

User Manual for **SONIC MINI**

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](#) ►►►

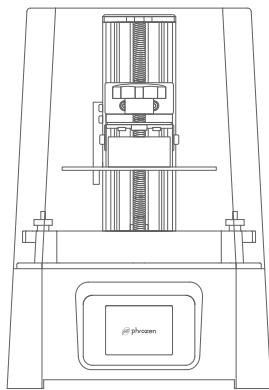
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Key Notes Before We Start !

- ▶ 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 MINI

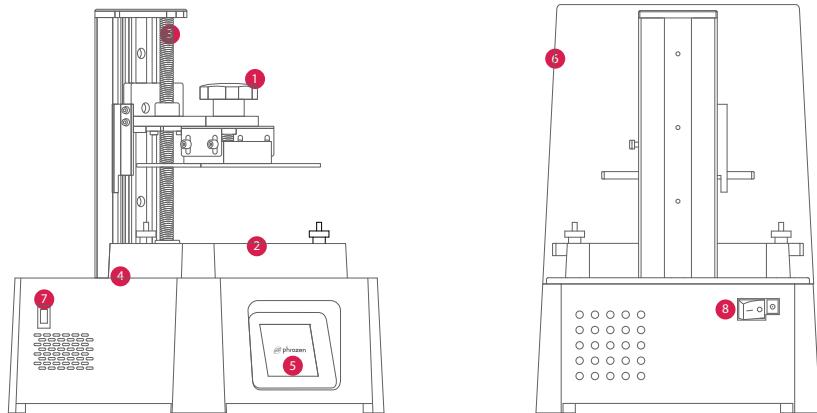
- ① User Manual
- ⑤ Allen Wrench
- ⑨ Build Platform

- ② Gloves
- ⑥ Plastic Funnel
- ⑩ Backup Screws

- ③ Scrapers
- ⑦ USB

- ④ Adaptor
- ⑧ 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 Technical Specs

System: Phrozen OS

Operation: 2.8 inch Touch Panel

Slicer Software: ChiTu Box V1.6.1

Connectivity: USB

Operation

Technology: Resin 3D Printer - LCD Type

Light Source: 405nm ParaLED® 2.0

XY Resolution: 0.063 mm

Layer Thickness: 0.01 - 0.30 mm

Printing Speed: 50 mm / hr

Power Requirement: AC100-240V~50/60Hz

Printing Specification

Printer Size: L9.8 x W9.8 x H1.3 in

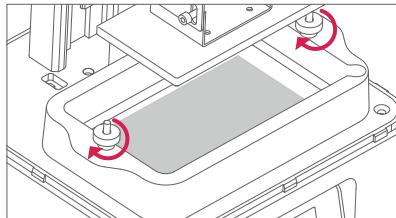
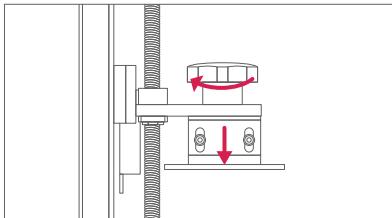
Printing Volume: L4.7 x W2.6 x H5.1 in

Printer Weight: 5 kg

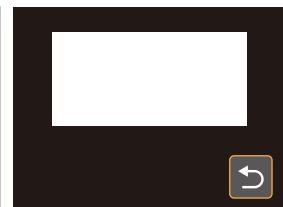
Hardware Specification

Calibrate & Test

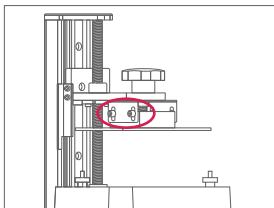
- ① Take out the printer from the box, plug in the power cord, and turn on the power switch.
- ② Screw the build platform and resin vat on the printer, and tighten them up.



- 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.

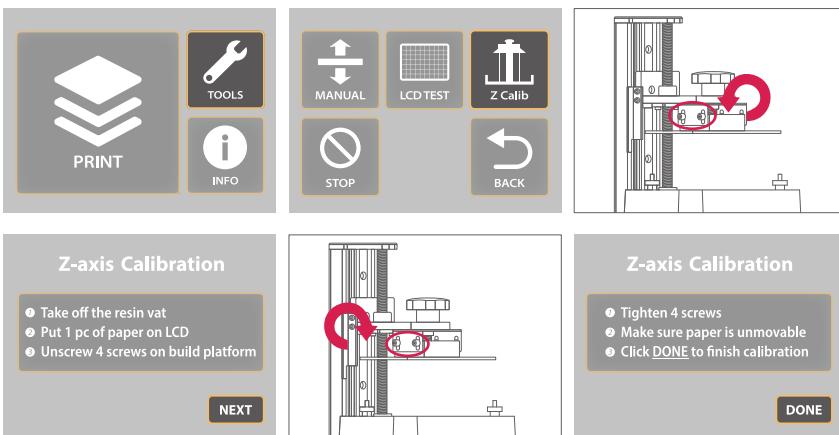


- ④ Loosen the 4 screws on the side of the build platform with an Allen wrench.



- 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.



Z-axis Calibration

- ➊ Take off the resin vat
- ➋ Put 1 pc of paper on LCD
- ➌ Unscrew 4 screws on build platform

NEXT

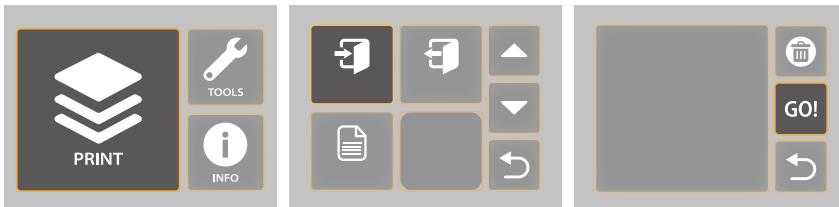
Z-axis Calibration

- ➊ Tighten 4 screws
- ➋ Make sure paper is unmovable
- ➌ Click **DONE** to finish calibration

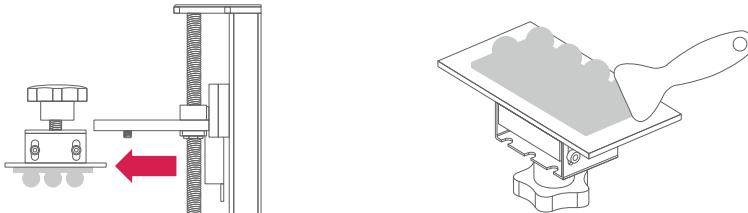
DONE

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

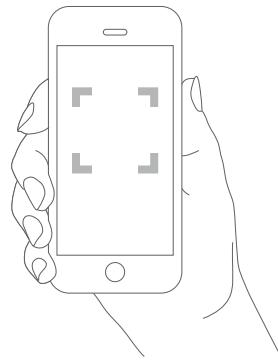


youtu.be/0gker8J-9FM

 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.

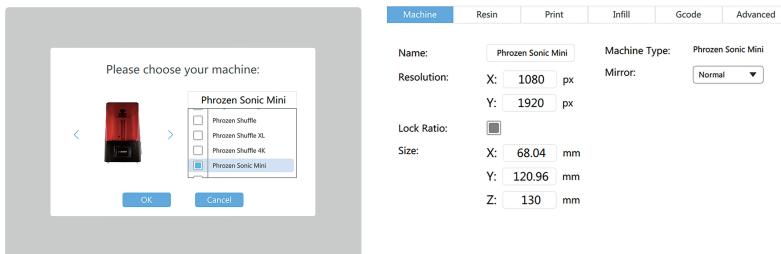
Prepare Your File

① Install ChiTu Box

Install ChiTu Box V1.6.1 (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” as your default printer.



Setup of ChiTu Box

③ Resin Parameter

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

The screenshot shows the ChiTu Box software interface with the Resin tab active. The Resin tab is highlighted with a blue background. Below the tab, there are three input fields: "Resin Type" set to "normal", "Resin Density" set to "1.1 g/ml", and "Resin Cost" set to "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:	<input type="text" value="0.05"/>	mm	Bottom Lift Distance:	<input type="text" value="6"/>	mm
Bottom Layer Count:	<input type="text" value="6"/>		Lifting Distance:	<input type="text" value="5"/>	mm
Exposure Time:	<input type="text" value="1.5"/>	s	Bottom Lift Speed:	<input type="text" value="100"/>	mm/min
Bottom Exposure Time:	<input type="text" value="20"/>	s	Lifting Speed:	<input type="text" value="100"/>	mm/min
Light-off Delay:	<input type="text" value="7"/>	s	Retract Speed:	<input type="text" value="150"/>	mm/min
Bottom Light-off Delay:	<input type="text" value="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

① My Sonic Mini Cannot Work Functionally

- Phrozen offer a full-one year warranty on printer and 3-month warranty on LCD for Sonic Mini.
- If your printer doesn't work, please contact us through support@phrozen3d.com
- If you buy Sonic Mini 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

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.

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

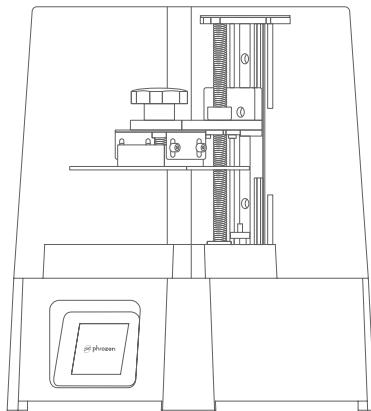
- ① Follow Phrozen Facebook Page for latest news & updates.
 - ② Join **Phrozen 3D Printer Group** to discuss with other users.
 - ③ When you have questions, feel free to contact us by emailing support@phrozen3d.com or send private message to Phrozen Facebook Page. (facebook.com/messages/t/Phrozen3DP)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



 Send private message to
Phrozen Facebook Page.



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



使用說明 **SONIC MINI**

感謝您的支持與選購!

親愛的使用者您好，

非常開心您的加入，為了有良好的使用品質，請您務必詳閱產品說明書並參照每一個步驟，謝謝。

如果您對於操作有任何疑問，歡迎聯繫我們團隊

信箱 | support@phrozen3d.com

可至官網的支援專區下載(不同語言版本及軟體說明書)

網址 | phrozen3d.com/page/download



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Instagram: [@Phrozen3d](#)

Youtube: [@Phrozen3DPrinter](#)

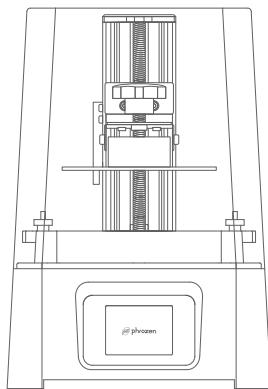
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操作前的注意事項！

- ▶ 將列印機和樹脂保持在室內涼爽、乾燥和通風之處，避免陽光直射與兒童接觸。
- ▶ 每台列印機在原廠均已預先校正。不過，我們建議您在首次使用時再次進行校正。
- ▶ 每次列印之前，請清潔樹脂槽內可能潛在的碎屑和顏料並重新填充樹脂於槽內，進而保持列印機和列印成品品質。
- ▶ 建議將樹脂填充至1/3的樹脂槽高度即可，避免列印時樹脂溢出。
- ▶ 操作列印機和樹脂時，請穿戴口罩、護目鏡和長袖外套等個人防護設備。
- ▶ 請使用95%酒精，IPA或Phrozen Wash之類的特殊清潔劑清潔模型。
- ▶ 使用刮板從底板上取下列印件時要小心。如果操作不當，可能會割傷您的手。
- ▶ 請不要自行拆卸列印機。可能會導致保固失效。

配件盒內容物



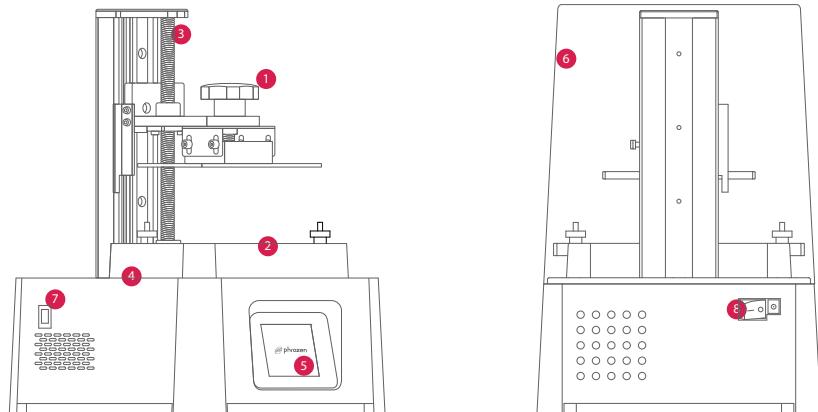
**SONIC
MINI**

- ① 操作手冊
- ⑤ 六角扳手
- ⑨ 列印載台

- ② 手套
- ⑥ 塑膠漏斗
- ⑩ 螺絲

- ③ 軟硬刮刀
 - ⑦ USB
- ④ 變壓器
 - ⑧ 機殼腳墊

列印機零件



- ① 列印載台
- ② 樹脂槽
- ③ Z軸
- ④ LCD面板
- ⑤ 觸控螢幕
- ⑥ 壓克力遮光罩
- ⑦ USB孔
- ⑧ 電源開關

技術規格

機台系統: Phrozen OS

操作介面: 2.8 英寸觸控螢幕

切層軟體: 赤兔 V1.6.1 或以上

上傳方式: USB

操作系統

技術: LCD 光固化

光源: 405nm ParaLED® 2.0

XY 解析度: 0.063 mm

建議層厚: 0.01 - 0.30 mm

列印速度: 50 mm / hr

電源需求: AC100-240V~50/60Hz

技術規格

尺寸: (長)25 x (寬)25 x (高)33 cm

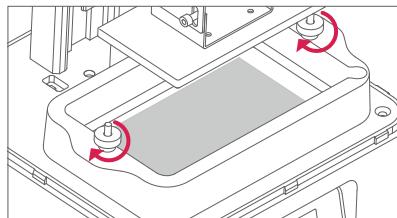
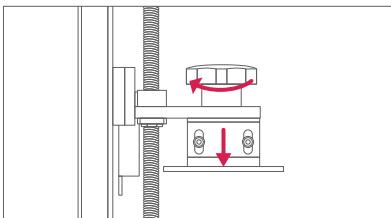
體積: (長)12 x (寬)6.8 x (高)13cm

重量: 5 kg

硬體規格

校正與測試

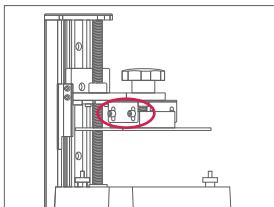
- ① 取出列印機，插入電源線，然後打開電源。
- ② 將列印載台和樹脂槽固定到列印機上。



- ③ 觸控 **TOOLS**，然後觸控 **LCD TEST**，接著LCD將點亮。
- ④ 如果 LCD 顯示如同觸控螢幕上之完整圖像，則表示光學引擎 (LCD + LED) 運作正常。



- ④ 用六角扳手鬆開列印載台側面的4個螺絲。



- ⑤ 觸控 **TOOLS**，然後觸控 **Z Calib** 開始校正列印載台。

當載台與底部接觸後，鎖緊載台側面的4個螺絲。

The image consists of several panels. At the top center is a screenshot of the printer's control interface showing menu options: PRINT, TOOLS (highlighted), INFO, MANUAL, LCD TEST, Z Calib, STOP, and BACK. Below this are two side-by-side 'Z-axis Calibration' screens. The left screen shows instructions: 'Take off the resin vat', 'Put 1 pc of paper on LCD', and 'Unscrew 4 screws on build platform'. It has a 'NEXT' button at the bottom right. The right screen shows the same instructions with a red circle highlighting the four screws on the build plate that need to be tightened. Both screens feature a detailed diagram of the printer's internal structure showing the build plate and its mounting hardware.

Z-axis Calibration

- Take off the resin vat
- Put 1 pc of paper on LCD
- Unscrew 4 screws on build platform

NEXT

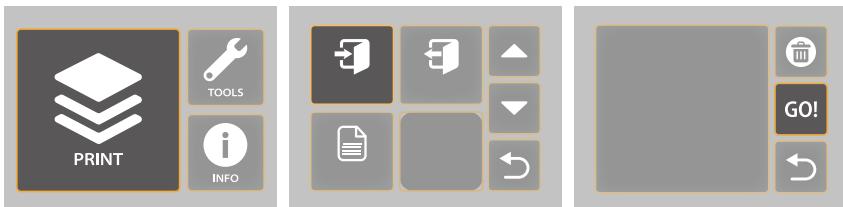
Z-axis Calibration

- Tighten 4 screws
- Make sure paper is unmovable
- Click DONE to finish calibration

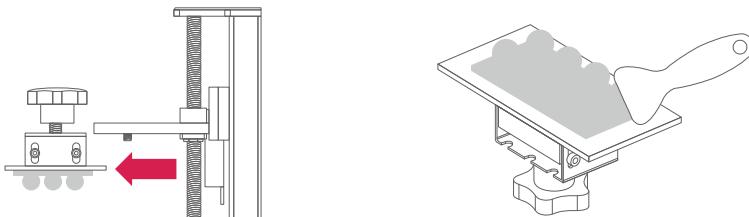
DONE

測試列印

- ① 穿戴個人防護裝備。
- ② 充分搖勻樹脂1分鐘，然後將其倒入樹酯槽內1/3的高度即可。
- ③ 將USB（已存取之切片檔案）插入列印機。
- ④ 切片檔案傳輸顯示在觸控螢幕中，然後觸控 **GO** 。
- ⑤ 一旦開始列印過程，請蓋上紅色遮光罩並等待列印完成。



- ⑥ 等到列印完成後，列印成品是緊密吸附在載台表面。
- ⑦ 請小心使用刮刀把列印成品從載台上移除。



列印後處理

- ① 使用95%的酒精、IPA或Phrozen Wash之類的清潔劑清潔模型。建議使用Phrozen超聲波清潔器可清潔更細微部位。
- ② 用紫外線燈對模型進行後固化。固化時間取決於燈的強度和波長。
Phrozen Cure平均可以在15分鐘內固化完成。

列印後處理

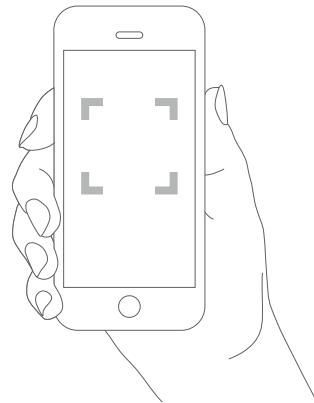


youtu.be/Ogker8J-9FM

Youtube 頻道



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



安全指導

- ① 樹脂應避免陽光直射。
- ② 如果會引起過敏，請立即停止使用樹脂。
- ③ 操作時應佩戴護目鏡和手套等個人防護設備。
- ④ 禁止吞嚥樹脂或使樹脂直接與眼睛和皮膚接觸。
- ⑤ 不要任意傾倒樹脂。將樹脂固化後，依一般事業廢棄物處理即可。

檔案規格 / 軟體操作

① 安裝赤兔軟體

在USB中存取ChiTu Box V1.6.1（或以上版本），並開始使用。

② 赤兔軟體設定

點選設定並選取列印機種。

選擇“Phrozen Sonic Mini”作為接下來之操作的樣板。



③ 樹脂參數設定

- 將樹脂密度設定為1.1g / ml，可以此估算印刷成本。



④ 列印參數

- **層厚:** 最佳建議範圍是0.03-0.100毫米。
較薄的層厚使列印成品更細緻，但列印時間相對更長。
- **底層數:** 建議3-6層。增加底層數進而更好地附著在列印載台上。
- **曝光時間:** LCD樹脂設置一般為1-3秒，DLP樹脂設置一般為3-10秒。
較厚的層需要更多的曝光時間。
- **底層曝光時間:** LCD樹脂設置為20-40秒，DLP樹脂設置為40-80秒。
較厚的層需要更多的曝光時間。
- **其他設定:** 請使用預設值設定。

機器	樹脂	列印	填充	Gcode	進階
層高:	<input type="text" value="0.05"/>	mm	底层抬升距離:	<input type="text" value="6"/>	mm
底層數:	<input type="text" value="6"/>		抬升距離:	<input type="text" value="5"/>	mm
曝光時間:	<input type="text" value="1.5"/>	s	底层抬升速度:	<input type="text" value="100"/>	mm/min
底层曝光時間:	<input type="text" value="20"/>	s	抬升速度:	<input type="text" value="100"/>	mm/min
減燈延時:	<input type="text" value="7"/>	s	回程速度:	<input type="text" value="150"/>	mm/min
底层減燈延時:	<input type="text" value="7"/>	s			

⑤ 填充 / Gcode

請使用預設值設定。

⑥ 進階

抗鋸齒功能讓邊緣較粗糙表面使之變得平滑，但是在某種程度上會影響其精細程度。

7 加載 / 編輯模型

- 從USB或您自己的文件中打開測試.stl 3D檔。
- 左側欄位可以變更尺寸、角度以及位置。
- 上方欄位可以做薄殼和開孔設定。
- 如果模型與列印成型載台之間懸空可以添加支撐。

其他操作

- 長按左鍵：將模型拖曳到需要的位置。
- 滑動滾輪：放大/縮小視圖。
- 長按右鍵：觀看不同的視圖角度。

8 儲存模型

- 設置完所有參數後，點選“切片”，下一步點選“保存”，將.stl 3D檔從電腦移至USB並將其加載到列印機。
- 完成後，點選“保存”。您將獲得切片的.cbddlp檔文件。

問與答

① 我的 Sonic Mini 無法正常使用

- Phrozen提供一年的列印機保固，並提供3個月的LCD面板保固。
- 使用上遇到任何疑問，歡迎寄電子郵件至 support@phrozen3d.com
- 若您向官方經銷商購買Sonic Mini，請聯繫他們提供後續的保固服務。
- 保固期內送修時，請提供訂單編號即可享有保固服務。

② 模型無法附著在列印載台上

- 再次做Z軸校正。
- 增加底層的固化時間。
- 在列印載台表面用磨砂紙使之粗糙化。

③ 模型落在槽體，但支撐/模型底層會緊密附著在列印載台上

- 檢查固化時間是否在適當的範圍內。
- 檢查支撐設定-增加支撐密度和尖端直徑。

④ 列印成品缺少某些部分

- 檢查固化時間是否在適當的範圍內。
- 檢查樹脂槽和LCD面板之間是否有雜物。
- 檢查LCD面板上是否有損壞點。

⑤ 列印成品放久了會有裂紋

- 檢查列印物件是否完全清潔乾淨，特別是中空部位。
- 增加固化的時間是有幫助的。

保養技巧

① 如何更換離型膜與LCD面板

- 可參閱我們Youtube頻道，有詳細影片教學。

② 如何保養Z軸

- 可以在Z軸螺絲上塗抹普通潤滑劑使其順暢地運行。

③ 使用適當的工具清潔槽體

- 為了避免離型膜之破壞，請使用塑料刮刀清潔樹酯槽體。

④ 小心取下列印載台

- 避免列印載台直接碰觸LCD面板造成之破壞。

⑤ 妥善保存樹酯

- 過濾樹脂並確保沒有殘留物並將樹脂保存在不透明且密封的瓶子中，
避免陽光直射。

⑥ 清潔列印機

- 直接用餐巾紙沾附酒精清潔列印機、樹酯槽和列印載台。

恭喜完成初步操作與認識光固化3D列印！

您已經完成了第一次3D列印。感謝您的支持並希望您使用愉快。

現在，您的3D列印旅程將開始，3個貼心小提醒：

- ① 密切關注 Phrozen Facebook 以獲取最新消息。
- ② 歡迎加入 **Phrozen 光固化3D 列印機** 社團，與其他用戶討論並分享心得。
- ③ 如有任何疑問，請隨時發送電子郵件至 support@phrozen3d.com 與我們聯繫或將私人訊息發送至Phrozen臉書私訊小編。
facebook.com/messages/t/Phrozen3DP



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- ❑ Instagram: @Phrozen3d
- ❑ Youtube: @Phrozen3DPrinter



Email Support



Message Support



Discussion Group

