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RAYSHAPE

www.rayshape3d.com

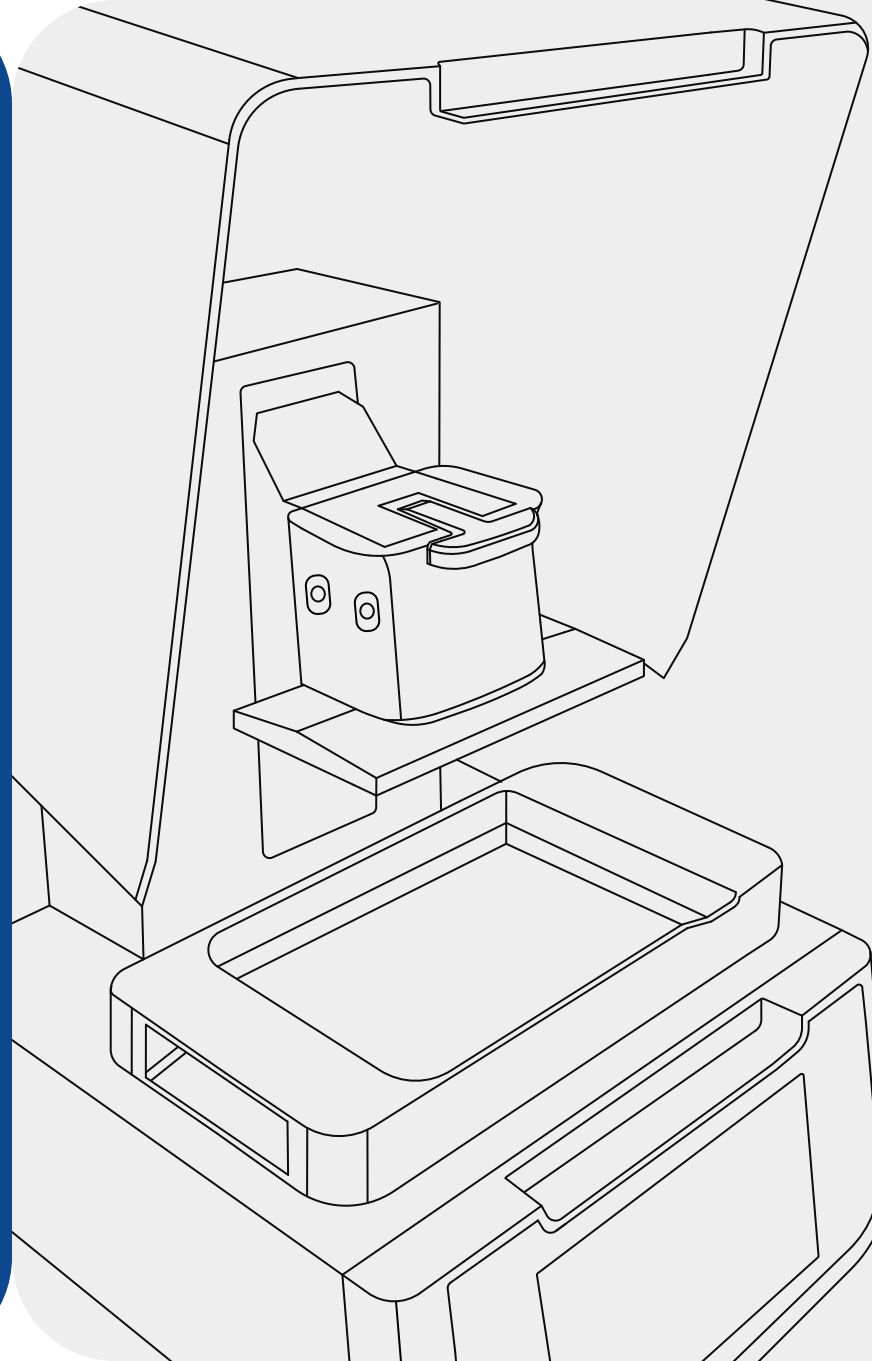


in | | | |



sales.os@rayshape3d.com

Contact the sales team for more information

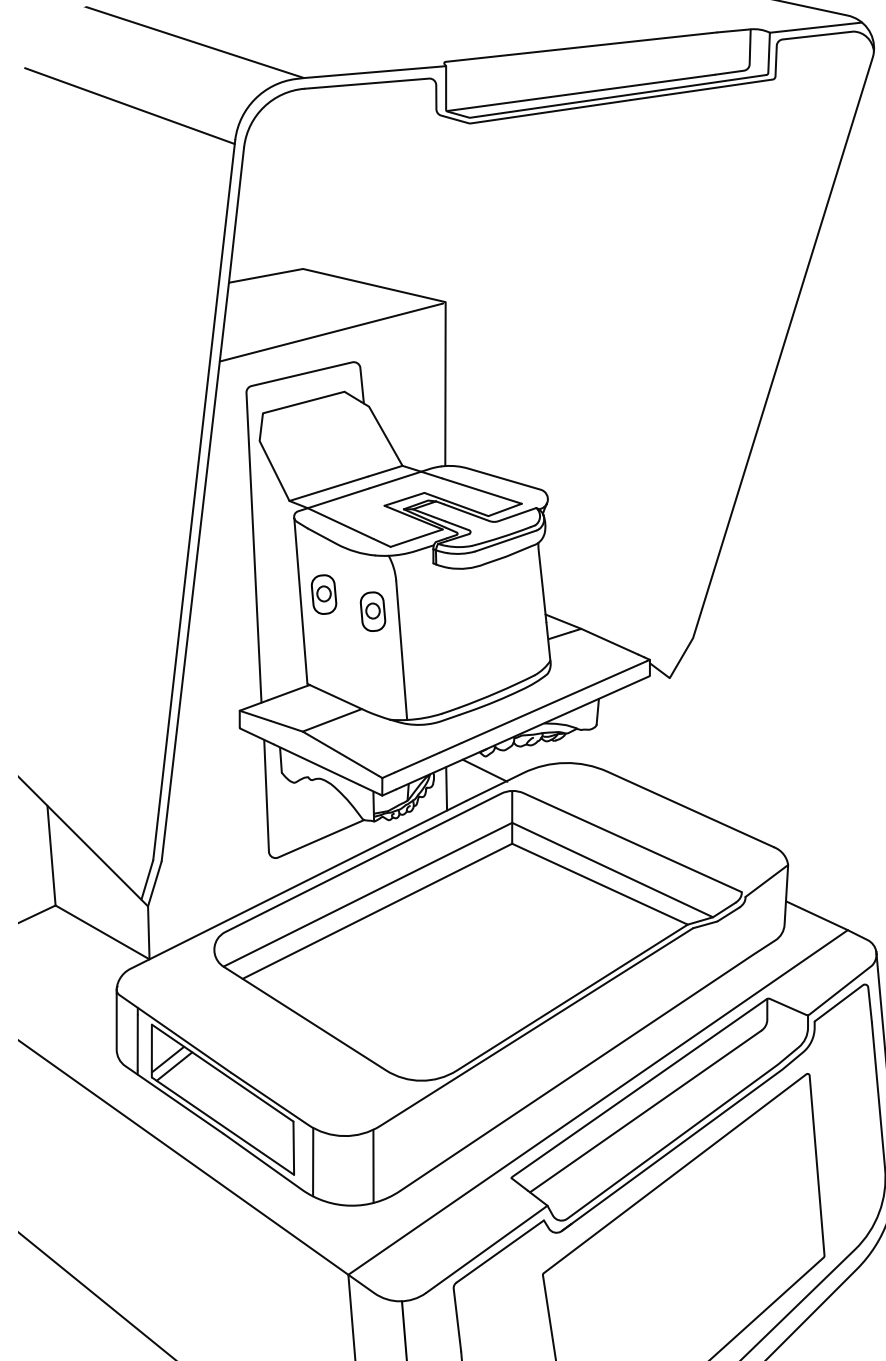


Edge mini

User Manual

V1.0

RAYSHAPE



General Information 02

Product Information 05

Operation Instructions 12

Troubleshooting 20

Service 22

Instructions

This manual contains the technical information, safety guidelines, and detailed operation instructions for Edge mini LCD 3D printer. Please keep it properly.


Please read this manual carefully before using the printer. Failure to comply with the safety and operating instructions required by this manual will result in consequences that are the sole responsibility of the user.

All information contained in this manual is up to date at the time of printing, but may be subject to change without notice as products are upgraded. The images used in this manual may differ from your printer due to differences in specific models and specifications.


If you have any improvement or modification opinions on this document and the product, or if there is any error, please inform us in time. Thank you for your valuable comments on our products.

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Instructions of mark




Warning : Could result in serious personal injury or equipment damage if it was failed to comply with this requirement.




Attention : Could result in minor personal injury or equipment damage if it was failed to comply with this requirement.



Important Information : The normal operation of the device or the quality of printed models would be influenced if it was failed to comply with this requirement.



Protection requirements : Corresponding precautions should be taken as required.




Hazard indicationt : Description of specified hazard.

Safety Guidelines


Before operating with the printer, please read the following safety guidelines to identify the potential risks which you may experience during the usage. When using the printer, make sure to comply with the related requirement defined in the manual already and take appropriate precautions in advance.

Any operation which was failed to fulfill with the requirement defined in the safety guidelines may result in personal injury or equipment damage, and the corresponding consequences should be taken by the users.




The device shall be operated by professional staff

Operators must carefully read and understand the safety guide and operation manual, then operate the device correctly as required.




Keep away from children

Please keep the device, resin material and other accessories out of the reach of children.




Disassembly or modification is strictly prohibited


It is strictly prohibited to disassemble or modify the device without authorization. Do not use accessories which are not designated officially.




Risk of electric shock




The specification of power must meet the operating requirements of the device.



A grounded electrical outlet should be applied.




Replaced with a new one before usage if it was found that the power cable was aging or damaged.




Risk of UV exposure

The device is designed based on the principle of UV light curing and there is UV light available inside the device during operation, the risk of UV exposure shall be avoided accordingly.



If any operation or maintenance work should be proceeded while the device is working, the anti-UV goggles shall be worn accordingly.



When the device is working, please keep protective cover/ door closed normally.

03



Risk of mechanical extrusion

The printing platform will move up and down while the printer is working, there is a risk of mechanical extrusion which was generated by the improper operation.



Please keep the protective cover/door closed normally when the printer is in service.



It is strictly forbidden to put hands or other parts of the body into the printing area during the printing.



Risk of sharp edge cutting

After printing, a shovel blade is used to separate printed models from the printing platform. There is a risk of getting injured by the sharp edge cutting of the shovel blade.



Cut-resistant gloves should be worn during the operation of separating printed parts from the platform.



The blade of the shovel should not be orientated to your body during usage.



Risk of flammability of cleaning solvent

The printed parts should be cleaned with a cleaning solvent, such as IPA or 95% alcohol.



Please keep good ventilatlon and keep away from heat and fire sources when storing or using cleaning solvent.



Wear protective gloves



Please wear disposable medical gloves when operating the devices to avoid direct contact with the resin material.



Please wear cut-resistant gloves when separating the printed models from printing platform with a shovel.



Wear goggles



If any operation or maintenance work is needed to proceed while the printer is working, anti-UV goggles should be worn accordingly.



Goggles should be worn to avoid the injury caused by the splashing fragment which was generated by the operation of separating printed parts from the printing platform.



Good ventilation



Areas for printer installation and post-processing should be well ventilated.

Installation requirement

In order to obtain the best printing quality, stability and safety, before the installation and use of the Edge mini 3D printer, please be sure to understand the best service environment of the device, and the requirements are described as follows:

Electrical requirements

·Rated voltage: 200-240VAC 50/60Hz; 100~120VAC 50/60Hz (Varies by country/region).

·Rated power: 120 W.

Operating ambient temperature, humidity, ventilation, and light

The best operating ambient temperature of Edge mini 3D printer is 25 ± 5 °C, the humidity is below 80%, the environment shall be well ventilated (non-confined space), and the device installation location shall avoid direct sunlight.



[The temperature and humidity requirements of resins should also be considered for printing.](#)

No dust pollution

Edge mini 3D printer contains precision optical components inside the machine body, so the user should ensure that there is no dust pollution in the service environment, otherwise it will affect the normal operation of the optical devices.

Level and stable platform, away from fire, heat and vibration sources

A level and stable platform is required for Edge mini, away from fire, heat and vibration sources.

Keep the cover closed during printing

During the printing process, please try not to open the cover for a long time, so as to avoid the drastic change of the resin temperature due to the fluctuation of the temperature inside the printer case, which affects the stability of the light-curing chemical reaction, causing printing failure or poor printing quality.

Use official materials

All official RAYSHAPE materials have been extensively tested and optimized for superior performance, and we can not guarantee that you can get the same or similar printing performance when using non-designated materials.

Ensure the speed and stability of wireless network

If your device is connected to the router via a wireless network, we recommend that you place the wireless router and your Edge mini 3D printer as close as possible to ensure high signal strength and data transmission speed. The router should not be blocked by walls.



[Connect your printer to the local network with an Ethernet cable to ensure the best data transmission speed and network connection stability. Make sure to connect your slicing computer and printer to the same router to enable data network transmission function.](#)

Product Information

Technical Specification

| Main Parameters | |
|-------------------------|---|
| Build Volume | 130 × 80 × 100 mm / 60 × 60 × 100 mm |
| Pixel Size | 35 μm |
| Layer Thickness | 0.05 ~ 0.20 mm |
| Printing Speed | Up to 85mm/h @0.10 mm (Depending on the resin type and slicing settings) |
| Materials | |
| Available Materials | ShapeMaterials Dental Series\ Third-party certified resin |
| Hardware | |
| LCD Screen | 6.23" 4K monochrome screen |
| Light Source | 405 nm LED |
| Resolution | 3840 × 2400 pixels |
| Heating Module | Automatic heating build platform |
| Touch Screen | 7" color touchscreen |
| Connectivity | USB2.0, Wireless network, Ethernet |
| Input Voltage | 100~120VAC, 50/60Hz、 200~240VAC, 50/60Hz |
| Rated Power | 120 W |
| Resin Tank Installation | Magnetic fixation |
| Door Control | Printing will be paused automatically if the cover is opened (optional) |

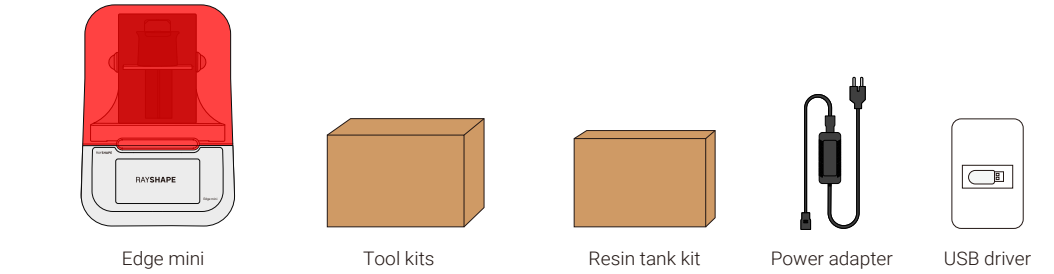
Product Information

Technical Specification

| Software | |
|---------------------------|--|
| Language | Chinese, English |
| Slicing Software | ShapeWare 2.0 |
| Operating System | Windows 10/11、 macOS 11.2 (Big Sur) and above |
| File Format (Input) | .stl |
| File Format (Output) | .rs, .shape |
| Advanced Functions | One-click printing、 Automatic grouping and layout、 Scan to model、 One-click hollowing and filling、 Printability analysis, etc. |
| Size & Weight | |
| Device Dimensions | 300 × 280 × 427 mm |
| Device Net Weight | 12 kg |
| Minimum Space Requirement | 380 × 280 × 572 mm |
| Packaging Size | 385 × 385 × 620 mm |
| Packaging Weight | 17 kg |

Product Information

Contents




Tool kits



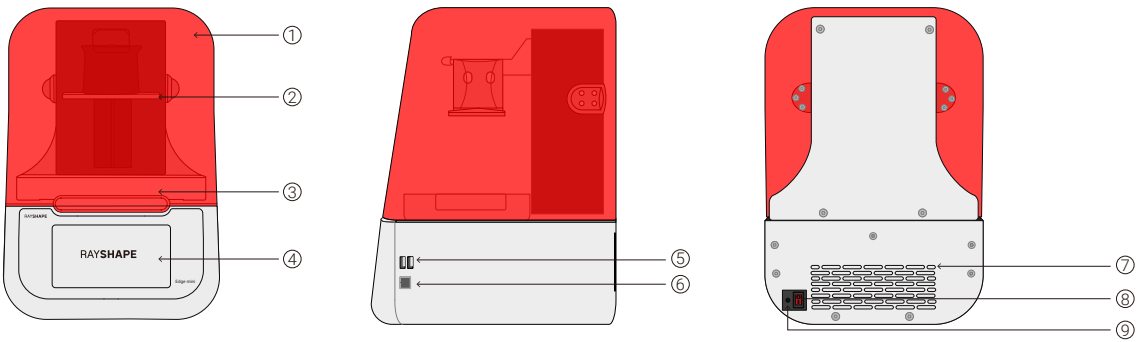
Resin tank kit



 Pictures above are a demo for tools and accessories packed with the printer.
The actual type or quantity of these items may be adjusted without notification.

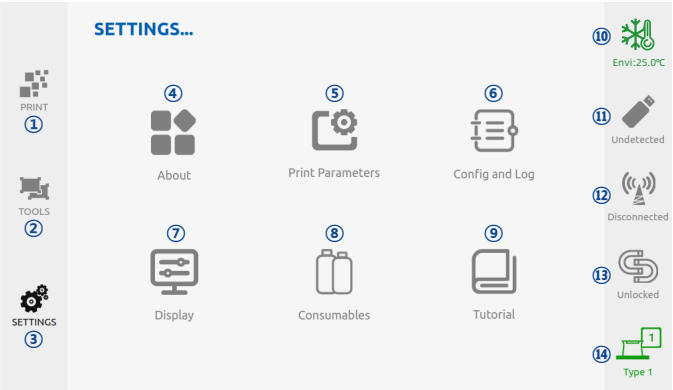
Product Information

Printer Components



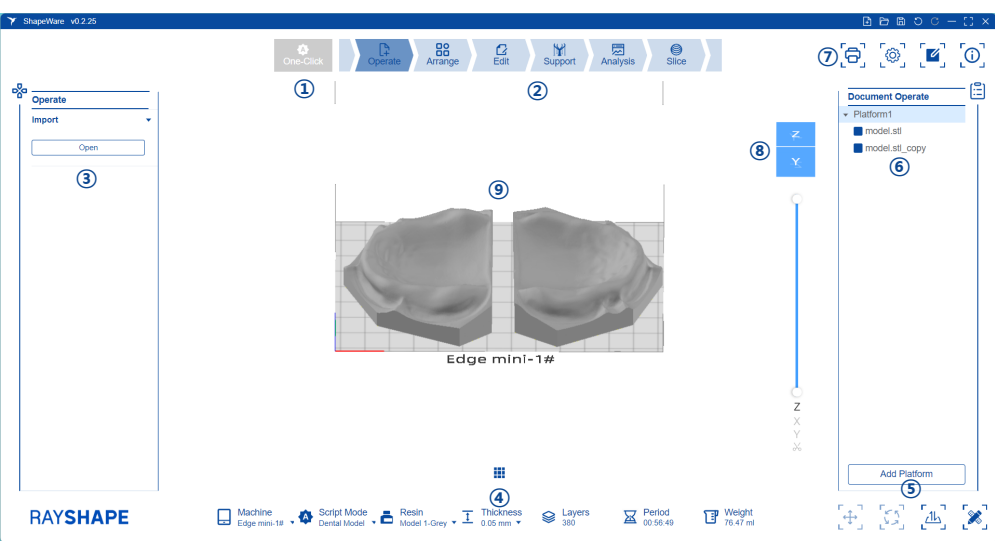
| No. | Description | Function |
|-----|--------------------|--|
| ① | Cover | Block UV light of specified wavelength and ensure suitable temperature and humidity in the chamber |
| ② | Printing platform | Adhere printed parts and heat the resin in the resin tank |
| ③ | Resin tank | Contain resin |
| ④ | Touch screen | Access for printer control software operation |
| ⑤ | USB port | Import/export print jobs and device information files |
| ⑥ | Ethernet interface | Connect the printer to a wired LAN |
| ⑦ | Heat emission hole | Dissipate the heat generated during operation |
| ⑧ | Power switch | Turn on/off the printer |
| ⑨ | Power interface | Connect the printer to a power source |

Printer Display Menu



| No. | Description | Function |
|-----|---|--|
| ① | Print | Navigate to print job menu, including unprinted and historical print jobs |
| ② | Tools | Navigate to tools menu, including printer calibration and maintenance modules |
| ③ | Settings | Navigate to setting menu (as shown in above picture) |
| ④ | About | Display printer hardware and software information |
| ⑤ | Print Parameters | Configure printer operation parameters |
| ⑥ | Config and Log | Export and import printer log files |
| ⑦ | Display | Display settings, including language and unit options |
| ⑧ | Consumables | Consumables usage log |
| ⑨ | Tutorial | Tutorial for printer operation |
| ⑩ | Temperature display / Pre-heating setting | Display the current printing platform temperature. Click to jump to the platform heating interface, where you can turn on or off the heating of the molding platform |
| ⑪ | USB driver indication | Indicate whether there is a USB drive connected |
| ⑫ | Network status / configuration | Display current network connection status and navigate to network configuration menu |
| ⑬ | Mag-securing status / switch | Display current resin tank securing status, navigate to mag-securing menu |
| ⑭ | Platform type indication / switch | Display the type of current installed platform, and switch platform type by clicking on the icon |

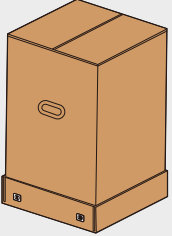
Pre-processing Software Overview - ShapeWare 2.0



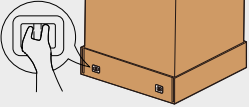
| No. | Description | Function |
|-----|-----------------------------------|---|
| ① | One-click processing | One-click processing of specified indication data, integrating the normal operation steps |
| ② | Process selection area | Process print data step-by-step according to the workflow, or select specific steps for targeted operations |
| ③ | Current process functions area | Choose and configure specific process functions |
| ④ | Printing setting display area | Display/adjust current printing settings and information |
| ⑤ | Quick operation area | Include frequently-used functions, such as move, rotate, etc. |
| ⑥ | Parts list area | Display 3D parts list grouped with platform, including data diagnostic information |
| ⑦ | Software information/setting area | Include system settings, license management, etc. |
| ⑧ | Navigation area | Quickly select/adjust the view angle of platform, and perform cutting operation |
| ⑨ | 3D parts operation area | Display single/multi-platform and 3D parts, and perform operations with mouse |

Operation Instructions


Unboxing




① Packaging inspection




② Pinch and pull to remove the clip



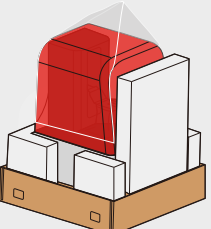
③ Open the outer box and take out the accessory box and the upper foam



④ Remove the resin tank kit

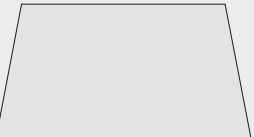


⑤ Lift the outer box off

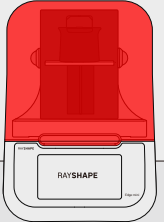


⑥ Remove the plastic bag

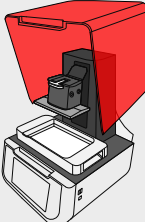
Desktop size: $\geq 500\text{mm} \times 500\text{mm}$
Table load capacity: $\geq 30\text{kg}$



⑦ Prepare the desktop in advance



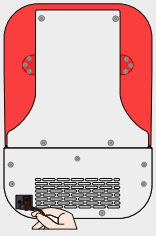
⑧ Take out and place the printer properly



⑨ Check the appearance of the printer

Operation Instructions

Setting Up



① Plug in the power cord



② Plug in the Ethernet cable



③ Powering on



④ Click on "Tools - Offset Z-axis - Move to top"



⑤ Remove the protective foam



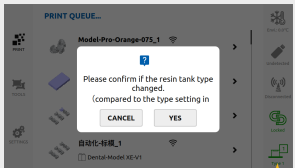
⑥ Perform and validate printing platform installation and removal operation



⑦ Remove the protective film from the bottom surface of the new resin tank




⑧ Install the resin tank and validate the mag-securing

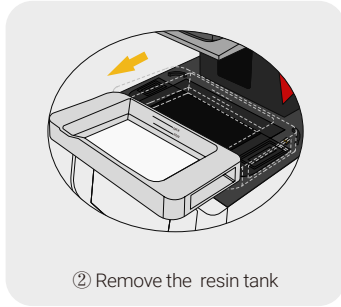


⑨ Verify printing platform type

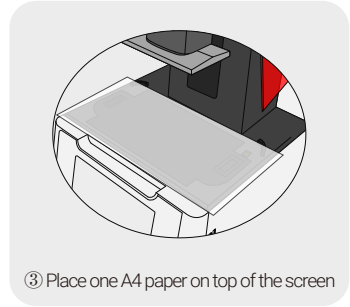
Printer Initialization



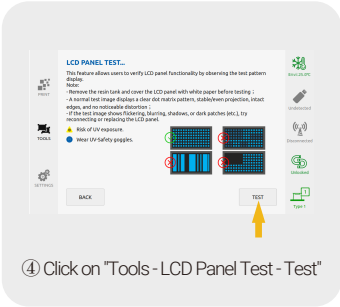
① Click on "Mag-securing - Off" to release the resin tank



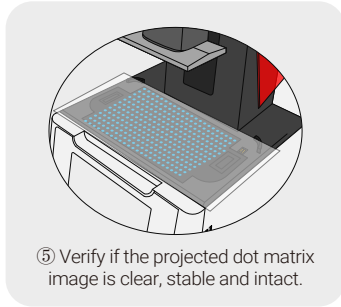
② Remove the resin tank



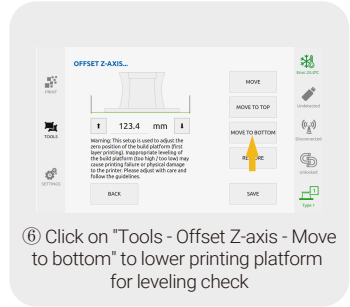
③ Place one A4 paper on top of the screen



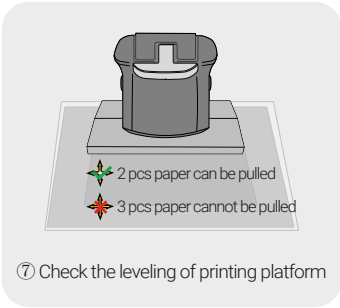
④ Click on "Tools - LCD Panel Test - Test"



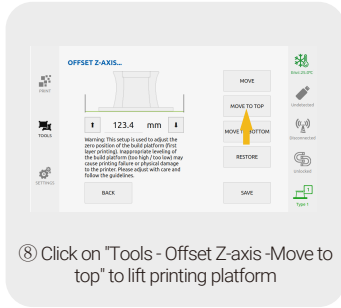
⑤ Verify if the projected dot matrix image is clear, stable and intact.



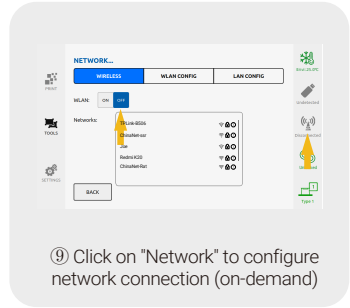
⑥ Click on "Tools - Offset Z-axis - Move to bottom" to lower printing platform for leveling check



⑦ Check the leveling of printing platform

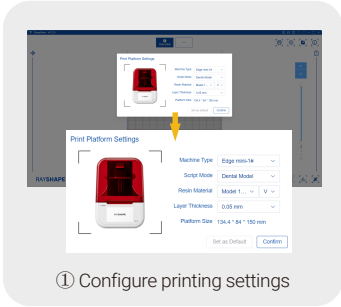


⑧ Click on "Tools - Offset Z-axis - Move to top" to lift printing platform




⑨ Click on "Network" to configure network connection (on-demand)

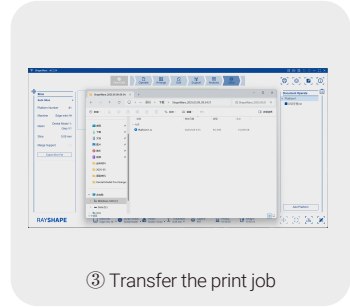
Pre-processing Software Operation (one-click printing / manual operation)



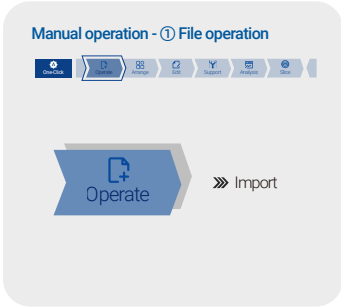
① Configure printing settings



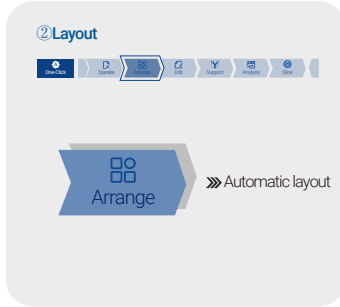
② One-click processing



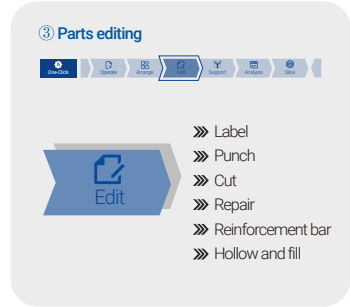
③ Transfer the print job



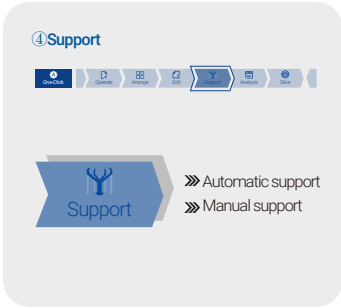
Manual operation - ① File operation



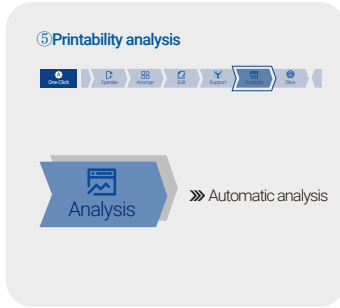
② Layout



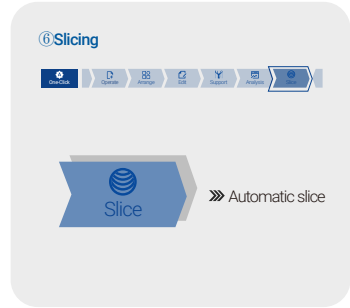
③ Parts editing



④ Support

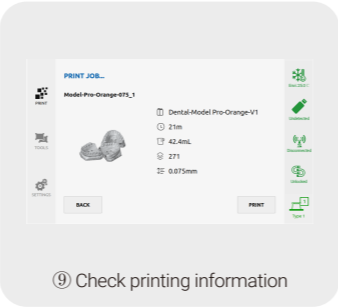
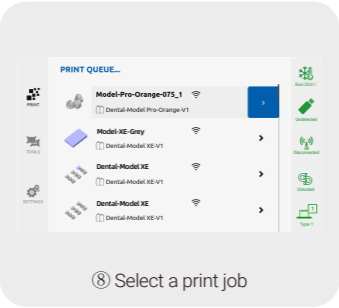
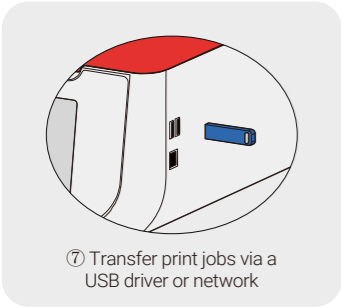
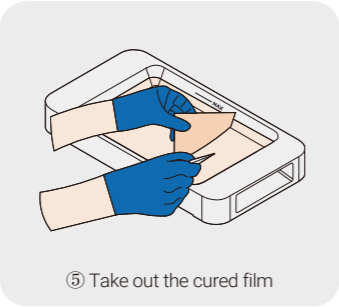
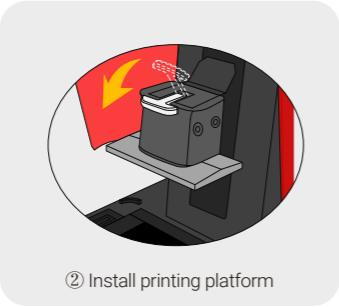


⑤ Printability analysis

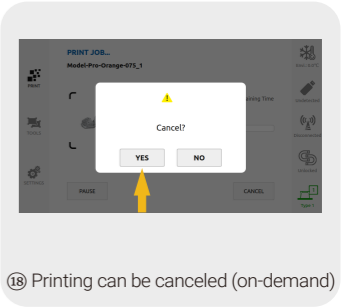
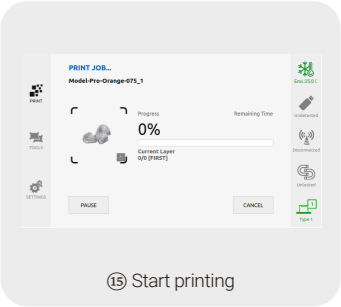
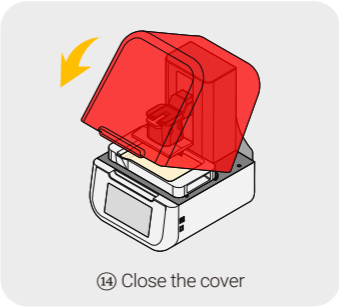
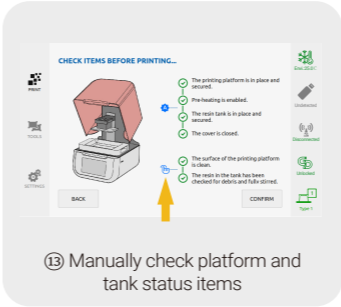
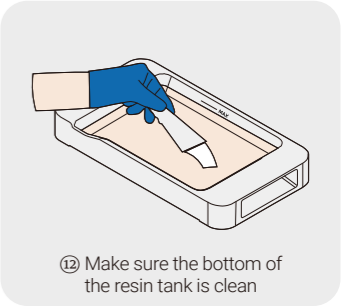
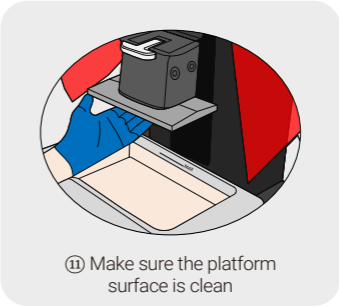
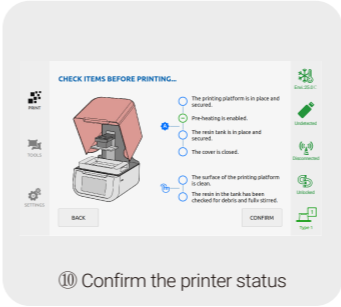


⑥ Slicing

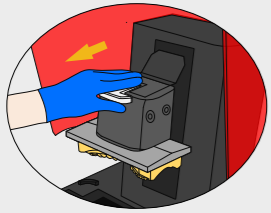
Printing Operation



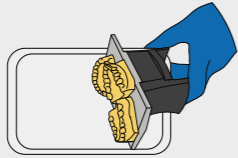
Printing Operation



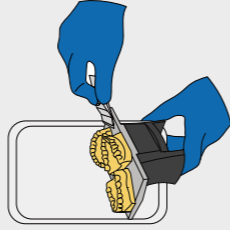
Post-processing Operation



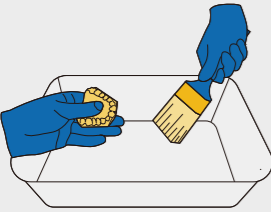
① Remove the printing platform



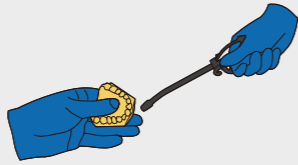
② Transfer printed parts



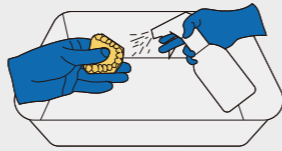
③ Remove printed parts with shovel blade



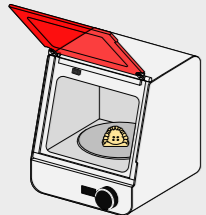
④ Use alcohol/IPA to clean parts



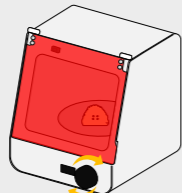
⑤ Dry parts with compressed air



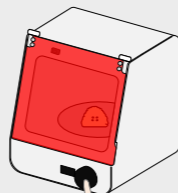
⑥ Repeat wash-and-dry until parts are clean



⑦ Place cleaned parts inside the curing station

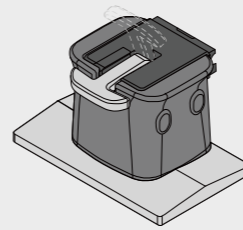


⑧ Close the cover, rotate the knob to set curing time

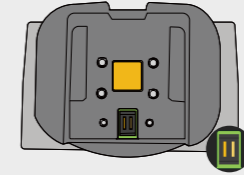


⑨ Press the knob to start curing

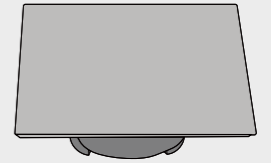
Maintenance Operation



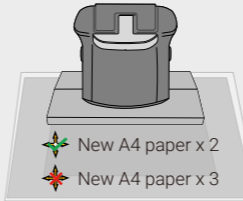
① Check the stability of printing platform installation



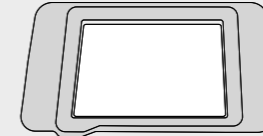
② Check the circuit interface on printing platform



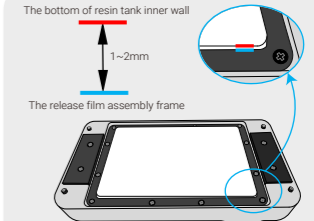
③ Check surface flatness of printing platform



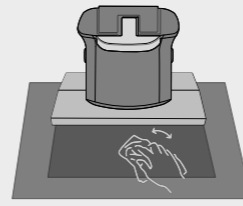
④ Check printing platform leveling



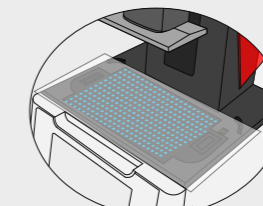
⑤ Check the resin tank surface



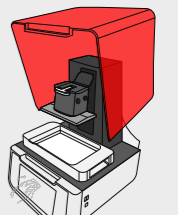
⑥ Check the bottom of resin tank



⑦ Clean the LCD panel surface



⑧ Perform LCD panel test



⑨ Clean the printer appearance

| Description | Reason | Solution |
|--|--|--|
| The device can not start up normally. | The socket does not have normal power supply. | Check whether the socket is working normally . |
| | The cable is not plugged in or becomes loose. | Re-plug the cable and confirm the connection is reliable. |
| | The power switch is not turned on. | Turn on the power switch and confirm that the light is on. |
| | Electrical fault | Contact the re-seller / distributor or after-sales department. |
| Part falling off. | The printing platform is not leveled and zeroed in place | Check the leveling, and redo printing platform alignment if needed. |
| | The ambient temperature is too low | Place the printer in an air-conditioned room to ensure that the ambient temperature is 25±5℃. |
| | There is foreign matter in the tank | Pour out the resin in the tank, clean the resin tank with clean alcohol / IPA, and confirm the removal of the foreign matter. |
| | Light path pollution | Check and clean the light path, and confirm that the bottom of the resin tank and the LCD screen are clean. |
| | Resin and slicing package do not match | The resin is inconsistent with the resin selected during slicing. Please confirm whether it matches. |
| | LCD panel is damaged | Perform the LCD Panel Test and replace with a new one if needed. |
| The bottom of part is peeling off. | The support is not added properly | Check the structure of the support and add enough support accordingly. |
| | Unreasonable design of part | The structure such as cupping and large cross-section should be avoided. |
| The surface of the part is coarse. | Unreasonable design of part | The structure such as cupping and large cross-section should be avoided. |
| | Resin and slicing package do not match | The resin is inconsistent with the resin selected during slicing. Please confirm whether it matches. |
| | The tank is seriously damaged | Pour out the resin in the tank, check the quality of the tank, and if it is seriously damaged, contact the dealer and purchase a new tank. |
| | Light path pollution | Check and clean the light path, and confirm that the bottom of the resin tank and the LCD screen are clean. |
| The part is difficult to be shoveled from the build plate or is easily broken when being shoveled off. | Unreasonable design of part | Shell the part for printing, with a thickness of not less than 2mm. |
| | The shovel blade becomes blunt | Replace the shovel blade. |
| | Unmatched resin profile | Check the printing setting and select the resin type according to the resin package label. |

| Description | Reason | Solution |
|---|--|--|
| The support in some area of the part is broken. | The support is not added in place | Check the structure of the support and add enough support accordingly. |
| | The support is too thin | Increase the diameter of the support bar. |
| | The tank below the area is damaged | Replace the resin tank. |
| | The ambient temperature is too low | Place the device in an air-conditioned room to ensure that the ambient temperature is 25±5℃. |
| Part of the printed part is missing. | Insufficient resin in the tank | Add enough resin and print it again. |
| | Light path pollution | Check and clean the light path, and confirm that the bottom of the resin tank and the LCD screen are clean. |
| | The tank is damaged | Drain the resin out of the tank, check the resin tank and replace with a new one if it is damaged. |
| | The part is designed or supported unreasonably | Re-design the part and add support properly. |
| | There is foreign matter in the tank | Pour out the resin in the tank, clean the resin tank with clean IPA/ alcohol, and confirm the removal of the foreign matter. |
| | LCD panel is damaged | Perform the LCD Panel Test and replace with a new one if needed. |
| Abnormal interruption during printing. | Power off | Check the main power supply of the site. |
| | The part has a problem | Check whether there is a problem with the interrupted layer, e.g. a blank outline. |
| | Other abnormalities | Export printer log file and send it to after-sales service. |

Technical support

If you need help during the use of Edge mini 3D printers, please contact the direct seller of the products directly.
Before you initiate a technical support request via email or telephone, we recommend that you make the following preparations in advance:

1.Device SN

The product SN can help us know more details about your device quickly. The device SN is located on the nameplate of the body.

2.Running log file of the device

Enter the menu: SETTINGS - Config and Log - Export Config, export the running log file of the device, which will be saved in the root directory of the USB disk.

3.Photos and videos

Some faults are difficult to describe and judge, and in this case, providing photos or videos is the most effective way to explain the problem.

Please provide photos or videos under following circumstances:

- ① Parts are damaged or fall off;
- ② You know the cause of the failure, but do not know the name of the relevant accessories involved in the failure;
- ③ The abnormal operating state of the device is complicated or difficult to describe;
- ④ Problems in printing quality.

Warranty

1. Warranty period

Edge mini 3D printers are provided with 12 months of warranty and lifetime maintenance services.

2. Preconditions

- The equipment failure is not caused by human reasons or force majeure.
- A valid proof of purchase.

3. Scope

- Appearance parts such as door panels and equipment case shall be deemed to be free of quality problems upon sign-off and are not included in the list of warranty components.
- Consumables (including LCD panels, resin tanks, etc.), please unpack and inspect the goods at the signing site; upon sign-off, it shall be deemed to be free of quality problems, and the warranty request is not accepted.

4. Service

For warranty service requests which are complied with the warranty conditions, the supplier should bear the cost for spare parts, repairing and transportation as well.

5. Non-warranty circumstances

- Equipment failure caused by human reasons or force majeure;
- Failure to provide valid proof of purchase;
- The performance and reliability of the equipment is depended on many factors, and the supplier could promise that the best printing performance and reliability would be obtained if the supplier's official consumables and supporting software was used and the instructions of the equipment's user manual were complied with strictly during usage; Such warranty requests, which were caused by the application of 3rd party software and consumables, would not be accepted by the supplier definitely.

6. Warranty services

Supplier would offer maintenance service to the request which does not comply with the warranty condition or out of the warranty period, but the cost related to spare parts and transportation should be undertaken by the requester accordingly.

7. Service response

The supplier will provide online technical support to the requester within 24 hours on working days.

Warranty Card



1Year Warranty Card

This warranty card, along with the valid invoice, will be guaranteed for one year after the purchase.
For the warranty details, please refer to the product user manual.

Reseller Name : _____ Invoice No. : _____ Purchase Date: _____

Product Model : _____ Serial Number : _____ Dealer's Seal: _____

* This is the basic proof of the warranty. Please fill in it carefully and hand it over to the customer for safekeeping.

Customer Name : _____ Contact: _____ Phone Number: _____

Address: _____ Service Evaluation: ☐Excellent ☐Good ☐Normal ☐Bad


Customer Signature : _____

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. Any changes or modications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

 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.