EN/CN-A02　　Focus 6K XL

Quick Start Guide

快速启动指南

中文P18

⚠ WARNING

1. When the glass over the LCD screen cracks, stop printing immediately, otherwise the crack will expand and cause more serious damage.
2. The maximum tank volume is 3 liters. Note that moderate resin must be added so its level will be between the upper and lower marker lines in the tank.
3. The correct way to cut off power supply is to turn off the power switch of the printer.
4. Do not cut off the power abruptly during printing to avoid mechanical damage.
5. The illustrations of the product, accessories and user interfaces in the instruction manual are all schematic diagrams for reference only. Due to the updating and upgrading of the product, the actual product may differ slightly from that in the schematic diagram. Please take the actual product as the standard.

⚠ 注意事项

1. 当LCD屏幕上方的玻璃出现裂纹时，禁止继续打印，否则裂纹会继续扩张，造成更严重的损伤。
2. 料槽最大容积为3升，请注意添加足够的树脂，使得液位必须在溶液盒内上限标记线和下限标记线之间。
3. 正确切断电源的方式是关闭打印机的电源开关。
4. 打印过程中切勿突然断电，避免造成机械损伤。
5. 说明书中的产品、配件、用户界面等插图均为示意图，仅供参考。由于产品的更新与升级，产品实物与示意图可能略有差异，请以实物为准。

This guide is only applicable to FLASHFORGE Focus 6K XL 3D printer
本手册仅适用于闪铸科技 Focus 6K XL 3D打印机

⚠ NOTE

Three screws A, B and C indicated in the picture should not be loosened, otherwise the printing will fail!
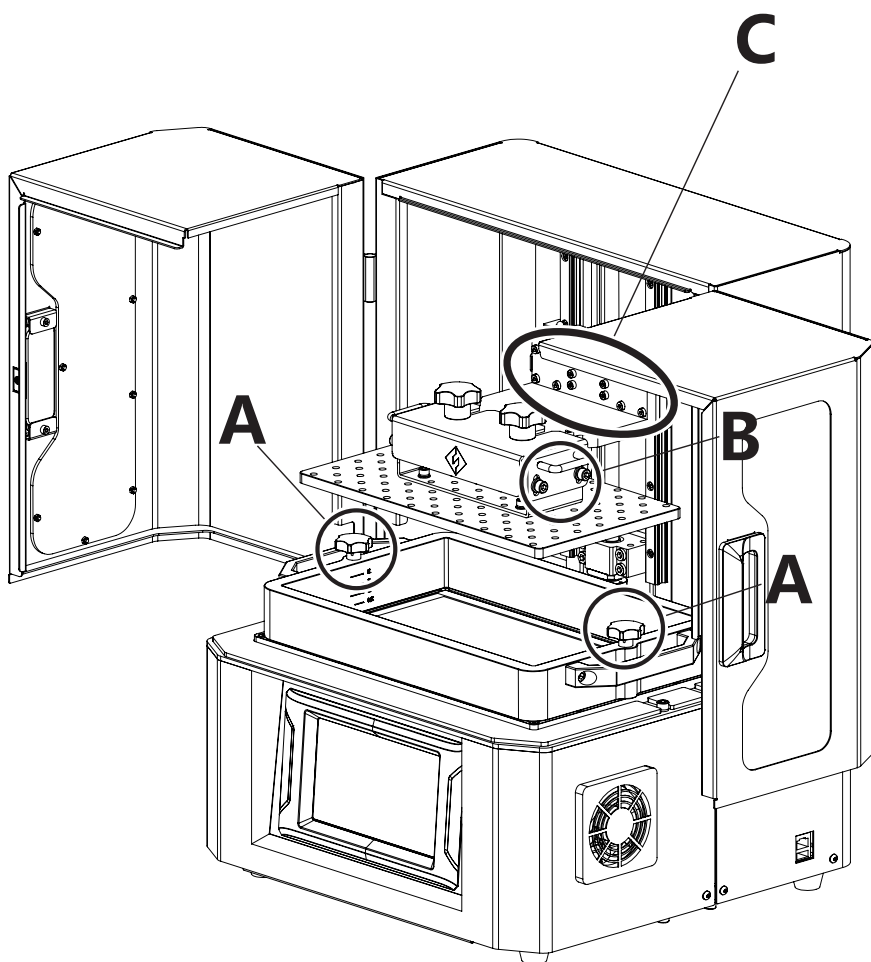
Foreword

Note **Each 3D printer has undergone a printing test before leaving the factory. If there are residual consumables in the feed resin tank or slight scratches on the printing platform, it is normal and will not affect the use.**

Dear customer:

Thank you for choosing and using the products of Flashforge Technology. Thank you for your great support and help. The product quality and performance of Flashforge Technology are excellent. For your convenience, please read the manual carefully before use, and strictly follow the instructions of the manual. The entire Flashforge Technology team is always ready to provide you with the best quality service. No matter what problems you encounter during use, please contact us according to the telephone and email provided at the end of the manual.
In order for you to experience our products better, you can also obtain equipment operating knowledge from the following channels:

Quick Starter Guide

Please unpack it carefully, you can take out the attached quick start guide from the top layer of foam. The quick start guide will help you get familiar with the device as quickly as possible and successfully complete the first printing experience.

Notice

Safety tips: Please make sure to read the following safety tips carefully

Work Environment Safety

◆ Keep your work place tidy.
◆ Do not operate in the presence of flammable liquids, gases or dust.
◆ Children and untrained personnel should not operate the equipment alone.

Environment Requirements   **Place Requirements**

◆ Temperature: RT 15-30℃
◆ Moisture: 20%-70%

◆ The device must be placed in a dry and ventilated environment. The distances of the left, right and back side space should be at least 20cm, and the distance of the front side space should be at least 35cm.

Electrical Requirements

◆ Be sure to ground the device; do not modify the plug of the device. (Ungrounded/incorrectly grounded/modified plugs will inevitably increase the risk of leakage)
◆ Do not expose the device to humidity and hot sun. (Wet environment will increase the risk of leakage/exposure will accelerate the aging of plastic parts)
◆ Do not abuse the power cord, and be sure to use the power cord provided by Flashforge.
◆ Do not use the device during thunderstorms. If you do not use the device for a long time, please turn off the device and unplug the power cord.

Personal Safety

◆ Please don't direct touch the photopolymer resin with hands.
◆ Please put on gloves and masks during operation.
◆ Please don't look at the light source directly.
◆ Do not operate the device while you are tired or under the influence of drugs, alcohol or medication.

Cautions

◆ Operate the device in a well-ventilated environment
◆ Do not leave the device unattended for long
◆ Do not make any modifications to the device
◆ Do not operate the device in bright light.
◆ Never use the device for illegal activities.
◆ Never use the device to make any food storage vessels.
◆ Never use the device to make any electrical appliance.
◆ Never put the model into your mouth.
◆ Do not remove the models with force.

Photopolymer Resin Requirements

◆ Please store the photosensitive resin solution in a dark and dry environment. Please place it in a place out of the reach of children. Please ensure that the label surface of the bottle is facing the eye-catching direction.

Photopolymer Resin Storage

◆ Unused photopolymer resin needs to be stored in a dark, dry, cool place, and out of the reach of children. Ensure the bottle body logo faces in an eye-catching and visible direction.

Legal Notice

◆ The user has no right to make any changes to this manual.
Flashforge Technology will not be responsible for any safety accidents caused by customers disassembling or modifying the equipment by themselves. Without the permission of Flashforge no one may modify or translate this manual. This manual is protected by copyright, and Flashforge reserves the right of final interpretation of this manual.

First edition (February 2022)
@Copyright 2021 Zhejiang Flashforge 3D Technology Co.,Ltd., Ltd. All rights reserved
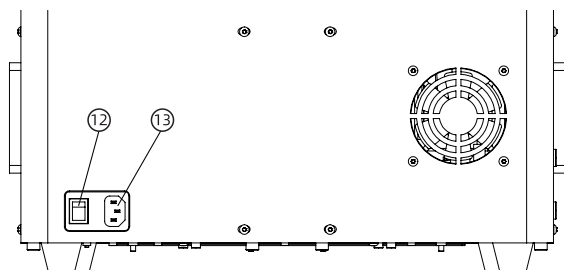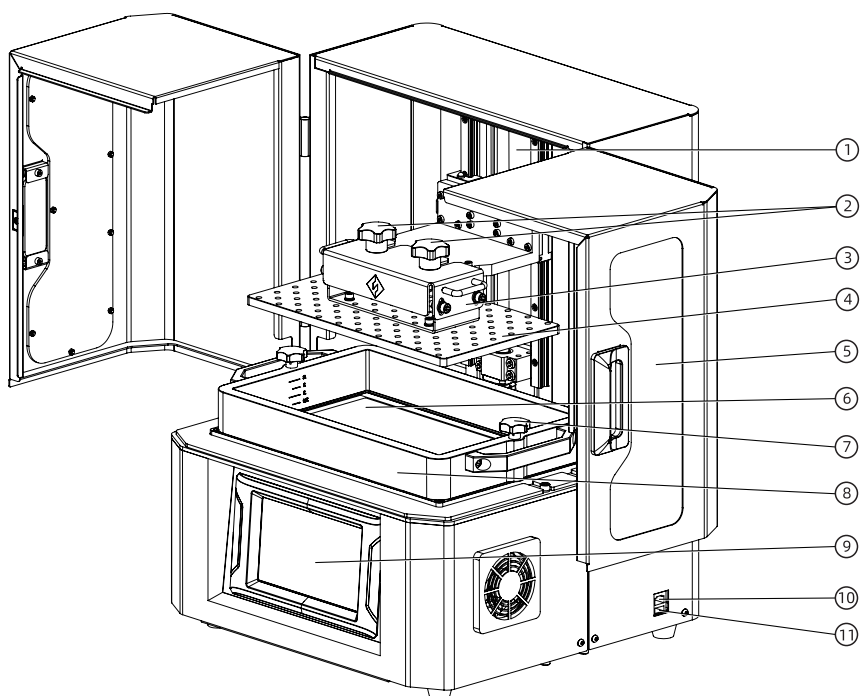
1. Z-axis   2. Platform Tighten Knob   3. Leveller   4. Build Plate

5. Light Shield   6. LCD   7. Box Tighten Knob   8. Resin Box

9. Touched Screen   10. Ethernet   11.USB Stick Port

12. Power Switch   13. Power Slot
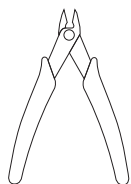
Accessory Box
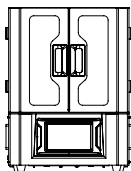
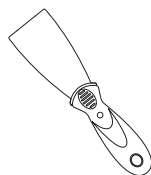|			
3D Printer	**After-sales Service**	**Power Cable**	**Quick Start Guide**
Diagonal Pliers	**Metal Scraper**	**Plastic Scraper**	**Brush**
Rubber Glove	**USB Stick**	**Wrench Accessory Kit**	**Tweezers**
Soft Cloth	**Filter**		
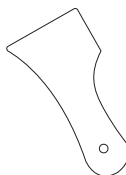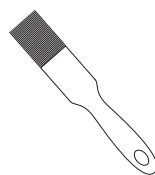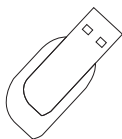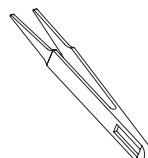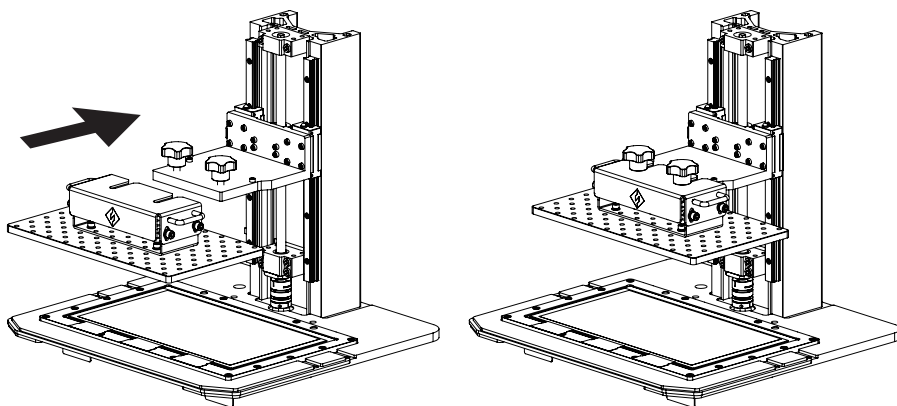
1. Confirm that the printing platform is clean. Install the platform as shown in the picture: fit it on the Z-axis and fasten it with hand-screw nuts.Confirm that there is no misalignment in the installation of the platform and that it is not loose when moved manually.
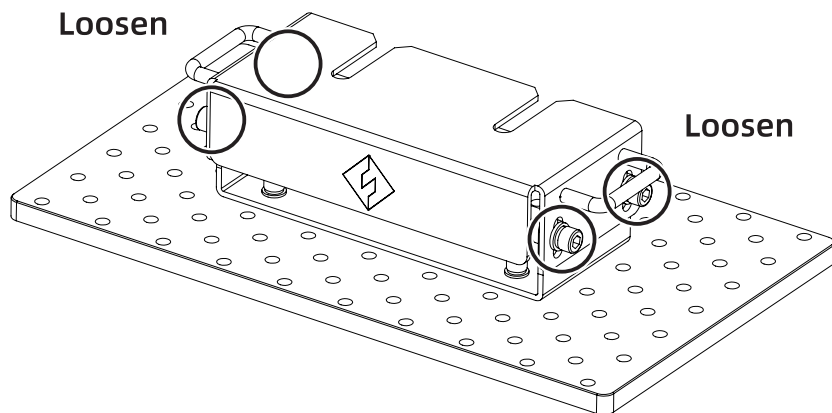
Loosen

Loosen

2. Loosen the four M6 screws in the upper-adjustment block of the platform assembly. Note that there are two screws on the both sides of the upper adjustment block.
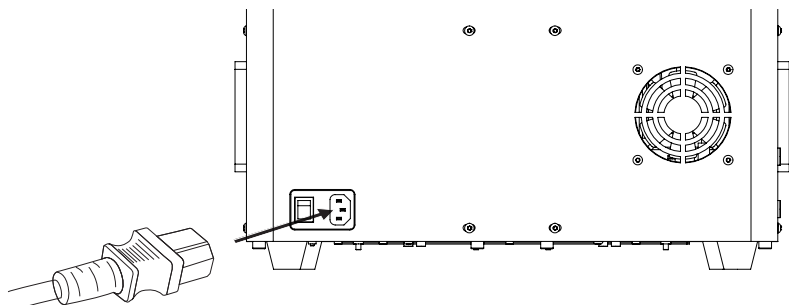
3. Connect the power cable to the adapter, insert the output of the power adapter into the power inlet port on the back of the printer. Turn on the switch.

Note Before leveling, you can choose whether to remove the protective film from the projection screen or not. If there are no obvious scratches and bubbles on the surface, and there is no abnormality on the surface of the printed model, it is recommended to keep it.
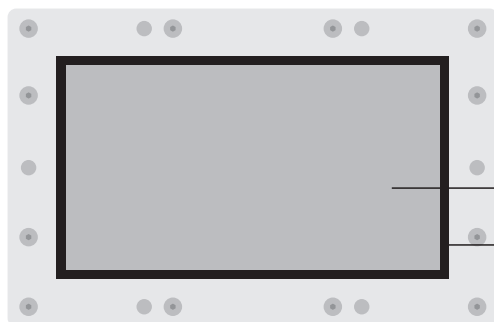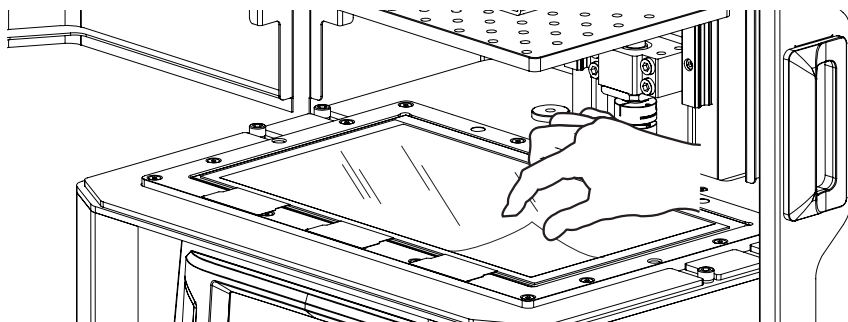
After removing the protective film, it needs to be fixed again with the light-blocking tape along the edge of the screen (i.e., the non-projection area, about 3.5 mm wide).

Screen

Edge of the screen

Light-blocking tape

Light-blocking tape
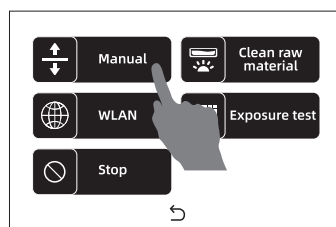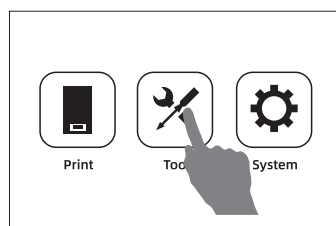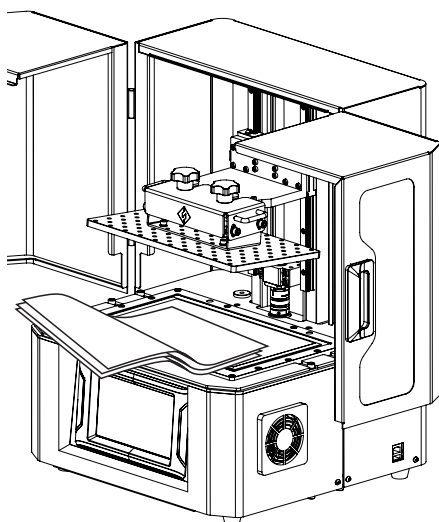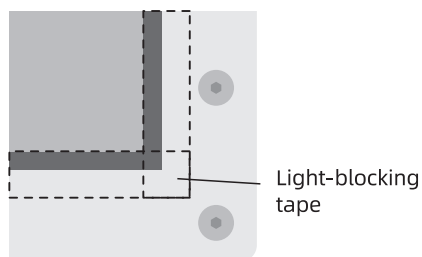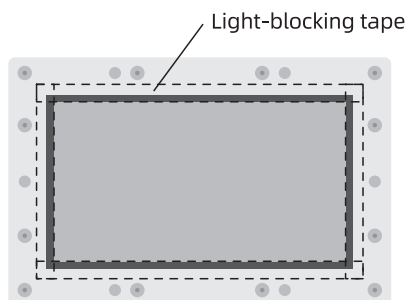
4. Place 3 sheets of A4 paper over the printer screen.

5. Click on [Tools] in the main interface, and then click on [Manual].

Print   Tools   System

Manual   Clean raw material

WLAN   Exposure test

Stop

Z: 23 00 mm

No.2
No.4
No.3

Tighten

No.1
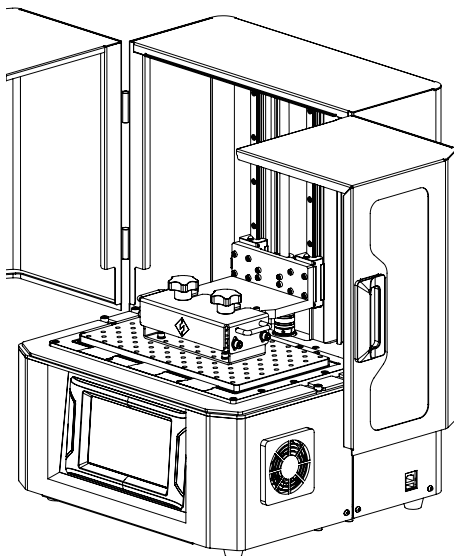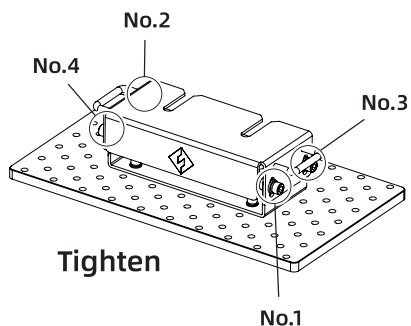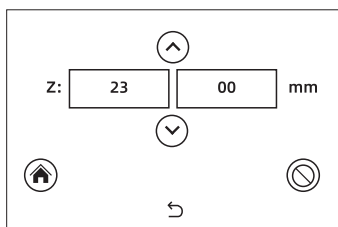
6. Click on [Home] to reset the Z-axis and lower the platform to the zeroposition. When the platform is lowered to the bottom, tighten the four M6 screws No.1-4 in sequence according to the figures shown.

Z: 23 00 mm
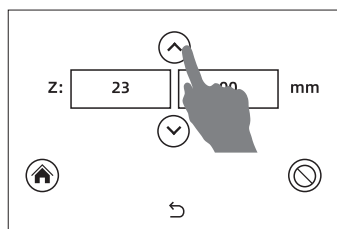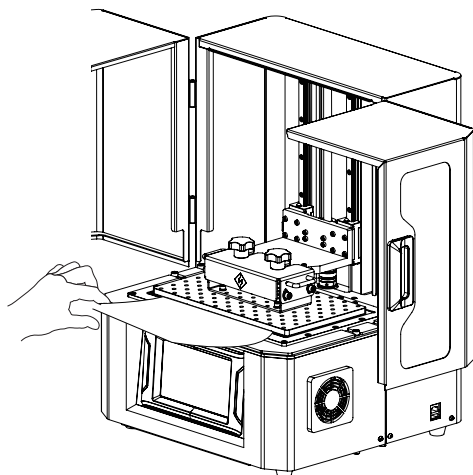
7. Pull the A4 paper back and forth. Make sure some resistance can be felt during pulling.

8. Click on " ^ " to raise the platform 100-150 mm to complete the leveling.

1. Confirm that the LCD screen and resin box are clean.

2. Take out the resin box and place it carefully on the screen. Pay attention to the orientation of the pouring port and install it in the direction shown on the right.
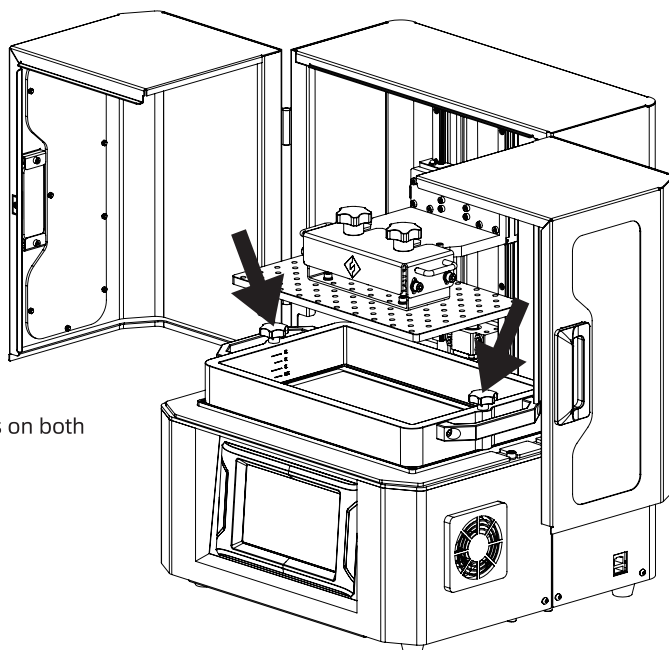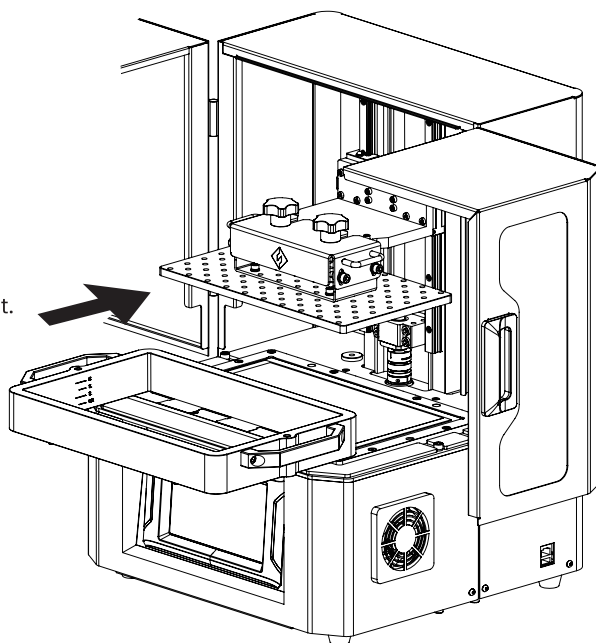
3. Tighten the screws on both sides.

No misalignment and looseness in installation
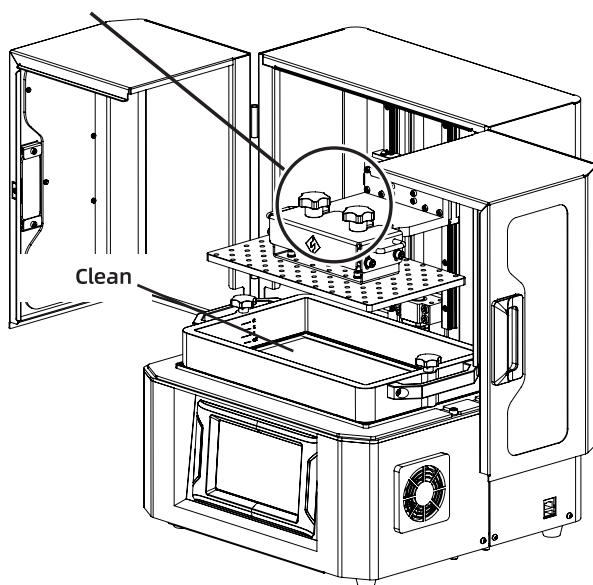
Clean

4. Confirm that LCD screen, build plate and solution box are clean.
5. Make sure that the resin box and platform are installed in alignment and that they are not loose when moved by hand.

6. Shake the resin to mix itwell.
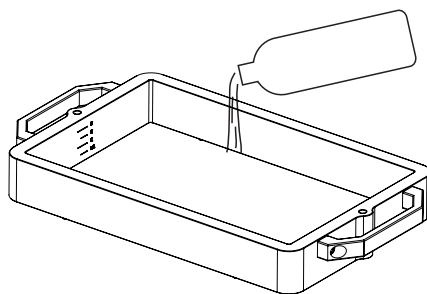
7. Pour the resin into the solution box. Note that level shall not exceed or be lower than the mark lines in the resin box. Close the light shield after all above preparatory steps.

Dental-Model

◀ 1/1 ▶

Print   Tool   System

0 h 52 min

297 min

0.05 min
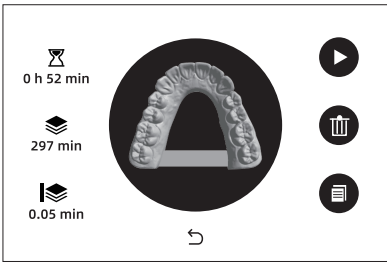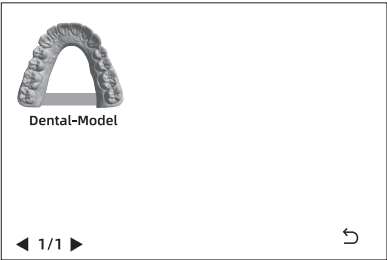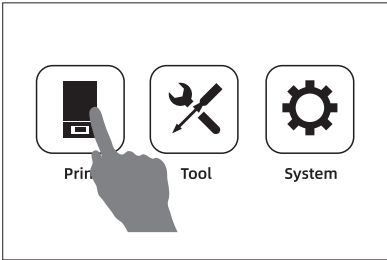
9. Click [Print] to enter the model list. Click the model file to start printing.
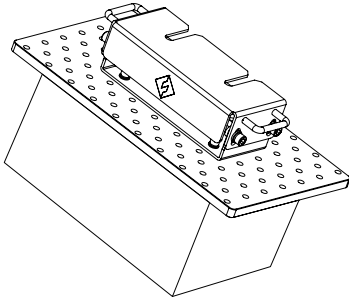
1. When the printing is finished, a notification will be displayed.Click [OK], open the light shield, take out the build plate, drain the remaining resin, and shovel the model off with a scraper.

   Note: There will be uncured resin on the model when printing is just finished. Please note that the model must be dried before being processed.
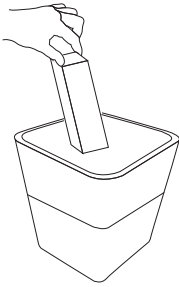
2. Small models are cleaned in an ultrasound device filled with alcohol, while the large models are rinsed in a drum with alcohol.
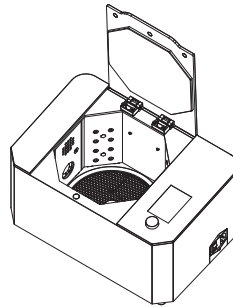
3. After cleaning, dry the model with a dust-free cloth or with an air gun. Put it in the curing box to solidify it again.

5. Clean the device with dust-free cloth and alcohol. Turn off the device.

   Note:
   1) Take extra care when installing and uninstalling the platform, for it's heavy and might damage LCD screen if were to fall.
   2) In the cases of long printing process, regular observations are required. Stop printing when flawed or fallen models appear.
   3) Keep the environment clean and dust-free.
   4) For novice to do the leveling, please reconfirm the installation and leveling gaps.

4. After filtering the resin, pour it into the resin recycling bottle (separate packing of the new resin is recommended).

13
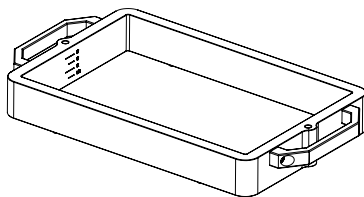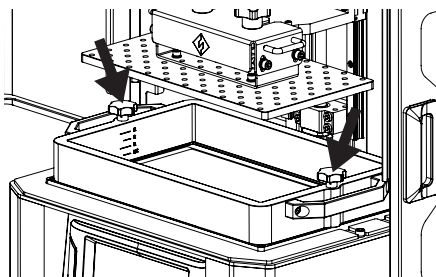
1. Loosen the screws indicated in the picture and take out the resin box. Remove the remaining resin and clean the box.
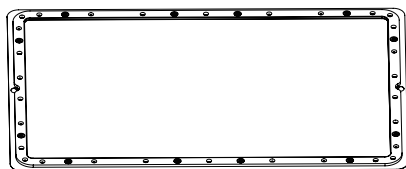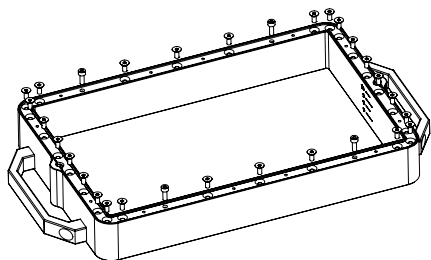

2. Turn the box up side down and loosen the screws on the base. Take out the FEP membrane module to be replaced.

3. Clean the bottom of the resin box and the screws, and prepare a new module. Note: Do not touch and leave fingerprints on the membrane which will affect printing.
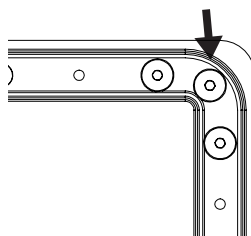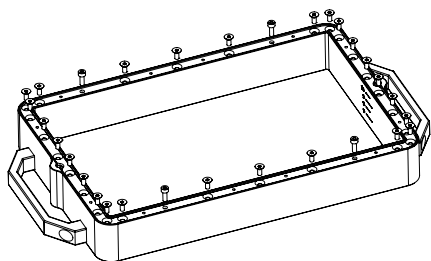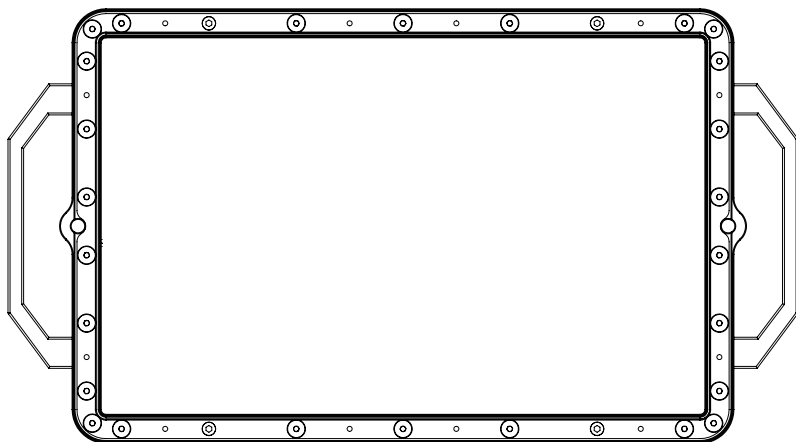

4. Place the FEP membrane at the bottom of the resin box.

5. Tighten the screws on the four corners first.

05
02
04
09
08
07
10
03
01
06
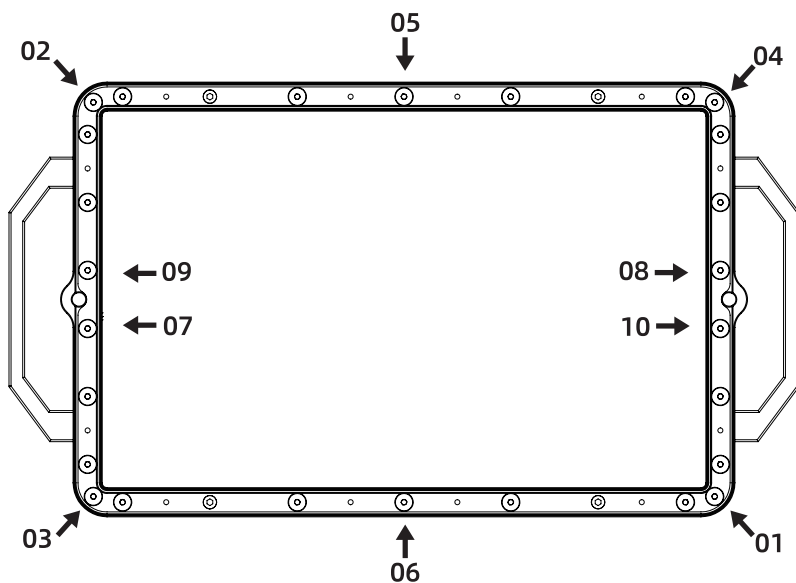
6. Tighten the M4*12 countersunk screws from 1 to 10. Please do it in a diagonal order.

7. Cut off excess FEP membrane (dark part) to finish the replacement. Please double check if the resin box is polluted with dirt, fingerprints, etc. If so, it needs to be cleaned again.

FlashDental

FlashDental.exe

1. Install and run the FlashDental.exe program.
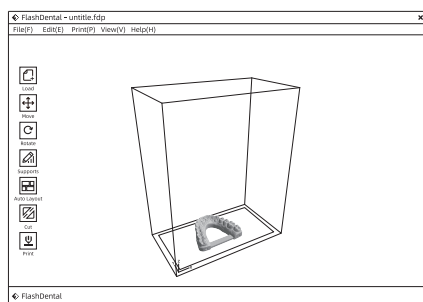
Load

2. Click Load, select the model file.

Set Position

X: 0.00mm
Y: 0.00mm
Z: 0.00mm

Move

Rotate

On Platform Separately
On Platform   Center
Reset

Print

I want to: Preview   Print When Slice Done
Material Type: Dental Model Resin
Operation: Save As New   Remove
Layer Height: 0.05mm
More Options >>

Exposure Time   Raft   Size Adjust   Infill   Others
Base Time: 2.5s
Attach Time: 35.0s
Gradual Time Layers: 8

Restore Defaults

OK   Cancel   Save Configuration
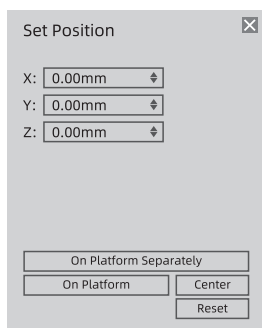
3. Use movement and rotation to place the model in an appropriate position. The model should not be lower than the network surface of the bottom plate.
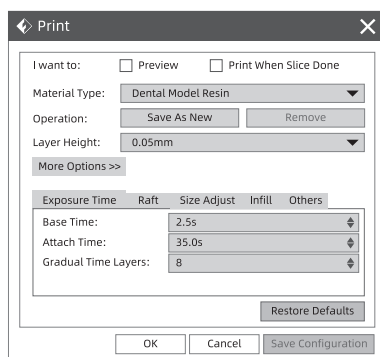
4. Click Print, and a print window pops up. (Generally just adjust "layer thickness", "bottom number", "exposure time", "bottom exposure time", etc.)

FlashDental – untitle.fdp
File(F)   Edit(E)   Print(P)   View(V)   Help(H)

Load
Move
Rotate
Supports
Auto Layout
Cut
Print

FlashDental

Slicing model ...

Select a path for saving file
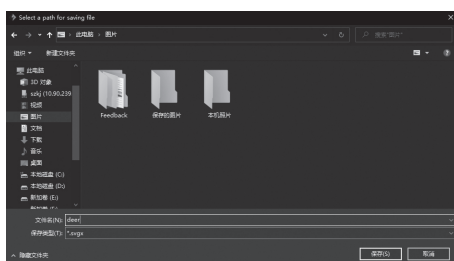
5. Click [OK], select the file type ".svgx ", select the save location, and click [Save S].

6. At this point, "Slicing..." will be displayed at the bottom of the interface. , after the section is completed, the interface changes into the section preview interface.

Load the model files

1. Copy the '.svgx' file to the USB stick on the computer. It would be better to remove USB stick from computer after 'Safely Remove USB stick ' note to avoid file damage.
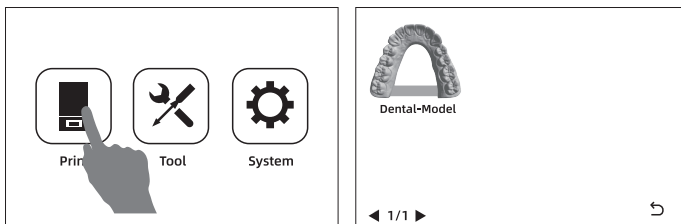
2. Insert USB stick into the USB stick port in the machine. Click [Print] on the screen to enter file list and scroll down your page to find the target model file. After starting printing, USB flash disk can be removed.

Maintenance

◆ Please keep two parts shown in the picture below clear without dust and fingerprint.
◆ Do not pour the used residual resin back to the resin bottle.
◆ The waste resin can be poured into the sealing bag for sealing and then be exposed to the sun until the resin solidifies.
◆ If the resin drops onto the LCD screen, please wipe it with non-woven fabric in time; if the resin has solidified, please wipe it via non-woven fabric with alcohol.
◆ Do not clean the residual resin in the resin box with something sharp to avoid the damage of FEP film.
◆ If the print doesn't work for quite a long time, please pour the residual resin in the resin box into a closed container and keep it away from light. If a solidified model falls into the residual resin, please take it out as soon as possible.
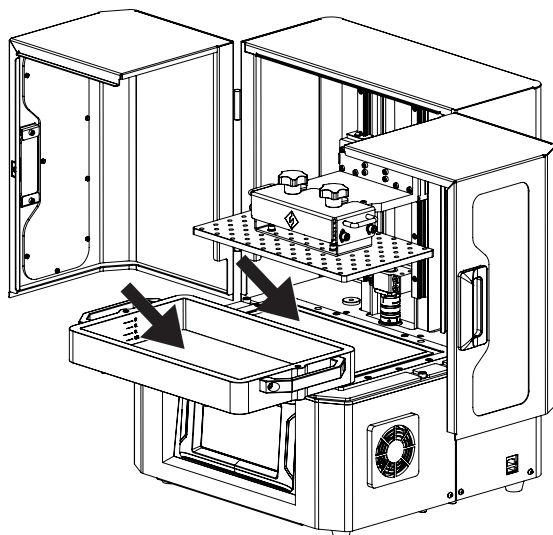
图中标示的**A、B、C**三处螺丝均不得松动，否则将导致打印失败！
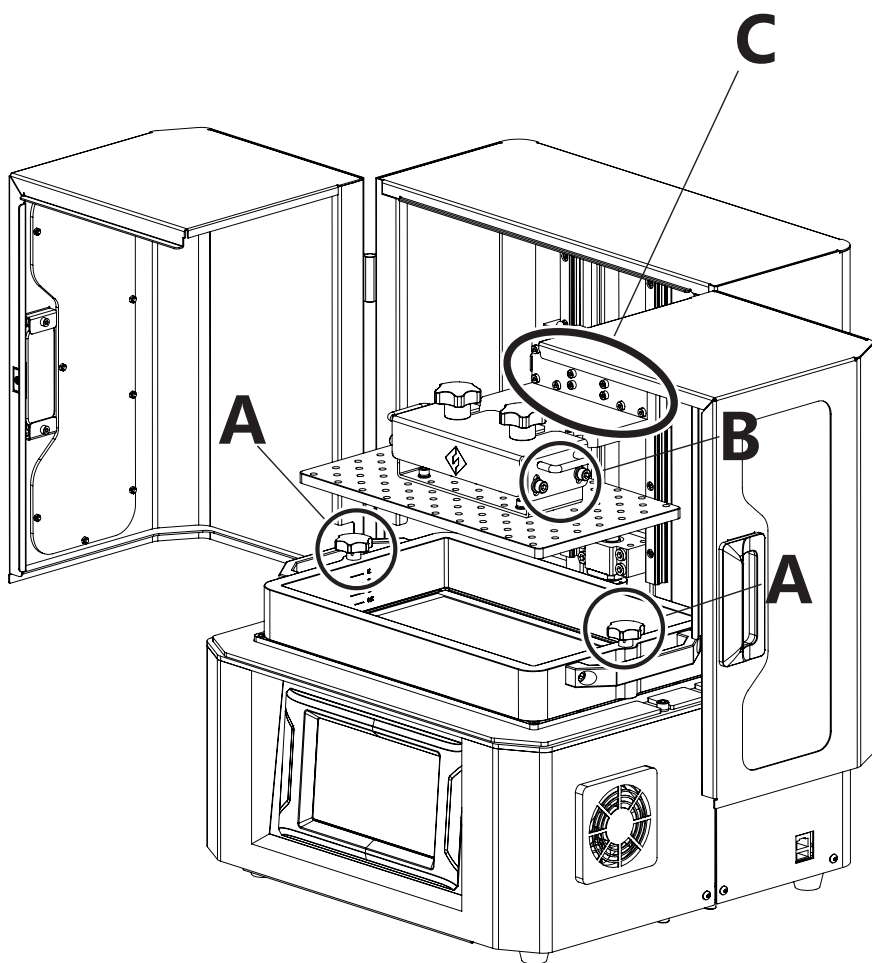
前 言

注 意　每台3D打印机在出厂前都经过打印测试，若料槽内存在耗材残留或打印平台有轻微划痕，都属正常现象，不影响使用。

尊敬的用户：

　　感谢您选择、使用闪铸科技的产品。感谢您的大力支持和帮助。闪铸科技的产品质量优、性能上佳。为了您使用方便，请您在使用之前仔细阅读该说明书，并严格按照说明书的指示进行操作。整个闪铸科技团队时刻准备为您提供最优质的服务。在使用过程中无论遇到什么问题，请按照说明书结尾所提供的电话、邮箱与我们进行联系。

　　为了您能够更好地体验我们的产品，您还可以从以下途径获取设备的操作知识：

快速启动指南

请您小心拆箱，您可以从最上层的泡沫中取出附带的快速启动指南。快速启动指南将帮助您以最快的速度熟悉设备并成功完成初次打印体验。

注意事项

安全提示：请确保认真阅读以下安全提示

工作环境安全

◆ 请保证打印机的工作台面干净整洁。
◆ 请保证打印机工作时远离可燃性气体、液体及灰尘。设备运行产生的高温有可能会与空气中的粉尘、液体、可燃性气体反应引发火灾。
◆ 儿童及未经培训的人员请勿单独操作设备。

设备运行环境要求

◆ 室内温度在15-30度为宜。
◆ 湿度在20%-70%为宜。

设备放置要求

◆ 设备需要放置于干燥通风的环境中。设备左侧、右侧以及后侧必须要留至少20cm的空余距离，前侧必须要留至少35cm的空间距离。

用电操作安全

◆ 请务必将设备接地。切勿改装设备的插头。未接地／未正确接地／改装插头必然会增加漏电风险。
◆ 请勿将设备暴露在潮湿或烈日环境中。潮湿环境会增加漏电的风险/暴晒会加速塑件老化。
◆ 请勿滥用电源线，务必使用闪铸科技提供的电源线。
◆ 切勿在雷雨天气使用设备。
◆ 如长时间不使用设备，请关闭设备并拔下电源线插头。

个人操作安全

◆ 请勿用手直接触碰光敏树脂溶液。
◆ 在操作设备时，请带上橡胶手套和口罩。
◆ 请勿直视光机光源。
◆ 请勿在饮酒、服药之后操作设备。

设备兼容耗材要求

◆ 在使用该设备时，请使用闪铸提供或指定的耗材。市场上耗材鱼龙混杂，质量良莠不齐。质量低劣或不兼容的耗材可能容易影响打印成功率，影响使用体验。

设备使用提示

◆ 切勿长时间离开正在运行的设备。
◆ 请勿自行对该设备进行任何改装。
◆ 请勿在强光环境下进行打印作业。
◆ 请在通风的环境下操作设备。
◆ 请勿利用该设备进行违法犯罪的活动。
◆ 请勿利用该设备制作食物储存类产品。
◆ 请勿利用该设备制作电器类产品。
◆ 请勿将打印模型放入口腔。
◆ 请勿用蛮力卸下打印模型。

耗材储存要求

◆ 请将光敏树脂溶液存储在阴暗干燥的环境下，请放置在儿童不可触及的位置，请保证瓶身标识面朝向醒目可视方向。低温存储的溶液需要摇匀，且恢复到室温（20℃以上）后使用。

模型排布注意事项

◆ 模型排布尽量避免形成倒扣漏洞状；打印密集排布的模型可以适当降低曝光时间。

法律申明

◆ 客户若自行拆装或改造设备造成任何安全事故，闪铸科技概不负责。未经闪铸科技允许，任何人不得对该手册进行修改或翻译。本手册受版权保护，闪铸科技对本手册保留最终解释权。

第一版（2022年3月）
@Copyright 2020 浙江闪铸三维科技有限公司 版权所有
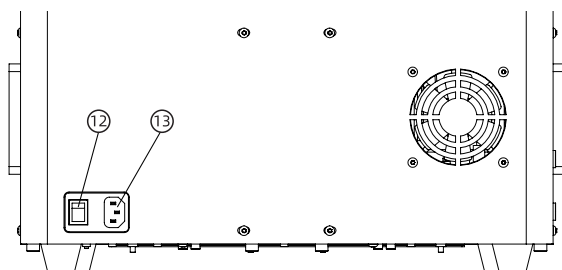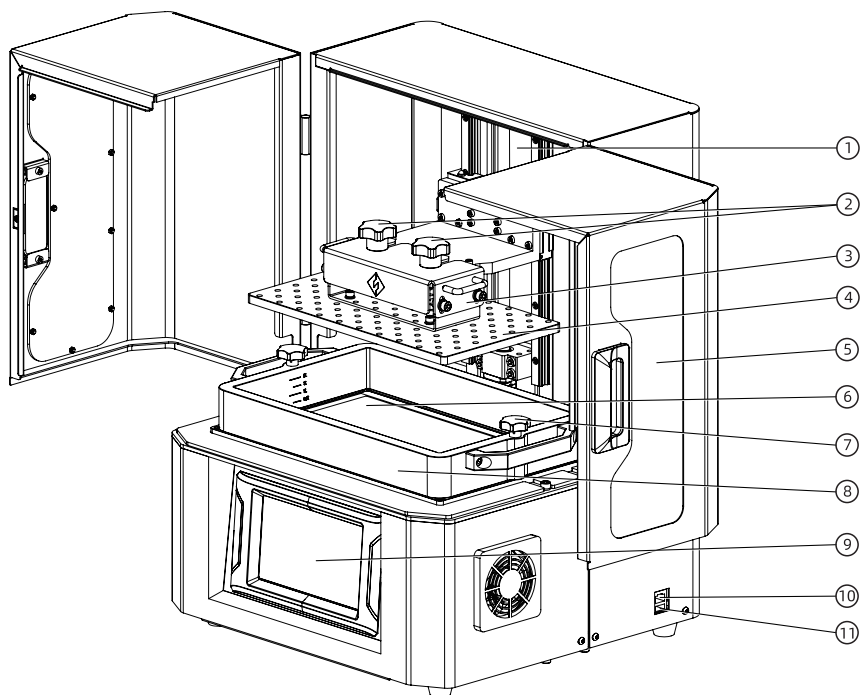
1. Z轴　　2. 平台紧固旋钮　　3. 上调节块　　4.成型平台　　5.遮光板

6.LCD　　7.溶液盒紧固旋钮　　8.溶液盒　　9.触摸屏　　10.以太网接口

11.USB接口　　12.电源开关　　13.电源线插槽

装箱物品
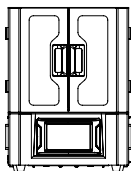
3D打印机	售后服务卡	电源线	快速启动指南
斜口钳	金属铲刀	塑料铲刀	刷 子
手 套	U 盘	扳手配件包	镊 子
无尘布	过滤纸		
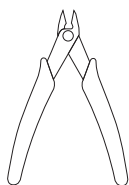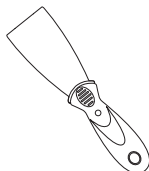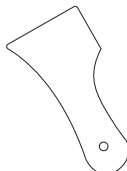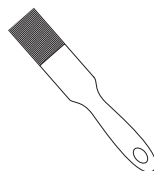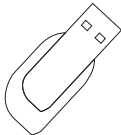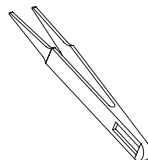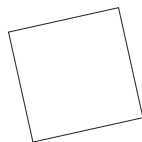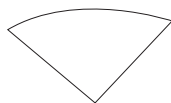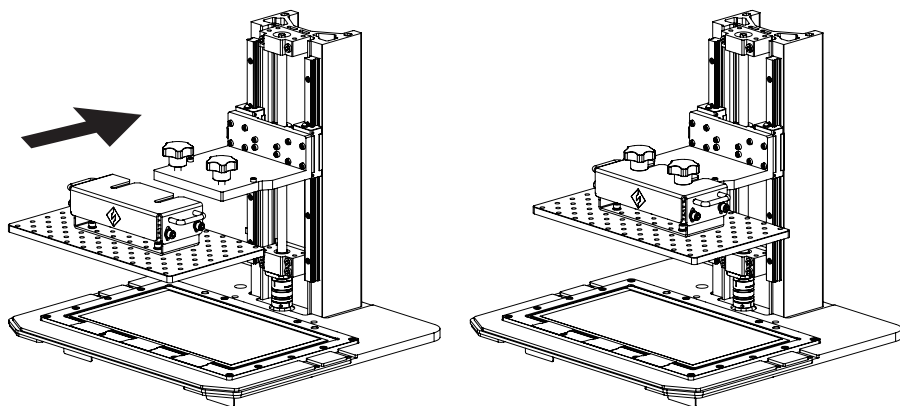
1. 确认打印平台无异物。如图所示，安装打印平台。将打印平台安装在Z轴上，手旋螺母固定锁紧。确认打印平台安装无错位，用手摆动没有松动。

拧 松

拧 松
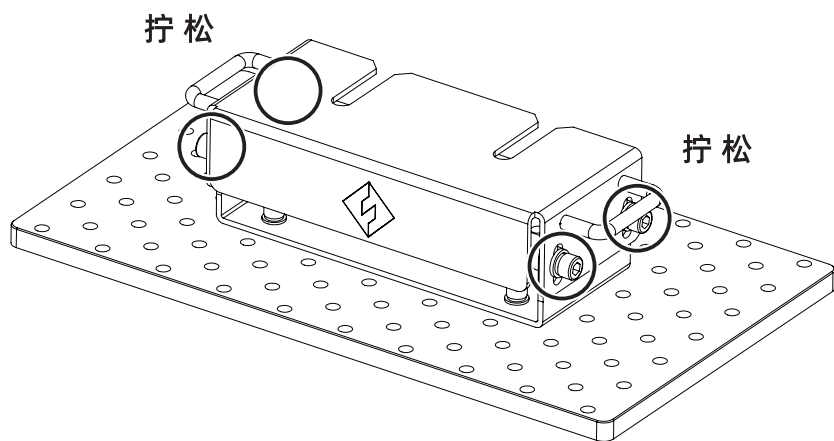
2. 将"打印平台组件"的"上调节块"中，4颗M6螺丝拧松。请注意，在上调节块左右两侧各有两颗螺丝。
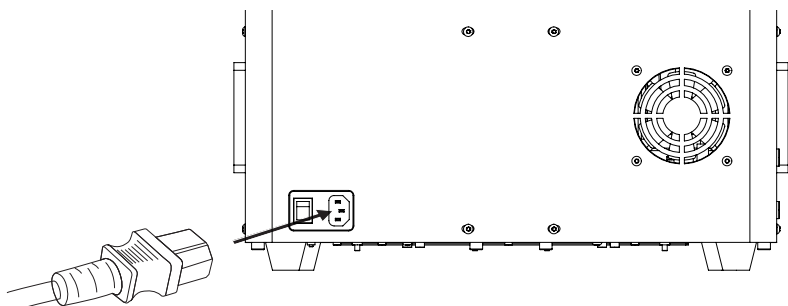
3. 连接电源适配器和电源线，将电源适配器输出端插入打印机背部的电源驶入端口，
   打开开关。

注 意　　调平前，可自行选择是否撕除投影屏上的保护膜。如果表面
没有明显的划伤以及气泡，且打印模型表面无异常，建议保留。
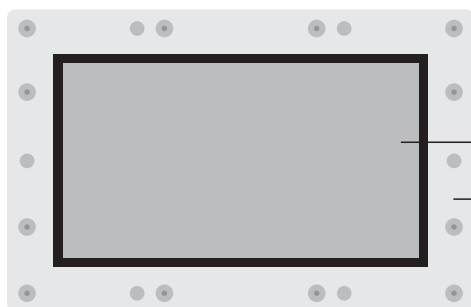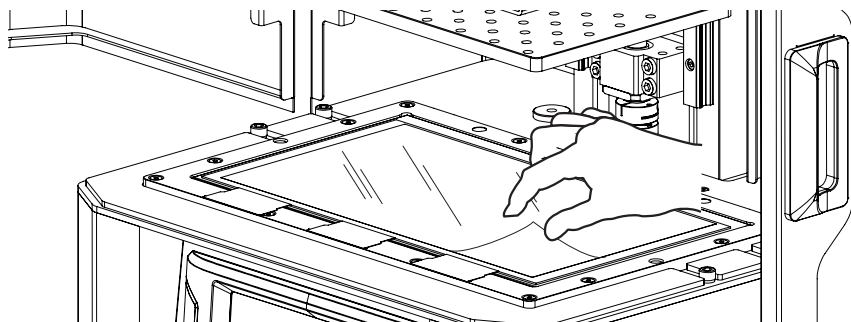
撕除保护膜后，需要对屏幕边缘的
非投影区（宽度约3.5 mm）进行
固定处理。

投影屏

屏幕边缘的非投影区
（黑色部分）
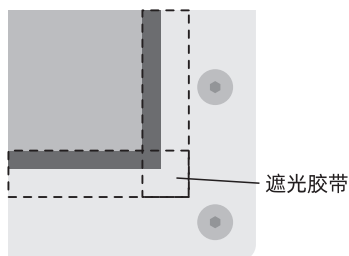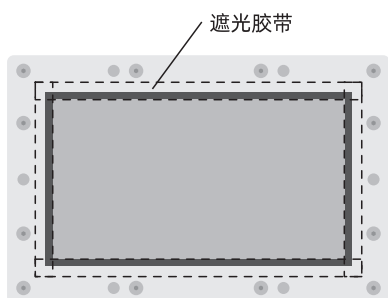
遮光胶带

遮光胶带

用遮光胶带沿屏幕边缘的非投影区粘贴（图中虚线部分），将投影屏固定住。

4. 在机器的打印屏幕上方，垫上3张A4纸张。

打印　　工具　　系统

Z轴移动　　　　料盘清理

网　络　　　　曝光测试

紧急停止
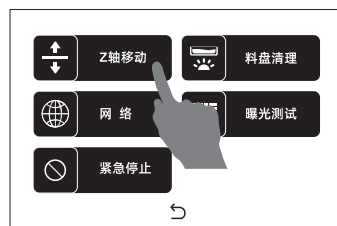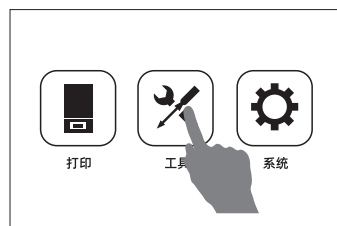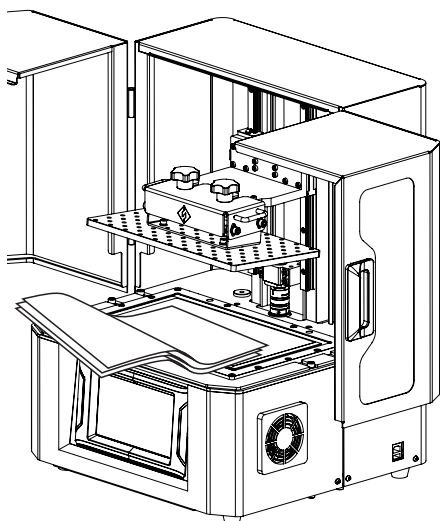
5. 在主界面点击"工具"，进入工具界面，
点击"z轴移动"。

2号
4号
3号
拧 紧
1号
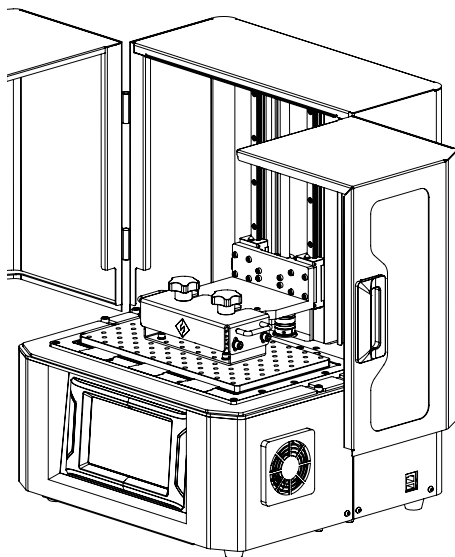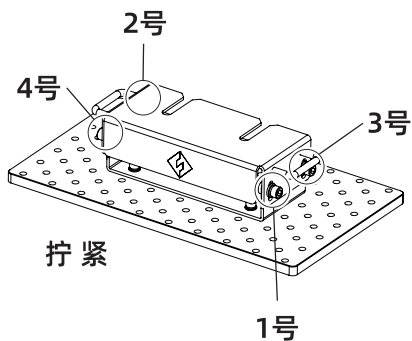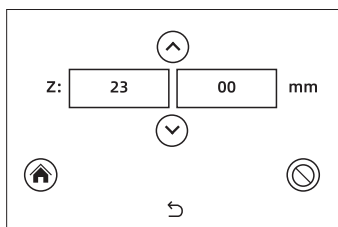
6. 点击"Home"，将Z轴复位，平台下降至下限位零位。平台下降至最底部后，按图示数字的
   顺序依次锁紧1-4号四颗M6螺丝。
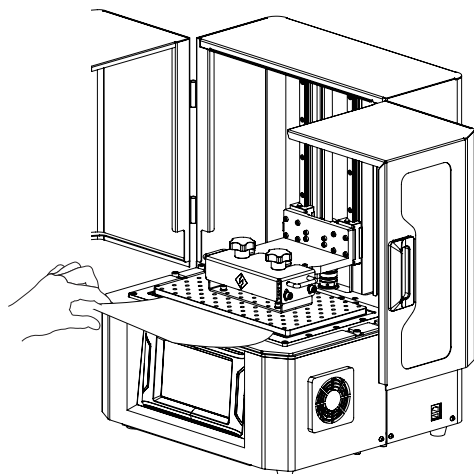
7. 检查来回抽动三张A4纸，以能够抽动，
   但有一些阻力为准。
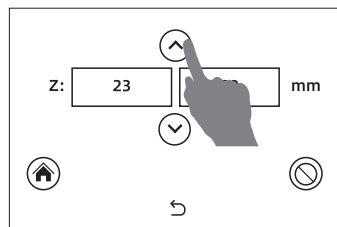
8. 点击"＾"，让平台上升100~150 mm，
   完成调平。

1. 确认LCD屏和溶液盒清洁无异物。
2. 取出溶液盒，小心放置在遮光屏上，
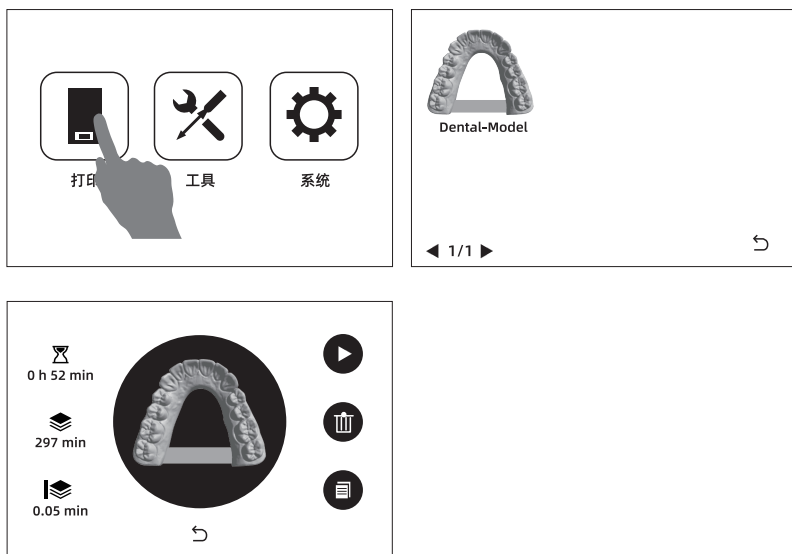   注意溶液盒的倒液口朝向，按右图
   所示的方向安装。
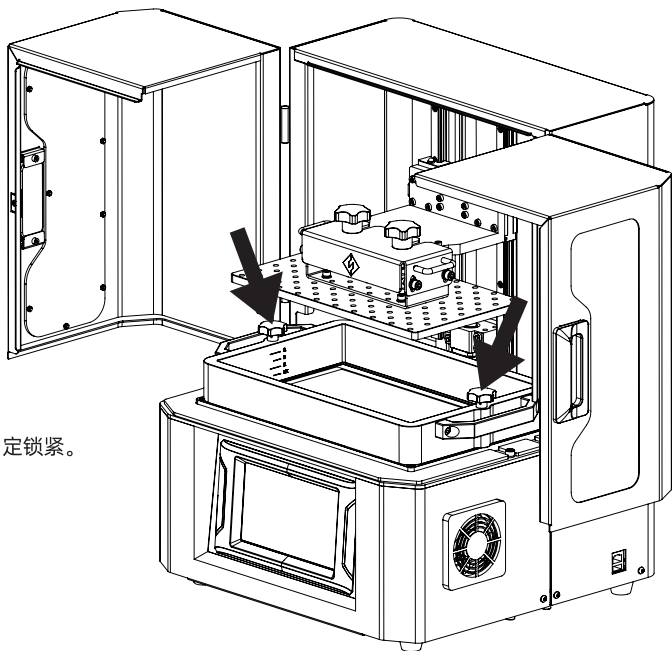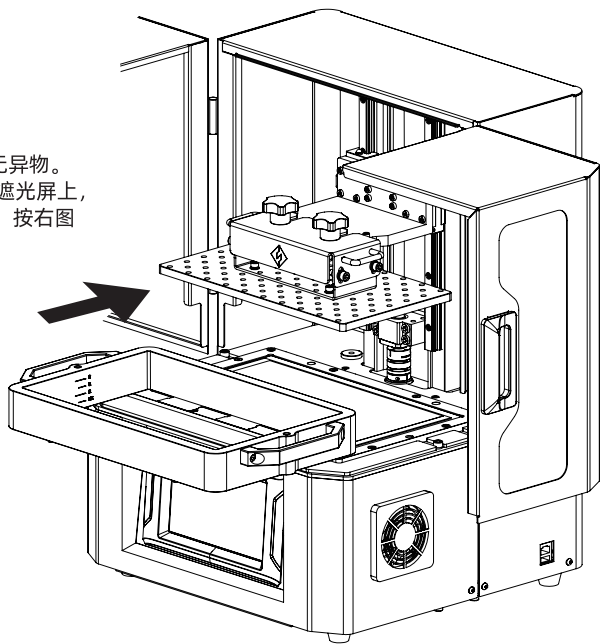
3. 左右两侧螺丝固定锁紧。

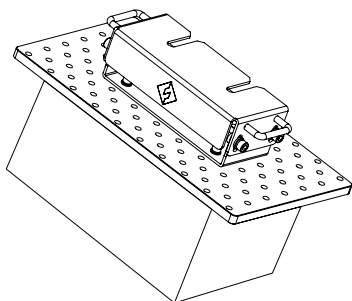安装无错位，无松动
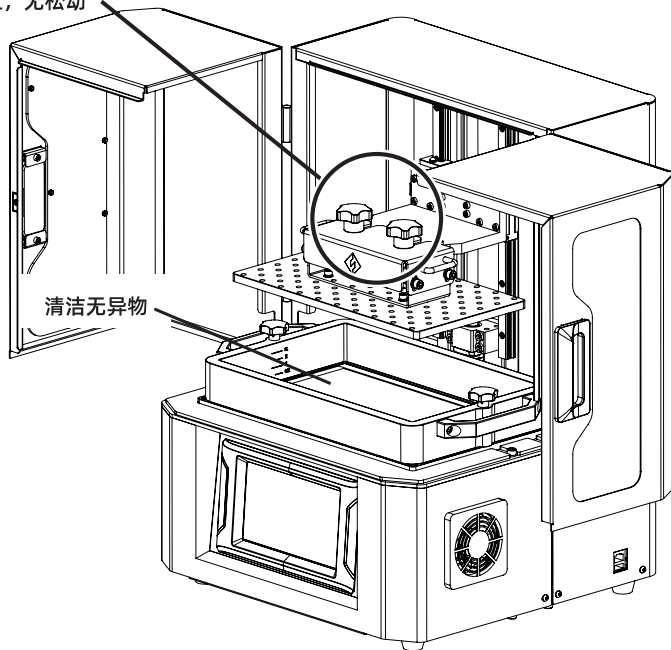
清洁无异物

4. 确认LCD屏、打印平台和溶液盒清洁无异物。
5. 确认溶液盒和打印平台安装无错位，用手摆动没有松动。
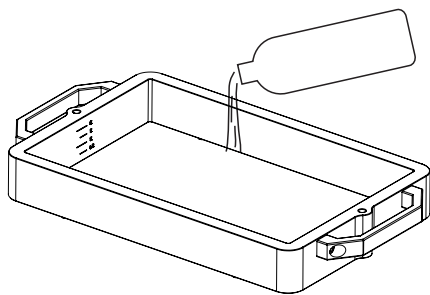
6. 晃动光敏树脂，确保光敏树脂混合均匀。

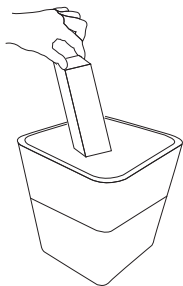7. 将光敏树脂倒入溶液盒中，溶液盒中的光敏
   树脂液位的必须在液位上限标记线和液位下
   限标记线之间。完成上述准备后关闭遮光门。
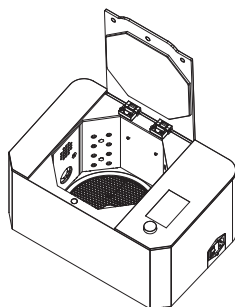
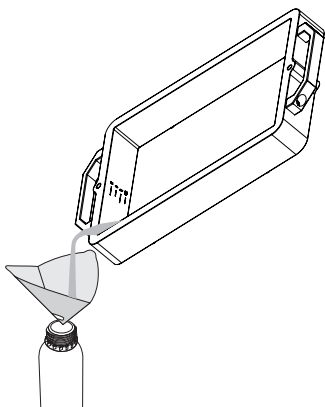9. 点击打印，进入模型列表。找到要打印的模型文件，点击模型文件，点击开始打印。

1. 待打印完成时，显示屏会显示打印完成提示，此时点击"确定"，打开遮光门。将打印平台取下，沥干剩余树脂，用铲刀将模型铲下。注意：打印刚刚完成时，模型上会留有未固化的树脂，请注意沥干后再处理模型。

2. 小模型放在装有酒精的超声设备中进行清洗，大模型在桶内用酒精冲洗。
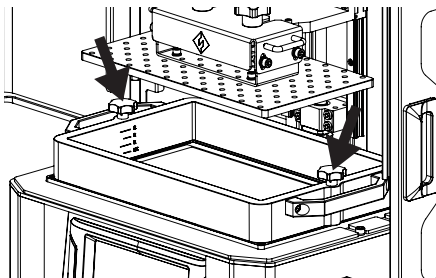
3. 完成清洗后，用无尘布擦干或用气枪吹干模型。放入固化箱内进行二次固化。

4. 将溶液盒中的树脂进行过滤后，倒入树脂回收瓶中（建议和新树脂分开装）
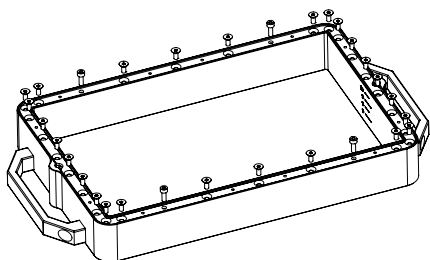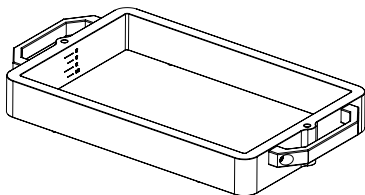
5. 用无尘布和酒精清洁设备，关闭机器的开关。

注意：
1) 平台较重，安装平台和取下平台时，需要格外小心，防止平台掉落砸坏LCD屏。
2) 打印时间较长时，为防止意外情况，需定时观察打印情况，出现模型残缺、掉落，停止打印。
3) 注意使用环境卫生，保持清洁，避免灰尘较多。
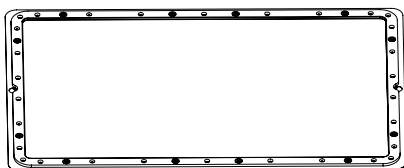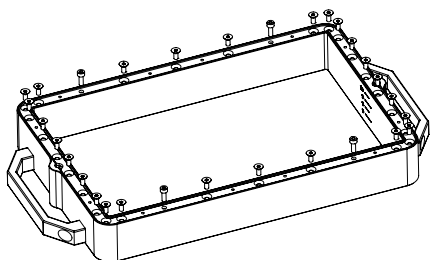4) 新手进行平台调平时，请多次确认安装、调平间隙情况。

更换FEP膜

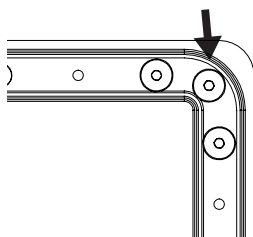1. 旋松图中所示螺丝，取下溶液盒。倒出内部残留树脂，并清洁溶液盒。
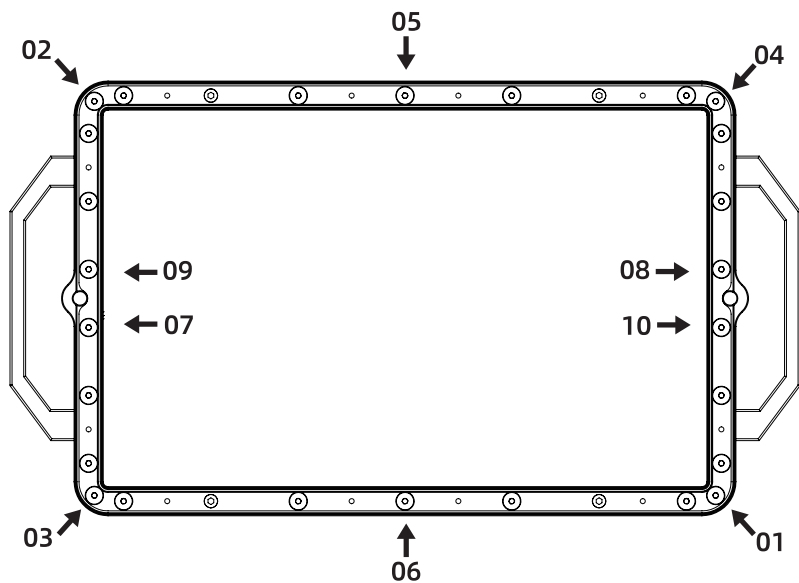

2. 翻转溶液盒，拧松底板的螺丝。取下旧的FEP膜组件。

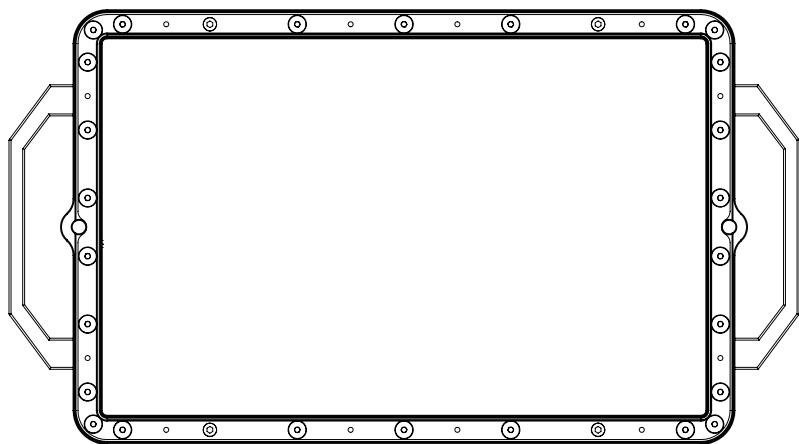3. 清洁溶液盒底部和螺丝。然后取出新的FEP膜组件。注意：手指不要触碰膜片两侧，避免留下指纹影响打印。

4. 将FEP膜组件安放在溶液盒底部。

5. 先拧紧四个角的螺丝。

6. 然后依次1-10锁紧M4*12沉头螺丝，注意请对称拧紧。

7. 拧紧后，用美工刀切掉多余的FEP膜（深色部分）。至此，FEP膜更换完毕。请再次检查溶液盒是否有脏污、指纹等，如有，则需要再次清洁。

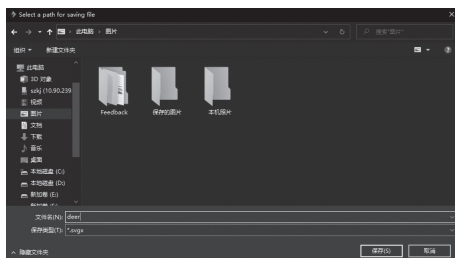## FlashDental

FlashDental.exe

1. 安装并运行FlashDental.exe程序。

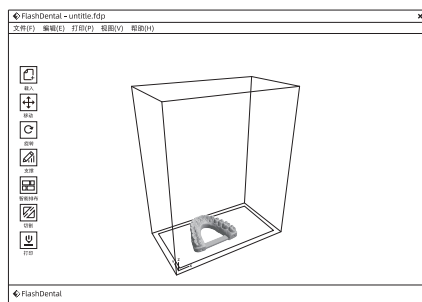

载入

2. 点击载入，选择模型文件。

移动

旋转

3. 使用移动、旋转将模型摆放到合适位置，模型不能低于底板网络面。

4. 点击打印，弹出打印窗口。（一般只需调"层厚"、"底层数"、"曝光时间"、"底层曝光时间"等）。

5. 点击[确定]，文件类型选择".svgx"文件，选择保存位置，点击[保存s]。


正在切片 ...

6. 此时界面下方会显示"正在切片..."，等待切片完成后，界面变为切片预览界面。

模型导入

1. 将模型的".svgx"文件在电脑端复制到U盘里。拔出U盘时先在电脑安全弹出U盘，再拔U盘，避免模型数据遗失或损坏。

打印　　工具　　系统

Dental-Model

◀ 1/1 ▶　　　　　　　　　　↩

2. 将U盘插在设备USB接口，在主界面点击打印进入文件列表，点击上下翻页按钮，找到需要打印的模型文件，则表示模型文件被成功识别。开始打印后，可将U盘移除。

设备维护

◆ 请保持下图所示两处透光部位洁净，保证无尘无指纹。
◆ 切勿将使用过的光敏树脂溶液倒回原溶液瓶。
◆ 废弃的光敏树脂溶液倒入密封袋密封，随后放在阳光下曝晒直至树脂固化。
◆ 如不慎有溶液滴落在LCD投影屏上，请及时用无纺布擦拭赶紧；如溶液已固化，请将无纺布浸润酒精后擦拭干净。
◆ 使用锐器处理溶液盒内的残留物，很容易伤害FEP膜，
  减少寿命甚至导致破损无法使用。
◆ 若长时间不打印，请将溶液盒中剩余的光敏树脂倒入密闭的容器中，并做避光保存。若剩余溶液有固化的模型掉入，需尽快取出。

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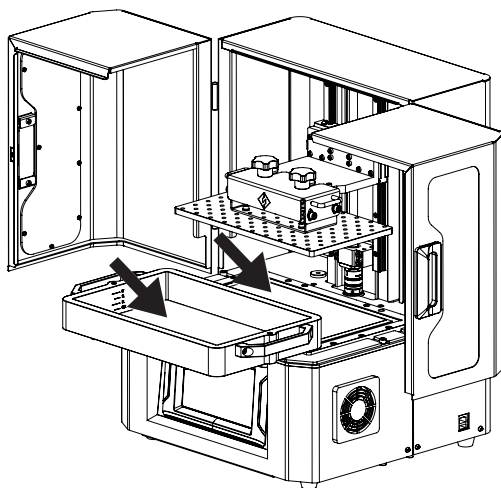
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