clicking **CONFIRM**.



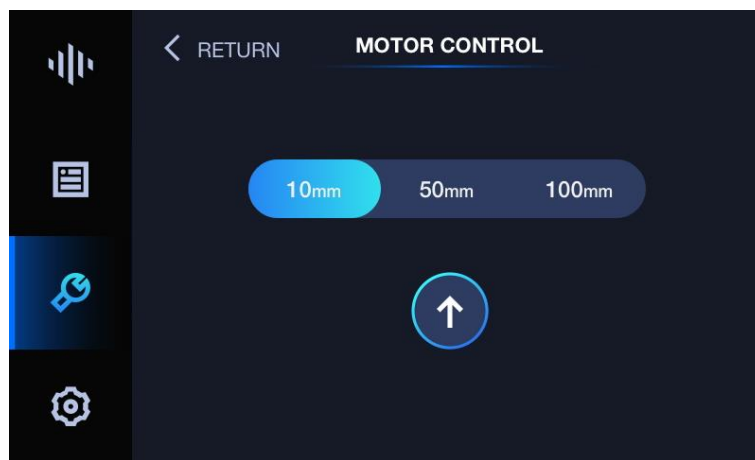
6. Once the Build Platform stopped moving, tighten the four screws with M5 Hexagon Wrench clock wisely - as below images showed.



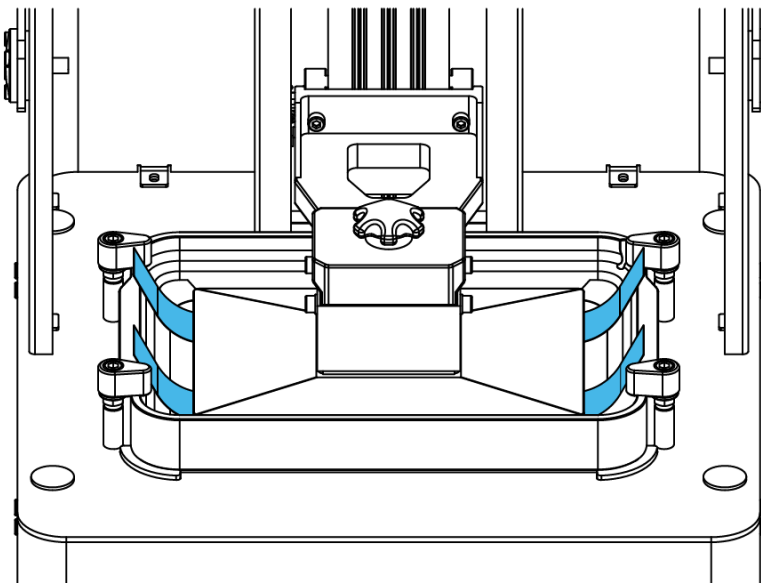
7. Click **CONFIRM** and the leveling is finished.



8. Then choose the 50mm option and click the **arrow**. Tightening the four M5 screws again.



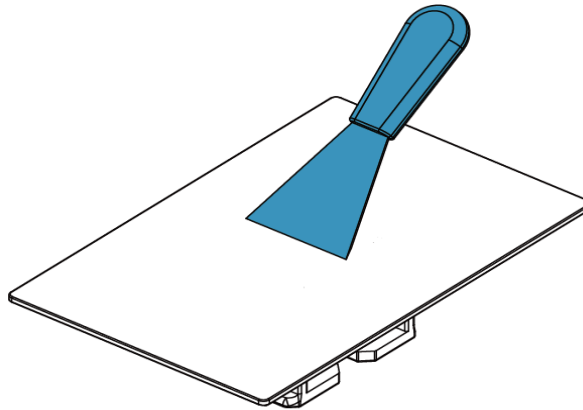
9. Install the Resin Tank, then repeat the Zero & Leveling process from Step 5. Once the Build Platform stopped, gently pull out the 4 small pieces of papers in any directions. If the papers are firmly pressed on the Resin Rank, that means the Build Platform is zeroed and Leveled successfully.



CLEAN THE BUILD PLATFORM

If a printing fails, there may be residues on the Platform which needs to be cleaned in time to avoid damage to the LCD screen.

Please remove the failed model on the Build Platform, and clean the solidified items on the bottom of the Resin Tank, dispose it properly.



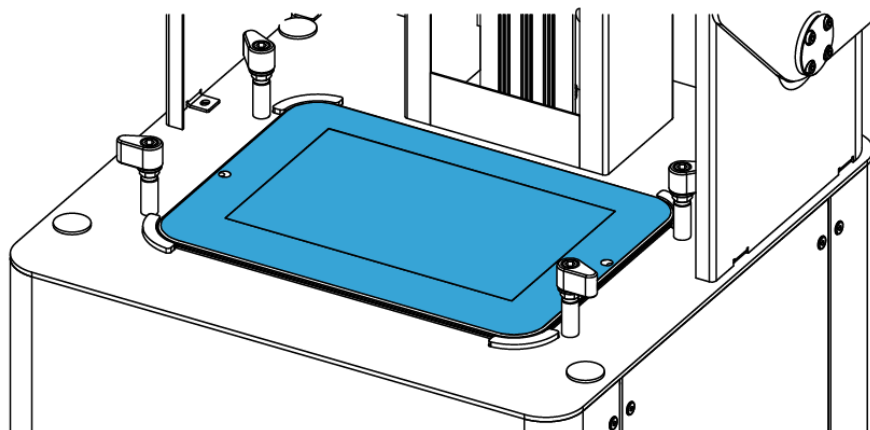
- Notes:**
1. After the failed model is removed, please clean the Build Platform with IPA (with concentration of 91% or higher) completely. Any solidified item on the Build Platform would damage the Resin Tank or LCD screen.
 2. Please wear nitrile gloves to clean the Build Platform, and be aware of the sharp Scraper to avoid harm.

RESIN TANK

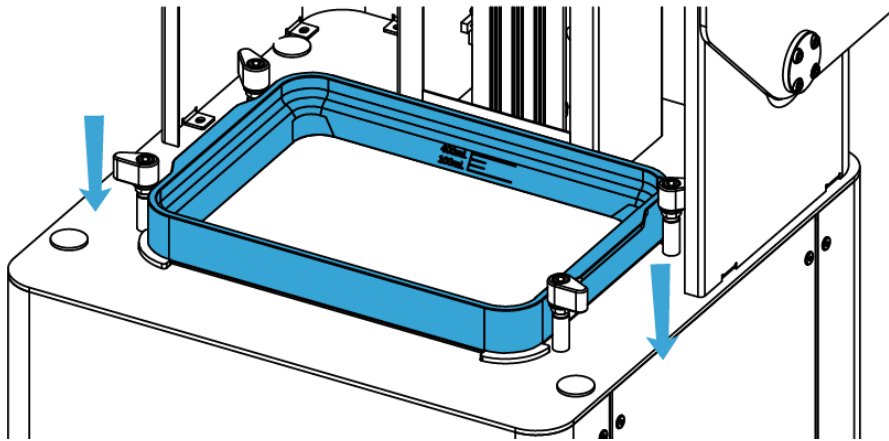
The Resin Tank is a crucial part for a successful print job, and requires constant maintenance and replacement if needed.

INSTALLATION

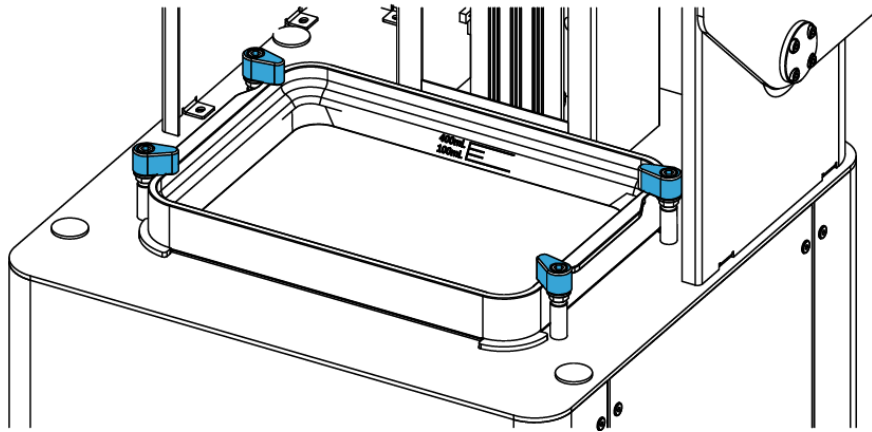
1. Make sure the LCD screen is clean and dry.



2. Put the Resin Tank onto the LCD screen.



3. Lock the Resin Tank with the 4 blocks.



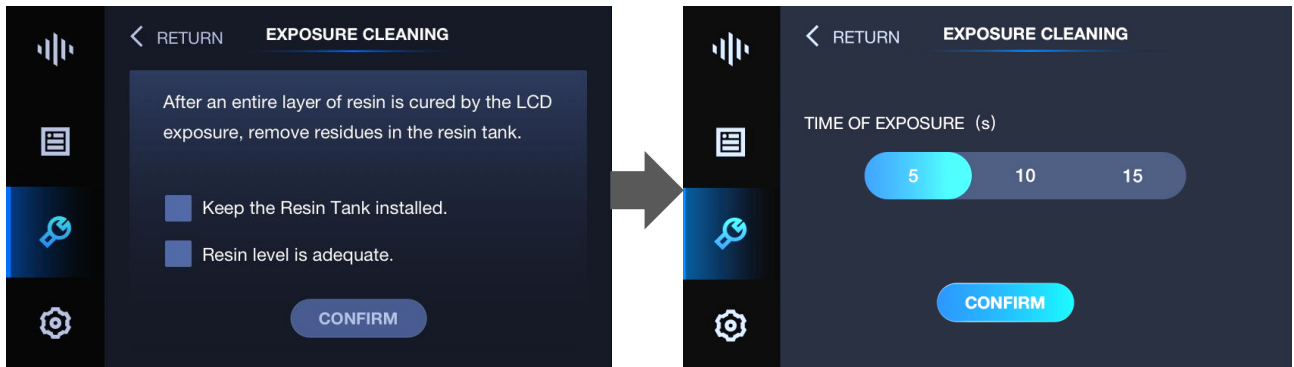
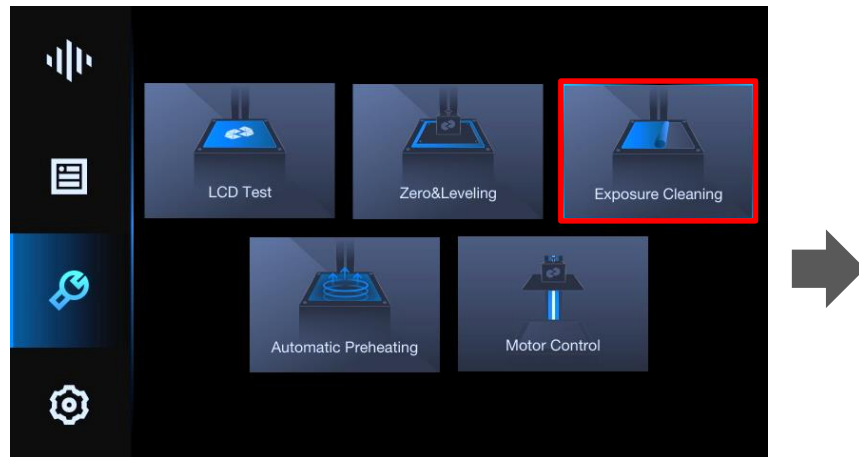
4. Make sure the Resin Tank is stably locked to get best performance. If a certain block is difficult to press onto the Resin Tank, please adjust the installation position and try again.

CLEANING THE RESIN TANK

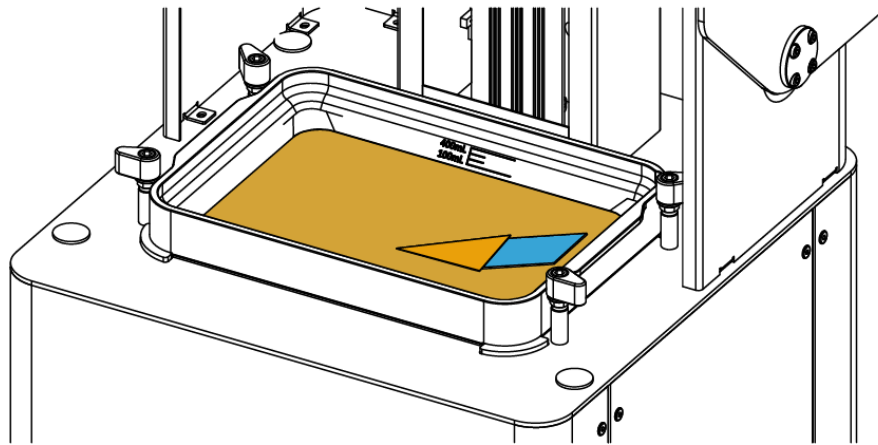
When a printing failure or model drop occurs, there will be some residual cured models in the Resin Tank. These residues need to be cleaned up promptly to avoid damaging the Resin Tank Film.

When the amount of residue in Resin Tank is small and the volume is large, you can use the randomly shipped white card for handling. When the amount of residue is large and the volume is small, it is recommended to use the **Exposure Cleaning** function for processing.

1. Click **TOOLS/EXPOSURE CLEANING**, choose the time and click **CONFIRM** to start exposure cleaning.



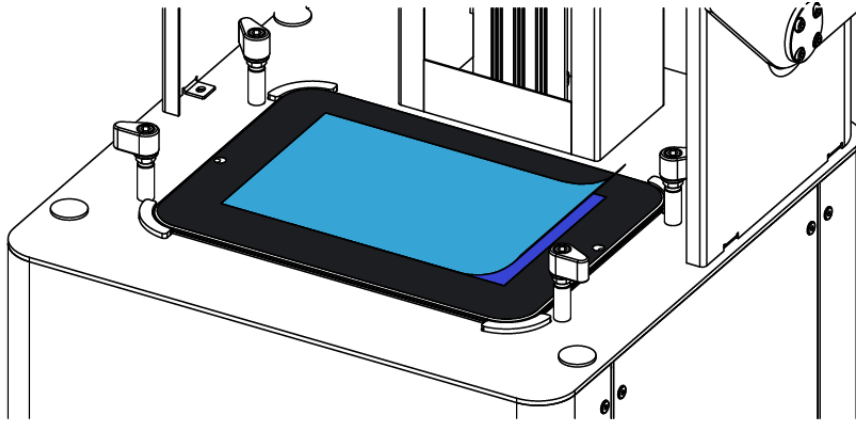
2. Once the EXPOSURE CLEANING is done, use a scraping card to take the solidified item out. DO NOT use metal scraper which will damage the release film and cause resin leakage. Repeat it if necessary.



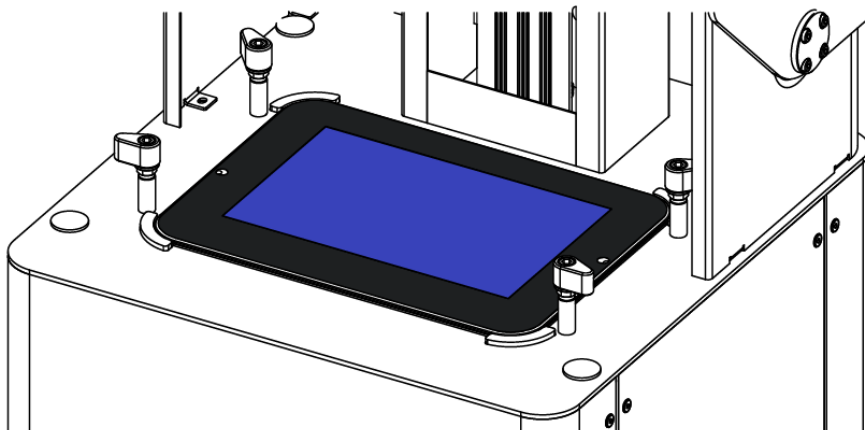
CHANGE LCD PROTECTIVE FILM

There is a protective film on the LCD. Change to a new protective film when it is scratched or dirty. Please keep one protective film on the LCD or the resin cured will left permanent damage to the LCD.

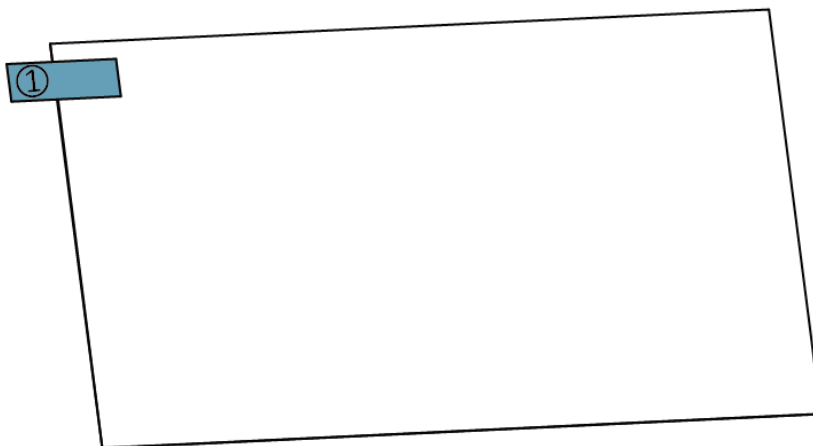
1. Peel off the old film.



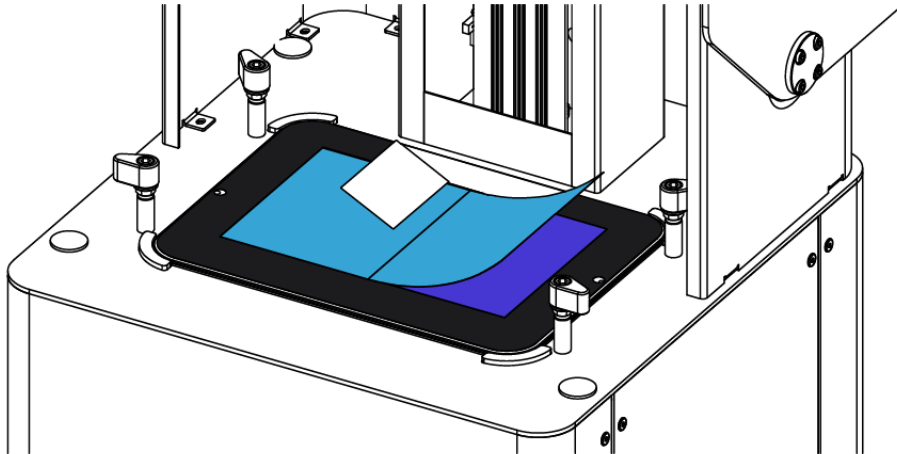
2. Clean the surface of the LCD and make sure there is no dust and residue left.



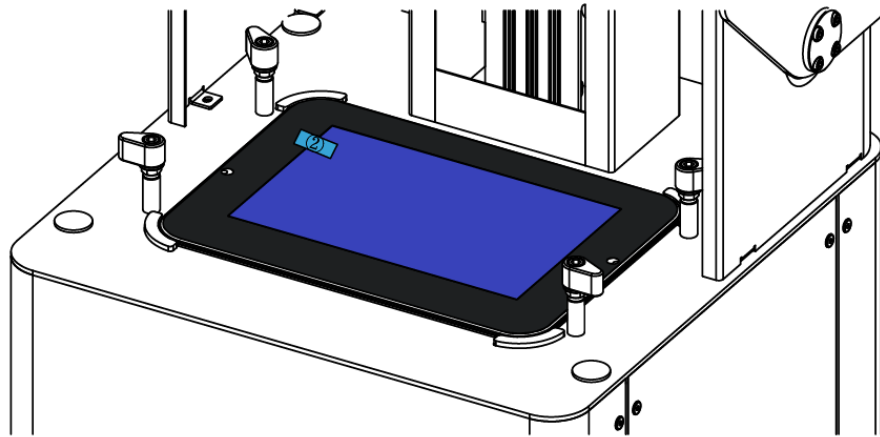
3. Take out a new film and peel off the cover film marked '①'.



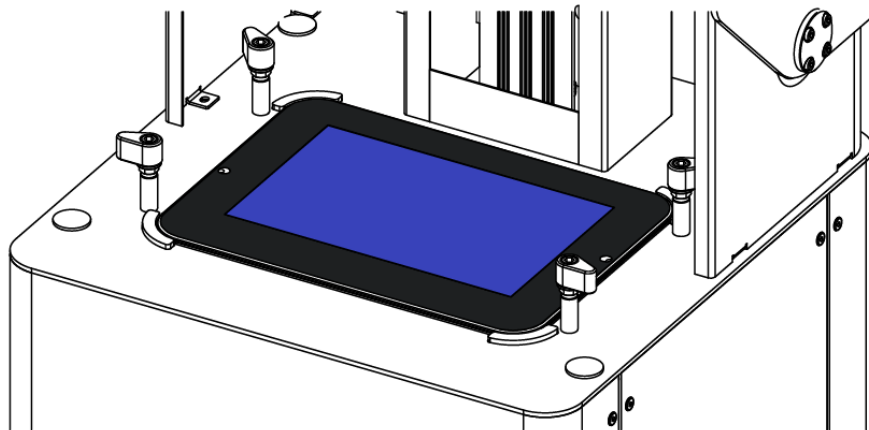
4. Using a card and cloth to paste the film onto the surface of LCD.



5. Peel off the cover film marked '②'.



6. Any air bubbles between film and the LCD will disappear automatically in a period of time.



SUGGESTIONS

1. When removing the Resin Tank, please place it on a clean table to avoid scratch.
2. When slicing a file by UNIZ Dental software, it is recommended to save the sliced file to a solid state drive (SSD) for faster storage speed.
3. Please check whether there are residues left on the Build Platform or at bottom of the Resin Tank before each printing. If there are residues left on the Build Platform, clean it with a scraper. If there are residues left in the Resin Tank, use Exposure Cleaning function to cure and clean.
4. Please well mix the resin in the Resin Tank by stirring with a hard cardboard like business card before each printing.
5. Please keep the printer stable to avoid disturbing while printing.
6. Please keep the Cover in position while printing.
7. Please check and clean the Build Platform and the Resin Tank before each print.
8. Please clean resin dropped incidentally on the LCD screen, cover immediately.
9. Please drill a hole at the side of the bottom of a model if it is a closed hollowed model.
10. Please keep the printer and resin tank in a ventilated place, avoiding straight sunlight.
11. Use 80~200 mesh filter to filter the resin when put it back to bottle for storage.
12. Children are not allowed to get close or operate the printer to avoid harm to children or damage to the printer.
13. Do NOT move printer when there is resin left in Resin Tank to avoid spilling.
14. Do NOT gaze at the LCD screen when doing a test print without Resin Tank and Build Platform.
15. Do NOT leave resin in resin tank for more than 24 hours without printing.
16. Do NOT connect the printer with your computer via USB. The USB ports only support USB Flash Drive and USB Wi-Fi.

E DEFINITIONS

Accessories Box	Mainboard
Air Port	Nameplate
Arm	Observation Light
Build Platform	Packaging Box
Casters	Power Cable
Cleaning Cloth	Power Port
Cover Plate	Printing Task
Detail Packing List	Rear Casing
Disposable Glove	Rear Cover
Ethylene Glycol(Coolant)	Resin
Film Frame-down	Resin Tank
Film Frame-up	Resin Tank Blocks
Front Casing	Resin Tank Film
Front Cover	Sand Paper
Handle	Scraper
Hexagon Wrench M3	Side Casing
Hexagon Wrench M5	SN Label
LCD Cooling Board	Touch Screen
LCD Module	Touch Screen Holder
LCD Protective Film	USB Flash Drive
LCD Shading Tape	USB-WiFi
LED Board	User Manual
LED Light Bar	Warranty Card
Limit Switch	HDMI Driver PCB
Lock Screw	LED Driver PCB
Main Switch	Ports PCB

F CONTACT US

FOR MORE INFORMATION

uniz.com/support

You could find extensive documentation and troubleshooting information to solve issues quickly on your own.

If you ever need help resolving an issue, please contact our Support Team.

support@uniz.com

STORE

To learn about other UNIZ products, including UNIZ resins, please visit our online store.

uniz.com/store

If you have additional questions about any UNIZ product, please email our Sales Team.

sales@uniz.com



Uniz Technology (Beijing) Co., Ltd



