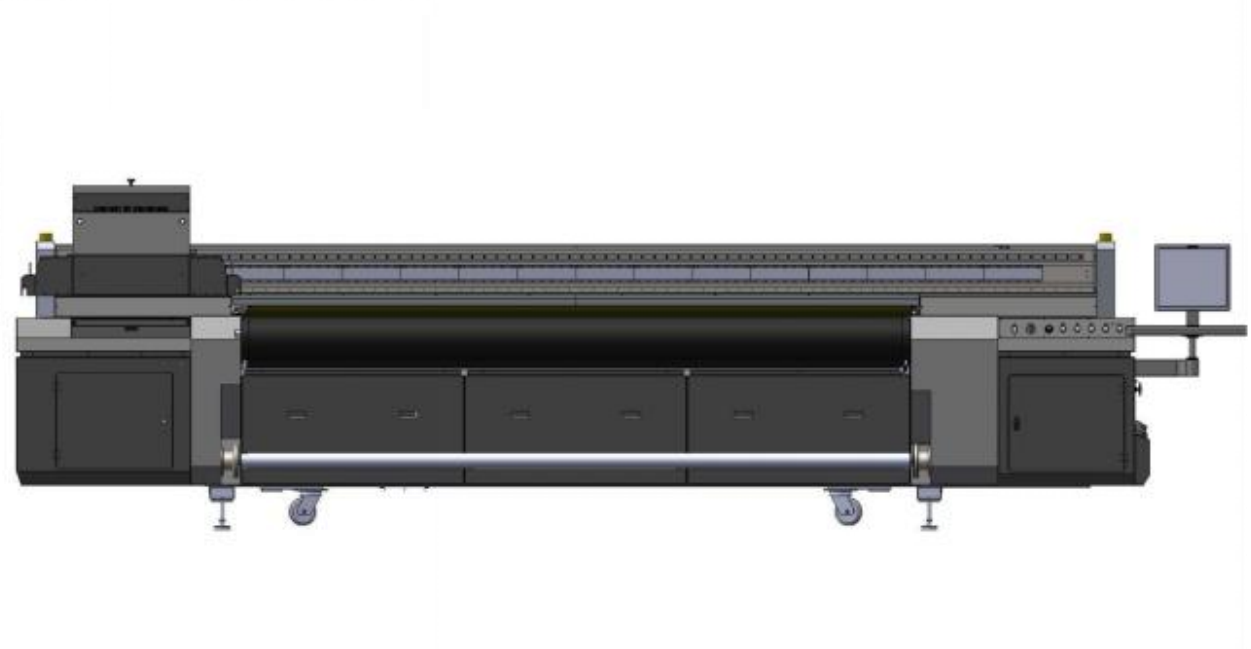
HandTop

3200 Hybrid UV printer installation instruction

HT3200-UV_K



LIST

FOREWORD

UV printers are composed of precision mechanical and electrical parts. This manual is made for helping users to better use this product.
The writing purpose of this manual is intended to allow the user to safe and efficient use of machines in a proper environment. Be sure to read the instructions carefully before using this machine.
Please kindly understand the information changed due to the upgrade of the machine without prior notice. If you have any questions about the use of the machine. Please contact the local agent or our aftersales service staff.

Safety Precautions

1. Indications of symbols

	This symbol indicates the failures to be caused by the ignorance of misunderstanding of the instruction may probably lead to equipment damage or personal injury
	This symbol indicates the possible risk of the given operation
	This symbol indicates the improper operation to be strictly prohibited
	This symbol indicates the proper protections needed for the given operation
	This symbol indicates the reference part of this manual
	This symbol indicates the useful tips

2. Precautions of operations

Working environment
 Never use the printer in a non-ventilated or stuffy workplace, or it may lead to toxic hazards to operators. A ventilator is always a necessity.
 Do not use the machine in the explosive atmosphere.
 The printer is a precision equipment and should always avoid strong impact or shake in any process of loading, installation and operation, or it may result in equipment damage.
 Avoid setting foot or heavy items placed on the printer or it may result in equipment damage.
 See product introduction - detailed parameters
Forbidden modification
 Any unauthorized alteration is strictly prohibited，or it might cause parts malfunction or damage to the printer.
 Any disassemble or replacement of the parts and cables is strictly prohibited in the state of power-on.
Electricity
 Please supply the printer with rated voltage and frequency, improper power input may cause functional abnormality or damage to the printer.
 Avoid any liquid spilled on the electronic parts or it may result in parts malfunctions.
 Verify that the printer is properly ground wired or it might cause some electric shock risks.
UV light protection
 Avoid continuous eye-contact with the ultra-violets of the lamp.
 Wear an anti-UV goggles when the printer is working to protect the operator from accidental direct eye-contact with the UV light.

Operator awareness
 Any disassemble or replacement of the parts and cables is strictly prohibited in the state of power-on
 Avoid any body contact with the locomotion parts in the process of printer working, or it may lead to equipment breakdown or personal injury.
 Wear rubber gloves to avoid chemical liquid spilled on human body.
 Flush with adequate purified water immediately if accident happened and see a doctor afterwards.
Ink store
 Keep the chemical consumables away from non-qualified individuals and stored according to the specific instructions.
Deposing waste ink and liquid
 The treatment of the waste chemicals should abide by local environment regulations.
Emergency reaction
 Always remember to press the scram stop at any emergency, and the printer should not be activated until all the malfunctions are settled.

Introduction

1.Printer brief introduction

The model of HT3200UV-D-K10 Kyocera Hybrid UV inkjet printer is highly cost-effective equipment specially designed for commercial printing enterprises.

2.Printer Features

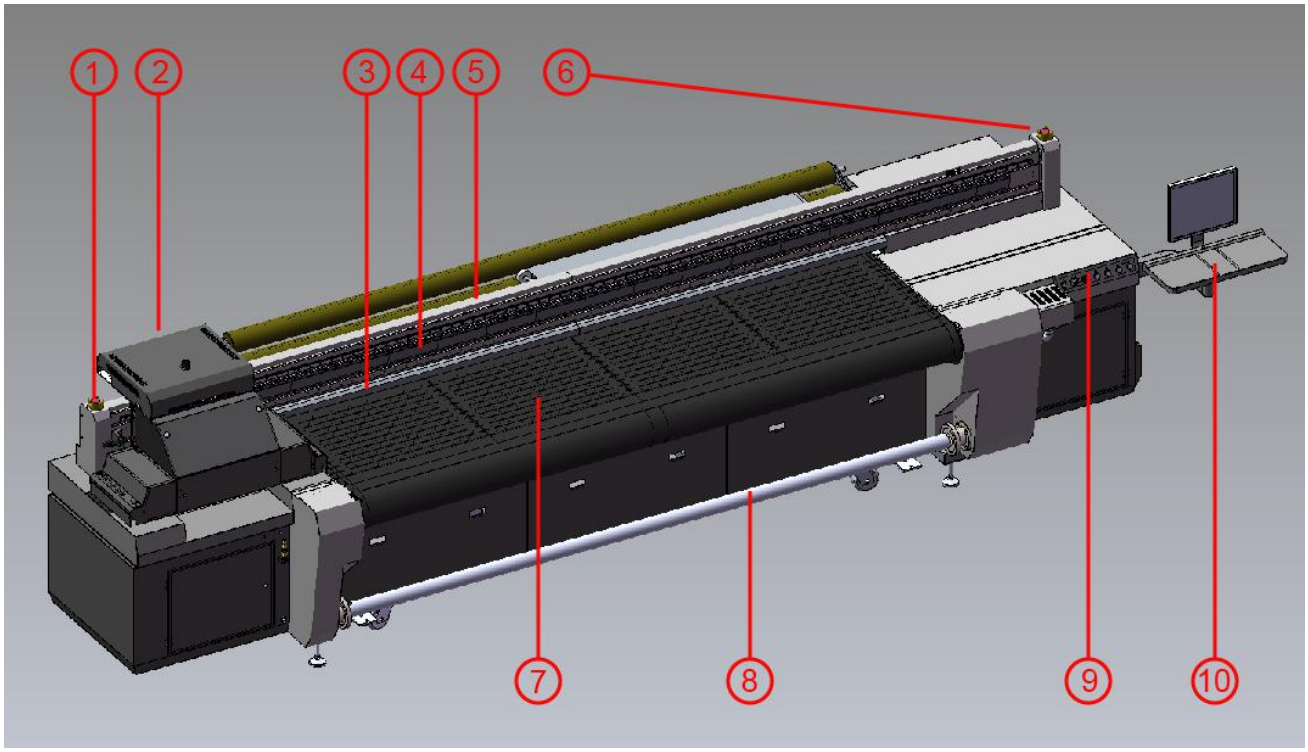
With the self-R&D ability that enables constant advancement.
Professional assembly crafts guarantee the perfect qualities.
Adopt high quality components (EGUS chain, linear motor)
Ironic beam plus dual lead rails assembly on X-directional mechanical structure enables the carriage to run stably.
High precision linear encoder strip for the positioning of the carriage.
Optical fiber with a maximum transmitting speed of 1.25Gb/S and zero-interference ability.
Industrial PCIE data transmitting interface with excellent proof to electric-magnetic interference.
Automatic head height adjustment enables the head height adjustable to different media thickness of 0-50mm.
A dual lead screw on the Y-directional mechanical structure guarantees the basis of the stable and high precision stepping movement.
Anti-crashing attachment can effectively reduce the head-strike risks.
Double-class ink-heating automatic control guarantees the optimum viscosity of ink for print head continuously discharging.
Special negative pressure tank for keeping the pressure in the state of main power-off.
More intuitive and user-friendly operating interface.
With the ability to 24hoursX7days continuous running of commercial printing production.

3.Printer configurations

Model	HT3200UV_D
Printhead type	Kyocera high-performance drop-on-demand piezo heads
Printhead array	5-10PCS
Maximum resolution	363*3600 DPI
Print size	Up to 3.2m of printing width
Media type	Rigid and flexible printing media
Printed thickness	0-50mm
Applications	glass, acrylic, wooden board, ceramic tile, metals, PVC board, corrugated board, plastic board, etc
Ink type	Environmental-friendly UV ink (non-VOC)
Color mode	Lc, Lm, K, C, M, Y, W
Support file	Adobe Postscript Level 3、PDF、 JPEG、TIFF、EPS、AI
Support RIP	Caldera/Onyx
PC system	Windows7
NET. Weight	2350kg
Dimension	5530x1550x1320
Power consumption	8kW, 20A
Power requirement	Three phase 380v,50Hz
Environment conditions	Temperature: 18ºC ~ 30ºC (64ºF ~ 86ºF) Humidity: 30% ~ 70%
Certificate	CE， FCC, ETL

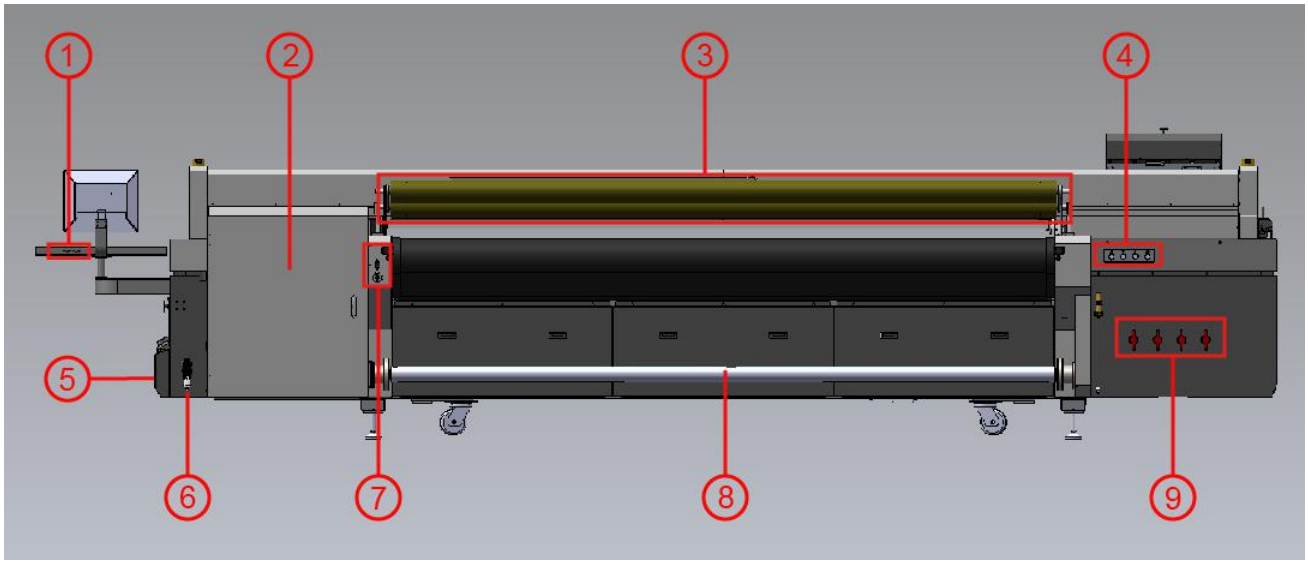
4.Structure Diagrams

4.1 Front view of the printer



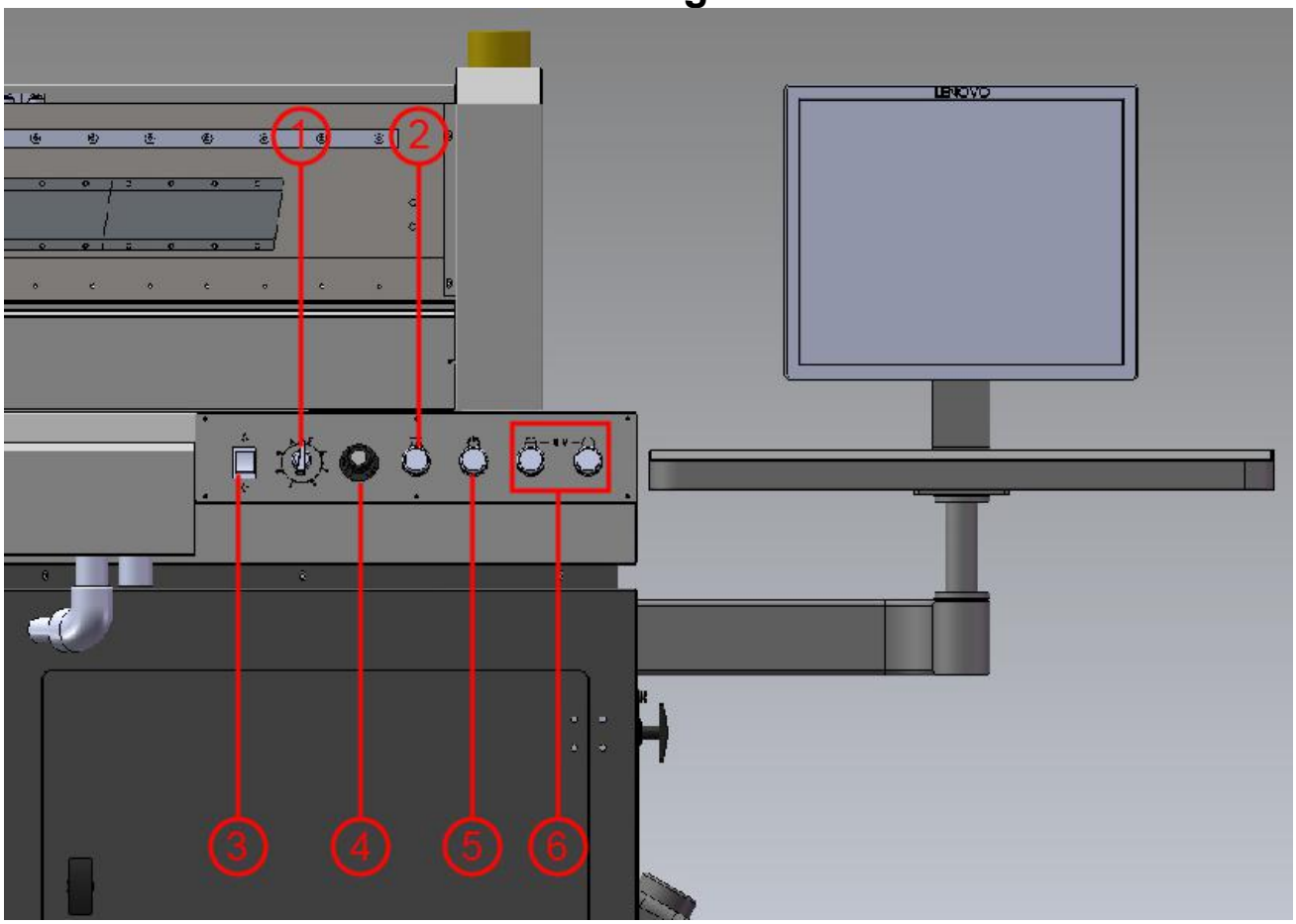
1. Emergency Stop Button Front Left
2. Carriage
3. Automatic Media Alignment
4. Linear Motor Rail
5. Beam
6. Emergency Stop Button Front Right
7. Printing Platform
8. Media Take up Roller
9. Electric Control Panel Front
10. Computer Monitor Assembly

4.2 Rear view of the printer



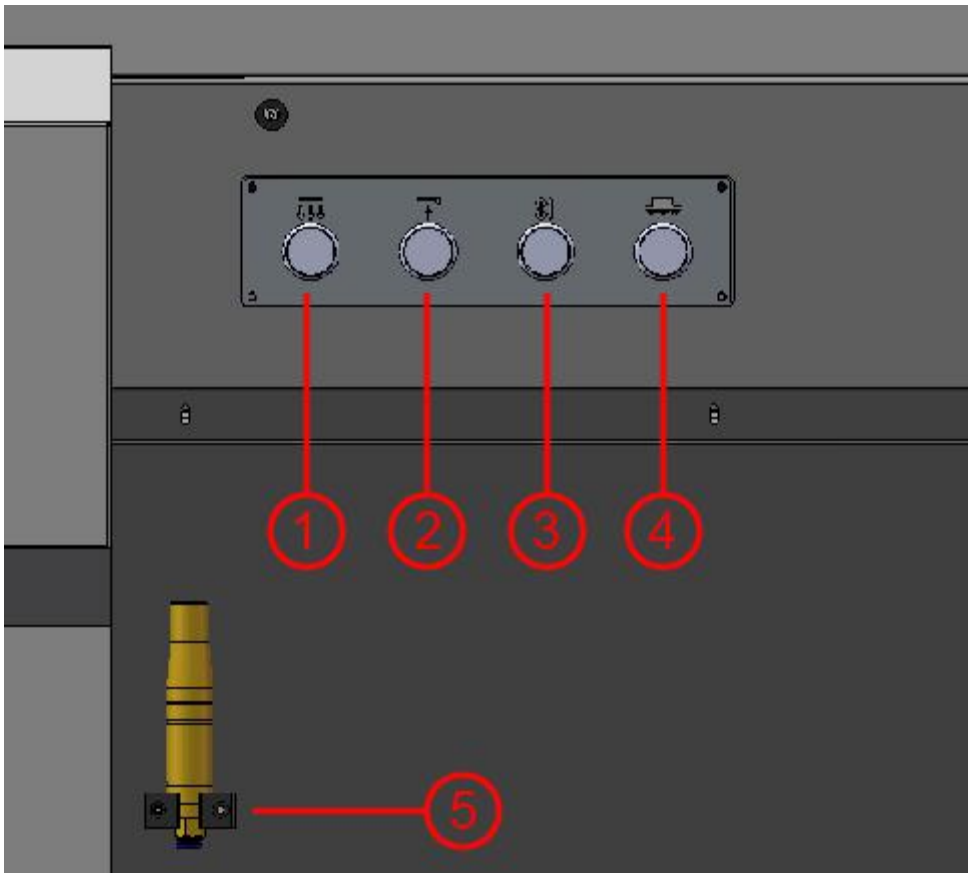
1. USB 2.0 Extension Port
2. Electric Box
3. Media Guide Rollers
4. Electric Control Panel Rear
5. Ink Main Tank Box
6. Main Power Switch
7. Media Feeding Control
8. Media Feeding Roller
9. Suction Control Area

4.3 Electric Control Panel Front Right



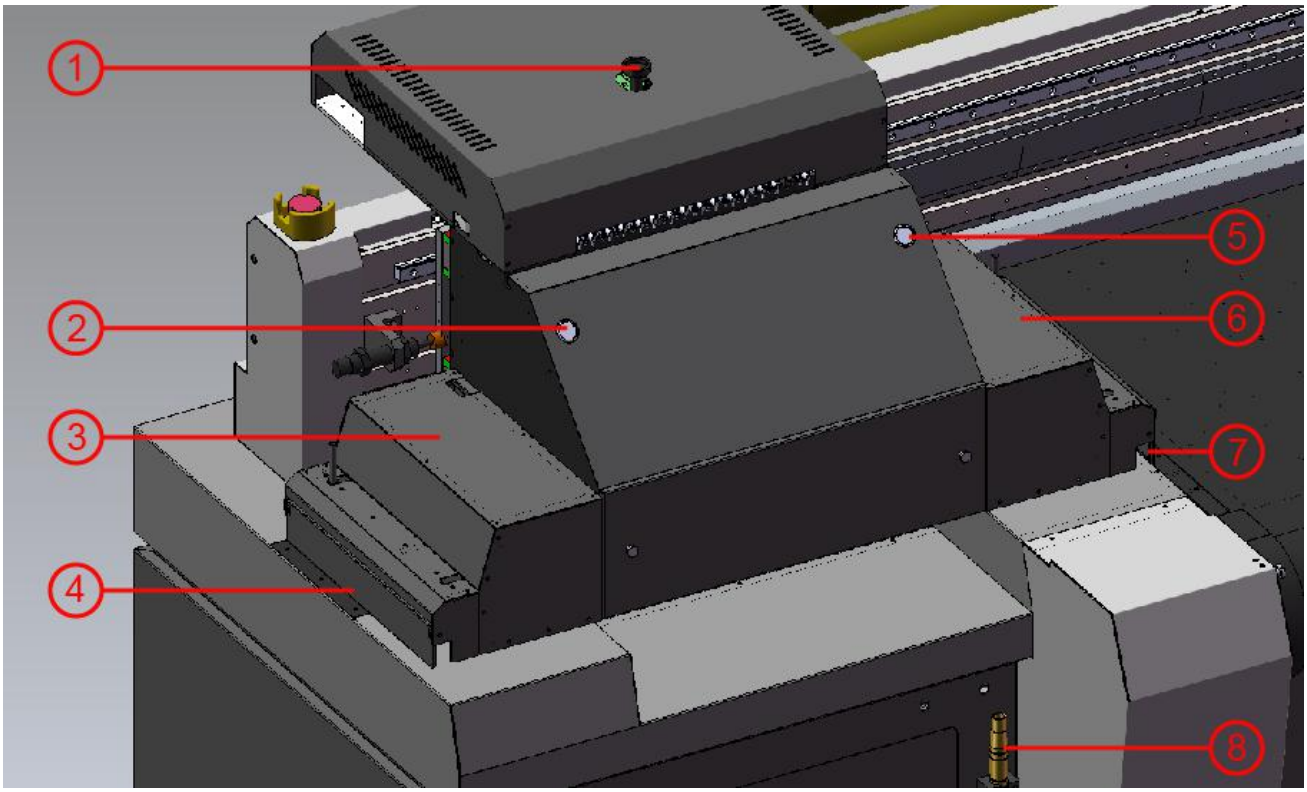
1. Media Take-up Speed Control Switch
2. Suction Button
3. Media Take-up Direction Control Switch
4. Suction Power Control Switch
5. Start Button
6. UV Mercury Lamp Control(Not For LED Lamp)

4.4 Electric Control Panel Rear Left



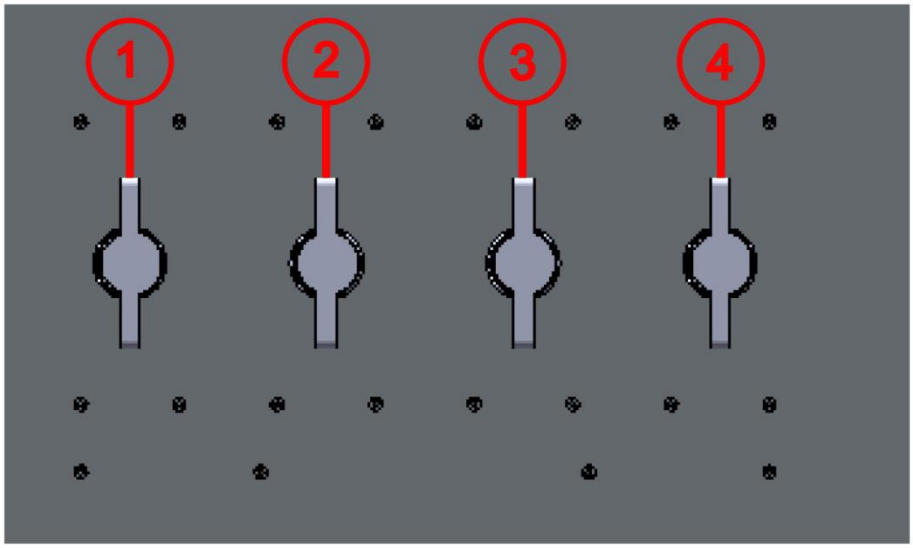
1. Suction Button
2. Automatic Media Alignment Button
3. Media Guide Roller Button
4. Print Button
5. Air Gun

4.5 Carriage Component



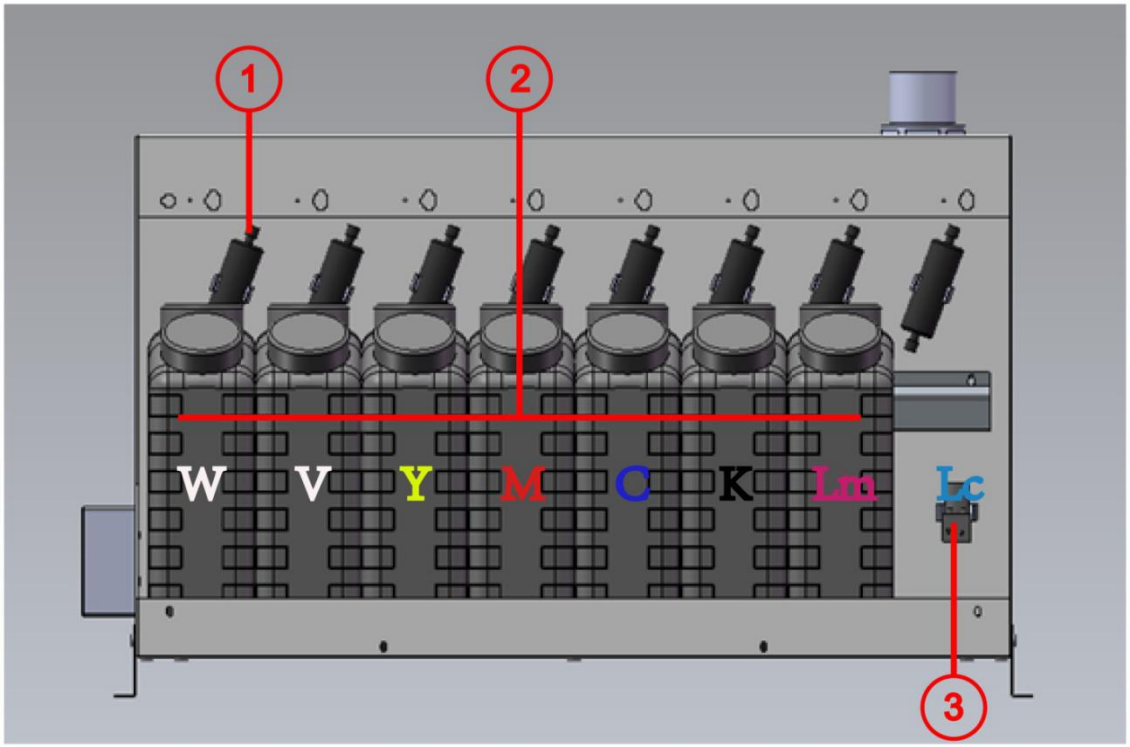
1. Carriage height manual-adjust knob
2. Color Purge Button
3. LED Lamp Assembly Left
4. Anti-crash Assembly Left
5. White Purge Button
6. LED Lamp Assembly Right
7. Anti-crash Assembly Right
8. Air Gun

4.6 Suction area control



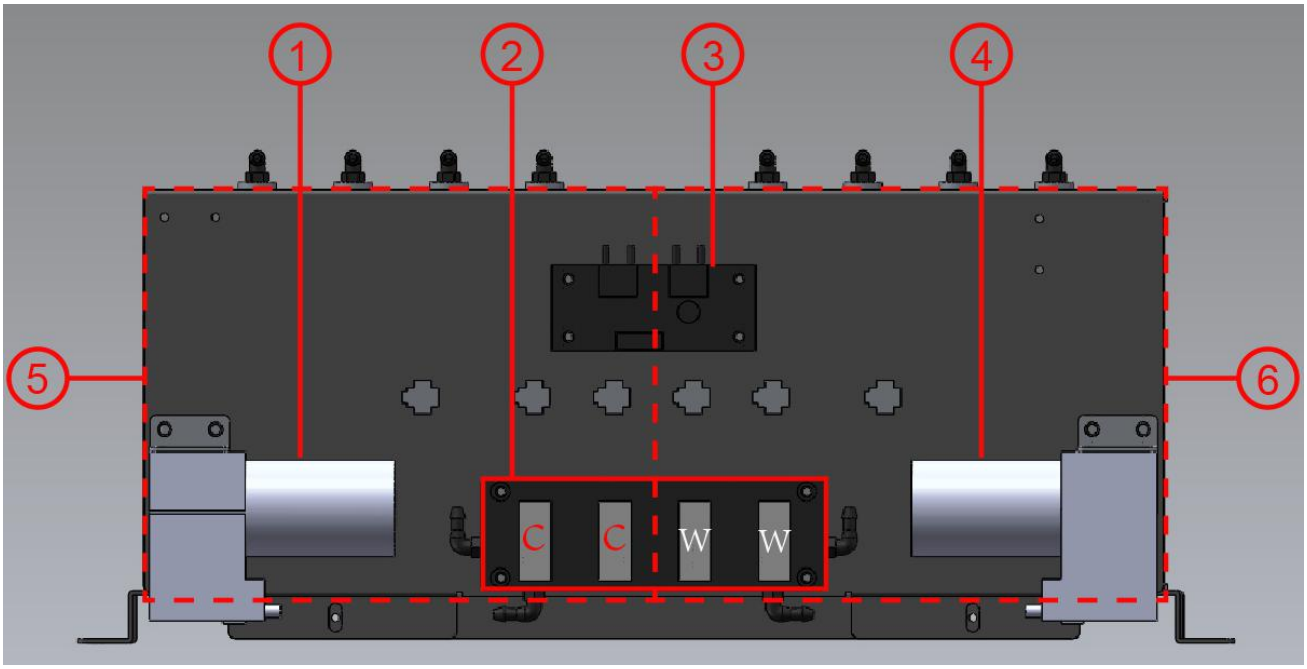
1. Suction Area 1
2. Suction Area 2
3. Suction Area 3
4. Suction Area 4

4.7 ink system diagram



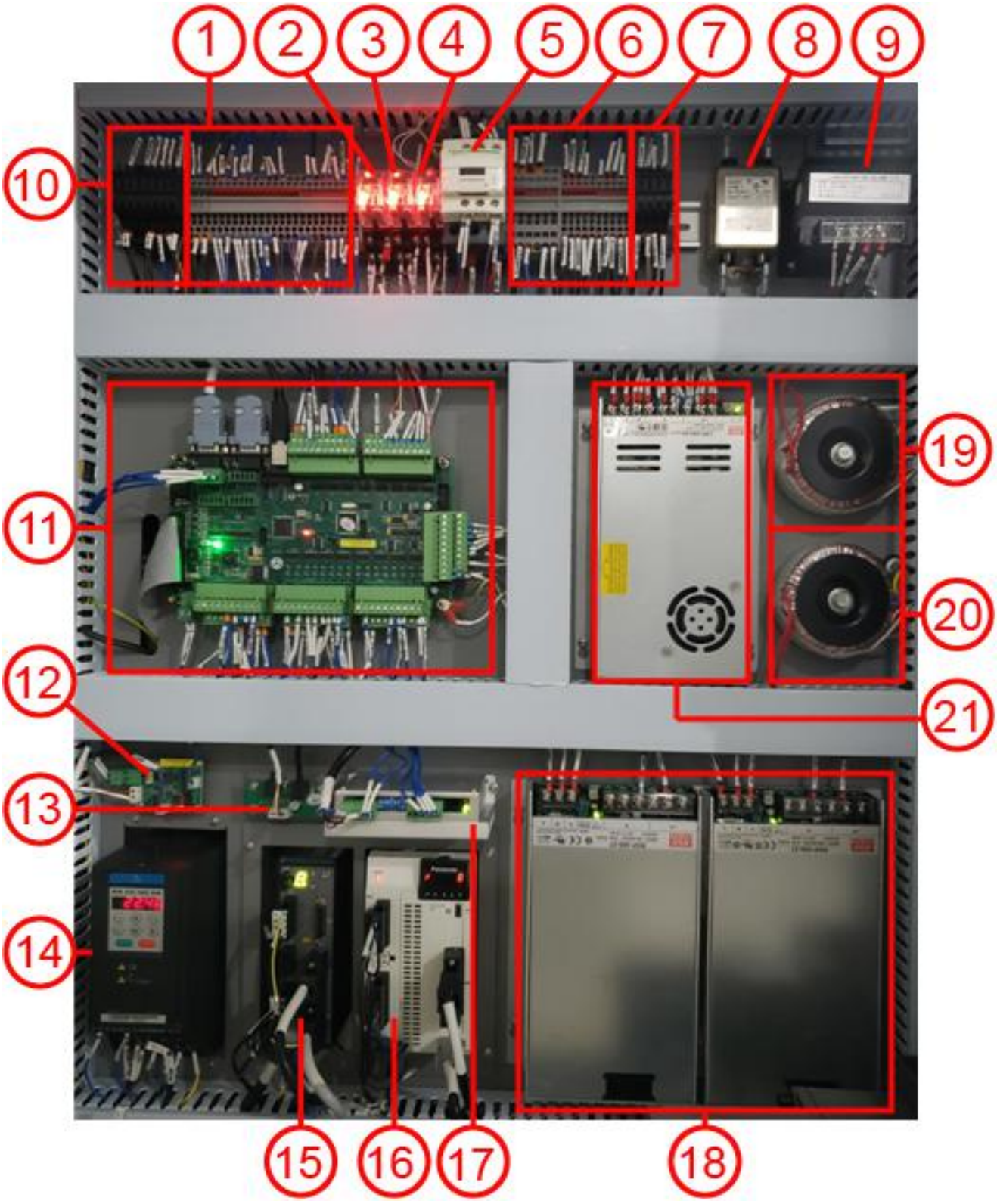
1. Ink Filter
2. Ink Main Tank
3. Ink Pump

4.8 Negative pressure system diagram



1. Color Negative Pressure Pump
2. Solenoid Valve
3. Negative Pressure Board
4. White Negative Pressure Pump
5. Color Negative Pressure Tank
6. White Negative Pressure Tank

4.9 Electrical System Diagram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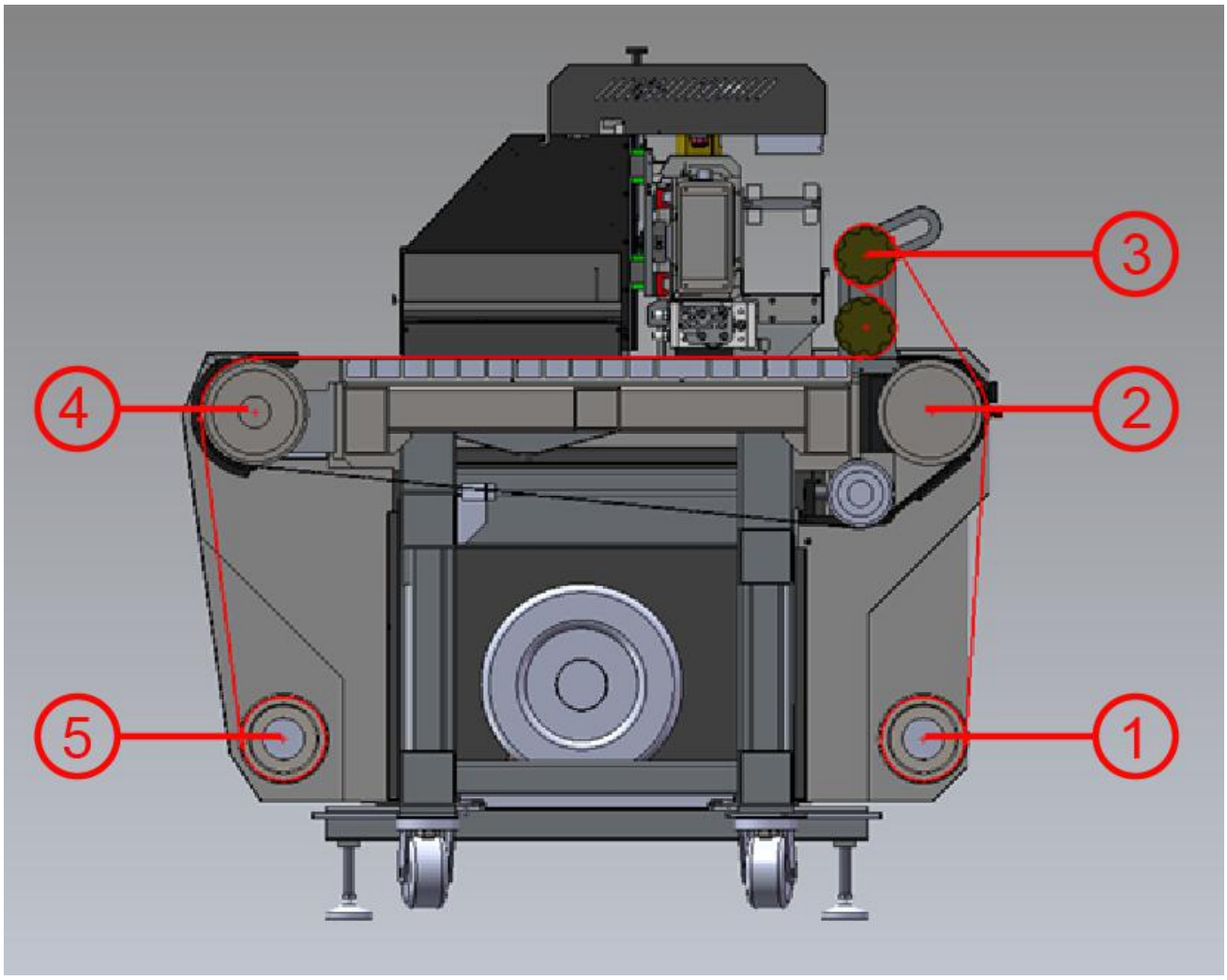
1. DC24v Terminal Block
2. Relay For Heating
3. Relay For Blower
4. Relay For Anti-static
5. AC Contactor
6. AC220V Terminal Block
7. Fuses For AC220V
8. Filter
9. Fuses For DC24V
10. JBK Control Transformer
11. External Device Control Board
12. Suction Control Board
13. Negative Pressure Control Board For Suction
14. Blower Frequency Converter
15. X Linear Motor Driver
16. Y Servo Driver
17. Conveyor Correct Motor Driver
18. 27V Power Supply
19. Toroidal Transformer For Take-up Roller
20. Toroidal Transformer For Feeding Roller
21. 24V Power Supply

4.10 media loading diagram



1. Feeding roller
2. Driven roller
3. Media guide rollers
4. Driving roller
5. Take-up roller

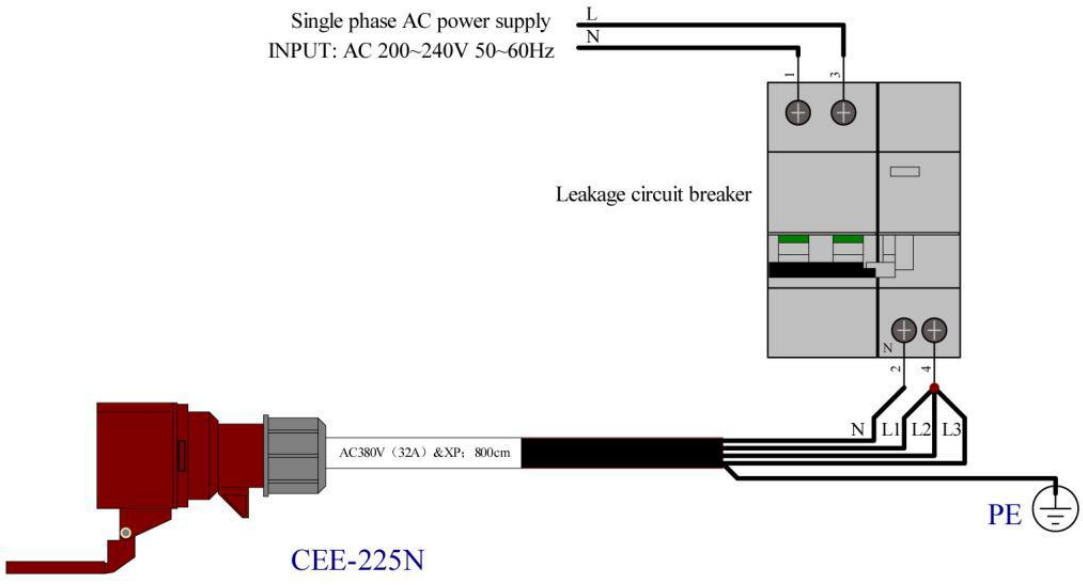
4.11 device label diagram

Keep hands clear from running rollers	
Regular maintenance signs	
Caution for high temperature and ultraviolet light	
Pay attention to protecting eyes and hands	
Keep hands clear from running rollers	
Keep hands clear from the moving carriage	
Heavy object and two person lift required	

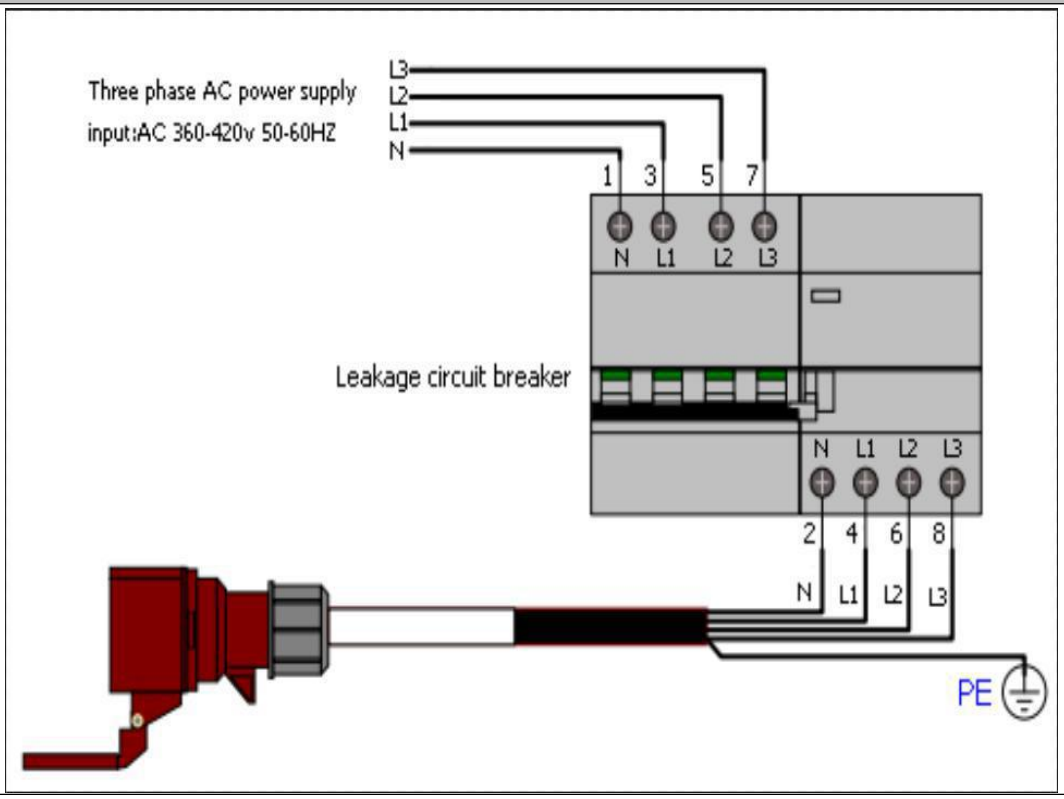
Printer installation

1.Environment requirements

Field dimension at least 7.5*5m
Without excessive dust and other pollutants
Temperature: 18C ~ 30℃(64F ~ 86F)
Humidity: 30%~70%RH
Avoid direct sunlight
Properly ventilated
Max input power 8.3kW， max current 20A
3 phase AC power supply, 380V, grounding voltage is less than 3V
The power cable specification must be no less than 4mm² GB
There must be a reliable grounding wire

Single phase 220V，50~60Hz


Three phase 360-420V， 50~60Hz



2.Pre-installation

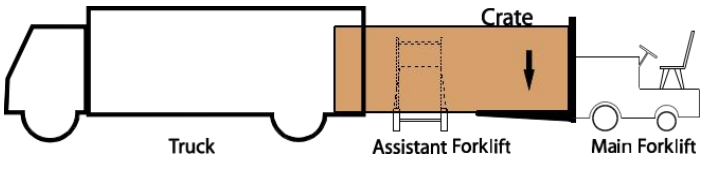
1. Prepare the working field under previous instruction.
2. Install distribution box under previous instruction, prepare a 15KVA voltage regulator.
3. Prepare 2 pcs of monkey wrench, 1 pcs of spirit level, 6L of coolant(pure water or anti-freeze fluid) for the LED lamp chiller.
4. Arrange a forklift for at least 8T(with extension arms) before the equipment arrives. If it needs to be unload from the container or hoisted to buildings, a crane will also be needed. Make sure the passage clear for the machine.

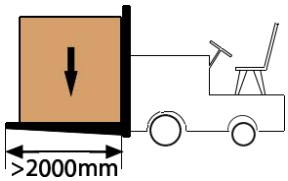
5. Optional PC requirement

Main board	CPU	RAM	Hard disk	OS
PCI-E plug supported	Intel coreI5 above (Industrial pc)	≥8G	≥500G	Windows7 64bit
	Handtop control software is not available in Windows8 and Windows10 system for the time being			

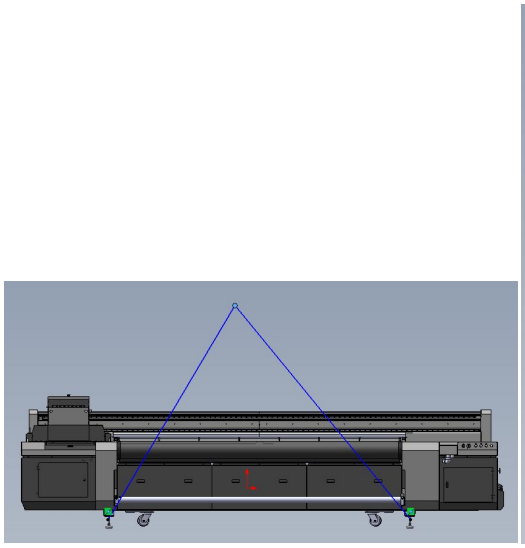
3.Transportation and unload

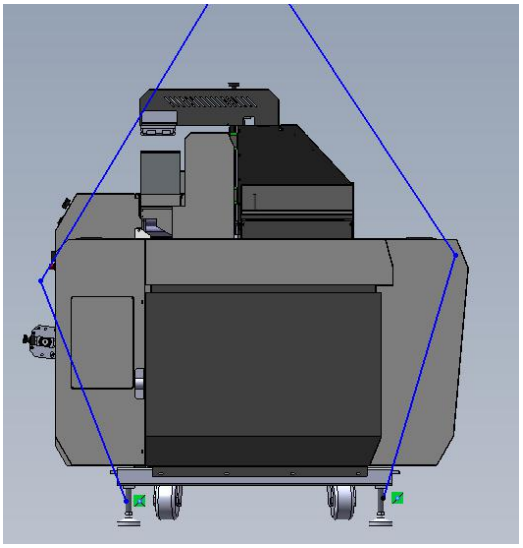
3.1Site transport





Another forklift would be needed if unload from a container or hoist onto building.



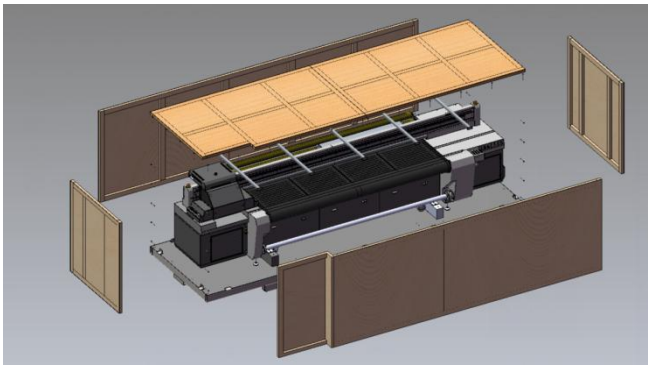


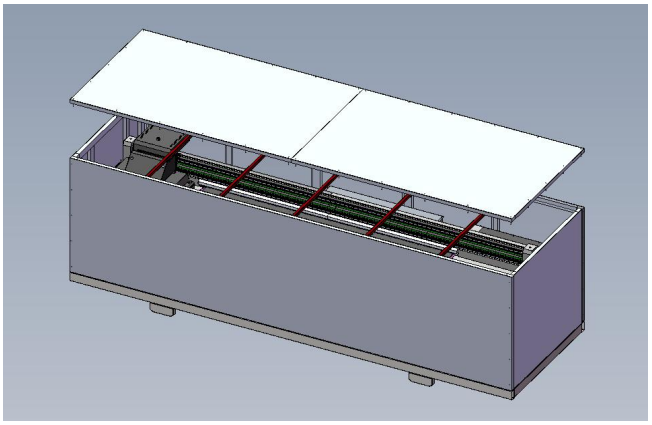
If lifting to upper floors needed, please mount the hoisting rope to the foot cups according to image 1 and 2, then proceed hoisting operation.

Net weight: 2350kg Equipment size: 5530mm*1320mm*1325mm

	This printer is belong to heavy, high precision and expensive machine, it is highly recommended to hire professional carriers to perform loading and transport operations to avoid accidents.
	Must insert the forklift in the front side of the package box (Marked as FRONT)
	Please hoist the machine together with the package base when performing hoisting operations, this is to prevent the machine been distorted by outer force.
	The loading and transport of the machine would require forklift with more than 8T capacity. The distance between the arms should be at lease 2.0m, length of the arms should also be at least 2.0m (No less than the package box width) .

3.2 Devanning process





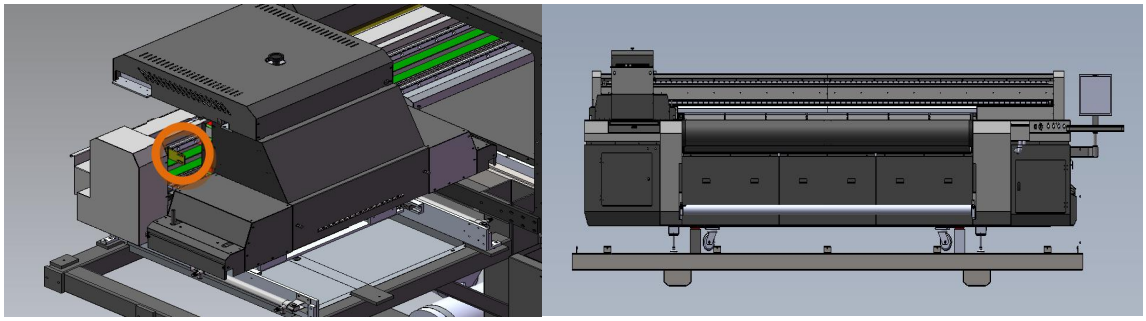
1. First remove the screws on the top of box and the upper plate. then remove five red mounted bars. In order to avoid the damage from the bar against the machine, do remember hold the bar before unscrew the screws.
2. Remove the screw at the both side of the base plate to move the four sides' wooden plate.
3. Remove the machine fix screws and use forklift to lift the machine in the middle position. After check the machine foot are all working well, put the machine to the right place.

4. Installation

4.1Check and confirmation

1. After the machine is located in the designated place, open the wooden package and first check the appearance of the machine and its internal circuit wiring status.
2. Confirm the spare parts list sent along with the machine and sign the packing list.

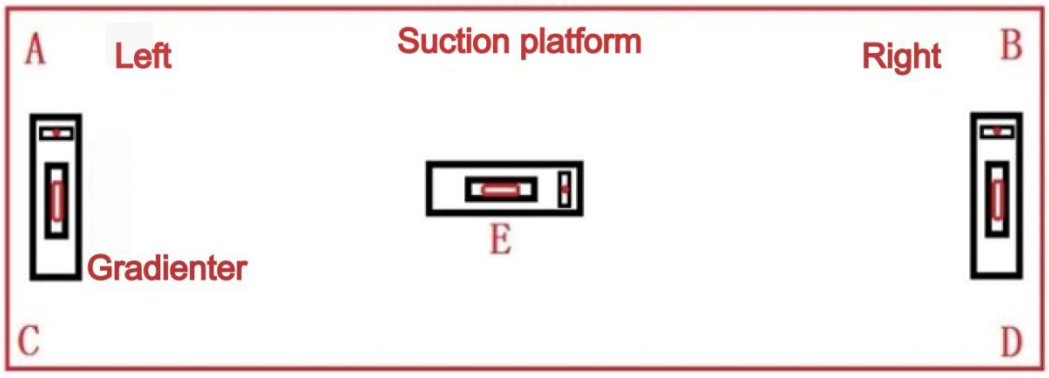
3. Remove the carriage locking parts on the right side of the beam, see the picture below



4.2 Equipment level adjustment

Tools: Level（Precision range 0.02mm/m）, monkey wrench

When adjusting the level on the right/left side, the level should face the same direction.

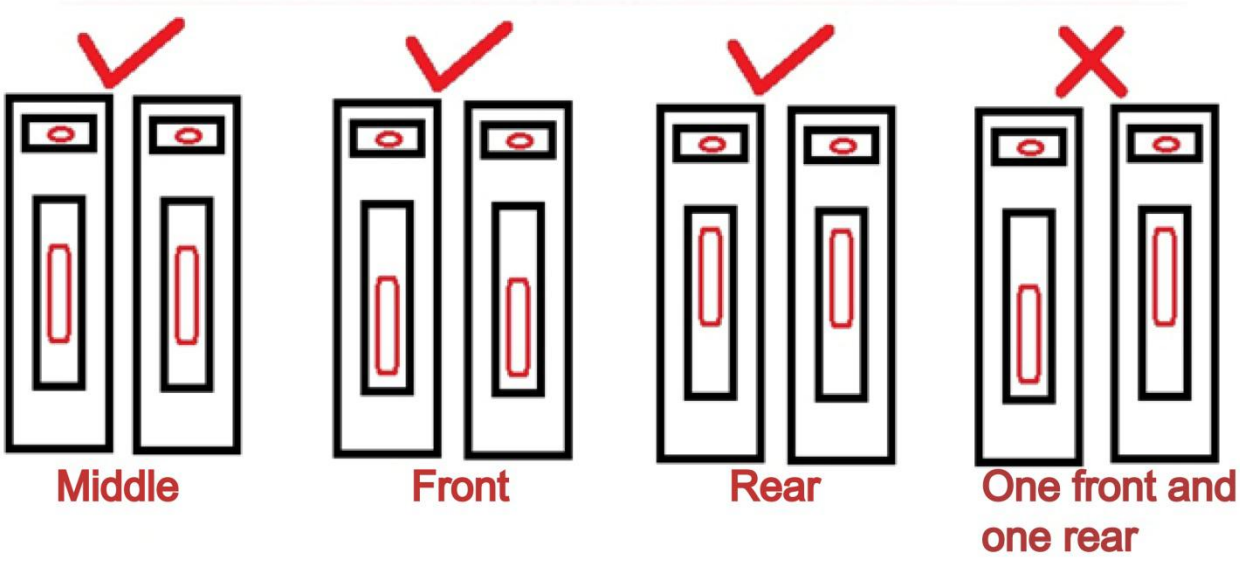


Level position diagram

1. There are 6 main supporting foot cups on the machine body. First, raise up all the foot cups, and lower down the 4 foot cups in the corner of the frame, make sure they touch the ground. Jack up the foot cups until the yellow base leave the ground (5mm height would be enough)
2. Place the level on E position, check the height difference of left/right side

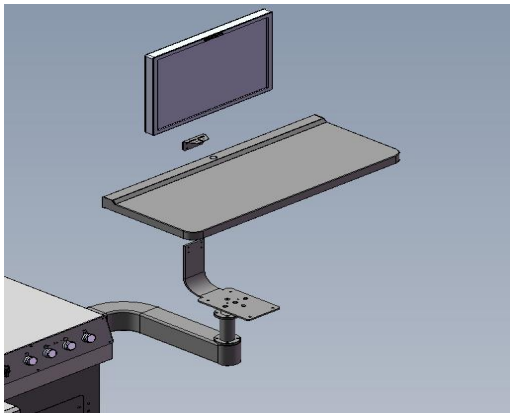
3. Place the level between position A and C, or between position B and D, check for the height for A,B,C,D points, then adjust the foot cup height according to the reference from step 2.
4. Adjust the 4 points to the same level with the assist of level, lock the foot cup screw to prevent loose
5. After the level adjustments, remove the yellow bases, lower down all the foot cups to the ground, lock the screws
6. Check the machine level again (Do not raise the foot cup too high, in case the machine shakes when running)

After adjusted the level, check for the error direction should be in the same direction (No more than 1 unit on the measure ruler) as below diagram shows.



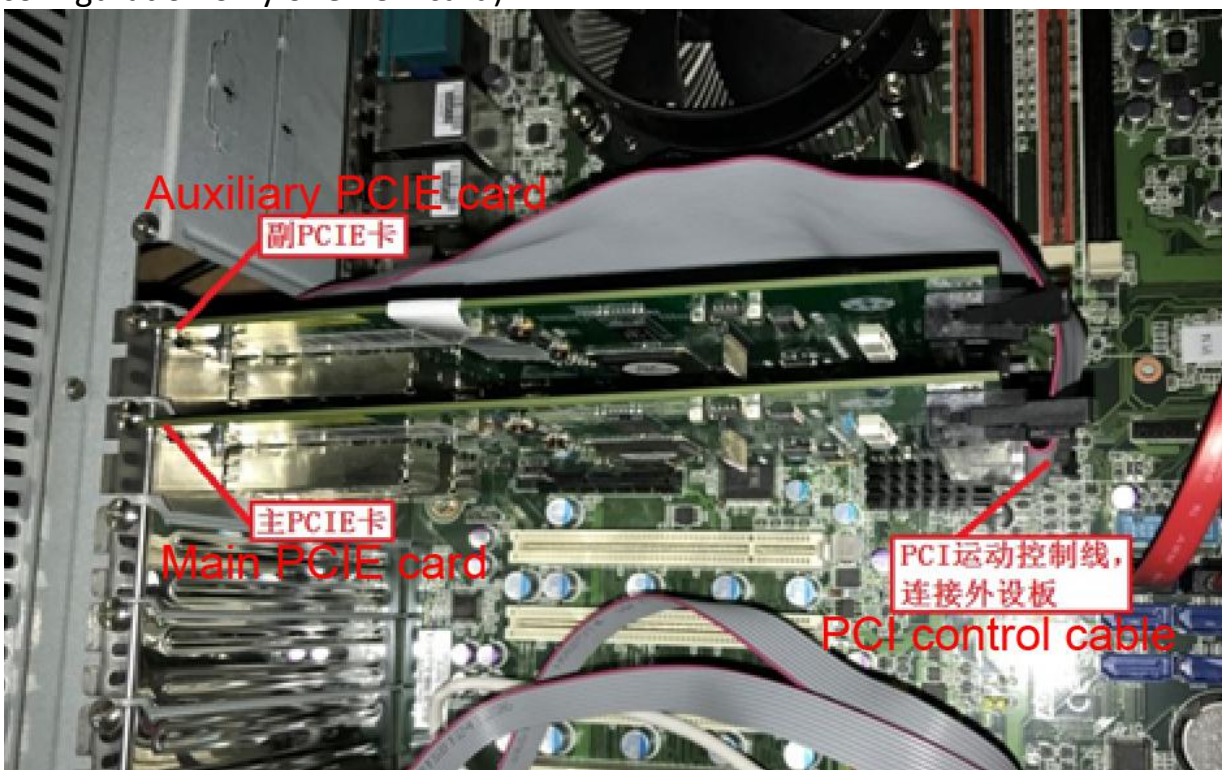
4.3 PC component & External device installation

4.3.1 Install PC component



Install the display and PC according to the above picture and put the USB cable, PC start cable, display signal cable and power cable into the crate.

4.3.2 Install PCIE cards (Pictures below are for the 2X5 configuration, for 2x4 configuration only one PCIE card)



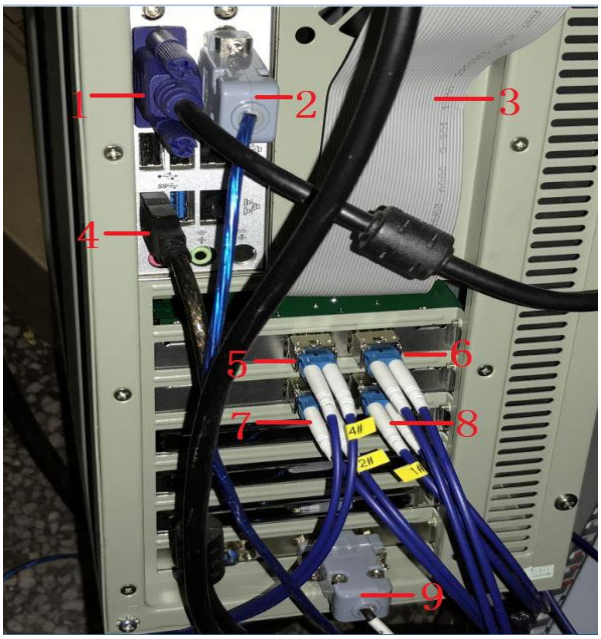
Install the PCIE card to the PC. Connect the movement control cable with the PCIE card and external device control board. Use the PC to connect the fiber cable for data transfer.

Difference of PCIE card between the 2x5 configuration and 2x4 configuration

Kyocera 2x4 V1.1 PCIE card

Kyocera 2x5 V1.2 PCIE card

4.3.3 Connect the cables on PC (Pictures below are for the 2X5 configuration, for 2x4 configuration only one PCIE card)



1. Display VGA Cable
2. X Axis Driver DP9 Cable
3. PCI Movement Control Cable
4. USB Communication Cable
5. Optical Fiber Cable No.4 (Connect to The Head Board No.4)
6. Optical Fiber Cable No.3 (Connect to The Head Board No.3)
7. Optical Fiber Cable No.2 (Connect to The Head Board No.2)
8. Optical Fiber Cable No.1 (Connect to The Head Board No.1)
9. Y Axis Driver DP9 Cable

4.4 LED module installation

4.4.1 LED lamp installation

1 Install the LED lamp to the fixing plate at two side and connect the power cable, shutter control cable and anti-collision signal cable.

2 The anti-collision module must be lower than jet plate with 0.5mm.

Put an acrylic on the platform and start the height detection function with 2mm setting. Lose the anti-collision plate screws and use the 1.5mm filler gauge to adjust the anti-collision plate height.

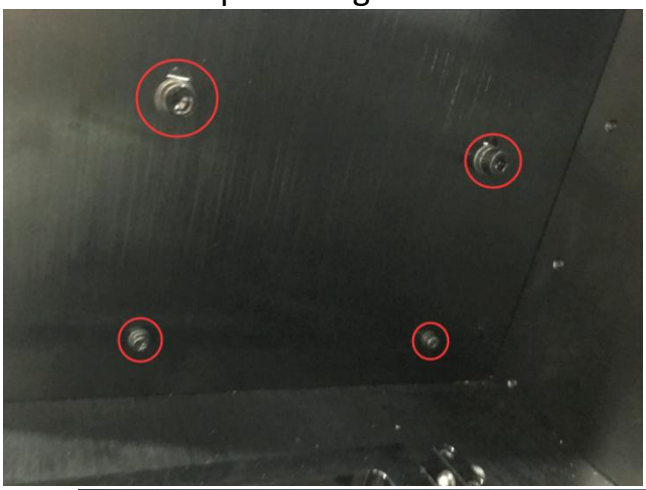


Plate screws

Adjust plate height

4.4.2 Chiller installation and setting

Connect the cooling circulation tube to the water hose. Then open the water-IN valve. Connect the power unit to 220V power and start the chiller working. Finally add the pure water(temp above 10℃) or anti-freezing water (temp under 10℃)

4.4.3 Setting of chiller

OPERATION INSTRUCTION MANUAL

1. The contents of the three digital displays are as follows:

D1 displays the real-time water temperature and displays the setting items when the status.

D2 displays the set value, displays the setting item value when setting the status, and displays the error code during the alarm.

D3 displays the monitoring temperature of the cooling system working condition, and displays the power value when pressing and holding the adjustable LED power.

Default factory setting : C0:15 C1:1.5 C2:60 C3:1 C4:20 C5:30 C6:3 C7:50

2. Button function introduction:

AUTO: (Smart mode) Entry method: Press once to enter the mode, press AUTO key (D1) again to display the room temperature, and automatically return to the display water temperature after 3 seconds.

CONSTANT (constant temperature mode) Entry method: same as smart mode entry method and function

SET (Settings): Entry method: Press SET key to enter the setting state, can adjust all the default parameters from C0 to C8, no operation button for more than 10 seconds or press SET button to exit the setting and save the parameters.

- + (minus and plus key): All parameters are modified by the plus or minus key.

(Up and down keys): Press the up and down keys to switch from C0 to C8 when entering the SET state; press the up and down keys to adjust the UV lamp power without entering the SET state (whether it is adjustable according to the actual situation of the UV manufacturer)

QA: phase A loss **QB**: phase B loss **QC**: phase C loss **QF**: phase sequence error **OK**: three phase normal

Press and hold the SET button for 4 seconds to reset all set values to the initial state.

3.Control mode selection and working mode details

CONSTANT (Constant temperature mode): (factory default: 26℃)

D2 displays the current set temperature value, directly press the plus or minus button to change the set value, real-time water temperature (D1) = set temperature (D2) ± return difference value(C1). The setting range is 5℃ - 40℃, the default is 30℃. In addition, the set temperature value cannot exceed the upper limit (C5), Lower limit (C4) temperature range.

AUTO: (Smart mode) (factory default: -2℃)

The D2 displays the difference value between the water temperature and the room temperature. Press the up and down keys to change the set value and set the temperature deviation range (-5℃--+5℃), water temperature (D1) range = room temperature + (D2) ± return difference value (C1). When the D1 range is not between C4-C5, the water temperature = upper limit (C5 ± return difference value (C1)), or lower limit (C4 + return difference value (C1)). For example, setting D2=1℃, Room temperature = 25℃, real-time water temperature D1 = 26℃ ± return difference value (C1), the actual water temperature D1 is controlled between 24.5 and 27.5℃.

Regardless of the smart mode or the constant temperature mode, if the water temperature is lower than (lower limit C4-0.5℃), the cooling is no longer performed, until the water temperature is higher than (lower limit C4+0.5℃), then resume normal control.

If the water temperature is lower than (the set temperature of the heating rod C6-0.5℃), turn on the heating rod; When the water temperature is higher than (the set temperature of the heating rod C6+0.5℃), heating is stopped. (The heating rod can be equipped as needed, it is not equipped by default)

4. Setting item parameter codes introduction:

C0: Adjust the alarm difference (5.0-15.0 degrees): In the constant temperature mode, it indicates that if the difference between the target value and the set value exceeds the CO value, then the alarm signal is output; in the smart mode: if the difference between the water temperature and (the room temperature + the smart mode deviation value) is greater than the value of C0, then output an alarm signal.

C1: return difference value (0.1℃-2.0℃, default 1.5℃): In the smart mode and constant temperature mode, the up and down difference value that water temperature and the target temperature allowed. When this value is too small, the compressor starts frequently.

C2: Cold water machine system monitoring temperature alarm setting value (1℃-100℃): This parameter is set by the factory to default to 60 degrees. Please contact the factory to modify this parameter.

C3: Water shortage alarm delay time (1S －100S): Continue to work normally when the water shortage time is detected is less than this value.

C4: Lower limit temperature setting (1℃-25℃). If it is lower than this value, it will not be cooled; this value cannot be higher than the set temperature value of the constant temperature mode.

C5: Upper limit temperature setting (25℃-50℃), the water temperature is kept below the value of (C5+C1).

This value must be 2℃ higher than the heating rod start temperature C6, and can not be lower than the set temperature value of the constant temperature mode, otherwise it cannot be adjusted.

C6: Heating rod start temperature (1℃-20℃): C6 is 2 degrees lower than C4, otherwise it cannot be adjusted.

C7: Maximum room temperature alarm function (42℃-50℃): When the room temperature exceeds this C7, the alarm signal is output and the Cold water machine compressor stops working.

C8: Start mode, ON-machine starts when the machine is powered on, OFF-powers on and presses the power button to start.

General parameter description:

※ All temperature measurement display range: -20℃~ 99.9℃.

※ When the following conditions occur during the adjustment, the conflict will be caused, the adjustment will stop, and the buzzer will sound 3 alarms to indicate that the adjustment is invalid:

.The set temperature of the constant temperature mode exceeds the value of the upper limit temperature

C5;

.The set temperature of the constant temperature mode is lower than the value of the lower limit

temperature C4;

.The heating rod start temperature is higher than (lower limit temperature C4-2℃);

When the above error conflict occurs and cannot be adjusted, you can return the conflicting items to modify them to resolve the conflict.

5. Fault protection function:

The meaning of the fault code is as follows:

E0: 2 PCB communication anomalies. Generally due to the connection lines of the 2 boards are damaged or loose.

E1: Too high water temperature protection. Water temperature exceeds (target value + C0), too high protection fault output interrupt signal.

E2: Too low water temperature protection. Water temperature lower than (target value -C0), too low water temperature protection fault output interrupt signal.

E3: Water shortage protection. The pump does not pump water, the water pipe is blocked or the water flow is not smooth, and the water shortage protection is started, and the output interrupt signal.

E4: Refrigeration system fault. The cause of the fault is that the exhaust fan is broken, the condenser is blocked by dust, the air inlet is not smooth and etc., and output interrupt signal.

E5: High voltage protection. The high voltage switch is disconnected and start protection. Output interrupt signal. E6: Low voltage protection. The low voltage switch is disconnected and start protection. Output interrupt signal. E7: High room temperature protection. Output interrupt signal.

The protection or de-protection delay time is 2 seconds, and less than 2 seconds is regarded as interference and do not start protection.

If you do not need the E3/E5/E6, these 3 protection, you can directly short the sensor line.

After the fault protection is started, turn off the compressor and the heating rod, open the protection output, and open the solenoid valve. When the fault is removed, automatically resume working status. However, if it is E3 and E4 protection, only the protection relay will be activated, and other work will not be affected.

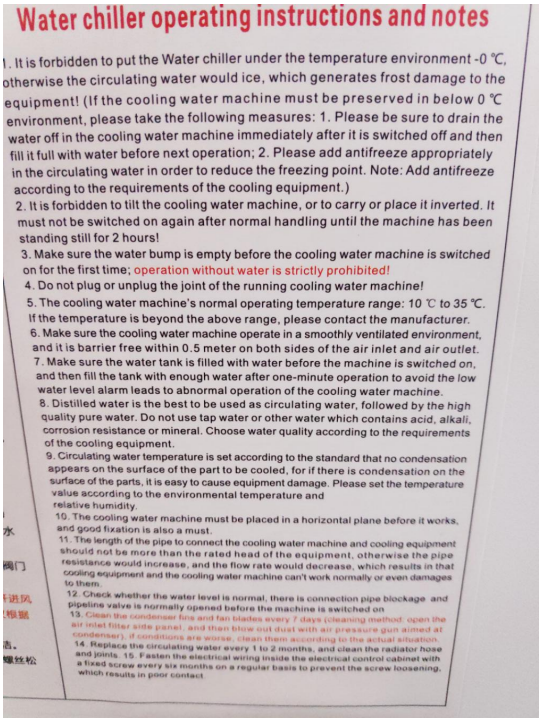
When the power is turned on, the difference between the water temperature and the target value may exceed the high and low temperature alarm limits. At this time, the alarm cannot be made, but at the same time detect temperature trends:

It is normal if it changes toward the target value and changes more than 0.3 degrees every 30 seconds.

If the change of continual 3 times *30 seconds does not meet the requirements, then the alarm program detects if the temperature difference reaches the alarm value and then starts the alarm.

After an error alarm occurs, first troubleshoot, or modify the set parameters, then press the on/off key to restart, or power off and restart to continue working.

If the alarm is caused by the water temperature being too high or too low, the alarm can be temporarily canceled after adjusting the temperature or after switching the constant temperature/smart mode.


Water chiller operating instructions and notes

. It is forbidden to put the Water chiller under the temperature environment -0 ℃, otherwise the circulating water would ice, which generates frost damage to the equipment! (If the cooling water machine must be preserved in below 0 ℃ environment, please take the following measures: 1. Please be sure to drain the water off in the cooling water machine immediately after it is switched off and then fill it full with water before next operation; 2. Please add antifreeze appropriately in the circulating water in order to reduce the freezing point. Note: Add antifreeze according to the requirements of the cooling equipment.)
2. It is forbidden to tilt the cooling water machine, or to carry or place it inverted. It must not be switched on again after normal handling until the machine has been standing still for 2 hours!
3. Make sure the water bump is empty before the cooling water machine is switched on for the first time; operation without water is strictly prohibited!
4. Do not plug or unplug the joint of the running cooling water machine!
5. The cooling water machine's normal operating temperature range: 10 ℃ to 35 ℃. If the temperature is beyond the above range, please contact the manufacturer.
6. Make sure the cooling water machine operate in a smoothly ventilated environment, and it is barrier free within 0.5 meter on both sides of the air inlet and air outlet.
7. Make sure the water tank is filled with water before the machine is switched on, and then fill the tank with enough water after one-minute operation to avoid the low water level alarm leads to abnormal operation of the cooling water machine.
8. Distilled water is the best to be used as circulating water, followed by the high quality pure water. Do not use tap water or other water which contains acid, alkali, corrosion resistance or mineral. Choose water quality according to the requirements of the cooling equipment.
9. Circulating water temperature is set according to the standard that no condensation appears on the surface of the part to be cooled, for if there is condensation on the surface of the parts, it is easy to cause equipment damage. Please set the temperature value according to the environmental temperature and relative humidity.
10. The cooling water machine must be placed in a horizontal plane before it works, and good fixation is also a must.
11. The length of the pipe to connect the cooling water machine and cooling equipment should not be more than the rated head of the equipment, otherwise the pipe resistance would increase, and the flow rate would decrease, which results in that cooling equipment and the cooling water machine can't work normally or even damages to them.
12. Check whether the water level is normal, there is connection pipe blockage and pipeline valve is normally opened before the machine is switched on
13. Clean the condenser fins and fan blades every 7 days (cleaning method: open the air inlet filter side panel, and then blow out dust with air pressure gun aimed at condenser); if conditions are worse, clean them according to the actual situation.
14. Replace the circulating water every 1 to 2 months, and clean the radiator hose and joints. 15. Fasten the electrical wiring inside the electrical control cabinet with a fixed screw every six months on a regular basis to prevent the screw loosening, which results in poor contact

4.5 Main power installation

Check the voltage with multimeter before connect the cable. Land N are 220, L and PE are more than 3V. After confirm the power supply is OK, connect the power cable to the voltage stabilizer which need to connect the air switch after that. Make sure

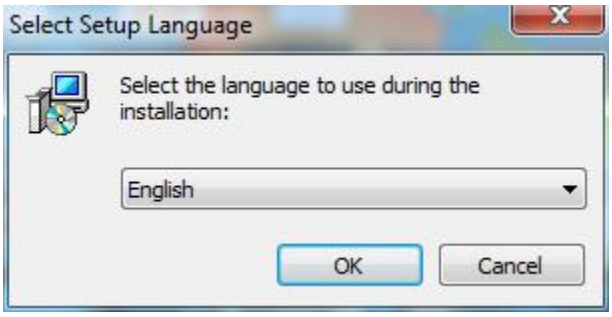
the connection is correct and normal, switch on from ip to down. Main power locker should open to the up before turn on the main power and connect to the electricity. Finally start the PC and machine.

5.Software Installation

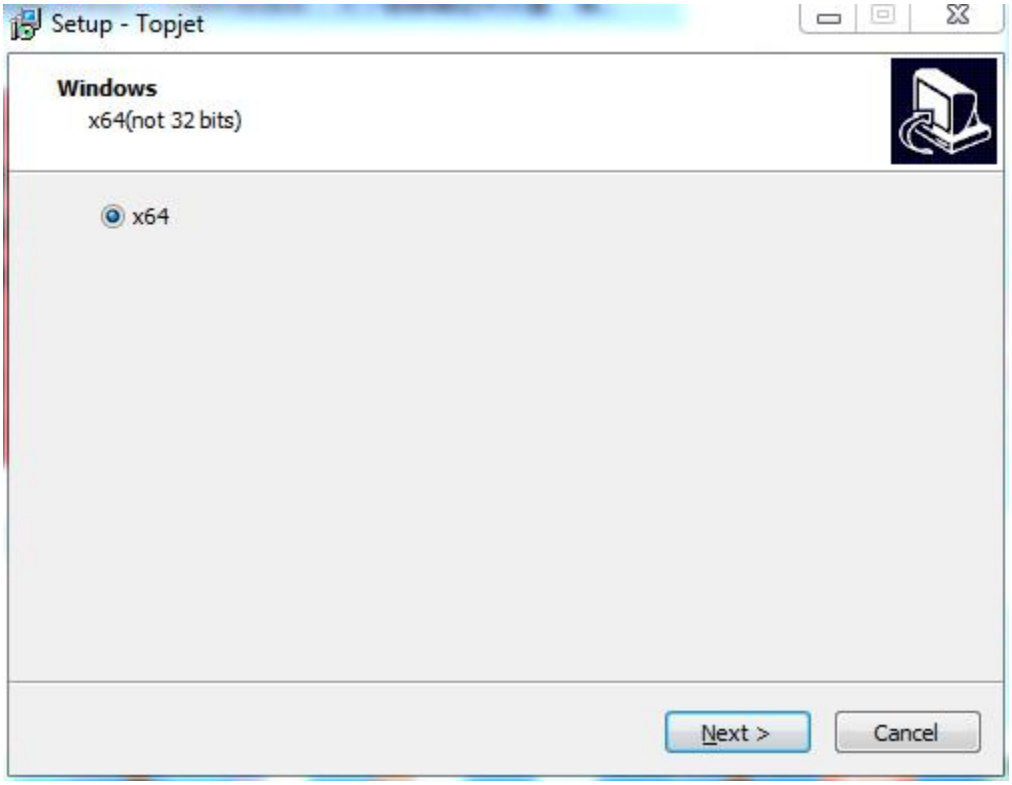
5.1Topjet Installation

1 Select the driver version accordingly

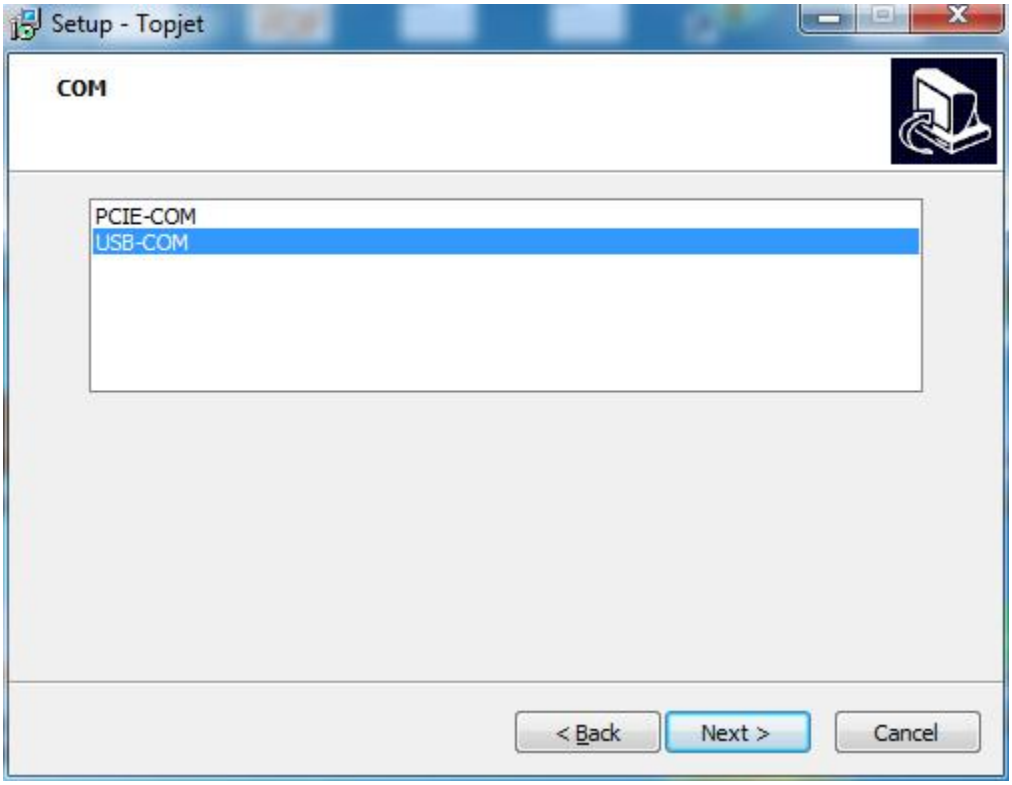
2 Double click the driver, choose language



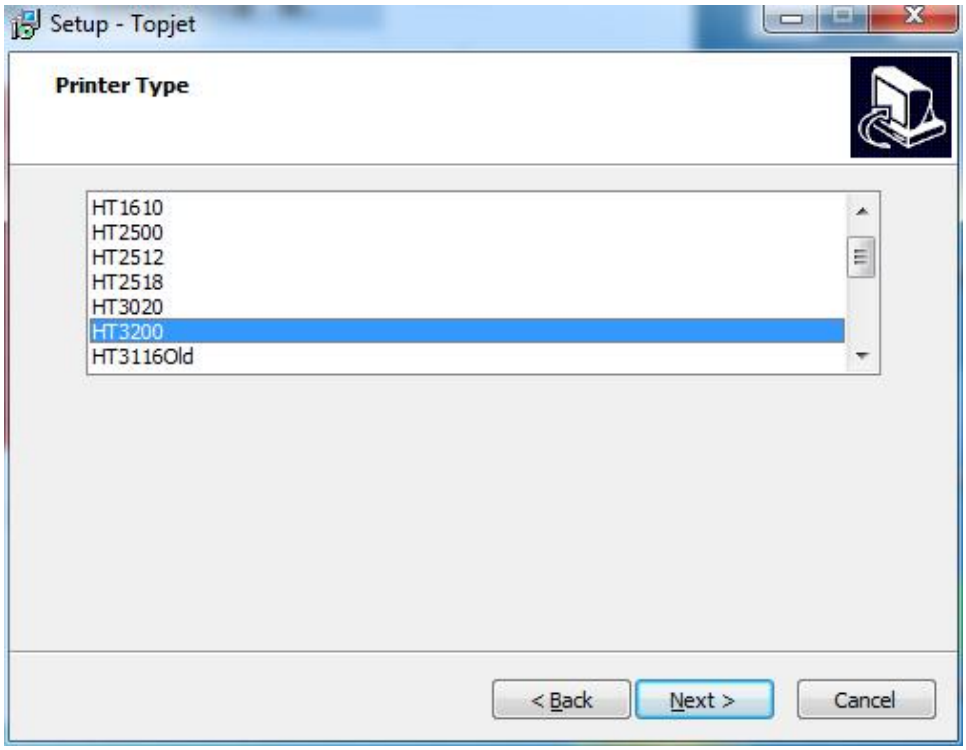
3 Select X64, only available for WIN 7 64bit OS



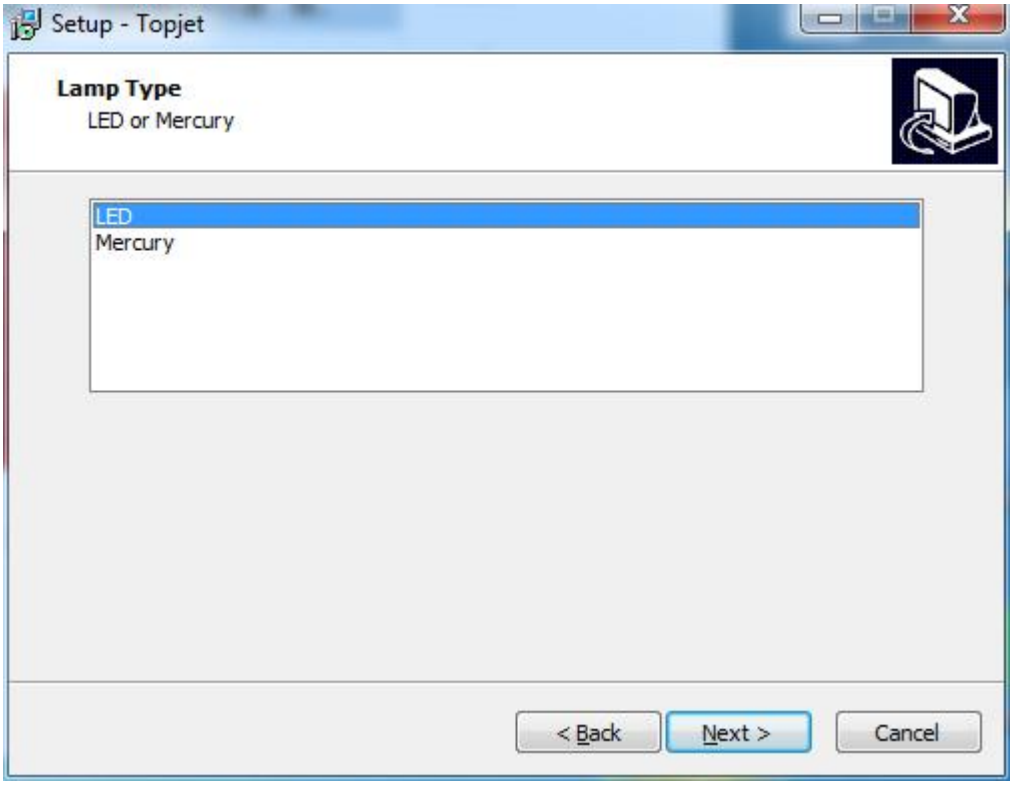
4 Select the communication port



5 Select the printer model

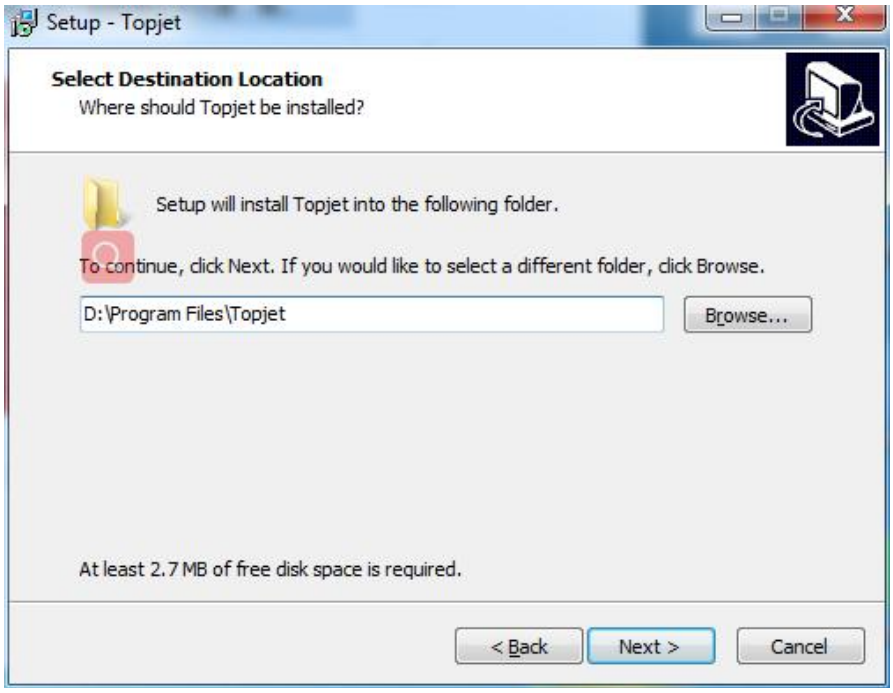


6 Select lamp type

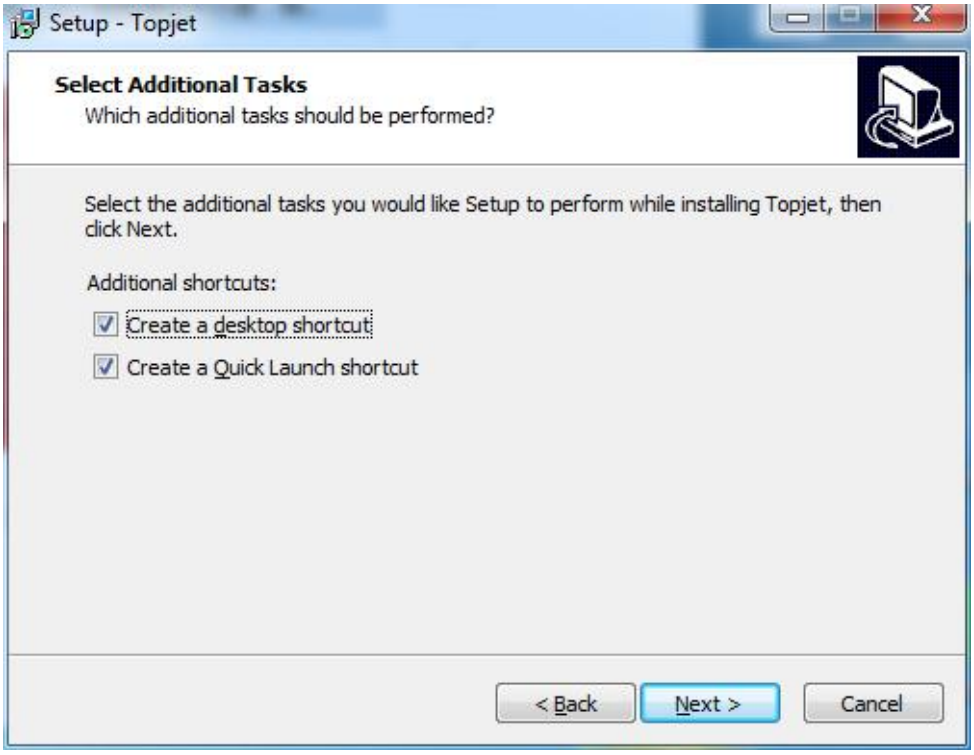


7 Browse a path for TopJet.

It's recommended to not choose system disk as installation folder. For example, "E:\". Thus, the package will generate a folder named "E:\TopJet" automatically.

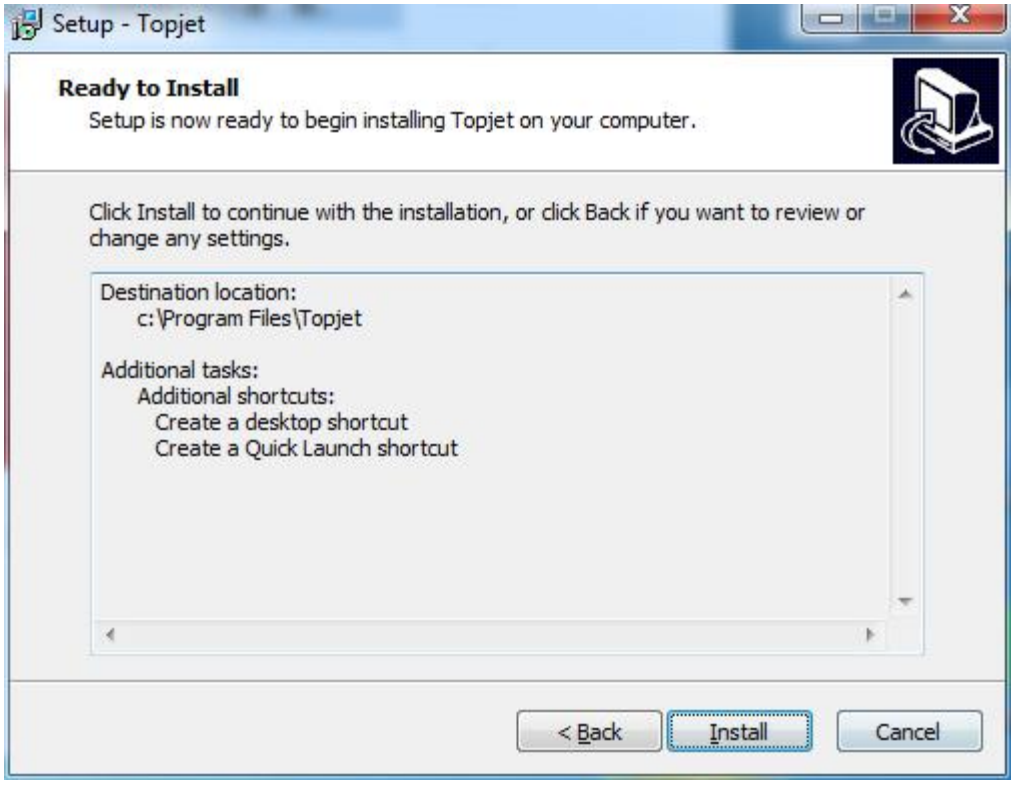


8 Select additional task

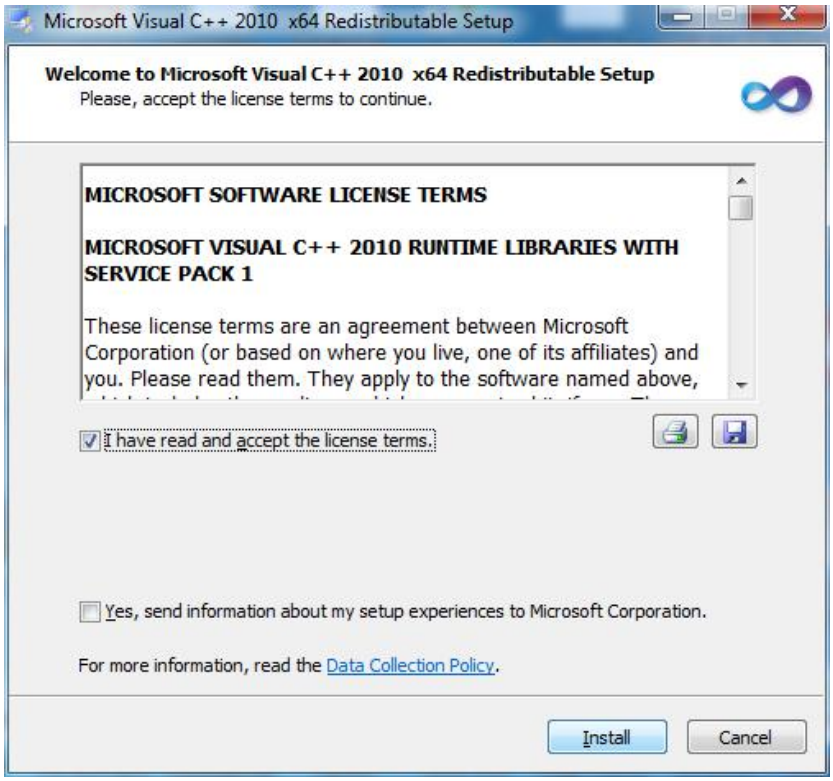


9 Install

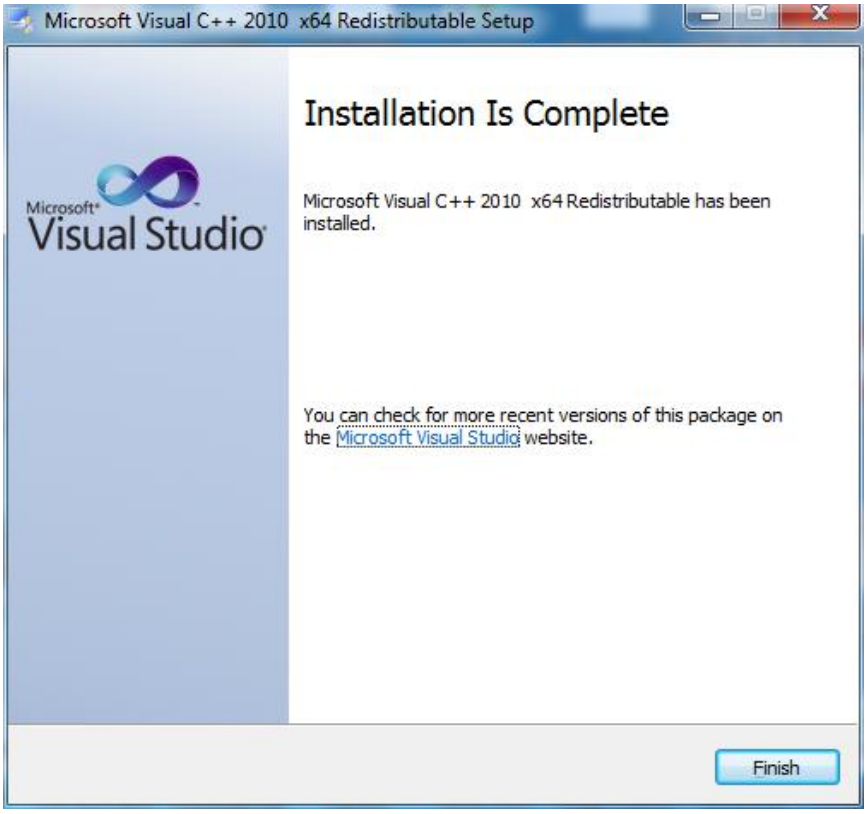
11



10 Install



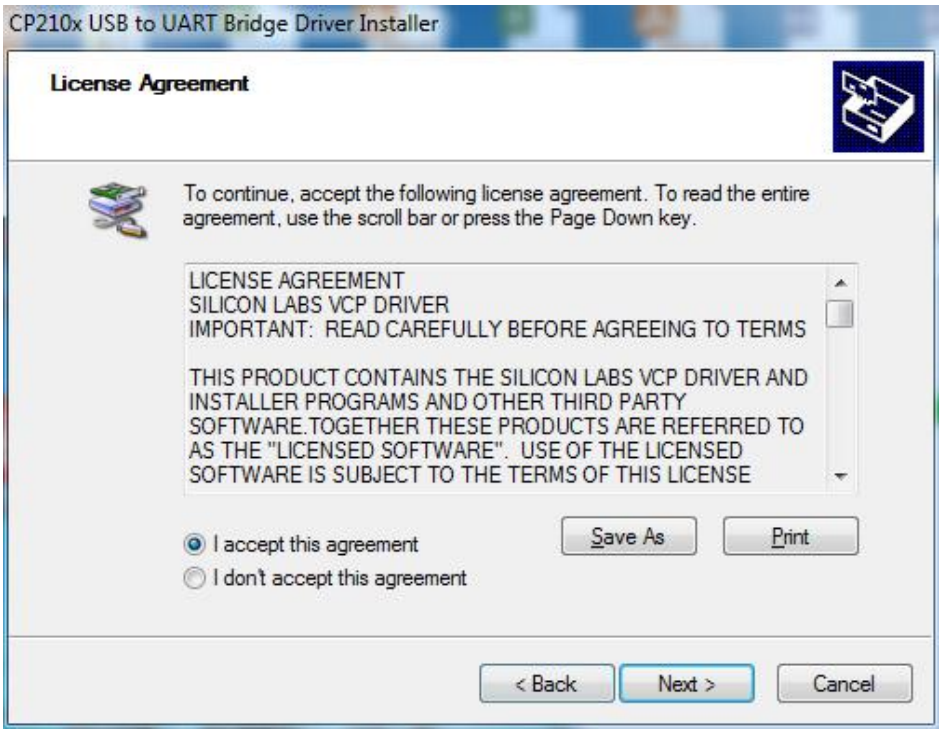
11 Click finish to continue



12 Install the driver for PCIE card

13

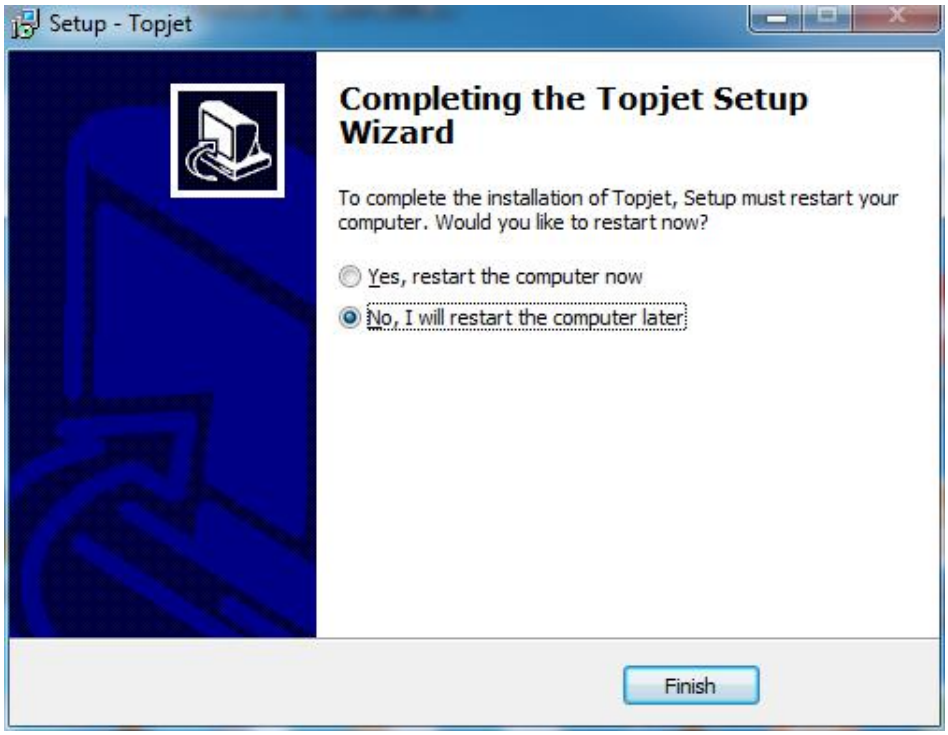
Accept and click next



14 Continue

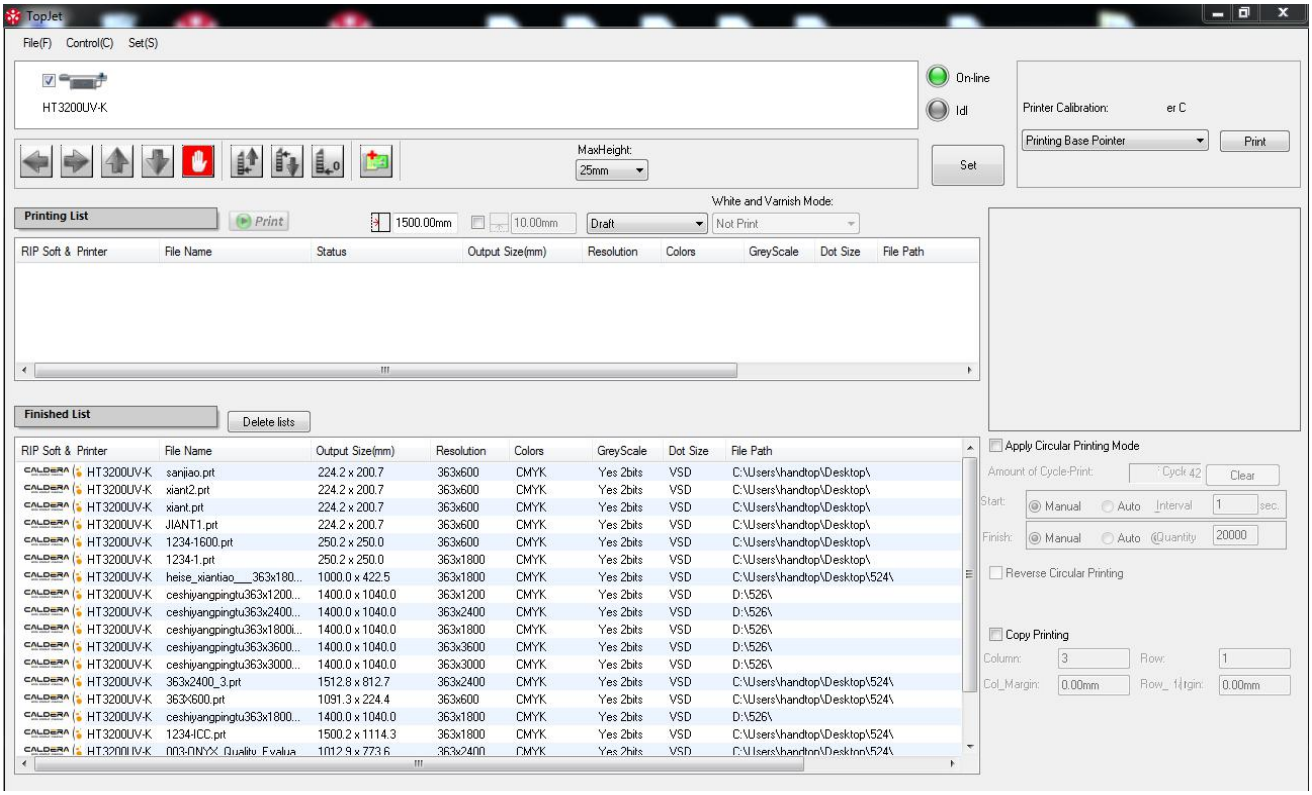
15

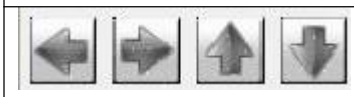
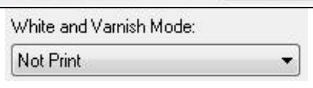
Finish. Normally we do not have to reboot computer after installation.

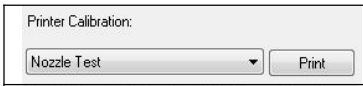
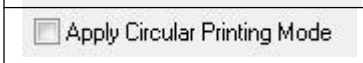


5.2 Topjet software operation guide

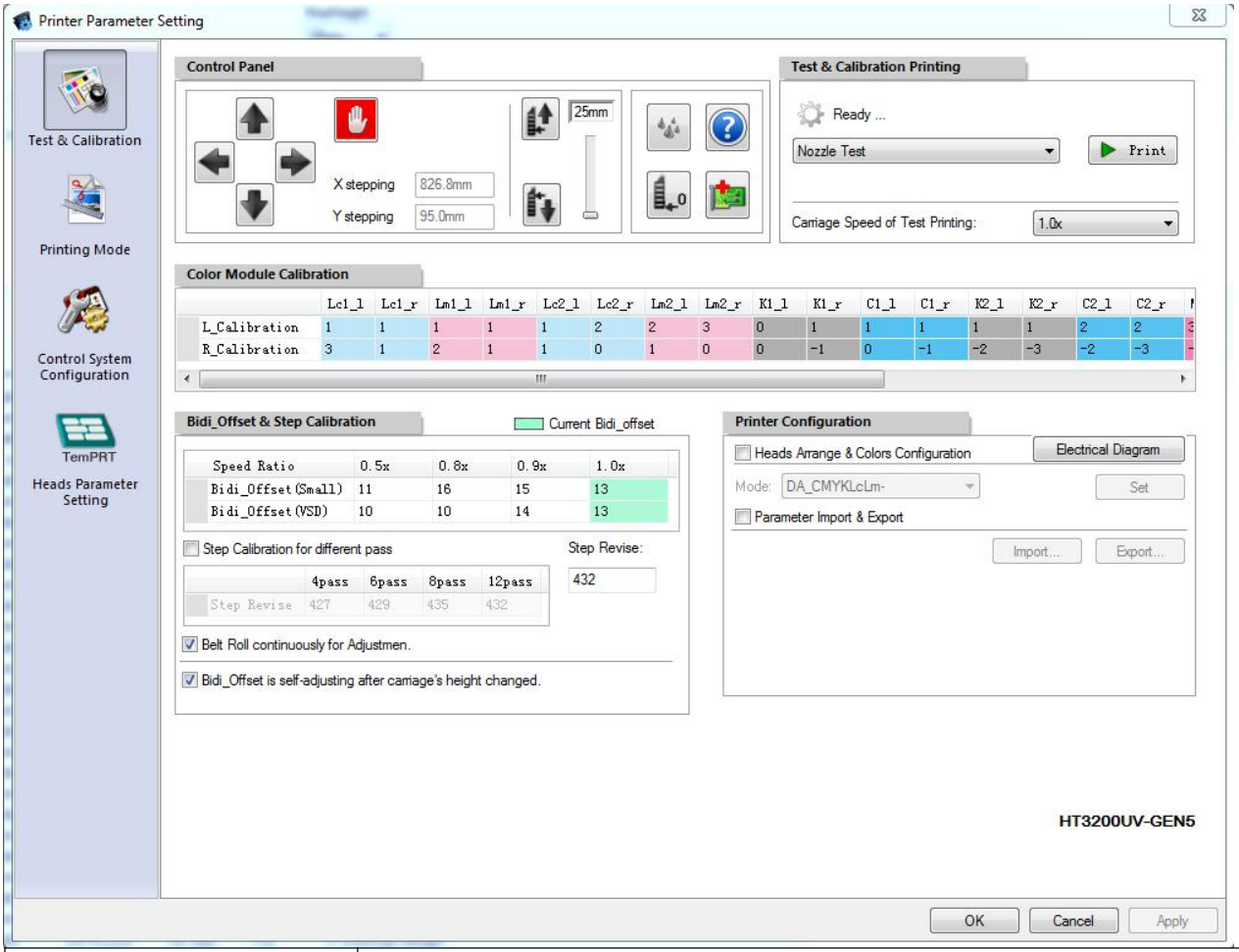
5.2.1 Main interface



Function interface	Introduction
	Controlling the carriage right/left motion, Y direction front/rare motion
	Stop button
	Up and down carriage motion, zero adjust for height sensor
	Equipment diagnose, the machine will automatically run the diagnose by a click
	List for awaiting printing files
	Finished printing files
	Print button, it will be in grey color if no printing file selected
	Margin and header settings
	List for white and varnish printing modes, this model doesn't support varnish function
	Advance settings

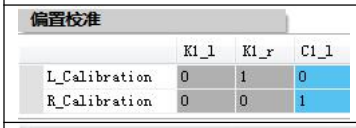
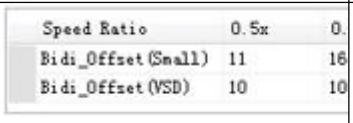
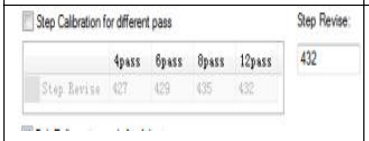
	Calibration printing list
	Circular printing mode including auto and manual options, do not select it while copy printing is selected.
	Copy printing function, can't be selected together with circular printing at the same time.

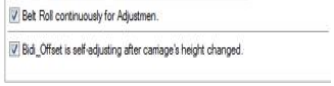
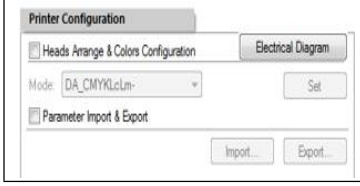
5.2.2 Test and calibration interface



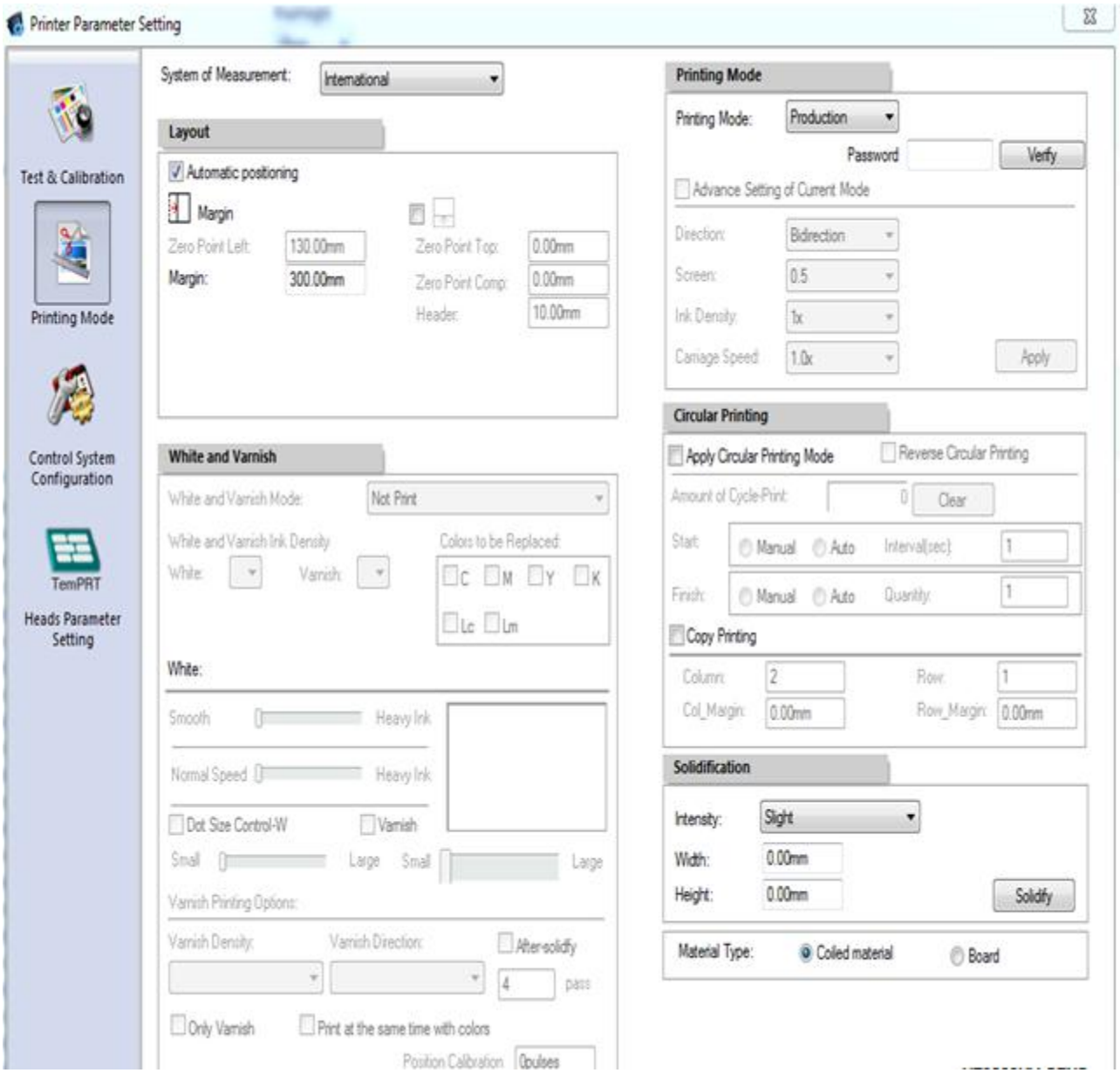
Function interface	Introduction
	1. Tighten： Click tighten function, the driving roller will move while the slave roller stop. This will make the media between these 2 rollers flat and smooth. Do not click it more than 1 time in case the driving roller overload. 2. X/Y Stepping. After setting, XY stepping distance will become the set value. Other functions are the same as the main page.

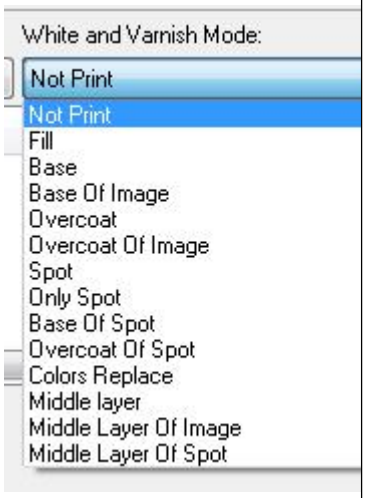
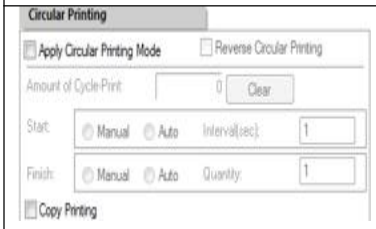
	 Print head spray function. The print head will frequently spray inks after click.  The version info for the software. Other functions are the same as the main page.
	1. Print head status test: Print test strip and observe print head status 2. Print head vertical calibration: Physical adjustment for print head left and right offset 3. Nozzle alignment: Physical adjustment for print head front and rare position 4. Left offset: Print head left offset adjustment 5. Right offset: Print head right offset adjustment 6. Bi-direction offset: Print head bi-direction offset adjustment 7. Stepping calibration: Adjust the stepping value for every pass 8. Point of origin printing: Adjusting base point 9. Voltage and temperature adjustment: color aberration adjustment for same color channel.

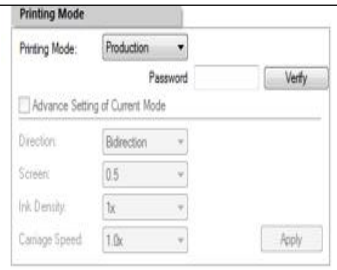
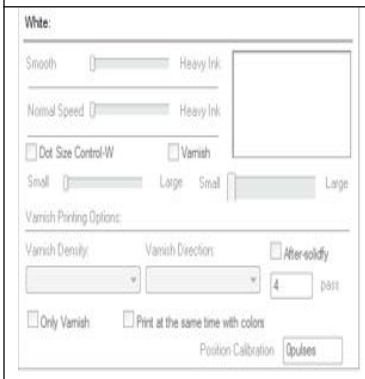
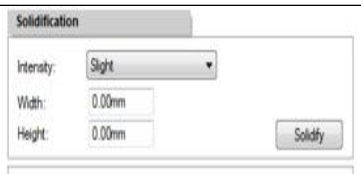
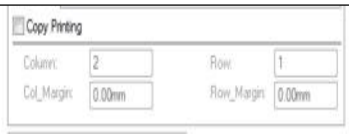
	Options for different carriage speed, please refer to the according settings of bi-direction offset and stepping calibrations.
	1. L_Calibration： Left offset adjusting value 2. R_Calibration： Right offset adjusting value
	1. Speed Ratio： carriage speed 2. Bidi Offset： Offset adjusting value for different carriage speed
	1. Calibrate stepping for different pass. When this calibration finished, the common adjusting value will not be applicable, the separated settings will be precede over it. The stepping value for different pass will follow neighboring principle, 6PASS（1-6PASS）、8PASS（8-10PASS）、12PASS（12-16PASS） 2. Stepping calibration: use the common stepping value to

	adjust the stepping
	1. This model does not support “Continuous stepping to adjust the belt” 2. During the printing, the carriage will automatically adjust if the carriage height changes. The bi-direction offset will automatically adjust its self if the carriage height changes for adapting the media thickness in the printing process. If manual adjustment needed for bi-direction offset during printing, close this function first.
	1. Print head array 2. The import and export of printing settings: Export the readings for the settings as XML file as a back up for all the settings. Restart the program after every change

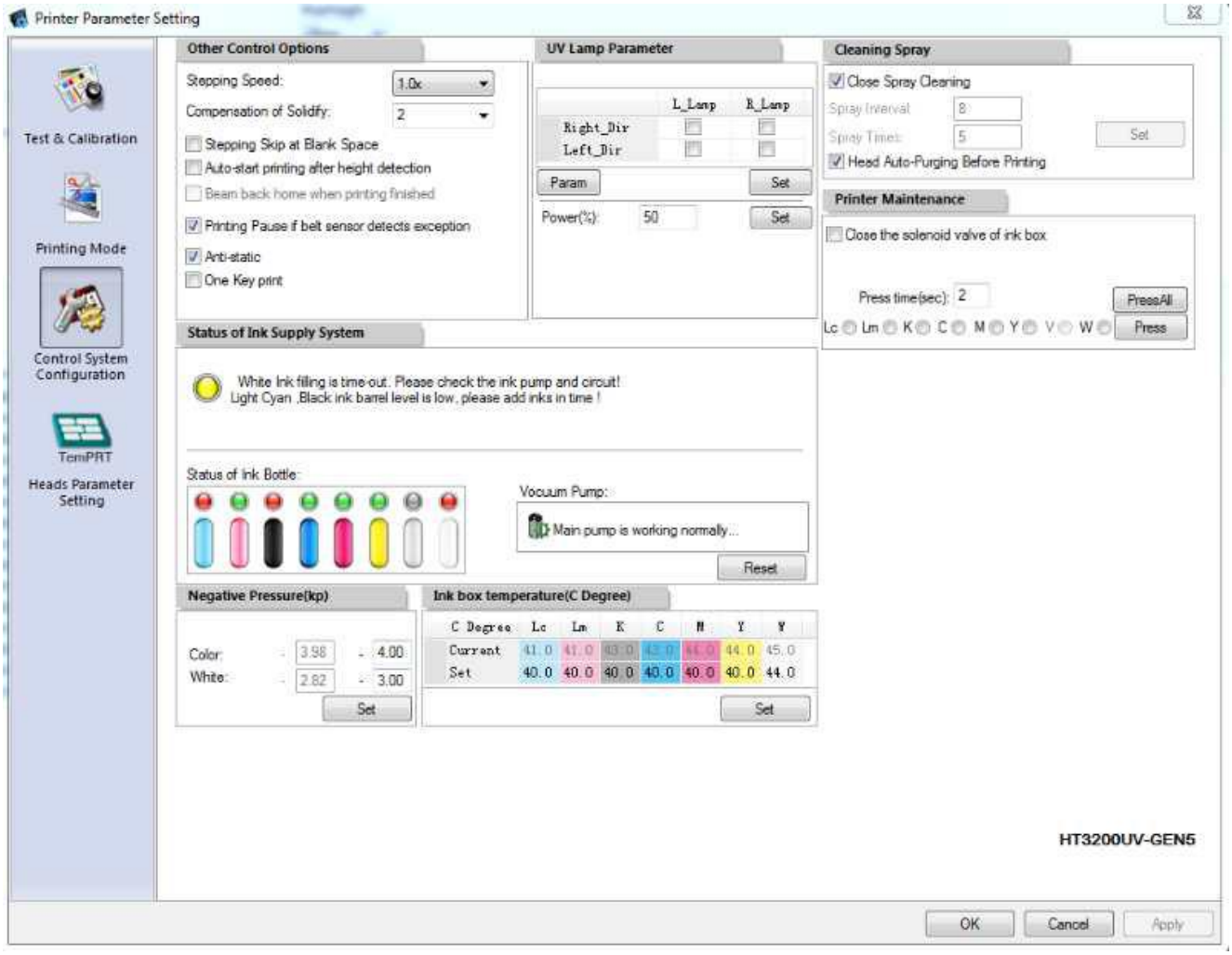
5.2.3Setting interface for printing mode


Printer Parameter Setting
Test & Calibration
Printing Mode
Control System Configuration
TemPRT
Heads Parameter Setting
System of Measurement:
International
Layout
Automatic positioning
Margin
Zero Point Left:
130.00mm
Margin:
300.00mm
Zero Point Top:
0.00mm
Zero Point Comp:
0.00mm
Header:
10.00mm
White and Varnish
White and Varnish Mode:
Not Print
White and Varnish Ink Density
White:
Varnish:
Colors to be Replaced:
C M Y K
Lc Lm
White:
Smooth
Heavy Ink
Normal Speed
Heavy Ink
Dot Size Control-W
Varnish
Small
Large
Small
Large
Varnish Printing Options:
Varnish Density:
Varnish Direction:
After-solidify
4
pass
Only Varnish
Print at the same time with colors
Position Calibration
0pulses
Printing Mode
Printing Mode:
Production
Password
Verify
Advance Setting of Current Mode
Direction:
Bidirection
Screen:
0.5
Ink Density:
1x
Carriage Speed:
1.0x
Apply
Circular Printing
Apply Circular Printing Mode
Reverse Circular Printing
Amount of Cycle-Print:
0
Clear
Start:
Manual
Auto
Interval(sec):
1
Finish:
Manual
Auto
Quantity:
1
Copy Printing
Column:
2
Row:
1
Col_Margin:
0.00mm
Row_Margin:
0.00mm
Solidification
Intensity:
Slight
Width:
0.00mm
Height:
0.00mm
Solidify
Material Type:
Coiled material
Board

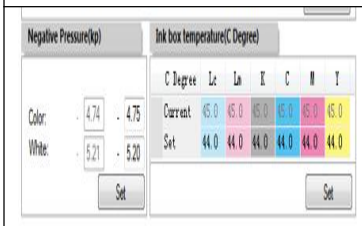
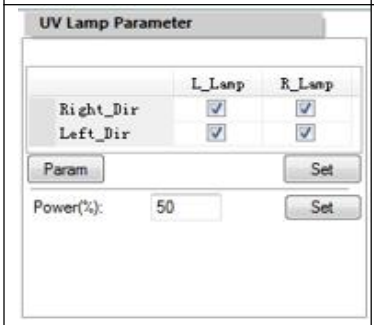
	1. Base pointer can be adjusted by changing the value of header and margin. 2. Header: Please adjust it according to the production need.
	1. Fill: Filling white ink in the blank area within the image size. 2. Base: Print a full format layer of white before CMYK printing. 3. Base of image: Print the white under the CMYK area. 4. Overcoat: Cover a full format layer after CMYK printing. 5. Overcoat of image: Cover white color on the CMYK area. 6. Spot: Print color and white together. 7. Only spot: Print only white in the spot channel. 8. Base of spot: Print white base in the spot channel before CMYK print. 9. overcoat of spot: Print white cover in the spot channel on CMYK. 10. Colors replace: Color replacement: Replace the CMYK area with white ink information for printing. 11. Middle layer: Print a full format white layer between 2 CMYK layers. 12. Middle layer of image: Print white between 2 CMYK layers. 13. Middle layer of spot: Make spot channel for the image, within the area of spot information, print CMYK, then print white and print CMYK for the last layer.
	1. Loop Circle printing-Manual: After each printing, the operator can choose continue printing in the dialog box, the printer will repeat printing the same content. If need to finish printing, manual click stop button will be needed. 2. Loop printing-Auto: Operator can set the interval time between each printing and times of loop. The software will exit printing after the printing finished. 3. Cannot be chosen with copy printing at the same time!

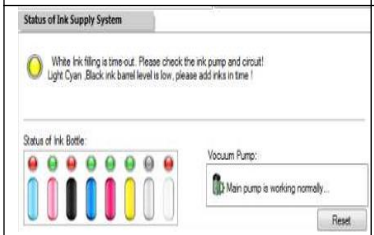
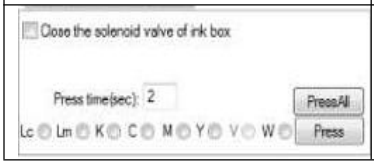
	1. Optional printing modes: Draft, Production, quality, high density. The default printing settings are available for adjustment. 2. Direction options: uni-direction and bi-direction 3. Optional screen value: 1.0, 0.75, 0.5, 0.33, 0.25. 4. Ink Density: Each 1x of density will increase 1x of pass number. 5. Carriage speed: 1.0x represents the maximum carriage speed. Smaller value means slower speed.
	1. White density control, smooth-high density: ink volume and surface smoothness will change. Smooth -1.0X, smoother -1.5X, average: 2.0X，printing quality changes (while the white ink screen value differs), productivity will not change 2. Normal speed-high density: The density and productivity under normal speed is 1.0X, the density and productivity under high density is 2.0X and 0.7X, the productivity changed.
	1. Cure printing: settings for strength and area of cure printing, the increasing of strength is by adding PASS number to increase the irradiation volume. Light: 2PASS, normal: 4PASS, intensive: 6PASS 2. The print heads are not jetting under cure printing, only for strengthen the curing effect of the ink.
	Copy printing: printing same image multiple times by automatic copying. Can not be select while circulate printing is on.

5.2.4Control system parameter interface

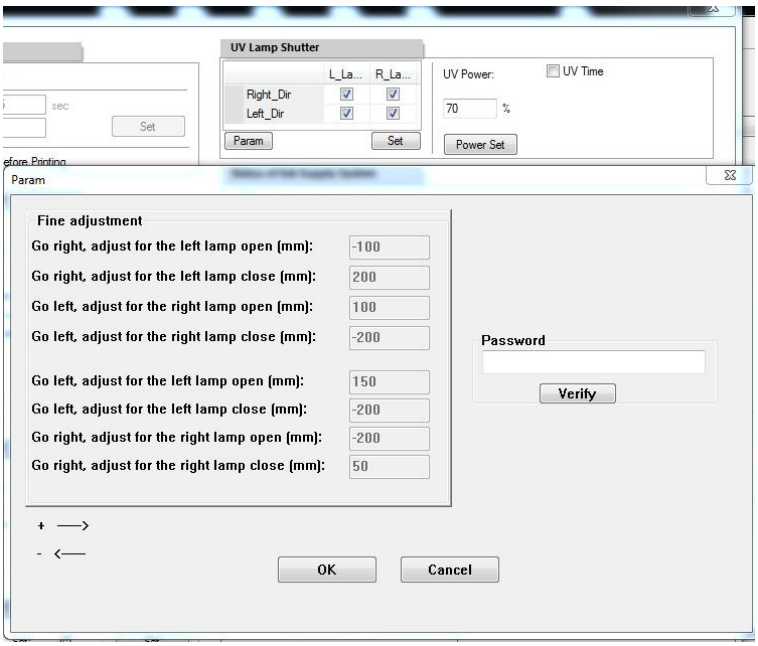


Function interface	Introduction
	1. Spray setting: An intermittent jetting motion when the print heads are under nonworking state. This function is to prevent the ink block the nozzle under long time of settling. Press the set button to confirm after the settings been altered. 2. Select the auto spray before printing option, the printer will perform spray before each printing task as default motion.

	1. Motion control option: Settings for printer motion control. 2. Stepping speed and curing compensation: This function is to compensate the curing pass and stepping speed after the printing finished. Stepping speed options include 1.0x and 1.3x, curing compensation include 2/4/6pass. 3. Stepping Skip at Blank Space: After selected, the printer will skip the blank area of image while printing the job. 4. Auto printing after height detect finish: after selected, the printer will automatically start printing after the height detect is over. 5. Static suppress printing: The switch for anti-static bar, selected means the anti-static is on. 6. One key print: After selected, the printer can continue to print by pressing the “one key printing ” button or double click “print”. 7. The option in grey color means cannot be selected, the printer doesn’t support that function.
	1. Negative pressure settings: Including color negative pressure and white negative pressure. Grey colored data represents the detected negative pressure, black colored date is the set negative pressure. 2. Negative pressure setting range: 0.5~10Kpa. 3. Default negative pressure: -6.0Kpa. 4. Ink tank temperature settings: This is the heating temperature setting for sub-tank, it is divided as the real time temperature and the setting value, default setting is 40℃.
	1. UV lamp shutter working mode: Switches for controlling the L&R movement for the L&R lamp. Only when the corresponded switch been selected, the shutter would open accordingly. 2. Parameter settings: Modify the on/off position of the LED lamp within the printing area. （For adjust instruction please refer to（4-1）Control parameter interface-Settings for LED lamp on/off position control）. 3. UV power: Energy control for LED lamp, adjusting arrange: 0%~100%.

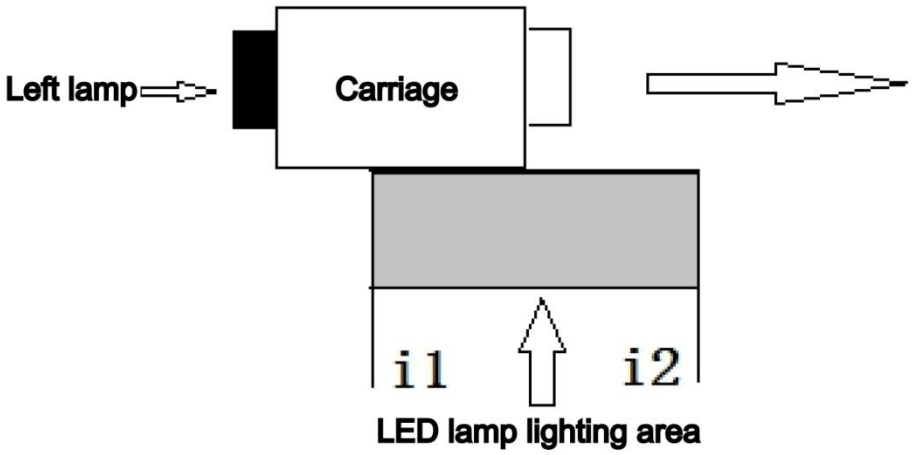
	1. Ink supply system status: The green light means normal status; yellow light means abnormal status. For different colors, the status information will be shown. 2. Reset button: Reset function for external device control board, equal as reboot the external device control board. It will erase the warning information. Including ink supply, air supply and light curtain reset.
	1. Disable the solenoid valve of subtank 2. Time setting of priming ink 3. Prime selection

5.2.5 GUI control---LED ON/OFF setting



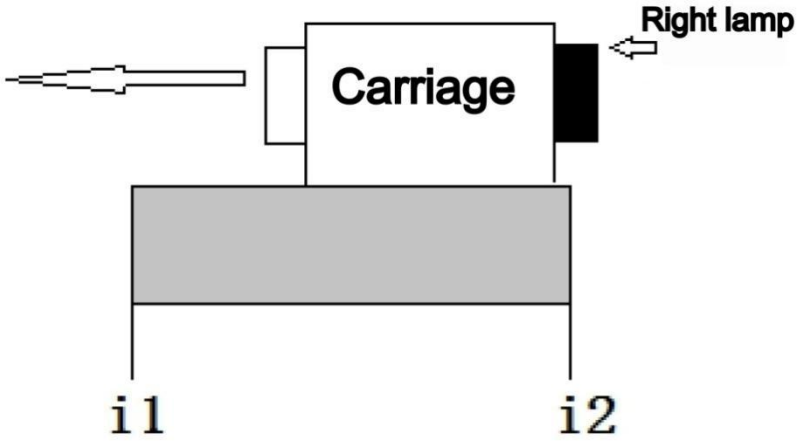
The adjusting password of the shutter (LED light source) opening and closing position is **ua13**. After input, click verification to enable the fine tuning setting function.
The 8 parameters on the left are fine-tuning parameters in millimeters. The parameters are described in detail as follows:
Left light on position adjustment (mm) of the left light when the car moves to the right and left light off position adjustment when the car moves to the right (mm) : According to the figure below, the top right arrow indicates that the car is moving to the right, and the black solid rectangle on the left side of the car indicates the left curing light. The vertical line i1 represents the position where the UV curing lamp is turned on, while the vertical line i2 represents the position where the UV curing lamp

is turned off. The grey area between i1 and i2 is the radiation area of the curing lamp on the left of the car. If the irradiation area is found not to coincide with the image, two parameters, "left light on position adjustment (mm) when the car moves to the right" and "left light on position adjustment (mm) when the car moves to the right" need to be adjusted."When the car moves to the right, the position adjustment of the left light on (mm)" adjusts the position of vertical line i1. "when the car moves to the right, the position adjustment of the left light on (mm)" adjusts the position of vertical line i2.Enter a positive number, indicating the position moves to the right; Enter a negative number to indicate a move to the left. Note that the value entered represents the amount of movement, for example 10, which represents a 10 mm movement to the right.

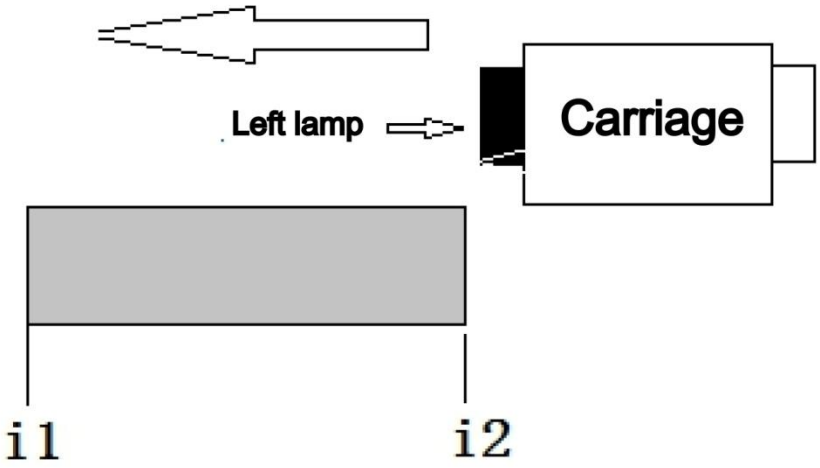


The position adjustment of the right light on when the car moves left (mm) and the position adjustment of the right light off when the car moves left (mm) :
According to the figure below, the upper left arrow indicates that the car is moving to the left, and the black solid rectangle on the right side of the car indicates the right curing lamp. The vertical line i2 represents the position where the UV curing lamp is turned on, while the vertical line i1 represents the position where the UV curing lamp is turned off. The grey area between i1 and i2 is the radiation area of the curing lamp on the right of the car. If it is found that the irradiation area does not coincide with the image, two parameters, "right light on position adjustment (mm) when the car moves left" and "right light on position adjustment when the car moves left (mm)" need to be adjusted."When the car moves left, the position adjustment of the right lamp on (mm)" adjusts the position of vertical line i2. "when the car moves left, the position adjustment of the right lamp on (mm) adjusts the position of vertical line i1.Enter a positive number, indicating the position moves to the right; Enter a negative number to indicate a move to the left. Note that the value entered Represents the amount of movement, for example, 10, which represents a 10 mm

movement to the right.

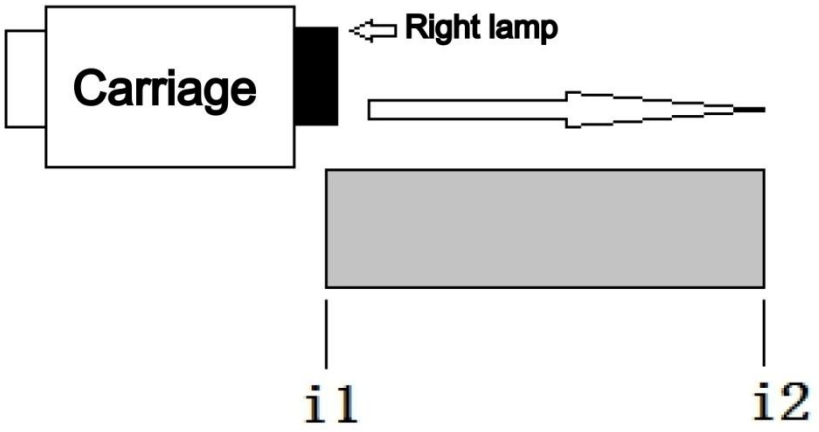


Left light on position adjustment (mm) of left light when car moves left and left light off position adjustment of left light when car moves left (mm) :
According to the figure below, the upper left arrow indicates that the car is moving to the left, and the black solid rectangle on the left side of the car indicates the left curing light .The vertical line i2 represents the position where the UV curing lamp is turned on, while the vertical line i1 represents the position where the UV curing lamp is turned off. The grey area between i2 and i1 is the radiation area of the curing lamp on the left of the car. If the irradiation area is found not to coincide with the image, two parameters, "left light on position adjustment (mm) when the car moves left" and "left light on position adjustment (mm) when the car moves left", need to be adjusted."When the car moves left, the position adjustment of the left light on (mm)" adjusts the position of vertical line i2. "when the car moves left, the position adjustment of the left light on (mm) adjusts the position of vertical line i1.Enter a positive number, indicating the position moves to the right; Enter a negative number to indicate a move to the left. Note that the value entered represents the amount of movement, for example, 10, which represents a 10 mm movement to the right.

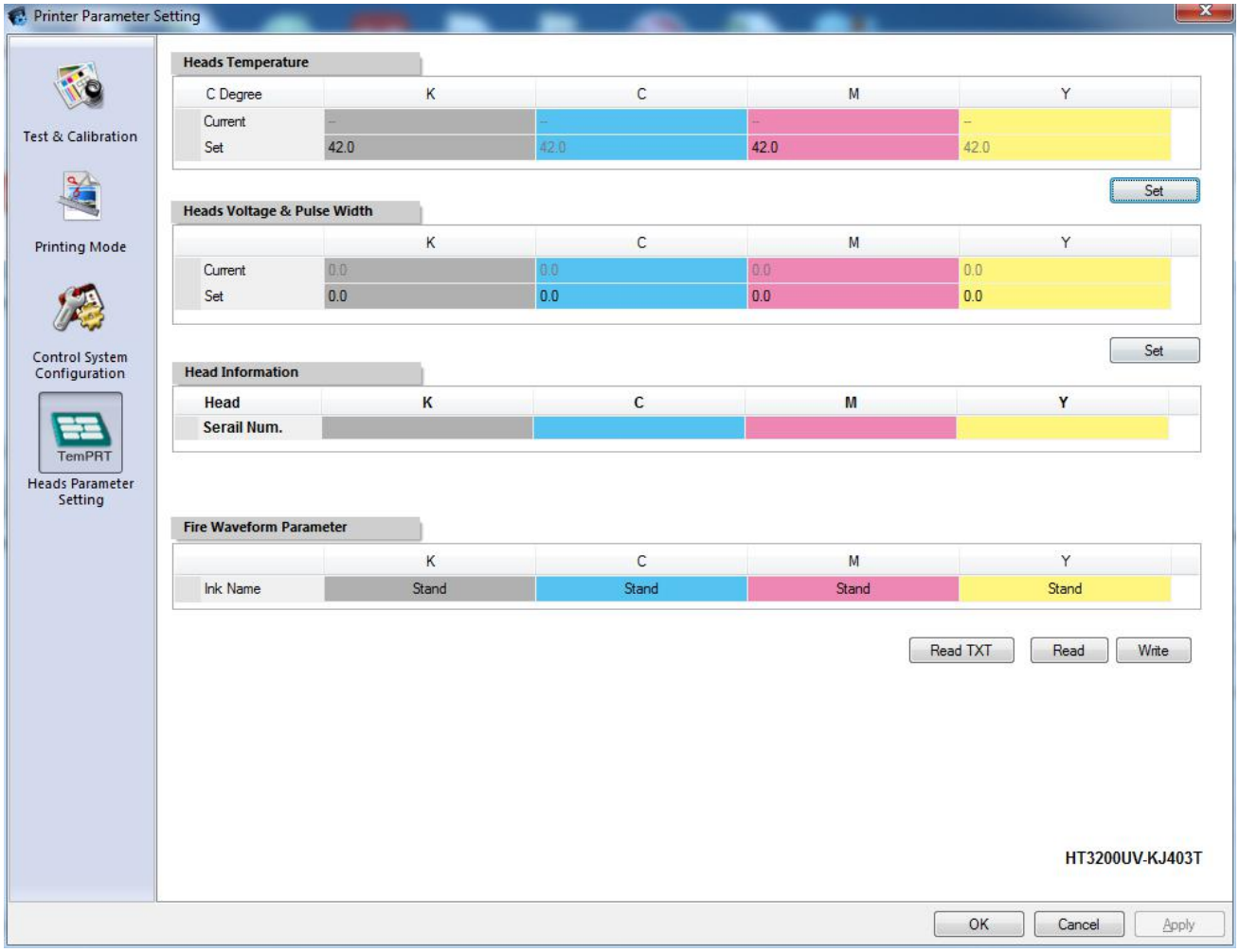


The position adjustment of the right light on when the car moves to the right (mm) and the position adjustment of the right light off when the car moves to the right (mm) :

According to the figure below, the large right arrow above indicates that the car is moving to the right, and the solid black rectangle on the right of the car indicates the right curing lamp. The vertical line i1 represents the position where the UV curing lamp is turned on, while the vertical line i2 represents the position where the UV curing lamp is turned off. The grey area between i1 and i2 is the radiation area of the curing lamp on the right of the car. If it is found that the irradiation area does not coincide with the image, two parameters, "right light on position adjustment (mm) when the car moves to the right" and "right light on position adjustment (mm) when the car moves to the right", need to be adjusted."When the car moves to the right, the position adjustment of the right lamp on (mm)" adjusts the position of vertical line i1. "when the car moves to the right, the position adjustment of the right lamp on (mm)" adjusts the position of vertical line i2.Enter a positive number, indicating the position moves to the right; Enter a negative number to indicate a move to the left. Note that the value entered represents the amount of movement, for example, 10, which represents a 10 mm movement to the right.

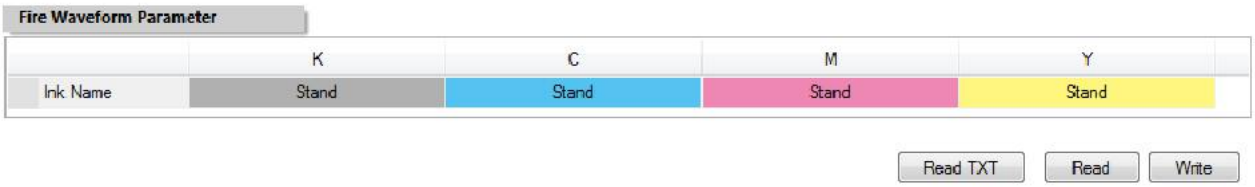


5.2.6 Heads parameter Setting



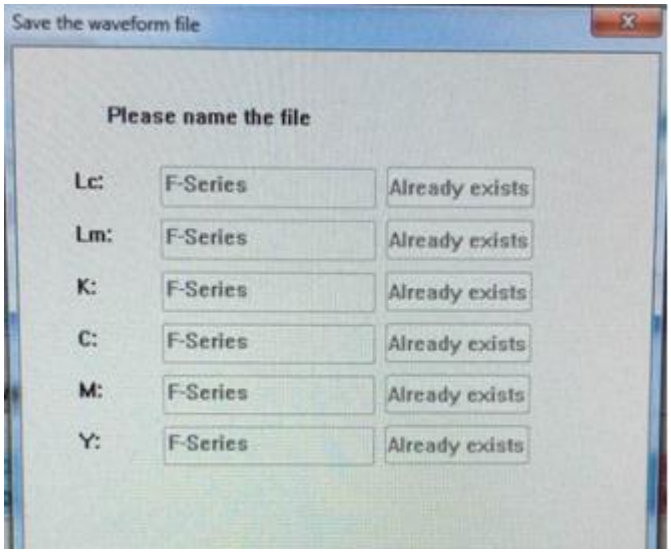
5.3 Kyocera waveform writing

After finishing the installation of heads, enter “head parameter setting”



First select “stand” waveform, click “write”, wait for 1min, then click “read” to check if the waveform is written successfully. (If not, please do it again.)

Then select the waveform you want(e.g. F-Series), click “write”, wait for 1min, then click “read” to check if the waveform is written successfully. (If not, please do it again.)



6.Printhead installation and calibration

6.1 Print head installation process

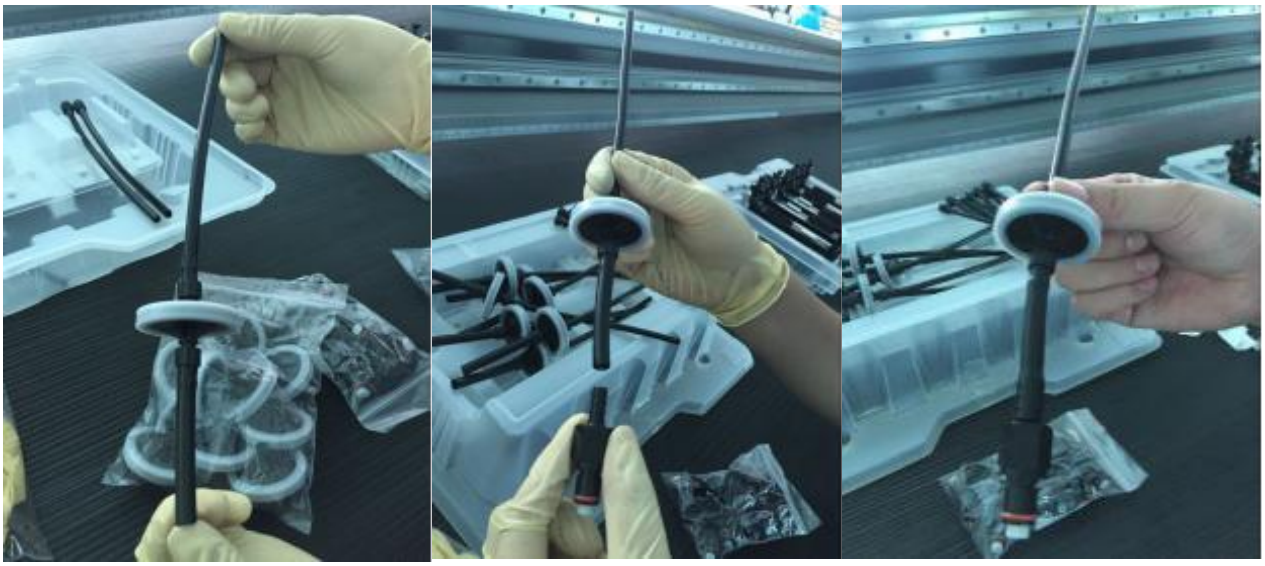
	This operation should be performed by professionally trained personnel to avoid accidental injury or device damage.
	The ribbon cable must be connected in the event of a power outage, and the pin of the ribbon cable must not be stained with ink or flush.

1 Find out the necessary accessories and confirm, The pictures are as follow:

2 Assembling head inlet and outlet ink tube.

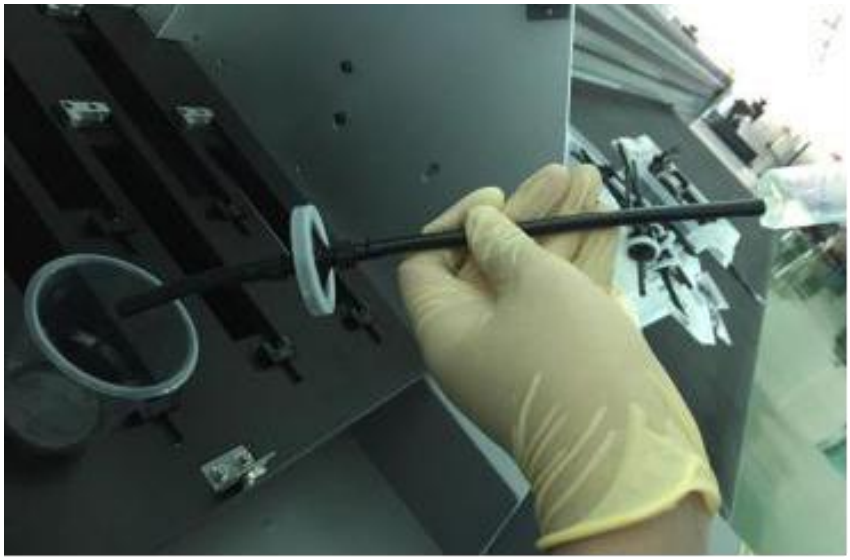
3 Check the filter and the inlet tube, make sure the lower tube is thicker than upper tube, then connect the big connector. Also connect the outlet tube with the small connectors.

The side marked with inlet connects to the sub-tank, and the other side connects to the printhead.

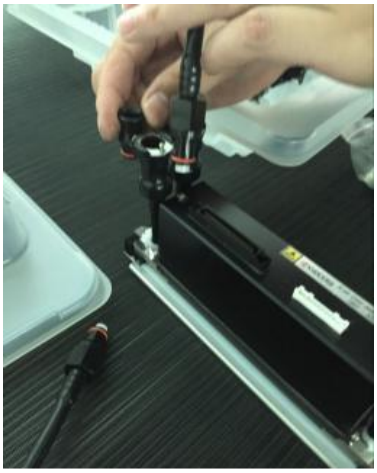
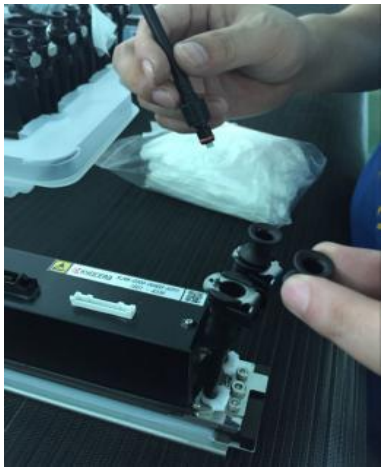
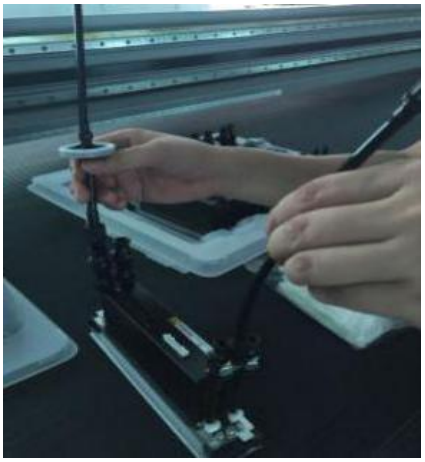


4 Finish assembly of tube, as shown in picture below. (Left is the outlet tube, right is the inlet tube)

5 Clean all tubes with flush

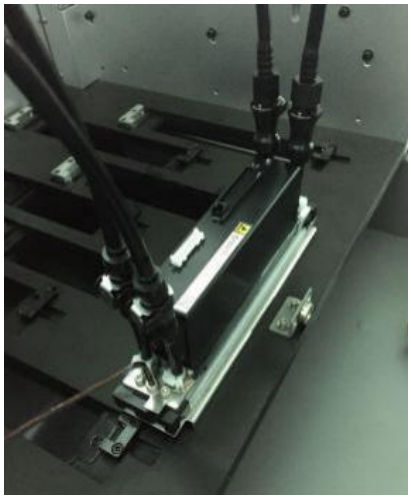


6 Connect the tubes with the heads

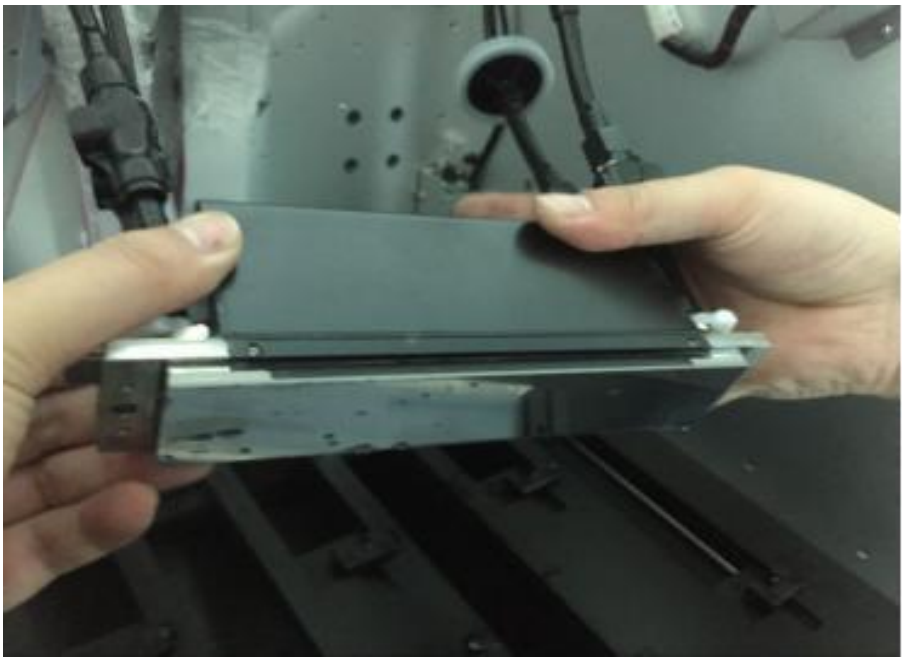




7 As shown in pictures below


8 Remove the screws on the plate. (one is at the back side, one is at the front side)

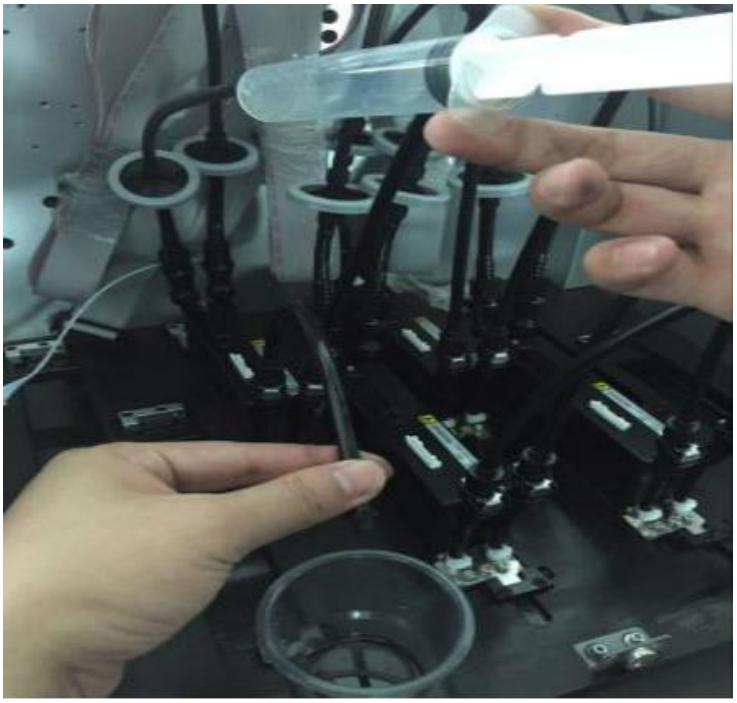


9 Remove the protective film

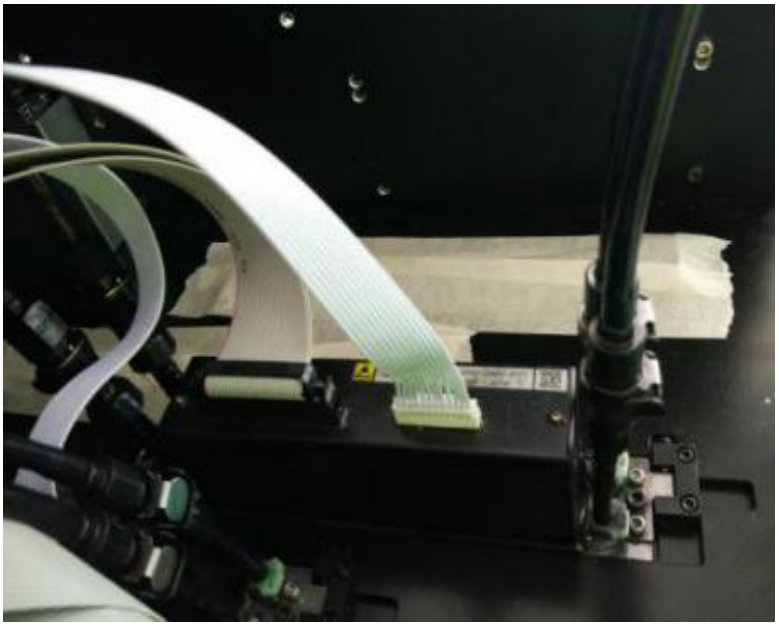


10 Put the head to the right position

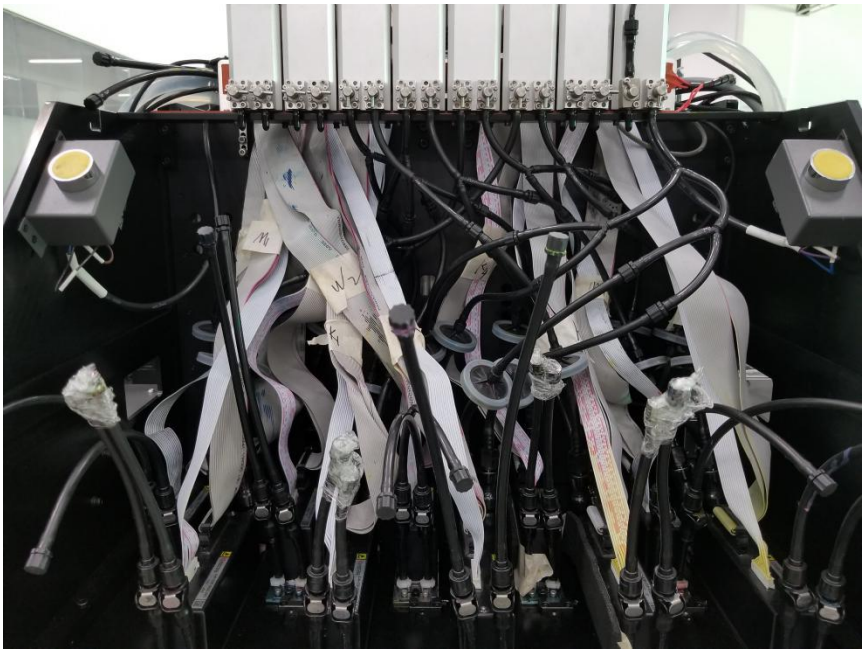
11 Discharge the protective fluid of the head



12 Connect the head cables, grey is data cable, the white is power cable.



13 After finish all assembly, as shown in picture below



6.2 Filling ink

	After installed the printheads, check the ink circuit and connection again, and then make sure that the filling ink operation is not carried out until it is correct.

1 Turn off the spray function in the software and lower the negative pressure to-1.2 kpa.so that the negative pressure after filling ink is larger than the protection.

2 Pour the ink into the main tank accordingly and make sure the ink pump power line is connected.

3 Click "reset" in the software.

4 When the ink supply lasts 15 seconds and the secondary cartridge is not filled, the system will automatically alarm three beeps. After the ink is finished, set the negative pressure to the normal value of - 4.5 kpa.

 Usually 3-4-times "reset" can be filled with ink.

6.3 Air exhausting of the printhead

	Air exhausting operation is required when printhead is firstly filled with ink,in order to eliminate the air bubbles inside the printhead, so that the ink can be supplied continuously while the printhead is jetting, thus avoiding the missing nozzle during the printing.
	This method also can be used in the subsequent nozzle maintenance operation.

1 Turn off spray cleaning function.

2 Lower the negative pressure to -1.5 kpa, and open the printhead that needs exhaust, press the corresponding pressure switch at the same time.

3 Loosen the cap of the air exhaust tube of the printhead, and press the ink prime button till you see a constant ink stream comes out of the tube. Then seal the tube with the cap. Execute the exhaust on each printhead as the operations described above.

	The operation must not exceed 3 seconds so as to avoid the generation of bubbles. If the system alert occurs, click the “reset” and continue the exhausting operation when the alert ceases.

4 When finishes exhaust operation, adjust the pressure to normal value(-4.5~5.0Kpa) and turn on all the valve, press the prime button till you see the ink comes out of the nozzles of each printhead.

5 Use the wiper to wipe all the printheads.

6 Print a “nozzle test” and check the status of the nozzles.

6.4 Parameter setting before calibration

1 Reference negative pressure for color is -5kpa, reference negative pressure for white is -5.2kpa.

2 Set temperature, voltage for printheads, the temperature of subtank.

6.5 Instructions for the Calibration

6.5.1 Heads vertical

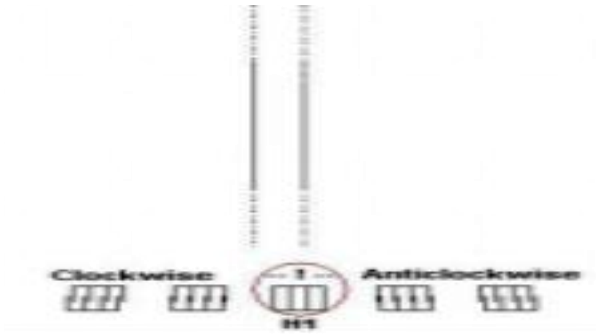
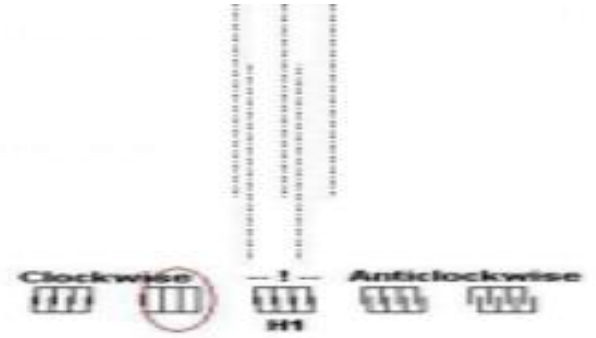
1 Run Topjet, Click “Set”.

2 Choose “heads vertical ” in the drop-down menu and print.

3 Observe the calibration print through a magnifying glass and see if the upper and lower parts overlap.

4 According to the testing picture, adjust the vertical alignment screw and repeat step 3.

5 Repeat step2/3/4 till the calibration of heads vertical is ok.

How to observe the testing picture of heads vertical?	
Testing picture of heads vertical (Overlapped)	Testing picture of heads vertical (not overlapped)
	
Exclamation point position, two groups of lines completely overlap, Heads vertical calibration is OK.	Reclosing in the "clockwise" direction, adjust the vertical alignment screw to clockwise.

How to adjust the Vertical alignment screw?
Release the fixing screws of printheads, adjust vertical alignment screws according to the testing picture, Fasten the fixing screws of printheads when they are overlapped

5.2 Nozzle alignment

1 Choose “Nozzle alignment ” in the drop-down menu and print.

2 Observe the calibration print through a magnifying glass and see if the left and right parts overlap.

3 Adjust the horizontal alignment fixing screw according to the calibration printing coincidence.

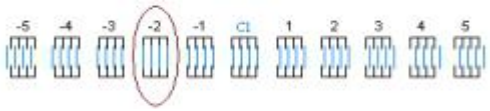
4 Repeat step 1 / 2 / 3 till nozzle alignment is ok, see the picture below.

6.5.3 Left/right direction offset

	Left/right direction offset indicates the calibration parameters of the nozzle jetting from left to right and from right to left.

1. Select “Left direction offset” in the drop-down menu and print.
2. Observe the calibration print through a magnifying glass
   Write down the corresponding parameters that have been aligned.
3. Modify the parameter of left direction offset according to step 2.
4. Repeat step 1 / 2 / 3 till left direction offset is ok.

How to observe the testing picture of left/right direction offset?

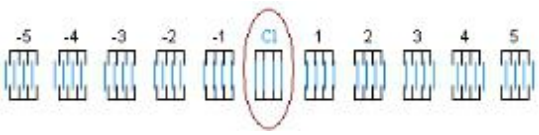


The blue lines at left-2 is best aligned with the black base line. So minus 2 from the original value.

偏置校准

	K_l	K_r	C_l	C_r	M_l	M_r	Y_l	Y_r
L_Calibration	0	0	1	1	1	2	0	1
R_Calibration	0	0	-1	-1	0	1	0	0

The original value of Cl is 3, After modified the value of Cl is 1,3-2=1



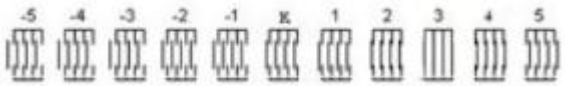
Overlapped left/right direction offset

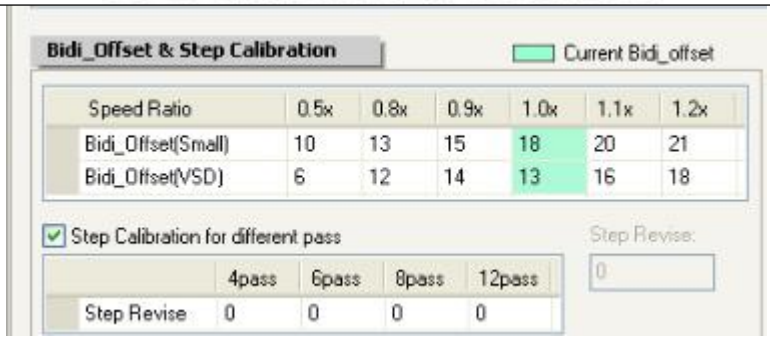
6.5.4 Bidirectional offset

1 Select “Bidirectional offset” in the drop-down menu and print.

2 Observe the calibration print through a magnifying glass and write down the aligned parameters.

3 Repeat step 1 / 2 / 3 at corresponding speed for modifying bidirectional offset till Bidirectional offset is ok.

<table>
<tr><td rowspan="4">  </td><td colspan="2">Different vehicle velocities correspond to different bidirectional calibration parameters, please calibrate separately.</td></tr>
<tr><td colspan="2">How to observe the testing picture of Bidirectional offset?</td></tr>
<tr><td>  </td><td>The status of +3

is the best.</td></tr>
<tr><td> 
</td><td>Plus 3 to the value of bidirectional offset of speed 1.0x.18+3=21.</td></tr>
</table>

6.5.5 Stepping calibration

1 Select “Stepping calibration” in the drop-down menu and print.

2 Observe the calibration print through a magnifying glass and write down the aligned parameters.

3 Modify the step bias parameter in the corresponding position.

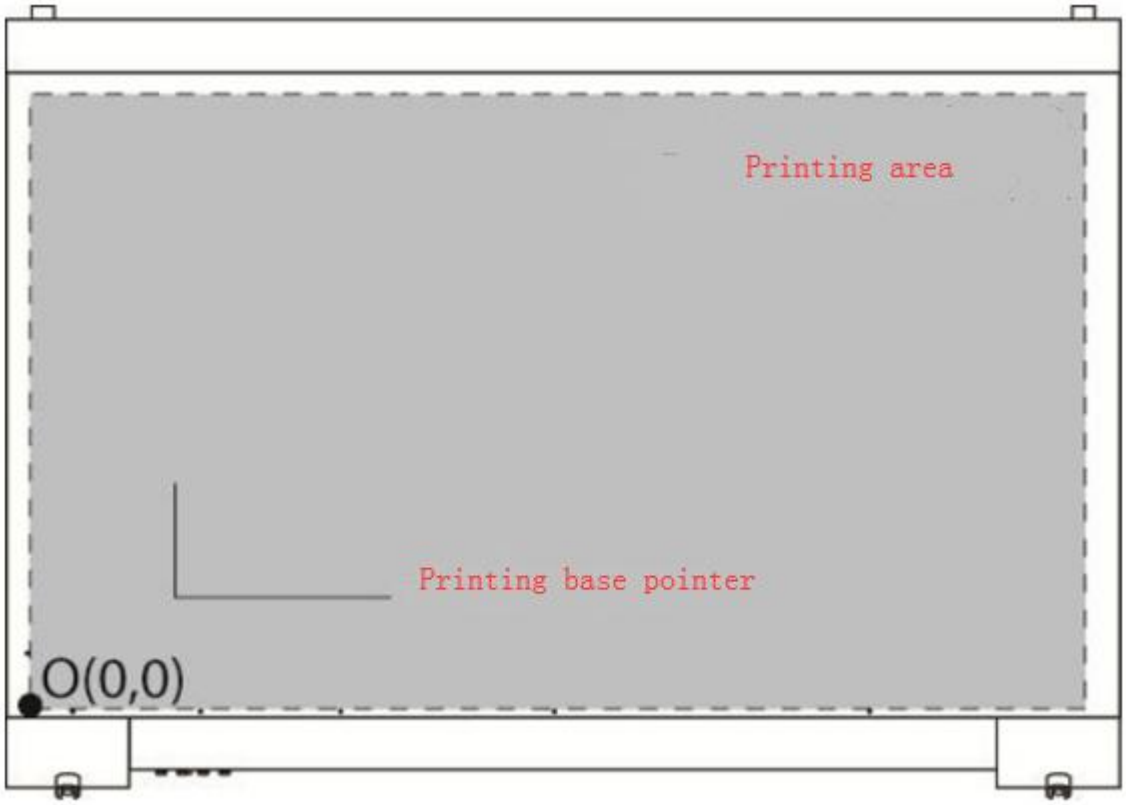
4 Repeat step1/2/3 till the stepping calibration is ok.

	How to observe the testing picture of stepping calibration?	
		Stepping calibration(Overlapped)
		Step calibration method is an imprecise algorithm, select the nearest numerical modification.

6.5.6Calibration of printing base pointer

1 Select “Printing base pointer” in the drop-down menu and print.

2 Measure and calculate the difference between the actual value and the expected value.



3 Modify the page header base point based on the margin.

6.6 Calibration confirmation

This test picture checks the status after calibration.

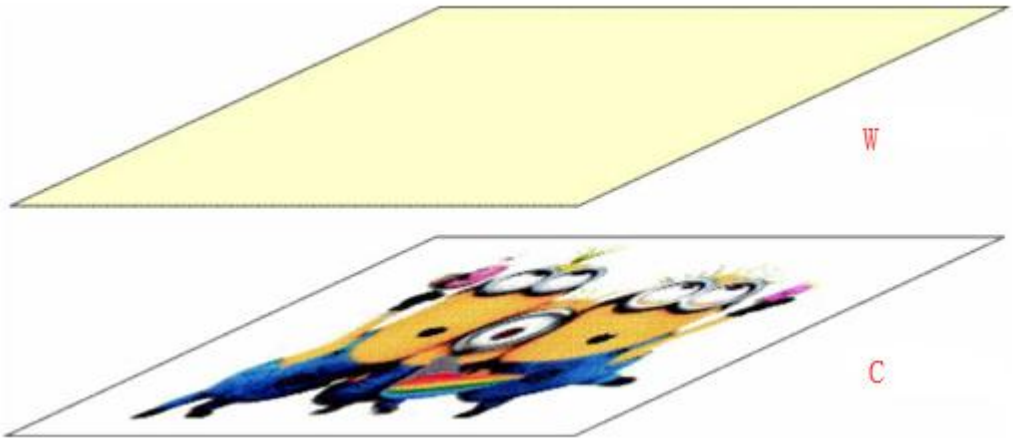
7.White printing Mode

7.1 Not print

Only color layer is printed.

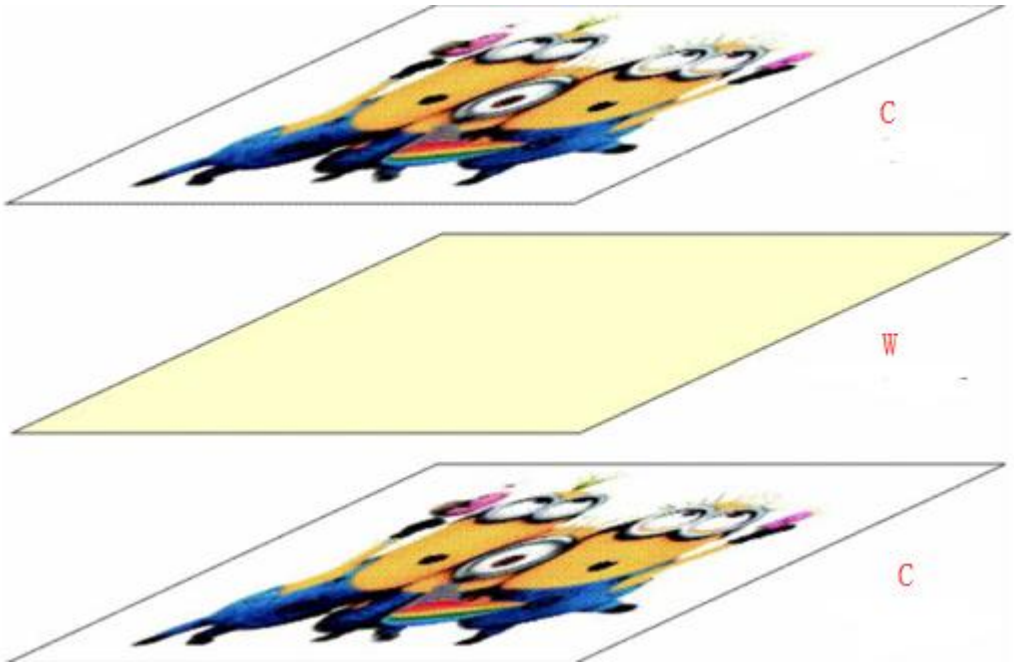
7.2 Overcoat

Within the image frame, above the color layer, print solid density white.



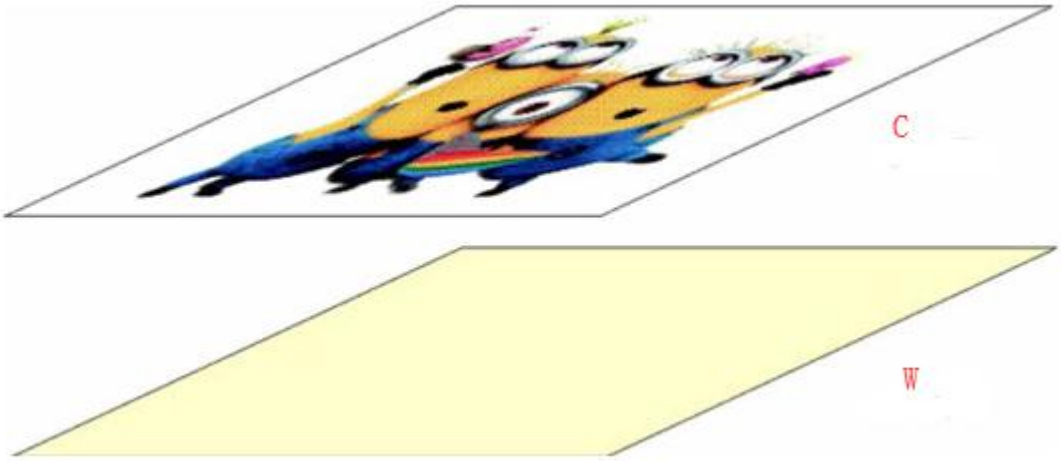
7.3Middle layer

Within the image frame, in between the top and bottom color layers, print solid density white.



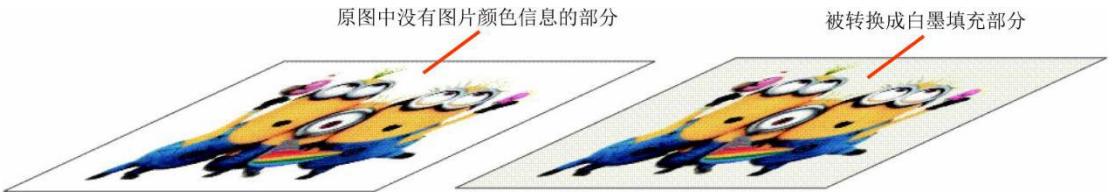
7.4 Base

Within the image frame, under the color layer, print solid density white.



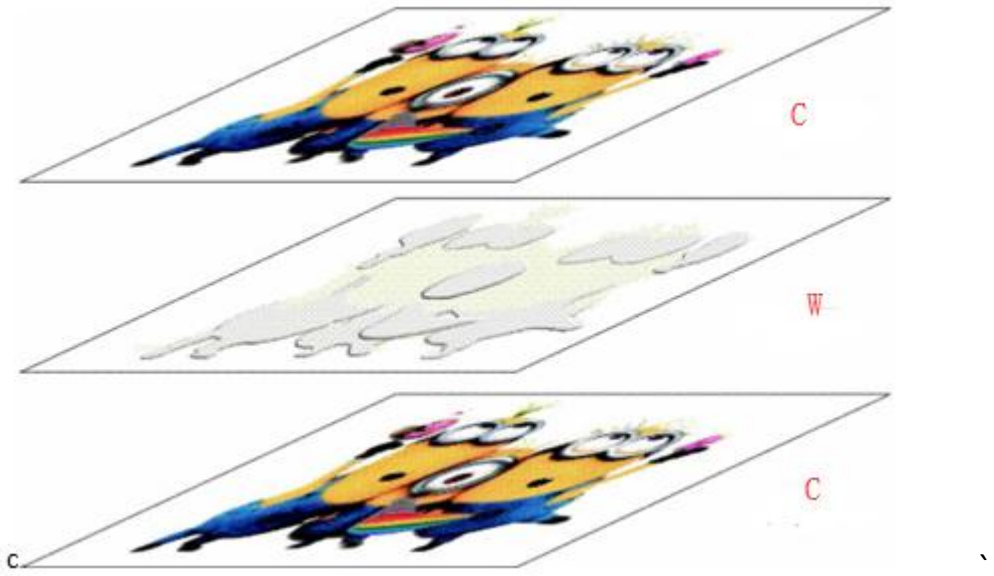
7.5 Fill

Within the image frame, in the empty(no color data) area, print solid density white.



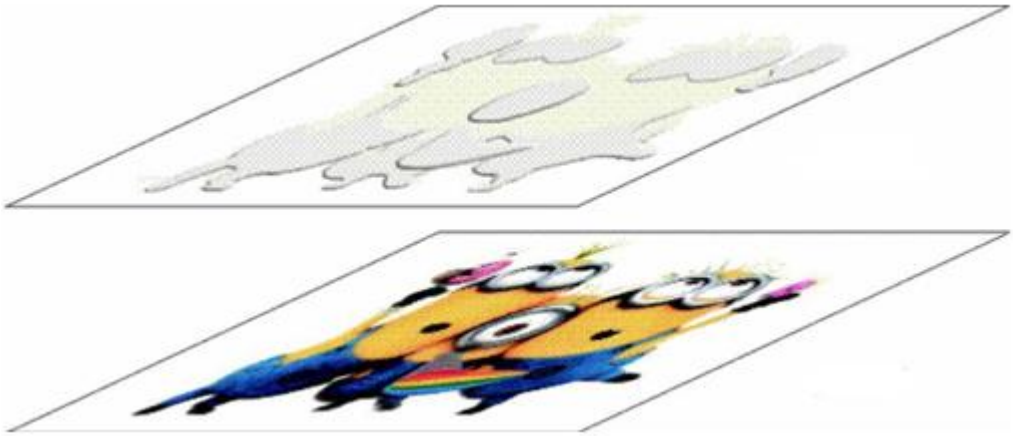
7.6 Middle layer of image

In the area where there is color data, in between the top and bottom color layers, print variable density white based on the color data.



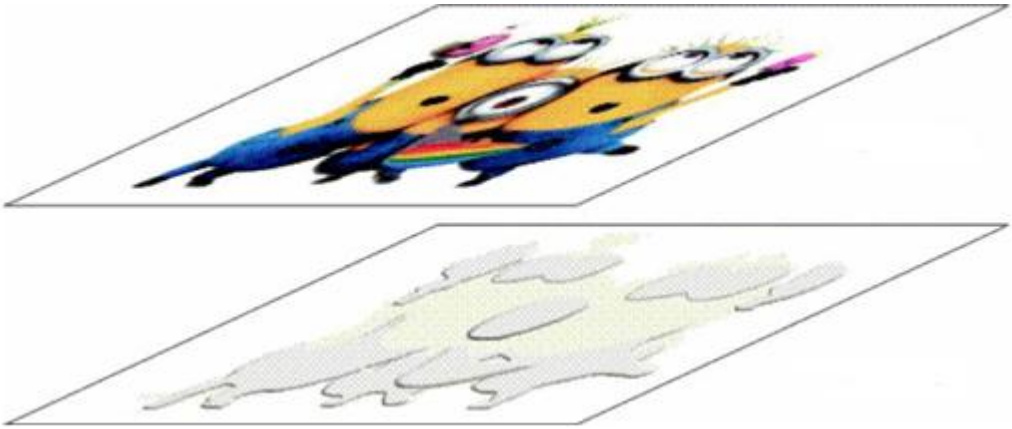
7.7Overcoat of image

In the area where there is color data, above the color layer, print variable density white based on the color data.



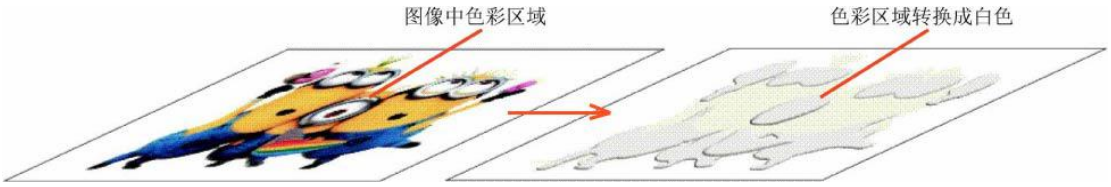
7.8 Base of image

In the area where there is color data, under the color layers, print variable density white based on the color data.



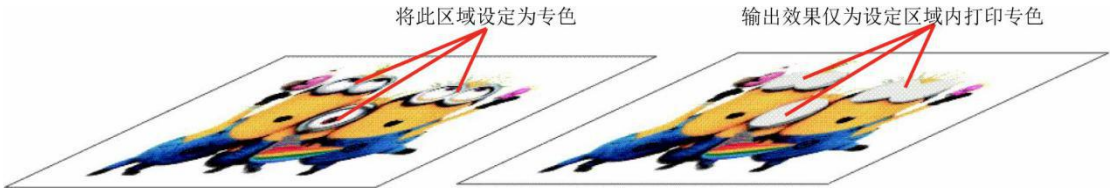
7.9 Color replacement

In the area where there is color data, print only variable density white based on the color data, color is not printed.



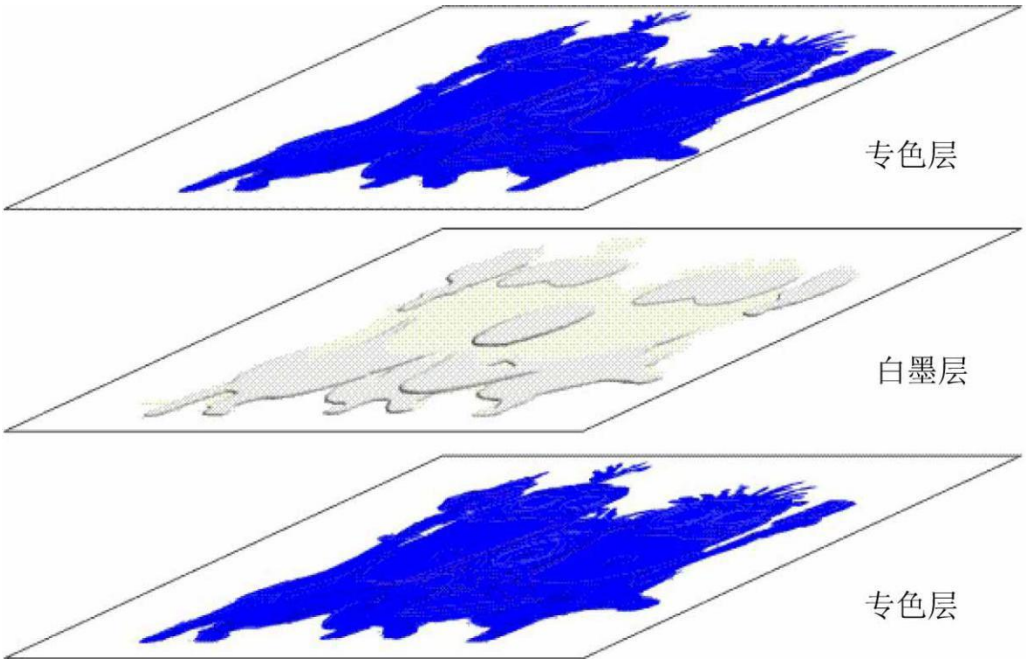
7.10 Spot

In the area defined as spot, print white based on the spot channel density data.



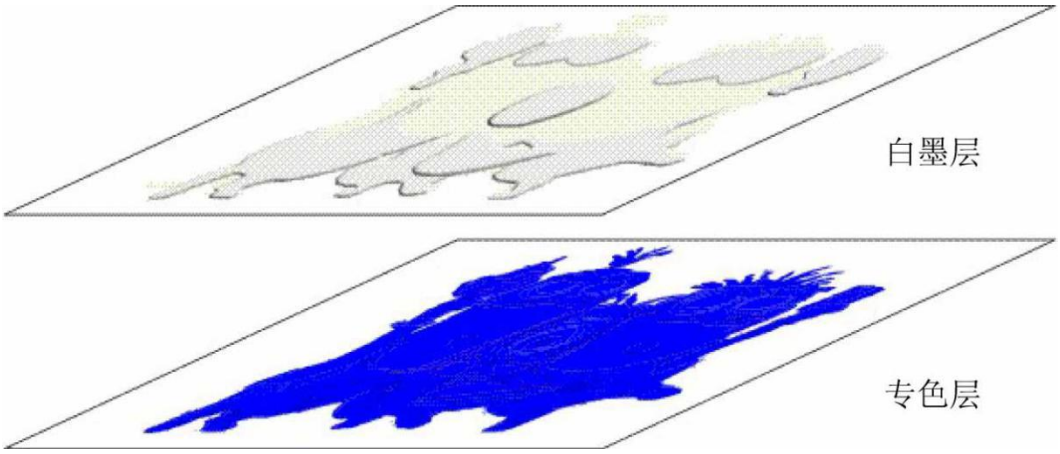
7.11Middle layer of spot

In the area defined as spot, in between the top and bottom color layers, print white based on the spot channel density data.



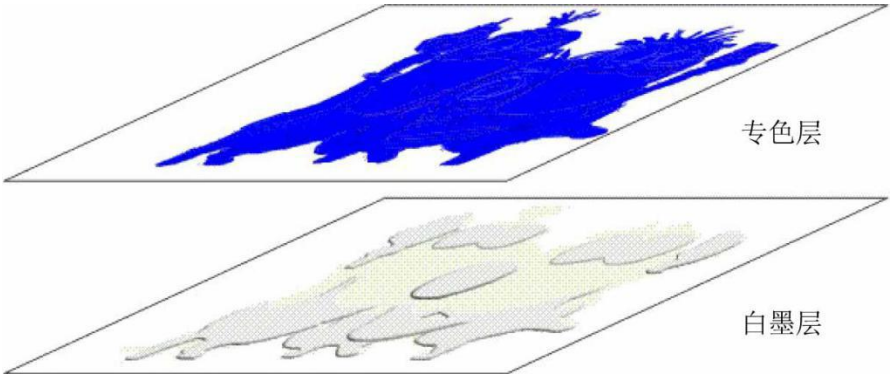
7.12Overcoat of spot

In the area defined as spot, above the color layer, print white based on the spot channel density data.



7.13Base of spot

In the area defined as spot, under the color layer, print white based on the spot channel density data.



Operation instruction

1.Machine turn-on

	Pay attention to the safty instruction in chapter 6; First operation must under professional techinical engineers' guidence.
	Use E-stop when meeting urgent issue, to protect the machine.

 Connect the main power cable

 Turn on the main air switch

 Start the PC

 Turn off the E-stop and turn on the start button for machine self checking.

 Check the negative pressure setting on the GUI

 Loading material and turn on the suction

 Turn on the LED lamp

	Button position refer to the machine drawing pictures
	Refer the alarm system information

2.Machine turn-off

1. Testing strip printing
2. Fan and LED lamp OFF
3. Check the negative pressure and sprary function
4. PC OFF
5. Machine cleaning

Maintenance instruction

1. Periodic maintenance

	To ensure the good condition of the equipment, users need to follow below instructions for regular cleaning and maintenance of the equipment.

Daily maintenance	Clean the machine body
	Empty the waste ink
	Clean printhead mounting plate
	Check the negative pressure system
	Check the nozzle test (print head status)
Weekly maintenance	Clean the chain and organize the internal wiring
	Clean the fan and cabinet
	Clean waste ink tank
	Calibrate

Monthly maintenance	Add lubricating grease to motion parts
	Check ink tube and air tube connections
	Replace the air pump

Seasonal maintenance	Replace the ink pump filter
	Replace ink pump and fiber cable

Annual maintenance	Replace the printhead filter
	Replace the ink tube in the chain

2. Motion component maintenance

The mechanical motion parts are lubricated with lithium base grease and lubricated once a month	
Mechanical motion unit	X axis guide rail Gears on feeding and take up torque motors Rectify guide rail and leading screw
	Use a lever type grease gun to grease the slider from lubricating nipple on the slider
	Do not use non-lithium base grease, keep the grease clean from damaging the guide rail and slider.

3. Precision components maintenance

Must use absolute alcohol and clean cloth for the cleansing of the precision components.	
Precision components	Raster strip Photoelectric switch Carriage height sensor components

4. Printhead maintenance

4.1 Daily maintenance of printhead

1 Print the nozzle test every on and off duty, check for nozzle status see if any blockage

	If there are nozzles blocking, dispose immediately.
	When printing images with single color, it is recommended to add right observation strip to ensure all the other colors are jetting. This is to prevent blocking from long time of print head resting.
	Be sure to check the flatness of the material after putting it on the platform, prevent nozzle scratching.

2 Clean the dust and debris on the printing platform and carriage base every day

3 Must remove dust and static charge from the substrates.

5. Commonly used parts replacement instructions

5.1 Replace the ink pump

	When the machine is alarming 3 beeps, check the ink pumps This is not the only possibility, see the alarm system

1 Unplug the ink pump power housing and loose the fixing screw;

2 Replace with new ink pump;

3 Cut off the ink pipe connected to the old pump;

4 Connect the ink pipe to the new pump. Pay attention to the flow direction, fix the screw, and
connect the power housing.

	It is normal to hear 3 beeps during the procedure. Click "Reset" in the software to finish.

5.2 Add ink

	If you hear 6 beeps, check the main tank see if it is running out of ink.
	Note that the ink drawing tube for the main tank must be inserted to the bottom.

1 Prepare the new ink, open the cover and keep it handy;

2 Open the lid of the main ink and carefully pour the ink into it;

3 Click "Reset" in the software.

5.3 Replace the ink pump filter

	The ink pump filter should be changed every 3 months

1. Remove the ink pump power housing;
2. Block the ink pipe to avoid backflow;
3. Remove the ink pipe and the filter;
4. Replace the filter and pay attention to the direction;

5. Stop blocking the ink tube and complete the replacement.

5.5 Replace air tube

	Replace the air tube immediately if any damage is found

1 Close the spray function and close the ink valve

2 Press the emergency stop switch, disconnect the pump power housing;

2 Open the chain;

3 Replace the new air tube;

4 Mark the airflow direction to avoid the mistake;

5 Install and fix the air tube;

6 Install the chain and switch on the printer;

7 Check the negative pressure system see if it is working properly.

	All air pump power housings must be disconnected before operation Otherwise it will cause backflow.

1. Alarm system

There are six kinds of alarms in the equipment, below are the troubleshooting methods for various alarms

Alarm type	One beep,【Bi】
Problem	Air Pump failure
Reason	The main air pump stops and the backup pump is working
Diagnose	First click "reset" in the software to stop the alarm. If the alarm is still on, check if the main pump is working normally and check whether the pump power housing and DC 24V power supply are normal.
Alarm type	Two beeps,【Bi-Bi】
Problem	Negative pressure malfunction
Reason	The negative pressure reached upper/lower limit
Diagnose	Click "reset" in the software
Alarm type	Three beeps，【Bi-Bi-Bi】
Problem	Ink supply system malfunction
Reason	Sub-tank ink is lower than the alarm level

Diagnose	Check if the main tank is starving, if so, add ink. Check the liquid sensor in sub-tank. Check the ink pump see if it's running normally. Check the ink pump for blockage. Check the ink supply system for leakage. Check the ink pump filter for blockage

Alarm type	Four beeps,【Bi-Bi-Bi-Bi】
Problem	Data transmission failure
	Hardware communication malfunction
Diagnose	It is normal to hear four alarms occasionally. If this happens continuous, it may be PCB board or other hardware malfunction. Please contact your local agent for technical support.
Alarm type	Five beeps,【Bi-Bi-Bi-Bi-Bi】
Problem	Ink supply malfunction
	Ink backflow to the safety box
	Close the spray function and the ink valve
	Adjust the negative pressure to -1.0kpa and press the emergency stop button
	Open the safety box and tap the ink tube to clear the backflow ink
	Open the top cover of the safety box and clean it with cleaner
	Replace the dirty ink tube

Diagnose	Do not break the ink tube when replacing it. The leakage will cause backflow.
	Activate the printer and open the ink valve on the backflow ink box
	Drain the ink until the liquid level returns to normal height

Alarm type	Six beeps【Bi-Bi-Bi-Bi-Bi-Bi】
Problem	Ink supply system malfunction Main tank starving
Diagnose	Check the main tank level Check the main tank liquid sensor Add ink

2. Negative pressure system

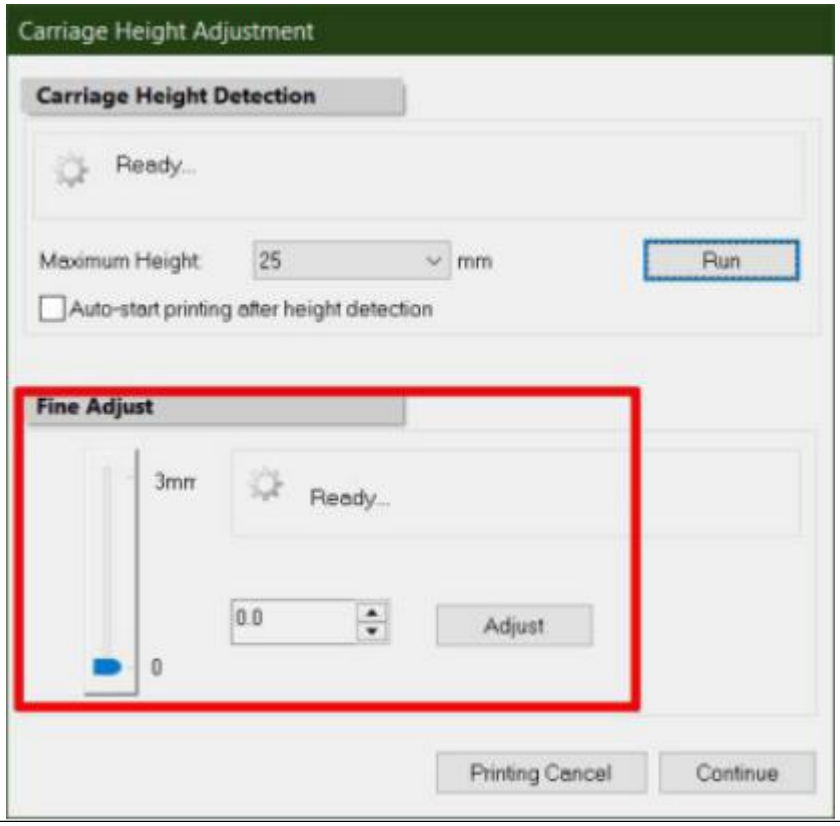
2.1 Purge failure

Description	Continuous press the purge button, but the ink is not coming out from the nozzles
Diagnose	Check the status of the corresponded solenoid valve Check if the sub-tank is empty (3 beeps) Check the positive pressure see if it's normal

3. Printhead accident handling

3.1 How to protect the print head from scratch and crash accidents

Must run the height detect before printing each time the media changed
For rough surface and heat sensitive material, besides height detection, need fine tune the height to ensure the print head safety.



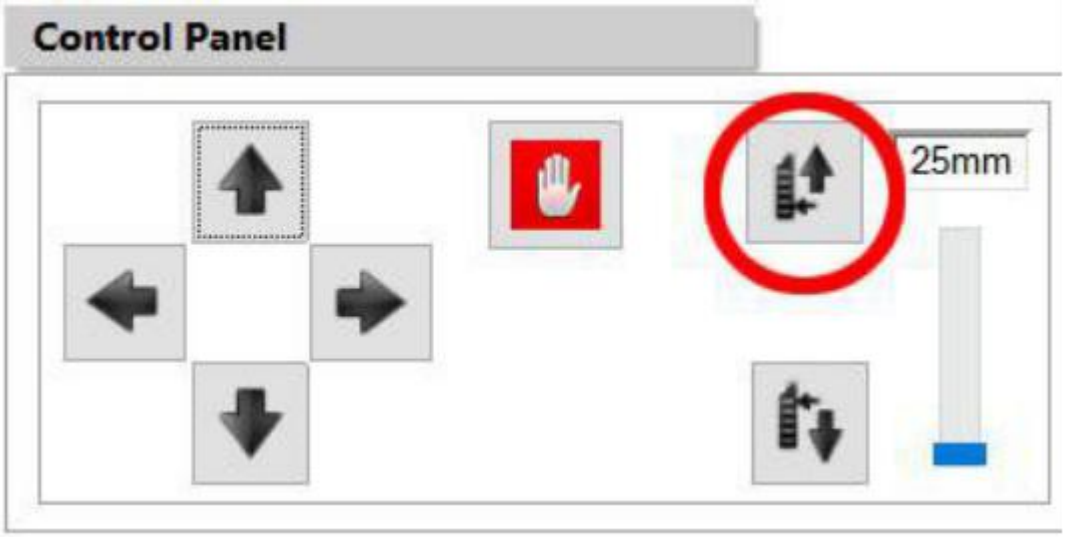
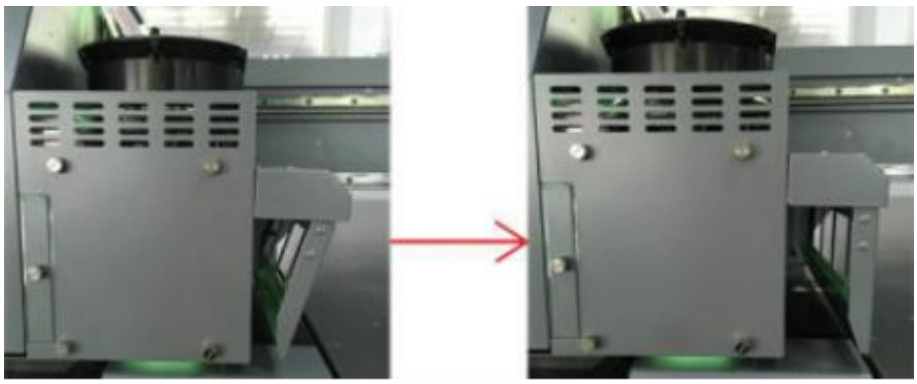
For rough surface and heat sensitive material, please adjust the vacuum power and area before printing, this is to get more stable suction.

Since the height sensor is not in the base point, it may never touch the substrate if the medium is in very small size.

To avoid this from happening under this circumstance, it is recommended to place the media under the sensor to perform height detect then register the media to the printing area.

Do not open the registration device during printing, or it will also scratch the print head. The motor driver will automatically lock down and cause defective printing

3.2 Print head scratch and crash accident treatment

1	Wait for the error message to show on the interface and click ok
2	Rise the carriage height as below image showing, remove the media. 
3	Reposition the baffle of the anti-crash on the carriage, as below image 
4	Click the back to origin button to restore the carriage to the base point.
5	Restart printing

It is recommended to print the nozzle test immediately after troubleshooting if there is an accident of rubbing the nozzle surface against the media. Check whether the nozzle is damaged and repair it immediately.

4.Carriage motion anomaly

4.1 Error code for FUJI motor driver

When the carriage motion is malfunction, the screen on the driver will show error code.

Please diagnose according to the error code.

Number	Code	Meaning	Treatment
1	oc1 or oc2	Over current	Check and repair power line (U, V, W) wiring
2	oL1 or oL2	Overload	Check and repair power line (U, V, W) wiring
3	Hu	Overvoltage	Make sure the power voltage is within the specification range
4	Fb	Fuse break	Replace the servo amplifier
5	AH	Amplifier overheat	Keep ambient temperature below 40 ℃ If there is a heat source near the servo amplifier, move away
6	EH	Encoder overheating	Keeping the surrounding temperature of servo motor under 40 ℃ Remove any object that prevents heat release.
7	LuP	Main circuit voltage is not sufficient	Confirm and improve the power supply situation. Confirm the power for the supply and adapter

8	¯PoF	Anti-collision emergency stop	Check the anti-collision device and return to normal
9	¯Pn0	Registration device is on	Check and restore the media registration device to normal state
10	=Pot	Y axis base point display	If Y displays this code when it is not at the origin, check whether the photoelectric switch is working properly
11	=PP1	Pulse column input in operation	The x-direction servo drive will display in normal state The y-direction drive will display when it is not at the origin

4.2 Carriage stuck during printing

Description
During printing, the carriage is detained too long on both edges.
Diagnose
1 When the printing data is too large, it will easily slow down the reading for RIP and printing data. Please start printing after the RIP process finished. 2 Install anti-virus software, check for virus in the flash driver every time copying the image with it. Scan the PC for virus regularly.

4.3 Device busy alert

Description
The software alert for error, interface shows below warning: “Device is busy, please check the media location plate, raster reader and motor driver, try again.”
Diagnose
1. The anti-collision device is triggered. 2. The raster encoder crash with obstacles and changed position, causing data reading failure. Adjust the raster encoder to the right position. 3. Optical fiber cable wear out, please replace the fiber cable.

4.4Height detect anomaly

Description
When performing height detection, the carriage can lift up but can't go down.
Diagnose
1 The height detect components are dirty cause high friction and the probe cannot go down. Please clean the components. 2 The height detect switch break down. Replace the height detect switch.

4.5Abnormal printing quality

Description	Diagnose
Obvious horizontal bending	Perform horizontal nozzle registration calibration
Fuzzy printing quality	Perform offset calibration

Fuzzy printing quality	Check the print head height see if it is too high, normally should be 2mm from the nozzle to substrate surface. Clean the print head surface, redo calibration
Printing color darker or lighter. If the brightness is not enough(or normally called noise), when printing vibrant, the color transition part showing missing line or regular bending.	Adjust colors in the job editor, if the color is darker, lower the overall ink limit 10-30. If the color is lighter, raise the overall ink limit 10-30.
	Perform offset calibration
	Check the print head vertical calibration Change the spreading type: Switch between FX-2 and J-STOCH, compare the performance.
Printed border lines are not straight	Re-do the calibration Perform the horizontal nozzle registration Offset calibration

5.Tools and attribute

	Tool	Function
	Diagonal pliers	Cut off the ink tube and air tube
	Ink valve spanner	Open and close the ink valve
	Monkey wrench	Adjust the level of the machine
	Allen Key	Adjust the inner hexagon screw
	Phillips screwdriver Slotted screwdriver	Adjust the cross and slotted screws
	Cleaner	Clean the ink path and printhead
	Clean cloth	Wipe the printhead
	Alcohol	Cleaning equipment
	Rag	Cleaning equipment
0	Rubber gloves	Protect the operator when wiping the nozzle
1	Glue gun	Lubricating motion unit
2	Lithium base grease	Lubricating motion unit
3	Plastic injector	Use when installing sprinkler head

Instruction for HT3200 conveyor belt rectify

I. Rectifying use guide:

1. This instruction only refer to HT3200B/C/B3200 models;

2. Please read this instruction carefully before power on the machine.

II. Tool

Allen Key

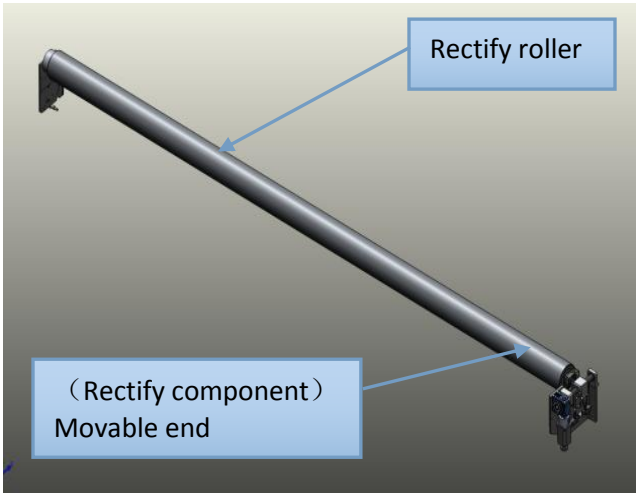
III. Operation guide

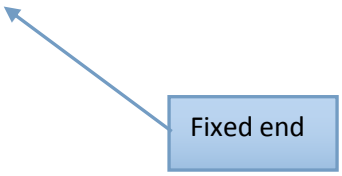
No matter large format belt or conveyor belt, it will run stable if both edges share the same tightness. If not, it will run from the tight end to the loose end, this is what called deviation.

Based on this phenomenon, we equipped the HTB3200 conveyor belt with rectifying device to avoid deviation during operating. The explanations and guide are as below:

1. How to realize rectifying

According to the deviation principle, the machine is equipped with a rectify roller. This roller is fixed in one end as well as another movable end. The structure allows the movable end to move left and right.(See image 1) .





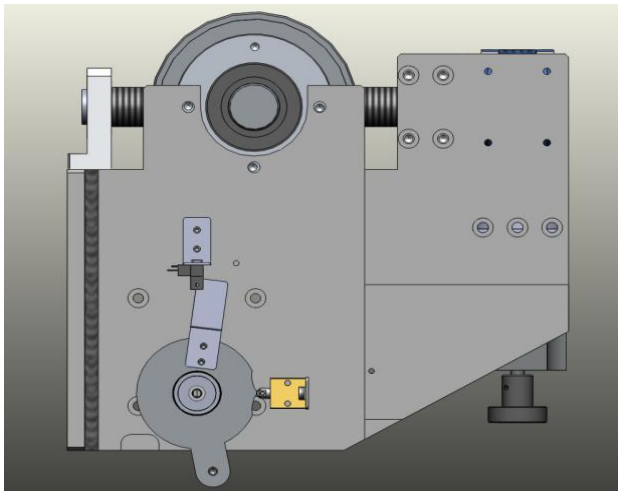


Image 1

When the belt on the rectify roller movable side is loose, it will move left to press the belt on this side to balance the tension of both sides of the conveyor belt. In contrary situation, the rectify roller will move right to leave the belt on this side, the tension of both sides will be balanced.

The conveyor belt will not get deviation when both ends has the same tension(See image 2)

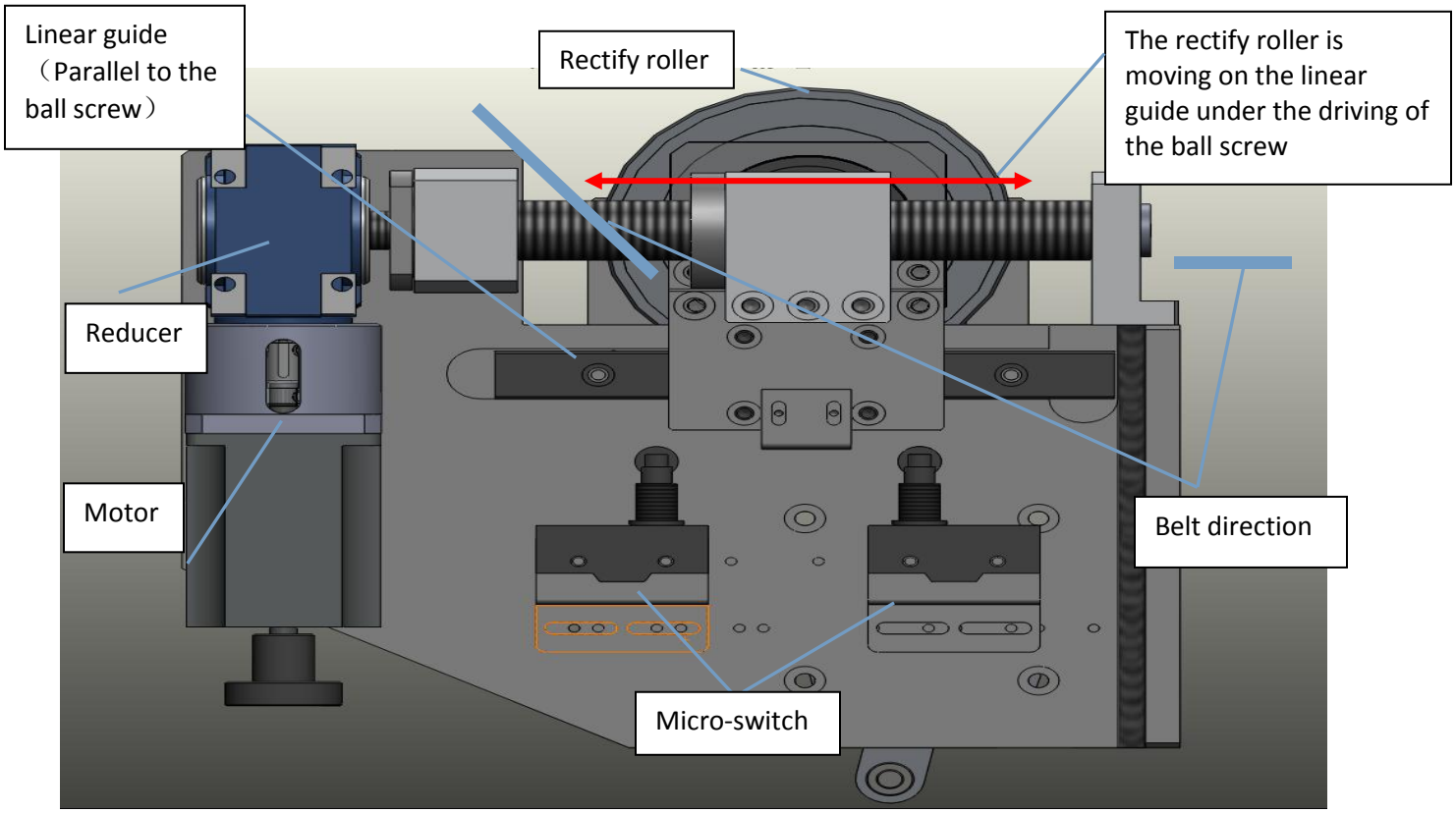


Image 2

2.Operation

The conveyor belt rectifying device is with simple and tight design, during the machine operation, it is user-friendly for customers. After the conveyor belt assembled, the belt tightness can be adjusted by the adjusting screw on both sides of the rectify roller（See image 3 and 4）, this adjustment will be finished by professional technician before the printer been sent out the factory, normally the customer won't need to adjust again.

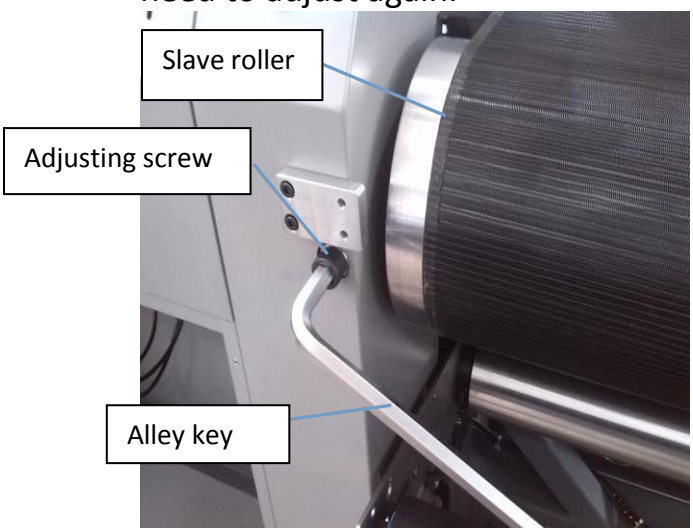


Image 3 （Left end）

Image 4（Right end）

During the machine operation, there are 2 focusing type photoelectric switches giving out red modulating light pointing the conveyor belt edge. Through the control program, the motors controlling the ball screw will run in different direction according to the signal and move the rectify roller to the left and right. (See image 5 and 6)

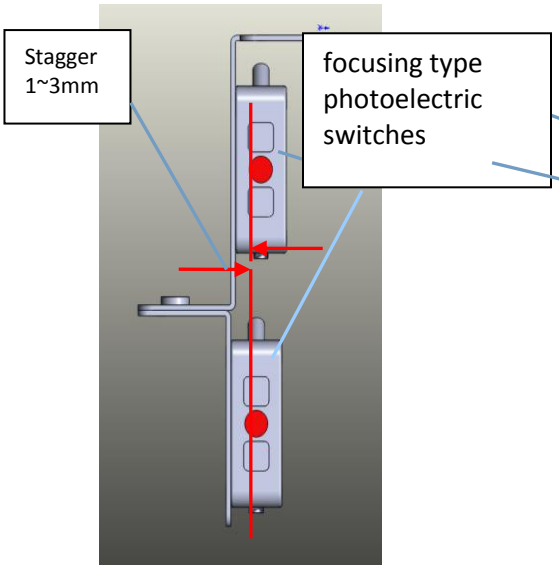


Image 5

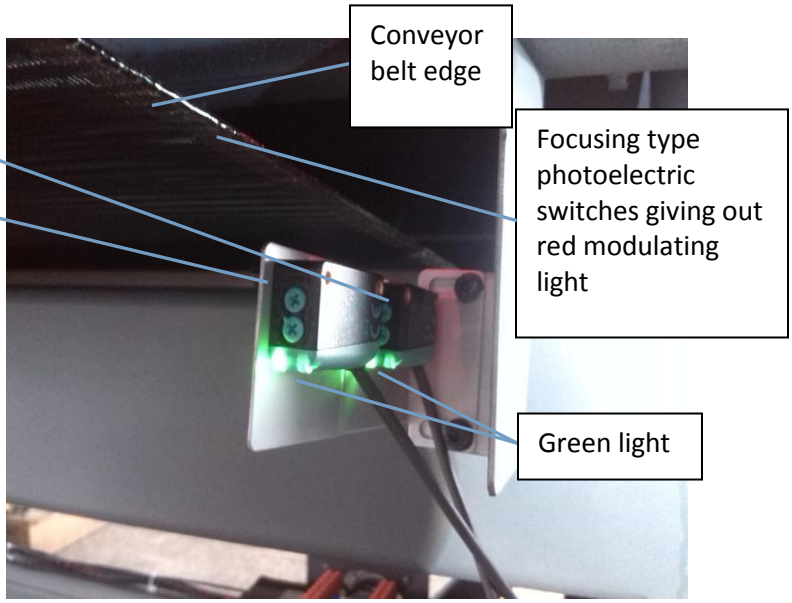


Image 6

The 2 focusing type photoelectric switches are staggered 1-3mm against the belt moving direction when assembling them. This will maintain the belt shift within this range. This was done in the factory, customers don't need to change or move the position of these 2 switches. (See image 5 and 6)

There a 3 status for the 2 photoelectric switches: ①Both 2 green lights are off ②One green light is on, another off ③ Both 2 green lights are on（See image 6）;

When both green lights are on for 10s, the rectify roller will move to the right side or in the right position; when both lights are off for 10s, the rectify roller will move to the left or in the left position. When one light is on while another one off, the rectify roller will not move. (See image 7)

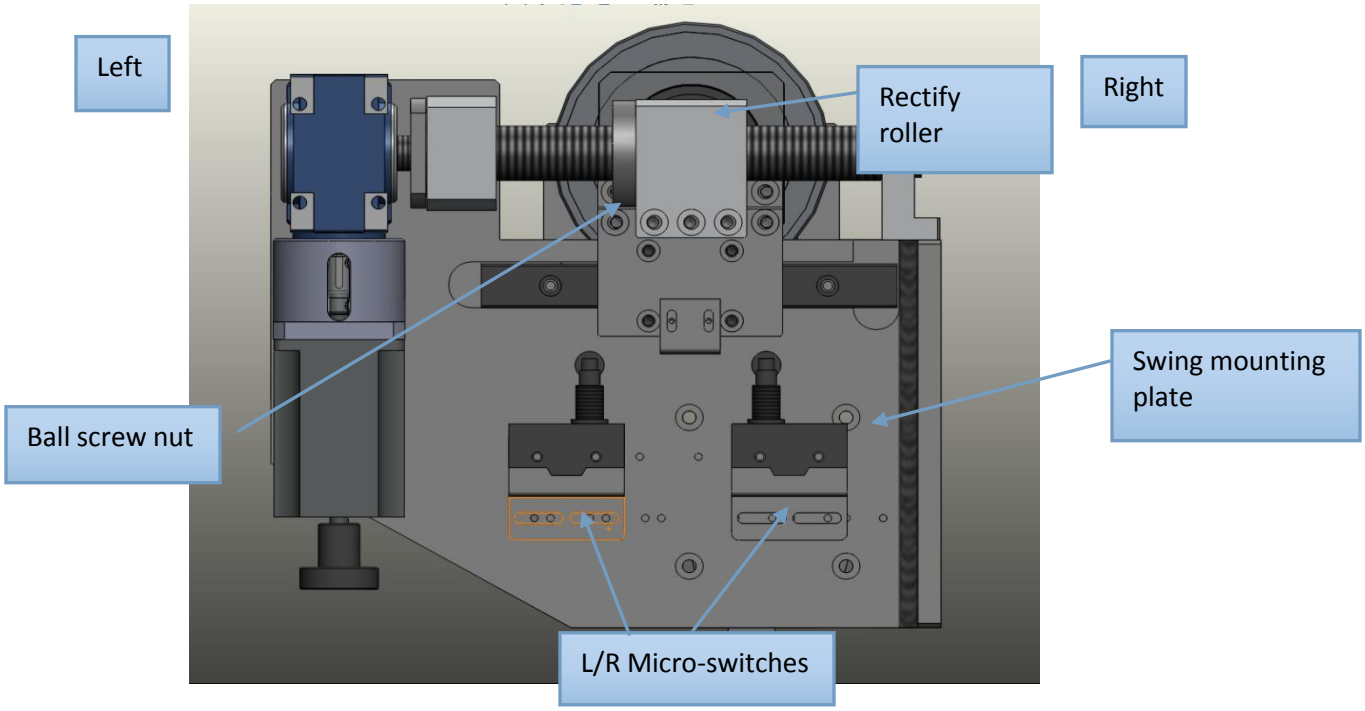


Image 7

When the rectify roller is moving right or left, the swing mounting plate in the bottom will trigger one of the micro-switches, the servo motor will stop working, the rectify roller will stay in right or left and stabilize the belt movement continuously. (See image 6)

Only when both green lights on the focusing photoelectric switches are on or off, and above rectify device is not able to correct the conveyor belt deviation, can we adjust the belt tightness through the adjusting screws on both sides of the slave roller. When adjusting them, use a Allen key to tighten both sides. Give even strength for both sides in the beginning, manually control the tension. (See image 3 and 4)

Start up the machine, observe the belt swinging status. A. the rectify device is in the right limit, if the belt is moving left (Reference from the backside of the machine), means the rectify process is correct. If the belt is shifting fast, tighten the left a bit or loose the right side a bit. If the belt is shifting to the right side, this means the rectify is wrong, need to tighten the right side and loose the left side until the belt shifting to the left side. B. Same principle when the situation is in contrary.

When the rectify device is in control of the belt, continue to adjust slightly with the alley key until the belt deviation is in sufficient control.

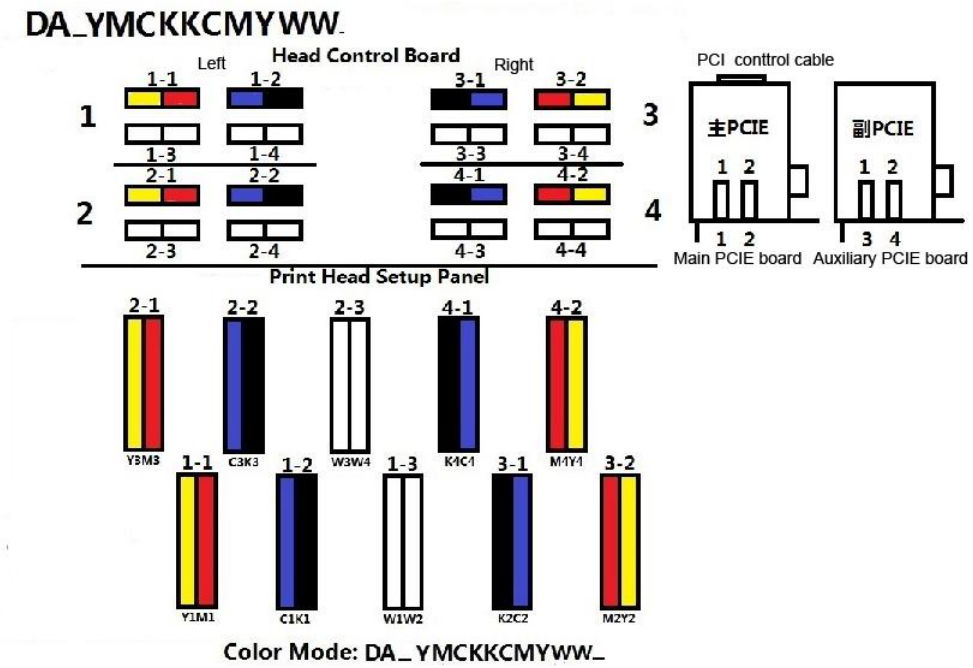
IV Technical requirements

1. Test run the machine each time start up the machine, observe carefully for anomaly shaking and noise. After confirmation, begin working.

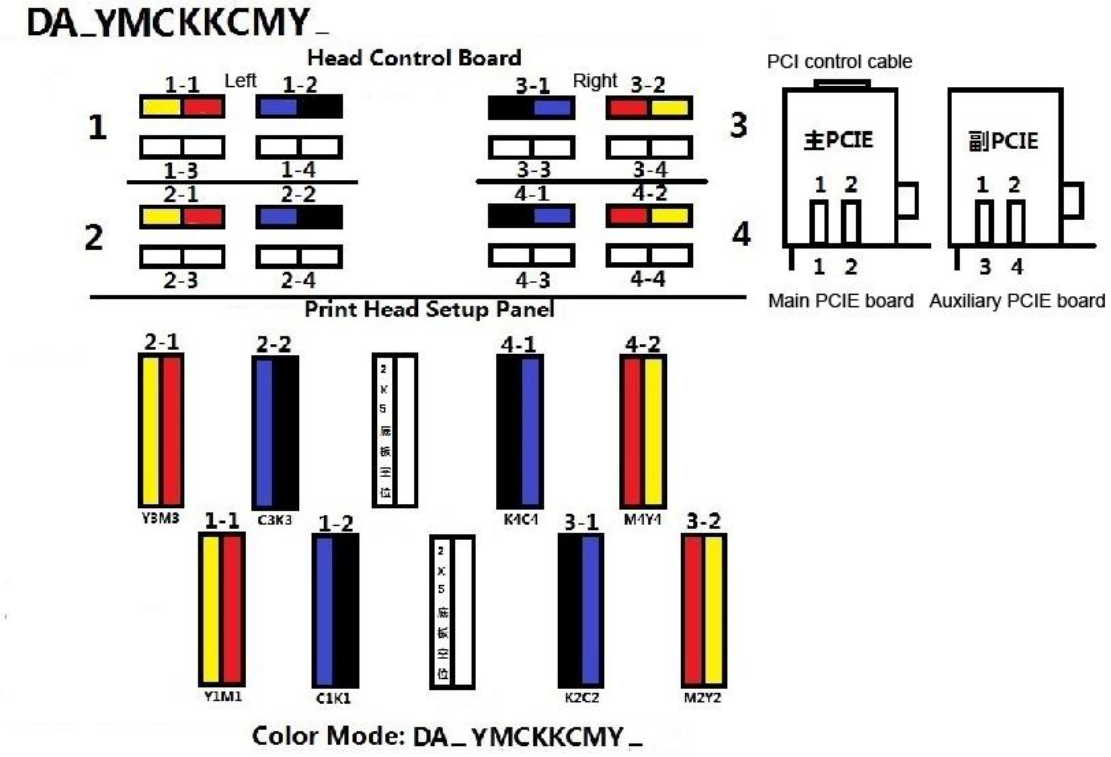
2. Observe for the photoelectric switches and micro-switches, they should be giving the right signal.

Cable diagram of HT3200D head configuration(2X5)

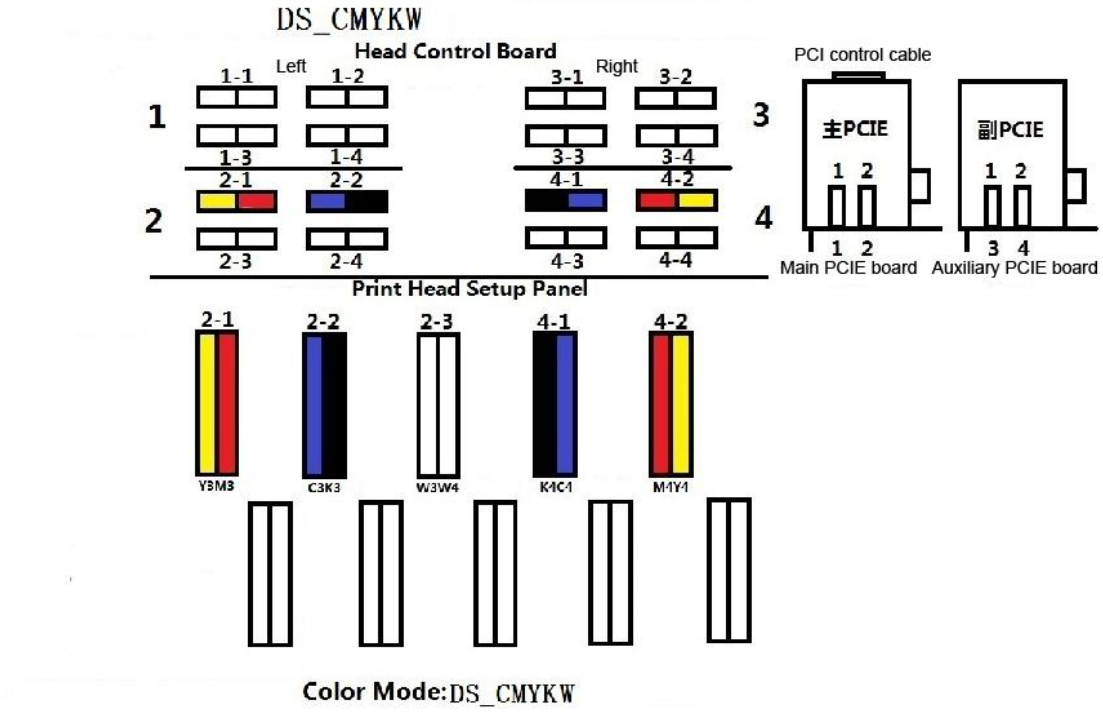
Mode:DA_YMCKKCMYWW



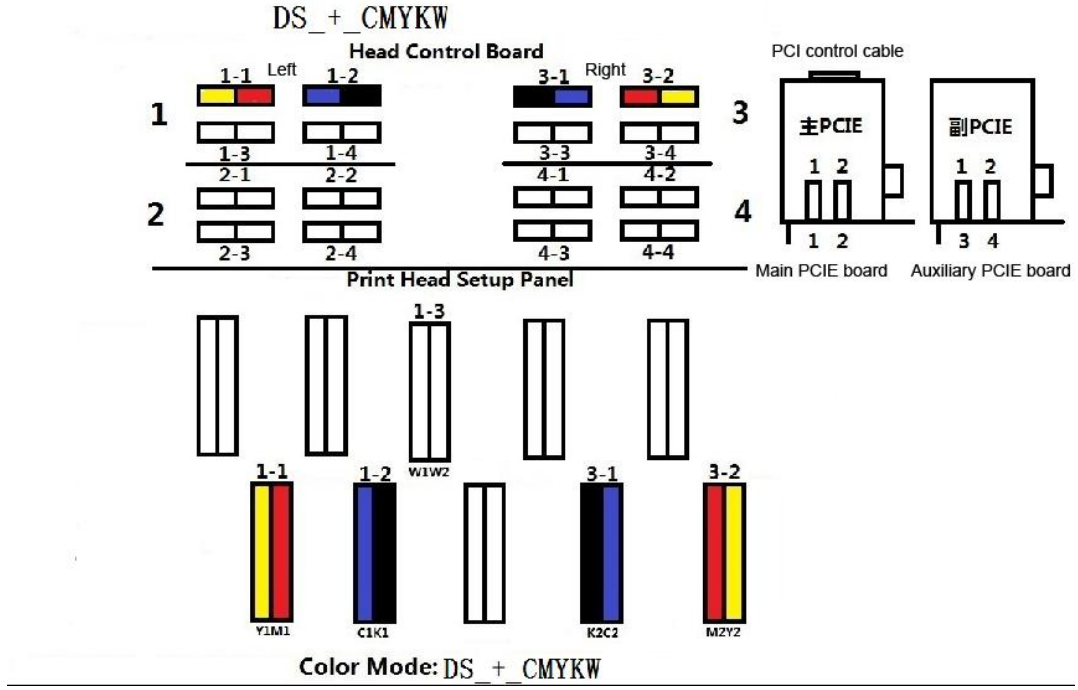
Mode:DA_YMCKKCMY_



Mode:DA_CMYKW



Mode:DA_+_CMYKW



Mode:DA_YMCKKCMYWW

Mode:DS_CMYK