Operation Manual for LIYU Printer Manager

Contents

I. So*r*ting and Update Instructions for New Version of Software:

In order to avoid using different versions of PM due to different models, resulting in poor software versatility and affecting the use experience of end customers, the software is sorted at one time.

1 The sorted version of PM: SW version: SW version:1.0.27200 09/07/2022 1506G

Layout 64bit. Uniformly enable the new software icon: (icon standard: peripheral CMYK ink circle with LIYU LOGO in the center)

2 The version solves the following problems:

2.1 Replace the software icon with a new one to distinguish it from the previous version.

2.2 The software interface in the installation package shows the word LIYU.

2.3 Unify the ink color sequence of the configuration in the installation package.

2.4 Unify the printing resolution. There are only 3 groups of 9 resolutions in the calibration option. All models correspond to the granting DPI.

2.5 The print mode is opened as a standard interface.

2.6 The guiding belt printer is positioned by the positioning rod, and the origin orientation is accurate with different PASSes or different feather methods.

2.7 The waveform file import interface displays the records.

2.8 Solve the problem that the software will flash back before printing when the layout with more than 10 print heads is imported.

2.9 Optimize the UV lamp interface.

2.10 VSD1-VSD2-VSD3 is classified into high, medium and low grades.

2.11 Optimize the anti-collision signal on the carriage head board.

2.12 Updating the software and entering the correct language password can solve the problem of Chinese (confused code) error in the English system.

2.13 Solve the problem that the PM will flash back if the reference color is not selected.

2.14 Solve the problem that during the maintenance carriage lifting, if you click the editing job icon of PM to confirm, the carriage will be positioned at the current height.

2.15 After the PM installation package of the KC flatbed printer is installed, the default Y-direction movement is reverse, and the status of automatic selection after installation has been modified.

2.16 Add the function that different adsorption parameters can be set for different media.

2.17 Optimize and improve the continuous printing process, and accordingly optimize and adjust the pinch roller interface, so that the pinch roller parameters can be imported and exported.

2.18 Adsorption can be automatically opened and closed before and after printing.

2.19 In the control calibration, the error compensation parameter modification for

different resolution origin is added.

2.20 One-key save / one-key import functions can be realized. It is convenient for customers to save all calibration parameters in time.

3 ID of models matches the MainBoard:

Model	MainBoard ID	Motor type	MainBoard upgrade package
KC	00811600	G5 belt	LiYu_FLAT_UV_G5_S_RD2_0x81_893_220228.dat
	08011610	G6 belt	LiYu_FLAT_UV_G6_S_RD2_0x81_963_220905.dat
	00811660	G6 linear motor	LiYu_FLAT_UV_G5_S_RD2_0x81_ZX_1213_220723.dat
	08011670	G6 linear motor	LiYu_FLAT_UV_G6_S_RD2_0x81_ZX_1094_220906.dat
PCT	08011690	G5 belt	LiYu_ROLL_UV_G5_S_RD2_0x81_1284_220228
		G6 belt	LiYu_ROLL_UV_G6_S_RD2_0x81_1239_220228
DS	00811620	G5 belt	LiYu_BELT_UV_G5_S_RD2_0x81_999_220907.dat
		G6 belt	LiYu_BELT_UV_G5_S_RD2_0x81_ZX_1579_220907.dat
	00811640	G5 linear motor	LiYu_BELT_UV_G6_S_RD2_0x81_1000_220907.dat
		G6 linear motor	LiYu_BELT_UV_G6_S_RD2_0x81_ZX_1372_220819.dat

Notes:

(1) The MainBoard upgrade package has changed all the anti-collision function interfaces to the carriage head board, and the J20 interface on the original MainBoard is temporarily short circuited without other functions. The interface serves as a backup function for light curtain and door switch upgrade.

(2) All carriage speeds of all models are unified.

Type of print head	Motor type	VSD1	VSD2	VSD3	Remarks
G6	Linear motor	1.6	1.4	1.2	Unit: m/s
	Belt				
G5	Linear motor	1.28	1	0.85	
	Belt				

4 The print head board and the print head driver board are all compatible: the new upgrade package mainly solves the problems of incomplete display of feedback voltage and low temperature.

Contents	Board card upgrade package
Print head board upgrade package	Updater_common_head_ARM20200911_V0.1.8_FPGA20200818_V1_V1.1.0_SetVsdLog.dat
Upgrade package for driver board for print head	Updater_RICOH_G5G6_16H_DRV_ARM20210810_v0.1.8_FPGA20210909_V4_FIREDLY_3v.dat

5 Different firing frequency of print head and grating resolution lead to different MainBoard upgrade package. It should be classified according to the corresponding model and grating

resolution.

Model	X-direction motor type	Printing resolution			Grating type
KC	G5/G6 belts	720	540	360	180DPI rubber grating
	G5/G6 linear motors	635	508	317	Metal / magnetic gratings
PCT	G5/G6 belts	720	540	360	180DPI rubber grating
DS	G5/G6 belts	600	400	300	300DPI rubber grating
	G5/G6 linear motors	635	508	317	Metal / magnetic gratings

II. Change the Anti-collision Wire before Upgrading:

Since the new version of the upgrade program changes the anti-collision signal to the carriage head, it is necessary to change the anti-collision wire before upgrading.

1. Remove the anti-collision connector from the MainBoard. (The J20 anti-collision connector on the MainBoard shall be short circuited.)
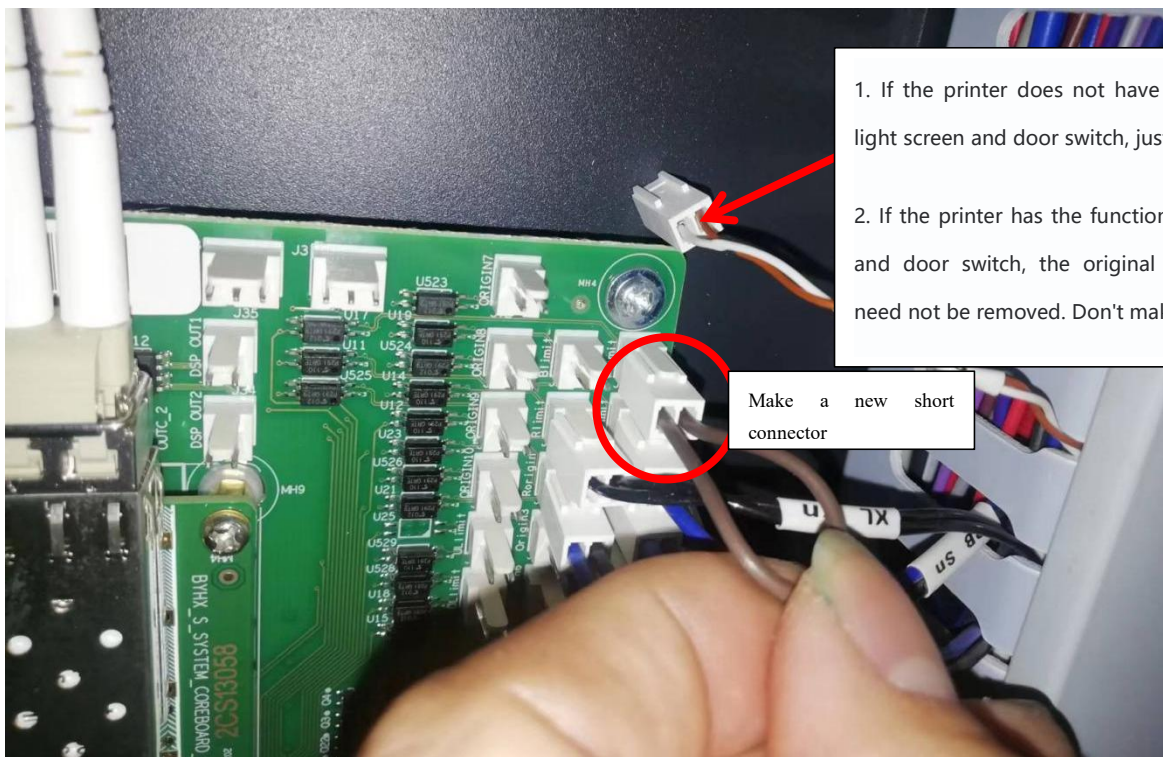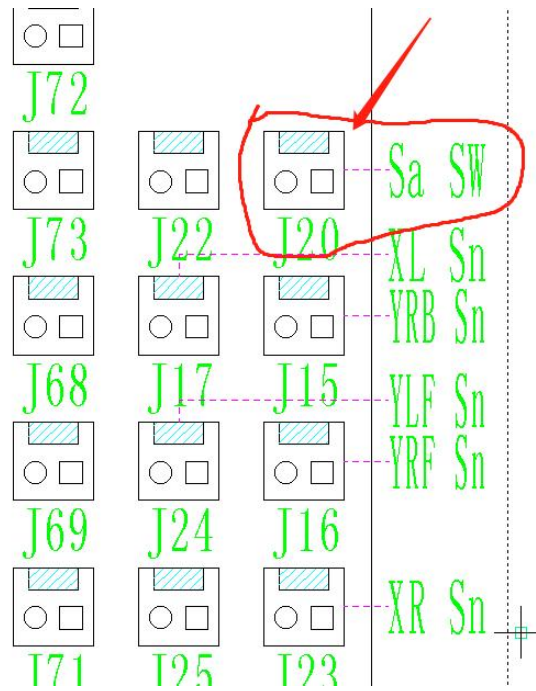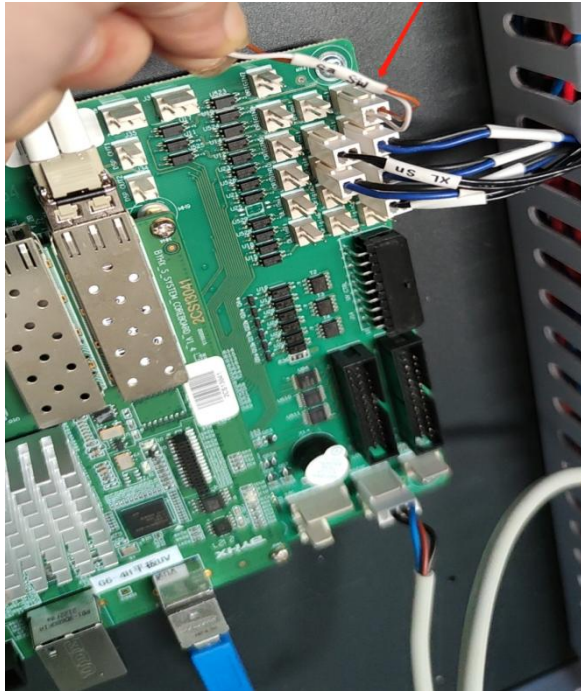

1. If the printer does not have the function of light screen and door switch, just unplug it.

2. If the printer has the function of light screen and door switch, the original wire connector need not be removed. Don't make a new nipple.

Make a new short connector

2. Find the anti-collision system connector under the carriage board (as shown in the following figure), discard the end connected to the MainBoard, cut the wire at the connector at the other end, and add a 3-hole plug.
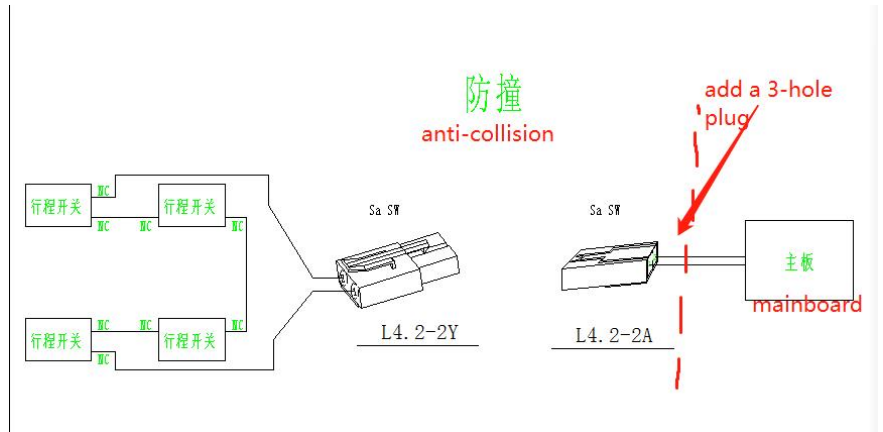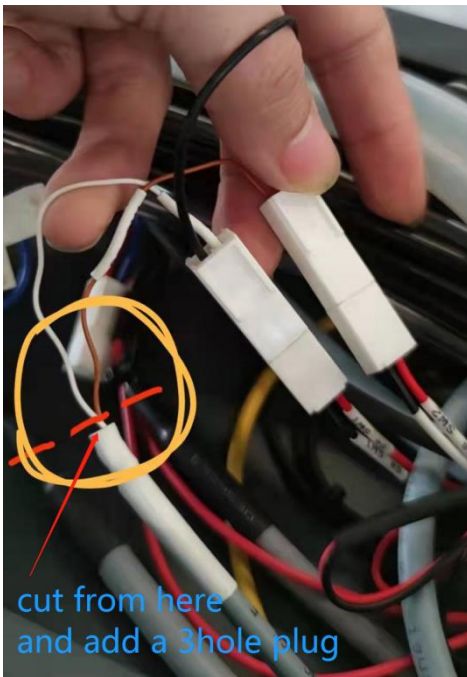
3. Insert the two cut wires on the carriage board (J1) with connectors, as shown in the following figure:
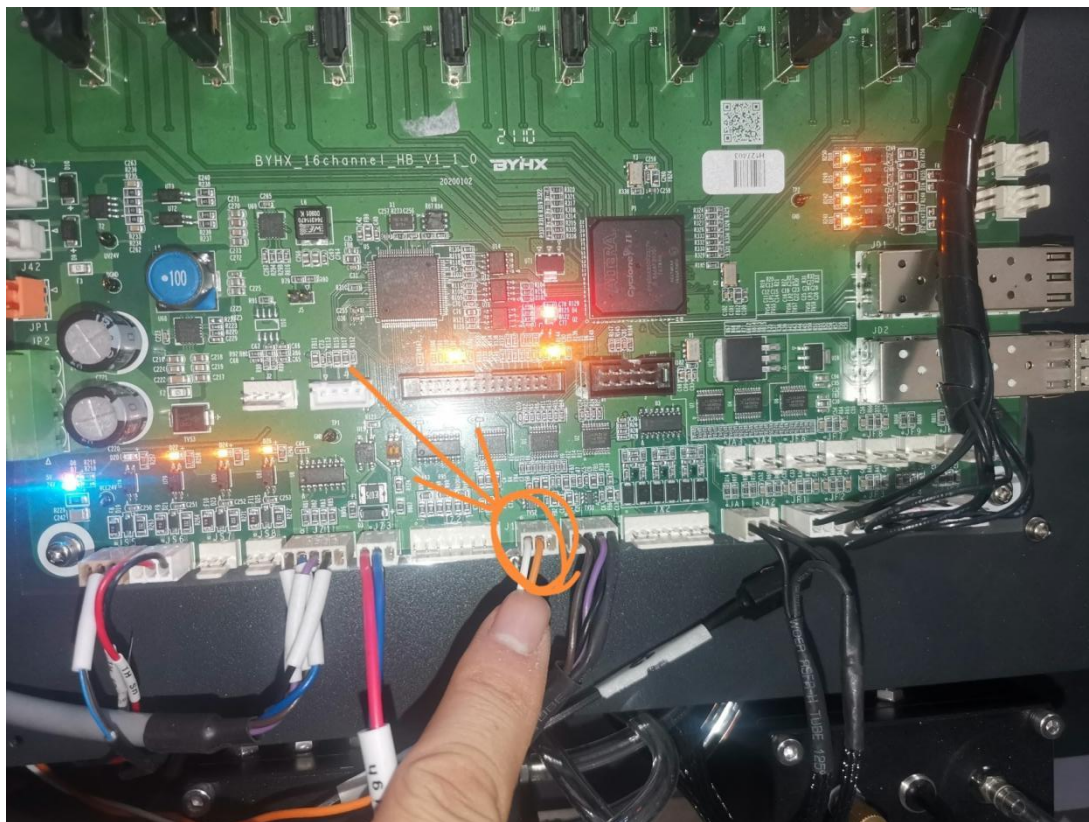
4. If equipped with light screen and door switch model, need to change the door switch line to short-circuit processing. As shown below:

2. Short connect ports 5 and 6 on the terminal block with short wiring.

1. Remove the two cables from ports 5 and 6.
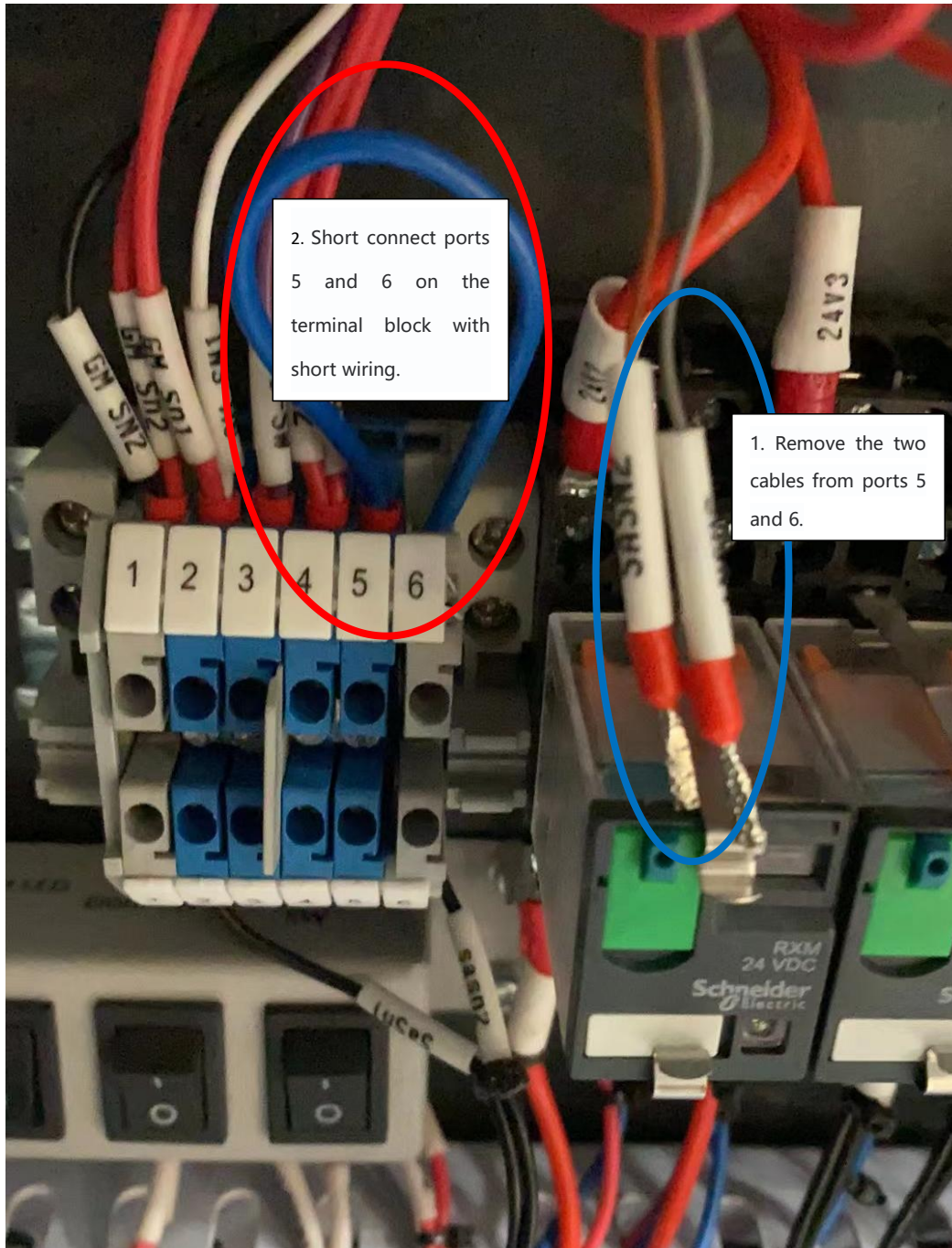
Move the cables originally connected to ports 5 and 6 on the terminal block according to the figure above, and then short-connect ports 5 and 6 on the terminal block with short-connect cables.
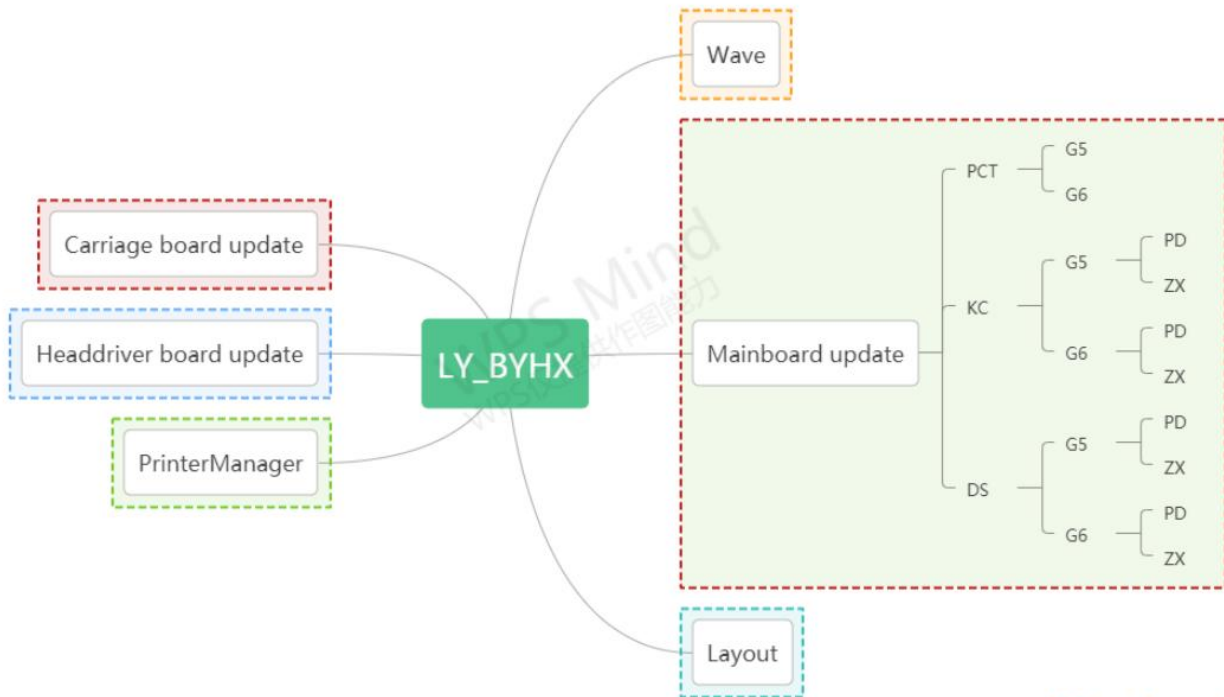
4. Upgrade each upgrade package in sequence:

Note: all models of 1, 3 and 4 are unified and can be upgraded directly.

| Sequence	Installation or upgrade package	Version
1	New version of PM	1.0.27200 09/07/2022 1506G Layout 64bit
2	MainBoard upgrade package	Upgrade corresponding programs according to different models. The ID corresponding to this model will be generated
3	Print head board upgrade package	Updater_common_head_ARM20200911_V0.1.8_FPGA20200818_V1_V1.1.0_SetVsdLog.dat
4	Upgrade package for driver board for print head	Updater_RICOH_G5G6_16H_DRV_ARM20210810_v0.1.8_FPGA20210909_V4_FIREDLY_3v.dat
5	Print head layout package	Upgrade according to the actual print head configuration.
6	Waveform	Upgrade according to the actual use of print head and ink.

III. Printer Manger (PM) Installation

3.1 Open the installation folder, double-click Setup in the red box, and follow the prompts to install.
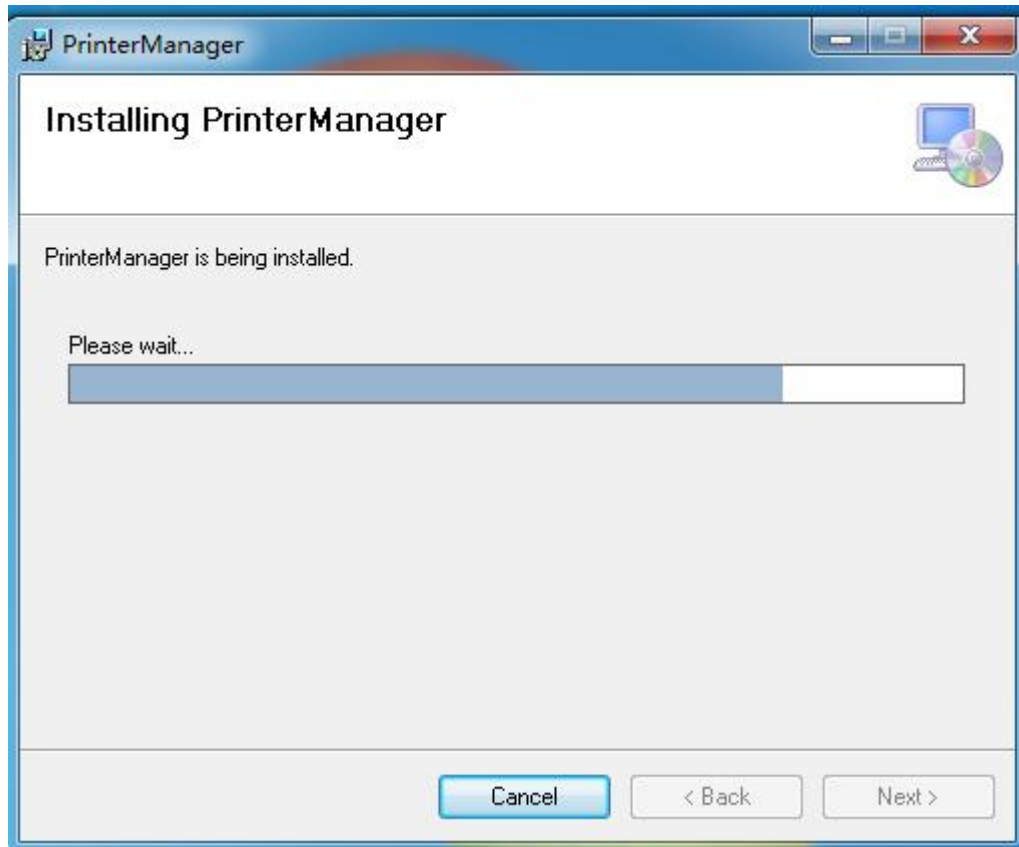

Notes:

1. Please close all anti-virus software before installation to avoid killing the installation APP.

2. But you need to make sure that Microsoft .NET Framework V4.0 or above is installed on your PC before installation, if not, the following error will be reported during installation:
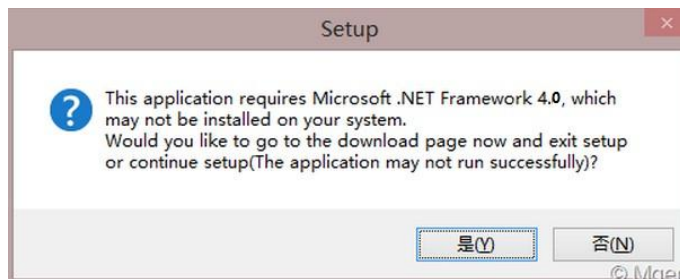
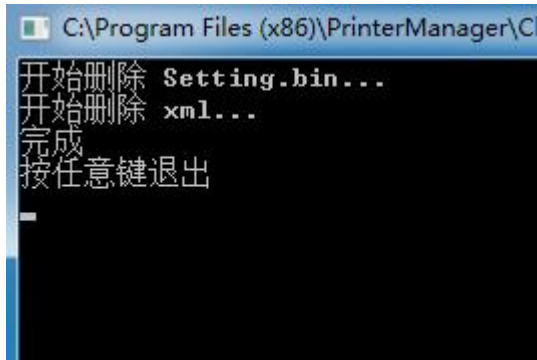If yes, the installation will be completed.

After the installation is complete, the following PM icon will appear on the PC desktop

3.2 If PM has been installed before, please clear it first: right click PM-open file location

Double-click ClearEnv, as shown in the figure below

Start PM directly if it has not been installed before.

3.3 [Tips] If power is off while running PM:

3.3.1. Printer is not started

3.3.2. USB is not connected or it is connected but the driver is not installed successfully, reinstall the driver;

3.3.3. Install USB 3.0, click control panel → device manager → universal serial bus controller → double-click FX3 → update driver software → manually find the driver → browse files under the root directory of software installation:
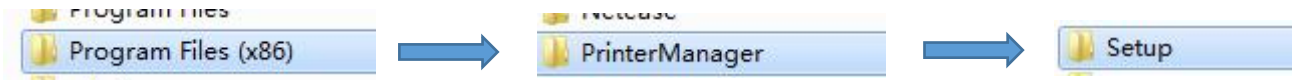
IV. Interface Introduction

4.1 Diagram of PM normal startup
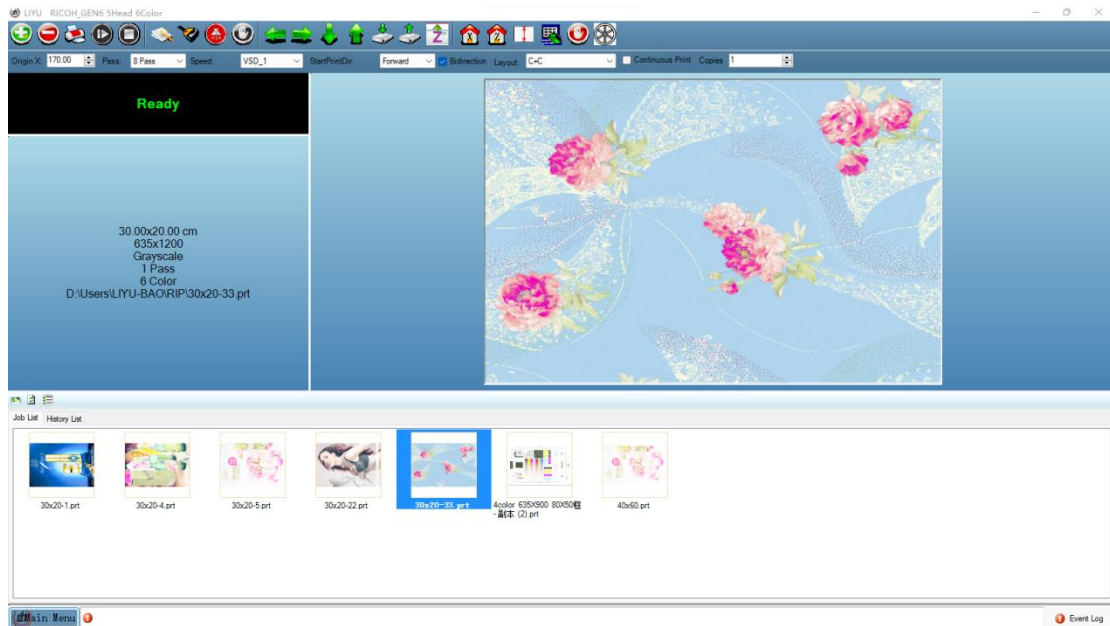
4.2 Icon function description:

For icon function, please move the cursor over this icon, and the icon's description will appear after 1s

: Add job	: Cancel
: Printing job	: Pause or recover
: Stop	: Print nozzle check
: Clean print head	: Setting tab
: Manual flash and cancel	: Moving upwards and downwards
: X-axis moving	: Set current Z position as printing height

: Y-axis moving	: PM error message
: To origin	: Pinch roller control
: One-key moisturizing	: Height measurement button
Pass: 8 Pass : Set pass quantity	Bidirection : Bidirectional printing
Origin X: 0.00 : Origin setting	AutoCenterPrint : Center print origin
Layout: c : Select the current layout;	
步进: 0 : Step, which can be debugged in printing with real-time effect	
Speed: VSD_1 : Carriage speed: VSD1 is high speed, VSD2 is medium speed, and VSD3 is low speed.	
Pass: 4 Pass : PASS quantity of current printing.	

V. Software Setting

5.1 Help Main Menu-Help-About-Get Factory Settings Password
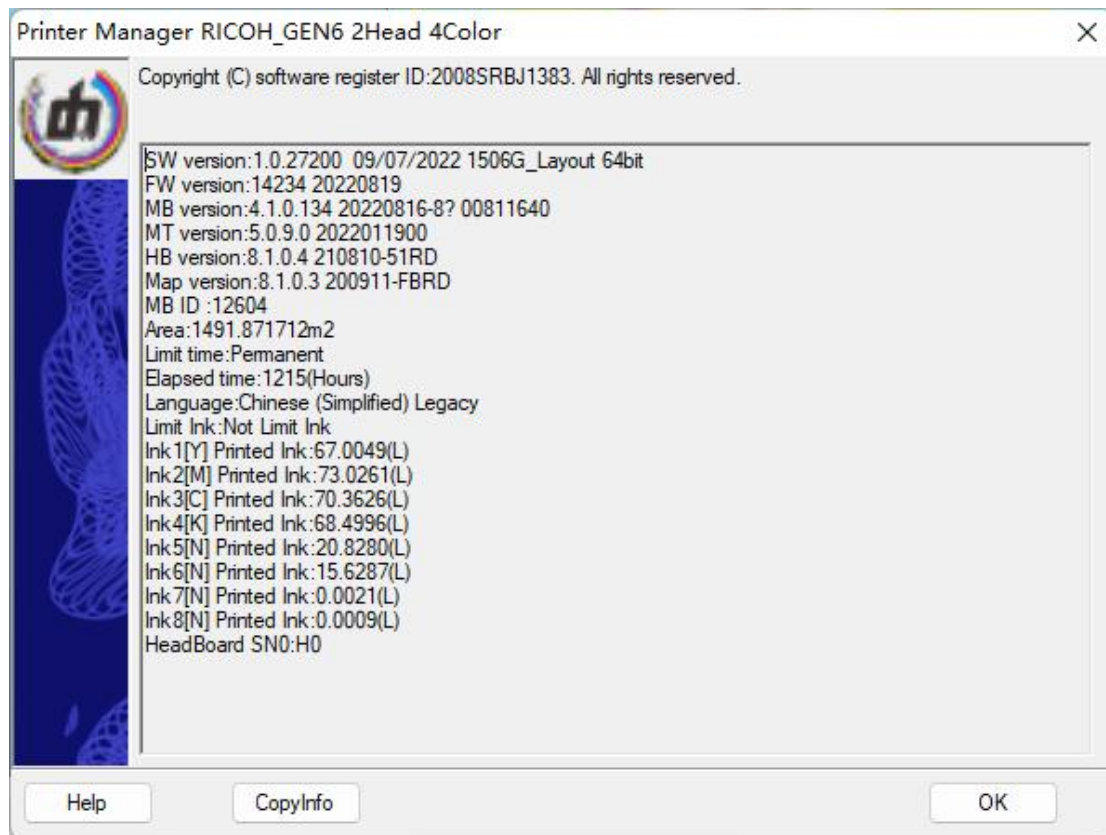
- ➤ **SW version:** PM version information
- ➤ **FW version:** firmware version information
- ➤ **MB version**: MainBoard version information
- ➤ **MT version:** DSP version information
- ➤ **HB version**: driver board version information
- ➤ **Map version:** print head board version information
- ➤ **ID**: 40911(core-board No.)
- ➤ **Limit time**: Permanent (unlimited)
- ➤ **Elapsed time**: 0Hour (running time: 0h)
- ➤ Language: Chinese (simplified)
- ➤ **Limit ink**: Not limit ink
- ➤ **C/M/Y/K/W/N Printed ink0(L)**: Display total ink usage

5.2 PM model parameter configuration

5.2.1: Turn off PM, right click PM icon - open file location - FactoryWrite.exe
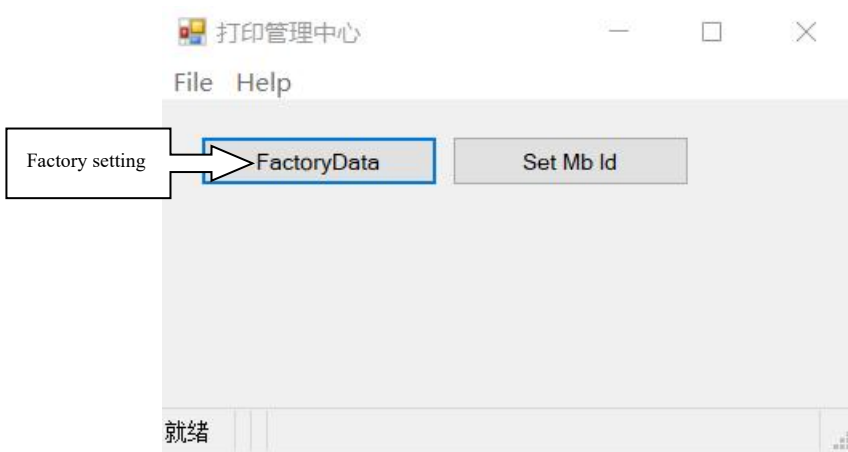
Factory setting

5.2.2 Click "Factory data"
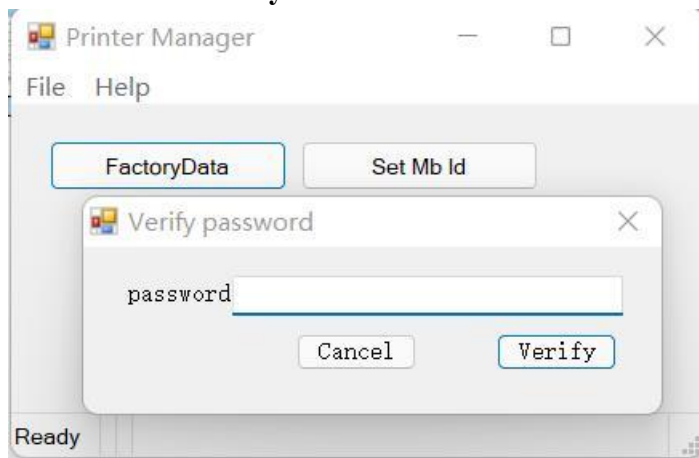
Password: Manufacturer ID (i.e. 00811640), click to verify and enter the factory setting interface

5.3 Enter the factory setting interface
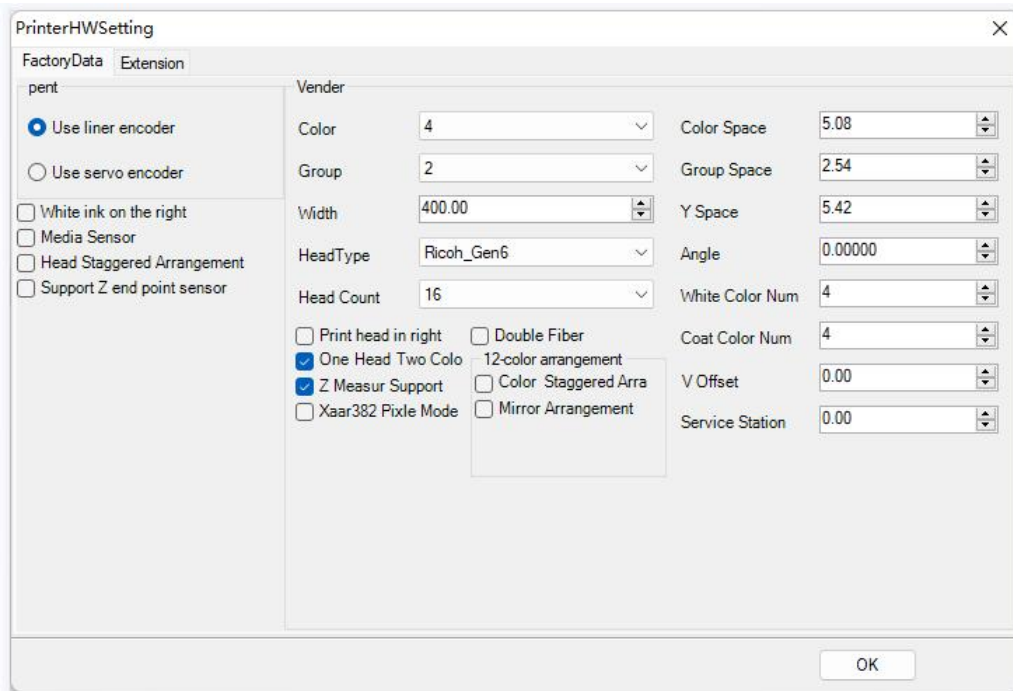
➢ **Color: Set according to the color to be used; For 4-color, set it to 4;**
➢ **Group:** Set according to the actual number of groups to be used, for 2 groups of KCMY, set it to 2;
➢ **Width: Set according to the actual machine length;**
➢ **HeadType**: Ricoh-Gen6 (Note: Ricoh-Gen6 should be selected for both GEN5 print head and GEN6 print head)
➢ **Print Head in right**: If selected, it is the right origin, if not, it is the left origin. Set according to whether the head is on the left or on the right;
➢ One Head Two Color**: One print head is provided with two colors**
➢ **Z Measur Support (support Z-axis measurement)**: This function is targeted for machines with height measuring function, and check it in case of height measurement;
➢ **White Color Num (white number)**: Set according to the actual conditions; After setting the white ink, the parameters of white ink mixing and white ink circulation will be showed on the software;
➢ **V Offset (number of tectorial membrane color)**: Set according to the actual conditions;

5.4 Extend the setting interface
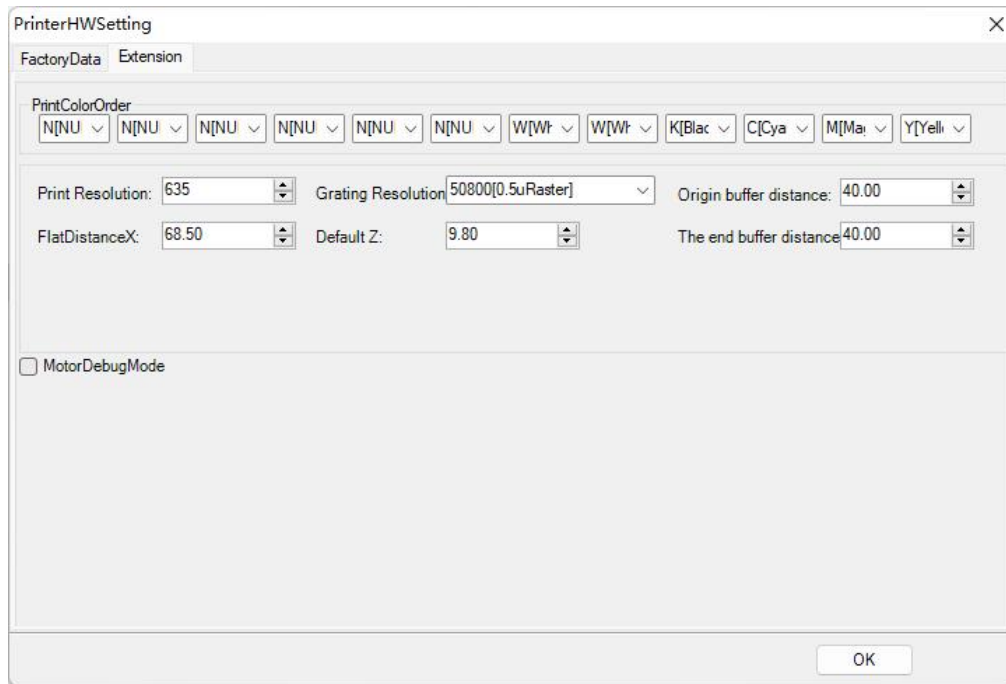
- ➢ **PrintColorOrder**: it is determined by the print head layout without setting.
- ➢ Print Resolution: belt motor with grating of 180DPI is set to 720; that of 300DPI is set to 600DPI; select 50800 [0.5uRaster] for metal grating or magnetic grating and set to 635DPI
- ➢ **Grating Resolution (encoder resolution DPI)**: grating resolution: 720DPI is selected for grating of 180DPI; 600DPI is selected for grating of 150, and 50800 [0.5uRaster] is selected for metal grating or magnetic grating
- ➢ **Origin /The end buffer distance(buffer distance for origin and destination)**: Different printing ignition methods will lead to different setting distances, and please contact the supplier for the set value;
- ➢ **FlatDistanceX (platform distance X):** adjust the printing position in X direction, and the parameter needs to be greater than or equal to the buffer distance;
- ➢ **Default Z (max Z stroke)**: set the max Z stroke parameter.
- ➢ **MotorDebugMode**: There is no need to set.

5.5 Click "OK" when the configuration is completed and restart the printer according to the prompts
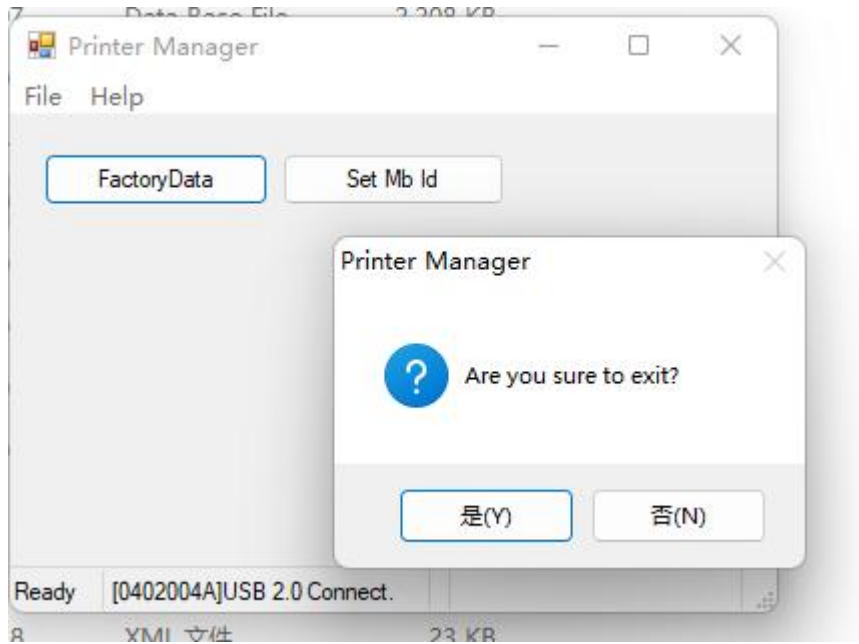
If you click "Sure to report error", the information in the above figure will not be prompted. You can check the error according to the report or send the screenshot to LIYU after-sales service department for troubleshooting.

VI. Job Editing and Printing

6.1 Add job

Select the prt or prn to be printed

30x20-1K.prt	2022/6/6 15:03	PRT
30x20-2K.prt	2022/6/6 15:04	PRT
30x20-3K.prt	2022/6/6 15:04	PRT
30x20-4K.prt	2022/6/6 15:05	PRT
30x20-5K.prt	2022/6/6 15:05	PRT

6.2 Status bar

The left area displays the information of the job, including the size, resolution, gray level and file path of the job;
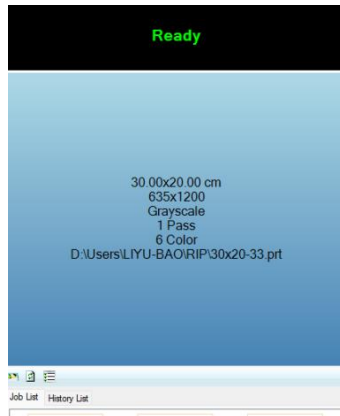
6.3 Job preview and editing

The job in the preview area displays the job editing and preview window
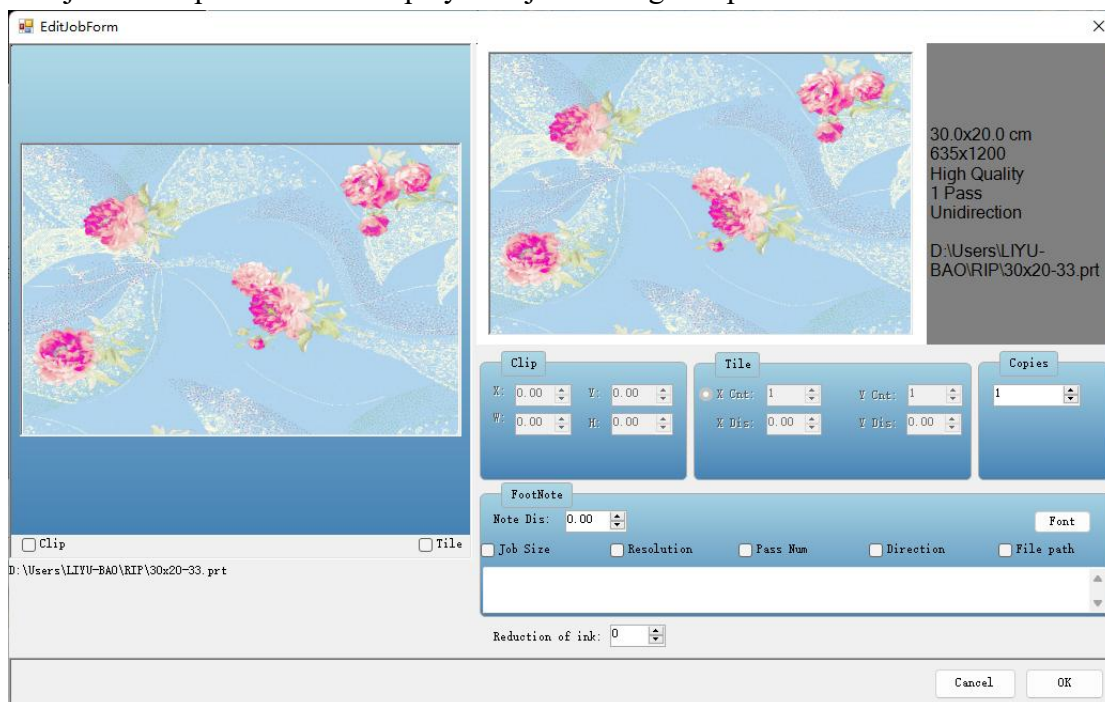
> ➤ **Clip**: The printing area in the screenshot can be selected
> ➤ **Tile**: The printing quantity of the cut area or the whole image can be set
> ➤ **Footnote:** It will add job information automatically when printing it, and if checked, the selected parameters of this job will be printed out;
> ➤ **Ink reduction:** This parameter can be used to reduce the amount of ink;

The gray area on the right shows the information of the prt/prn file and their locations

VII. Setting Options Main Menu - Setting - Edit

7.1 Printer
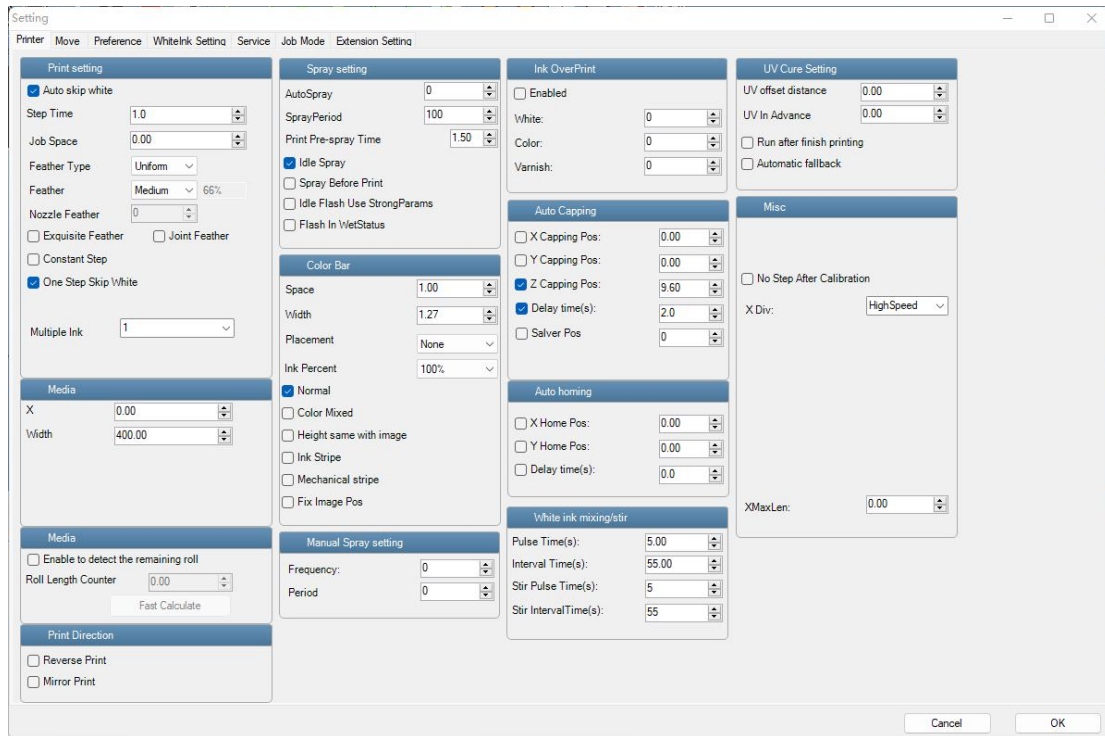
(1) Printing setting
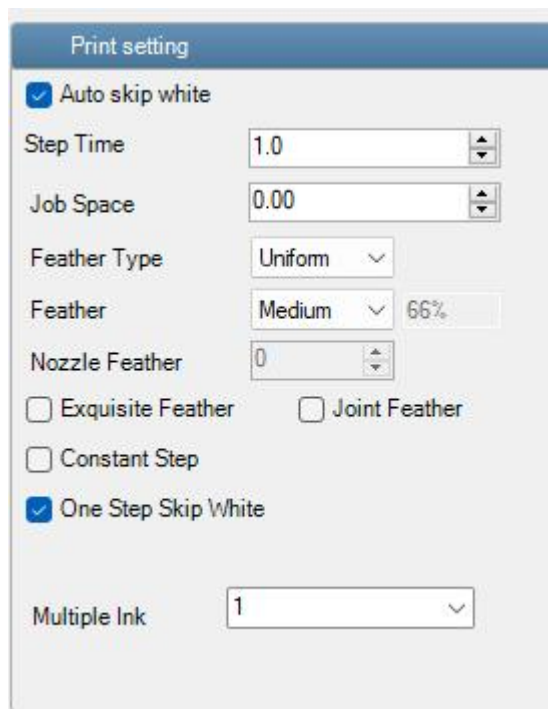
> **Auto skip white:** when there is no data in X and Y directions, it can be stepped and realize printing without scanning;

➢ **Skip white time:** increasing the time of X-axis movement in skip-white process, which is conducive to the drying of ink on media and paper receiving

➢ **Job space:** the space between two jobs

➢ **Feather type:** choosing the feather mode, with common using of gradient and even;

➢ **Feather intensity:** choosing feather intensity, including normal, moderate, and strong;

➢ **Fine feather and constant stepping:** feather mode;

➢ **Feather between print heads:** used when there are multiple group of print heads. It is the transfer position of feather print heads;

➢ **One-step skip white:** used with auto skip white;

➢ **Ink volume:** controlling the volume of colorful ink with the default of 1, and using multiple times of ink volume in printing;
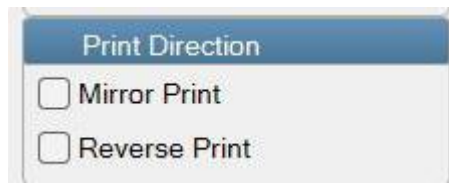
(2) Media: media setting

Media		
X	0.00	▲▼
Width	400.00	▲▼

➢ **X:** Origin

➢ **Width:** the maximum width in X direction that the printer can print

(3) Printing direction

Print Direction
☐ Mirror Print
☐ Reverse Print

➢ **Mirror printing**: the image can be mirrored for printing

➢ **Reverse printing**: reverse printing in Y direction. Print from back to front,

(4) Clean setting
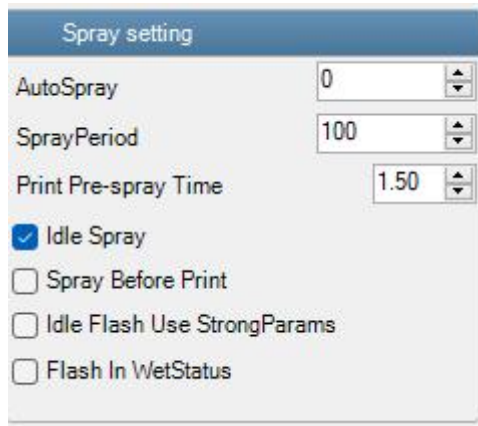
- ➤ **Auto flash spray:** setting the unit as pass, and returning to origin for a flash spray after printing the set pass value;
- ➤ **Flash spray cycle:** controlling the cycle of idle flash spray when the carriage is at the X origin, unit: m/s;
- ➤ **Duration of flash spray before printing:** the duration of flash spray before printing;
- ➤ **Idle flash spray:** idle flash spray switch of carriage at the X origin;
- ➤ **Flash spray before printing:** switch of flash spray before printing;
- ➤ **Idle flash spray shall be applied with strong spray**: enhance flash spray.
- ➤ **Application of flash spray at moisturizing position**: optional.

(5) Color bar setting
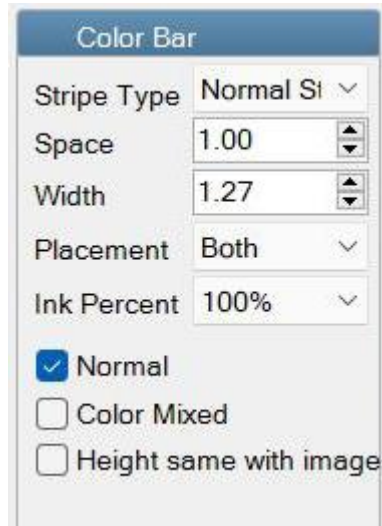
- ➤ **Distance:** distance of color ramp
- ➤ **Width:** width of color bar
- ➤ **Position of color bar:** (Both Sides, Left, Right, No)
- ➤ **Normal:** separate printing of different color ramps
- ➤ **Color overlapping:** printing with overlapped color
- ➤ **Same height as image:** the color ramp is the same height as the image
- ➤ **Manual flash spray setting:** setting the frequency and cycle of manual flash spray;

(6) Stack printing: set values for corresponding layers of corresponding colors to achieve stack printing effect.

Ink OverPrint	
☐ Enabled	
White:	0
Color:	0
Varnish:	0

(7) Automatic moisturizing

Auto Capping	
☐ X Capping Pos:	0.00
☐ Y Capping Pos:	0.00
☑ Z Capping Pos:	9.60
☑ Delay time(s):	2.0
☐ Salver Pos	0
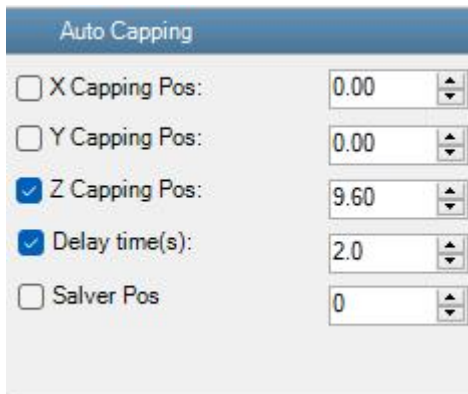
> **Moisturizing position X**: no need to set
> **Moisturizing position Y**: no need to set
> **Moisturizing position Z**: the setting parameter is the position distance from the origin to the tray.
> **Delay time**: after the carriage reaches the origin, it will drop to the moisturizing position after the delay setting time.
> **Position of moisturizing device**: no need to set.

(8) Circulation \ mixing of white ink

White ink mixing/stir	
Enable ☑	
Pulse Time(s):	5.00
Interval Time(s)	55.00
Stir Pulse Time(	5
Stir IntervalTime	55

Setting the time of circulation and mixing functions of white ink;

(9) Setting of UV lamp solidification
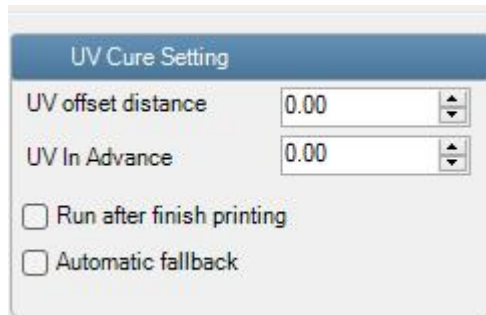
Turning on the setting to delay the solidification of curable varnish on flatbed machine, and set the offset distance of UV lamp;

(10) X-printing speed
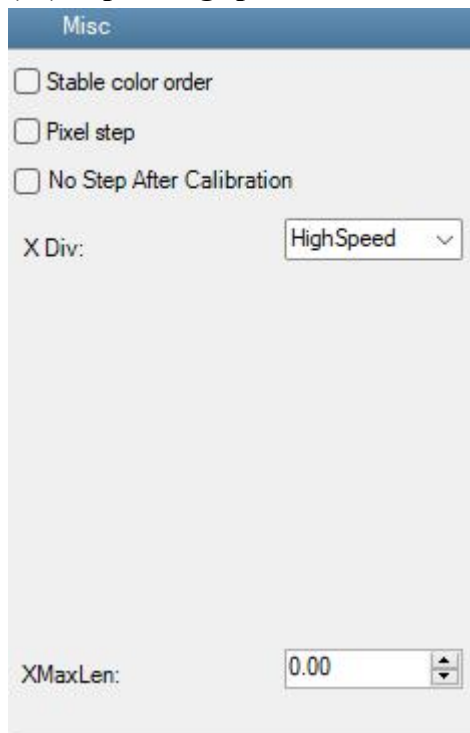
> ➢ **X Div**: it can be divided into high-precision mode and high-speed mode (currently, the default mode is high-speed mode, for example, 635DPI high-speed printing resolution is 317DPI).
> ➢ **X MaxLen:** When the movement setting will hit the sensor, the max strove parameter can be set. **After the setting is completed, restart the printer to enable it.**

7.2 Moving
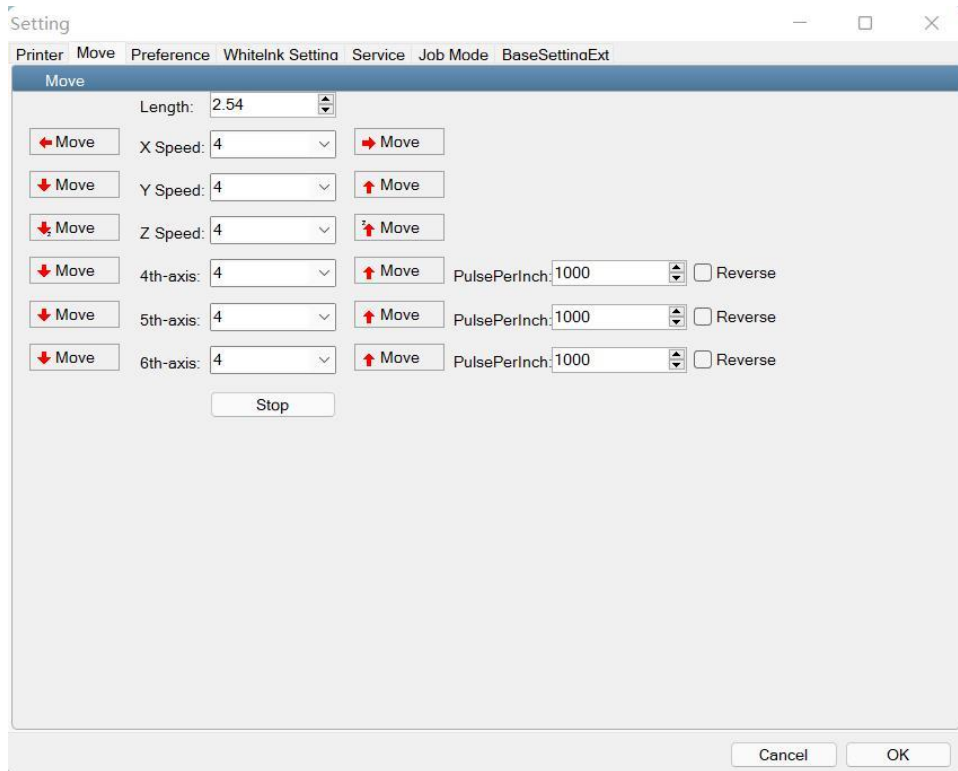
The moving speed in this interface can control the speed of manual moving button on the main interface;

7.3 Preference
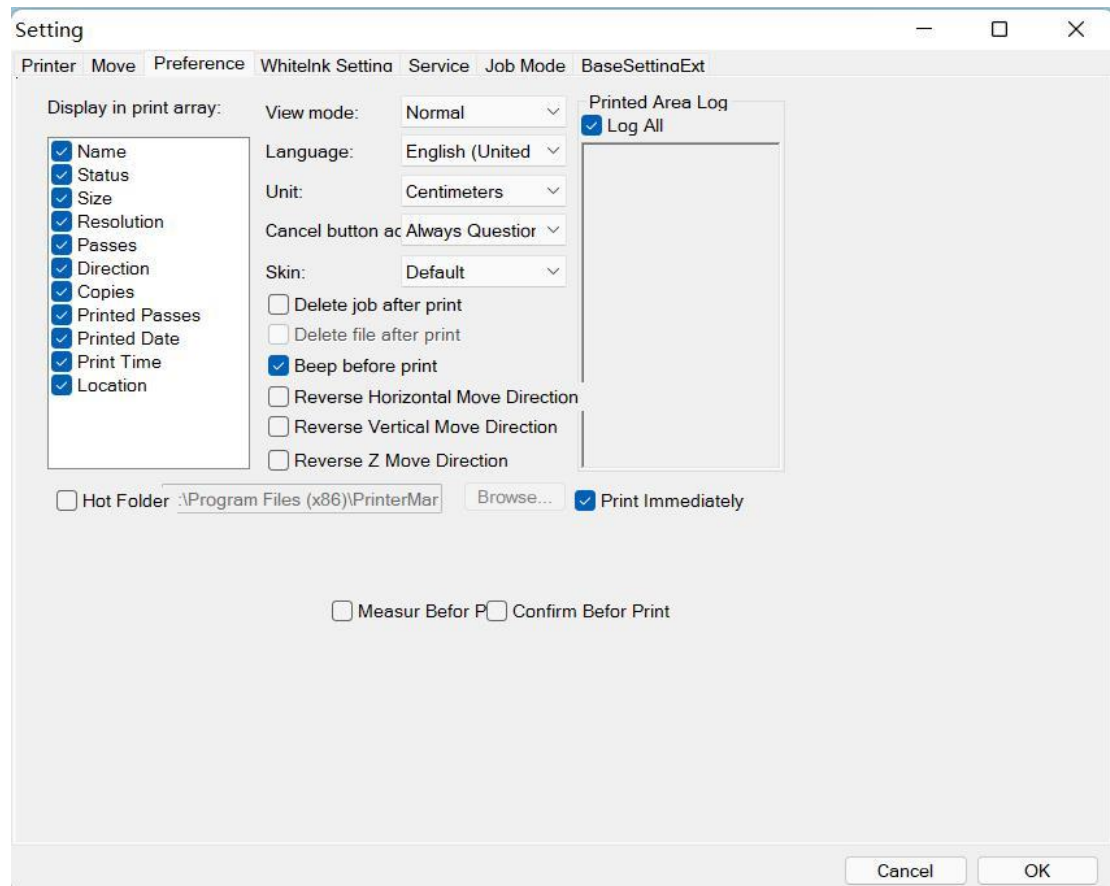
➢ **Checking mode:** normal, wide screen, and old interface;

➢ **Language:** simplified Chinese, traditional Chinese, and English. Set language according to the needs, which requires a language password;

➢ **Unit:** setting the unit displayed in the software;

➢ **Cancel the printing default, skin:** default;

➢ **Delete the job after printing:** the switch of deleting the job after printing;

➢ **Delete the file after printing:** this function can be selected when selecting "delete the job after printing", and the files in the computer can be deleted;

➢ **Reverse of motion from left to right, front and back, reverse of Z axis:** reverse switch of the motion button on the main interface, and it does not affect the printing movement direction;

➢ **Hotfolder:** used with "Print now". When the new prt file is placed in the selected folder path, the print action will be performed immediately;

➢ **Measurement before printing:** click the Print button to pop up the height measuring interface, then you can choose to remeasure the height or print it immediately;

➢ **Confirm before printing:** click the Print button to pop up the OK interface, then you can confirm and print with the current Z position as the print origin;

7.4 White ink setting
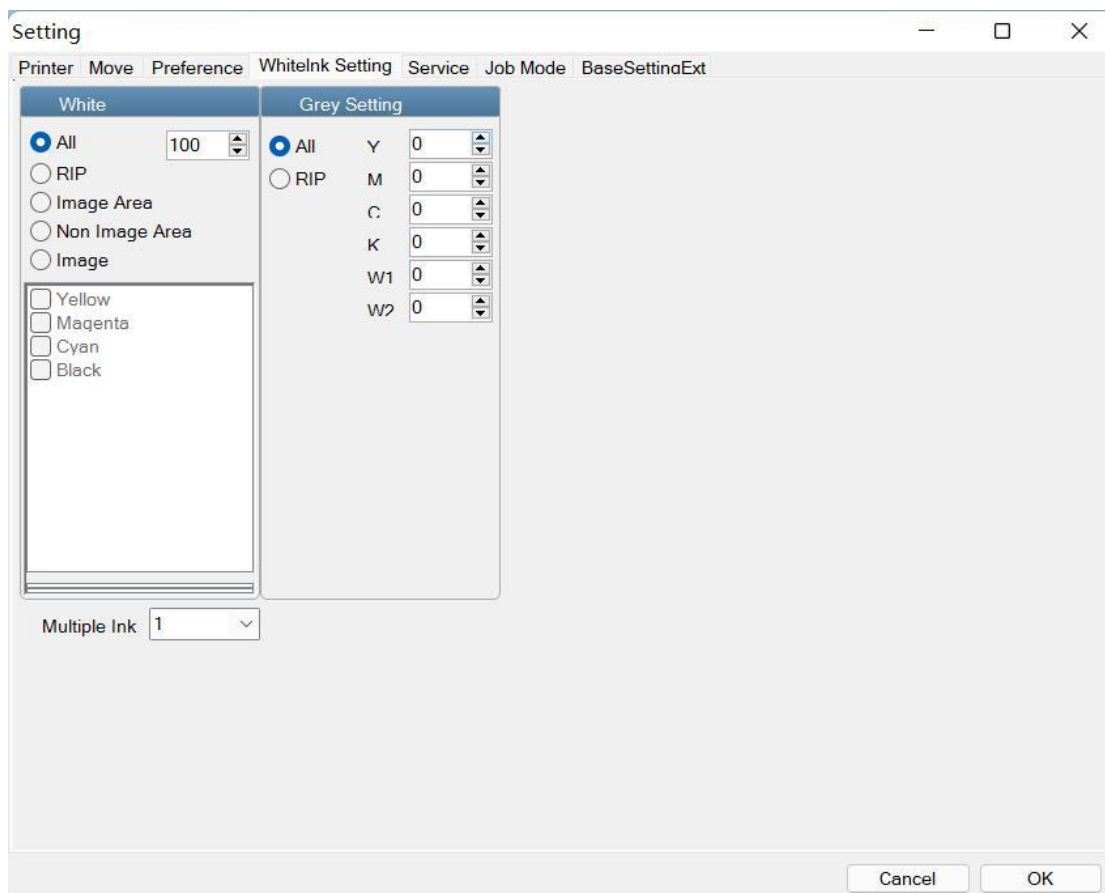
➢ **The whole figure:** set the whole job with white background, and the white ink output can be set as required

➢ **RIP:** print white ink where there is data

➢ **Image**: if you check this option, the color channel below will be lighted up, and it is optional to specify a color and print white under it according to the job,

➢ **Ink amount**: set the ink amount of white ink for printing under the above settings, which is one time by default.

After the varnish is configured, it will also be displayed on this interface. And the configuration method is the same as that of white ink;

7.5 Service
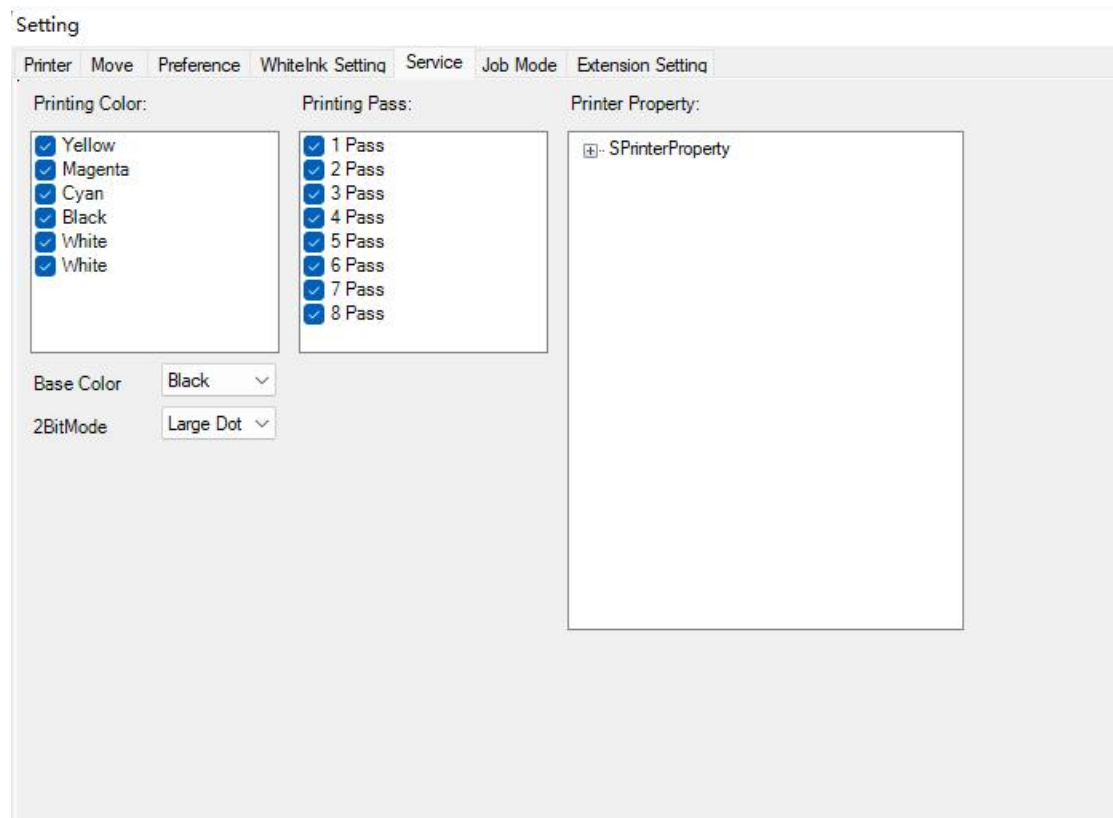
➢ **Print color set:** this parameter can be used to determine whether the ink is inkjet or not;

➢ **Base color:** set base colors for printing;

➢ **2BitMode**: carry out print nozzle check to calibrate the dot type used for printing;
Use defaults for other parameters;

7.5　Job Mode　（You need to add the factory.usr file to display it）
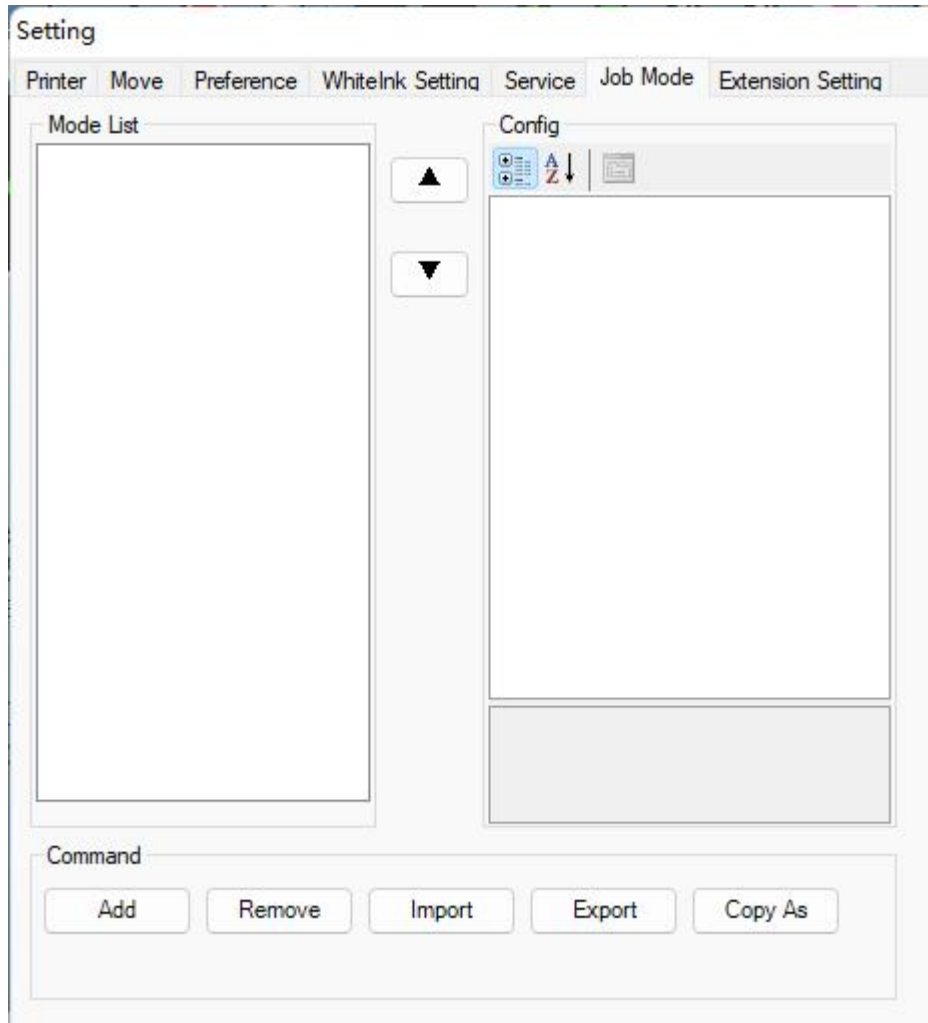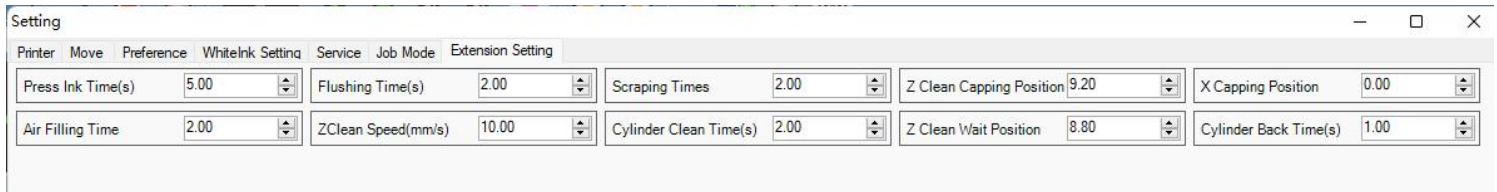
You can add a variety of different print modes in the print mode bar,
Selecting the mode list will set all print-related parameters in the Settings bar on the right.
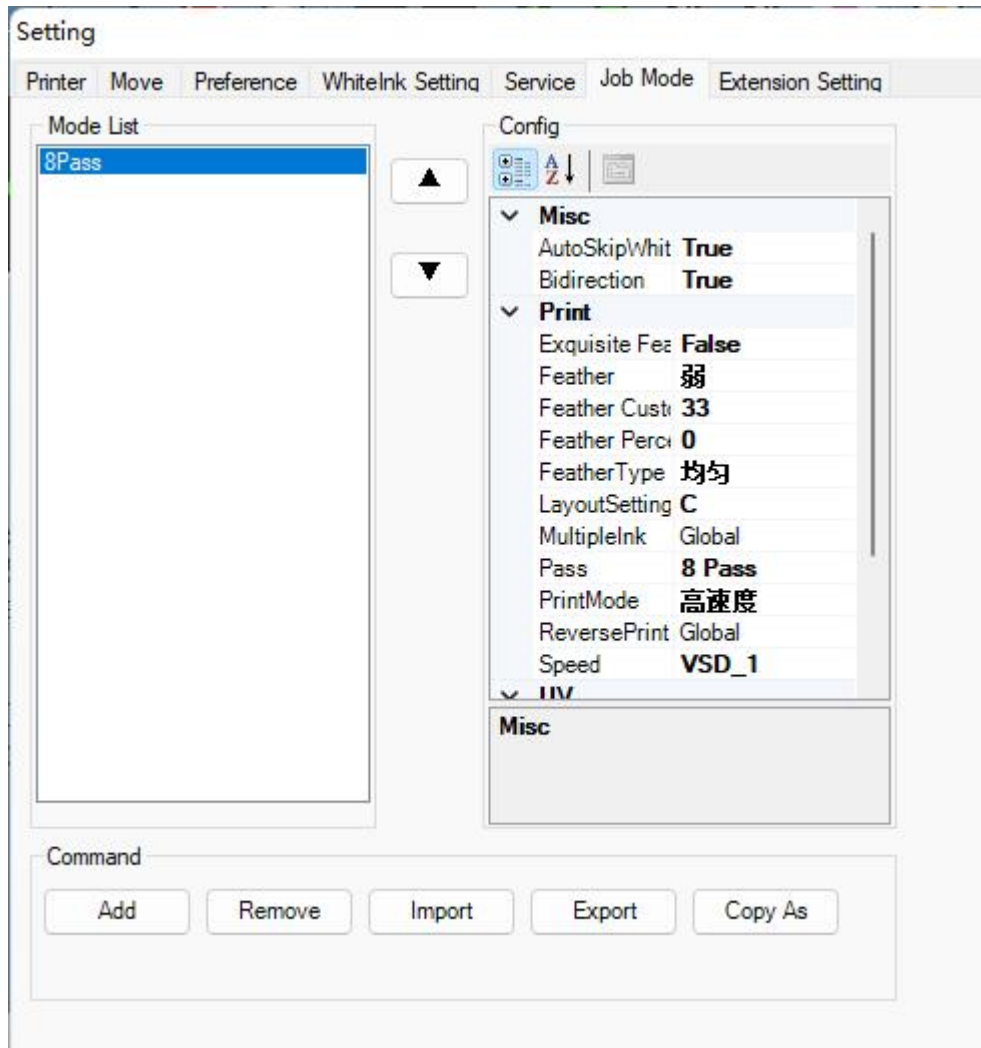
After the setting is complete, the PM interface will generate the print mode interface. Customers only need to select the set parameters from the drop-down menu to print.

7.6 Extension Setting
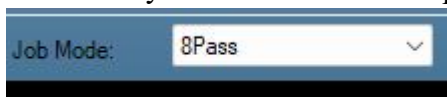
Setting					— □ ×
Printer Move Preference WhiteInk Setting Service Job Mode **Extension Setting**					

Press Ink Time(s) 5.00	Flushing Time(s) 2.00	Scraping Times 2.00	Z Clean Capping Position 9.20	X Capping Position 0.00
Air Filling Time 2.00	ZClean Speed(mm/s) 10.00	Cylinder Clean Time(s) 2.00	Z Clean Wait Position 8.80	Cylinder Back Time(s) 1.00

- ➤ **Press Ink Time:** Automatic Ink Time
- ➤ **Air Filling Time:** Time to blow dry the cleaning fluid on the scraping sheet after washing with cleaning fluid.
- ➤ **Flushing Time:** Set the Flushing and scraping Time of the cleaning solution
- ➤ **Z Clean Speed:** The Speed at which the Z axis rises and falls during automatic ink scraping
- ➤ **Scraping times:** Scraping times representative: Set the number of Scraping trips.
- ➤ **Cylinder scraping Time:** Cylinder to the front setting Time.
- ➤ **Z Clean Capping Position:** Lower the cart to the height where it encounters the scrappage.
- ➤ **Z Clean Wait Position:** The scrape is moved forward to the front of the printing plate. In order to facilitate the return of the scrape, the cart will be raised to specify an action exceeding the height of the scrape.
- ➤ **X axis Capping Position:** No setting is required.
- ➤ **Cyliner Back Time :** Time at which the scrap returns to the origin.

VIII. Height Measurement
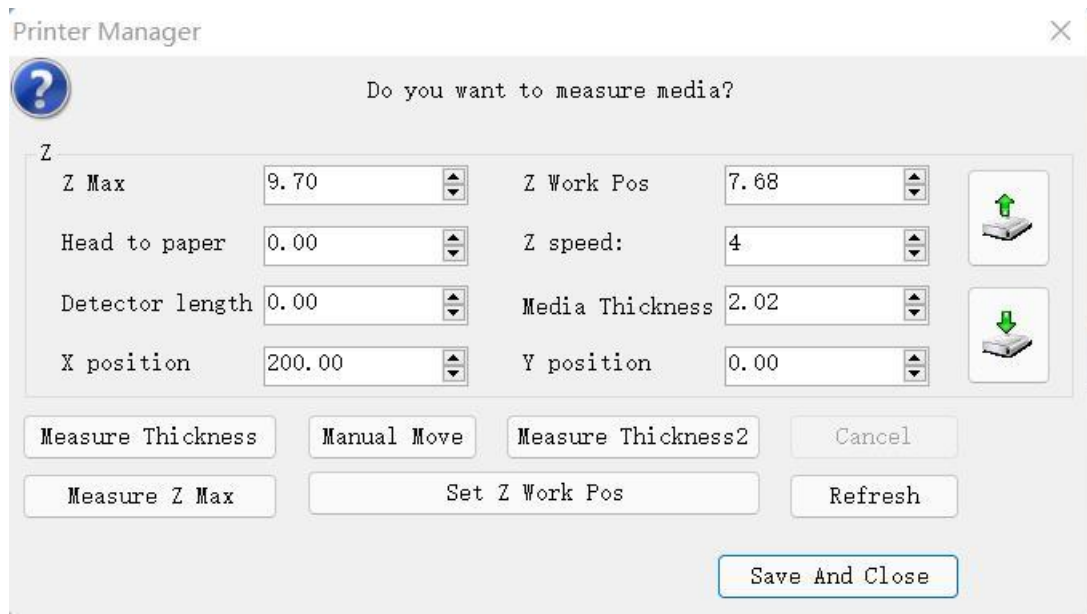
> ➢ **Z Max (max Z stroke):**

Press the button of automatic measurement to measure the max Z stroke, and the measured position is controlled by the following X and Y directions. The parameter can be manually modified. After the machine is installed, the max Z stroke needs to be measured in the first step of height measurement;

> ➢ **Head to paper (distance between media and print head):**

This parameter can control the actual height of the print head from the media after measuring. During the height measurement, once triggered, the probe will move again according to the value set in this parameter, with a minimum of 0. For example, if the height between media and print head is set to 0, and after height measurement, the height of the print head to the print media is measured to be 1.5mm by caliper. If the value of the height from the print head to the media is changed to 0.5mm, then, you need to measure the height again. At this time, the height from the print head to the print media is 2.0mm;

> ➢ **Detector length (length of probe)**: It is suggested to set this value to 0 all the time;
> ➢ **Z Work Pos (Z job position)**: This parameter will be updated automatically after the height measurement or manual input of the value of material thickness, and this parameter does not need to be modified;
> ➢ **Z Speed (moving speed in Z direction)**: set the up and down moving speed in Z direction.
> ➢ **Media Thickness (material thickness)**: This parameter will be automatically updated after the height measurement;

If the value of material thickness is known, you can also manually input it to this position, then click Close and save it, and it will automatically move Z to the set height to print according to the set parameters during printing;

> ➢ **X /Y Position (measuring position X and Y)**: Used with automatic positioning

height measurement and max stroke measurement;

➢ **Measure Thickness 1 (automatic positioning height measurement):** After pressing this button, the carriage will move according to the set measuring position X and Y, and carry out height measurement after reaching;

➢ **Manual Move**: Move according to the parameters set in the interface;

➢ **Measure Thickness 2 (manual positioning height measurement):** After pressing this button, the carriage will conduct height measurement at the current position without moving to X or Y, but you need to move it manually;

➢ **Measure Z Max (max Z stroke measurement)**: After pressing this button, the carriage will move according to the set measuring position X and Y, and carry out max Z stroke measurement after reaching. Besides, you need to set the correct Z resolution before using this function;

➢ **Set Z Work Pos (set the Z printing origin)**: Press this button to set the height of Z as the default printing height, and the value of material thickness will be updated accordingly. The effect of it is same as that of setting the Z printing origin in the main interface;

➢ **Z axis moving upwards and downwards button**: It can control the lift and fall of the Z axis, and the effect of it is same as that of the main interface;

➢ **Save and Close**: If there is any parameter modification, make sure that you press this button. Clicking the X in the upper right corner will not save the modified parameters;

IX. Waveform Import and Export   Main Menu → Setup → Waveform Import and Export
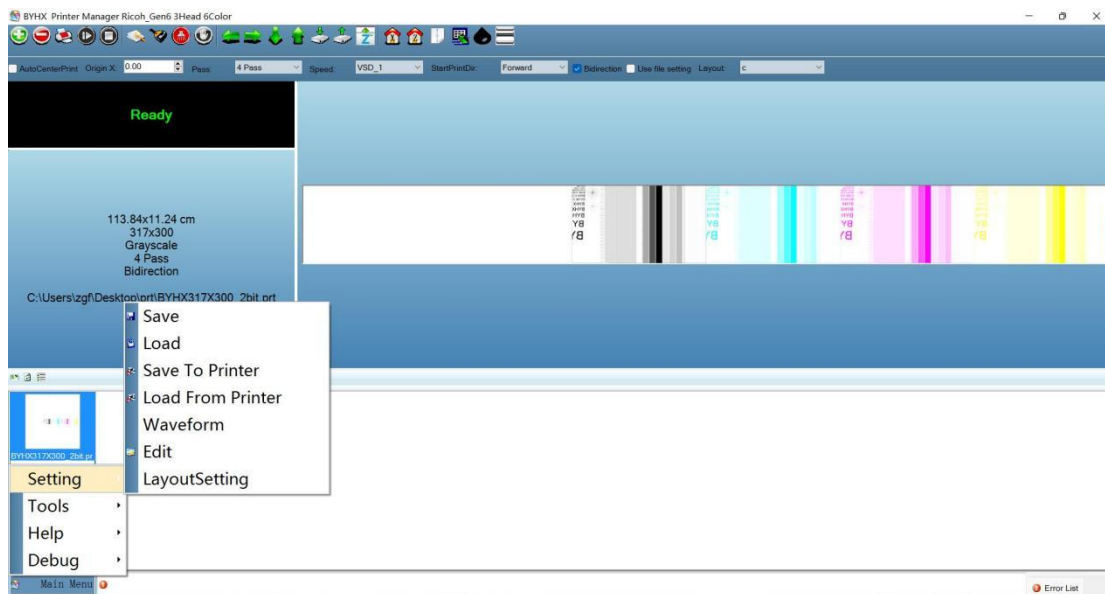
Waveform

		Open

H1:		Open	H
H2:		Open
H3:		Open
H4:		Open
H5:		Open
H6:		Open
H7:		Open
H8:		Open
H9:		Open
H10:		Open
H11:		Open
H12:		Open
H13:		Open
H14:		Open
H15:		Open

Download

This function is used to load waveform. H1-16 corresponds to 1-1, 1-2.....1-16 in the layout package;

Click "Open" to select the waveform to be downloaded. After selection, click "Download". After downloading, you will be prompted that the download is completed without restarting the printer;

X. Tool Options Main Menu → Tool
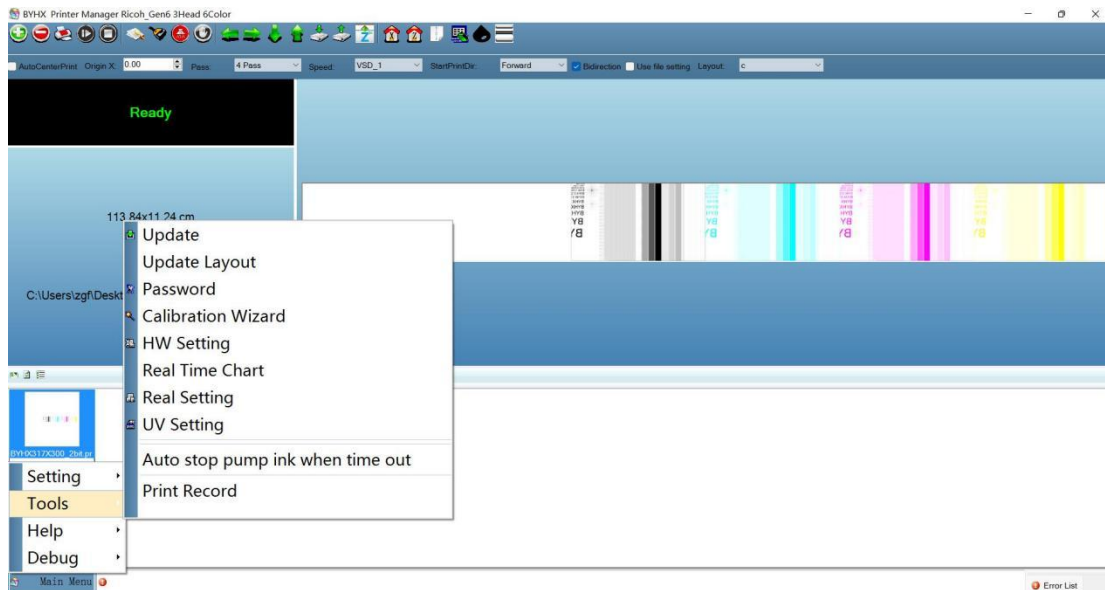
10.1 Upgrade

Upgrade the version of the driver board for print head board of MainBoard, and the upgrade package will be provided in the attached USB flash disk or by LIYU;

10.2 Print head layout upgrade

Upgrade the free layout version arranged for print head, so that the actual arrangement of print heads can correspond to the   software; the layout package will also be kept in the USB flash disk or provided by LIYU.
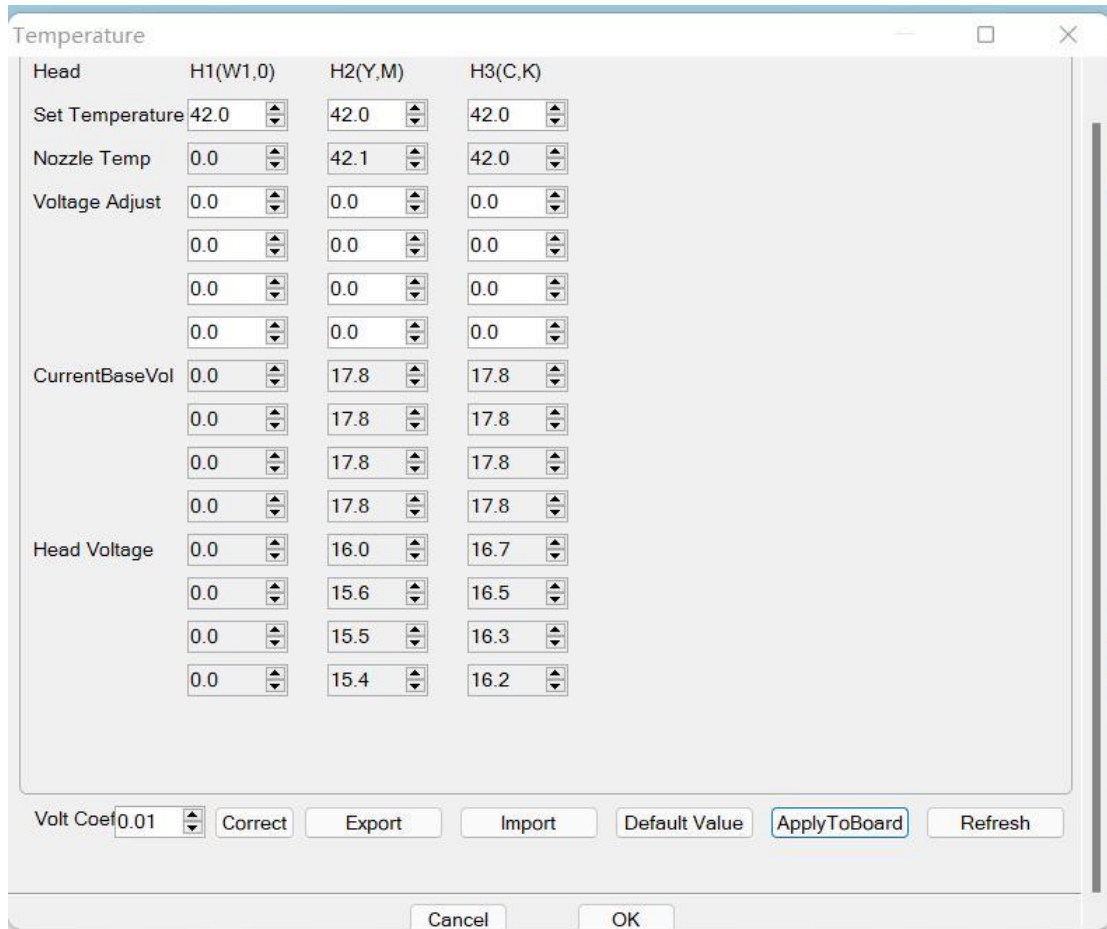
10.3 Password

For inputting time password and language password;

10.4 Calibration wizard

Adjust the physical angle of print head and calibrate it by the software. The detailed calibration wizard will be introduced in the following chapters;
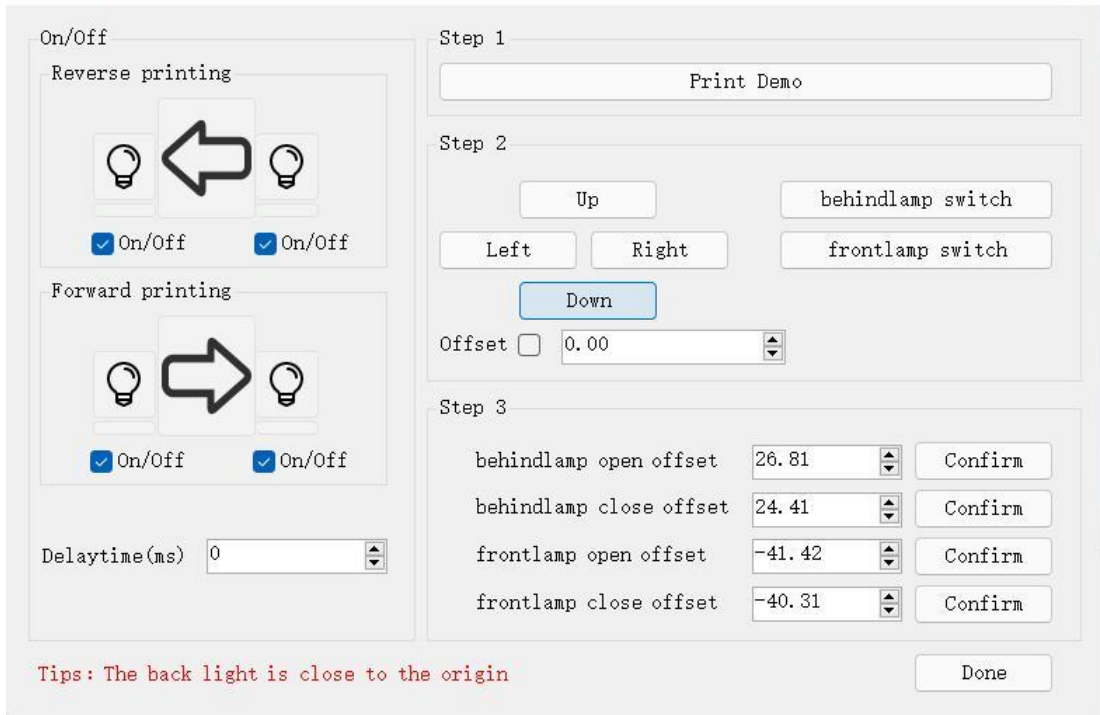
10.5 Real-time setting

> ➢ **Setting temperature:** set the temperature according to the ink viscosity. Generally, UV ink is set at 40-45°;
> ➢ **Print head temperature:** display the real-time temperature of the currently connected print head. If the print head is not read, it is displayed as 0;
> ➢ **Correction voltage:** slightly adjust the voltage parameters of each row of print heads, and the recommended setting range is ±2;
> ➢ **Current reference voltage:** display the platform voltage of the current waveform;
> ➢ **Export to file:** save the current set parameters to a file;
> ➢ **Import from file:** export to the file generated by the file to import. This operation is only for the same inkjet printer with the same configuration;
> ➢ **Apply to MainBoard:** save the set parameters. Click this button to save after modifying the correction voltage and temperature;
> ➢ **Update:** refresh the current interface;

10.6 UV setting

1 Main Menu → Tool → UV Setting
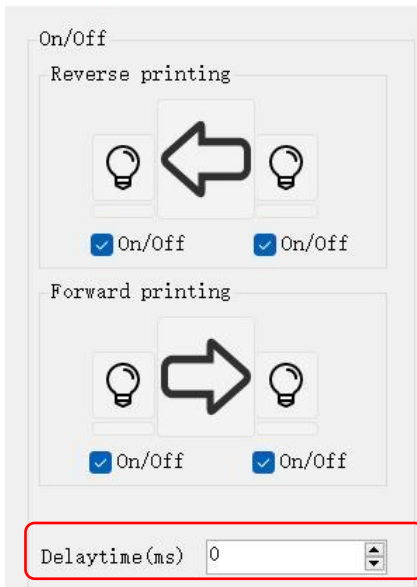
2 Tick switch (**switch delay: 0**)
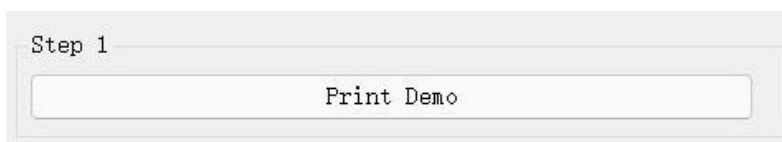
3 Step 1: printing test chart

The printing chart is as follows:

4 Step 2 (facing the ink carriage, the rear lamp is the left lamp, and the front lamp is the right lamp)

1) Click move right to move the right lamp to the outside of the left color bar of the test chart and click (Front lamp on offset - Confirm the setting)
2) Continue moving right to move the right lamp to the outside of the right color bar of the test chart and click (Front lamp off offset - Confirm the setting)
3) Click move right to move the left lamp to the outside of the left color bar of the test chart and click (Rear lamp on offset - Confirm the setting)
4) Continue moving right to move the left lamp to the outside of the right color bar of the test chart and click (Rear lamp off offset - Confirm the setting)
5) Submit data to complete

5、UV lamp operation note:
Manual switch UV lamp, be sure to confirm that the carriage stopped at the origin position (that is, the most left end), if the car stopped on the guide belt, will burn the guide belt.

10.7 Automatic stop after ink pump timeout

The switch for whether to stop automatically after the pump ink timeout, which is used to prevent the ink from reflowing to the negative pressure;

10.8 Printing record
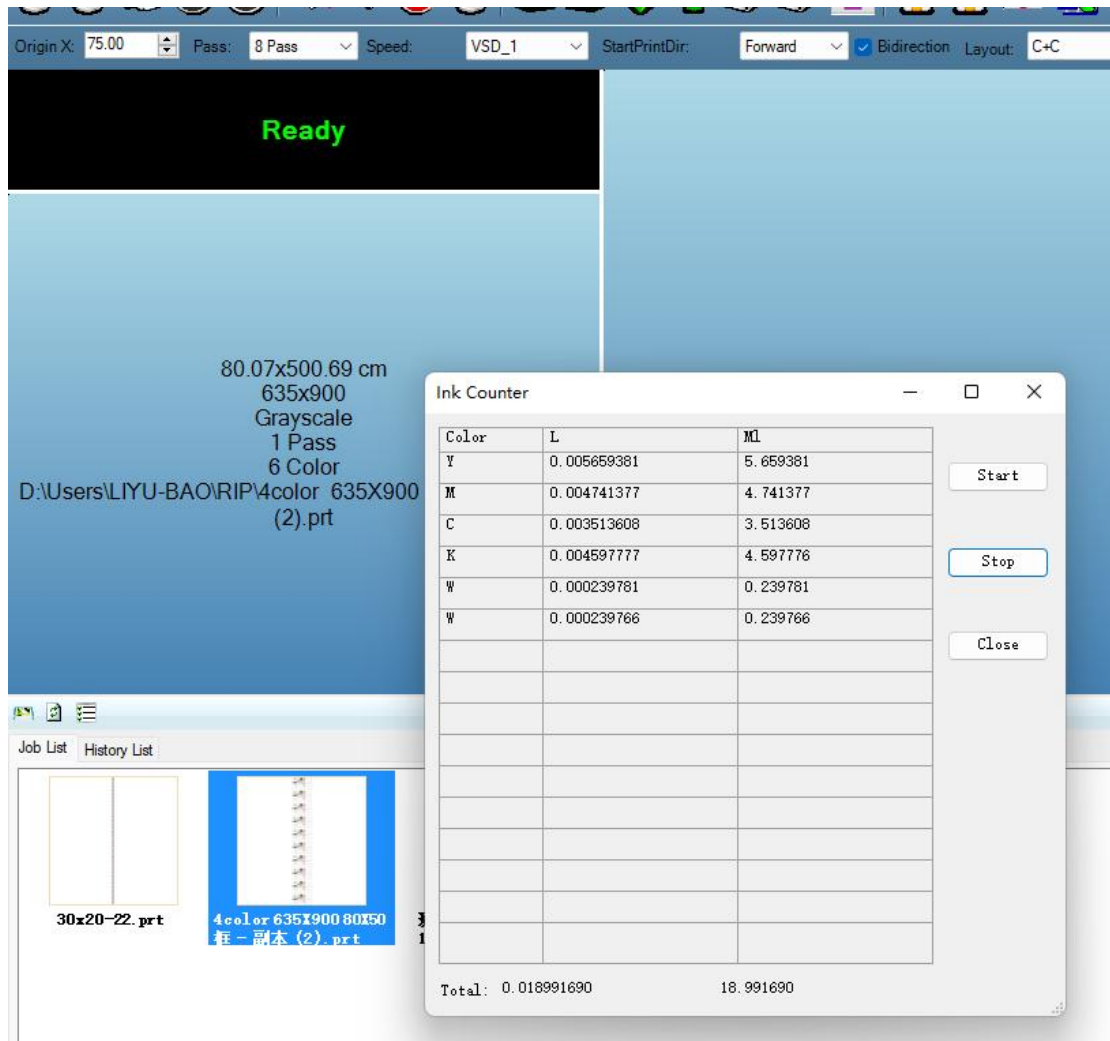
XI. Ink Counting

Select the job chart, right-click and select ink counting to calculate the ink used in this job;

XII. Factory Debugging Main Menu → Debugging → Factory Debugging

12.1 General
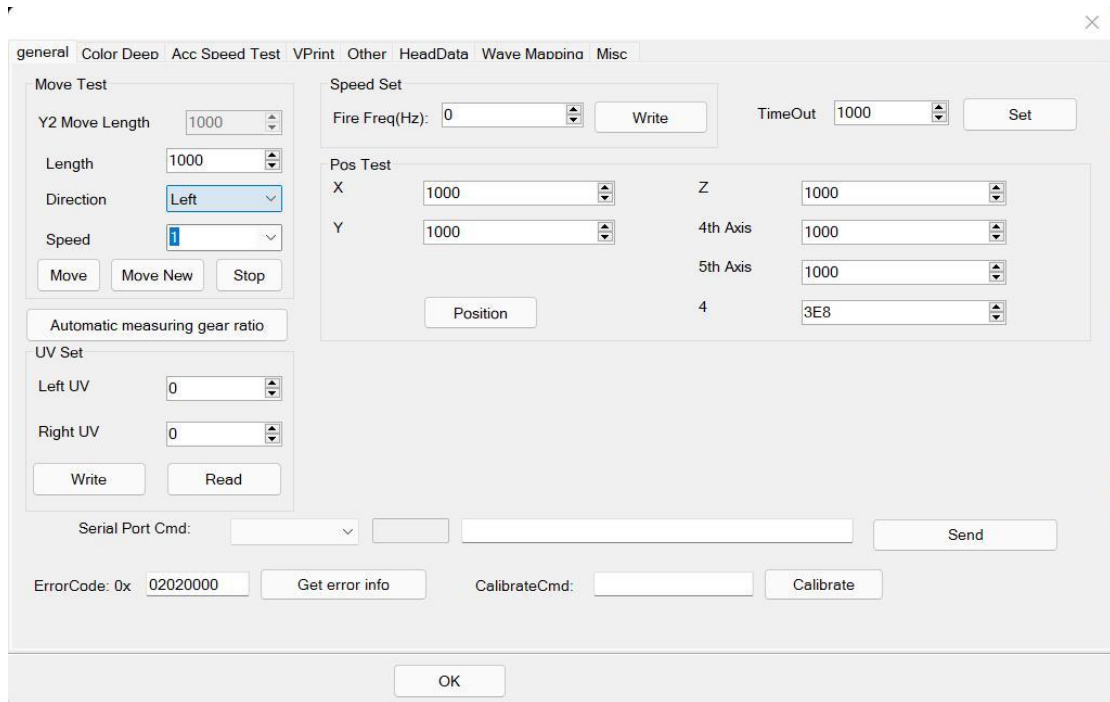
Fire Freq (Hz): used to set the temporary firing frequency. After entering the parameters, click "Write" to enable it, restart the printer and restore the default value;
Movement test: used to measure the gear ratio parameters of each axis and view the feedback;

12.2 Colordeep
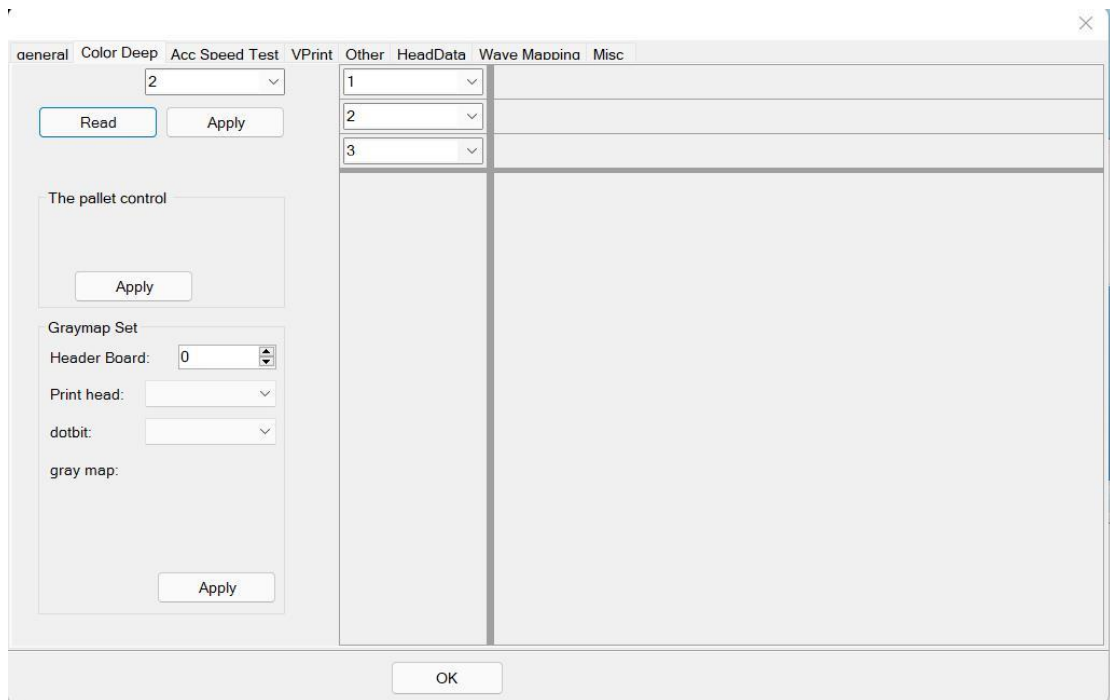
This is the interface for grayscale setup, and that of Ricoh shall be set to 2;
Click "Read". If it is displayed as 1, set it to 2, and click "Apply".

XIII. Calibration Wizard Main Menu → Tool → Calibration Wizard
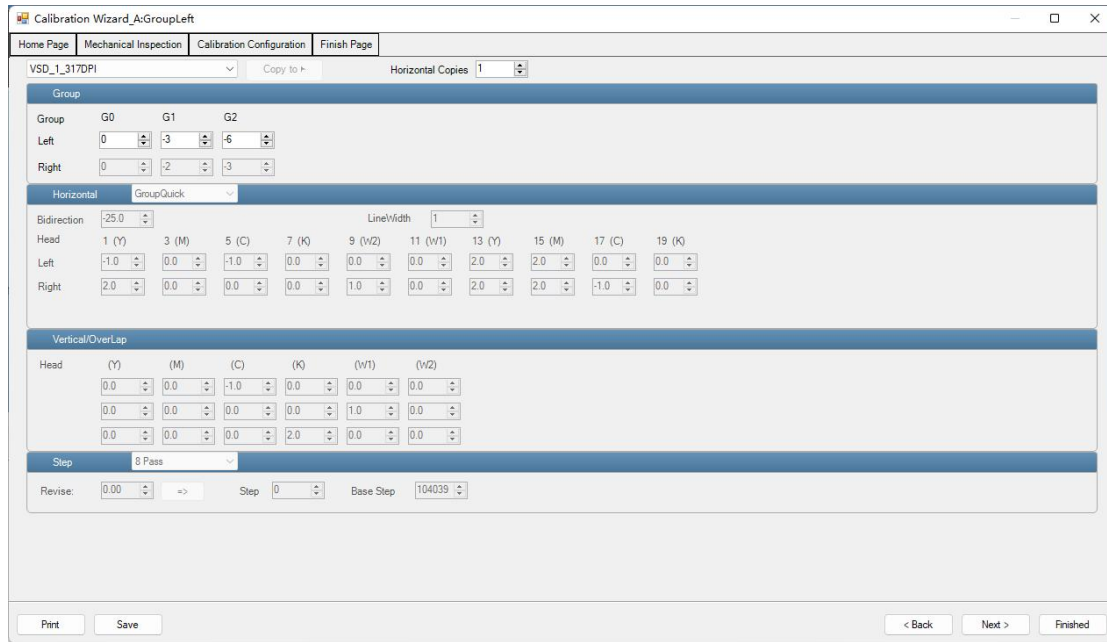
13.1 Angle check

Set the starting point of printing in X and Y directions, and click "Angle check", as shown in the figure below:
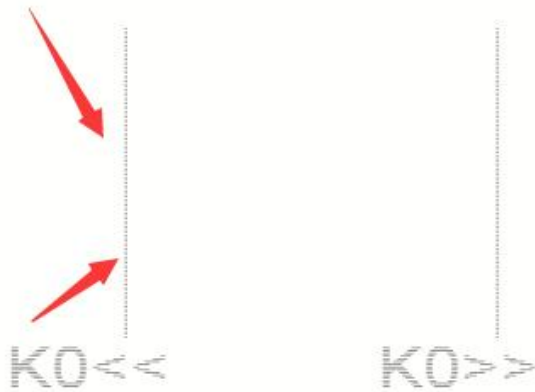
Check whether the upper and lower lines of color labels coincide. If so, it indicates that the print head is installed vertically,
otherwise, the perpendicularity needs to be corrected by mechanically adjusting the installation angle of the print head. If the upper and lower lines do not coincide, it is recommended to print and observe.

13.2 Vertical check
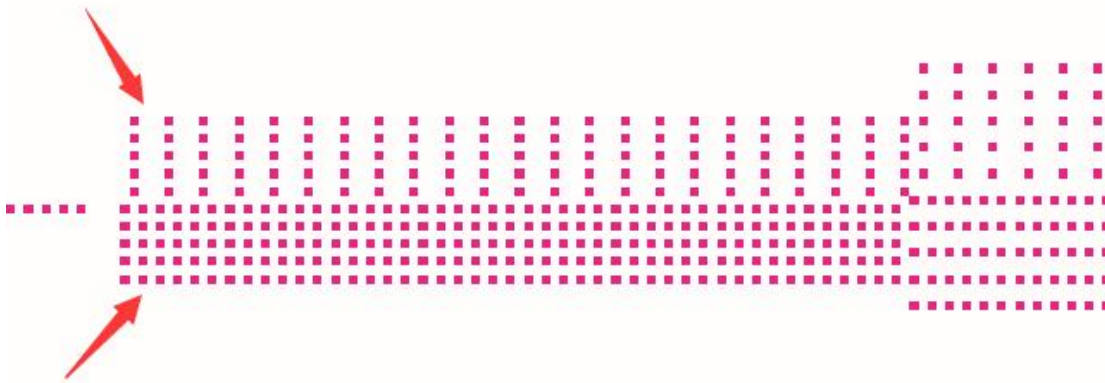
The top 5 rows of nozzles are punched by one print head (with an interval of one nozzle), and the lower nozzles are punched by another print head. The ideal effect is shown in the figure above. If the upper and lower print heads overlap, the neat 5 rows of print heads cannot be seen.

13.3 Color register calibration
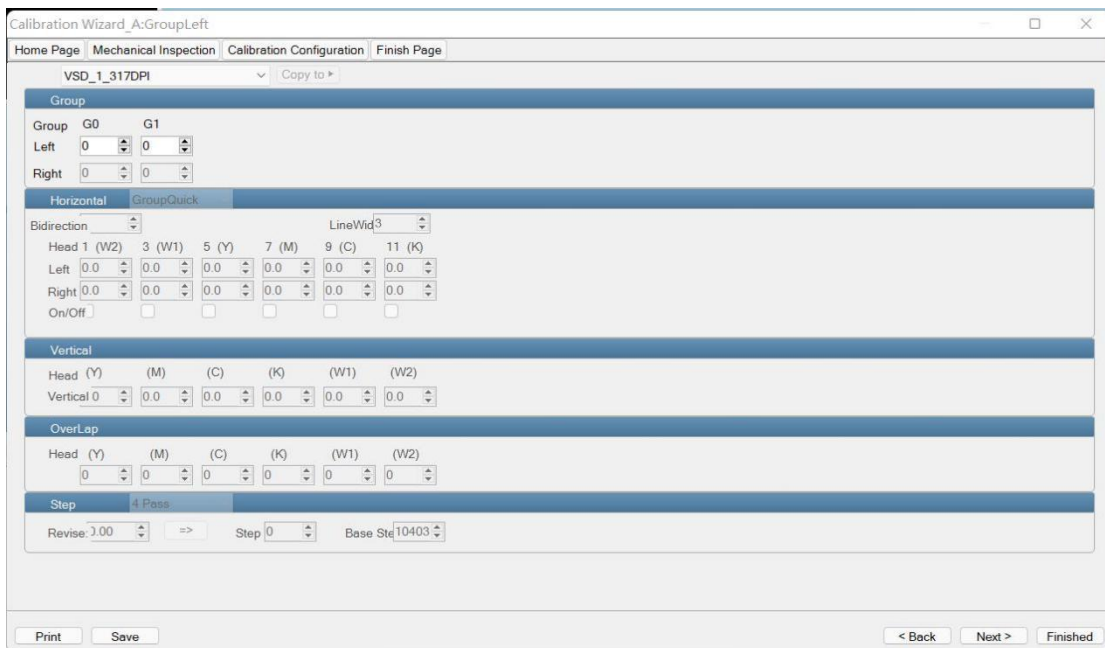
Note: it is recommended to use intra-group full calibration for horizontal

bidirectional calibration.

(1) Stepping check
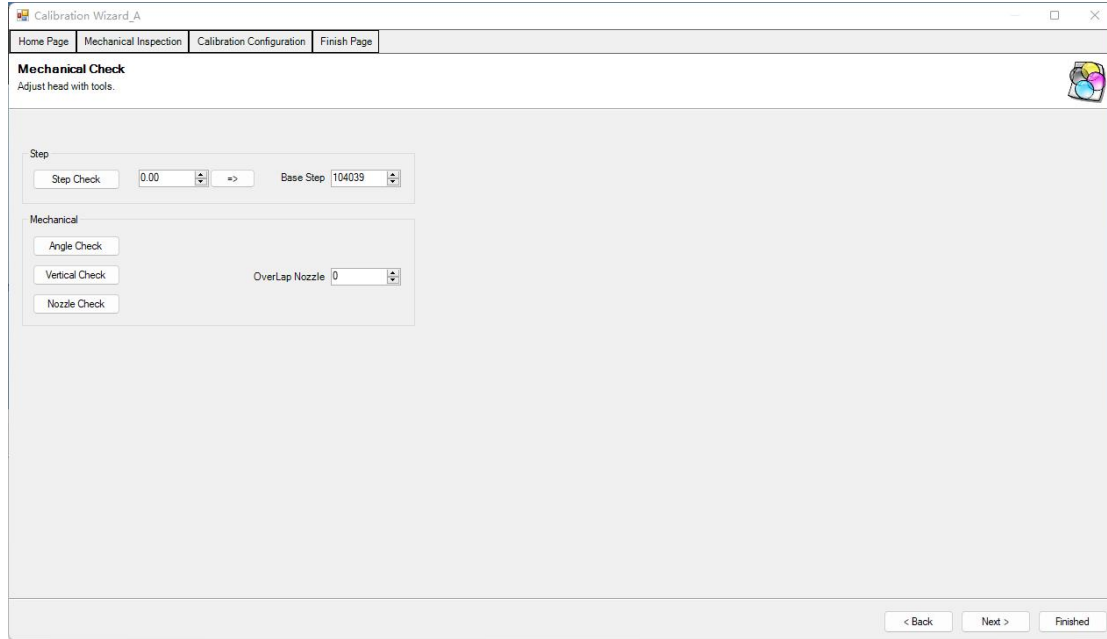
First test and check the step value. Generally, the step value can be directly displayed after the software is installed. (For example, DS step value is generally 104039)
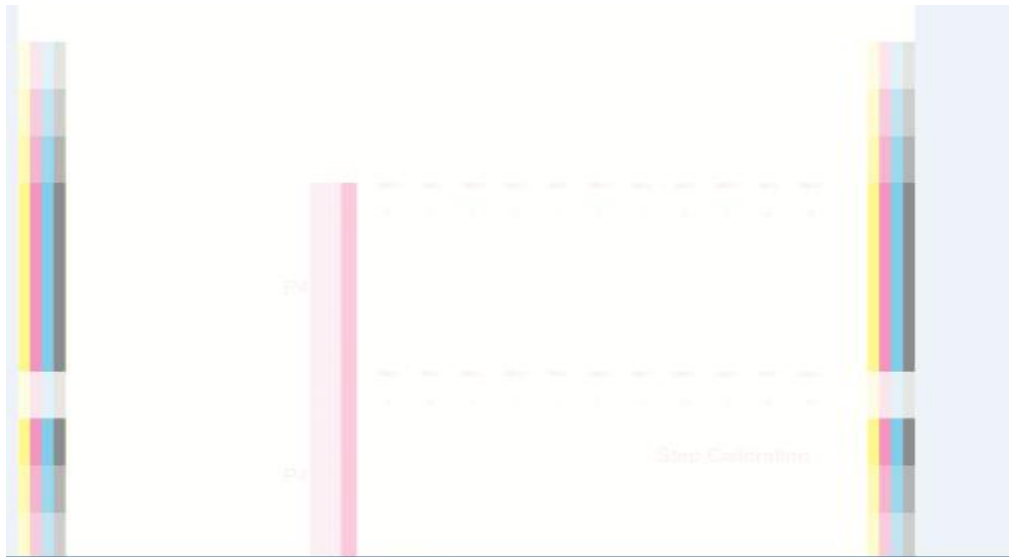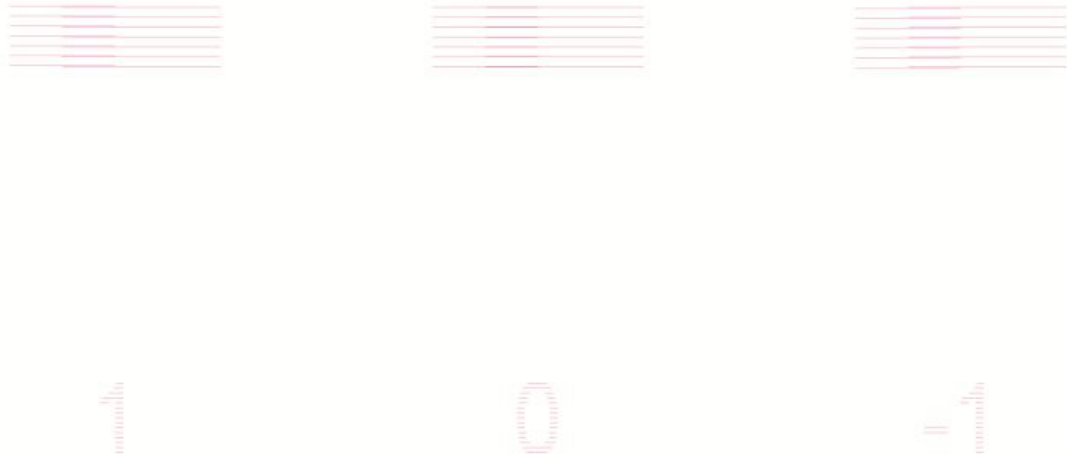
Stepping calibration means that the carriage prints and ejects in the Y direction. The ideal effect is that the value 0 is on the same line. Otherwise, select the value on the same line and fill it in the corresponding position of the software.

Note: calibration parameters can be imported directly by one-key import / export.
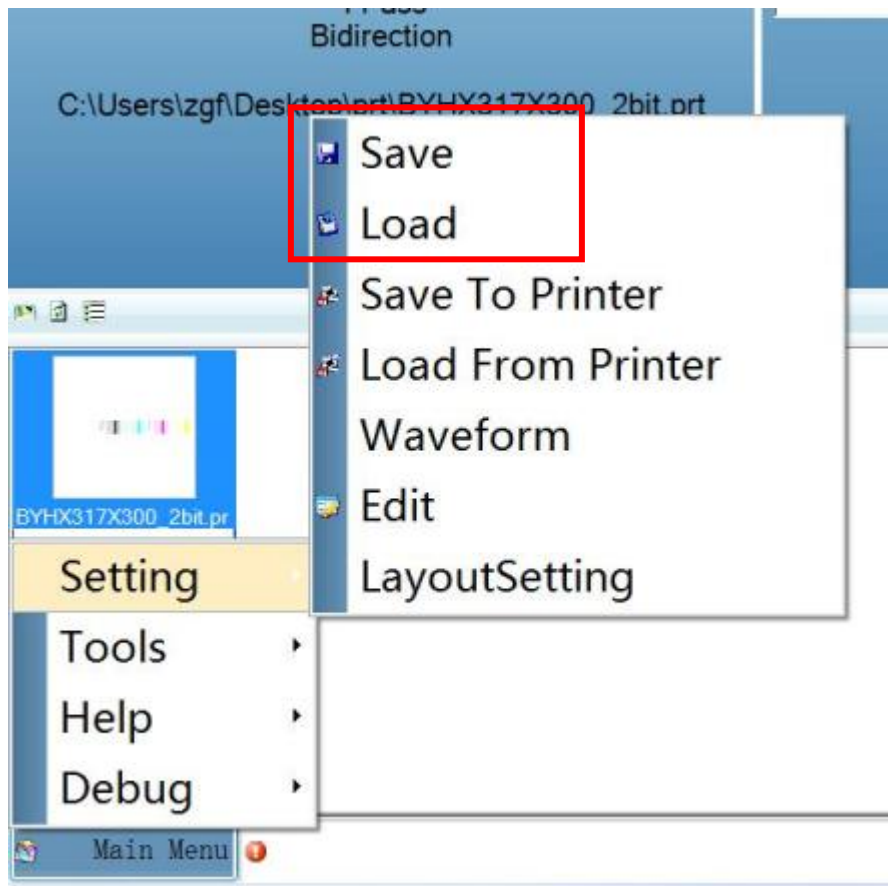
(2) During control calibration, it can calibrate high precision (VSD1-635DPI,

VSD2-635DPI, VSD3-635DPI) and high speed (VSD1-317DPI, VSD2-317DPI, VSD3-317DPI) according to the customers' needs. Click "Next", the corresponding calibration box will display bright color, and the rest will be gray. Click "Print" in the lower left corner to print the test line. Enter the corresponding value, and click "Save" to carry out the next calibration.

| VSD_1_317DPI | ∨ | Copy to ► |

Group			
Group	G0		G1
Left	0		0
Right	0		0

Calibrate the left (reverse) and right (forward) twice, find the line with the best coincidence, and fill the corresponding value back into the corresponding number box. If there is no complete coincidence, it can also be estimated and read from the middle of the two values with the best coincidence. (G0 represents the first group of color print heads, all other rows are aligned with the first row, and the calibration line is black)

(3) Left calibration
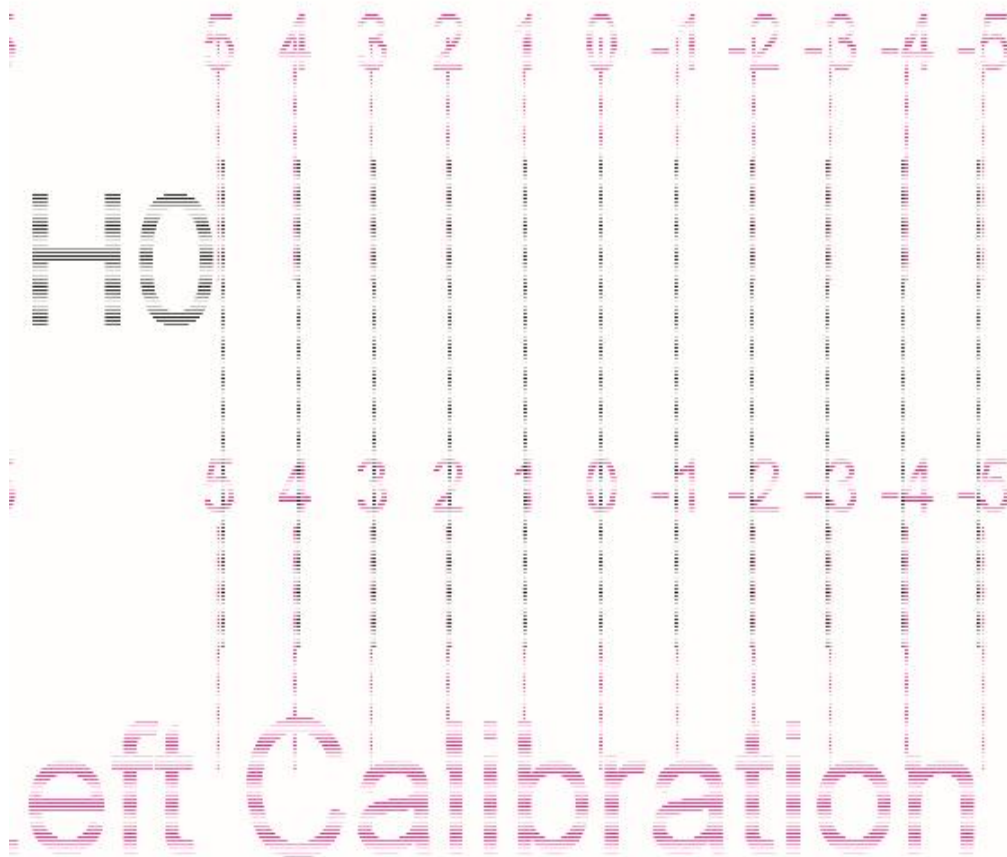
Left calibration means that the carriage prints and ejects to the left. The ideal effect is that the value 0 is on the same line. Otherwise, select the value on the same line and fill it in the corresponding position of the software.
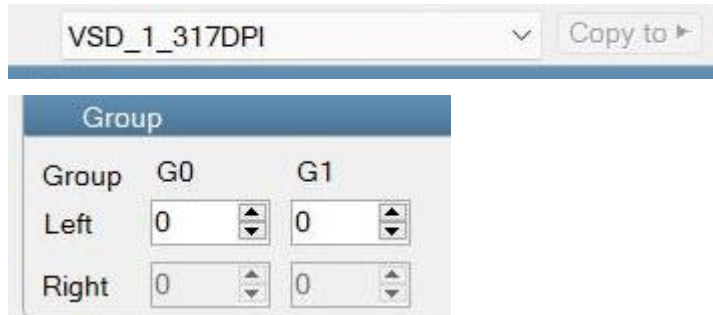
(4) Right calibration
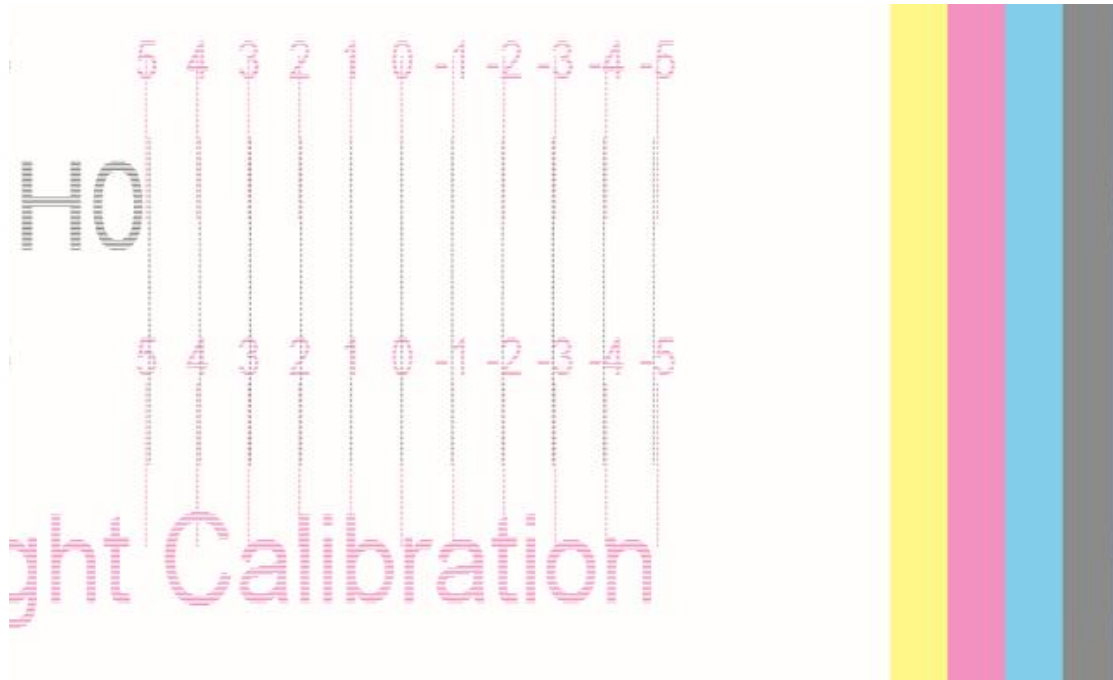
Right calibration means that the carriage prints and ejects to the right. The ideal effect is that the value 0 is on the same line. Otherwise, select the value on the same line and fill it in the corresponding position of the software.

(5) Bidirectional calibration

Bidirectional calibration means that the carriage prints and ejects bidirectionally. The

ideal effect is that the value 0 is on the same line. Otherwise, select the value on the same line and fill it in the corresponding position of the software.

(6) Vertical check

Vertical calibration means that the software calibration of print head and nozzle in the Y direction. The ideal effect is that the value 0 is on the same line. Otherwise, select the value on the same line and fill it in the corresponding position of the software.
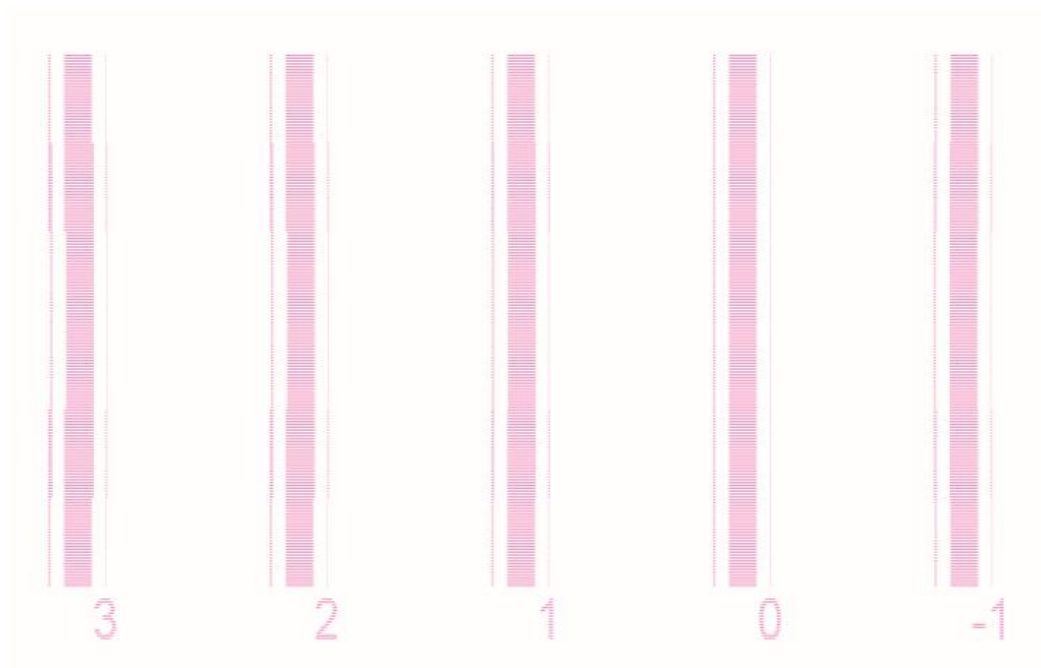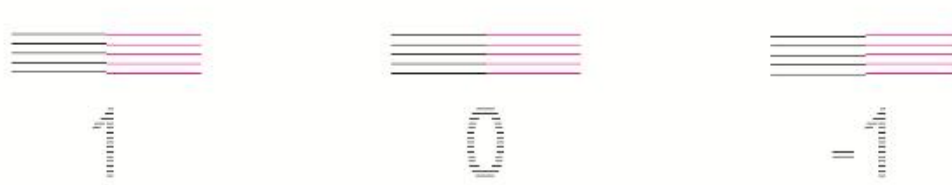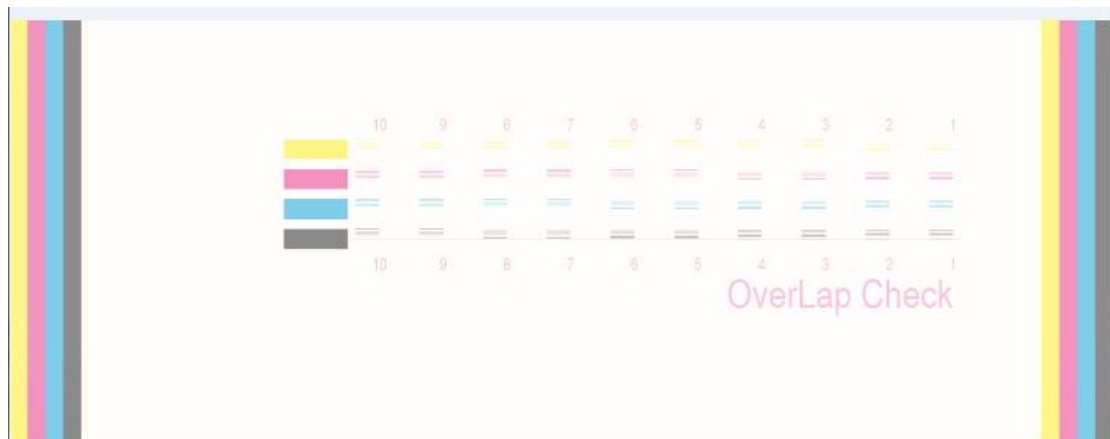
(7) Overlap calibration
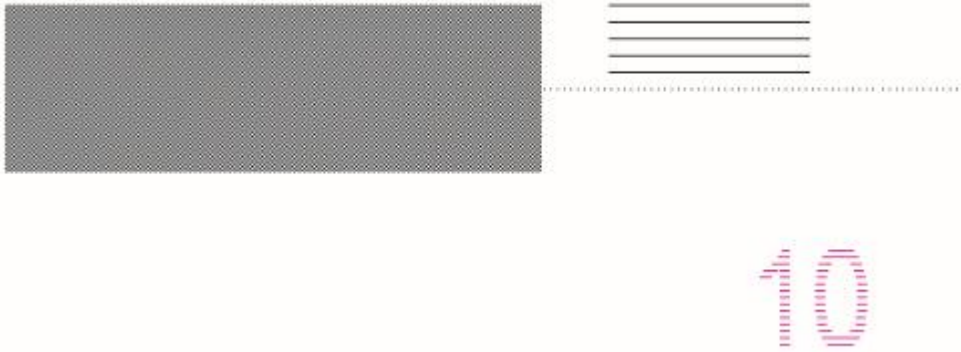
Overlap calibration is to adjust whether there is nozzle overlap between the first and the second group of print heads with the same color. The ideal effect is that the color blocks are evenly distributed without white lines and black lines. If there is overlap, fill the figure corresponding to the overlap of dotted line and solid line into the corresponding position of the software.

XIV. Layout Settings   Main Menu → Settings → Layout Settings
14.1 Interface Introduction
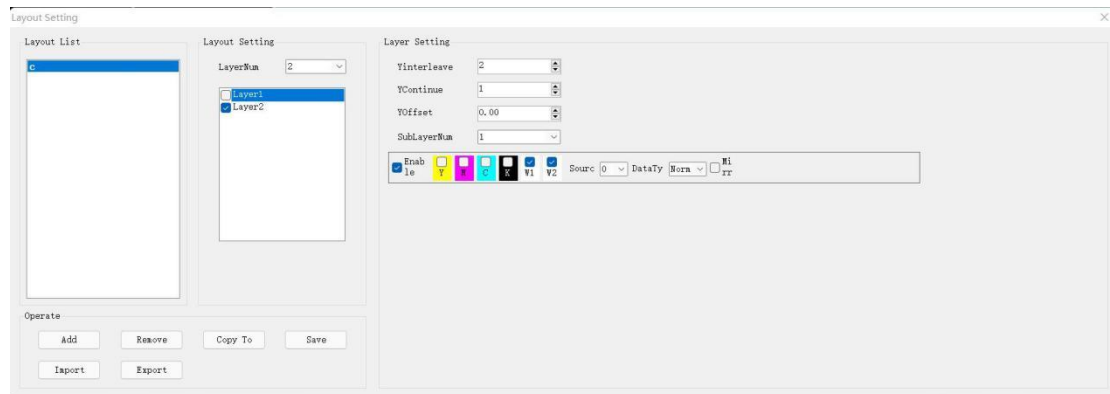
Layout list: display all current layout configurations, which can be configured according to different print modes. Just select the print layout mode in the main interface to use;

Layout settings:

(1) Number of layers: set according to the number of rows of print heads in the layout package. For example, if there are 3 rows of print heads in the layout picture, the number of layers is set to 3, and the display area under the number of layers will be refreshed in real time according to the number of layers;

Layer settings:

(2) Y-splicing and insertion: it refers to the number of Y interleaving and the number of rows of colors in the same print head. For Ricoh GEN6 print head, **if it has one**

head and two colors, the Y-splicing and insertion is set to 2; if one head and one color, the Y-splicing and insertion is set to 4.

(3) Y-continuous: it refers to the number of rows of print heads with the same color. For 2 consecutive groups of four colors and two groups, the Y-continuous is 2. Generally, this parameter is set only in full color, basically 1;

(4) Y offset: for the case when there are multiple rows of print heads. The distance from the first nozzle on this layer to the first nozzle on the first layer is the number of nozzles, and the number of nozzles in a row.

For 3 rows of GEN6 print heads, if the Y offset of the first layer is 0, that of the second layer is 320, and that of the third layer is 640. Different print heads will lead to different set parameters;

(5) Number of sublayers: set to 1;

(6) Data source: the default value is 0. It can be used when printing color-white-color. You can print patterns of two sides;

(7) Data type: generally the default value. It needs to be set when two rows of colors are separated, as described below.

Mirroring: if you check this function, the printing will be mirrored on this layer;

Add: add a layout mode according to actual use;

Remove: delete the existing layout mode;

Copy as: copy a layout mode to quickly set it;

Save: click Save after setting and modifying the layout, otherwise the set layout will not be saved;

Import: import the exported layout file into the software;

Export: export the set layout to a file to save;

14.2 Print head layout and arrangement: take Ricoh GEN6 of four-color color-white-color, with one head and two colors as an example (as shown in the following figure)

Inside is the first row of print heads

The color sequence corresponding to the print head: this print head has one head and two colors.

Name of color sequence corresponding to the print

The output bit interface on the carriage board (interface sequence: H1-16), and the current print head is equipped with H4 interface.
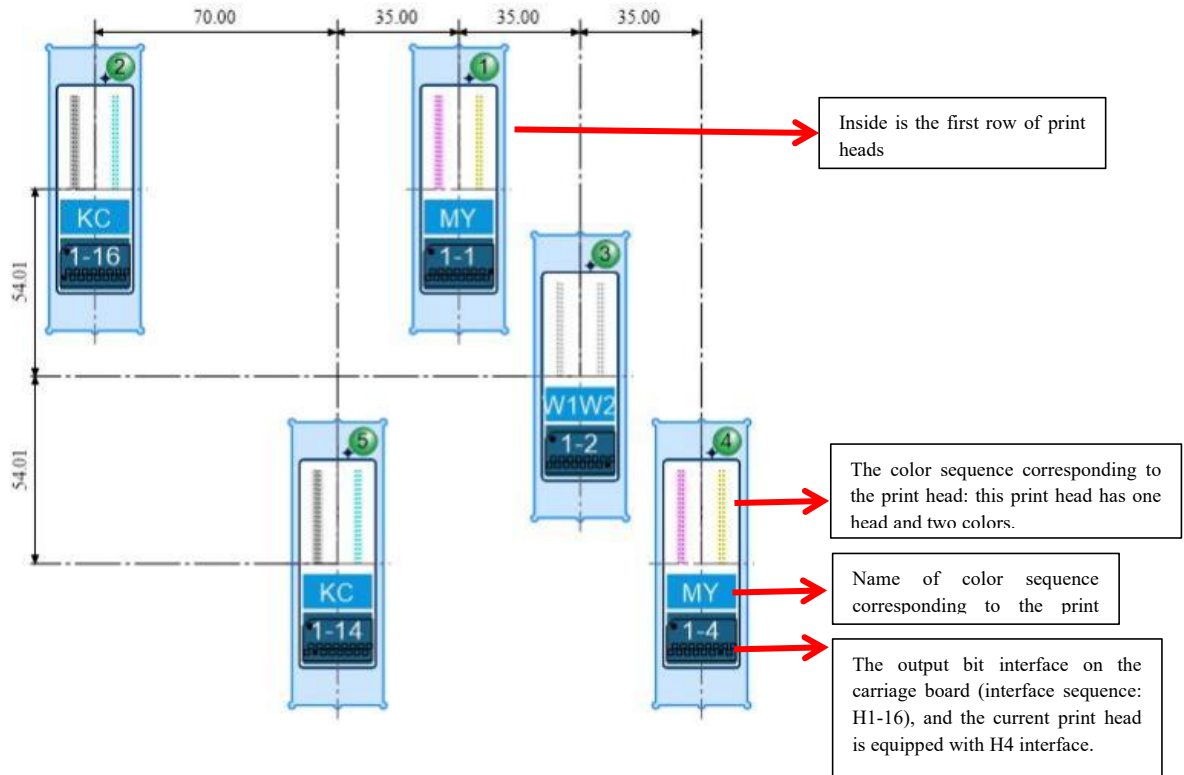
14.3 Set three layers:

The first layer is set as shown in the following figure:
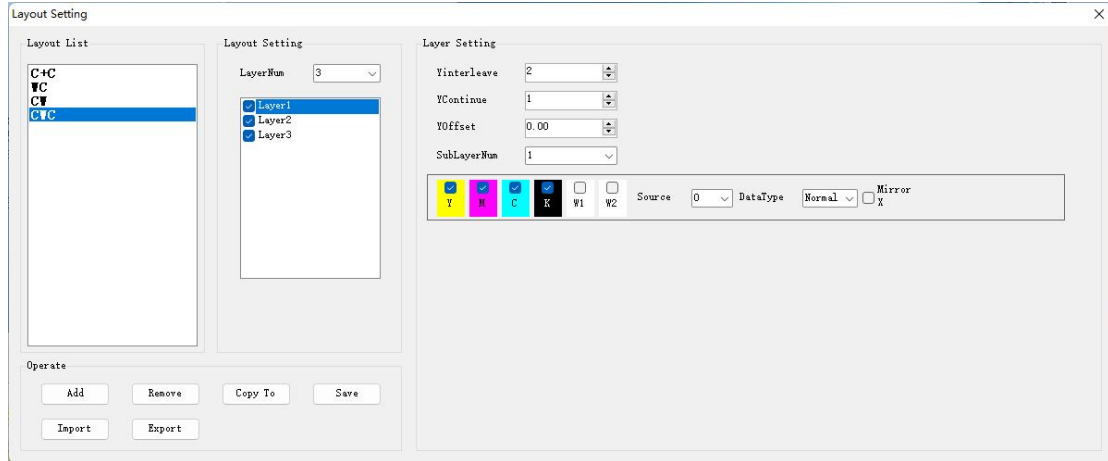
The second layer is set as shown in the following figure:
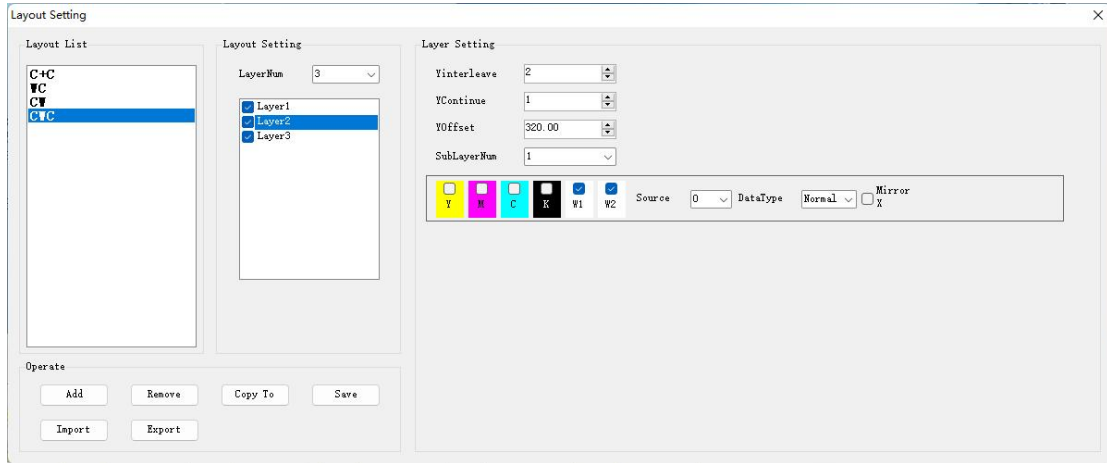
The third layer is set as shown in the following figure:
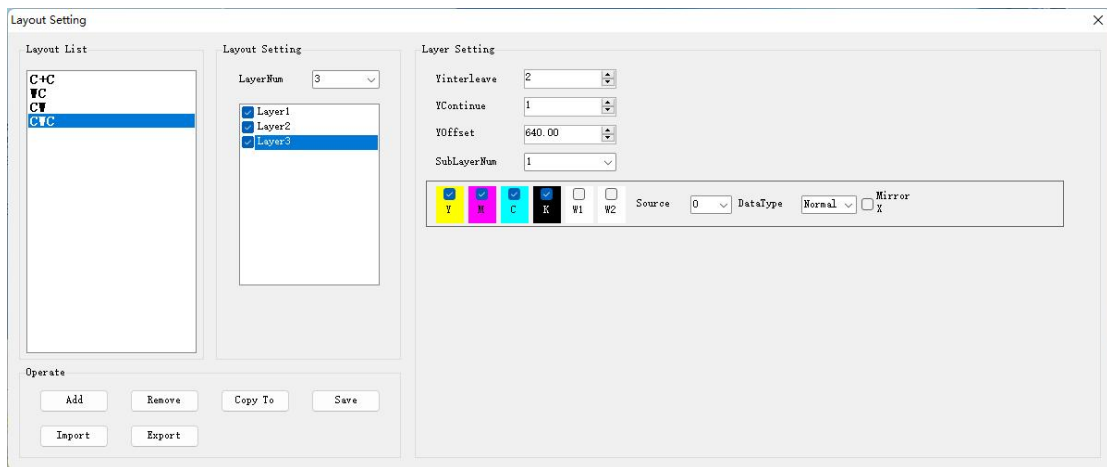
Note: if double-sided printing is required, the data source of the third layer needs to be set to 1.

14.4 Several common layout cases:

14.4.1 Color + color:

First layer:
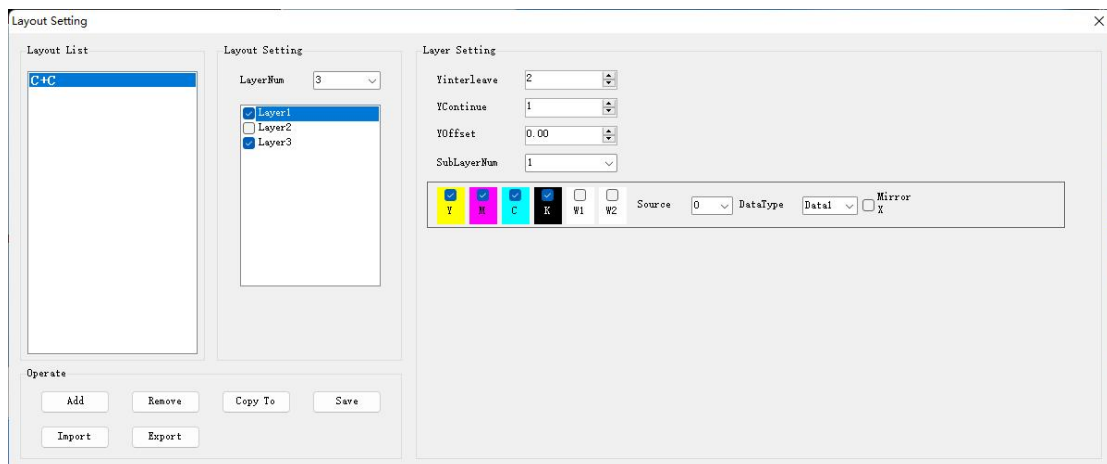
Note: Data 1 is selected as the data source of the first layer of color.

Second layer: N/A.
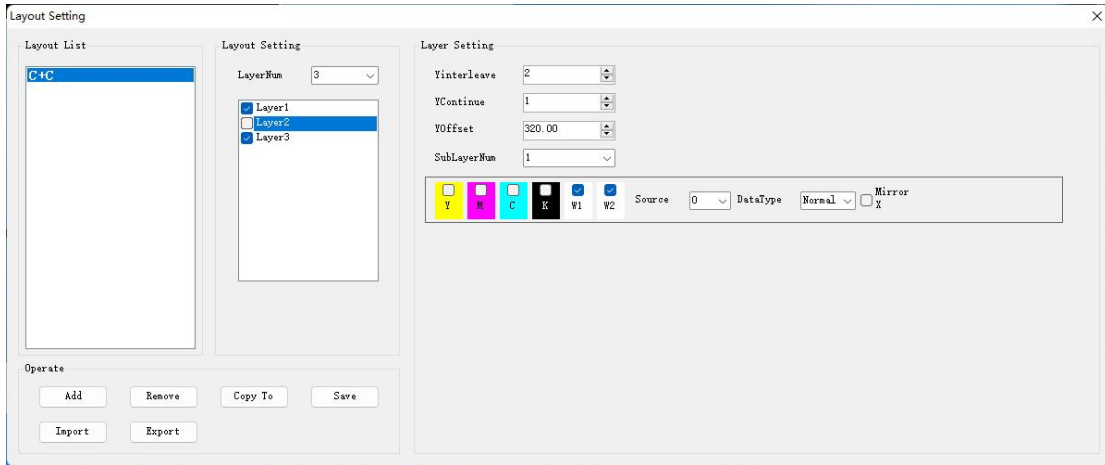
Third layer:
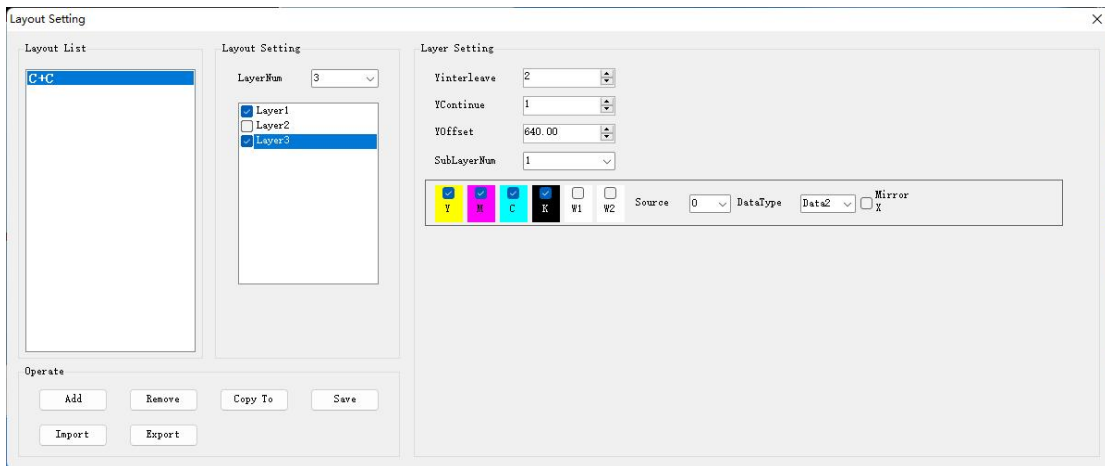
Note: Data 2 is selected as the data source of color.

14.4.2 White-color:

First layer:
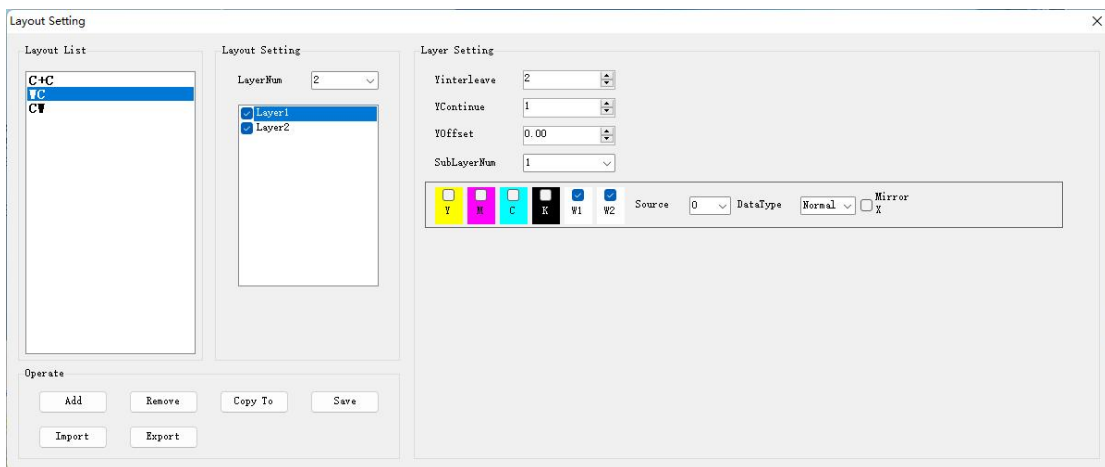
Second layer:
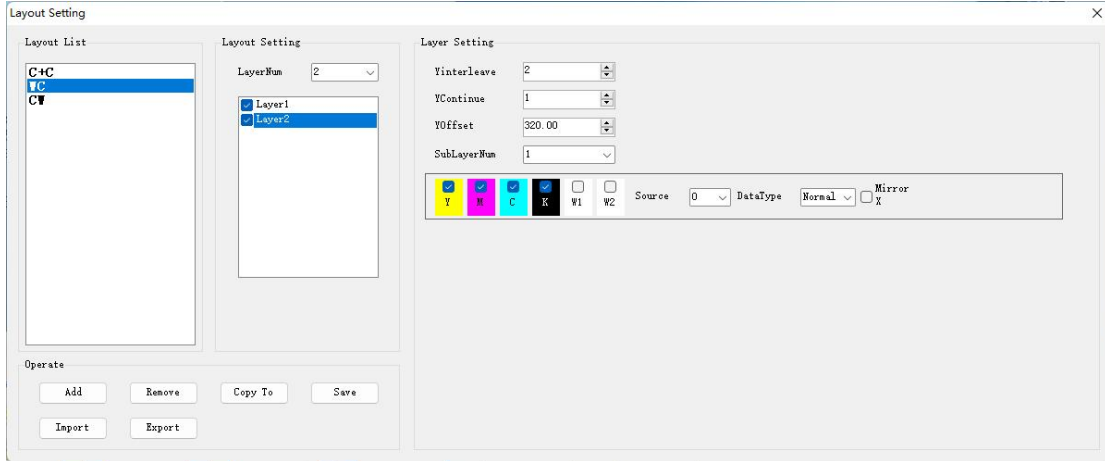
14.4.2 Color-white:

First layer:
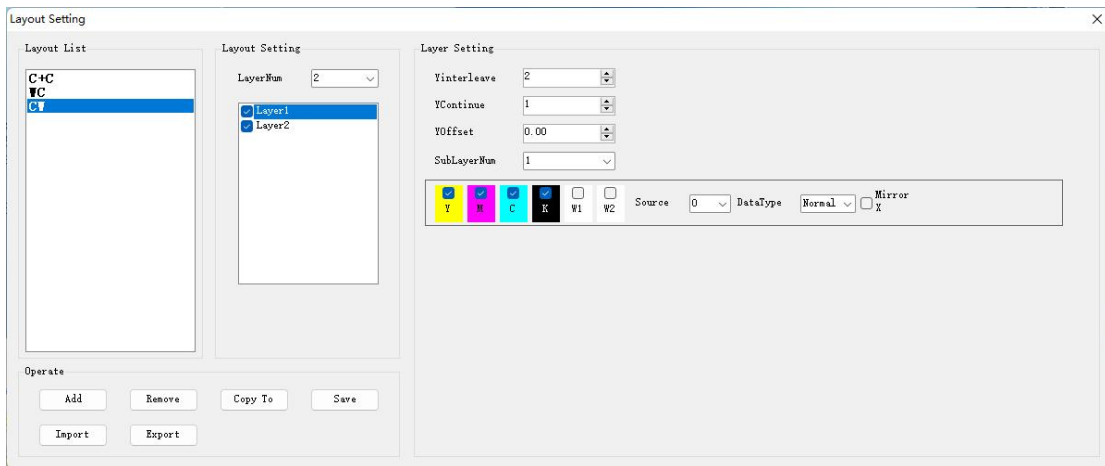
Second layer:
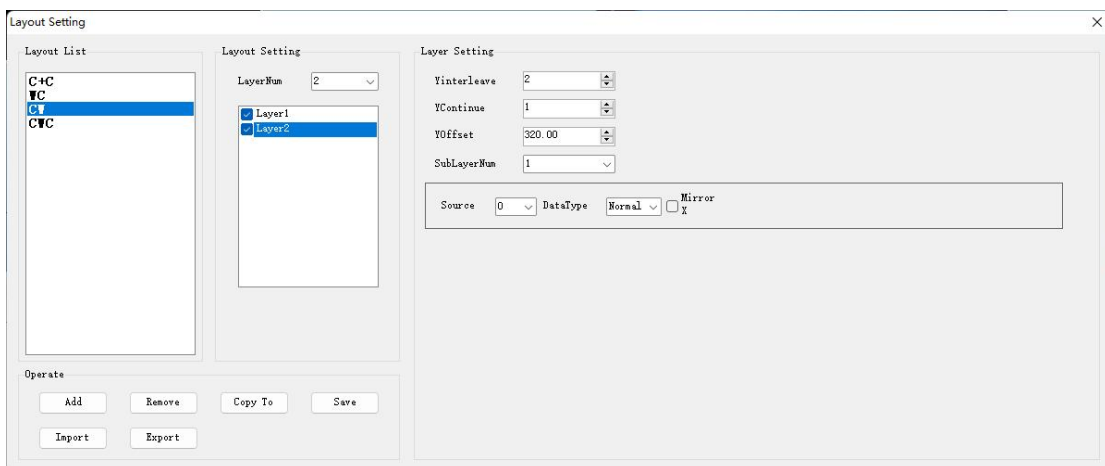
XV. Continuous Printing Process and Operation Precautions:

15.1 Introduction to continuous printing function window:

15.1.1 Main interface options
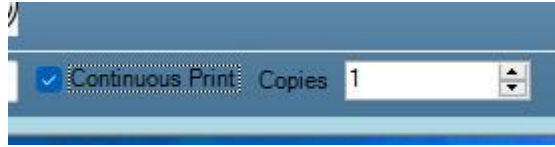
➢ **Continuous printing**: if you select this check box, the continuous printing process can be realized. In the pinch roller control interface, the control of the front and rear rods will be automatically selected to enter the automatic continuous printing process.

➢ **Number of copies**: it can print multiple copies of a picture continuously. If multiple copies of different pictures (with the same size) are selected at the same time, for example, print 2 copies of 3 pictures, the printing process is 1 → 2 → 3 for the first time and second time, and then the continuous printing is completed.

15.1.2 Introduction to pinch roller interface: (7 parts in total)
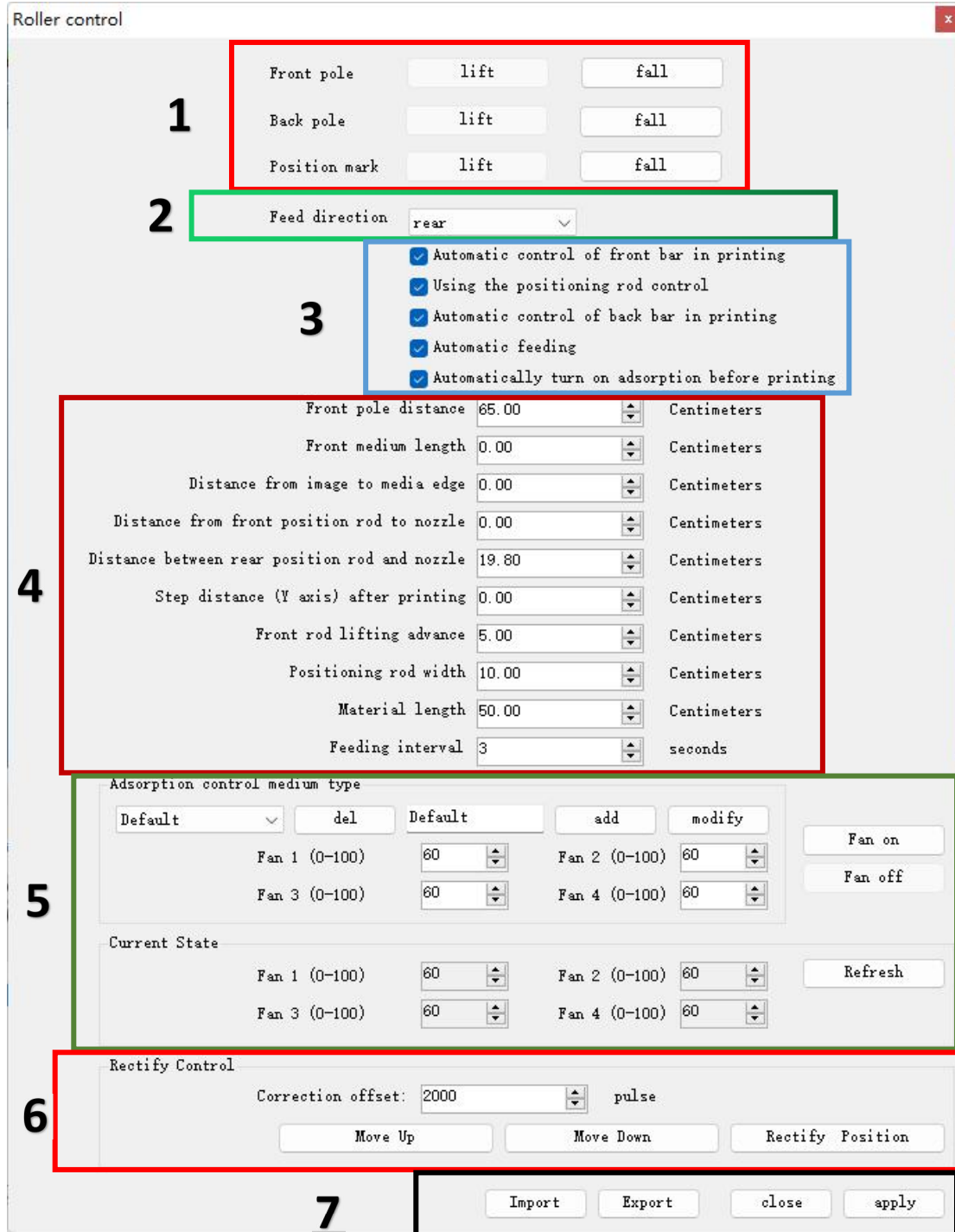
> ➤ **Part 1:** manually control the lifting and falling areas of front, rear and positioning rods.
> ➤ **Part 2:**

Feeding direction: place the material to be printed in front or behind the positioning rod, generally rear feeding.

> ➤ **Part 3:**

Before printing, you need to determine the functions to be used, for example, the front, rear and positioning rods are needed for continuous printing; and adsorption needs to be turned on automatically before printing. Select the required function to

realize.

➢ **Part 4: several parameters for continuous printing of hard materials. The unit is length.**

Front rod distance: the distance from the front rod to the positioning rod. After setting, this parameter will be read in the continuous printing process. When the media moves under the front rod, the front pressure bar will automatically lower and press the material to be printed.

Front media length: if the material is placed in front of the positioning rod, enter the length of the material to be printed (Y direction).

Distance from image to media edge: the blank distance from the image to be printed to the media edge (Y direction), mainly used when the image is smaller than the media.

Distance from the front positioning rod to the print head: the distance from the front material of the positioning rod to the starting position of the first PASS of the print head during front feeding.

Distance from the rear positioning rod to the print head: the distance from the rear material of the positioning rod to the starting position of the first PASS of the print head during rear feeding.

Note: the distances from the front positioning rod and rear positioning rod to the print head have been calibrated before delivery. If necessary, you need to lower the positioning rod, draw lines with soft materials, print the pictures, check the starting point, and then slightly adjust the parameters.

Stepping distance after printing (Y direction): not used temporarily.

Lifting length of front rod: the length of the material minus the set parameter is the length of the front rod staying in the material from falling to lifting,

Width of positioning rod: actual width of positioning rod + width of positioning block. For example, DS32 = 80mm (width of positioning rod) + 20mm (width of positioning block) = 100mm.

Material length: the length of the material to be printed during rear feeding.

Feeding interval: different sizes of materials will lead to different feeding times. The time setting shall be based on the actual requirements of customers. Generally the default is 3 seconds.

➢ **Part 5: type of adsorption control media**

Different adsorption values can be set for different media. The specific operations are as follows:
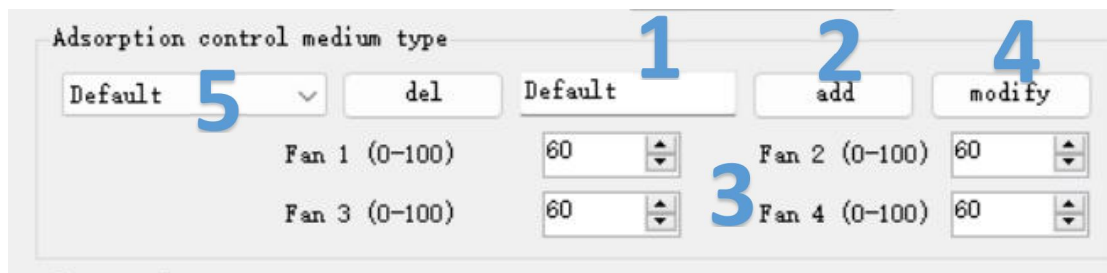
1. Enter material name → 2. Add → 3. Enter adsorption parameters → 4. Modify → 5.

Save in the pull-down list. Then several adsorption parameters can be applied later by selecting the material name in the pull-down list.

Current State

Fan 1 (0-100)	60	Fan 2 (0-100)	60	Refresh
Fan 3 (0-100)	60	Fan 4 (0-100)	60	

After setting the parameters and refreshing, the interface will display the current parameters.

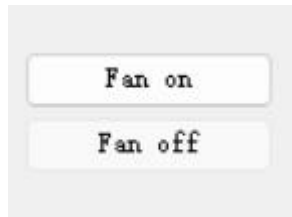The right button can manually control the adsorption on and off

Fan on

Fan off

➢ **Part 6: correction control**

It mainly realizes automatic correction parameter setting. **The default factory setting value is 2000.** And the lower part can be manually moved back and forth and reset to the middle.

➢ **Part 7:**

Import   Export   close   apply

Import: the debugged and exported parameters last time can be imported.

Export: all the correct current parameters can be exported and saved for backup.

Close: close the current window.

Apply: after setting the current window parameters, click Apply to save.

15.2 Steps of continuous printing process:

15.2.1 The continuous printing operation of a single job is shown in the following figure:

2. Transfer in the job to be printed and select

3. Check the option of Continuous printing

4. Set the number of copies of continuous printing

6. Press the positioning rod to lower and place the materials

1. Measure the material thickness

5. Set corresponding parameters in the pinch roller control window, apply and close the window

8. Every time the positioning rod is lowered, place the next copy of the material until all copies are printed

7. Lower the rear pressure bar and press Print

15.2.1 The continuous printing operation of multiple jobs of different patterns are shown in the following figure:

2. Transfer in the job to be printed and select all

3. Check the option of Continuous printing

4. Set the number of copies of continuous printing, generally 1, if it is set to 2, 5*2=10 jobs will be printed continuously

1. Measure the material thickness

6. Press the positioning rod to lower and place the materials

5. Set corresponding parameters in the pinch roller control window, apply and close the window

8. Every time the positioning rod is lowered, place the next copy of the material until all copies are printed

7. Lower the rear pressure bar, press Print to automatically start adsorption and start printing.