Ultra Series 24in DTF Printer

USER MANUAL

DTF-UL-A24H2-US (With 2 Epson I3200-A1 Printheads)

DTF-UL-A24H4-US (With 4 Epson I3200-A1 Printheads)

Thank you very much for choosing our **Ultra series** DTF printer. Please read the manual carefully, including the operation and maintenance to ensure the best output and the lifetime of the machine.

> Every care has been taken in writing the contents of this manual, but please contact us or the dealer you purchased the product from if you find any unclear, erroneous or otherwise unsatisfactory content in the manual.

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1. Equipment Data Sheet

Data Sheet:

DTF-UL-A24H2-US (with 2 Epson I3200-A1 Printheads)

DTF-UL-A24H4-US (with 4 Epson I3200-A1 Printheads)

24in (620mm) maximum print width

Ink Sort: Textile Pigment Ink, (CMYK - WWWW)

1.8 Liter per color ink bottle capacity

Media: PET Film

Thickness: 0.06in to 0.24in (1.5mm to 6mm) Adjustable

Maximum Roll Weight: 396lbs (20kg)

Media Heater: Pre / Rear Heater (Can be controlled separately)

Printing Resolution: 720 x 1200dpi; 720 x 1800dpi; 720 x 2400dpi (4Pass, 6Pass, 8Pass)

Printing Speed:

4 pass: 12m^2/ h; 6 pass: 8m^2/ h; 8 pass: 6m^2/ h (2 heads)

4 pass: 22m^2/h, 6pass:18m^2/h, 8pass:12m^2/h (4 heads)

Interface: Gigabit Network Port

Printing Software: Flexi PhotoPrint RIP (SAI)

Print Head Cleaning: Automatic

Rewinding Function: Automatic

Heating Sections: Pre-heater, printing bed heater, rear heater: 86˚F-149˚F (30˚C-65˚C)

Printer Size: 70.3in x 31.1in x 63.5in (1785mm x 790mm x 1613mm)

Printer Weight: 396lbs (180kg)

Height of Working Platform: 41.8in (1062mm)

Packing Size: 74in x 38.2in x 29.1in (1880mm x 970mm x 740mm)

Gross Weight: 440.9lbs (200kg)

Requirements:

> Working Power Supply: AC 110V / 220V, 50HZ / 60HZ, 1 phase.

> Current: 5.5A (220V), 11A (110V)

> Operating System: XP / Win7 / Win10

> Temperature control set to 68˚F - 82˚F (20˚C - 28˚C) and 65 - 75% humidity.

Remarks: Please use recommended DTF ink / powder / film. Contact our sales for recommended supplies.

2. Notice On Safety Using

2.1 General

Read the instructions carefully as they contain important information regarding proper, efficient and safe installation, use and maintenance of the unit.

The installation of this unit must be carried out in accordance with the manufacturer's instructions.

Switch off the unit in case of failure or malfunction and contact your distributor for service information.

2.2 Symbols That May Be Used In This Manual

This symbol informs about a situation where a safety risk might be at hand. Given instructions are mandatory in order to prevent injury.

This symbol informs about the right way to perform in order to prevent bad results, appliance damages or hazardous situations.

This symbol informs about recommendations and hints that help to get the best performance out of the equipment.

2.3 Safety

1.3.1 Safe use of the appliance

For your safety. Do not store or use gasoline or other flammable vapors or liquids in the vicinity of this or any other appliance.

1.3.2 Other prohibitions (dangerous procedures)

Using any parts other than genuine approved manufactured parts can void the warranty.

Improper installation, adjustment, alteration, service or maintenance can cause property damage or major injury. Read the installation and operating instructions thoroughly before installing or servicing this equipment.

1.3.3 Caution

Users must pay attention to content have this mark, it might be caused by misoperation.

2.4 Notice Before Starting The Printer

This machine is a high voltage equipment, in order to use the machine better please be aware of following specification.

Equipment installation instructions

Installation and placement

① The equipment should be placed in a dry and ventilated environment

② The equipment must be placed horizontally

Power connection instructions

Electricity parameters

Rated voltage: AC110V / 220 V, 1 phase

Rated current: 11A / 6A, 1200W

Rated power: 1200W

The access power must be consistent with the rated power of the equipment, and the diameter of the access power supply line must meet the rated requirements.

Ground connection

Before getting the power-on, the ground wire must be connected properly to avoid accidents

Those who are sensitive to static electricity should take protective measures when operating the equipment.

Those who are allergic to static electricity should wear an anti-static wristband or anti-static gloves.

2.5 Cautions In Using This Printer

Cautions when handling film

> Be cautious of expansion and contraction of media from temperature and humidity.

After opening an unopened media, leave the media for approximately 30 minutes to adjust to environments.

> Do not use media with folds, scratches, tears, curvatures, winding curl and weaving.

> Do not leave a roll media set in this product for a long time. The media can be

curled becoming unsuitable for printing.

When not using for a long time, remove a roll media and store in its original package box.

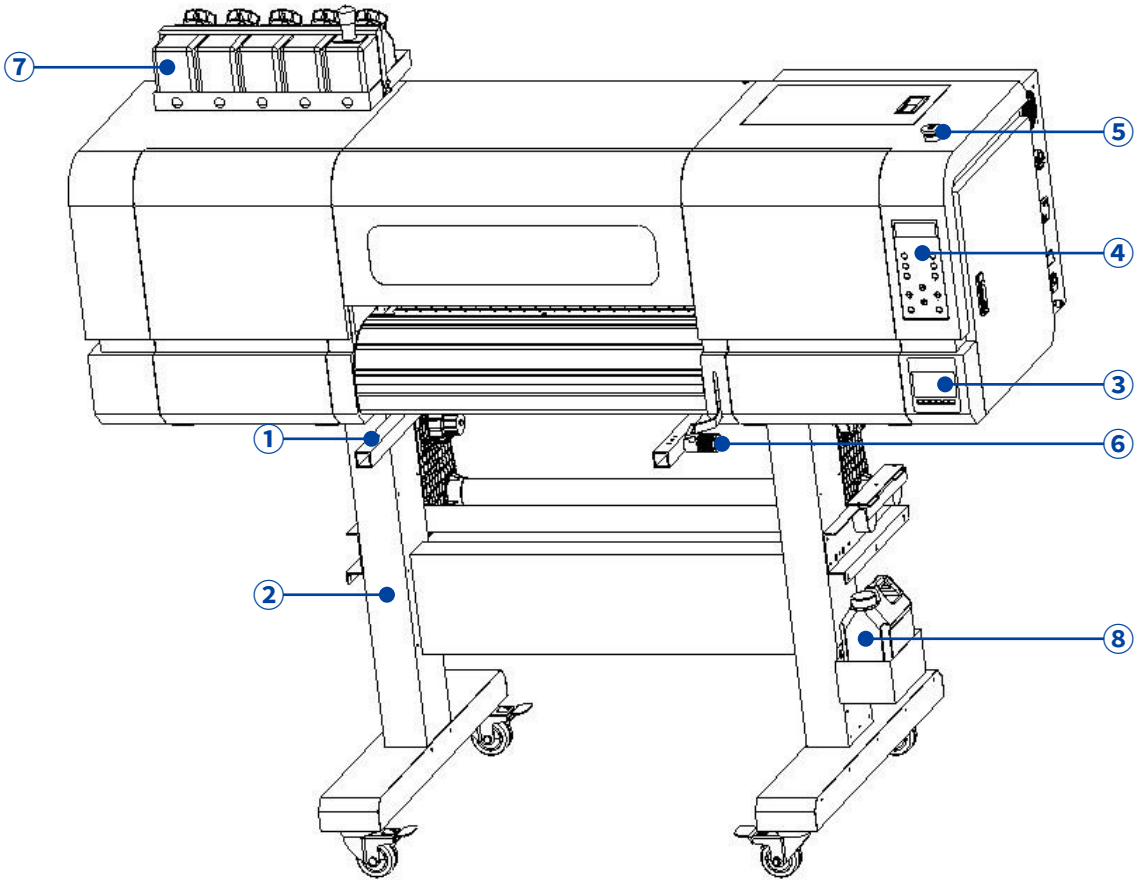
It is recommended to use this product once a week. When left unused for a long time, the print head nozzles can get clogged causing damage.

Conduct periodic maintenance

> Check the nozzle before and after printing.
  If nozzle clog is found, conduct a head cleaning.
> Clean the cleaning wiper once a week.
> When this product is not used for a long time (a week or more), conduct a head cleaning once a week.
> Clean its exterior and inside once a month.
> Drain waste ink in the waste liquid tank periodically.

3. Illustration Of The Printer

3.1 The Front Of The Printer



① **Printer Lift :** The lift can be removed when the printer is first installed and fixed on the floor of wooden box during transportation.

② **Printer Bracket:** The bracket of the machine. Refer to the bracket installation for details.

③ **Platform Heating Control Panel:** Set up the platform before and after the heating, installation instructions refer to the platform heating settings.

④ **Panel Board:** Adjust and set the operation and internal parameters of the printer. Refer to the panel board instructions for details.

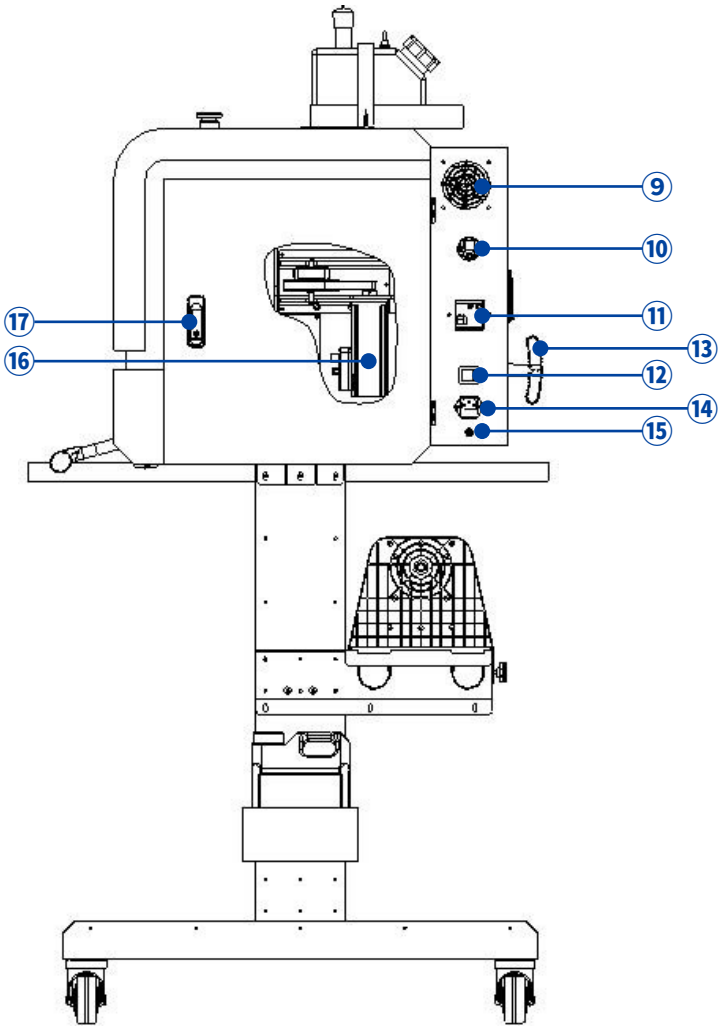
⑤ **Emergency Stop Switch:** Press the stop switch in case of emergency.

⑥ **Paper Lifting Handle:** Lift the Pinch Roller to install the Film.

⑦ **Ink Bottle:** Device for storing ink.

⑧ **Waste Ink Bottle:** Device for storing waste ink.

3.2 The Right Side Of The Printer



⑨ **Cooling Fan Air Outlet:** Please do not block the air outlet when the printer is working.

⑩ **USB Cable Clip:** Fix the USB data cable.

⑪ **Earth Leakage Switch:** Earth leakage protective device.

⑫ **Power Switch:** On-off control of the main power supply.

⑬ **Paper Lift Handle:** Lift the pinch roller for easy installation of the film.

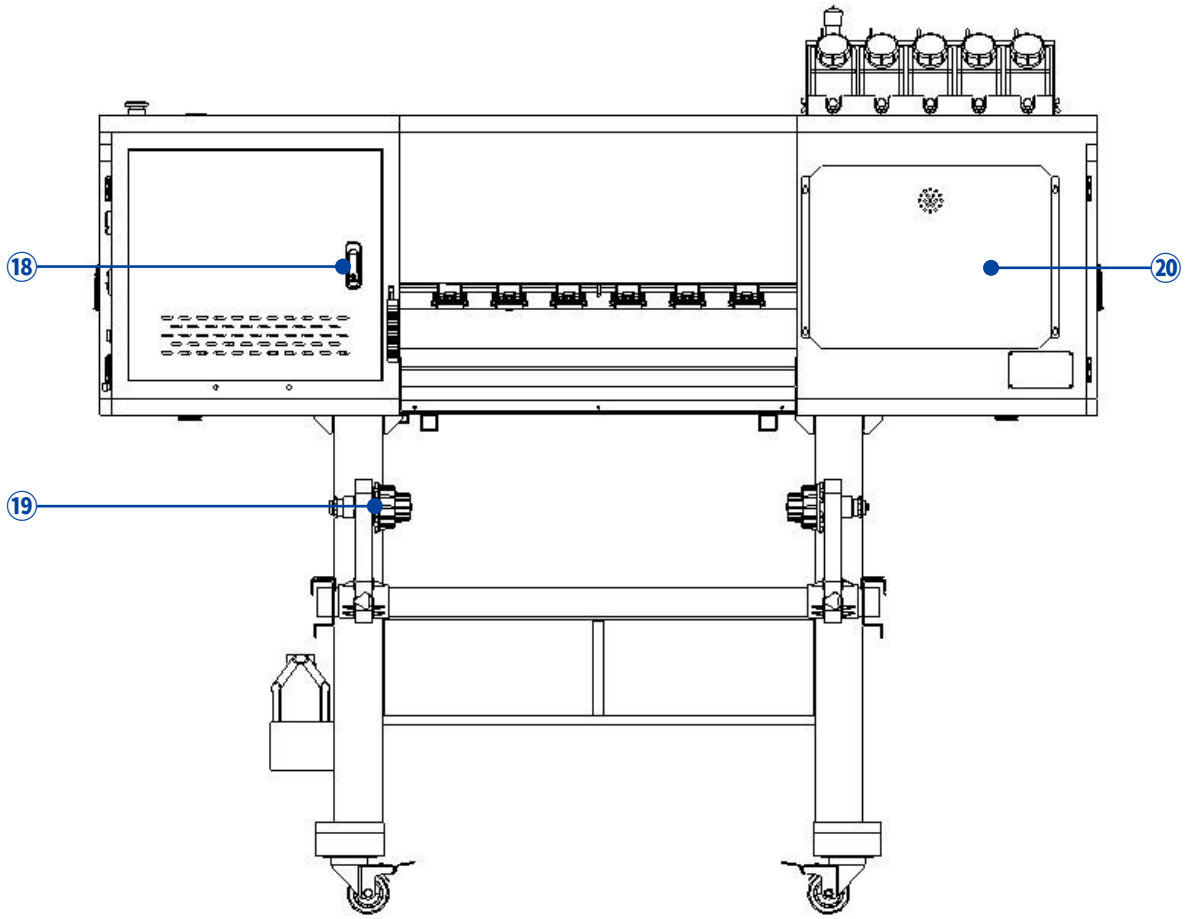
⑭ **Main Power Supply:** Connect the power plug.

⑮ **Ground Terminal:** External ground wire to protect the printer from static electricity or external electric field.

⑯ **X-axis Motor:** X-axis drive motor set.

⑰ **Right Side Door:** There are X-axis motor unit, control panel board, temperature control board and other circuit units, non-professionals do not open.

3.3 The Rear Side Of The Printer

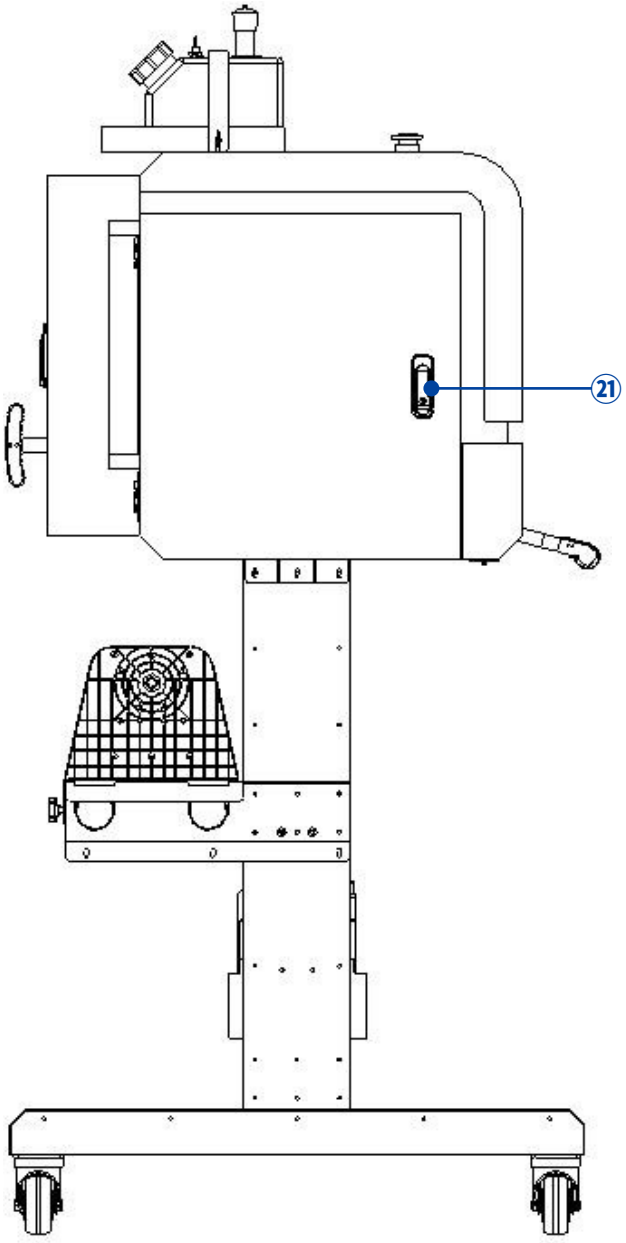


⑱ **Electrical Box Door:** Main circuit is inside, non-professionals do not open.

⑲ **Paper Feeder Adaptor:** Device for placing the film.

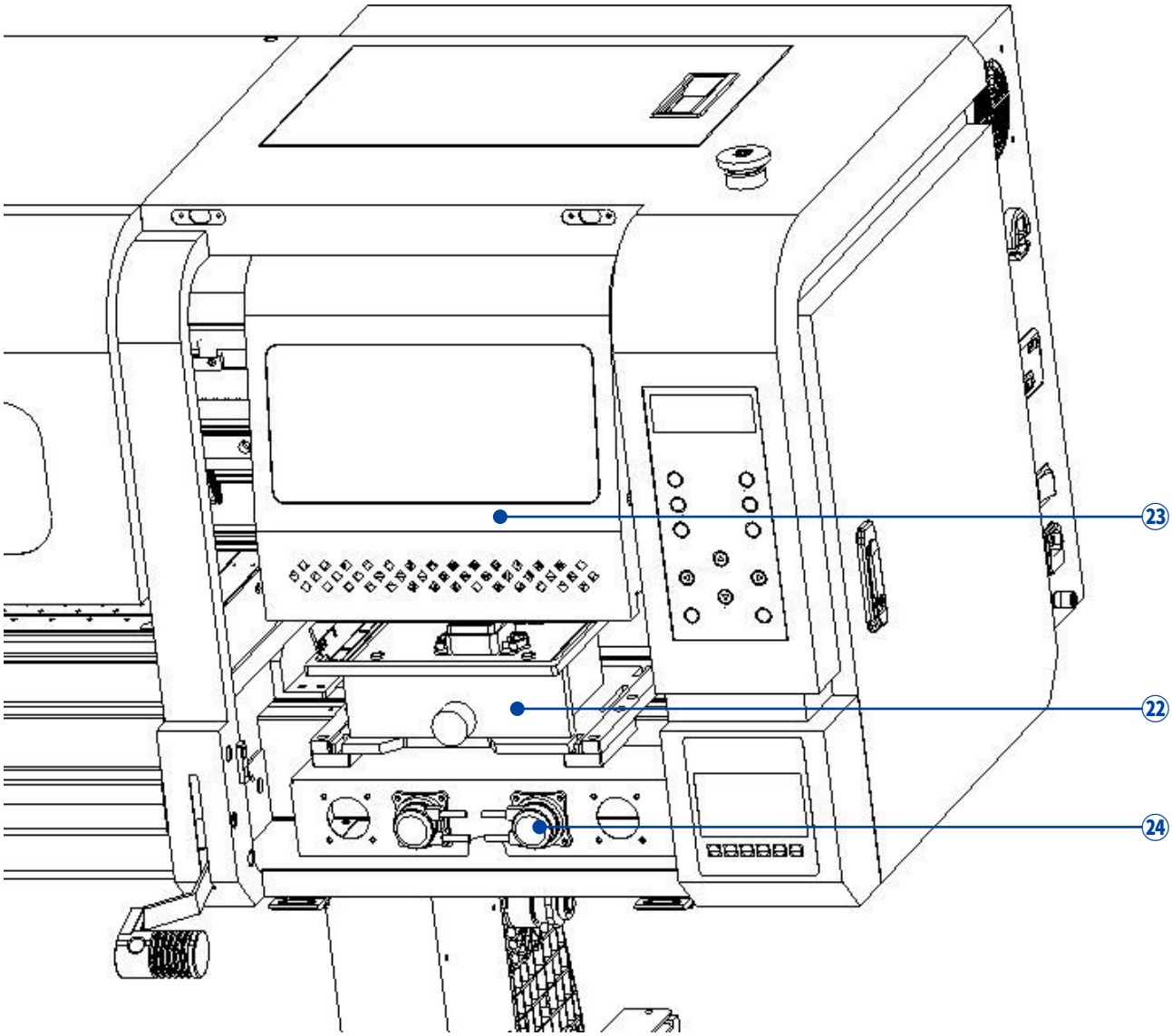
⑳ **Ink Cover:** Internal ink system, non-professionals do not open.

3.4 The Left Side Of The Printer



㉑ **Left Side Door:** Y-axis drive group is inside, non-professionals do not open.

3.5 The Printhead On The Right Side Of The Printer

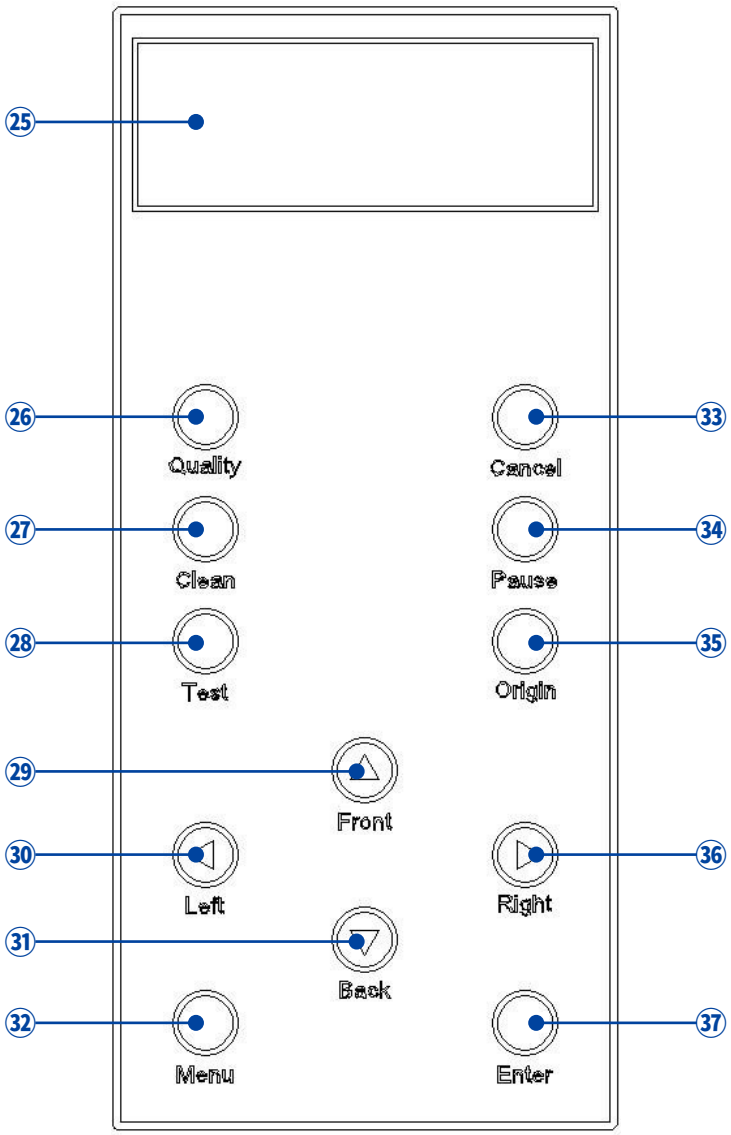


㉒ **Ink Station:** nozzle suction and nozzle moisture device. The nozzles must be sealed by cap tops when the printer is not working.

㉓ **Carriage:** Printing device, refer to carriage instrutions for details.

㉔ **Ink Pump:** The component for extracting the ink.

3.6 The Control Panel



㉕ **Display Screen:** Printer operation information display.

㉖ **Quality Button**

㉗ **Cleaning Button**

㉘ **Testing Button**

㉙ **Front Button:** The film moves back.

㉚ **Left Button:** The carriage moves to the left.

㉛ **Back Button:** The film moves forward.

㉜ **Menu Button:** Menu selection

㉝ **Cancel Button**

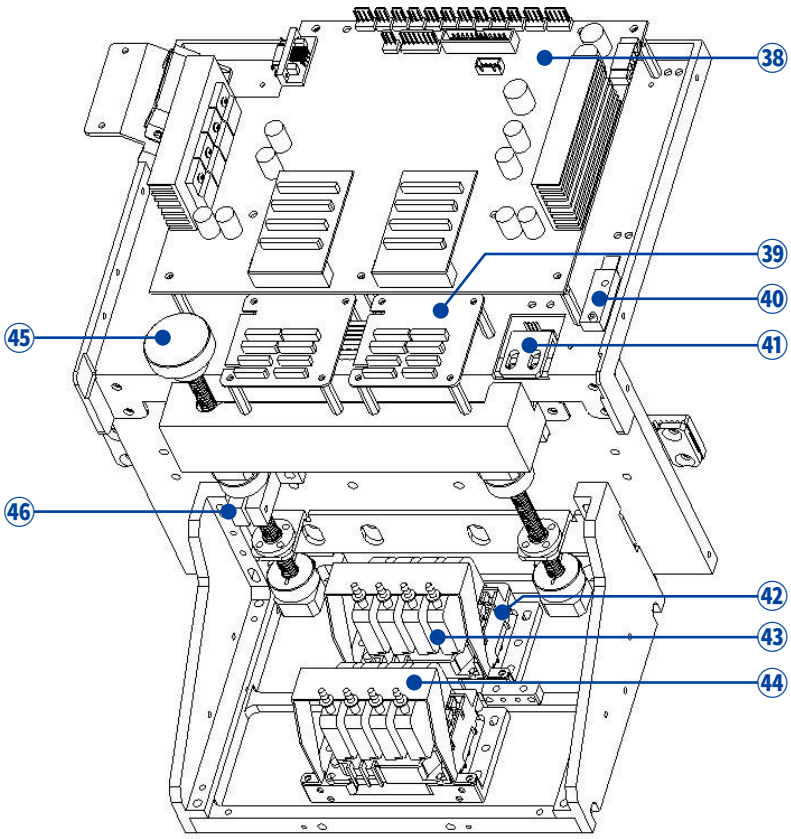
㉞ **Pause Button**

㉟ **Origin Button**

㊱ **Right Button:** The carriage moves to the right.

㊲ **Enter Button**

3.7 The Carriage



㊳ **Carriage Board:** Include printer online port, data pore and ink system.

㊴ **Decryption Card:** Only use for encrypting the print head, the original print head does not need to be used.

㊵ **Origin Sensor:** The component for positioning the origin.

㊶ **Encoder Sensor:** The element for reading the X-axis encoder stripe.

㊷ **Print Head:** Output the ink, the head condition directly affect the printing effect.

㊸ **Ink Damper:** Ensure continuous supply of ink, filter impurities.

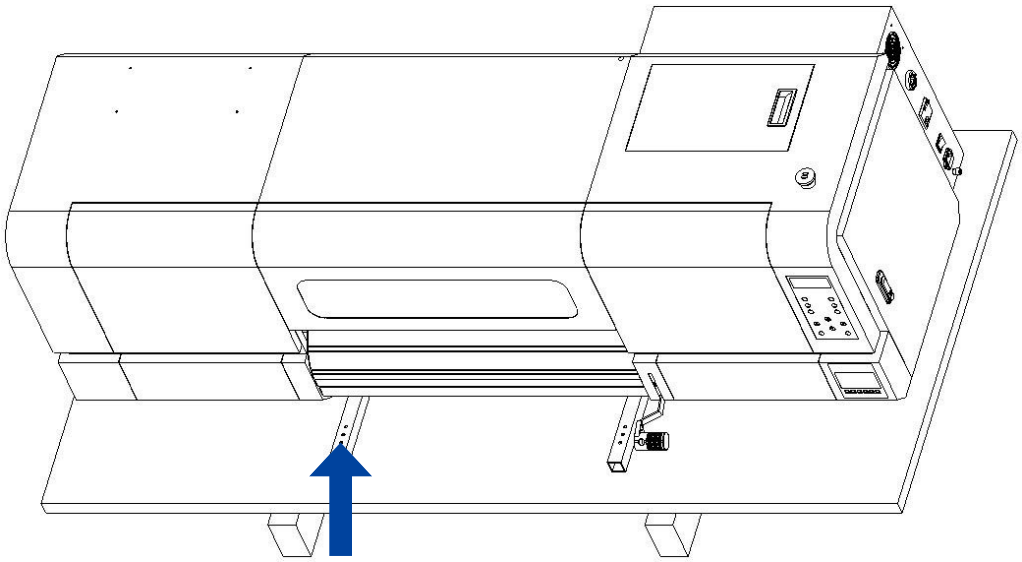
㊹ **Ink Damper Holder:** Prevent the damper from falling off.

㊺ **Lifting Knob:** Adjust the height of the print head according to the thickness of the film.

㊻ **Clamp Blade:** Usually it's locked to prevent the print head from moving up and down, and it needs to be loosened when the height of the print head needs to be adjusted. This clamping piece and the left and right side panels of the carriage can only be adjusted with five screws. After the height adjustment, the screws need to be re-tightened.

4. Printer Installation

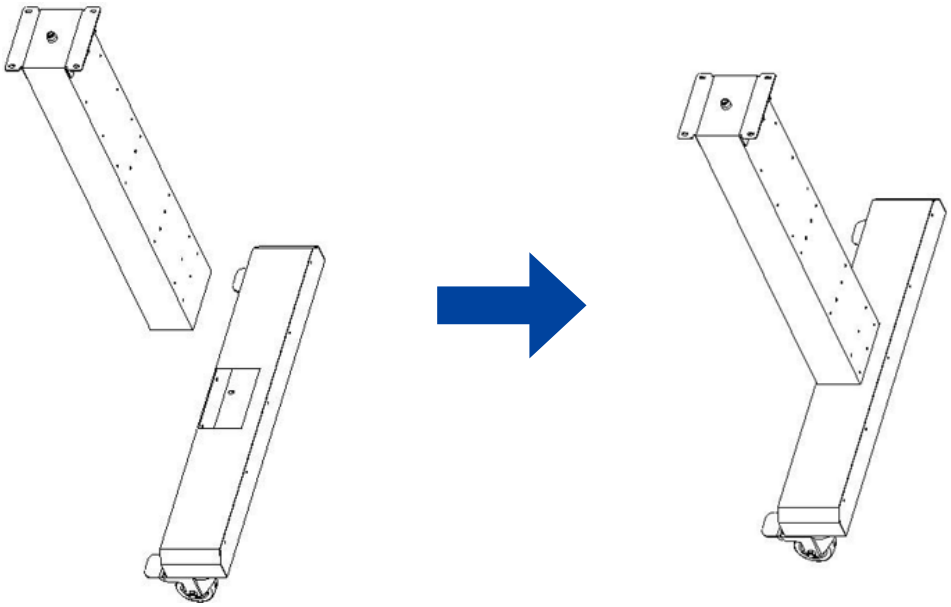
4.1 Printer Unpacking



Printer Unpacking: Open the wooden box and remove all the screws which fasten the printer lifting rod to the bottom plate.

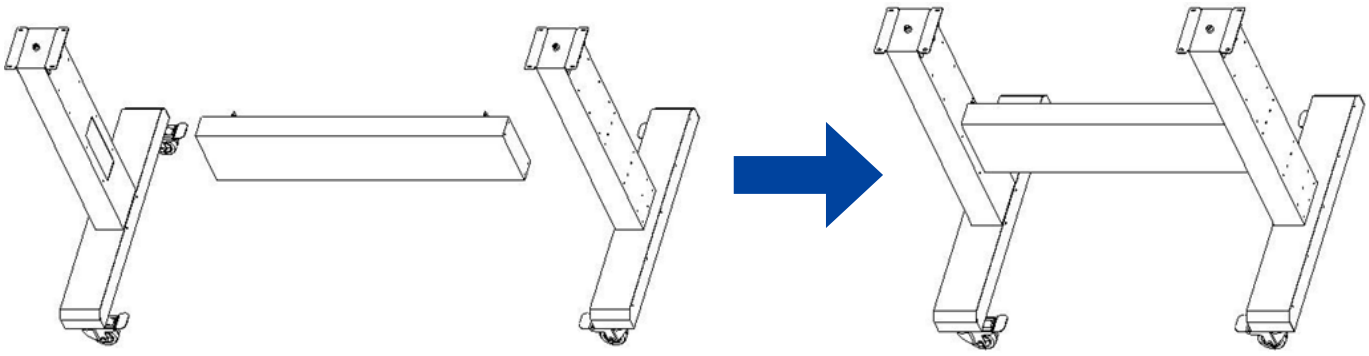
4.2 Bracket Installation

4.2.1 Bracket Foot Installation



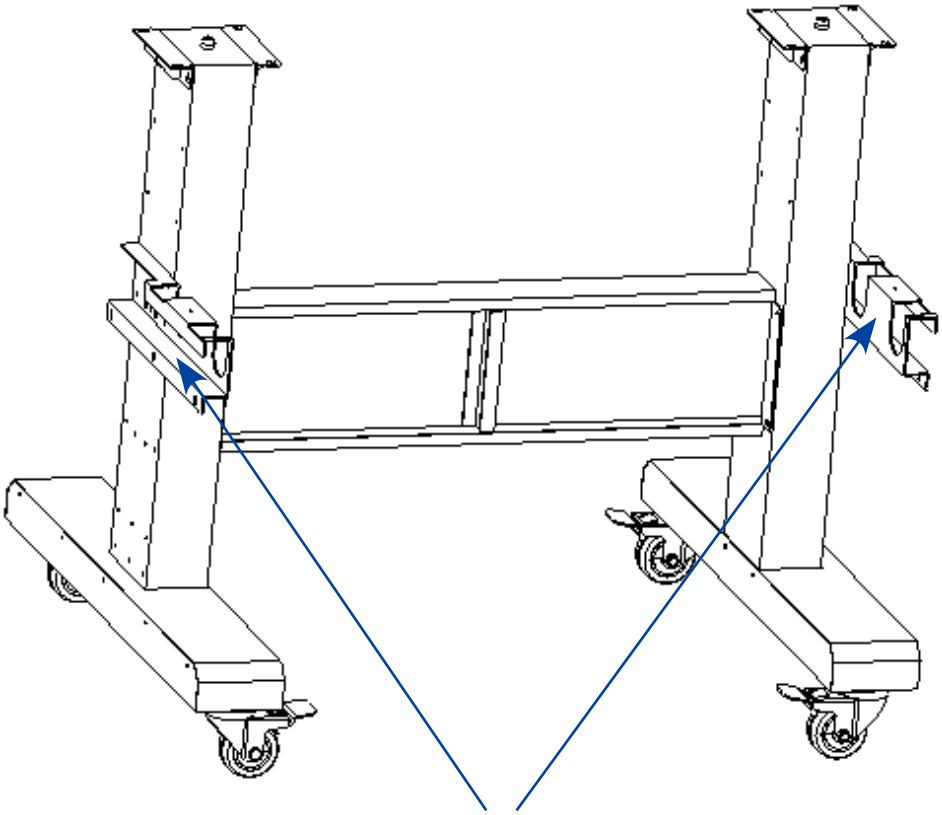
Installation Instructions: Fix the bracket feet together. There are totally six screws.

4.2.2 Bracket Crossbar Installation

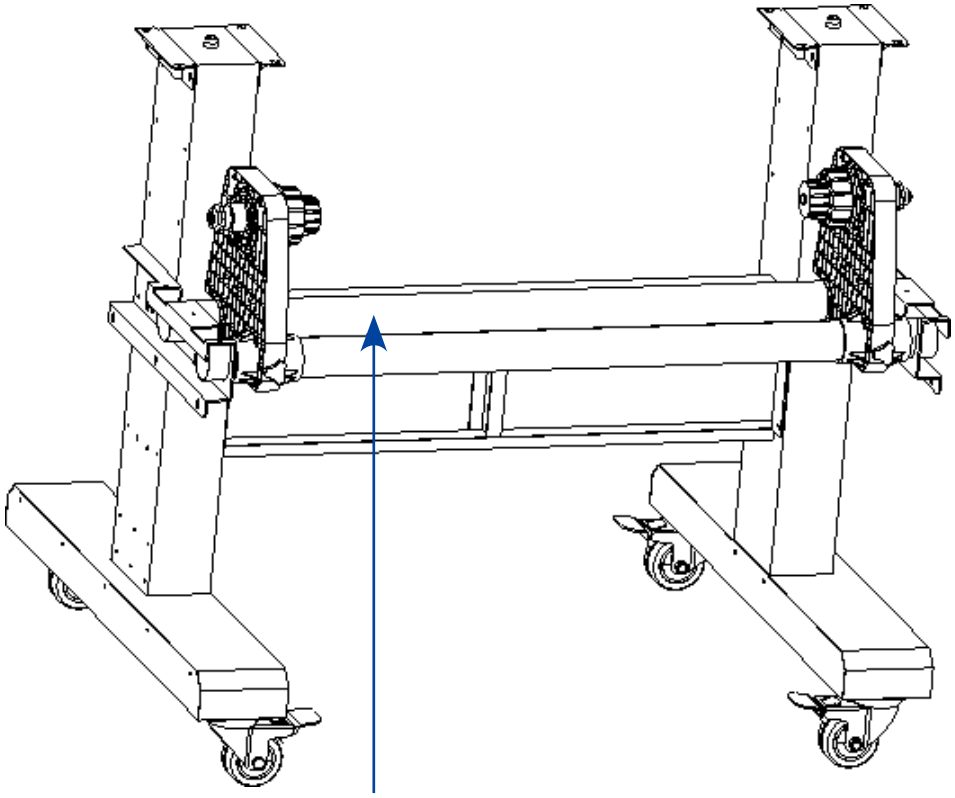


Installation instructions: Fix the bracket crossbar and bracket foot together. There are totally 12 screws.

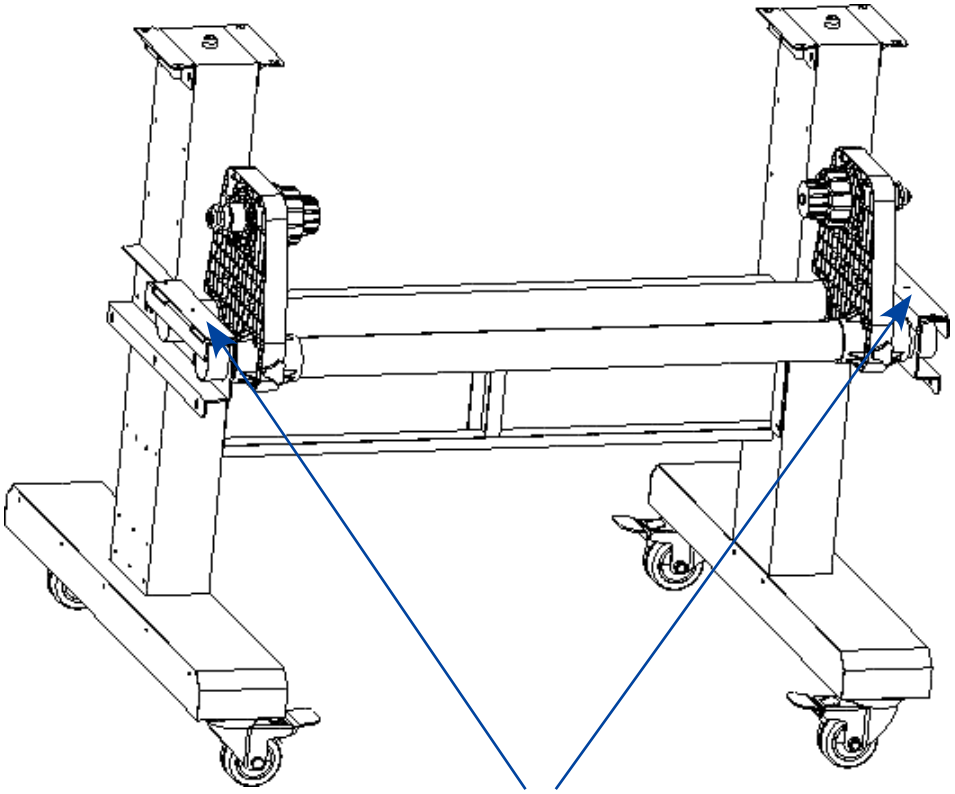
4.2.3 Paper Feeder Installation



Install the left and right side of the steel pipe frame.

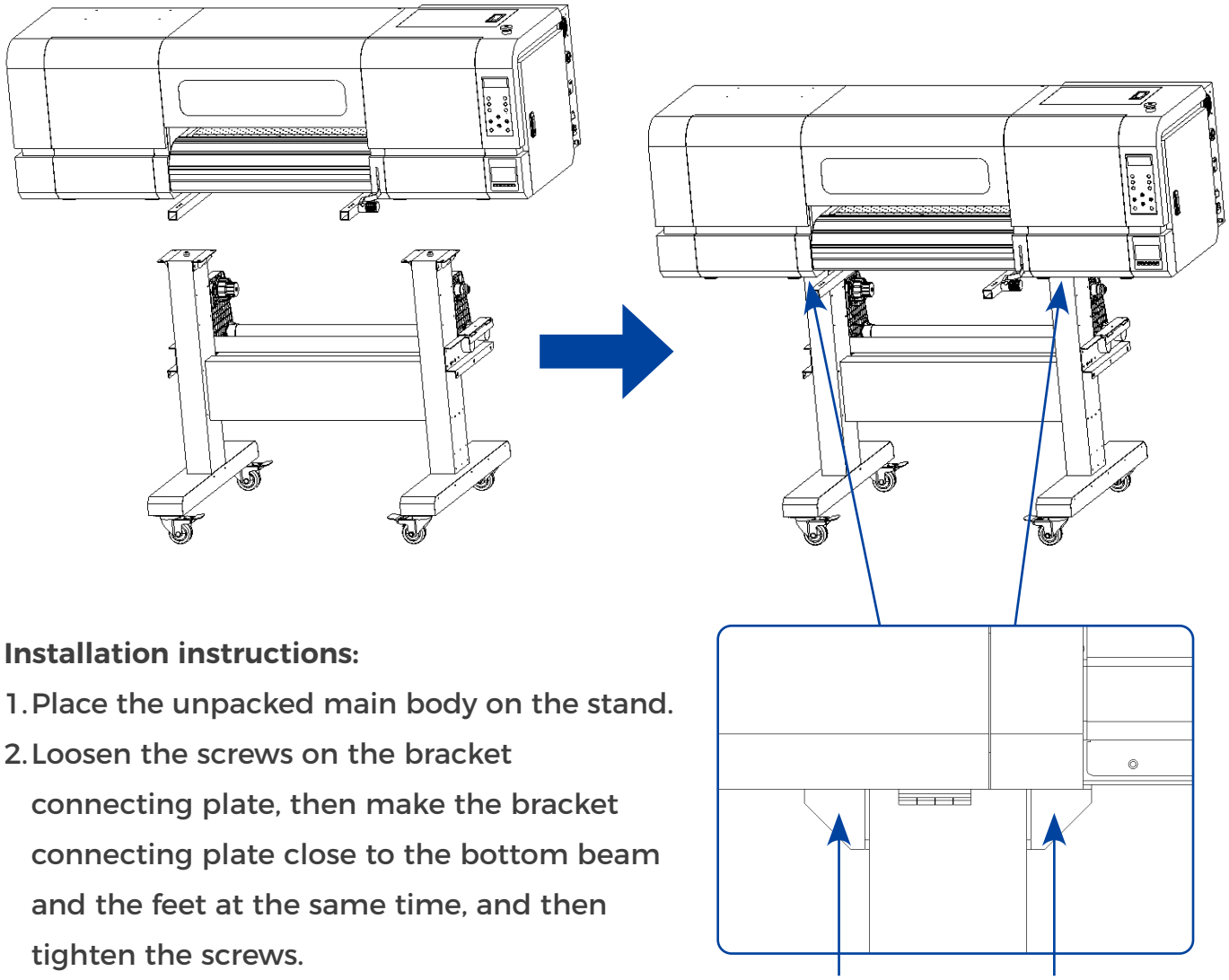


Put the two steel pipes and the paper feeders on the holder.



Fix the pipe tighten plate on the pipe frame.

4.3 Printer Head Installation

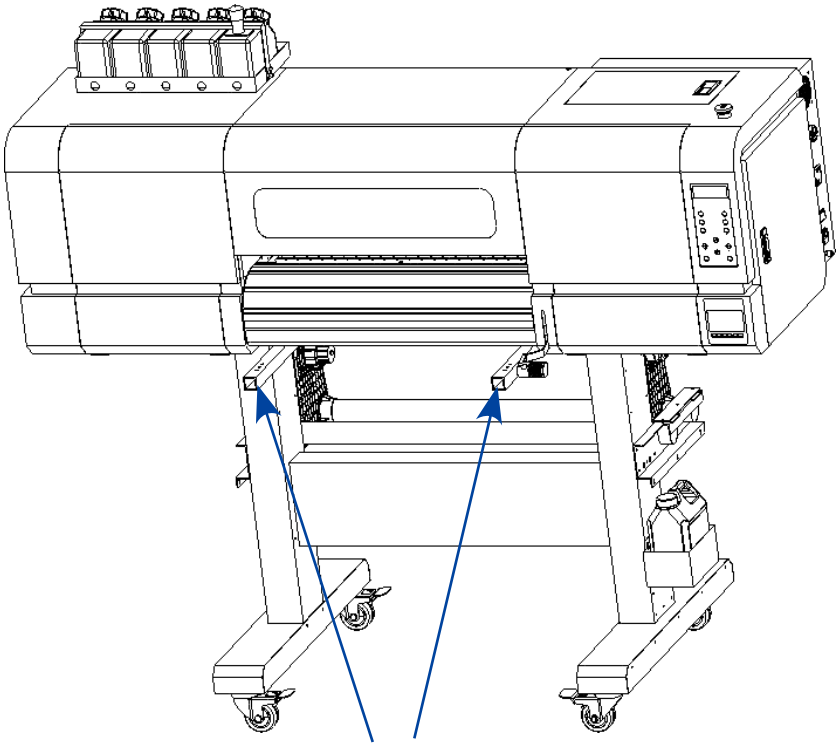


Installation instructions:

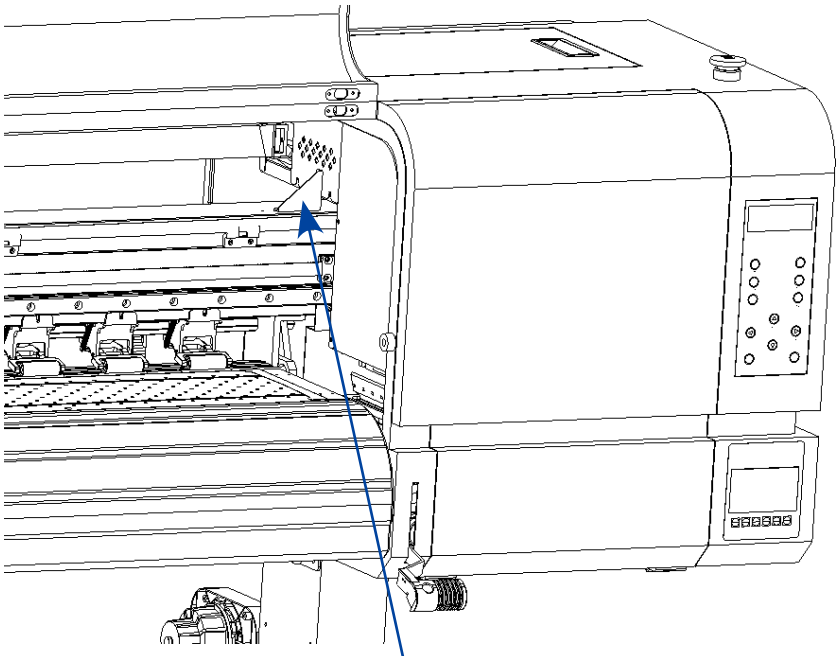
1. Place the unpacked main body on the stand.
2. Loosen the screws on the bracket connecting plate, then make the bracket connecting plate close to the bottom beam and the feet at the same time, and then tighten the screws.
3. Fix the four bracket connecting plates the same way.

The bracket connecting plate needs to be attached to the bottom beam and the feet at the same time, and then tighten the screws.

4.4 Removal Of The Printer Lifters And Carriage Fixer



Remove the two printer lift rods.



Remove the Carriage fasteners.

5. Introduction Of The Software

5.1 Software Installation

5.1.1 Computer Configuration Instructions

CPU: Intel I5 or higher Gen

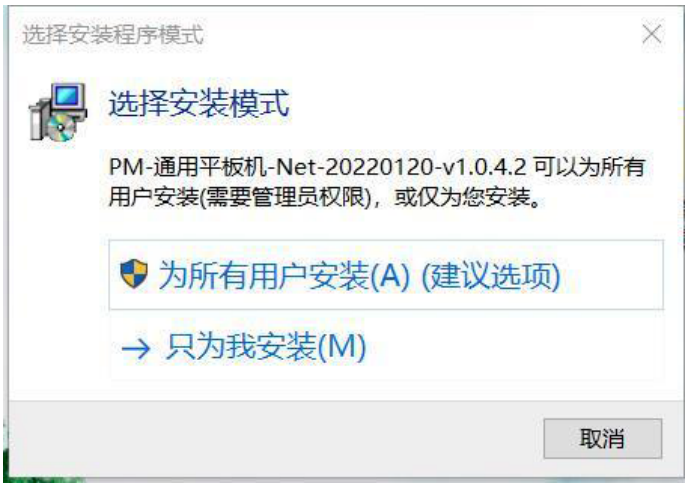
Memory: 8G or higher

Hard Drive: 500G or larger

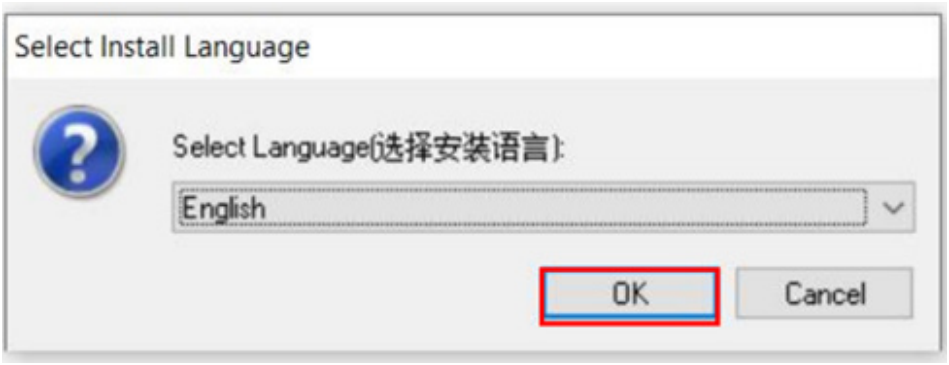
Operating System: Windows 7/10/11 64-bit professional version

5.1.2 Installation Steps

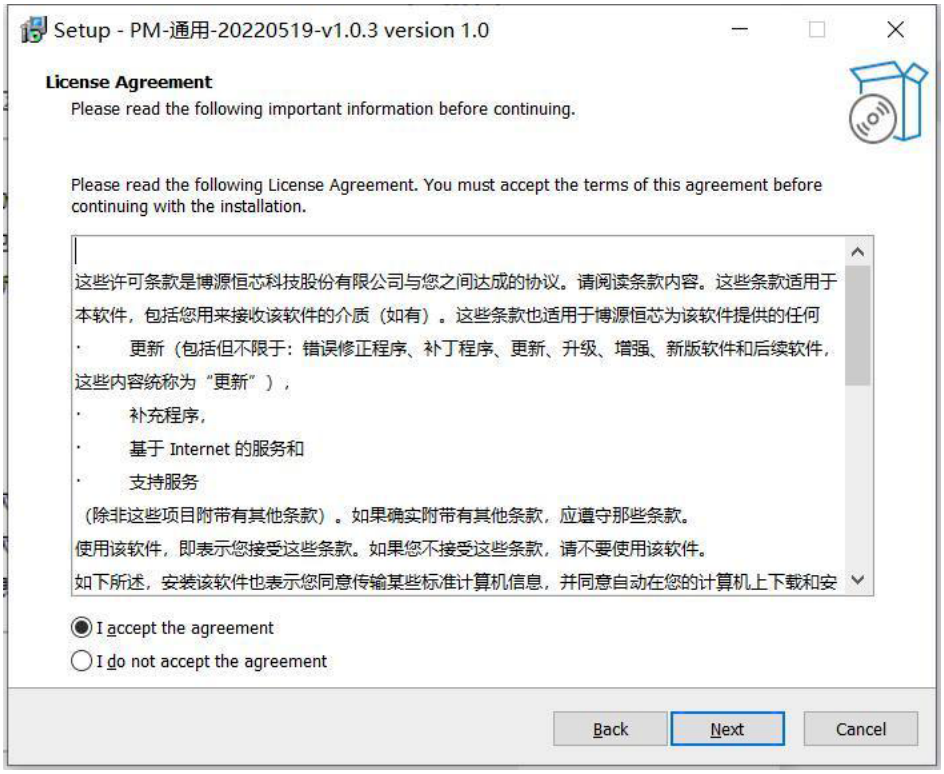
Double-click PM_Setup_ Reel machine. The .exe or Tablet machine the PM_Setup_ tablet machine. Install the .exe program, this document install PM_Setup_ tablet machine. After .exe, double-click the installation program, the interface shown in the figure as below.



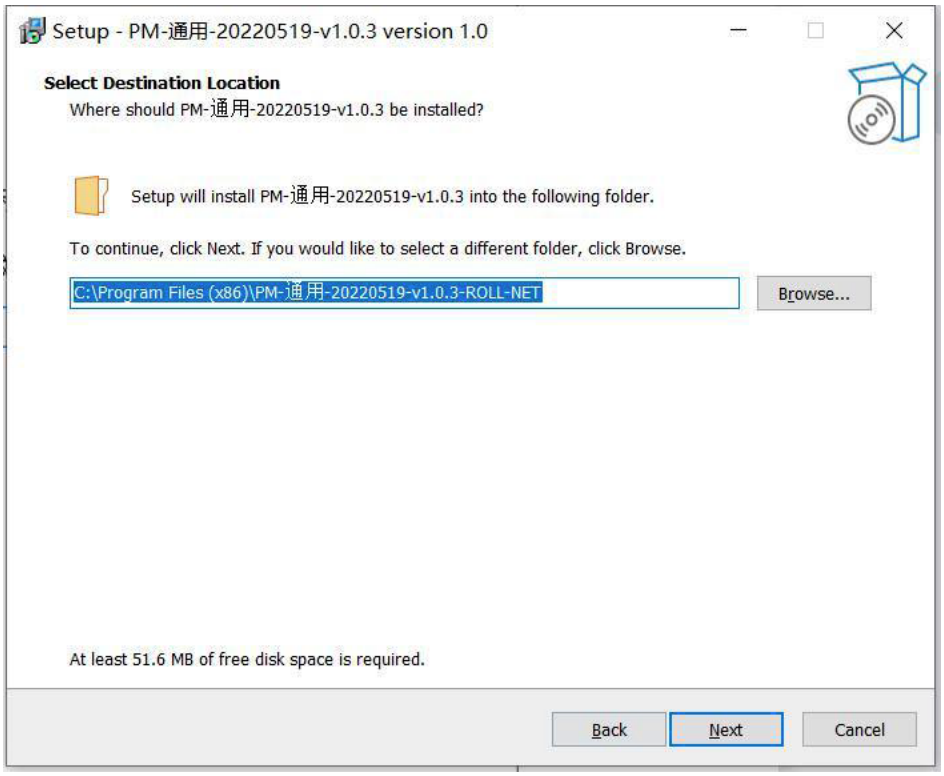
Select installation for all users (A) to enter next step, as shown below:



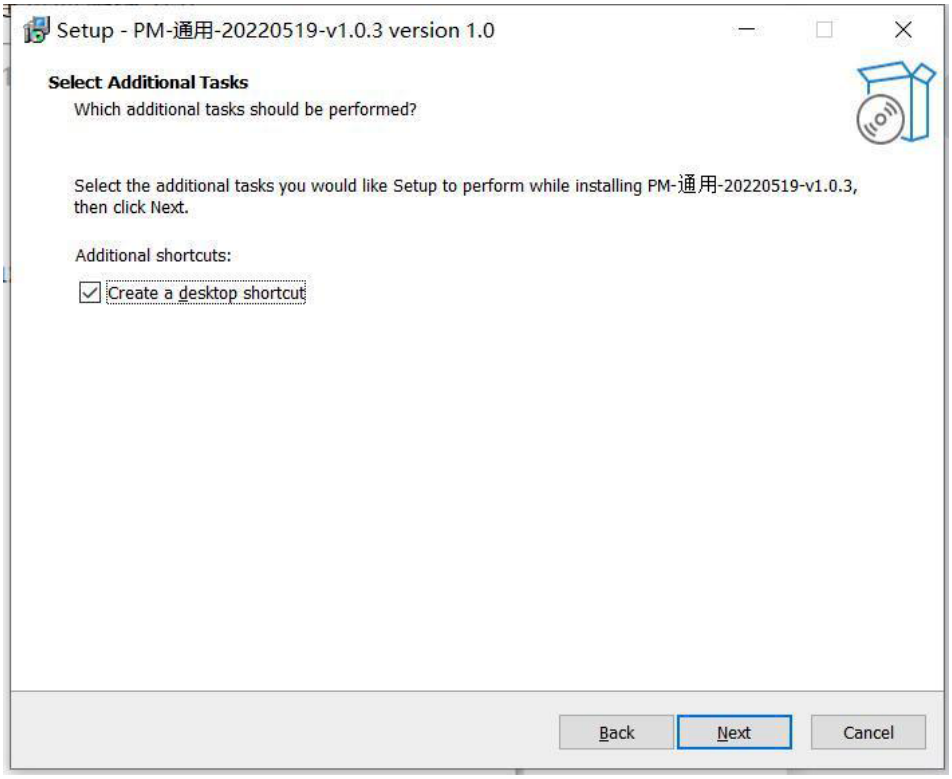
Select the installation language and click “OK”.

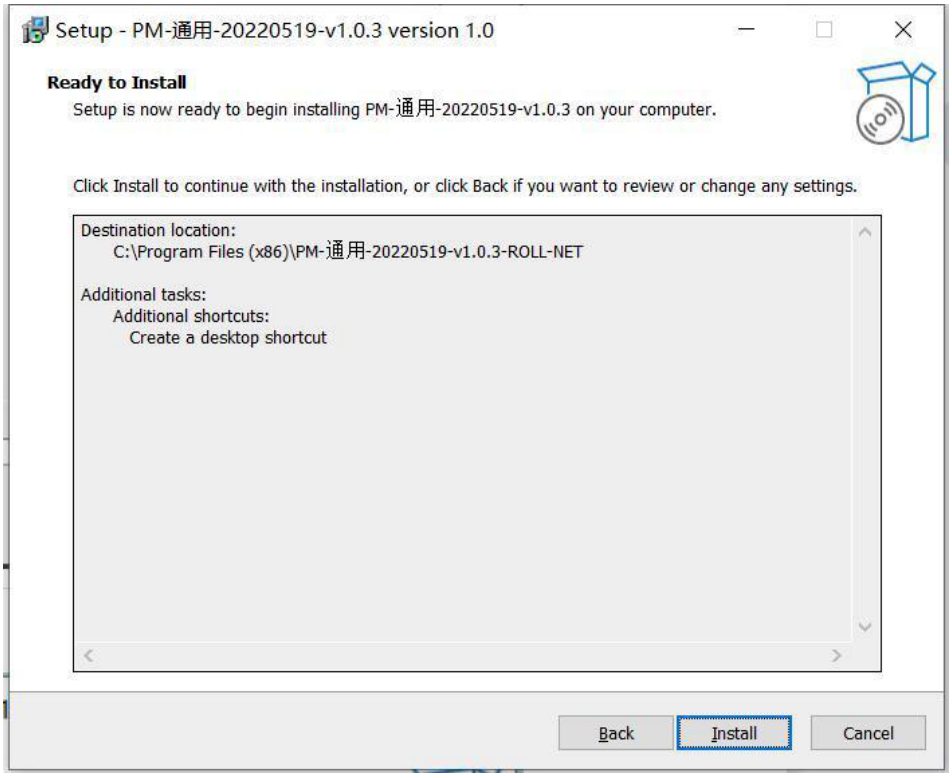


After selecting “I accept this Agreement”, click “Next” to select the installation path. (Use the default settings), click to change the size and space of each hard disk partition. If you select the default value, then click “ Next” to the confirmation installation interface, as picture below:

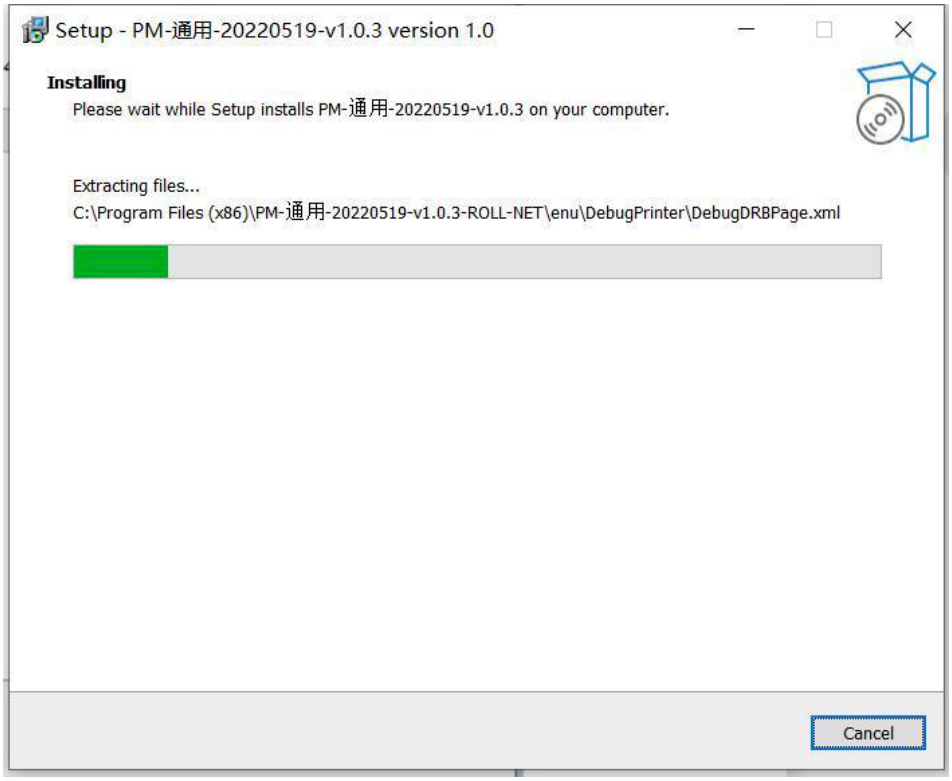


Select the installing folder, and click “Next” to select if you need to create a desktop shortcut.

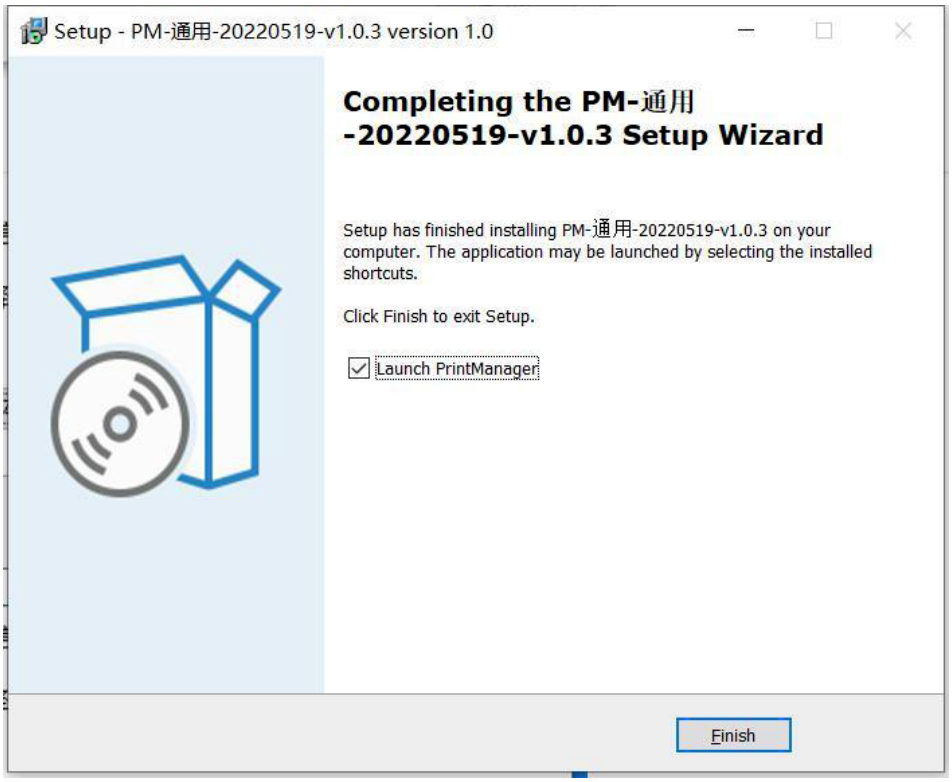




Click install to start the installation, as picture below:



Please wait till finish of installation.



The software was installed successfully, click Finish and exit the installation, or click Launch PrintManager to open the software.

5.1.3 Software Unloading

Uninstallation can be processed in control penal or in program list.

Uninstall in the control panel:

Open the control panel——find programs and functions and start ——find PrintManager programs in the list of programs——right-click, select uninstall to delete the software.

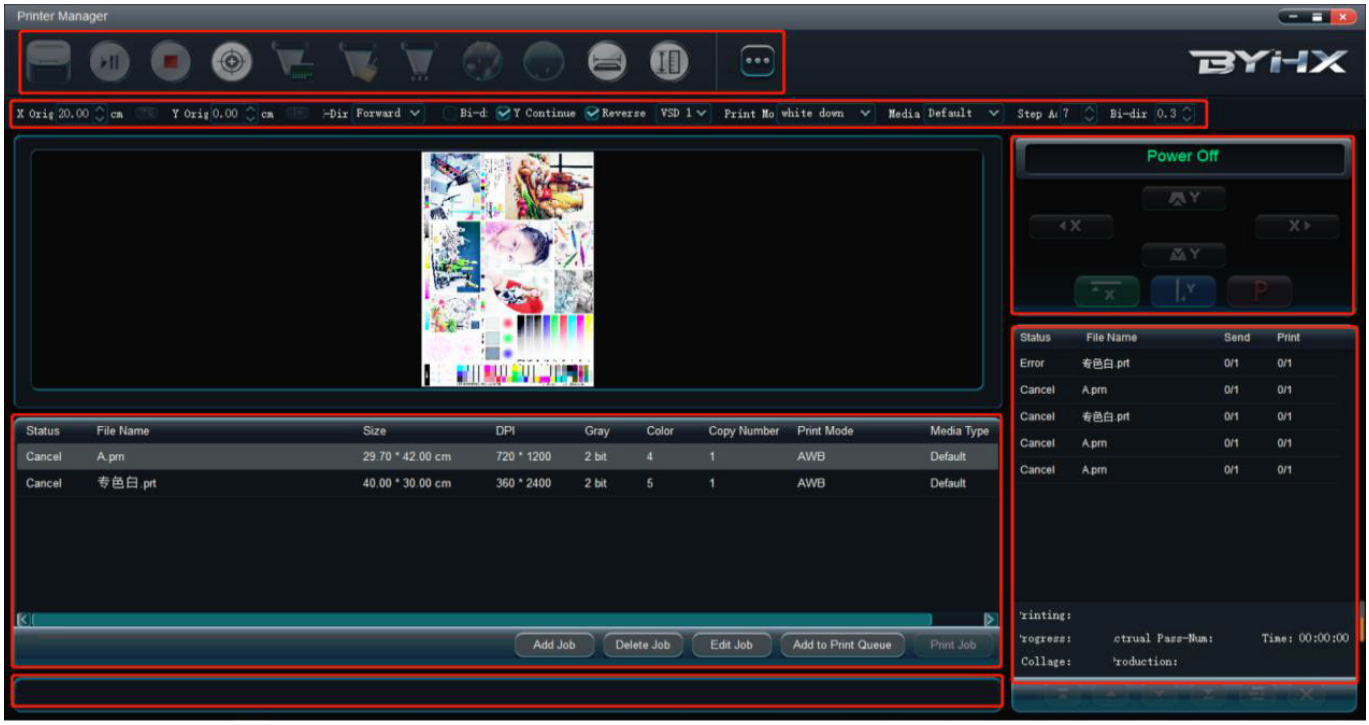
Start the uninstallaltion in program list:

Click the start menu —— to find the BYHX folder in the program list —— click "Uninstall program start to uninstall l Boyuan constant core PM", in the next pop-up dialog box of "whether to uninstall", choose "uninstall" to start. Delete all the related folder before you reinstall the software.

5.2 Software Interface Introduction

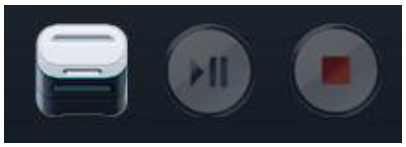
5.2.1 Main Interface

As picture below, the main interface of the software consists of toolbar, parameter setting, preview bar, task bar, status bar and print queue bar. This chapter will introduce each part in detail.



5.2.2 Tool Button

Print control area



Start the print job

Pause the jobs in printin

Stop the jobs in the print

Spithead maintenance area

Nozzle checking button

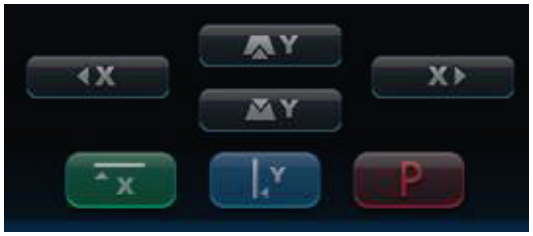
Stop the nozzle moisturizing button

Automatic cleaning button

Spray head moisturizing button

Automatic flash spray button

Movement control area



Carriage left move button

Carriage right move button

Move the button forward

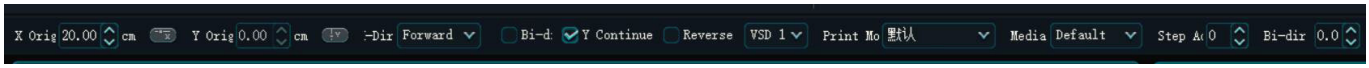
Move the button back

Move to the X-axis origin

Move to the Y-axis origin

Stop the move button

5.2.3 Parameter Setting Bar

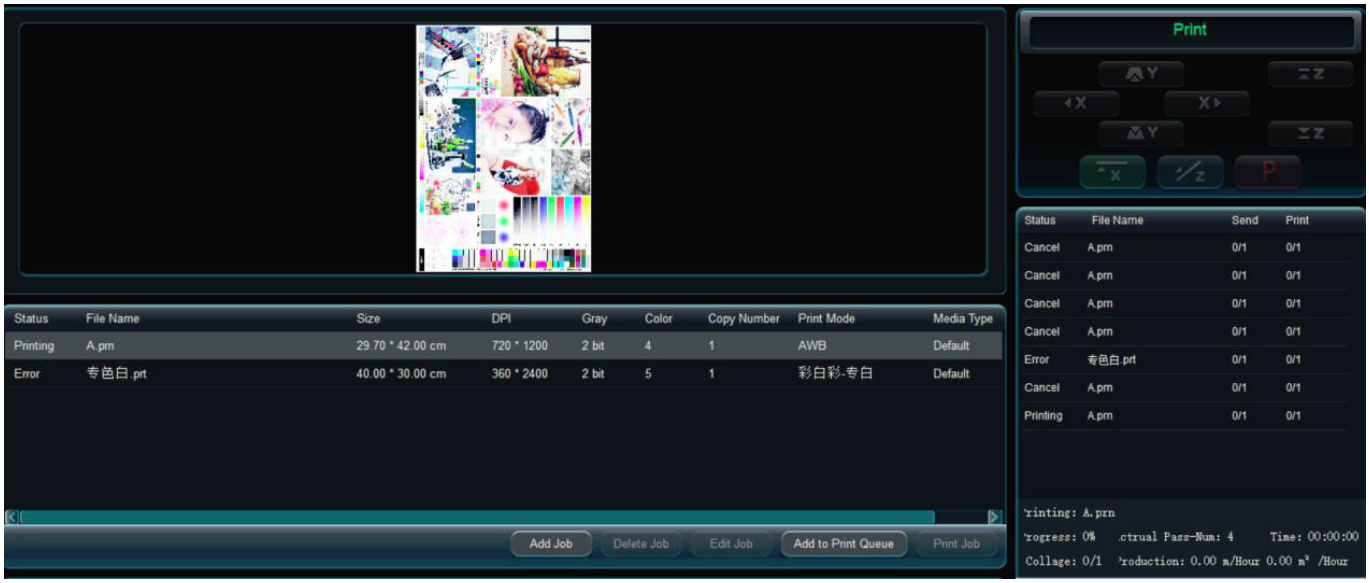


- **X origin:** print the starting point of the X direction, the distance from the car HOME position to the left edge of the picture (or color bar).
- **Y origin:** print the starting point of Y direction, the distance from the beam HOME position to the lower edge of the screen.
- **Synchronize the X origin:** move the car to a certain position, and set the current position to the X printing origin.

- **Synchronize Y origin:** move the beam to a certain position and set the current position to the Y print origin.
- **Start print direction:** Select whether the start print direction is forward or reverse.
- **Bi-Dir-:** Select one-way or two-way printing.
- **Y continuous:** under the tablet machine model, Y starts the printing from the current position of the crossbeam.
- **Reverse:** under the flat plate machine model, the Y starting position starts to print from the end of the job.
- **VSD:** the speed of the movement of carriage during printing, there are four levels of VSD Mode 1,2,3 and 4. The actual speed of carriage movement is determined by the ignition frequency in the four modes.
- **Mode:** Select the current print mode, which the newly added prt binds as default.
- **Step adjustment:** make small compensation for the step value of each PASS. When there is overlap during printing, the step value should be increased. If there is white leakage, the step value should be reduced.
- **Bi-Dir adjustment:** make small compensation for each PASS positive printing set, when there is a two-way deviation during printing, the bidirectional value can be adjusted in real time.
- **Torque mode:** switch the Y axis step mode of the machine and set whether the Y axis step is position mode or torque mode.

5.2.4 The Preview Bar

The preview bar is divided into three parts as below, It consists of the system status, the job information and the job preview, which will introduce separately.



System Status: Displays an overview of the current state.

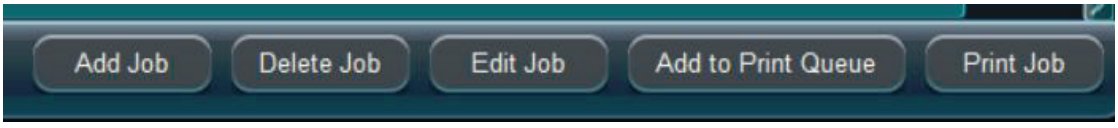
Job Information: Job information is displayed, as listed below.

> Job behavior
> File name
> Job size
> Job DPI
> Work Gray grade
> Job color
> Copy number
> Job Print Mode
> Job Media type
> Homework path

5.2.5 Taskbar

The taskbar consists of the taskbar button and selection bar, here will be introduced one by one.

Taskbar button:



Task Selection Bar

After selecting one or more jobs in the print list, right-click to pop the menu as picture above.

> **Add Job:** Add additional jobs

> **Delete Job:** Delete the selected job

> **Edit Job:** Edit selected jobs, please read chapter about job editing.

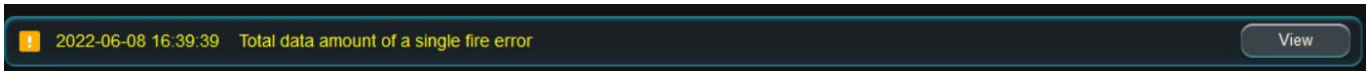
> **Print job:** Print the selected jobs

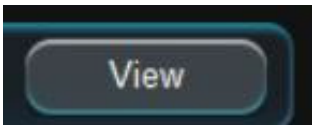
> **Ink volume statistics:** Adjust proportion of ink and ink volume of each color in the prt.

> **Join to Print list:** Add the currently selected job to the print list.

5.2.6 Status Bar

The status bar displays the details of the current status of system, as shown in the picture below. Including Errors, warnings, or other states.





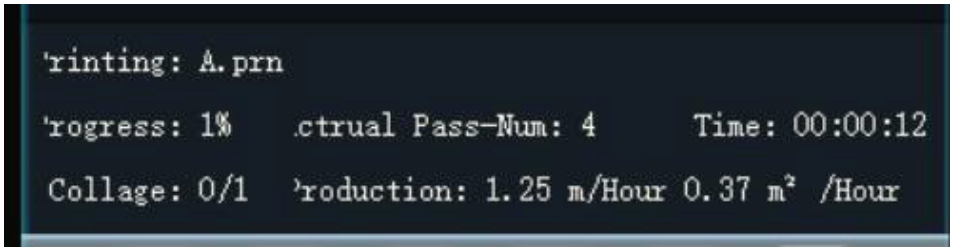
Click the View button to read the related errors, warnings, and other details which occurre in system. As picture below:

5.2.7 Print The Queue Bar

Send the job file to print queue, and then click the print button to achieve continuous automatic job printing.

5.2.8 Job Printing Information Bar

When printing a job, the job Printing information bar displays the progress, time consumption and printing output of the current printing job in real time:



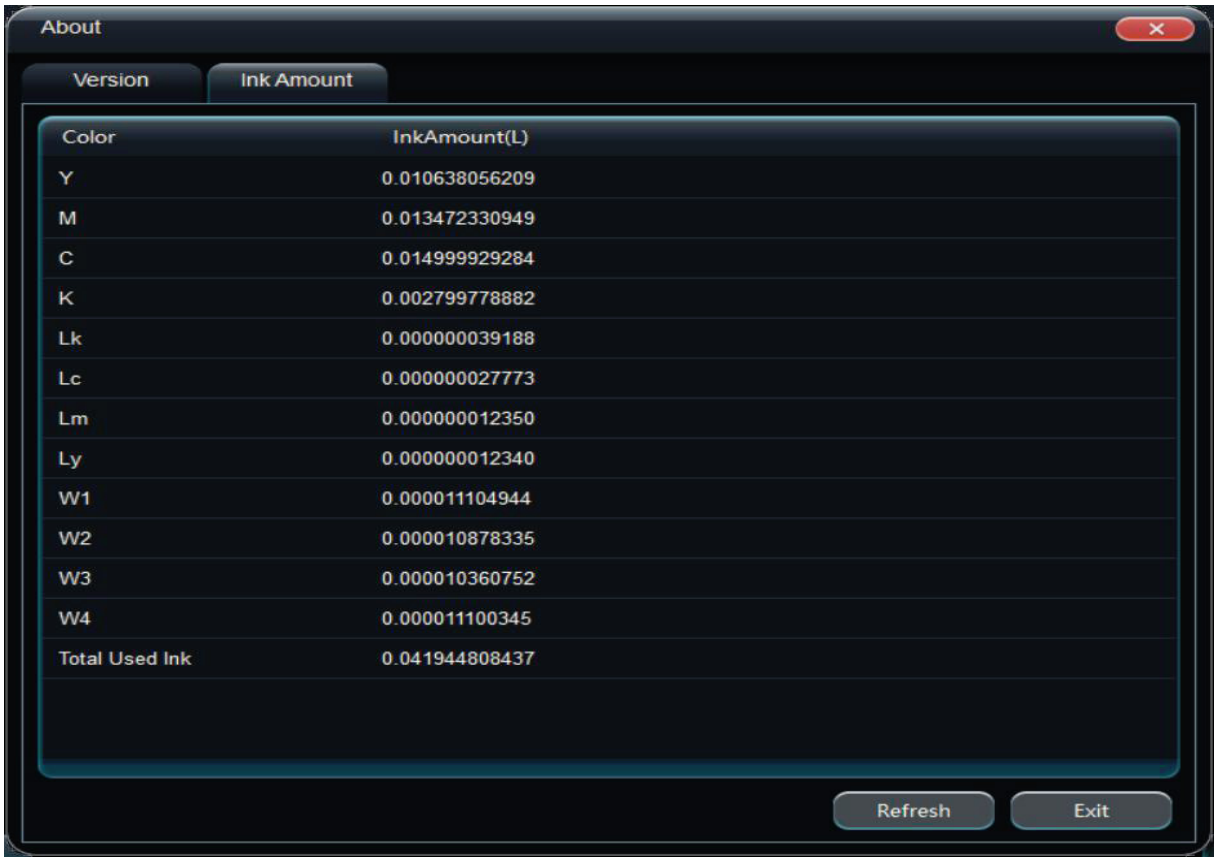
5.2.9 The Main Menu

Click the main menu button to pop to the menu shows as picture below on settings, tools, about, etc., Below is the introduction in details.

5.2.9.1 About

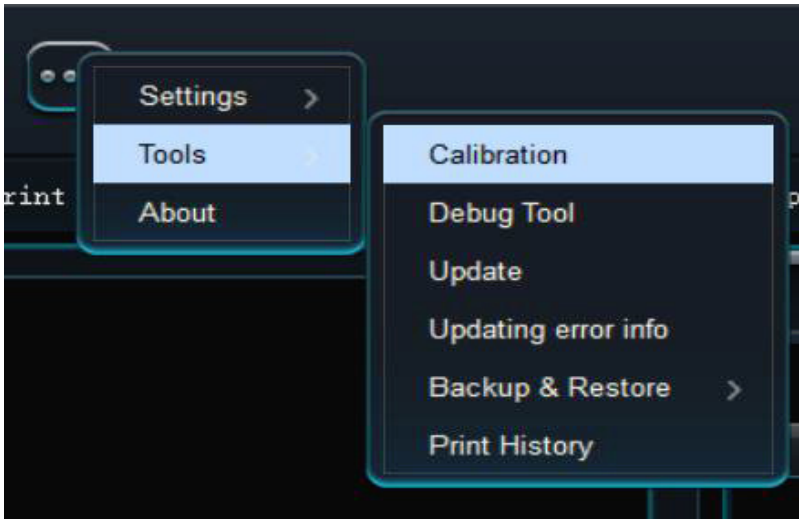
Select the About in the main menu to check the entire system version information and ink volume information as picture below.

About
Version
Ink Amount
Module
Version
PrintManager
1.14.63.172 20220519 1.0.3
Error Info Database
2022042717263434
MainBoard Kernel
5.15.32-rt39
Main Print Program
20220517-09:14:18, ARM:0.0.0.43--FPGA:0.26
Functional Program
20220523-03:09:02, ARM:1.0.0.2--FPGA:0.0
MB CoreBoard
VenderID:FFFF-PIN:ROMC300SP0001100-SN:0A0017-15703
HB Distribution/Unified Board SW
20210917-11:18:08, ARM:1.10.0.0--FPGA:0.20
HeadBoardID
PM:0x03020104--FW:0x03020104
Time Limit
No Limit
Used Times
672Hours
Ink Limit
No Limit
Used Ink
0L
Check more version info
Refresh
Exit


About
Version
Ink Amount
Color
InkAmount(L)
Y
0.010638056209
M
0.013472330949
C
0.014999929284
K
0.002799778882
Lk
0.000000039188
Lc
0.000000027773
Lm
0.000000012350
Ly
0.000000012340
W1
0.000011104944
W2
0.000010878335
W3
0.000010360752
W4
0.000011100345
Total Used Ink
0.041944808437
Refresh
Exit

5.2.9.2 Tools

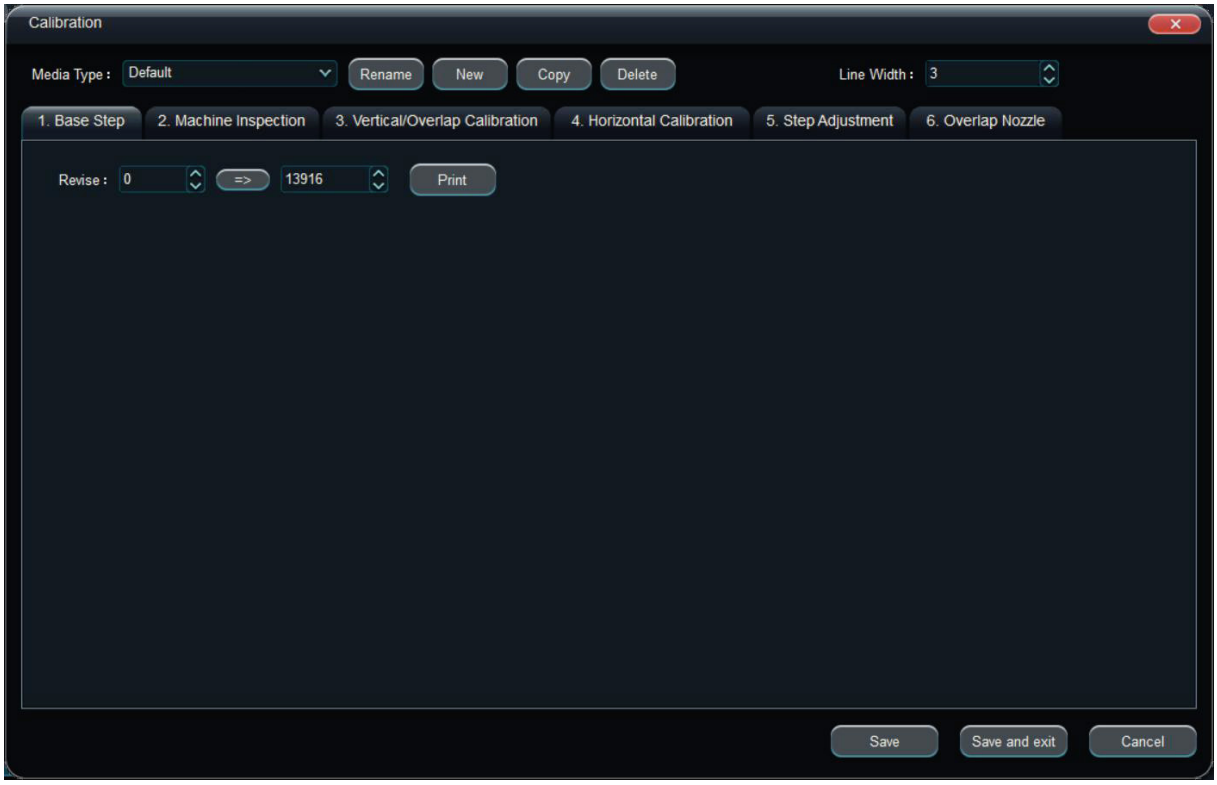
Select tools in the main menu to open tool settings items, as picture below.



There are calibration, adjustment tool, upgrade, update error information, backup and recovery, and print history setting items after enter Tool Setting. The introduction is listed below in details.

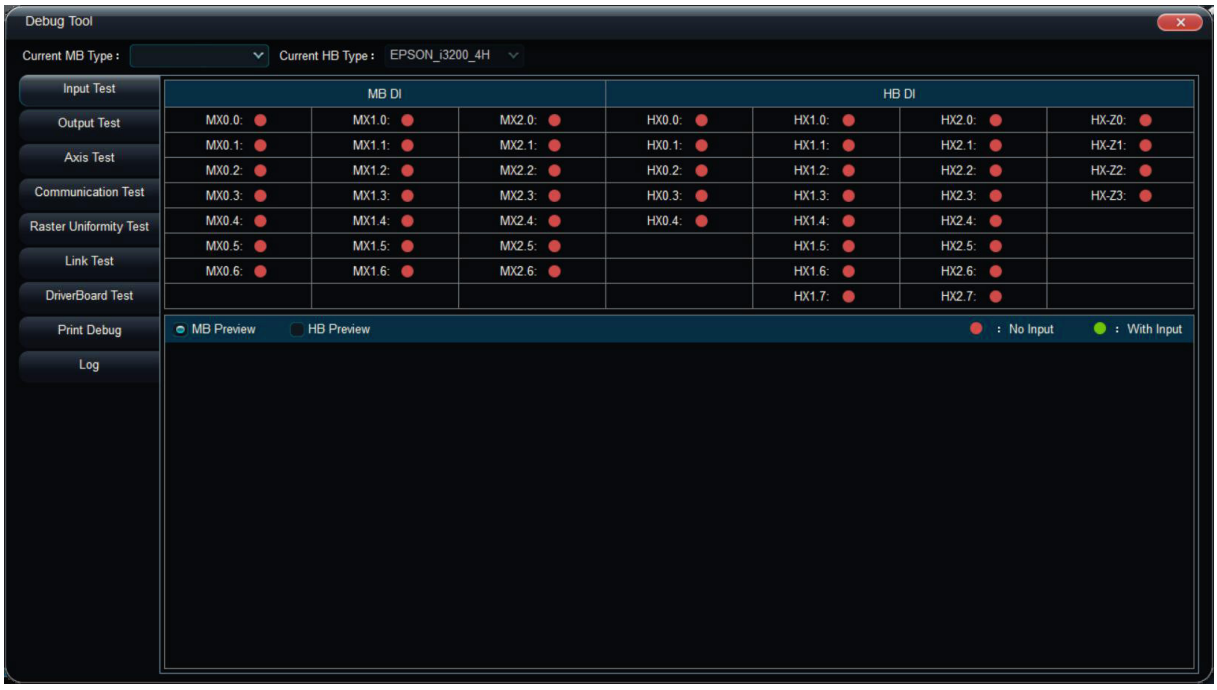
- **Calibration:** Click the calibration to start the calibration. Please refer to the calibration manual for the detailed calibration method.
- **Debug Tool:** Debugging machine sensor status, communication status and other functions.
- **Upgrade:** A firmware program for upgrading the system.
- **Update Error Info:** Update the latest failure information (Including fault description, error cause, and processing recommendations) from the network server.
- **Backup & Recovery:** Backup and restore the firmware parameters and PM parameters of the system, and you can also restore the factory parameters.
- **Print History:** Store the job print history by time and date.

5.2.9.2.1 Calibration



The Calibration settings page is only used to change the calibration parameters, please refer to the calibration manual for detailed calibration methods.

5.2.9.2.2 Debug Tool



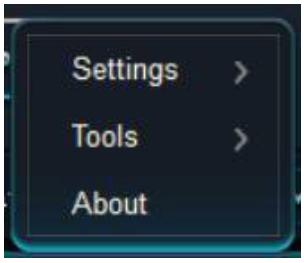
> **Input Test:** The connection status of the test board card input sensor.

> **Output Test:** Test the connection status of the board card output sensor.
> **Axis Test:** Test the different shaft status of the machine.
> **Communication Test:** Test a card connection can communication status.
> **Rating Uniformity Test:** Test the grating ignition uniformity of the current machine operation.
> **Link Test:** Test the optical fiber, main board, and PC communications connected to the current system.
> **Drive Board Test:** Test the drive board status of the system connection.
> **Print Debug:** Debug the current printed ignition frequency and buffer distance adjustment amount.
> **Log:** Output the system motherboard cache log.

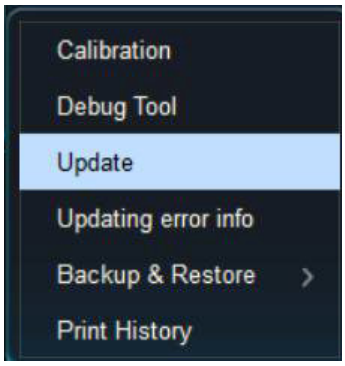
5.2.9.2.3 Upgrade Results

To fix some discovered BUG or add some features, you need to update the firmware), the following is how to update the firmware.

Click the “Main Menu”

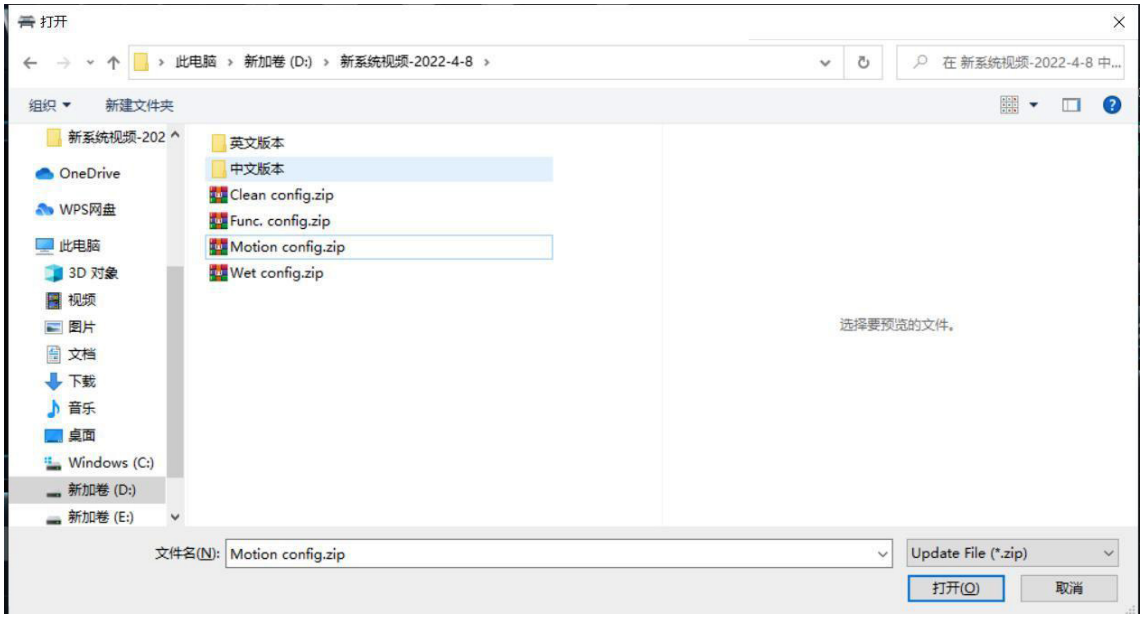


to enter the “Tools”

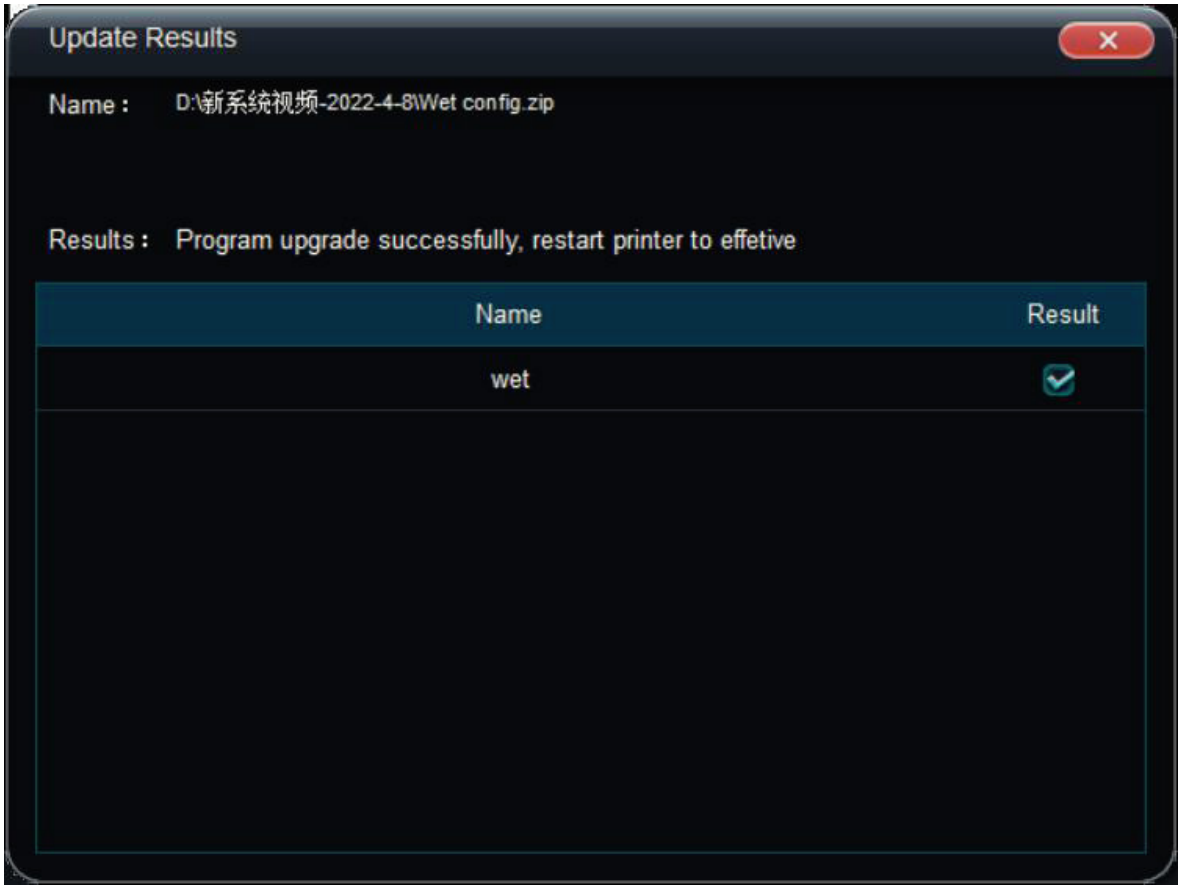


“Update”

Pop up the following dialog box, and then select the corresponding upgrade file then press OK (the upgrade file suffix is.zip, document).



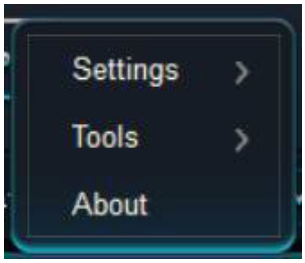
After confirming the upgrade file, you will enter the upgrade process. At this time, you can observe the upgrade process under the status bar and observe whether there is any problem in the upgrade process.If the upgrade fails, note that the status bar fails to upgrade to a percent, and report it.



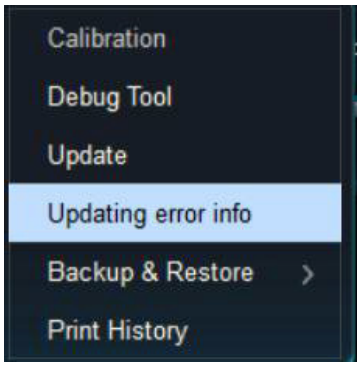
5.2.9.2.4 Update The Error Message

In order to regularly optimize and improve the system error information, you need to update the system error information. The following will introduce how to update the error information. Make sure the computer firewall is off or allow print applications to update through the firewall.

Click the “Main Menu”

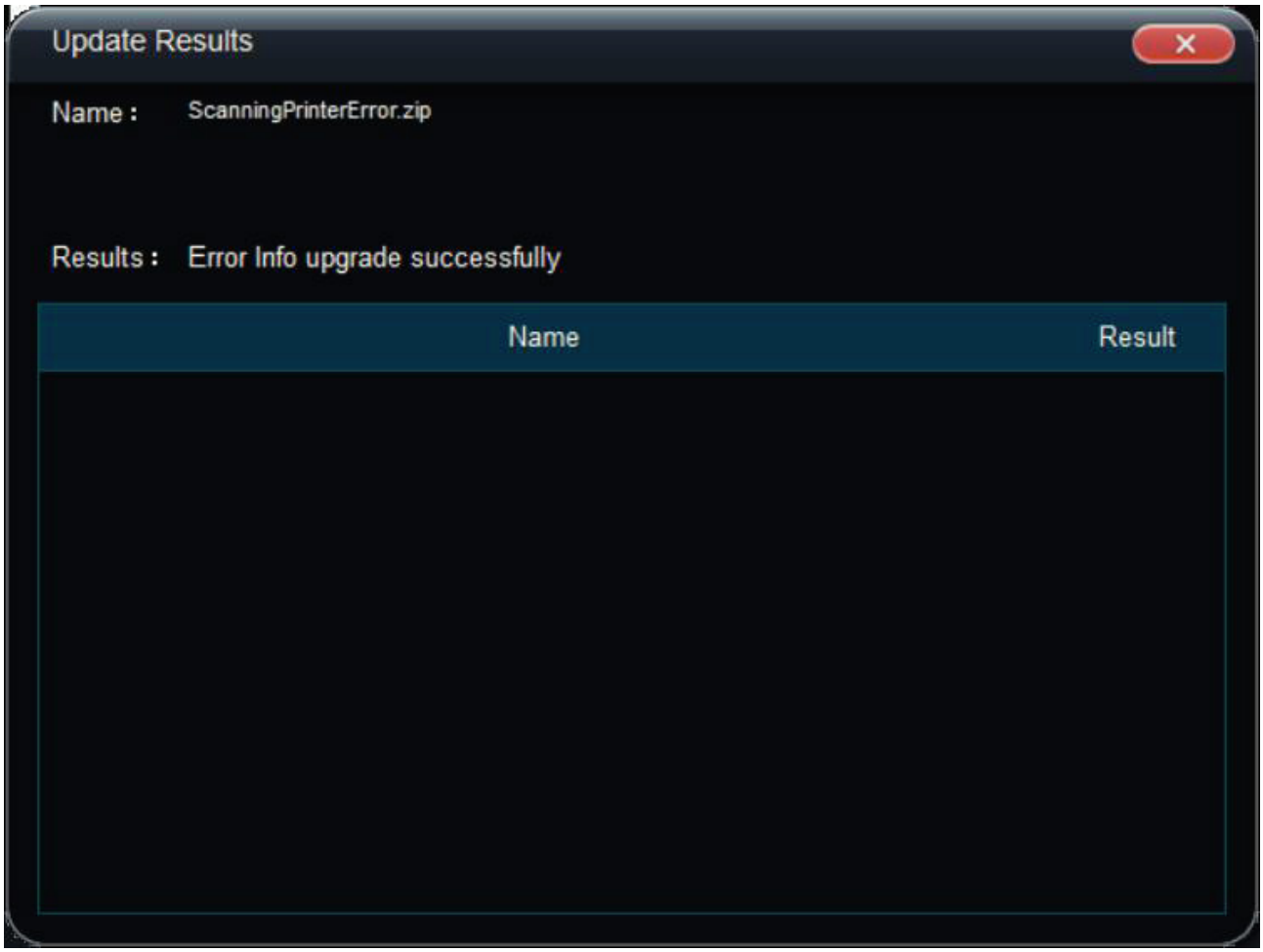


to enter the “Tools”



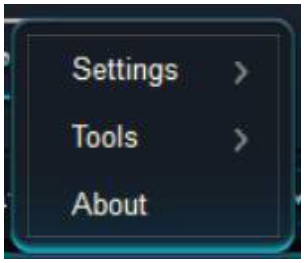
“Updating error info”

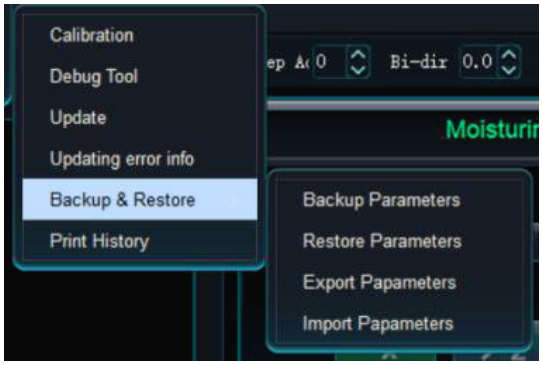
Pop up the following dialog box when the update is successful.



5.2.9.2.5 Parameter Backup & Recovery

To periodically backup the PM software parameters and the card firmware parameters, you can operate according to the following methods.



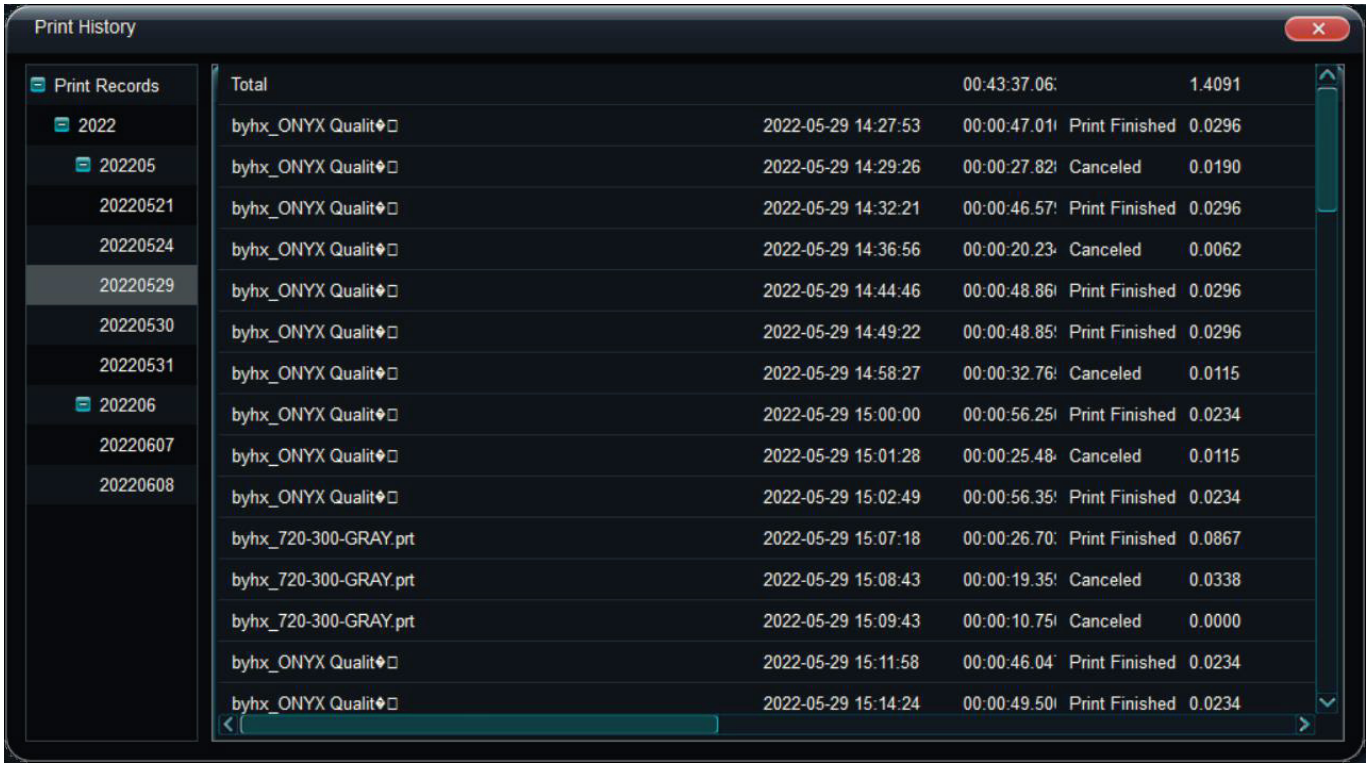


Click the “Main Menu” → to enter the “Tools” → “Backup & Restore”

- **Backup Parameters:** Backup the current PM parameters (layout, print mode, calibration parameters) to the main board.
- **Restore Parameters:** Restore the PM settings parameters saved in the motherboard.
- **Export Parameters:** Export the current PM setting parameters and store them in a file.
- **Import Parameters:** The PM setting parameters that were stored before the import.
- **Backup Motherboard Parameters (Customer):** Current motherboard parameters of backup card (function, movement, cleaning, moisturizing parameters, business unit parameters).
- **Restore The Motherboard Parameters (Customer):** Restore the motherboard parameters saved in the board card.
- **Export Main Board Parameters (Customer):** Export the board card current main board parameters.
- **Import Motherboard Parameters (Customer):** Import previously stored motherboard parameters to the card.
- **Restore Factory Parameters:** Restore board card factory parameters.

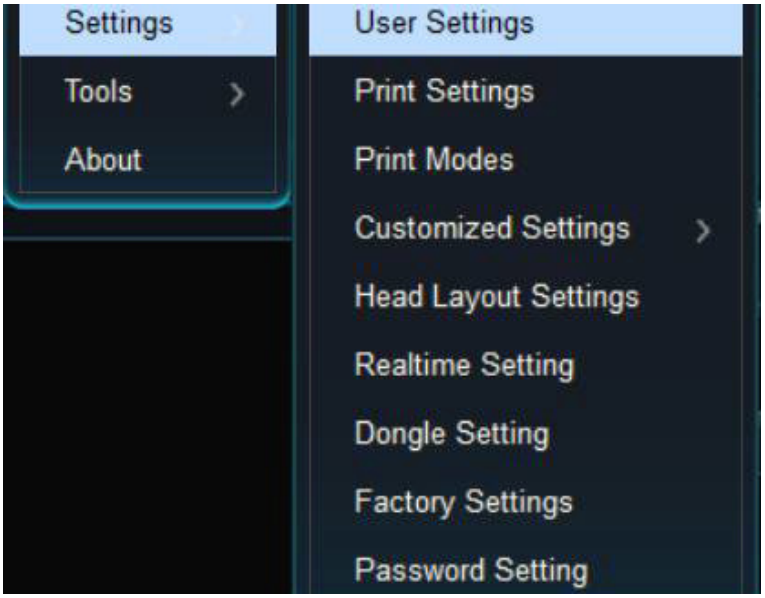
5.2.9.2.6 Print History

Record the printed job history of the day by date and time.



5.2.9.3 Settings

Select the settings in the main menu, as picture below.

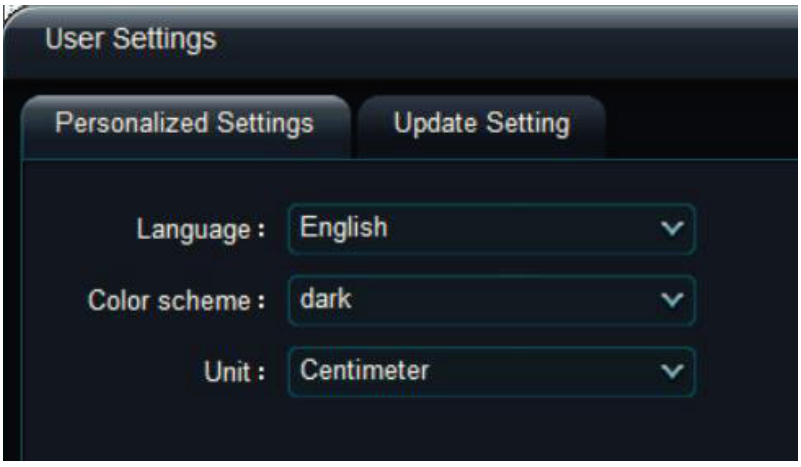


> **User Settings:** Set the language, unit, and address of the error in database downloading.

> **Print Settings:** Used for printing parameters, cleaning parameters, flash spray parameters, moisturizing parameters and Z-axis height measurement parameters, please refer to Chapter 5.4 for detailed methods.

- **Print Mode:** Print parameter settings (e. g. pass number, feather mode, single or bidirectional, etc.) when printing different files, please refer to Chapter 5.3.8 for detailed methods.
- **Customized Settings:** For customize functional settings, refer to Chapter 5.2.9.3.4 for detailed methods.
- **Head Layout Setting:** To set up the nozzle color sequence and nozzle connection mode used for printing, please refer to Chapter 5.3.3 for the detailed methods.
- **Real-time Setting:** To set the nozzle temperature and voltage parameters during printing, please refer to Chapter 5.3.2 for detailed methods.
- **Dongle Setting:** Set the password for the software dog.
- **Factory Setting:** Read the basic information of the board card configuration, set the nozzle type, scan resolution, optical fiber connection structure, and the grating smooth filter function, please refer to Chapter 5.2.9.3.9 for the details.
- **Password Settings:** Set the machine's time, language, and ink passwords.

5.2.9.3.1 User Settings

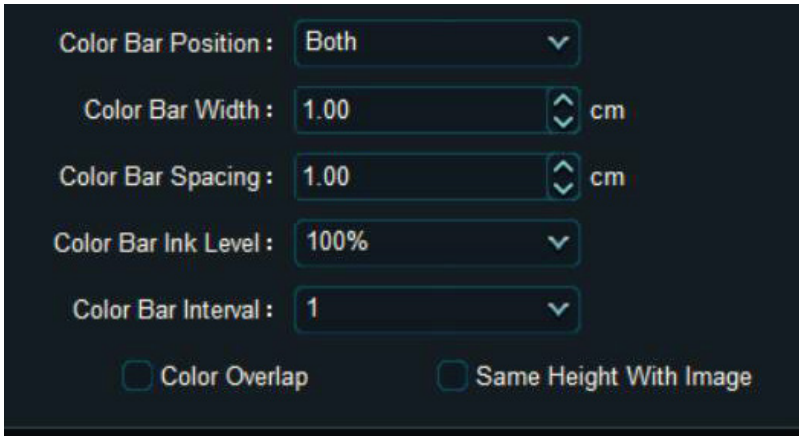


- **Language:** Select the display language of the PM software, simplified Chinese and English are optional.

> **Color Scheme:** Select the overall color scheme of PM software, choose dark / light color.
> **Unit:** Select the display unit of the PM software, optional inch / foot / mm / cm / m.
> **Error Info Database Download Address:** default our error database website 47.93.225.113

5.2.9.3.2 Print

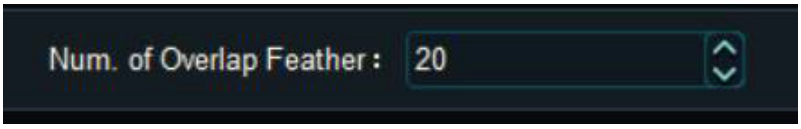
Settings Color bar



> **Color Bar Position:** (Both, on the left, on the right, not)
> **Color Bar Width:** The width of the color strip.
> **Color Bar Spacing:** The distance of the color strip from the picture.
> **Color Bar Ink Level:** The ink quantity of the color strip.
> **Color Bar Interval:** How many pass print color stripe intervals.
> **Color Overlap:** Color overlap printing.
> **Same Height With Image:** The color bar and the picture are high, etc.

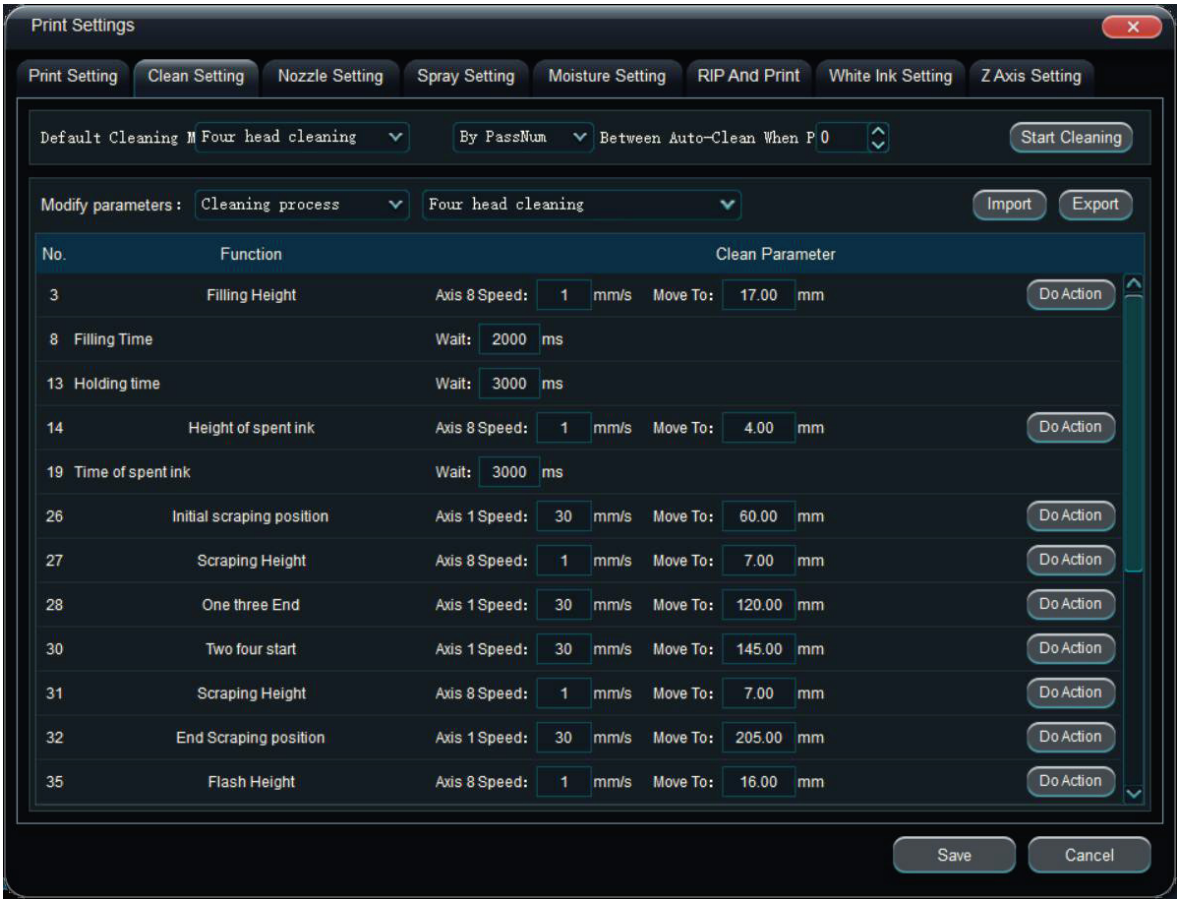
> **Number of Blank Band:** Set the number of passes of the blank band after printing completes.
> **Blank Band Step:** Whether to step after the blank band printing.
> **Calibration Base Color:** The base color selected when printing the calibration.

> **Step After Check Nozzle:** Set whether to step after printing and injection inspection.



> **Number of Overlap Feather:** Set the number of overlapping vents.

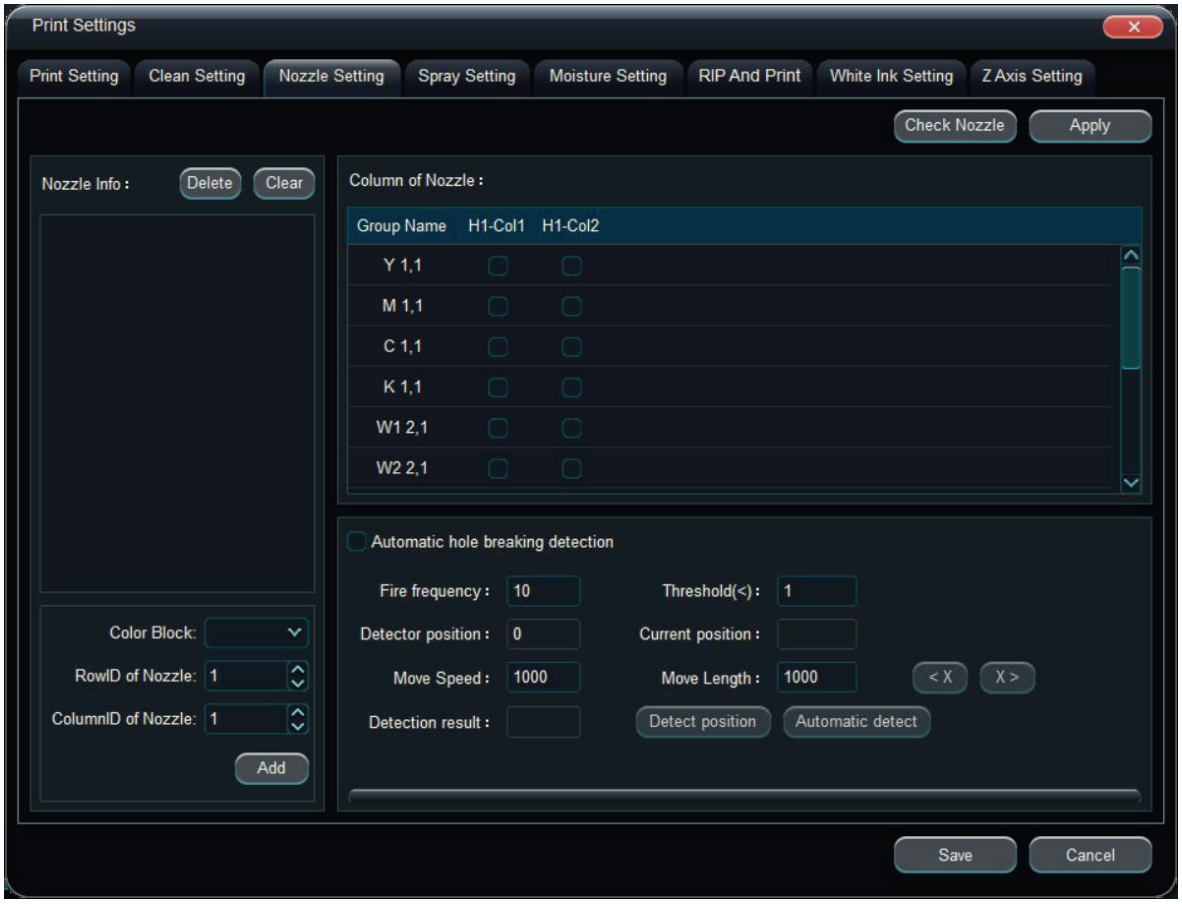
Cleaning Settings:



> **Number of Automatic Cleaning Intervals Pass:** How many pass intervals execute the cleaning process.

> **Select The Cleaning Mode**

Nozzle Setting:



> **Nozzle Info:** Select the row and column of either color hole to set a single hole.

> **Column of Nozzle:** Select any column of any nozzle to set the whole row hole position.

> **Automatic Detect:** Automatic detection of nozzle hole position combined with detection equipment.

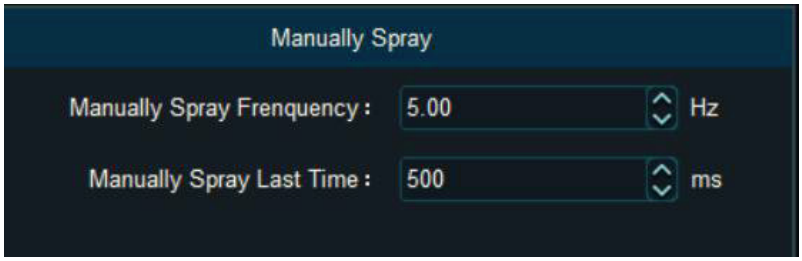
Flash Spray Setting:

> **Idle Flash Switch:** Idle flash switch

> **Idle Spray Frequency:** Flash injection frequency in idle flash injection, 5Hz represents 5 flash injection in 1 second.

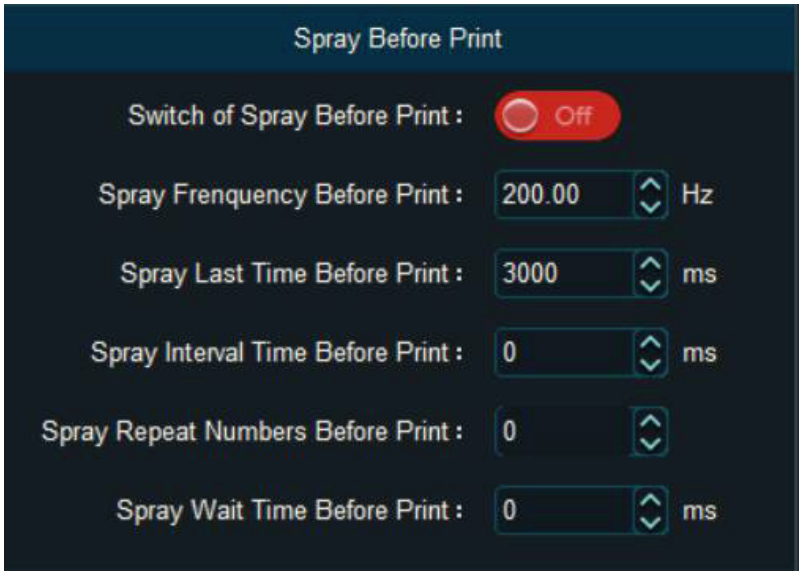
> **Idle Spray Time:** Set the duration of idle flash spray, 1000ms means continuous flash spray for 1 second.

> **Idle Spray Interval Time:** Set the idle flash spray interval time, and 1000ms indicates a flash spray interval of 1 second.



> **Manual Spray Frequency:** The flash injection frequency during the manual flash injection, and 200Hz represents 200 flash injection in 1 second.

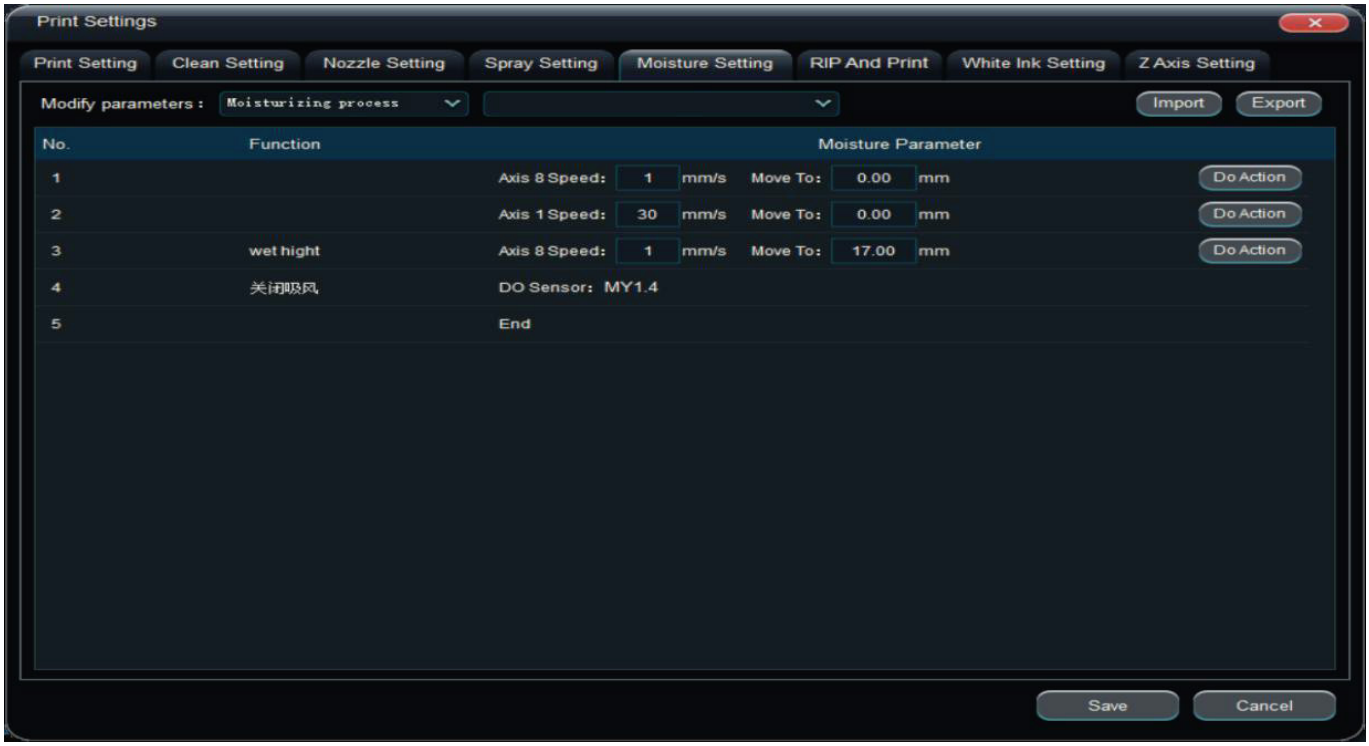
> **Manual Spray Last Time:** duration during manual flash.



> **Switch of Spray Before Printing:** Print front flash switch
> **Spray Frequency Before Print:** Flash spray frequency before printing, 5Hz represents 5 flash spray in 1 second.
> **Spray Last Time Before Print:** The duration of the flash spray before printing, and 500ms indicates 500ms of continuous flash spray.
> **Spray Interval Time Before Print:** The interval time of flash spray time before printing, 1000ms indicates a flash spray interval of 1 second.
> **Spray Repeat Numbers Before Print:** Set the number of flash spray repeats before printing.
> **Spray Wait Time Before Print:** Set the standing time before flash spray after printing.

> **Pass-Num Between Auto Spray:** How many pass between automatic flash spray.
> **Auto Spray Frequency During Printing:** The flash spray frequency before printing, and 1Hz represents one flash spray in 1 second.
> **Auto Spray Last Time:** The duration of the flash spray before printing.

Moisture Settings:



> **Moisture Parameter:** The moisturizing process performed when moisturizing begins

> **Stop Moisture Parameter:** The moisturizing process performed when stopping moisturizing.

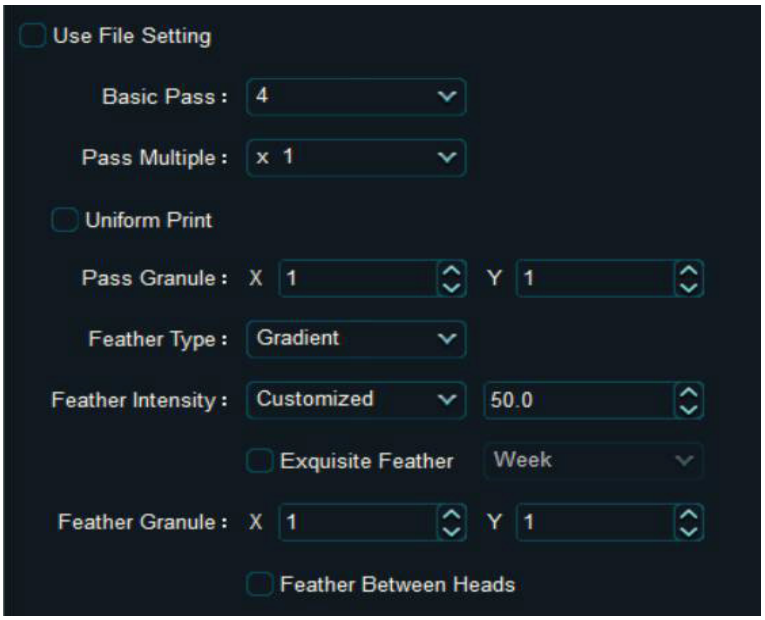
Z Axis Setting:

> **Z Max Route (Zmax):** The distance of the Z origin from the media on the printing platform.

> **Head Distance From Media:** The distance of the nozzle from the media on the printing platform.

5.2.9.3.3 Print Modes

Pass settings and feather settings:

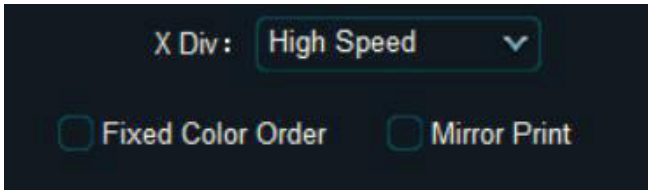


> **Use File Settings:** Select this setting in side rip side print mode.

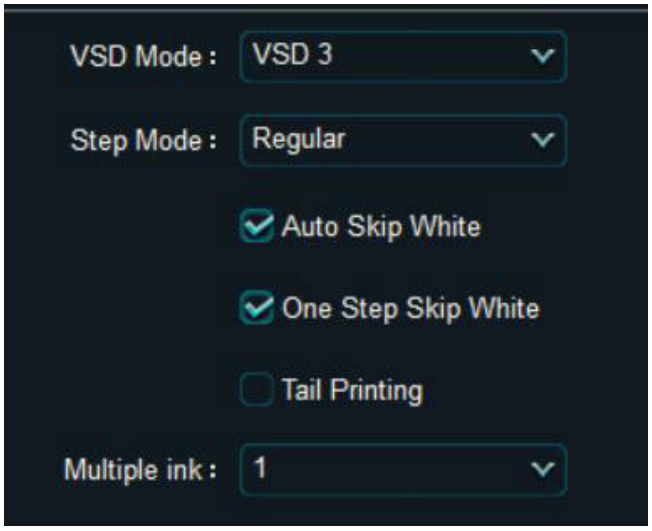
> **Pass:** Set the number of base pass for jobs in the current printing mode, machine grating 720dpi, sprinkler resolution 600dpi, high speed printing prt of 720 x 1200dpi, then the number of pass choose 4.

- **Pass Multiple:** The actual number of pass printed by the selected job, 1 indicates the base pass, and 2 indicates that it doubles the number of pass.
- **Uniform Print:** Double the sprinkler resolution, machine raster 720dpi, sprinkler resolution 600dpi, print 360 x 1200dpi (2pass) to 360 x 1800dpi (3pass).
- **Pass Granule:** The granularity of the ink point per pass printing, the greater the value, the greater the granularity per pass, the maximum set is 30.
- **Feather Type:** Dot mode per pass printing, optional gradient and uniform emergence.
- **Feather Intensity:** The strength of feather per pass printing is 33% weak, 66% medium and 100% strong. After choosing a certain feather proportion, the actual number of printed pass will increase.For example, the 6pass job selection is weak to feather, but it is actually 6 + 6 * 1 / 3=8pass.
- **Feather Granule:** The granularity of feather per pass, the greater the value, the greater the granularity per pass, and the maximum setting is 30.
- **Exquisite Feather:** a way of no point when printing per pass, weak feather strength is 100% + 2pas, medium feather strength is 100% + 4pass, strong feather strength is 100% + 6pass.
- **Feather Between Heads:** The feather pattern between sprinkler head groups in multiple groups of sprinkler head printing. In special scenarios, the number of pass will be increased, for example, 4 groups of head printing 3pass operation will become 4pass printing.

Print Setup:

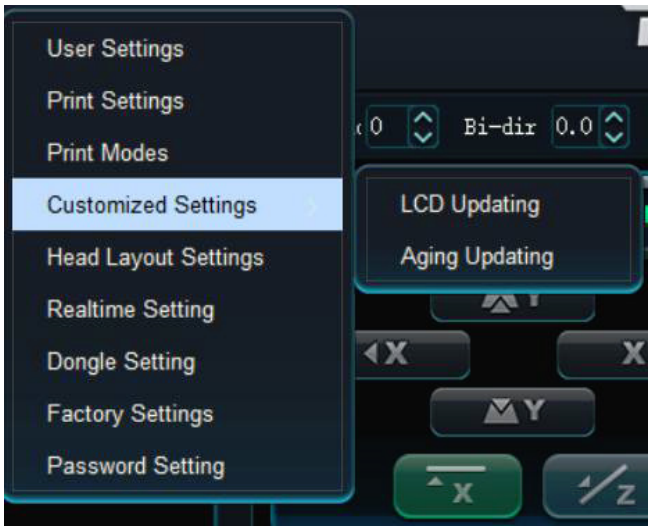


- **X Div:** Set the resolution of the X direction when printing, the high precision is the raster resolution, and the high speed is 1 / 2 of the raster resolution.
- **Fixed Color Order:** Print the positive and reverse direction of the output with the same color order.
- **Mirror Print:** The X direction is mirror printing.



> **VSD Mode:** Sets the VSD Mode for the current print mode.
> **Media Type:** Set the corresponding media calibration parameters for the current print mode call.
> **Step Mode:** Sets the step type of the current print mode call.
> **Auto Skip White:** Set the stepping method when the Y to blank is greater than the nozzle height.
> **One Step Skip White:** Skip the blank when Y blank is more than the nozzle height.
> **Multiple Ink:** Set the amount of ink to be printed, and the corresponding pass will increase after the amount of ink is set higher.

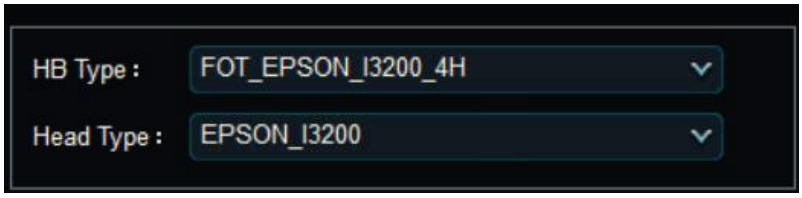
5.2.9.3.4 Custom Settings



> **LCD Updating:** Upgrade the LCD program

5.2.9.3.5 Sprout Layout Setting-ordinary

Layout Headboard and Nozzle:



> **Headboard Type:** Defines the header type for the current system connection

> **Head Type:** Defines the nozzle type for the current system connection

Spray Nozzle Properties:

> **Amount of Head Colors:** The number of colors currently connected to the nozzle

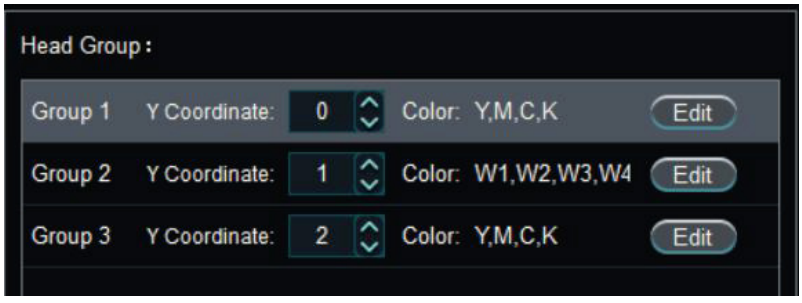
> **Number of Splicing Heads:** The number of currently connected nozzle X insertion

Head Plate Attributes:

> **Head Board:** Currently connected head board card

> **Port:** The physical location where the current header panel is connected on the distribution plate

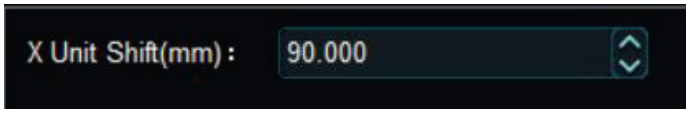
Headboard Color Sequence Attribute:



> **Group:** Currently connect to a set of sprinklers

> **Color:** Defines the color order of the current group spray nozzle

Headboard Position Properties:



> **X unit shift (mm):** Distance in X direction of two adjacent heads

> **Backward:** Define the current nozzle installation direction

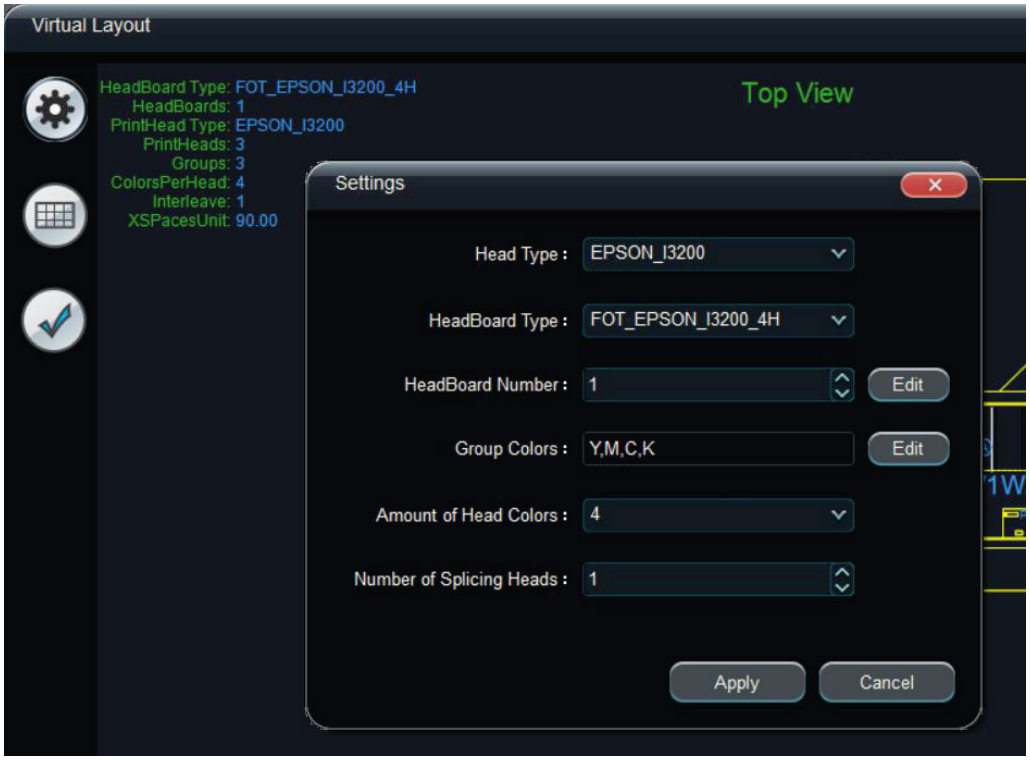
> **X Coordinate:** Defines the distance between the current nozzle and the reference nozzle in the X-direction, in a 1-unit X-unit offset value.

> **Slot:** Defines the physical location on the current nozzle connection headboard.

> **X shift:** Define the offset value of the nozzle in the X direction

> **Y shift:** Defines the offset value of the nozzle in the Y direction

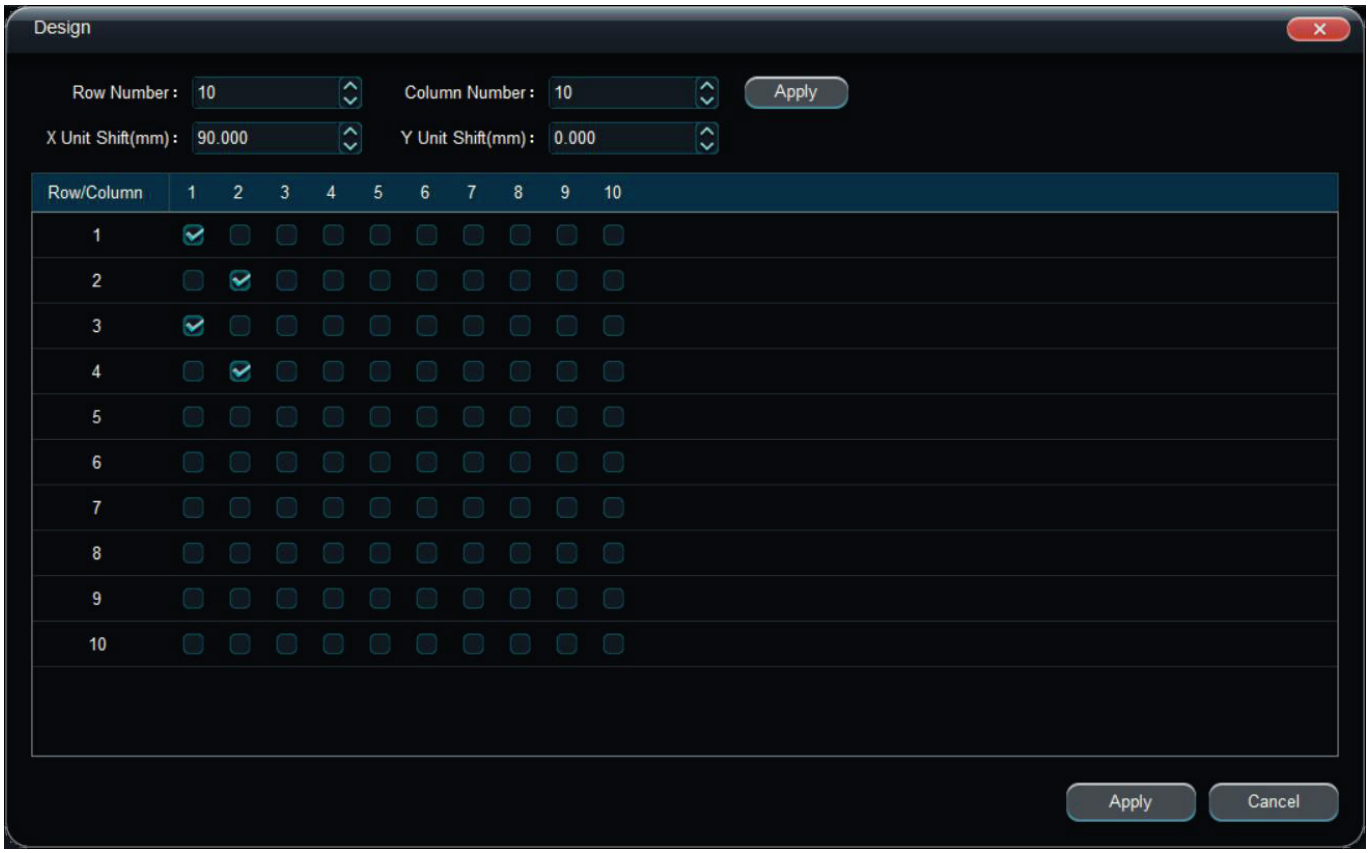
5.2.9.3.6 Head Layout Setting- -Visual Layout



> **Head Type:** Defines the nozzle type for the current system connection

> **Headboard Type:** Defines the header type for the current system connection

> **Headboard Numbers:** Number of heads / drives required for the current layout
> **Group Colors:** The color order required for the current layout, such as YMCK or KCMY
> **Amount of Head Color:** The color of the current configuration nozzle, 1 head 1 color choice 1,1 head 2 color choice 2
> **Number of Splicing Heads:** The number of currently connected nozzle X insertion.



> **Row Number:** Number of spray heads in the currently set layout in the X direction.
> **Column Number:** Number of current outs in the Y direction.
> **X Unit Shift:** Distance in X direction of two adjacent heads.
> **Y Unit Shift:** Defines the offset value of the nozzle in the Y direction.

5.2.9.3.7 Realtime Settings

> **Current:** Define the target temperature heated in nozzles.

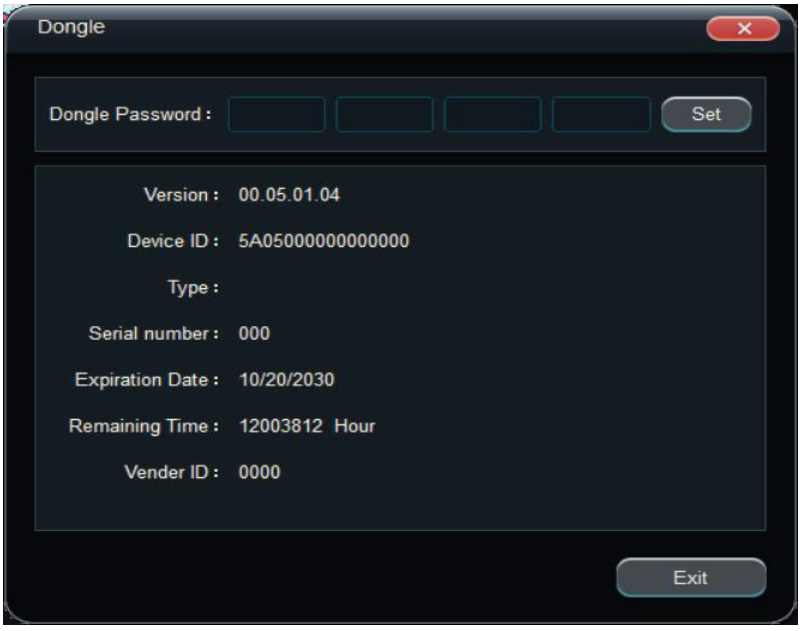
> **Corrected Voltage:** The current temperature in nozzles.

> **Current Output Voltage:** Define the correction voltage of nozzles.

> **Reference Voltage:** The current voltage of nozzles.

> **QR Code:** The reference voltage of the spray nozzle.

5.2.9.3.8 Software Dongle



> **Dongle Password:** Set the password of PM software dongle, which is generated by specific tools according to user requirements.

5.2.9.3.9 Factory Settings

> **Head Type:** Select the nozzle type for the current system connection.

> **Origin location:** Machine trolley installation location.

> **Print Platform Width:** Set the maximum width range of the printer.

> **Y to Total Length:** Set maximum length range of printer, reel is 0.

> **Origin-side Platform Width:** Sets the platform width of the printer origin area.

> **Terminal Side Platform Width:** Sets the platform width of the printer origin area.

> **Origin-side Platform Adjustment Value:** Adjust the printer origin measurement platform distance.

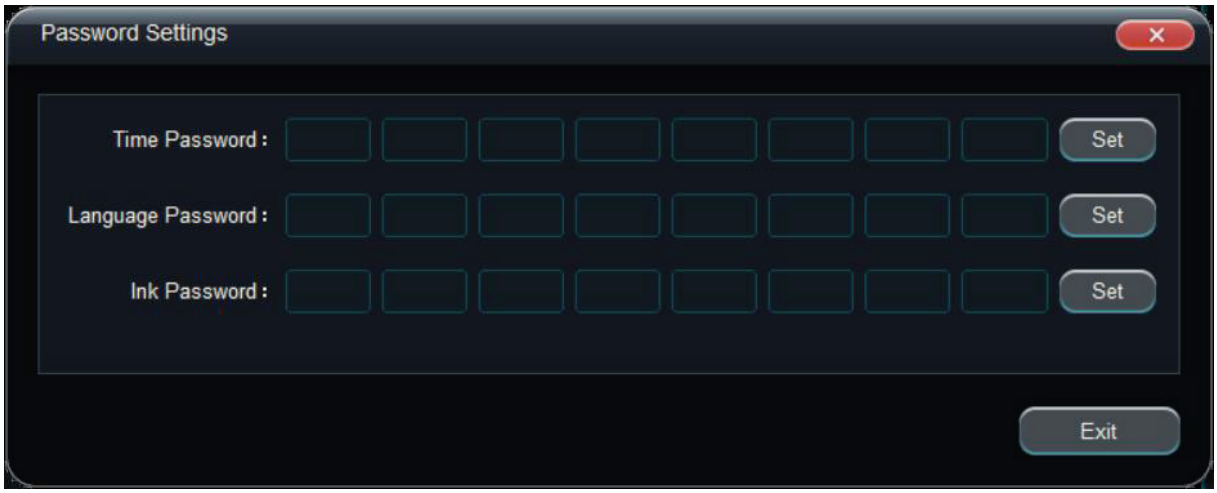
> **Terminal Side Platform Adjustment Value:** Adjust the end point measurement platform distance of the printer.

> **Y-origin Side Platform Adjustment Value:** Adjust the origin distance of the Y-axis printer.

> **Scanning Axis Raster Resolution:** Print resolution of the printer scan axis.

> **Fiber Connection Topological Structure:** How the current system fiber is connected.
> **Fiber Speed:** The transmission speed of the current system fiber connection.
> **Rating Smoothing Filter Switch:** Select whether to use the grating smoothing filter when printing.
> **Moisturizing Delay:** Set the position of each movement axis when the machine is on standby.
> **Automatic Cleaning Time In Standby:** Sets the offset distance after each motion axis finds the origin when the machine initializes.

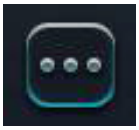
5.2.9.3.10 Password Settings:

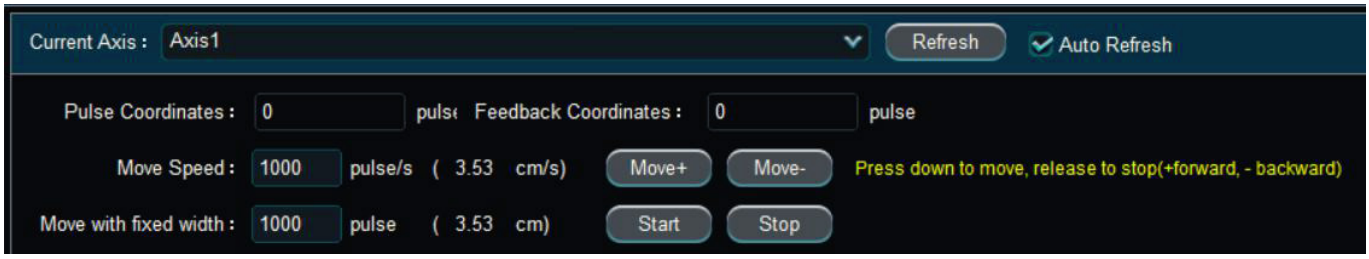


> **Time Password:** Sets the password of the machine running time limit, whose different time period keys are generated by specific tools according to user requirements.
> **Language Password:** Set the password of the PM software switching language, which is generated with different time period keys by specific tools according to user requirements.
> **Ink Password:** Set the password for machine ink usage, which generates generated keys by specific tools according to user requirements.

5.3 How To Set The Parameters

5.3.1 Test Movement

Click the main menu button on the toolbar  — tool — axis test, and select Move different axis tab.



> First mark it up before moving.

> Select the direction axis button that you want to move.

> Enter the moving unit value in the move speed box and the length move box, and refer to Section 2 for unit settings.

> Measure whether the actual distance is accurate.

> Forward movement is far away from the origin direction, and negative movement is back to the origin direction.

5.3.2 Set The Temperature And Voltage

Click the main menu —— setting —— real-time setting to enter the temperature and voltage setting, as shown in the figure below:

> **Head:** Represents the nozzle position, H1 / G1-1 represents the first nozzle, the nozzle layout diagram after double click.

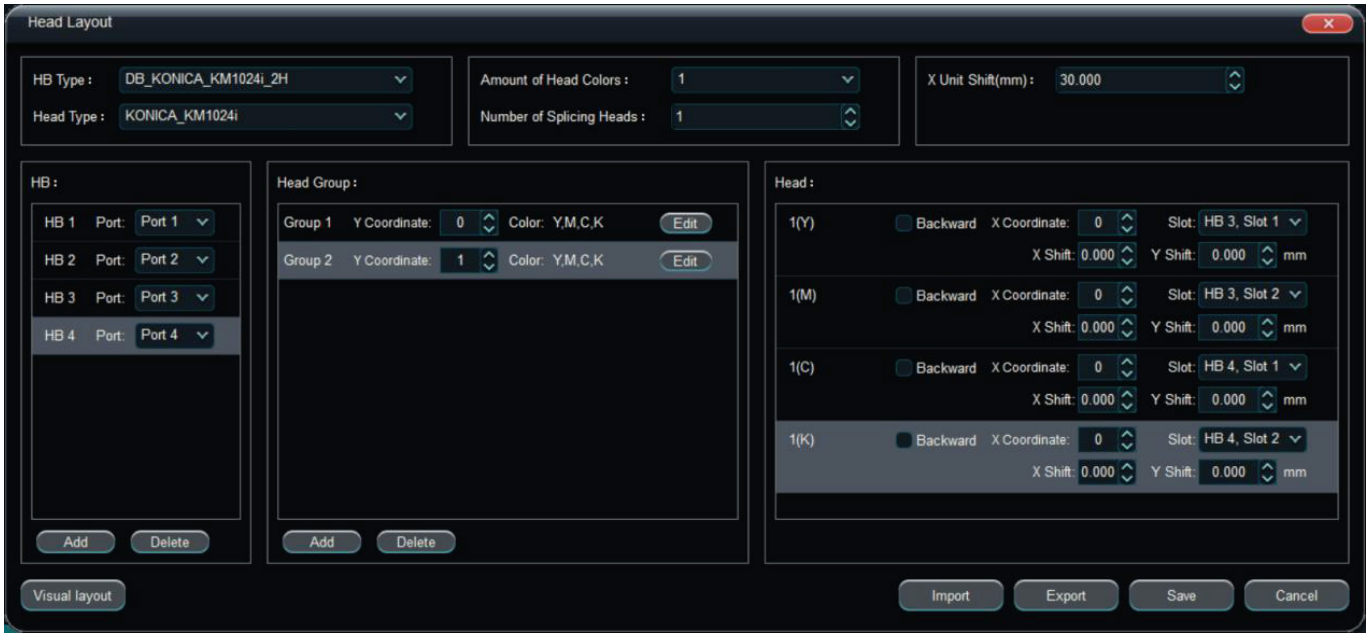
> **Target Temperature:** Set the operating temperature required by the nozzle (if nozzle heating), maximum range of 140˚F (60˚C).

> **Current:** The current nozzle.
> **Corrective Voltage:** Correct the reference voltage with the correction range of (-5V + 5V).
> **Current Output Voltage:** The actual voltage of the current nozzle operation.
> **Reference Voltage:** The reference voltage identified on the nozzle or the QR code.
> **Head QR Code:** The character code that the specific nozzle describes the reference voltage.

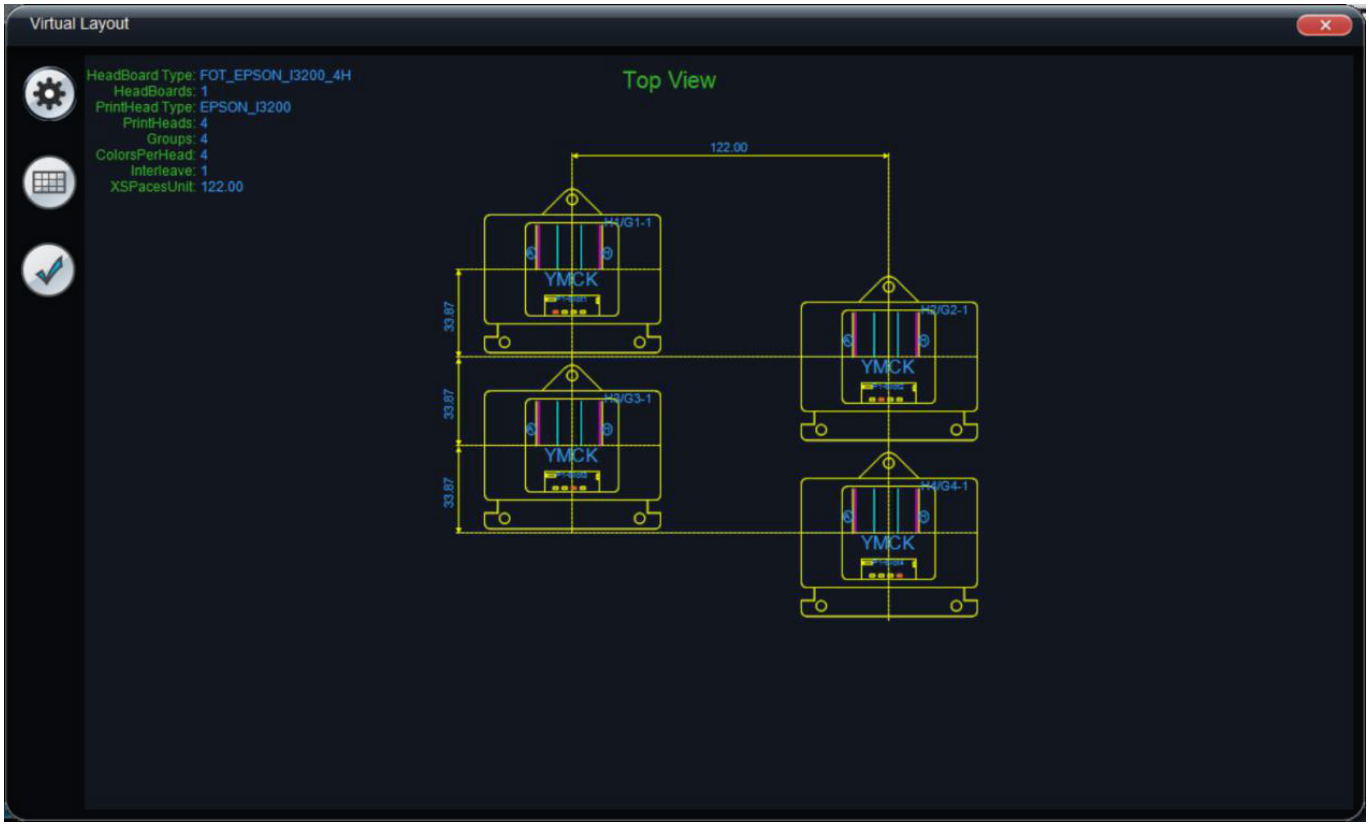
5.3.3 Set Up The Spray Nozzle Layout

> Configure the header port according to the actual hardware connection of the card.
> Arrange color order according to the actual physical position of the nozzle, and configure Y position for multiple groups.
> Configure the X unit offset and the X position according to the actual physical position of the nozzle base plate.
> Configure the slot according to the actual head plate port of the nozzle.

The following figure shows the setting reference of the four color and two sets of standard sprinkler layout of KM1024i system. The spacing of the X direction of each group is 2.36in (60mm), and the X direction of the two sets of sprinkler heads is 1.18in (30mm). The machine is the left origin, and Y, M, C and K from left to right.



The following figure shows the setting reference of the four-head standard nozzle layout of the Epson-i3200 system, with a spacing of 4.8in (122mm) for each nozzle in the X direction.



5.3.4 Check The Nozzle Status

The nozzle ink status can be checked by printing the spray check patterns through the nozzle check button on the toolbar. Please refer to the calibration manual for detailed methods of identifying the nozzle status map.

5.3.5 Clean The Spray Nozzle

There are two methods of cleaning the nozzle, cleaning and flash spray.

Cleaning: Click the cleaning button on the menu bar to perform the overall cleaning of all sprinkler heads.

Flash Spray: Click the flash spray button on the menu bar to flash spray on all spray heads.

5.3.6 Set Up The Flash Spray

Enter the flash spray setting menu by clicking the main menu button ⟶ on the toolbar. Please refer to chapter 5.3 for relevant operation:

> **Idle Flash Spray:** When the carriage is in the machine-ready state, follow the idle flash spray frequency in the flash spray area. On means that the function is turned on, and Off means that the function is turned off.

> **Idle Flash Spray Frequency:** The unit is Hz, the value according to different ink and different nozzle, its value is also different, the general water-based ink 10-100Hz, solvent ink 5-10Hz, UV ink 0.2-0.5Hz.

> **Idle Flash Spray Time:** Set the duration of idle flash spray, 1000ms means continuous flash spray for 1 second.

> **Idle Flash Spray Interval Time:** Set the idle flash spray interval time, and 1000ms indicates a flash spray interval of 1 second.

> **Manual Flash Injection:** When the PM main interface clicks on the flash injection, follow the manual flash injection frequency and continuous actual flash injection action.

> **Manual Flash Injection Frequency:** in Hz, which is generally set at 100Hz.

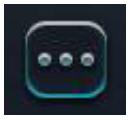
> **Manual Flash Spray Duration:** To perform the manual flash spray with a specific frequency for a period of time, the unit is in ms, the value is generally set at 1000ms.

> **Flash Before Printing:** Flash starts before printing, On puts the feature on, and Off turns it off.

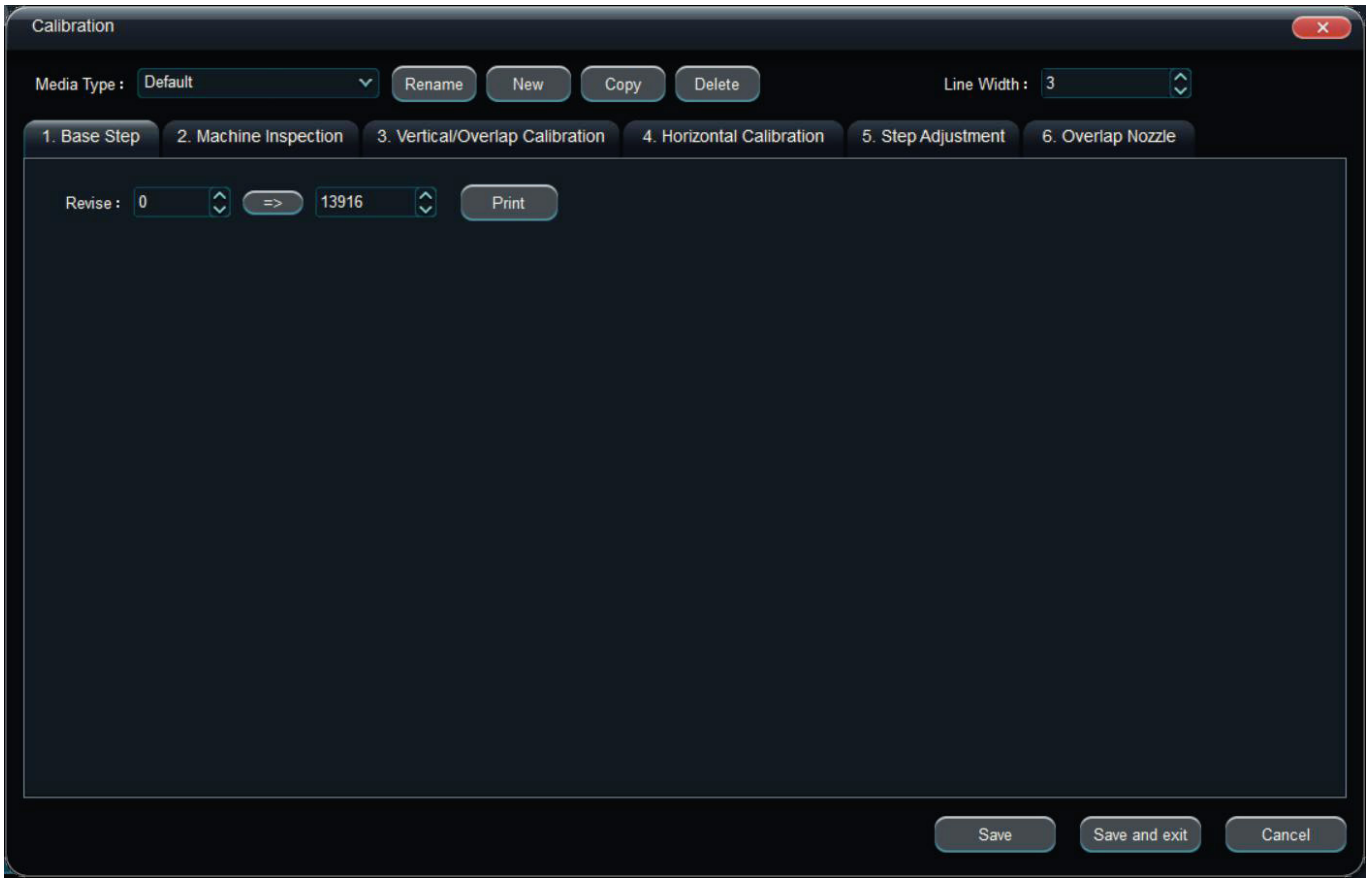
> **Flash Spray Frequency Before Printing:** Use the flash spray at a specific frequency in Hz, which is generally set at 100Hz.

- **Flash Duration Before Printing:** At a specific frequency for a while in ms. It is recommended to use 1000-3000ms.
- **Automatic Flash Spray Interval Pass Number:** How many PASS is printed, return to the origin for a flash spray process. 0 Represents an automatic flash spray when the print is not turned on.
- **Automatic Flash Spray Frequency When Printing:** Use the flash spray at a specific frequency in Hz, which is generally set at 100Hz.
- **Automatic Flash Spray Duration:** At a specific frequency in ms, with 1000-3000ms.

5.3.7 Print And Calibration



Click the main menu —— to select the tool menu —— to select the Calibration wizard to enter the calibration, the calibration is divided into six parts, followed by step calibration, mechanical inspection, vertical overlap calibration, horizontal calibration, step fine-tuning, and nozzle overlap.



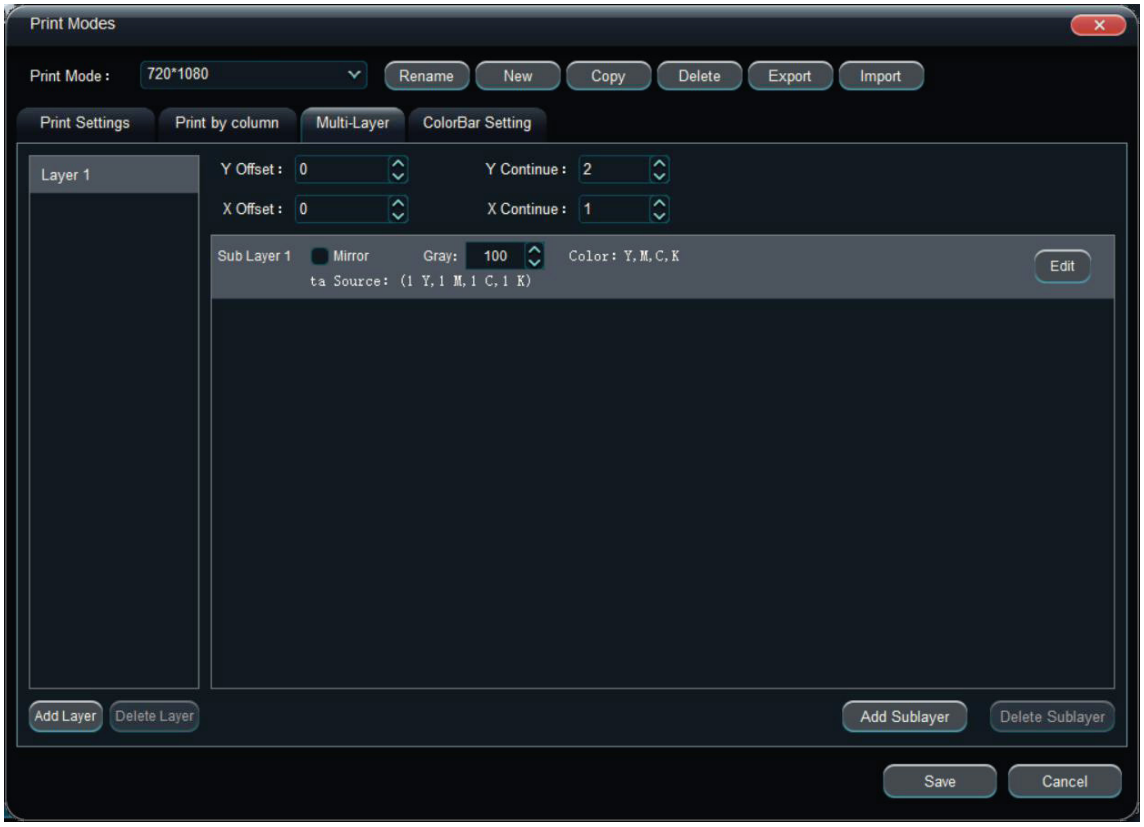
5.3.8 Set The Print Mode

> Establish different printing patterns according to the actual generated status.

> Select the different print mode based on the print type (side rip change, select Use File Settings).

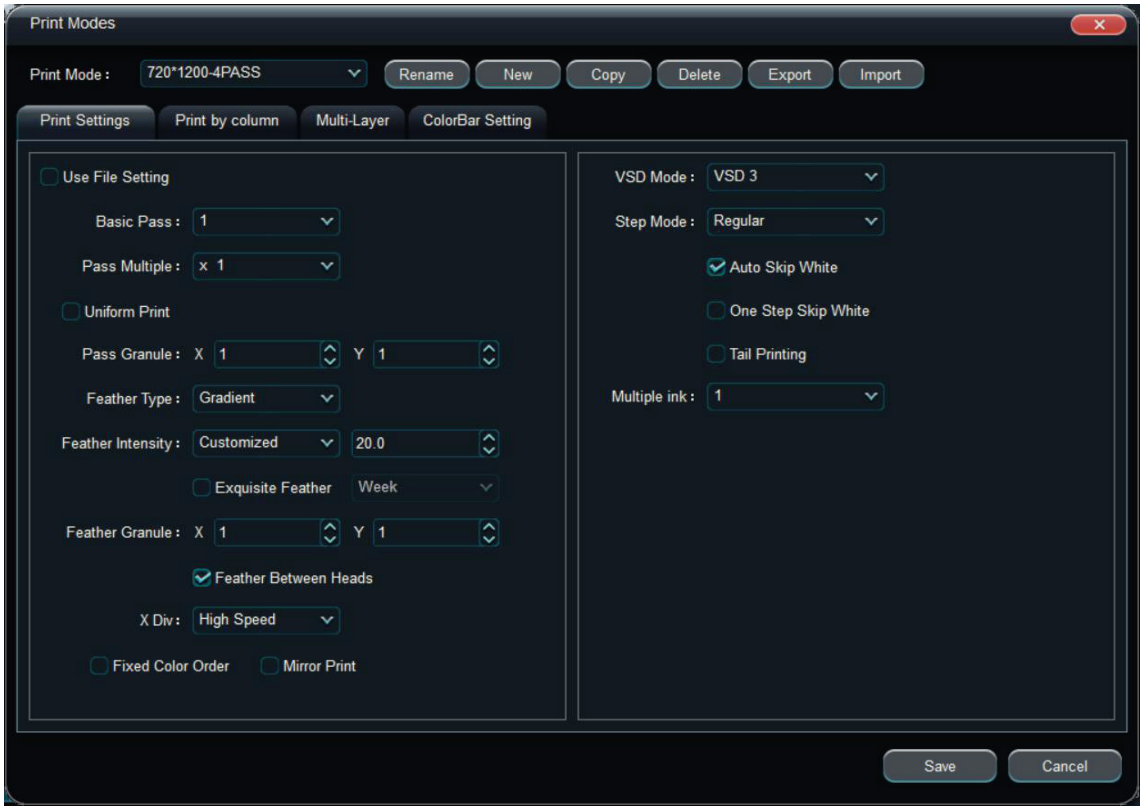
> Configure the high speed / high precision mode according to the actual printing requirements.

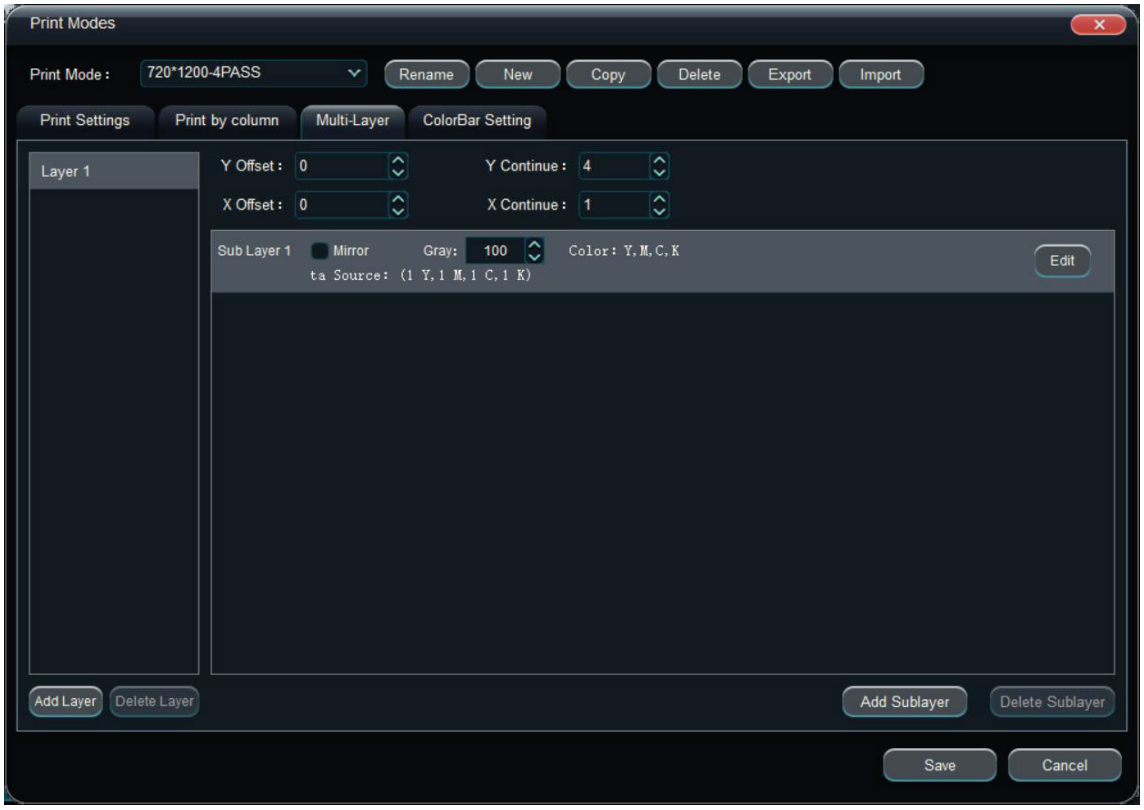
> Feather mode and feather strength are selected according to printing effect requirements. The following figure shows the setting reference of the four-color two-group printing 720 x 1080 operation in KM1024i system. The machine grating resolution is 720dpi, the printing medium is soft film, and the gradient strong feather high-speed mode is used.



The following figure is for Epson-i3200 4-head system printing 4pass resolution of 720 x 1200 setting reference, the machine raster resolution of 720dpi, the printing

media is the car paste, choose the nozzle, gradient custom 20% high speed mode bidirectional printing.

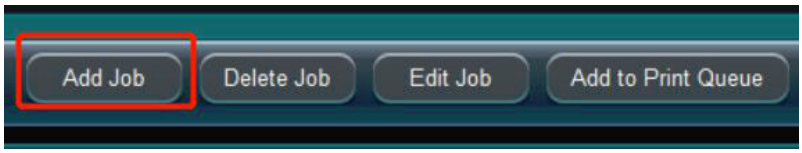




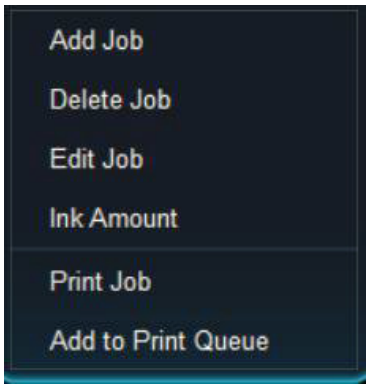
5.3.9 Add Print Jobs

There are two ways to add print jobs, as described as follows:

1. Use the toolbar to add the job button as picture below. Click the Add Job button to find the job you want to print. When looking for jobs, you can choose with one or more than one.



2. Right-click in the taskbar, Add jobs, as shown on the right:



5.3.10 Edit Job Properties

5.3.10.1 Print Start Point

There are two ways to set up the print starting point:

1. After filling in the corresponding values on the PM main interface toolbar, the return confirmation can complete the printing starting point setting. The scroll machine and the rewind machine type can set X origin, and the flat plate machine can set X and Y origin at the same time.

2. Move the X car or Y beam to a certain printing area, click the synchronous X origin and synchronous Y origin on the PM main interface toolbar to set the printing starting point. The scroll machine and rewind machine can set the X origin, and the flat plate machine can set the X and Y origin at the same time.

Take the left origin of the carriage as an example, the distance of the printing starting point from the nozzle on the right side to the rightmost boundary of the printing picture (including the color bar) is the position of the X origin.The distance from the top nozzle to the bottom boundary of the print screen is the Y origin position.

5.3.10.2 Step Adjustment

During the printing process, the step value of the next pass printing can be adjusted in real time according to the actual printing effect of the machine, and the adjustment unit is the pulse.

5.3.10.3 Bi-dir Adjustment

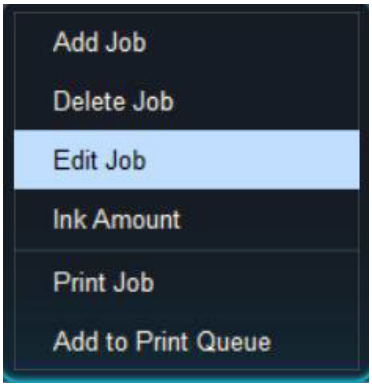
During the printing process, the bidirectional value of the next pass printing can be adjusted in real time according to the actual printing effect of the machine, and the adjustment unit is the pulse.

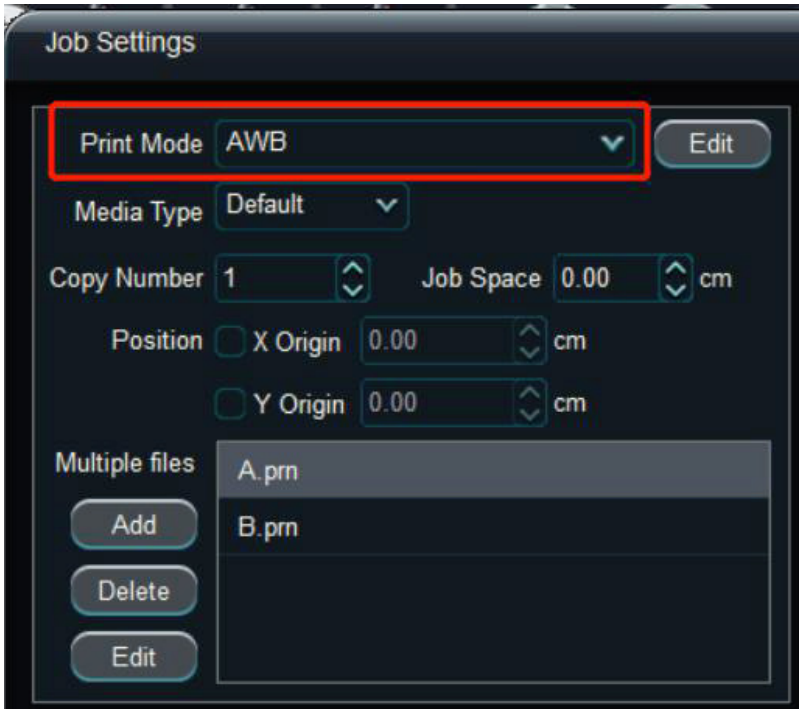
5.3.10.4 Speed Selection

Click the VSD Mode pull-down arrow on the PM main interface toolbar to select the speed of the car during printing injection or calibration.There are four modes: VSD Mode 1, VSD Mode 2, VSD Mode and VSD Mode 4, respectively. The printing speed of the four modes is determined by the ignition frequency corresponding to the four wave patterns in the waveform file.

5.3.10.5 Print Mode

Select a print job in the taskbar, and click right to select the edit job. And then select the correspinding print mode to complete the printing setting.

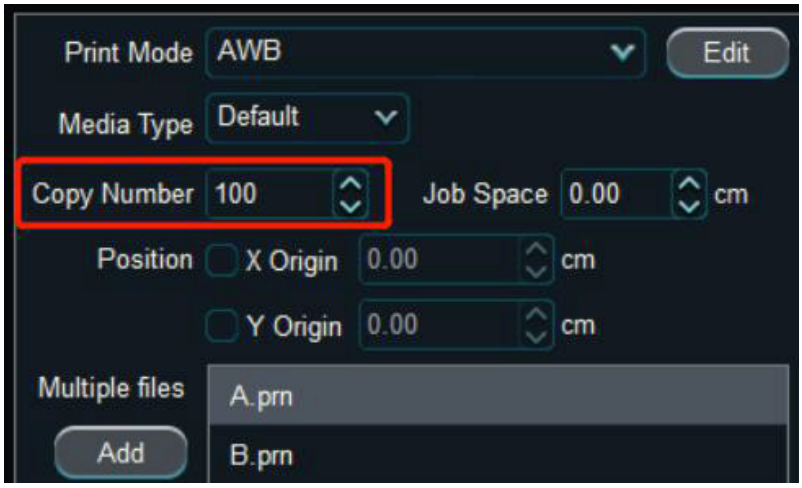




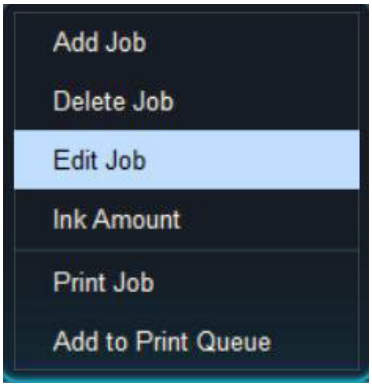
Refer to chapter 5.3.8 for the specific printing mode setting.

5.3.10.6 Multiple Prints (Copy Numble)

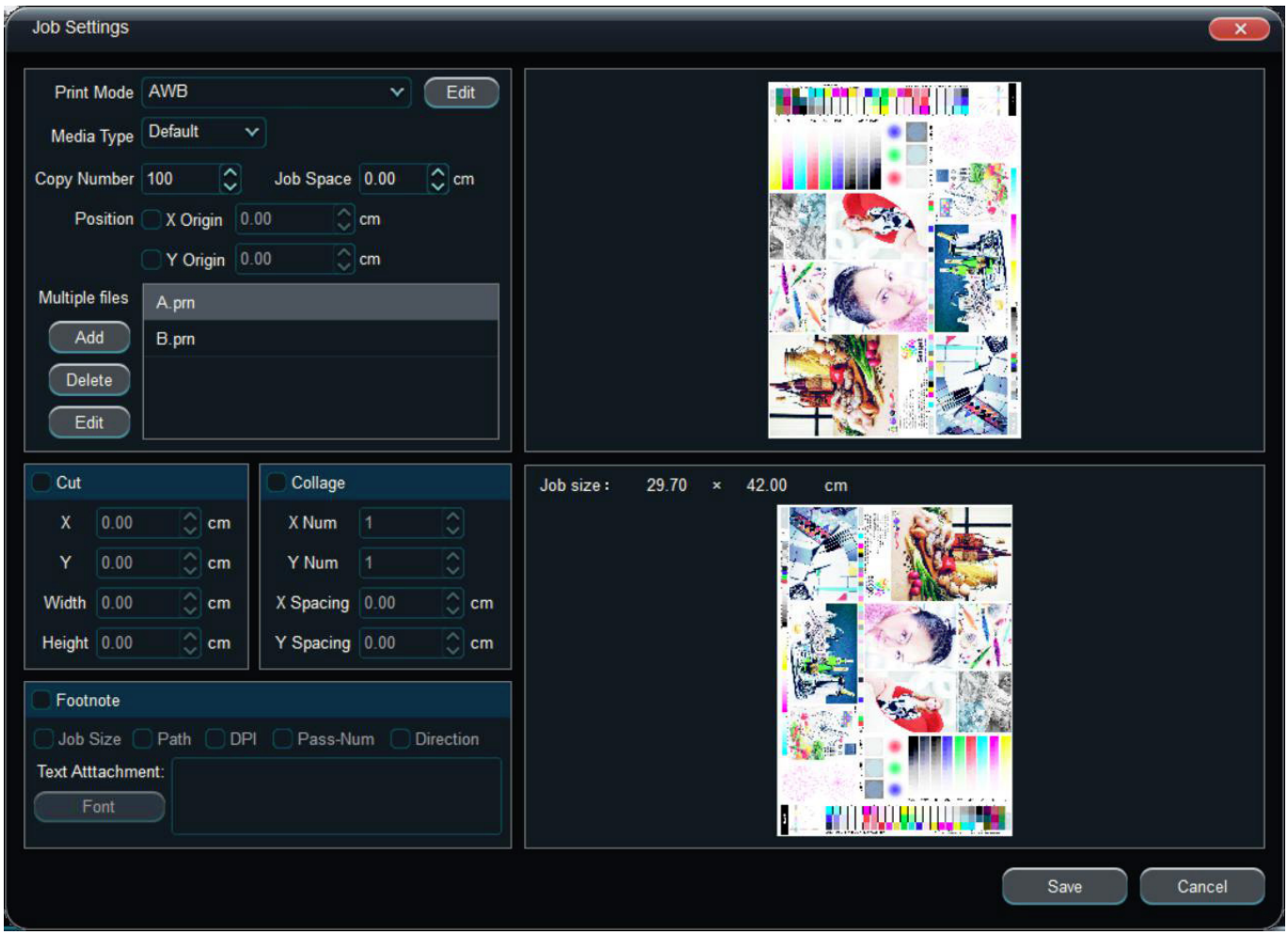
Such as the above cutting and collage function, after entering the job editing setting window, fill in the corresponding number of printed copies at the following picture to complete multiple settings.



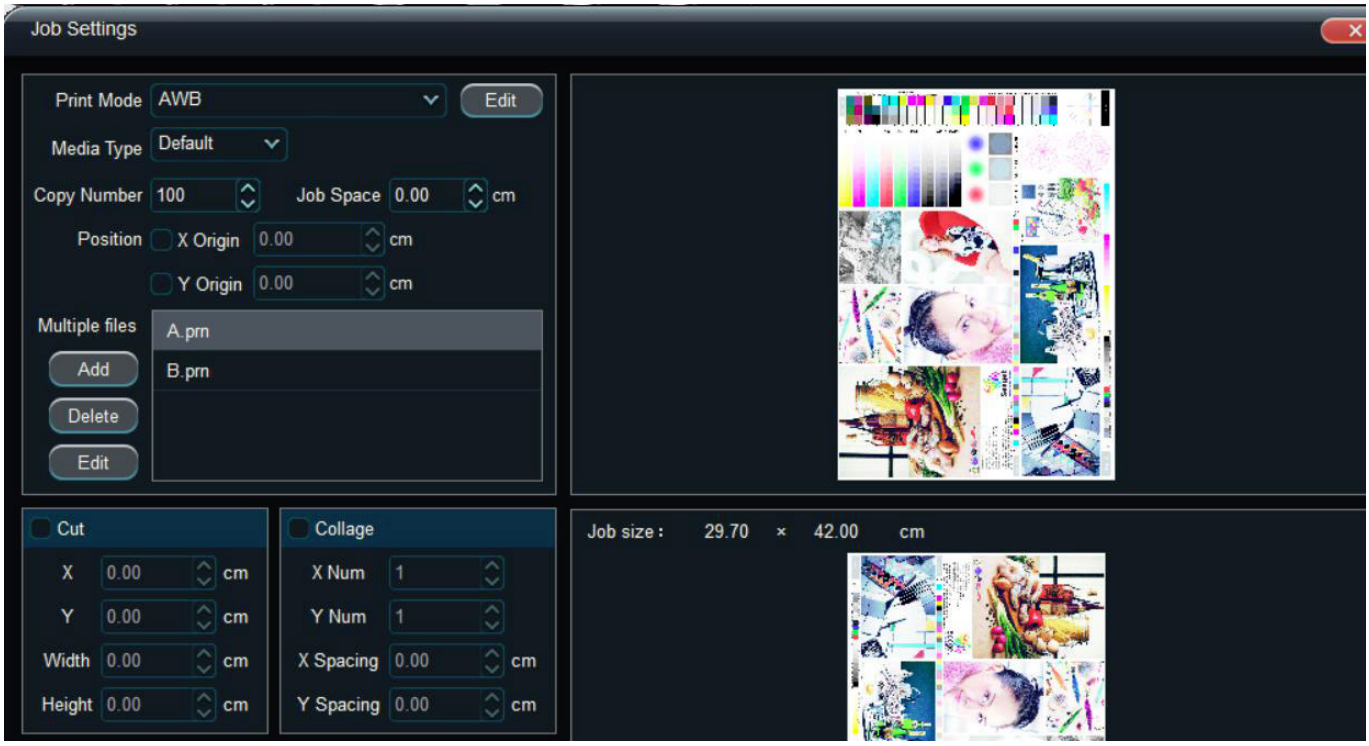
5.3.10.7 Cutting Operations (Cut)



Select a print job in the taskbar, right-click to select the edit job, and the following edit job window will pop up:



When Cut is selected, the picture preview box is shown in the figure below:



See the black box on the picture, drag the black box to complete the cutting. You can also enter the shear X, Y start position or the corresponding width and height setting value in the left shear setting box to complete the shear.

5.3.10.8 Collage Work

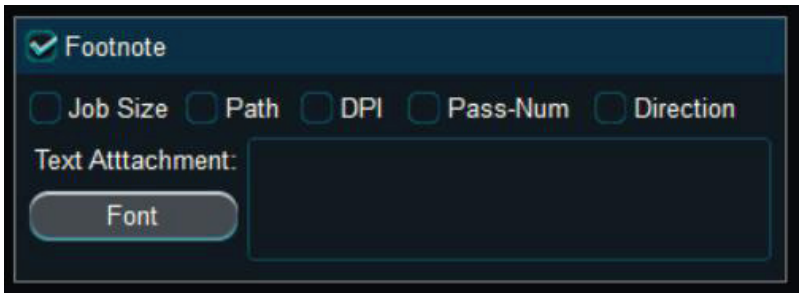
The collage job has the same function as the shear job. After selecting a job, click right and select the edit job, the job editing window will pop up, and select the collage under the right job preview figure, as picture below:

After selecting collage, enter the corresponding collage parameter setting in the left collage setting. X number is horizontal collage number, Y number is vertical collage number. The X spacing and Y spacing are the spacing between horizontal and

vertical jobs when setting collage work.

5.3.10.9 Footnote Printing

As the cutting and collage function above, after entering the job editing window, make the corresponding setting in the footnote:

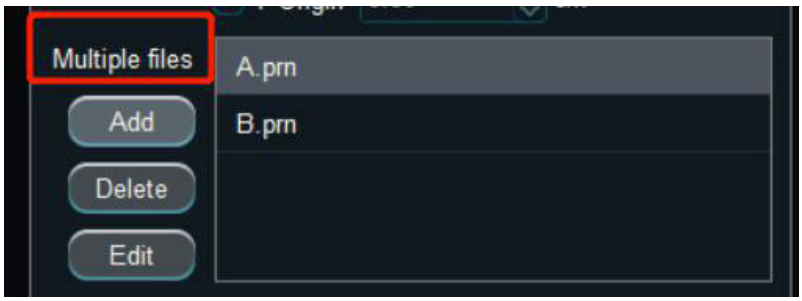


- **Job Size:** Add information about the job size dimensions to the footnote.
- **DPI:** Add information about the job resolution to the footnote.
- **PASS numbers:** Add information about the PASS numbers to the footnote
- **Direction:** Add information for the print direction (single / bidirectional) in the footnote.
- **Font:** Defines the text you enter with annotation.

5.3.10.10 Multi-file Printing

Job Edit —— Multiple Files

Added multiple file jobs need to be the same size and resolution.



5.3.11 Set Up The Color Bars

Enter the color Bar Settings editing option by clicking the interface main menu - Settings - Print Settings button. Please refer to the Chapter 5.2.9.3.2 Color Bar Settings.

> **Color Bar Position:** Location of the color bar.

No: There is no color bar

At Left or Right: Color bar in the left or right side of the picture.

Both Sides: Color bar in the left and right side of the picture at the same time.

> **Color Bar Width:** The overall width of the color bar, which can be set in the user Settings - personality settings.

> **Color Bar Spacing:** The distance between the color bar and printing edge, which can be set in the user Settings-personality settings.

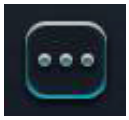
> **Color Bar Ink level:** You can set the ink amount of color strip printing, 100% is all of the jet ink, 50% is half volume of the ink jetting.

> **Color Bar Interval:** Select automatically to print the color bars according to the number of printed job pass intervals, and select 1 for 1pass to print per interval of color bars.

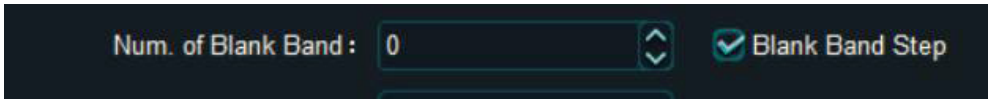
> **Color Overlap:** The four colors overlap together.

> **Same Height With Image:** Keep the height color bar same as prints.

5.3.12 Set The Blank Band Action



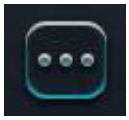
Enter the blank band setting interface by clicking the interface main menu — — setting —— print setting button



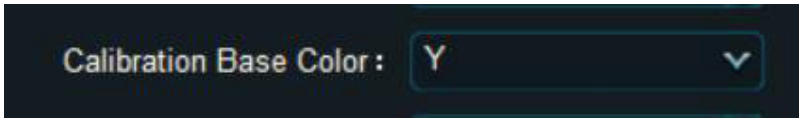
> **Num. of Blank Band:** The extra empty band added after printing the last band of the job.

> **Blank Band Step:** Decide whether to print an additional empty band to step.

5.3.13 Set The Calibration Reference Color

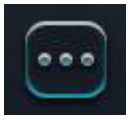


Enter the calibration reference color setting interface by clicking the — — print setting button of the interface main menu —

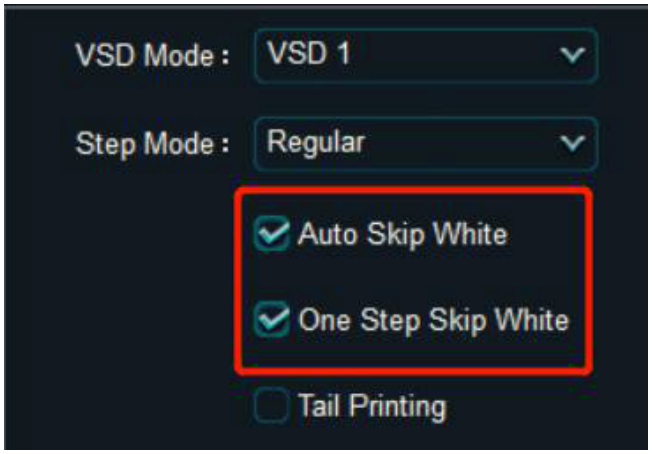


> **Calibration Base Color:** The base color used in printing the calibration.

5.3.14 Set Up The Automatic White Jump



Click the main menu — to enter the automatic white jump setting interface, as picture below:



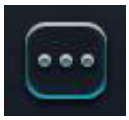
> **Auto Skip White:** Set the stepping method when the Y to blank is greater than the nozzle height.

> **One Step Skip White:** Skip the blank when Y blank is more than the nozzle height.

Check the automatic white jump, and save the settings to realize the printing automatic white jump function (Job Y to the blank height should be greater than the height of one nozzle), encounter the blank part step by time according to the pass height to skip.

At the same time, check the automatic jump and step jump, blank part can achieve one-time jump.

5.3.15 Set Up The Emergence



Enter the feather mode setting interface by clicking the main menu of the interface, as shown in the figure below:

The feather setting interface has feather type, feather strength and feather particle options: Fetype: gradient, uniform, fine feather and jet between feather options, described below:

> **Gradient:** PASS uses to fade the head and tail of each PASS to modify the PASS channel and depth stripes.

> **Uniform:** Use the PASS front to back to feather the head and tail of each PASS in a uniform manner for resolving dark stripes.

> **Exquisite Feather:** PASS makes each PASS head feather by gradient way, which is suitable for printing large ink color block, fine weak feather ratio is fixed 100% + 2pass, fine middle feather ratio is fixed 100% + 4pass, fine strong feather ratio is fixed 100% + 6pass.

> **Feather Between Heads:** Suitable for resolving dark stripes at multiple sets of nozzle panels.

> **Feather Intensity:** 33% of weak feather, 66%, and 100% of strong feather.You can also choose the custom feather proportion according to the actual printing effect.

> **Feather Granule:** Used to adjust the granularity of the feather part per pass print, the larger the granularity, the rougher the feather part, the less likely to form the feather path, granularity 1-5 is optional.

The feather function is to make up for the regular stripes and pass channels caused by the bad nozzle state and inaccurate stepping phenomenon when printing. The higher the proportion of feathers selected, the more the printing pass required to complete the operation, and the corresponding decrease in the printing output.

5.4 How to Choose The Right Printing Method

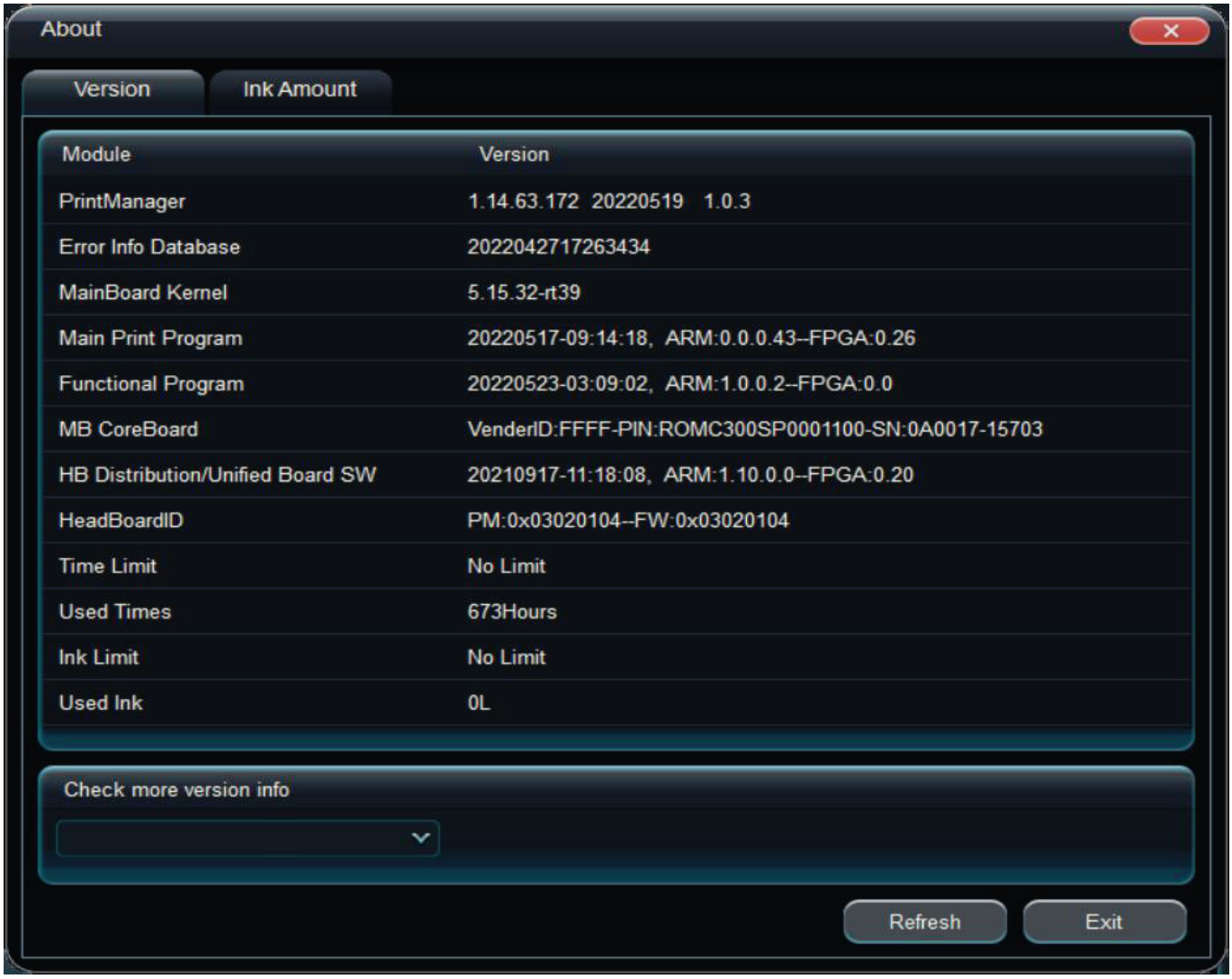
5.4.1 Select The Appropriate Printing Accuracy

Must consider the following elements:

- **Machine Grating Resolution:** The resolution of the grating ruler installed in the printer is 150dpi, 180dpi.
- **Print Resolution:** Like 360x1440dpi, if larger than value, the higher resolution you will get. However, the physical resolution of the nozzle, ignition frequency and ink drop size should also be considered. The nozzle ignition frequency is low, and the carriage speed will be relatively slow when printing with high resolution. When the nozzle physical resolution is low, to print high resolution pictures, higher PASS number should be chose. When the ink drops are large, and printing with high resolution, it is necessary to consider whether the ink drops form an accumulation and will affect the overall resolution.
- **PASS Number:** With the same resolution, the higher number of PASS, the higher printing accuracy, but the printing speed is inversely proportional.
- **Feather:** Used to modify the PASS channels (black, white channels) or improve the depth of stripes, and the speed, not as much as increasing the number of PASS.
- **Fixed Color Sequence:** Use to improve dark stripes without affecting printing speed at all.
- **High Precision and High Speed:** For improving the dark stripes, the high speed mode is also a good choice, which can improve the deep stripes without affecting the printing efficiency.

5.4.2 Get The Version Information

Click the main menu —— about to get the version information.



> **Print Manager:** The PM software version.
> **Error Info Database:** Error message database version.
> **Main Board Kernel:** Motherboard kernel version.
> **Monitor Program:** The Monitor program version.
> **Functional Program:** Main printer version.
> **Division Program Software:** Division program version.
> **MB Core Board:** Main board core board hardware version.
> **HB Distribution / Unified Software:** Distribution board / all-one board software version.
> **HeadBoard ID:** Headboard ID
> **Time Limit:** Version card use time limit.
> **Used Time:** The cumulative running time of the card.

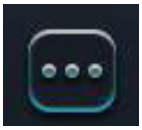
> **Ink Limit:** The plate card uses the ink capacity limit.

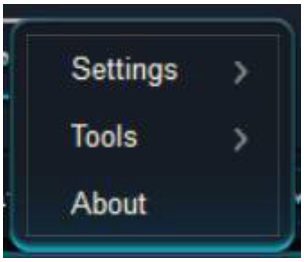
> **Used Ink:** The total amount of ink currently used by the plate card.

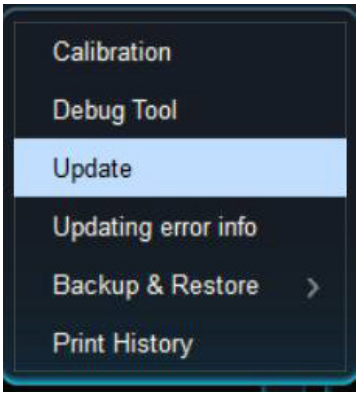
5.4.3 Upgrade / Maintain The Firmware And Software

5.4.3.1 Upgrade Firmware (Firm Ware)

In order to fix some undiscovered bugs during testing or add some functionality, you can update the firmware as following:

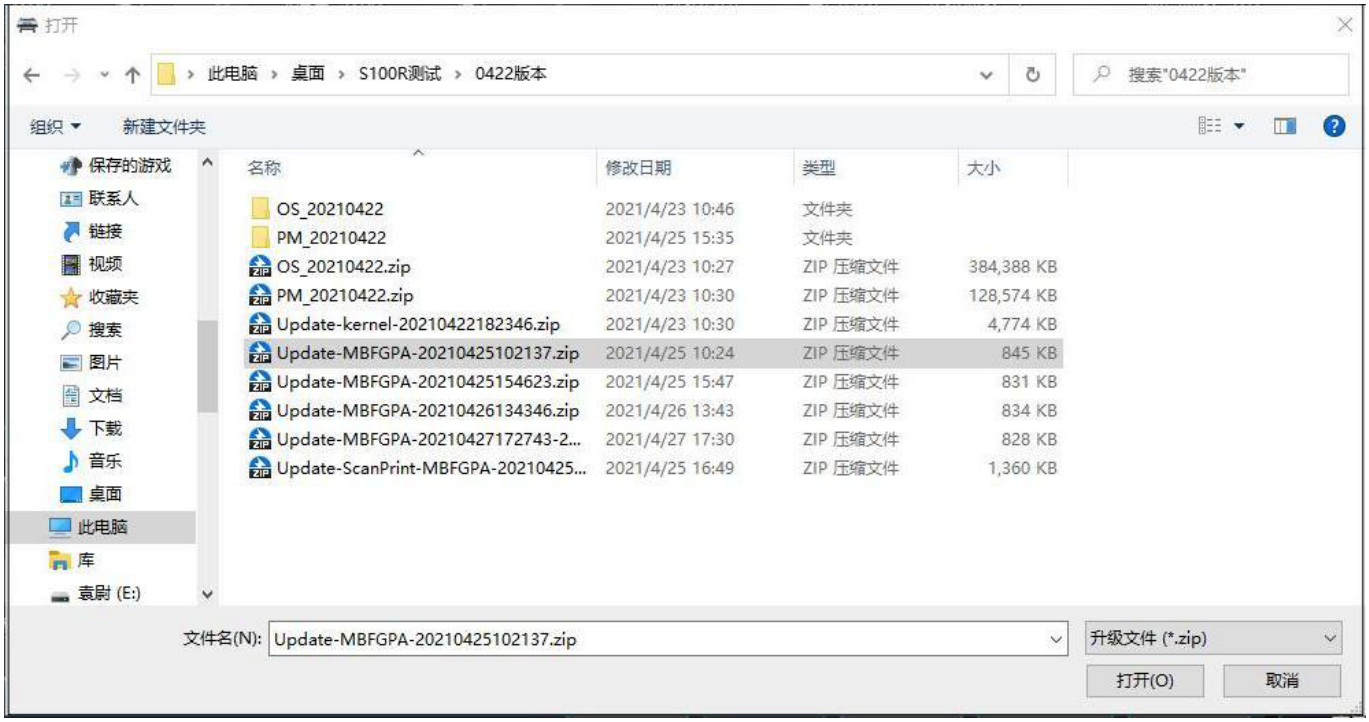






Click the “Main Menu” → to enter the “Tools” → “Update”

pop up the following dialog box, and then select the corresponding upgrade file to press OK (the upgrade file suffix is.zip, document).



Confirming the upgrade file, enter the upgrade process. After the upgrade, restart the printer.

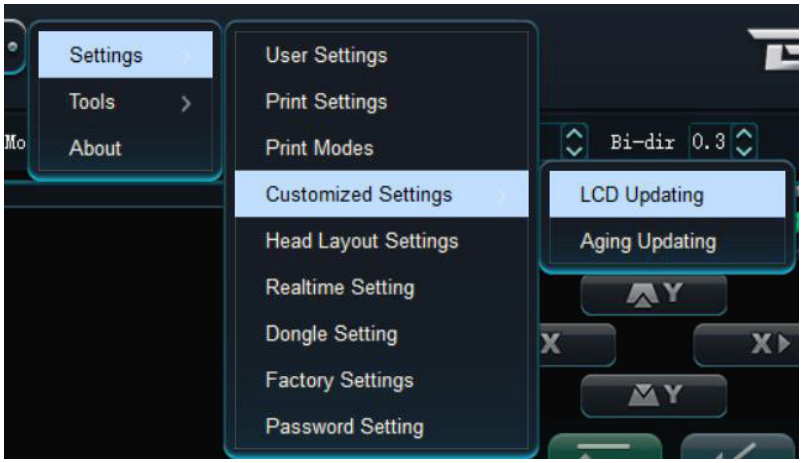
You can observe the upgrade process under the status bar and observe whether

there is any problem in the upgrade process. If the upgrade fails, note that the status bar fails to upgrade to a percent, and report it.

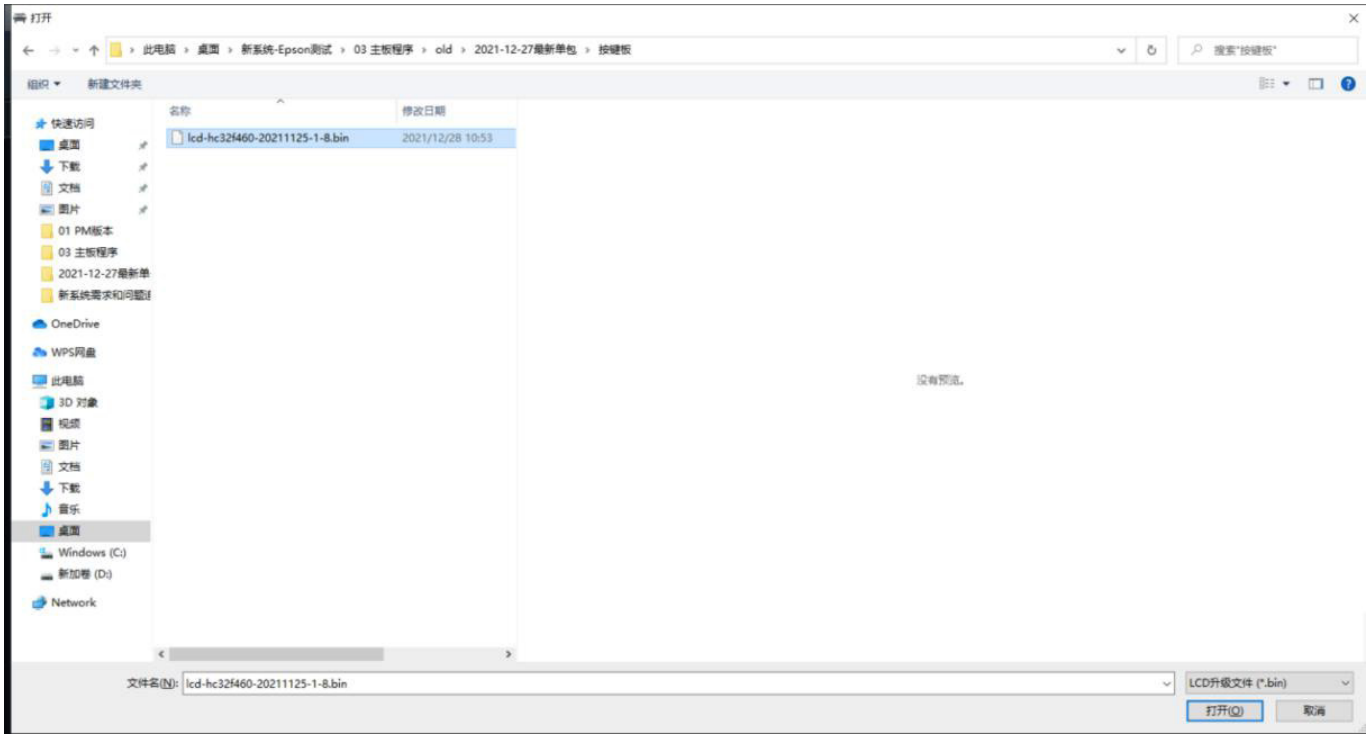
5.4.3.2 Upgrade The LCD

In order to repair some undiscovered bugs during testing or add some functions, and you need to update the LCD as followings:

Click the main menu — — Settings — —Customized Settings — — LCD upgrade



The following dialog box will pop up, and then select the corresponding upgrade file to press OK (the upgrade file suffix is.bin, document).



Confirming the upgrade file, enter the upgrade process. After the upgrade is done, you need to restart the printer.

5.4.3.3 Upgrade the Software

In order to repair some undiscovered bugs during testing or add some functions, you need to update the upper computer software (Printer Manager) as followings:

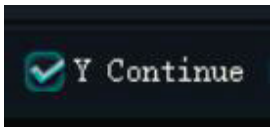
> Uninstall the existing software.

> Remove all of the files in the "X: \ Program Files (x86) \ Printer Manager \" directory, or remove the entire Printer Manager folder.

> Install the new Printer Manager software.

5.4.4 Print Out

5.4.4.1 Y Continuous Printing



Y Continuous Printing: Determines the starting position of the Y axis for each printing.

> **Click Y continuous printing:** Means continue printing the next job after printing a job for the Y axis.

> **Without click Y continuous printing:** Means after print a job for the Y axis, and then go back to the origin to print the next job.

5.4.4.2 Reverse Print

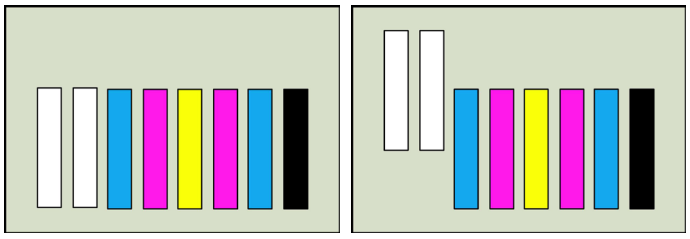
The Y axis - forward printing is from front to back, the reverse printing is from back to front.

> **Click Reverse:** Y axis moves to setting start position and reverse prints job.

> Without click the reverse printing, the Y axis will print jobs in the positive direction according to the setting Y start position.

5.4.4.3 White Ink (Varnish) Printing

White printhead can be installed in two ways, one is in a flat row to print in layers. The other one is the wrong row, dedicated to white bottom (forward printing) or cover white (reverse printing).



White flat row White wrong row

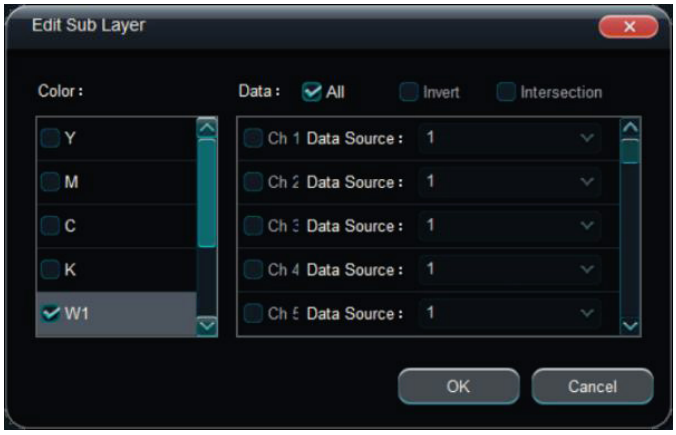
White Flat Row

The printing method of white flat row are as following- white can print first layer, or or print last layer.

> **First Layer Printing:** Set the number of sublayers to 2 in the multi-layer setting, white W1 in sublayer 1, and color Y-M-C-K-Lc-Lm in sublayer 2. The gray scale setting determines the amount of ink output at nozzle printing, 0 means the current inkjet volume is 0, 50 means 50% of the ink output volume, and 100 means full ink output volume.

White ink backgroud printing is divided into all color backgroud and specific color background, you can according to the actual printing needs.

> If you need print background for all colors, select 'All' in the data.



> You need choose specific color in Data if you need print white background for one specific color. (for example, to print background only under M color), click M in the data, and the non-clicked colors will without white back ground. Intersection means print back ground on overlap of two colors.

> Top layer White Printing: Set the number of sub-layers to 2 in the multi-layer setting, sub-layer 1 selects color Y-M-C-K-L-Lc-Lm, and sub-layer 2 selects white W. The gray scale setting determines the amount of ink output at nozzle printing,

0 means the current inkjet volume is 0, 50 means 50% of the ink output volume, and 100 means full ink output volume.

Save the printing mode after the setting is complete, you can select the printing mode when printing jobs.

White Disalign Row

When using white printhead disalign row, white ink can print first layser or last layer. You can print directly without set layers.

> **White Ink for Back Ground:** Forward printing - spray white ink first and then spray color ink.

> **White Ink for Top Layer:** Reverse printing - spray color ink first and then cover white ink.

5.4.4.4 Mirror Printing

Mirror printing flips the print image 180 degrees horizontally, such as if print on glass and view from the front, which need to use the mirror function.

When use this effect, simply click mirror print in print mode.

7. Troubleshooting: Error Report Form

	FTA Type Error	Solution
FTA 7	The print start and end positions are wrong.	1. Reset all parameters 2. Re-upgrade
FTA 8	The printing start point of Band is less than the origin	1. Reset all parameters 2. Re-upgrade
FTA 9	The end of the image is beyond the farthest point of the printer, Image too width.	1. Crop and print the picture 2. Check the RIP file and RIP software
FTA 10	Motion control first stage initialization failed.	1. Re-upgrade 2. Reset all parameters 3. Check if the MT version is correct 4. Replace the motherboard
FTA 11	Motion Control Phase 2 Initialization Failed.	1. Re-upgrade 2. Reset all parameters 3. Check if the MT version is correct 4. Replace the motherboard
FTA 12	The first stage initialization of the head board did not pass the main board and the trolley board did not match.	1. Re-upgrade 2. Reset all parameters 3. Check if the HB version is correct 4. Replace the motherboard
FTA 14	The LVDS receiver chip of the motherboard does not have LOCK, or the cable is not plugged in.	1. Check the LVDS cable connection 2. Replace the LVDS cable 3. Check the head board power supply 4. Check the motherboard
FTA 17	Failed to read EEPROM	1. Reset all parameters 2. Re-upgrade 3. Check the motherboard version
FTA 22	The type of printhead reported by the headboard does not match the settings in FactoryData. Please replace the headboard or reset the hardware settings.	1. Check the factory settings (Factorywriter.exe) 2. Check if the headboard is correct (Hardware and software version)
FTA 23	The control system does not match the manufacturer of the FW, the system needs to be replaced or the FW needs to be upgraded.	Check the version of the motherboard upgrade package
FTA 24	Exceeded time limit, please re-enter password.	Enter a new password
FTA 25	Internal error, blank band or Y distance is zero.	Check PM, RIP and PRT files
FTA 26	USB1.1 error \ n USB connection re-establishing...	1. Restart the machine, pay attention to the restart interval of at least 10 seconds. 2. Check the USB cable, PCUSB port and computer.
FTA 27	The language used by the UI does not match the permissions, please reset the language or re-enter the password.	Change the correct language
FTA 28	PINCONF write to FPGA error.	1. Reset all parameters 2. Re-upgrade
FTA 29	Wrong number of colors written in factory settings.	Check the factory settings (Factorywriter.exe)

	FTA Type Error	Solution
FTA 30	EEPROM write of head board failed.	1. Restart the system 2. Re-upgrade 3. Reset all parameters 4. Replace the head board
FTA 31	The nozzle heating exceeded 55 degrees, and all heating was forcibly turned off.	1. EPSON check the print head. 2. RICOH check the actual heating temperature. 3. Check the head board.
FTA 32	Software error or version error, did not pass the handshake protocol.	Check the version of PM software.
FTA 33	The firmware requires a special software version, the version is wrong.	Check the PM version
FTA 37	EPSON print head error.	1. Check the nozzle wiring 2. Check whether the nozzle connection is wet 3. Check the head board insurance 4. Check the nozzle 5. Check the ground wire 6. Check whether there is isolation protection between the FC wires
FTA 50	Unsupported resolution.	1. Check PRT file and RIP software 2. Check PM
FTA 53	Headboard main voltage is too low.	Check the input power supply voltage of the head board
FTA 54	The motherboard FW does not support the printhead type written by the current Factory Write.	1. Check factory settings (Factorywriter.exe) 2. Re-upgrade and reset all parameters
FTA 56	Head board voltage is too high, overvoltage protection.	1. Check the input power supply voltage 2. Check the head board
FTA 57	Problem with ink stack sensor or ink stack motor.	1. Check the ink stack sensor 2. Check the ink stack motor and wiring
FTA 58	The head board MOS tube is broken down.	Replace the head board
FTA 59	DSP upgrade failed.	1. Re-upgrade and reset all parameters 2. Check the motherboard
FTA 225	The read EEPROM operation failed.	1. Reset all parameters 2. Re-upgrade 3. Check the motherboard version
FTA 226	The write EEPROM operation failed.	1. Reset all parameters 2. Re-upgrade 3. Check the motherboard version
FTA 227	The read EEPROM operation is not completed, and the EEPROM is accessed again.	1. Reset all parameters 2. Re-upgrade 3. Check the motherboard version
FTA 246	Raster error	1. Check the gear ratio 2. Check the grating and decoder 3. Check the LVDS line 4. Check whether the motor movement is abnormal 5. Check whether the belt is slipping and whether the guide rail is smooth power supply

	FTA Type Error	Solution
FTA 248	No medium	Check the paper out sensor and paper status
FTA 249	X-axis movement blocked	Check whether the emergency stop is triggered
FTA 250	X-axis movement blocked	Check whether the emergency stop is triggered
ERR 2	Motion Communication Timeout	1. Check peripheral connections 2. Re-upgrade and reset all parameters 3. Replace the motherboard
ERR 3	The communication between the head board and the main board times out.	1. Check the LVDS cable connection 2. Replace the LVDS cable 3. Check the power supply of the head board 4. Check the upgrade package version
ERR 4	The print data and firing frequency do not match.	1. Check the gear ratio 2. Check the grating and decoder 3. Check the LVDS line 4. Check whether the motor movement is abnormal Version
ERR 11	30 seconds after the motion command was issued, no motion complete command was received.	1. Check whether the motor can move. 2. Whether the trolley can be moved by hand in the power-on state, and whether the motor is not locked.

	Initialize Process State	Solution
INI 0	Initializing the main control board	1. Re-upgrade 2. Re-reset all parameters
INI 1	Initializing USB communication	1. Re-upgrade 2. Re-reset all parameters
INI 2	Initializing FPGA	1. Re-upgrade 2. Re-reset all parameters
INI 3	Initializing motion	1. Check X origin 2. Check X end, Z origin, end, Y origin, Y end (If any) 3. Check ink stack and clip motion 4. Check X and Y motor wiring 5. Check ink stack and scraper Chip wiring
INI 4	Initializing headboard	1. Check the LVDS cable connection 2. Check the power supply of the head board 3. Check the version of the head board (HB)
INI 5	PLC initialization	Check the peripheral connections

	WAR Type	Solution
WAR 34	The nozzle temperature is too low.	1. Check the print head and head board 2. Check the print head data cable connection
WAR 35	The nozzle temperature is too high.	1. Check the print head and head board 2. Check the print head data cable connection
WAR 36	Nozzle is not connected.	1. Check the print head and head board 2. Check the print head data cable connection

WARRANTY CARD

MODEL		**LOT #**	
BUYER		**DATE**	
SELLER		**TEL**	

Notes

i. The warranty card should be filled out by seller and kept by buyer. Alterations are prohibited.

ii. 24 Month Warranty - DTF printer includes a 24 month warranty, Consumable parts are excluded from the warranty.

iii. No free repair is available for any damages caused by the improper use.

9. The Terminology

- **Spray Orifice:** It also known as nozzle, refers to the smallest inkjet unit on the nozzle.
- **Nozzle Resolution:** The number of nozzle holes arranged per inch in the longitudinal direction of the nozzle, represented by dpi.
- **Grating Resolution:** The number of scales per inch is expressed in dpi on the grating ruler of the machine.
- **Dpi:** Dot per inch. The number of dots per inch.
- **Pass:** Describes the forward or reverse action of a complete printing of the printer.
- **Band:** Same pass.
- **Grayscale:** Indicates the depth of the color, with 0-100 representing white to black
- **Feathering:** Gradual processing is carried out the print transition area between passes to achieve the effect of visual uniformity.
- **Feathering Channel:** Visually observed in homogeneity in the feathering area.
- **Color Bars:** Specific printed patterns for checking the status of nozzle holes.
- **Calibration:** Subjective and objective measurement of machine horizontal and vertical accuracy.
- **Flash Spray:** The nozzle hole ejects ink according to a certain frequency and cycle
- **Firmware:** The board hardware of the main board.
- **Yield:** Describes the number of square meters printed by the printer per hour.
- **CAN Communication:** Controls LAN communication.

THANK YOU

for choosing our Ultra series DTF printer