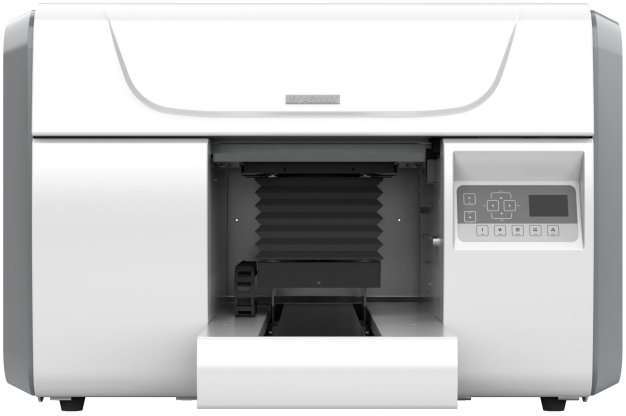
NC-UVA3MAX

Visual Positioning System



User Manual

Please read this manual carefully before using the machine, keep it ready for use at any time, and refer to it for future reference.

Catalogue

Warning

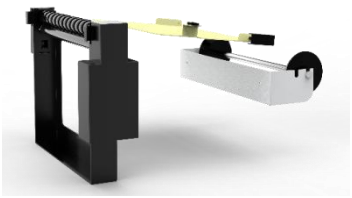
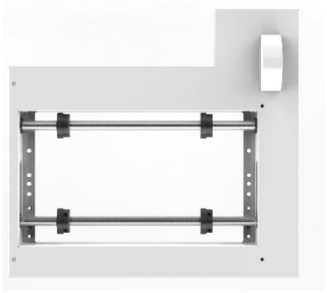
Please read these instructions carefully before using the machine

1. This machine must not be used by children or persons with disabilities. If necessary, it must be used under supervision.
2. Please use original supplier's spare parts and ink under instruction.
3. Make sure the power voltage is same as power cable and machine which shown on the Nameplate.
4. The machine is for indoor use only. It is recommended to install air conditioning in the room to maintain stable operating temperature and humidity.
5. Before use, remove the wooden crate and foot cup fixtures used for transportation, and place the machine stably on a solid table.
6. Do not use the machine in harsh environments with open flames, dust, or moisture.
7. Never use the machine in damp or leaky rooms.
8. Do not place debris on the machine body, platform, or surrounding areas.
9. Please keep a stable temperature in the working room, not suggest to use machine where environment over 30 degrees or below 15 degrees.
10. Do not use any broken cable to provide electricity.
11. If the power supply cable is damaged, stop using the machine immediately.
12. Turn off the machine power before cleaning or performing maintenance.
13. Please use the machine in compliance with local legal policies.
14. Before sending a print job, ensure the print head does not come into contact with any objects and that the printing height is appropriate.
15. When machine is working, eyes will feel sick if staring at the UV lamp for a long time, better suggest to wear ultraviolet-proof glasses.
16. At least 2 people are required to move the machine. Do not move it with other machine components. Remember to unplug the power plug before moving.
17. When adding ink, ink may come into contact with ink tubes, ink bottles, cap tops, and other component. Take appropriate protective measures.
18. The table which used to put the machine should be make sure it's stability to place the machine and protect machine from shaking during working.
19. It is not recommended to operate the LED lamps under high load for extended periods.

20. Ensure the machine is properly grounded.
21. Avoid using the machine during thunderstorms to prevent lightning strikes.
22. If inks not from Nocai are used, it will void the machine's warranty.

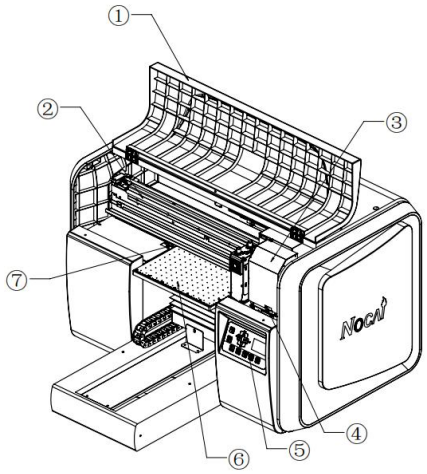
Product Parameters

Model Number	NC-UVA3MAX
Nozzle Spray Force Range	2-3mm
Print size	297*420mm
Print height	0-90mm
Printing version	Simultaneous output of white ink, color ink, and varnish
Printing software	Future Rip
File format	Tiff,Jpg,Pdf,Png
Printer dimensions	1000mm*902mm*592mm
Power	AC220/110V，50Hz-60Hz
Connect plug	Network cable

Optional Spare Parts	image	Related Parameters
Roll Material Unit		Paper width: 30-250mm Inner diameter of roll paper: 3-inch
Rotary Motor Jig		Cylinder diameter: 25~80mm Cylinder length: 20-210mm

Machine Structure Overview

3.1 Machine Front View Diagram



①Front cover

②Single rail

③Print cart

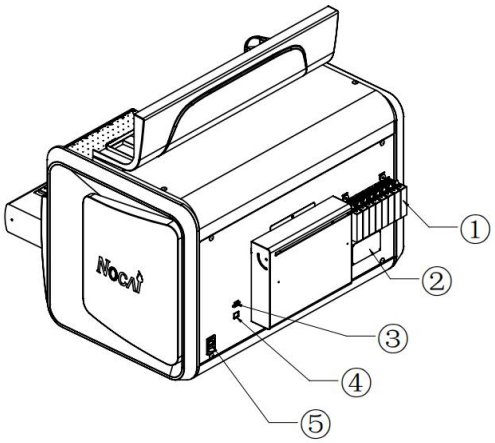
④Ink station

⑤Panel board

⑥Plate table: 297*420mm (W*L)

⑦camera(visual system)

3.2 Machine Back View Diagram



①Ink tank

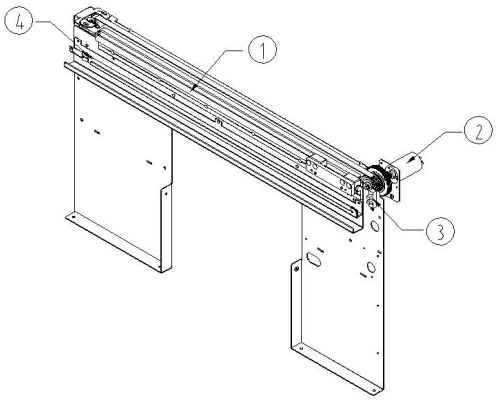
②Machine Nameplate

③Network Cable Interface

④Power Interface & main power switch

⑤Capture card interface

3.3 Carriage Beam Diagram



①Guide rail

②X axis motor

③Home sensor

④Encoder strip

3.4 Print Cart Diagram

①Headboard

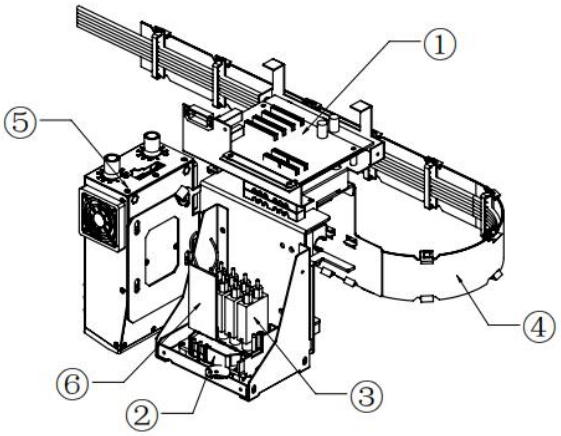
②Print head

③Damper

④Cart steel belt

⑤UV lamp

⑥Damper Cover



3.5 Ink Station Diagram

①Cap top

②Cart locker (Remove before use)

③Ink station sensor

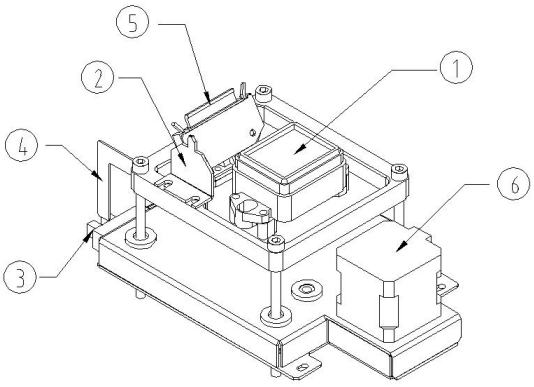
④Ink station stop part

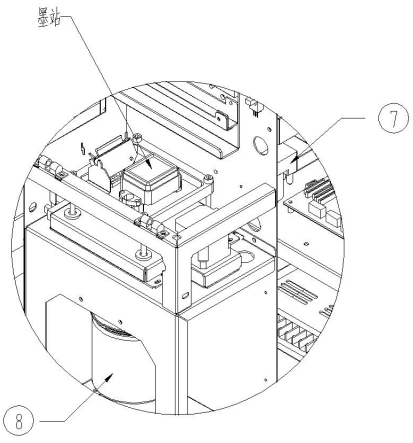
⑤Wiper

⑥Station motor

⑦Ink pump

⑧Waste ink bottle





3.6 Display and Control Panel Diagram

①UP: Table up

②Left: Cart left

③Front: Table forward

④Back: Table backward

⑤Right: Cart right

⑥Down: Table down

⑦Test: Print nozzle test

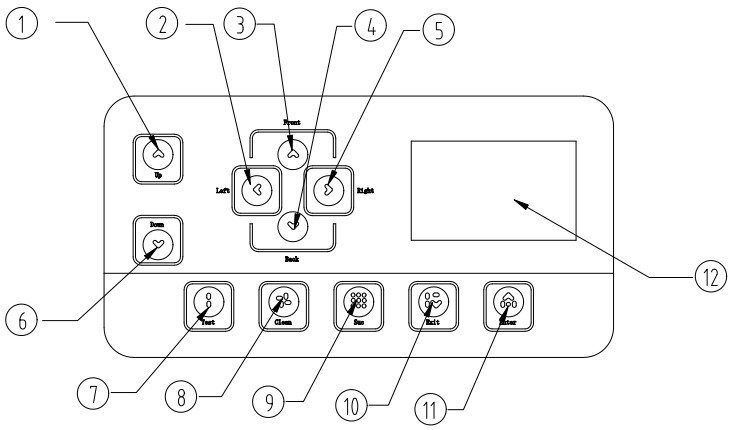
⑧Clean: Quick Clean

⑨Suction: Platform Vacuum Button

⑩Exit: Settings Exit

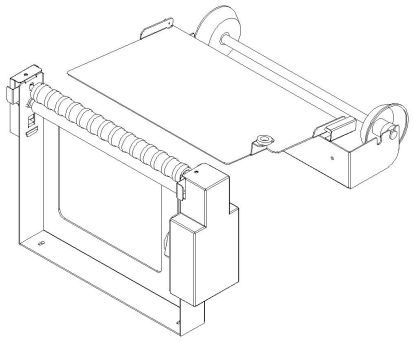
⑪Enter: Settings Confirmation

⑫Machine Display Panel



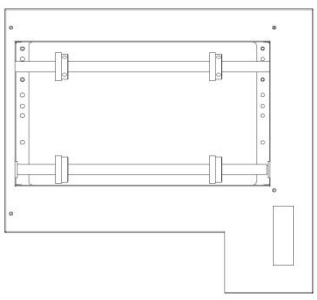
3.7 Roll Material Unit（Optional）

Need to purchase it when need.



3.8 Rotary Motor Jig（Optional）

Need to purchase it when need.



Pre-Operation Preparation

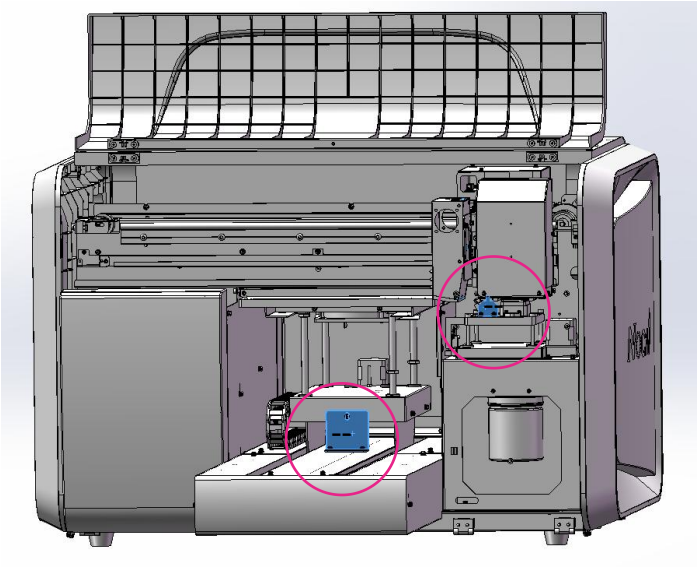
This section covers the necessary steps after unpacking the machine and before powering it on, including ensuring proper placement, removing transport securing sheet metal, and verifying normal startup and movement.

4.1 Ensuring Proper Machine Placement

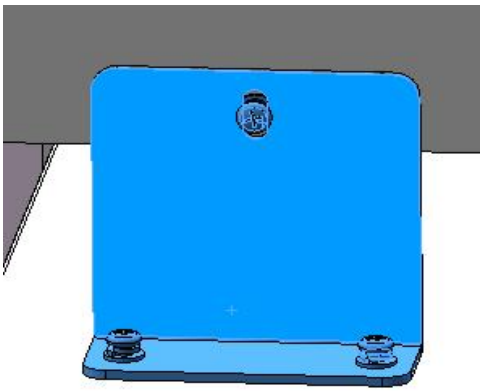
(1) Select a suitable location.
(2) Floor and table must be level and strong enough. Move the cart to the four corners of the table; the difference between the highest and lowest gap to the table surface must not exceed 0.3 mm.
(3) Keep the machine away from direct sunlight, uneven floors, temperature swings, vibration, air-conditioning drafts, and open flames.
(4) Do not store chemicals in the immediate area.
(5) Avoid locating the machine next to high-noise equipment.
(6) Operating conditions: 20 – 30 °C, 30 – 65 % RH (no condensation). For best accuracy maintain 20–25 °C with a drift < ±10 °C/h.
(7) Store inks at 15–35 °C in a dark place.

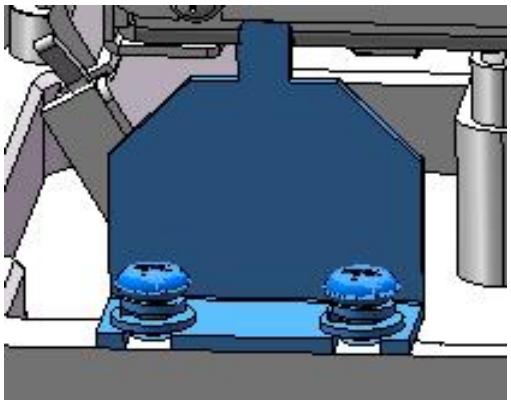
4.2 Removing Transport Securing Sheet Metal

The two transport securing sheet metal MUST be removed before powering on the machine, as shown below:



Detailed images are as follows:





4.3 Verifying Normal Startup Operation

(1) Confirm the machine's appearance is normal and it is placed stably. Check the nameplate voltage (110 V or 220 V) matches the local supply.

(2) Connect the machine to the power supply and turn on the main power switch at the rear of the machine. The machine will start the initialization sequence, which is as follows:

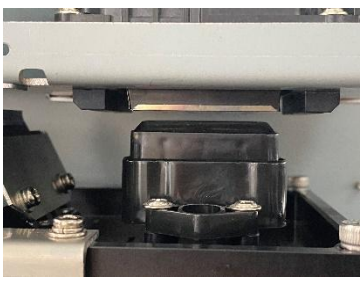
[Cap & wiper down → small down stroke → table forward → table to rear limit → cart left → cart right → cart left to ink station → cap up (sealed)]

4.4 Cleaning Action Debugging and Setup

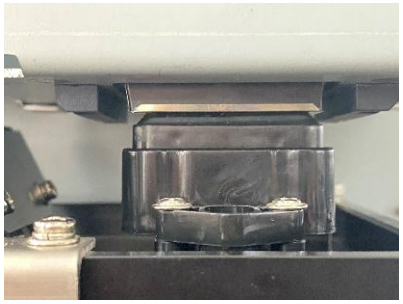
Press 'ENTER' on the panel to enter the function menu, press 'ENTER' to enter the settings menu, and press 'ENTER' again to enter the ink station settings. The five motions— ink station origin, capping height, spit height, wiper height, and wiper position—must be set in that order.

After entering the capping-station menu, the cap automatically unseals. Use FRONT/BACK to raise/lower the station and LEFT/RIGHT to jog the cart.

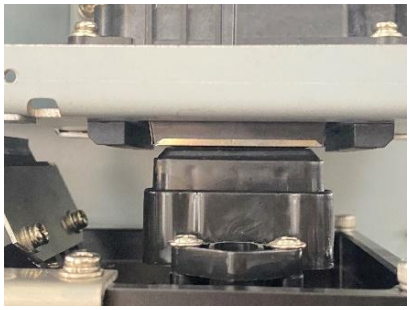
4.4.1 Ink station origin: Align the print head centrally with the cap top; press "ENTER" twice to save the option and settings. (see figure):



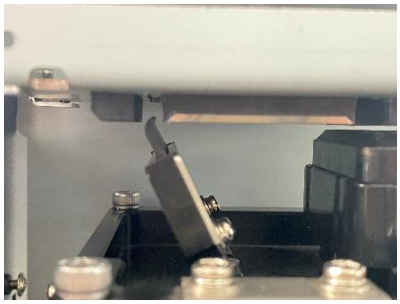
4.4.2 Capping heigh: After setting the ink station origin, raise the station until cap top lightly compresses nozzle plate halfway; press "ENTER" twice to save the option and settings. (see figure):



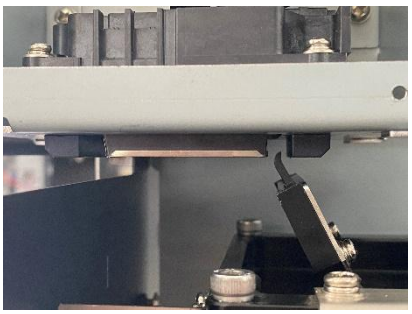
4.4.3 Spit height: After setting the ink station2 origin, raise until cap top just touches nozzle surface; press "ENTER" twice to save the option and setting. (See figure):



4.4.4 Wiper height: Position wiper between nozzle plate and crash bar; raise station until wiper aligns with nozzle; press "ENTER" twice to save the option and setting. (See figure):



4.4.5 Wiper position: Wiper position: Move wiper to center between right crash bar and nozzle; press "ENTER" twice to save the option and setting. (See figure):



Ink Filling and Nozzle Test Checking

5.1 How to fill the ink

▲**NOTE:** This model has an ink encryption function, and the ink bottle has an Ink ID, which needs to be registered online to activate and generate an ink authorization code before use. Each ink bottle has been activated once during the first factory inspection of the new machine. It is recommended that customers take a photo to back up the ID of the ink bottle for activation and use.

5.1.1 Requirements for Ink Filling:

① Add the corresponding ink according to the color marks on the ink tank.

② To prevent ink leakage from contaminating the outer sheet metal when adding ink, it is recommended to wrap the bottle mouth with paper towels.

③ After filling the ink, please clean the surrounding area.

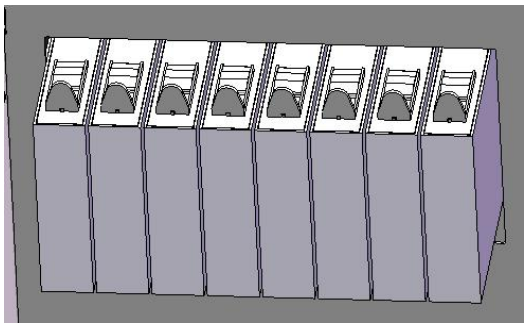
5.1.2 Ink Filling Process (taking K black ink as an example, as shown in the figure below):

① Locate the ink bay at the rear of the machine.

② Gently push the flap at the ink filling port of the K ink tank inward to expose the circular filling port.

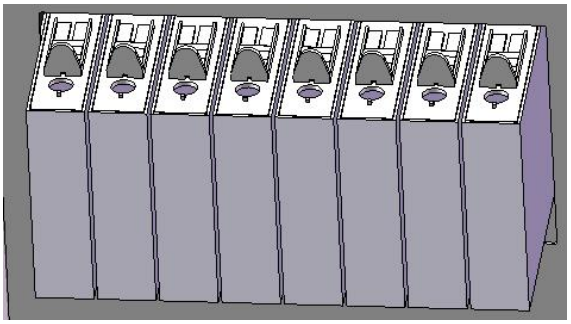
③ Unscrew the conical cap of the K ink bottle, remove the seal, then screw the conical cap back on. Align the bottle mouth with the circular filling port of the K ink tank, and gently squeeze the bottle until all ink is dispensed.

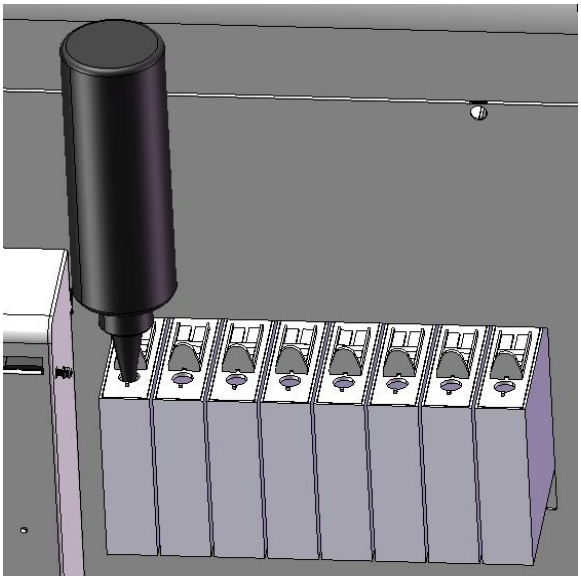
④ Push the flap of the filling port back to its original position to close the filling port.



◀ Locate the cartridges at the rear

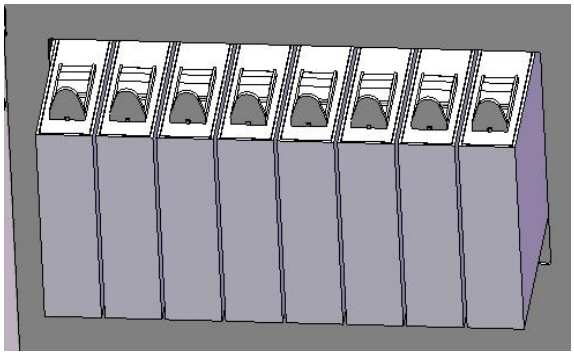
Push aside the filling port flap ▶





◀ Fill inks

Push back the filling port flap ▶

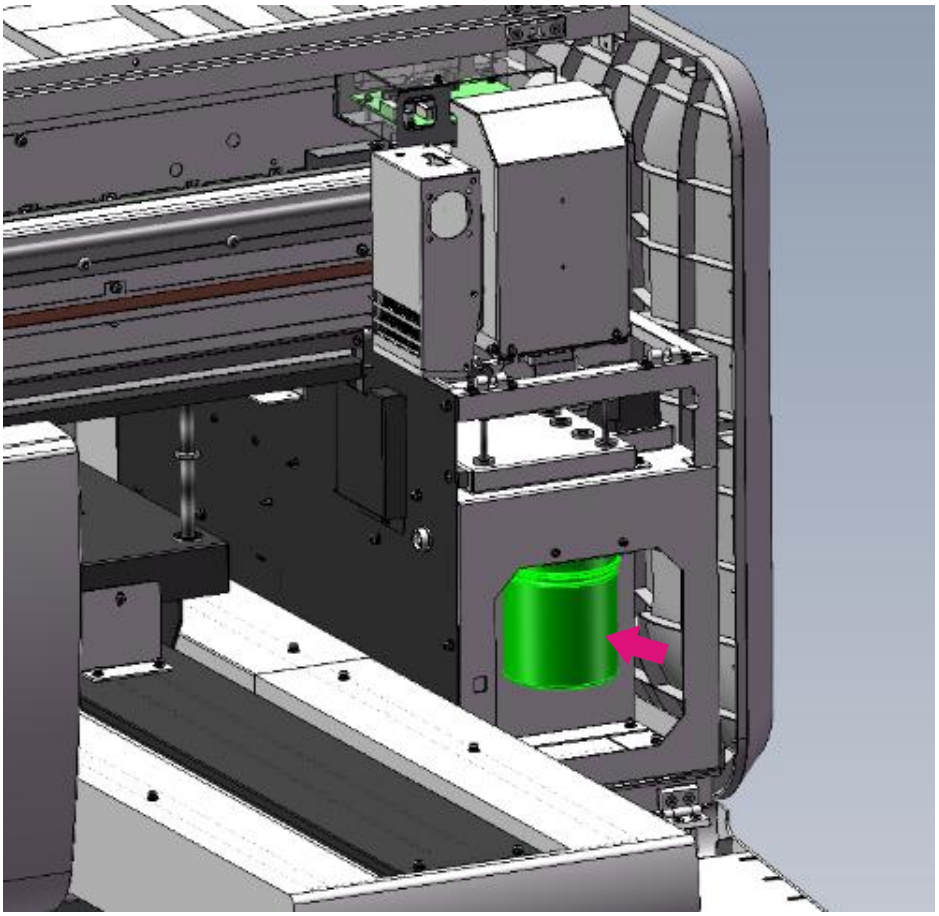


5.2 Ink Pump and Manual Clean

5.2.1 Ink Pump

In standby mode, press the following sequence on the control panel: [RIGHT]→ [Maintenance] → [Manual Pump] → [ENTER]. After pressing the confirm key, the machine starts ink pumping.

▲**Note:** After observing that ink flows smoothly from the ink tube into the waste ink bottle, press "Exit" to stop ink pumping.



5.2.2 Clean Nozzle (Auto Clean)

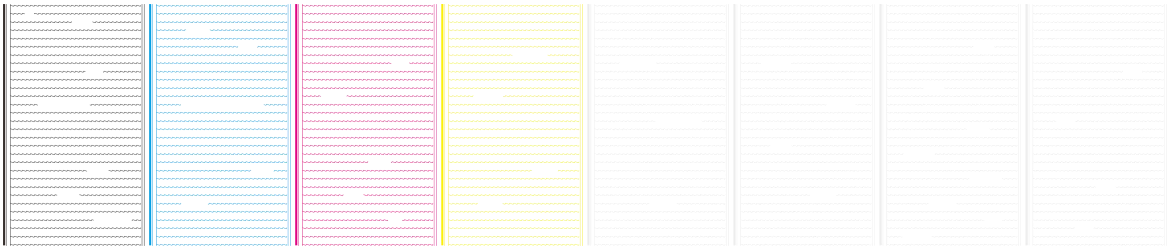
In standby mode, on the control panel, press the keys in sequence: [RIGHT]→ [Maintenance] → [Clean Nozzle] → [ENTER]. After pressing the confirm key, the machine starts automatic cleaning.

5.3 Print Nozzle Test Strip

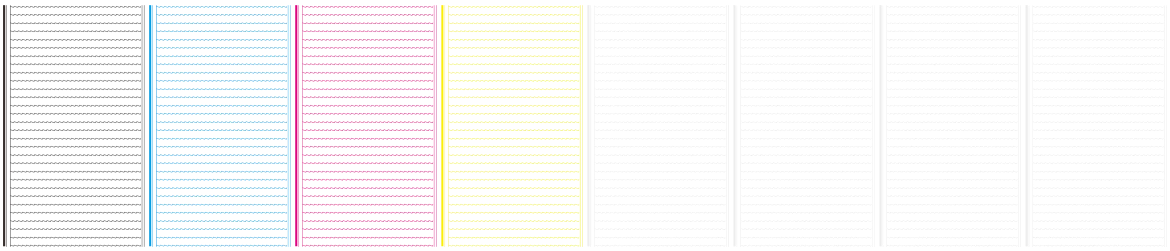
Press the [TEST] button to print a test strip and check the print head status. If there are any missing nozzles or streaks, perform cleaning until the strip is complete and all nozzles are firing correctly. This indicates the ink installation is complete.

Sample as below:

- If the test strip has ink breakage or nozzle clogging, continue with "Clean Nozzle".



- The normal test strip is shown in the figure below:



Future Rip Installation

Future RIP is a machine printing control software, which is mainly divided into two parts: image processing and driver setting.

6.1 Future Rip Hardware Introduction

Including two parts: Future RIP installation package and dongle. The picture below is a dongle with a serial number on the front.

6.2 Computer Configuration Requirements and IP Configuration

① System version:

- OS: Must be 64-bit Windows 7, Windows 8, or Windows 10.
- System display language: Must support both Chinese and English
- CPU: It is recommended to choose i5 or above or equivalent specifications;
- Memory: 8 GB or more is recommended;
- Hard disk: 500 GB or more is recommended.

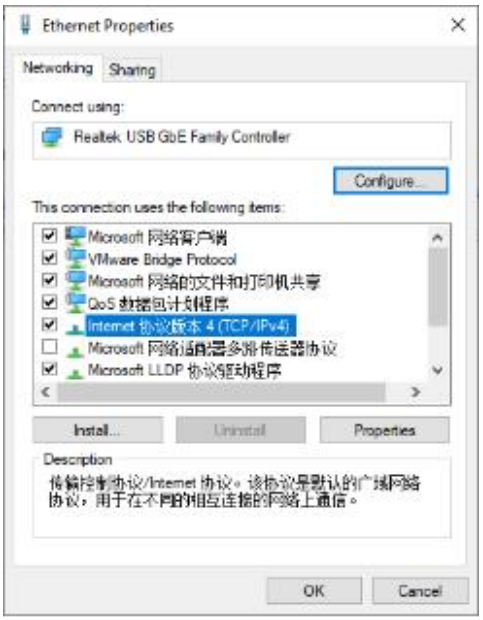
② The computer is equipped with a gigabit network card and a gigabit network cable, so that the software can be connected normally.

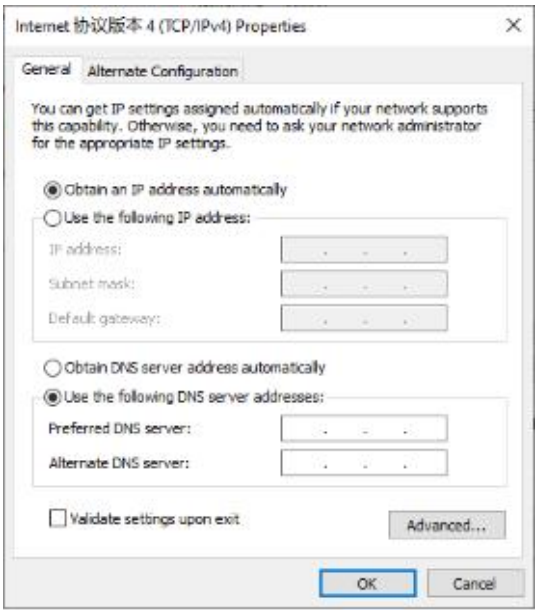
③ Set the computer's IPv4 address to obtain an IP address automatically, and do not check IPv6. Only then can the driver connect online automatically.

④ IP Configuration:

The operation is as follows: Find the icon   in the lower right corner of the desktop, right-click it, right click, select [Open Network and Internet Settings]-click to change the adapter option, double-click the local connection (or Ethernet)- click

[Ethernet Properties] - Uncheck “Internet Protocol Version 6 (TCP/IPv6)”, check “Internet Protocol version 4 (TCP/IPv4)” and double-click to open, - fill in the IP address, click OK, - OK to complete.

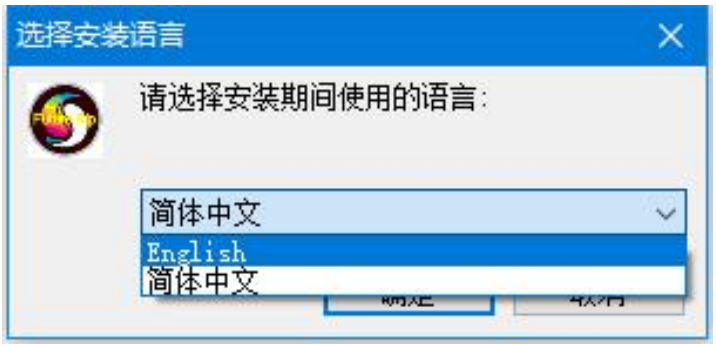




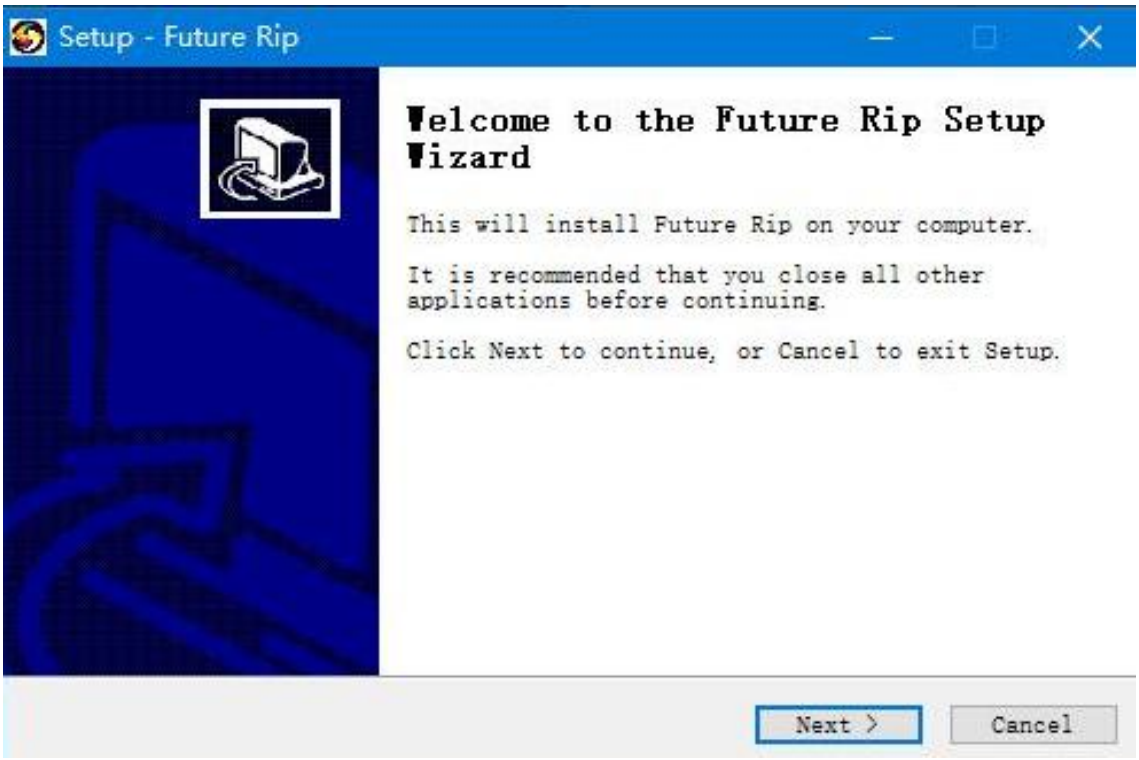
6.3 Install Future Rip

Open the file named “Future Rip” on the computer, obtain it from the after-sales service or download it from our official website www.happycolor.com.cn. Find and open the Future RIP.exe program, right-click to run it as an administrator, and then click Agree , Next step, click Install to complete, as follows:

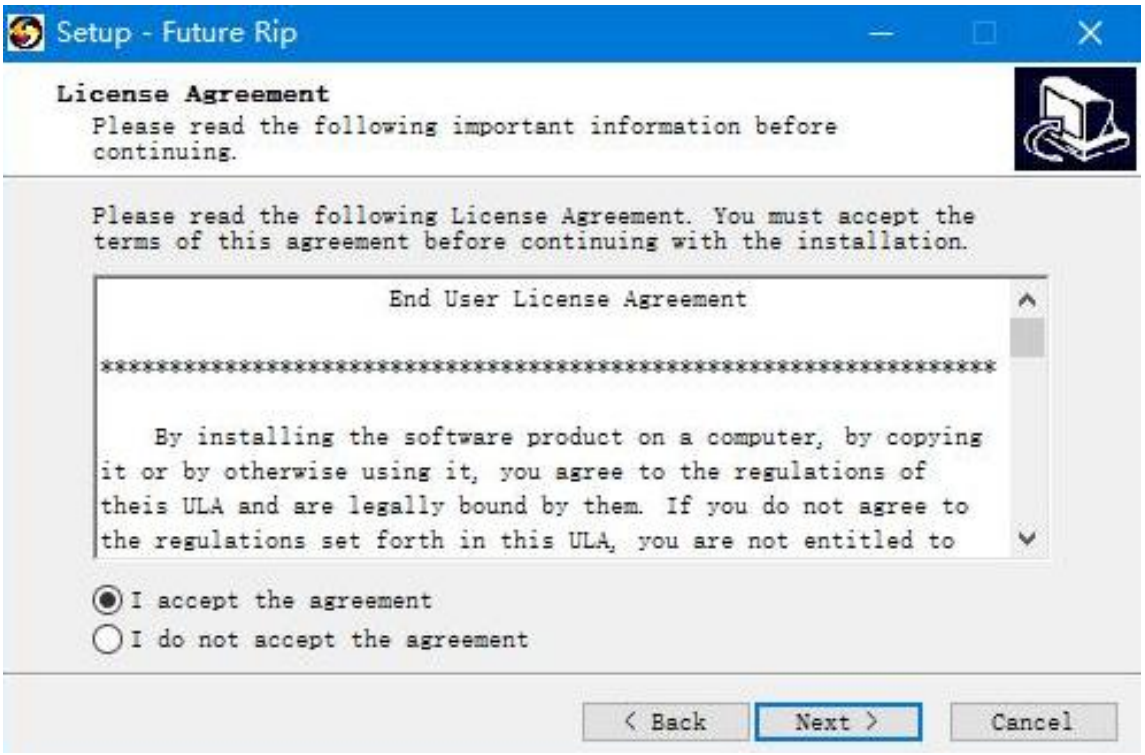
① In this interface, free to choose to install in Chinese or English, click "Confirm", and the pop-up window is as follows:



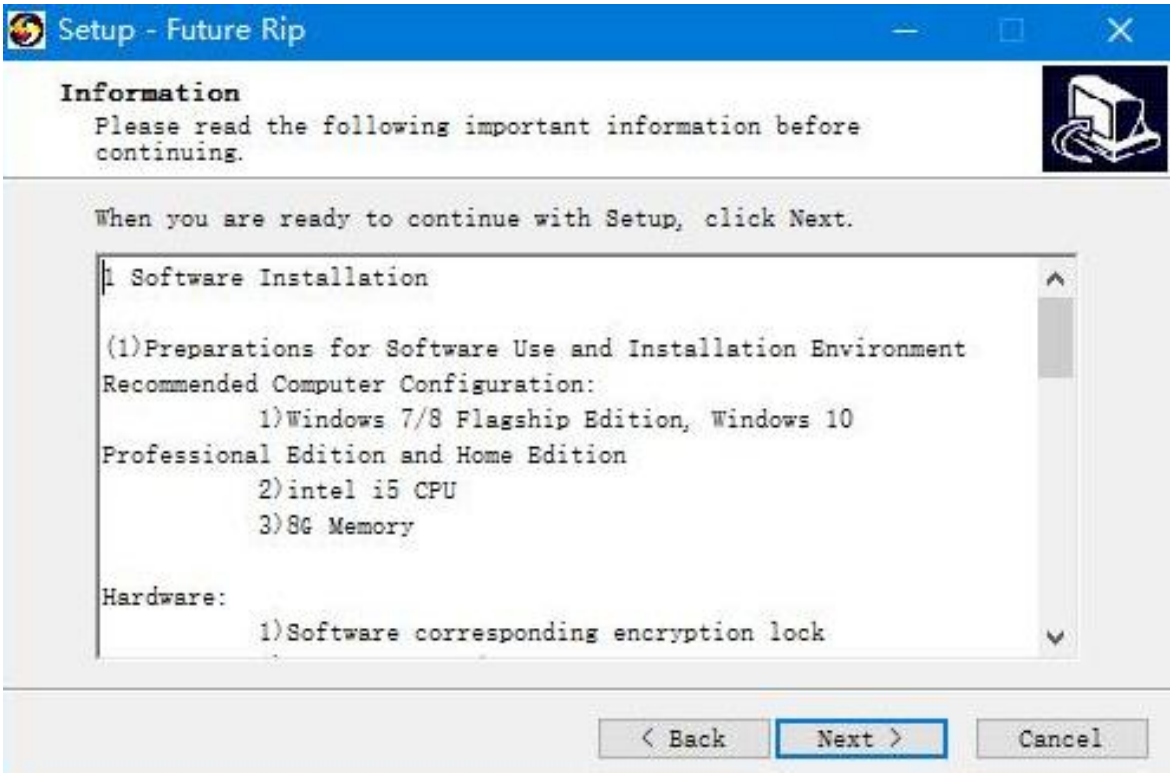
② Click Next, the pop-up window is as follows:



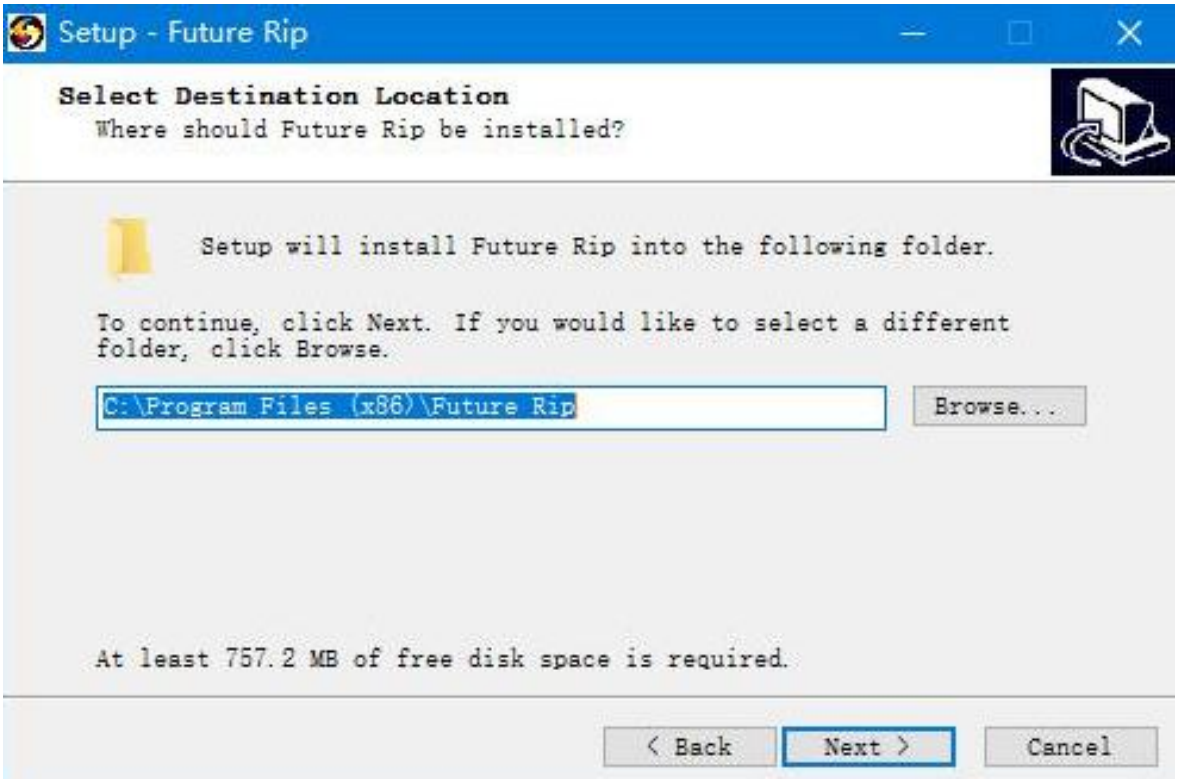
③ Click Next, the pop-up window is as follows:



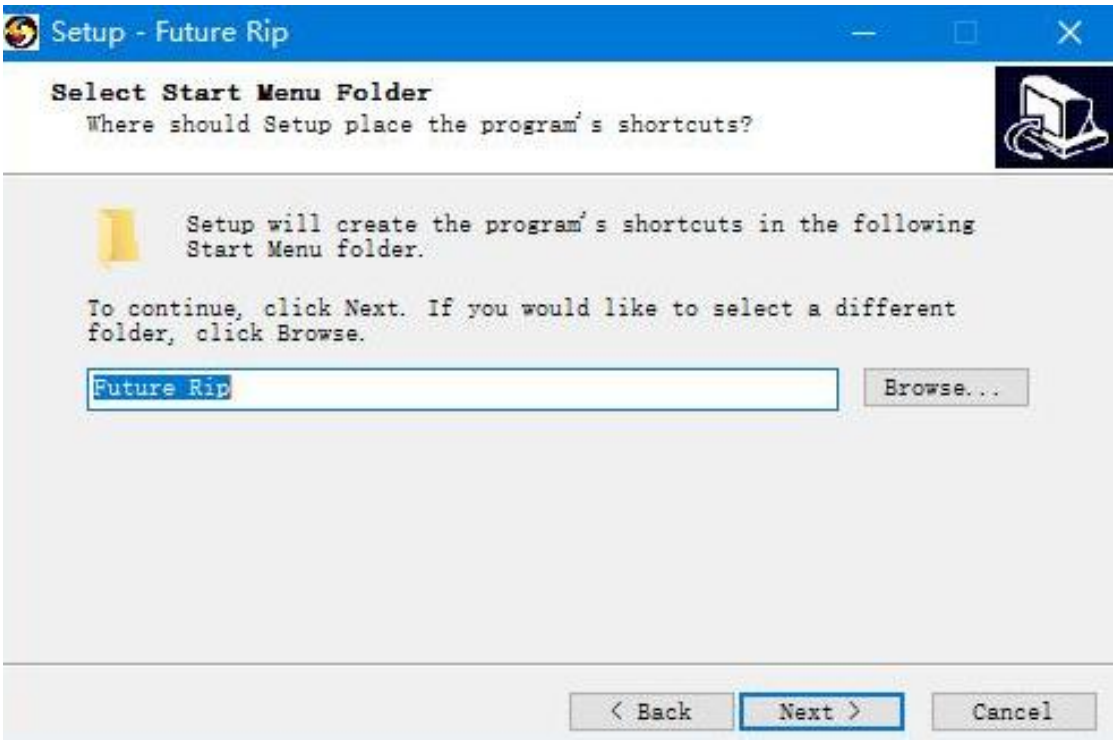
④ Click Next, the pop-up window is as follows:



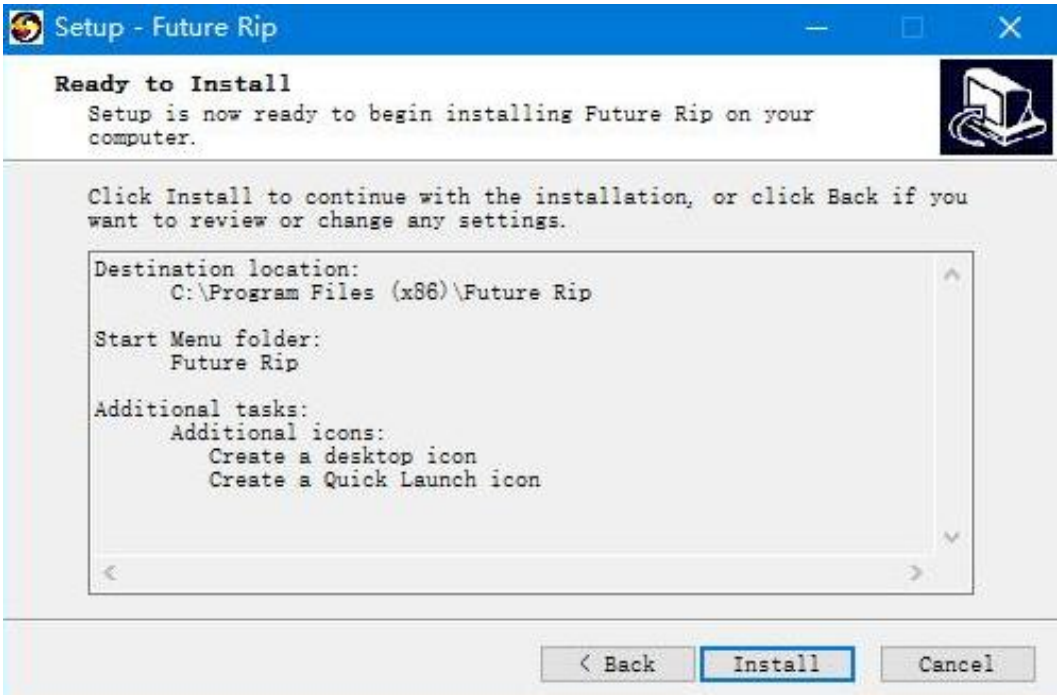
⑤ Click Next, the pop-up window is as follows:



⑥ Click Next, the pop-up window is as follows:



⑦ Click Install to complete the software installation. Computer desktop generates startup icon.



Explanation of Driver Settings

7.1 Driver Installation

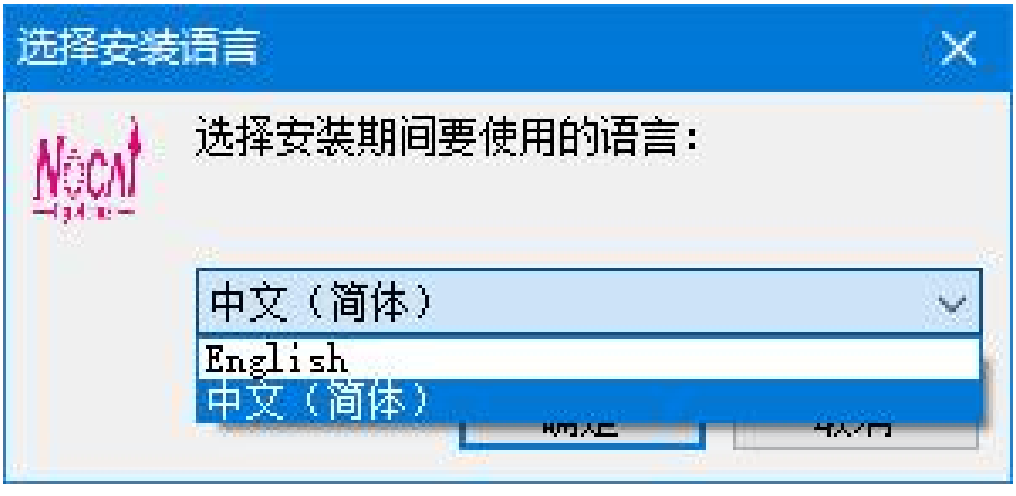
The driver of this machine is a standalone installation driver, and the installation content is mainly divided into three parts: ①Runtime environment ②Camera driver software ③Device driver.

The installation process is as follows:

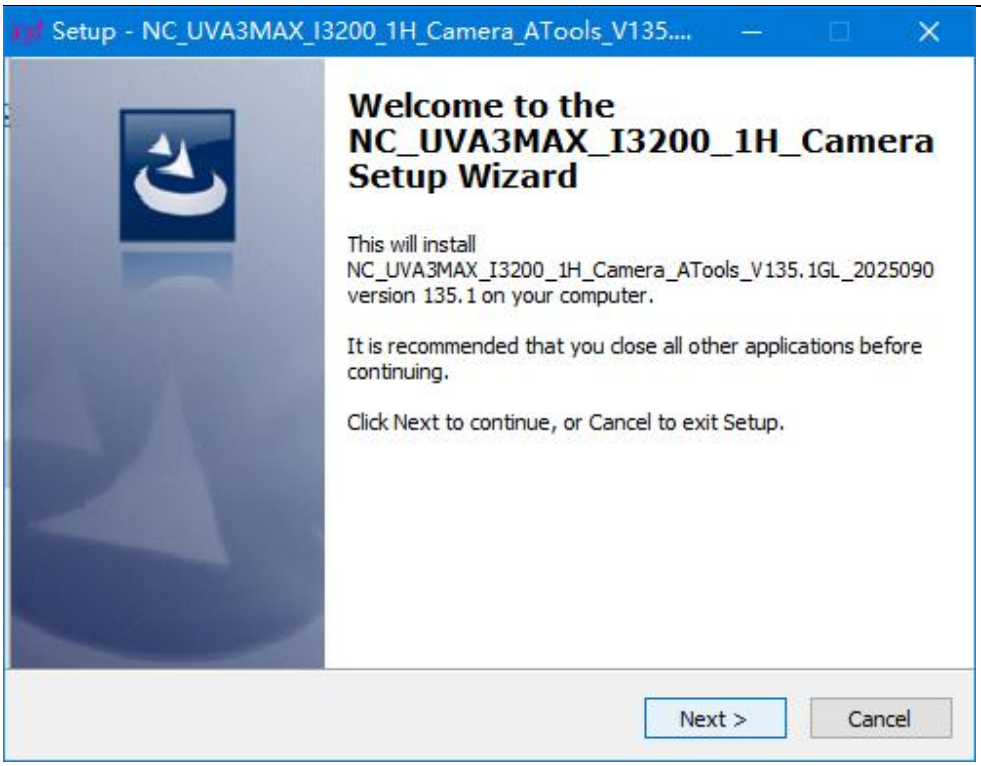
1. Find the control software in the data package, open the standalone online driver installation package, and you will see the following icon. Double-click this icon to start the installation process.

▲ **Note: Ensure the installation package is fully downloaded and extracted before installation. Otherwise, software abnormalities may occur.**

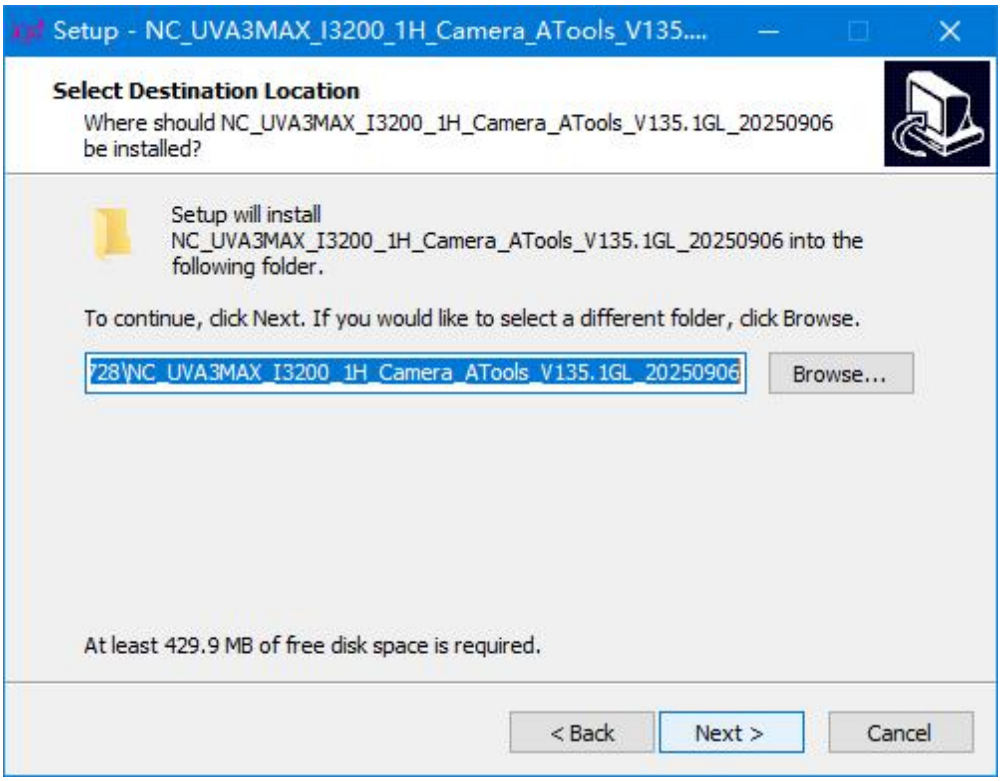
2. Select the language to use and click OK:



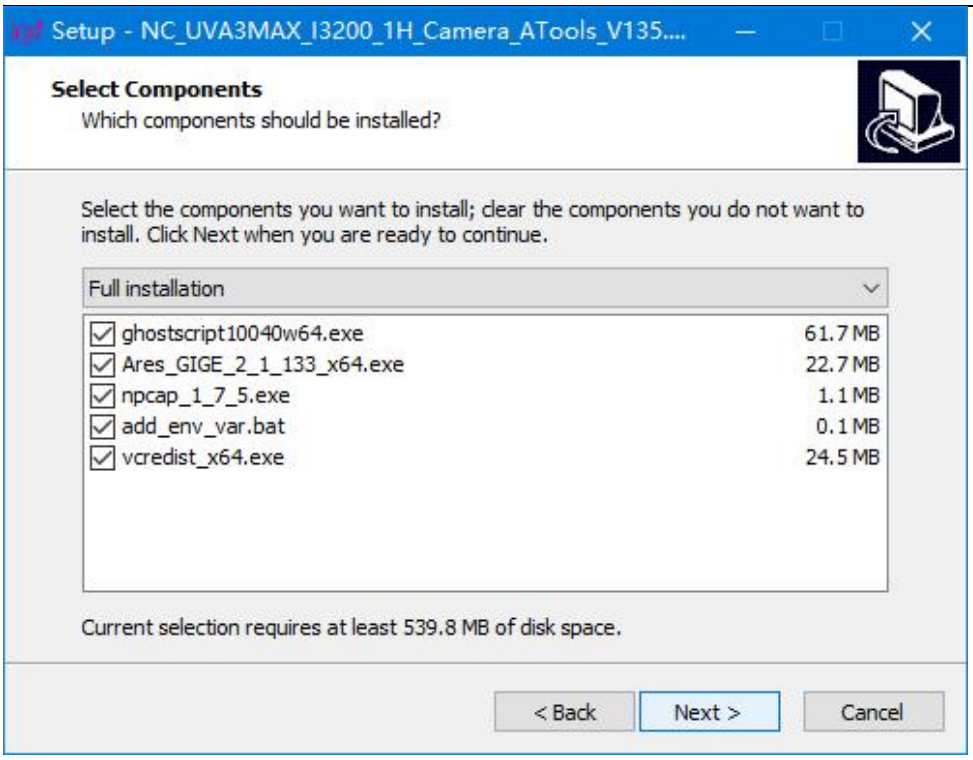
3. Enter the following interface and click Next:



4. Select the driver installation destination location and click Next:

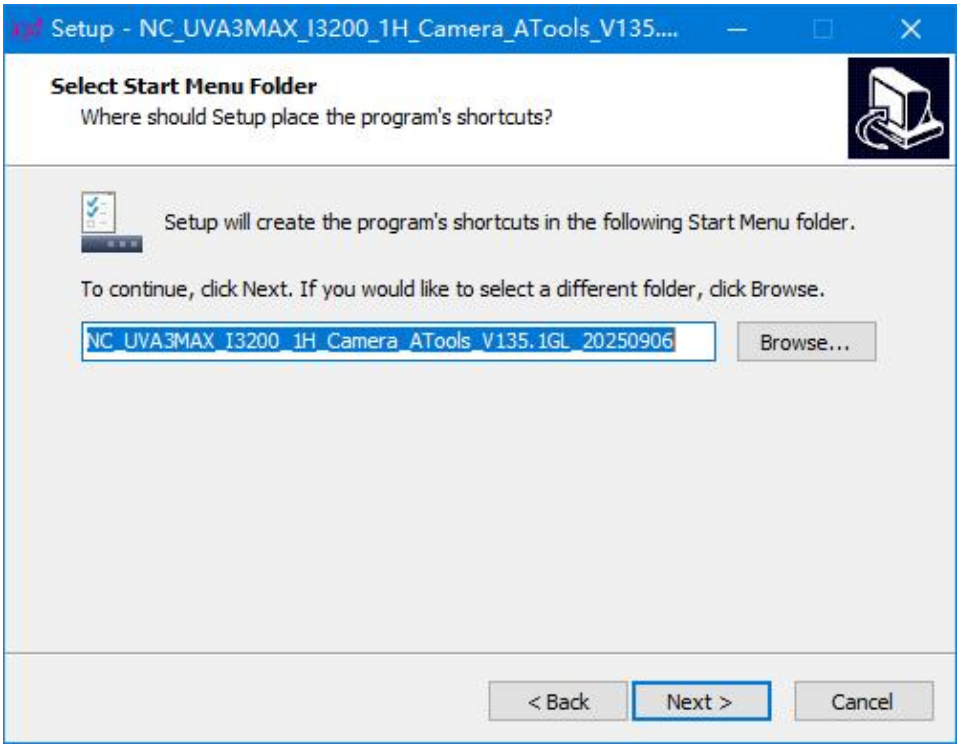


5. Enter the runtime environment installation interface and click Next:

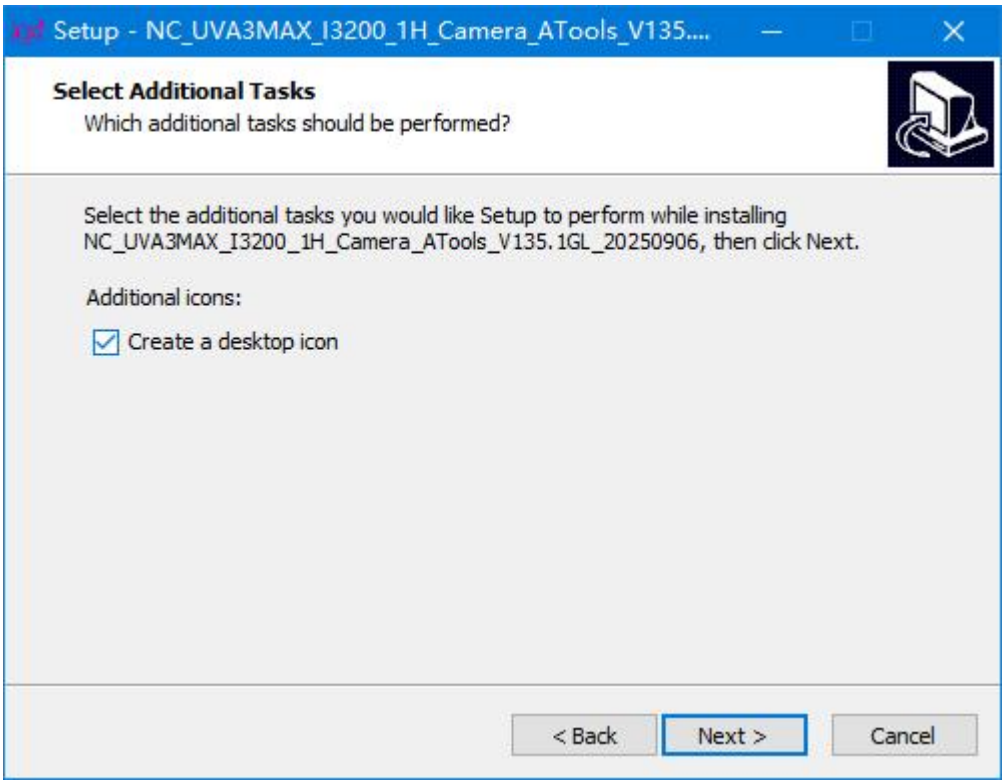


▲Note: If this is the first time installing this software on your computer, please select Full Installation to avoid missing runtime environment, which may prevent the software from working properly.

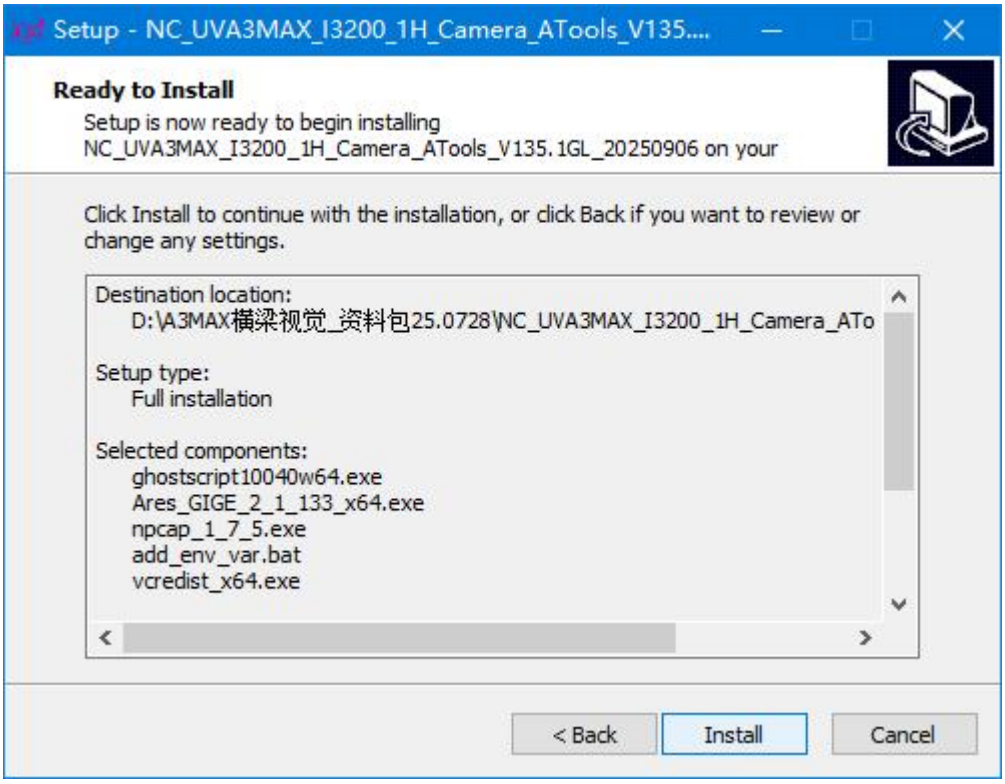
6. Select the Start Menu folder, and after selecting the installation location, click Next:



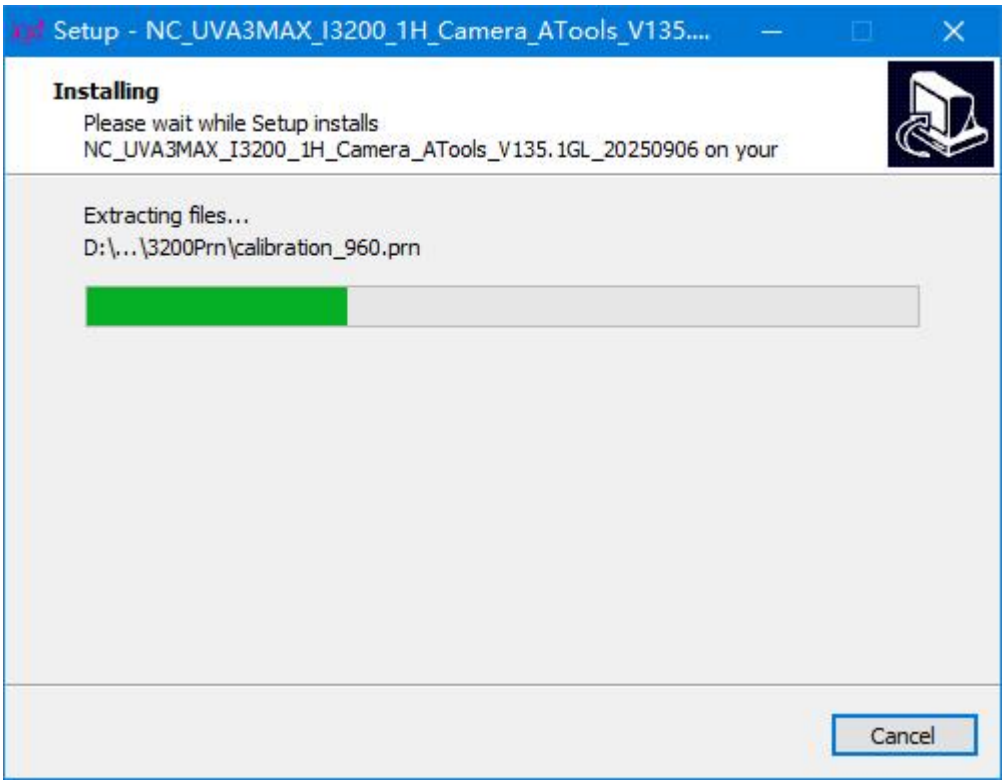
7. Confirm whether to create a shortcut. If this is your first installation on the computer, it is recommended to select Create Desktop Icon, then click Next:

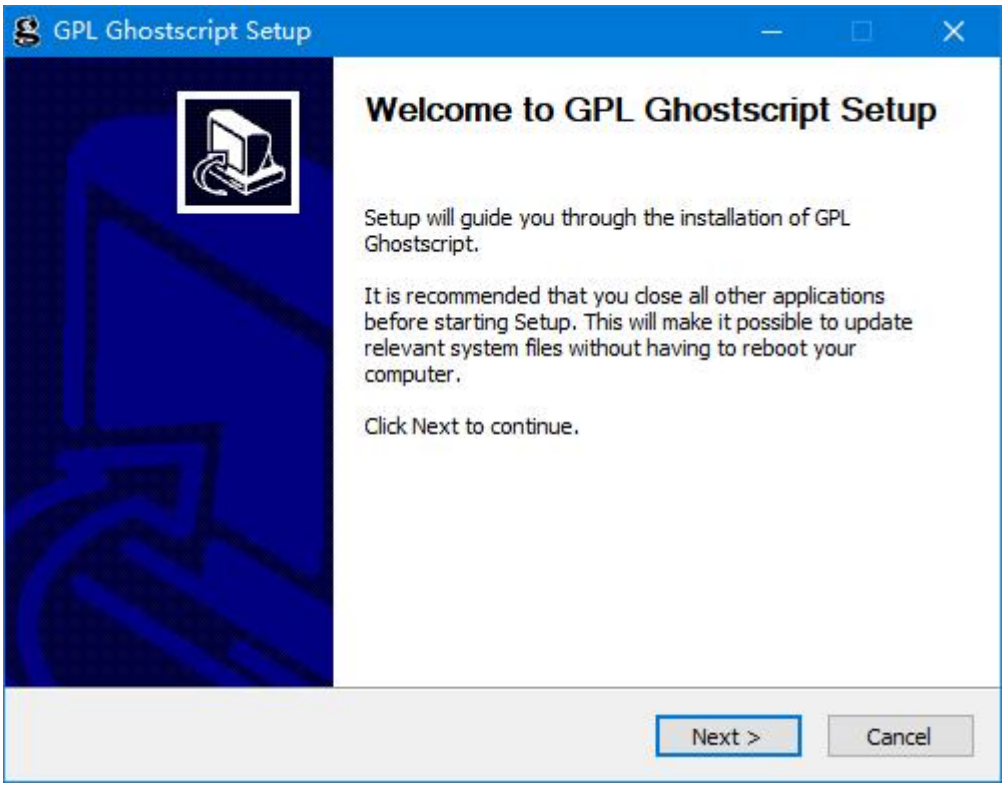


8. Enter the installation confirmation process and click Install:

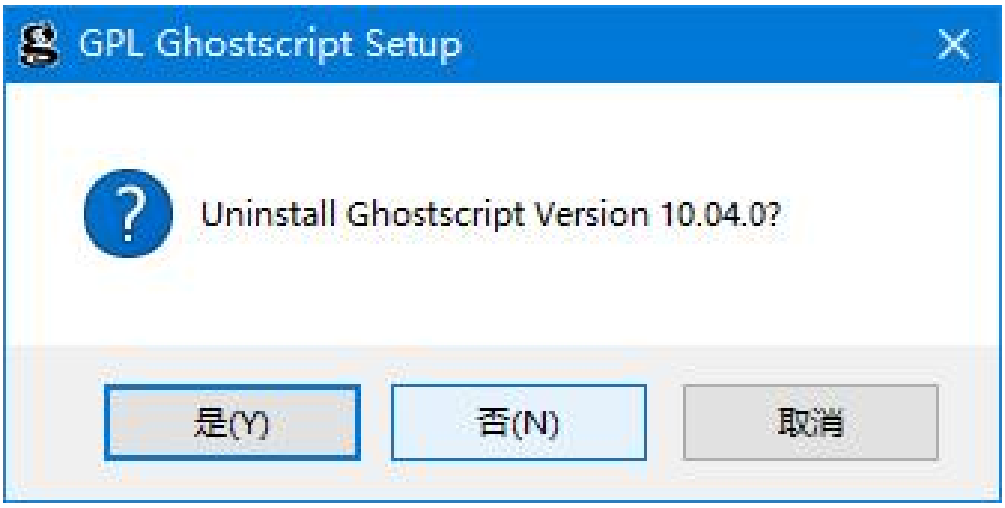


9. When the progress bar reaches 100%, enter the GPL Ghostscript Setup interface and click Next:

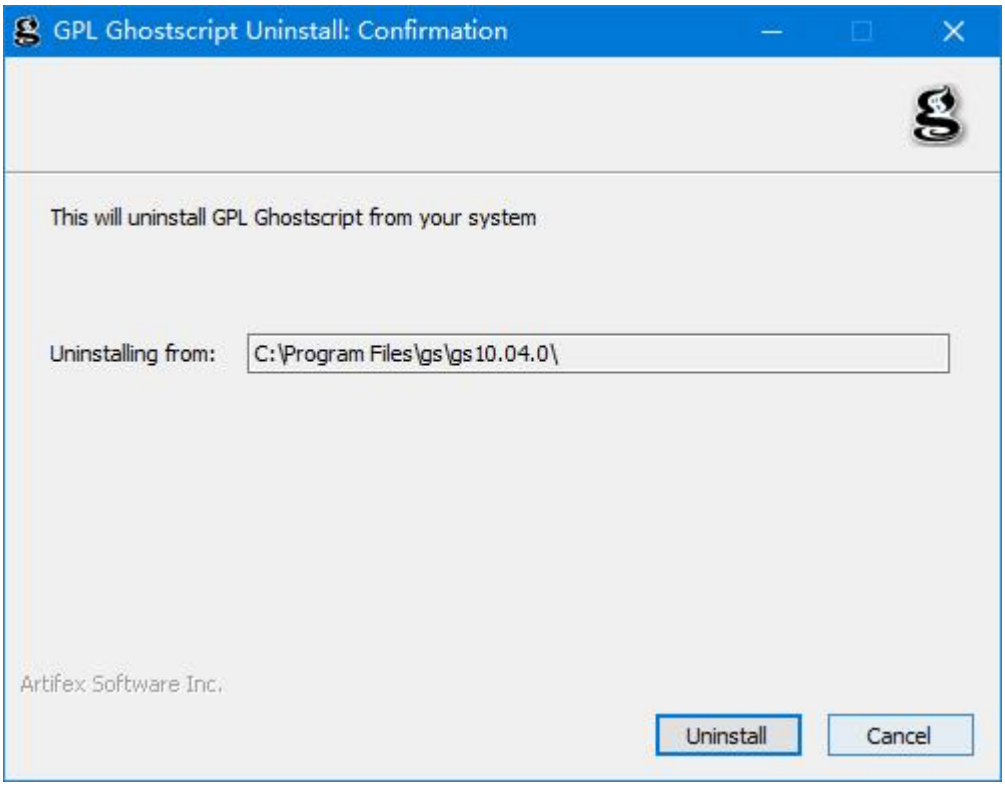




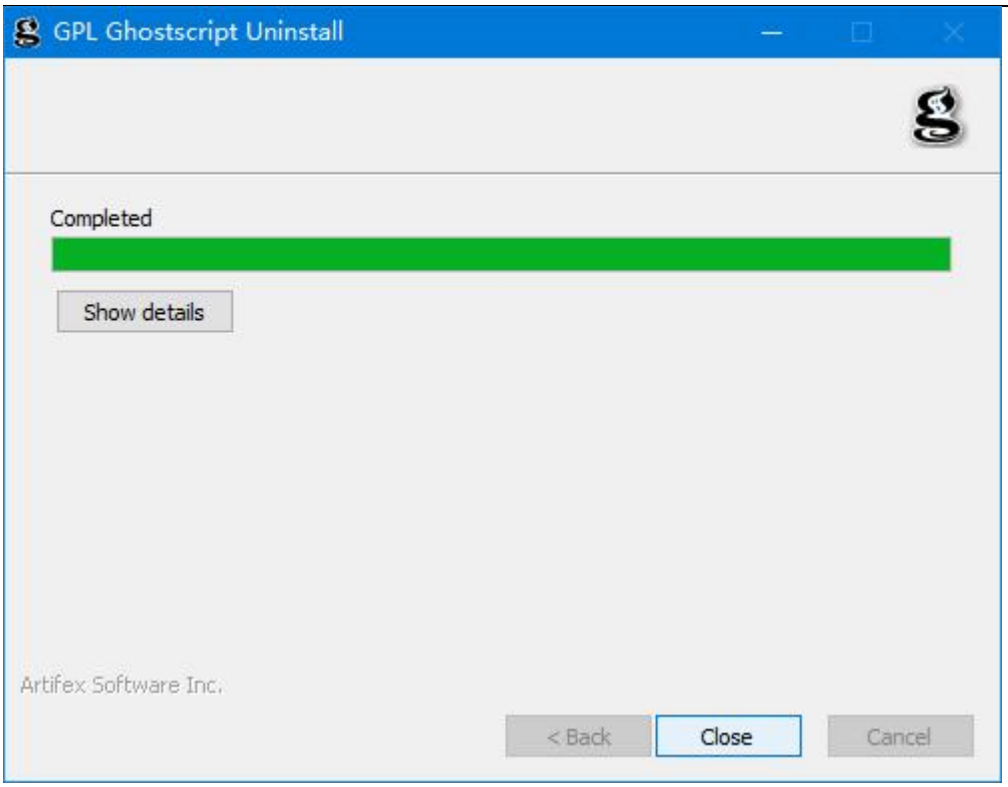
10.A following interface will pop up; select Yes to proceed to the next installation step:

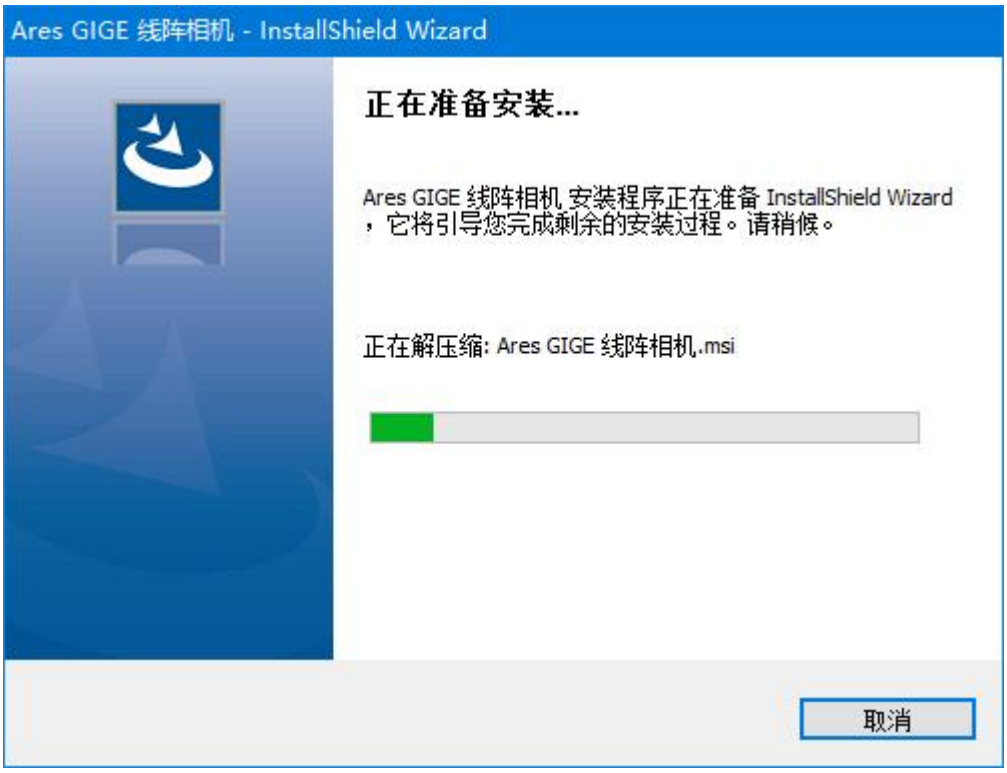


11.Click Uninstall to complete the installation:



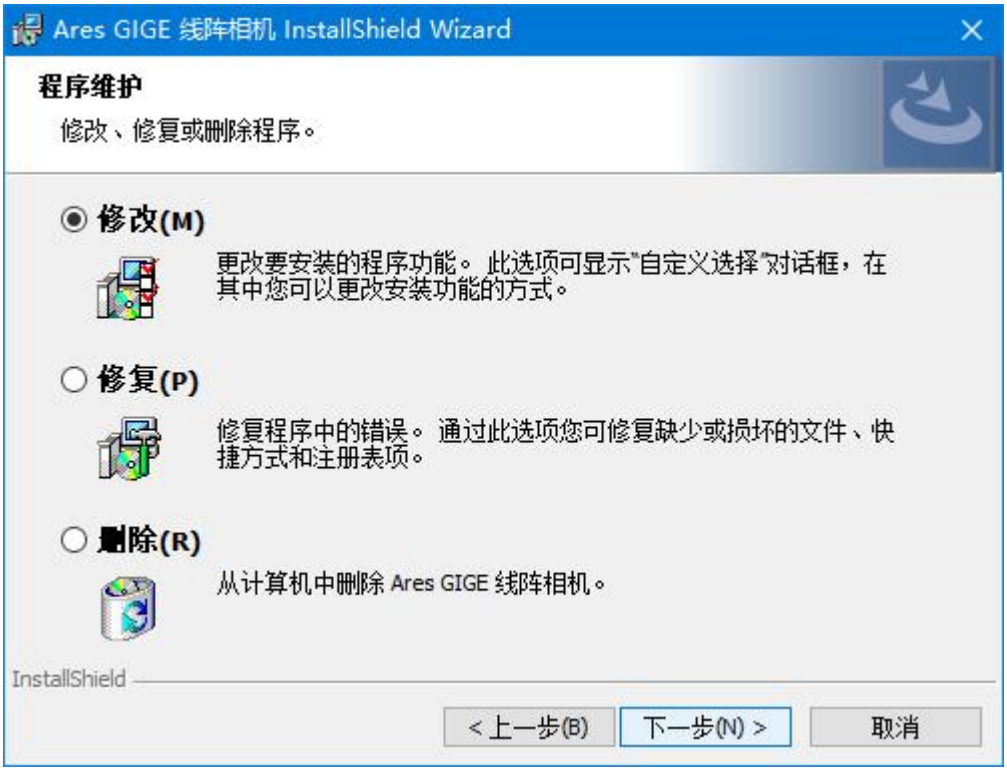
12.After the GPL installation is completed, the camera driver installation will begin:



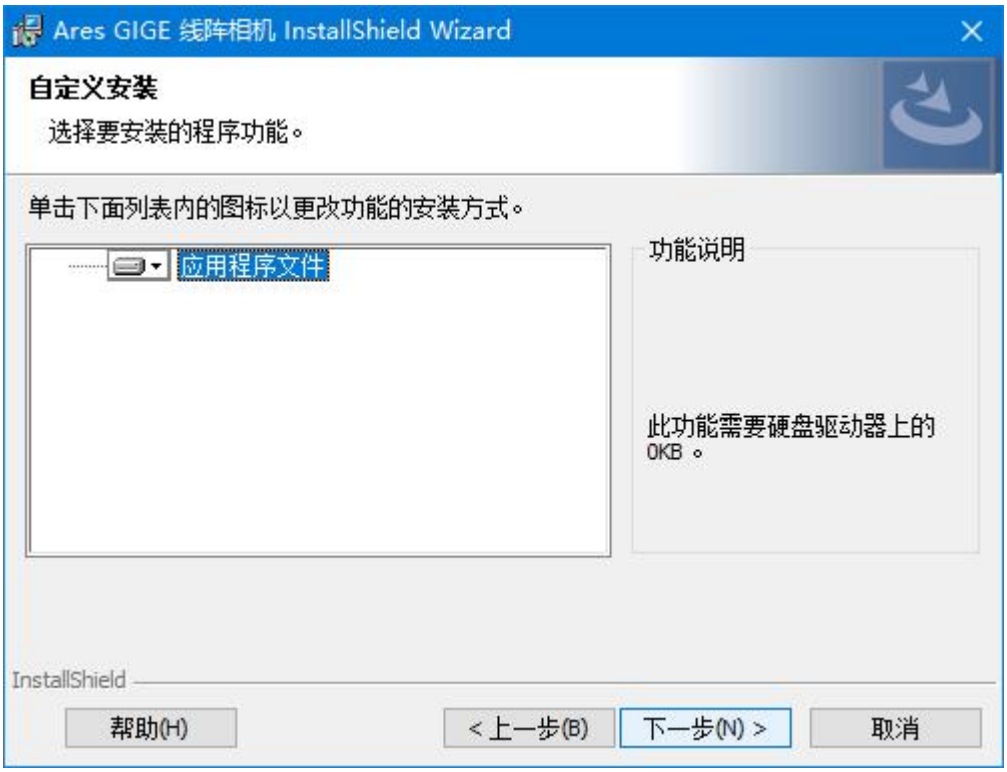


13.After the installation preparation is completed, enter the main installation process and click Next

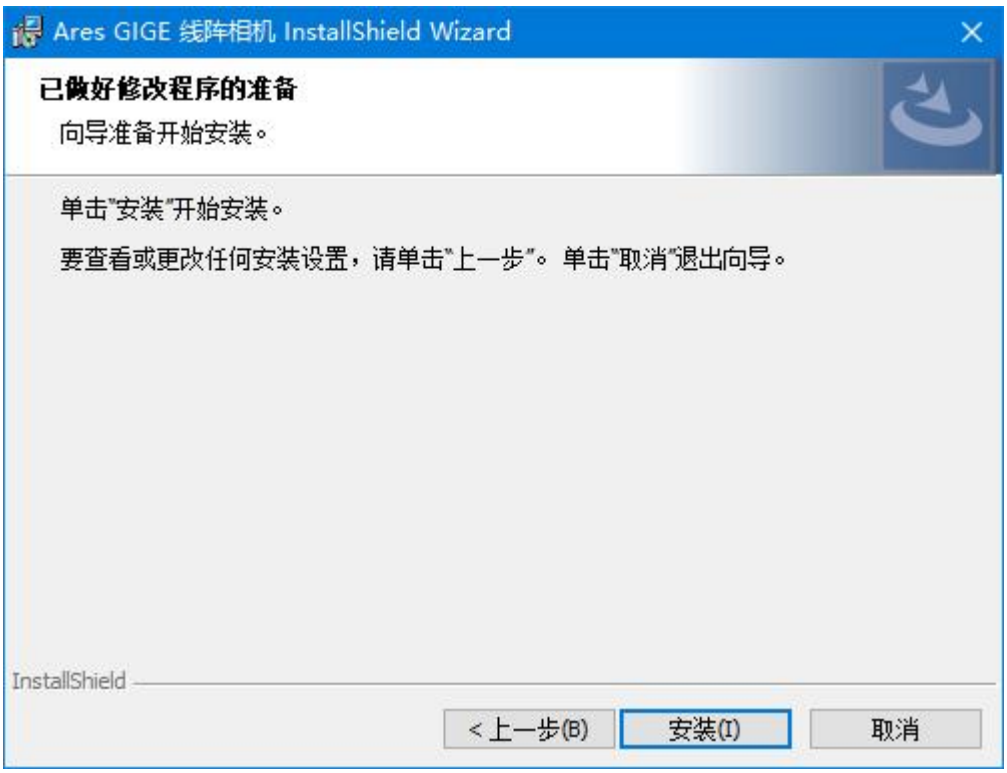
14.Enter the program maintenance interface, select Modify(M), and click Next to enter the custom installation:



15.Now enter the start installation interface and click Next:

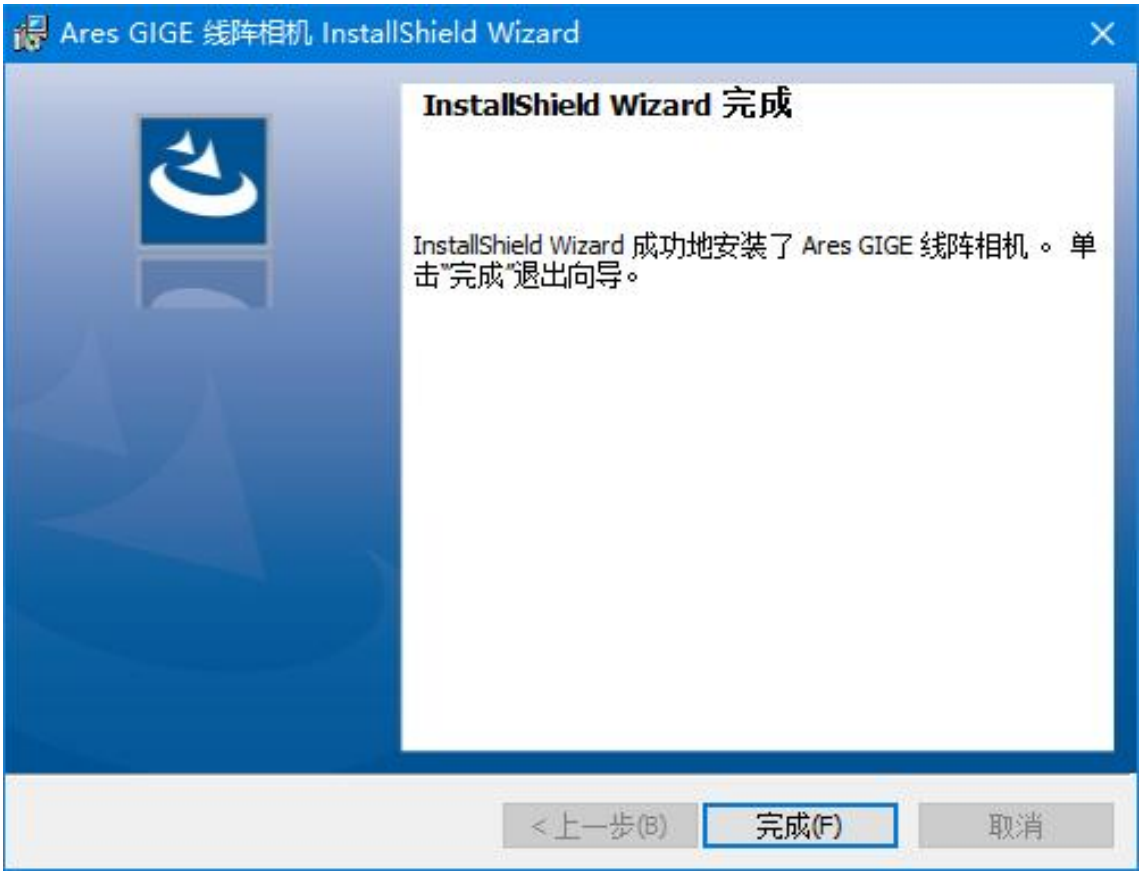


16.Now click Install to complete the installation:

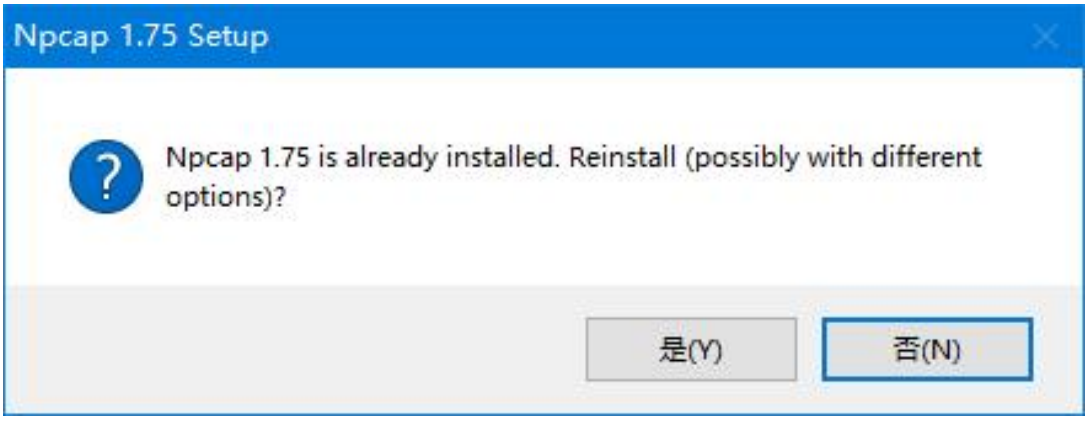


17.After the camera driver installation is completed, this icon 

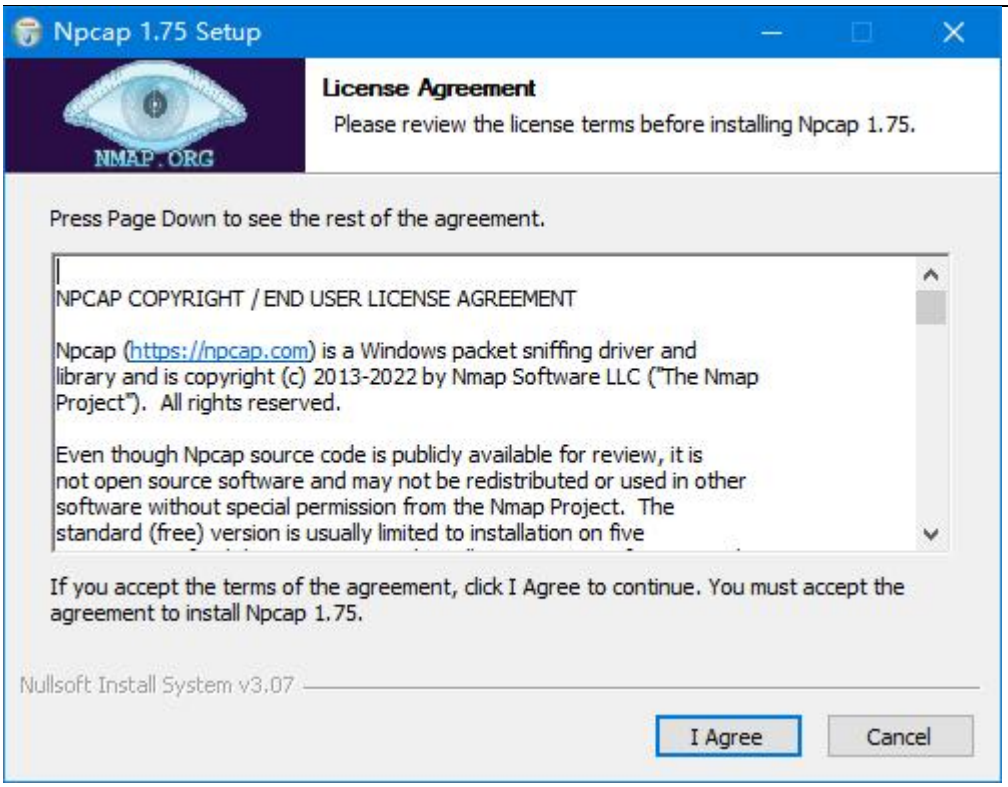
will appear on your computer



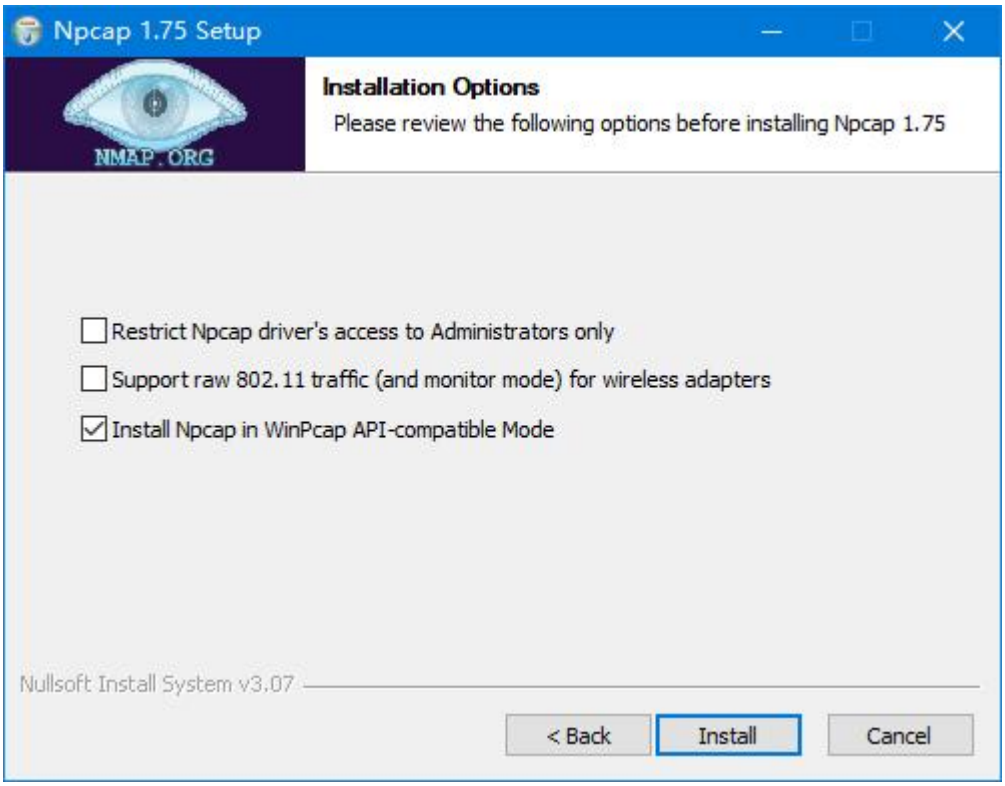
18.After the camera driver installation is completed, enter the Npcap Setup interface and click Yes:



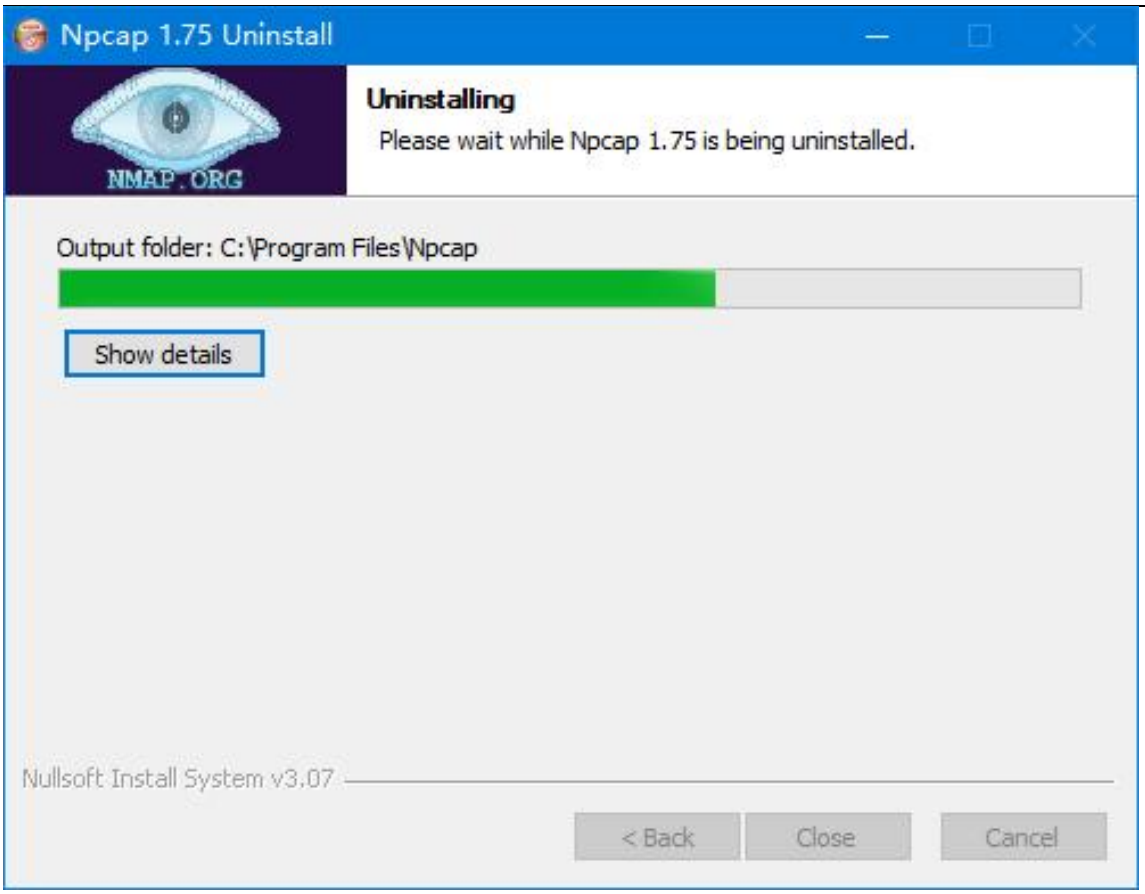
19.Enter the following interface and select I Agree:

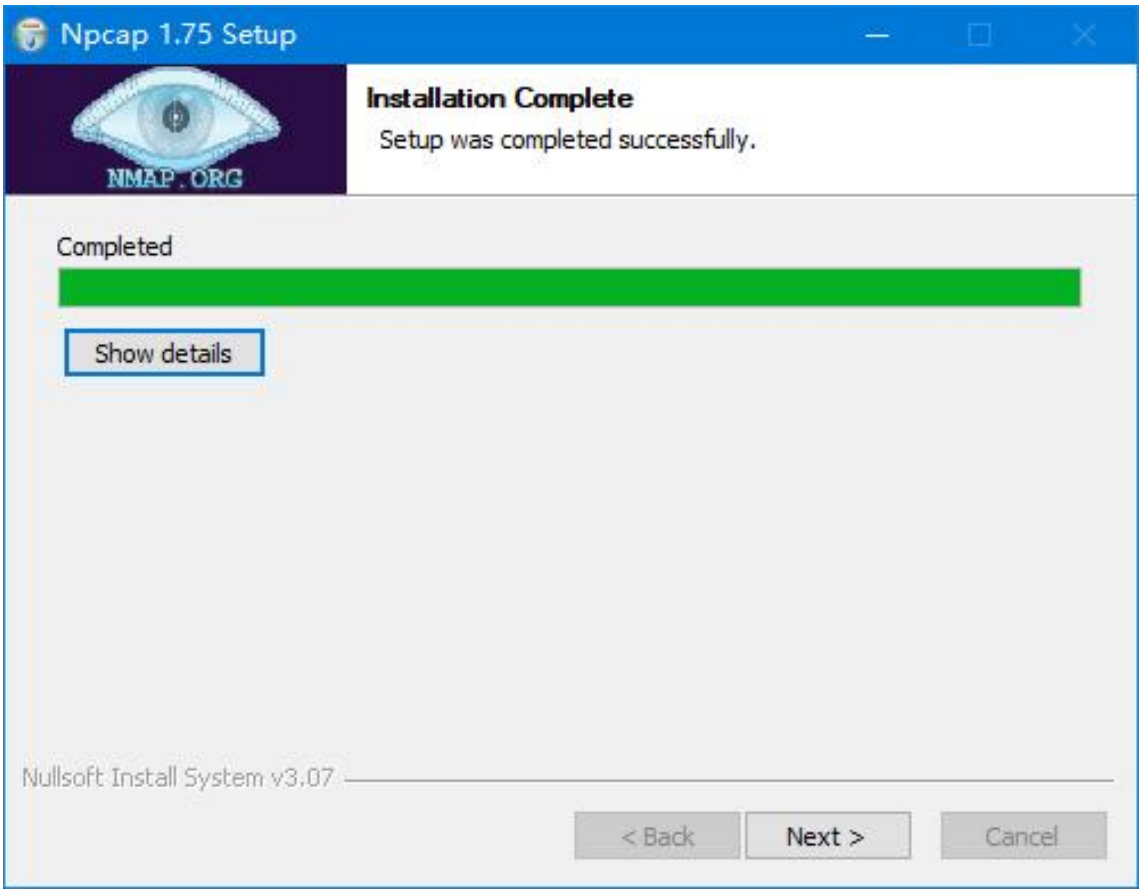


20.Enter the following interface, use the default options, and click Install:

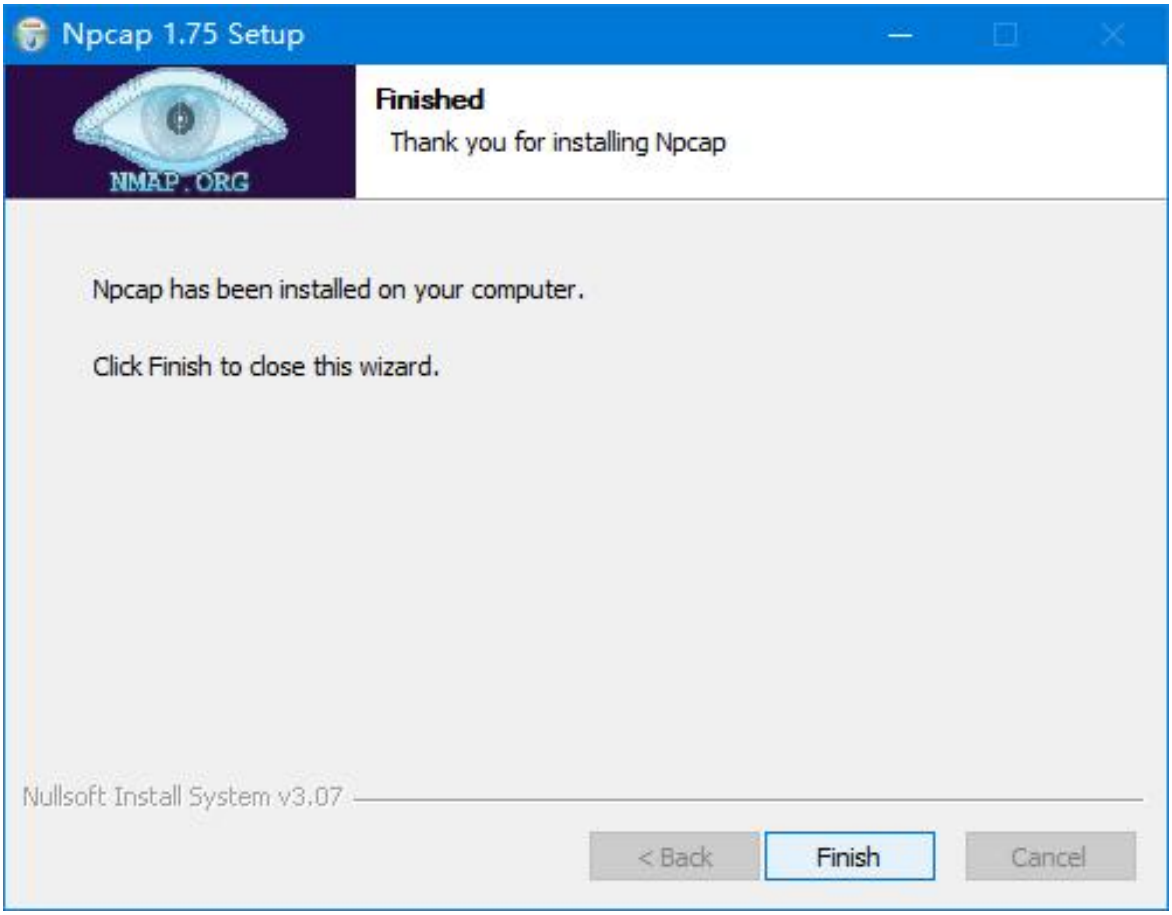


21.Enter the following interface; when the progress bar reaches 100%, select Next:

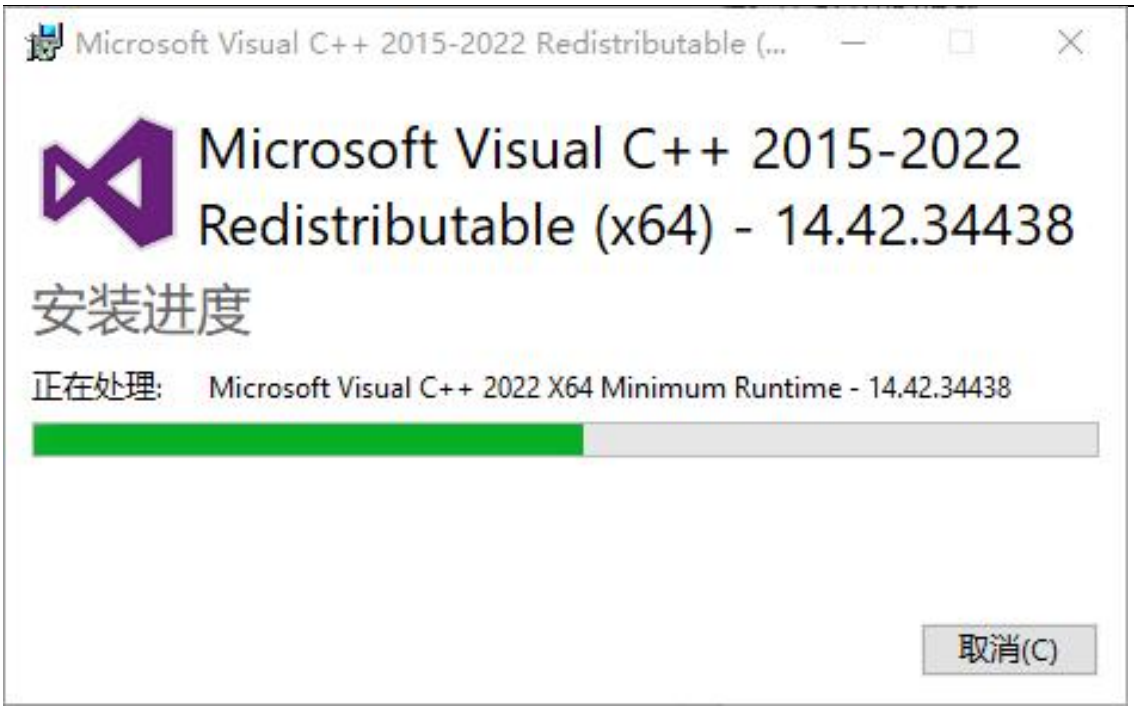

Npcap 1.75 Uninstall
NMAP.ORG
Uninstalling
Please wait while Npcap 1.75 is being uninstalled.
Output folder: C:\Program Files\Npcap
Show details
Nullsoft Install System v3.07
< Back
Close
Cancel


Npcap 1.75 Setup
NMAP.ORG
Installation Complete
Setup was completed successfully.
Completed
Show details
Nullsoft Install System v3.07
< Back
Next >
Cancel

22.Click Finish to complete the installation:

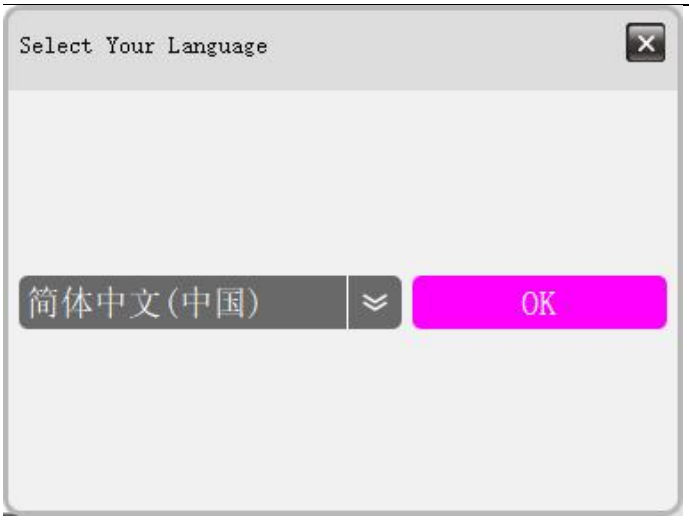


23.After the Npcap installation is completed, enter the runtime environment installation interface and click Repair:

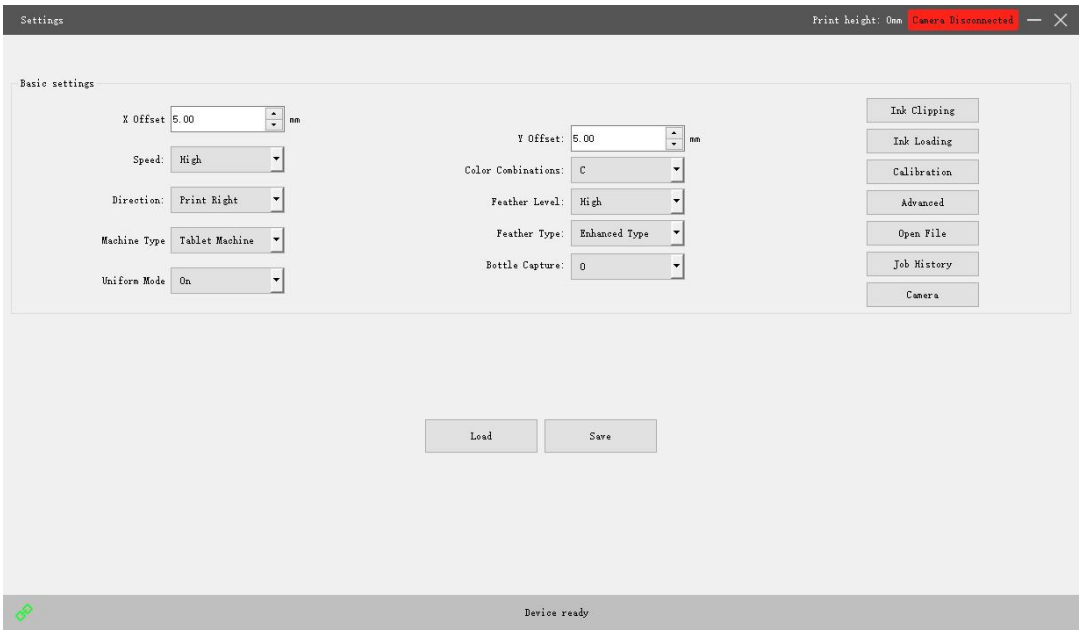


24.Setup successful. Click Restart:

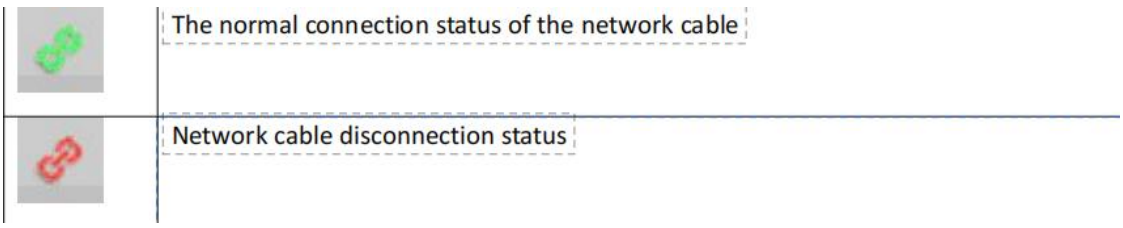
25.After restarting, the installation is completed. Select the icon  , open the driver, and the following window will pop up, select your language:



26.When a green hinge icon is displayed in the lower left corner, it indicates that the driver is online, as shown in the figure below: A steadily lit green hinge icon in the lower left corner indicates a successful connection.



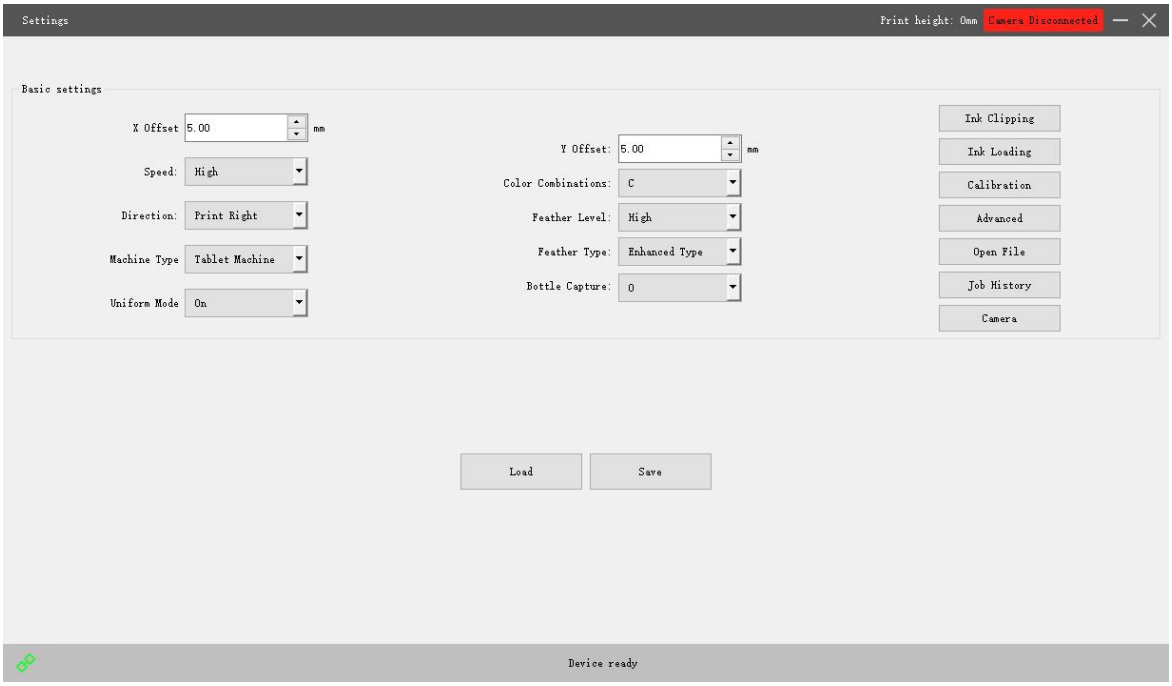
27.Normal connection displays a green hinge, and disconnection displays a red hinge.



7.2 Driver Settings Instructions

The software interface is mainly divided into four sections: ① Basic Settings, ② Calibration, ③ Advanced, and ④ Camera. Details are as follows:

7.2.1 Basic Settings



① **X offset/Y offset**: These set the offset position of the calibration chart and image relative to the printing start point of the platform; it is recommended to set both to 0.

② **Speed**: Three options are available—High, Medium, and Low—which refer to the printing speed of the print head.

③ **Color combination**: C: single color, W: single white, V: single varnish, WC: white then color, CW: color then white, CV: bright surface color then varnish, WCV: bright surface white color varnish, CWC: color white then color, WCV (F): white color varnish matte effect.

(It refers to the selected printing color, for example: select white, print only white ink; select color, print only color ink; white color, print white and color ink.)

④ **Direction**: Three options are available—Print Left, Print Right, and Bidirectional Print—which refer to the moving direction of the print head.

⑤ **Feather level**: Options include No Feathering, Low Feathering, Medium Feathering, and High Feathering. This improves print quality: the higher the feathering level, the better the print precision and quality, but the slower the printing

speed.

⑥ **Machine type**: Options: Flatbed (for printing on any flat material), Roll-to-Roll (roll material mode), Cylinder (for printing cylindrical objects).

⑦ **Feather Type**: Select Enhanced mode (which is selected by default).

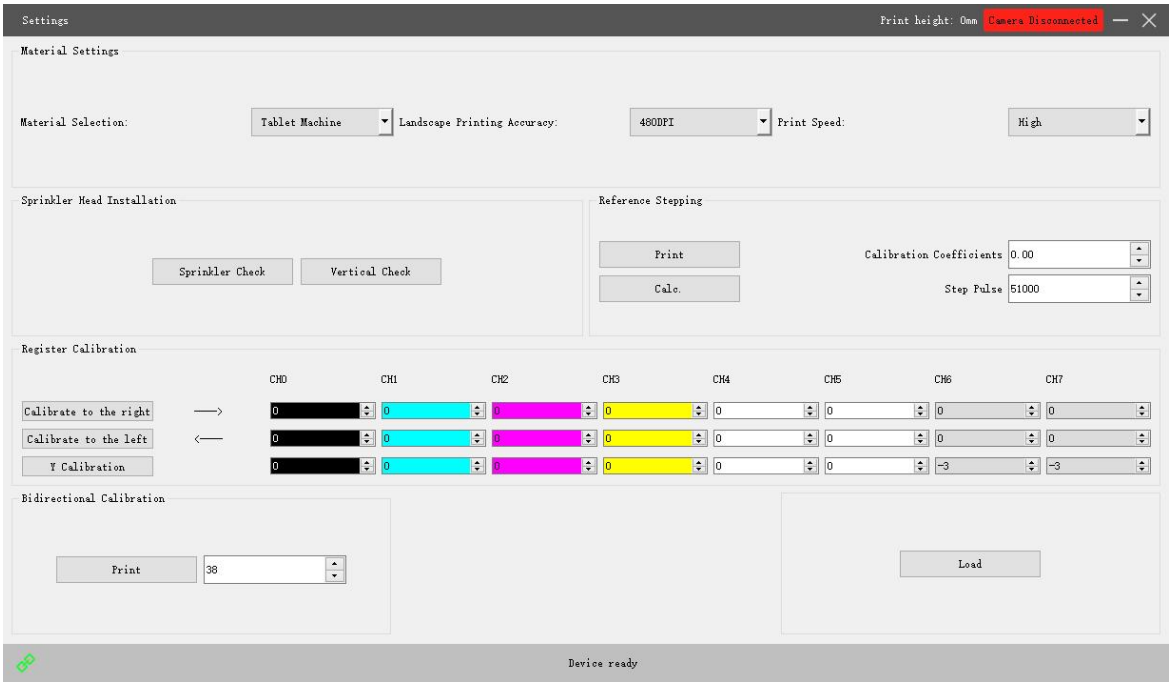
⑧ **Uniform mode**: Enable this mode when the print head has severe nozzle clogging.

⑨ **Ink loading**: Automatic ink priming for 30 seconds

⑩ **Ink clipping**: Adjust here if the ink volume during printing is too much or too little. This includes percentage-based ink reduction and multi-pass ink printing.

7.2.2 Calibration

Click the calibration button, and the software will pop up a calibration process interface, as shown in the figure below.



7.2.2.1 Material Settings

① **Material selection**: Use this when customers need to save and use different parameters for different printing materials; each material corresponds to a set of calibration parameters for easy printing.

② **Landscape printing accuracy**: Select 480 DPI for this machine.

③ **Print speed**: For higher calibration accuracy requirements, calibrate parameters at high, medium, or low speeds; usually, only high-speed calibration is needed.

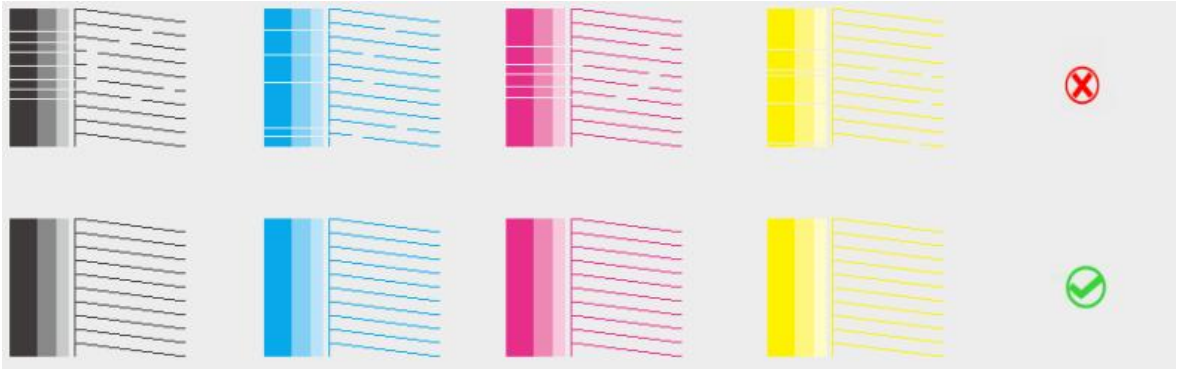
7.2.2.2 Calibration Process

When installing a new machine, replacing the print head, or after the print head is hit, perform calibration from top to bottom to complete the calibration work.

① Sprinkler head installation

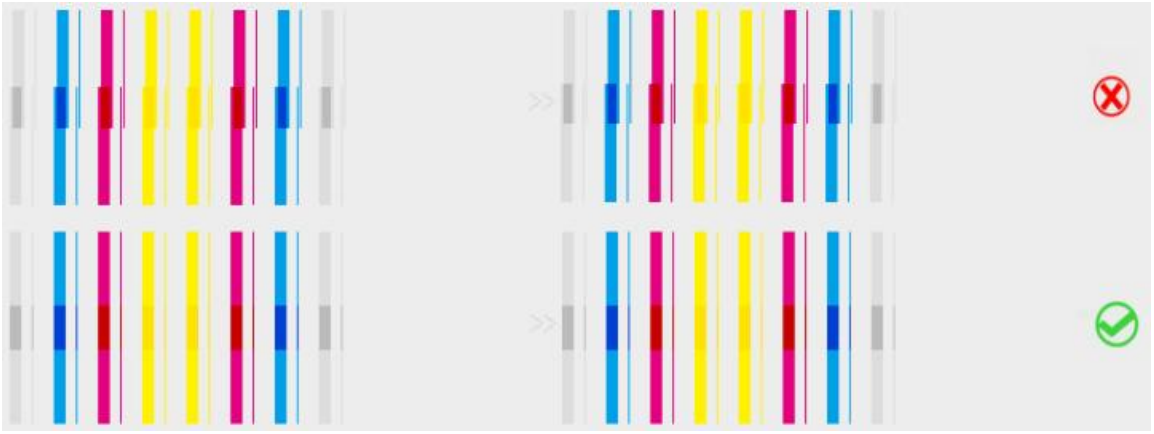
- **Sprinkler check**

Compare with the schematic diagram: incorrect results include nozzle clogging, skewed jetting, and color block streaking—clean the print head. Correct results show all color blocks appearing evenly.

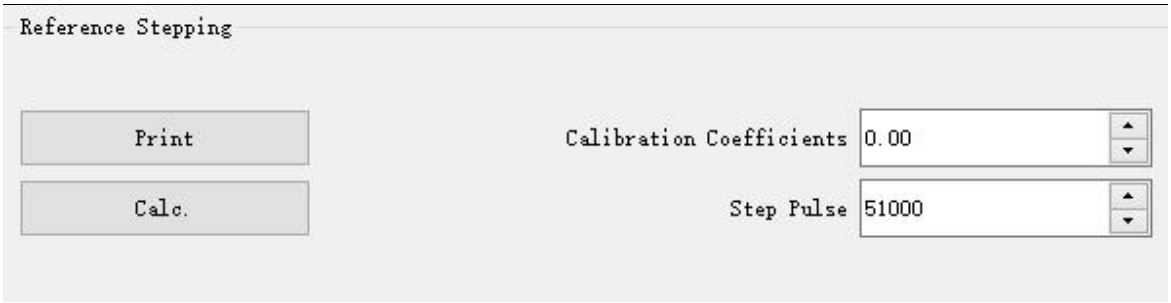


- **Vertical check**

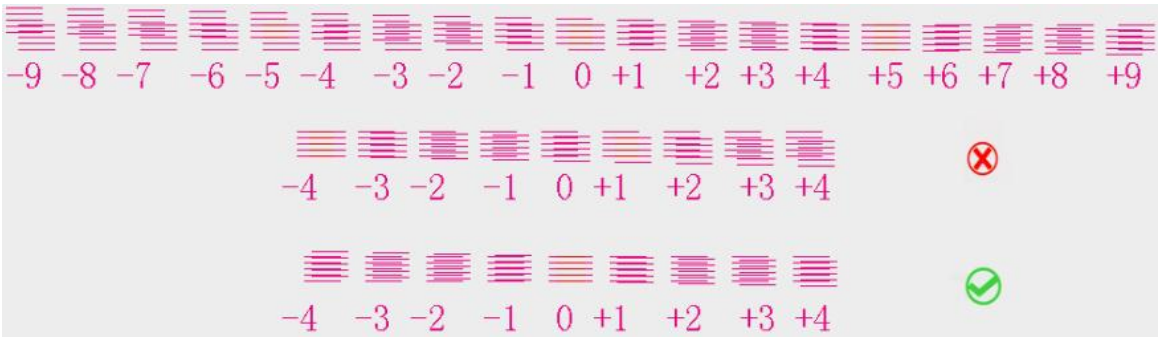
After confirming the print head status is OK, click Vertical Check. If the print head is offset left or right vertically, loosen the print head fixing screws and gently twist left or right to adjust.



② Reference stepping



First, click Print in Reference Stepping to generate calibration lines as shown in the figure below.

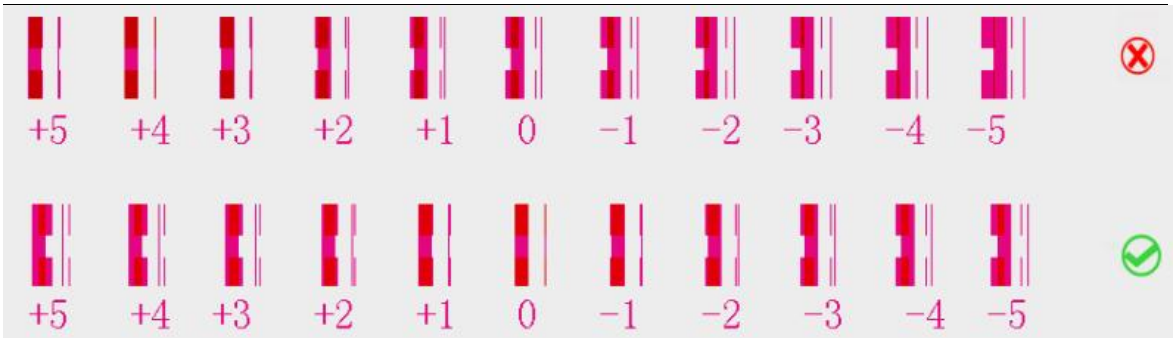


Compare with the schematic diagram: incorrect results mean the calibration lines and reference lines do not align at position 0. Enter the value of their alignment position in the input box next to the Print button, then click the [Calculate] button below to calibrate. Correct results mean the calibration lines and reference lines align at position 0.

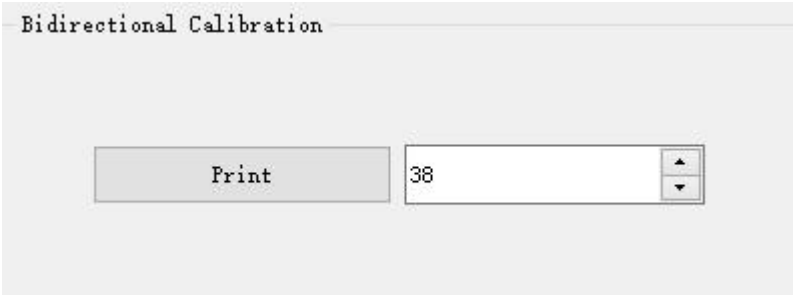
③ Register calibration

Click Calibrate to the left, and the machine will print a calibration chart, as shown in the figure below:

An incorrect result shows the calibration line and reference line not aligned at the 0 position. Please adjust the value based on their alignment position (add or subtract from the original value) and enter it in the corresponding box for the color. Correct results mean the calibration lines and reference lines align at position 0.



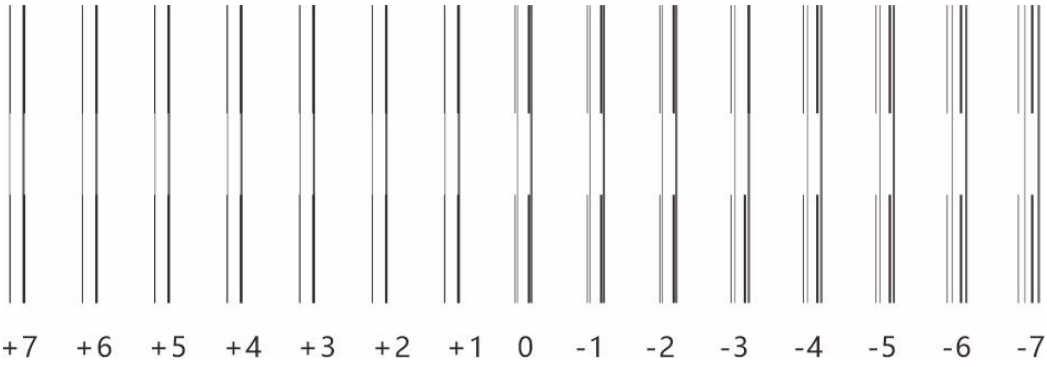
④ Bidirectional calibration



The calibration line and adjustment method are as follows:

Refer to the schematic diagram; the correct result is that the alignment position of the calibration lines and reference lines is at position 0.

The incorrect result is that the alignment position of the calibration chart and reference lines is not at position 0. Please add or subtract based on the original value of the alignment position of the calibration lines and reference lines, then enter it in the bidirectional offset box.

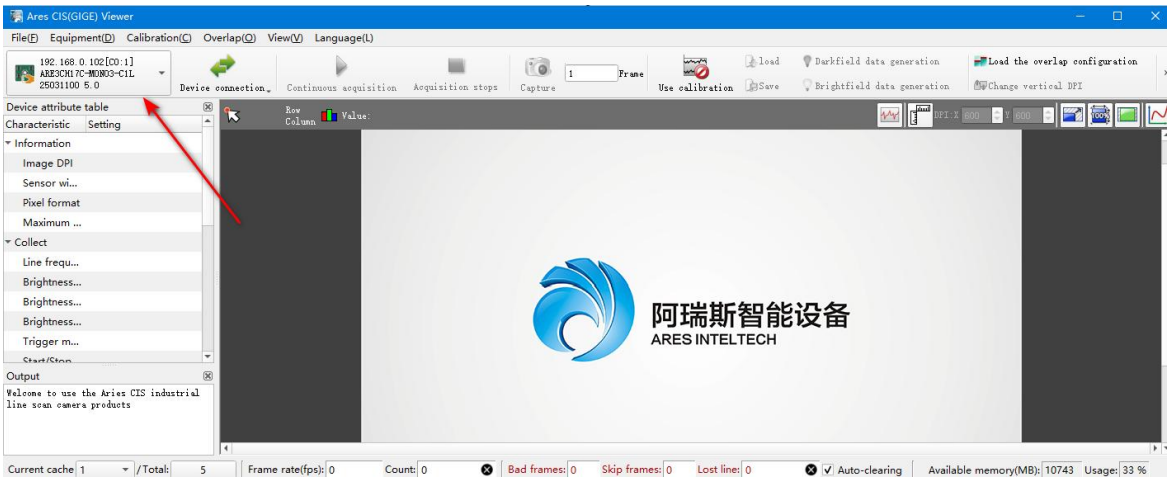


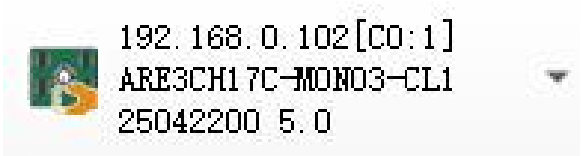
Camera Calibration

After unzipping the installation package and installing related software, you will find

the icon  in your installation path; this is the Ares tool driver. Before using the camera, confirm it is connected to the correct network port. If connected to the correct port, the display will be as follows:

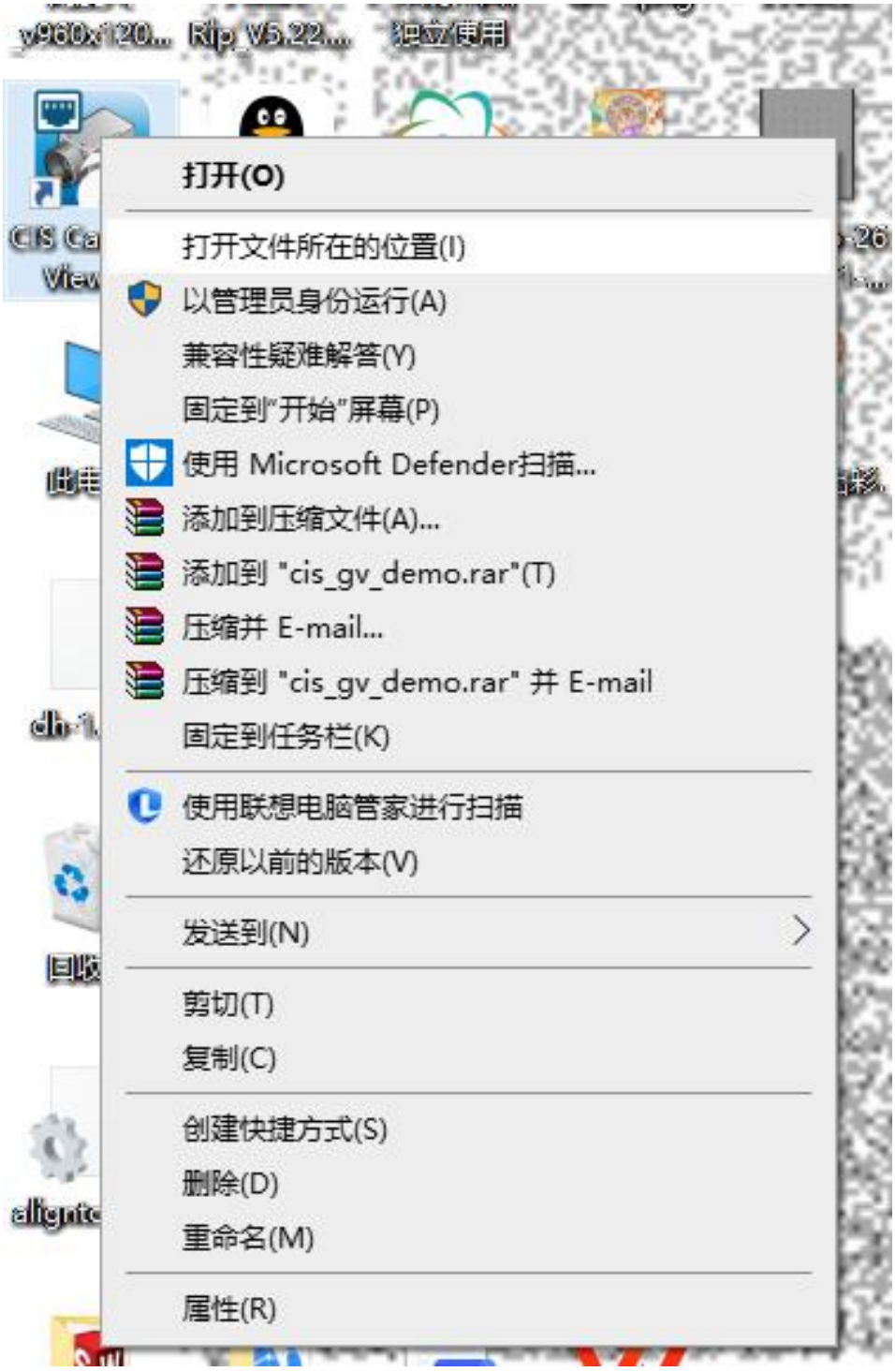
A successful connection is indicated when "**the top left corner"** shows "**the gateway and model the camera is connected to**, as shown below:

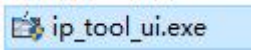




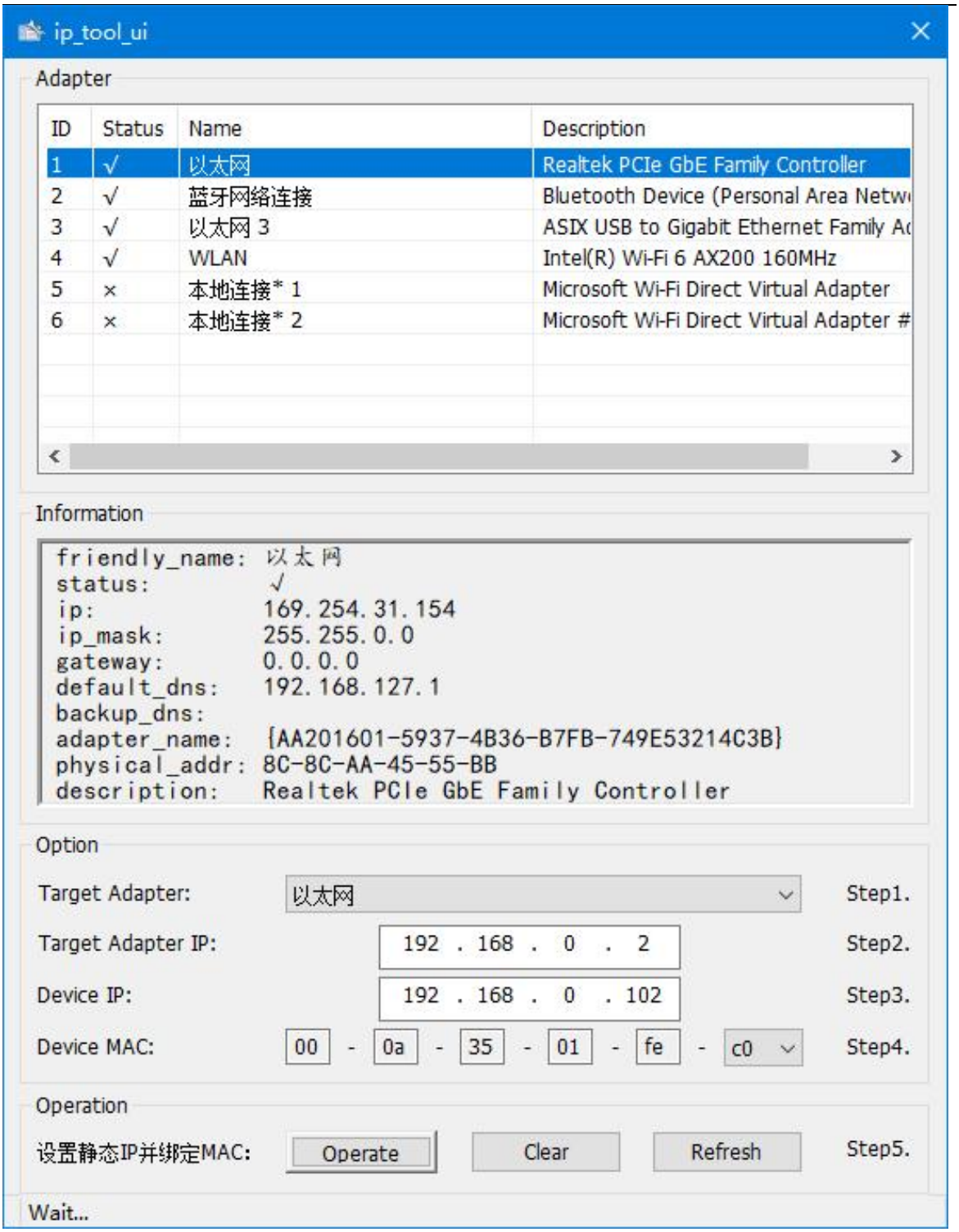
If **the top left corner** is blank with no text or icon, the connection has failed. In case of failure, first check if the camera network port matches, following these steps:

(1) Right-click the icon and select Open File Location



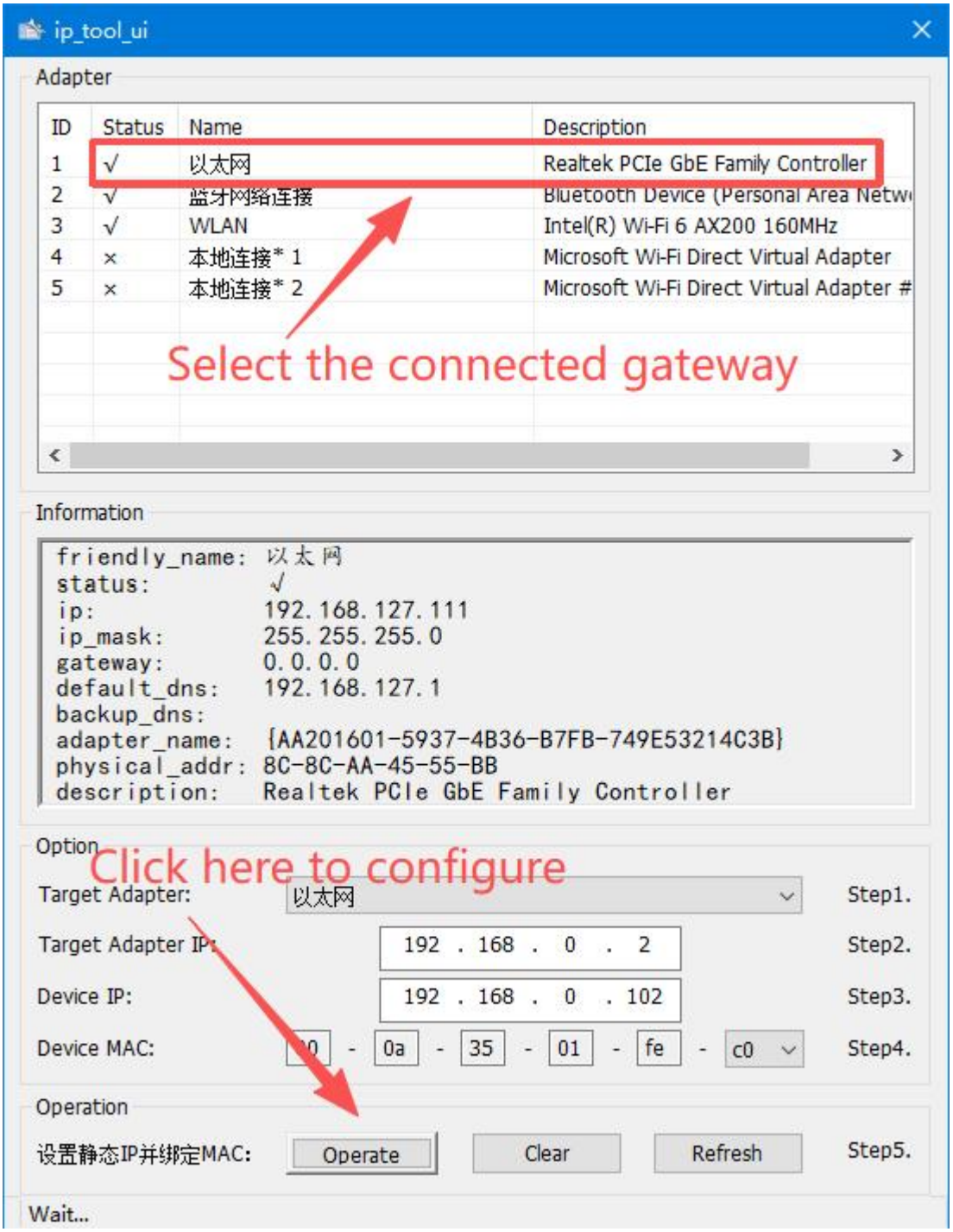
(2) Select this icon: 

(3) Double-click the icon, and you will see the following interface:



If your camera capture card is directly connected to the computer and camera, your gateway should be "**Ethernet**." If the camera connection **fails**, it is usually because the **two Ethernet gateways are swapped**. In case of connection issues, **first try replacing the Ethernet port**. If the camera connects successfully, proceed with subsequent operations; if not, **check the network cable interface or connection**. If problems persist, **contact our after-sales service or the camera manufacturer**

promptly.



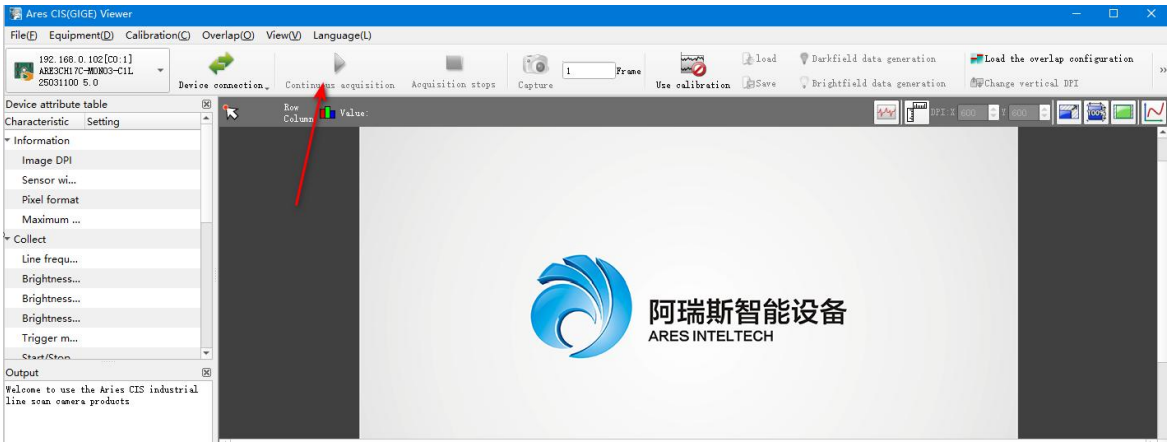
7.2.3 Camera Calibration

The physical position of the camera should be approximately 2.8 mm from the printing platform and must be level. The key installation points are as follows:

1. Platform Levelness: Use a dial indicator to calibrate the machine platform,

ensuring the levelness error of the machine platform is within 0.10 mm.

2. Pitch Angle: Lower the platform, fix the dial indicator on the platform, place the indicator head against the edge of the camera, and move the platform back and forth to ensure the front-rear pitch angle error is within 0.05 mm.
3. Tilt Angle: Fix the dial indicator on the carriage, move the carriage left and right to ensure the left-right tilt angle error is within 0.10 mm. Meanwhile, place a fixture on the platform to make light contact with the camera surface and check if the camera is parallel to the platform surface.
4. Parallelism Angle: Use a dial indicator, fix the indicator head on the side of the camera, and confirm that the Y-axis parallelism error is maintained within 0.05 mm.
5. After adjusting the camera to the correct position, open the Ares Camera Driver  select the Equipment tab, and click Equipment Connection.



After completing the above operations, place a piece of white paper on the printing platform and select the Continuous Acquisition tab (within the driver):

When this tab is selected, the driver will display evenly arranged and equal-length lines, and the status bar below will show the camera status in real time.

```
Welcome to use the Aries CIS industrial
line scan camera products
[19:59:11] Device connected
[19:59:17] Start collection ...
```

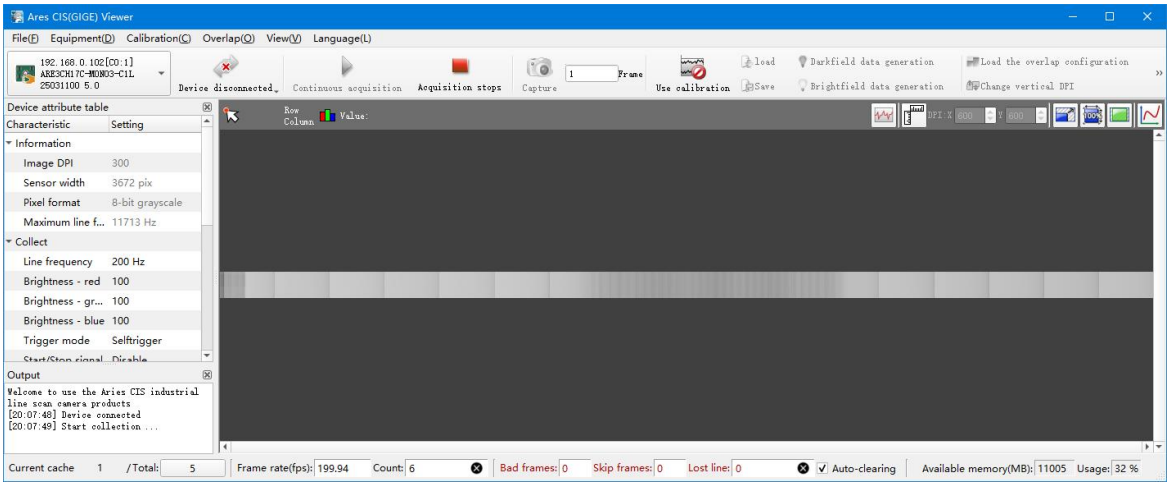
After the line generation is finished, click Stop Acquisition, then open the Calibration tab to perform bright field and dark field calibration.

(Note: For continuous acquisition, set the "Trigger Mode" property to "Selftrigger" and the "Start/Stop Signal" property to "Disabled".)

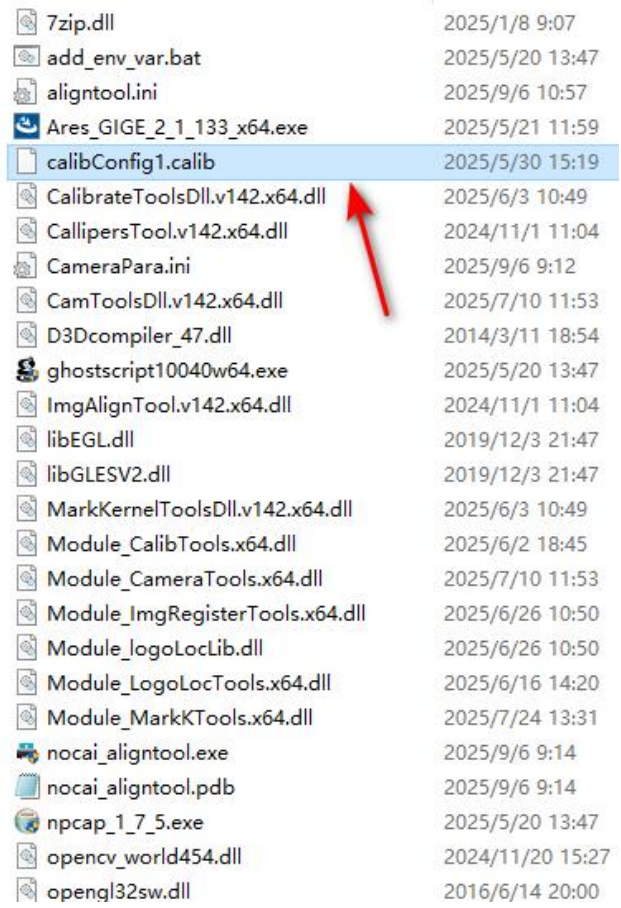
During bright field calibration, the camera will emit light bands of different colors—do not block the camera during this process. The steps are as follows:

1. Place a light-tight, fine white paper with uniform texture (photo paper or coated paper is recommended) on the platform, and move the camera above the white paper.
2. Use the camera software to generate brightness data. (Note: Confirm that the Trigger Mode and Start/Stop Signal are set to [Selftrigger] and [Disabled].)
3. The bright field data acquisition is complete once the emission of the bright light bands ends.

For dark field calibration, cover the camera completely to prevent light leakage; all other operations are the same as those for bright field calibration.



After calibration is completed, click Save to store the flat field calibration data. Once stored, name the data **calibConfig1.calib** and replace it in the root directory of the printing driver.



After the above calibration, perform stretch calibration as follows:

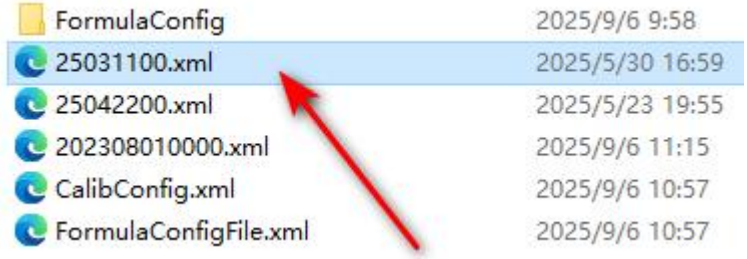
1.Disconnect the camera from the printing software, then open the Ares software to connect to the camera.

2.Click Start Scanning in the printing software; after the Ares software finishes imaging, the scanned image of the calibration pattern should be an ellipse. Save this image to the computer.

3.Import the saved image into PS, use the circumscribed circle tool to frame the top, bottom, left, and right positions of the calibration pattern circle, and obtain the pixel height and width of the circle.

4.Divide the pixel width by the height to get the stretch calibration parameter.

5.Enter the calibration parameter into the m_ImgScaleY parameter of the 25031100.xml file in the VisionConfig folder, then click Save.

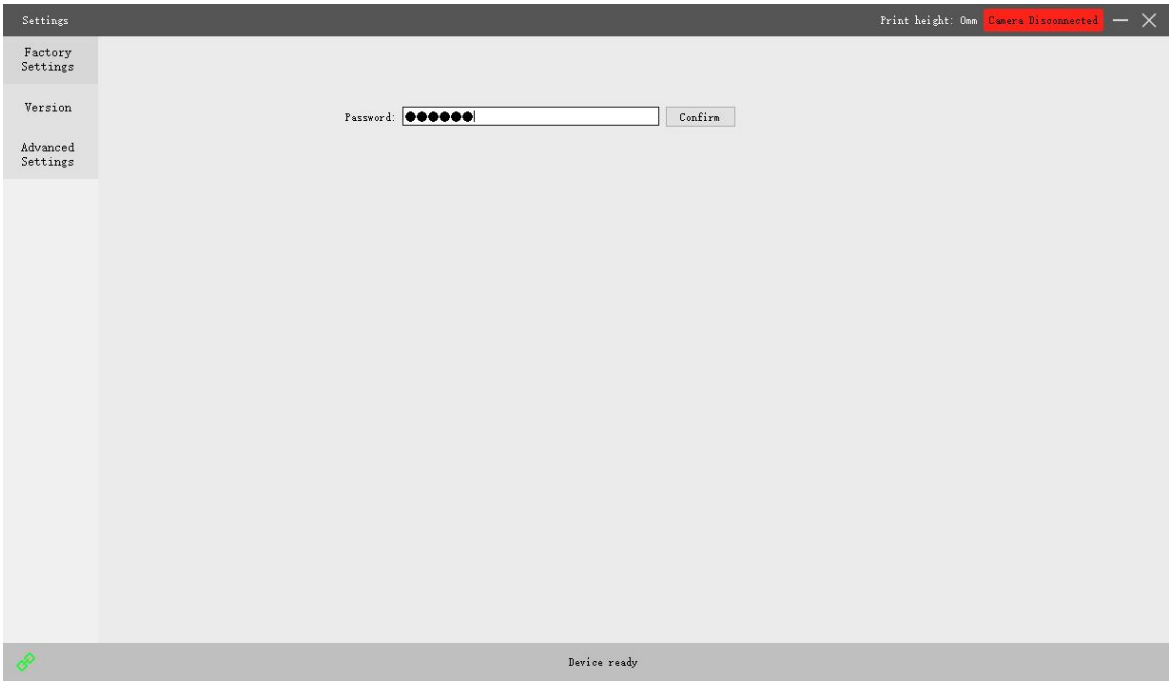


```
<?xml version="1.0"?>
<opencv_storage>
<writeF>1</writeF>
<mirroXF>0</mirroXF>
<mirroYF>0</mirroYF>
<mirroRF>0</mirroRF>
<m_Montage_Nums>1</m_Montage_Nums>
<m_Montage_Dir>0</m_Montage_Dir>
<ImgWidth>3672</ImgWidth>
<ImgHeight>5500</ImgHeight>
<m_ImgScaleX>1.</m_ImgScaleX>
<m_ImgScaleY>7.9124480485916138e-01</m_ImgScaleY>
<m_ImgSave>0</m_ImgSave>
</opencv_storage>
```

6.Close the Ares Software, connect the camera to the printing software, click Start Scanning, and check if the scanned image of the calibration pattern is a 1:1 circle. If not, repeat from Step 1.

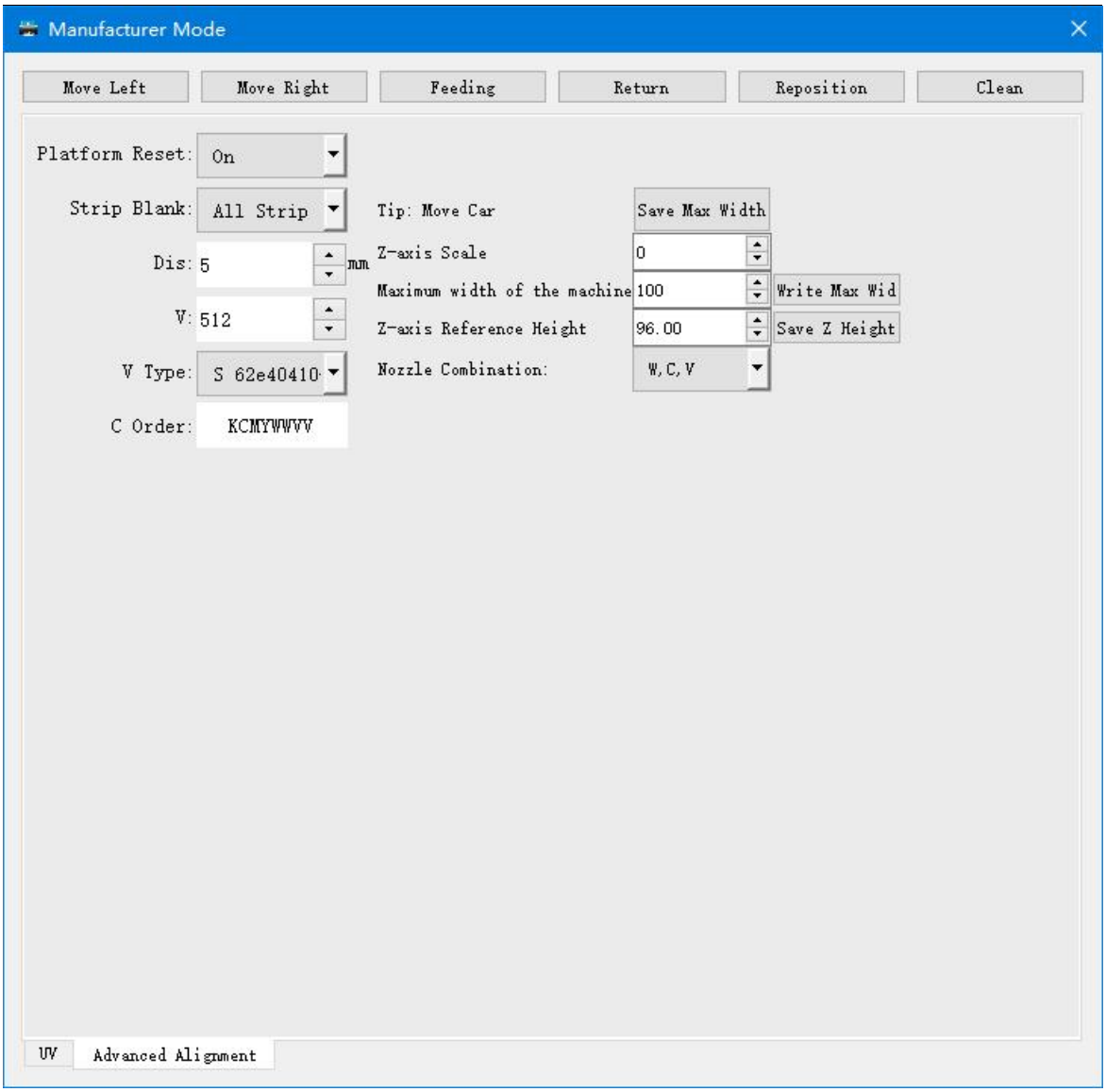
Advanced

Click the Advanced button, and a pop-up interface will appear as follows, which includes three sections: Factory Settings, Version, and Advanced Settings.



1. Factory Settings

Password Entry: Enter **222222** to access the advanced settings.



Move Left: Move the cart to the left

Move Right: Move the cart to the right

Feeding: Move the platform forward

Return: Move the platform backward

Reposition: Return the cart to the origin and the platform to the rear limit

Clean: Automatic print head cleaning

Advanced Alignment:

1. Platform Reset: Before printing, the platform automatically resets to find the origin and returns to the frontmost position; enabled by default.

2.Strip Blank: When enabled, the machine skips blank areas of the image during printing.

3.Dis(Idle Printing Distance):The buffer distance for UV lamp irradiation after printing is completed.

4.V(Voltage Adjustment:):Range: 512－600; default voltage is 512. Generally, if the print head is in good condition and no ink drifting occurs, it is not recommended to increase the voltage excessively—too high a voltage may damage the print head. Do not adjust without professional guidance.

5.V(Voltage) Type: Commonly referred to as "waveform" in professional terms. Select different waveforms based on the height difference of the printed object. Example: S waveform (0－3mm) for objects with a height difference within 3mm. The default is the S standard waveform.

6.C(color) Order: Refers to the order in which the driver recognizes and controls color inkjetting. The sequence set in the driver must match the actual sequence of the machine's test strip; otherwise, color printing errors will occur. Default color sequence: KCMYWWVV.

7.Maximum Width of the Machine:Save the maximum moving distance of the cart. During use, move the cart to the desired maximum width and click Save.

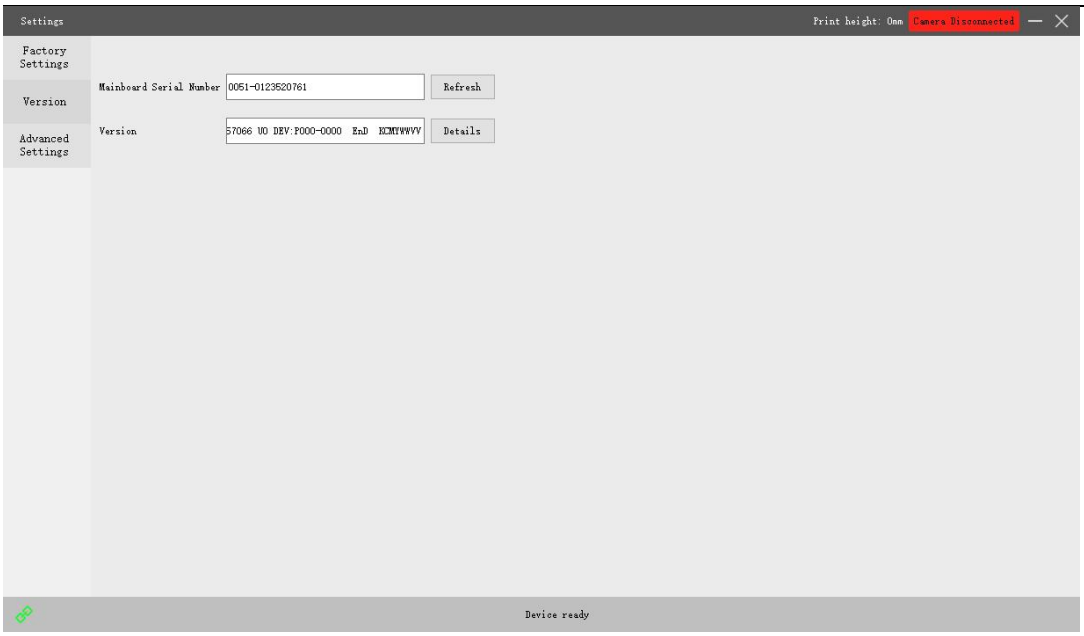
8. Z-Axis Scale: Set the gear ratio of the Z-axis; default setting is 6700.

9. Z-Axis Reference Height: Set the maximum lifting distance of the Z-axis; default setting is 96.

10.Nozzle Combination: Set the printing mode. The default is white, color, and varnish, and it can be changed to eight colors / two whites and six colors / four colors and four whites.

UV(Lamp):

This is the UV lamp control parameter area. It is recommended to use the default settings and do not modify them arbitrarily; otherwise, the ink may not dry properly. For modifications, please contact the manufacturer's after-sales service for assistance.



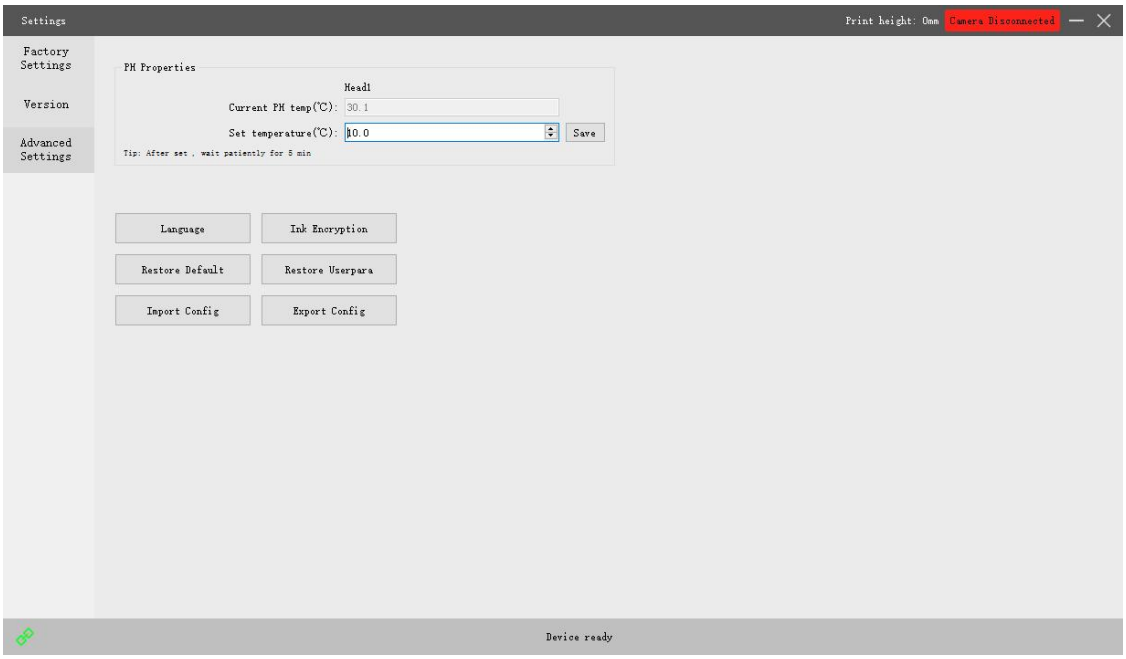
2. Version

Version Information mainly displays: “Mainboard Serial Number” and “Version”.

Refresh： Refresh the current display of the mainboard serial number.

Details information: PC-side driver software version number, FPGA version number, CPU version number, and CRC version number.

3. Advanced Settings



PH(Print Head) Properties:

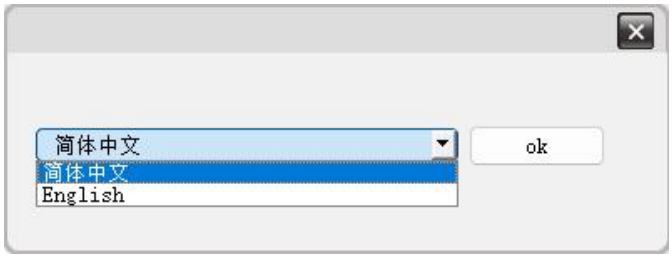
Current PH Temp: This is the currently detected actual temperature of the print

head.

Set temperature: The set temperature range is 0–28 °C. When the current print head temperature is lower than the set temperature, the heating function will activate and stop automatically once the set temperature is reached.

Language:

Select the desired language and confirm to complete the language switch.



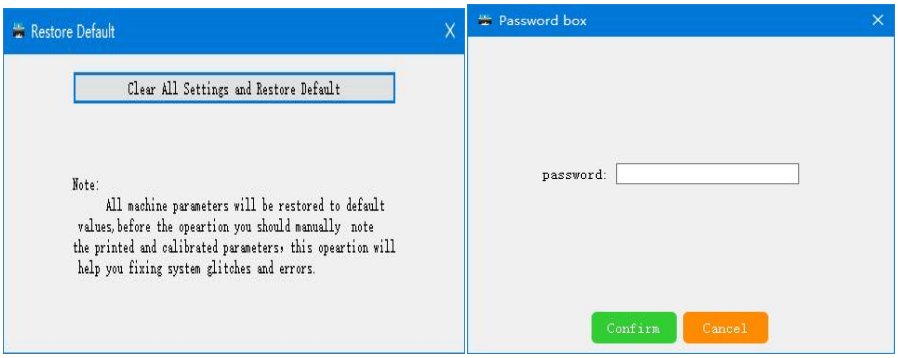
Ink Encryption:

This function is used for activating the ink authorization code. Detailed usage instructions are provided later in the manual.

Restore Default:

Function: Clear program and driver settings, and restore all parameters to the factory default values.

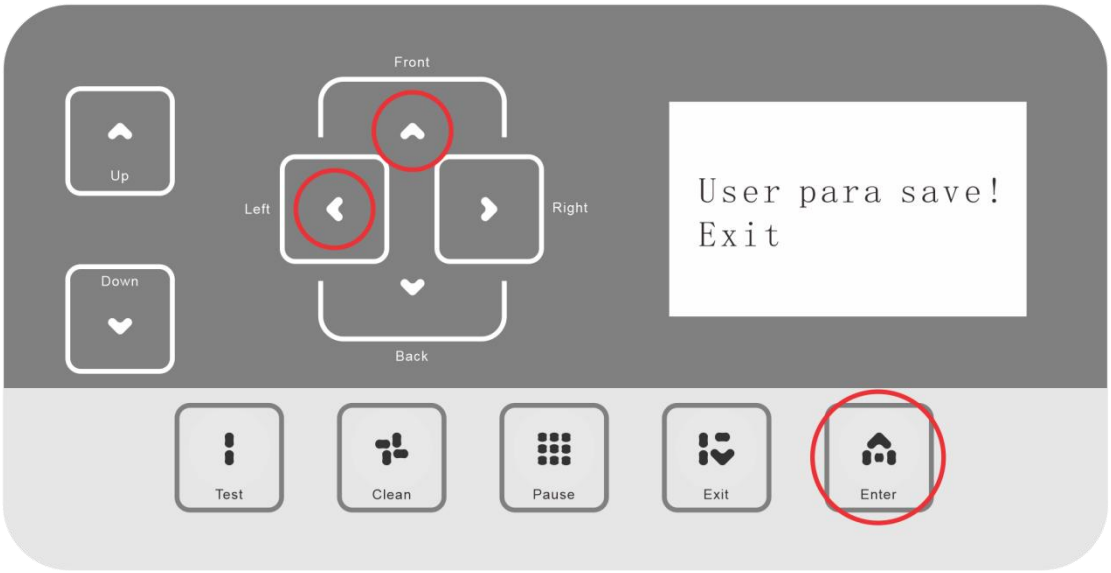
Operation: Click **Clear All Settings and Restore Default**, enter the password: **110000**, and confirm to restore the factory default parameters.



Restore UserPara:

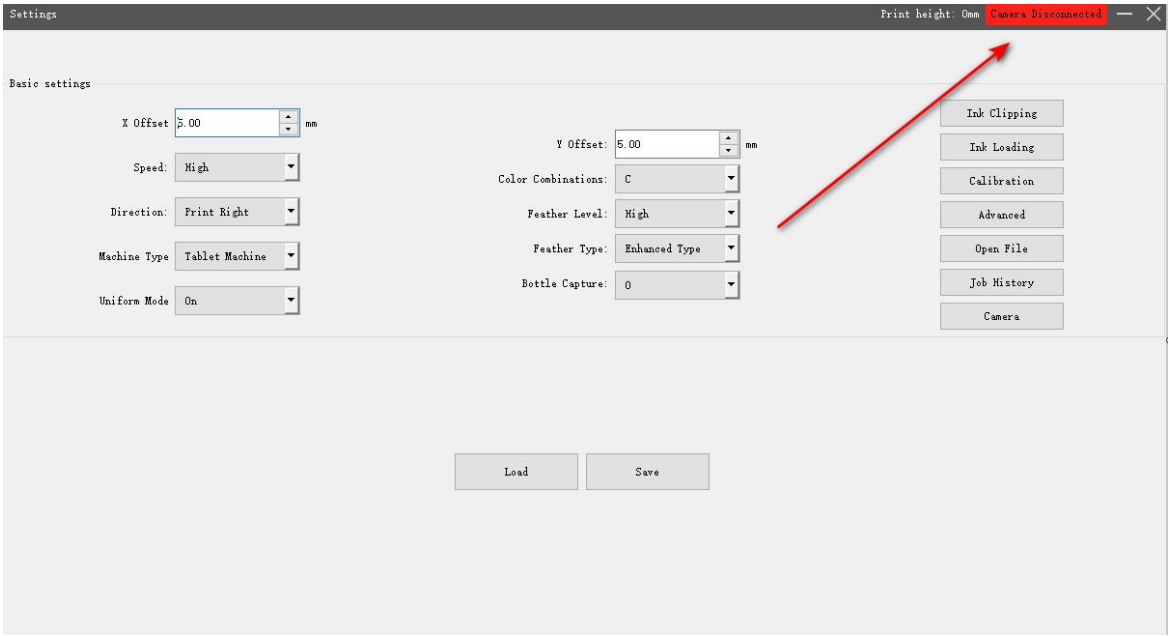
Setting Saving Function: On the control panel standby interface, press and hold the LEFT, FRONT, and ENTER keys simultaneously to save the control panel and driver parameters.

After saving, the display will be as shown in the figure below.



Restore Saved Parameter Settings: Click **Restore UserPara,** enter the password: **16753,** and confirm to restore the previously saved control panel and driver settings.

Camera Mode



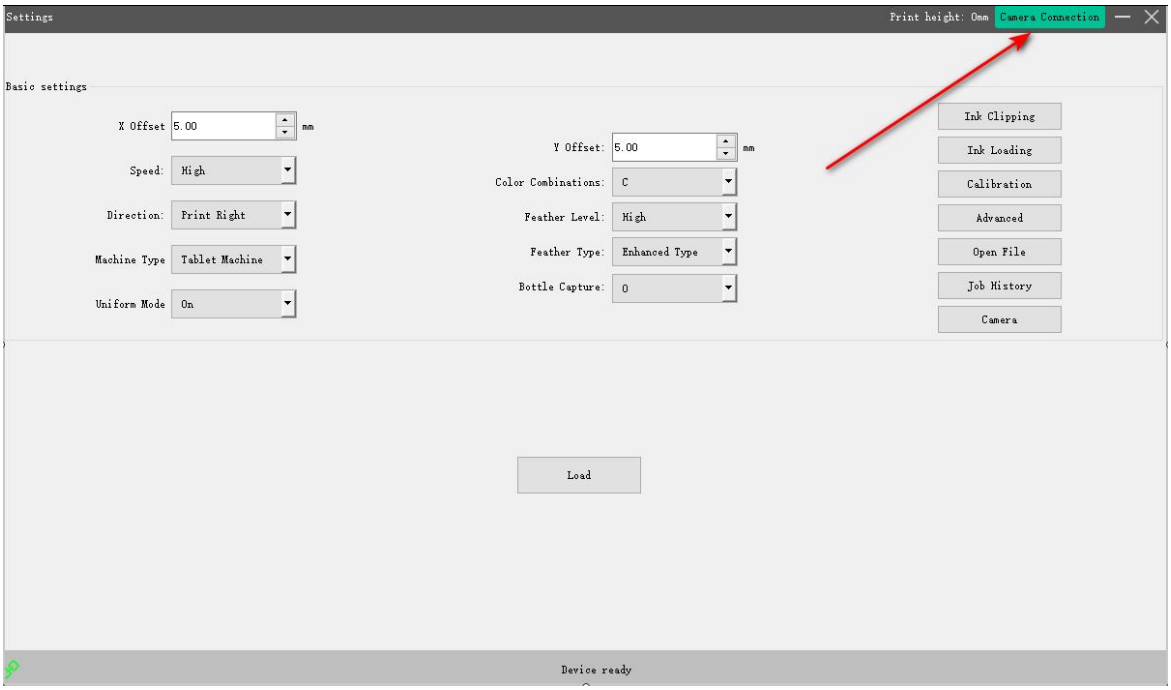
This section allows control of the camera connection. When in Camera Disconnected Mode, the camera will not communicate with the board card. Click this section:

If the following icon appears, it indicates the camera is not connected. You need to check whether the wiring of the camera capture card is loose or

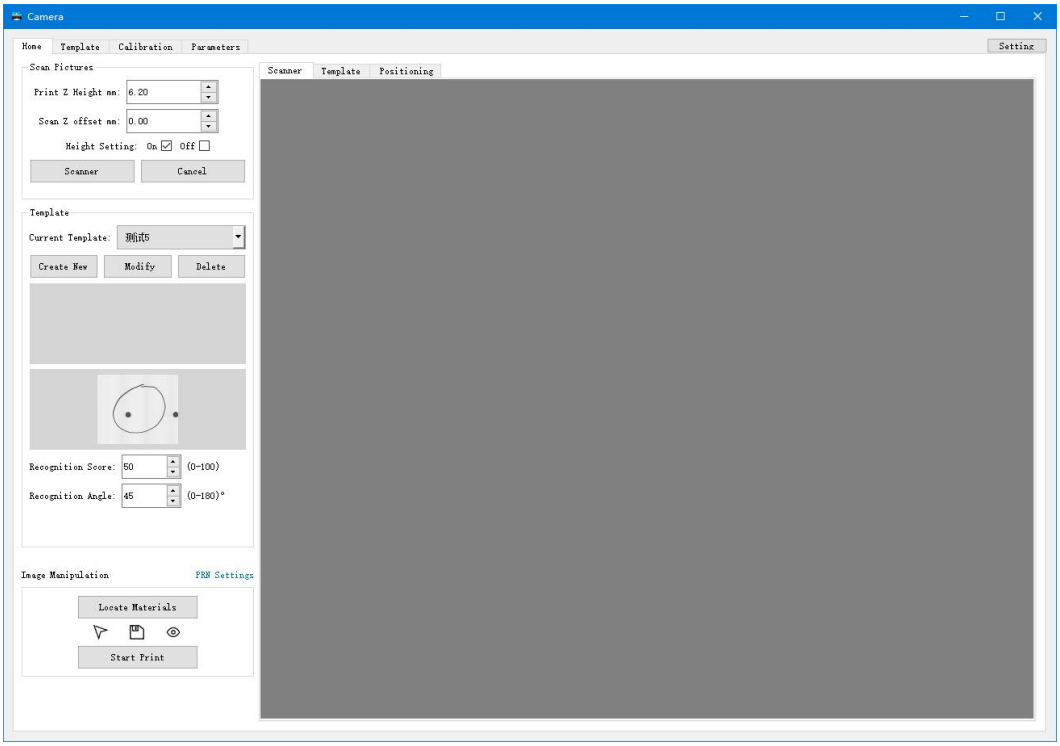
reconfigure the network port (detailed instructions for reconfiguring the network port are provided earlier in the manual).

If the following icon appears, it indicates the camera can communicate normally with the board card.

Click reconnect, and the icon in the upper right corner of the driver will turn green.

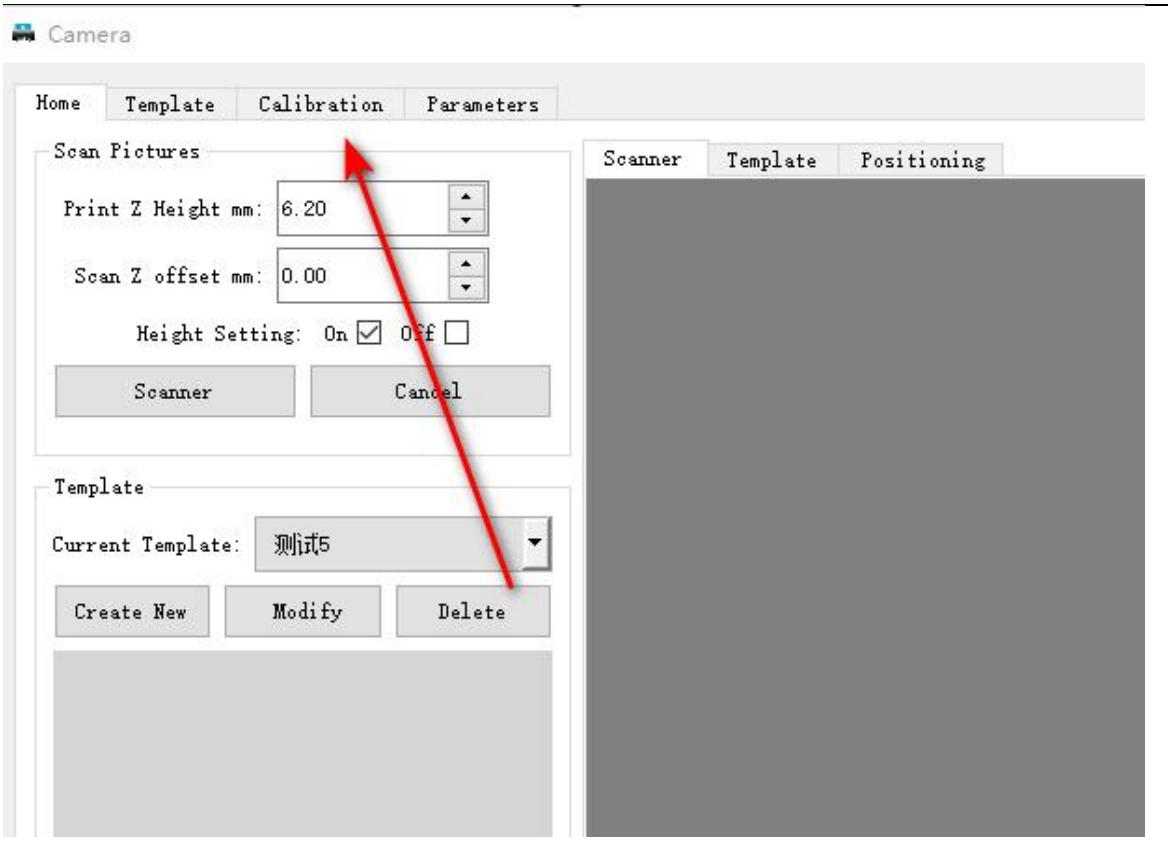


Click Camera Mode to open the following window:

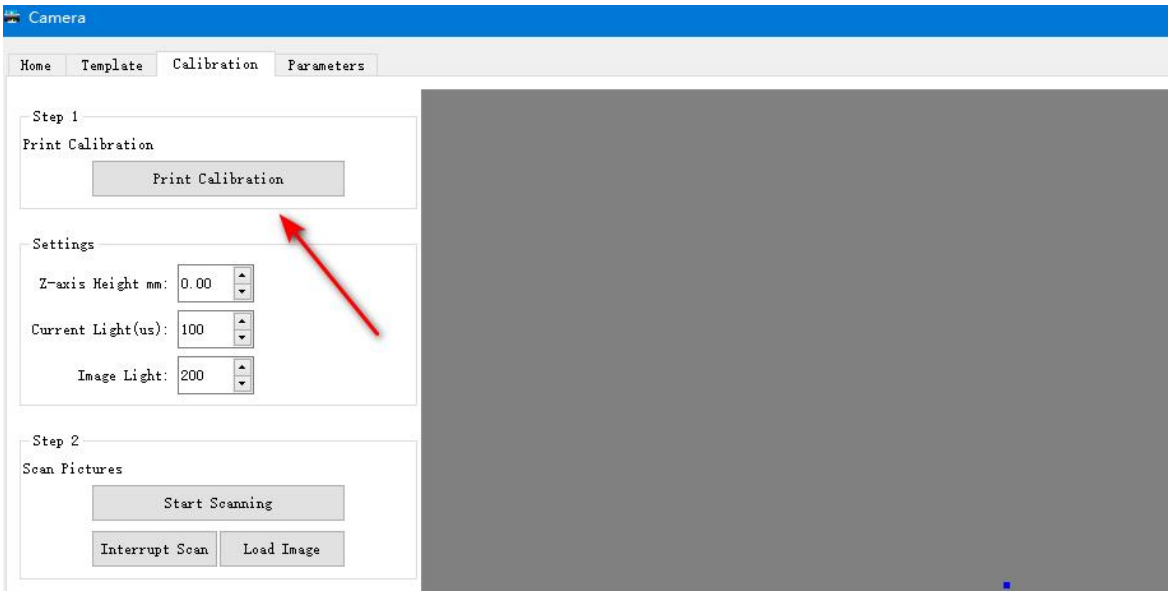


Camera Mode is divided into four sections: 1. Home, 2. Template, 3. Calibration, 4. Parameters.

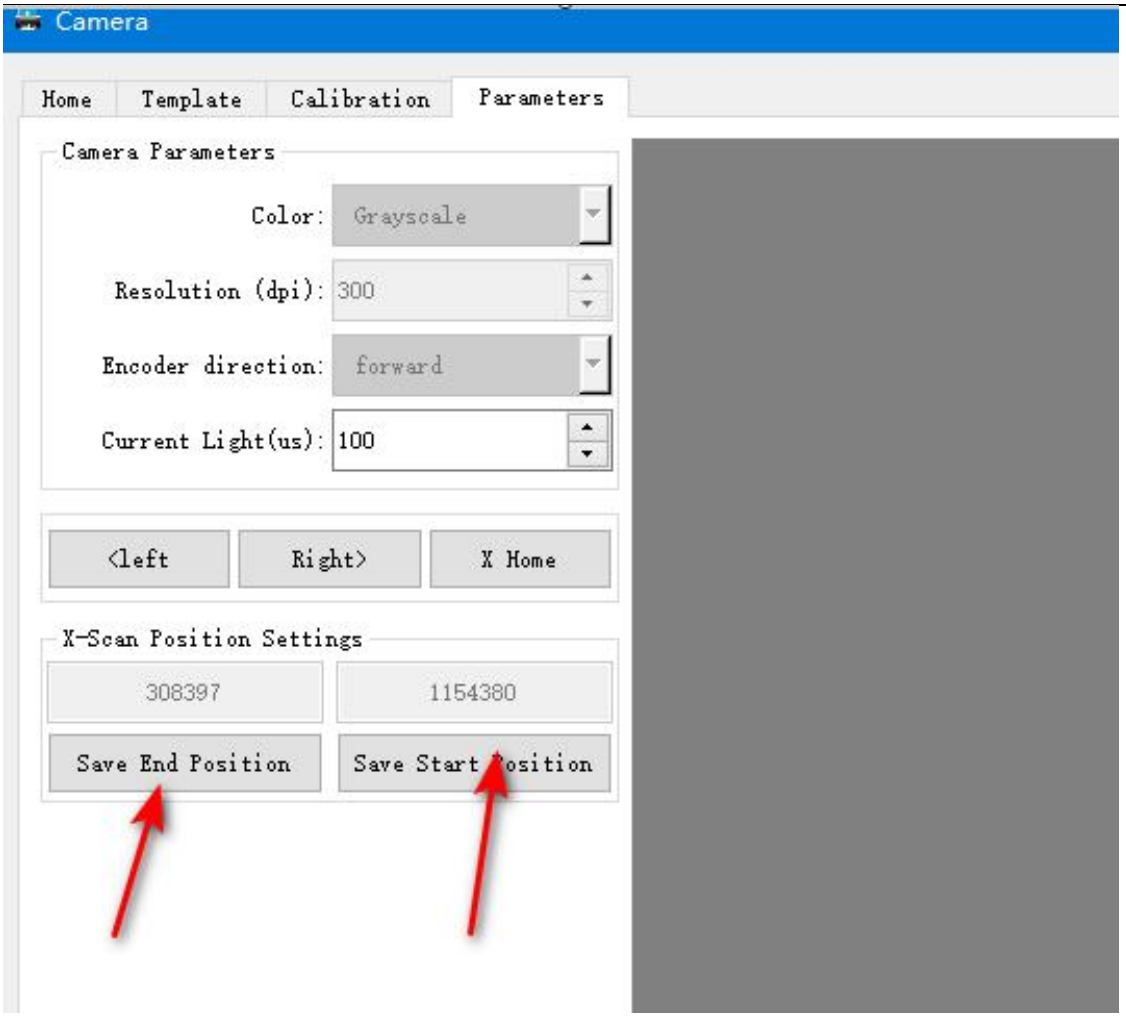
Before using the visual positioning function, calibrate the camera first. Click here to enter the Camera Calibration interface.



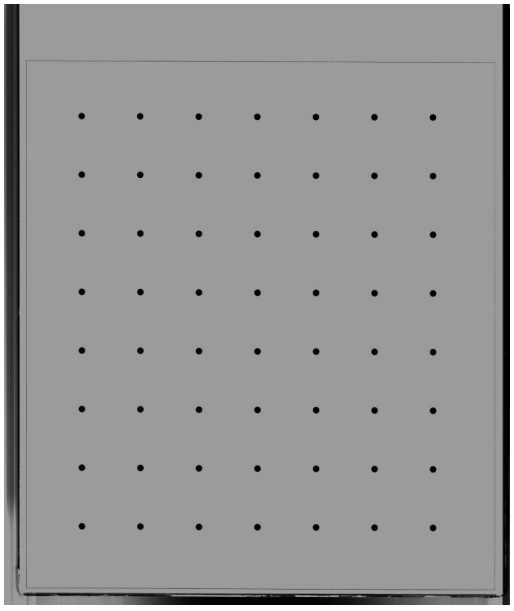
Click **Print Calibration** to print the calibration chart.



After printing the calibration chart, enter the **Parameters** interface, move the platform, and select appropriate scan start and end positions—ensure the entire calibration chart can be scanned during subsequent scanning.



Adjust the print head position (maintain a 2mm distance from the printing surface), enter the required data in the Configuration tab, and select to print the calibration chart. A normal calibration chart is shown below:



Clear wireframes and evenly arranged calibration points indicate a normal image.

(Note: ①**Z-axis Height** refers to the print head height during printing; ②**Current Light** refers to the current exposure intensity (default value: 100). If the ambient light is too strong, lower it by 20-30; increase it if the ambient light is too weak; ③The **Image Light** refers to the output intensity of the camera light source (default value: 200). If the ambient light intensity is too high, lower it by 30-50; increase it otherwise.)

Scan the image, and a calibration chart covered with origin points and surrounded by wireframes will be displayed in the driver. After printing, be sure to check whether the ink output of the calibration chart is uniform and smooth, with no nozzle clogging or ink streaking, and the calibration chart has no distortion—otherwise, the calibration will be affected.

（1）Calibration: Click Start Calibration, select the top-left and bottom-right corners of the calibration chart to frame it, then select Start Calculation.

（2）The calibration is successful when the following data appears on the calibration chart.

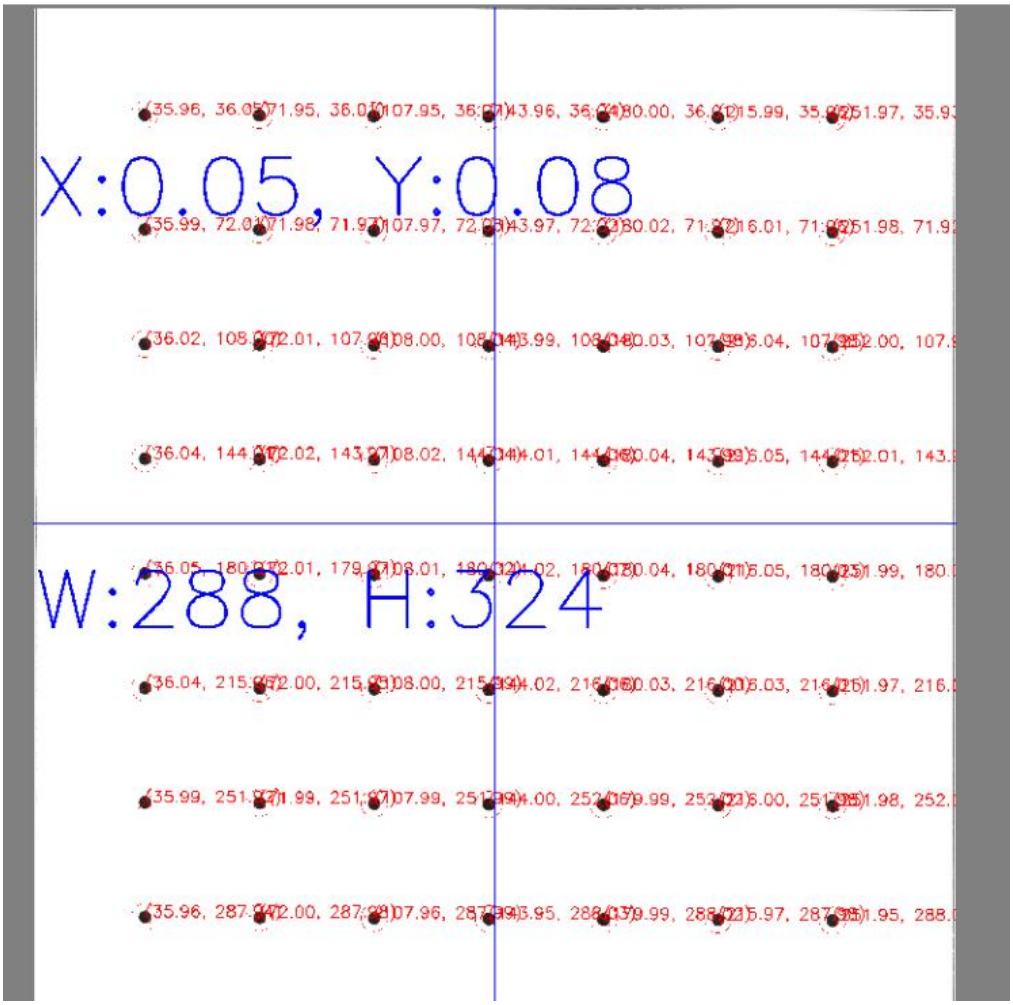
(Note: ① Calibration values should be as small as possible;

② Do not allow the calibration chart to warp; turn on the platform vacuum to make it fit tightly to the platform surface;

③ Do not let the wireframe cover the taped areas, otherwise calibration errors will increase;

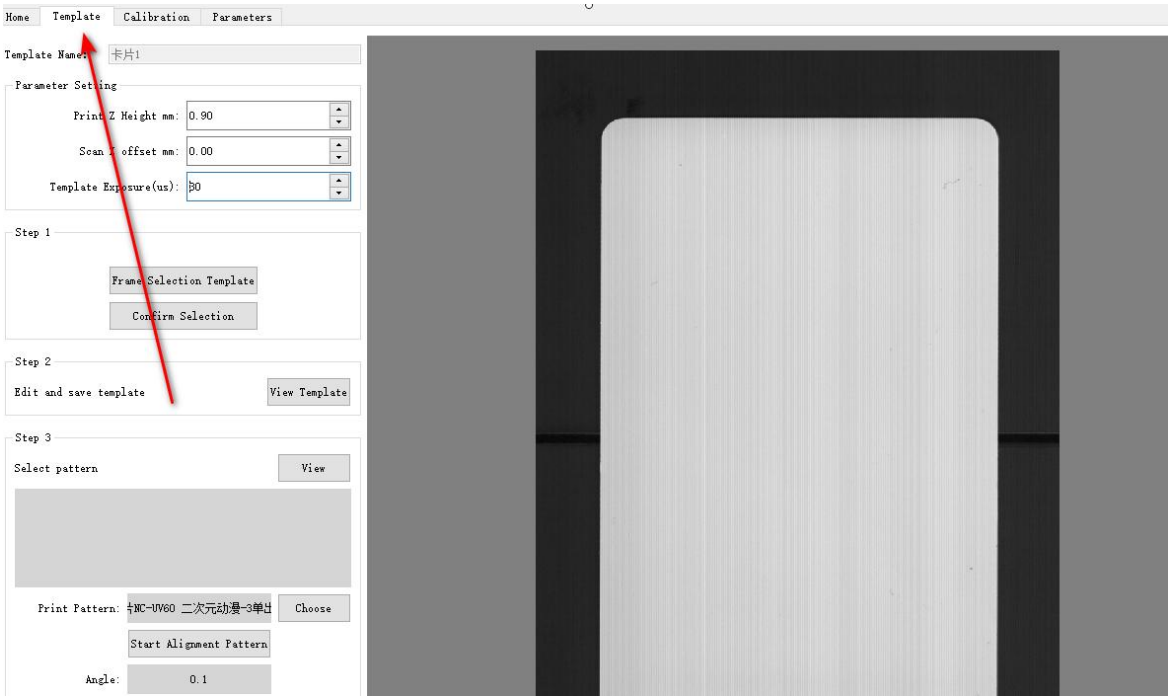
④ After clicking [Start Scanning], wait for the scan to complete before clicking [Start Calibration]. When selecting the calibration range, click from the top-left to the bottom-right of the image—do not include the black edges;

⑤ The normal operating range of the returned calibration error is X<0.15 and Y<0.15; the optimal error is X<0.05 and Y<0.05.)



After successful calibration, select Template to identify the printing materials.

The Template tab is shown in the figure below:



(Note: ① Its Print Z Height is a combination of calibration and correction, i.e., Print Z Height = calibration height + correction height;② The value of Template Exposure should be set according to the ambient light intensity: default value is 100; set it to 50-80 if the ambient light is strong, and 80-100 if the ambient light is weak.)

After adjusting the parameter settings, follow the steps below to configure the template:

(1) Click **Frame Selection Template**, select the outline of the placed material (Note: Try to use materials placed parallel to the platform's Y-axis as the template for framing—it can effectively reduce calibration time), then click Confirm Framing after framing.

(2) After **Confirming the Selection**, you will see the following interface. Frame the template again, select Create New Template Feature, then set and save it.

(3) Click the selection interface next to Print Pattern, import the desired image, and select Start Alignment Pattern.

Please align the image with the Template as much as possible to minimize deviation. Print and calibrate several times to ensure the Template and the image are completely aligned.

(Note: Deviation may occur during the first print. It is recommended to measure the image position, set an appropriate Margin Value, and then adjust the Angle. If the image is offset to the left, increase the value; if offset to the right, decrease the value.)

(4) Select the Recognition Mode (Note: Standard Mode is usually recommended).

(5) After the settings are completed, return to the Home interface.

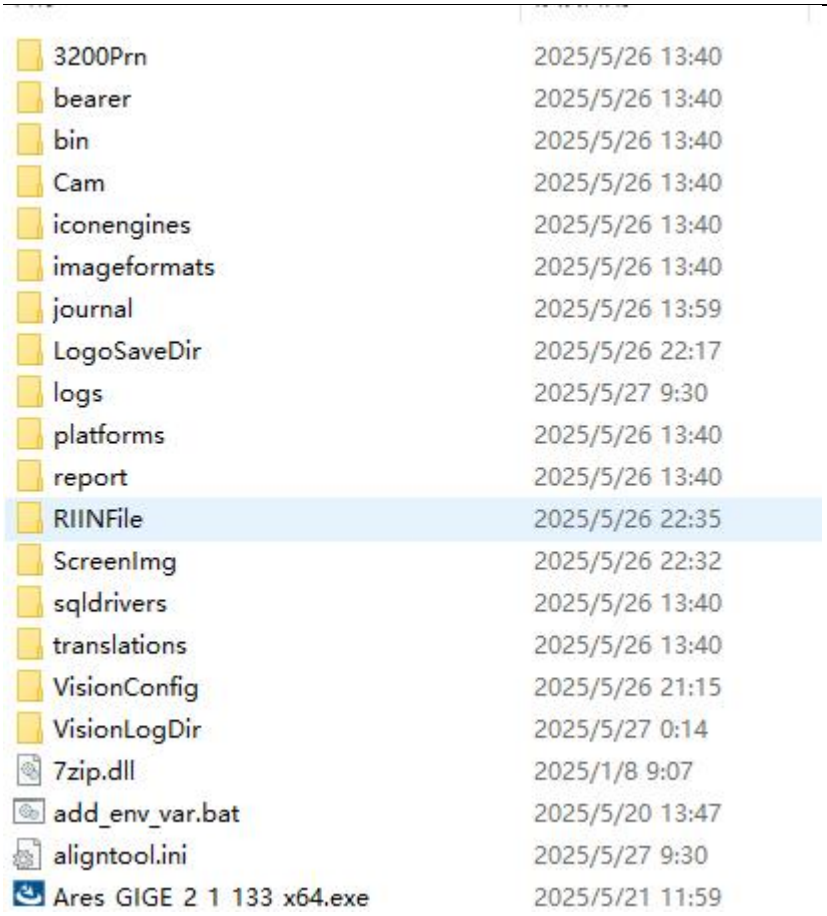
Once the Template is created, you can start the Print Process.

After returning to the Home interface, click **Locate Materials** on the Home interface.

(Note: After clicking this tab, the device will position the scanned Template. If the Positioning Quantity does not match the Actual Placement Quantity, lower the Recognition Score (usually set to around 70). If accurate recognition is still not achieved after this adjustment, lower the Exposure and scan again; if the issue persists, re-calibrate.)

Click Start Print to start printing.

(Note: Before printing, it is necessary to connect the Hot Folder of the Driver Tool to the Hot Folder of Future RIP. The name of the Hot Folder is: RIIN File, and its location is as follows:

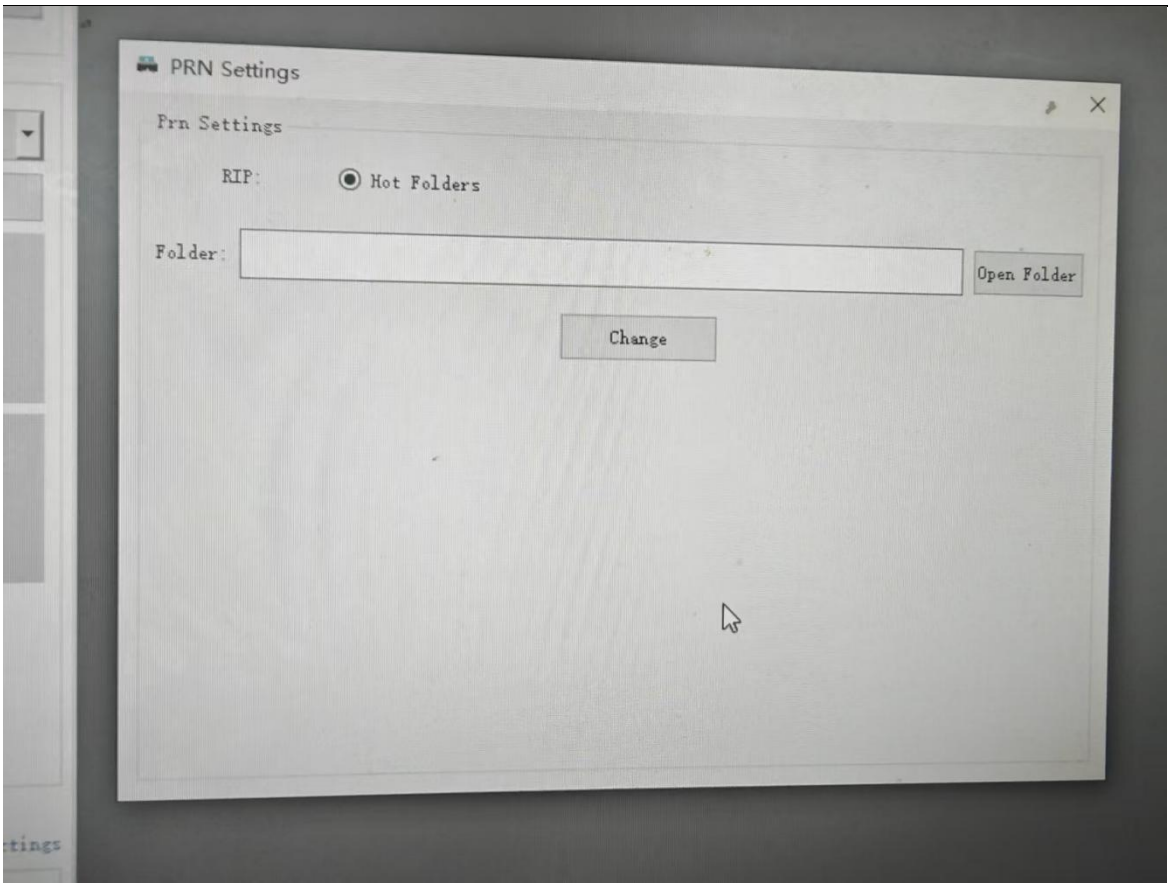


Before connecting the Hot Folders, ensure the folder is empty; if there are other files, delete them.

The configuration process is as follows:

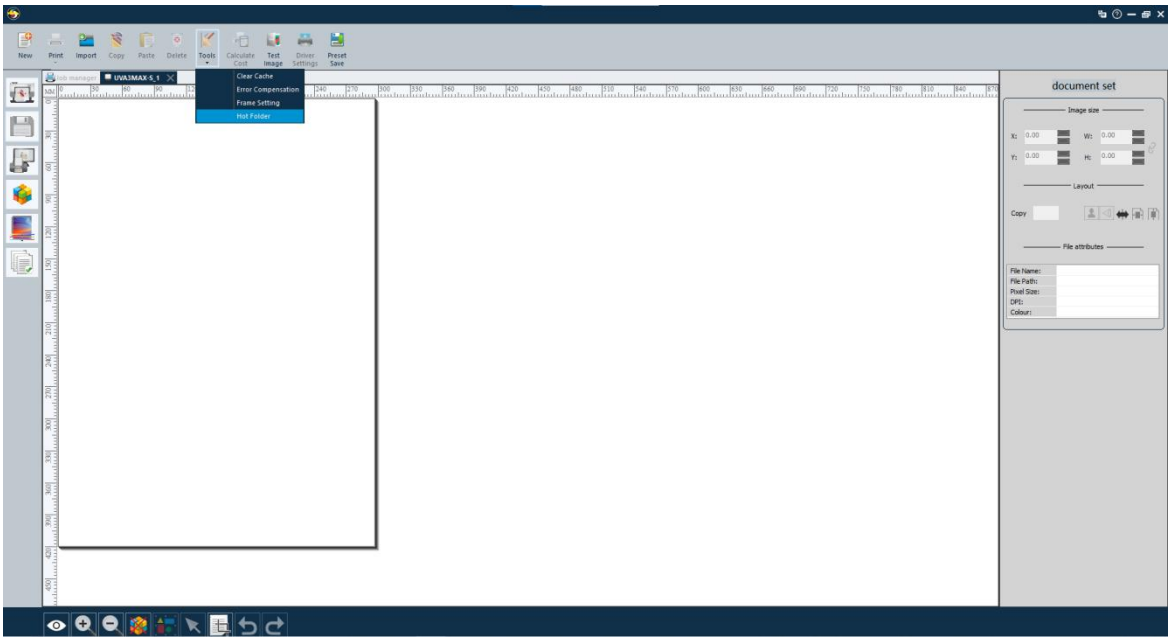
1. Open PRN Settings in the driver; its location is as follows:

2. After opening, you will see the following icon:

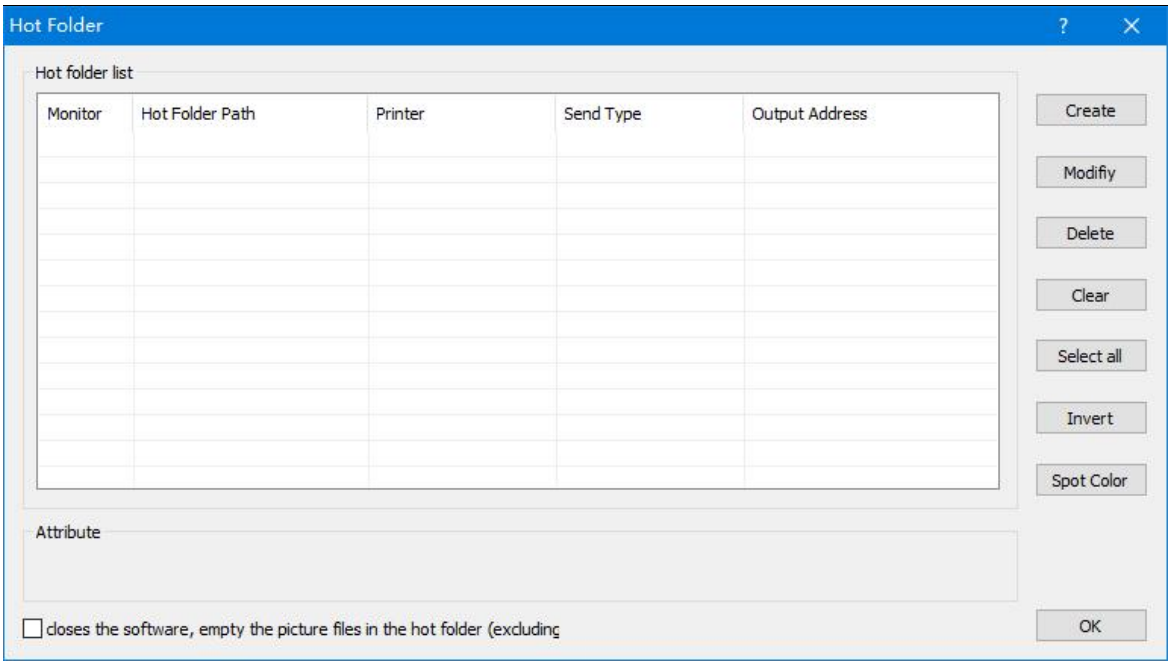


3. Find the path of the printing tool and select it.

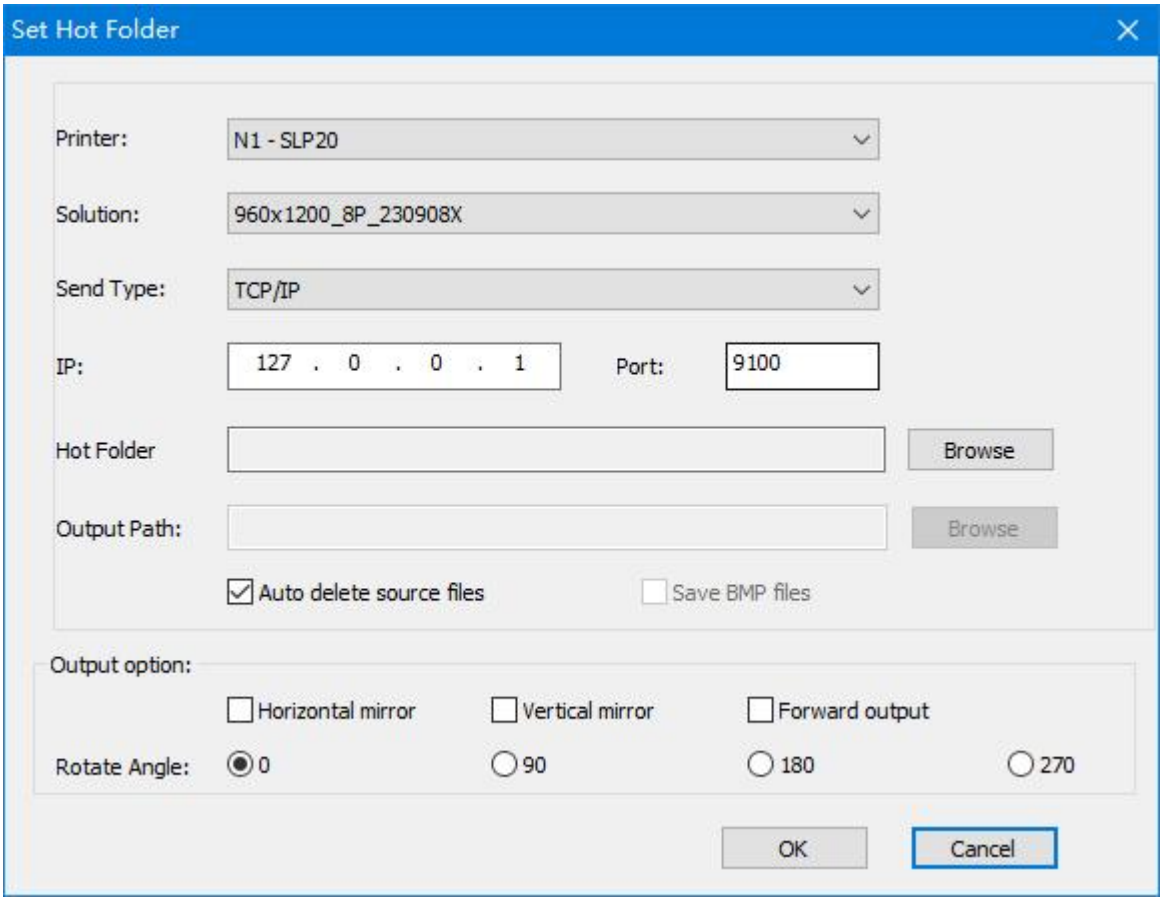
4. Open FUTURE RIP, open the Tools option in the menu bar, and it will be visible in the drop-down list:



5. Select Hot Folder, and you will see the following interface:

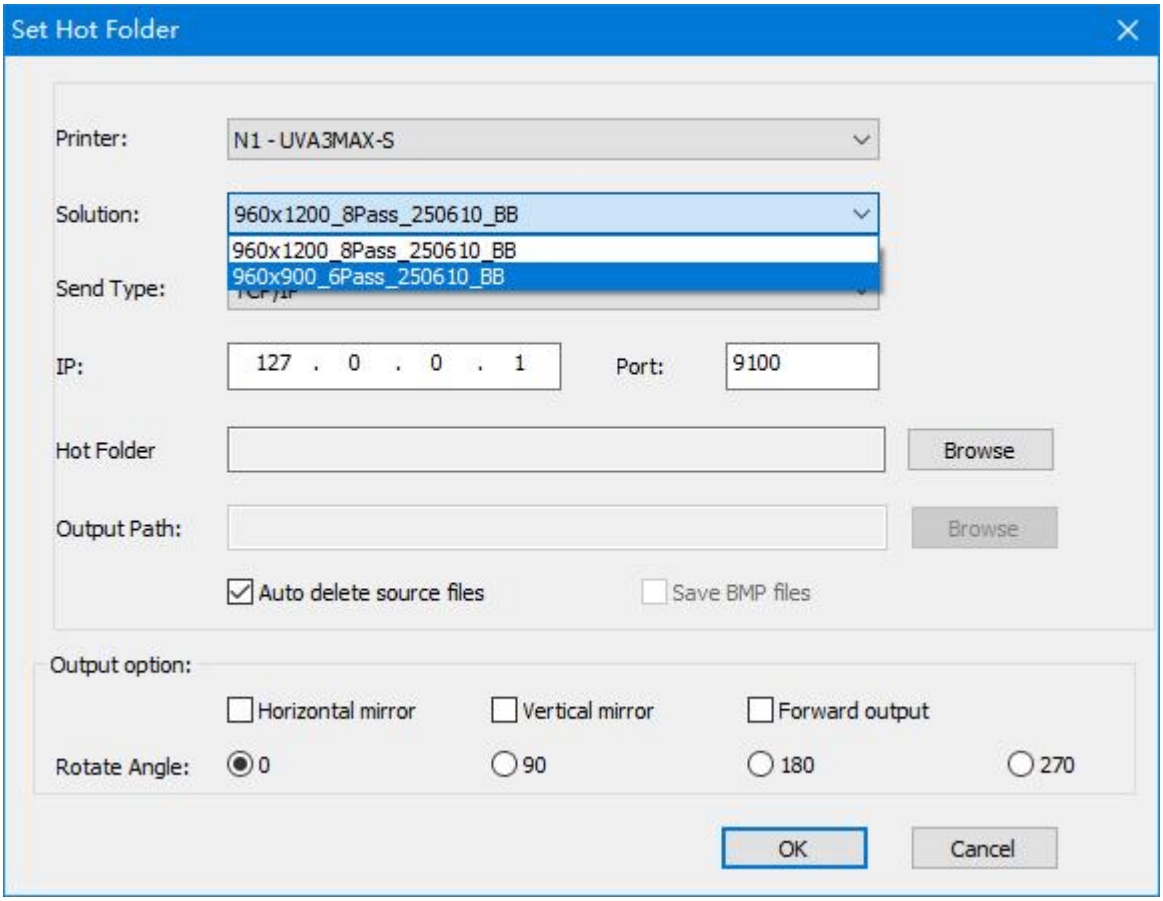


6. Select Create, as shown in the figure:



7. Select the printer as NC-UV A3MAX-S, as shown in the figure below:

8. Select the printing solution; 6pass/8pass Curves are optional.



9. Keep the IP address unchanged.

10. Select the path of the Hot Folder; the path here must be consistent with that of the printing tool.

11. After selection, click OK to complete the configuration.

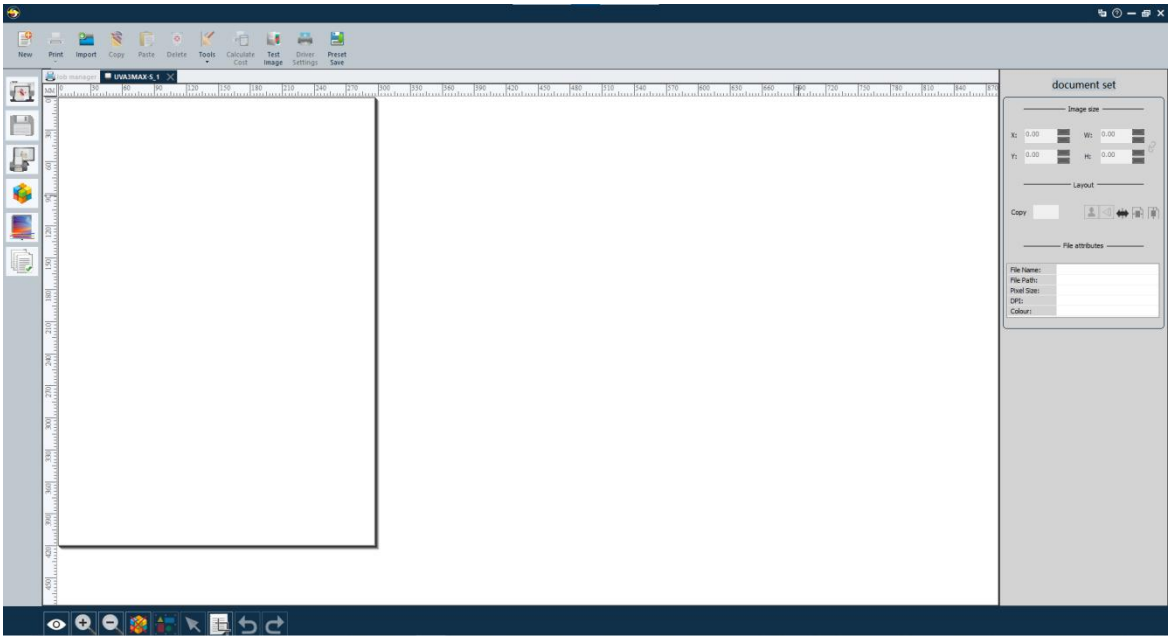
8.1 Dongle

• Plug the dongle into the computer, as shown the above picture, the light will turn on and off after a period of time, indicating that the operation is normal.

• Observe the upper middle part of the software, if there is no display, it means that the dongle is recognized normally, and if it is displayed (demo version), it means that the dongle is not plugged into the computer or the dongle is not recognized normally.

8.2 Function introduction

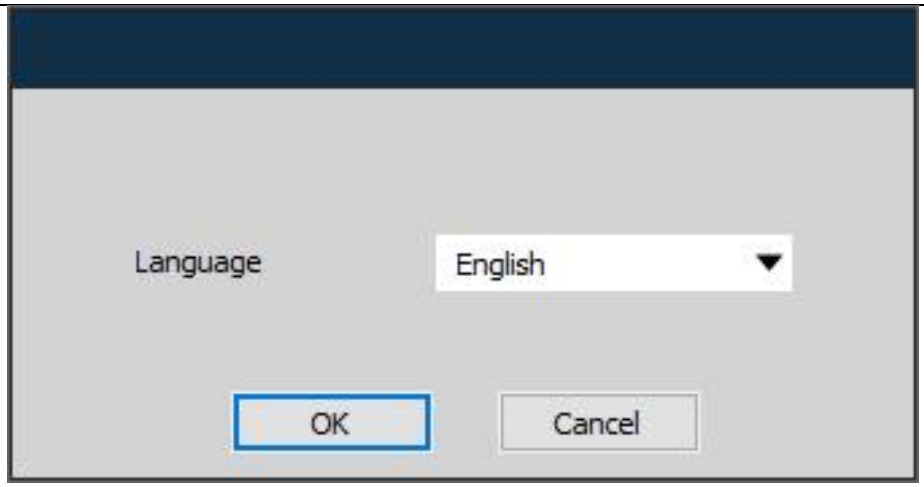
Open the software, and the main page of the software will pop up. The following is a brief introduction to the setting and use of the printing process.



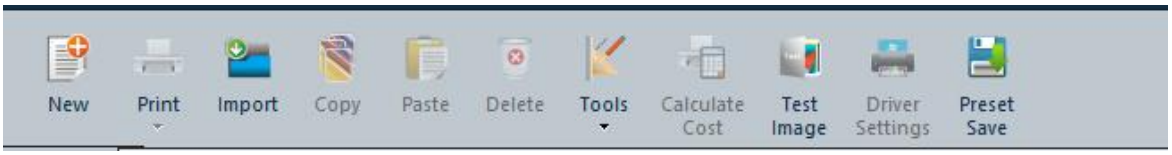
8.2.1 Language switching

Click the icon  displayed in the upper right corner of the software to switch between Chinese and English:

The pop-up window is displayed as follows:



8.2.2 Navigation bar



New: Create a new print task window

Print: Send to print

Import: Import pictures.

Copy: Copy multiple print pictures

Paste: Paste the copied picture

Delete: Delete the picture

Driver Settings: Printer driver parameter settings

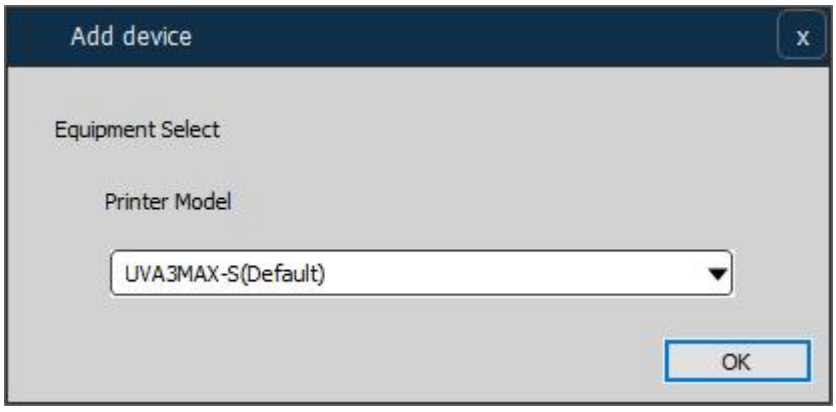
8.2.3 Main functions

Icon	illustration
	Printer management

	Document settings
	Print Settings
	Color Management
	Output Color Correction
	Job Management

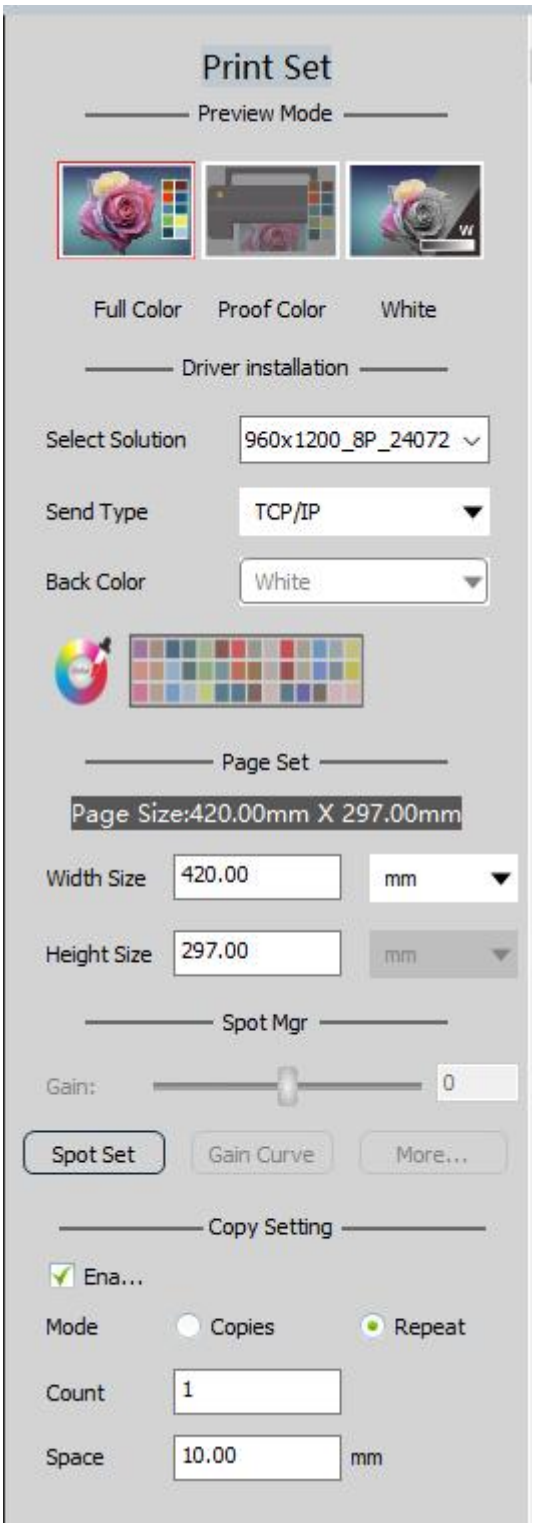
Printer management

Click the printer management icon, the pop-up window is as follows:



Equipment select - Printer Model: the default **NC_UVA3MAX-S** model, **no need to modify**, just click **OK**.

Print Settings



Click the print settings icon  to pop up as follows:

①driver Installation

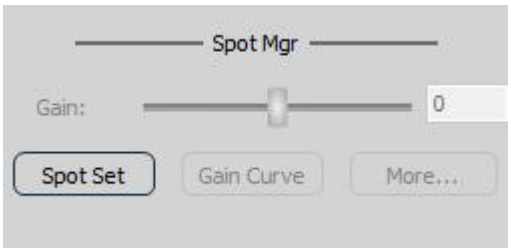
Select solution: default 960x900 6pass, 960x1200 8pass

Send type: file, network (default network)

②Page Settings

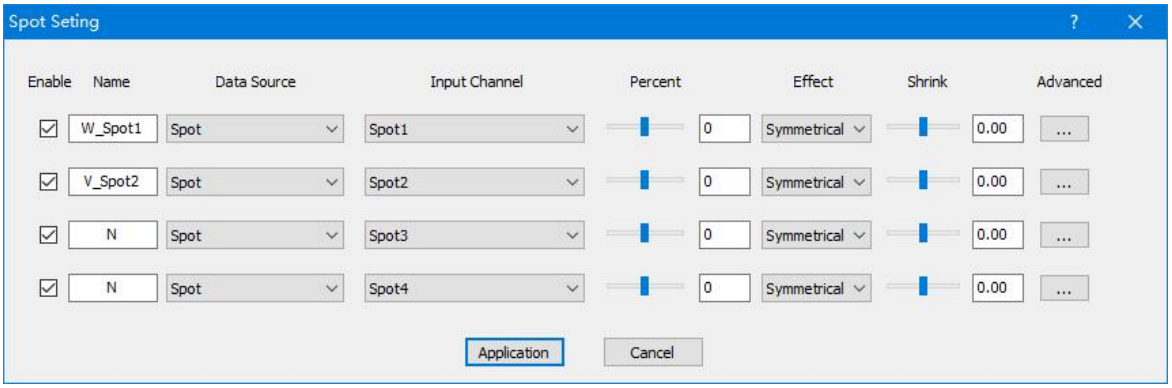
Page size: the default width is 297mm, and the default height is 420mm. (When modifying the size value, press the [Enter] key on the keyboard to save)

③Spot Mgr



Spot Setting

Click [Spot Setting] in the menu bar of the software, and set in detail



Enable: Tick to enable the corresponding spot color printing, If not tick , unenable spot color printing.

Here spot color 1 ticks white ink to enable white ink spot color printing; spot color 2 ticks varnish to enable varnish spot color printing;

Data source: Select the ink output method corresponding to the spot color. Take white ink printing as an example (varnish is the same) to introduce the functions:

Null	If there is no data, the white ink cannot be printed.
Image base color (same density)	Based on the maximum concentration of the image color, white ink of the same thickness is printed on the colored

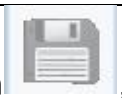
	part of the image. Transparent and pure white areas are not printed.
Image base color (image density)	Print the white ink according to the depth of the picture color, the darker the color, the thicker the white ink, and the lighter the white ink, the thinner; transparent and pure white areas are not printed.
Image Base Color (Inverse Image Density)	Print white ink according to the depth of the picture color, the darker the color, the thinner the white ink, and the lighter the color, the thicker the white ink; transparent and pure white areas are not printed
Spot color	Print white ink with the spot color data at the time of image production; Note: Currently Future Rip prints spot color data, and currently supports images in mainstream formats such as Tiff, PDF, AI exported by PS; for the production and application of spot colors, please refer to the spot color video tutorial
All	The entire image is printed with 100% concentration of special colors (white ink or varnish)

Input channel: spot color 1 and spot color 2 can be selected.
Spot color 1 → the first spot color data contained in the picture
Spot color 2 → the second spot color data contained in the picture

Here, in general, choose spot color 1 for white ink, and spot color 2 for varnish.
Density: On the current basis, the spot color data increases or decreases the printing density, the adjustment range: -100%-+100%.
Effect: choose uniform mode.
Scaling: Spot color data printing shrinks or expands. Adjustment range: -5 to +5.

As shown in the figure above, after setting, click [Apply] and choose to print white ink or varnish spot color data

Document settings

Click on the document settings icon  , The right side of the interface displays as follows:

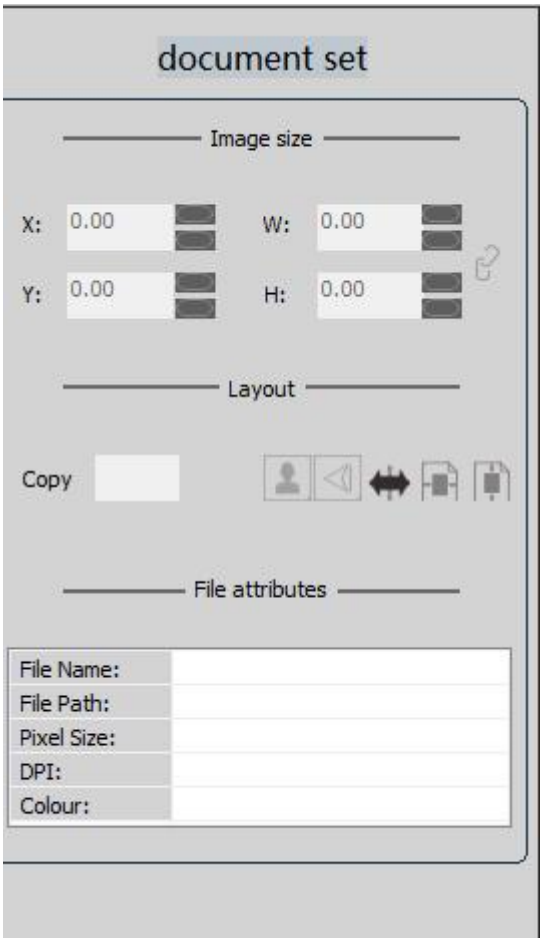


Image size:

X white edge Y white edge modify offset image

W picture width, H picture height modification size scaling

	Constrained aspect ratio, unidirectional scaling mode
	Constrained aspect ratio, proportional scaling mode

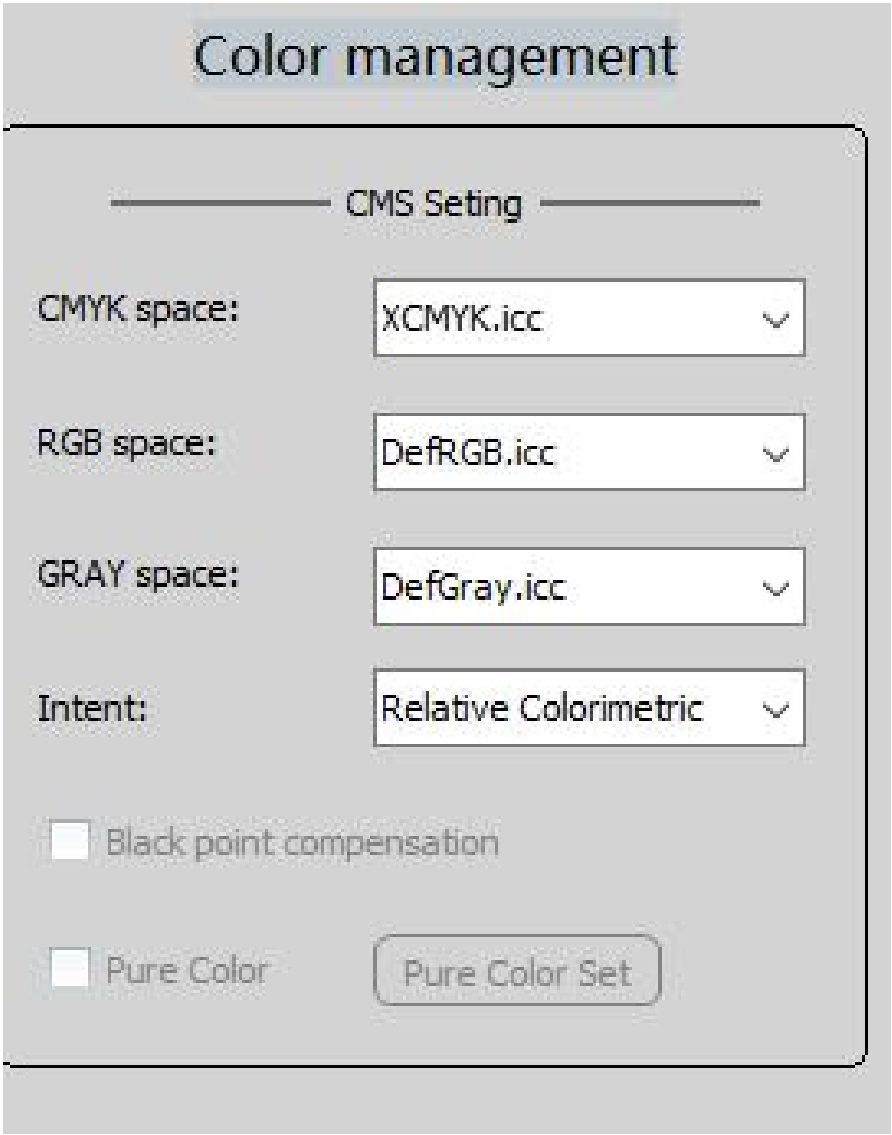
Layout:

Copy multiple pictures, automatic typesetting, rotate left 90°, rotate right 90°, center horizontally, mirror horizontally, mirror vertically, center vertically, etc.

File attributes:

File name, file path, pixel size, DPI, original color system

Color management



Click on the color management icon  The details are as follows:

CMS Setting

1.CMYK space

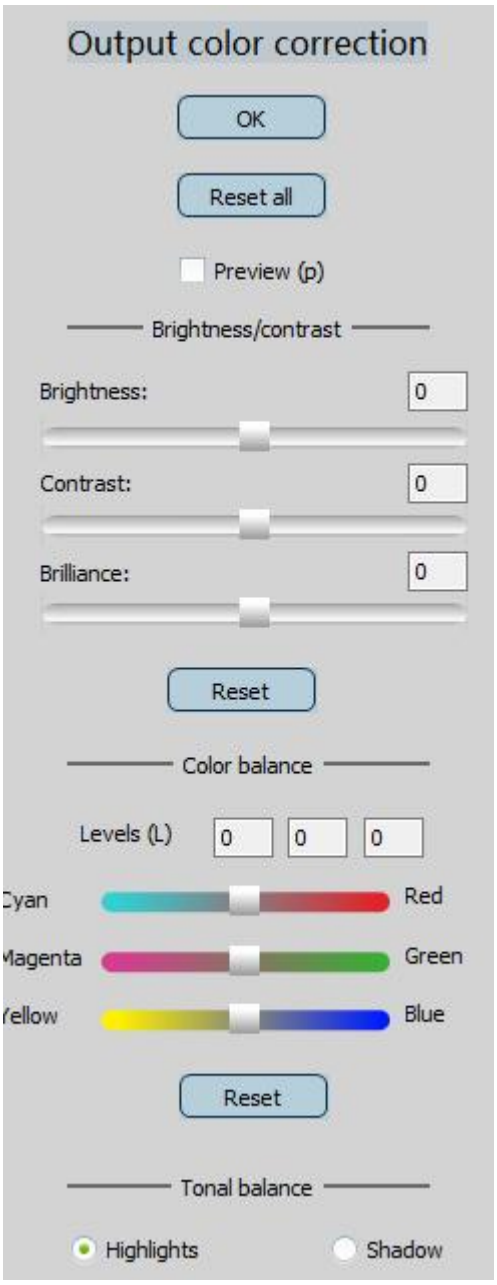
2.RGB space

3.GRAY space

4.Intent

5.Black point compensation

Output Color Correction



Click the Output Color Correction icon  , the details are as follows:

①Brightness/Contrast

Brightness, contrast, Brilliance, ink quantity adjustment

②Color balance

Color adjustment

Job management

Click on the role management icon  . The details are as follows:

Logo job management (display print image data, print history): name,create date, file type, size ,printer,processed

8.2.4 bottom function keys

	Preview page
	Enlarge
	Keep small
	Identifies the always-on icc file
	Icc file not turned on
	Select all
	Select image to move
	Identify image size cropping function

Proofing Operation Process Introduction

Taking PP paper printing as an example, this section introduces the printing operation process.

9.1 Place the printing material and confirm the printing height

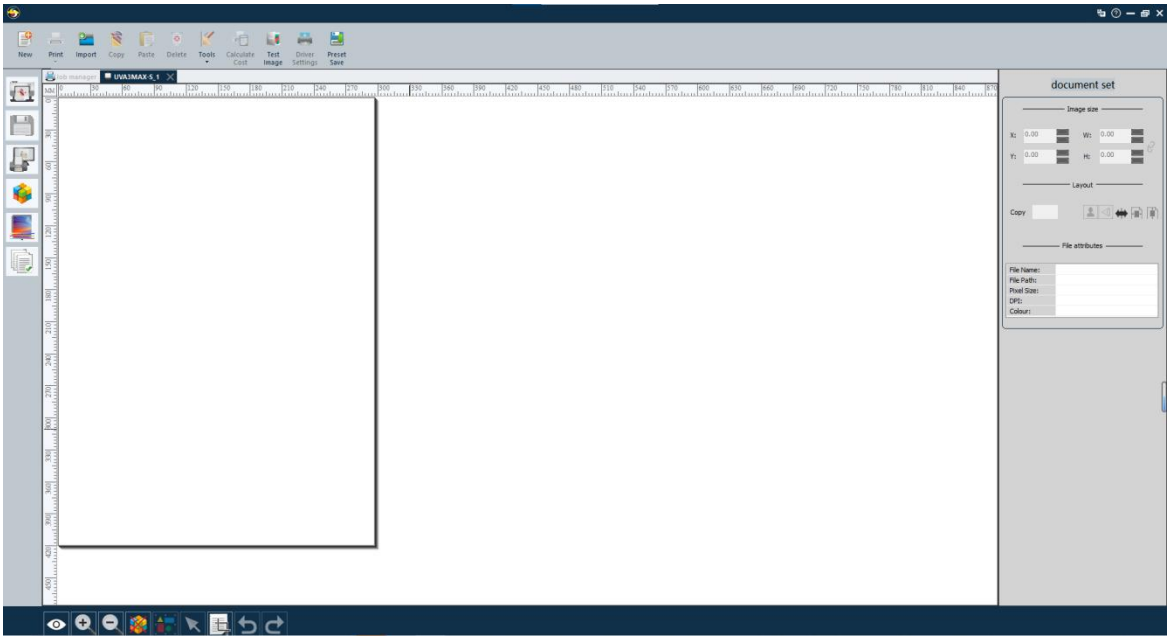
Spread PP paper of appropriate size on the platform, and if necessary, paste the four sides of the paper with textured paper to make it fit tightly with the platform. And click the [SUC] button on the key board to open the platform suction.

Adjust the printing height of the nozzle by lifting the platform, and confirm that the height difference between the nozzle and the paper surface is between 2-3mm.

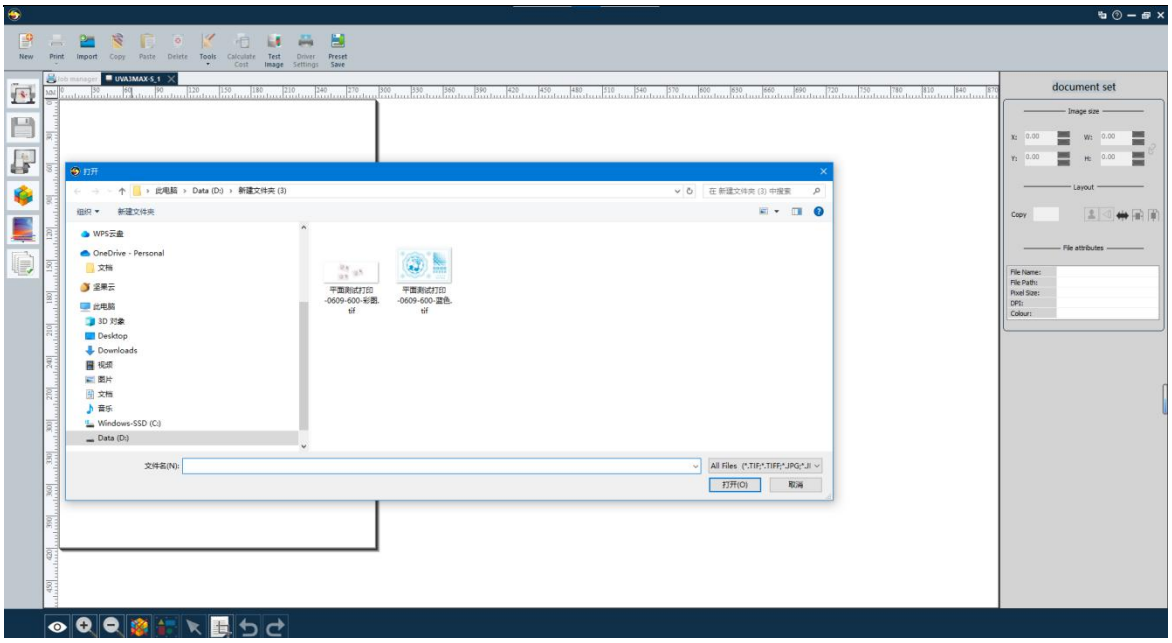
9.2 Import pictures

Open the Future Rip software, click the [Import] button 

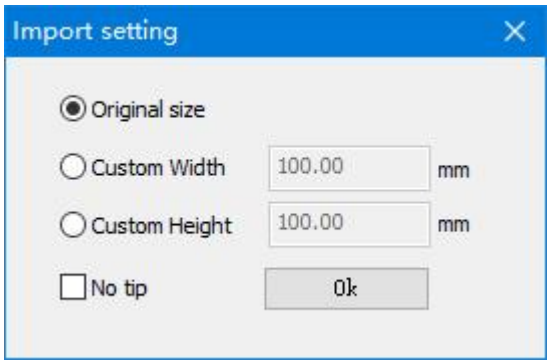
in the upper left corner of the software, locate the stored image, select it, and click Open.



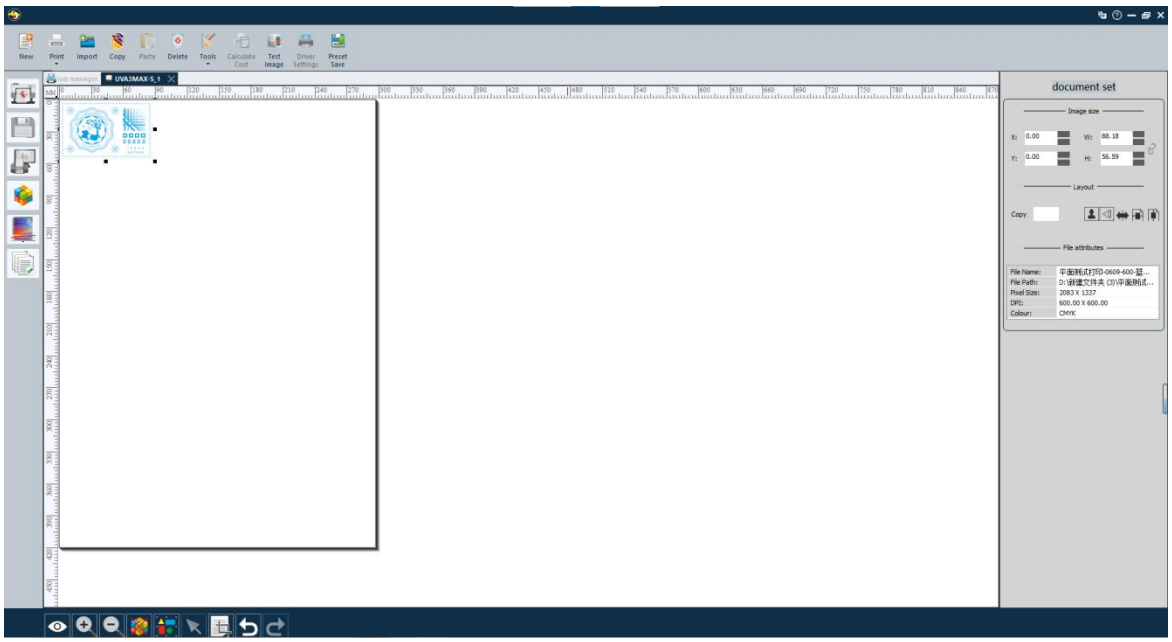
The pop-up window is as follows, select the picture and click to open



Click to open and the pop-up window is as follows, click OK

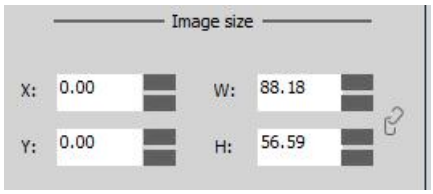


The details are as follows:



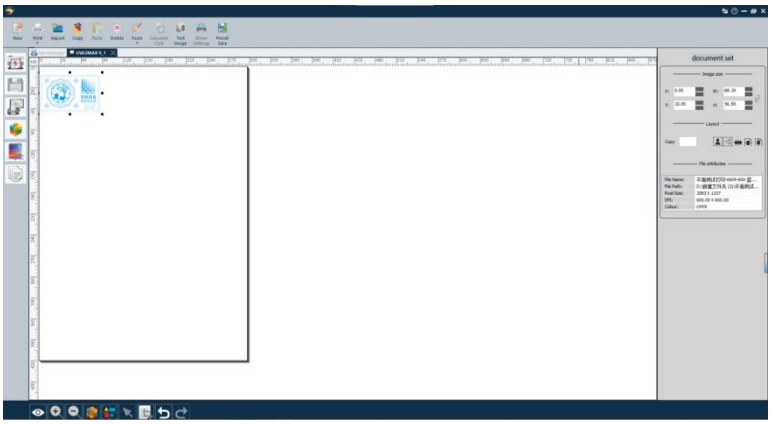
9.3 Confirm printing conditions

Image offset

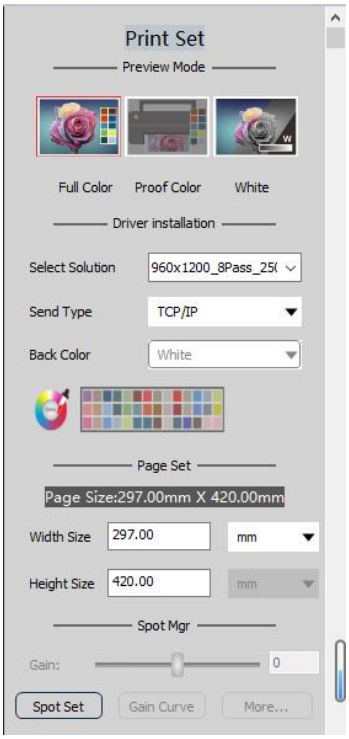


Click on the document settings icon  , Set the offset position to the right by 10mm and down by 10mm.

As shown on the right:



Then click on print settings



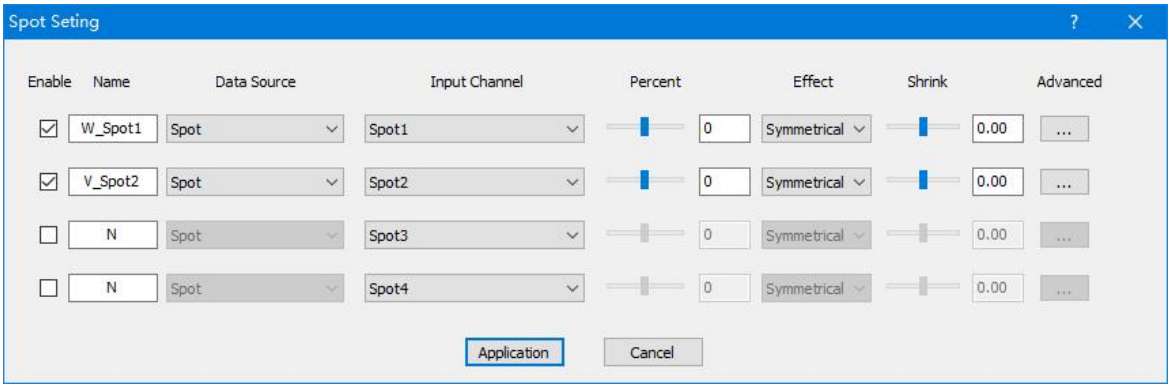
The details are as follows:

①Select resolution (default 960x900 6pass, 960x1200 8pass)

②Set the send type to the network

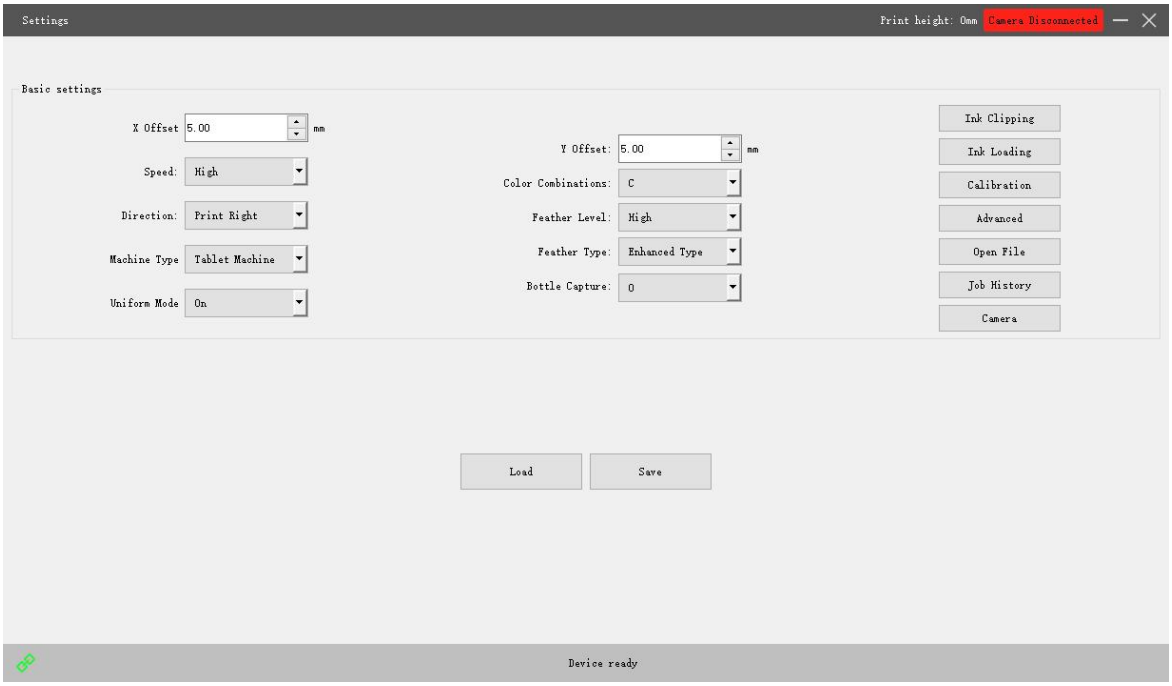
③The confirmation page is set to: width 297mm, height 420mm

④Spot color setting: set the spot color of the picture, select spot color 1 for white ink, spot color 2 for varnish, and the default uniform mode for the effect



9.4 Confirm the driver setting parameters

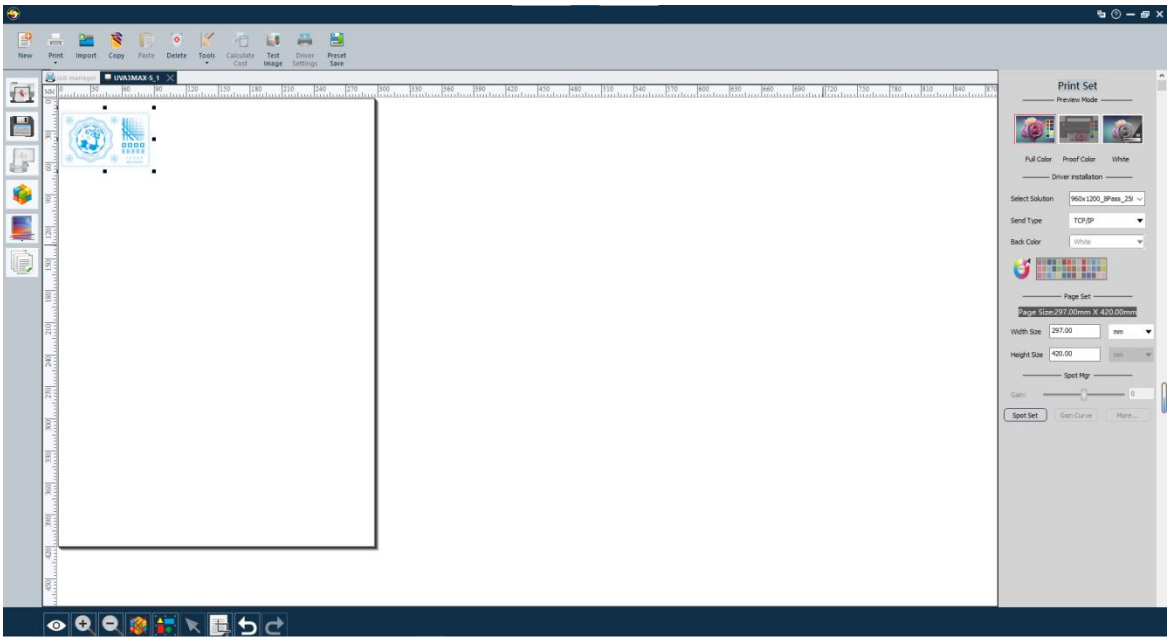
Open the the printing driver software, and the pop-up window is as follows:



Confirm X Offset, y Offset, printing speed, color combination, Feather selection, print direction, Machine type, calibration parameters and other information.

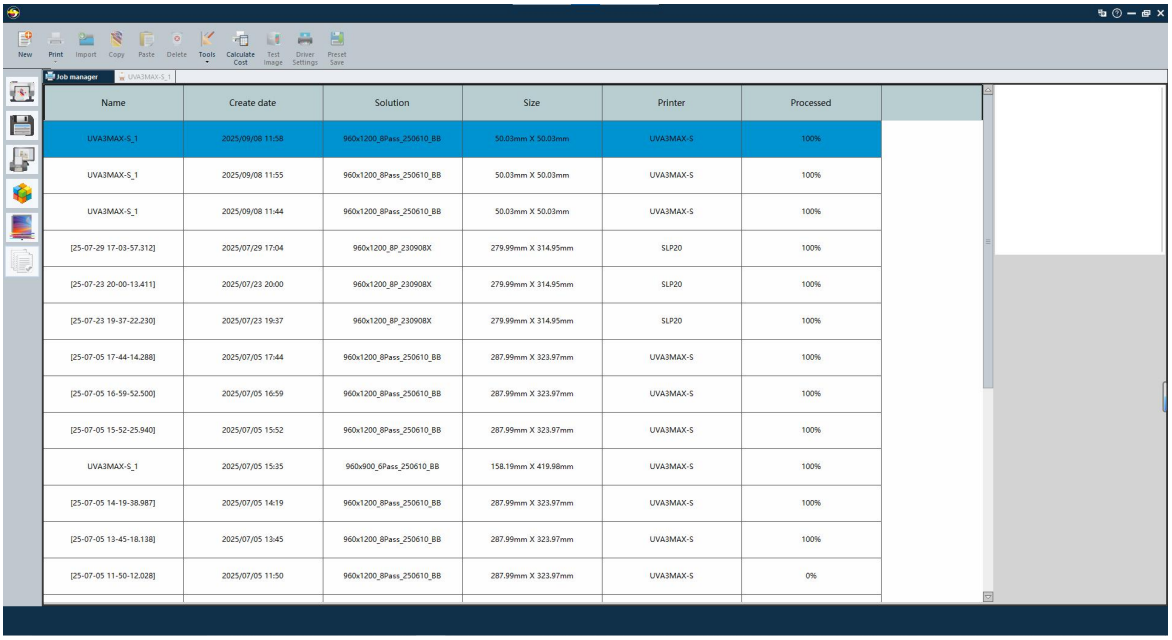
9.5 Send print

Return to the Future RIP interface



Click on the print icon in the upper left 

.Printing is now performed. After clicking print, a window will pop up to the print list, and print with sharp edges.

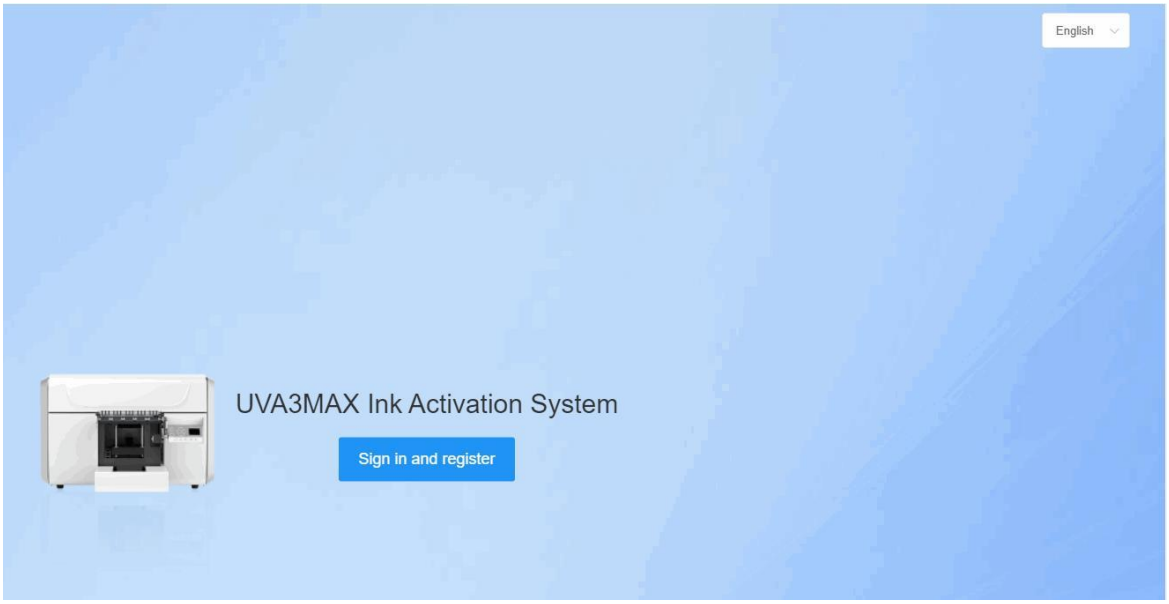


Ink ID Activation Operation Process Instructions

10.1 Register an account member online and log in

Enter URL in browser: http://124.71.46.129:880/user/#/home

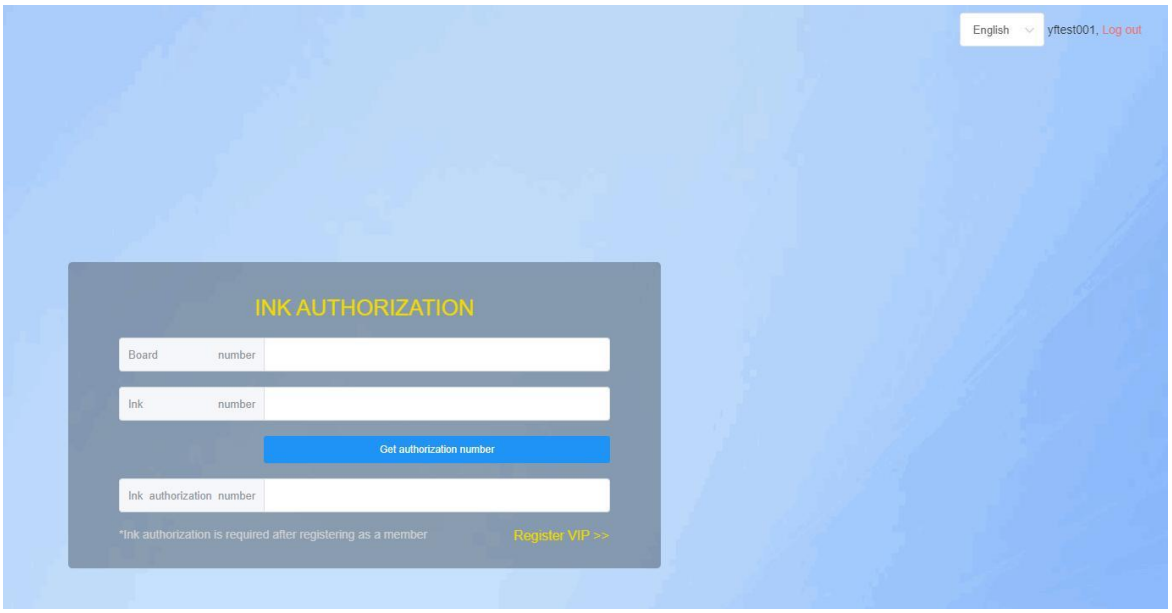
After entering the URL, the pop-up window is as follows, the language can be modified in the upper right corner of the interface, click [Login Register], click [Register]



Follow the prompts to fill in the [account, password, email] and other information and click OK to complete the account registration.

Return to the login interface and enter the account password.

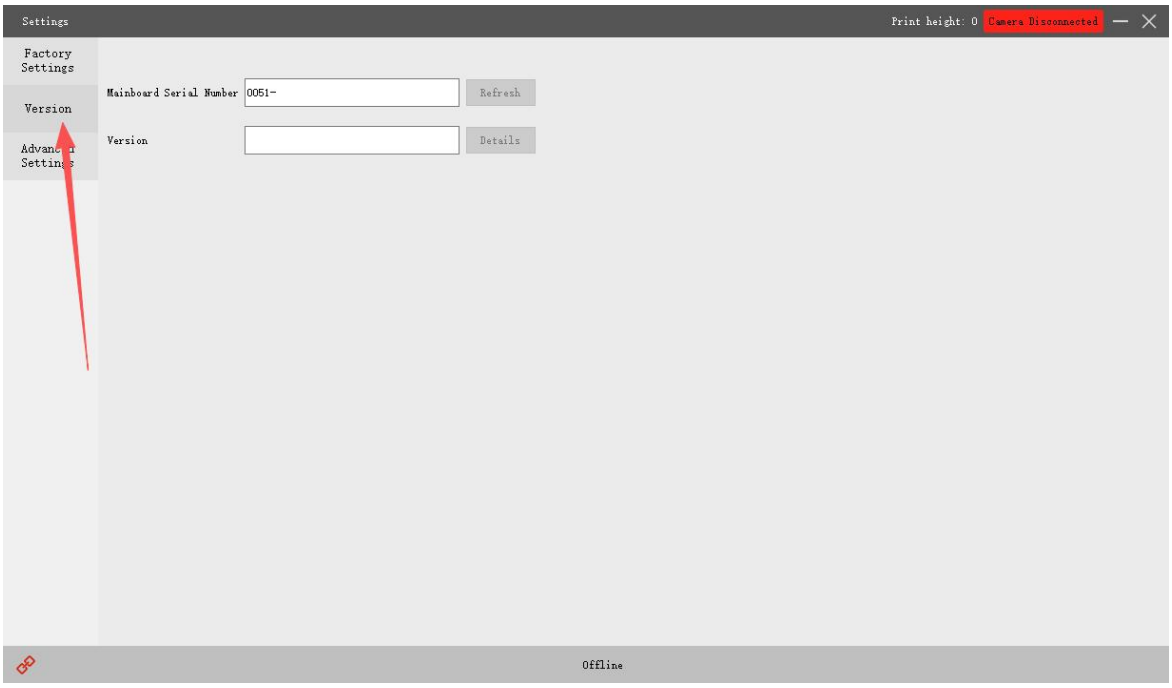
The account login is completed and the display is as follows:



10.2 Ink ID activation to generate ink authorization number

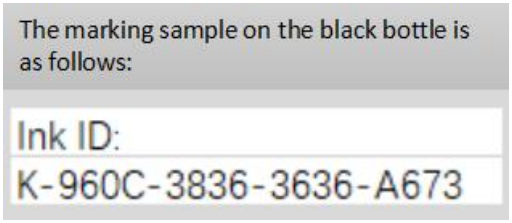
Enter the [Mainboard Serial Number] and the [Ink ID] of the corresponding machine

①The mainboard code can be obtained in [Driver Settings] → [Advanced] → [Version] → [Mainboard Serial Number], Select and copy with the mouse. Below is the motherboard number.



Enter the mainborad Serial Number in the website

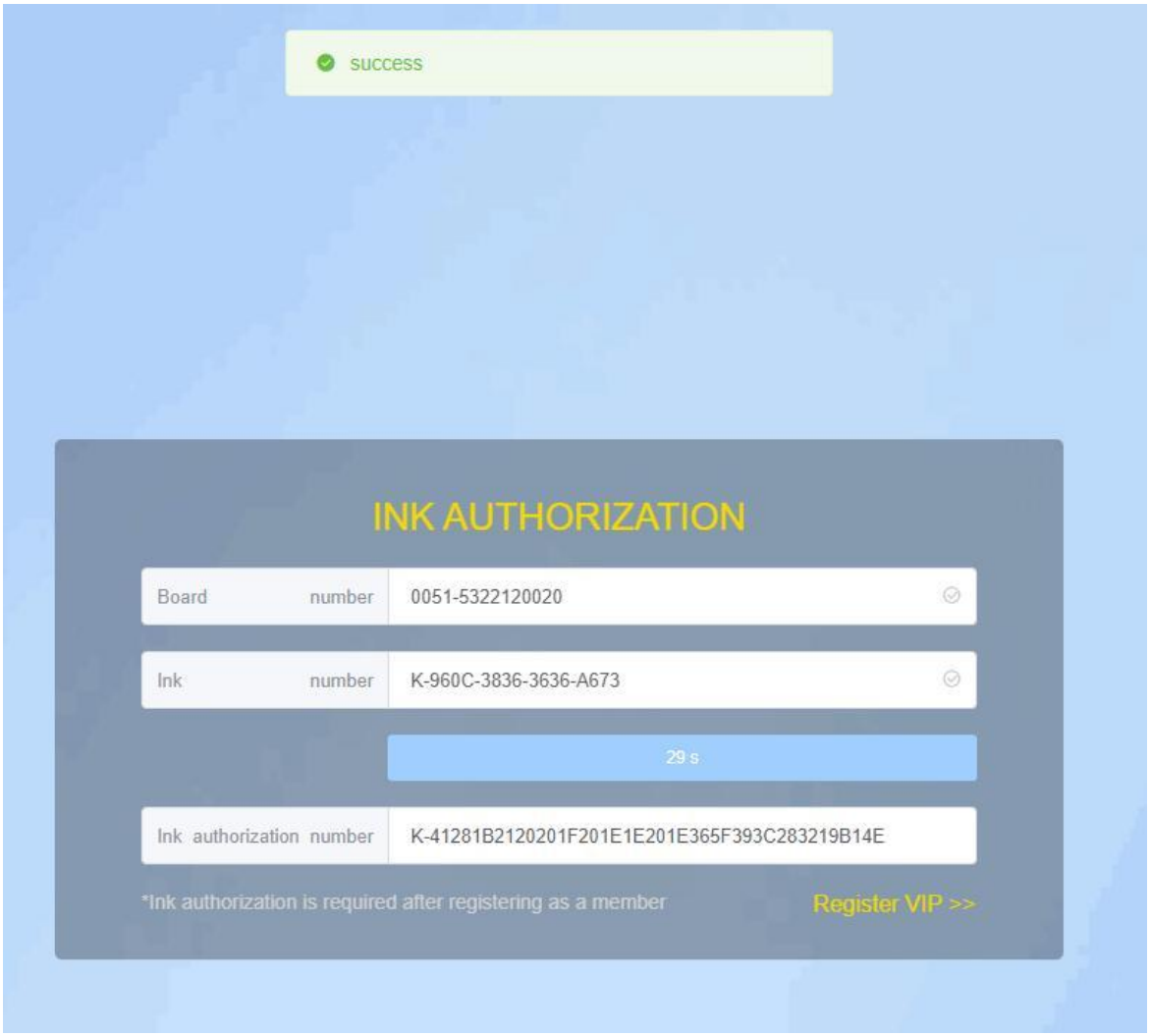
②Ink ID will be on label of the ink bottle. For example:K-960C-3836-3636-A673, first letter K means it is the ID code for Black.



After entering [MB Number] and [Ink number], click [get authorization number]. After

succeed,the page will prompt that the operation is successful

As below picture: K-41281E1F20211F1E211E1E365F39402434330C17 , the first letter K, means ink color is Black, only can activate K ink bottle.



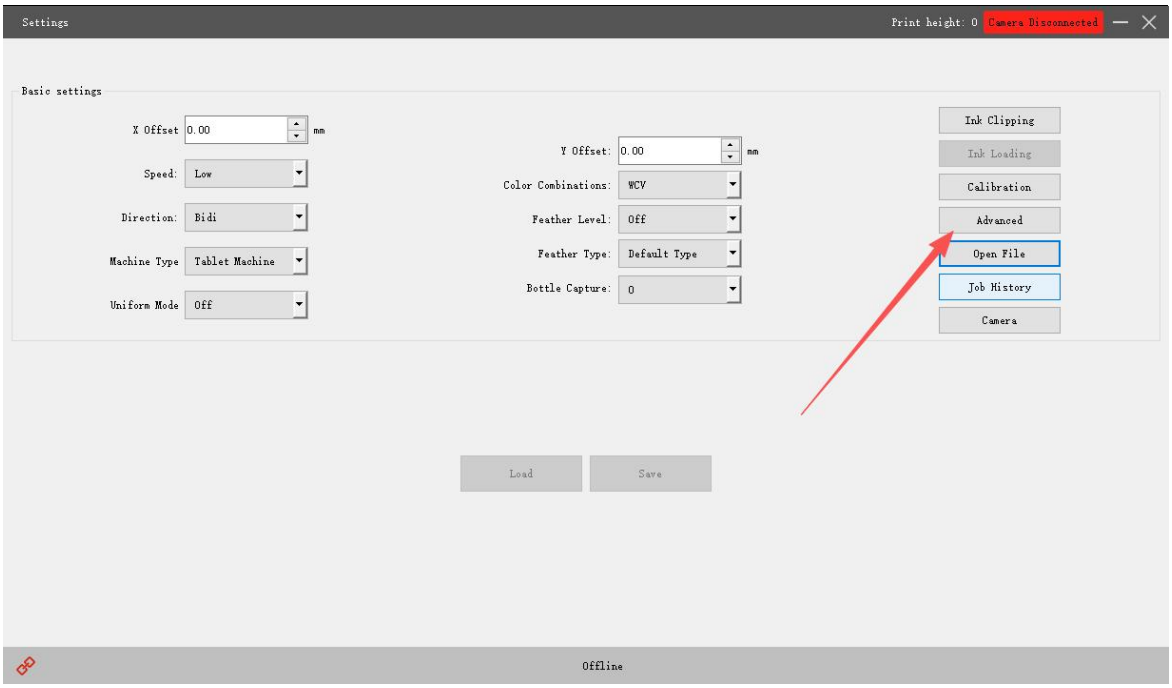
Attention: The Ink ID for each ink bottle needs to be activated separately to obtain an authorization code before it can be used.

10.3 Enter the ink authorization code in the driver setting

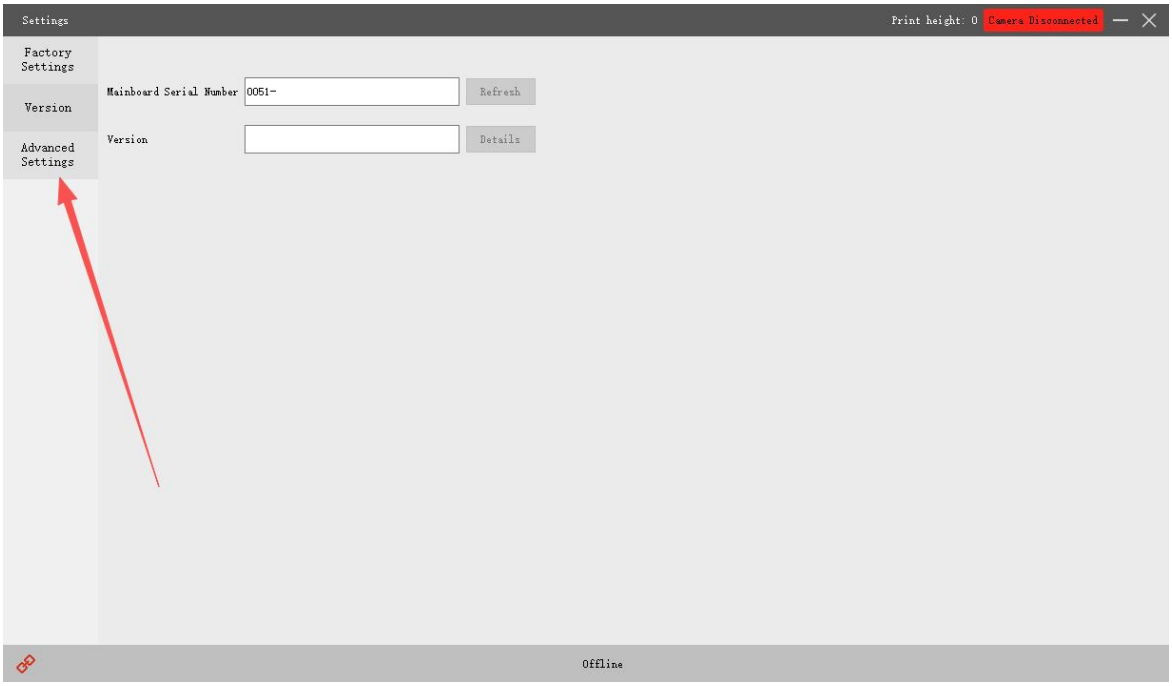
When one of the ink tank runs out of ink, the key panel will pop up a window to warm it. the corresponding ink authorization code needs to be activated.

After connection,Click 【Driver setting】→【advanced】→【Advanced setting】→【ink encryption】to enter next page:

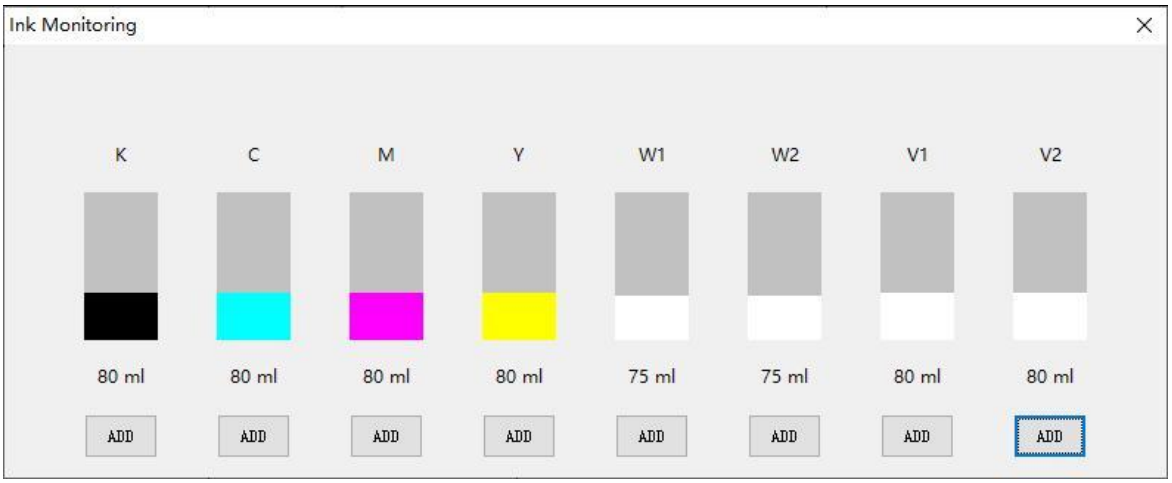
Click【Advanced】



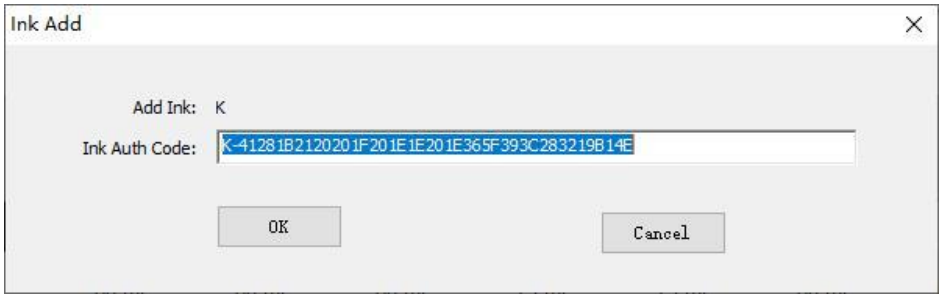
Click [Advanced Settings]



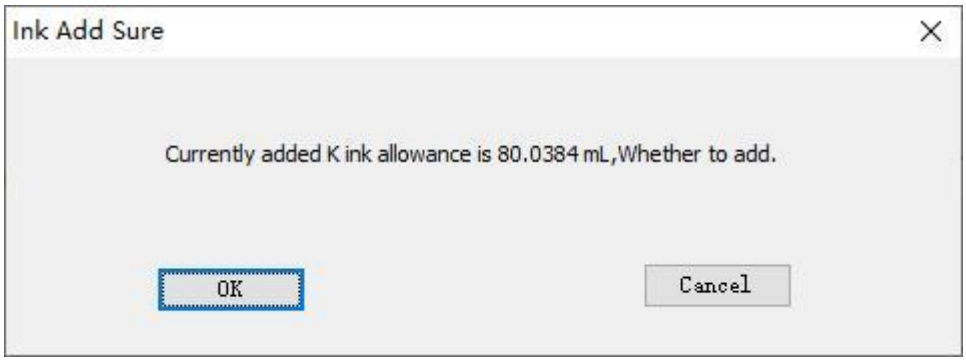
Click [Ink Encryption], and the following pop-up window will appear:



Click the [Add] button, enter the ink authorization code corresponding to the color in the pop-up dialog box, and click Confirm after verifying that the information is correct.



Enter the ink authorization code and click [OK], will show how many inks in this tank as below. Click [OK]:



After adding the inks, will show below, Click [OK]. It means finishing adding inks.

Machine Maintenance Methods and Precautions

11.1.Maintenance method of Print head

①There is a board chip inside the print head, which is directly inserted into the print head cable. Pay attention to the contact part between the print head cable and the print head. Be sure to prevent ink dripping. Shut down for a while, and then remove it for drying, and then try to install it again to test whether it is burnt. Remember not to use it with water, otherwise the nozzle and cart board will be burned.

② Since the nozzle cable is closely combined with the nozzle socket in use, it is generally not easy to pull out and insert, so after a long time, the contacts will be oxidized, damaged, dislocated or other contacts are paralleled. It is necessary to carefully observe whether these problems occur, and eliminate or replace the nozzle wiring, otherwise the nozzle or cart board will be burned.

③ Be sure to do maintenance work without using the machine, insist on turning on the machine once a day and print the test strip. The test strip should be automatically cleaned if the ink is broken to ensure that the test strip is normal. You can print a small picture. If the holiday is more than 3 days When left unattended, 3-5 drops of cleaning solution should be used in the cap top, and then the nozzle and the cap top should be combined and sealed, which will play a certain protective role.

④After adding the machine ink to the ink cartridge, use the method of less time and more time. The shelf life of the ink after opening is 3 months. If it exceeds 3 months, it will

deteriorate, which will affect the printing effect and cause the nozzle to be blocked. It is recommended that customers regularly uniformize the ink. Stir and turn on the white ink stirring switch at the ink cartridge when using the machine.

⑤ It is best to keep the height of the print head at 2-3mm from the printing material, and confirm the printing height in time to avoid scratching and damage to the print head.

⑥ The sheet metal of the cart nozzle must be cleaned regularly to avoid affecting the nozzle.

⑦ Avoid printing reflective materials, which will cause the nozzle to be blocked.

11.2. Ink station maintenance

Due to the combination of the nozzle and the cap top for ink extraction or cleaning, there will be ink dripping inside the ink station or on the sheet metal. It must be scrubbed with alcohol regularly or in time to keep it clean.

11.3.Rail maintenance

The machine guide rail includes the cart guide rail. The contact between the guide rail and the slider is based on lubricating oil. Please add lubricating oil to the guide rail within a certain period of time to prevent the guide rail from being rusted and jerky due to lack of oil. It needs to be wiped clean with alcohol before adding lubricating oil.

11.4.Damper replacement

It is recommended to replace it every 3 months.

11.5.Cap top replacement

It is recommended to replace it every 3 months.

11.6.Shell sheet metal maintenance

Keep the shell clean, and if there is any ink leakage, please scrub it to avoid the corrosion of the ink on the outer paint surface of the sheet metal.

12.1 Boot initialization error reporting process

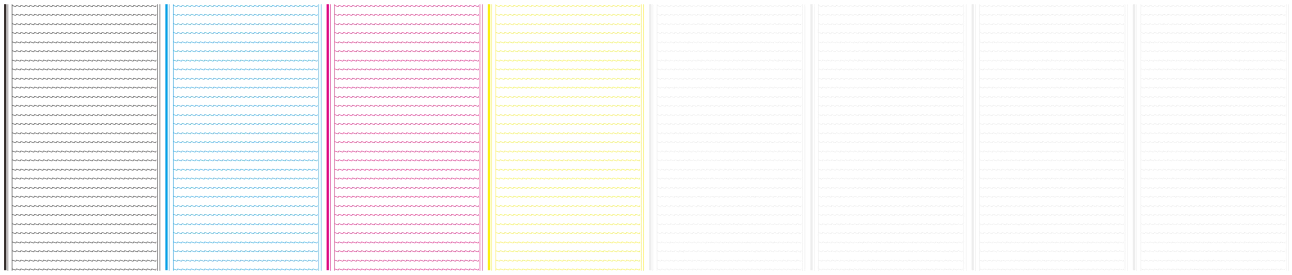
Error code	Possible Reasons	Suggestion
Cap Sensor Loss CODE:4 LV:5 CAP SENSOR LOSS	Reason 1.Limit position is not connected or damaged Reason 2.Cap station motor is not connected or damaged	Please check if there is problem in the limited sensor and motor
Y1_1 Sensor Loss CODE:4 LV:5 Y1_1 SENSOR LOSS	Reason 1.Limit position is not connected or damaged Reason 2. Y axis motor is not connected or damaged	Please check if there is problem in the limited sensor and motor
Grating Loss CODE:39 LV:5 GRATING LOSS	Reason 1. Encoder wrong polarity setting Reason 2. motor wrong polarity setting Reason 3.motor did not connect or damage	Revised the setting, set the encoder polarity or motor polarity Check the motor cable is connected right
X Sensor Loss CODE:12 LV:5	Reason 1.Limit position is not connected or damaged	Please check if there is problem in the limited sensor

CARRIER REV -1		and motor

12.2 Ink Breakage Issues on Test Strip

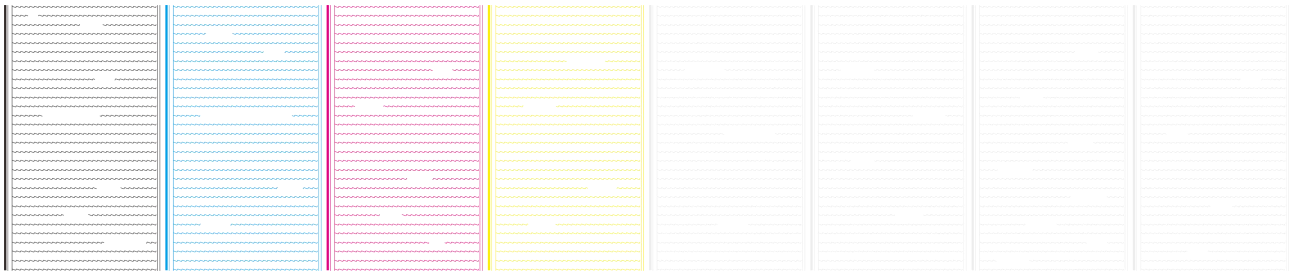
Examples of common ink breakage problems are as follows:

12.2.1 The test strips are all out



Note: normal. This state indicates that the print head of the machine is in good condition.

12.2.2 Partial ink break of the test strip



Note: The partial ink failure of the test strip is caused by the corrosion damage of the ink to the print head. You can choose automatic cleaning. If the automatic cleaning cannot solve the problem, you can continue to use it without affecting the effect.

12.2.3 Severe ink breakage in the test strip

Solution:

1. Use a syringe to extract the damper, check whether the ink can flow out normally, and eliminate the possibility of blockage and air leakage. If there is any problem, please replace the damper.

2. After replacing the damper, if the ink of the damper is still blocked, please check whether the ink tube and the cartridge head of the damper are blocked.

3. Manually clean the print head to ensure that the print head is not blocked.

Problem overview: The above problems are usually caused by dampers and clogging of the nozzles. Please check them first.

12.2.4 The test strip is almost completely broken

Solution:

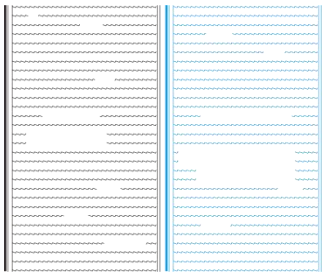
1. Automatic cleaning, check whether the ink can be pumped, if the ink cannot be pumped normally, please replace the new cap top or re-adjust the position.

2. Check whether there is any ink residue on the surface of the nozzle. If there is a single color ink droplet, please replace the corresponding ink bag. If there is a multi-color ink droplet, please check whether the scraper can scrape the nozzle mirror normally during the automatic cleaning process.

3. Manual cleaning, use a syringe to flush the nozzle, and check whether the nozzle is blocked.

Summary of the problem: The above-mentioned multi-color ink breakage problem is generally less likely to be blocked by the nozzle. Check in detail whether the ink suction and scraping of the cap top and the nozzle are normal.

12.2.5 The test strip lacks color blocks



Solution:

1. Use a syringe to draw ink from the damper to ensure normal ink flow; perform manual cleaning on the print head to ensure it is not blocked.

2. Check if there are ink stains on the print head cable connection interface. If yes, clean it thoroughly and retest, or replace the print head.

3. Unplug and reinsert the print head cable, and check if there is oxidation or damage on the cable contacts. Replace the cable if any issues are found, then plug it back in and retest.

4. Replace the print head board.

The missing of a single color as mentioned above is generally caused by abnormal voltage transmission to the print head, commonly due to issues with the print head board, print head cable, or print head itself. However, the possibility of insufficient ink supply for a single color or print head blockage cannot be ruled out.

12.2.6 No Ink Output on Entire Test Strip

Solution:

1. Unplug and plug the nozzle wire to check whether the contact point of the nozzle wire is oxidized or damaged. If so, please replace the nozzle wire and plug it in again.

2. Check whether there are ink stains on the nozzle line connection interface of the nozzle. If there is, please clean it up and re-test or replace the nozzle.

Summary of the problem: The above problems are usually caused by the ink entering the nozzle outlet or the wrong operation after the customer replaces the print head, resulting in a short circuit of the nozzle, burning the cart board or the nozzle, because the nozzle will damage the cart board, but the cart board will not damage the nozzle, It is recommended to give priority to the replacement of the nozzle and the replacement of a new nozzle line.

12.2.7 Color mixing: large area color mixing

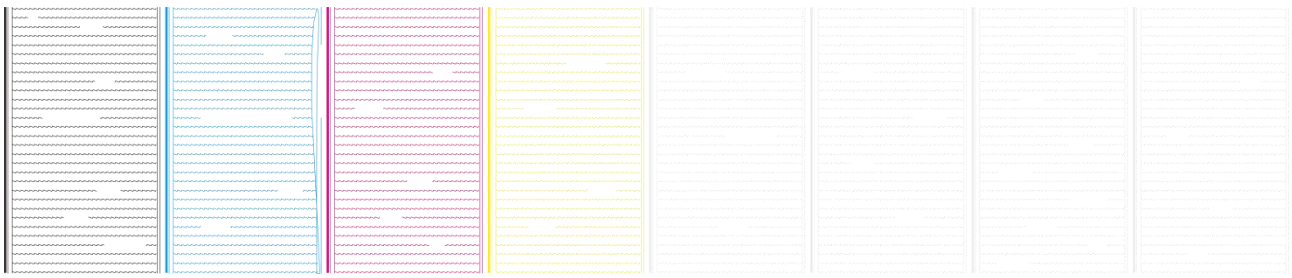
Solution:

1. First perform ink flushing, then print a test strip to check if the color mixing issue improves. If not, check for ink residue on the print head surface: if there are ink droplets of a single color, replace the corresponding damper; if there are multi-color ink droplets, check whether the wiper blade can properly wipe the print head surface during Auto Clean.

2. Replace the print head.

Problem Overview: For the above issue, prioritize checking for ink residue on the print head surface.

12.2.8.Test strip floating ink



Solution:

1. Check whether the height of the nozzle is within 2-3mm from the printing medium.

2. The printing environment is within the range of 15℃~30℃.

3. Test whether the cap top can pump ink normally.

4. Stir the floating ink evenly, and pump more than 10ml of the damper ink from the syringe, and then clean the print head. If the problem cannot be solved, it is recommended to replace the ink.

Problem overview: If the above problems occur, if there is no special change in the surrounding environment, it is generally caused by the ink precipitation caused by the machine being put on hold for a long time.

12.3 Future RIP Prompt: UV (Demo Version)

1.Check whether the dongle light is on, if not, please replace the computer USB adapter or replace the dongle

12.4 UV Lamp Not Turning On

1. Measure the continuity of the UV lamp power cable.
2. Check if the UV lamp power supply is powered on and has voltage output; replace the UV lamp power supply if necessary.
3. Measure the corresponding terminals on the mainboard to check if there is 24V voltage output during printing; replace the mainboard if there is no output.
4. Replace the UV lamp.

12.5 Ink Remaining Uncured

Entire product remains uncured:

Check if the UV lamp is on during printing. If not, refer to the troubleshooting solution for "UV Lamp Not Turning On".

Product edges remain uncured:

1. Verify the UV lamp calibration parameters.

2. Confirm the device information version with the manufacturer and upgrade the machine to the latest version.

12.6 Error Codes

Error Code 1: PC Version Driver Misalignment

Error Code 2: Balance Below a Certain Threshold

Error Code 3: Zero Balance

Error Code 4: Origin Sensor Error

Error Code 5: Parameter Initialization Error

Error Code 6: Carriage Collision

Error Code 7: Parameter Table ID Mismatch with Registered ID

Error Code 8: Carriage Gear Ratio Too Small

Error Code 9: Carriage Gear Ratio Too Large

Error Code 10: UI Parameter Initialization Error

Error Code 11: Waveform Table Empty

Error Code 12: Carriage Reverse Error

Error Code 13: Print Carriage Stop

Error Code 14: Carriage Position Error

Error Code 15: Servo Motor Self-Test Distance Insufficient

Error Code 16: Driver Board Alarm

Error Code 17: UI Parameter ID Mismatch with Carriage Parameter ID

Error Code 18: IP Address Conflict Error

Error Code 19: Ink Cartridge Initialization Error

Error Code 20: Ink Cartridge Level Warning

Error Code 21: Ink Cartridge Level Zero

Error Code 22: UI Parameter Table (Beta Version)

Error Code 23: Time Limit Not Supported

Error Code 24: Time Limit Reading Error

Error Code 25: Time Limit Expired

Error Code 26: Illegal Time Modification

Error Code 27: Parameter Table Print Head Type Error

Error Code 28: Print Head Auto-Detection Error

Error Code 29: UI Mainboard Reset

Error Code 30: Ink Station Motor or Sensor Detection Error

Error Code 31: Panel Nozzle Test Filling Data Error

Error Code 39: Grating Loss - Sensor Fails to Detect Grating Changes (Blockage or No Motor

Output)

Error Code 40: Waste Ink Alarm

Error Code 41: Over-Width Alarm

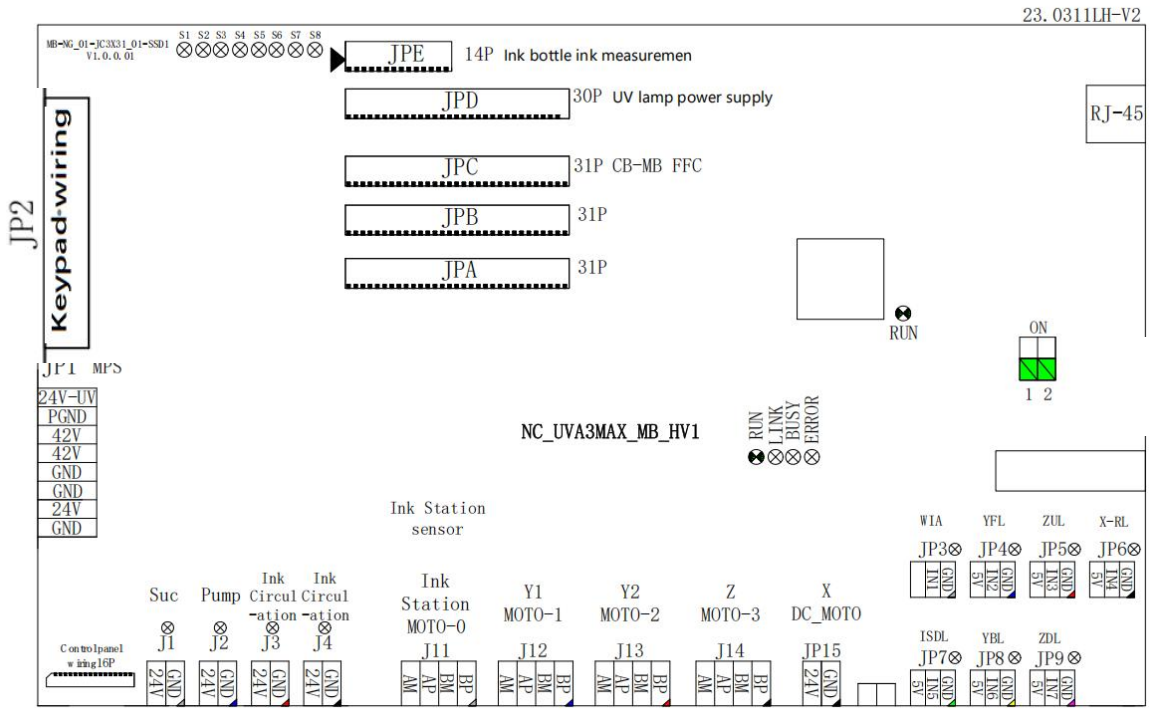
Error Code 42: Printing Hits Y-Axis Maximum Limit

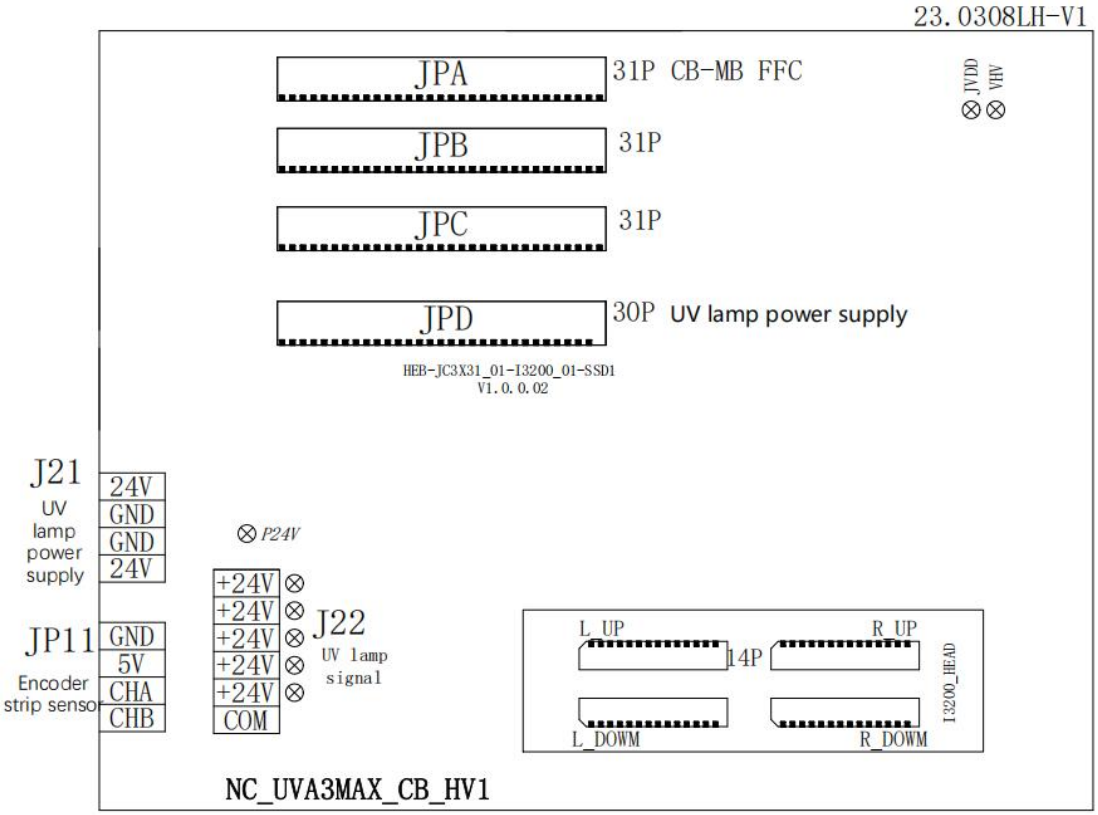
Error Code 43: Carriage Collision

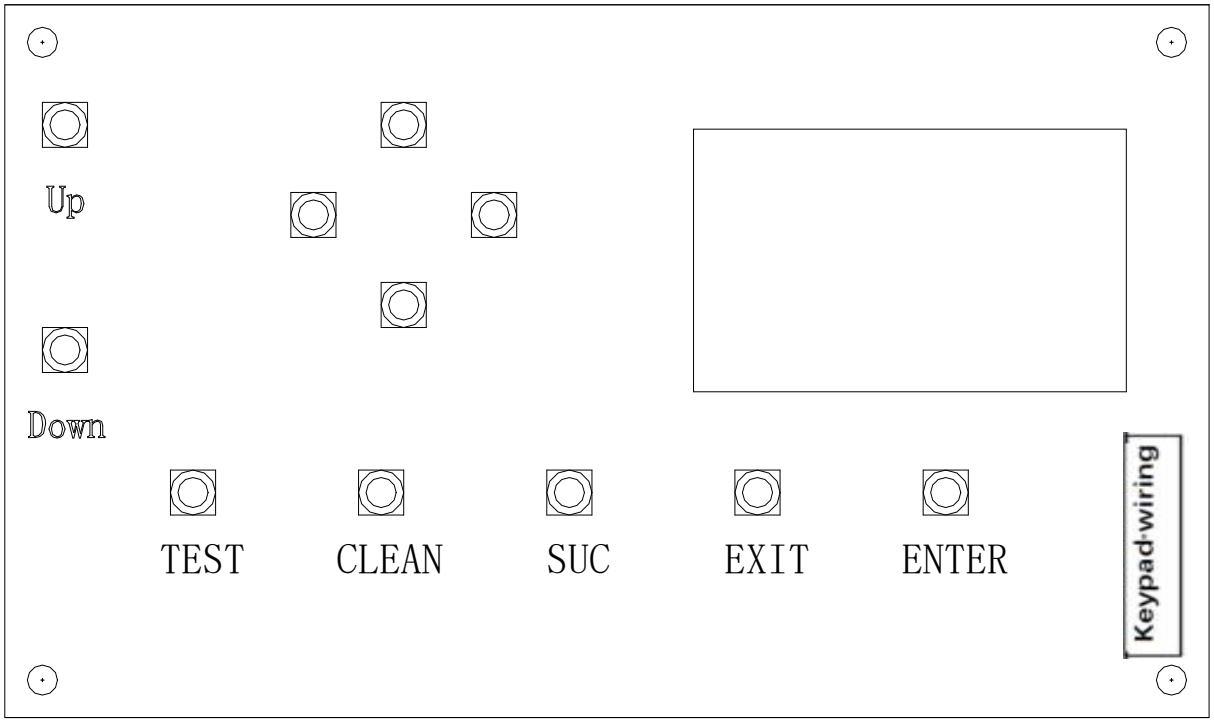
Error Code 50: Ink Level Monitoring Alarm

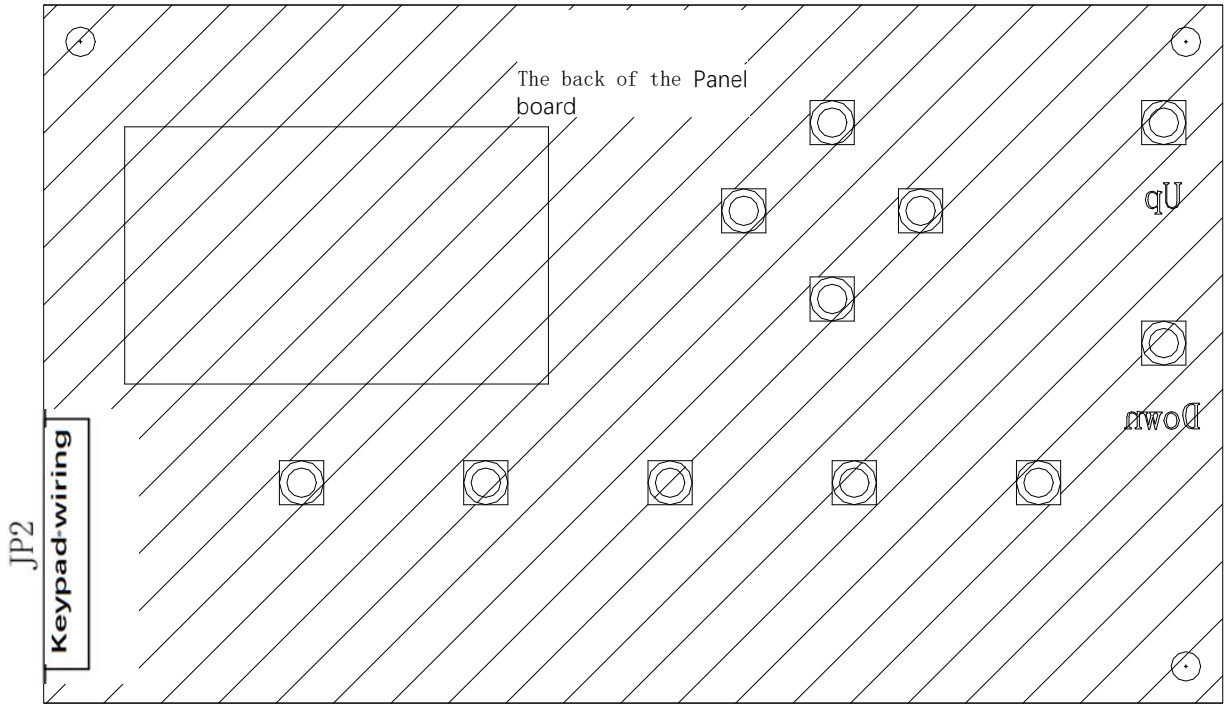
Error Code 173: Print Head Alarm

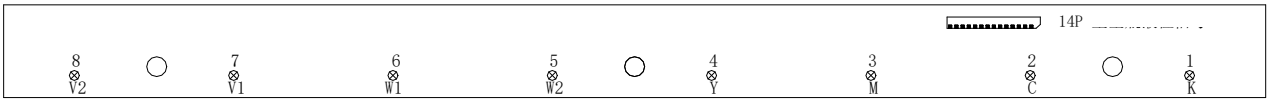
Introduction of Board Circuit






Up
Down
TEST
CLEAN
SUC
EXIT
ENTER
Keypad-wiring


The back of the Panel board
Keypad-wiring
JP2


14P
8 V2
7 V1
6 W1
5 W2
4 Y
3 M
2 C
1 K

Appendix: List of Common Errors in Visual Mode

No.	Issue	Causes & Solutions
1	Visual tool module not found in the driver	1. Install the Ares camera software; 2. Insert the visual Dongle.
2	Camera fails to connect	Loose camera network cable, network cable not directly plugged into the computer's motherboard Ethernet port, or non-Gigabit Ethernet port affecting communication; The camera network adapter is not assigned the correct IP address; ensure it is set to 192.168.0.2; 3. The npcap-1.75 runtime environment is not installed correctly.
3	Camera does not turn on	1. The camera ' s signal cable is not properly connected, or the adapter board/camera flat cable is damaged; 2. The camera is occupied or disconnected in the background: click the green camera connection icon in the upper right corner of the printer driver, confirm, then click the red camera disconnection icon to reconnect the

		camera; 3. Loose camera power cable.
4	Partial area missing (appears as black blocks) during camera acquisition	1. Data loss during camera network transmission: confirm the Ethernet port is normal and replace the network cable; 2. Loose signal cable between the camera and the board, or loose board flat cable: replug and fasten them.
5	Camera turns on normally but fails to image	1. Confirm the camera's grating strip is normal; replug the interface to ensure it is tight; 2. The trigger positions for acquisition start and end set for the camera must be larger than the format height; 3. The camera ' s movement range must be larger than the acquisition area.

6	Camera Y-axis scanning parameter settings	1. Currently, the camera resolution is 300 dpi, and the single pixel size is 0.0846 mm/pix; 2. The Y-axis movement distance of the cart (starting from the trigger position) must be greater than 341 mm. Therefore, the cart ' s acquisition start position should be around 820000, and the end position around 300000.
7	Distorted image from camera scanning	Confirm whether the camera ' s Y-axis stretch coefficient and buffer height are correct.
8	Abnormal printing of calibration chart	1. The calibration chart size is 341mm×279mm; adjust the carrier start point and margins to print it in the center, preventing it from exceeding the normal printing area; 2. Incorrect use of the calibration chart: do not add margins to the calibration chart's PRN file; 3. Print the calibration chart with default settings (high speed, low feathering); configure color registration in advance to ensure image output accuracy for subsequent calibration calculations.

9	Abnormal scanned image of the calibration chart	1. The calibration chart is printed on adhesive tape, resulting in blurred line acquisition;2. When printing the calibration chart, lay the paper flat and turn on the platform vacuum to ensure no line distortion.
10	Calibration chart calculation does not return results	1. Incorrect framing for calibration: frame the calibration chart from the top-left to the bottom-right to include all lines; 2. Blurred lines: use an exposure value of around 100 for scanning; if lines remain unclear, increase the exposure/image light; 3. Printing software freezes or excessive background resource usage: restart the software and the computer.
11	Large calibration error of the calibration chart; missing grids/coordinates on the calibration chart	1. The camera is not calibrated to the proper position; recalibration is required; 2. Incorrect Y-axis initial scanning start position, resulting in uncalibrated front side; 3. Reframe the calibration area and slightly expand the framing range; 4. Image overexposure: adjust the exposure value, and adjust the image light if necessary

		after scanning; 5. Insufficient buffer height: modify it in the XML file.
12	Camera turns on once during scanning but not afterward	1. Reconnect the disconnected camera; 2. Restart the driver; 3. Check if the camera cables are loose; 4. Confirm the camera trigger mode in the Ares software is set to Auto-Trigger.
13	Blurred material imaging	1. The camera needs recalibration; 2. The camera is installed unevenly (front-back) or too high; 3. The camera is deformed or damaged.
14	Vertical stripes in the image	1. Incorrect frequency division/multiplication (default: 255, 255); 2. The camera's flat field calibration file is not replaced; 3. The camera's flat field calibration needs to be re-performed;4. Insufficient image light.
15	No normal jump after framing the material when creating/modifying a template	The calibration file does not match the current scanning width (framing is not possible if current scanning width > calibration width), or no calibration has been performed.

16	Unideal template feature selection	1. Adjust the grayscale level, clear existing features, and reframe; 2. Change the exposure time and rescan the material.
17	Deviation persists after repeated alignment adjustments of the pattern	The original image size does not match the material size; adjust the X/Y ratios of the image.
18	“ Drawing failed ” when drawing according to the template	1. Unideal template creation: reselect features, and ensure the exposure value used for template creation is the same as that for material scanning; 2. Unsuitable recognition score/angle: excessively high score or excessively small angle results in failure to recognize the material.
19	Low drawing recognition rate	1. Frame an area slightly larger than the material; excessive blank area reduces recognition rate; 2. Unideal features: reselect features; 3. Lower the recognition score (recommended: around 180), adjust the recognition angle according to material placement, and redraw; if the recognition rate remains low, continue lowering the score;

		4. High repetition rate during feature selection: adjust if materials are dense (low repetition rate also reduces recognition rate).
20	Incorrect recognition and drawing of patterns in blank areas	1. Excessively low recognition score: slightly increase it; 2. Few misrecognitions: use the drawing deletion function to manually delete incorrectly recognized patterns.
21	Recognition count is significantly higher than the actual number of materials	1. Excessively high repetition rate: lower it; 2. Unsuitable feature selection: select continuous, clear, and unique lines.
22	Deviation between the drawn pattern and the actual material	1. Unsuitable feature selection leading to incorrect feature area recognition (e.g., for symmetrical materials, select asymmetrical feature areas as much as possible); 2. Unsuitable recognition mode: select the appropriate mode as instructed; 3. Few deviated patterns: manually delete them.

23	Driver crashes when printing the drawn image	Non-compliant image format is used (required format: CMYK color mode, 4 spot color channels (1234), TIF images without saving transparency).
24	Generated image not found when printing the drawn image	Check if the hot folder settings are effective; confirm “Retain after Reception/Auto-Enable” is activated.
25	Large deviation in printed image position	1. Confirm the material alignment effect of the template; 2. Check if the material may move during printing; 3. Confirm the X/Y margin values are the same as those used during calibration; 4. Adjust the image position using the Camera Mode in the upper right corner of the fine-tune camera mode; 5. The camera is not level.
26	Regular deviation in printed image position	1. Caused by reconfigured Y-axis trigger position: recalibrate; 2. Changed carrier start point: recalibrate; 3. Adjust the image position using the Camera Mode in the upper right corner of the fine-tune camera mode.

27	Printed white ink/varnish is too light/too thick	Adjust the white ink/varnish ratio and printing frequency in the driver.
28	Repeated errors when using the printer driver upgrade program	1. Click Confirm or close the error pop-up window several times in a row; normal upgrade can be achieved afterward (this method is invalid when upgrading control panel program resources); 2. First uninstall Npcap 1.75, install Winpcap 4.1.3, uninstall Winpcap 4.1.3 after the upgrade is completed, then reinstall Npcap 1.75 for camera use.

14.1 Maintenance services

From the invoice date, one-year maintenance warranty (print head, cap top, ink pump, ink tube, ink tank and damper, all the spare parts which connect to the ink are not included). When on-site maintenance is required by buyer, the cost of travel and accommodation of our technician will be borne by buyer.

14.2 Ask for help

If you meet any problem when using the machine, ask for help as below step:

14.2.1 Check the user manual first.

14.2.2 Visit the Nocai website for more product information.(http://www.happycolor.com.cn/)

14.2.3 Contact the local distributor for help.

14.3 submit the information to the local distributor if you need help

User information	
Name	
Model	
Series code	

Address	
Telephone NO.	

14.4 Non-warranty items

14.4.1 Product failures and damages are due to the use of not Nocai inks

14.4.2 Product failure and damage are due to the user's do noy use the machine in the working environment specified by Nocai (such as power supply, temperature, humidity)

14.4.3 Failure and damage caused by improper storage by the user (such as rodent damage, insect damage, liquid infiltration, entry of foreign objects, etc.), or loss of components

14.4.4 Failure and damage caused by human factors

14.4.5 Failure and damage caused by failure to follow the usage methods and main items remarked in the product instruction manual

14.4.6 Malfunctions and damages caused during user transportation

14.4.7 Malfunctions and damages caused by force majeure

14.5 Warranty Policy

14.5.1 Nocai Company does not guarantee the provision of replacement for lost or damaged random accessories (including user manuals and software).

14.5.2 Nocai Company assumes no liability for indirect losses, future profits, or other related losses incurred by users due to product malfunctions.

14.6 Notes

14.6.1 Carry:

14.6.1.1 Do not force ink carriage beam ad print table when you move the printer

14.6.1.2 Need 2 people to hold the printer's foot cups with hands and move it stably.

14.6.2 Working environment

Working environment	Temperature	20℃-28℃
	Humidity	35%-65%