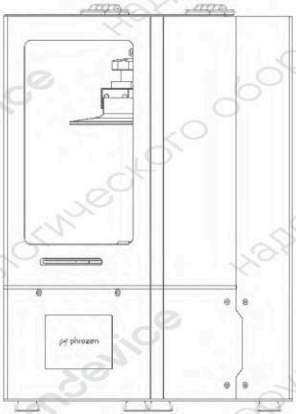
stomdevice

phrozen



User Manual for SONIC 4K

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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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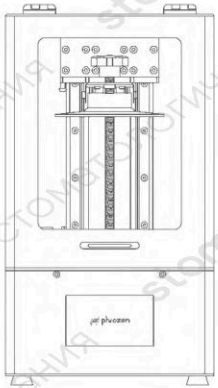
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Key Notes Before We Start !

- 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.

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What You Have In The Box



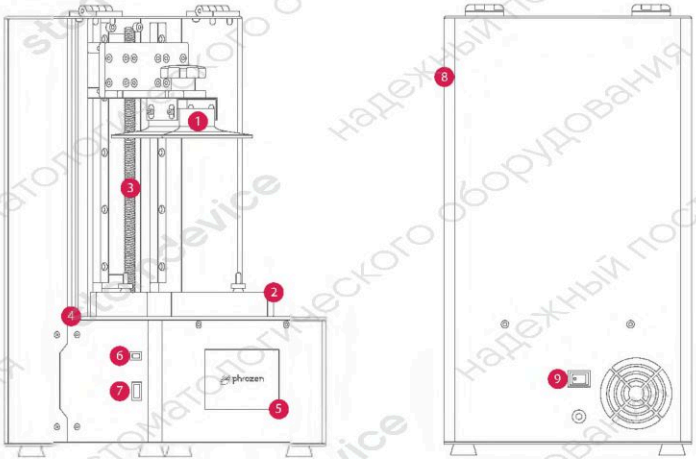


SONIC 4K

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

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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

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Sonic 4K Technical Specs

Operation

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

Printing Specification

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

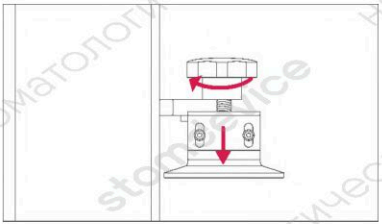
Hardware Specification

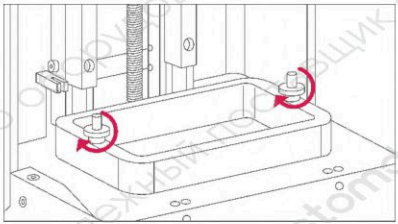
Printer Size:	L9 x W10.2 x H18.1 in
Printing Volume:	L5.2 x W2.9 x H7.8 in
Printer Weight:	14.5 kg

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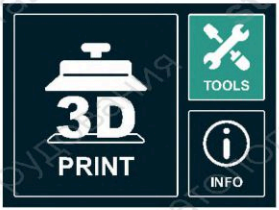
Calibrate & Test

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.

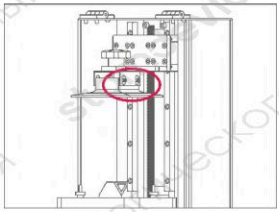




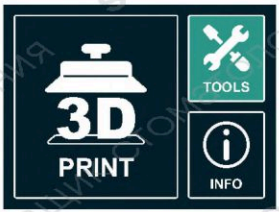


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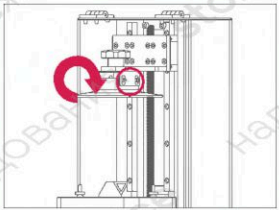
4 Loosen the 4 screws on the side of the build platform with an Allen wrench.



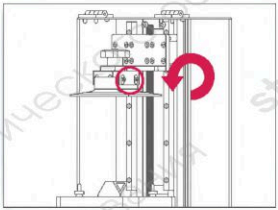
5 Click **TOOLS** , then click **Z Calib** to start the calibration.
After the build platform reaches the bottom of resin vat, tighten 4 screws on the side of the build platform with an Allen wrench.

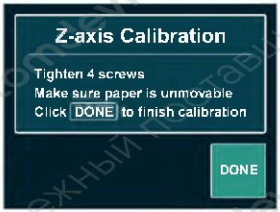












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Test Printing

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.

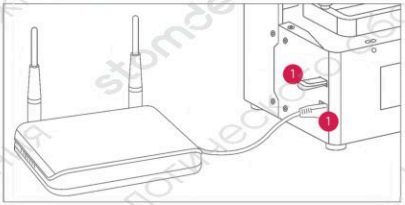


6. Wait till there's no resin drips once the process is completed.
7. Use scraper CAREFULLY to remove the print.



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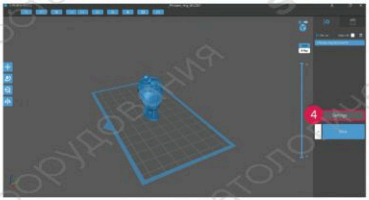
NETWORK



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





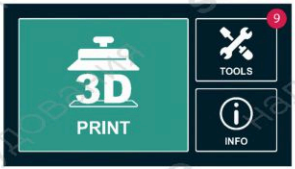
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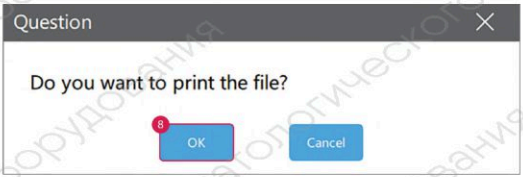


6. Click on Network Sending
7. When saving your file, make sure to save it as an .ctb file, then send it over to your printer
8. Click OK and start printing

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

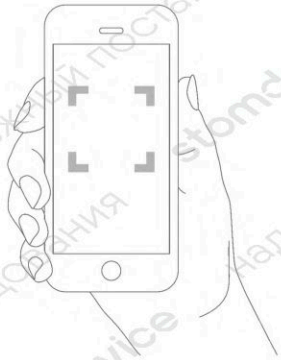
1. Use 95% alcohol, IPA, or detergent like Phrozen Wash to clean your print. An Ultra-sonic cleaner is recommended for cleaning hollowed parts.
2. Post-cure your print by UV lamp. Curing time depends on the intensity and wavelength of your lamp. Prints can be cured within 15 minutes in average by Phrozen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

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Prepare Your File

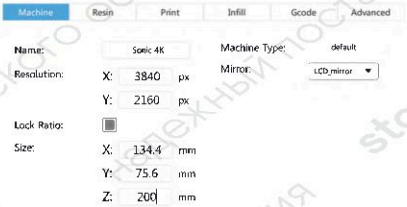
❶ Install ChiTu Box

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.



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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.

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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.

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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.

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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.

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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.

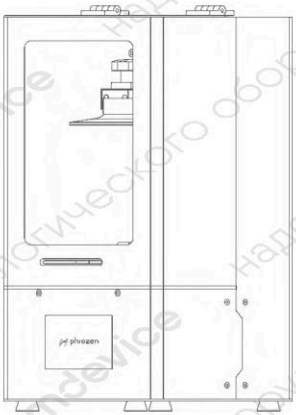


- Facebook: @Phrozen3d
- Twitter: @Phrozen3d
- Instagram: @Phrozen3d
- Youtube: @Phrozen3DPrinter

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使用說明 SONIC 4K

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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



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

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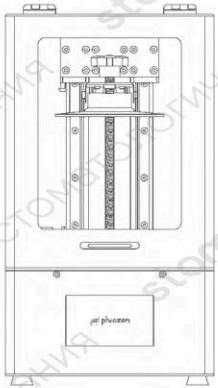
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操作前的注意事項！

- 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。

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配件盒内容物



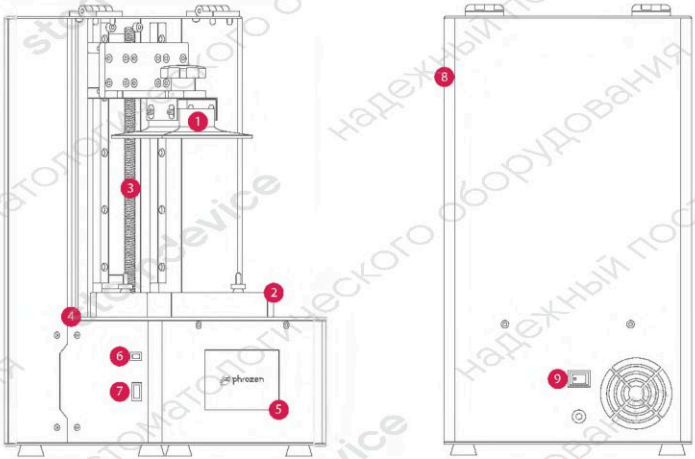


SONIC 4K

- ❶ 操作手冊
- ❷ 手套
- ❸ 軟硬刮刀
- ❹ 變壓器
- ❺ 六角板手
- ❻ 塑膠漏斗
- ❼ USB
- ❽ 螺絲
- ❾ 把手
- ❿ 空氣濾芯包與外蓋

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列印機零件



1 列印載台　2 樹酯槽　3 Z軸　4 LCD面板　5 觸控螢幕

6 USB孔　7 網路接孔　8 遮光罩　9 電源開關

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技術規格

操作系統

機台系統: Phrozen OS
操作介面: 5 英寸觸控螢幕
切層軟體: 赤兔 V1.6.5或以上
上傳方式: USB | Ethernet

技術規格

技術: LCD 光固化
光源: 405nm ParaLED® Matrix 3.0
XY 解析度: 0.035 mm
建議層厚: 0.01 - 0.30 mm
列印速度: 90 mm / hr
電源需求: AC100 240V~50/60Hz

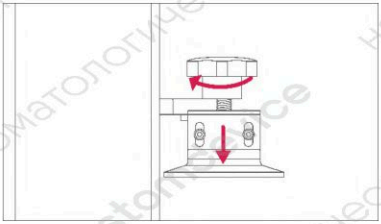
硬體規格

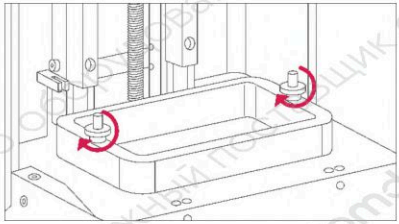
尺寸: (長)23 x (寬)26 x (高)46 cm
體積: (長)13.3 x (寬)7.5 x (高)20cm
重量: 14.5 kg

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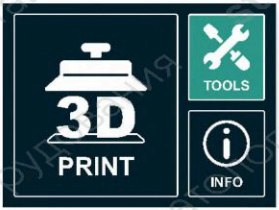
校正與測試

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。

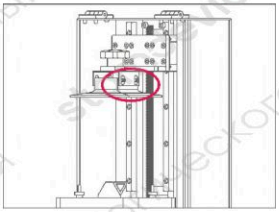




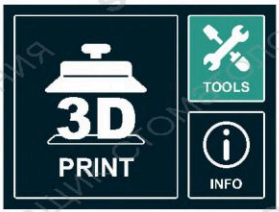


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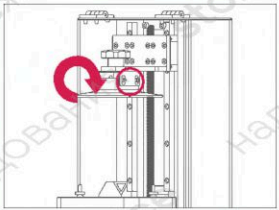
4. 用六角扳手鬆開列印載台側面的4個螺絲。



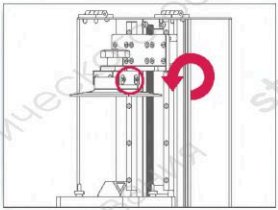
5. 觸控 TOOLS ，然後觸控 Z Calib 開始校正列印載台。
當載台與底部接觸後，鎖緊載台側面的4個螺絲。

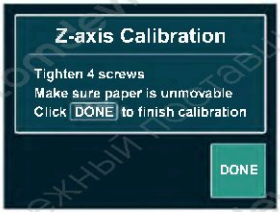












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測試列印

1. 穿戴個人防護裝備。
2. 充分搖均勻樹脂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。

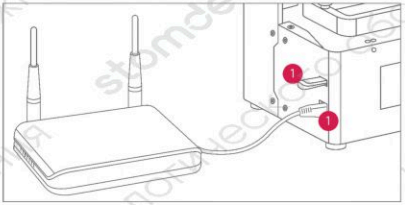


6. 等到列印完成後，列印成品是緊密吸附在載台表面。
7. 請小心使用刮刀把列印成品從載台上移除。

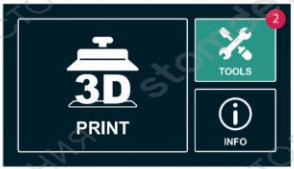


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NETWORK 傳輸檔案



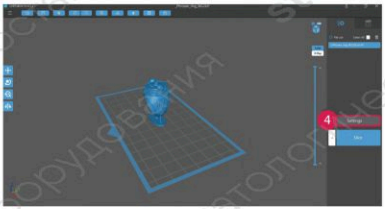
1. 將機台插上USB與網路線。
2. 進入 TOOLS，點選 NETWORK。
3. 確認連接的Wifi IP是否與電腦的 Wifi IP相同。







4. 開啟赤兔軟體，點選設定。
5. 選擇“Phrozen Sonic 4K”作為接下來之操作的樣板。





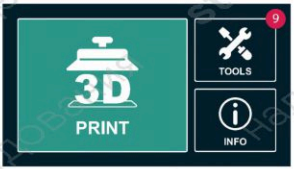
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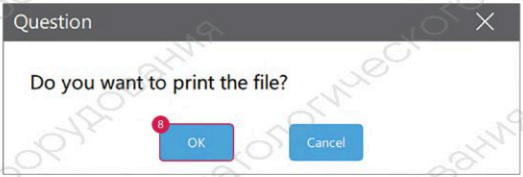


6. 點擊Network Sending
7. 將檔案設定為 .ctb 檔並傳送
8. 點選 OK 機台立即列印

9. 若在第八步驟點選 Cancel，請回機台點擊 PRINT 進入檔案頁面，確認檔案是否傳送完成，即可選擇列印。









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列印後處理

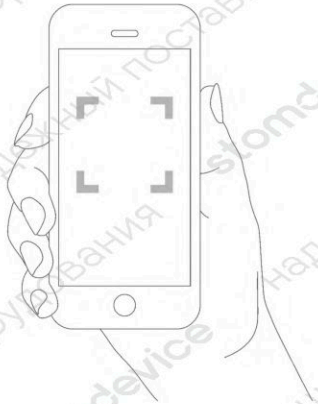
1. 使用95%的酒精、IPA或Phrozen Wash之類的清潔劑清潔模型。建議使用Phrozen超聲波清潔器可清潔更細微部位。
2. 用紫外線燈對模型進行後固化。固化時間取決於燈的強度和波長。Phrozen Cure平均可以在15分鐘內固化完成。

列印後處理

youtu.be/0gker8J-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酯直接與眼睛和皮膚接觸。
5. 不要任意傾倒樹脂。將樹酯固化後，依一般事業廢棄物處理即可。

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檔案規格/軟體操作

❶ 安裝赤兔軟體

在USB中存取ChiTu Box V1.6.5（或以上版本），並開始使用。

❷ 赤兔軟體設定

點選設定並選取列印機種。

選擇“Phrozen Sonic 4K”作為接下來之操作的樣板。





❸ 樹酯參數設定

- 將樹脂密度設定為1.1g / ml，可以此估算印刷成本。



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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。



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。

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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.CTB檔文件。

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問與答

1. **我的 Sonic 4K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 4K，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。

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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。

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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:

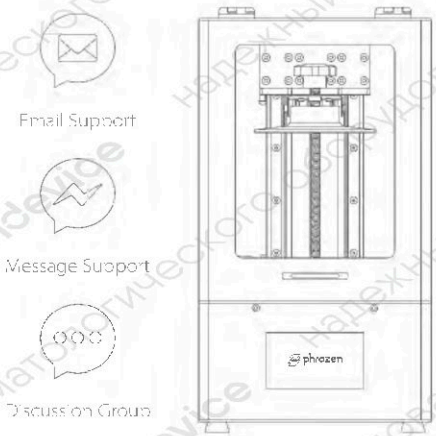
1. 密切關注 Phrozen Facebook 以獲取最新消息。
2. 歡迎加入 **Phrozen 光固化3D 列印機** 社團，與其他用戶討論並分享心得。
3. 如有任何疑問，請隨時發送電子郵件至 support@phrozen3d.com與我們聯繫或將私人訊息發送至Phrozen臉書私訊小編。
   facebook.com/messages/t/Phrozen3DP

臉書私訊小編



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

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