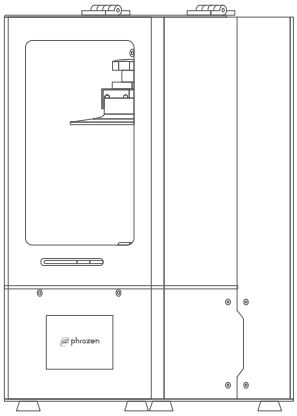
phrozen




# User Manual for SONIC 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: @Phrozen3d
- Twitter: @Phrozen3d
- Instagram: @Phrozen3d
- Youtube: @Phrozen3DPrinter

Chinese version starts from Page 18 ▸▸▸

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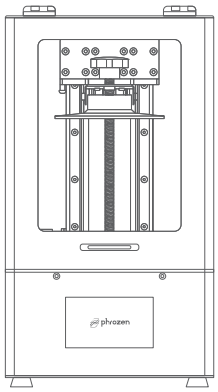
# Key Notes Before We Start !

- 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 plateform. 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.

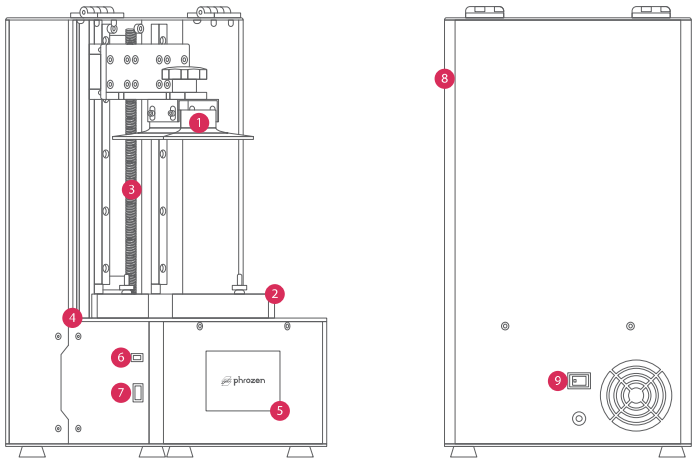
# What You Have In The Box



## SONIC 4K

1. User Manual
2. Gloves
3. Scrapers
4. Adaptor
5. Allen Wrench
6. Plastic Funnel
7. USB
8. Backup Screws
9. Handle
10. Air Filter Bag with Case

# Printer Parts




1 Build Platform 2 Resin Vat 3 Z-Axis 4 LCD 5 Touch Panel

6 USB Port 7 Ethernet 8 Plastic Case 9 Power Switch

# Sonic 4K Technical Specs

| | |
|---|---|
| System: | Phrozen OS |
| Operation: | 5 inch Touch Panel |
| Slicer Software: | ChiTu Box V1.6.5 |
| Connectivity: | USB \| Ethernet |

Operation

| | |
|---|---|
| Technology: | Resin 3D Printer - LCD Type |
| Light Source: | 405nm ParaLED® Matrix 3.0 |
| XY Resolution: | 0.035 mm |
| Layer Thickness: | 0.01 - 0.30 mm |
| Printing Speed: | 90 mm / hr |
| Power Requirement: | AC100-240V~50/60Hz |

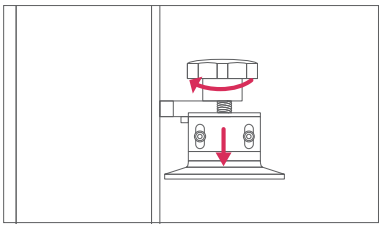
Printing Specification

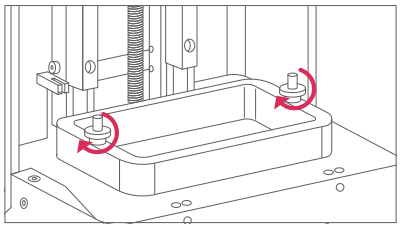
| | |
|---|---|
| Printer Size: | L9 x W10.2 x H18.1 in |
| Printing Volume: | L5.2 x W2.9 x H7.8 in |
| Printer Weight: | 14.5 kg |

Hardware Specification

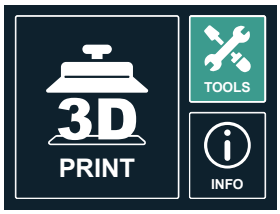
# Calibrate & Test

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.

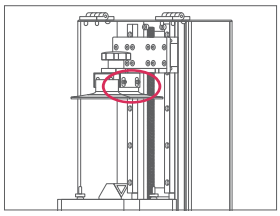




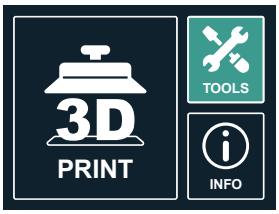
3. Click **TOOLS** and then click **LCD TEST** . Then the LCD will be light up.
4. If the LCD displays a complete image as shown on touch panel, that means optical engine (LCD + LED) works perfectly.

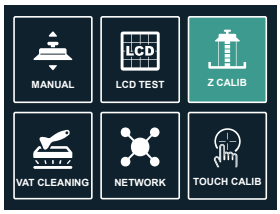


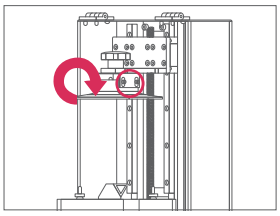
4 Loosen the 4 screws on the side of the build platform with an Allen wrench.

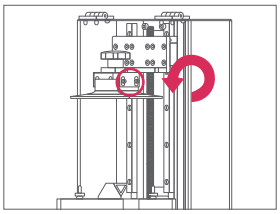


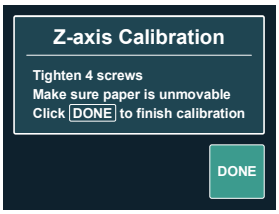
5 Click **TOOLS** , then click **Z Calib** to start the calibration.
After the build platform reaches the bottom of resin vat, tighten 4 screws on the side of the build platform with an Allen wrench.



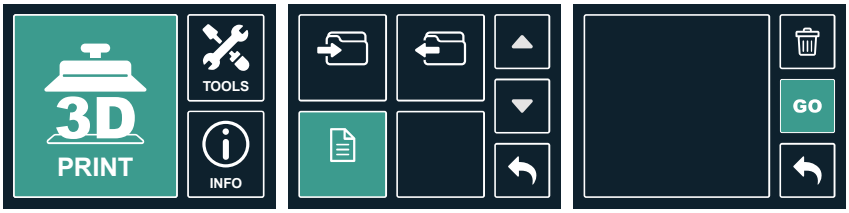





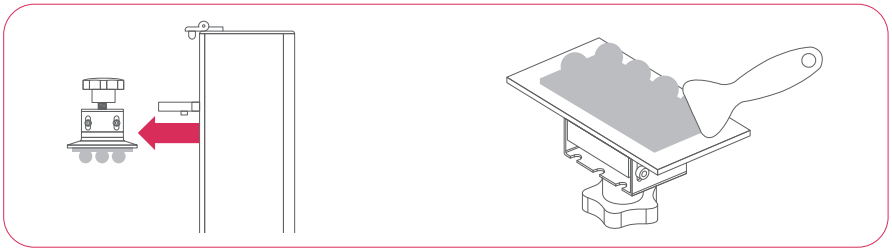


# Test Printing

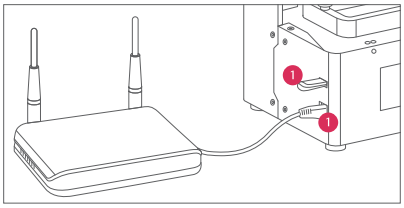
1. Wear PPE (Personal Protective Equipment) .
2. Shake the resin for 1 minute and pour it into the vat to fill 1/3 of the vat.
3. Plug USB (with sliced 3D file) into printer.
4. Load the sliced 3D files in USB through touch panel and click **GO**.
5. Once the printing process starts, close the plastic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

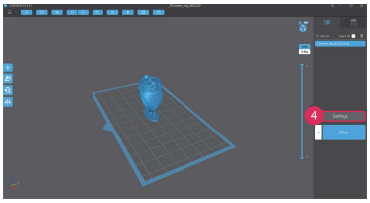


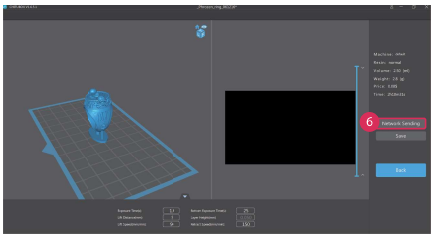
# NETWORK




1. Plug  in your USB into the printer, then connect to the internet
2. On your printer's touch panel screen, click on TOOLS, then click on NETWORK
3. Please check to see if your printer's WiFi's IP address matches the computer's WiFi IP address

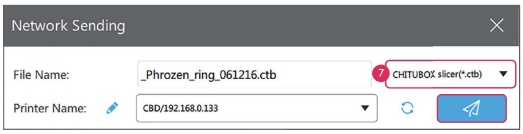
4. On your laptop or computer, open ChiTuBox 3D Slicer Software and click on Settings
5. Choose Phrozen Sonic 4K

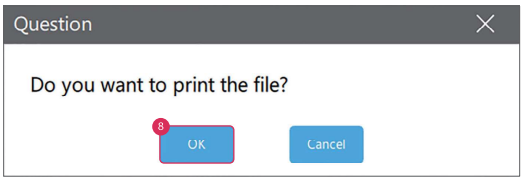


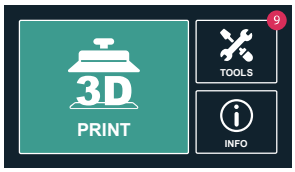



6. Click on Network Sending
7. When saving your file, make sure to save it as an .ctb file, then send it over to your printer
8. Click OK and start printing

9. If you click Cancel during the 8th step, please return to the previous screen and click on Print. Once your file has been sent over to the printer, you can start printing



# Post Processing

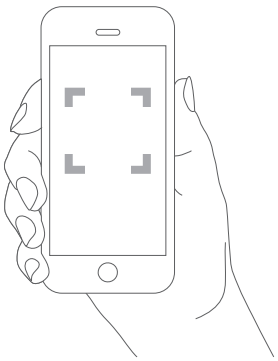
1. Use 95% alcohol, IPA, or detergent like Phrozen Wash to clean your print. An Ultra-sonic cleaner is recommended for cleaning hollowed parts.
2. Post-cure your print by UV lamp. Curing time depends on the intensity and wavelength of your lamp. Prints can be cured within 15 minutes in average by Phrozen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

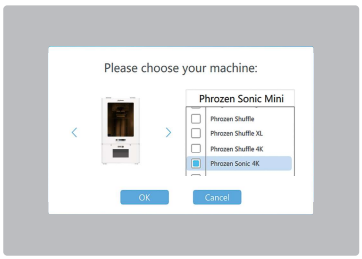
# Prepare Your File

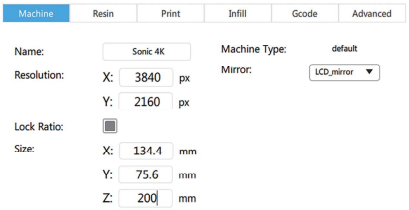
## ❶ Install ChiTu Box

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

## ❷ Find ChiTu Box Setting

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



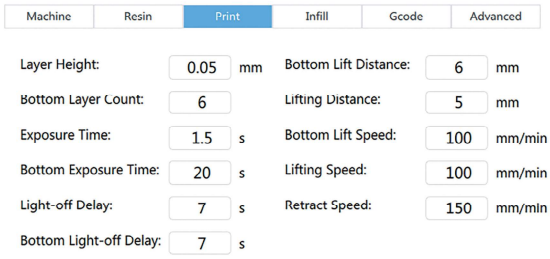

## Setup of ChiTu Box

## ❸ Resin Parameter

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

## 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.




## 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

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

2. **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.

3. **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.

4. **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

5. **Finish Print Crack Easily**
- Check whether the print is cleaned completely, especially for hollow parts.
- Increasing cure time could also help.

# Maintenance

### ❶ How to Replace FEP & LCD

- Check our Youtube Channel for more details.

### ❷ How to Maintain Z-axis

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

### ❸ Clean the Vat with Proper Tool

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

### ❹ Remove Build Platform with Care

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

### ❺ Storage of Resins

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

### ❻ 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 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.

- Facebook: @Phrozen3d
- Twitter: @Phrozen3d
- Instagram: @Phrozen3d
- Youtube: @Phrozen3DPrinter