

Aidite

EZPRINT-P1 Printer Instruction Manual



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Chapter 1 Introduction to Printer

1.1 Printer Introduction

The EZPRINT-P1 printer, shown below, has a touchscreen in the centre of the front housing, with a power switch and USB connector on the lower right side, making it easy for users to operate the device. The printer's hatch is made of translucent black PC material, which protects the operator's eyesight from UV light and prevents external light from affecting print accuracy. The hatch is supported by a top pivot structure that ensures smooth opening and closing of the hatch without noise.

The resin tank in the print chamber can be quickly fixed by two simple clamps, and the print platform is fixed by a clamp structure, allowing users to quickly load and unload the resin tank and print platform. The rear casing of the printer is designed with a removable access port, which is convenient for the repair and maintenance of the equipment.

On the back of the printer are the power and network cable sockets, which provide 24V DC power to the printer and a network connection.

1.2 Printer Specifications



Equipment name	EZPRINT-P1
Technology	DLP
Wavelength	405nm
Build size(L:W:H)	144mm×81mm×130mm
Forming accuracy	30µm
Pixel size	75µm
Layer thickness	0.05mm-0.1mm
Printing speed	36-72mm/h
Heating temperature	20°C-35°C
Data format	STL
Voltage	AC-100 ~ 240V(50/60Hz)
Wattage	220W
Dimension	Φ400×800(mm)
Weight	35kg

Chapter 2 Printer Installation

2.1 Pre-installation preparation

2.1.1 Necessary Items for Printer Use

- (1) 1 computer with slicing software installed, minimum configuration: processor Intel® Core™ i5 6600K or AMD Ryzen™ 5 1600, Windows 10 version of the operating system or above, more than 8GB of RAM, no less than 10GB of hard disk storage space, graphics card GPU RAM: \geq 1GB; monitor resolution \geq 1280x960, The computer needs to be connected to the internet.
- (2) 1 power supply plug.
- (3) Alcohol of 95% or higher concentration for cleaning dental models.

2.1.2 Installation and operating environment

As the printing equipment and printing materials on the working environment and storage environment has strict requirements, so in the equipment before the installation of the following environmental conditions need to be pre-confirmation to ensure the smooth installation and use of the equipment, and each time you use the equipment is also necessary to ensure that the printer's use of the environment to meet the requirements of the conditions.

Classification	Influencing factors	Specific requirements and instructions	Remarks
Indoor Environment	Temperature	20~28°C	Air Condition
	Humidity	< 50%	Air Condition
	Regular ventilation	Regular ventilation to keep the indoor air clean	Vents
	Environment	Clean and dust-free	Keep it clean
	Light	1. no direct sunlight, indoor warm-coloured lamps are recommended or ordinary fluorescent lamps with UV protection film.	Warming lamps or UV protection film
Electrical Environment	Voltage	2. If there is a window in the working environment, it is necessary to use blackout curtains to block out the light.	-
	Frequency	AC 100 ~ 240V	-
	Wattage	50/60Hz	-
Installation Environment	Placement platform	220W	-
Other	Industrial Alcohol	The platform is hard, flat, easy to clean, and the surrounding environment is free of vibration.	Use alcohol with a concentration of 95% or more.

2.2 Printer Installation

2.2.1 Printer space requirements

- (1) The right side of the printer should be at least 45cm from the wall or equipment, and the left side should be at least 45cm from the wall or equipment in order to ensure the space required for operation of the printer, and the back side should be at least 40cm from the wall in order to ensure the installation of heat dissipation, cable plugs, and so on.
- (2) The installation surface of the printer must be stable, and other vibration equipment is not allowed to be installed on the ground, and keep away from heat sources, and pay special attention to keep away from cutting machines and dental stoves.

2.2.2 Power on

- (1) Check that the anti-tipping markings on the box are in proper condition. When removing the packaging, you need to check whether the machine and related accessories are complete and intact. Check the delivery list for any missing items. If there is a problem, contact the dealer.
- (2) Place the printer on a solid platform to ensure that the printer meets the requirements of the placement space, the power adapter to the back of the body of the power connector. Plug firmly, the other side of the three-jawed plug to the earth wire connected to the power outlet, note that the printer must not be shared with other high-power equipment plug.
- (3) Turn on the printer and press the power switch on the bottom right side of the printer, the printer starts, the screen displays the startup interface. After the startup is complete, enter the boot boot interface.

2.2.3 Printer activation process

2.2.3.1 Network Setup

Connect to a wireless network or connect to a network cable (It is recommended to connect to the same network as the computer on which the slicing software is installed), and the interface will be as shown in the figure.

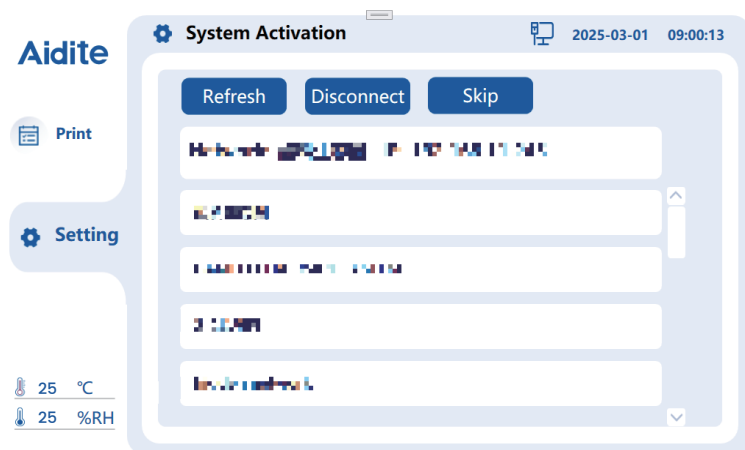


Figure 2.2-1

2.2.3.2 General Settings

Set the language, system volume and time, the interface is shown in the figure.

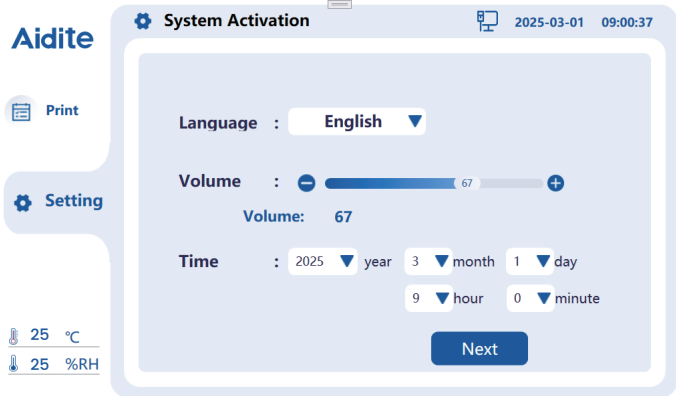


Figure 2.2-2

2.2.3.3 View planting model commissioning programme

Currently, the user is provided with two debugging options for the implant model: modification of the design gap and modification of the tolerance compensation. The user can choose one of the plans, Plan A or Plan B, for test printing of the implant model, which can adjust the implant hole looseness and tightness to the appropriate range, and then view the debugging instructions in the help video, the interface is shown in the figure.

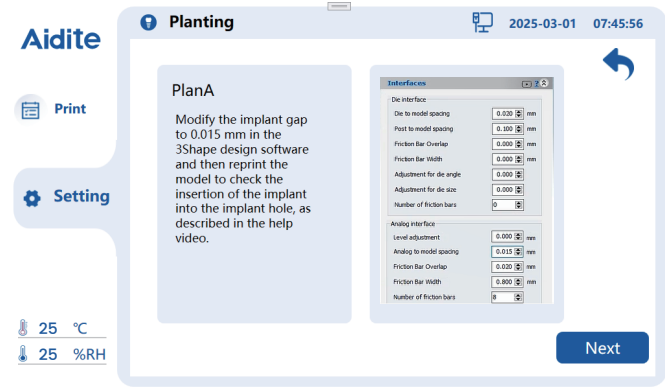


Figure 2.2-3

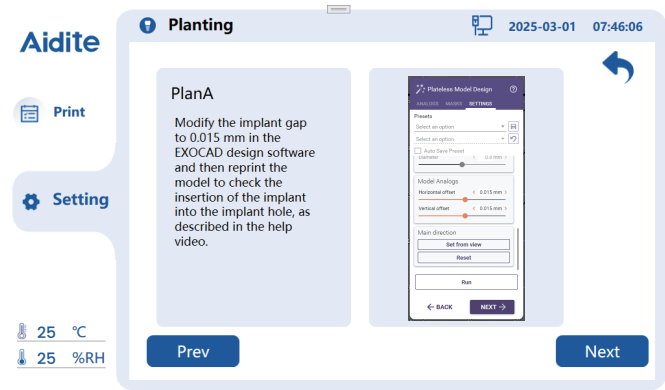


Figure 2.2-4

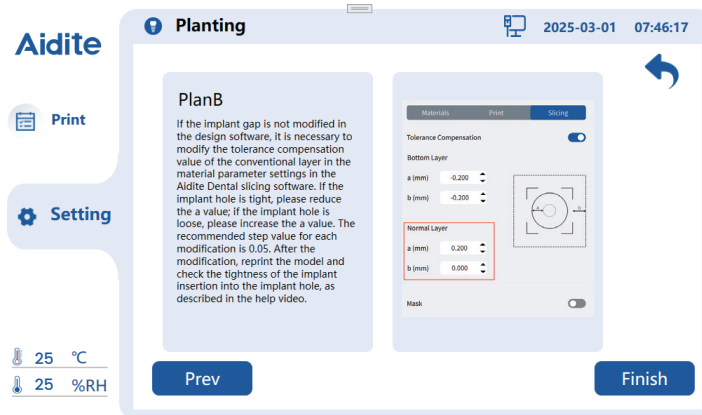


Figure 2.2-5

2.2.3.4 Device activation

After completing the boot operation, the device activation interface is displayed, click the activation button, the device completes activation and enters the main interface. Start calculating the warranty time.

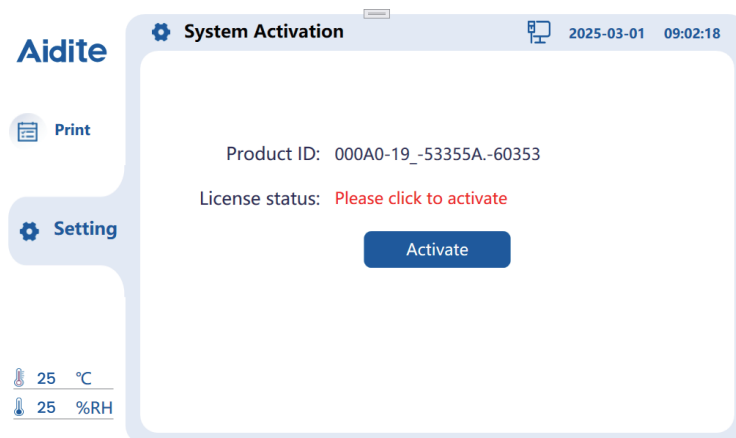


Figure 2.2-6

Before installing the resin tank and printing platform, you need to make sure that the following points are in order before installing:

- ① The release film is not damaged.
- ② The release film is tautly mounted.



The glass plate is clean and free of dirt.

After confirming the above points, install the resin tank and printing platform in the printer in order to make sure that they are locked without shaking.

Take out the resin liquid from the resin packing box, shake the resin bottle for 3 minutes, pour the resin liquid into the resin tank, make sure the liquid level is higher than the lowest line and lower than the highest line, then close the printer door.

2.3 Aidite Dental Slicing Software Installation and Use

2.3.1 Software Installation

- (1) Turn on the computer being used for slicing, insert the supplied USB stick into the computer and double-click on the Aidite Dental Slicer installation icon. 
- (2) Install the slicing software according to the installation prompts (Note: the software can only be installed to a computer to use, you need to confirm in advance that the installation of long-term use of the computer, this computer and the printer need to be connected to the same network in order to achieve the remote sending of print jobs).
- (3) Follow the installation prompts to install the remote control software.  AiditeRemoteControl
- (4) After the software is installed, you need to authorise the software to activate it in order to lay out the slices, double-click to open the slicing software, enter the authorisation code stored in the USB memory stick, and click to confirm the authorisation, then the software activation can be completed.

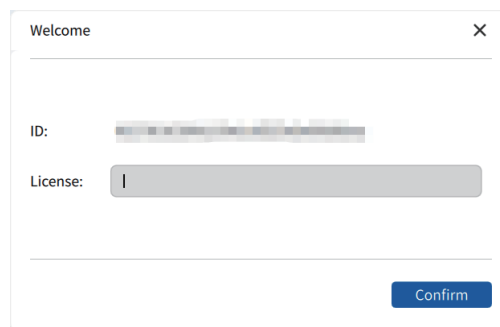


Figure 2.3-1

2.3.2 Aidite Dental Slicing Software Usage

After activating the slicing software, enter the main interface of the software, as shown below:

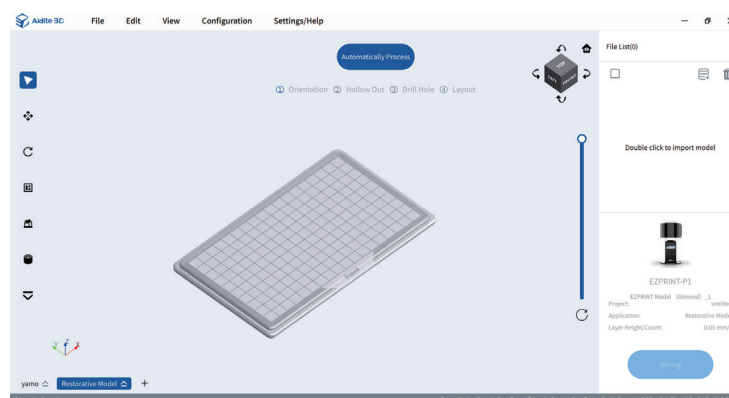


Figure 2.3-2

We will introduce the basic usage of the whole process from selecting the equipment model and material type, importing the model, orientating it, placing it, adding supports, slicing the model, and finally exporting the printable file to the printer. Detailed instructions for the slicing software can be found in the Slicing Software User Guide.

2.3.2.1 Selection of equipment model and material type

Start the software, click the plus button on the machine management bar or click the "Add Configuration" option in the configuration menu and select the EZPRINT-P1 printer from the list. Select the dental application, material, and print layer thickness. If the selected application is one of the applications that can be processed automatically, you can click on Settings and select the Automated Process option, then you can tick the Enable Automated Process option to simplify the process.

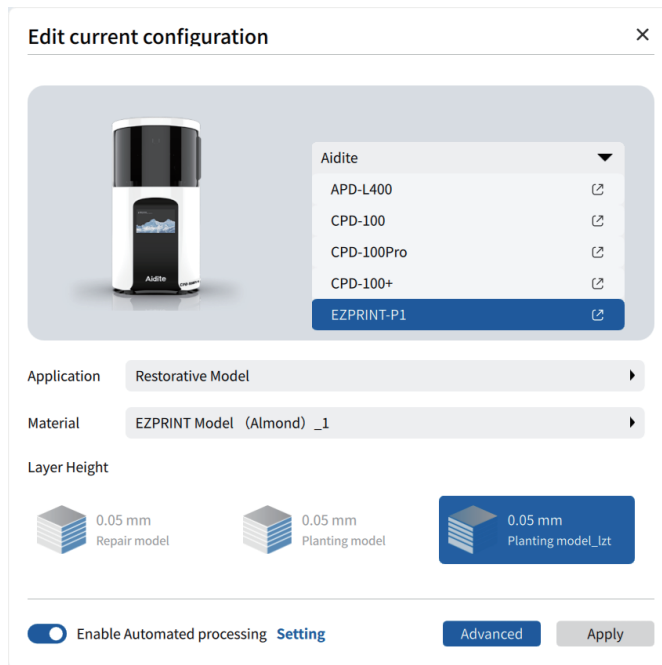


Figure 2.3-3

2.3.2.2 Importing model files

Click on the File option in the top left corner of the navigation bar, or click Import Model if importing an STL file. To load an existing project, click Open Project.

As an example, click Import Model, select the STL file, click Open, and the model file is imported into the slicing software.

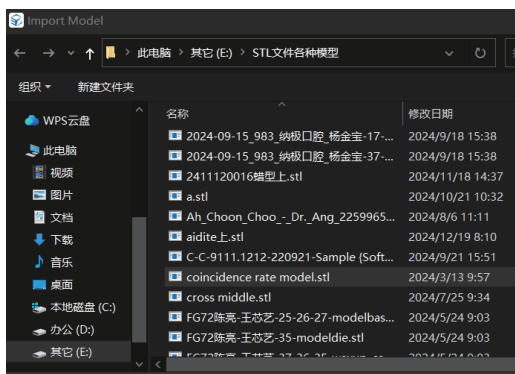


Figure 2.3-4

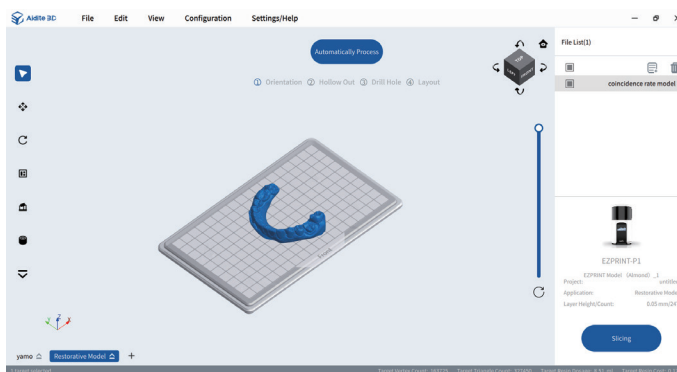


Figure 2.3-5

2.3.2.3 Model layout

If the selected application (e.g. model and guides) supports the autoprocessing process, the "Autoprocessing" button will be displayed at the top of the main window, which can be used to auto-orientate, repair, skeletonise, support, etc. the model in one click.

The automation process can be configured in detail according to your usage habits. In this section, to keep it as simple as possible, we will use the default settings, and the model can be automatically processed to the optimal printing state by clicking on the "Automate" button.

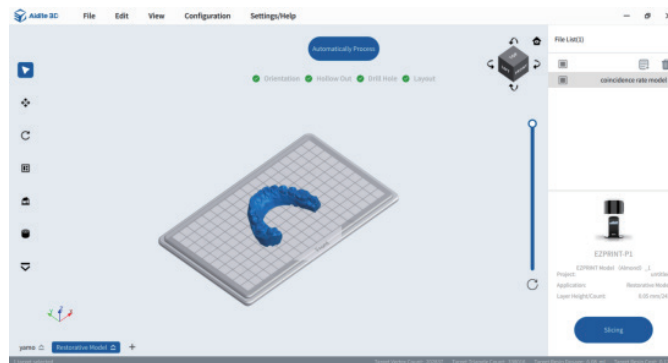


Figure 2.3-6

If the selected application does not support automatic processing, click the rotation icon on the left navigation bar to position the model horizontally, then click the support icon to open the support page and click the "Auto Support" button.

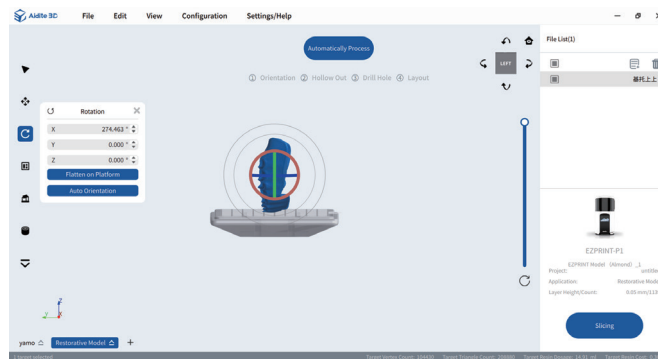


Figure 2.3-7

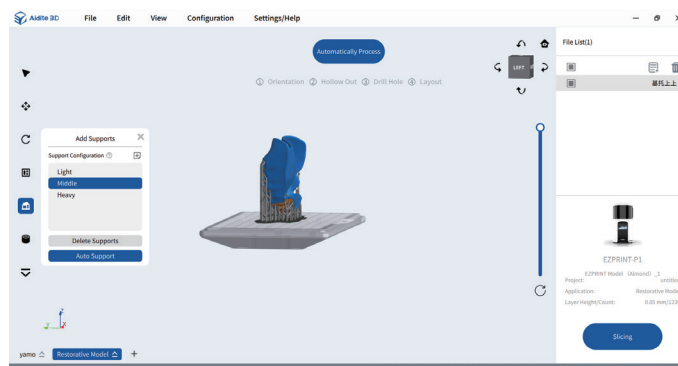


Figure 2.3-8

2.3.2.4 Saving Slices

USB stick transfer: Click the "Slice" button at the bottom right to export and save the slice file to the root directory of a USB stick (make sure to select the .aidite format in the "Save as type" drop-down menu and click "Save" to save the file). Insert the USB stick into the printer's USB port and select the file on the stick to start printing.

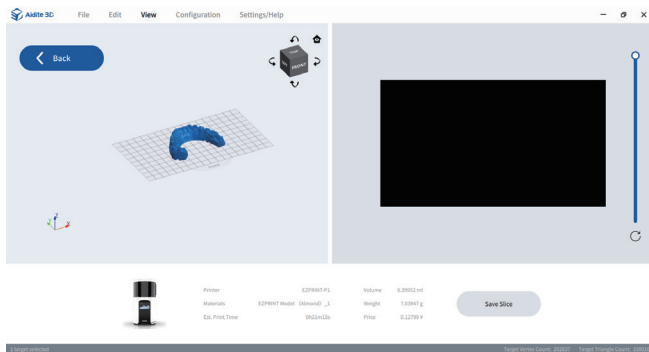


Figure 2.3-9



Figure 2.3-10

Network Transfer: Click the "Send to Printer" button to view networked printers and printer status. After selecting a printer, the print queue jobs and the history file list print jobs that have been sent to the currently selected printer are displayed. After selecting a print job from the history list, you can add it to the print queue of the selected printer over the network and start the printer remotely to start printing. Printing can be started, paused and stopped remotely from the computer.

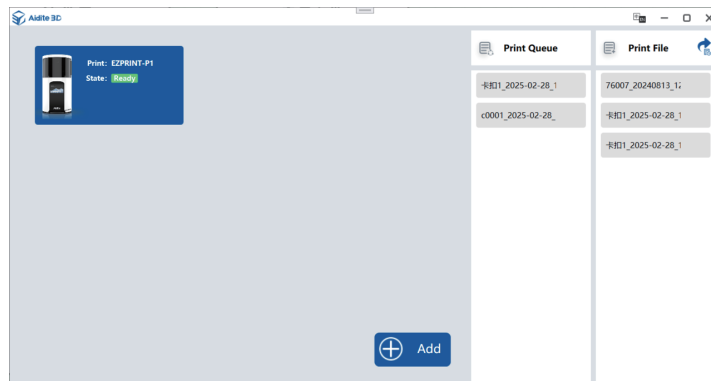


Figure 2.3-11

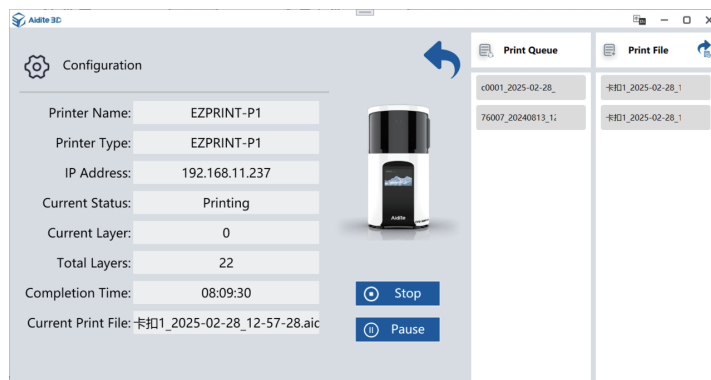


Figure 2.3-12

Chapter 3: Introduction to Printer Use

3.1 Print Job Interface

The print job interface allows you to view queue jobs, historical print jobs and sliced files in the USB memory stick. After selecting a print job, click the Print button in the lower right corner to start printing.

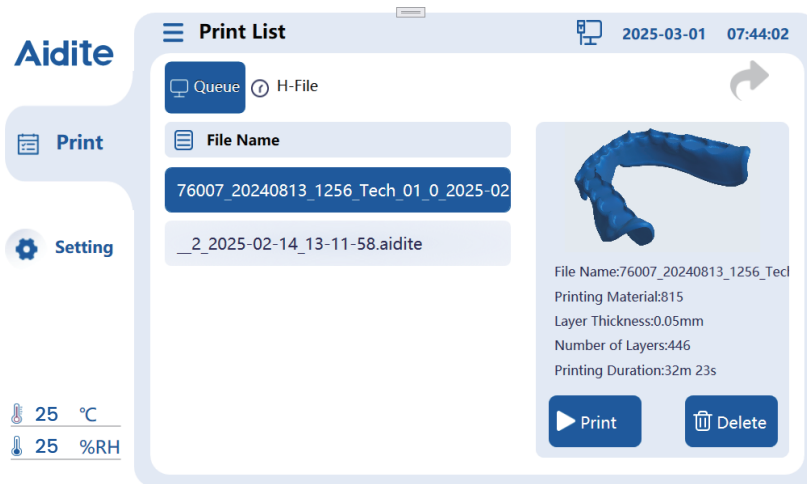


Figure 3.1-1

After starting to print, the print job interface displays a preview image of the current print job, the estimated completion time, the printing progress, and the current number of print layers.

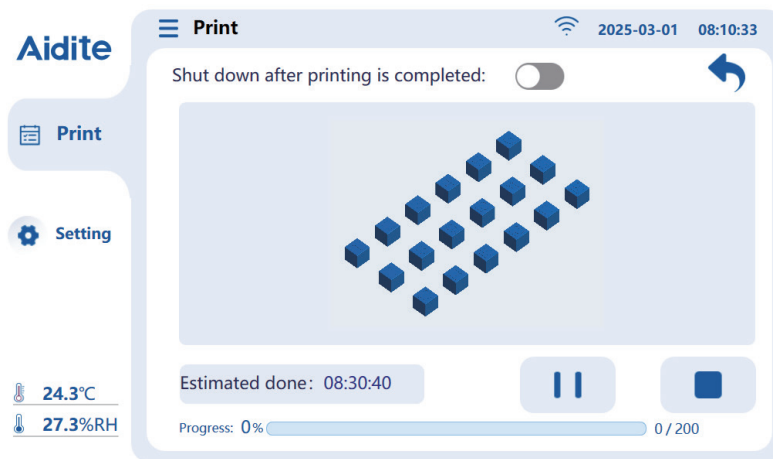


Figure 3.1-2

Chapter 3 Introduction to Printer Use

Click the "Pause" button, a pop-up box to confirm whether to pause, click "Confirm" to pause printing after the completion of the current layer, click the "Cancel" button to continue printing.

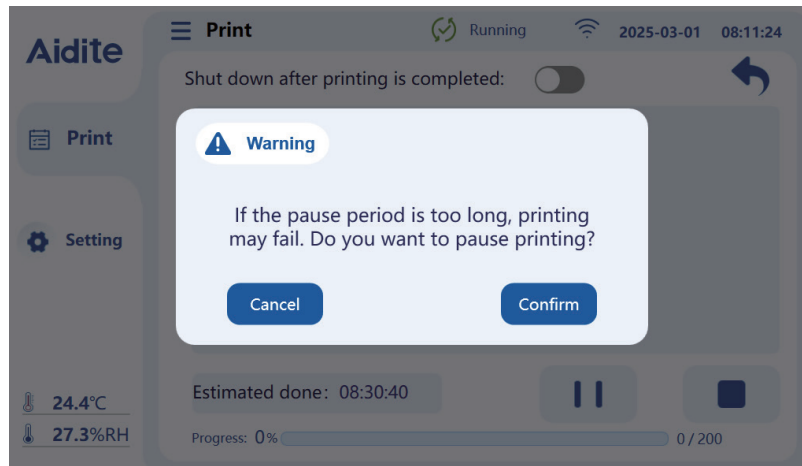


Figure 3.1-3

If you click the "Stop" button, a pop-up box will appear to confirm whether to stop printing, if you click the "OK" button, the printing will stop after the printing of the current layer, if you click the "Cancel" button then if you click the "Cancel" button, printing will continue.

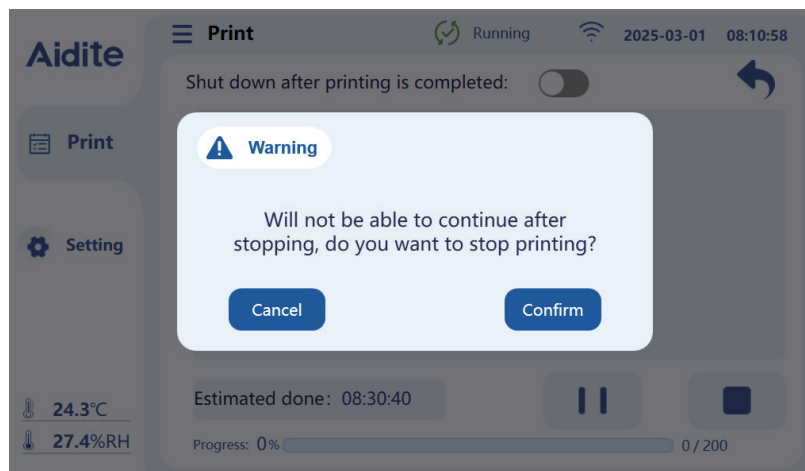


Figure 3.1-4

3.2 Settings

Click the "System Settings" button to enter the system settings interface, which mainly contains buttons for cleaning the bottom of the tank, levelling the platform, temperature settings, general settings, network settings, help and other functions.

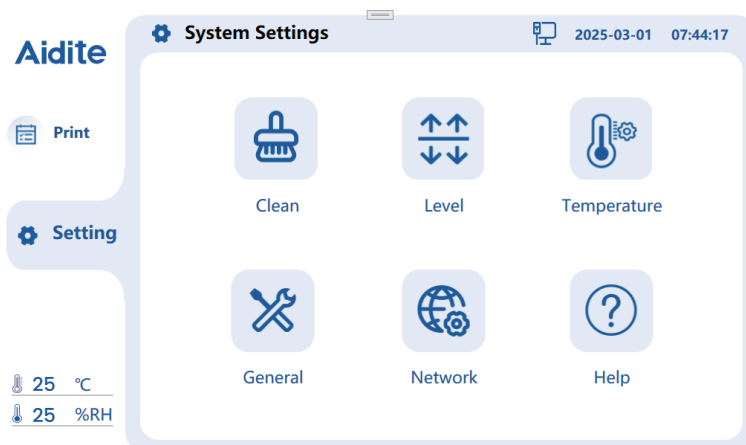


Figure 3.2-1

3.2.1 Clean the bottom of the tank

After each print run, carefully check the number and completeness of the models on the printing platform to make sure whether there are models that failed to print. If there is a model that fails to print, you need to click the Clean Bottom button to enter the Clean Bottom operation interface, put the Clean Bottom model into the resin tank, click the Start Exposure button to cure the bottom layer of the resin tank, at this time, the Clean Bottom model will be connected to the bottom of the excess curing layer, wear gloves to clean the bottom of the tank components out of the resin tank can be completed to clean the bottom of the tank. Note: Do not use sharp and hard tools to operate deep into the resin tank to avoid damaging the release film.

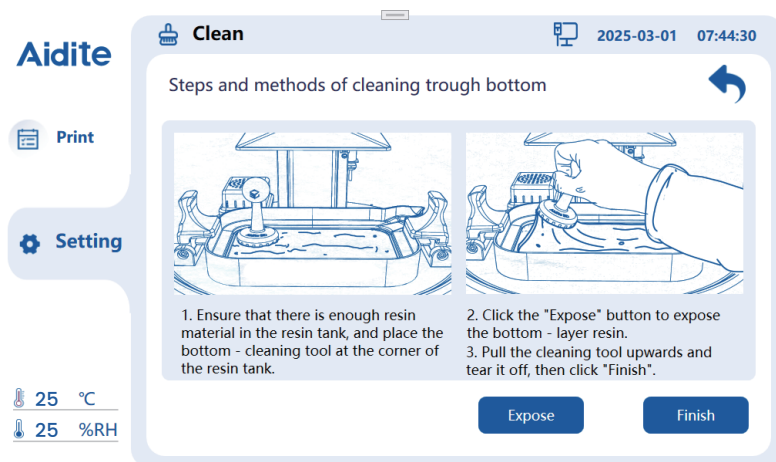


Figure 3.2-2

3.2.2 Levelling

Click the main interface print platform levelling button to enter the platform levelling interface, and follow the levelling steps. Remove the resin tank, clean the surface of the glass plate and place a piece of white paper. Clean the printing platform and fix it on the levelling bracket. Loosen the four fixing screws on both sides of the printing platform counterclockwise according to the instructions in the diagram.

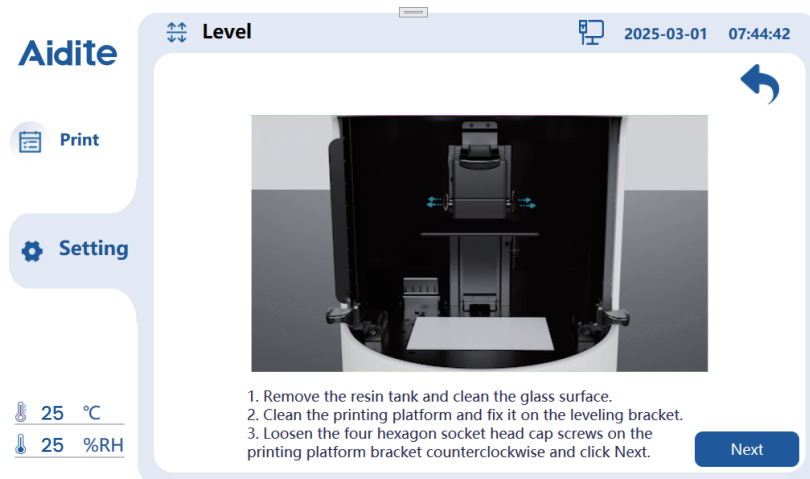


Figure 3.2-3

Click Next and lock the four socket head cap screws once the print platform is lowered to the bottom.- Click Finish to raise the platform back up and levelling is complete.

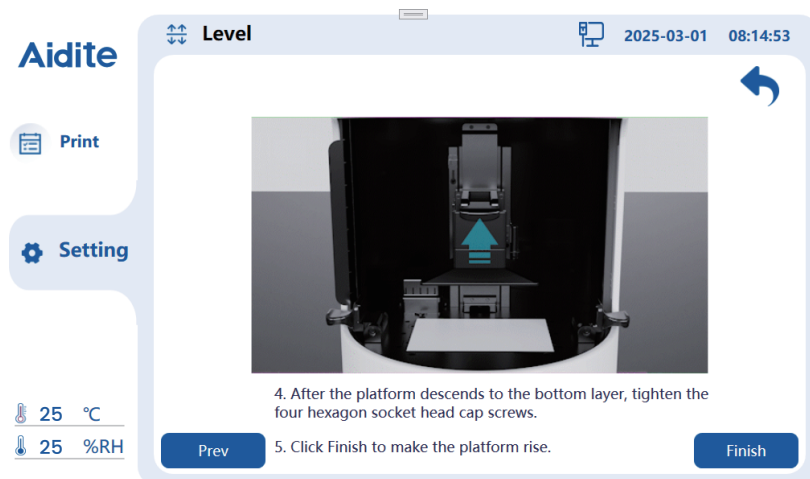


Figure 3.2-4

3.2.3 Temperature setting

Click the "Temperature Setting" button to enter the temperature setting interface. In this interface, you can turn off or turn on the heating function, set the heating temperature (up to 35°C), turn off or turn on the temperature control time, and set the temperature control time interval.

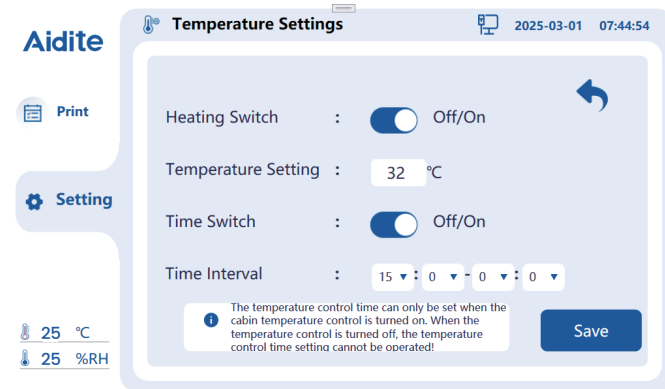


Figure 3.2-5

3.2.4 General Setting

Click the "General Settings" button on the system settings screen to enter the general settings screen, where you can set the system language, volume and time.

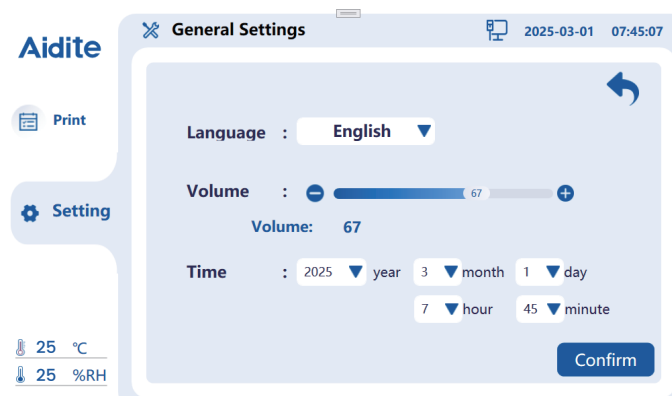


Figure 3.2-6

3.2.5 Network Setting

Click the "Network Setting" button, the printer will automatically detect the current environment can be connected to the wireless network, click on the need to connect to the wireless network, enter the password to connect. If you use the network cable networking, plug the cable into the printer cable port can be.

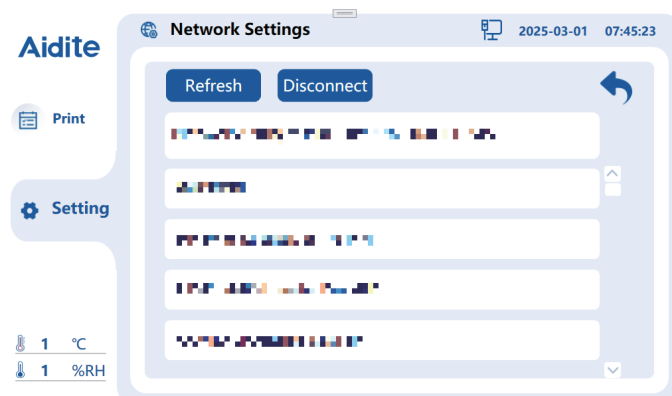


Figure 3.2-7



Figure 3.2-8

3.2.6 Using Help

The help contains information about the device, implantiing debugging and help videos.

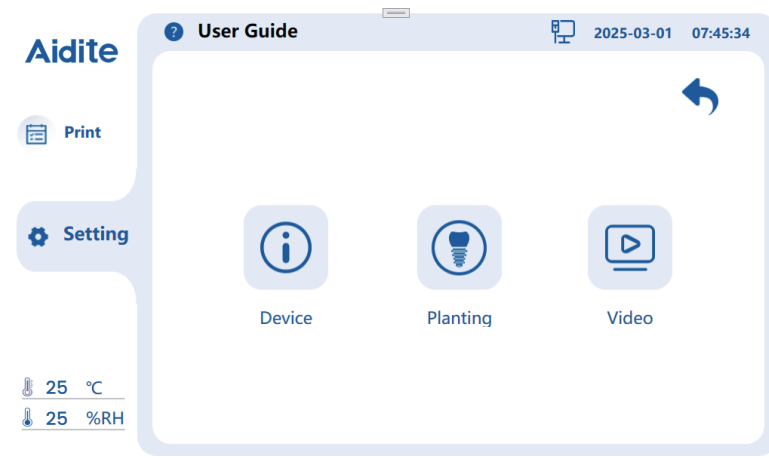


Figure 3.2-9

3.2.6.1 Device Information

Click the "About Device" button to enter the device information view interface, the interface displays the factory date, serial number, the first boot date, the cumulative working time, software version and other information. You can manually modify the printer device name to distinguish the device, and click Reset to reset the number of times the film has been used, and the number of times the film has been printed will be reset to zero. Click Check Update to update the printer system version online.

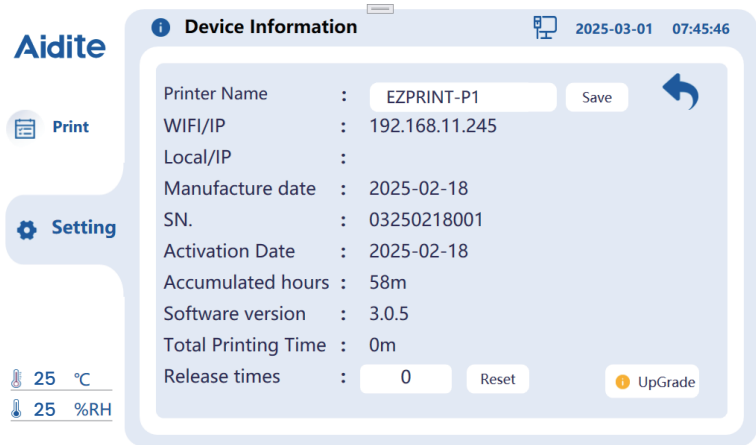


Figure 3.2-10

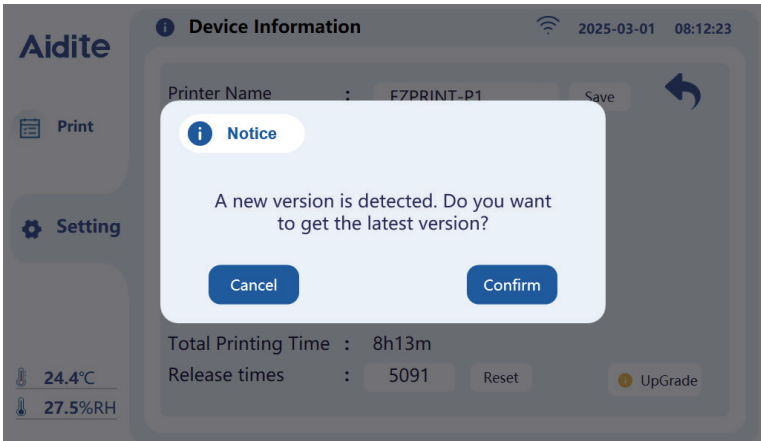


Figure 3.2-11

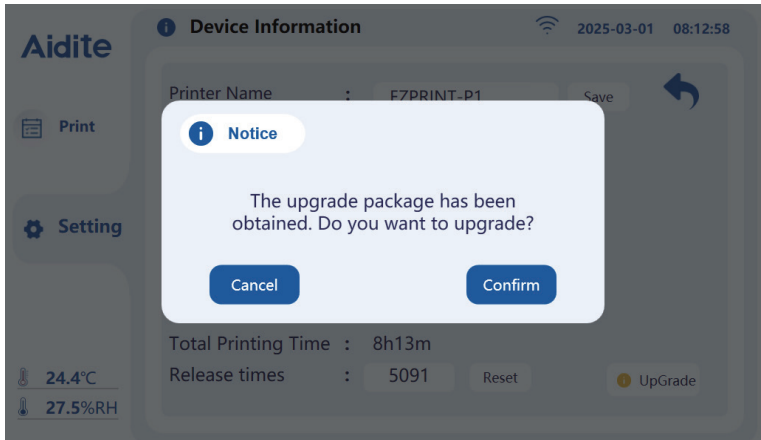


Figure 3.2-12

3.2.6.2 Implant commissioning

Click the "Help" button in the system setting interface to enter the help interface, click the "Implanting" button, this interface contains different debugging options for the planting holes, the user can choose one of the plan A or B to complete the adjustment of the planting hole tightness.

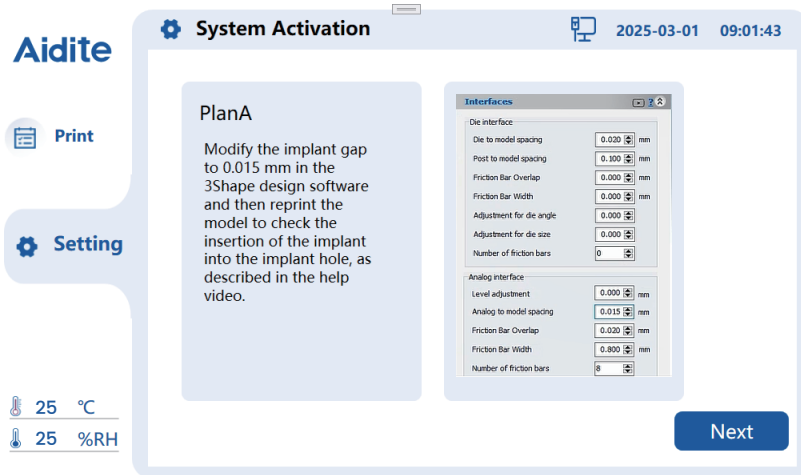


Figure 3.2-13

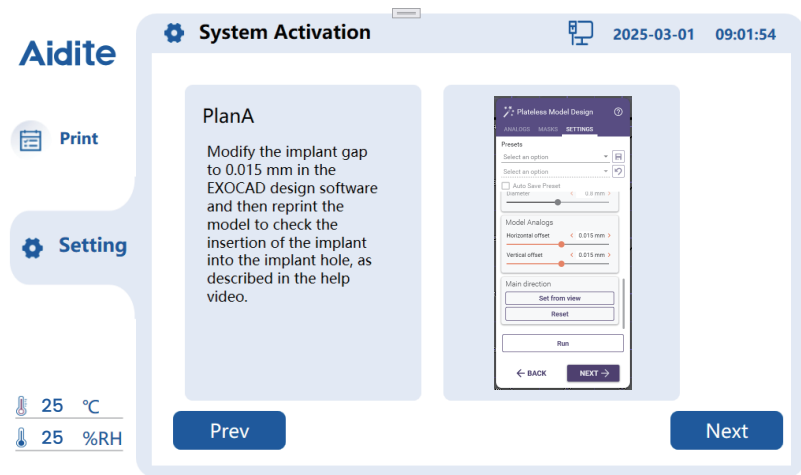


Figure 3.2-14

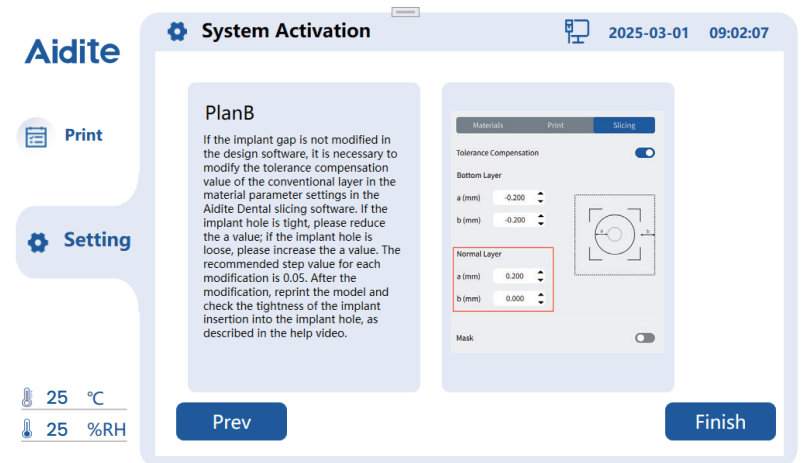


Figure 3.2-15

3.2.6.3 Help video

Click the "Help" button on the system settings interface to enter the help interface, click the "Help Video" button on this interface, which contains the QR code of the daily use of the printer help video, use your mobile phone to scan the QR code to view the video.

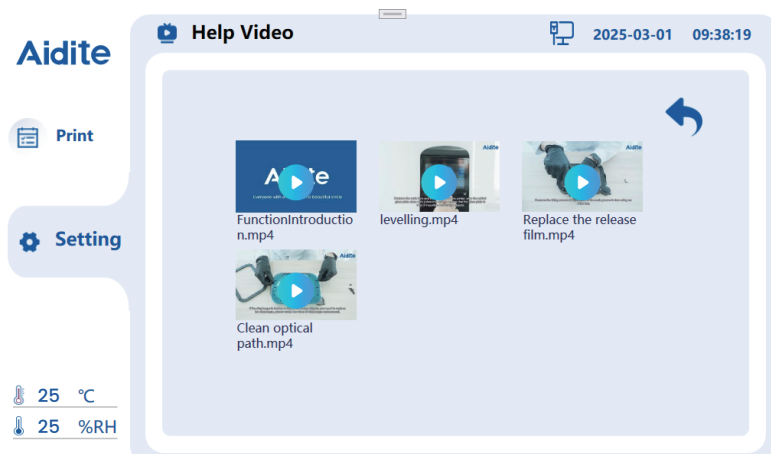


Figure 3.2-16





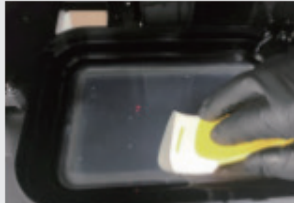
3.3 Model Post-Processing

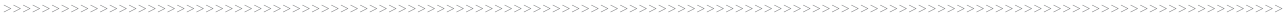
- (1) When printing is complete, remove the printing platform and shovel down the model by placing the blade of the spatula right where the model is bonded to the printing platform (take care to avoid cutting your hands with the spatula).
- (2) Place the model in a container of 95% or more alcohol for initial cleaning to remove most of the resin from the surface of the model. Put the model into the washing machine again, pour in alcohol with a concentration of 95 per cent or more, and wash it again for 2-3 minutes until there is no resin left on the model, and blow dry the surface of the model with an air gun. (Note: The maximum cleaning time in alcohol should not exceed 5 minutes.)
- (3) Place the model evenly on the post-curing light box turntable, close the light box door and select the corresponding curing parameters. (Note: Different resin materials require different post-curing light intensity and time, you need to adjust the light intensity and time according to different materials.)
- (4) After the curing is completed, remove the model, wait for the model to cool down and put it into a black self-sealing bag with a label, and store it in a dry place away from light to ensure that the printed model can maintain accuracy for a long time.



Chapter 4 Printer Usage Precautions

4.1 Printer routine care and maintenance

Maintenance items	Maintenance requirements	Maintenance cycle	Note
Cleaning of printer	Daily cleaning of printer	Once a day	When resin is stuck to the printer case, wipe it off promptly with a paper towel with alcohol stuck to it.
Maintenance of resin tank and optical path	<ol style="list-style-type: none"> 1、 When disassembling the resin tank, wear disposable rubber gloves and refer to the correct "demonstration gestures" when picking up the resin bath to avoid contaminating the bottom surface of the resin bath with your fingers. 2、 After removing the resin tank, it needs to be placed on a clean and dust-free flat surface to avoid damage and contamination of the release film. 3、 Filter the resin in the resin tank and store in a dark, opaque container. Use alcohol and paper towel to wipe the resin tank clean, observe whether the release film is broken or deformed, if broken or deformed seriously need to replace the release film, see the help video for details on how to replace the film. 5、 Wipe the glass plate with alcohol after each disassembly of the resin tank to ensure that the optical path is clean, see the help video for details on how to clean the optical path. 6、 The resin bath release film and diaphragm are wearing parts and the following points should be noted during daily use: <ol style="list-style-type: none"> (1) Avoid indentation of the release film due to residue from poor cleaning of the printing platform. (2) Avoid scratching the release film when cleaning the curing layer at the bottom of the tank. (3) When mixing the resin in the resin tank, use the rubber scraper provided with the unit to avoid scratching the release film. 	Once a week	    



Printing Platform	After each shovelling of the model, make sure that the surface of the printing platform is free of debris to avoid debris sticking to the printing platform and being brought back into the resin tank.	Every time	
Platform levelling	Enter the device levelling interface to perform the print platform levelling operation.	Every six months	

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