



# Signature3240/2140 Series UV Hybrid Printer User Manual

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# Chapter One Safety

## 1.1 Safety Label



### **Caution: Purpose**

This device is intended for the specific purpose for which it is designed. Any use beyond the manufacturer's intended purpose may result in serious injury.



### **Caution: Protection**

This device is designed to include specific protective measures. If these measures are not taken, it may be dangerous. Do not operate this printer if the protective device is missing or damaged.



### **Caution: Moving parts**

Pay attention to moving parts.



### **Caution: Risk of entanglement**

There is a risk of entanglement on the printer. Do not wear loose clothing. Long hair should be tied up.



### **Caution: Edit**

Do not modify this printer—any modification may affect the safety of the operator.



### **Caution: Control system**

Do not modify the control system. If the control system is damaged or non-functional, stop using the printer immediately. Do not operate the printer until the control system is repaired by a certified LIYU engineer.



### **Caution: Training**

This printer can only be installed by professionally trained technicians.



### **Caution: High pressure**

This printer contains a power supply operating under high pressure. Special care must be taken during installation when working in these areas.



### **Caution: Restricted.**

Electrical cabinet contains equipment operating under dangerous voltage.

Only authorized personnel can maintain or install in this area. Operators are not allowed to enter these cabinets.



### **Caution: Ultraviolet light**

The device includes an LED ultraviolet (UV) light source. Prolonged exposure to UV radiation may cause eye pain or skin burns. Wear appropriate personal protective equipment (PPE) when operating the printer. Do not stare directly at the light source.



### **Caution: Installation is dangerous**

When installing the printer, make sure you wear appropriate personal protective equipment, including protective gloves, safety shoes and safety goggles.



### **Caution: Manual operation**

The installation process may involve manual operation hazards not present during normal printer operation, including lifting and moving components, as well as relocating the printer. Prior assessment of lifting or operating procedures is mandatory, and appropriate lifting assistive equipment should be utilized whenever possible. If lifting assistive equipment is not feasible, appropriate manual operation techniques must be employed.

## 1.2 Fire precaution measures

1.2.1 Keep away from flammable substances such as alcohol, and ensure no

debris within 1 meter to maintain proper heat dissipation.

- 1.2.2 Use dedicated power outlets, avoid unauthorized wiring or overloading, and turn off the device when unoccupied.
- 1.2.3 Regularly clean up paper scraps and toner inside to prevent dust accumulation that may cause safety hazards.
- 1.2.4 If the device exhibits overheating, abnormal noise, or unusual odor, immediately disconnect the power and deactivate it, then contact the maintenance team.
- 1.2.5 A dry powder fire extinguisher is provided near the equipment, and operators must know how to use it.
- 1.2.6 In case of fire, immediately cut off the power supply, use dry powder fire extinguisher to put out the fire (do not use water to directly extinguish ink fire), and evacuate the surrounding personnel.

### 1.3 Ventilation system

- 1.3.1 Basic ventilation: The equipment placement area must maintain air circulation. Priority should be given to spaces with natural ventilation, and exhaust fans should be used when natural ventilation is unavailable.
- 1.3.2 Hazardous substance discharge: A dedicated ventilation duct can be installed in the printing room to ensure timely removal of ink gasses.
- 1.3.3 Maintenance points: Regularly clean dust and paper debris from ventilation outlets to prevent blockage and ensure ventilation efficiency; in humid environments. The operating environment of the equipment shall be equipped with a dedicated dehumidification device.

### 1.4 Waste disposal

- 1.4.1 Used ink bottles and cleaning solution containers should be stored in sealed containers and handed over to qualified environmental protection agencies for recycling. Random disposal is prohibited.
- 1.4.2 In case of skin contact with ink or cleaning agents, immediately rinse with large amounts of water. If volatile gasses are inhaled accidentally, move to a ventilated area and rest. Seek medical attention promptly if symptoms are severe.
- 1.4.3 UV ink penetrates chemical substances in gloves without coloration, making it difficult to detect. Even the absence of visible contamination on the skin does not imply the absence of exposure.
- 1.4.4 Latex gloves provide minimal or no protection. They can only

temporarily block the penetration of certain components of UV ink while allowing invisible harmful chemicals to freely permeate, contaminating the skin and increasing the risk of exposure.



**Warning:**

UV ink and cleaning solution begin to penetrate disposable nitrile gloves within less than 10 minutes. Gloves should be replaced frequently, especially when contaminated. Heavy-duty nitrile gloves should be used if severe contamination is anticipated. Disposable gloves must not be reused. Contaminated gloves should be disposed of appropriately.

### 1.5 Emergency stop button operation

Release all emergency stop buttons located at each corner of the inkjet printer. Rotate the button head counterclockwise to release them. The positions of the four emergency stop buttons are shown in the Fig. below.

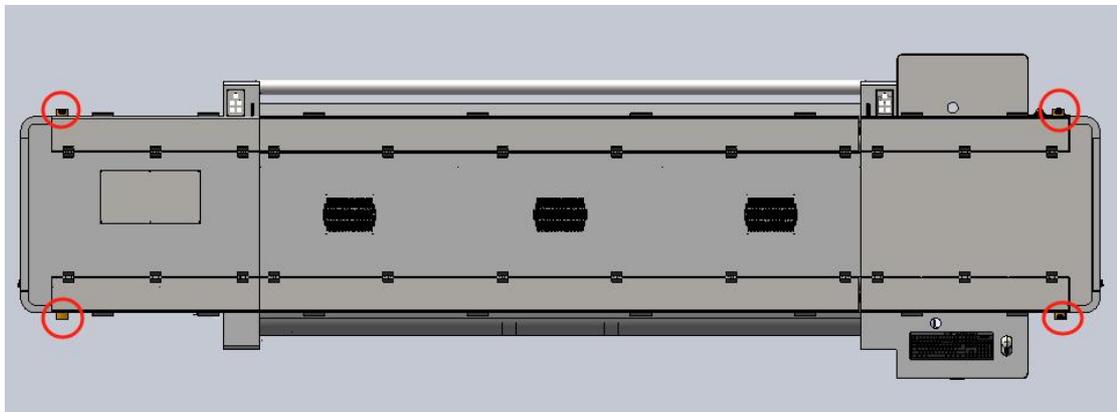


Fig. 1: printer emergency stop position

### 1.6 Main switch

Main switch: Before opening the door, turn off the main lock switch to prevent accidental opening during operation. Do not short-circuit or bypass the total switch, otherwise may cause serious safety accidents.



Fig. 2: Main switch

## 1.7 Light emitting indicator

- 1.7.1 Ambient light display: There are two types. Blue indicates the printing status, meaning the carriage has left its original position. As shown in the figure below.



Fig. 3: Ambient light blue

- 1.7.2 Red indicates stopped or ready, meaning the carriage has returned to the origin. As shown in the figure below.



Fig. 4: Ambient light red

- 1.7.3 The main ink tank alarm light activates when any color level of the main ink tank reaches the lower limit, triggering both an alarm indicator light and audible notification. Simultaneously, the software interface displays the specific color level of the main ink tank in a flashing status. Solution: Add ink promptly. (The software interface display is described in the PM interface functions.)



Fig. 5: Main ink tank alarm indicator light

- 1.7.4 The effluent alarm light activates when the liquid level reaches the upper limit, triggering both an indicator light and audible alarm. Solution: Remove the waste liquid container and empty the contents.



Fig. 6: Waste liquid tank alarm indicator light

- 1.7.5 The belt alarm light activates when the belt shifts significantly to either side, triggering the left or right limit sensors. The alarm light then illuminates and sounds. Solution: Stop printing, release the belt, realign it to the center, and re-tighten it before resuming operation.



Fig. 7: Belt deviation alarm indicator light

- 1.7.6 The negative alarm light activates to provide alert and protective functions when the negative pressure system operates unstably or for an extended duration. Solutions: The negative pressure issue must be promptly resolved, such as addressing air leaks or incorrect negative pressure settings.



Fig. 8: Negative pressure alarm indicator light

#### 1.7.7 Lever alarm



Fig. 9: Front and rear position bar dropping safety alarm

#### 1.7.8 Print alarm



Fig. 10: Alarm indicator light before printing

## Chapter Two System technical parameters and configuration

### 2.1 Printer technical parameter

<b>Printer model</b>	Signature 3340-330 cm / Signature 2140-210cm
<b>Nozzle type</b>	The RICOH G6 supports four rows.
<b>Dot volume</b>	5PL
<b>nozzle configuration</b>	40 (maximum supported)
<b>Maximum print width</b>	3.3 m/2.1 m
<b>Maximum print resolution</b>	635*2,440 dpi
<b>Ink Type</b>	UV ink
<b>Color Settings</b>	K C M Y Lc Lm W V (Neon colors available)
<b>Ink feeding method</b>	Automatic continuous ink supply by vacuum negative pressure
<b>Auto scrapping device</b>	Standard configuration
<b>Media vacuum</b>	Vacuum adsorption on countertop with pressure-regulated zoned control
<b>Max pressure of platform</b>	25 kg/m <sup>2</sup>
<b>Curing</b>	LED_UV lamp automatic segmental curing
<b>Packing Size</b>	Host 3340:6360*1820*1980 / Host 2140:5120*1820*1980
	Auxiliary platform and deployment system: 3982*1750*1204
<b>Printer size</b>	Host (including fabric): 6360*2220*1980; includes 2 expansion platforms: 6020*3732*1775
<b>Printer weight</b>	Signature3340: Approximately 3170 KG (Printer) / 1 ton (2 expansion platforms and media feeding/taking up systems)
	Signature3210: Approximately 2660 KG (Printer) / 1 ton (2 expansion platforms and media feeding/taking up systems)
<b>Print interface</b>	Dual motherboard with dual USB 3.0 ports
<b>Power interface</b>	Host: 220V ±10%,50Hz, 3300W Fan: 220V±10%,50Hz, 6000W UV lamp: 220V±10%,50Hz, 5000W
<b>Environmental requirements</b>	Temperature: 15°C to 30°C; Relative humidity: 40% to 80%

<b>RIP software</b>	Photoprint/Caldera
<b>Printer features</b>	The system features: magnetic levitation carriage movement, intelligent constant-pressure adsorption, fully automatic belt alignment, independent temperature control for auxiliary ink tanks, foldable expansion platform, intelligent differential pressure negative pressure ink supply system, ergonomic design, silent guide rails, LED cold light curing, independent single/double roll fabric feeding system, ink level/empty/full alarms, media depletion pause, anti-collision/stop-and-print function, cyclic automatic printing, carriage automatic medium height detection, and rear rod automatic medium height detection.

## 2.2 Printing efficiency



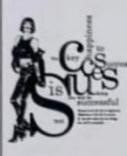

SIGNATURE 3340 PRINTER - RICOH GEN6 4 ROW MIRROR CONFIGURATION					
 	<b>OUTDOOR / BILBOARD MODE</b> CMYKx4 / 1 PASS		300-350 m <sup>2</sup> /h		
	<b>OUTDOOR / BILBOARD MODE</b> CMYKx4 / 2 PASS		200-250 m <sup>2</sup> /h		
 	<b>PRODUCTION LIGHT IMAGES</b> CMYKx4 / 2 PASS FEATHER		130-160 m <sup>2</sup> /h		
	<b>PRODUCTION LIGHT IMAGES</b> CMYKx4 / 3 PASS FEATHER		100-120 m <sup>2</sup> /h		
 	<b>PRODUCTION</b> CMYKx4 / 3 PASS FEATHER		100-120 m <sup>2</sup> /h		
	<b>PRODUCTION</b> CMYKx4 / 4 PASS FEATHER		70-88 m <sup>2</sup> /h		
 	<b>DARK IMAGES</b> CMYKx4 / 4 PASS FEATHER		60-88 m <sup>2</sup> /h		
	<b>BACKLIGHT</b> CMYKx4 / 4 PASS FEATHER		60-70 m <sup>2</sup> /h		
	<b>BACKLIGHT</b> CMYKx4 / 6 PASS FEATHER		45-50 m <sup>2</sup> /h		
			<b>PHOTO QUALITY</b> CMYKx4 / 4 PASS FEATHER HIGH QUALITY MODE		35-50 m <sup>2</sup> /h
Measure with 3.20 mt. media size					

Fig. 11: Printing efficiency

Adjust the feathering value based on the nozzle status to ensure print quality.



Note:

The computer configuration meets the following requirements. The printer PC specifications are as shown below. Deviating from the minimum specifications listed in the table below may cause the printer PC and its services to run slowly and unreliably.

### 2.3 Computer configuration:

Parameter	Specifications
Operating system	Windows 10 64-bit
Central processing unit	Intel® Core™ i7 12700 @3.30GHz or higher configurations
RAM	greater than 32 GB
Internal solid state drive + mechanical hard drive	Storage capacity: 1TB + 1TB
USB port	USB 3.0 (requires 2 or more)
Input voltage	220 V
Motherboard	High-quality motherboard
Indicator	Recommended brands: 27 inches and above

We strongly recommend purchasing branded desktop computers instead of DIY.

## Chapter Three Printer space requirement



### Note:

The specified area in the figure below represents the minimum recommended value for safe and efficient operation of the Signature 32/21 printer. If possible, a

larger area would be better.

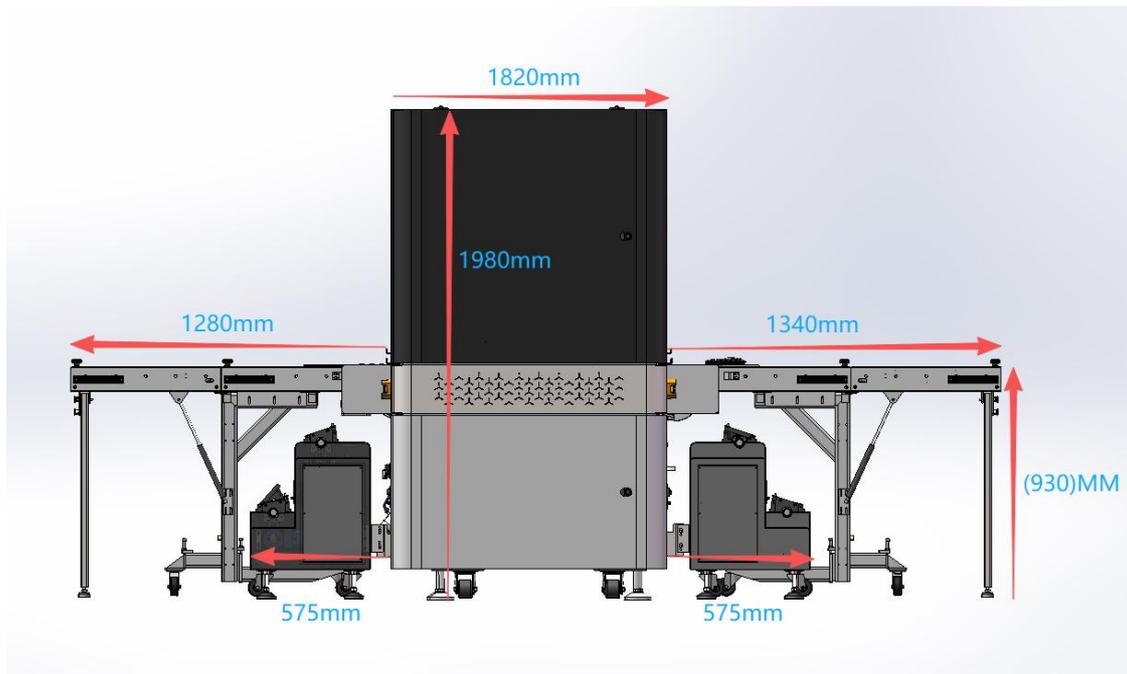
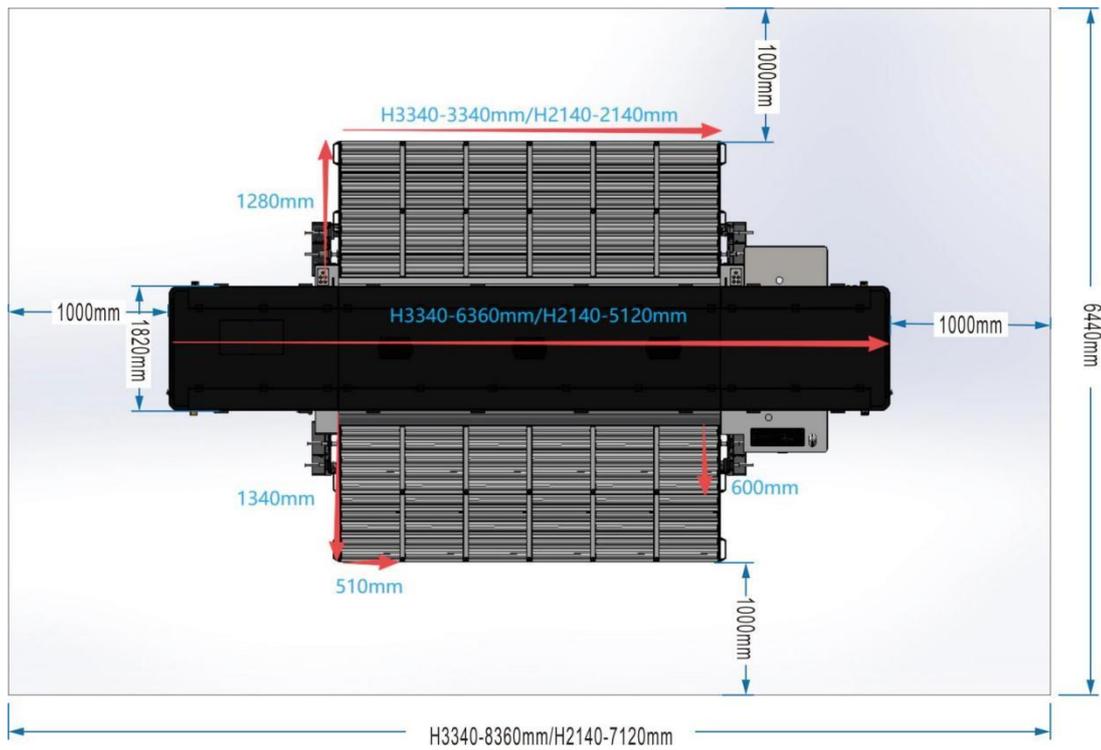


Fig. 12: Space requirements

### Printer size-Packing size and Net size

Refer to the table below for the actual dimensions of the printing printer and corresponding packaging boxes used for shipment (DS21 data in parentheses).

Item	Printer	Packing chest
Length	6360 (5120 )mm	6640 (5440) mm
Width	1820 mm	2,100 mm
Altitude	1980 mm	2,470 mm
Weight	2950/ (2600) kg	3850/ (3200) kg

### 3.1 Moving the printer



#### **Important Reminder:**

Once the printer is removed from the packaging box, it is recommended to leave the packaging and filling media on the printer when the printer is moved to the final position.

Ideally, the route to the final position should be as smooth as possible to avoid any impact on the printer during movement.

The printer can be moved using a forklift or its casters, or manually pushed into position. Manual positioning requires at least four people to safely move the printer, with one person stationed at each corner to push and guide the printer into position.

Avoid pushing the printer with a carriage, as this may cause frame deformation and damage. The minimum placement requirements for the inkjet printer should consider its dimensions and the method of moving the printer.

#### **Ground requirements**

Signature 32/21 The spray painting printer must be placed on a level and stable surface, with the base capable of supporting the weight of the printer and all nearby media and equipment during normal operation.

Do not place the printer on carpets or any surfaces that may settle over time. The printer's accuracy may change, leading to poor print quality or damage to the printer.



#### **Note:**

If the preferred area for positioning the printer is uneven or has a soft carpet surface, a metal base plate can be used to place the printer.

Do not place the printer on any surface that cannot support its weight, as this can be dangerous and may at least cause it to warp or move over time!

### 3.2 Environmental requirements

Parameter	Specifications
Working temperature (°C)	15 - 28
Working humidity (RH%)	30 - 70
Storage temperature (°C)	20 - 60
Storage humidity (RH%)	5-85 (non-condensing)



**Caution:**

Do not store or install this printer:

Approach any local heat source

In areas exposed to direct sunlight

In areas affected by vibrations

In areas with excessive dust

In areas where temperature or humidity undergoes extreme changes

Avoid spraying in areas where the printer may get wet, especially in poorly ventilated spaces.

When the floor is unstable or unable to support the weight of the printer and other equipment and media may generate other pollutants.

### 3.3 Ventilate

Parameter	Specifications
Air quality	In well-ventilated areas, ink fumes can be kept to a minimum.
Ventilation requirements	≥ 50 m <sup>3</sup> /min

### 3.4 Power and Gas Supply Requirements

Alternating current power supply	Voltage	Frequency	Wiring	Current
	220 - 240 VAC	50 / 60 Hz	Single phase	15 A

Compressed air	Pressure (minimum)
Clean, dry, and oil-free.	90 psi
Filter before printer use.	0.4 MPa

# Chapter Four Printer Overview

## 4.1 General introduction to the front of the printer

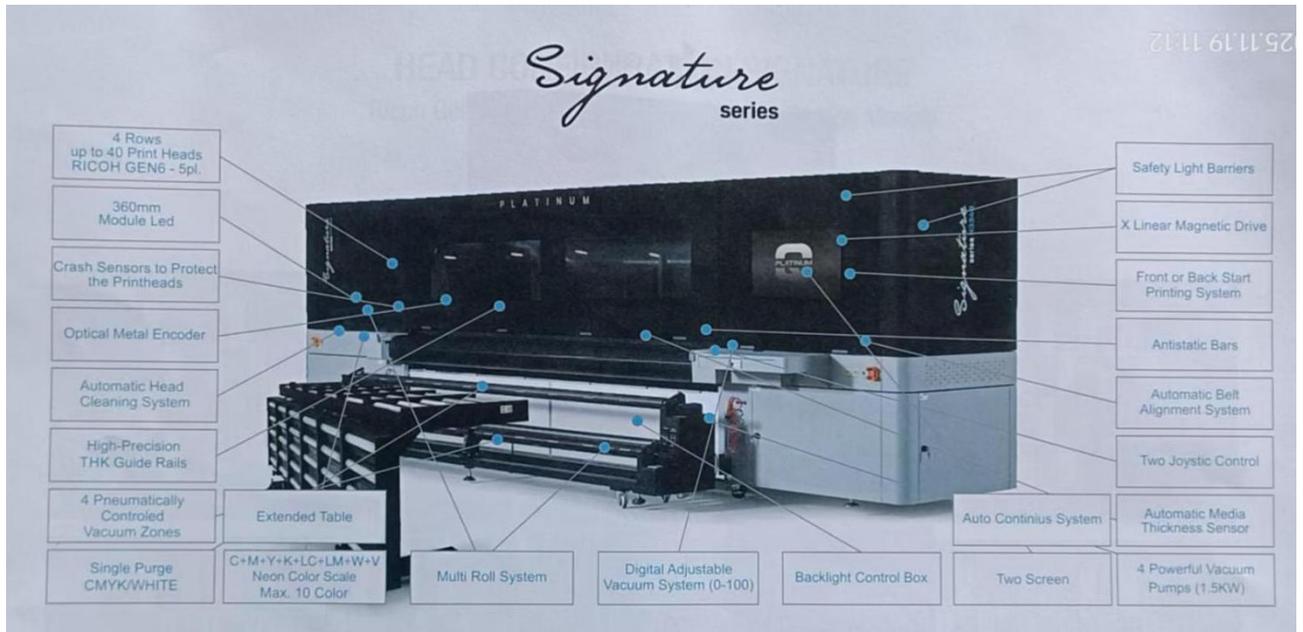


Fig. 13: Overall view

## 4.2 The rear components and buttons of the printer

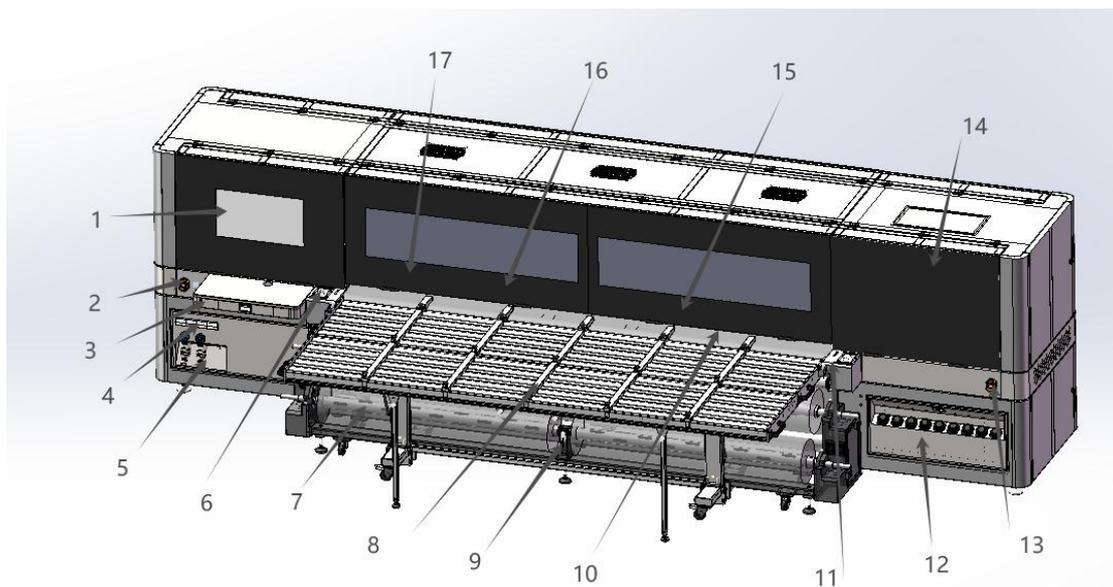


Fig. 14: Rear components and buttons of the printer

Number	Component Name	Description
1	Display window	Display installation position
2	Push-button	From left to right, they are the emergency stop and the start button.
3	Keyboard tray	Place the keyboard and mouse on the countertop. The drawer below stores tools.
4	Main power switch	The components are: UV LAMP (UV lamp master switch), FAN (fan master switch), PC (computer switch), and MAIN (printer master switch).
5	Main power interface	The power supply is divided into UV LAMP POWER (total input for the UV adsorption lamp) and MAIN POWER (main unit power input).
6	Left rear operation control panel	One on each side, it can control the printing, pause and continue printing, positioning, adsorption, and the lifting and lowering of the rear pressure rod.
7	Laying rod	The structure can be configured with either one 3.2-meter or two 1.6-meter components.
8	Expand platform partition	There are five pieces in total, with the first one spaced approximately 55 cm apart. They can be separated to increase the width of the printed media.
9	Double roll bar intermediate support	It is used to support the double-coiled media laying rod.
10	Electric eye	There are six in total, used for printing through-hole recognition and printing of rigid media
11	Right back operation control panel	One on each side, it can control the printing, pause and continue printing, positioning, adsorption, and the lifting and lowering of the rear pressure rod.
12	Main Ink Tank and Alarm	The ink supply system features an ink alarm on the KCMYLCLMWVF edge, which triggers audio-visual alerts when the main ink tank runs low.
13	Posterior emergency brake	There are four in total, one each in front, back, left, and right.
14	Back door	This door can open upward and is supported by a pneumatic rod.
15	Drag chain	Connect to the moving part of the carriage, which contains ink tubes, cables, UV lamp water pipes, and other components.
16	Drag chain	The drag chain can serve as a support during movement.
17	Car crossbeam	The primary support structure for the vehicle's movement

### 4.3 Rear button panel



Fig. 15: Rear button panel

Component Name	English Words	Description
Put a seal on	PRINT	One on each side for easy back printing
Lower roll lift	BACK-ROLLER UP/DOWN	The control of the back pressure roller lifting.
Adsorb	VACUUM	There are 2 in total, with 1 on the left rear and 1 on the right rear. The adsorption can be independently controlled to turn on and off.
Locating rod	FIX	There are two in total, one on the rear left and one on the rear right. The positioning rod is raised and lowered to activate the medium positioning function.
Pause/Continue	PAUSE/CONTINU E	You can pause and resume operations when it's convenient.

## 4.4 Left box

### 4.4.1 Inside the front of the left box



Fig. 16: Front interior of the upper left box

Number	Component Name	Description
1	Light curtain	It activates the safety function. When the light is triggered, the carriage will stop.
2	Anti-crash system	On both sides of the carriage, to prevent media from lifting or exceeding the height of the printing plate for protective purposes.
3	2-way-valve	It can effectively solve the problem of nozzle drain and ink channel.
4	Automatic ink feeding system	Automatic Ink-Feeding and Moisturizing Function
5	UV lamp and electrostatic discharge component	Both sides of the vehicle are equipped with curing and electrostatic elimination devices.
6	Temperature control board	Control the temperature of the secondary ink carriage.
7	Color separation ink pressure switch	The ink pressure is controlled independently for each color.
8	Carriage door sensor	When you open the car door, the car cannot move left or right.
9	Cleaning valve assembly	The three-way valve body combines the functions of ink flow and cleaning.
10	Head drive board	They are installed on the left and right sides and the middle position respectively.

- **Maintenance button area**



Fig. 17: Maintenance buttons

Component Name	English Words	Description
Light switch	LIGHT	One on each side for easy back printing
Cleaning	CLEANING	There are two in total, one on the rear left and one on the rear right. The positioning rod is raised and lowered to activate the medium positioning function.
Maintenance	MAINTAIN	The control of the back pressure roller lifting.

#### 4.4.2 Introduction to the Lower Left Box

- Ink supply system

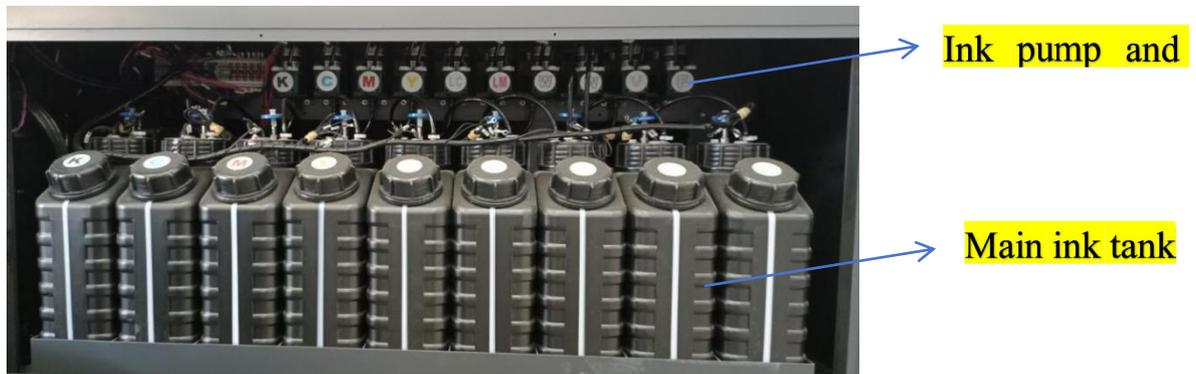


Fig. 18: Main Ink Tank Diagram

- Waste ink tank

When the waste ink tank is full, an alarm will be triggered. Clean the waste liquid promptly. To remove the waste ink tank, disconnect the level signal connector. After disposal, reattach the level signal to the main ink tank. Failure to do so will prevent the alarm when the tank is full. Clean the waste ink regularly.

When you need to take it out, first disconnect



Fig. 19: Waste ink tank

- Negative pressure system

Negative pressure system includes color and white control parts, which are controlled by a negative pressure board to regulate two negative pressure channels.

The dual-path negative pressure control system consists of three components: a negative pressure control board, a set of exhaust pumps, and two air buffer cylinders. The exhaust pump is further composed of two PWM speed-regulated unidirectional diaphragm pumps and two exhaust solenoid valves, as shown in the figure below.



Fig. 20: Negative pressure system

Number	Name	Quantity	Description
1	Air buffer bottle	2	Negative pressure storage
2	Two-position three-way solenoid valve	2	Maintain negative pressure and positive pressure switching
3	Two-way solenoid valve	2	Tonifying Qi
4	Diaphragm pump	2	speed regulating unidirectional pumping
5	Negative pressure control board	1 block	Dual-channel color and white negative pressure control

① System parameter description:

The effective measurement and control range of this board is 0 to -7kP. If the pressure exceeds this range, the accuracy will not be guaranteed. If the pressure exceeds +14 to -21 kP, the pneumatic pressure sensor will be damaged.

This product achieves a measurement accuracy of 0.01 KP. However, as it lacks rigorous mathematical correction, the displayed air pressure values approximate standard atmospheric pressure and should not be used as absolute references. Additionally, due to inherent sensor errors, applying identical negative pressure parameters across different control boards may result in varying negative pressure readings.

To minimize frequent pressure adjustments via peristaltic pump rotation, this system defaults to a  $\pm 0.02$  KP pressure regulation range. The vacuum pump or peristaltic pump activates only when the pressure deviates beyond this range, ensuring the system's actual control accuracy remains at  $\pm 0.02$  KP.

② Display interface:

After the system is powered on normally



Fig. 21: Negative Pressure Display Interface

Color negative pressure control: The top row of the screen displays the current negative pressure value measured by the A-channel sensor and its setpoint. This

configuration defines the A-channel as the color negative pressure control channel.

White negative pressure control: The second line (below) displays the current negative pressure value measured by the B-channel sensor and its setpoint. Caution: The B-channel is designated for white negative pressure control.

### Button Function Introduction

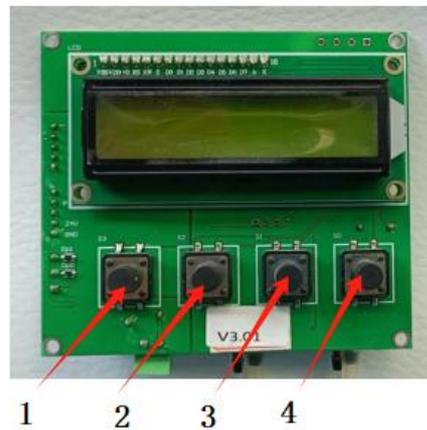
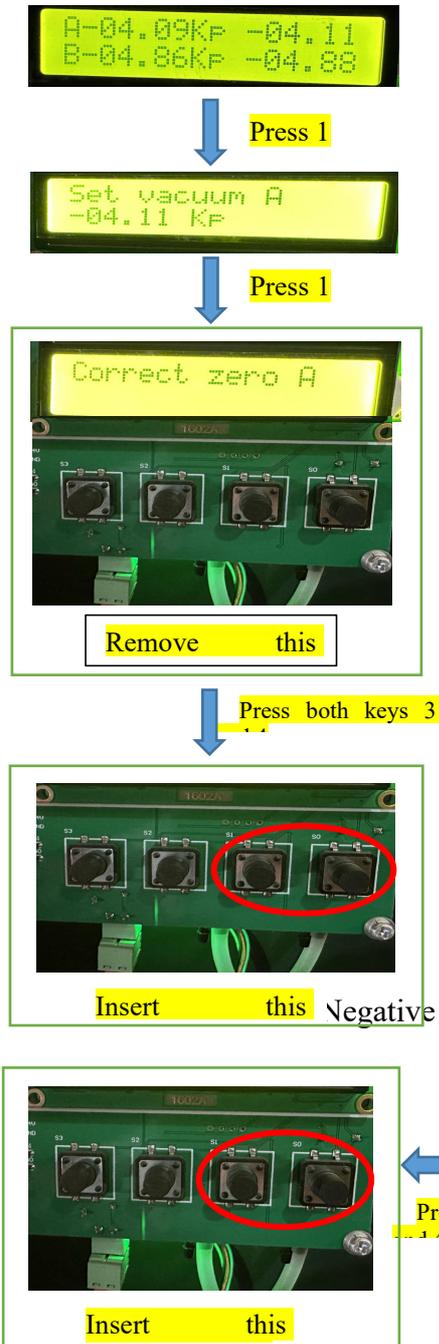


Fig. 22: Negative Pressure Control Settings Button

Number	Name	Description
1	Set key	Go to the parameter settings interface
2	Up + key	In the setting mode, the parameter is set upward
3	Down arrow key	In the setting mode, the parameter is set downward
4	Confirm key	Save and exit with parameters

### ③ Clearing settings

Clearing color:



Clearing white:

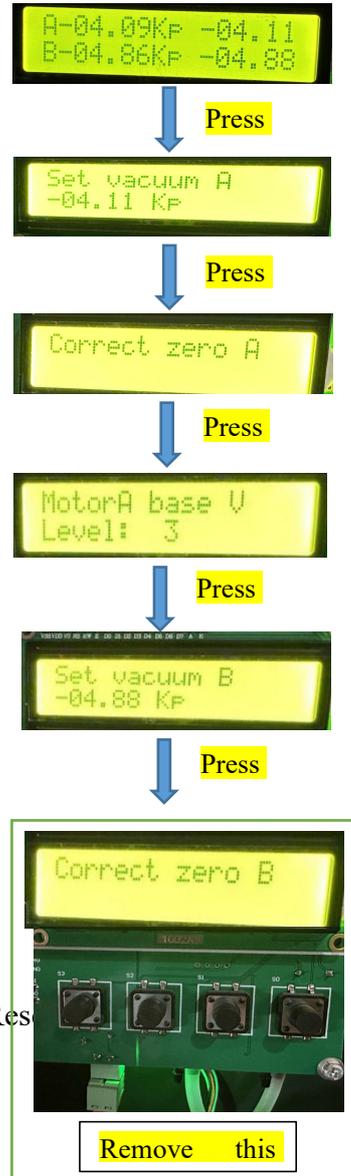


Fig. 23: Negative Pressure Adjustment



**Note:**

To clear the A channel (color) or B channel (white), press and hold both the selection keys 3 and 4 simultaneously.

- Negative pressure maintenance button

A yellow push-button switch shall be installed adjacent to the negative pressure system. Its primary function is to activate the emergency shutdown when the main power supply is activated. The yellow button remains in the pressed state without interrupting the negative pressure power supply, thereby maintaining negative pressure. It is recommended that the negative pressure hold button be kept in the activated state.



Negative pressure is maintained in the off state



Negative pressure maintenance state

Fig. 24: Negative Pressure Maintenance Button

- The three-bar control system is divided into three parts: the positioning bar, the front pressure bar, and the rear pressure bar.

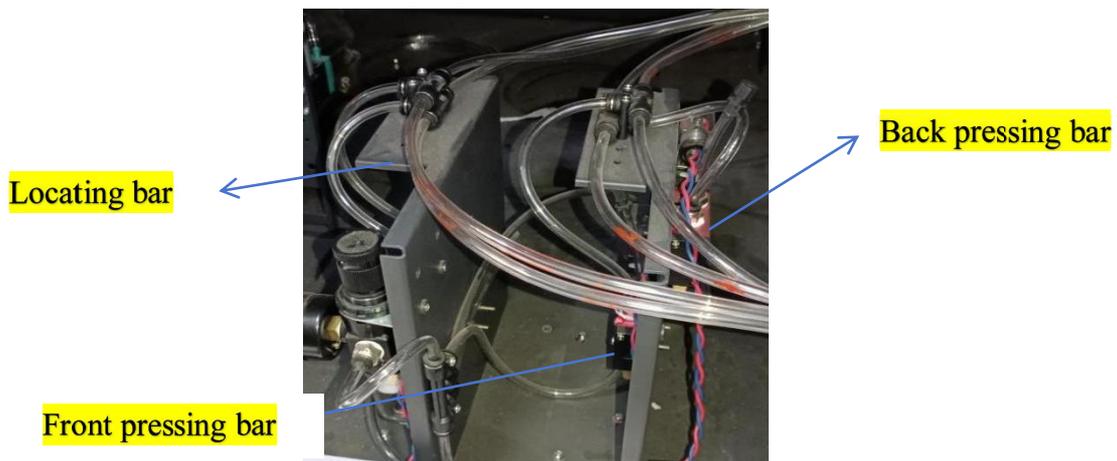


Fig. 25: Three bars control

## 4.5 Right box

- Circuit board section: Refer to appendix for details

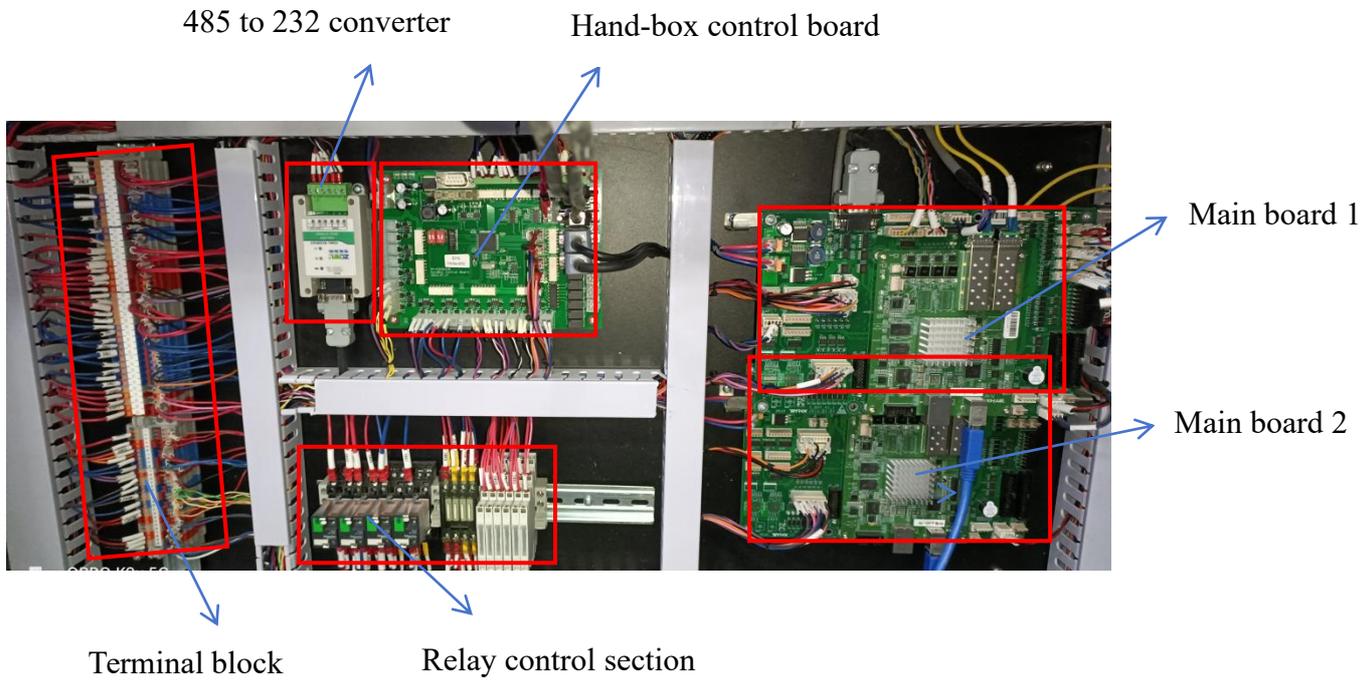


Fig. 26: Circuit board section of the right box

- High-voltage section: see appendix for details

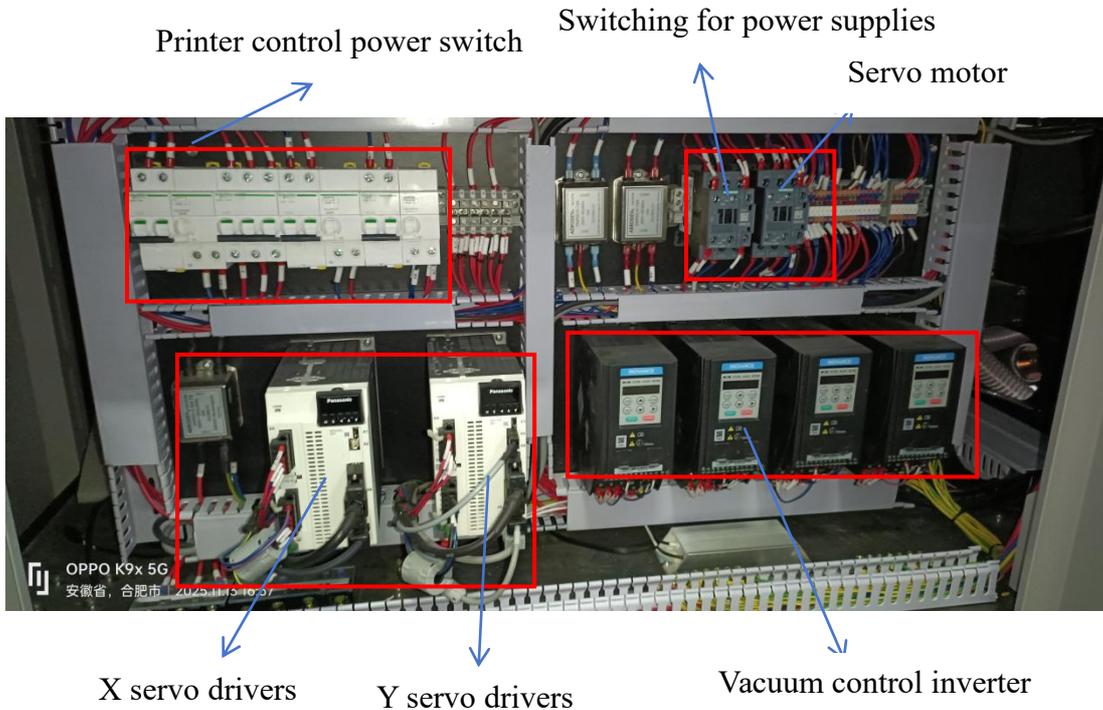


Fig. 27: Strong current cabinet

## 4.6 Carriage assembly introduction

- Carriage assembly parts

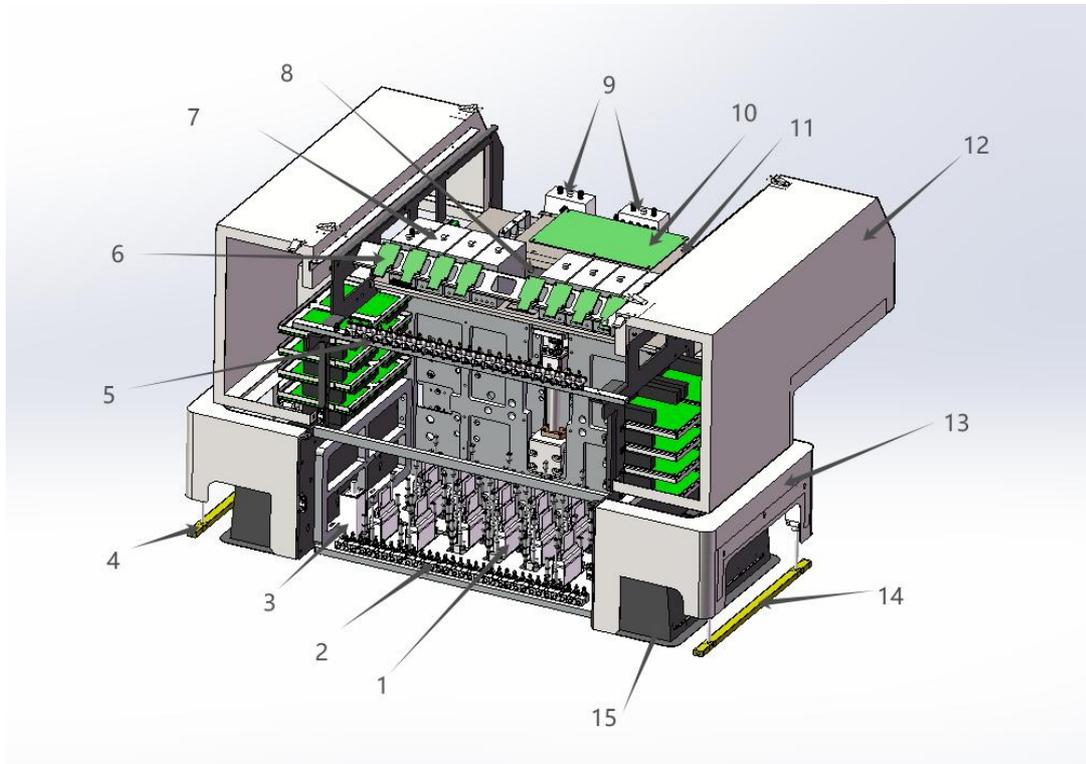


Fig. 28: Carriage assembly parts

Number	Component Name	Function
1	Print head	Place different numbers and positions of heads based on the printer model
2	Two-way valve assembly	Two states for discharging air from the nozzle.
3	Height measurement system	It is used for automatic measurement of media height, and can be operated by hand or software.
4	Left anti-crash switch	When the carriage crashes into any objects during printing, it stops to provide protection.
5	Three-way valve assembly	The valve body has three states: open, closed, and cleaning.
6	Temperature control board	Set the temperature of each ink tank to the specified setting.
7	Secondary ink tank	The main ink tank supplies ink to this section, with a secondary buffer under negative pressure.

8	Z-axis lifting motor	Control the print head height.
9	Waste ink tank	For overflow protection. This area contains overflow ink. Available in color and white.
10	Carriage board	Control the ignition signal and data of the nozzle.
11	Signal transfer board	The signal of all sensors on the carriage is transferred to the motion board and PCIE board through this board.
12	Cover lock	Fix the car head cover lock.
13	LED UV lamp	For curing UV ink. The system supports air-cooled and water-cooled UV lamps based on configuration.
14	Right anti-crash switch	When the carriage collides with foreign objects during printing, it stops to provide protection.
15	Excluding electrostatic devices	There is a deionization device on each side.

- The three detailed working mechanisms of the three-way valve assembly are illustrated below:

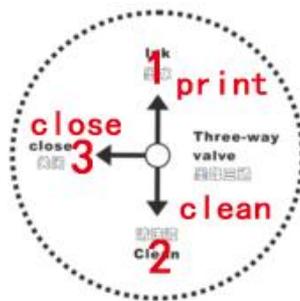


Fig. 29: Three-way valve assembly

State 1: Working mode. When the device is operating normally, especially during printing, it should be oriented upward.

State 2: Cleaning mode. To clean the nozzle with cleaning solution, turn the valve downward.

State 3: Closed. When the device is turned off, the valve is in the closed position.

- Introduction to two states of two-way valve body assembly:

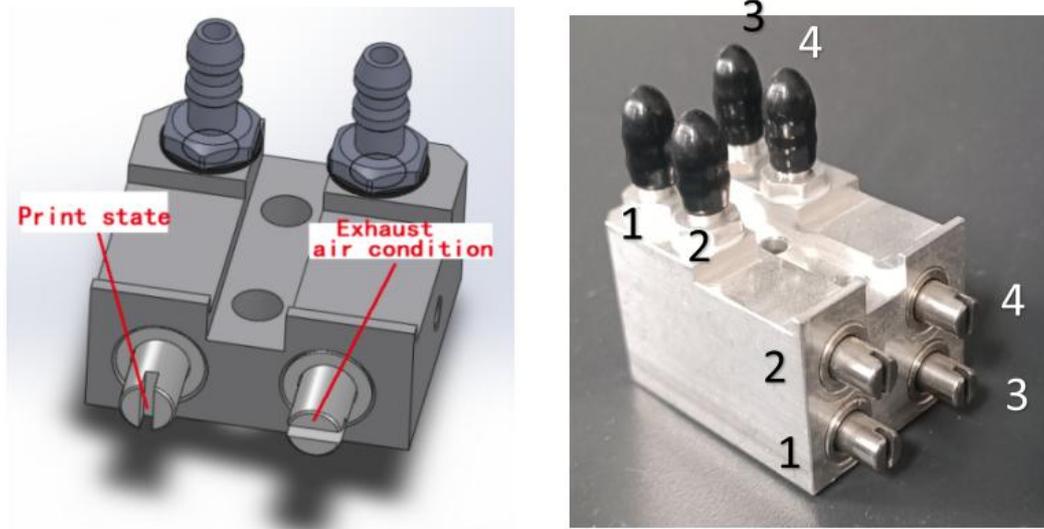


Fig. 30: Two-way valve assembly

Printing status: During routine printing, the valve core is in a vertical position with the valve body sealed.

Air discharge mode: To purge air from the nozzle, rotate the valve core 90° while applying ink. Once the air is expelled from the ink, close the valve to enable printing.

- The control system for the carriage board and color separation and ink pressing

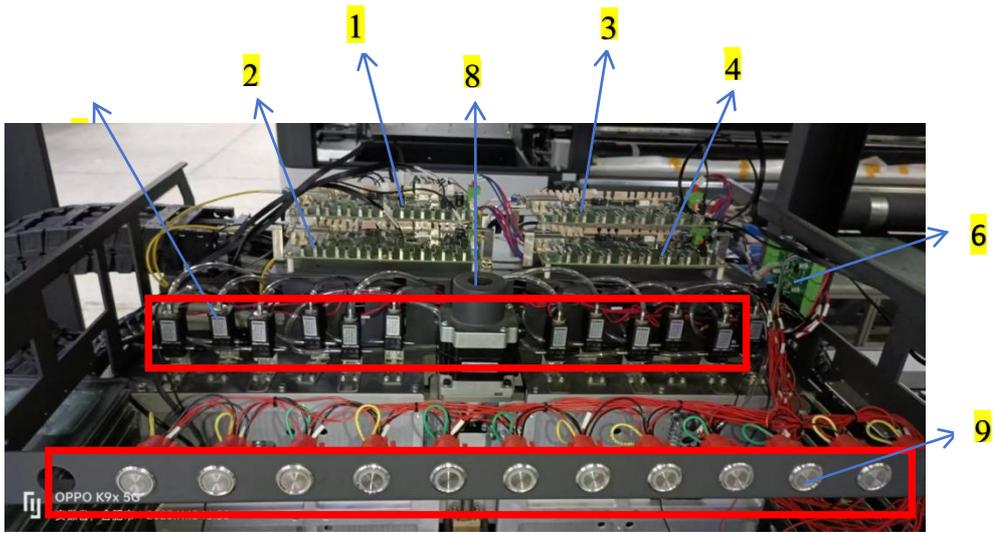


Fig 31: Color separation and ink pressure control

Number	Component Name	Function
1	MB1-CB1	Main board 1 (also known as the carriage board 1) with all the primary functional signal interfaces.
2	MB1-CB2	Main board 1 and carriage board 2 are only connected to the nozzle driver board signal.
3	MB2-CB1	Main board 2 and carriage board 1 are connected in parallel, with the waste liquid bottle signal also connected in parallel to main board 1 and carriage board 1.
4	MB2-CB2	Main board 2 (carriage board 2) receives signals exclusively from the head driver board.
5	Color separation and ink pressing solenoid valve	Control the positive and negative pressure switching of each ink tank.
6	Color separation and ink pressing board	Control the operation of each solenoid valve.
7	Z-axis lifting motor	Control the print head height.
8	Ink pressing Button	Control ink output for each color.

- Temperature control board

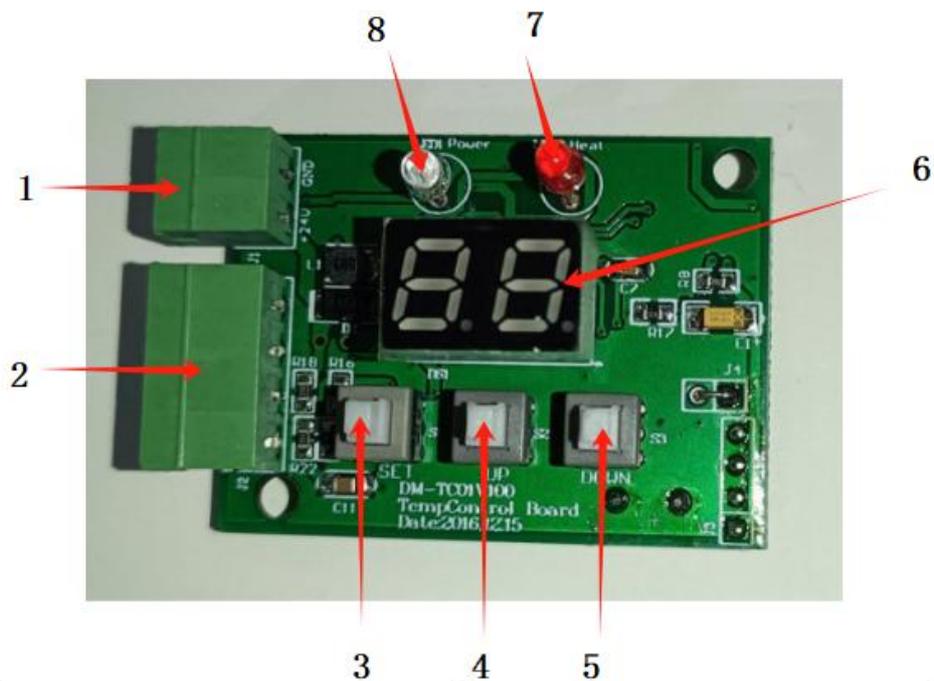


Fig. 33: Temperature control board

Number	Name	Description
1	Power input port	Input voltage 24V
2	Temperature control port	Access of Temperature Sensor and Heating Control
3	Temperature setting key	Press to set the status. After setting, this button will pop up by default.
4	UP key	In the setting mode, the parameter is set upward
5	DOWN key	In the setting mode, the parameter is set downward
6	LED display screen	Display current temperature
7	LED red lantern	Display when temperature rises
8	LED green light	Power light

#### Temperature settings

1. Press the SET button (3) to enter the setup mode. The display will then flash.
2. Press UP (4) or DOWN (5) to adjust the value to the desired temperature.
3. Press the SET key (3) again to exit the setup mode. The display will show normal numbers.



**Note:**

The default temperature is 40-42°C, which may vary depending on the ink's actual conditions.

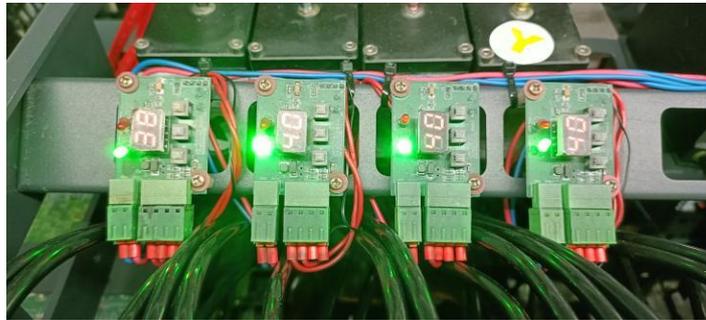


Fig. 34: Operating state of the temperature control board

- The temperature and voltage settings of the heads

Main menu—Tools—Real-time settings

Head	G0Y	G0M	G0C	G0K	G1W0
Set Temperature	45.0	45.0	45.0	45.0	45.0
Nozzle Temp	0.0	0.0	0.0	0.0	0.0
Voltage Adjust	0.0	0.0	0.0	0.0	0.0
CurrentBaseVol	17.5	17.5	17.5	17.5	17.5
Head Voltage	0.0	0.0	0.0	0.0	0.0

Fig. 35: Head temperature and voltage settings interface

- Temperature settings: Adjust the ink viscosity by setting the temperature, typically UV inks require 40-45°C.

- Nozzle temperature: Displays the real-time temperature of the connected nozzle. If no reading is detected, it shows 0.
- Voltage adjust: Fine-tune the voltage parameters for each nozzle row, with a recommended setting range of  $\pm 2$ .
- Current base voltage: displays the platform voltage of the current waveform.
- Apply to board: Save the setting parameters. To modify correction voltage and temperature, click this button to save.

- The height measurement assembly

Two signal lines are connected to the JZ3 and JS6 interfaces on the main board and the carriage board.

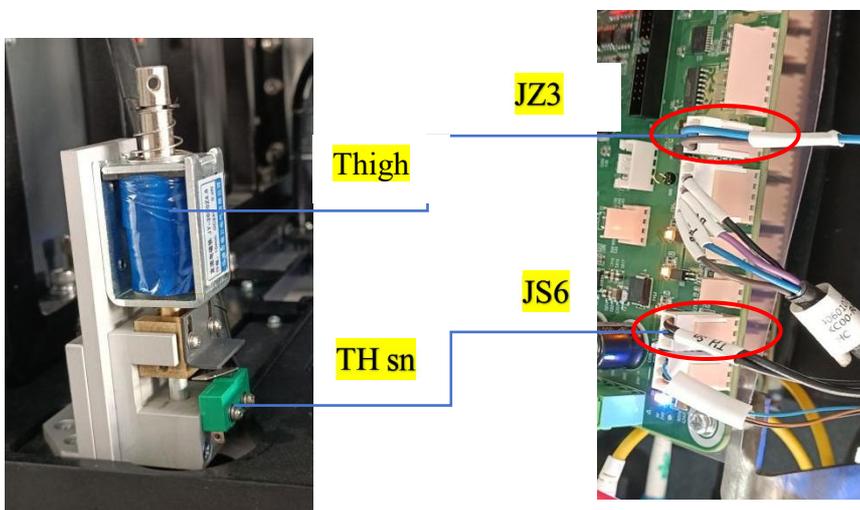


Fig. 36: Height measurement assembly

- Adjustment of print head position

Primary adjustment method



Fig. 37: Print head base plate adjustment

Adjust the print head base plate as a whole, with adjustments available in all directions. As shown in the figure below:

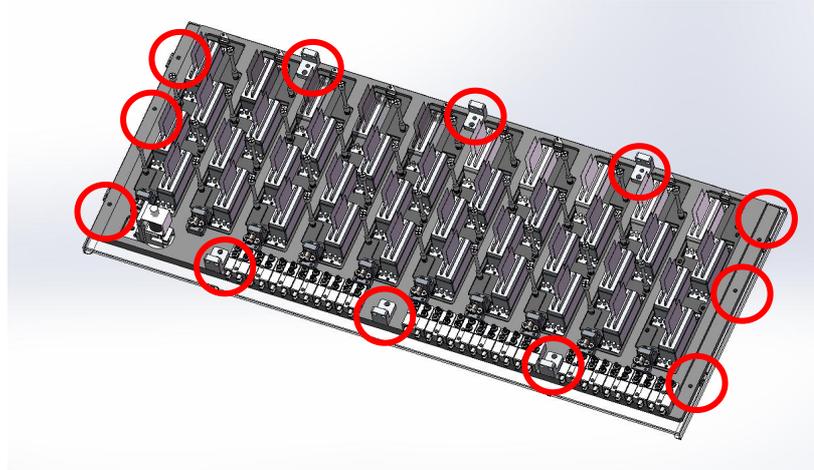


Fig. 38: Print head base plate

After installing the nozzle, adjust the front and rear of the group nozzle as shown in the figure below.

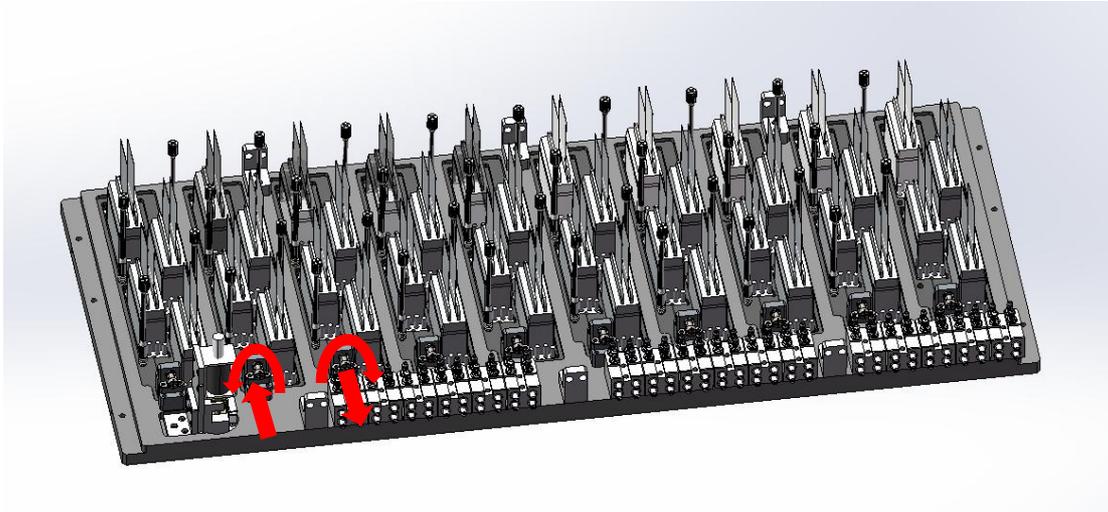


Fig. 39: Print head base plate module adjustment

- Anti-crash system adjustment

Two anti-crash sensors are mounted on both sides of the carriage. When the X-axis carriage crashes into the media or foreign matter, the sensors will activate and trigger an emergency stop for the printer to prevent the carriage's movement.

If any anti-crash sensor is triggered, restart the printer.



**Caution:**

The anti-crash sensor is a critical component for nozzle protection. Ensure it is properly packaged to guarantee safe and effective operation. Incorrect height adjustment of the anti-crash assembly may cause head damage.

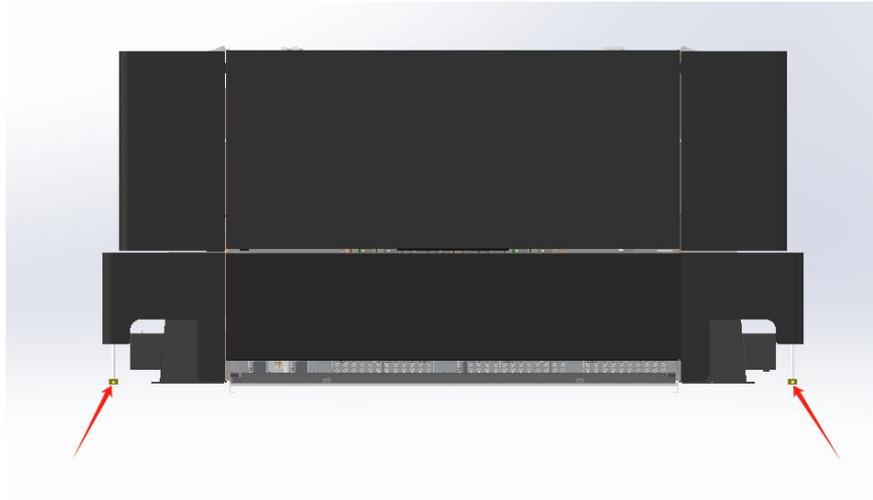


Fig. 42: Anti-crash bar of the anti-crash assembly

**Collision prevention component adjustment steps:**

- Step 1: Push the carriage to the middle of the platform manually.
- Step 2: Lower the carriage to ensure the nozzle base plate is precisely in contact with the mesh belt. Use the manual lifting wrench in the accessory box to rotate the hand wheel seat at the rear of the Z-axis motor (position as shown in Fig. 50).
- Step 3: Adjust the fixing screws of the side bumpers to ensure the bumpers are properly aligned with the belt.
- Step 4: After adjusting the anti-crash assembly position, raise the carriage by approximately 2mm, then move it left and right to check the distance between the assembly and the belt.



Fig. 43: Anti-collision component fixing screw

- Platform vacuum control

Platform vacuum settings: Operators can configure them in two ways:

Method 1: Handle-controlled vacuum switch

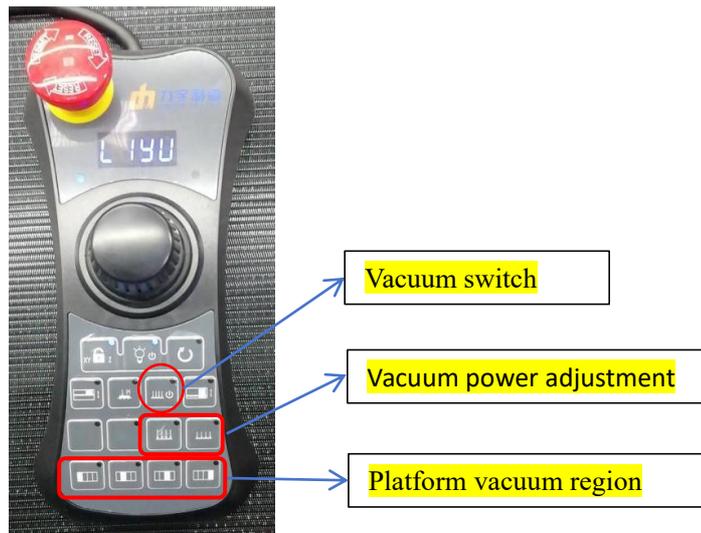


Fig. 44: Handle-controlled vacuum

Method 2: Control vacuum on the software interface:

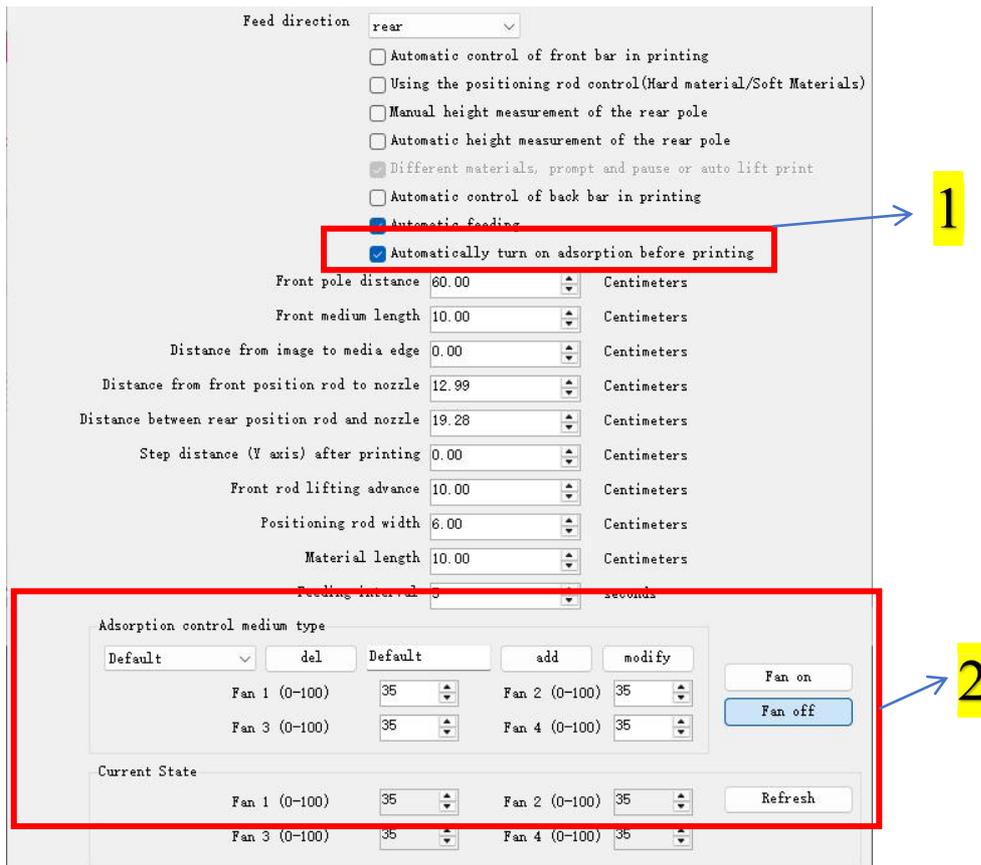


Fig. 45: Vacuum control UI

- Step 1: Select to automatically control the suction switch before printing. The suction will turn on automatically before printing and turn off automatically after printing.
- Step 2: Set the adsorption value size to conFig. different adsorption parameters for different media.
- Method 3: Control via the button panel on the rear of the printer: Before printing, the vacuum switch can be manually controlled from the rear.

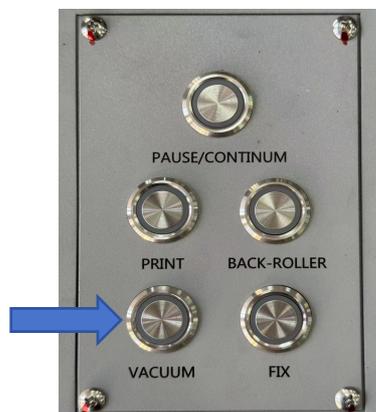


Fig. 46: Rear Button Adhesive Control

- **Belt adjustment**

Step 1: Tension roller adjustment

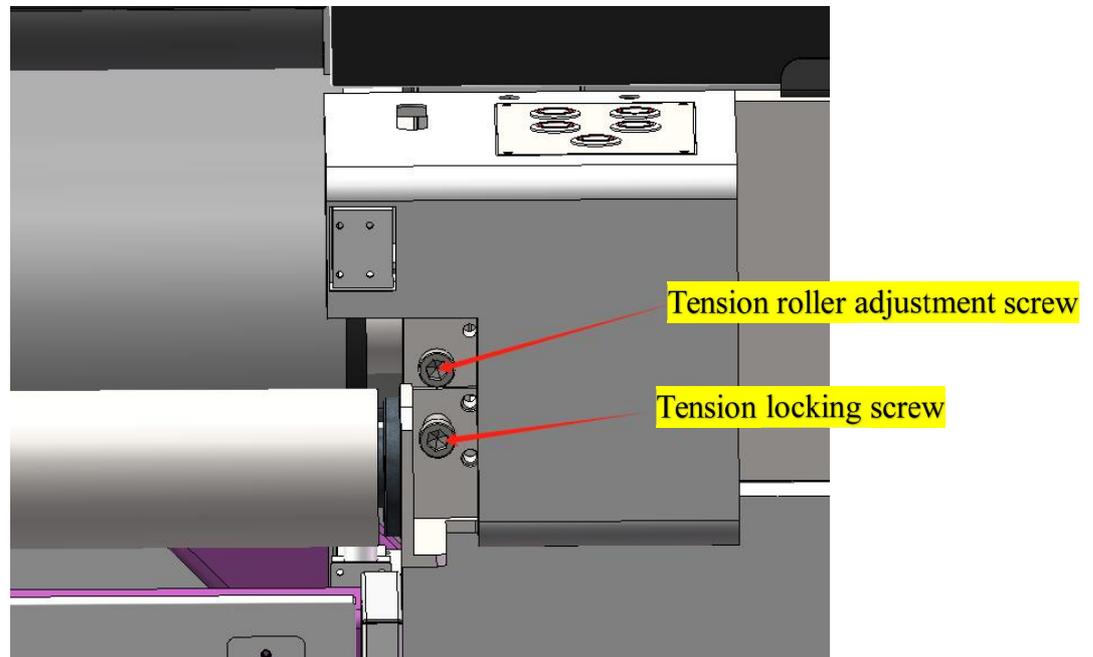


Fig. 47: Adjusting the tension roller

Loosen the tension locking screws before adjusting the tension of the belt and tighten the locking screws after done.

After installing the belt, tighten the tension rollers by adjusting the left and right screws to correct any belt deviation. Adjustment principle: Tighten the tension rollers at the end where the guide belt is shifted.

Step 2: Belt deviation correction

To achieve rapid and precise correction of the guide belt offset reaction, two photoelectric sensors are installed with a misalignment of approximately 2mm, with the belt drive positioned between them. The system can be divided into three states:

- A: When the lead is in the middle of the two photoelectric sensors, the yellow and green lights inside the sensor are both on, and only the green light of the outer photoelectric sensor is on.
- B: When the guide rail is shifted to the far left, the green and yellow lights of the photoelectric switch inside and outside will turn on.
- C: When the guide rail is shifted to the far right, the yellow lights of the inner and outer photoelectric sensors turn off, only the green light remains on.



Fig. 48: Position adjustment of shielded photoelectric Sensor

Step 3: Correction initialization action

First move forward to the limit switch → then move backward to the limit switch → wait for the carriage to reset → return to the middle position.

Step 4: Correcting roller working condition

- A: When the belt moves forward, if it keeps deviating to the left, the correction rod moves forward to adjust the belt to the center position.
- B: When the guide belt moves forward, if it keeps deviating to the right, the correction rod moves backward to adjust the belt to the center position.
- C: When the guide belt retracts, if it keeps moving to the left, the correction rod moves backward to adjust the belt to the center position.
- D: When the guide belt retracts, if it keeps moving to the right, the alignment rod moves forward to correct the deviation and bring the guide belt back to the center position.

# Chapter Five Printer Power ON and OFF

## 5.1 Power ON



### Caution:

When starting the DS printer, check for foreign objects on the conveyor belt.

### 5.1.1 Power ON process

- Connect the printer's input power supply, then push the printer up and activate the left main power supply's functional leakage protection switches.

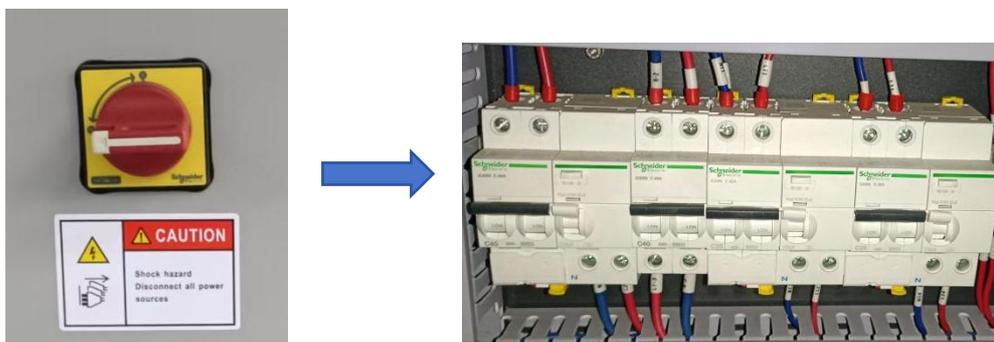


Fig. 49: Main printer Switch

- Turn the emergency stop knobs on all four corners of the printer (including the stop switch on the handheld unit).



Fig. 50: Handle-controlled emergency stop

- Turn on your computer and open Printer Manager.



Fig. 51: PM software icon

Step 1: Press the start button on the left or right side of the printer.

Printer startup → correcting roller performs a self-test by reaching the front and rear reference points → carriage lift to its maximum height → moving left to the reference point → carriage goes down to the preset height in the software → correcting roller moves to its central position → it shows ready.

For the automatic scrapping system: Before power-on, the external air compressor must run in advance to ensure the pressure gauge reaches the set value. After startup:

The moisture tray descends → The correcting roller performs a self-test by reaching the front and rear reference points → carriage lift to its maximum height → moving left to the reference point → carriage goes down to the preset height in the software → correcting roller moves to its central position → it shows ready.

Step 2: Rotate the three-way ink valves upward, press the ink button to direct the ink from the secondary ink tank through the valve to the nozzle for ejection, with air discharge achieved via the vent valve.

Step 3: Press the auto-maintenance button to raise the carriage to its highest position for easy nozzle cleaning. (The automatic ink scraping system performs the operation automatically, as detailed below.)

Step 4: Place the print media, set the print height and origin.

Step 5: Be ready to print now.

### 5.1.2 Ink purge during printing

If a color missing occurs, activate the "Cleaning" function or press the maintenance button in the software. The carriage will move to the far-left end of the beam and reach its maximum height after completing the current print PASS. After manually applying ink and cleaning the nozzle surface, the maintenance button will automatically lower the carriage to its previous print height, allowing the printing process to resume.

### 5.1.3 Positive pressure and cleaning

Rotate the three-way ink valve upward, press the ink button to direct the ink from the secondary ink tank through the valve to the nozzle for ejection, with air discharge achieved via the vent valve.

Press the auto-maintenance button to raise the carriage to its highest position for easy nozzle cleaning. (The automatic ink scraping system performs the operation automatically, as detailed below.)

### 5.1.4 Ink fill for the head



#### Note:

Injecting ink into the nozzles is a critical procedure that must be performed strictly according to specifications. This process involves two key steps: nozzle cleaning and nozzle degassing.

### 5.1.5 Nozzle cleaning:

Before the first ink injection, always clean the nozzle with a cleaning solution. The head comes with protective liquid in the nozzle, and the liquid must be completely removed before filling ink.

Each head cleaning procedure needs to be done individually. First, set the three-way valve to clean mode and keep other valves closed.

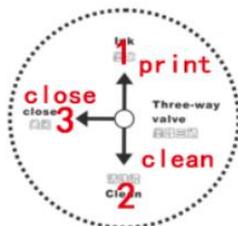


Fig. 52: Three-way valve in clean mode

Then rotate the corresponding two-way valve.

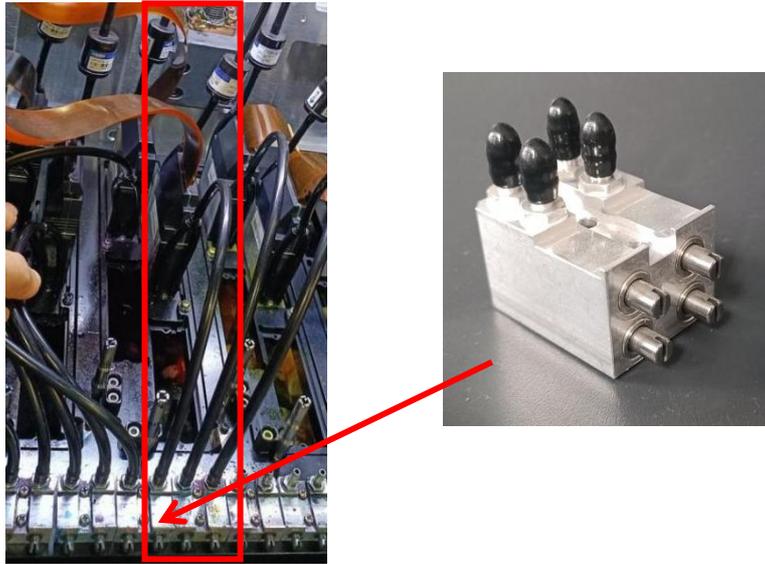


Fig. 53: Two-way valve for ink flow

Press the cleaning button to release the cleaning solution through the ink chamber of the head via the two-way valve. After approximately 1-2 seconds, close the valve and allow the solution to cascade from the nozzles for 5 seconds. Repeat the process for all other nozzles. After five minutes, perform another round of cleaning on all nozzles using the same method. The nozzle cleaning is now complete.



Fig. 54: Cleaning button

#### 5.1.6 Nozzle exhaust:

Fill ink into the head after cleaning the nozzles. Perform a degassing operation during the process. Here's how to do it:

Step 1: When operating the nozzle exhaust, it is recommended to handle only one head at a time, keeping all other heads' valves closed. First, position the corresponding ink line three-way valve in the print mode.

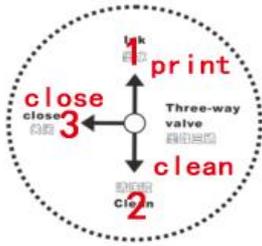


Fig. 55: Three-way valve in print mode

Step 2: The two-way valve core is turned to keep the ink outlet open.

Step 3: Press the purge button (for white or color)



Fig. 56: Positive pressure button

Press the ink from the secondary ink tank into the heads. The ink will then flow out through the two-way valve. Observe the ink flow at the outlet: it should form a vertical stream without bubbles around the edges. After confirming this and closing the two-way valve, allowing the ink to flow through the nozzles.



**Caution:**

Due to the initial pressurization and longer pipeline, the process may be slower. Additionally, the secondary ink tank might not have enough ink initially. After a brief period of positive pressure, pause briefly to let the ink supply system fill the secondary tank before resuming the pressurization.

Step 4: Perform the above operations sequentially on each head. After completing the operations, set all ink circuit three-way valves to the working position and conduct a purge for all colors to finish the head ink filling.

At the same time, if there are bubbles in the ink tube, which affect the ink output, the above method can also be used to deal with the exhaust.

### 5.1.7 Automatic ink control function

Front view of the ink scraping device

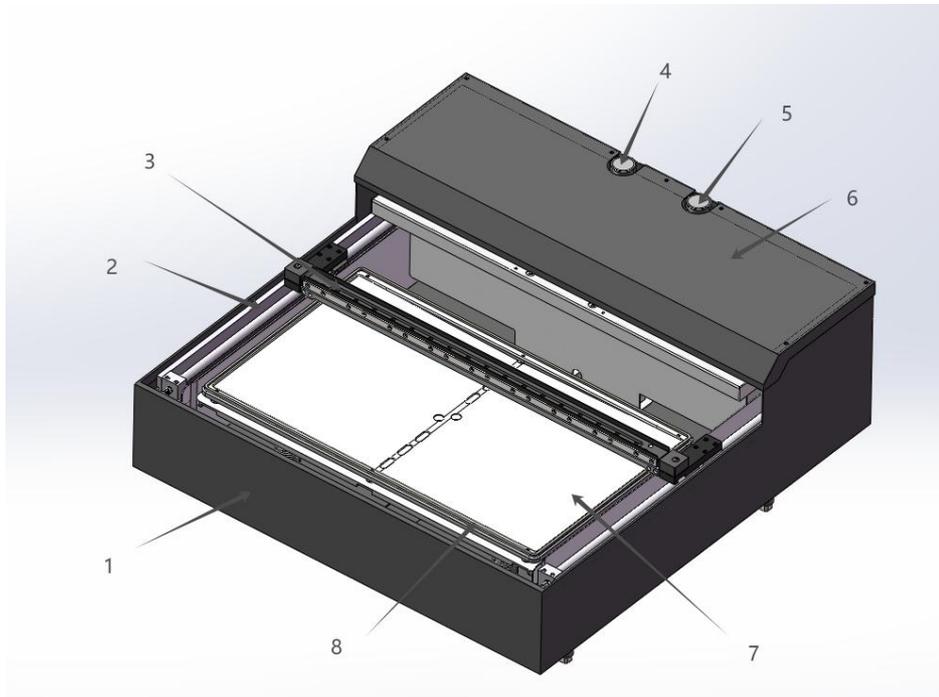


Fig. 57: Automatic ink scrapping system

Number	Component Name	Description
1	Liquid contact box	Recycling waste liquid.
2	Rod-less cylinder	One on each side controls the front and rear sliding tracks of the wiper.
3	Wiper	Clean the nozzle surface.
4	Y air inlet of cylinder	Adjust the total intake of the moving air before and after the control wiper
5	Z air inlet of cylinder	Adjust the total intake of the upper and lower air of the control tray.
6	Rear cover plate	The inner part has control of front and back, up and down, cleaning liquid and other air pipe joints.
7	Moisture tray	Moisture tray.
8	Block gine	For sealed the tray

The back view of the ink scrapping device



Fig. 57: Function of automatic ink scrapping system

Number	Component Name	English Words	Description
1	Control the tray to move up and down.	PLATE UP&DOWN	Adjusting the air pressure controls the upward or downward speed and force of the pallet cylinder.
2	Tray gas-pressure meter	PLATE GASOMETE R	Control the intake pressure of the tray
3	Cleaning air pressure	AIR FOR FLUSH	Adjust the intake pressure of the clean air
4	Wiper gas-pressure meter	WIPER GASOMET ER	Control the air pressure of the wiper
5	Before and after the scrapping control	WIPER FRONT&B ACK	Adjusting the air pressure controls the speed and force of the wiper moving forward or backward.



**Note:**

Both the tray gas-pressure meter and wiper gas-pressure meter are installed to control the air pressure of vertical movement of the moisturizing tray and the horizontal movement of the wiper, respectively. The normal pressure value is 0.3 KPa, not exceeding 0.4 KPa.



### Caution:

If the device fails to initiate during startup, an error message will be displayed. First, verify whether the moisturizing tray has been lowered; second, check if the scraper has returned to its original starting position.

How to set operation parameters in the system tab

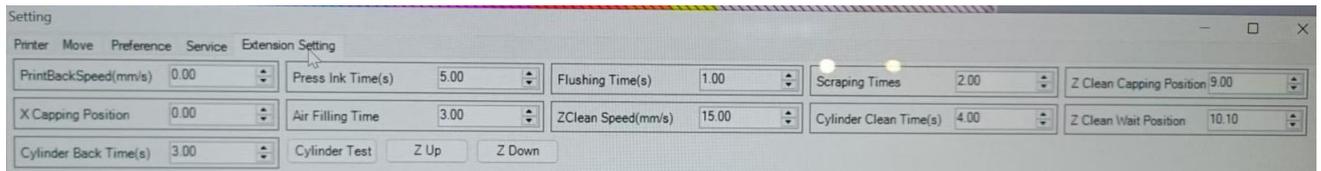


Fig. 58: Basic Settings Extension Interface

- **Print Back Speed:** When performing high-precision one-way printing, this setting increases the speed of the return path to enhance printing efficiency. The maximum speed cannot exceed 1700 mm/s.



### Caution:

This setting parameter is unrelated to the automatic ink scrapping parameter. Ensure this field is not entered incorrectly.

- **Press Ink Time:** Automatic press ink time
- **Air Filling Time:** The duration required to dry the slide after rinsing it with the cleaning solution.
- **Flushing Time:** The duration for which the smear is rinsed with the cleaning solution
- **Z-axis cleaning speed (Z Clean Speed):** The speed at which the Z-axis moves up and down during automatic ink scrapping.
- **Scraping Time:** Sets the number of wipers.
- **Cylinder Time:** The time from the time the scraper reaches the front-most position.
- **Z-axis cleaning and moisturizing position (Z Clean Capping Position):** The carriage descends to the height where it contacts the wiper.
- **Z-axis cleaning wait position:** The scraper moves forward to the front of the print plate. To facilitate its return, the carriage lifts beyond the scraper's height.
- **X-axis cap position:** Not required.

- Cylinder Back Time: The time required for the scraper to return to its starting position.

### 5.1.8 Perform nozzle test

5.1.8.1 It is recommended to print and check the nozzle test diagram every day.

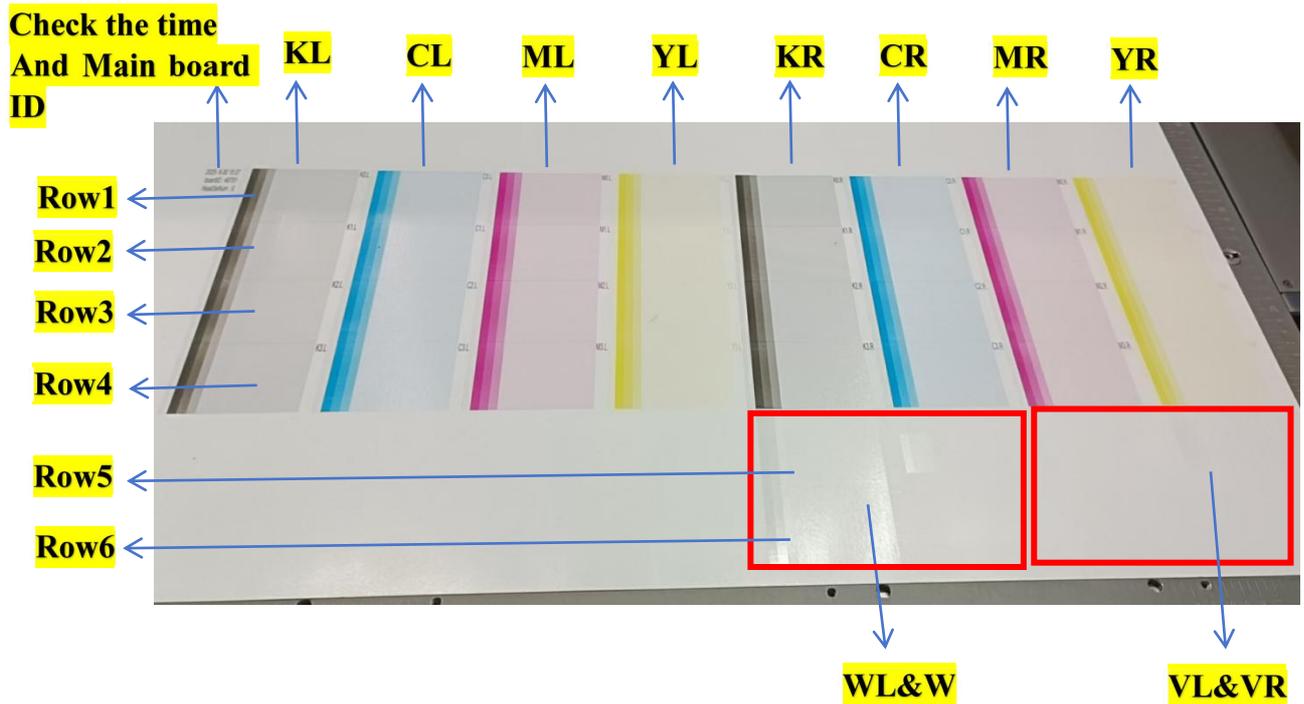


Fig. 59: Nozzle Inspection

5.1.8.2 For example, with C, the following are the inspection methods:

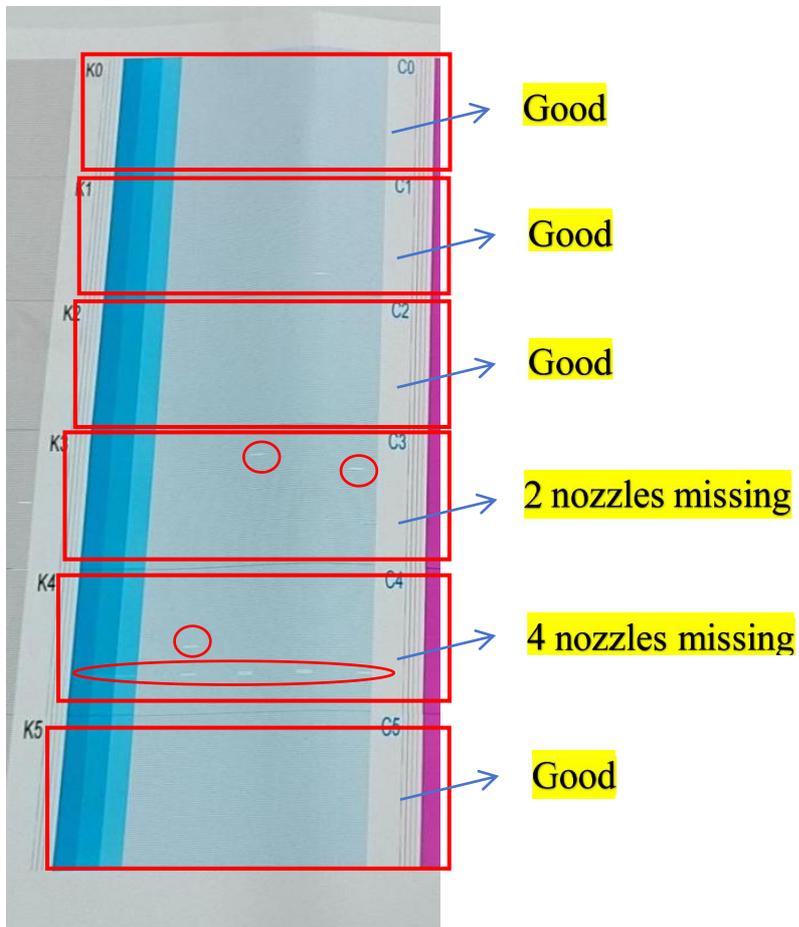


Fig. 57: Inspection of nozzle status

5.1.8.3 It can be reprinted by pressing the ink when a nozzle missing is detected. If the issue persists, it is recommended to resolve it by flushing with cleaning solution.

## 5.1.9 Print

### 5.1.9.1 Import tasks and select tasks

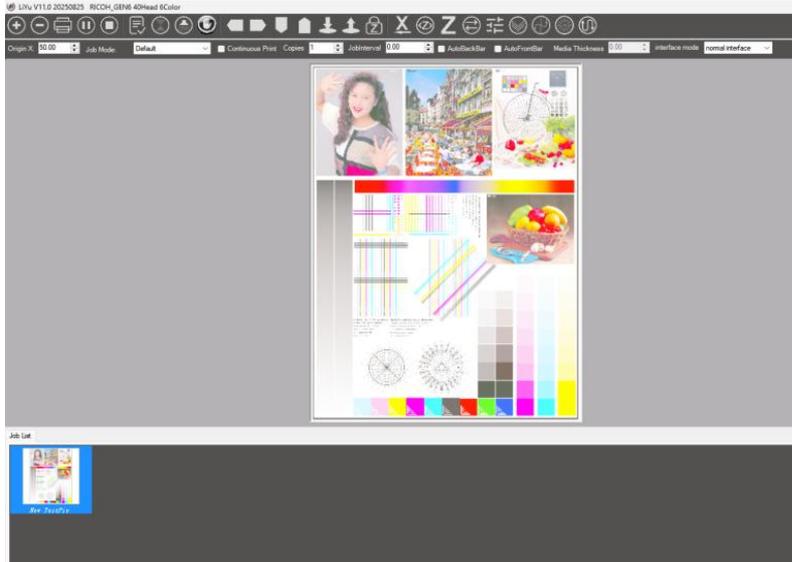


Fig. 58: Import Task

### 5.1.9.2 Set the print mode

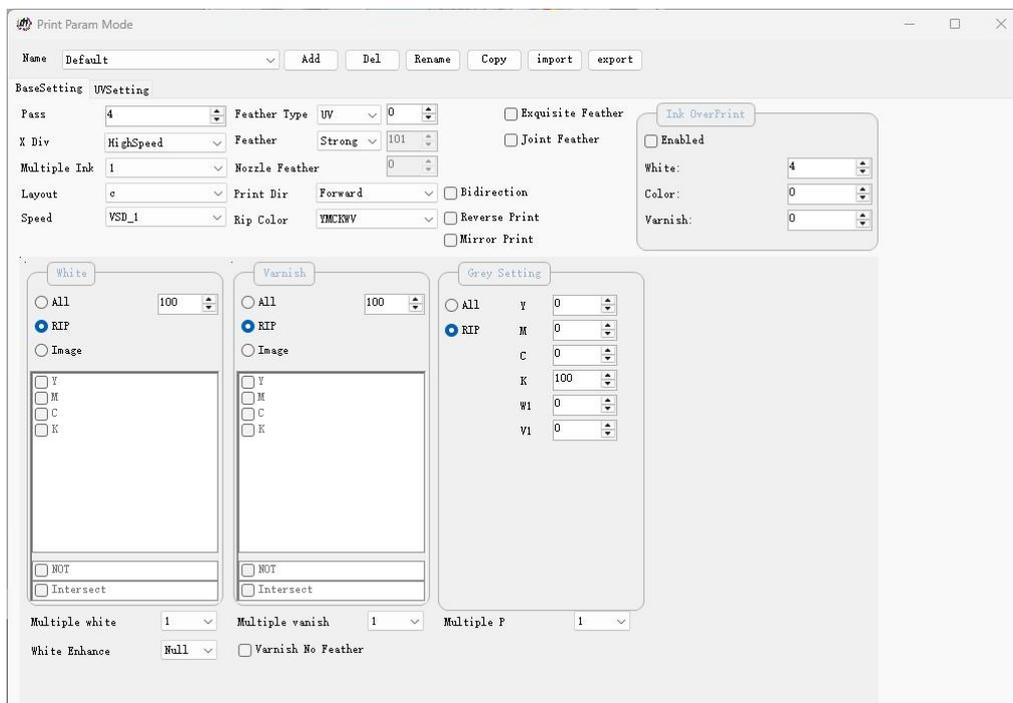


Fig. 59: Print Mode

### 5.1.9.3 Set the UV lamp parameters

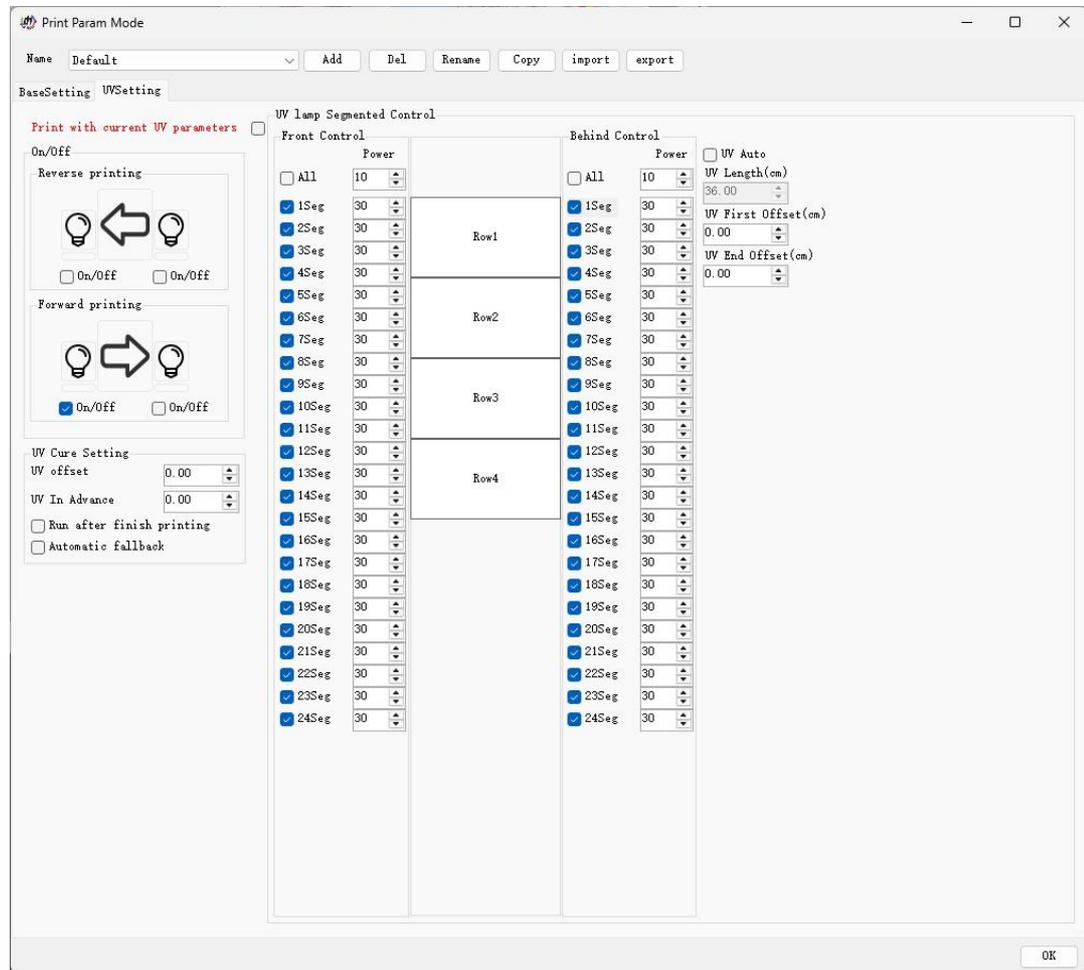


Fig. 60: UV lamp mode

### 5.1.9.4 Print the job

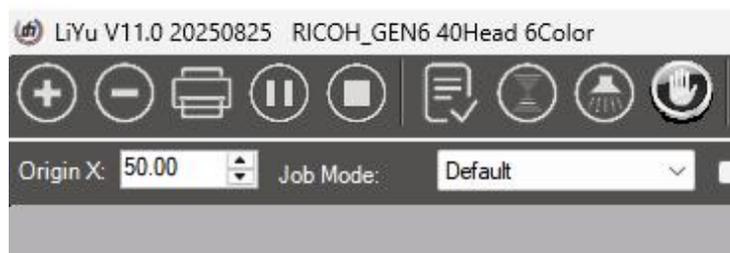


Fig. 61: Print icon

## 5.2 Power off

### Power off process

5.2.1 Press the emergency stop switch, close the moisture tray, and close the ink valves.

5.2.2 Shut down the computer.

5.2.3 Turn off the main power switch of the printer.

## Chapter Six Hardware operation

The printer supports printing on both roll media and rigid media. For roll media, it offers full-width printing (standard interface) and dual-roll printing (dual-roll interface). Rigid media can be printed using either positioning bar control (standard interface) or a Six Electric Eyes system (Six Electric Eyes interface).

Standard interface with full-width roll media printing and positioning bar function. The dual-roll and Six Electric Eyes interface are independent. Different media require distinct feeding methods and operational procedures.

### 6.1 Full-size media printing

Full-size media printing with standard media supplied in 3.2-meter or 1.6-meter double-roll configurations.

6.1.1. The user must choose between a 3.2-meter long air shaft or a 1.6-meter short air shaft to insert the printing media.

6.1.2 The media loading path is as follows:

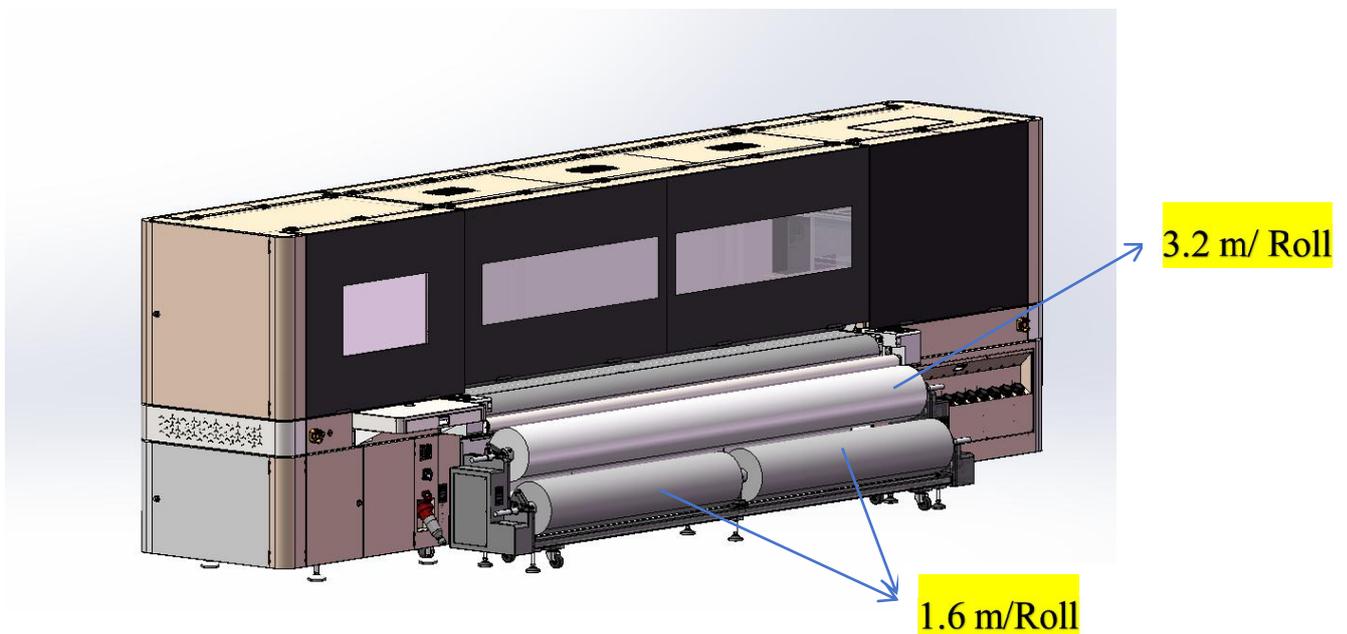


Fig. 61: Media loading

- 6.1.3 To load the media onto the belt, firstly lower the bar, then press it down, and move the media using the handle or PM software.
- 6.1.4 After determining the media location, enable vacuum.
- 6.1.5 Set pressing bar parameters and print mode.
- 6.1.6 When the media moves to taking up air shaft, fasten it and set tension parameters.

Dual roll interface introduction:

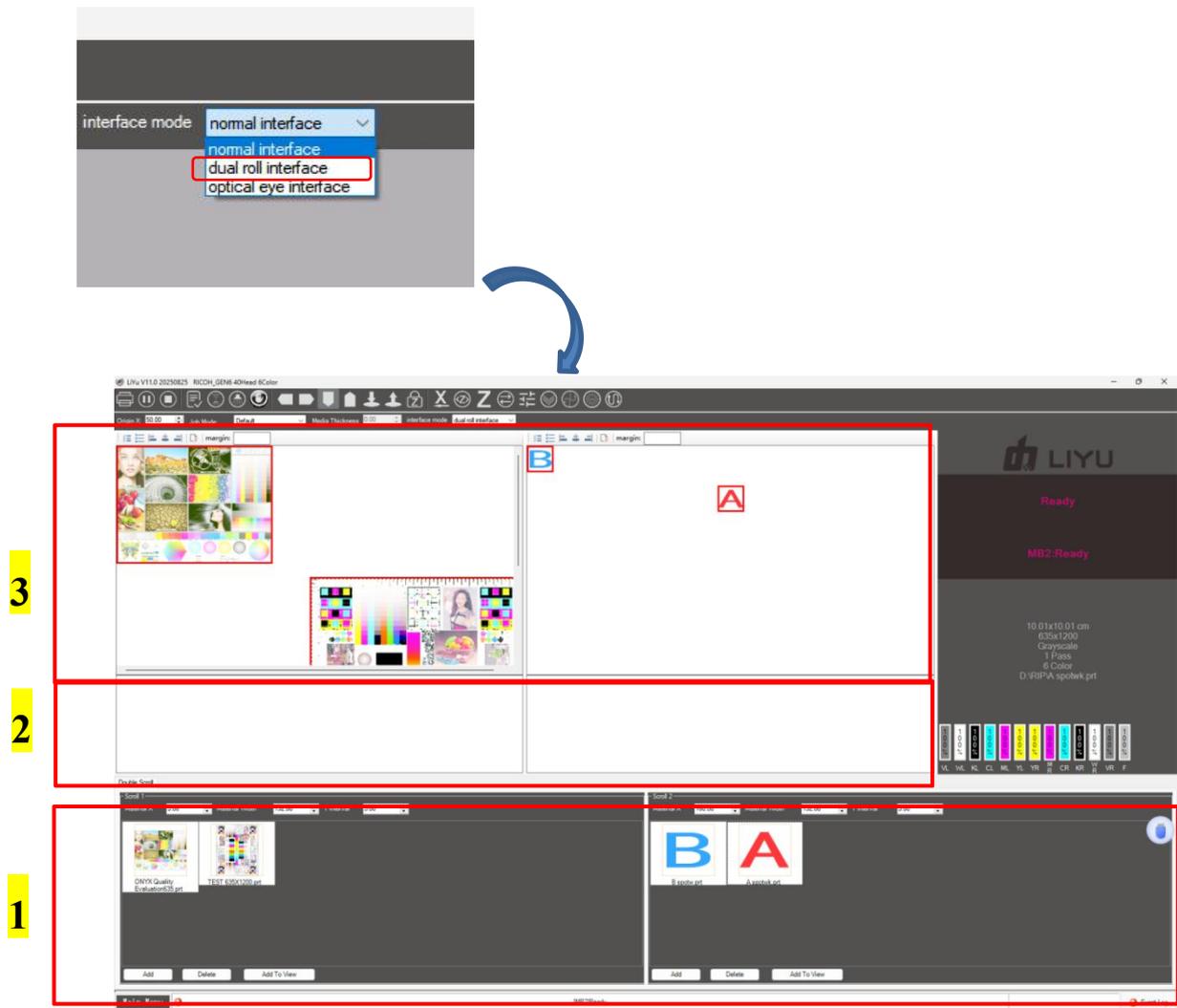


Fig. 62: Dual Roll UI

- Part 1: Displays two workstations, each configured for different imported tasks. The first workstation is introduced as follows:

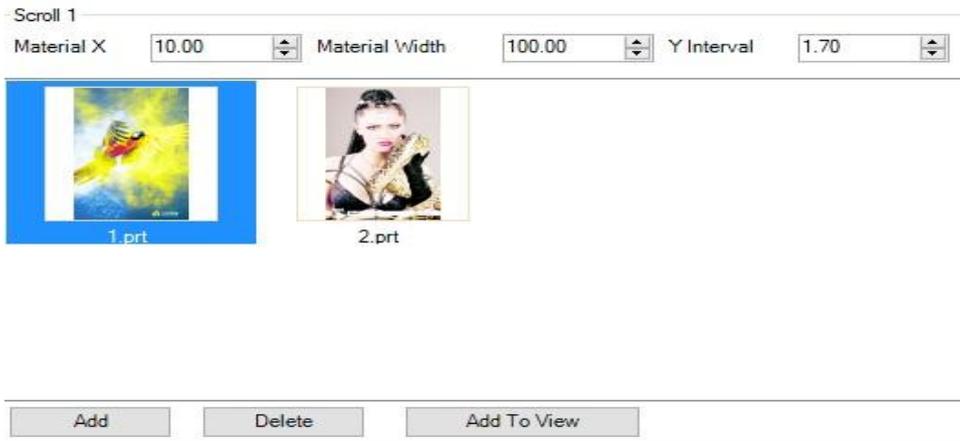


Fig. 63: Add task to dual-roll interface

- ❖ Origin X: The print origin setting for the left side of the media.
- ❖ media width: The actual width of the media.
- ❖ Y-axis spacing: Set the Y-axis spacing in the preview when multiple jobs are loaded.



**Note:**

Add to view (Add to preview) -After loading the task, you need to add it to the preview to edit.

- Part 2: Dual-Workstation preview Interface:

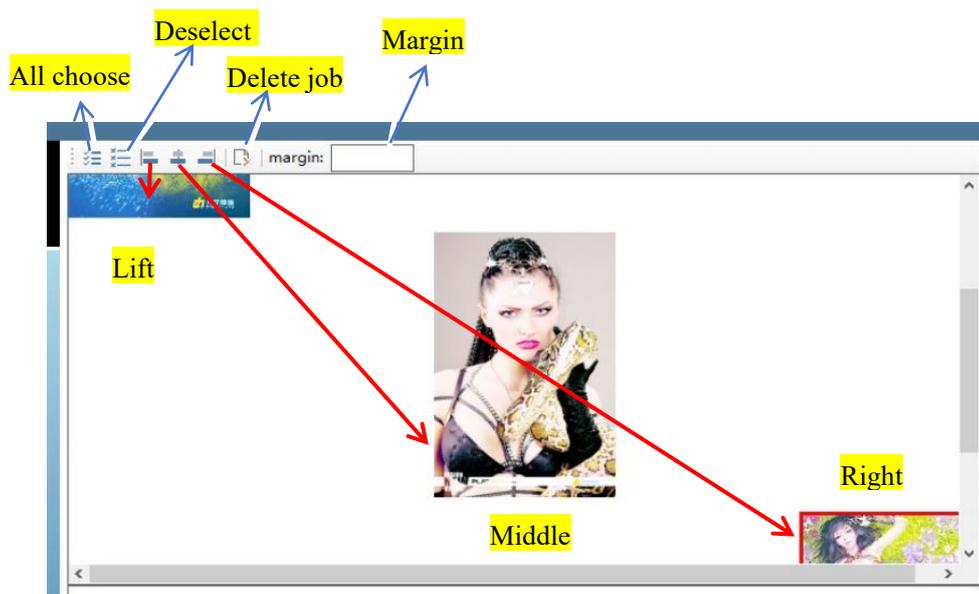


Fig. 64: Double Scroll Interface Layout



**Note:**

To set the location, first select the task in the preview interface.

- Part 3: Displays the print job progress, square number, and related information.

Step 1: Select a 1.6-meter short air shaft for the media . Two short air shafts can be inserted separately.

Step 2: Place the two media rolls onto the belt, activate the vacuum, then move the media to the designated position.

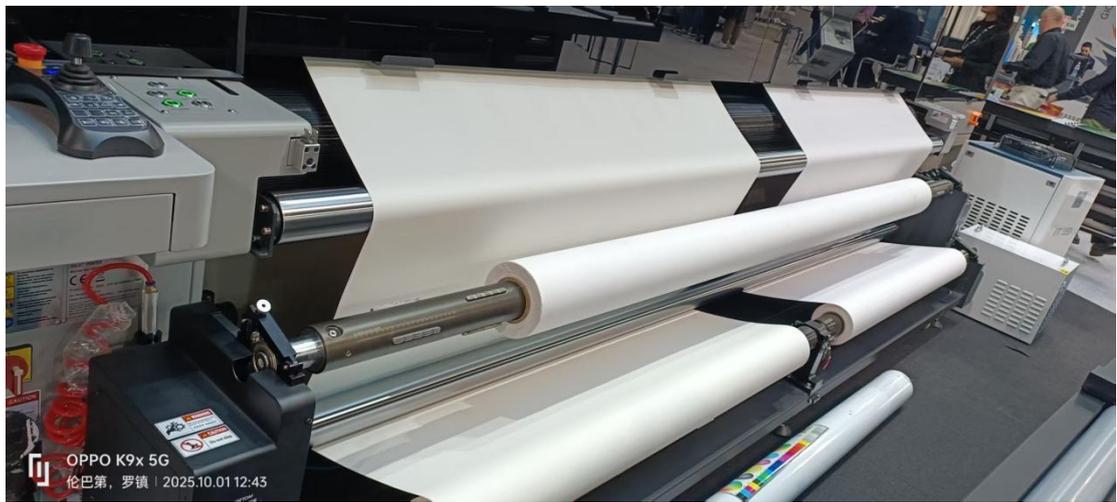


Fig. 65: Discharge Method

Step 3: After determining the media location.

Step 4: Set pressing bar parameters and print mode.

Step 5: When the media moves onto the taking up air shafts, fasten them and set tension parameters separately.



Fig. 66: Media taking up method

## 6.2 Printed rigid media by using positioning bar

- 6.2.1 Connect the extension platforms to the printer.
- 6.2.2 Detect the print media thickness before printing.
- 6.2.3 Lower the positioning bar and set the positioning block to the specified position.

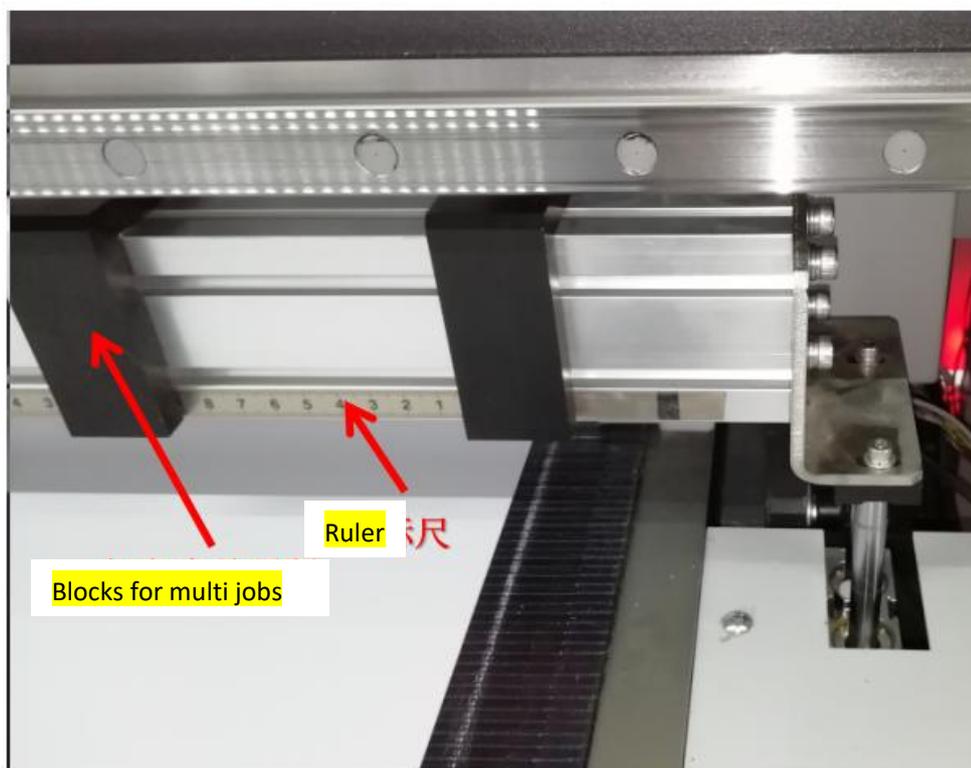


Fig. 67: Positioning bar

6.2.4 Place the media behind it and click Print.

6.2.5 Printing process: Detect media thickness → Lower positioning bar  
→ Place media → Initiate printing → Retract bar, lift positioning bar →  
Adjust media print position → Move carriage to media position for printing →  
When media approaches rear bar, rear bar lifts → After first media exits  
positioning bar → Positioning bar lowers → Place second media →  
Positioning bar lifts → Move media → When first media finishes printing →  
Continue printing second media → When first media reaches front bar, lower  
front bar → When first media completes → Front bar lifts. This cycle repeats  
continuously.

### 6.3 Printing rigid media by using electric eyes

6.3.1 Connect the extend platform to the printer.



Fig. 68: Fix the extension platform

### 6.3.2 Introduction to the Six Electric Eyes UI:

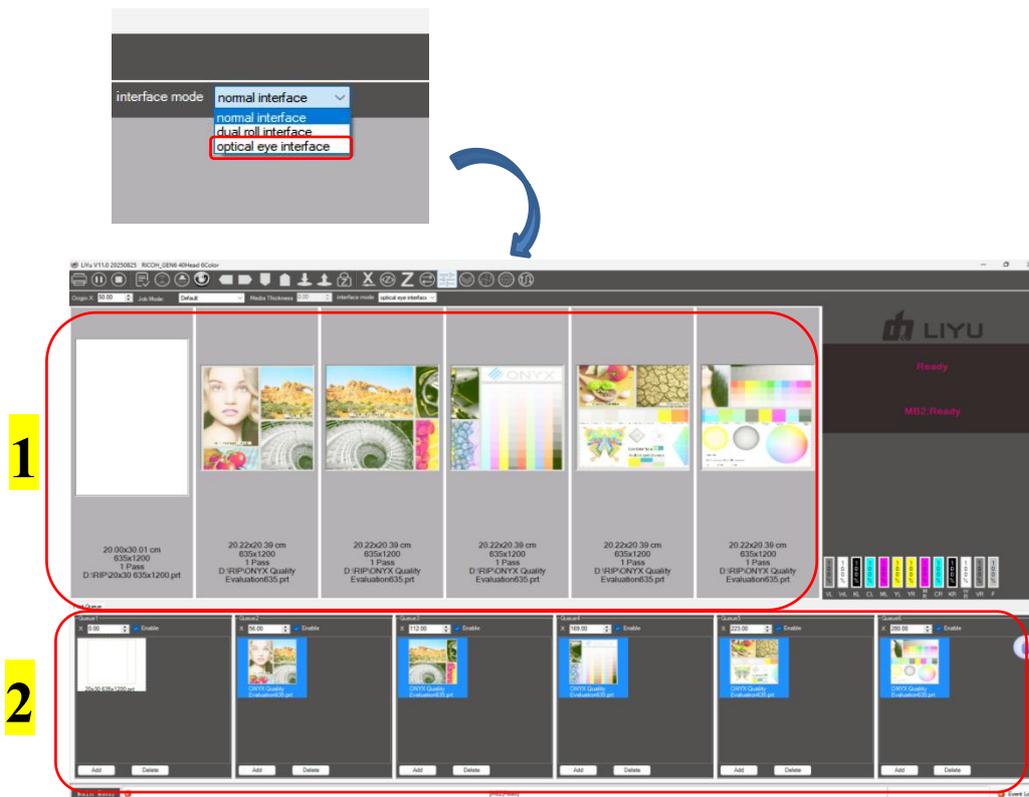


Fig. 69: Six Electric Eyes UI



#### Note:

To access Six Electric Eyes UI, users must first upgrade the firmware package.

- Part 1: Six Workstation Printing Preview UI. This interface displays six concurrent printing jobs simultaneously. Below the preview, you can see the total number of jobs and current copies, along with printing progress, square numbers, and related information. When the current job finishes, the next preview will appear.
- Part 2: You can add or delete different tasks for each of the Six Workstations.  
The origin is set as the X-axis print position. Enable this feature to apply to the Electric eye of this workstation. If disabled, the Electric eye will not function, and media will not be printed.

Step 1: Right-click the job to move it forward or backward, print it, copy it, or remove it.

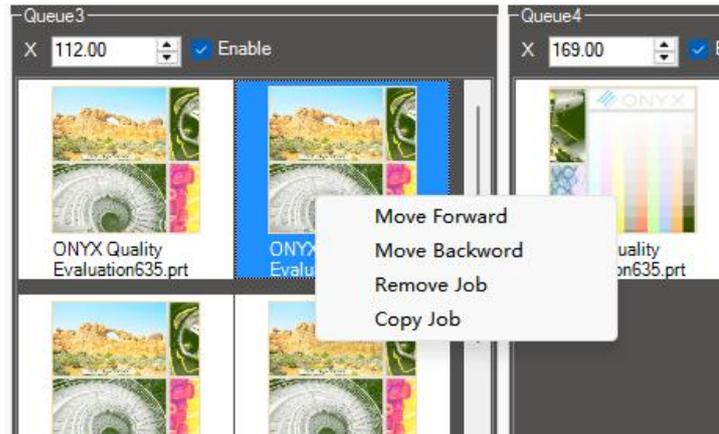


Fig. 70: Six Electric Eyes UI

Step 2: Double-click the job with the left mouse button to open the editing window for cropping and other common operations.

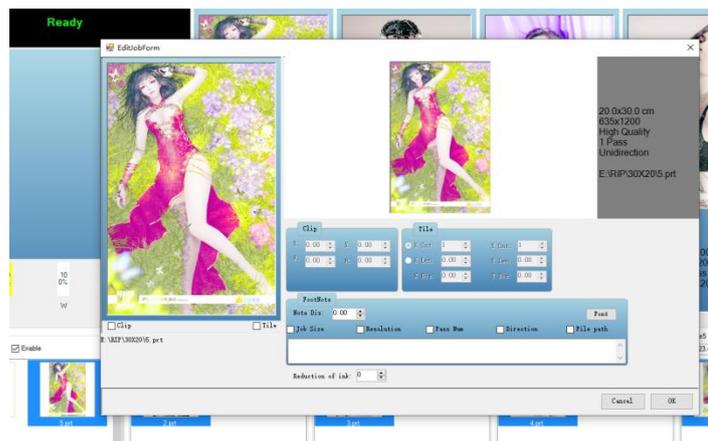


Fig. 71: Six Electric Eyes setting

Step 3: Electric Eyes correction settings: In Settings > Electric Eye Setting, you can configure the Y-axis origin parameters for each visual field separately.

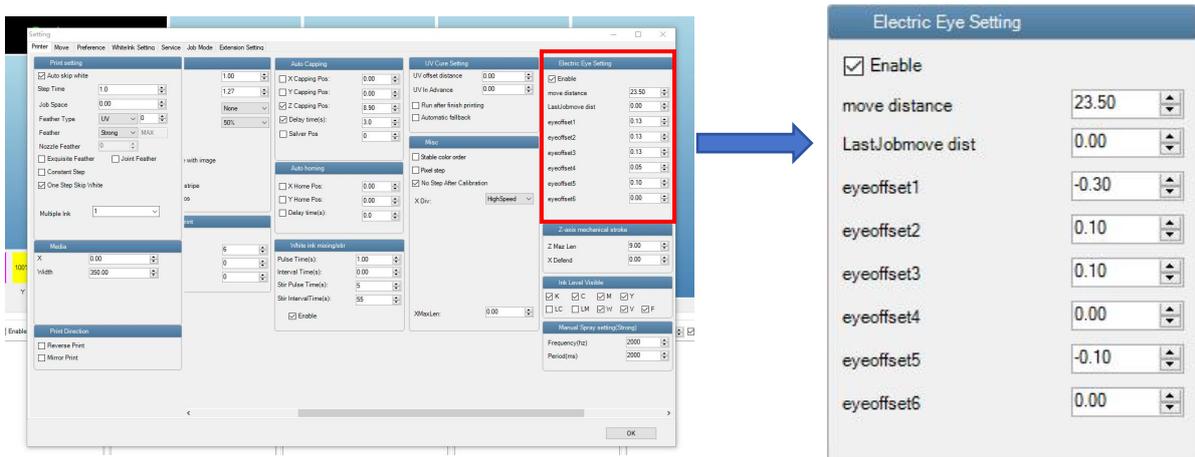


Fig. 72: Six Electric Eyes origin correction

### 6.3.3 Calibration of X-axis and Y-axis move origins.

Step 1: The X-axis is divided into six segments, with the inner edge of the red line on the partition of the rear extension platform serving as the origin (i.e., the media printing edge aligns with the partition side).

Step 2: The printed media's edge can be positioned to detect the drop, with the measured value input into the software's corresponding X origin.

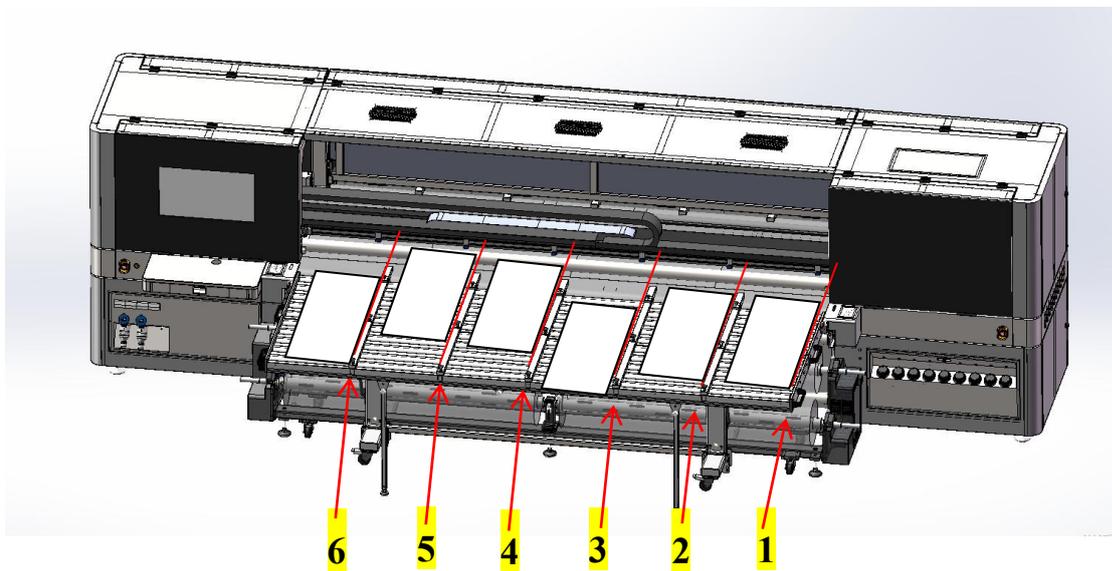


Fig. 73: Media placement of Six Electric Eyes mode

Step 3: The corresponding values are input into the origin position of each

workstation in the software interface.

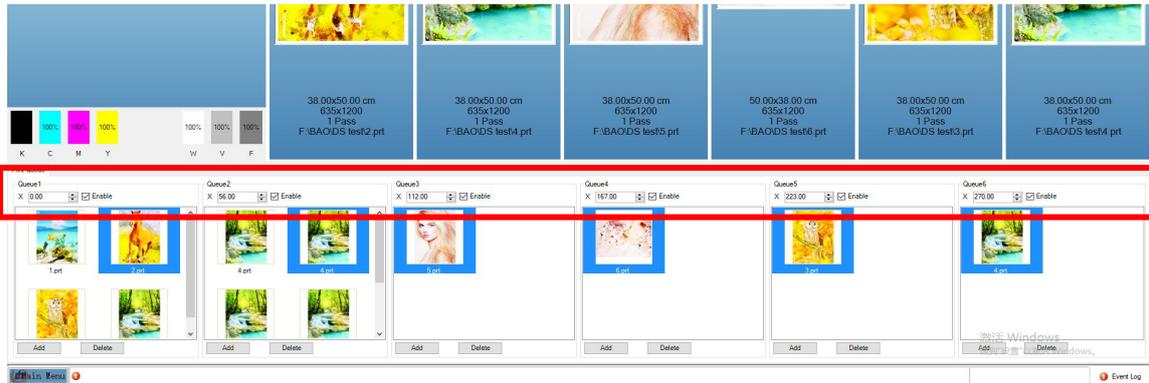


Fig. 74: Six Electric Eyes Origin Setting-1



**Note:**

When the 6-position origin is based on the software X origin, the original X origin value must be Zero. If not, all 6-position origins will be offset backward by adding the value to the X origin.



Origin value must be Zero

Fig. 75: Six Electric Eyes origin setting-2

Step 4: For Y-axis origin debugging, use a high-quality wire frame chart. Firstly print the wire frame. When it appears inside the media, the media has exceeded the print origin. Enter a negative value in the corresponding workstation settings for the electric eyes. If the wire frame appears outside the media, enter a positive value. The ideal state is when the wire frame is printed at the media's edge.

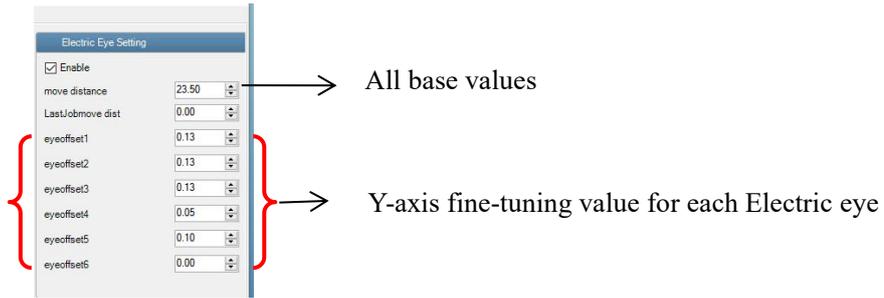


Fig. 76: Correction of the origin of Six Electric Eyes

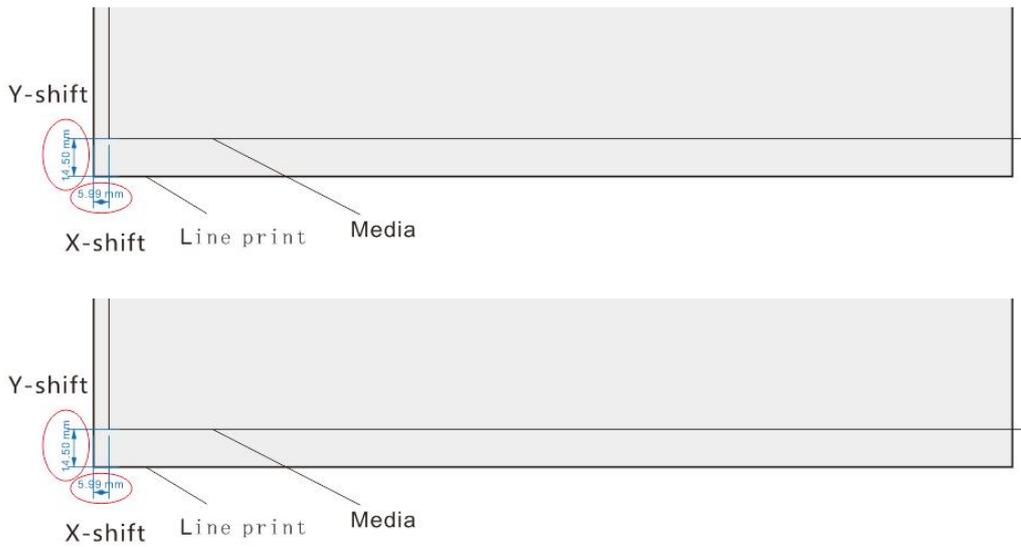


Fig. 77: Y-origin correction of the Origin of Six Electric Eyes

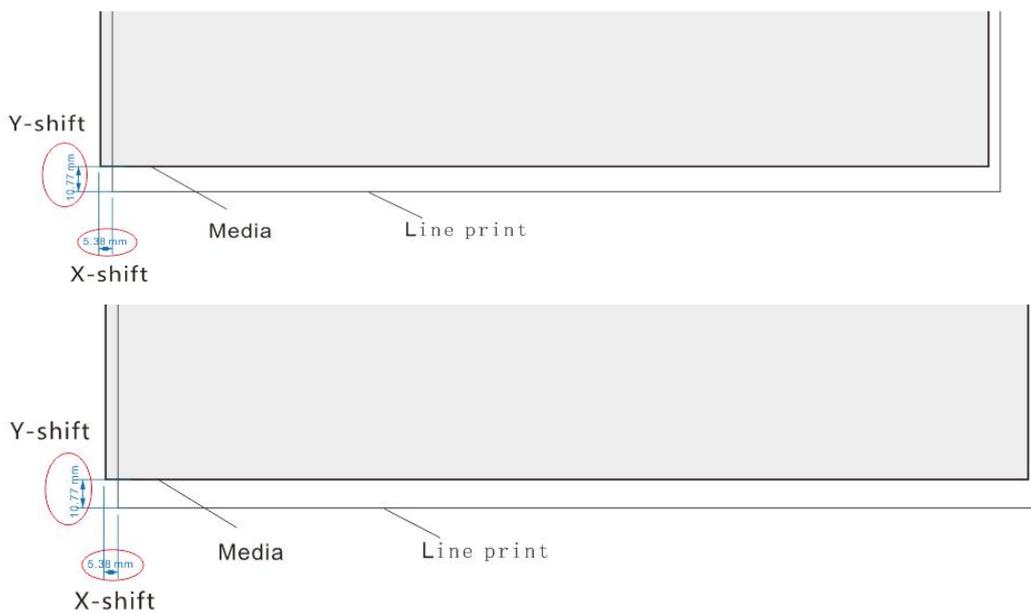


Fig. 78: X-origin correction of the origin of Six Electric Eyes

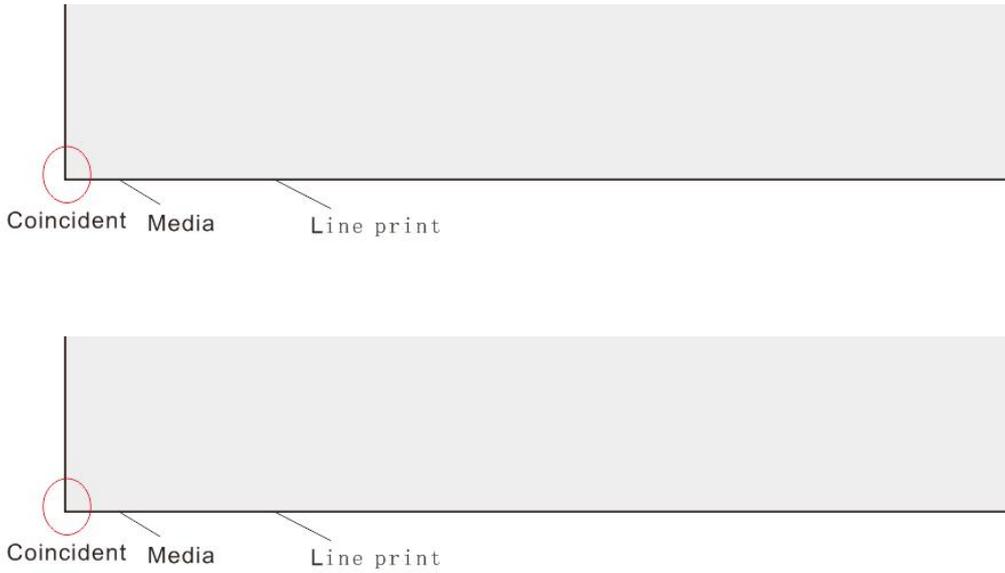


Fig. 79: Six Electric Eyes Origin Correction Coincidence

After completing the debugging and setting each Electric eye origin, the system will function properly.

### 6.3.4 Transfer Operations and Printing

➤ Transfer task

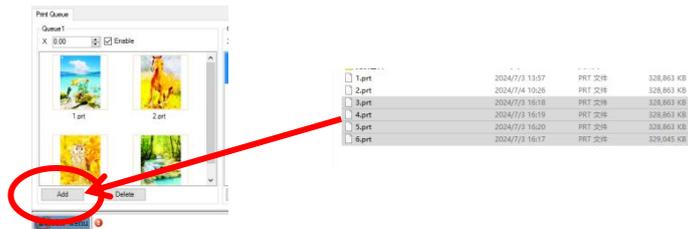


Fig. 80: Six Electric Eyes operation introduction

➤ Copy and Remove: Right-click to move forward or backward, remove, or copy.

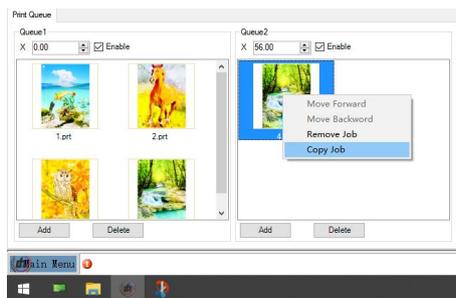


Fig. 81: Six Electric Eyes mode layout

- After the respective jobs are assigned, the printing command can be executed. At this point, the belt begins rotating forward while the Electric sensors remain in standby mode. When any workstation detects media triggering the Electric sensor, the carriage initiates printing at the designated position. The carriage moves to each workstation to print corresponding media and jobs as they are placed there.



Fig. 82: Printing effect of Six Electric Eyes operation

# Chapter Seven GUI of PM

## 7.1 Main interface introduction

Double click the  icon to Open PM

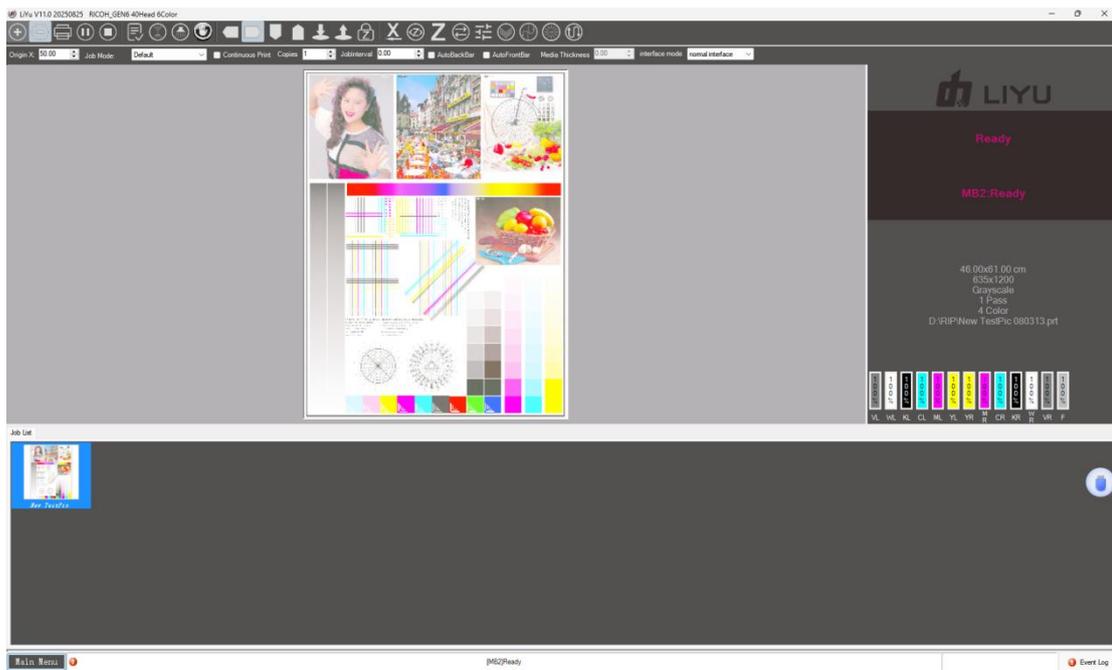


Fig. 83: Print Manager main interface



Fig. 84: Software version identification



**Note:**

After installing the new version, the version icon will appear in the upper left corner of the software interface.

## 7.2 Icon function overview

When using the icon feature, hover over the icon and the description will appear after one second.



Fig. 85: Icon Function Overview



### Note:

The software interface of V11.0 differs from previous versions.

The interface is primarily in black and white, with changes to both the interface style and icons. This is the first version, and the icons may change later, but the features remain the same. Added dual motherboard display for work status. Added a media width icon (only works with installed detection sensors).

## 7.3 Job Editing and Settings

### 7.3.1 Main menu—Settings—Edit—Printer

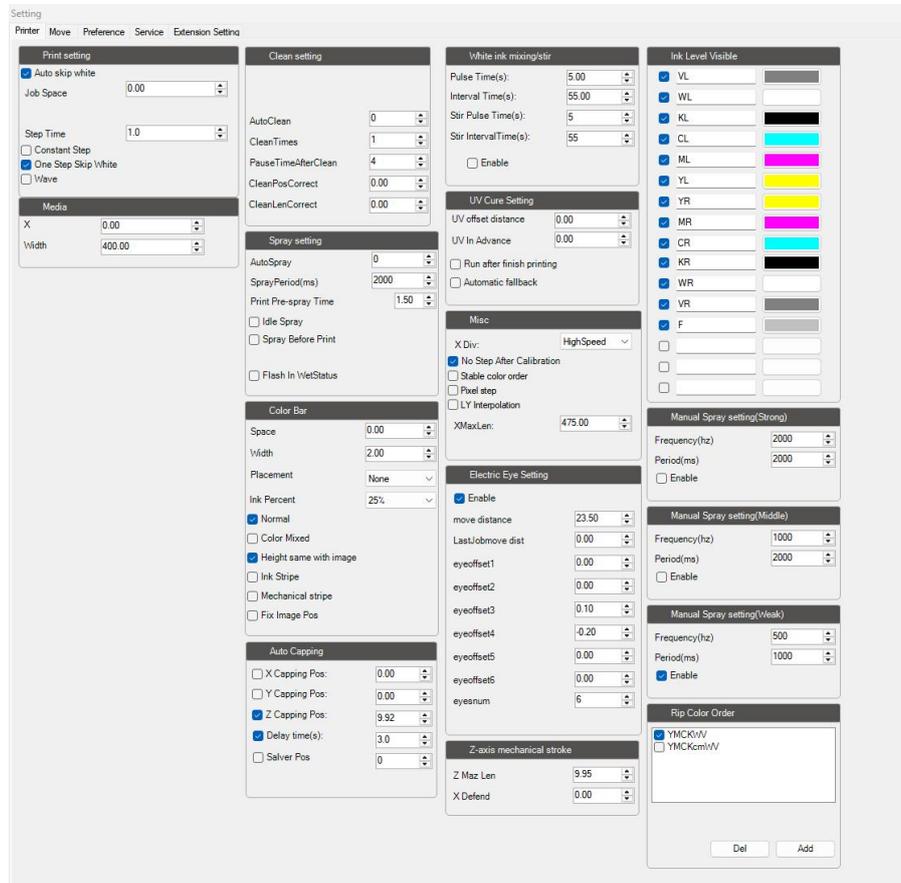


Fig. 86: Printer interface

#### 7.3.1.1 Print setting

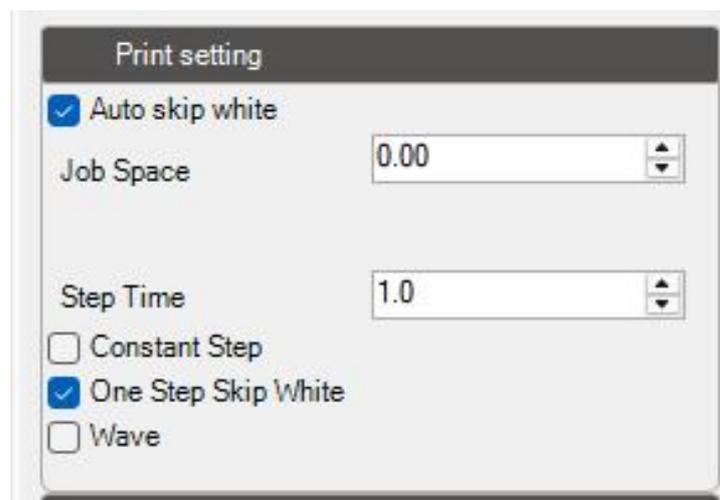


Fig. 87: Print Setting

- Auto skip white: When XY data is absent, the printer can print by stepping without scanning.
- Step time: Increases the duration of X-axis movement during the blank time process, facilitating ink drying and paper retraction on the substrate.
- Job Space: the distance between two jobs
- One Step Skip White: Use with automatic blank jump;
- Wave: It works as a special feather form when selected.

### 7.3.1.2 Media: Media settings

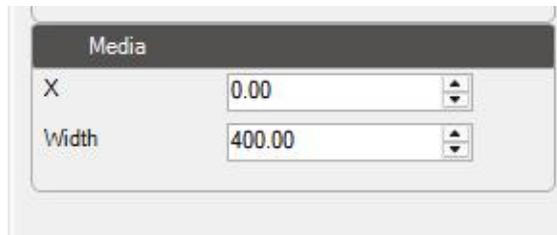


Fig. 88: Media Settings Interface

- X: Origin
- Width: The maximum width in the X direction that the printer can print

### 7.3.1.3 Clean setting

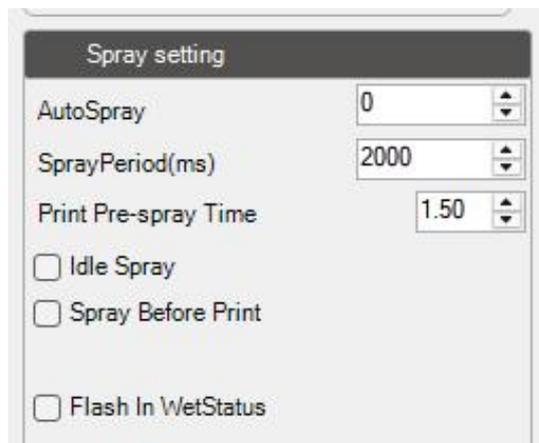


Fig. 89: Cleaning settings interface

- Auto Spray : Set the unit to pass, print the specified number of passes, then return to the origin for one flash jet action.
- Spray Period: controls the idle flash jet interval of the carriage at X origin, measured in milliseconds.
- Flash Pre-spray Time: Duration of flash jet before printing;
- Idle Spray: Idle flash jet switch of the carriage at the X origin point.
- Flash before printing: Enable or disable flash jet before printing.

#### 7.3.1.4 Color bar settings

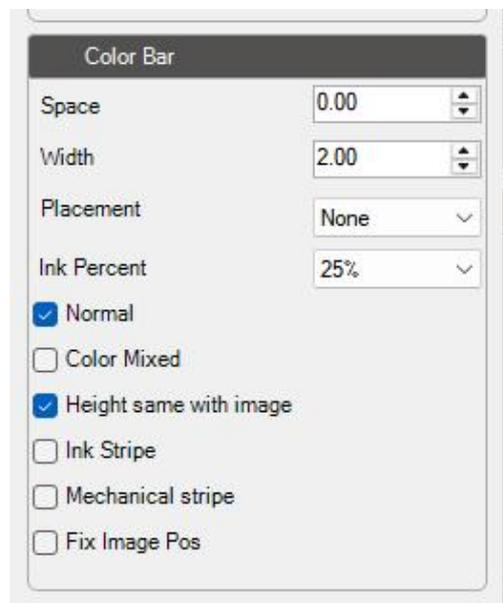


Fig. 90: Color bar settings

- Space: The distance from the color bar to the image edge
- Width: The width of the color bar
- Placement: Set to left, right, or none of the image sides
- Normal: Color Separation Printing
- Color Mixed: Color Overlap Print
- Height same with image: Color bars will be printed at the same level as the image.

### 7.3.1.5 Auto Capping

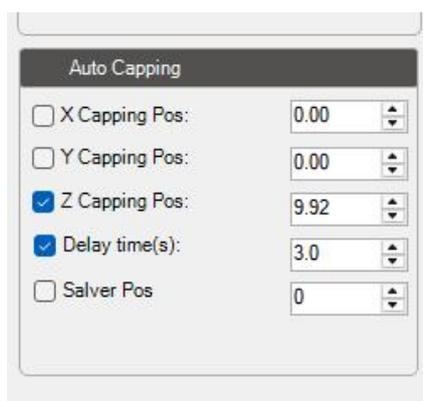


Fig. 91: Auto capping setting interface

- X Capping Pos: Not required
- Y Capping Pos: Not required
- Z Capping Pos: Sets the distance from the origin to the tray.
- Delay time: After the carriage reaches the origin, it will descend to the humidification position after the delay time is set.
- Salver Pos: Not required.

### 7.3.1.6 White ink mixing/stir

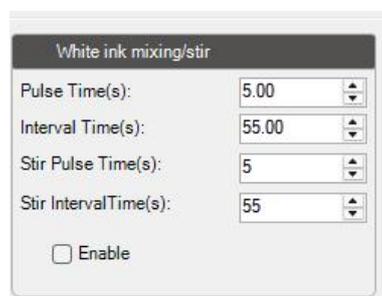


Fig. 92: White ink mixing/stir settings interface

- Enable: Select to activate
- Pulse Time: The operating time of the circulating pump
- Interval Time: Time interval for each iteration
- Stir Pulse Time: The operating time of the stirring pump
- Stir Interval Time: The interval time for each stir



**Note:**

All options must be enabled to take effect; otherwise, the settings will be invalid. The effectiveness of this item is primarily determined by the white number setting in the factory configuration.

### 7.3.1.7 UV curing setup

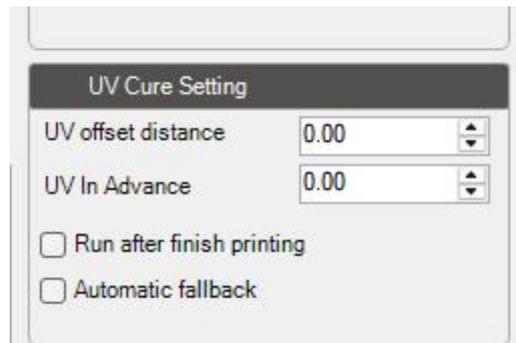


Fig. 93: UV curing setup interface

- UV offset distance: Sets the distance from the end of the final light segment to the edge of the last image. This ensures the UV light fully cures the varnish.
- UV In Advance: Not required
- Run after finish printing: Set the parameter to enable for the option to take effect.
- Automatic fallback: After printing the varnish finish, the Y-axis automatically returns to the image edge.

### 7.3.1.8 X print speed

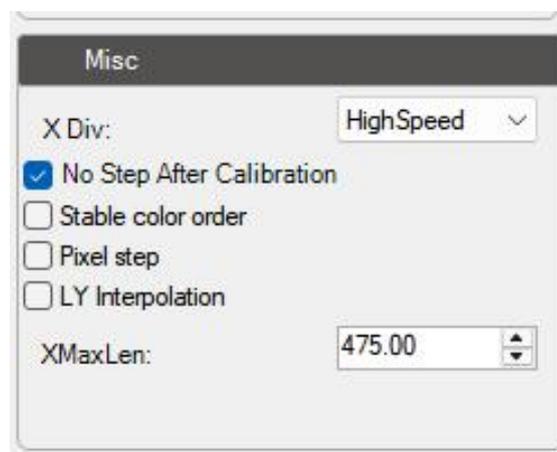


Fig. 94: X print speed settings interface

- No Step After Calibration: The stepper does not move after calibration.
- X Div : Available in high-precision mode and high-speed mode
- Stable color order: Not required
- Pixel step: Not required
- LY interpolation: Not required
- X Max Len: This parameter sets the maximum stroke when the movement configuration collides with the sensor.



**Note:**

The high-speed and high-precision modes are linked to the X Div option in the software interface. After setting X MaxLen, you must restart the printer for the changes to take effect.

#### 7.3.1.9 Z-axis setting and X-axis maintenance distance setting

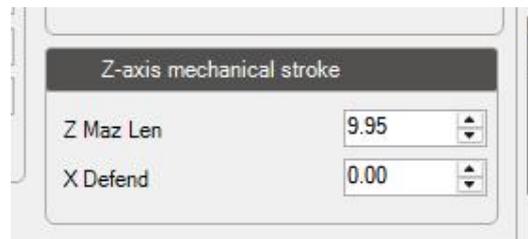


Fig. 95: Z-axis setting and X maintenance distance setting interface

- Z Max Len : Sets the maximum limit parameter for the Z-axis.
- X Defend : Sets the distance the carriage moves during X maintenance.

#### 7.3.1.10 Main ink tank level display settings

Display settings vary by the model of printer.

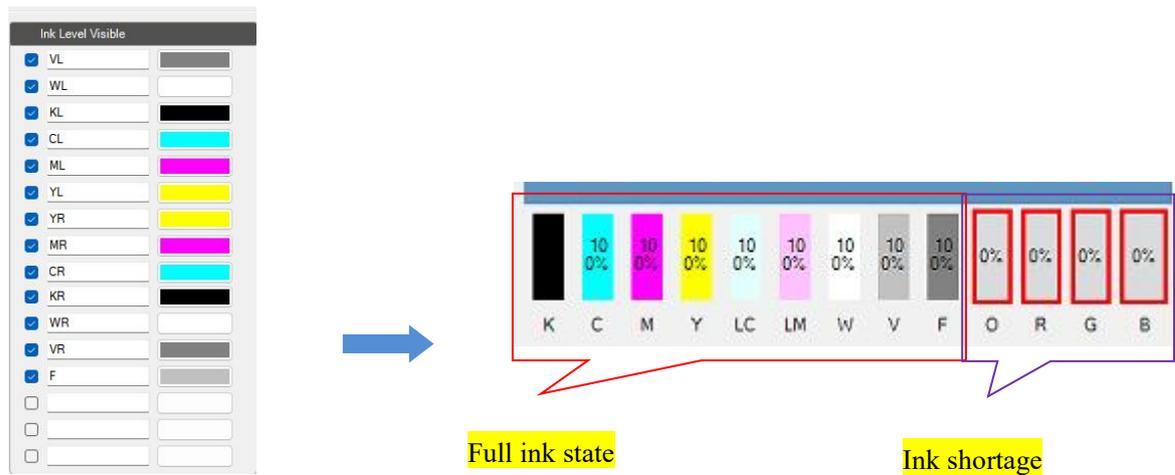


Fig. 96: Main ink tank level display settings interface

### 7.3.1.11 RIP color sequence

Set the color sequence for adding spot colors in the interface.

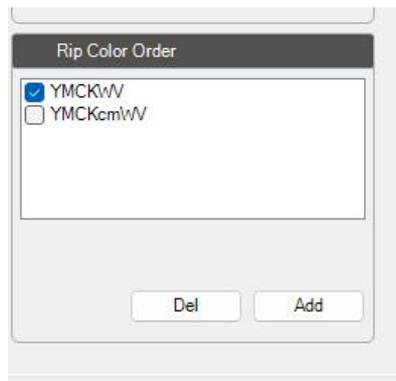


Fig. 97: RIP Color Sequence Interface



**Note:**

- 1、 Four-color settings: YMCKWV
- 2、 Six-color settings: YMCKcmWV
- 3、 Fluorescent color settings: YMCKcmWVRG (e.g.)

The above two items are fixed and commonly used. Click Add to add a custom color sequence configuration, .

### 7.3.1.12 Flash jet settings

Set the flash jet intensity (weak to strong):

The higher the flash jet frequency, the greater the flash jet intensity. The longer the flash jet time, the greater the flash jet intensity.

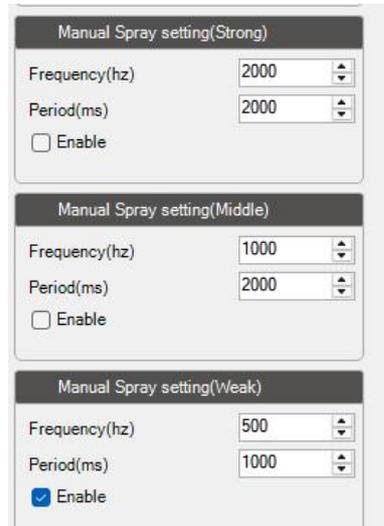


Fig. 98: Interface of weak to strong selection in flash jet



**Note:**

The recommended setting is to set the flash jet time to 2000 ms.

Flash jet-Low frequency: Set range: 100-500 Hz

Flash jet-Medium frequency: Set range: 1000-1500 Hz

Flash jet-High frequency: Set range: 2000-2500 Hz

### 7.3.2 Main menu—Settings—Move

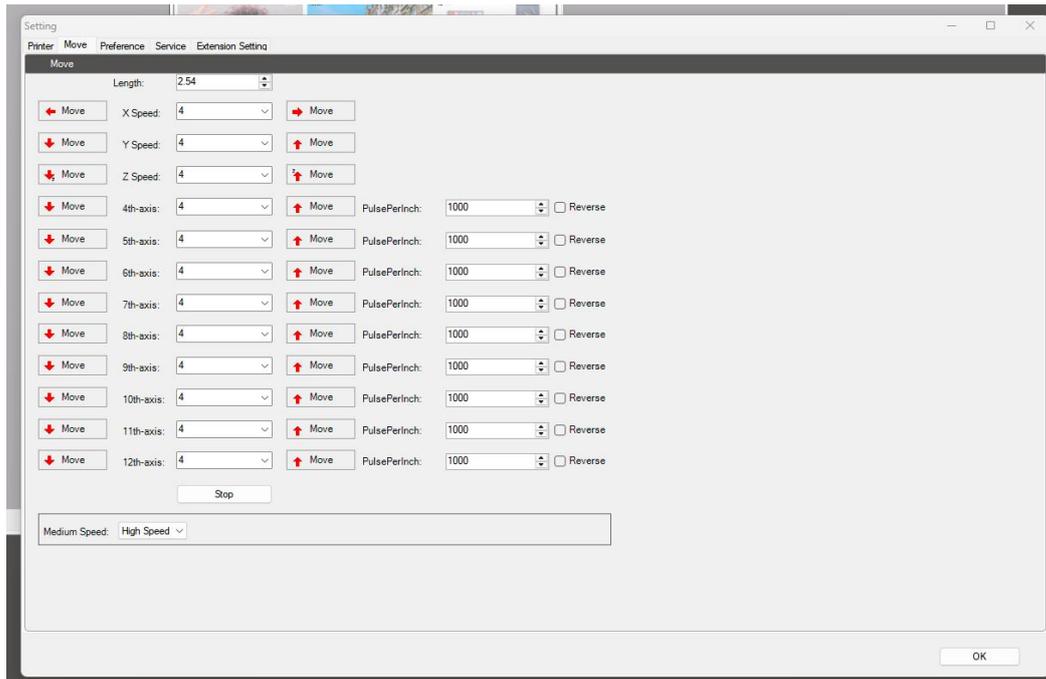


Fig. 99: Movement interface



**Note:**

This interface controls the manual movement speed of the main interface's buttons. In version V10.1, all XYZ axes are uniformly set to 1-7 steps, where lower values indicate slower speed and higher values indicate faster speed. Additionally, step speed for medium printing has been added for user convenience. Step speed: Available in high, medium, and low settings, with different speeds for different PASS modes.

### 7.3.3 Main menu—Settings—Individuation settings

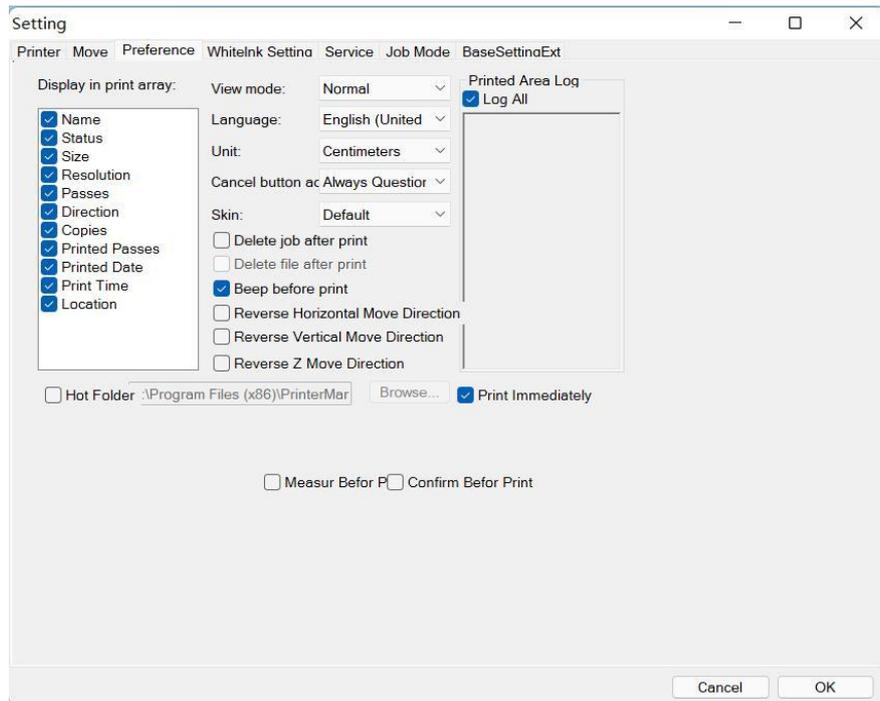


Fig. 100: Individuation settings

- View mode: Normal, Wide Screen, Old Interface
- Language: Simplified Chinese, Traditional Chinese, English. Set the language as needed. This modification requires a language password.
- Unit: Set the unit displayed in the software.
- Skin: Use default.
- Delete job after print: Enable or disable the job deletion feature after printing.
- Delete files after print: Check this option to delete files from your computer.
- Reverse move direction: The main interface's movement button reverses direction without affecting the printing movement.
- Hot Folder: Works with Instant Print. When a new prt file is added to the selected folder path, it prints immediately.
- Measure before print: Press the print button to open the height measurement interface, where you can choose to measure again or print immediately.
- Confirm before print: Click the print button to open the confirmation interface. Select "Confirm and Print" to start printing from the current Z position as the origin.



**Note:**

After setting the language, restart the printer. Otherwise, some language features may not be fully configured.

### 7.3.4 Main menu—Settings—Services

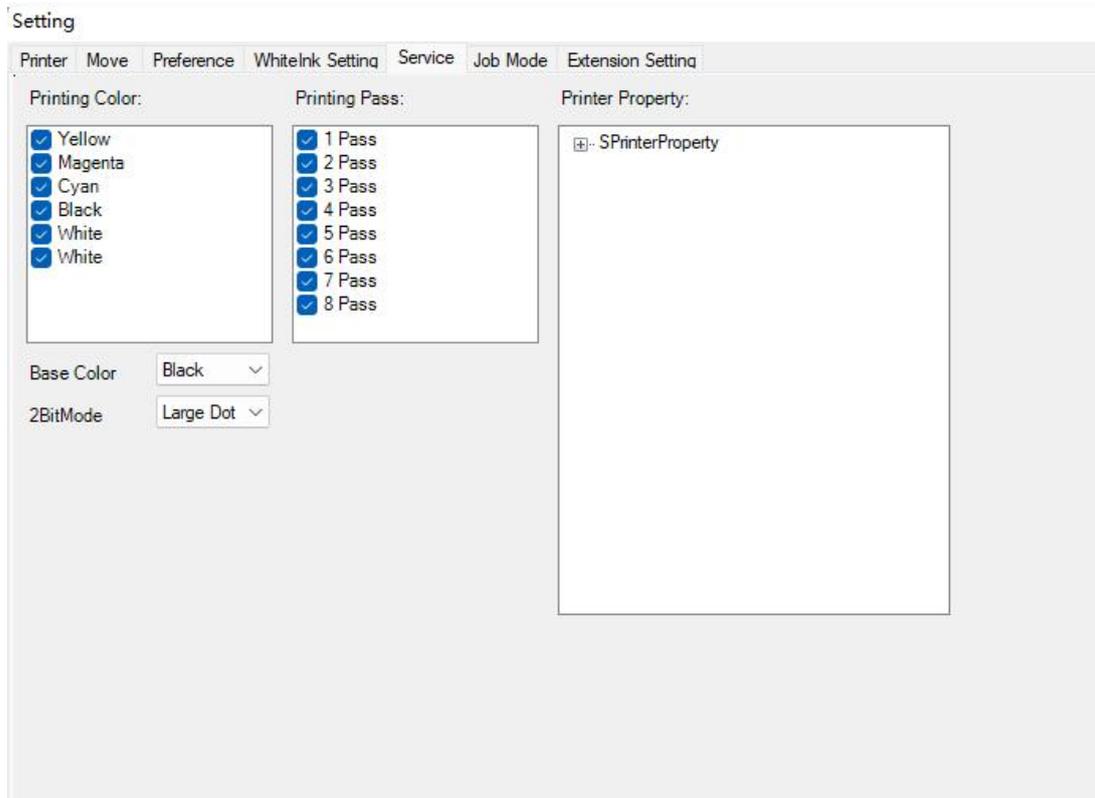


Fig. 101: Service Interface

- Printing Color: This parameter controls whether printing is enabled.
- Base Color: Set the base color for printing.
- 2BitMode: Configure nozzle inspection and calibrates the dot pattern for printing.
- Other parameters use the default and do not require setting.



**Note:**

Need to add the factory.usr file to display the interface.

### 7.3.5 Main menu—Settings—Basic extension settings

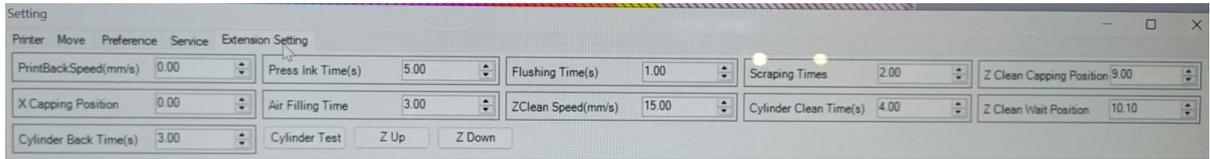


Fig. 102: Basic Settings Extension Interface

- **Print Back Speed:** When performing high-precision one-way printing, this setting increases the speed of the return path to enhance printing efficiency. The maximum speed cannot exceed 1700 mm/s.



**Caution:**

This setting parameter is unrelated to the automatic ink scrapping parameter. Ensure this field is not entered incorrectly.

- **Press Ink Time:** Automatic press ink time
- **Air Filling Time:** The duration required to dry the slide after rinsing it with the cleaning solution.
- **Flushing Time:** The duration for which the smear is rinsed with the cleaning solution
- **Z Clean Speed:** The speed at which the Z-axis moves up and down during automatic ink scrapping.
- **Scraping Time:** Sets the number of wipers.
- **Cylinder Time:** The time from the time the scraper reaches the front most position.
- **Z Clean Capping Position:** The carriage descends to the height where it contacts the scraper.
- **Z-axis cleaning wait position:** The scraper moves forward to the front of the print plate. To facilitate its return, the carriage lifts beyond the scraper's height.
- **X-axis cap position:** Not required.
- **Cylinder Back Time:** The time required for the scraper to return to its starting position.

### 7.3.6 Height detect

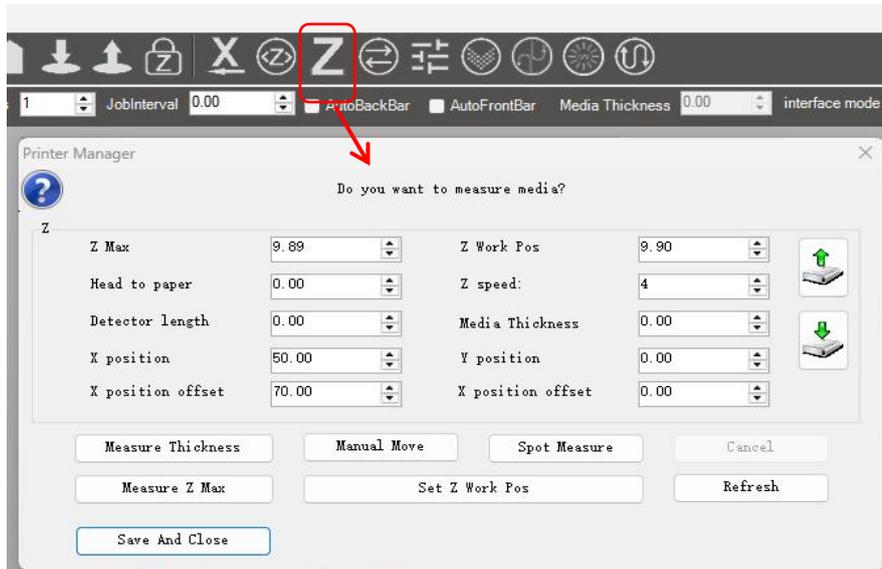


Fig. 103: Z-axis height detect interface

- Z Max : The system automatically measures the Z-axis maximum travel via the button, with the measurement position controlled by the XY coordinates below. This parameter can be manually adjusted. After installing the printer, the first step in height measurement requires measuring the Z-axis maximum travel.
- Head to paper: This parameter controls the actual nozzle-to-medium distance after height measurement. When the probe triggers during the measurement, it will move again according to the set value, with a minimum of 0. For example, if the nozzle-to-medium distance is set to 0 and measured, the caliper reads 1.5mm after measurement. If the distance is adjusted to 0.5mm and re-measured, the reading will be 2.0mm.
- Detector length : This value should remain set to 0 at all times.
- Z Work Pos: This parameter updates automatically when measuring height or manually entering media thickness values, and does not require modification.
- Z Speed: Sets the speed for vertical movement in the Z direction.
- Media Thickness: This parameter is automatically updated after height measurement.

If the media thickness value is known, you can manually enter it here, click Close and Save, and the Z-axis will automatically move to the set height for printing based on the parameters.

- X/Y Position : Designed for use with automatic positioning height measurement and maximum travel measurement.
- Measure Thickness 1: Press this button to activate the carriage's movement to preset X and Y coordinates, where it will measure the height upon arrival.
- Manual Move: Move according to the parameters set in this interface.
- Measure Thickness 2: Press this button to measure height at the current position without XY movement. Move XY manually.
- Measure Z Max: Press this button to move the carriage to preset X and Y positions for maximum travel measurement. Ensure correct Z resolution is set before using this function.
- Set Z Work Pos : Press this button to set the current Z height as the default print height, and the media thickness value will update accordingly. It functions similarly to the Z print origin settings on the main interface.
- Z-axis up/down button: controls vertical movement of the Z-axis, functioning similarly to the main interface's vertical controls.
- Save and Close: Save before closing.



**Note:**

If you modify any parameters, be sure to click Save to close the dialog. Clicking the X in the top-right corner (Exit) will not save the current changes.

### 7.3.7 Waveform Import and Export

Main menu---Settings---Waveform Import and Export

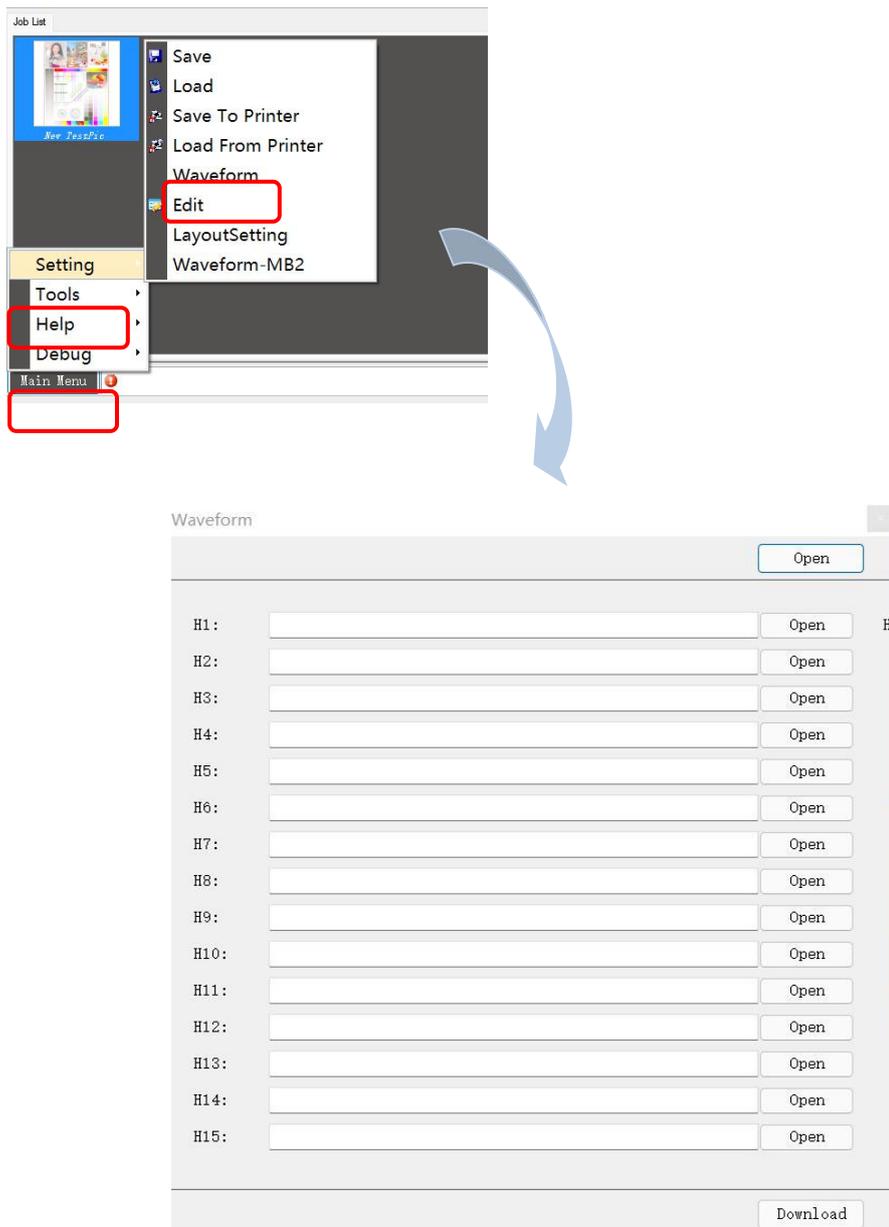


Fig. 104: Waveform import and export interface

This function loads waveform, with H1-16 corresponding to 1-1, 1-2,..., 1-16 in the layout package. Click to open, select the waveform to download, and click Download after selection. The download will be successful without restarting the printer.

### 7.3.8 Quick ink fill for main ink tanks

7.3.8.1 When the software interface displays an ink shortage alarm, the printer also emits an audible and visual alarm.

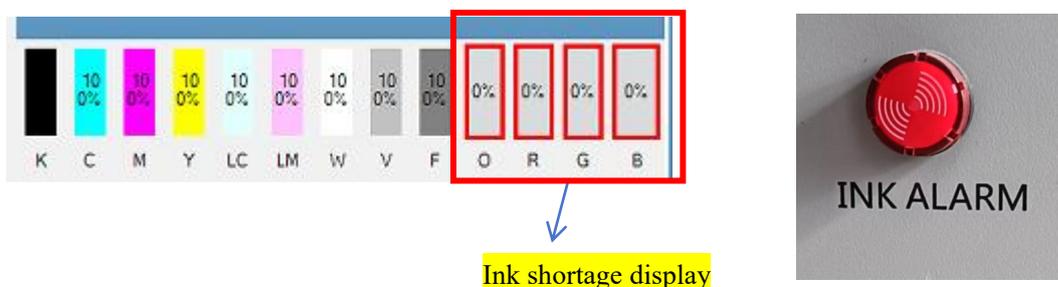


Fig. 105: Ink shortage alarm

7.3.8.2 Open the corresponding color bottle cap at the rear of the printer's left box and fill ink.



Fig. 106: Main ink tank position

### 7.3.9 Application of rear height measurement pole

The original pressure wheel control interface has been added with the following three items: Manual height measurement of the rear pole, Automatic height measurement of the rear pole, and different materials prompt and pause or auto lift print.

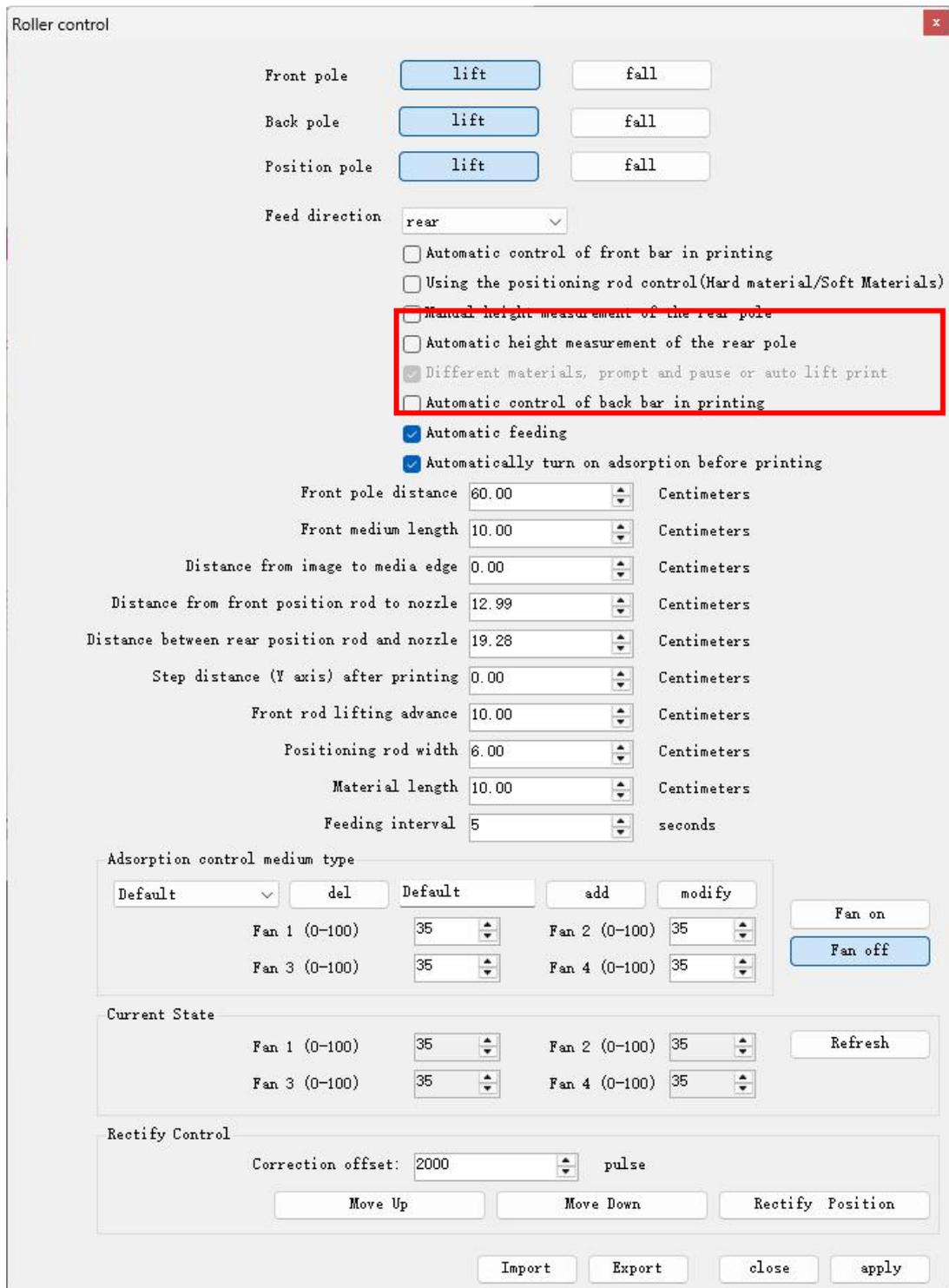


Fig. 107: Roller control interface

- After being selected, you can manually measure the height of the rear bar before printing.
- The rear bar automatically measures the thickness of the new media during printing.

- By default, the system will pause or automatically adjust the print height when detecting different media thicknesses. If this option is selected, the system will pause when encountering media of different thicknesses and print only after confirmation. If this option is not selected, the carriage will automatically detect different thicknesses and adjust the print height without prompting.
- In the positioning bar printing mode, the thickness of each media can be automatically detected.



**Note:**

In Six Electric Eyes mode, the rear bar cannot descend during printing, so the system only automatically measures media thickness before printing. It cannot measure media thickness during printing.