

User Manual for **SONIC MINI** **4K**

Thank you for Choosing your Phrozen 3D Printer !

Dear Phrozen's User,
Glad you've joined us. For the best experience, please read through the Phrozen manual and follow step-by-step before you start.

Feel free to contact us if you have any questions.
Email: support@phrozen3d.com

Multi-language manuals and related software are available on our official website at phrozen3d.com/page/download



-  Facebook: @Phrozen3DP
-  Twitter: @PhrozenDLP
-  Instagram: @Phrozen3DP
-  Youtube: @Phrozen3DPrinter

Chinese version starts from Page 18 ▶▶▶

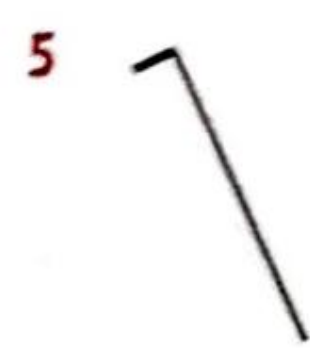
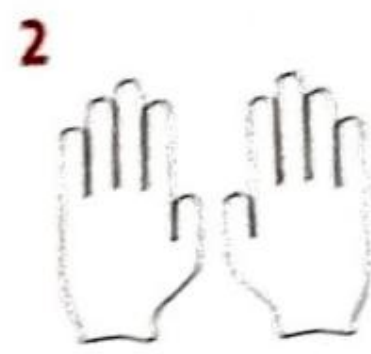
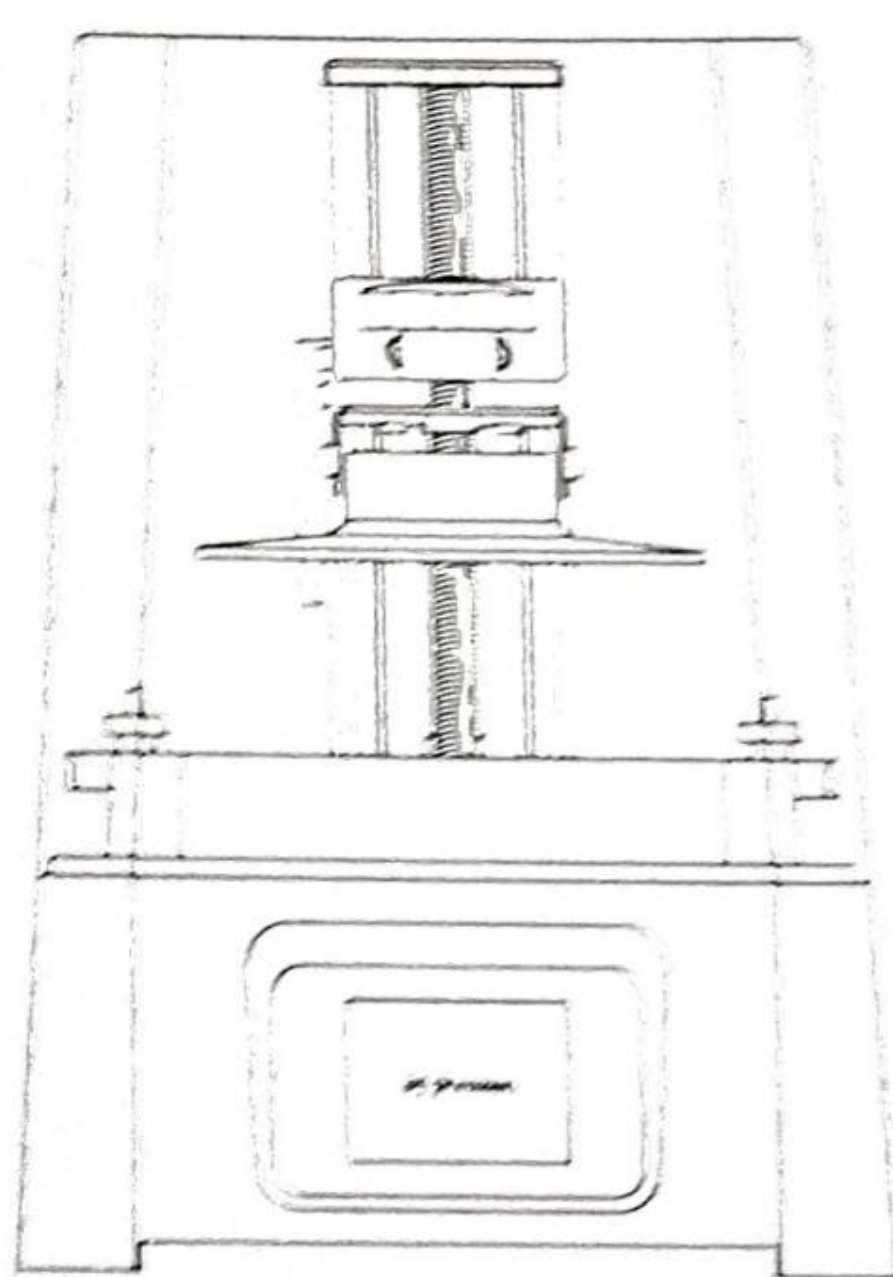
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Key Notes Before We Start !

- ▶ Keep printer & resin away from kids and direct sunlight exposure. Also make sure to print in a cool, dry, and ventilated environment.
- ▶ Every printer is pre-calibrated. However, we still recommend that you calibrate when you use the printer for the first time.
- ▶ Before starting every print, please clean the resin vat and refill the resin to avoid potential debris and pigment separation which may affect your printer / print.
- ▶ Fill the resin vat approximately 1/3 of the way full. DO NOT OVERFILL.
- ▶ Please wear PPE (Personal Protective Equipment) like mask, goggles, and long sleeves when operating printers and resins.
- ▶ Please clean the model with 95% Alcohol, IPA, or special detergent like Phrozen Wash.
- ▶ Be careful when using scraper to remove the print from the build platform. It might cut your hand if it is used carelessly.
- ▶ Please DO NOT dis-assemble printer by yourself. It may cause your warranty to be expired.

What You Have In The Box



SONIC
MINI 4k

❶ User Manual

❷ Allen Wrench

❸ Build Platform

❹ Gloves

❺ Plastic Funnel

❻ Backup Screws

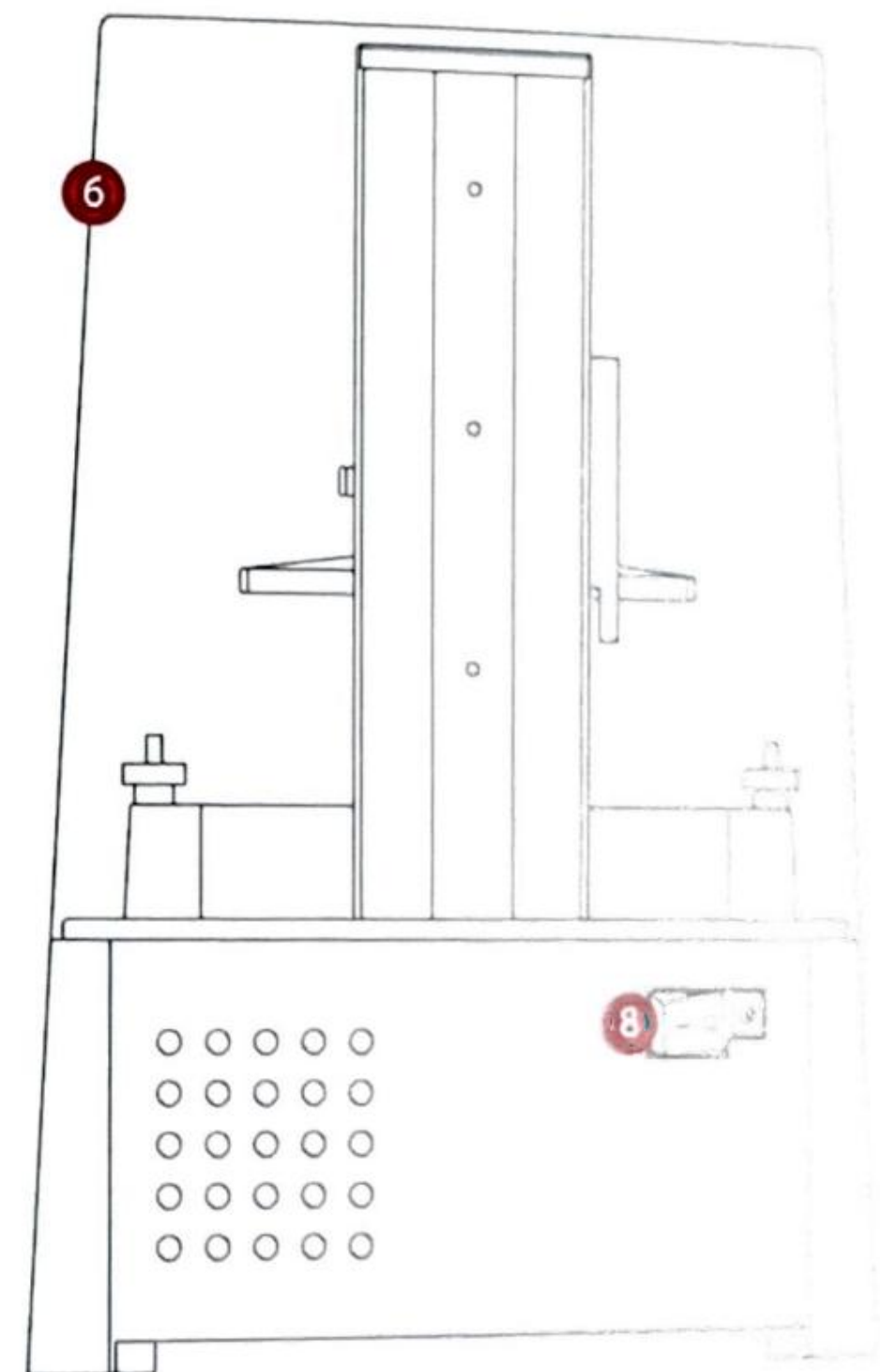
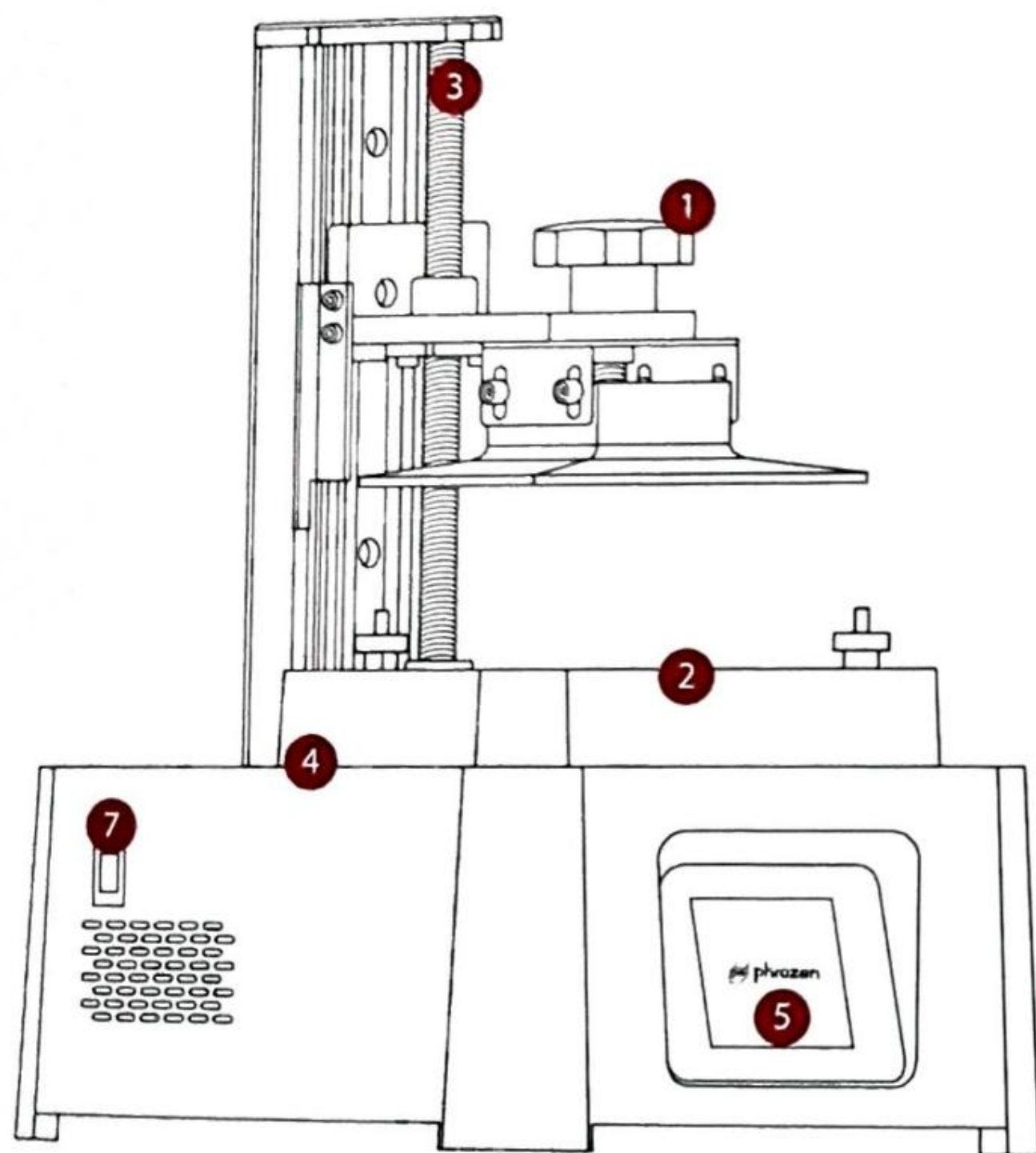
❼ Scrapers

❽ USB

❹ Adaptor

❺ Foot Pad

Printer Parts



- | | | | |
|------------------|----------------|------------|----------------|
| 1 Build Platform | 2 Resin Vat | 3 Z-Axis | 4 LCD |
| 5 Touch Panel | 6 Plastic Case | 7 USB Port | 8 Power Switch |

Sonic Mini 4k Technical Specs

System: Phrozen OS
Operation: 2.8 inch Touch Panel
Slicer Software: ChiTu Box V1.6.5
Connectivity: USB

Operation

Technology: Resin 3D Printer - LCD Type
Light Source: 405nm ParaLED® Matrix 2.0
XY Resolution: 0.035 mm
Layer Thickness: 0.01 - 0.30 mm
Printing Speed: 80 mm / hr
Power Requirement: AC100-240V~50/60Hz

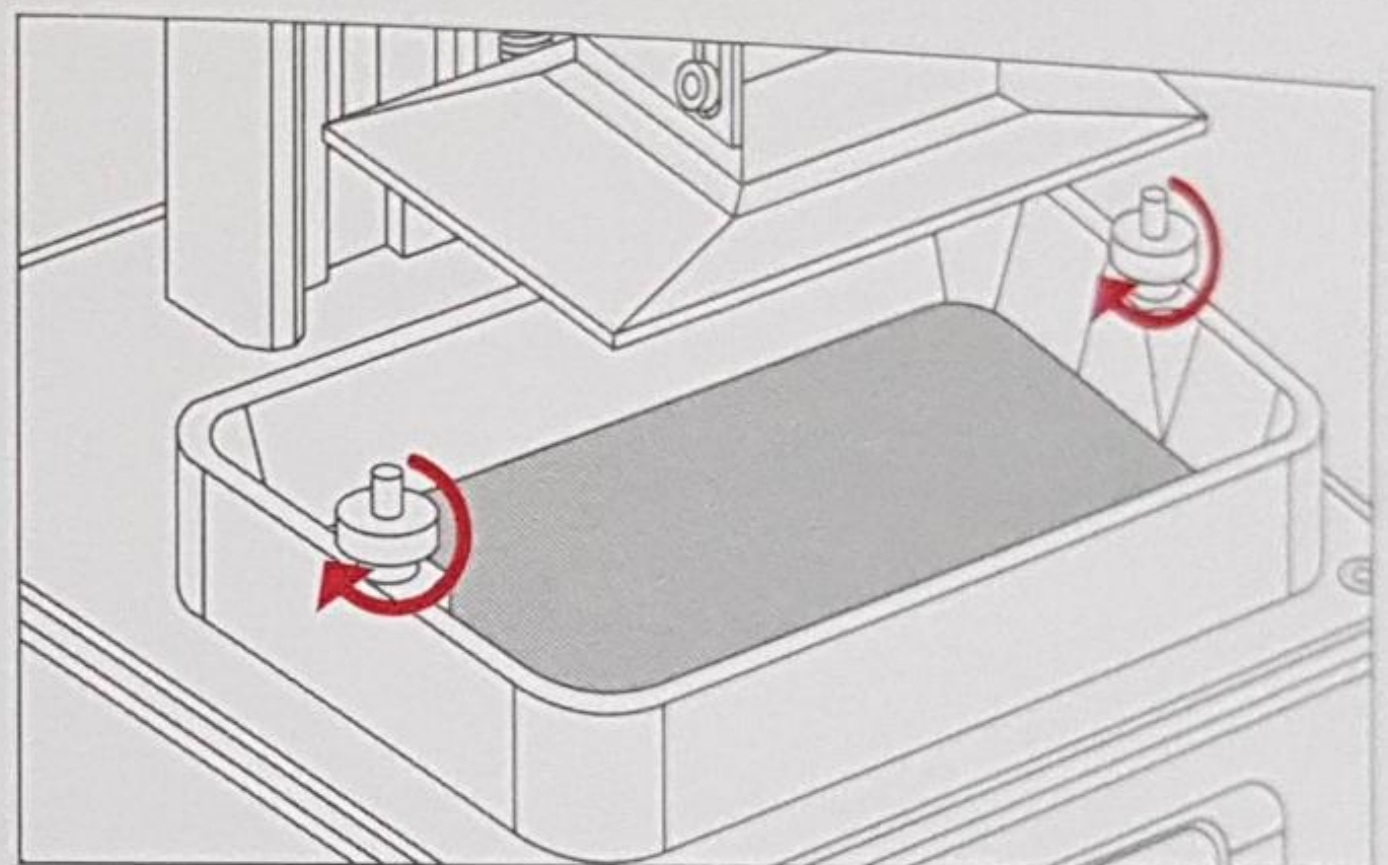
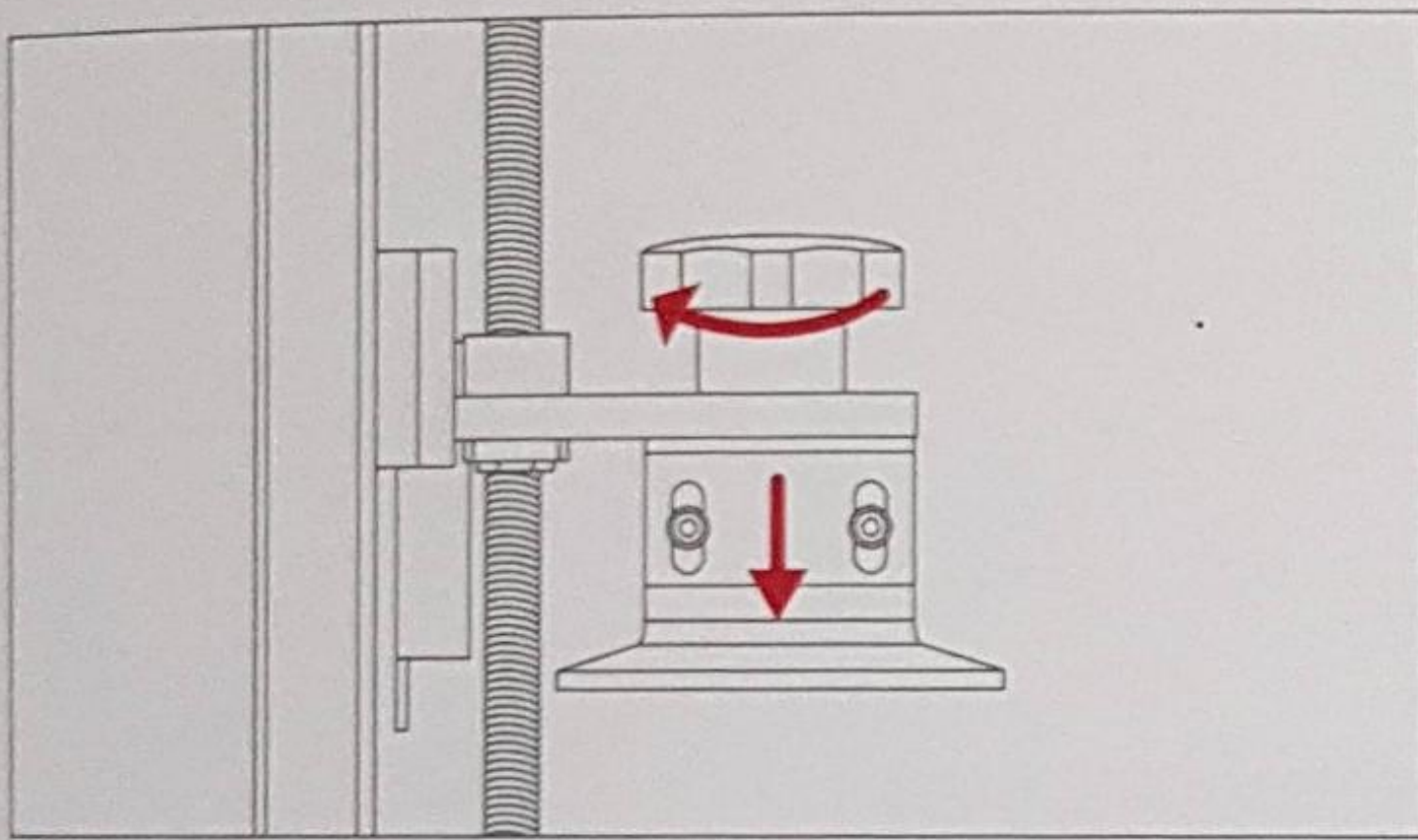
Printing Specification

Printer Size: L9.8 x W9.8 x H12.9 in
Printing Volume: L5.2 x W2.9 x H5.1 in
Printer Weight: 5 kg

Hardware Specification

Calibrate & Test

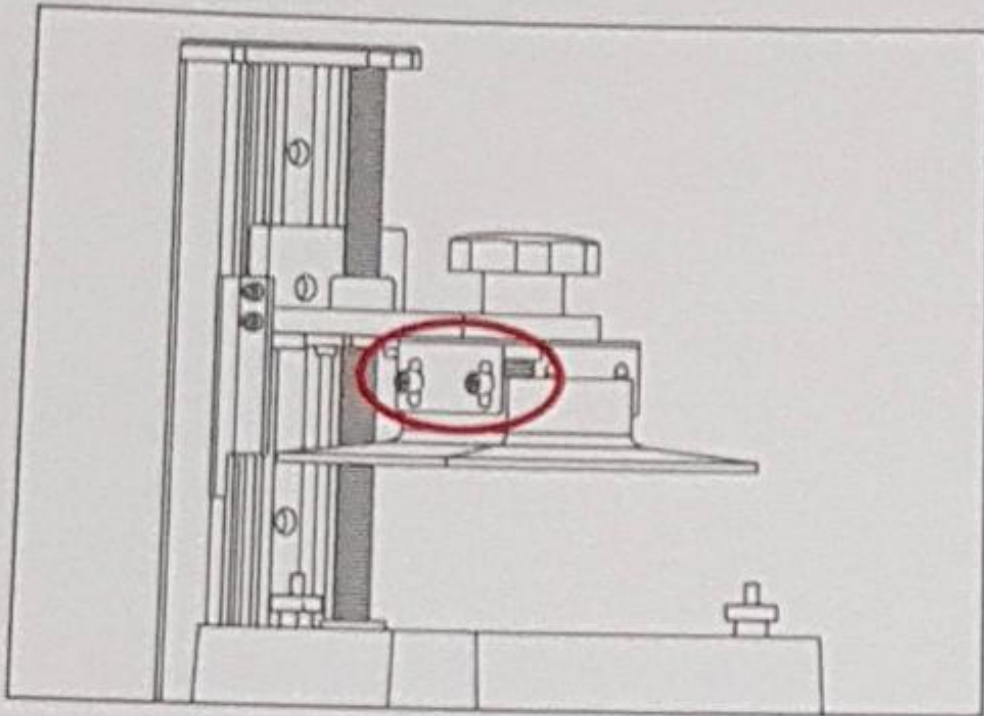
- 1 Take out the printer from the box, plug in the power cord, and turn on the power switch.
- 2 Screw the build platform and resin vat on the printer, and tighten them up.



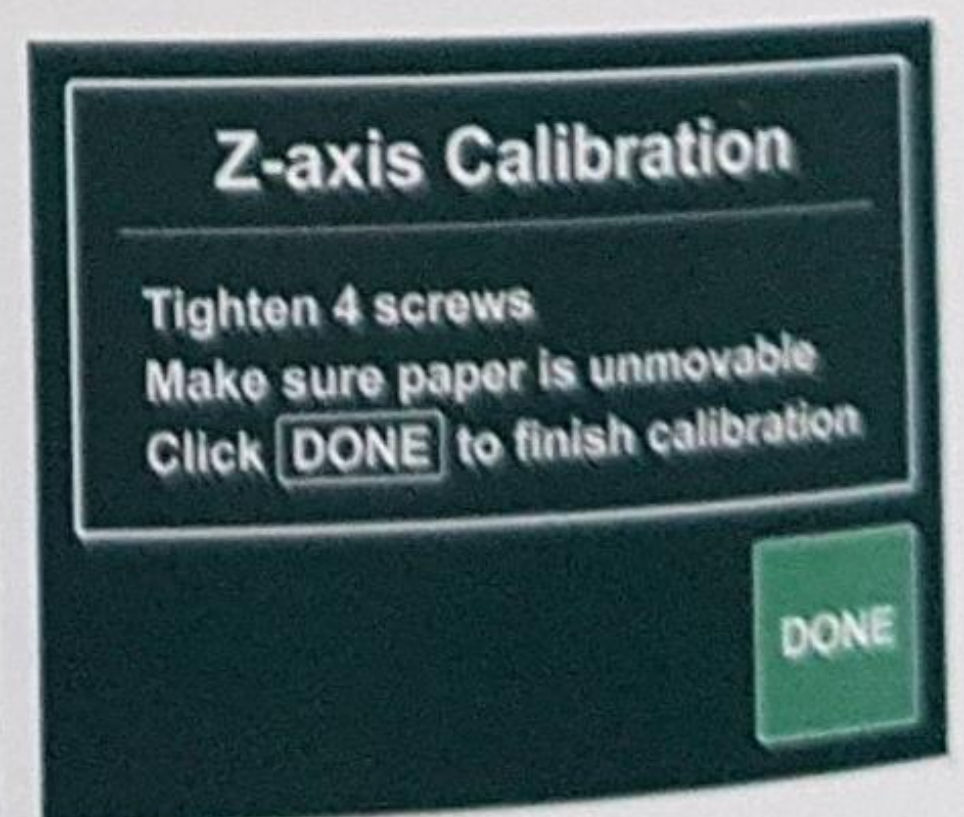
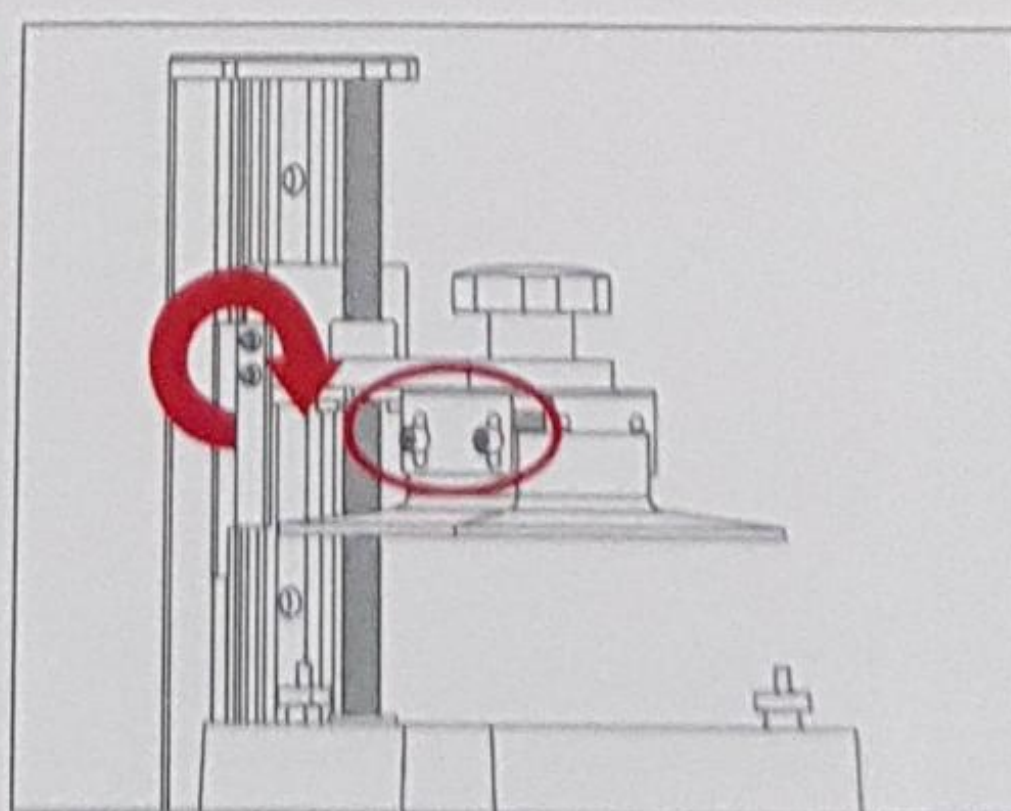
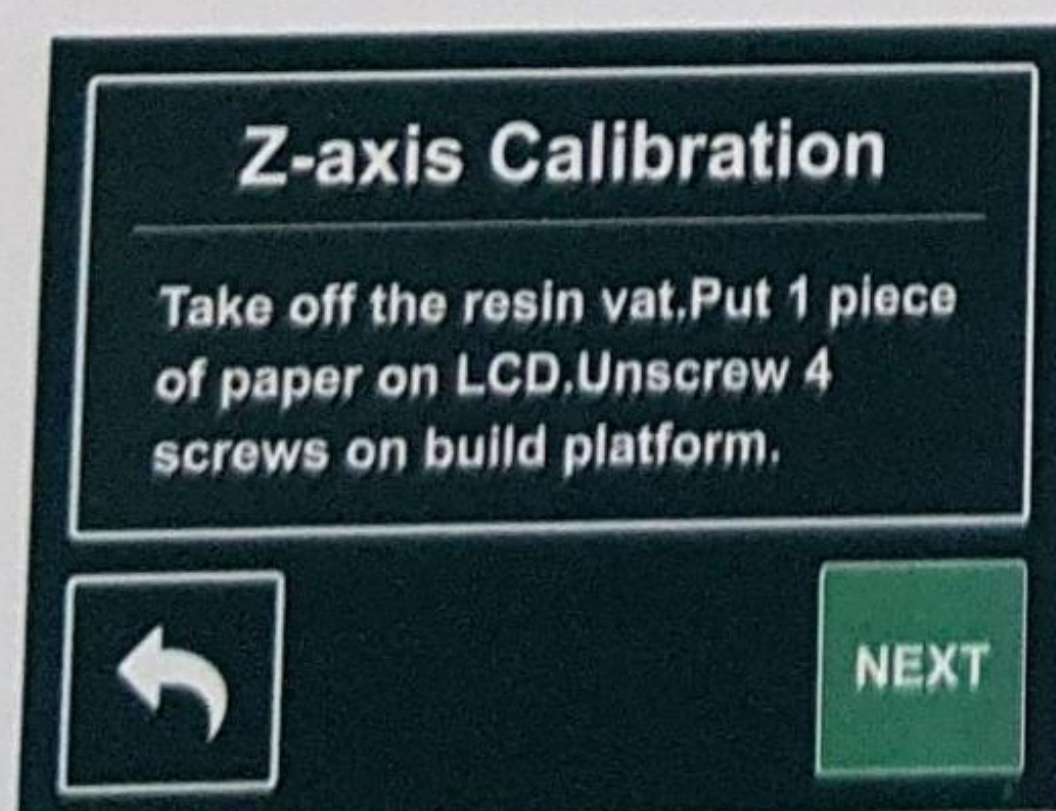
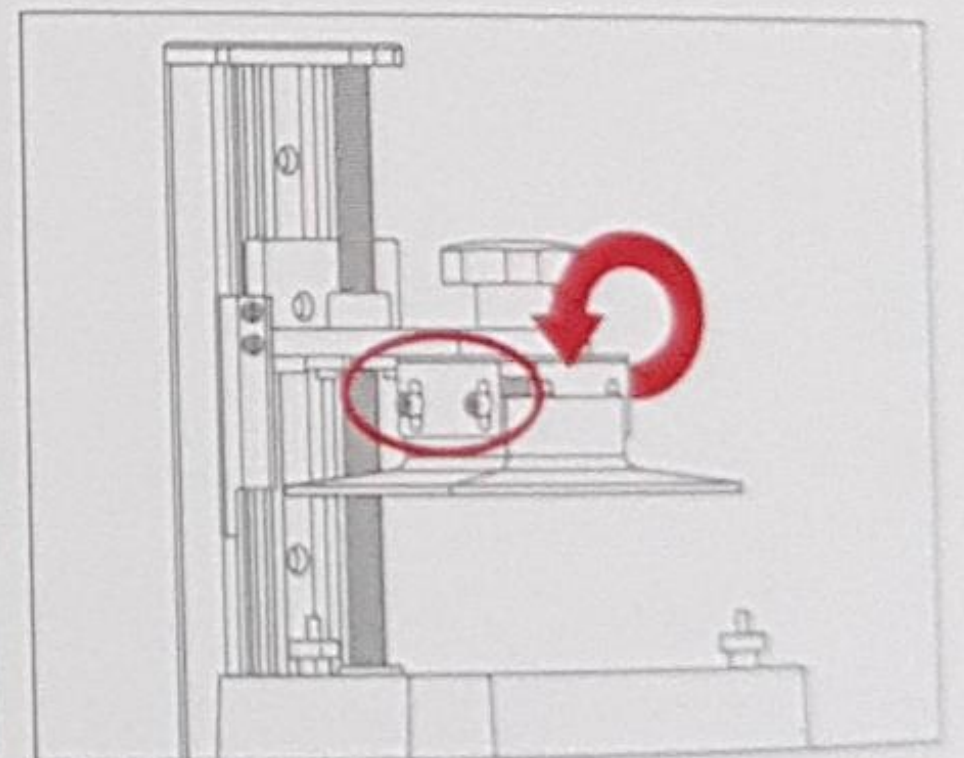
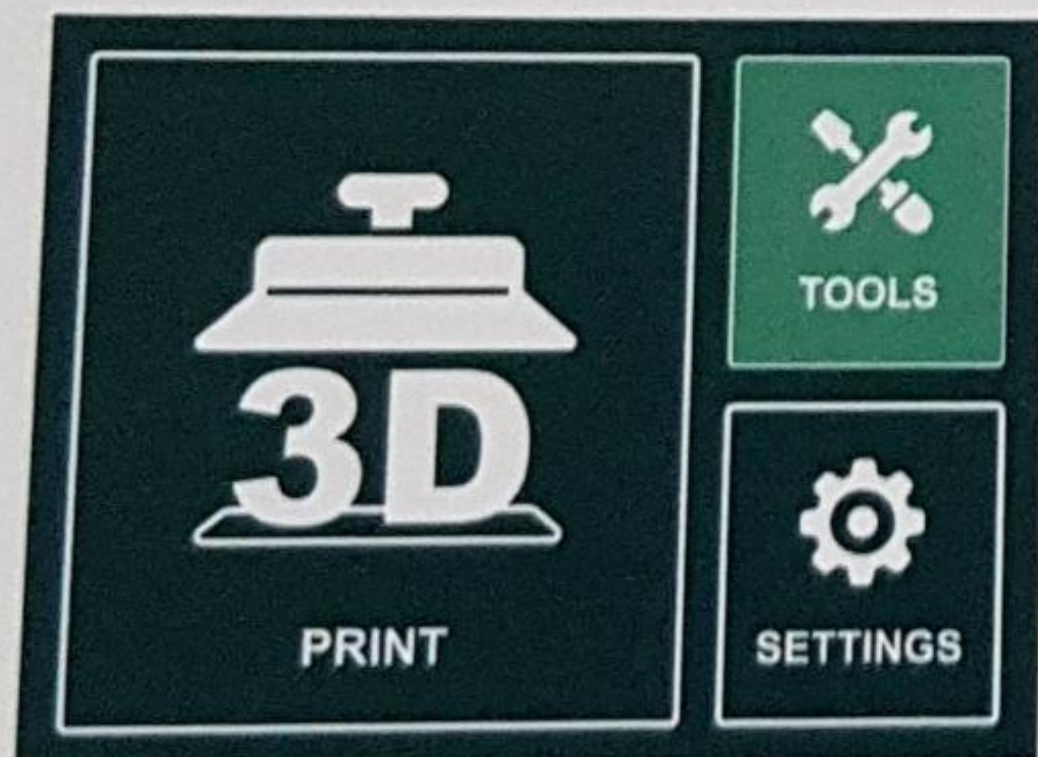
- 3 Click **TOOLS** and then click **LCD TEST**. Then the LCD will be light up.
- 4 If the LCD displays a complete image as shown on touch panel, that means optical engine (LCD + LED) works perfectly.



- 4 Loosen the 4 screws on the side of the build platform with an Allen wrench.

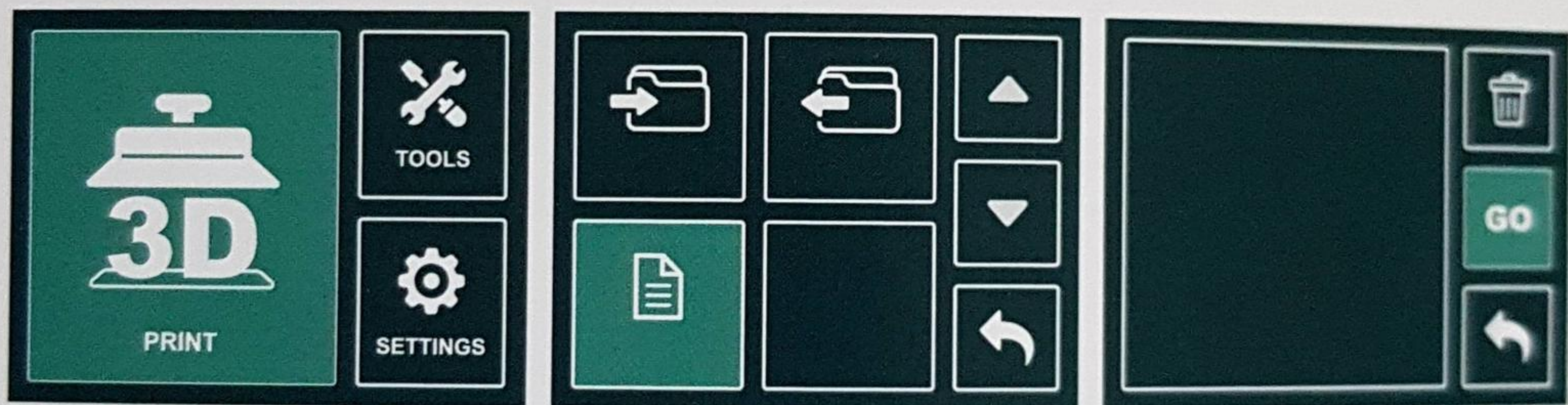


- 5 Click **TOOLS** , then click **Z Calib** to start the calibration.
After the build platform reaches the bottom of resin vat, tighten 4 screws on the side of the build platform with an Allen wrench.

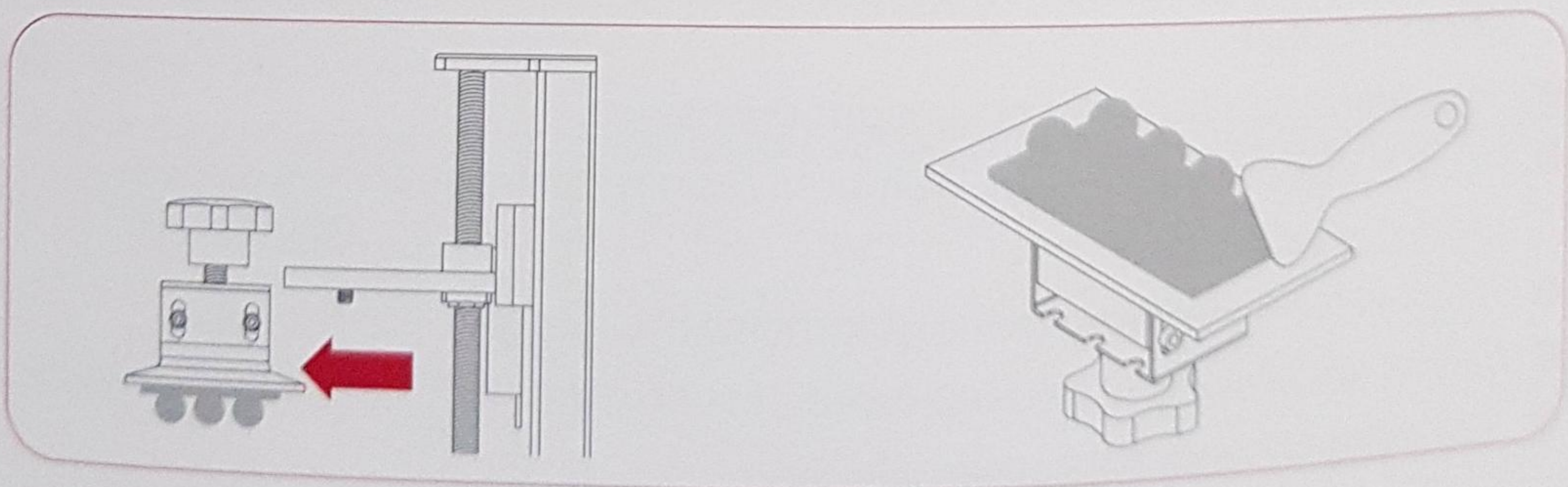


Test Printing

- 1 Wear PPE (Personal Protective Equipment) .
- 2 Shake the resin for 1 minute and pour it into the vat to fill 1/3 of the vat.
- 3 Plug USB (with sliced 3D file) into printer.
- 4 Load the sliced 3D files in USB through touch panel and click **GO**.
- 5 Once the printing process starts, close the plastic case and wait till process finishes.



- 6 Wait till there's no resin drips once the process is completed.
- 7 Use scraper CAREFULLY to remove the print.



Post Processing

- 1 Use 95% alcohol, IPA, or detergent like Phrozen Wash to clean your print. An Ultra-sonic cleaner is recommended for cleaning hollowed parts.
- 2 Post-cure your print by UV lamp. Curing time depends on the intensity and wavelength of your lamp. Prints can be cured within 15 minutes in average by Phrozen Cure .

▶ Post-Processing

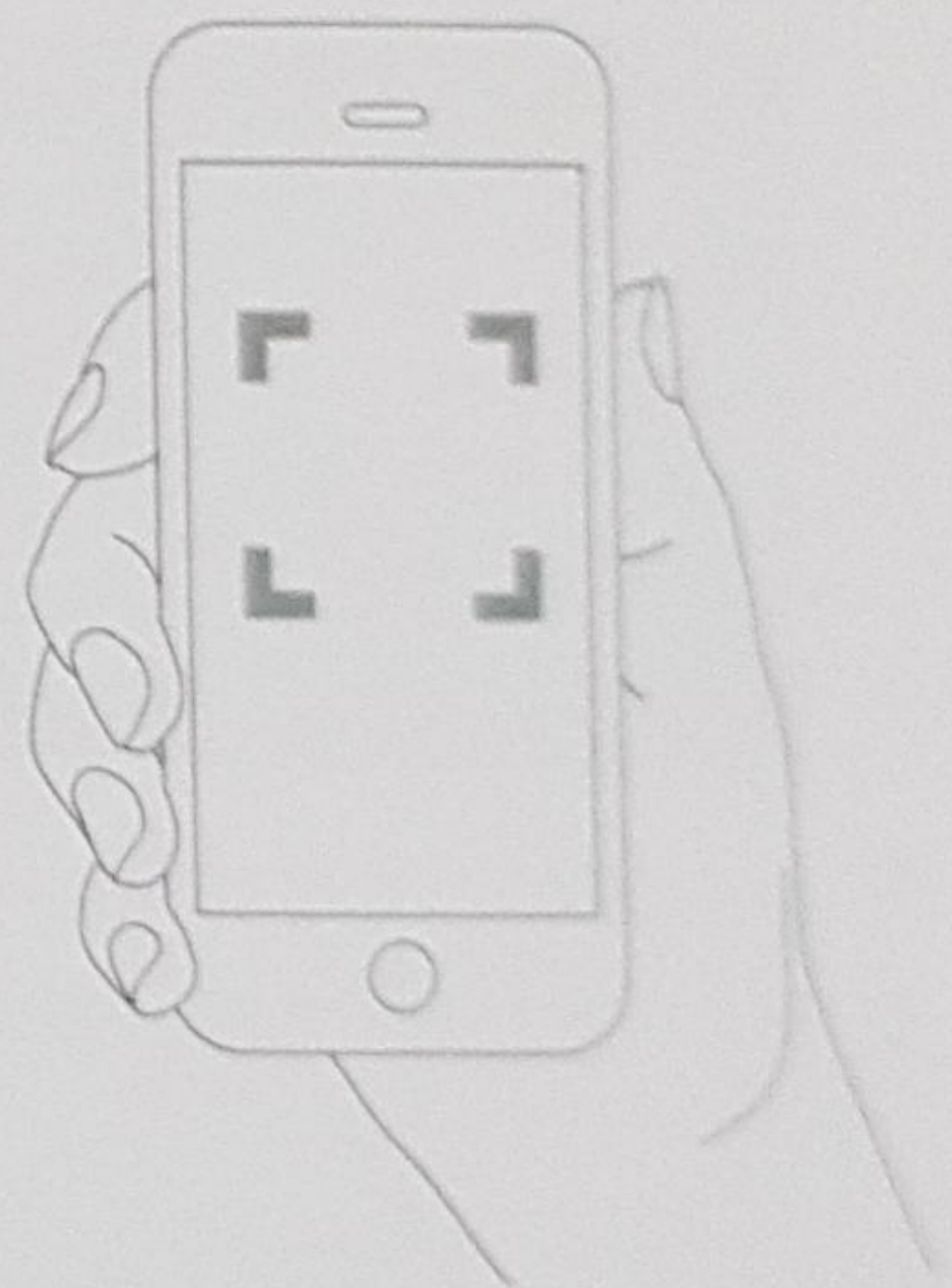


youtu.be/0gker8J-9FM

▶ Youtube channel



<https://reurl.cc/0z5G8b>



SAFETY GUIDE

- 1 Keep resin away from direct sunlight exposure.
- 2 DO NOT dispose liquid resin. Wait until resin is fully cured, then dispose as general plastic waste.
- 3 Wear PPE(Personal Protective Equipment) like goggles, gloves...etc.
- 4 Resin is not allowed to be swallowed or contacted with eyes & skins directly.
- 5 Stop using UV resin if it causes allergy.

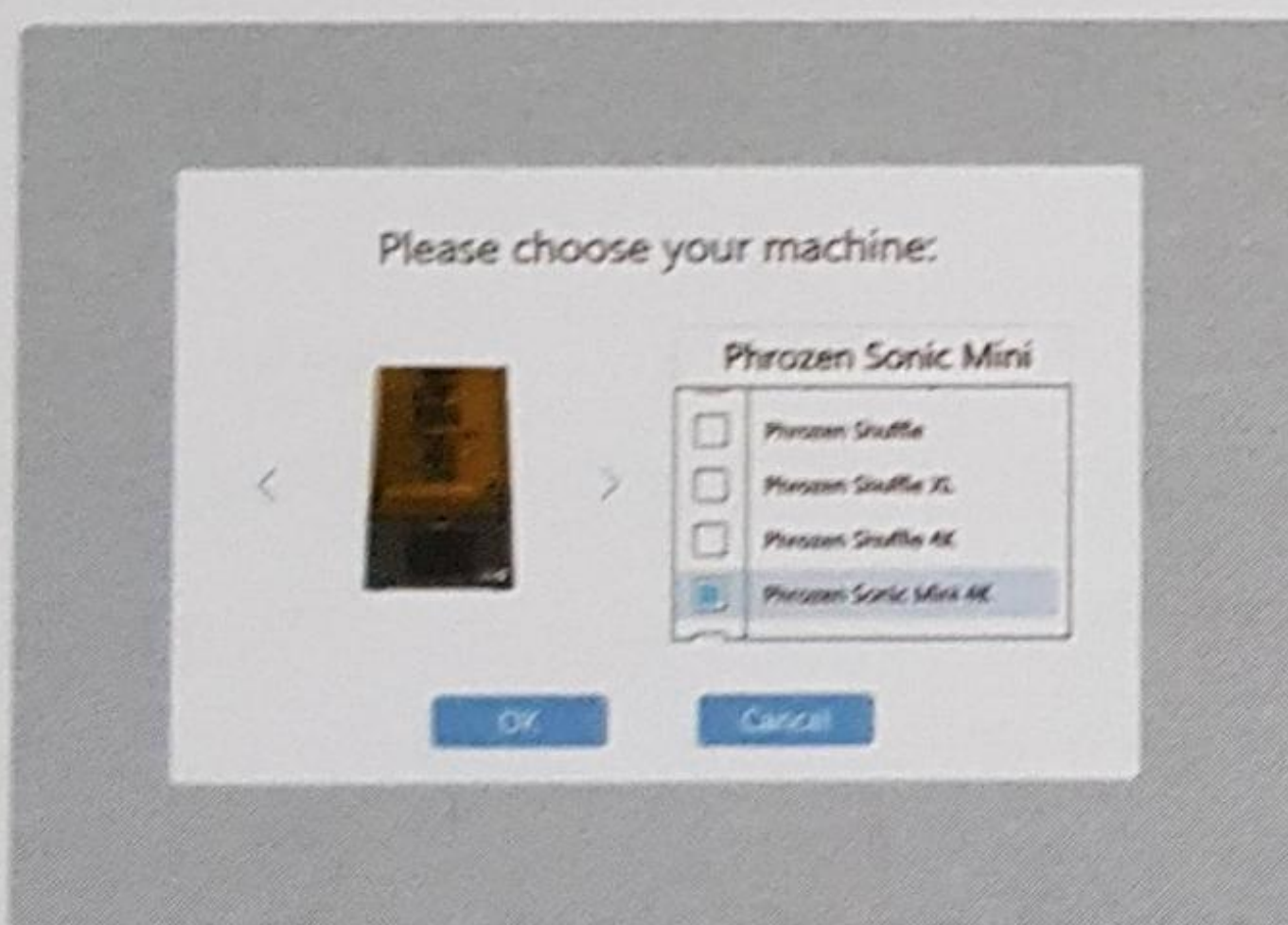
Prepare Your File

1 Install ChiTu Box

Install ChiTu Box V1.6.5 (or above version) in the USB. Run ChiTu Box after installation.

2 Find ChiTu Box Setting

Click Setting and add a new printer. Select "Phrozen Sonic Mini 4K" as your default printer.



Machine	Resin	Print	Infill	Gcode	Advanced
Name:	Sonic Mini 4K		Machine Type:	default	
Resolution:	X: 3840 px	Y: 2160 px	Mirror:	LCD_mirror	
Lock Ratio:	<input type="checkbox"/>				
Size:	X: 134.4 mm	Y: 75.6 mm	Z: 130 mm		

Setup of ChiTu Box

3 Resin Parameter

- Put Resin Density: 1.1g / ml and your resin cost for printing cost estimation.

Machine	Resin	Print	Infill	Gcode	Advanced
Resin Type:	normal				
Resin Density:	1.1	g/ml			
Resin Cost:	30	\$/l			

4 Print Parameter

- **Layer Height:** Best recommended range is 0.03 - 0.100 mm. Thinner layers make parts finer but takes longer time to print.
- **Bottom Layer Count:** 3 - 6 layers. More layers for better adhesion to build platform.
- **Exposure Time:** set from 1-3 sec for LCD resins and 3-10 for DLP resins. Thicker layers requires more exposure time.
- **Bottom Exposure Time:** set from 20-40 seconds for LCD Resins and 40-80 sec for DLP resins. Thicker layers require more exposure time.
- **Other Setting:** Please use default setting.

Machine	Resin	Print	Infill	Gcode	Advanced
Layer Height:	0.05	mm	Bottom Lift Distance:	6	mm
Bottom Layer Count:	6		Lifting Distance:	5	mm
Exposure Time:	1.5	s	Bottom Lift Speed:	100	mm/min
Bottom Exposure Time:	20	s	Lifting Speed:	100	mm/min
Light-off Delay:	7	s	Retract Speed:	150	mm/min
Bottom Light-off Delay:	7	s			

5 Infill / Gcode

Please use default setting.

6 Advanced

Turning on the anti-aliasing function could make the print more smooth, but it will sometimes disrupt dimension accuracy in certain prints.

7 Load & Edit Model

- Open test 3D file (.stl) from USB or your own file.
- Menu on the left can change dimension, angle, position of the 3D file.
- Menu on the top can hollow and dig holes on the 3D file.
- You can add support on your 3D file if there are overhangs.

Other Operation

- Long Press Left Button : drag the 3D file to proper position.
- Scroll Wheel : zoom in/out of the view.
- Long Press Right Button : see different angles of the view.

8 Save Model

- After setting up all the parameters, click "Slice". Once it is done, click "Save". Move the file from your laptop to the USB and load it to your 3D printer.
- Once it is done, click "Save". You will get a sliced .CTB file.

FAQ

❶ **My Sonic Mini 4K Cannot Work Functionally**

- Phrozen offer a full-one year warranty on printer and 3-month warranty on LCD for Sonic Mini 4K.
- If your printer doesn't work, please contact us through support@phrozen3d.com
- If you buy Sonic Mini 4K from our distributor, please contact them for claim of warranty.
- Order ID is required if you need to claim warranty.

❷ **Model Is Not Able To Stick To Build Platform**

- Re-do Z-axis calibration.
- Increase cure time in base layer.
- Roughen the build plate surface by sanding it.

❸ **Model Is Falling Down In Vat, but Support / Base Stick To Build Platform**

- Check whether curing time is in the proper range.
- Check the support setup - increasing support density & tip diameter could help.

❹ **Micro Holes are Found in Finished Print**

- Check whether cure time is in proper range.
- Check whether there are debris between resin vat and LCD.
- Check if there are dead pixels on LCD

❺ **Finish Print Crack Easily**

- Check whether the print is cleaned completely, especially for hollow parts.
- Increasing cure time could also help.

Maintenance

① How to Replace FEP & LCD

- Check our Youtube Channel for more details.

② How to Maintain Z-axis

- General lubricant could be applied on the Z-axis screw to make it move fluently.

③ Clean the Vat with Proper Tool

- To protect release film, use plastic spreader to clean the vat instead of sharp scraper.

④ Remove Build Platform with Care

- The Build Platform will damage the LCD screen if it bumps against it.

⑤ Storage of Resins

- Filter the resin and make sure there are no residues. Keep the resin in opaque & sealed bottles without sunlight exposure.

⑥ Cleaning the Printer

- Clean the printer, build platform, and resin vat with alcohol and tissues directly.

Congratulations !

You have finished your first run of the printing. Hope you have a great experience with Phrozen Sonic Mini 4K.

Now it's the beginning of your 3D printing journey. Here are 3 tips for you.

- 1 Follow Phrozen Facebook Page for latest news & updates.
- 2 Join **Phrozen 3D Printer Group** to discuss with other users.
- 3 When you have questions, feel free to contact us by emailing support@phrozen3d.com or send private message to Phrozen Facebook Page. (facebook.com/messages/t/Phrozen3DP)



Send private message to
Phrozen Facebook Page.



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