UNIZ

USER MANUAL

APPLICABLE TO

NBEE

UNIZ TECHNOLOGY LLC

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: V1.3

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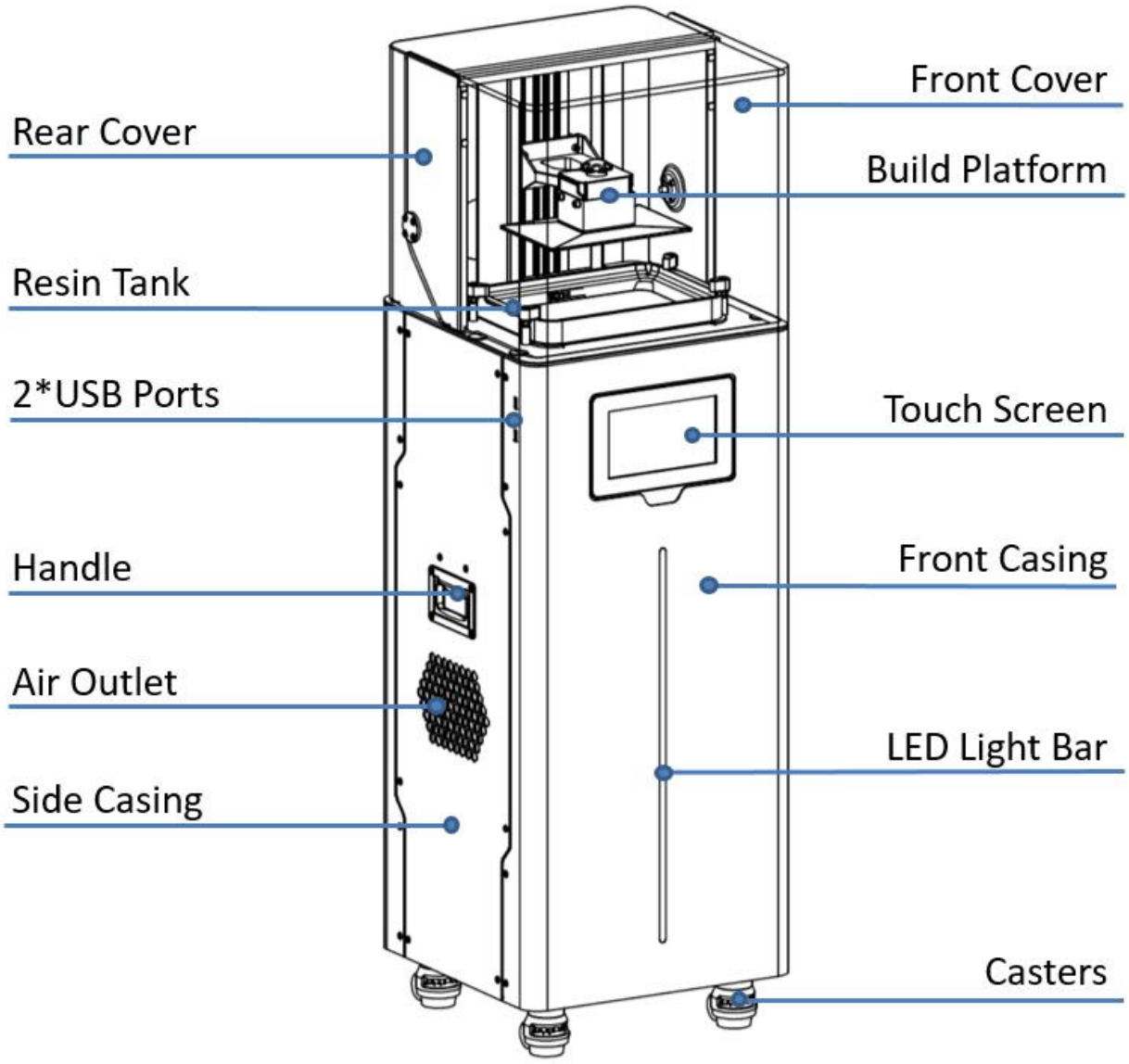
A NBEE 3D PRINTER

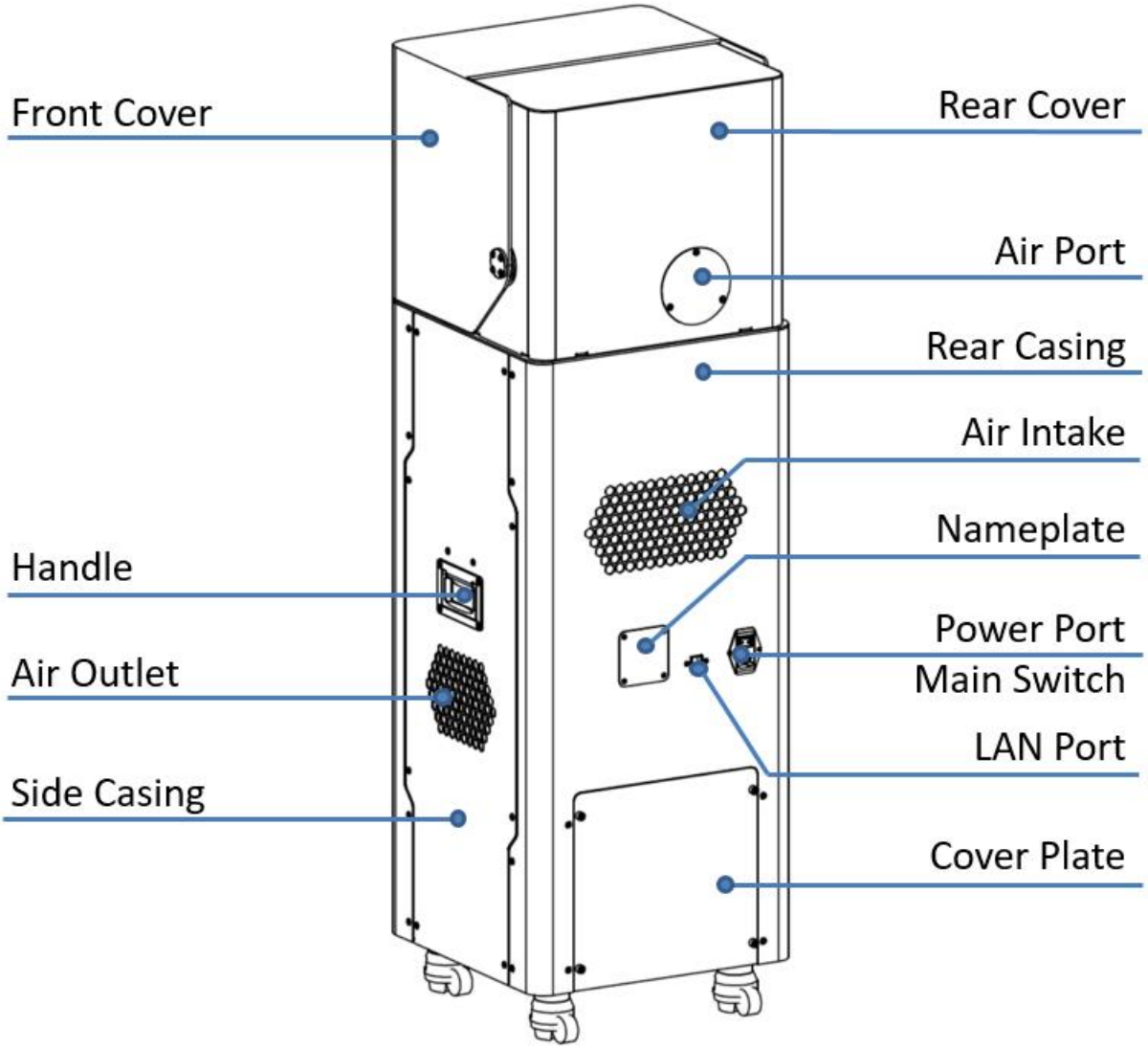
This user manual is designed to help you start your **NBEE** 3D printer experience. Learn everything about using your printer by following the instructions in this user manual and experience how easy it is to produce great quality prints.

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



FRONT


Front Cover
Rear Cover
Air Port
Rear Casing
Air Intake
Nameplate
Handle
Power Port
Air Outlet
Main Switch
LAN Port
Side Casing
Cover Plate

REAR

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 dental models 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)
	Power Requirement	110V 6A/220V 3A 60Hz/50Hz
	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
SOFTWARE	System Requirement	Windows 7 and up (64-bit only), Mac OS X 11.4 and up (64-bit only), 16GB RAM, OpenGL 2.1, Discrete Graphics
	Advanced Features	Built-in Advanced Model Repair, Dentist and Technician Friendly, Ultra Large File Support (1GB+)
	Compatible Format	STL, OBJ, AMF, 3MF
	Slice Format	zslr

* Maximum accuracy 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

Now your printer has arrived 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

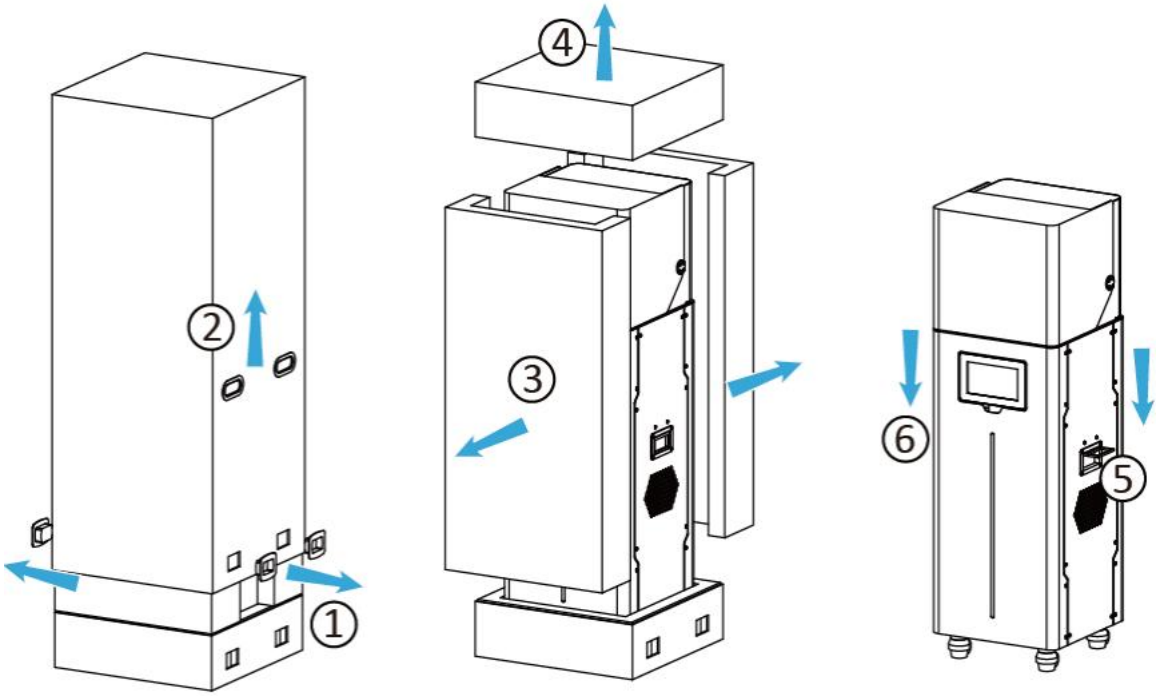
③ Remove front and rear foam.

④ Remove 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.

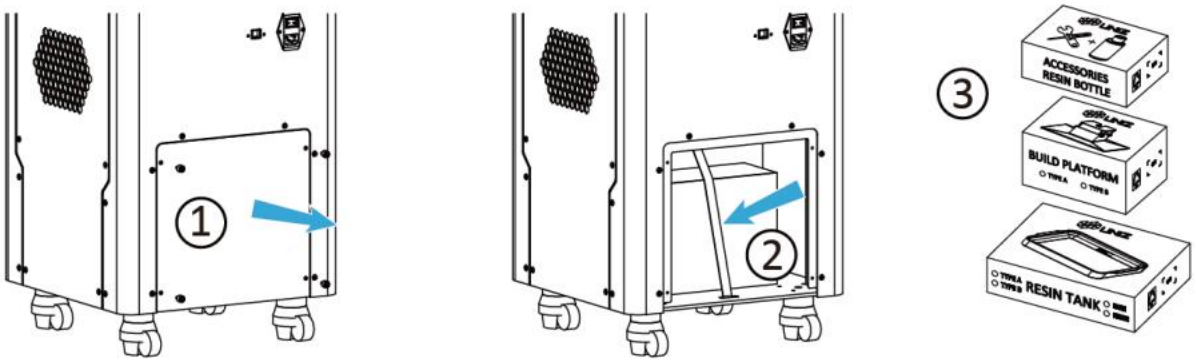


GET THE ACCESSORIES

① Remove the four screws on the back of the printer and the bottom rear 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, open https://www.uniz.com/software.

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

INSTALLATION

Windows

UNIZ DENTAL supports Windows 7 and above. Please use the following 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 use the following 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.

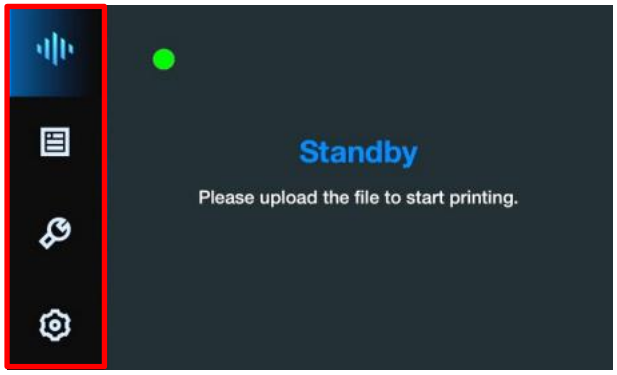
C INTERFACE INFORMATION

You may check device information, 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.

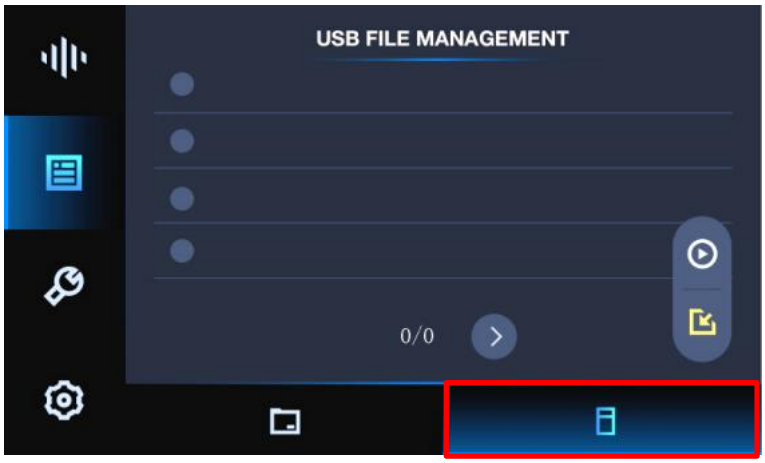
- Solid green means the printer is ready for printing.
- Blinking green means the print is in progress.
- Blinking red means the print program is stopping and the platform is moving upwards.

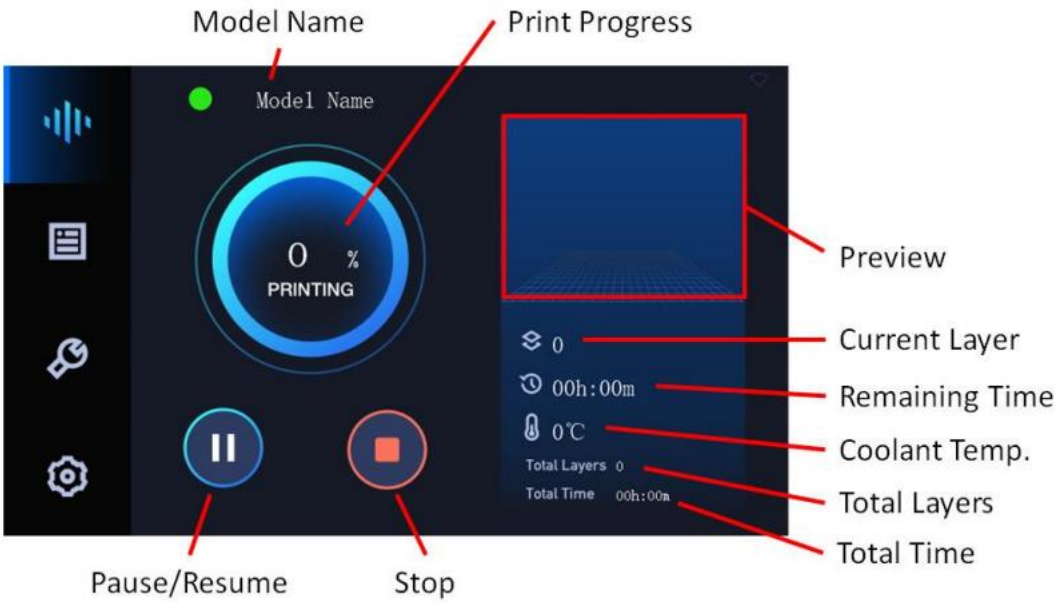
Note: Some functions have 1~3 pages to introduce the details. Please read carefully and follow the instructions.

PRINT

PRINT WITH FLASH DISK

NBEE 3D 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 to the USB port on the left of the printer, then choose the slice you want to print and click Start button . The printer will step into normal printing program.

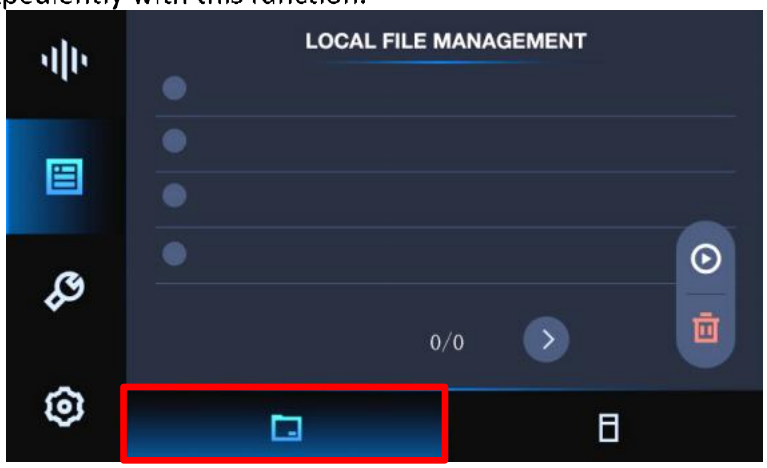




In this interface, you may check the preview and printing parameters of the print. Also you may pause/resume or stop the printing program by click the buttons on bottom.
You may also select a slice file and use the **COPY** function to copy the file to the printer.

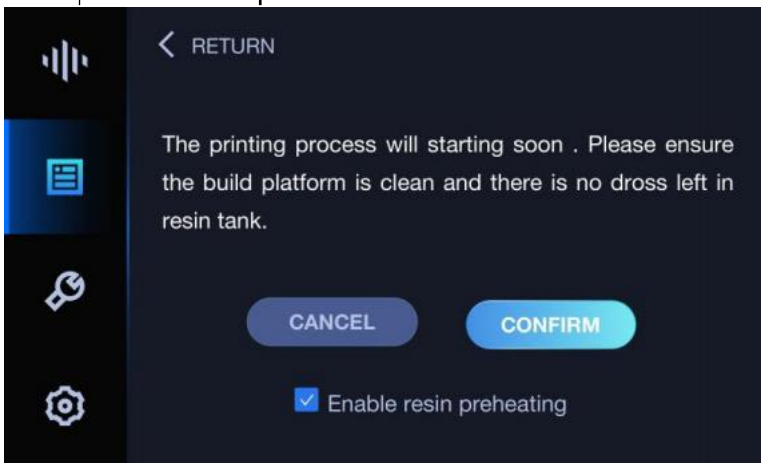
PRINT LOCAL FILES

The files printed on the printer will be shown in this interface. You may choose and print a model second time very expediently with this function.

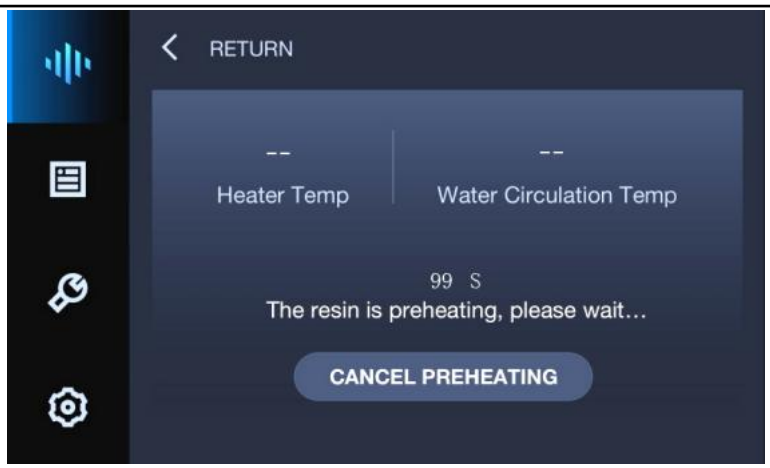


You may also select a slice file and use **DELETE** to delete it

To make sure the printer works properly under low temperature conditions, the system will ask you whether to enable the preheating feature. Note that preheating takes extra time, and it is recommended to use the printer in temperature controlled environment.



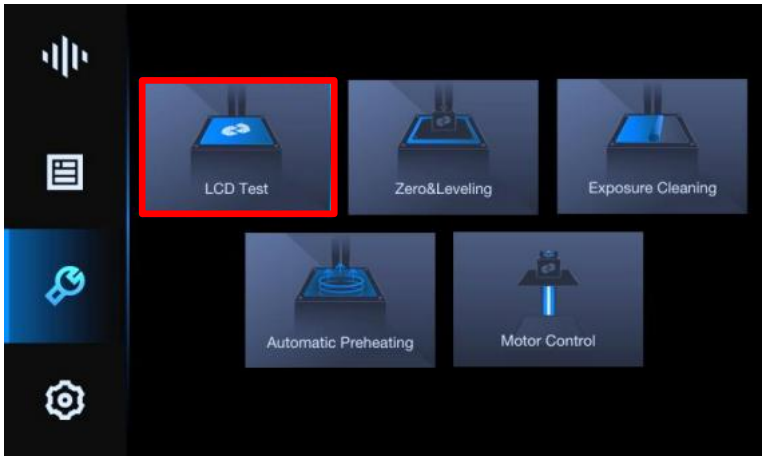
The printer will measure the **coolant temperature**, if it is **below 25°C**, then the system will start preheating until **25°C and hold for 100s** or until you click **CANCEL PREHEATING**, then it will stop heating and start printing. If coolant temperature is **greater than 25°C**, the system will start preheating **and hold for 100s**, then stop heating and printing will start.



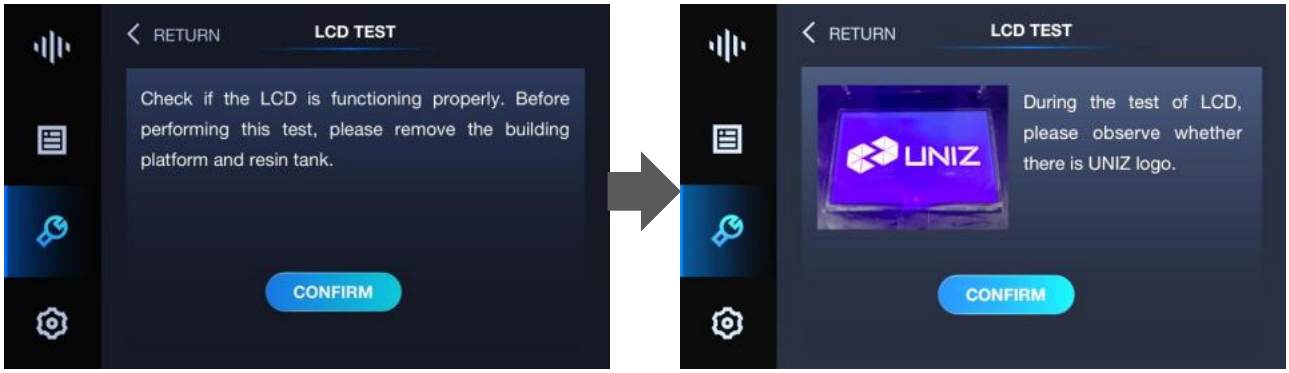
TOOLS

LCD TEST

This function is used to help users to confirm the LCD works normally.

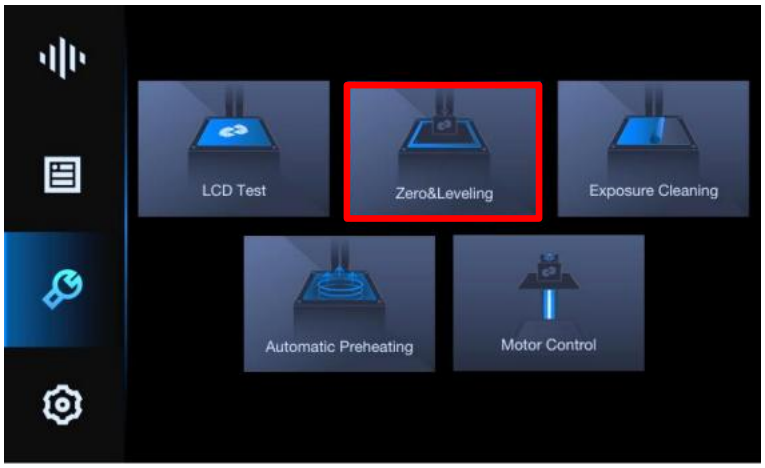


Click **LCD TEST** you will see the UNIZ Logo appears on the LCD screen.



RESET Z-AXIS ZERO POSITION AND LEVELING BUILD PLATFORM

If you change for a new Build Platform or the printing model may 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 in the accessory box sent with your printer.

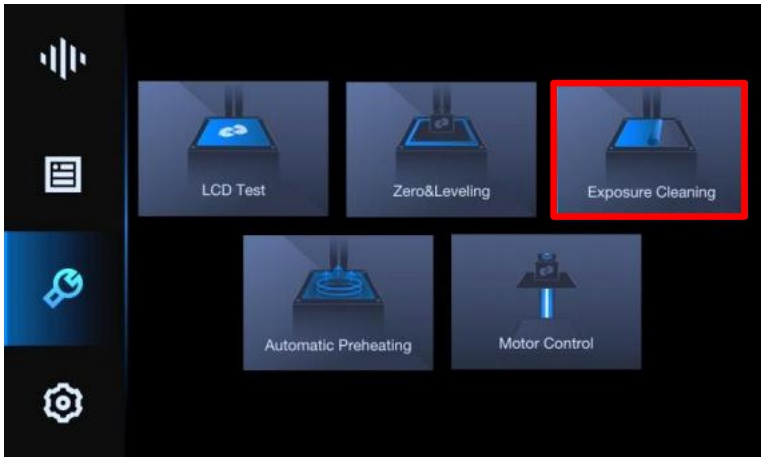


After leveling, please put the paper under Build Platform and reset again. It finishes if you may feel the frictional force between Platform and paper.

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

EXPOSURE CLEANING

When a failed print occurs and there are some residues left in the bottom of Resin Tank, you need to exposure to clean it. After that, please wear nitrile gloves and take the solidified piece out.



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

Automatic Preheating

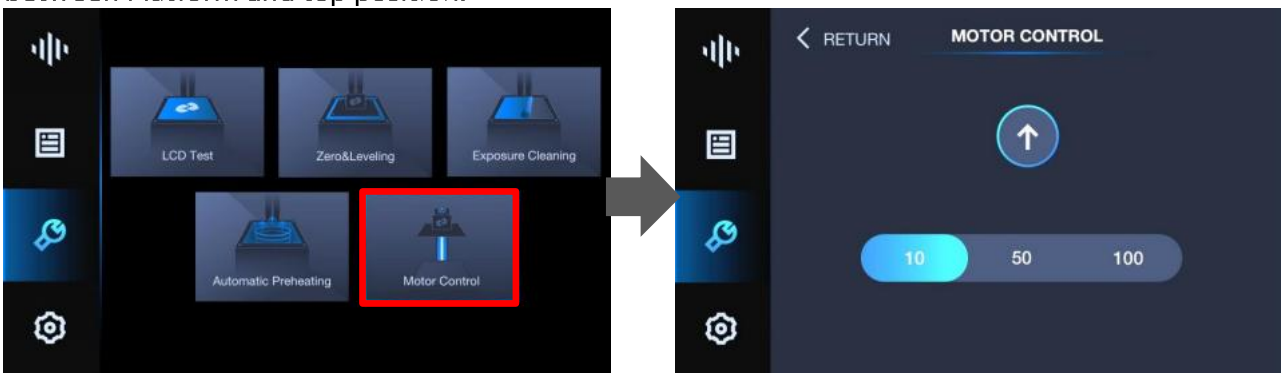
To keep the printer be able to print at any time, you may enable the auto preheating feature and keep the resin at 25°C.

1. Auto preheating is by default disabled, and its status will depend on your last use.
2. If coolant temperature is below 25°C, the coolant will be kept at 25°C~30°C by heater via LCD liquid circulation system.
3. Once enabled, the printer will automatically heat up on next start up, saving preparation time.
4. Ambient Temp and LED Light Board Temp are for your reference only, preheating functions do not involve these parameters.

Note: only enable this when there is resin in the resin tank.

MOTOR CONTROL

If you want to control Build Platform to move upwards, choose a distance (10/50/100mm) first, and then click the arrow. Please do not click too fast and take an eye to watch the distance between Platform and top position.

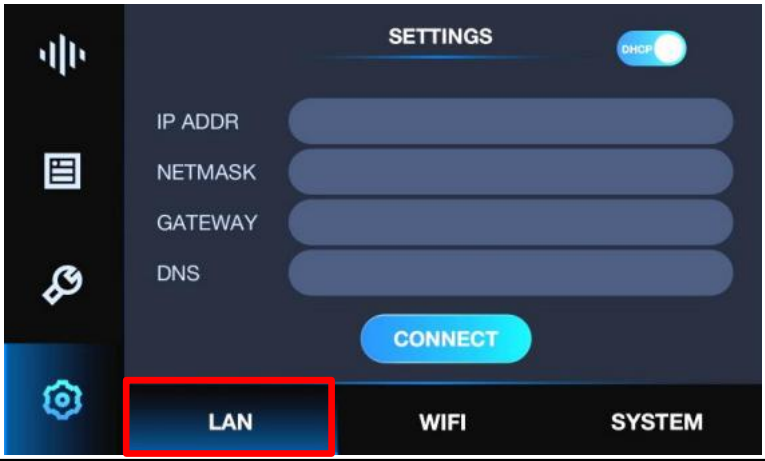


SETTINGS

SET LAN

You could connect the printer with your router via Ethernet cable. Go the SETTINGS menu. Click **LAN** button. Set to AUTO mode on. The printer will get IP address automatically. Click **CONNECT**.

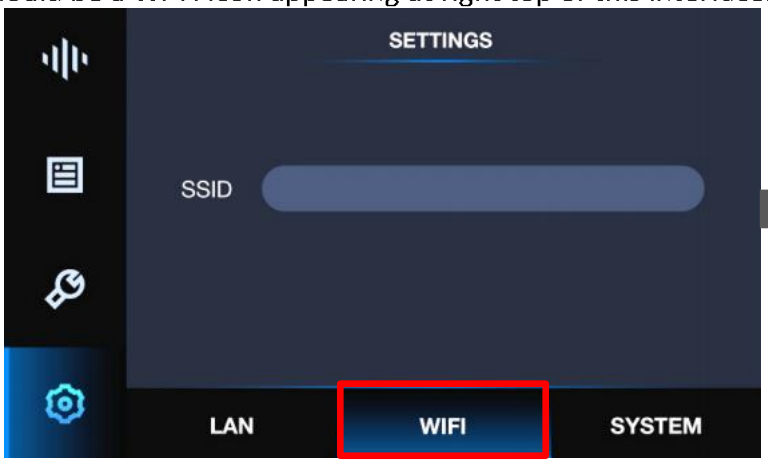
If you set AUTO mode off, you need to type IP address, Netmask, Gateway, DNS manually. Then click **CONNECT**. When you could see the Ethernet icon at right top of interface, it means the printer in connected with network.

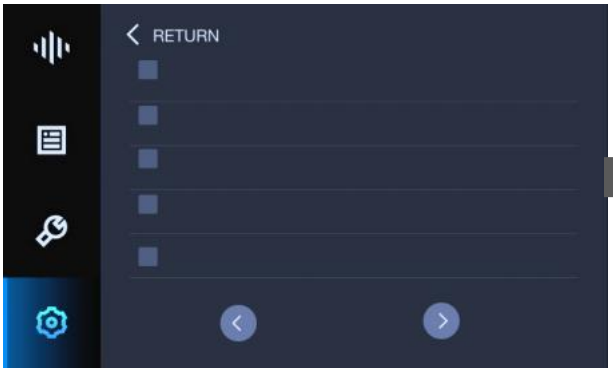


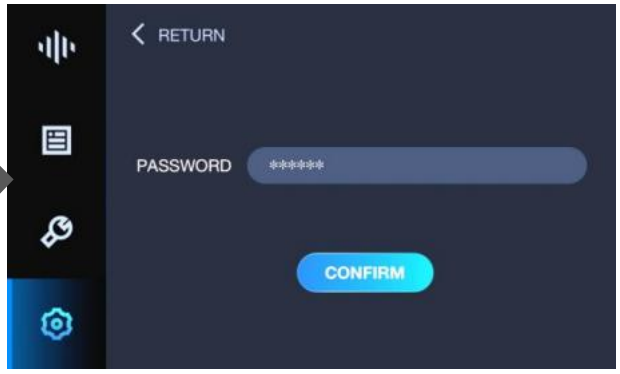
SET WIFI

Please insert the USB-WiFi sent with the printer into the USB port on the left side of 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 password. Click **CONFIRM**. When you see the IP address is shown, it means the printer is connected well with Wi-Fi network. There should be a Wi-Fi icon appearing at right top of this interface.



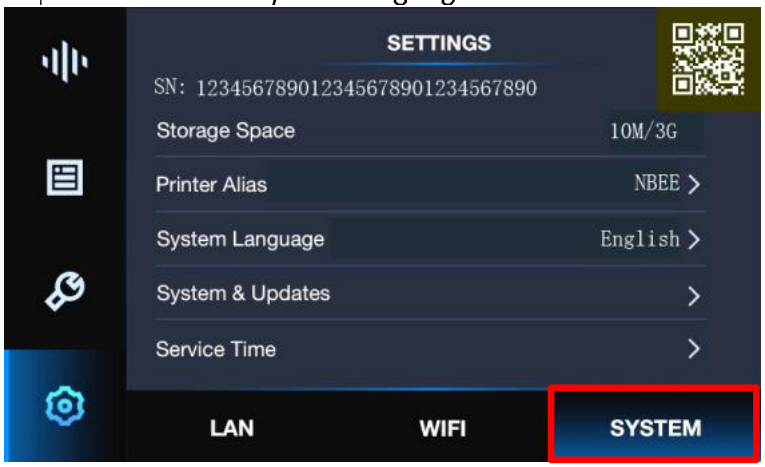




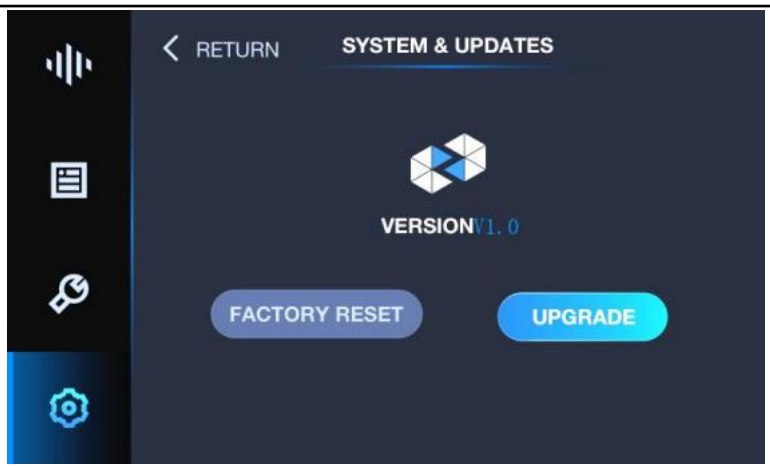
SYSTEM

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**.

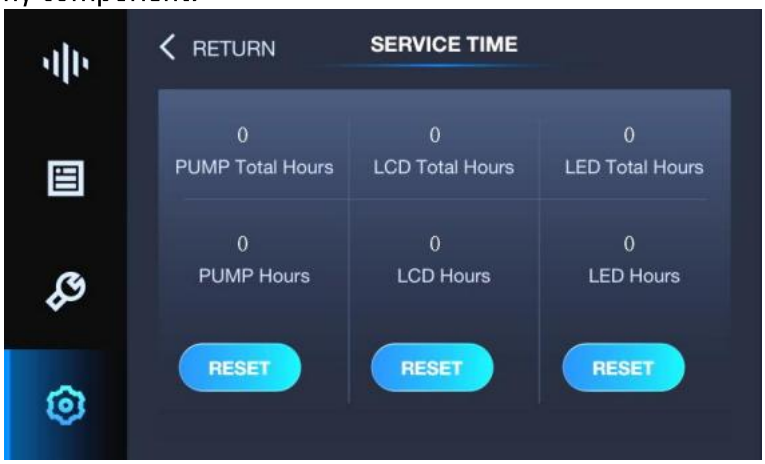


Note: Factory Reset only resets LAN and alias, but will not modify light calibration or firmware version, local files, and the work time of LCD/LED/PUMP.

4. Click **Service Time** to access the work time record, here you may check the total work time of three main component 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 current part work time, and you should reset the second line timer once you replaced any component.



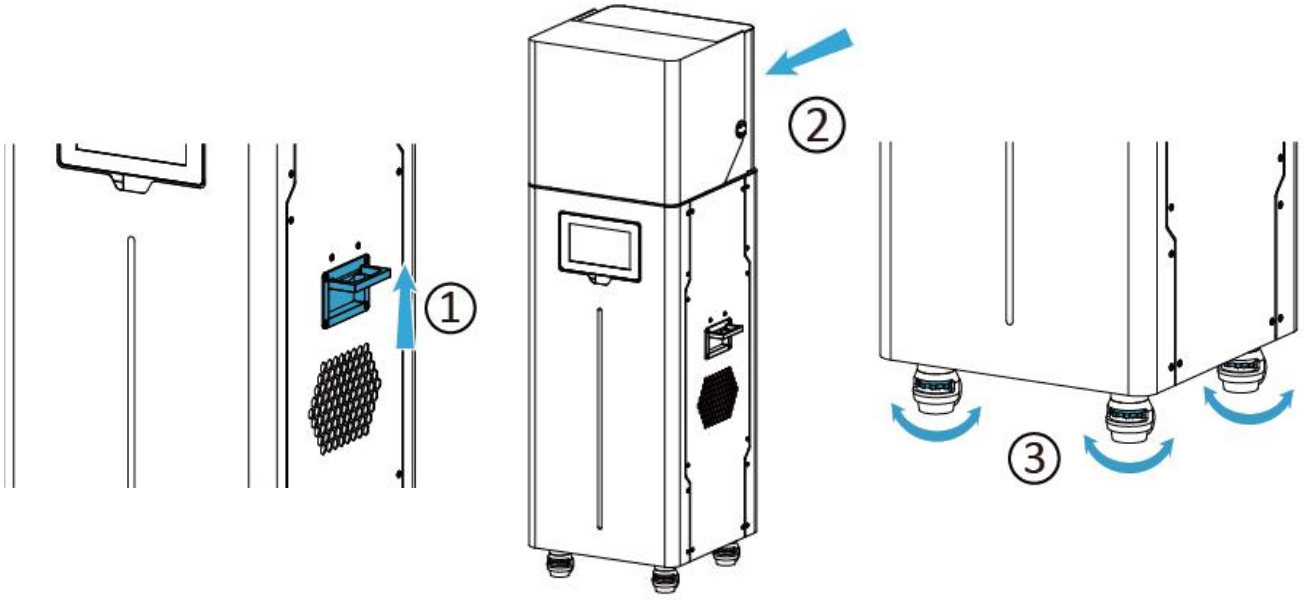
D USAGE AND MAINTENANCE

In order to have a great working 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.

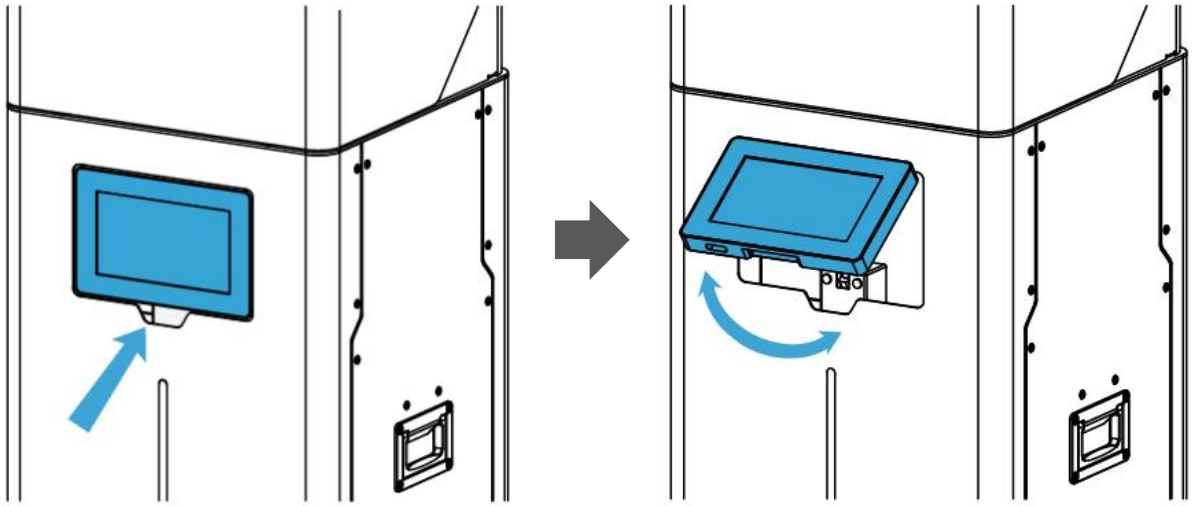
PRINTER PLACEMENT AND LEVELING

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

To level the printer, turn the leveling screw on the four wheels to extend out the leveling foot 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.

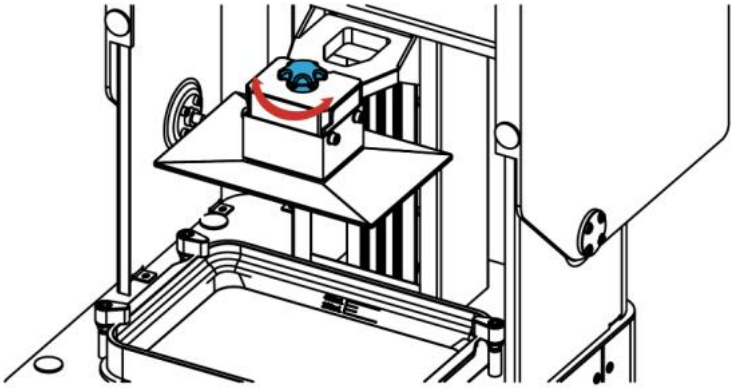


BUILD PLATFORM

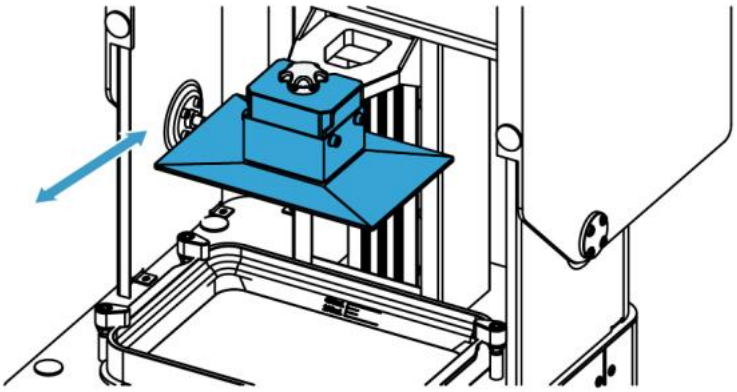
The Build Platform is the platform where the first layer of the model burns in-to, its levelness and roughness are crucial to successful prints.

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.

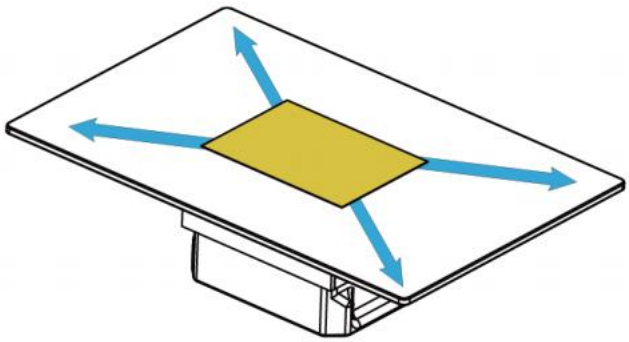


SANDING BUILD PLATFORM

After the platform has been used for a long time, its surface will become smooth which leads to poor model adhesion and increases the printing failure rate. To deal with this problem, users need to sand the platform.

1. Clean the platform surface with alcohol.

2. Grind the surface into a grid shape with the sandpaper delivered with the machine.

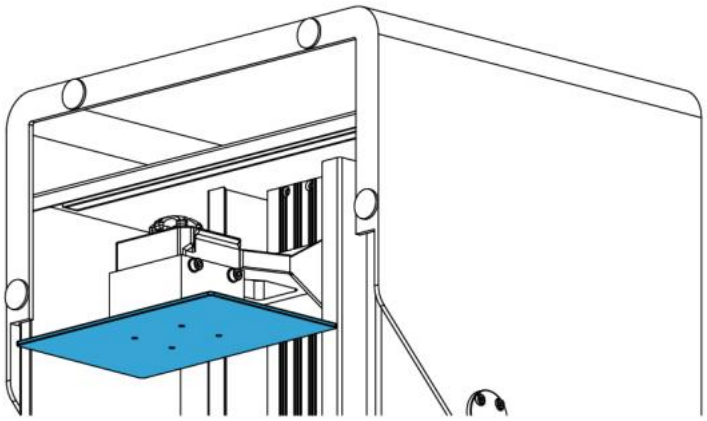


3. Clean the platform with alcohol and a soft cloth again to make sure there is no residue left.

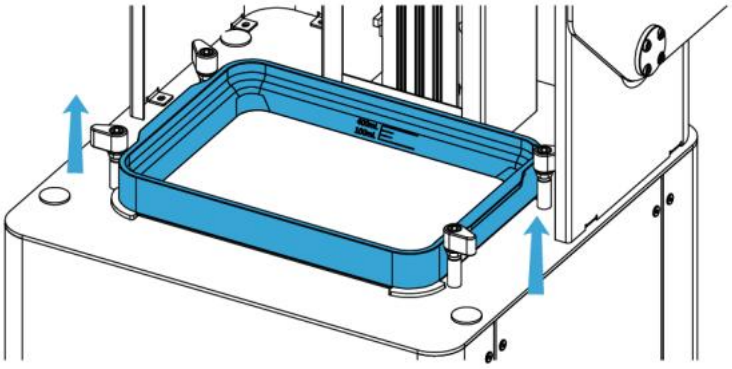
RESET Z-axis ZERO POSITION AND LEVELING BUILD PLATFORM

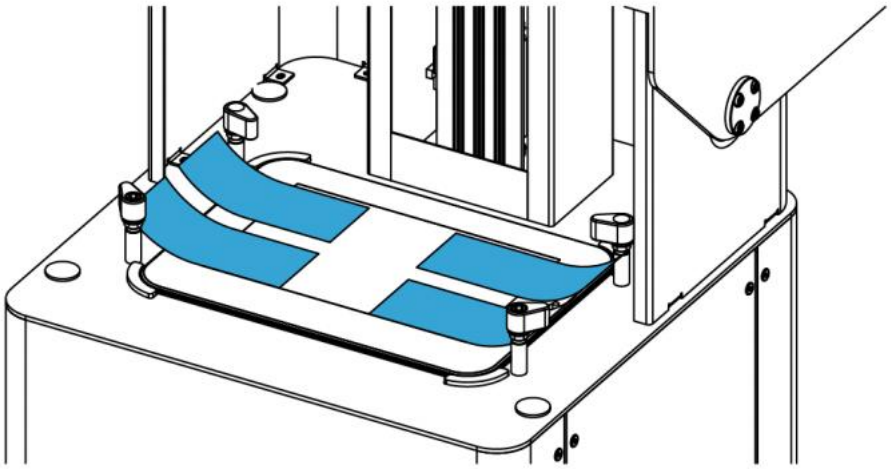
1. Prepare the four paper slips and the Hexagon Wrench in the accessory box sent with printer.

2. Make sure the bottom of Platform is clean and dry.

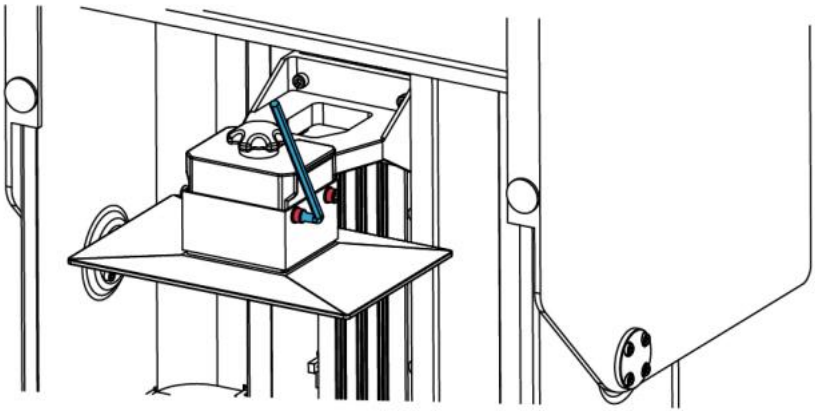


3. Turn the four lock blocks and take Resin Tank off and then put four pieces of paper slips at the four corners of LCD screen.



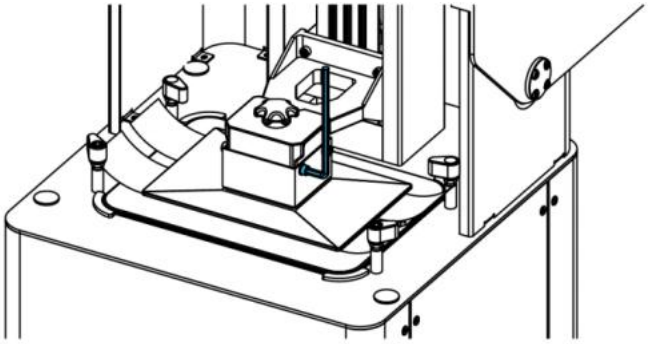


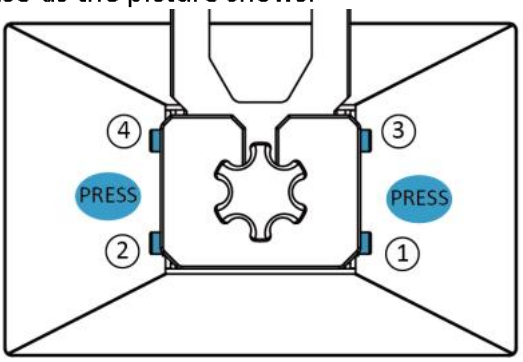
4. Loosen the four screws with Hexagon Wrench by turning counter-clockwise.



5. Click **TOOLS/ZERO&LEVELING**, then read the introduction and click **CONFIRM** twice to start.

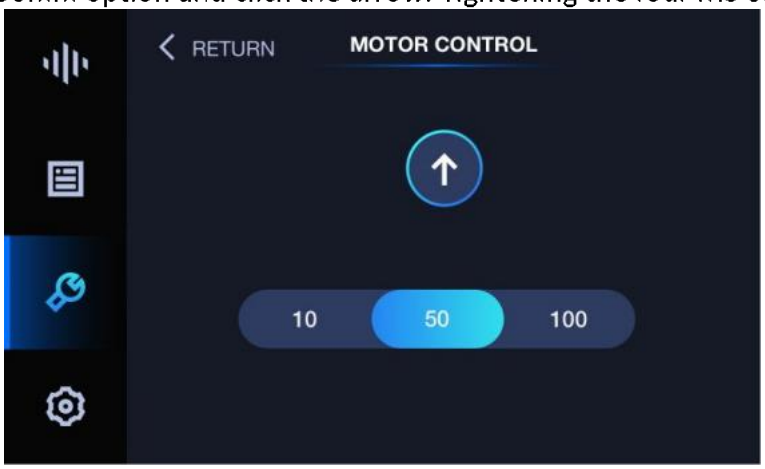
6. After Build Platform moves to the lowest position and stops, press the plate down and tighten the four screws with Hexagon Wrench by turning clockwise-as the picture shows.



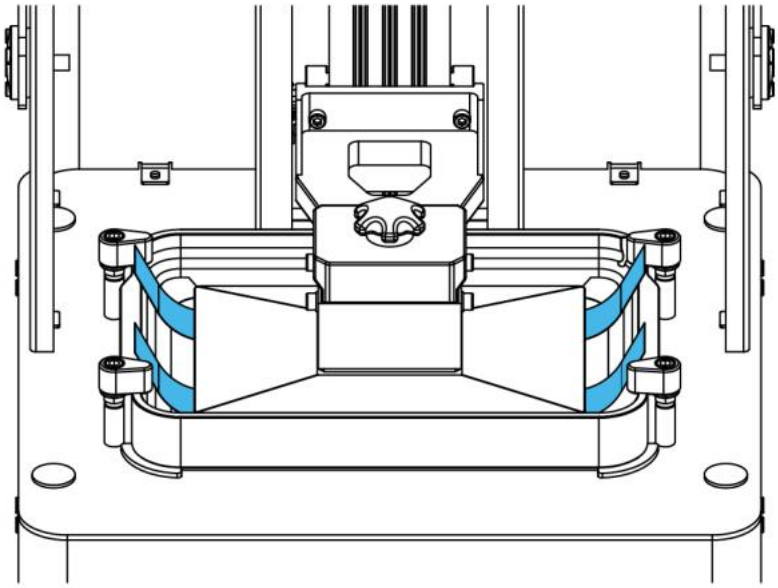


7. Click **CONFIRM** to finish.

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



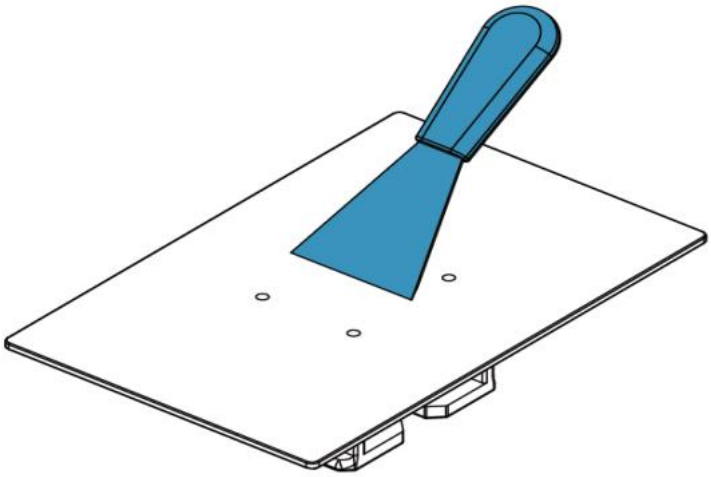
9. Install the Resin Tank and repeat step 5. Wait until the Platform stops, Try to pull out paper from any directions. If you can feel the frictional force between Platform and paper, that means it is zeroed and leveled successfully.



CLEAN BUILD PLATFORM

When printing fails, there may be residues on the platform which needs to be cleaned in time to avoid damage to the screen.

Please use the scraper delivered with the printer to remove the residues (please dispose of solidified materials and waste resin properly).



Notes:1. After removal of model, please clean Build Platform thoroughly, any leftover bits may damage the Resin Tank or LCD.

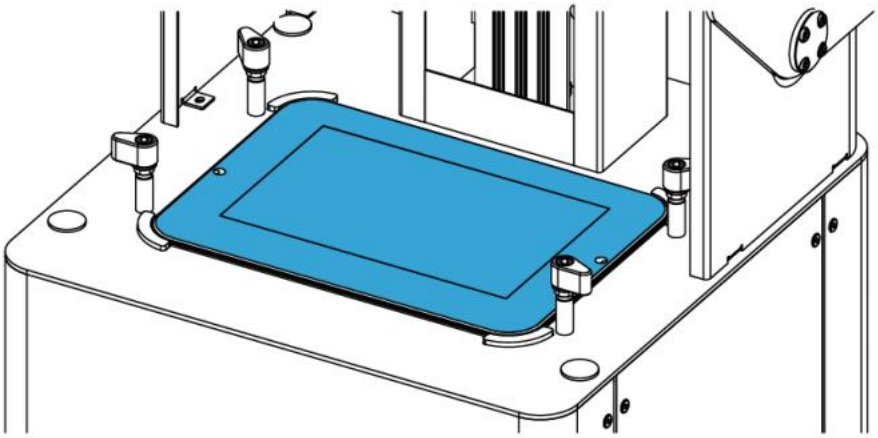
2. Please be careful and **do not hurt yourself** (Scraper is sharp).

RESIN TANK

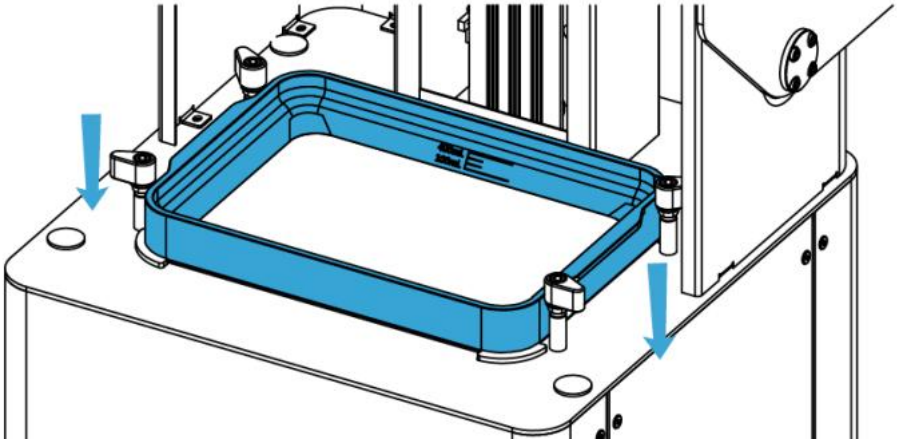
The Resin Tank is a crucial part for a successful print job, and requires constant maintenance and regular replacement.

INSTALLATION

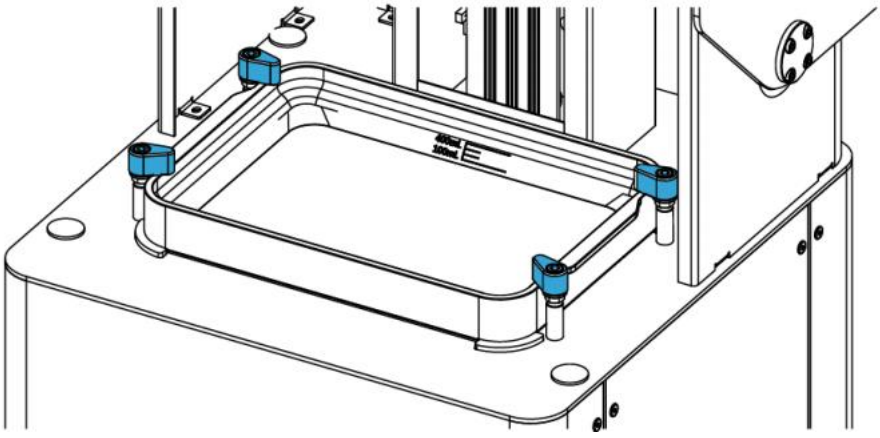
1. Make sure the LCD is clean and dry.



2. Put Resin Tank onto the LCD screen.



3. Turn the four lock blocks to lock the Resin Tank.



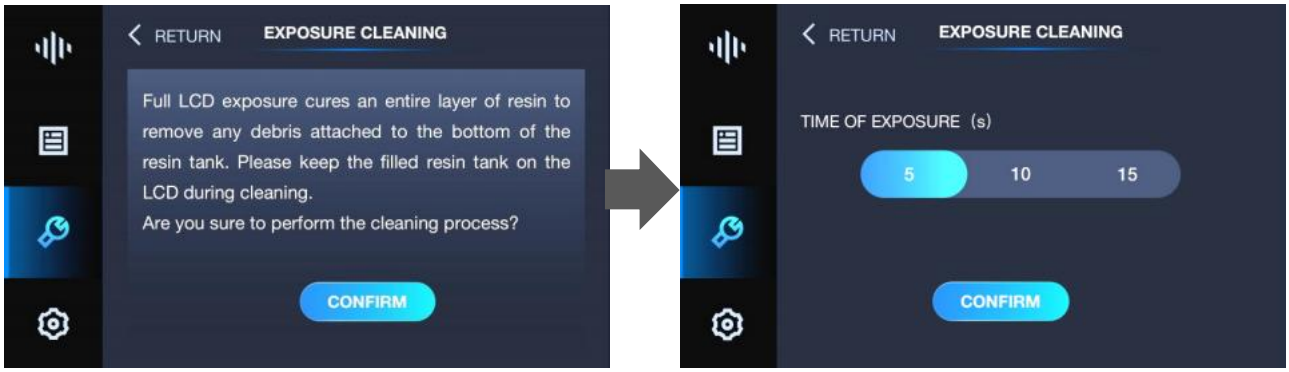
4. Make sure the Resin Tank is stably locked to get best performance.

CLEANING RESIN TANK

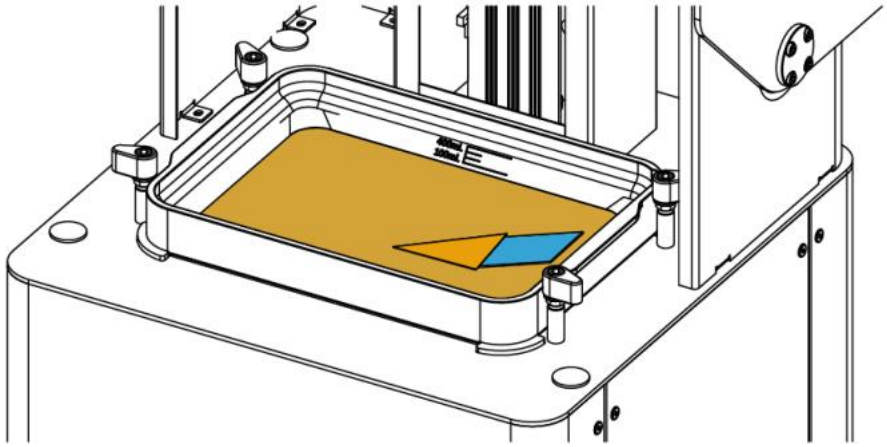
When printing fails, there may be residues on the platform and in the Resin Tank which needs to be cleaned in time to avoid damage to the LCD screen.

When residues are small in number and big in volume, use the cards delivered with the machine to clean; when residues are big in number and small in volume, it is recommended to use the Full Screen Clean function as following.

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



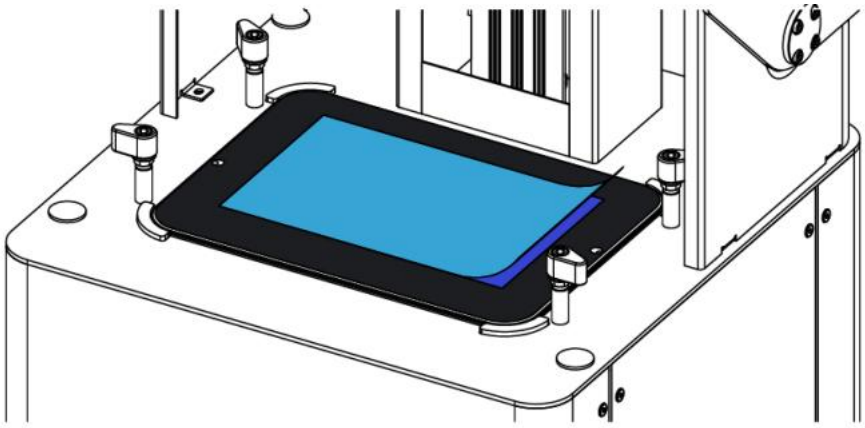
2. After the exposure is done, gently scrape off the whole piece of cured resin from Tank with a paper card. **DO NOT** use the scraper, since this may damage the film and cause a severe leak. Repeat it if necessary.



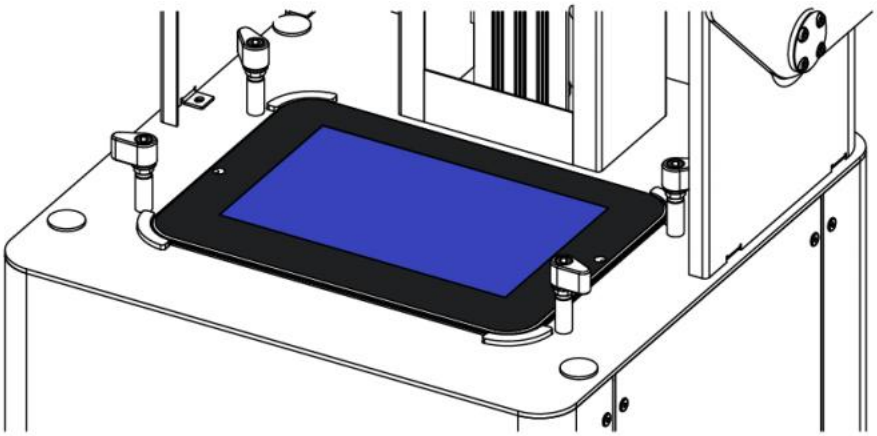
CHANGE LCD PROTECTIVE FILM

There is a protective film on the LCD. If the film is scratched or dirty with cured resin, you should change with a new protective film. Please keep one protective film on the LCD or the resin cured will left permanent damage to LCD.

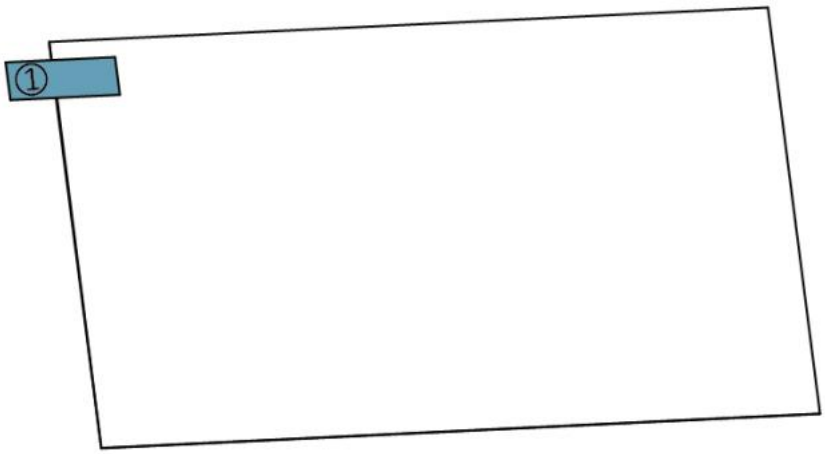
1. Peel off the old film.



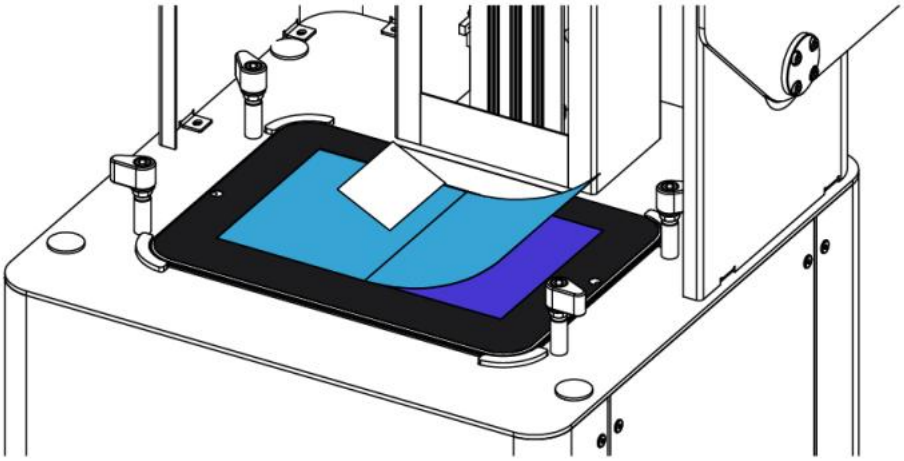
2. Clean the surface of LCD and make sure there is no dust and residue left.



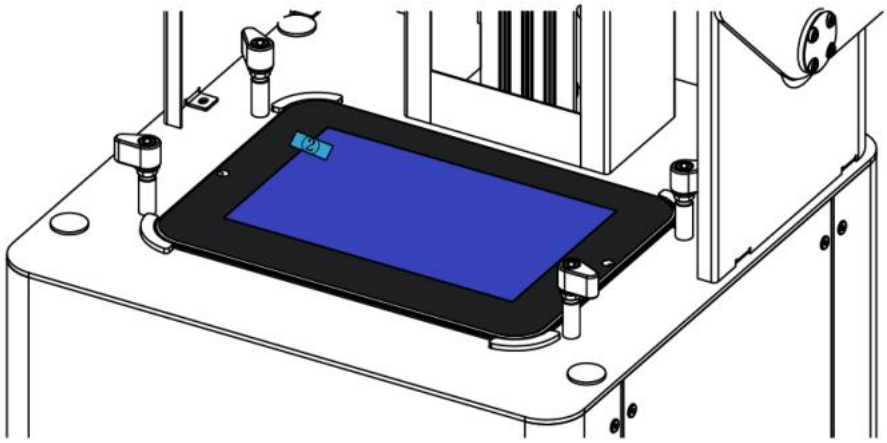
3. Take out a new film and peel off the cover film marked '①'.



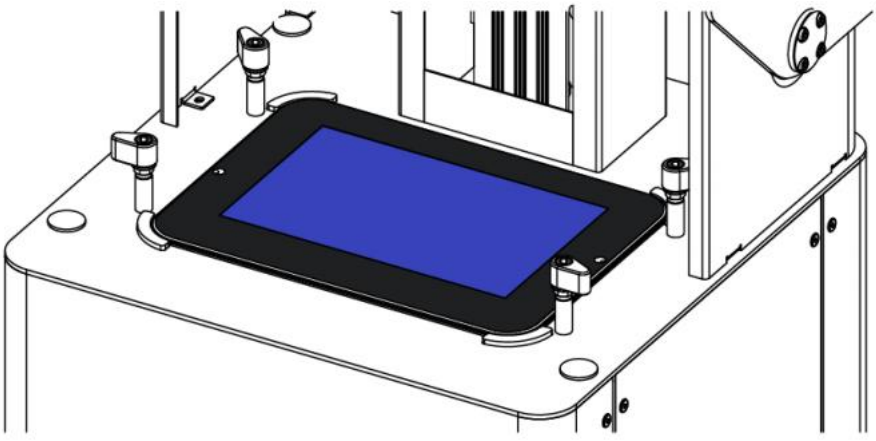
4. Using a card and cloth to paste the film onto the surface of LCD.



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



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



SUGGESTION

1. After taking off resin tank, please place it on a clean table to avoid scratch.

2. When you slice a file by UNIZ Dental software, we recommend saving the sliced file to a solid state drive (SSD) for faster storage speed.

3. Please check whether there is dross left on Build Platform or at bottom of resin tank before each printing. If there is dross left on Build Platform, clean it with a scraper. If there is dross left in resin tank, you could use Exposure Cleaning function to cure and clean.

4. Please well mix the resin in 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 Resin Tank after each print.

8. Please clean resin dropped incidentally on 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. Do Not let child close or operate the printer to avoid harm to child or damage to printer.

13. Please do NOT move printer when there is resin left in resin tank to avoid spilling.

14. Please do NOT gaze LCD screen when doing test print without Resin Tank and Build Platform.

15. Please do NOT leave resin in resin tank for more than 24 hours if not print.

16. Please do NOT connect the printer with your computer via USB. The USB ports only support USB Flash Drive and USB Wi-Fi.

E CONTACT US

FOR MORE INFORMATION

uniz.com/support

Our website has extensive documentation and troubleshooting information to solve issues quickly on your own.

support@uniz.com

If you ever need help resolving an issue, please send an email to the address above to contact our Support Team.

STORE

uniz.com/store

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

sales@uniz.com

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

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