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martrix

# Martrix Series User Manual

产品用户手册



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# Before Started

## 1.1 Thanks Letter

Thank you for using our products!



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## 1.2 Safety Alert



Read and understand this manual and safety alerts prior to using the Martrix Series. Failure to do so can result in serious injury or death.



Receipt to determine the appearance and mechanical structure of the machine.



When removing the printed model from the platform with a shovel, be careful not to put your hand in the forward direction of the shovel.



In case of emergency, turn off the power of the machine directly.



Do not touch the moving parts of the machine when the machine is in motion to prevent pinching.



Wear gloves and goggles when filling resin and post-processing the model.



The printer and consumables should be placed out of the reach of children to prevent pinching and accidental drinking of resin.



Please use the printer in a well-ventilated environment and place the machine on a level platform.



When not in use for a long time, the resin in the machine should be emptied, and the machine should be kept out of moisture when it is sealed.



When printing, it is recommended to control the ambient temperature between 10°C-40°C and the humidity between 20%-40%. Exceeding the recommended range may cause some printing problems.



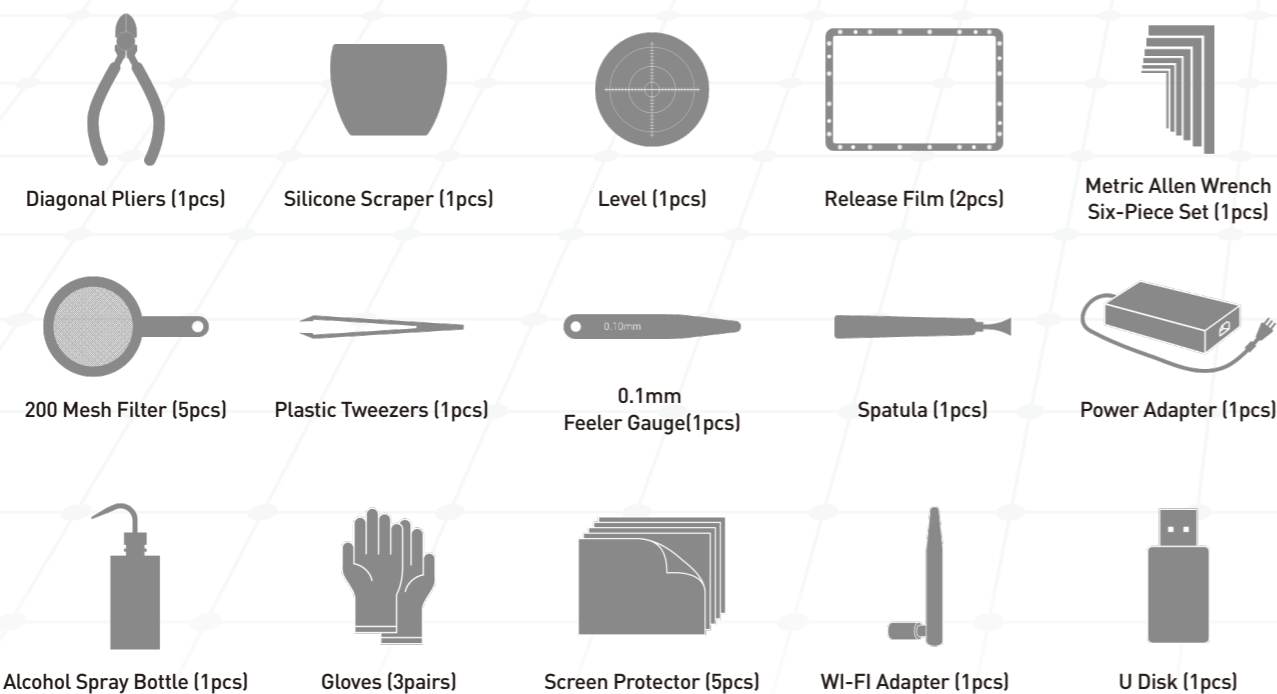
When there is a problem with the machine hardware, please contact the after-sales service, and do not disassemble the machine without permission.

# Getting to Know Martrix

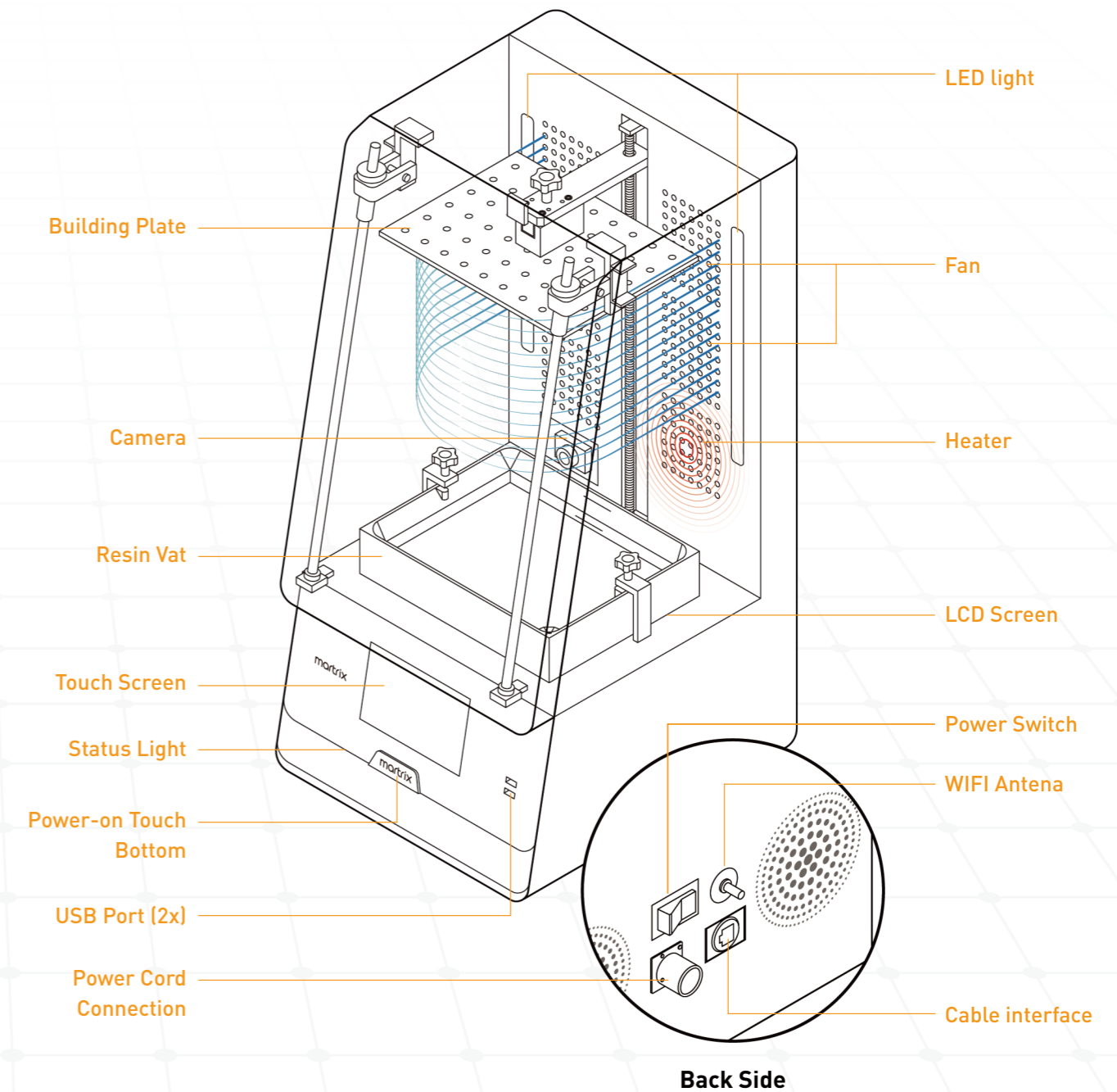
## 2.1 Technical Specifications

	Martrix 190	Martrix 520	
Printing Specification	Build Volume	192 x 120 x 280 mm	298 x 165 x 320 mm
	Printing Layer Thickness	0.05-0.15 mm	0.05-0.15 mm
	Pixel Size	50 μm	46 μm
	Max Light Output Intensity	5.8 mW/cm <sup>2</sup> (20-100% adjustable)	6.0 mW/cm <sup>2</sup> (20-100% adjustable)
	Max Printing Speed	50 mm/H	50 mm/H
	Light Output Wavelength	405 nm	405 nm
Operation Environment	Operating Software	UnionTech DSCON	UnionTech DSCON
	Preprocessing Software	Polydevs Pro	Polydevs Pro
	Operating System	Linux	Linux
	Pre-Processing File Format	.stl, .obj, .ply, .off	.stl, .obj, .ply, .off
	Connectivity	Wi-Fi,USB,Ethemet	Wi-Fi,USB,Ethemet
	Power Requirement	100-240V AC ,50/60Hz	100-240V AC ,50/60Hz
Physical Dimensions	Printer Size	355 x 370 x 705 mm	515 x 560 x 970 mm
	Printer Weight	33 Kg	64 Kg

## 2.2 Martrix Components



## 2.3 Printer Overview



# Getting to Know Martrix

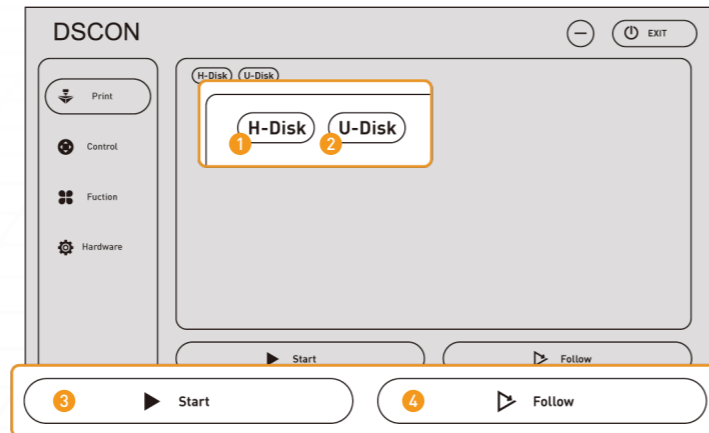
## 2.4 The Touchscreen User Interface

The interactive interface including 4 parts: printing, control, function and hardware, there is a 'turn off' button at the top side.

### Print

Below shows the printing interface of Dscon:

- 1) **Hard Disk:** The location where the print files are stored inside the machine.
- 2) **U Disk:** The location where the print files are stored in the U disk.
- 3) **Start:** Start printing.
- 4) **Continue Printing:** Continue printing.



### Control

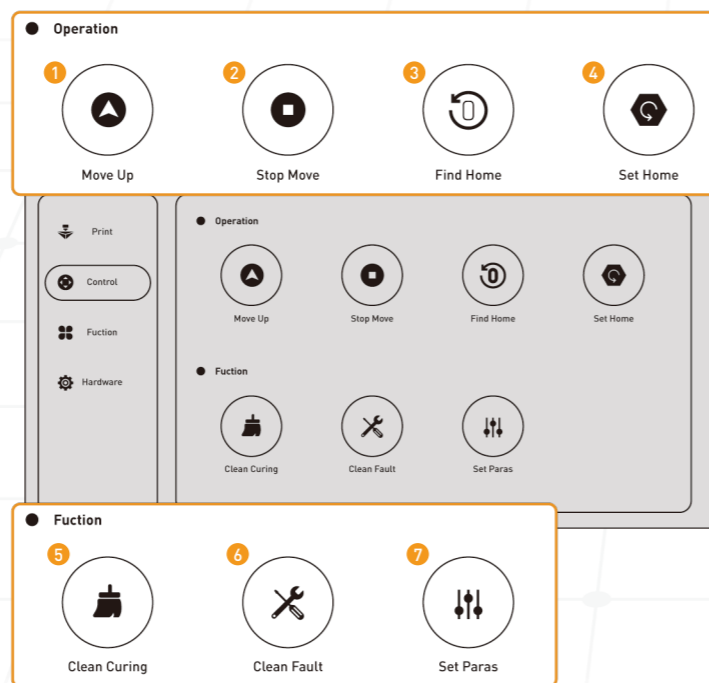
Below shows the control interface of Dscon:

#### 1) Action Bar

- 1) **Move to the Top:** The pallet moves to the highest point of the z-axis.
- 2) **Stop Motion:** Stop the motion part.
- 3) **Return to Zero:** The pallet moves to the lowest point of the z-axis.
- 4) **Set Zero Position:** Set the zero position (the lowest point of the z-axis) when printing.

#### 2) Function Bar

- 5) **Debris Cleaning:** The entire print area is exposed to form a layer of flakes that are removed along with the flakes.
- 6) **Fault Clearing:** When the status light alarms, click fault clearing to cancel the alarm.
- 7) **Setting Parameters:** Adjust some parameters of the machine.



⚠️ Do not click 'Find Home' when there are parts on the building plate.

### Functional

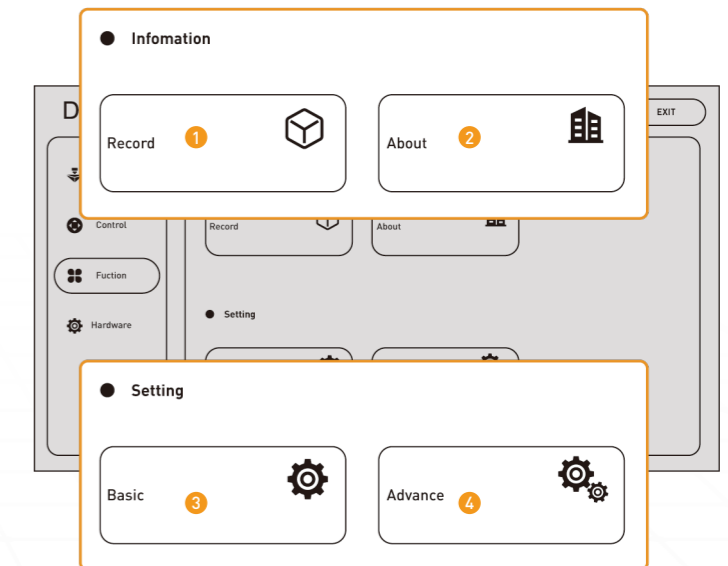
Below shows the functional interface of Dscon:

#### 1) Information bar

- 1) **Record:** Record the operating status of the machine.
- 2) **About:** Company information, software information.

#### 2) Setting bar

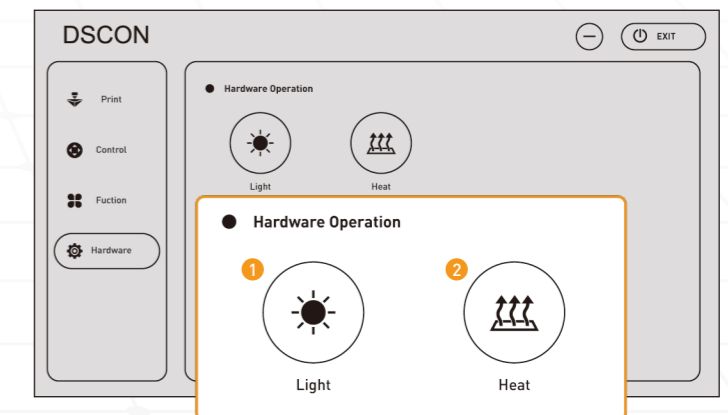
- 3) **Basic Settings:** Set language, etc.
- 4) **Advanced Settings:** Set the printing parameters of the machine, etc.



### Hardware

Below shows the hardware interface of Dscon:

- 1) **Lighting:** The light inside the machine will be on long after the sliding door is pushed up.
- 2) **Heating:** The heating fan starts to work to heat the resin in the resin vat.



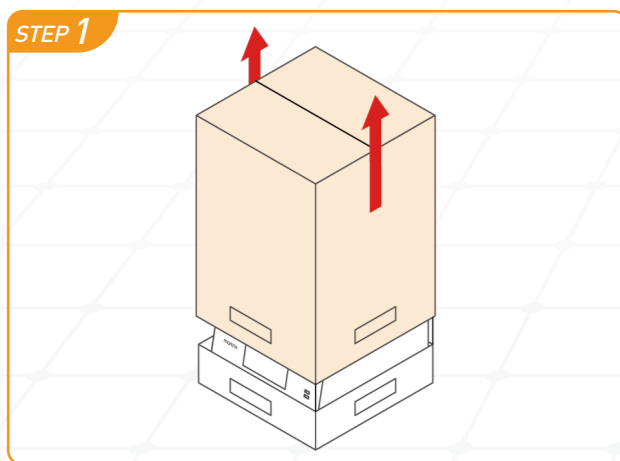
# Printing Preparation and Operation



Please follow the steps in the manual below to finish the relevant settings of the printer. This will help you to know how to run through your first print from beginning to end.

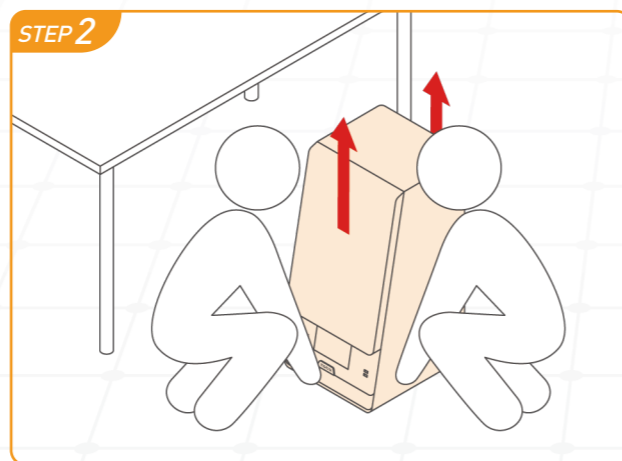


## 3.1 Prepare the Workspace



### STEP 1 Unboxing the Printer

- 1 Open the box by lift the top portion of the box and remove the packing bag.
- 2 Take out the components which packed on the top side of the printer.

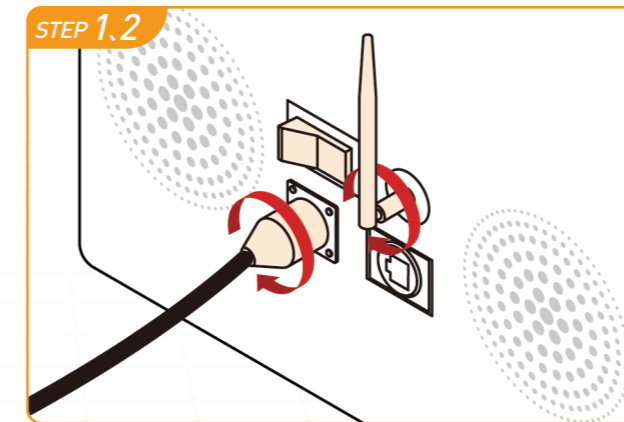


### STEP 2 Arrange the Workplace

- 1 Lift the printer from the base and put it on a stable place.
- 2 Use the level to check the work place where printer be put on, make sure the tabletop is horizontal.

- ⚠ The Matrix 3D printer is a heavy object, two person lift is required to prevent injure and avoid damage to the machine.
- ⚠ Save the original packing material. It is required for warranty service and designed to be kept for transportation on shipping.

## 3.2 Cable Connection & Power On

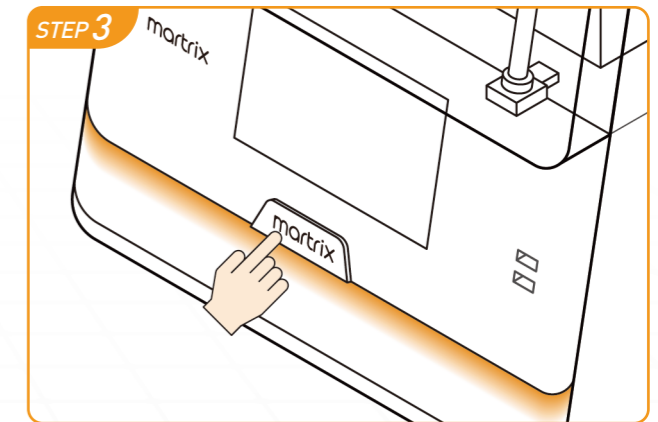


### STEP 1

Plug in AC power cord and WiFi antenna to the back of the printer. Ensure the antenna is installed in place.

### STEP 2

Turn on the power switch after connect the power cord to an electrical outlet.



### STEP 3

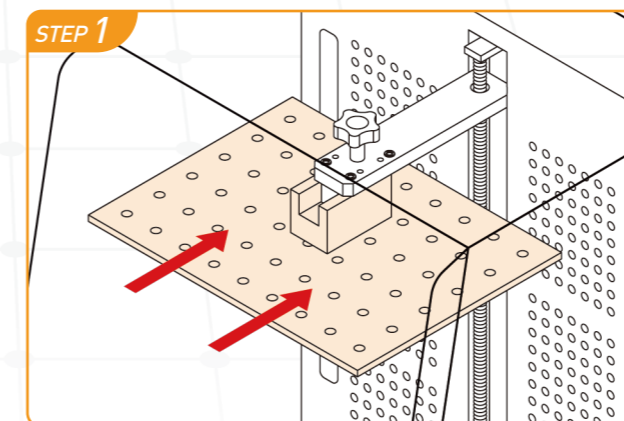
Turn on the printer by touching the ' Matrix ' button on the frontside of the printer. Once the printer be booted up, the status light will turn on after 1~2s, The touch screen will show boot progress in 5~10s.



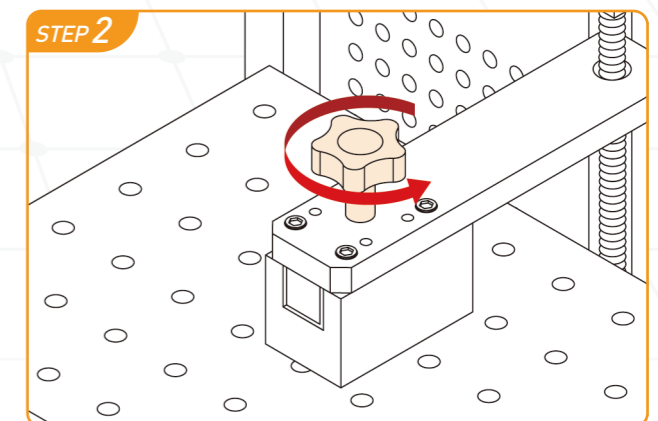
The Matrix turn on button is an inductive switch, Do not heavy press the button instead of touch 2s to turn on the machine easily.

## 3.3 Install the Building Plate

Open the printer door, Install the building plate to the designated position, tighten the screws on the top side of the platform.



### STEP 1



### STEP 2

# Printing Preparation and Operation

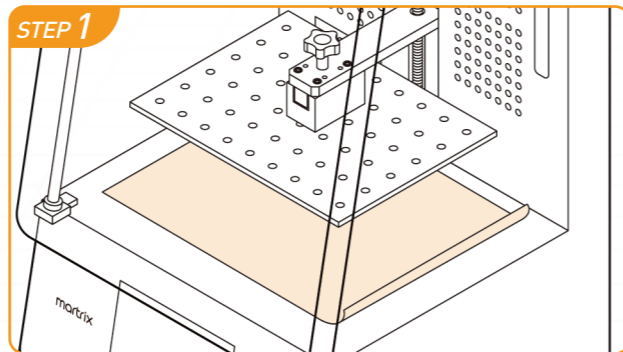
## 3.4 Printer Leveling Verification

The 3D printer has been leveled before delivery, when received the product, please easy check the levelness by following below process.

### STEP 1

Make sure the LCD screen and building plate are cleaned and there's no resin remain.

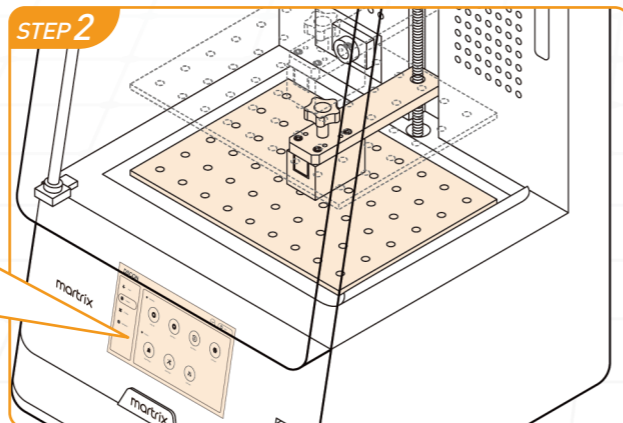
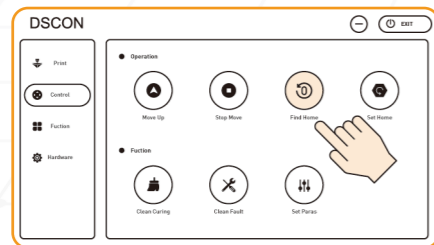
Put a piece of A4 paper on the top of the screen to prevent the screen from being scratched.



### STEP 2

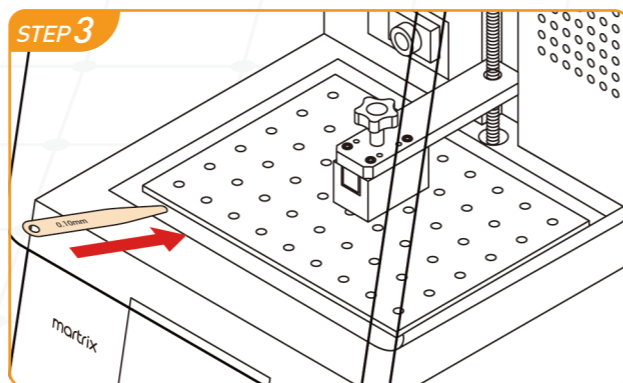
Find the zero return command in the machine control interface and click it.

The building plate will move down to the bottom side.



### STEP 3

Insert the attached feeler gauge (0.1mm) into the four corners of the building plate, to check whether the tightness of the four corners is the same and the feeler gauge is not easy to insert.

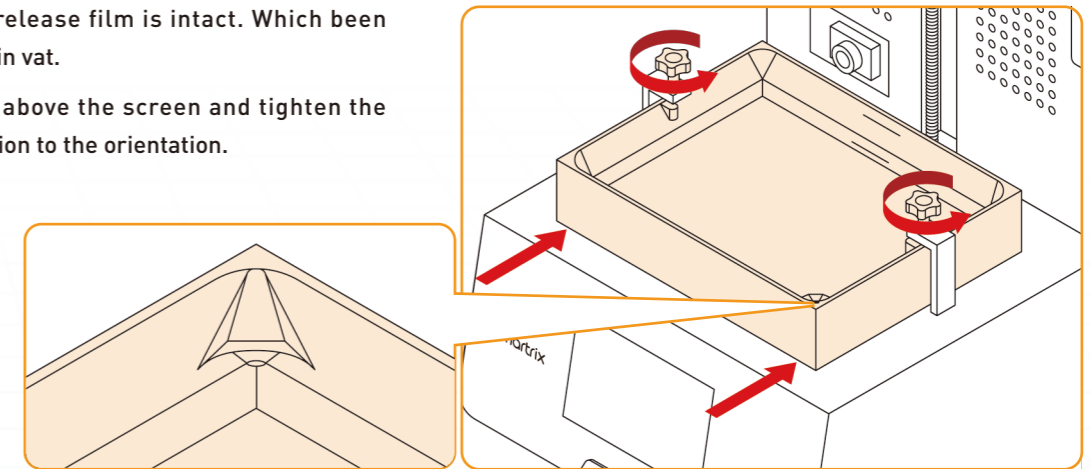


! If one corner is too loose or too tight, it needs to be re-leveled. please check chapter 5-5 for re-level process. Click 'move up' once finish verification. Wait until the building plate move back to the top.

## 3.5 Install the Resin Vat

Check whether the release film is intact. Which been assembled on the resin vat.

Install the resin vat above the screen and tighten the wrench, paying attention to the orientation.

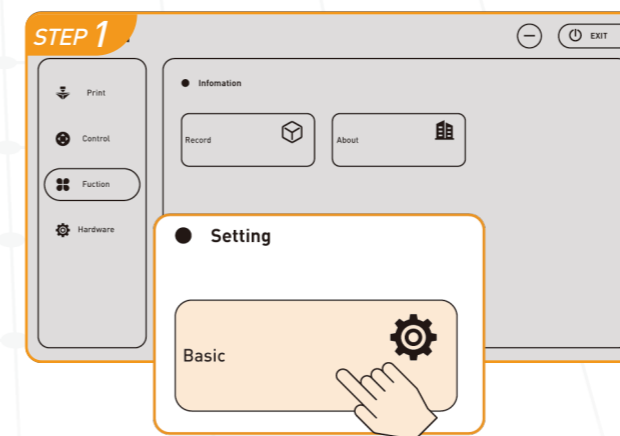


! Make sure the pour port of the resin vat is outwards when installation.

## 3.6 WiFi Connection

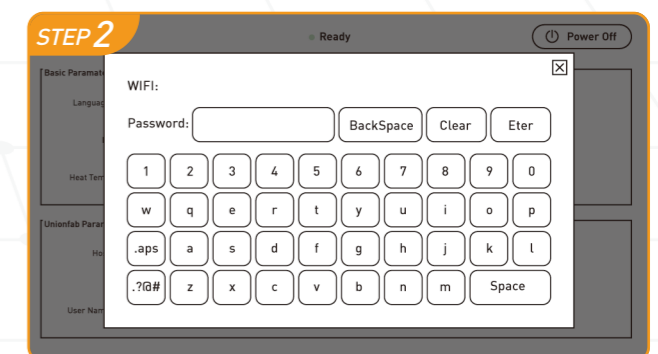
### STEP 1

Tap the 'Function' Basic settings and find the WiFi searching button box.



### STEP 2

Choose the name of the network you want to connect to Enter the password and tap join. The IP address will shown up once the WiFi been connected sucessfully.



# Printing Preparation and Operation

## 3.7 Martrix ONE Installation & Setup

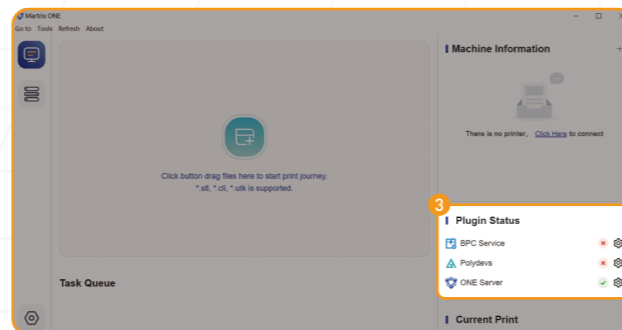
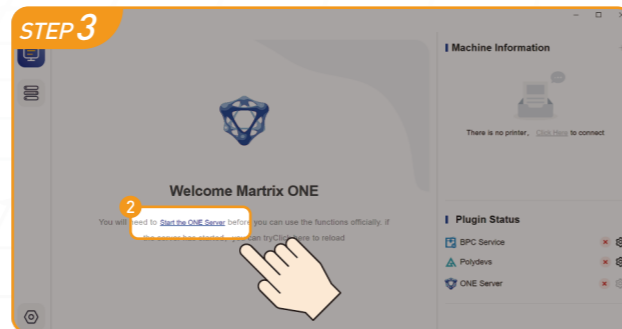
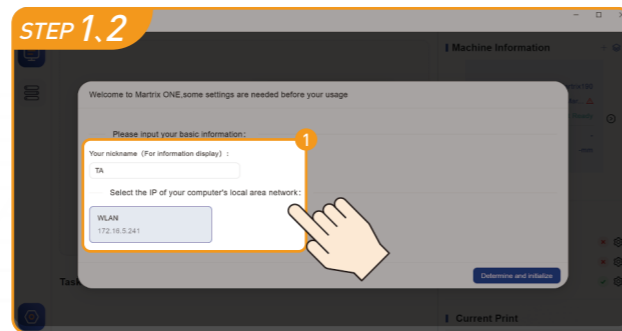
**STEP 1**  
Follow the installer instruction to finish installation.

**STEP 2**  
Start Martrix ONE service by input nickname and select the IP in LAN. <sup>1</sup>

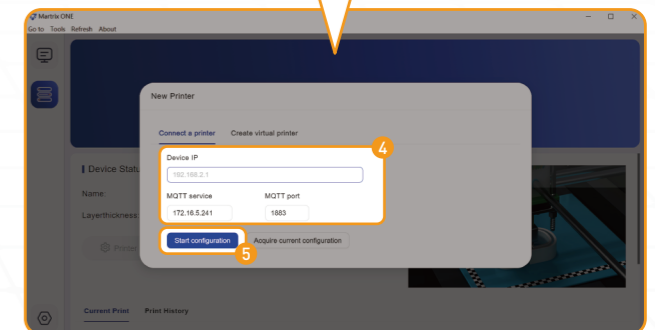
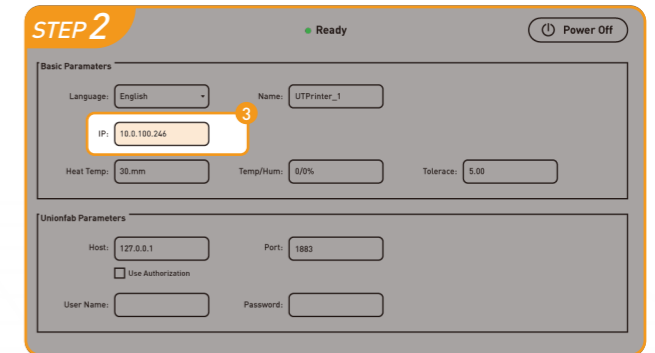
**!** If there're multi net cards in your computer, please check if you are choosing the right IP.

**STEP 3**  
Press 'Start the ONE Server' <sup>2</sup> to start Martrix ONE Server.

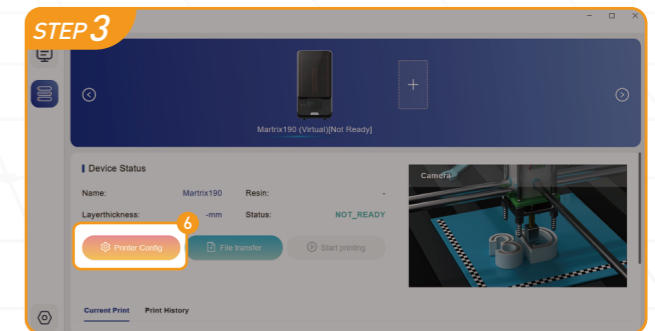
**!** Please check the plugins status on the right side, If there're any wrong button, please follow the tips to start these plugins. Make sure that all plugins had been right status. <sup>3</sup>



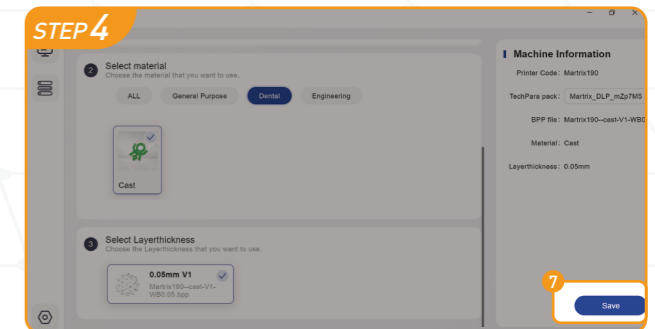
**STEP 2**  
Find your device IP in DSCON 'Function-Basic-Basic Parameters' to find your device IP. <sup>3</sup>  
Enter machine IP in device IP line edit, <sup>4</sup> then press 'Start Configuration' <sup>5</sup> to connect to your device.



**STEP 3**  
Refresh page and now you have succeeded in connecting your device. You can press 'Print Config' <sup>6</sup> to finish the configuration.

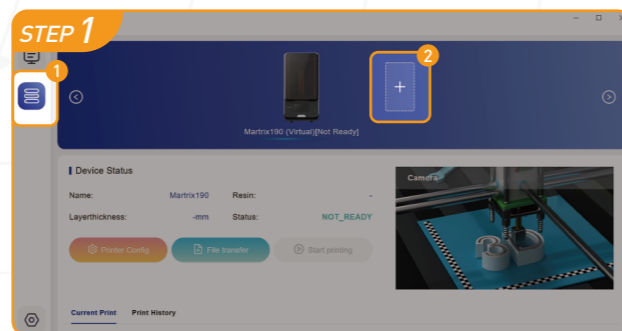


**STEP 4**  
Follow the instructions on the screen, then press 'Apply' <sup>7</sup> to finish all the configuration.



## 3.8 Machine connection and print configuration

**STEP 1**  
Press the machine button to get into machine page. <sup>1</sup>  
Then press '+' <sup>2</sup> button to get into add-machine page.






# Printing Preparation and Operation

## 3.9 Make a Print


### Use Maratrix ONE to print

#### STEP 1


After finish connection of the Maratrix ONE, click the middle blue button  or drag the files to the frame to add the files that you want to handle.


#### STEP 2

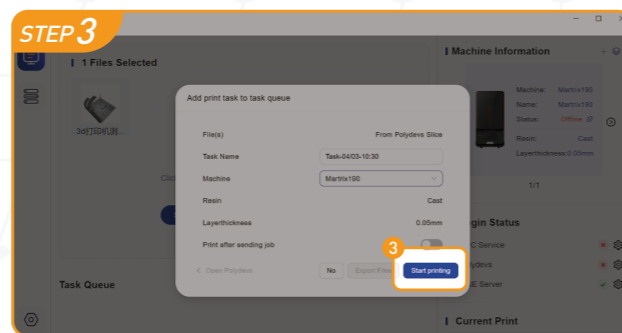
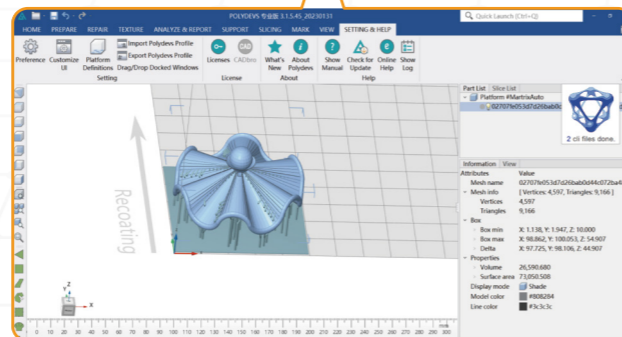
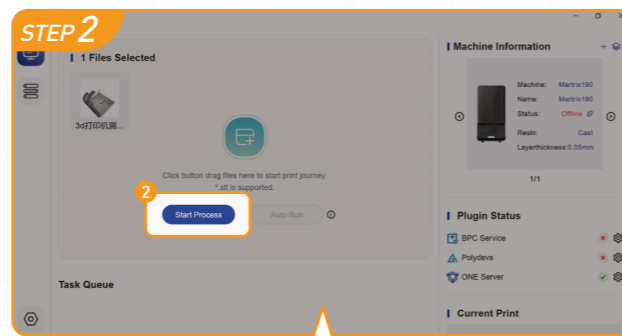
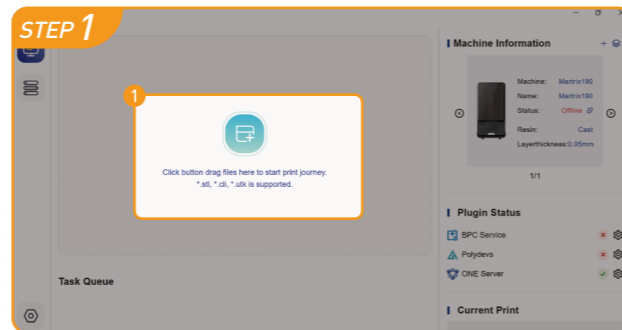
Press 'Start Process'  to start pre-process.

 Please make sure that Polydevs has been installed already, after click the pre-process button, Polydevs will load STL automatically and been maximized to front, then do anything you want in pre-process. When you finish anything before slice, click suspended window on the right-top to get back to Maratrix ONE to finish the rest print progress.

#### STEP 3

Press 'Start Print'  to add the print file to the queue. Wait for the file to be transferred to the printer, then the preparation is complete.

 At any time, you can view 'Current Print' in the right-bottom of main page to see the progress of printing.



Please check out the building plate and resin vat are clean before printing.

Shake the resin and pour it into the resin vat, do not exceed the 'MAX' mark when pouring.

### Use USB to Print

#### STEP 1

Insert the USB flash drive into the USB port.


There's a test file prepared in the USB flash drive.

#### STEP 2

After ensuring that all parameters on the machine are accurate, select the file to be printed in the U disk of the printing interface, and then click 'Start'.

#### STEP 3

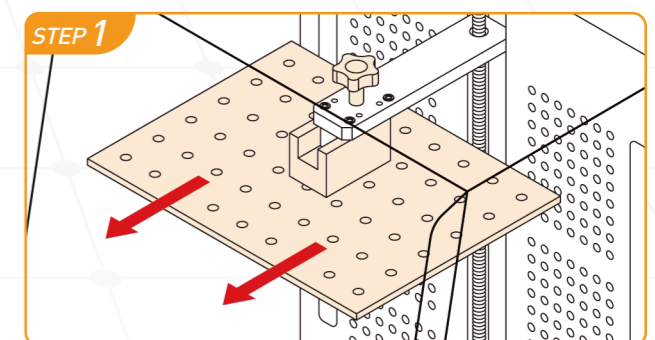
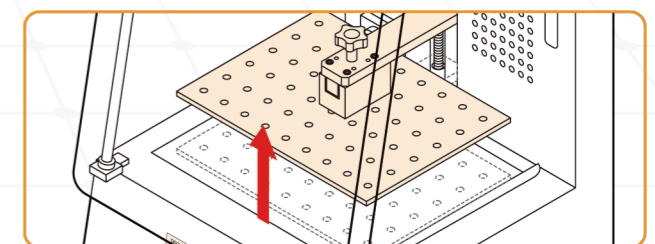
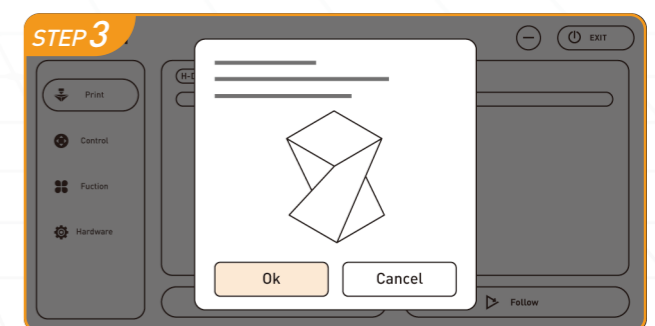
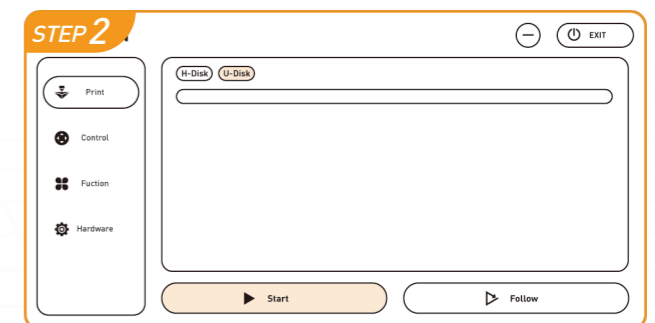
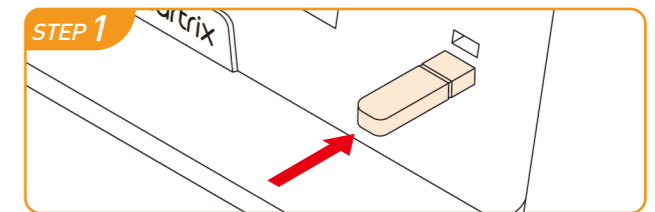
After clicking OK, the interface will display the information of the print file. After checking the information is correct, select 'OK' to start the printing task.

 Once the printing is complete. The building plate will move up to a fixed proper height for easy taken (print model height: 0~170mm).

## 3.10 Parts Remove

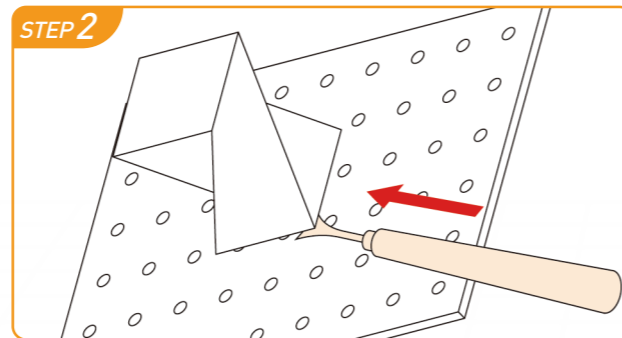
#### STEP 1

After finish the printing process, remove the building plate from the machine and place it in the tray.



## STEP 2

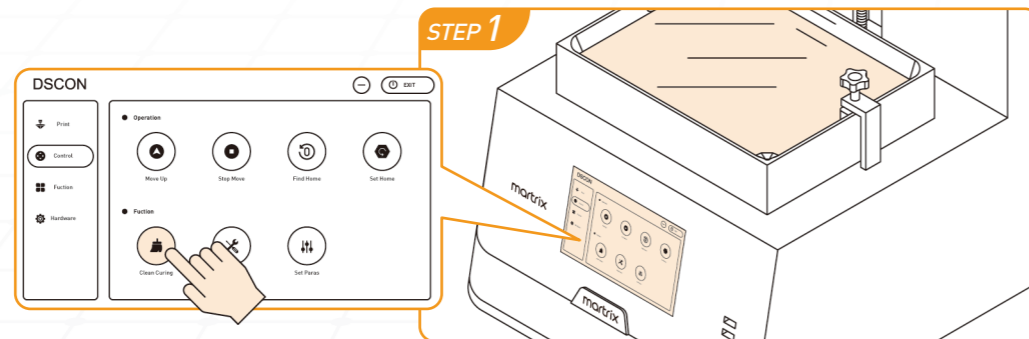
Use the included spatula to scoop the parts off the building plate.



## 3.11 Resin Vat Cleaning

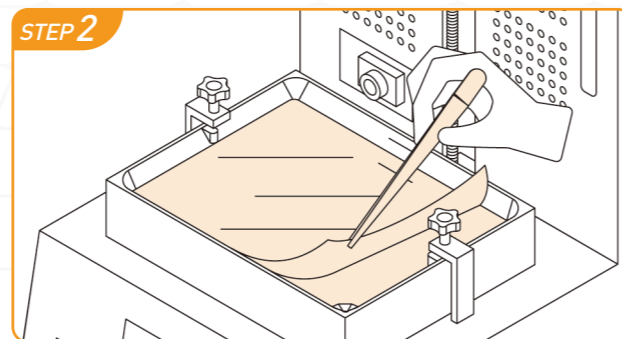
### STEP 1

After the parts are printed, please select the 'clean curing' function in the control interface to clean up the residue deposited in the resin vat.



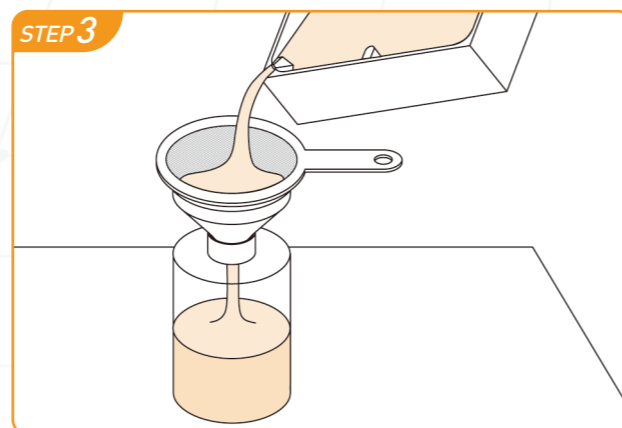
### STEP 2

After the debris has been cleaned up, use the provided tweezers to pick up the flakes from the sides of the resulting flakes. Visually check the condition of the resin vat, make sure there's no more flakes remain.




### STEP 3

Remove the resin vat and filter the resin from the vat using the mesh filter provided, then pour it back into the resin bottle, making sure there is no cured resin in the liquid resin.



## 4.1 Troubleshooting of Printer

Fault Phenomena	Possible Causes	Solutions
The Equipment cannot Start up Normally	The power plug of printer is not inserted to the specified position.	Readjust the position of power plug to ensure tight and stable connection.
	The main power switch on the back of printer is not turned on.	Turn the power switch on  the back to 'I'.
	The fuse system of printer blows out.	Replace the fuse and restart the printer.
	Program startup failed to find optical machine.	Check the connecting cable of the optical system.
	No power on or misconfiguration of CAN port..	Check the connecting cable of the motor and CAN.
	Use .utk files that are not required for Martrix520 or Martrix190	Using BPC software of Martrix520 or Matrix190 to regenerate .utk.
The Lifting of Building Plate is Stuck	The building plate reaches the limitation of limit switch.	Rest the elevator position and lift it again.
	Another process is controlling the lifting of plate	Close the process and lift it again.
	The lifting is stuck by other foreign bodies near the platform	Clear away all foreign bodies near the platform in advance
The Building Process is Interrupted Suddenly	Power failure or poor contact of the printer	Insert all cable plugs again and print again
	DSCON control software failure	Restart the control software and print again
	The building plate reaches the limitation of limit switch	Rest the elevator position and print again
Breakage on the Bottom Side of the Resin Vat	The lower distance of the building plate is too large during zeroing procedure.	Adjust the distance properly during zeroing procedure.
	There are dirt on the contact surface during zeroing	Cleaning the contact surface before zeroing
	The building plate and resin vat being installed improperly	Follow the user manual to install the building plate and resin vat
	Exposure time setting error, overcure	Adjust exposure time parameters
	Sharp scratches while cleaning the mixture in the resin	Use accompanying tools for cleaning

### 4.2 Troubleshooting of Building Part

Fault Phenomena	Possible Causes	Solutions
Missing Details of Building Part	Data are lost during preprocessing of models.	Restart the preparation software and load the .stl file.
	Building resin is dampened, resulting in soft details.	Replace resin and control ambient humidity.
	Details are lost due to impact of strong flow at postprocessing.	Wash the part with alcohol gently and slowly.
	Faults of preprocessed files, e.g. insufficient support.	Preprocess source files and print again.
	Body part is cleared away in the postprocessing process.	Carry out postprocessing operation prudently.
	There're vibration source here the 3D printer.	Remove the vibration source here the 3D printer.
Softened Structure of Building Part	Building resin is dampened, resulting in soft details.	Replace resin and control ambient humidity.
	The post curing time or light intensity is not enough.	Adjust post curing-related parameters.
	Light projection parameters are incorrect, and resin is not cured completely.	Adjust light projection parameters and print again.
	The temperature changes largely in the building process.	Strictly control the temperature in the building process.
	Preprocessing support is not set reasonably.	Redo preprocessing and add support.
The Molding Sample has a Burrs Edge	Design defect of support.	Redo preprocessing and add support.
	Single exposure parameter setting incorrect.	Adjust exposure time, light intensity and other parameters.
	The molding resin contains impurities such as debris.	Filter the resin material and reprint..
	The sample is cured without being cleaned thoroughly.	Carefully clean the molded sample repeatedly.
	Resin vat damage seriously.	Replace with new resin vat and print.

### 5.1 Inspecting the Printer

#### Regular Maintenance Procedure

Please refer to the following procedure for daily maintenance of the printer:

- Confirm all switches are in off state and unplug all cables connected to the printer.
- Wipe the whole building platform of printer with clean non-woven fabrics wetted with a little alcohol to clear off residual resin.
- Check all fasteners for looseness and breakage, etc.
- Check the functionality of all safety gears, and make sure they are kept in reset state.
- Check all sockets for their integrity and the trace of overcurrent burn off.
- Check the sealing condition of door to prevent print failure and the influence of light leak on resin quality.
- Check all cables and adapters for integrity and applicability, and in case of breakage or aging, immediately replace them with cables of the same type.
- Check all standards parts in the building platform (e.g. screw and nut, etc.), and immediately replace damaged parts with parts of the same type if any.

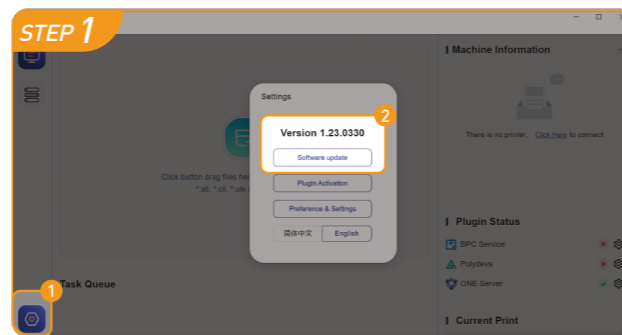
#### Precautions for Daily Operation and Use

- It's strictly prohibited to dismount modules/components of the printer or adjust components of the upper actuator without authorization.
- It shall be ensured that all exposed wiring connections are sheathed with protective cover to prevent the danger of electric shock in case of aging failure.
- Cable joints, panel indicators and buttons must be inspected regularly to confirm they are in good condition.
- It's strictly prohibited to tear up, alter and move the nameplate and warning signs of the printer without permission.
- Mechanisms of the printer must be inspected regularly for missing, lose or damaged parts.
- Safety gears of the printer must be inspected regularly to ensure their functionality and stability.
- The printer must be installed far away from combustion source, water source, heat source, and vibration source, etc.
- The printer must be cleaned regularly, and the building room shall be kept sanitary and low-dust.
- After completion of each production, solid residual resin on the platform shall be cleared off, and blocked holes shall be unchoked timely.
- The guide rail and lead screw at Z-axis should be cleaned regularly to remove debris and oiled every six months.
- In daily use, please do not carve on the surface of equipment with sharp objects so as to avoid damage to outer coating.
- Please do not knock the equipment with blunt so as to avoid deformation of equipment.

## 5.2 Software Update

### STEP 1

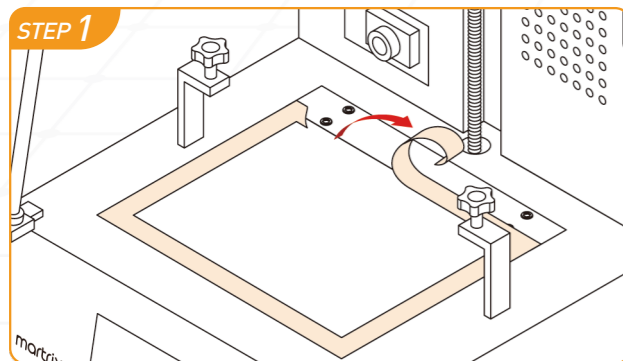
Online upgrading is useful for those who want to get newest version. You can click 'Setting Button' -Software Update' to check if the latest version has been released.



## 5.3 Replace the LCD Assembly

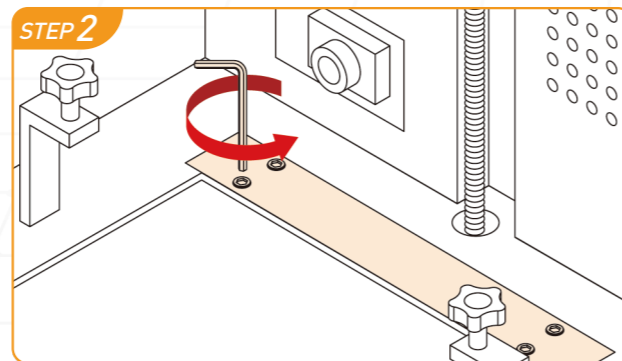
### STEP 1

Hold the LCD screen and remove the Frame tap on the each side of the LCD screen carefully.



### STEP 2

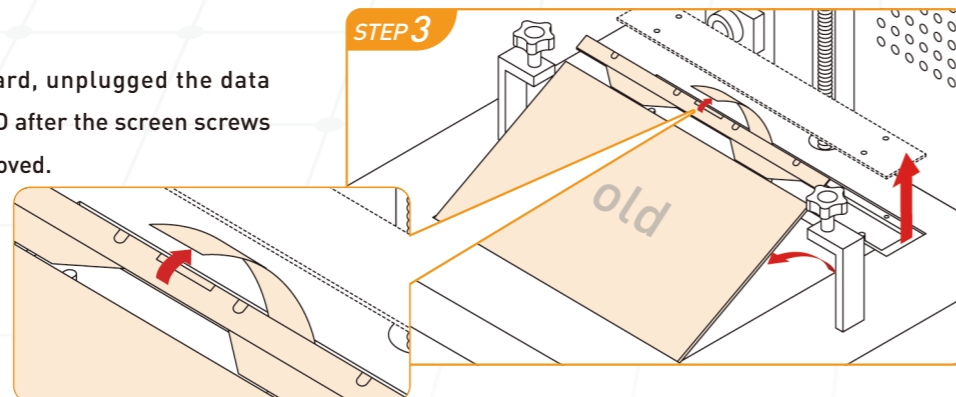
Use an all-hex wrench to remove the screws, on the cover easily take off the cover of the LCD.



⚠ If any resin has cured on the screw, remove it before trying to remove the screws.

### STEP 3

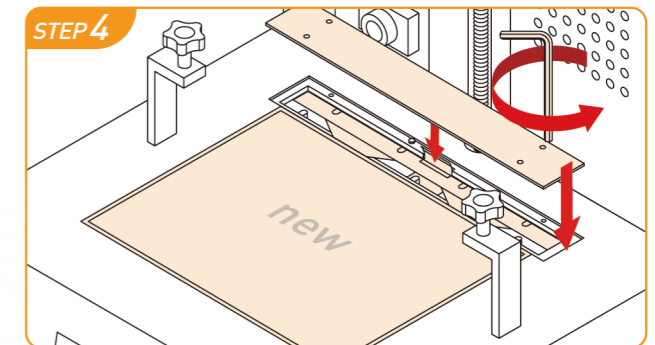
Take out the LCD screen forward, unplugged the data cable on the back side of the LCD after the screen screws on the original machine are removed.



Plug the corresponding data cable into the screen after replacing the other screen.

### STEP 4

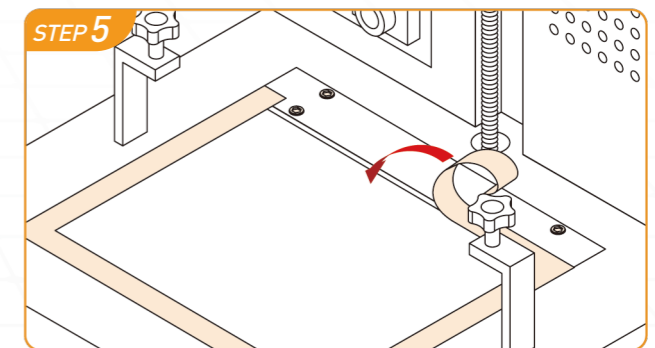
Align the four screw openings on the screen with the threaded openings on the machine and install the four screws that you just removed back in. After the screws are applied, you need to manually check whether the screen is still shaking to make sure that the machine screen is fixed to death.



### STEP 5

Take cover around the LCD screen.

⚠ After LCD installation, please select the 'cleaning curing' function in the control interface to check whether LCD lighting property



## 5.4 Replace the Vat Film

### STEP 1

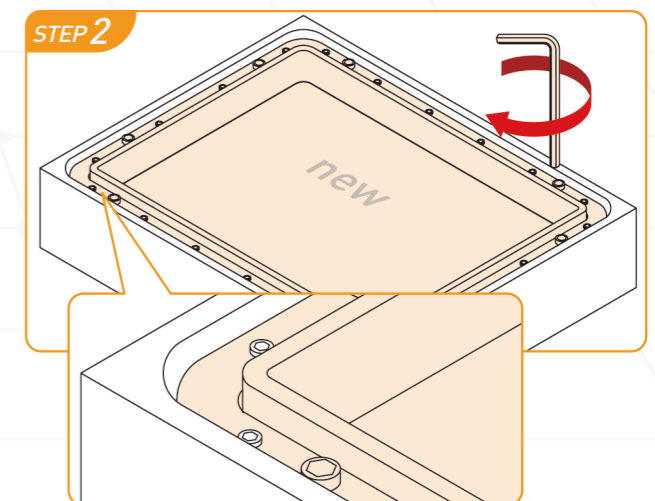
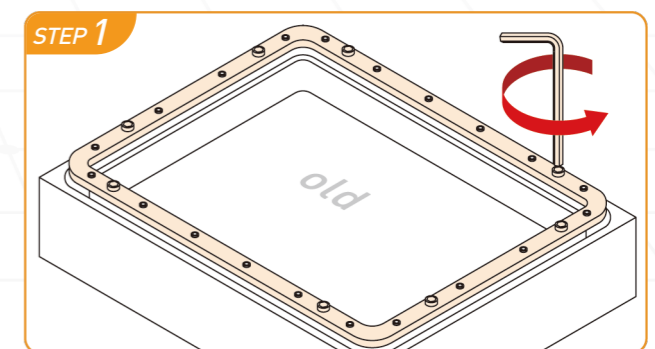
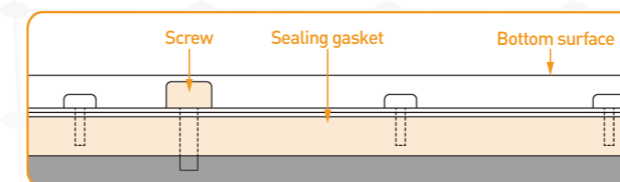
Clean the resin vat with 95% alcohol. Remove the 8 screws of the fixed frame.

### STEP 2

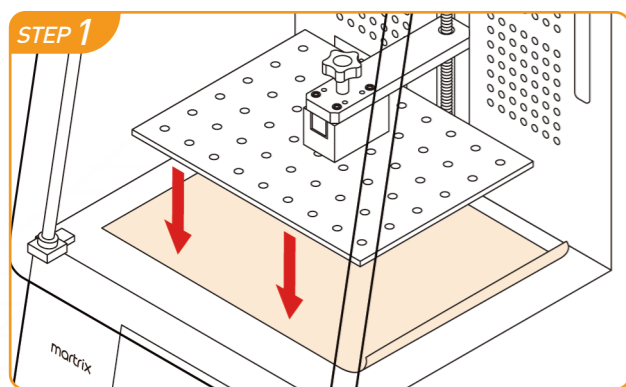
Fix the frame on the resin vat and tighten the screws on the each side of vat (The screw heads is facing upward). Make sure all the screws have been installed properly.

⚠ Check the sealing gasket in the resin vat. Change the gasket if there's any breakage or damage.

⚠ Make sure the screws have been well assembled in the groove. The screw head did not over the bottom surface.

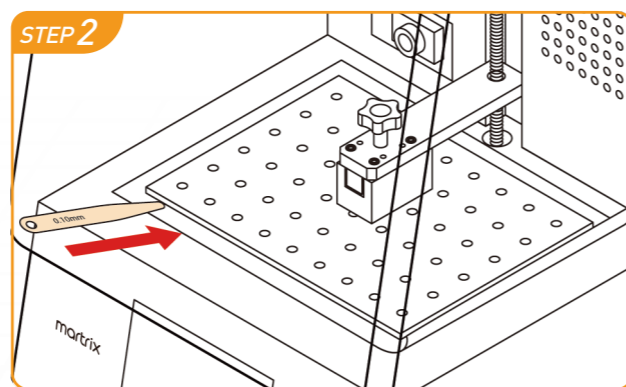


## 5.5 Re-Level the Building Plate



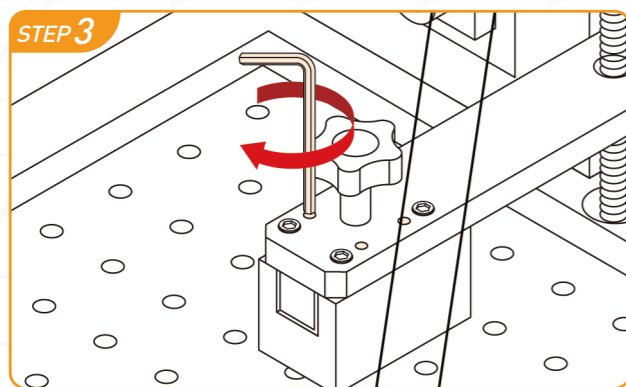
STEP 1

Follow the leveling verification process Step 1— Step 3 to move down the building plate, to touches the LCD screen.



STEP 2

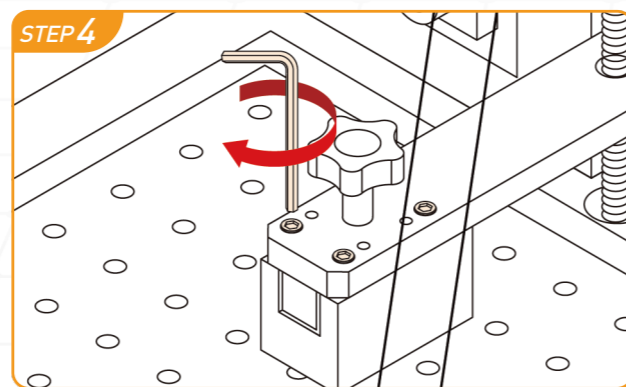
Use the gauge (0.1mm) to check the four conner of the pallet. tach side of building plate should be tightly steady.



STEP 3

[ Too Loose ]

If the feeler gauge can be easily inserted. Looser the wire screw and tighten the fastening screw.



STEP 4

[ Too Tight ]

If the feeler gange cannt be insert into a coner. Loosen the fastening screw and tighten the wire screw.



When adjusting the screw, the amplitude should not be too large to prevent the screen from being crashed.

## 2.1 技术参数

	Martrix190	Martrix520	
打印参数	打印体积	192 x 120 x 280 mm	298 x 165 x 320 mm
	层厚度	0.05-0.15 mm	0.05-0.15 mm
	XY 分辨率	50 μm	46 μm
	最大输出强度	5.8 mW/cm <sup>2</sup> (20-100% 可调节)	6.0 mW/cm <sup>2</sup> (20-100% 可调节)
	最大打印速度	50 mm/H	50 mm/H
	波长	405 nm	405 nm
操作环境	操作软件	UnionTech DSCON	UnionTech DSCON
	前处理软件	Polydevs Pro	Polydevs Pro
	系统	Linux	Linux
	打印文件	.stl, .obj, .ply, .off	.stl, .obj, .ply, .off
	链接方式	Wi-Fi,USB, 以太网	Wi-Fi,USB, 以太网
	电源规格	100-240V AC ,50/60Hz	100-240V AC ,50/60Hz
打印机参数	打印机尺寸	355 x 370 x 705 mm	515 x 560 x 970 mm
	打印机重量	33 Kg	64 Kg

## 2.2 随货配件清单



斜口钳 (1pcs)



刮刀 (1pcs)



水平仪 (1pcs)



框式换膜组件 (2pcs)



工具包 (1pcs)



过滤网 (5pcs)



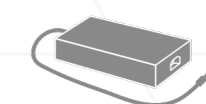
镊子 (1pcs)



0.1mm 塞尺 (1pcs)



铲刀 (1pcs)



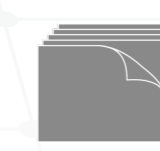
电源适配器 (1pcs)



酒精喷壶 (1pcs)



手套 (3 双)



高精膜 (5pcs)

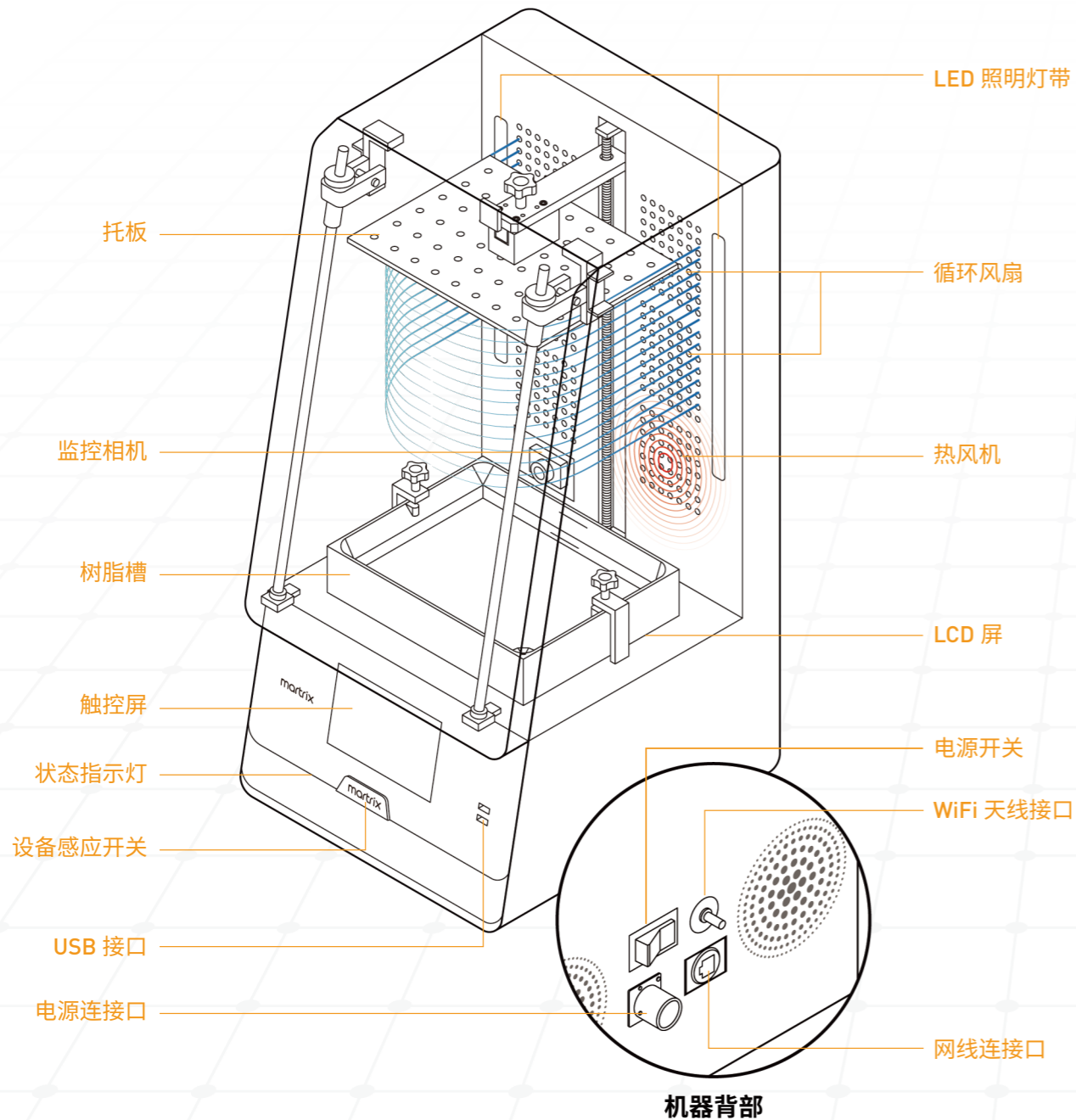


Wifi 天线 (1pcs)



U 盘 (1pcs)

## 2.3 打印机概览



机器背部

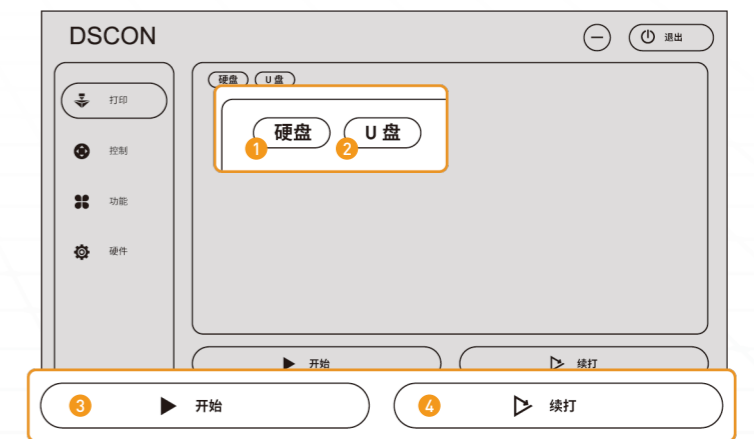
## 2.4 控制软件介绍

Dscon 软件分为四个界面分别为：打印界面、控制界面、功能界面、硬件界面。界面右上方有个退出按钮。

### 打印界面

Dscon 的打印界面如右：

- ① 硬盘：机器内部存储打印文件的位置；
- ② U 盘：U 盘内存储打印文件的位置；
- ③ 开始：开始打印；
- ④ 续打：继续打印。



### 控制界面

Dscon 的控制界面如右：

#### 1) 操作栏

- ① 运动到顶：托板运动到 z 轴最高点；
- ② 停止运动：停止托板运动；
- ③ 回零：托板运动到 z 轴最低点；
- ④ 设置零位：设置打印时的零位(z 轴最低点)。

#### 2) 功能栏

- ⑤ 碎屑清理：整个打印区域曝光，形成一层薄片，移除薄片时会带碎屑一起带出；
- ⑥ 故障清除：状态灯报警时，点击故障清除解除报警；
- ⑦ 设置参数：对机器的一些参数进行调整。



## 功能界面

Dscon 的功能界面如右:

### 1) 信息栏

- ① 日志: 记录机器运行状况;
- ② 关于: 公司信息、软件信息。

### 2) 设置栏

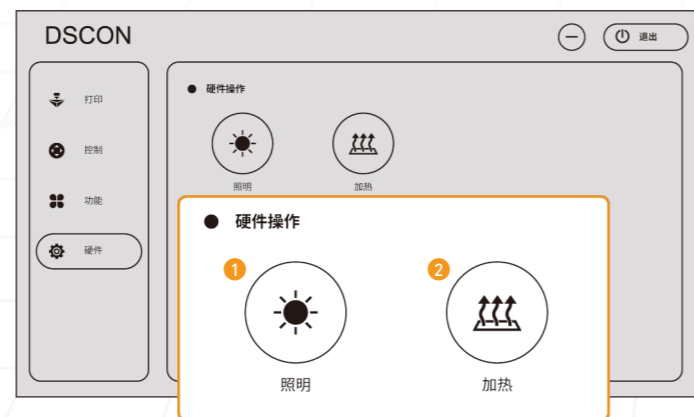
- ③ 基本设置: 设置语言等;
- ④ 高级设置: 设置机器的打印参数等。



## 硬件界面

Dscon 的硬件接口如右:

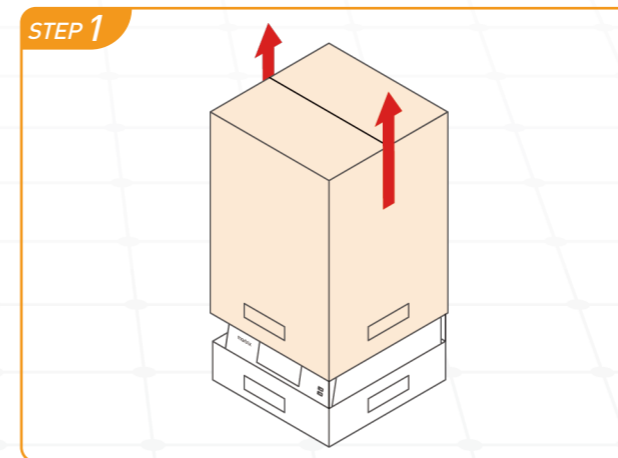
- ① 照明: 机器内部的灯将会在推起推拉门后长亮;
- ② 加热: 加热风扇开始工作,加热树脂槽中的树脂。



请参考如下操作步骤完成打印机打印前的各项准备工作。

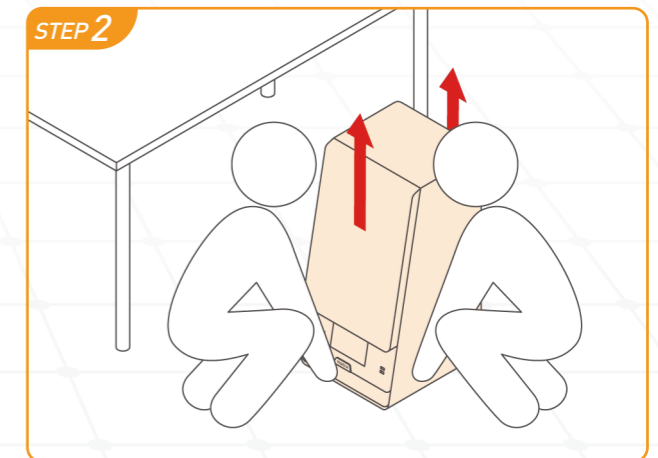


## 3.1 工作环境准备



### STEP 1 Matrix 拆箱

- ① 从两侧抓手向上取下打印机外箱,取下套在打印机上的包装袋;
- ② 小心取下放置于打印机上侧的零配件包装盒。



### STEP 2 放置打印机

- ① 两人拖举打印机底部,缓缓将机器放置于打印平台处;
- ② 利用随机配备的水平仪检查打印机放置平台的水平度。



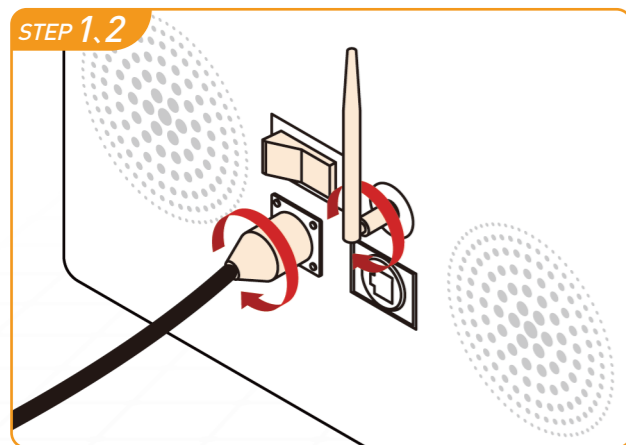
保持打印机水平放置很重要,可防止树脂在打印过程中不会从树脂槽中溢出。所有四个支脚必须放置在平稳的表面上,以确保完美的打印精度。



保留 Martrix 打印机的包装以供运输使用。原包装为保修服务所需物品。

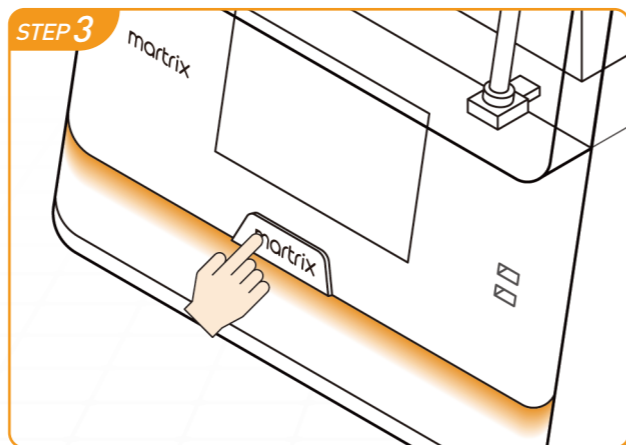
# 打印前准备和基础操作

## 3.2 电源连接



**STEP 1.2**  
按图示指示方式接入打印机后部的电源线及 WiFi 天线。(可通过 USB, Wi-Fi 或以太网上传文件) 机连接至以太网端口。

**STEP 2**  
打开机器背部电源总开关

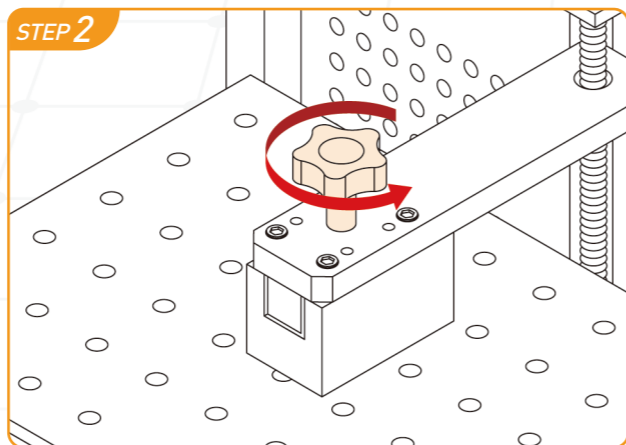
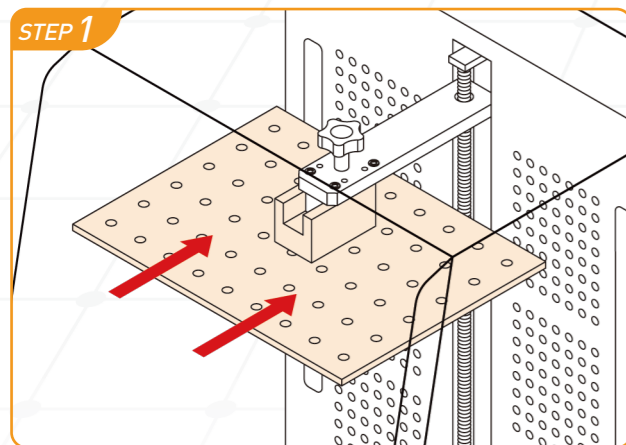


**STEP 3**  
手指轻触打印机前感应开关 (Matrix 字样) 1~2 秒以开启打印机, 开启打印机后, 机器下方状态指示灯亮起, 屏幕会在 5 秒左右开启。

**!** 请勿尝试按压感应开关, 以免造成开关按钮的损坏。

## 3.3 托板安装

开启打印机舱门, 将托板按照箭头指示方向插入托架处, 旋紧固定螺丝完成托板固定。

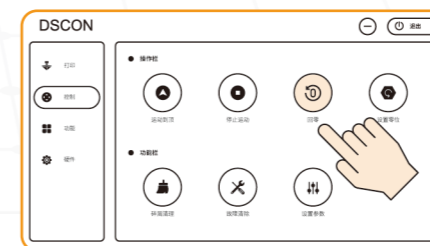


## 3.4 打印机调平验证

Matrix 打印机在出厂前已进行托板调平, 请按照如下操作步骤检查托板水平度。

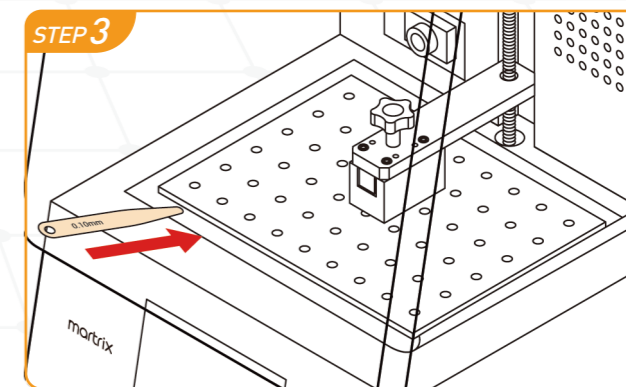
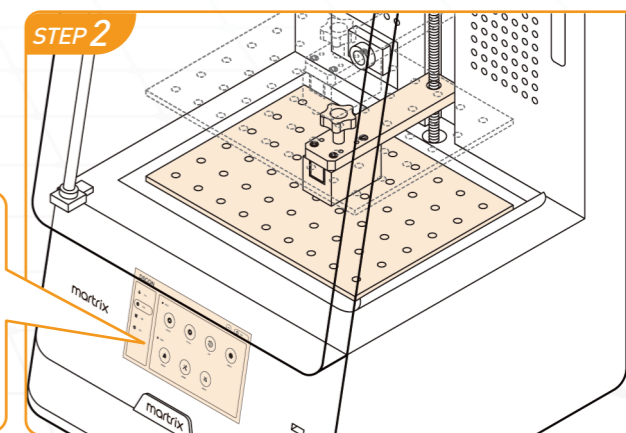
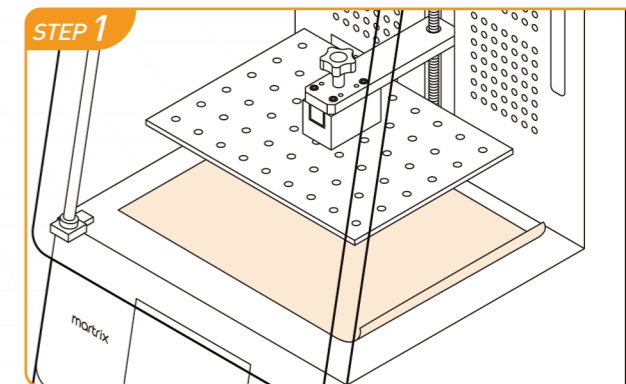
**STEP 1**  
检查 LCD 显示屏及托板清洁整洁无树脂残留, 放置一张 A4 纸于 LCD 屏幕上, 避免后续屏幕与托板接触造成损伤。

**STEP 2**  
在 Matrix 机器控制界面中找到【回零】命令并点击, 托板会持续下降至底部并停止。



**STEP 3**  
将附赠的塞尺 (0.1mm) 依次插入托板的四个角, 检查四个角松紧程度是否一致, 如塞尺不容易塞进去且四个角松紧程度一致, 那托板水平度 OK。

**!** 如果四个角缝隙松紧程度不一致, 存在太松或太紧的情况, 请依照 5.5 章节托板调平步骤操作。  
验证完成后点击控制界面中的运【运动到顶】, 将托板回至顶部。



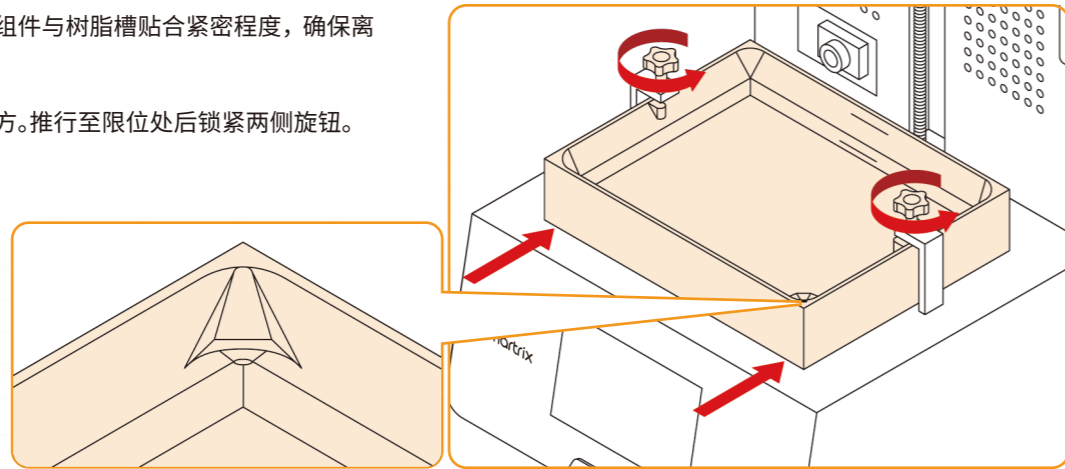


# 打印前准备和基础操作

## 3.5 树脂槽安装

检查树脂槽底部离型膜组件与树脂槽贴合紧密程度，确保离型膜无破损，变形。

将树脂槽安装至屏幕上方。推行至限位处后锁紧两侧旋钮。



⚠ 注意树脂槽安装方向，到料口位置应朝向外侧，如上述图示。

## 3.6 WiFi 连接

**STEP 1**  
找到控制界面中的【基础设置】-【WiFi】命令并点击。



**STEP 2**  
于 WiFi 对话框中选择所需的无线网络，输入密码进行连接。  
如操作界面跳出连接完成弹窗，且 IP 地址栏中有 IP 显示，则连接成功。



## 3.7 Martrix ONE 安装及设置

**STEP 1**  
请按照操作指示完成 Martrix ONE 软件安装。

**STEP 2**  
启动 Martrix ONE，根据指示，输入用户信息，选择缓存目录。<sup>①</sup>

⚠ 如果您的计算机中存在多个网卡，请检查您是否选择了正确的 IP。

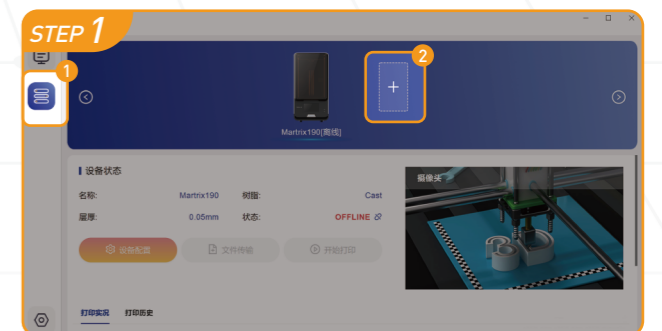
**STEP 3**  
点击“Start the ONE Server”<sup>②</sup> 开启 Martrix 服务。

⚠ 请检查右边的插件状态，如存在错误的按键，点击，然后按照提示启动这些插件。确保所有插件都处于正确的状态。<sup>③</sup>



## 3.8 设备连接及打印配置

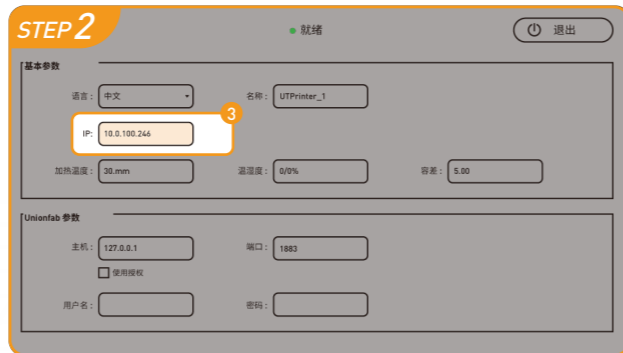
**STEP 1**  
找到左侧设备状态栏按钮<sup>①</sup>并点击，选择“+”<sup>②</sup>进入设备添加界面。



# 打印前准备和基础操作

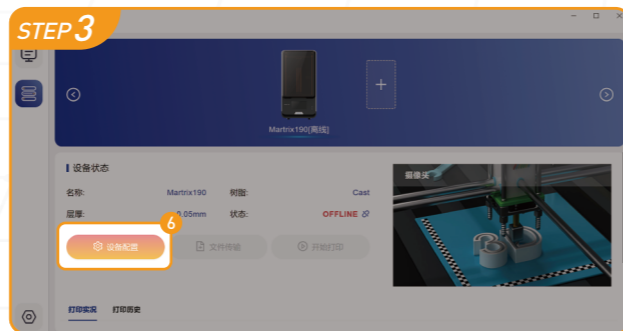
## STEP 2

在设备界面中找到功能界面下的 IP 地址。<sup>3</sup>  
 并将 IP 地址输入至 ONE 设备添加界面中，<sup>4</sup> 点击“开始配置”<sup>5</sup>  
 进行打印机连接。



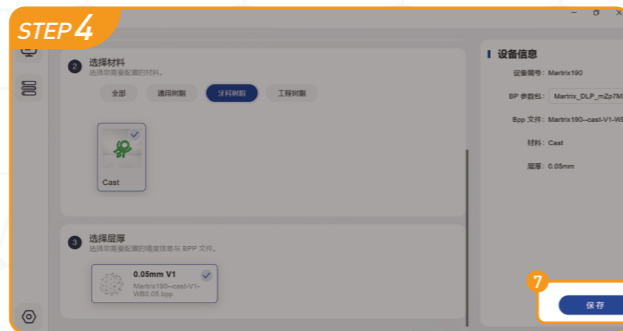
## STEP 3

刷新页面，现在您已经成功连接您的设备。您可以按“打印配置”<sup>6</sup> 键完成配置。



## STEP 4

按照屏幕上的说明，然后按“应用”<sup>7</sup> 完成所有配置。



## 3.9 使用 Martrix 进行打印

### 通过 Martrix ONE 打印

#### STEP 1

完成 Martrix ONE 与设备的连接后，点击界面中间的添加文件按钮(或将需打印文件拖拽进来)。<sup>1</sup>

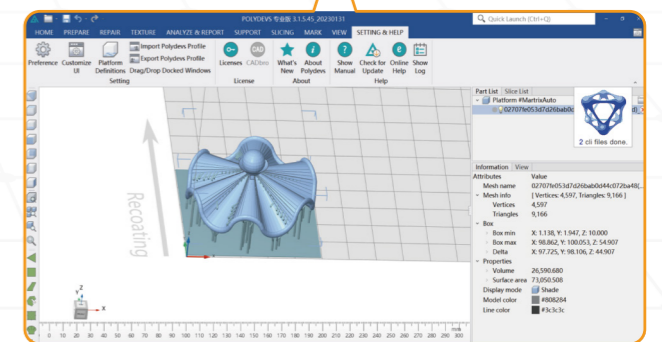


#### STEP 2

点击“开始处理”<sup>2</sup> 进行前处理工作。

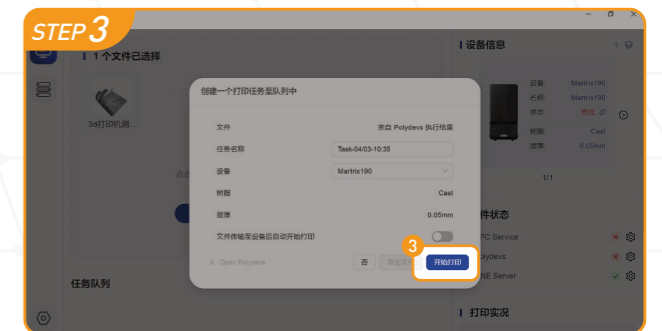


**!** 务必确保 Polydevs Pro 已安装完成，当点击“开始处理”按钮后，界面将自动跳转至 Polydevs Pro 操作界面，可根据需要进行前处理作业。完成后点击右上方的回到 Martrix ONE 即可。



#### STEP 3

按“Start Print”<sup>3</sup> 将任务添加到任务队列。等待 BP 和发送到设备，即完成了打印上传任务工作。



**!** 随时可以在主页右下角查看“当前打印”，查看打印进度。

# 打印前准备和基础操作

开始打印前,请检查树脂槽及托板平面是否清洁,先将树脂摇晃均匀后再添加至树脂槽内,树脂不要添加超过“MAX”上位线。

## 通过 USB 打印

### STEP 1

将附有打印文件 U 盘插入设备接口。

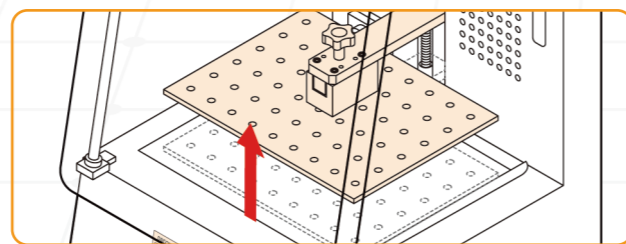
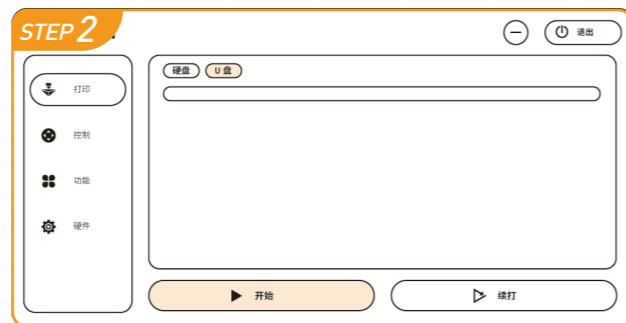
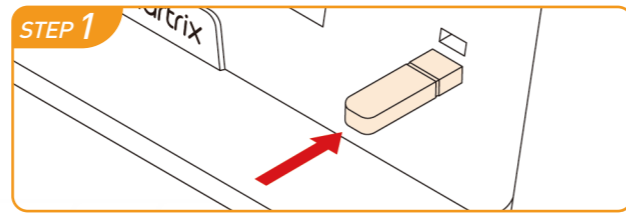
### STEP 2

在确保机器上所有参数准确后,在打印界面的 U 盘中选择要打印的文件,然后点击“开始”。

### STEP 3

点击确定后界面会出现打印文件的信息,在审核信息无误后选择“确定”机器即可进行打印。

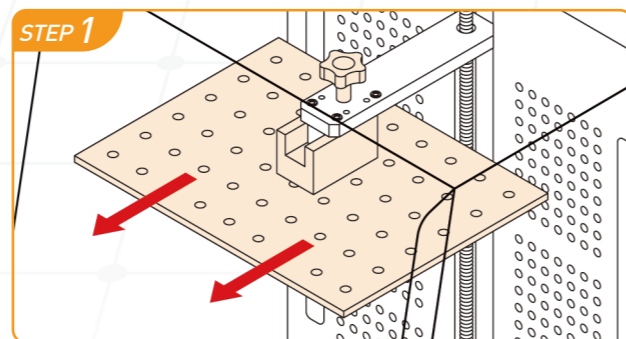
⚠ 打印完成后,托板会根据打印件高度自适应抬升到适当高度,便于操作者将托板取下。



## 3.10 打印样件处理

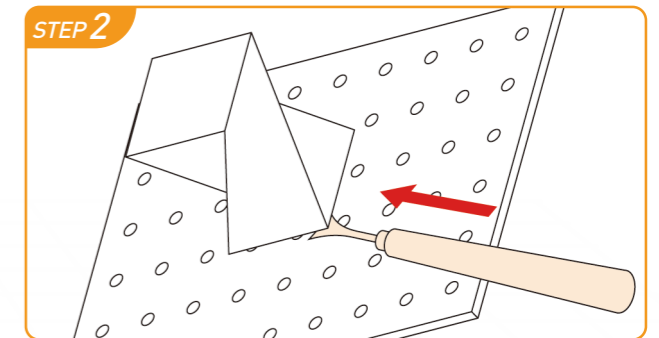
### STEP 1

打印完成后,待托板上树脂滴下,拧松托板上固定螺丝,取下托板。

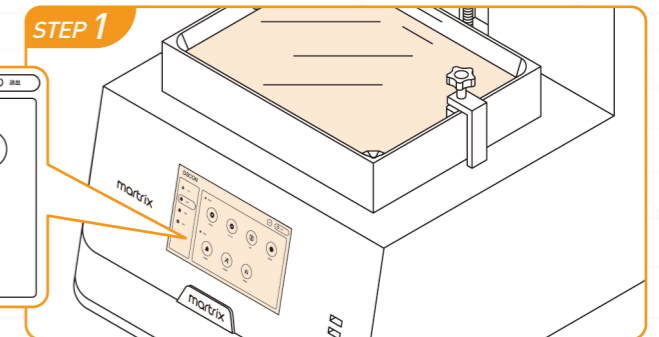
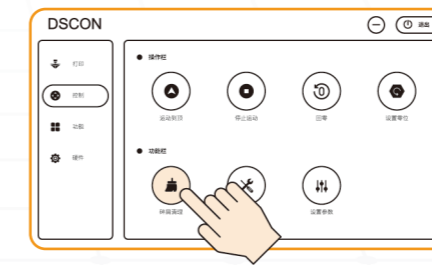


### STEP 2

使用附赠的铲刀将零件从托板上铲下,铲件完成后使用酒精对托板进行擦拭,去除托板上的残留树脂。



## 3.11 树脂槽清洁

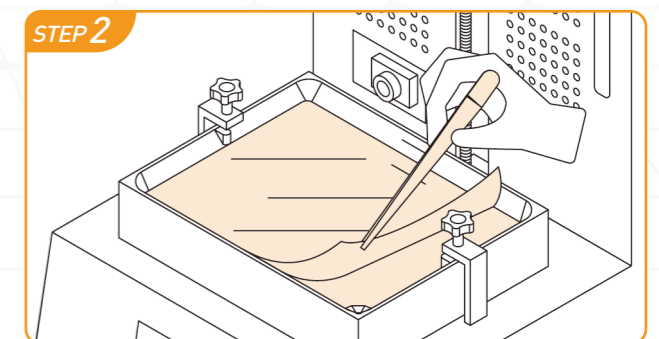


### STEP 1

打印完成后,找到控制界面中的【碎屑清理】命令并点击,机器会对树脂进行投光固化,将树脂槽中沉淀的残渣进行清理。

### STEP 2

在碎屑清理完成后,需使用配备的镊子从生成的薄片侧边将薄片夹起。目视所有薄片均被清理,无残留。




### STEP 3

在碎屑清理完成后取出盛满树脂的树脂槽,使用配备的漏斗及筛网将树脂槽中的树脂过筛后倒回材料瓶中,确保树脂中无悬浮杂质。



## 4.1 打印机故障排除

故障现象	可能成因	解决办法
设备不能正常启动	打印机电源线插头未插入至指定位置	重新调整电源插头位置,保证紧密、稳定连接
	打印机背侧总电源开关未开启	启动背侧电源开关  至“1”
	打印机保险系统熔断	重新更换保险丝后重启打印机
	程序启动找不到光机	排查光机的连接电缆是否有问题
	电机没有上电或 CAN 口配置错误	排查电机的接线和 CAN
	使用的 .utk 文件不适配本设备	利用 Martrix ONE 平台重新生成适配本设备的 .utk 文件
成型平台升降卡死	成型平台达到限位开关极限	复位 Z 轴位置,重新升降
	其他进程正在控制平台升降	关闭其他进程,重新升降
	平台附近有其它异物卡死升降	事先清除平台附近所有异物
成型进程突然中断	打印机掉电或接触不良	重新插入各线缆插头后打印
	DSCON 控制软件信息指令故障	重启控制软件,重新打印
	成型平台达到限位开关极限	复位 Z 轴位置,重新打印
树脂槽底面受损	调零过程中托板下降距离过大	适当调整调零时托板下降距离
	调零过程中接触表面有异物	提前清理所有多余残留物
	树脂槽和托板未推至指定位置	提前妥善安装调零构件
	曝光时间设定错误,过度固化	重新调整曝光时间等参数
	清理树脂内混合物时锐物划伤	使用配套软质工具

## 4.2 样件故障及排除

故障现象	可能成因	解决办法
成型样件细节缺失	成型树脂受潮,细节软化	更换树脂并控制环境湿度
	后处理时强流冲击使细节丢失	采用酒精小心缓慢冲洗
	前处理文件故障,支撑不够等	将源文件重新前处理后打印
	后处理过程清理掉了本体部分	谨慎进行后处理操作
	打印机周围有振动源影响成型	移走打印机周围的振动源
	成型树脂受潮,细节软化	更换树脂并控制环境湿度
成型样件结构软化	后固化时间或者光强不够	重新调整后固化相关参数
	投光参数不正确树脂固化不全	重新调整投光参数后打印
	成型过程中温度有较大变动	严格控制成型过程中的温度
	前处理支撑设置不合理	重新进行前处理并添加支撑
	单程曝光参数设定有问题	重新调整曝光时间光强等参数
成型样件出现飞边	成型树脂内含有碎片等杂质	过滤树脂材料后重新打印
	样件未清洗彻底就进行固化	仔细对成型样件反复进行清洗
	树脂槽破损较严重,投光散射	更换新树脂槽然后打印

## 5.1 打印机维护

### 日常保养：

有关打印机的日常维护,请参阅以下步骤：

- 确认所有开关均处于关闭状态后拔出所有打印机连接线缆；
- 取下成型托板后再取下树脂槽，分别将二者使用96%及以上纯度的干净酒精溶液清洗干净，然后用气枪吹干；使用干净的无纺布浸润少量酒精擦拭整个打印机成型平台，清理残留树脂等；
- 检查各处的紧固件是否出现松动、破损等情况；
- 检查所有安全结构的功能性，确保其保持在复位状态；
- 检查所有插孔的完整性以及是否有过流烧化的痕迹；
- 检查操作门关闭时的密合程度，防止打印故障及漏光对树脂质量产生影响；
- 检查所有线缆和转接头的完整性和适用性，一旦出现破损、老化现象应立即更换同型号线缆；
- 检查成型平台内所有标准零件(如螺钉、螺母等)，如有损毁请立即更换同型号配件。

### 日常操作使用注意事项：

- 严禁未经授权擅自拆卸打印机各模块构件或调节上方执行机构元器件；
- 确保所有的外露接线都采用保护套封闭包覆，防止老化失效后有触电危险；
- 必须定期检查各个线缆接头、面板指示灯及按钮，并确认其完好；
- 严禁擅自撕毁、篡改和挪动打印机铭牌和警示标签；
- 必须定期检查打印机各机构，查看是否有丢失、松动或者损坏的零件；
- 必须定期检查打印机各安全结构，确保其功能性和稳定性；
- 打印机必须远离火源、水源、热源、振动源等区域安装；
- 必须定期清洁打印机，并保持成型室内卫生少尘；
- 每次打印作业完成后，应及时清理平台上的固体残留树脂，堵塞的孔应及时疏通。
- Z轴导轨、丝杠应定期清洗，清除杂物，每半年上一次油。
- 日常使用中，请勿用尖锐物体在设备表面雕刻，以免损坏外涂层。
- 请勿用钝器敲打设备，以免设备变形

## 5.2 软件更新

### STEP 1

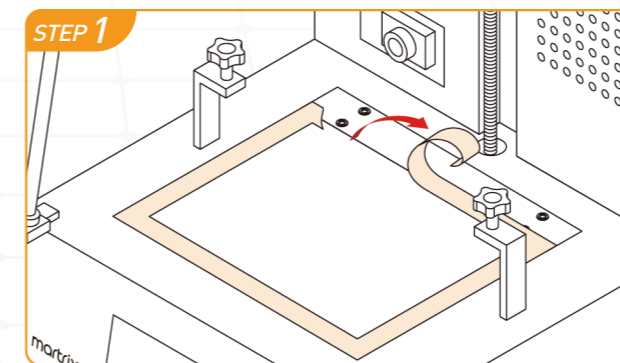
您可以点击“配置按钮<sup>1</sup> - 软件更新<sup>2</sup>”查看最新版本是否已经发布。



## 5.3 更换 LCD 屏幕

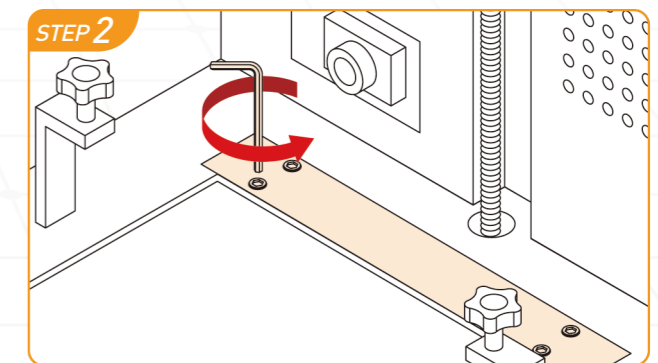
### STEP 1

取下 LCD 屏幕四周的遮光胶带。



### STEP 2

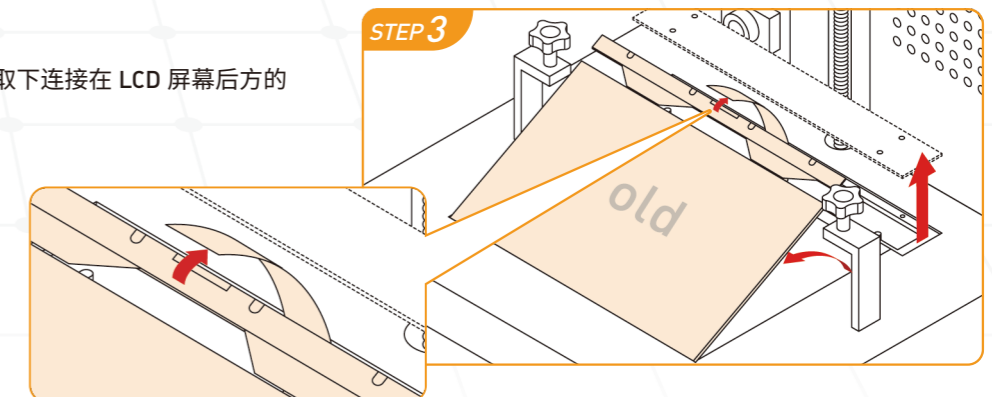
用随货配备的六角扳手拧松屏幕上盖板上方的螺丝，然后取下盖板。



⚠ 如有树脂残留在 LCD 屏幕平台上，请先将树脂清除干净。

### STEP 3

拆除盖板后，将 LCD 屏幕抬起，取下连接在 LCD 屏幕后方的数据线，然后将 LCD 屏幕取出。



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将新的 LCD 屏安装至机器连接线上。

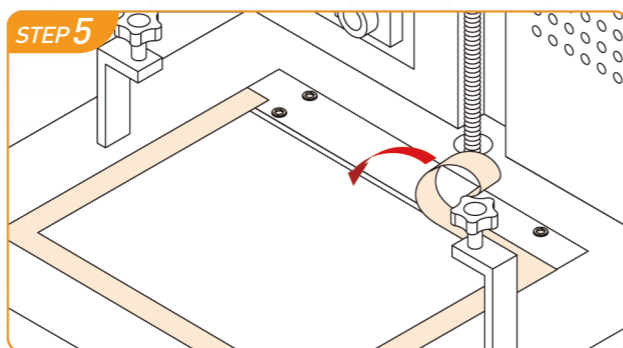
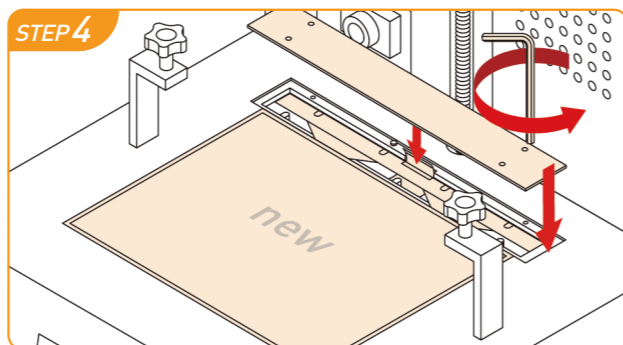
## STEP 4

将屏幕与数据线妥善放置于屏幕卡槽内,再将盖板复原即可。  
螺丝拧紧后,检查屏幕是否固定完好。

## STEP 5

将遮光胶带沿屏幕四周紧密贴合。

⚠ 在上述步骤完成后在“控制”命令,选择“碎屑清理”进行投光检查屏幕是否完好无损。



## 5.4 更换离型膜组件

### STEP 1

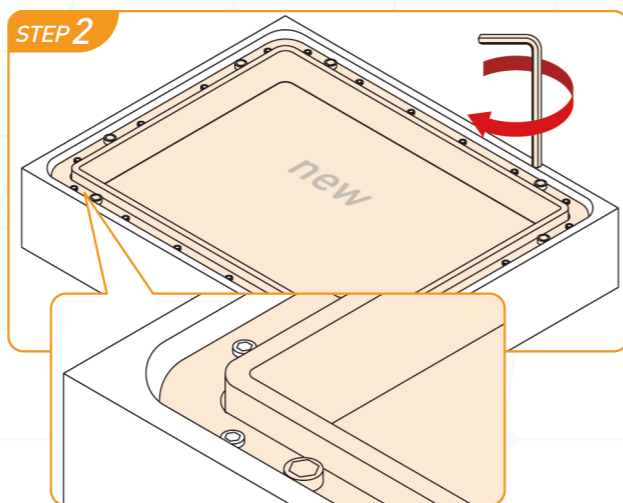
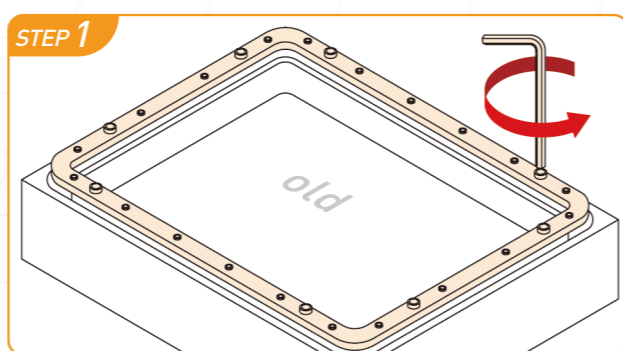
用酒精将树脂槽上杂质清洗干净,取出框架卸下固定框架的螺丝,将离型膜组件取下。

### STEP 2

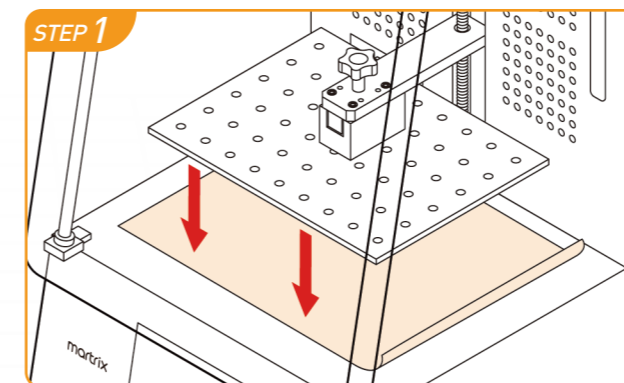
将随货配备的离型膜组件(固定螺丝头方向朝上)放置于树脂槽内槽中,拧紧 8 颗螺丝,检查离型膜组件是否固定完好。

⚠ 仔细检查装在树脂槽底部的密封圈,如果存在破损,断裂等情况,请及时更换。

⚠ 安装完毕后,请再次检查螺丝是否完全拧紧到位,确保螺丝头无超出树脂槽底面。

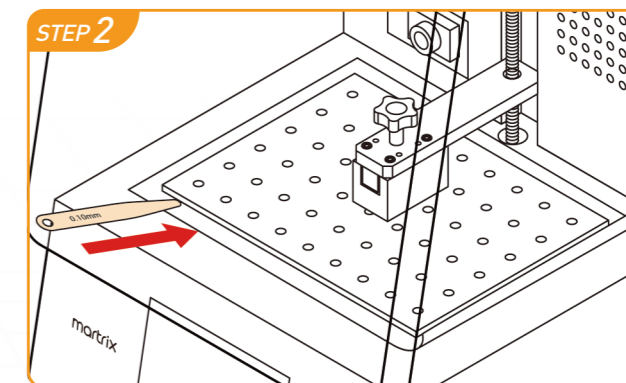


## 5.5 托板调平



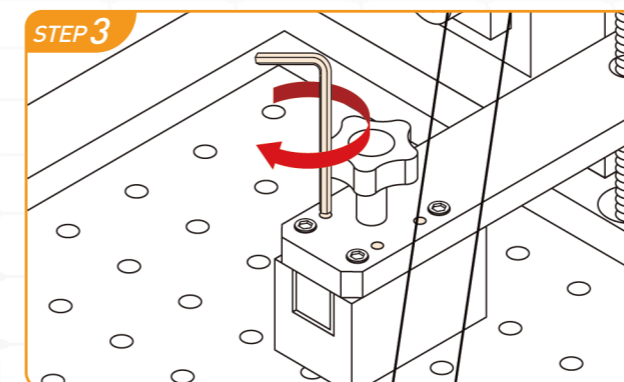
### STEP 1

按照托板调平验证第 1-3 步将托板持续下降至底部并停止。



### STEP 2

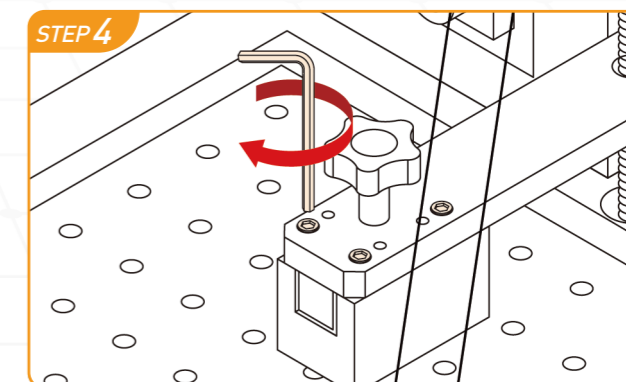
将附赠的塞尺(0.1mm)依次插入托板的四个角,检查四个角松紧程度。



### STEP 3

#### 【太松】

当一个角塞尺能轻松塞入时,托板的这个角就偏高,这时应松开拉丝,拧紧顶丝。



### STEP 4

#### 【太紧】


如果塞尺不能塞入一个角,那托板的这个角就偏紧,这时应松开顶丝,拧紧拉丝。

⚠ 需要注意的是在调整螺丝时幅度不要太大,防止压坏屏幕。


# Limited Warranty & Certification

## 6.1 After-Sales Service & Warranty


UnionTech undertakes to provide one-year warranty and life-time technical support for Marrix520 or 190 printer, the warranty period is counted from the installation date of printer and software, and the following points shall be noted here:

-  The warranty is only limited to the Marrix 520 or 190 printer itself, and the accessories attached to the printer are defined as consumables, which are not covered under warranty.


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-  The warranty is only limited to data preparation software and control software attached to the printer, excluding any third-party software.


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-  Any damage of the printer or related accessories caused by operators' failure to comply with this User Manual and personal misoperation is not covered under warranty.

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-  Any damage of the printer or related accessories caused by operators' disassembly of printer without permission is not covered under warranty, and the warranty period expires immediately in such cases.

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-  It's strictly prohibited for any organization or individual to pass on any data of Marrix520 or 190 printer to other organizations or individuals without written authorization of UnionTech, and relevant personnel shall be investigated for legal responsibility according to law once verified.

## 6.2 FCC Warning

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference,
- (2) this device must accept any interference received, including interference that may cause undesired operation.



NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

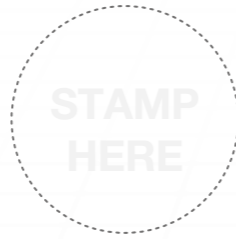
To maintain compliance with FCC's RF exposure guidelines, This equipment should be installed and operated with minimum 20cm distance between the radiator and your body: Use only the supplied antenna.

# Limited Warranty & Certification

## 6.3 Quality Control

### Certificate of Approval

The product has successfully passed the factory quality inspection. Our quality assurance team has carefully examined every aspect of the product, ensuring that it is safe, reliable, and meets all of our strict quality control standards.



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#### Technical Support

After purchasing our product, you can enjoy technical support for the entire lifetime of the product (excluding technical problems that are beyond the product itself). The user manual is included in a USB flash drive for instruction. Please provide the product's serial number when applying for technical support.

#### Notification

Please ensure that you carefully review the user manual prior to using the product. If you require any assistance, please contact your local seller or reach out to us via email: [martrix@uniontech3d.com](mailto:martrix@uniontech3d.com) for support. For detailed information regarding the warranty coverage for your product, as well as the procedures for submitting a warranty claim, please visit our website: [www.martrix3d.com](http://www.martrix3d.com).