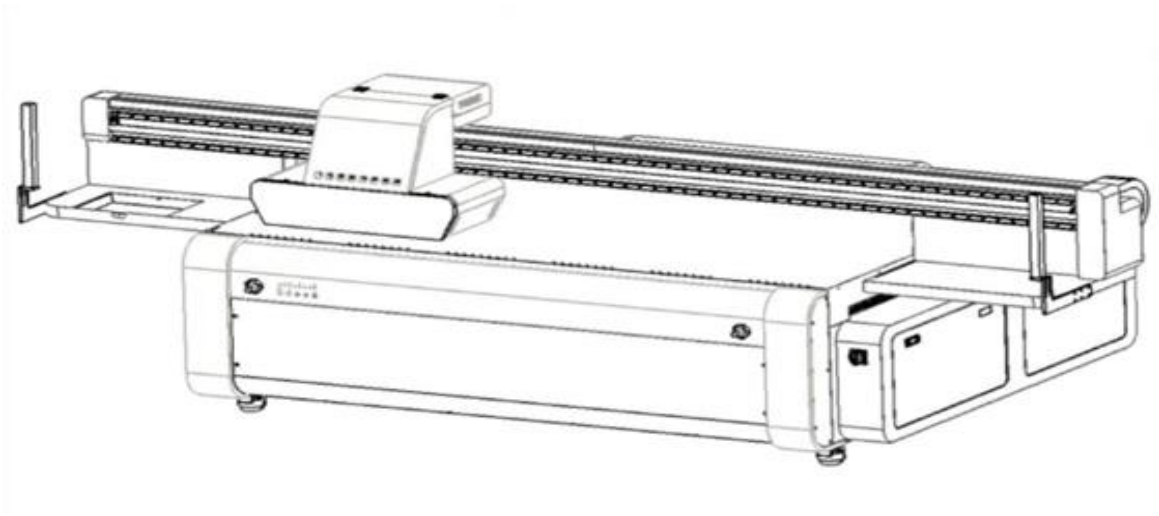
polaroid

POLAROID T-REX FBS

UV Flatbed Printer

USER MANUAL

polaroid



Please keep this manual in durability form for long term usage.

Table of Contents

Foreword

The UV inkjet printer is a precision machine equipped with extremely fine mechanisms and integrated circuit.

This manual has been prepared for end users' easy understanding and using of this printer safely and efficiently. Please read all the contents carefully in detail before operating the printer.

Alterations of any contents in this manual are subjected to change without notice for technical updates.

If you have any question on using this printer, please do not hesitate to contact your local dealer or our technical assistance.

Safety Precautions

1. Symbol indications

Note the specific features given with these symbols to avoid property damage and personal injury in the operating process.

	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.
Verify that there is no individual or item within the printing area.
See ***2. Working environment***
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 poweron.
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.
See ***4.5 Power input requirement***
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 poweron.
Avoid any body contact with the locomotion parts in the process of printer working, or it may lead to equipment breakdown or personal injury.
The operator must be well-properly trained and should operate the machine under the instructions, or it may easily cause equipment damage 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 them as the specific instructions.

Continuous-flow drying awareness

To avoid printing issue and explosion risks, only use the inks and varnishes qualified by POLAROID can be applied to the machinery.

Physical and chemical properties of inks	
Specific Physical Form: Liquid	General Physical Form: Liquid
Color: Y/M/C/K/LC/LM	Odor: Acrylic odor
pH: N/AV	Boiling Point: >120℃
Decomposition Temperature: N/AV	Flash Point: >120℃ (Test Method: Closed Cup)
Auto-ignition Temperature: N/AV	Flammable Limits: N/AV
Vapor Pressure: <1mmHg@20℃	Vapor Density: (Air = 1) >I
Specific Gravity: 1.01	Solubility in Water: Negligible

Solvents are not allowed to be placed on the printing area.
Solvents shall not be present at the printhead nozzle surface.

Exhaust system from the top of the machinery is needed to vacuum the hazardous ink mist.

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.

See ***Troubleshooting***

Introduction

1. Printer brief introduction

The Polaroid T-Rex FBS Flatbed UV inkjet printer is highly cost-effective equipment specially designed for commercial printing enterprises.

Assembled with high-performance piezo heads that enables an output speed of up to 30 ㎡/h at the precision of 720 x 600 DPI.

2. Printer applications

The UV digital printer can print directly on diversified media. The model can be used in advertising production such as banner, panel led, POP stand, vinyl display, meanwhile make creative innovation to the traditional craftwork in the decoration industry, of which

fine-art glass, wooden products, natural or artificial leather, ceramic tiles and wallpaper, etc. can also be printed on.

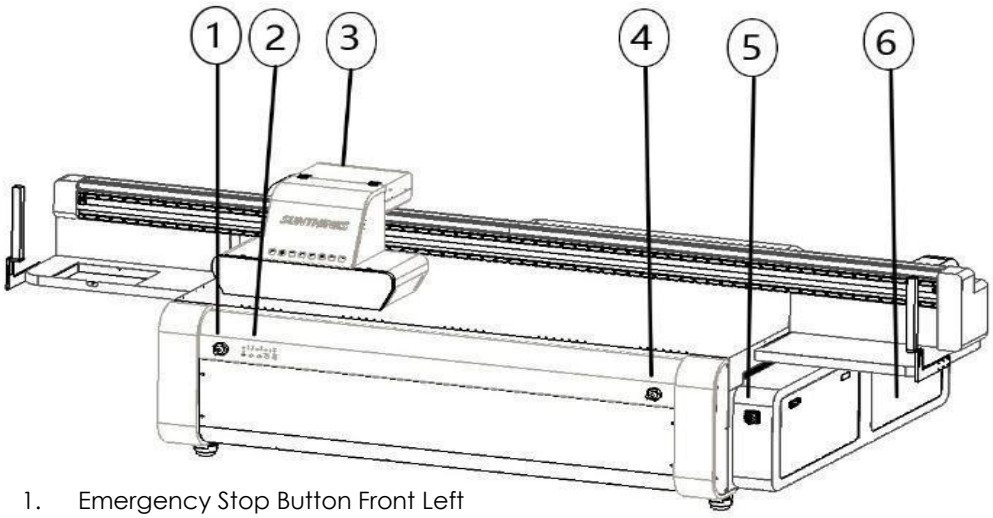
3. Printer configurations

Model	POLAROID T-REX FBS			
Printhead type	RICOH high-performance drop-on-demand piezo heads			
Printhead array	2-8 PCS			
Maximum resolution	720*1800 DPI 720*1200 DPI			
Printing speed (4 Printheads)	Production	4 Pass	6 Pass	8 Pass
	m²/h	30	23	15
Print size	Up to 2.5m x 1.3m			
Media type	Rigid and flexible printing media			
Printed thickness	0-150 mm			
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, V			
Support file	PDF、JPEG、TIFF、EPS			
Support RIP	Colorgate RIPrint Photoprint Onyx			
Computer system	Windows7, Windows 8 10			
NET. Weight	1050 kg			
Dimension	1600mm [H] × 2185mm [W] × 4120mm [L]			
Power consumption	5.2 kW			
Noise	The A-weighted emission sound pressure level at workstations does not exceed 60dB(A)			
Radiation	cat.1			
Remark. All technical configurations are subjected to change without notification.				

AC Supplies	Nominal Voltage	220V
	Nominal Frequency	50Hz
	Steady state voltage	0,9 to 1,1 of nominal voltage
	Frequency	0,99 to 1,01 of nominal frequency continuously
	Harmonic distortion	Harmonic distortion not exceeding 10 % of the total r.m.s. voltage between live conductors for the sum of the 2nd through to the 5th harmonic. An additional 2 % of the total r.m.s. voltage between live conductors for the sum of the 6th through to the30th harmonic is permissible.
	Voltage unbalance	Neither the voltage of the negative sequence component nor the voltage of the zero-sequence component in two-phase supplies exceeding 2 % of the positive sequence component.
	Voltage interruption	Supply interrupted or at zero voltage for not more than 3 ms at any random time in the supply cycle with more than 0.5 s between successive interruptions.
	Voltage dip	Voltage dips not exceeding 20 % of the peak voltage of the supply for more than one cycle with more than 1 s between successive dips.

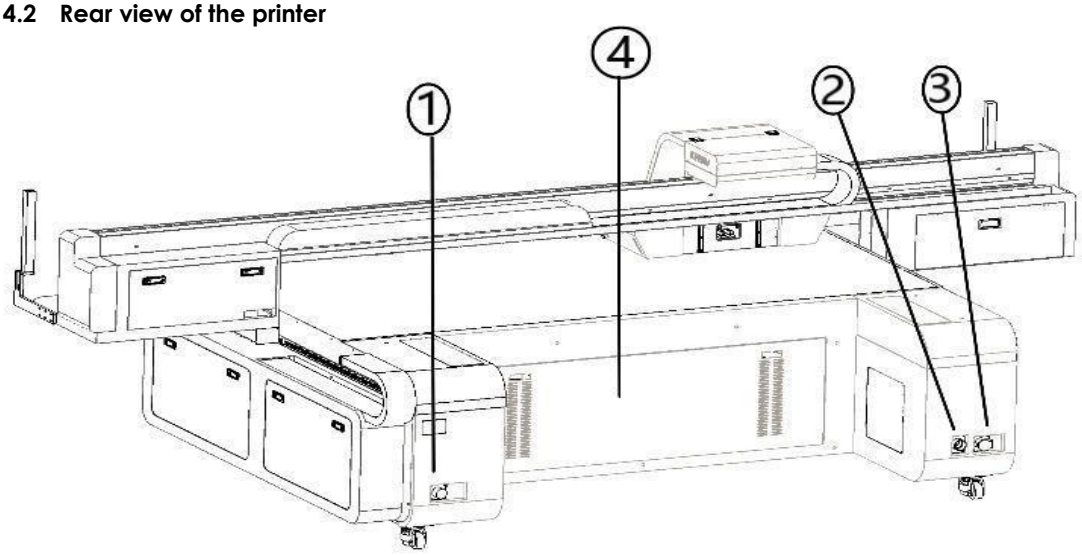
4. Structure Diagrams

4.1 Front view of the printer



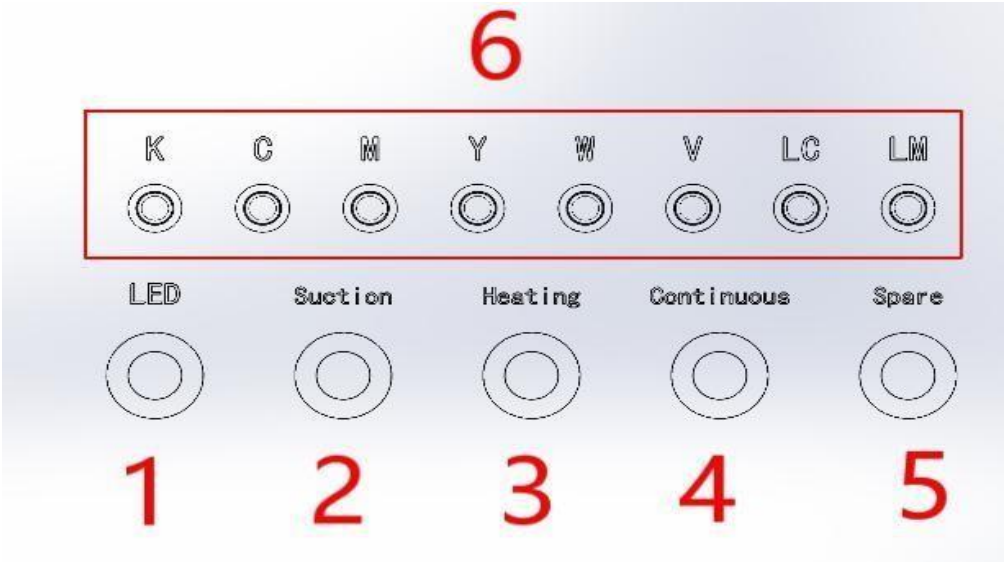
1. Emergency Stop Button Front Left
2. Electric Control Panel
3. Carriage
4. Emergency Stop Button Front Right
5. Power Switch
6. The Ink Box

4.2 Rear view of the printer



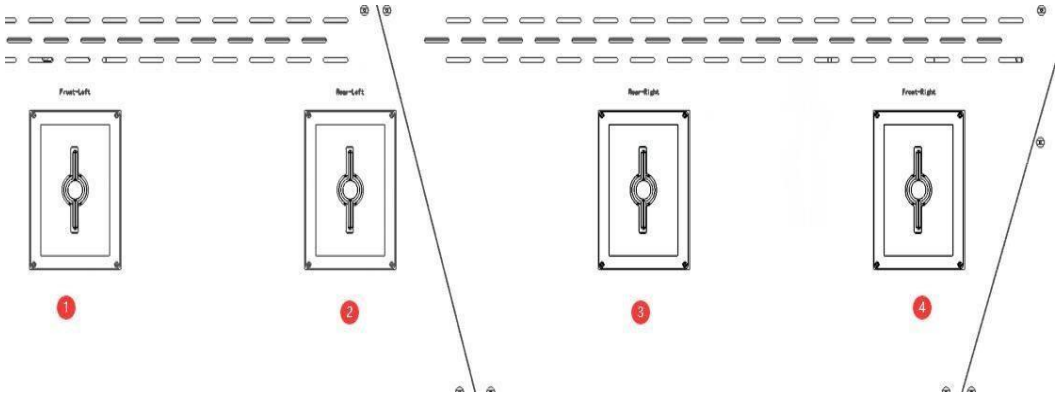
1. The power input (220V)
2. Suction interface
3. Suction MOTO Power supply (220V)
4. UV water tank and negative pressure system (**Inside**)

4.3 Electric Control Panel



1. UV Light Switch
2. Suction Switch
3. Heating Switch For Ink
4. Continuous Print Control
5. Spare
6. Ink Alarm lamp

4.4 Suction Control Panel

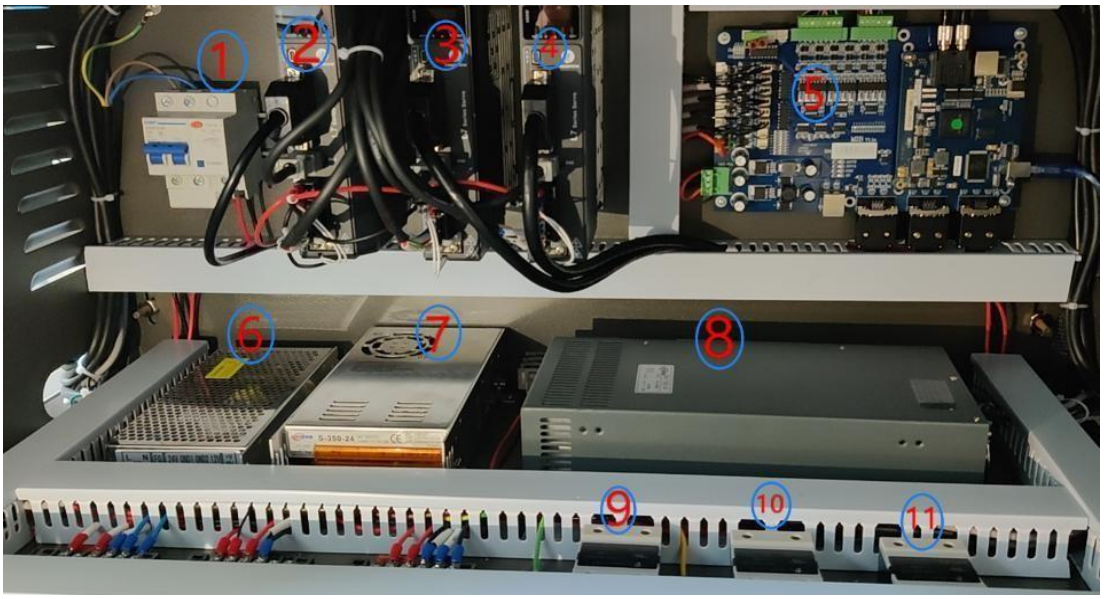


1. Front-Left Table Suction Zone Valve
2. Rear-Left Table Suction Zone Valve
3. Rear-Right Table Suction Zone Valve
4. Front-Right Table Suction Zone Valve

5. Printer Features

With the self-R&D ability that enables constant advancement
Professional assembly crafts guarantee the perfect qualities.
Adopt excellent quality parts of worldwide famous brands, e.g. towline of EGUS.GERMANY, servomotor of panasonic . JAPAN and Leadshine.China ,synchronous belt of MEGADYNE.
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 zerointerference ability.
Industrial PCIE data transmitting interface with excellent proof to electricmagnetic interference.
Automatic head height adjustment enables the head height adjustable to different media thickness of 0-150mm.
A dual lead screw on the Y-directional mechanical structure guarantees the basis of the stable and high precision stepping movement.
Self-checking on printer running malfunctions.
Double-class ink-heating automatic control guarantees the optimum viscosity of ink for printhead 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.

5.1 Electric Box



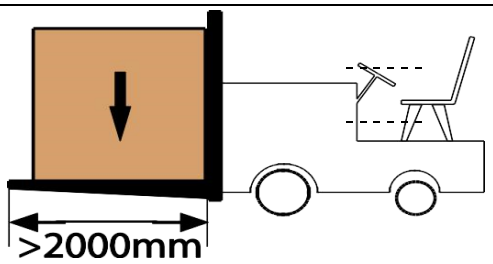
6. Power Switch 220V
7. 24V DC Power supply Servo driver of X(Carriage)
8. Servo driver of Y_Left
9. Servo driver of Y_Right
10. Main Board
11. 24V/12V DC Power supply
12. 24V15A DC Power supply
13. 24V50A DC Power supply
14. Solid state relay1 For Moto X Y
15. Solid state relay2 For UV Light
16. Solid state relay2 For Sution

Printer Installation

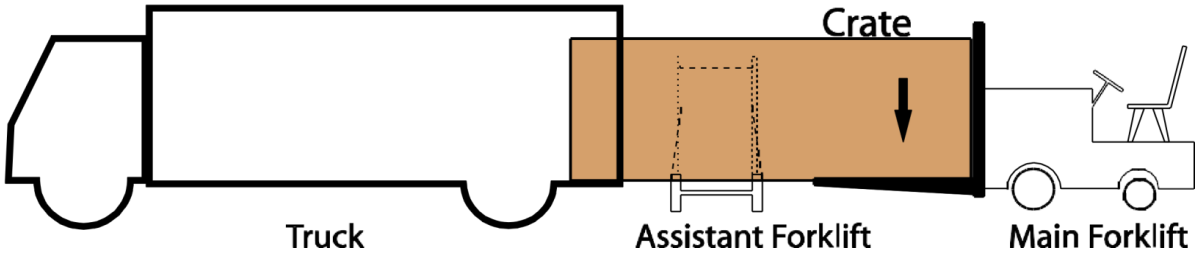
1. Loading and transporting

The net weight of the printer is 1050 kg
Transportation and storage temperature: -20℃~60℃

	The printer is a heavy-duty precision equipment of great value; thus, the loading and transporting assignment must be assumed by qualified individuals, with a view to reduce the risks unexpected.
	The lift of the wooden package should be executed to the front side (with an identification mark of FRONT).
	The equipment must be hoisted with the package box by the crane, with a view to avoid printer damage caused by external force.
	It is recommended that a 3-ton forklift to be used in the loading and unloading job. Basically, the distance between the two arms of the forklift should be 1.3 m at the minimum, and the length of the arm should be 2.0m at the minimum.



2. Working environment



Individual, clean, shadowy and dust-free workplace with associated ventilation
Altitude: Below 1000 meter
Constant humidity: 30%~70%RH(non-condensing)
Ambient Temperature: 18℃ ~ 30℃ (64℉ ~ 86℉)
Clean and dust-free
Sheltered from sunlight
In a good ventilating condition
Certified power outlet of which maximum consumption of 8.3kW and amperage of 20A is required
Rated voltage of 220V and the grounded voltage should below the value of 3V

3. Computer configuration

Motherboard	CPU	RAM	Hard Disk Driver	Operating system
PCIE port supported	PENTIUM dual-core G3250 or above	4G or more	80G or more	Windows 7/10 64Bit
	**Windows 2000** / **WindowsXP/ Mac** are not supported **Windows10** /**Win8** need to disable driver signature enforcement			

4. Installation instructions

4.1 Check and acceptance

1. Verify that all electronic units and mechanism are in normal state as soon as the printer is placed properly.
2. Disassemble all the fixtures of the printer.
3. Verify that all the accessories listed are included and sign the bill.

4.2 Installation of the computer attachments

1. Connect all I/O devices of the computer
2. Install the USB drive into the computer
3. Connect the optical fibers, serial data cables of each corresponding circuit

4.3 Installation of the UV lamp assembly

1. Load the assembly to the carriage. and fasten the screws
2. Put antifreeze and water into the UV water tan

4.4 Leveling adjustment

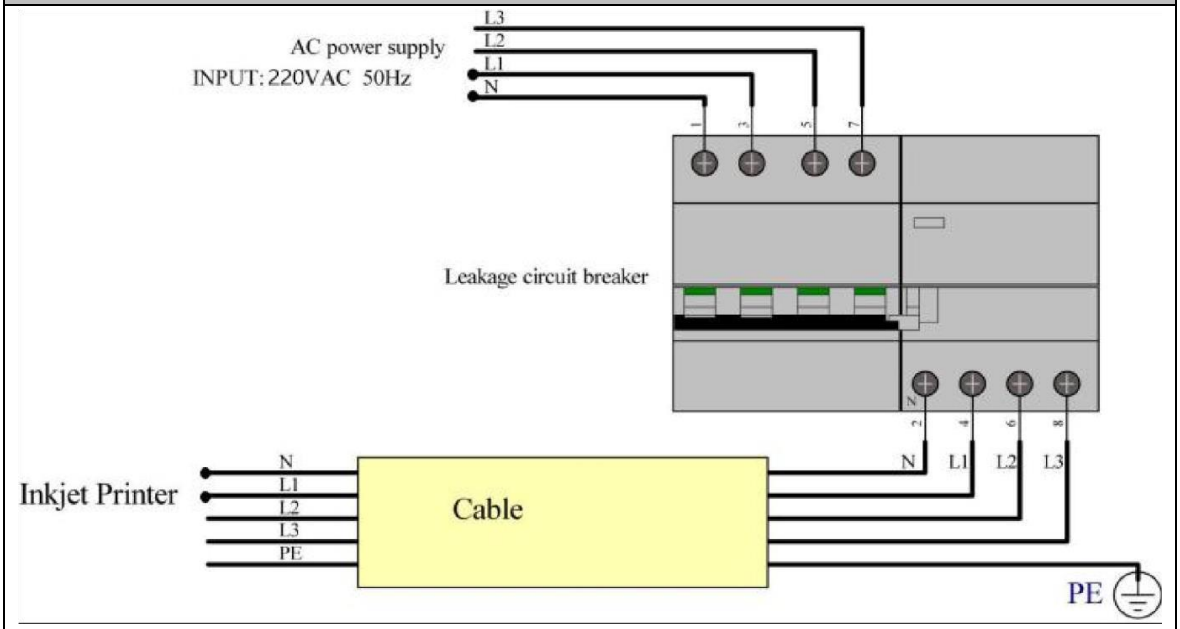
1. Keep the printer's castors laid on the ground with the supports not enabled.
2. Use the level to measure the middle of the four edges of the platen and find out the highest point of the platen.
3. Take the highest point as a reference and adjust the support screws of the other three corners, and get to make the four edges on the same level.
4. Fasten the nut of the support screws to keep the whole frame steady.

4.5 Power input requirement

The printer is high power consumption equipment of 3.2kW.
The input power should meet with the rated value of AC voltage and 20A.
Voltage between N and PE should lower than 3V.
The specification of the power cable should be the diameter of 4 ㎡ GB.
The printer should be properly ground wired.

Diagrams below show the wiring method for various power input.

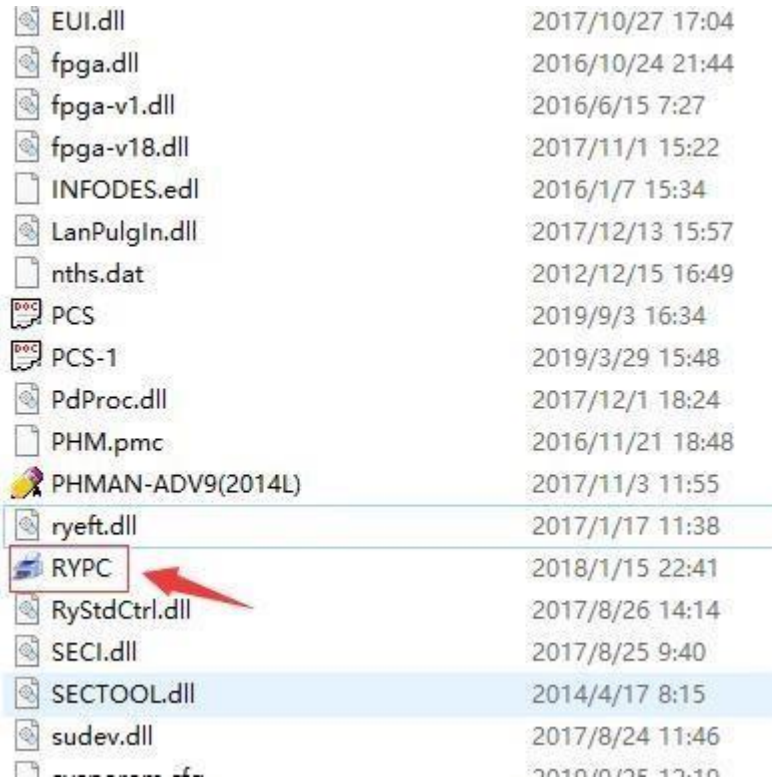
220VAC 50Hz



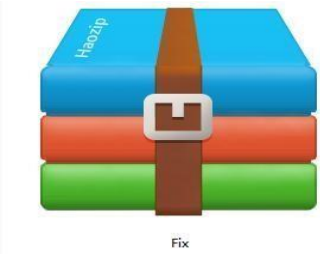
4.6 Software and driver installation

1. Copy the che file to your PC

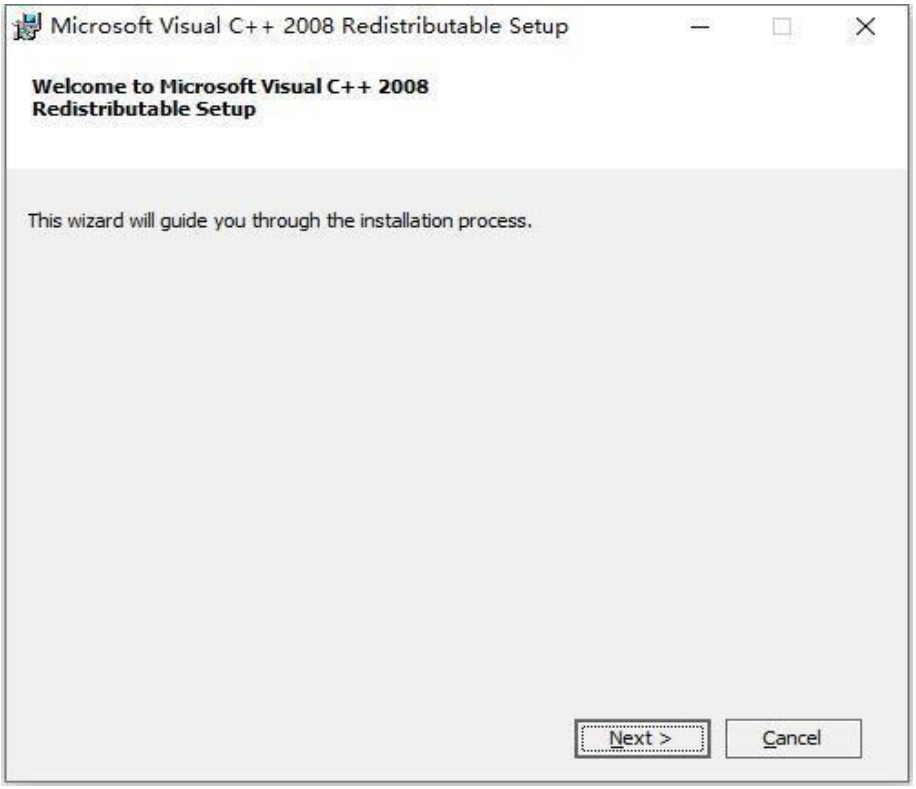
2. Open the file and find RYPC to Create a shortcut

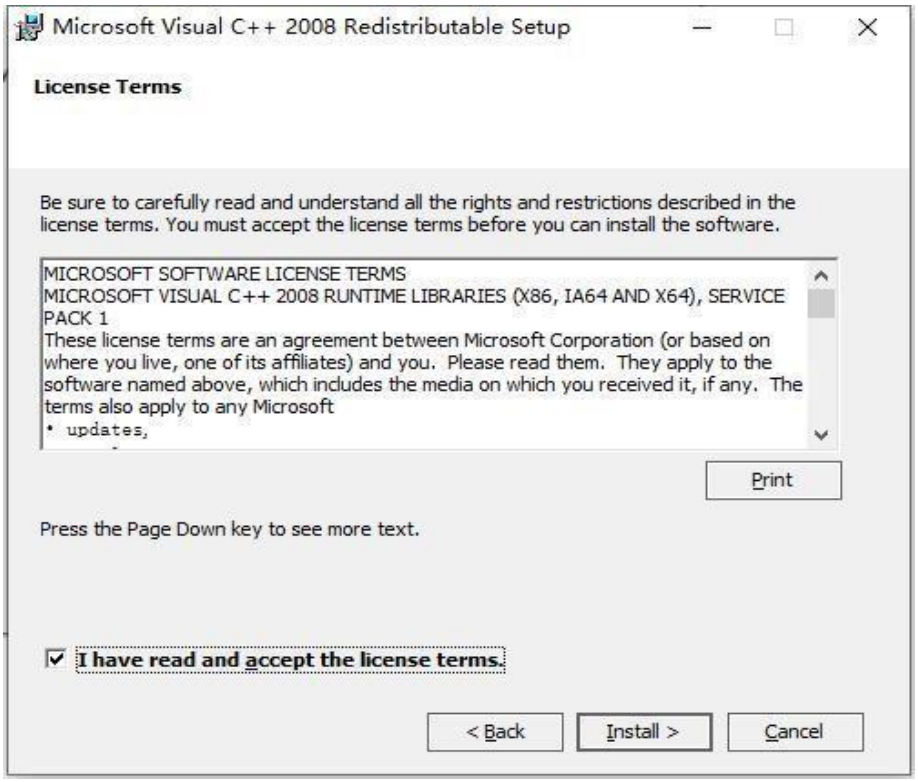


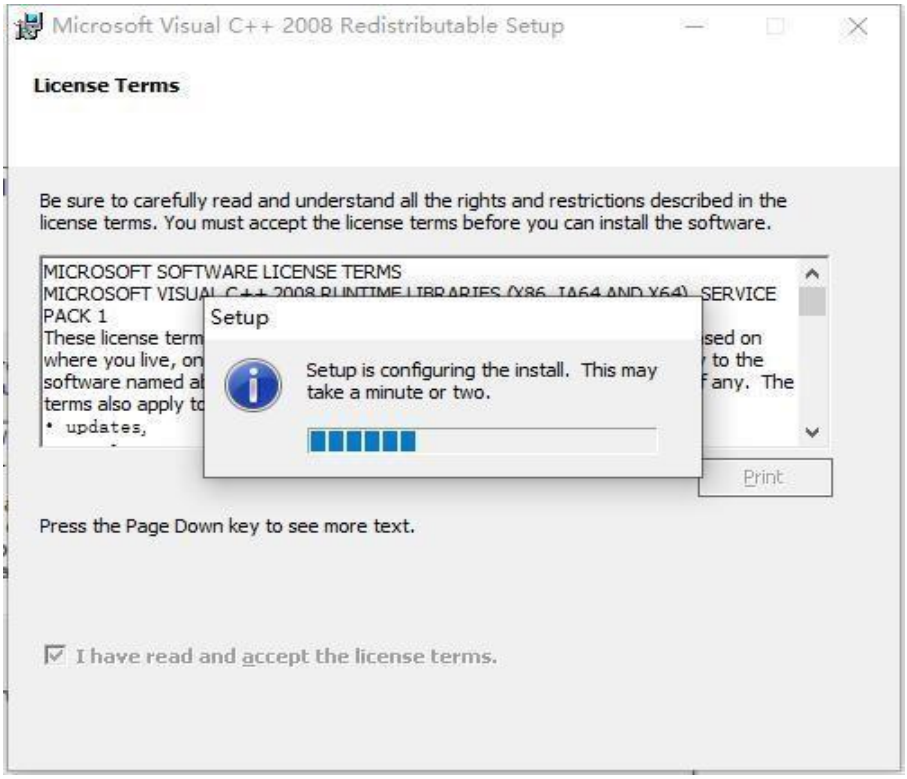
3. Select VC++08 10 .
version. x86 for 32 bit windows, x64 for 64 bit windows

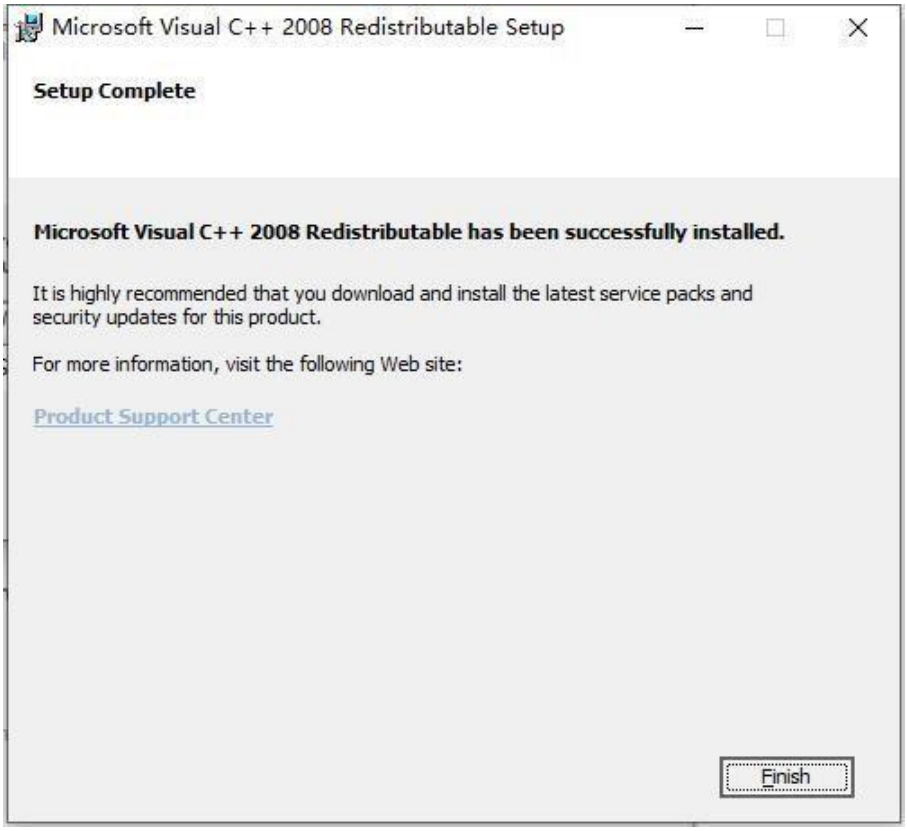


Open the file VC++ and setup

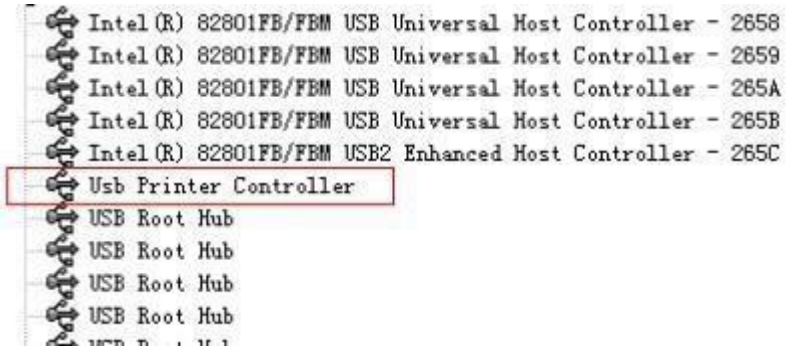

Microsoft Visual C++ 2008 Redistributable Setup
Welcome to Microsoft Visual C++ 2008 Redistributable Setup
This wizard will guide you through the installation process.
Next >
Cancel


Microsoft Visual C++ 2008 Redistributable Setup
License Terms
Be sure to carefully read and understand all the rights and restrictions described in the license terms. You must accept the license terms before you can install the software.
MICROSOFT SOFTWARE LICENSE TERMS
MICROSOFT VISUAL C++ 2008 RUNTIME LIBRARIES (X86, IA64 AND X64), SERVICE PACK 1
These license terms are an agreement between Microsoft Corporation (or based on where you live, one of its affiliates) and you. Please read them. They apply to the software named above, which includes the media on which you received it, if any. The terms also apply to any Microsoft
• updates,
Print
Press the Page Down key to see more text.
I have read and accept the license terms.
< Back
Install >
Cancel

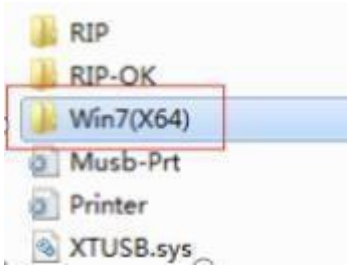

Microsoft Visual C++ 2008 Redistributable Setup
License Terms
Be sure to carefully read and understand all the rights and restrictions described in the license terms. You must accept the license terms before you can install the software.
MICROSOFT SOFTWARE LICENSE TERMS
PACK 1
Setup
Setup is configuring the install. This may take a minute or two.
Print
Press the Page Down key to see more text.
I have read and accept the license terms.


Microsoft Visual C++ 2008 Redistributable Setup
Setup Complete
Microsoft Visual C++ 2008 Redistributable has been successfully installed.
It is highly recommended that you download and install the latest service packs and security updates for this product.
For more information, visit the following Web site:
Product Support Center
Finish

4. Connect USB cable to the computer ,then open the switch of the machine , the device manager will remind you to pack drive



Driving position



Usb Printer Controller of RETC is finish

Note: If the system is WIN10, you need to ban driver signature of your PC

4.7 Functional tests

Open the power supply, and test the following functions of the printer:

Z directional moving properly
X and Y directional moving properly
Head height locating function running properly
Print test OK

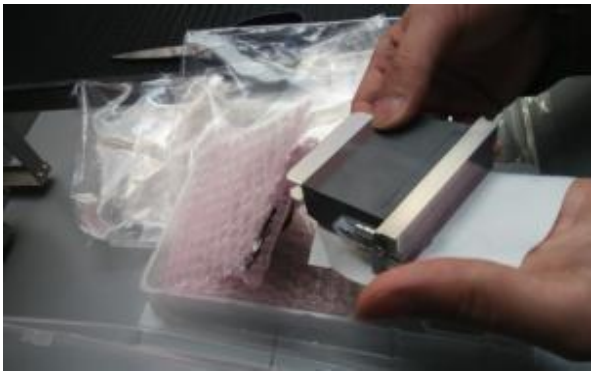
4.8 Print head installation

	This step must be operated by qualified technicians with a view to avoid damage to printhead and integrated circuit, and reduce the risk of unexpected hazard due to improper operations.
	The connection of printhead cables can only be executed in the state of power-off. The pins of the cables must avoid to be dipped with any liquid and should never be bent.
	When dismantling the printhead, Wear rubber gloves goggle to protect yourself from the ink.

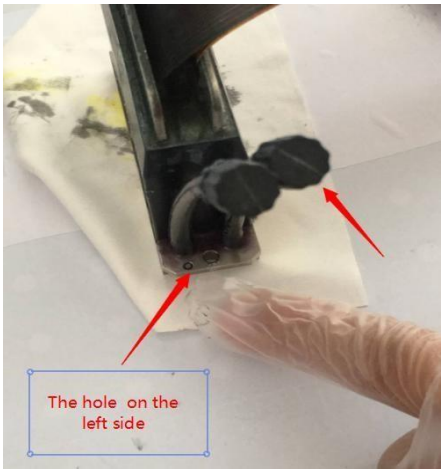
1. Take all the assistant parts out and connect the connectors

2. Finish Connecting as below

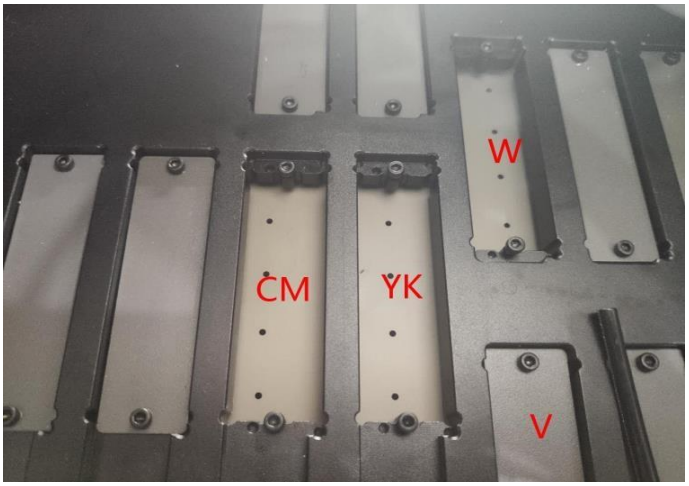
3. Pay more attention to the heads and take the printhead out of the packing case



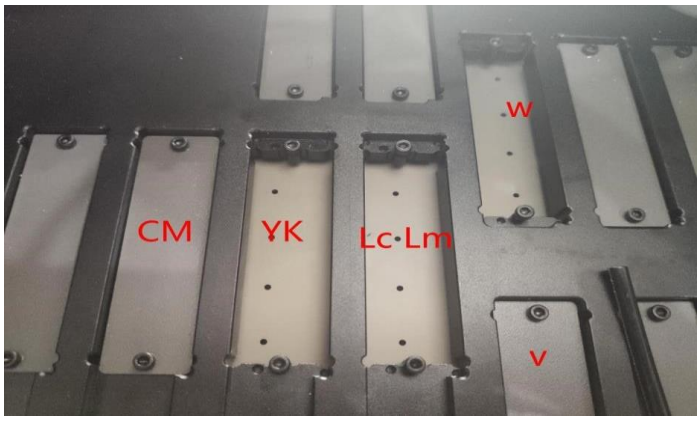
4. Finish the connecting between sub tank to heads and fix the printhead



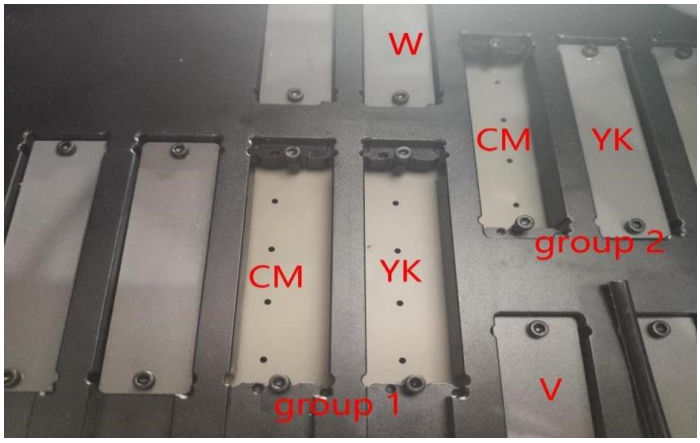
5. Head Position



CM YK W V

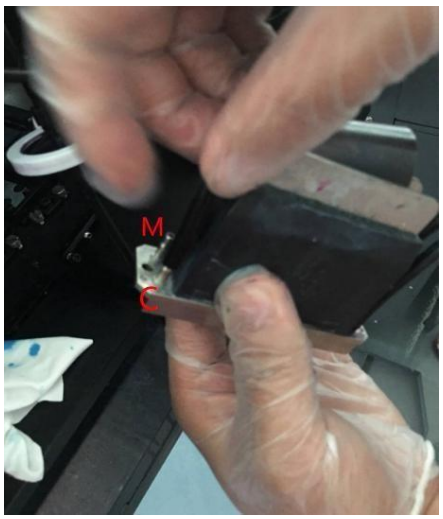


CM YK Lc Lm W V

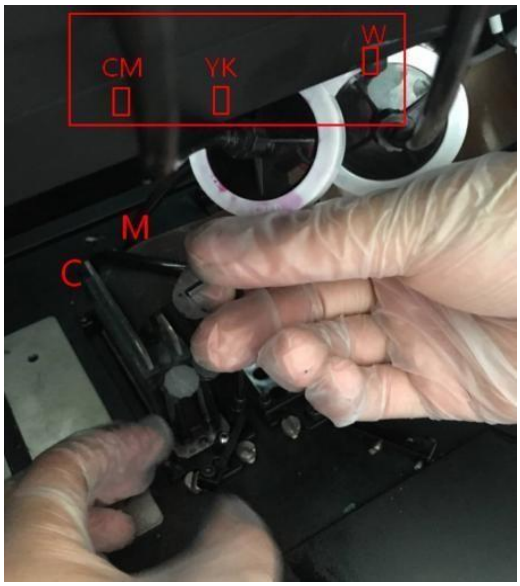


(Double)CMYK

6. Connect the refill tube with the Head at the other side



7. Put the head on the Hole location then twist screws

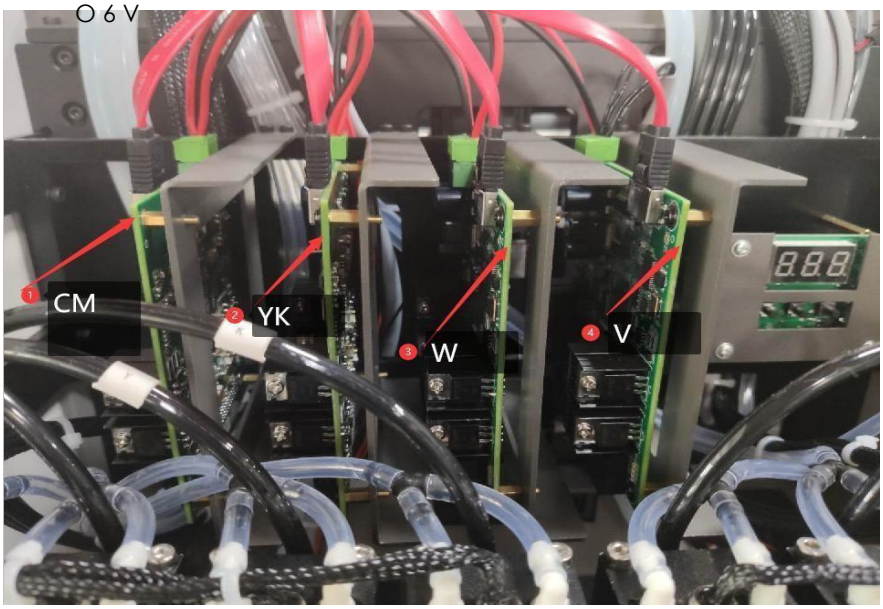


8. Connect the transfer boards with head boards and printheads Finish installing the printheads one by one

8H Model

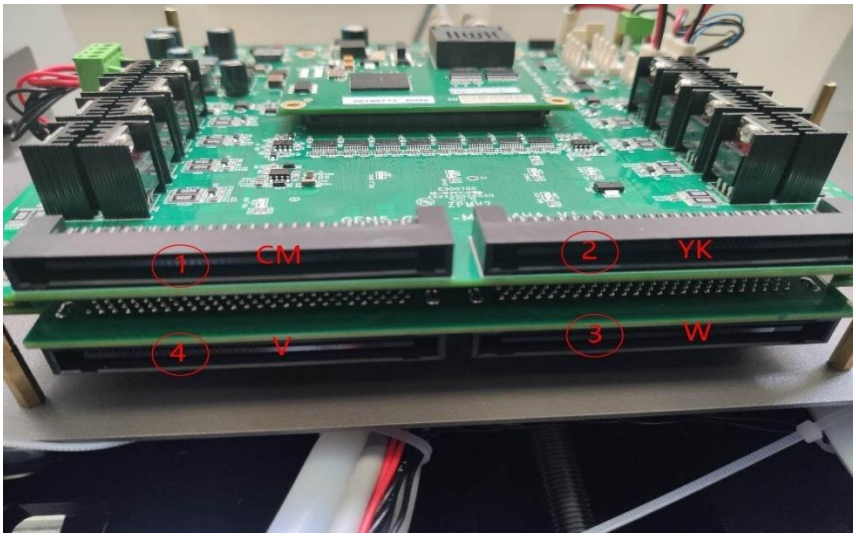
From left to right

1. O 1 CM O 2 YK O 3 W O 4 V
2. O 1 CM O 2 YK O 3 LcLm O 4 W O 5 V
3. O 1 CM(Group1) O 2 YK(Group1) O 3 CM(Group2) O 4 YK(Group2) O 5 W O 6 V



4H Model

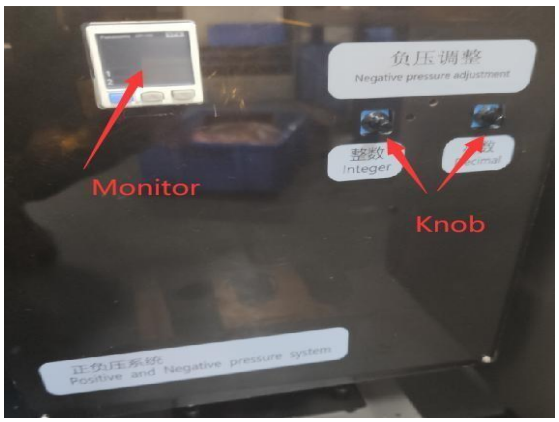
1. O 1 CM O 2 YK O 3 W O 4 V
2. O 1 CM O 2 YK O 3 Lc Lm O 4 W



4.9 Filling ink

!	The ink filling operation can only be executed when the ink lines and the connections of the cables are carefully double-checked after the printhead installation.

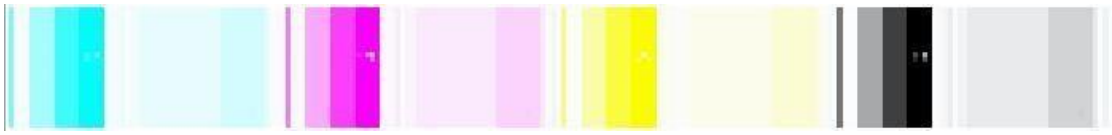
1. Adjust the value to -1.5kPa, avoid the automatic protection of system when the negative pressure fluctuates in the ink filling operation process. (Turn the knob until the monitor displays the value you need).
2. Verify that all cables of the ink pumps are connected properly and then fill in each main tank with the color of ink accordingly.
3. The ink pumping function will be interrupted if the Sub Tank is still not filled to its standard ink amount every 15s, and the buzzer will make a three-alert from the pc software. Normally this alert can be ignored by resetting of the ink filling function, and the ink filling can be accomplished by the repeating the operation a couple of times. (The bottom right of the software will display the current ink level of the secondary ink stack).
4. When finishes the ink filling, adjust the pressure to a value of -3.0kPa, then turn on the valves of the Sub Tank.



4.10 Air exhausting of the print head

	The exhausting operation should be done the first time of printhead installation
	This operation can help exhaust the air bubbles in the chamber.
	This operation can also be used to deal with the nozzles missing problem.
	Wearing rubber gloves goggle to protect yourself from the ink

1. Shutdown the spray function
2. Turn off all the valves except the valves of the printhead, which needs to be exhausted and adjust the pressure to a value of -1.0kPa.
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.
4. Execute the exhaust on each printhead as the operations described above. When finishes exhaust operation, adjust the pressure to a value of -3.0kPa 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 a lint-free, dust-free cloth to wipe the ink residue on the nozzle surface.
6. Print a "status" and check the status of the nozzles.

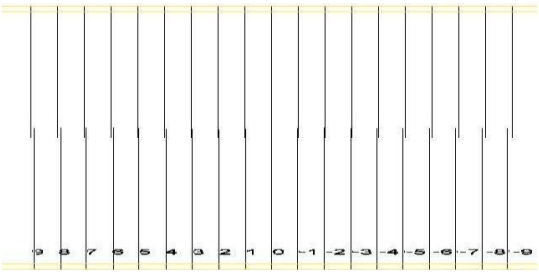


4.11 Print head calibration and alignment

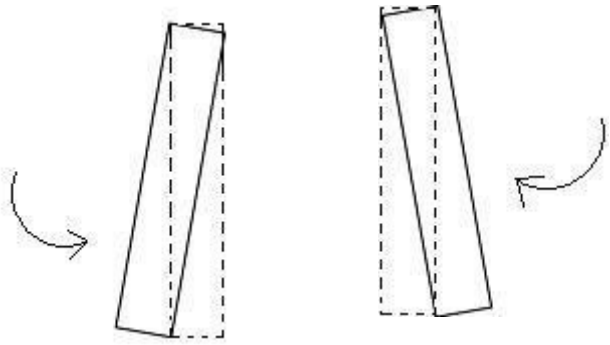
4.11.1 Vertical alignment

1. Run the RYPC program, click “calibration” to enter the “Vertical calibration”

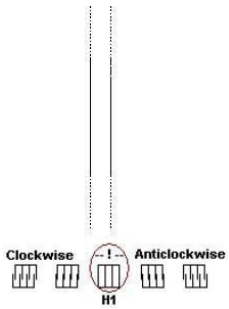
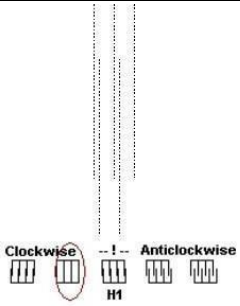
2. Select the printhead vertical alignment in the drop-down-list of the alignment checking and run printing.



3. Use the magnifier to observe the upper and lower parts of the small iron printed and sees whether the two parts merge into a complete one.
4. Adjust the **Vertical Adjusting Screw** of the printhead base according to the “Heads Vertical” calibration print and repeat the Step3.



5. Repeat Step2, Step3 and Step4 until they were aligned.

How to read the Vertical Calibration print	
Picture A Vertical calibration print (Good)	Picture B Vertical calibration print (Bad)
	
The lines of the two parts printed are completely overlapped. Vertical calibration is good.	There is one icon in the clockwise side. Adjust the screw clockwise to make it aligned to the middle position with the exclamation mark
How to adjust the **Vertical Adjusting Screw**	
1. Loosen the **Head Fixing Screw** 2. Adjust according to the Vertical calibration print. (Rotate the head) 3. Fasten the **Head Fixing Screw** when the vertical alignment accomplished.	

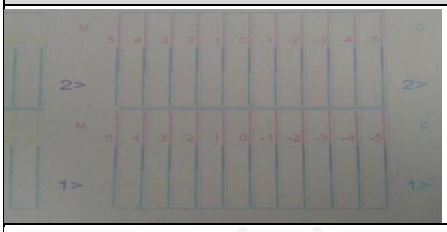
4.11.2 Left/Right heads offset

"Left-dir offset" means color calibration of left-directional print. "Right-dir offset" means color calibration of right-directional print.

plan 1

1. Select the "Left-to right ""color offset"

2. Use the magnifier to observe the best alignment of the offset calibration print and take it as a variable to adjust the original value.
3. Modify the value with a variable in the corresponding blank of "Color offset Calibration" sector and check the alignment again.
4. Repeat Step1, Step2 and Step3 until they were aligned.

How to read the Left/Right Offset Calibration print	
	The left-side nozzles of the printhead (M) printed line align with the black line more perfectly in the icon with a figure of "-3".

Speed Mode: High Spee | Copy to | Offset Direction Selection: From left to right | Input Relative Value

Color Offse	C	M	Y	K	LC	LM	W1	W2	V1	V2
Y Offset	640.0	640.7	639.3	639.7	641.0	641.5	1281.5	1282.6	-128.0	-128.0
PH1(R)	0	-3	0	0	0	0	0	0	0	0
PH1(L)	0	-3	0	0	0	0	0	0	0	0

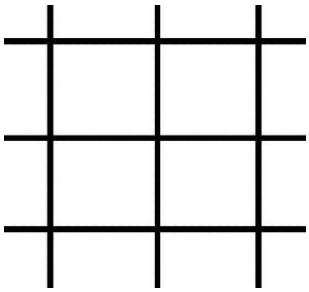
Subtract 2 on the basis of the origin for M

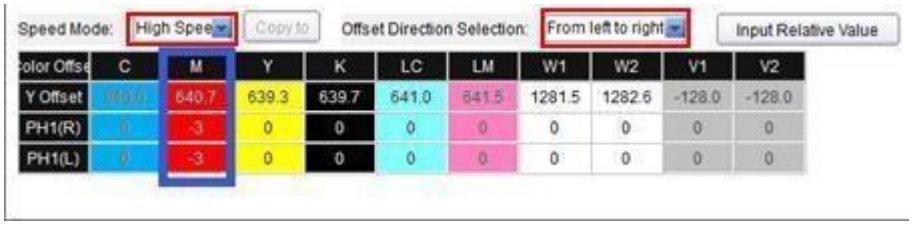
	Aligned after adjusting offset the parameters.

Right Direction Offset using the same method with Left Direction Offset

plan 2

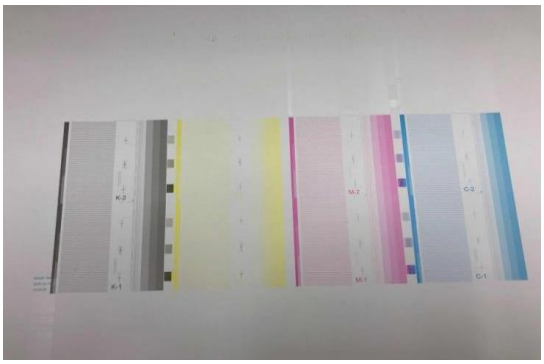
1. Make a file, four colors black (White and varnish spot color)
2. Print this file
3. View color offset position
4. Based on blue, other colors move to the blue position (coincident)
5. Write the value in the calibration table in the software
6. Click Apply to print again. Repeat 1 to 6 (Pay attention to the printing speed direction,)

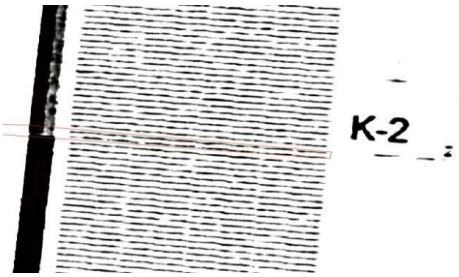


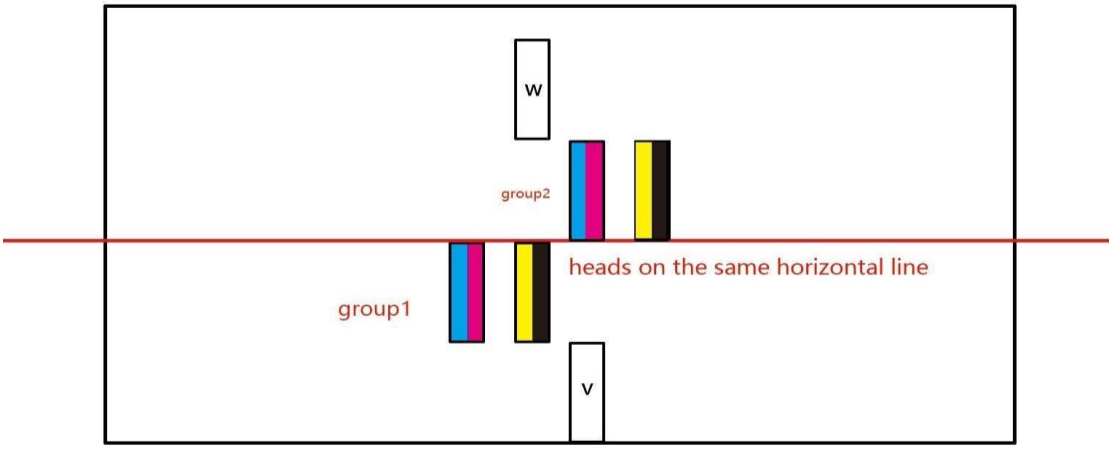


Double CMYK calibration and alignment

1. Group 2 heads are aligned inside, Group 1 is aligned to the front
2. Vertical calibration
3. Status print (First adjust the two heads of group 2 on the same level)
4. Status print （Push group 1 by hand to connect group 1 and group 2）
5. Vertical calibration again
6. Color calibration（group 1）
7. Color calibration（group 2）

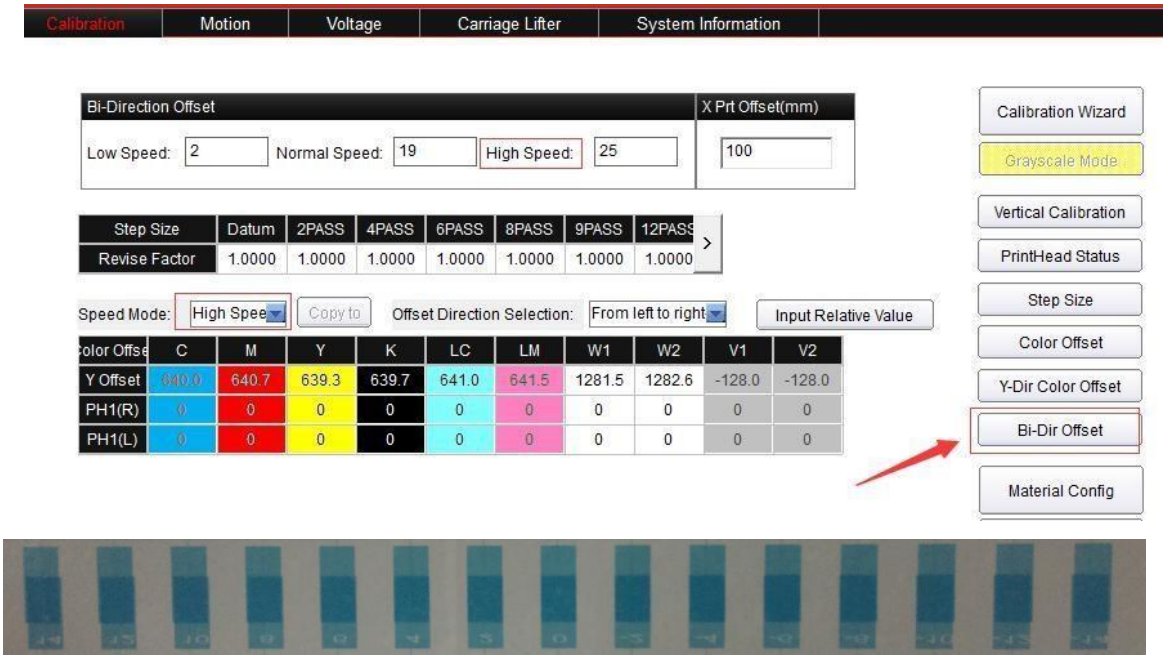






4.11.3 Bi-directional Offset Calibration

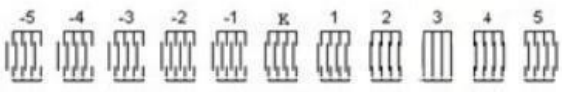
1. Select the "Bi -dir offset" (High speed)



2. Use the magnifier to observe the best alignment of the offset calibration print and take it as a variable to adjust the original value.

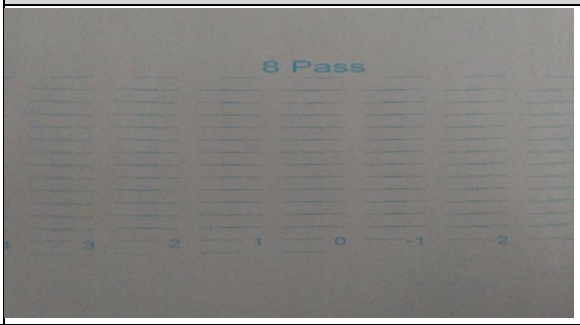
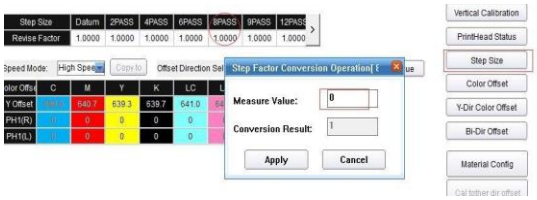
3. Calibration" sector and check the alignment again.

4. Repeat Step1, Step2 and Step3 until they were aligned. Modify the value with a variable in the corresponding blank of "Bidi_Offset & Step.

	The calibration parameter differs for different carriage speed. Calibrate the Bi-direction offset parameters for them separately.	
	We often use a kind of speed (High speed)	
	How to read the Bi-directional Offset Calibration print	
		The line overlaps the best at the position of figure +3
		Plus 3 to the corresponding parameter (Here is the speed, 25+3=28).

4.11.4 Stepping calibration

1. Select the stepping checking print in the Step size of calibration
2. Use the magnifier to observe and find a number indicates the best overlapping of the tiny lines.
3. Modify the value with a variable in the corresponding parameter and check the alignment again.
4. Repeat Step1, Step2 and Step3 until they were aligned.

	How to read the Stepping Calibration print	
		An aligned Stepping Calibration print
		Adjust the parameter here. This method is using a precise parameter calculating.

Operating Instructions

1. Start-up and shutdown operation

	The user should go through the ***Safety Precautions*** chapter before the first-time operation. And all operations to be done by beginners must be executed under the instructions of professional technicians.
	For emergency stop press the any of the Emergency stop buttons.

1.1 Printer start-up operation

1. Connect the power cable plugs to the wall socket.

	MAIN POWER SWITCH	

2. Turn the main power breaker on.
3. Start the computer.
4. Turn on the four Emergency Stop Buttons on each corner of the printer. Then turn up the switch
5. Run the self-checking on the initial start of the printing system.
6. Check if the reading value of the pressure is normal.

	Normally the value of the negative pressure reads -3.0KPa. But various slightly in different models and locations. Adjust the pressure in theNegative pressure system

7. Activate the air blower and turn on the corresponding suction sector of the platform where the media laid.
8. Press the UV-LED lamp button and start the normal printing job.

	See **Printer configurations** *for detail information*
	If ever encountered with an alert or an error message. Refer to the ***Troubleshooting*** chapter.

1.2 Printer shutdown operation

1. Print the nozzle test on anA4-size paper and compare with the previous one.
2. Turn off the air blower and the UV lamps.
3. Close the second ink bottle switch and Clean the surface of the printhead use by Clean cloth
4. Shutdown the computer.
5. Put The shading cloth cover on the Carriage

	If any nozzles missing is observed, execute the exhausting operation immediately.

Printer Maintenance

1. Periodic maintenance for printer parts

	With a view to keep the printer in good working conditions, operators should do the maintenance job periodically according to the following instructions.
Daily routine maintenance	Clean the frame
	Clean the waste ink sink
	Clean the quartz glass of the UV lamp assembly
	Clean the bottom of the printhead tray
	Check the negative pressure system
	Take a nozzle checking.
Weekly routine maintenance	Clean the towline and its internal cables
	Clean the fans, electronic parts
	Clean the waste ink collecting tray
	Replace the filter fiber
	Do the calibration and alignment.
Monthly routine maintenance	Lubricate the rolling and moving mechanical parts
	Check the joints of ink lines and air lines
	Replace the air pump
Quarterly routine maintenance	Reset the pressure indicator
	Replace the capsule filter
	Ink pump and optical fiber
Yearly routine maintenance	Replace the quartz glass of the UV lamp assembly
	Replace the disk filter and the tubes within the towline

*** The following maintenance instructions with a star mark "*" is provided for skilled person.**

2. Maintenance of the mechanical parts

Lubricate the moving mechanical parts with lithium grease monthly.	
Mechanical parts	X-directional Slide Way Y-directional Slide Way Y-directional Screw Leads Z-directional Screw Lead
	Use the lever type grease gun to eject the lubricating grease into the slide block via the lubricating nipple assembly on the block.
	Non-clean lithium grease must avoid to be used for lubrication job or it will result in slide way and slide block damage.

3. Precision part maintenance*

All precision parts must be strictly cleaned with isopropanol and lint-free tissue according to the maintenance instructions.	
Precision parts	Encoder Strip Opt-electric Sensor head height finder assembly

4. Printhead maintenance*

4.1 Print head daily routine maintenance

1. Every day before or after work, take a nozzle checking print and see if there is any blockage.

	Execute priming or flushing immediately as soon as any blockage is observed.
	In the case, only one or two color are jetting during the printing process, a synchronize color bar printed with the image is strongly recommended. All the other colors can also be working during the whole printing. Thus, avoid constant reflective UV light causes the non-discharging nozzles clog.

2. Tidy and clean the printing platform and the bottom of the printhead tray.
3. Execute anti-dust and anti-electrostatic operation.

4.2 Print head preservation

If ever encountered with

2. ***A power failure yet the recovery time remained unknown***
3. ***Vacation longer than 5 days***

A printhead preservation needs to be done.
Follow the instructions below.

1. Get a KT board the size of the printhead tray and wrap it with preservation film.
2. Carefully lay some lint-free tissue on the surface and use some flushing to moisture it.
3. Put the moisturized KT board under the printhead tray, then roll the Z-directional screw lead manually, making the carriage low down till the two surface adhere to each other. (slightly contact is right, avoid pressing too hard)
4. Turn off the valves and disconnect the cable terminal of the air pump.
5. Turn off the main circuit breaker.

5. Replacement of consumable parts

5.1 Replacement of ink pump

	When hearing consecutive buzz from computer and showing no ink for a long time
	Check and see if the ink pump malfunctions.

1. Disconnect the plug of the ink pump cable and loosen the screws of the fixture.

2. Remove the broken ink pump and remove the tubes connected to the pump. Illustrated as below.

3. Cut the deformed heads of the tubes and reconnect them to the new pump.
4. Carefully connect the tubes to the ink pump proper inlet and outlet with corresponding arrows indicating the flow directions.
5. Fasten the screw and reconnect the power cable.

5.2 Ink refill

1. Get a new bottle of ink and uncap it, put it nearby. Uncap the main ink tank which needs to be refilled.
2. Carefully pour the ink of the new bottle into the main tank.

	The ink tube must be inserted into the bottom of the main tank.

5.3 Replacement of ink filter

	The ink filter requires seasonal replacement.

1. Clamp the inlet tube to avoid ink leaking or withdrawal
2. Disconnect the joints of the tube and the filter. Remove the filer.
3. Replace with a new one and pay attention to the flow direction indicated by the arrow mark on the filter

5.4 Replacement of ink/air tubes

	The replacement must be replaced when any damage or spoil is found on certain tubes.

1. Move the beam to the backward.
2. Shutdown the spray and turn off the valves.
3. Turn off the scram stop and disconnect the power cables of both air pumps.
4. Disassemble the cover of the towline.
5. Replace the used tubes with new ones.
6. Mark the tubes accordingly to avoid incorrect connection.
7. Connect and fix the tube properly.
8. Reassemble the cover of the towline. Reconnect the power cable and then activated the printer.

	The valves must be turned off and disconnect all power cables of the both air pump before replacement. Or it would easily cause ink leakage.

Troubleshooting

1. Warning and troubleshooting

There are six kinds of warning
Below is the list of indications and troubleshooting.

warning type	1190
indication	Waveform issue
	Main not download the Waveform
Troubleshooting	Put the password retc_000 inside And load configuration a Waveform, then open software again 

warning type	1190
indication	Main board issue
	main board is broken
Troubleshooting	Change a new main board
warning type	811
indication	Software issue
	Software to the mainboard don't match
Troubleshooting	Change a new software
warning type	**Stop!** Carriage can not move
indication	Anticollision issue
	Something touch the Carriage
Troubleshooting	Check the Carriage and stop button

2. Pressure system problems

2.1 Priming issue

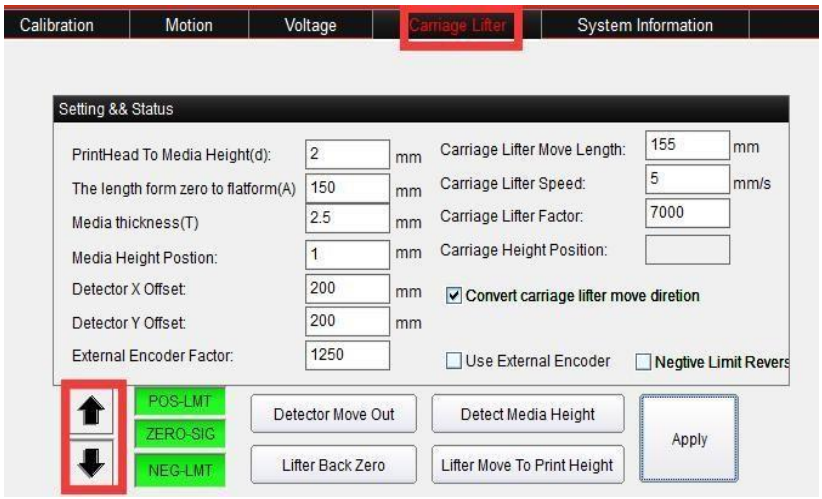
Issue Description	Ink does not come out from the nozzles when keep pressing the Prime Button
Troubleshooting	1. Check if the ink valves to the corresponding ink is open. 2. Check if the sub-tank is empty. 3. Check in the Negative pressure bottle if the press number is volatility

3. Printhead strike

3.1 How to avoid head strike

The automatic head height adjustment must be run whenever changes material.

For some inflated or unsmooth or even some heat sensitive media Fine adjust the head height



When printing on some heat sensitive materials 1. Shut the non-used suction sectors of the platform. 2. Cover the tiny holes of air leaking.
to reduce the possibility of deformation by strengthen the corresponding suction.
There is a certain distance between the Head Height Sensor and the datum point. If the media is too small to be detected when placed near the datum point, you should put the media on the location for head height founder first. And move it to the printing position when head height adjustment accomplished.
Never try to lift the media positioning lever otherwise it may lead to head strike incident. Besides the servomotor might come to an accidental stop by automatic protection and thus result in printing failure.

4. Carriage moving malfunction

4.1 Carriage moving failure

Check whether the carriage touch urgent stop switch
Check whether the stop switch around the machine is pressed
If stop switch is pressed ,rotating the stop wsitch
If the carriage touch urgent stop switch,leave the carriage to the middle

4.2 Cache problem

Description
The carriage pause too long at the two ends of the lead rail during the printing process.
Troubleshooting
1. Excessive image size or excessive file gross result in long data processing, and thus relate to printing data transmitting slowdown. Normally when processing some large image or a great number of images, adopt the mode of print after RIP. 2. A virus might have affected the computer. Execute anti-virus operation periodically.

4.3 Printing error

Description
With a message reads “please check the raster reader and motor driver, try again.”
Troubleshooting
1. Check USB connect 2. Data transmitting error due toabrasion of the optical fiber. 3. Encoder malfunction due to accidental crash with obstacle.

5. Automatic head height adjustment malfunctions

If the carriage can only be operated going up but not going down. 1. Check if there are too many dirt makes the electromagnet clog and not able to effect action. 2. If the head height finder is broken.

6. Printing quality troubleshooting

Abnormality	Troubleshooting
Horizontal banding	Check horizontal alignment
	Check color calibration
Unclear(blurred) printing	Check if the head height is right for the printing job, normally 2mm would be optimum.
	Clean the nozzles surface
	Do the calibration again
Color deviation	Adjust the total ink limit by 10%-30%.
The printed image appears dark	Check color calibration
	Adjust the brightness by 3-6 in Photoshop
	Select all options in the vector image. This method only effects in vector image printing.
Vertical blank or banding	Check vertical calibration and alignment
	Change the screen type
Blurred printed lines	Do the calibration again

Appendix

1. Routine Maintenance Guide

It is recommended that end users have this sheet printed and placed nearby the operation bracket, carefully execute the maintenance job and make notes.

Number	Maintenance Items	Period
1	Cleaning printer appearance	daily
2	Check if there is ink in the air tube	daily
3	Clean the platform and the sucking holes	daily
4	Check the nozzle state	daily
5	Clean the quartz glass and the printhead tray	daily
6	Cleaning the towline and check if there is any leakage of tubes	daily
7	Execute calibration and alignment	weekly
8	Clean the waste ink collection	weekly
9	Replace the filtration fiber	weekly
10	Clean the fans and internal device	weekly
11	Lubricate the rolling or moving parts	weekly
12	Check and see the joints of tubes	monthly
13	Replace the shutter of UV lamp assembly	monthly
14	Replace the pump and filter	half-year
15	Replace the optical fiber	half-year
16	Reset the pressure indicator	yearly
17	Replace the quartz glass of UV lamp	yearly
Please contact with POLAROID for more technical report when necessary.		

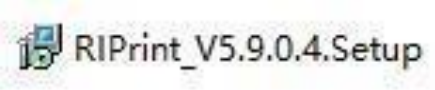
2. Company and Factory information:

Company name: Polaroid Large Format Mexico
Address: Calle 10, #206. Colonia Granja San Antonio, Iztapalapa.
E-mail: info@polaroidlargeformat.com
Website: www.polaroidlargeformat.com

3. RIPrint Direction (how to print a picture)

(1) Put the dongle Insert the computer

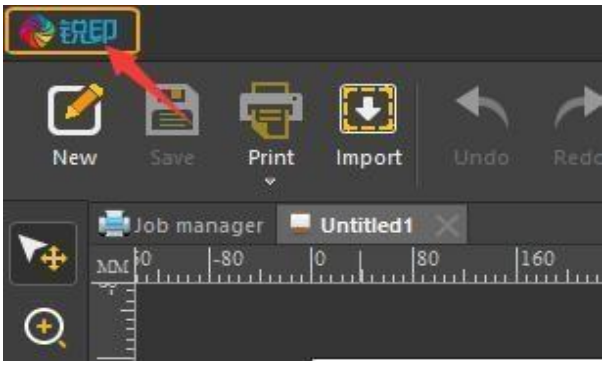
(2) Double click install RIPrint

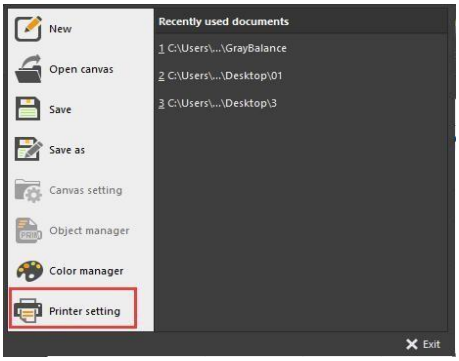


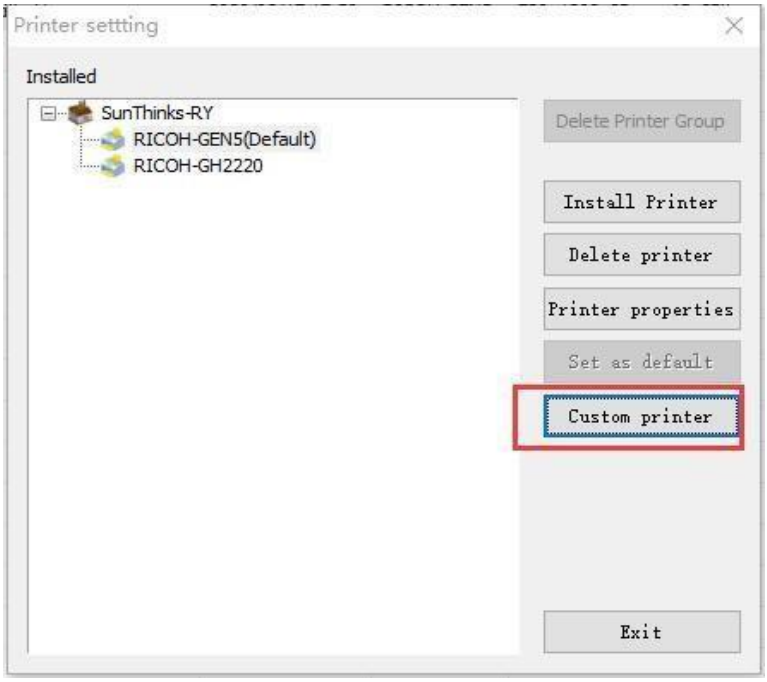
(3) Open the RIPrint

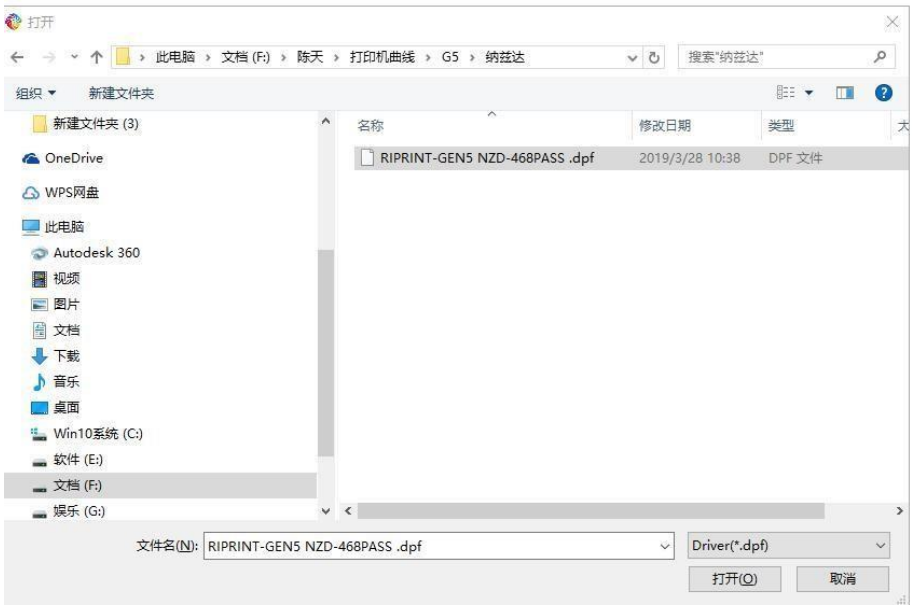
(4) Printer setting

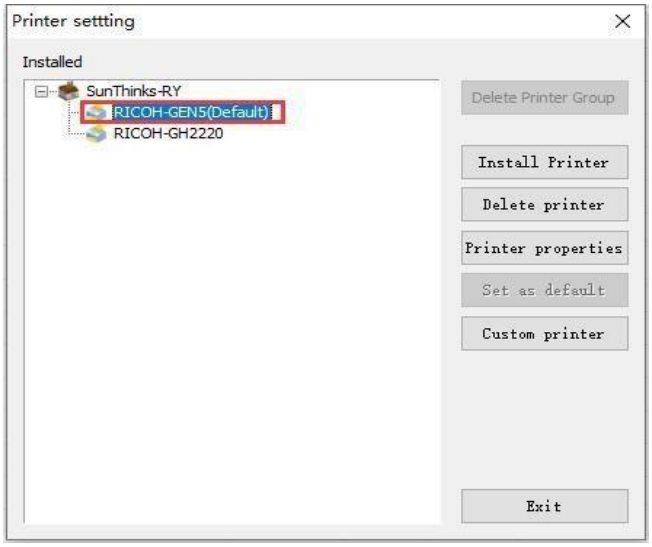
1. Open printer settings
2. Install Printer(Find the icc file)
3. Select your printer model
4. Set as default



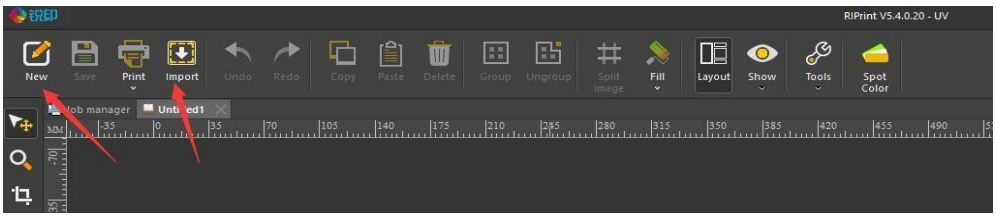


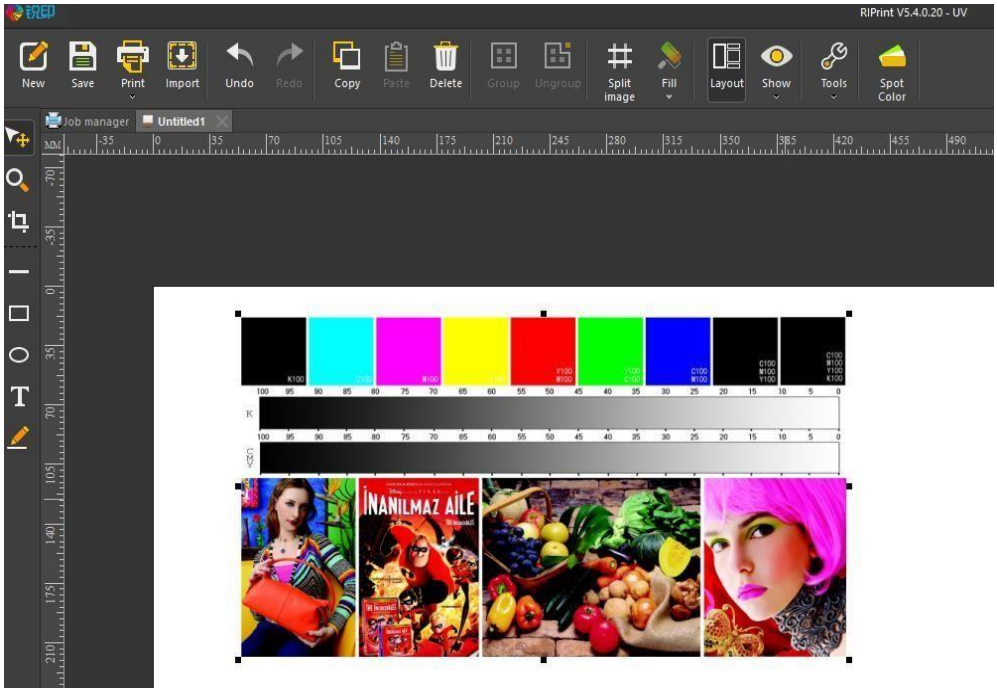




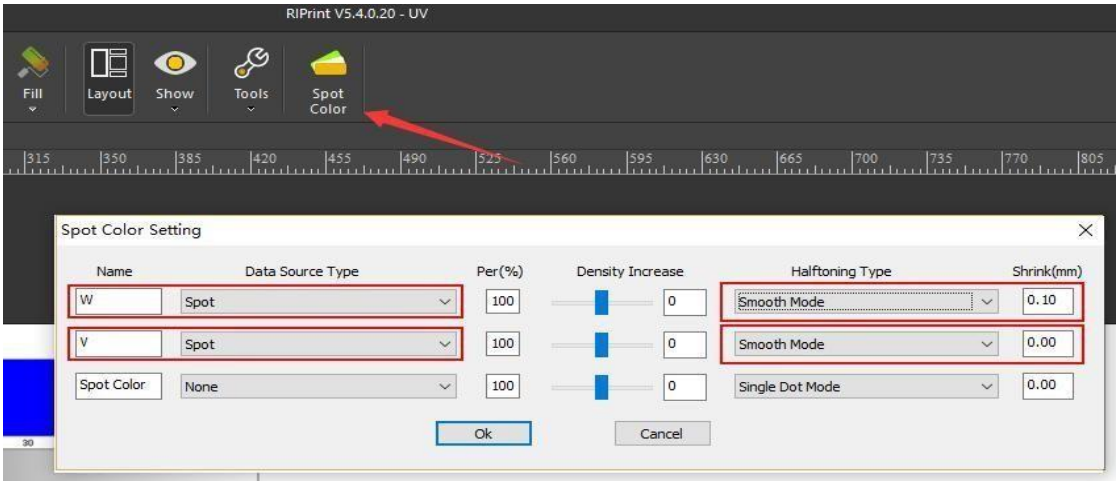


(5) Make a new canvas then import a picture





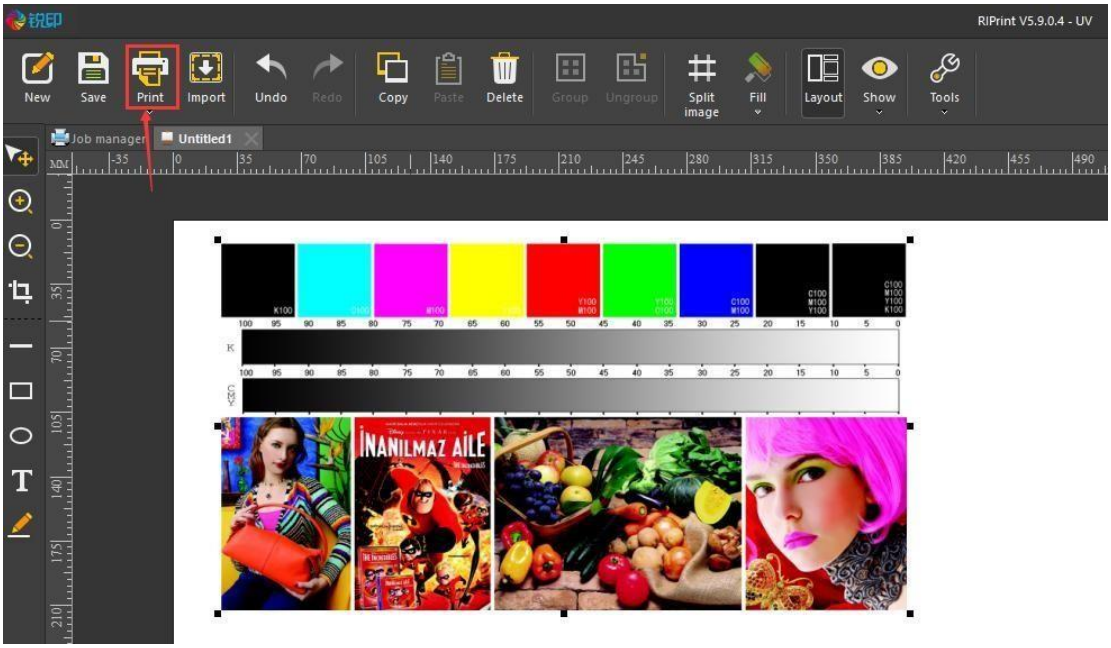
(6) Spot setting

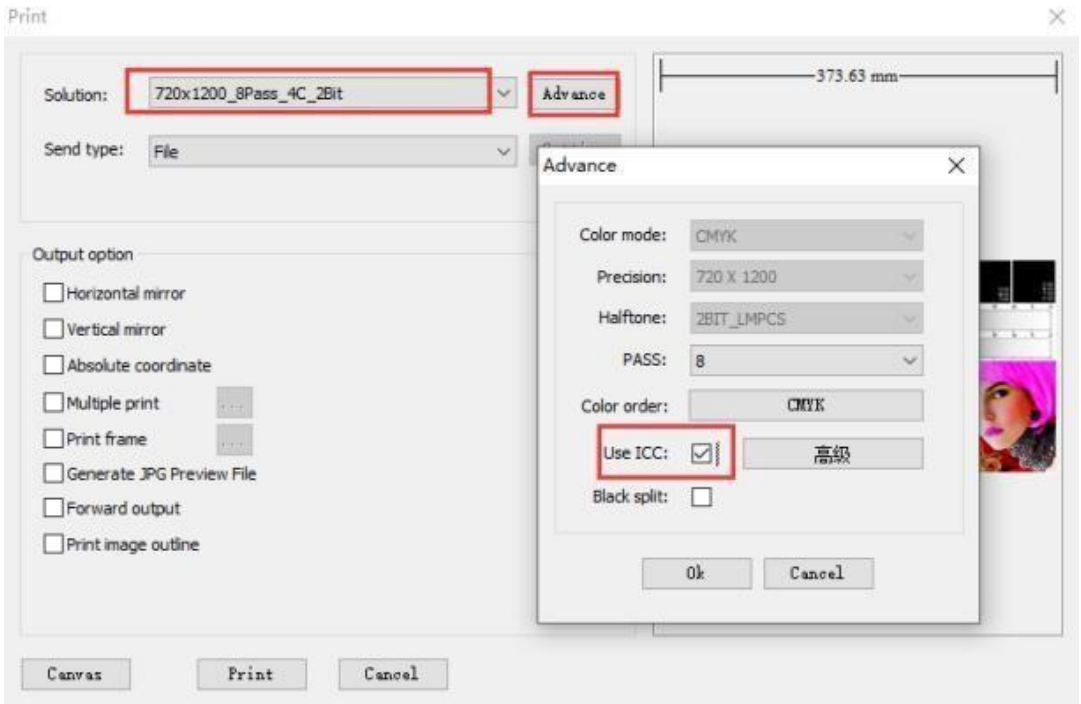


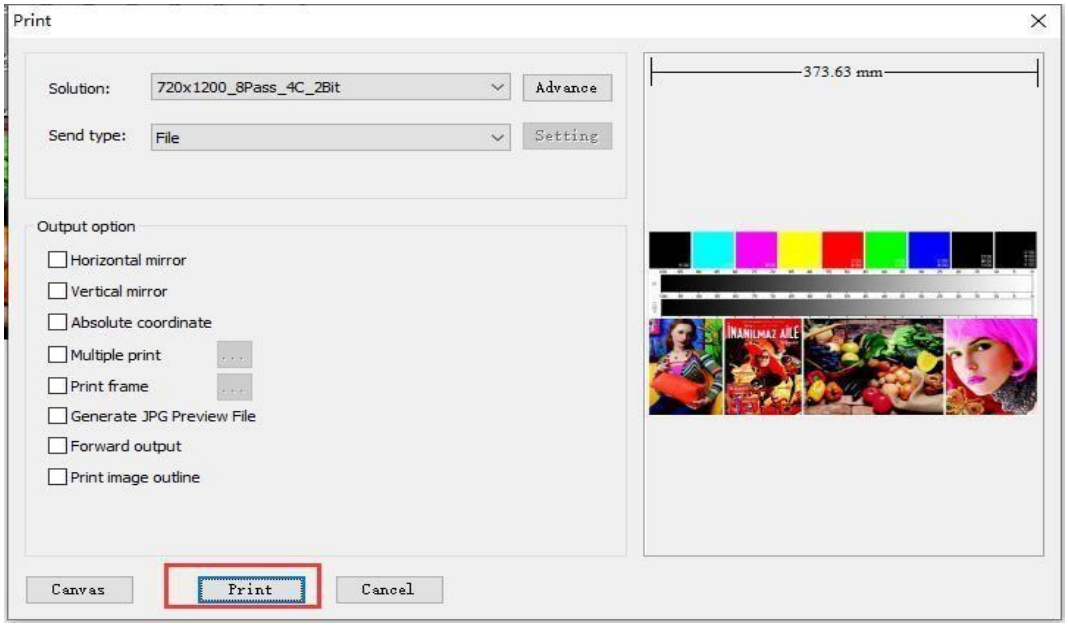
Setting "Spot", "Smooth Mode"

(7) Print a picture and setting the ICC

Select accuracy, use icc


RIPrint V5.9.0.4 - UV
New
Save
Print
Import
Undo
Redo
Copy
Paste
Delete
Group
Ungroup
Split image
Fill
Layout
Show
Tools
Job manager
Untitled1
İNANILMAZ AİLE


Print
Solution:
720x1200_8Pass_4C_2Bit
Advance
Send type:
File
373.63 mm
Output option
Horizontal mirror
Vertical mirror
Absolute coordinate
Multiple print
Print frame
Generate JPG Preview File
Forward output
Print image outline
Canvas
Print
Cancel
Advance
Color mode:
CMYK
Precision:
720 X 1200
Halftone:
2BIT_LMPCS
PASS:
8
Color order:
CMYK
Use ICC:
Black split:
Ok
Cancel

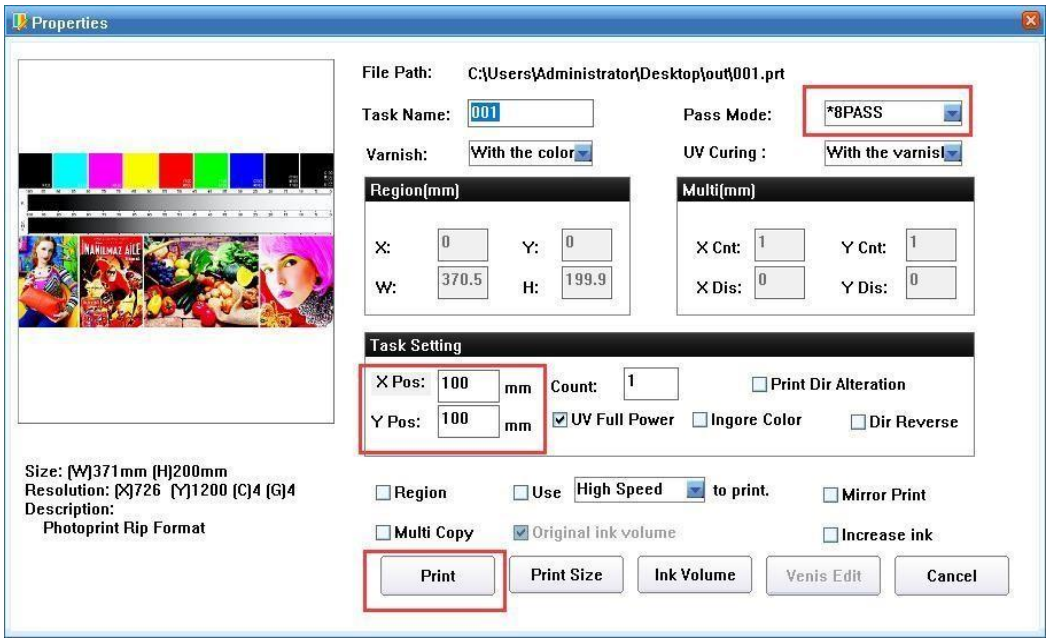


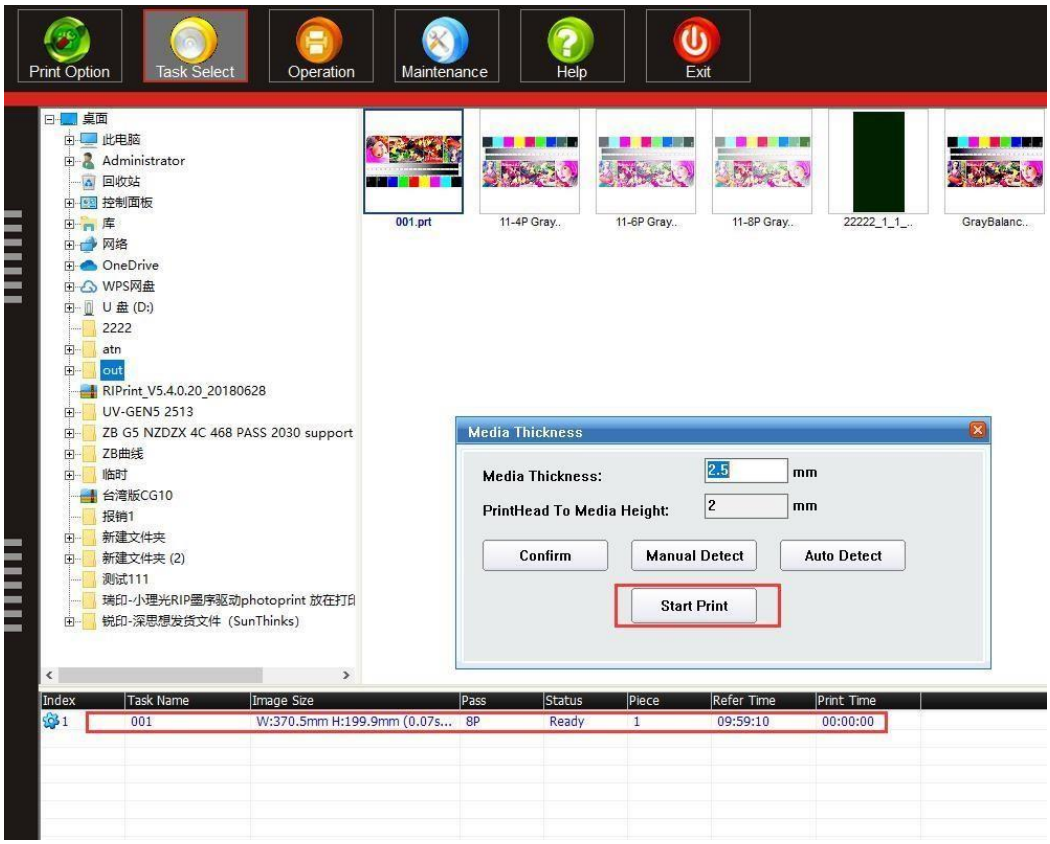
(8) Finish and find the output file

(9) Open the printing software RYPC

(10) Chose Task select and find the output file

(11) Double-click the task and start printing





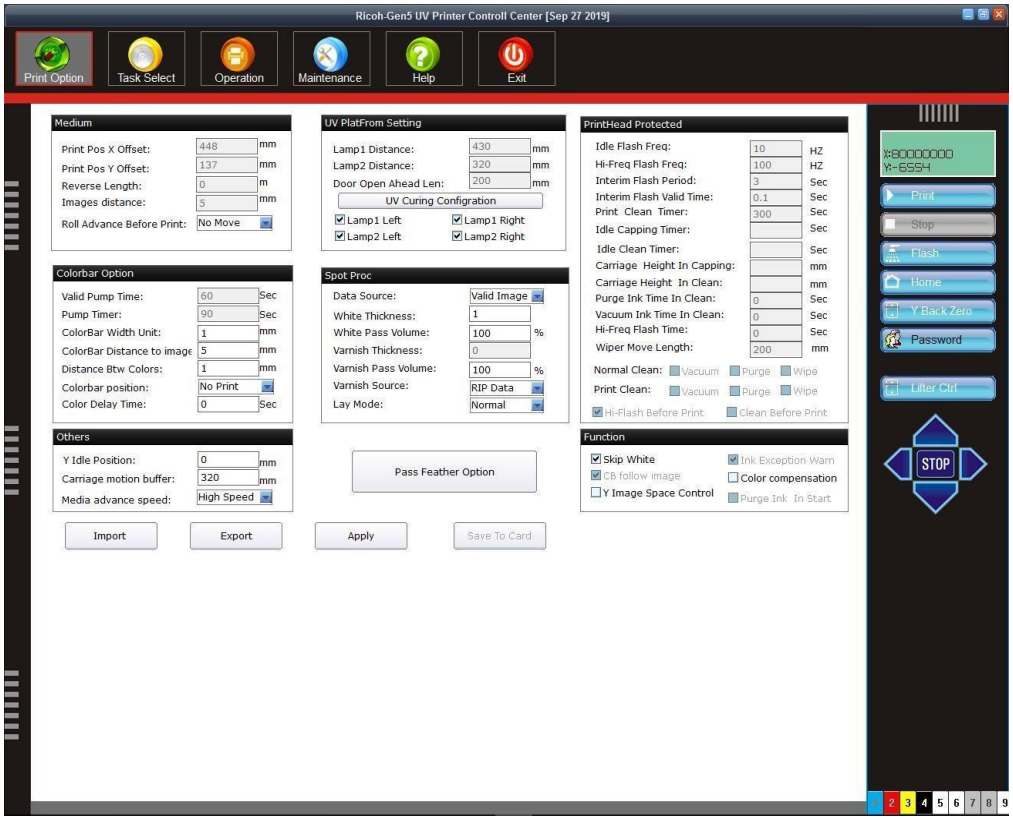
4. RYPC software

4.1 Software introduction

- The system supports popular RIP formats on the market, such as ColorGate, Wasach, PhotoPrint, Maintop,etc.
- Intelligent X-direction and Y-direction skip printing, automatically identify blank areas and skip quickly.
- It supports multiple copy printing and area printing, which is convenient for batch printing of small pictures and sampling printing of large pictures.
- It supports resume printing, which is used to resume printing for the printing tasks stopped by the user or the printing tasks exited due to errors in the printing process
- Automatic ink supply function, ink supply status display, long time low liquid level alarm function..
- ➢The nozzle voltage control function can automatically adjust the nozzle voltage according to the nozzle temperature and ink characteristic curve.
- ➢Dynamic output, print time display. It is convenient for users to control the printing production process.

4.2 Interface introduction

The following figure is the main operation interface of the control software. The operation of the inkjet printer is divided into four blocks, which are parameter setting, task selection, print control, and system maintenance. For daily printing, only the task selection and print control are required. Thereby, the operations involved are relatively few, making the system simple and easy for ordinary users.



4.2.1 function button

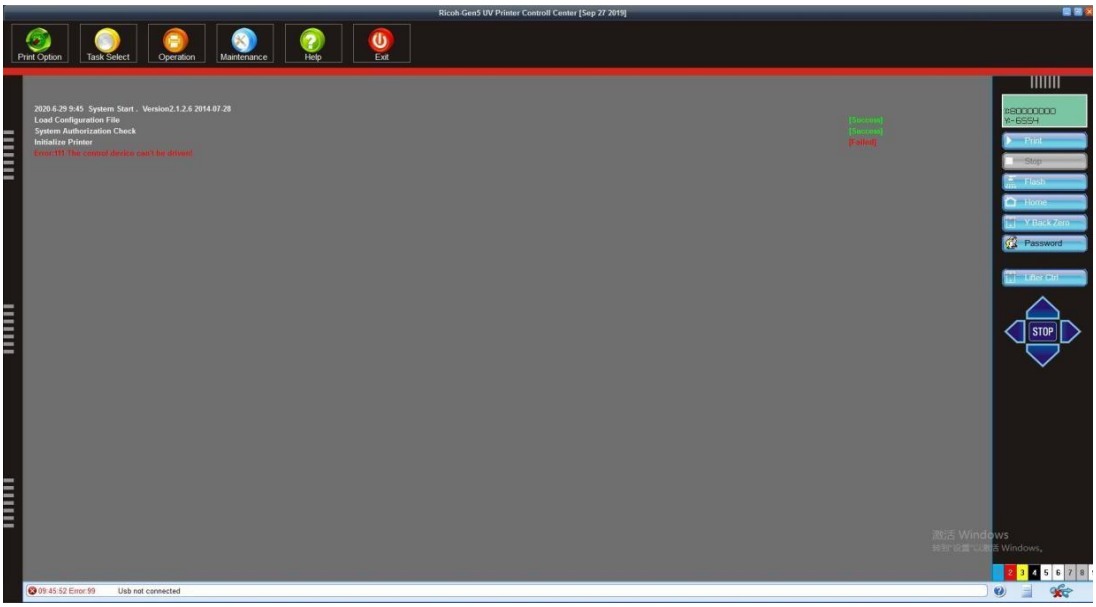
	Features		Features
Print	Start print queue, pause/resume print job	Lifter Ctrl	Z axis height adjustment
Stop	Printing stops or aborts the print queue		Manually move the carriage to the left
Flash	On/off nozzle flash		Manually move the carriage to the right
X:80000000 Y:-6554	Front position value		Manually move the carriage forward
Home	carriage returns to the zero nozzle protection area		Manually move the carriage backwards
Y Back Zero	Y axis returns to zero	STOP	Stop the current carriage movement
Password	When modifying the key parameters of the system, you must enter the maintenance password to operate		

4.2.2 the message says

Numbering	Features	Numbering	Features
1	Warning, error and other information display area	2	The liquid level status of the front ink cartridge, the corresponding ink flashes when the liquid level is low
3	Print status, travel signal display	4	USB board connection status:

4.3 Software running

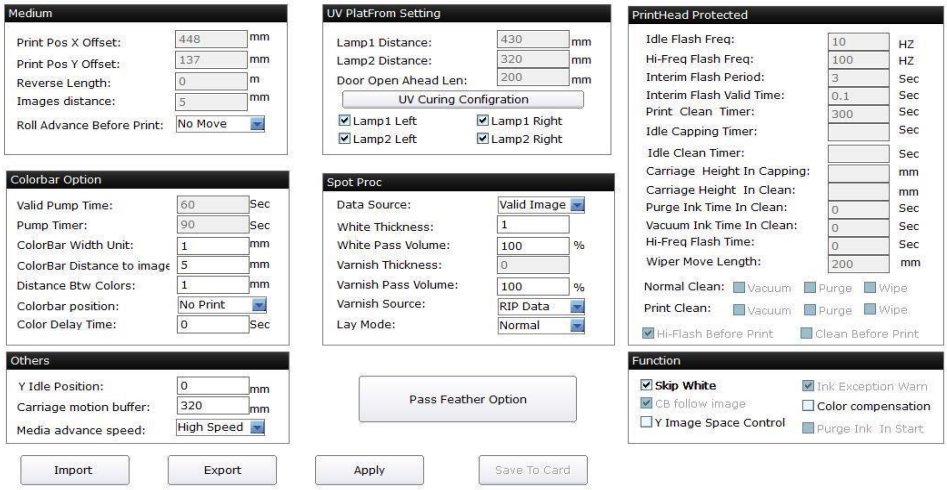
When the software line starts, the system performs initialization and checks the connection and communication of various hardware components. The software interface will display the initialization steps and the test results.



If an error occurs in the above detection steps, the results in the interface will display a red error. At this time, the system does not work properly. You must solve the corresponding problem and restart the software until all the test results are green. The words, the correct initialization completed by the system, can only be used for normal printing. (See the error table for details on the solutions to the errors.)

4.4 parameter settings

Before printing, you need to open the parameter setting page to confirm that the corresponding parameters meet the requirements of the printing task. Click the "Print Option" on the left to open the page.



Medium	Print Pos X Offest	The distance between the starting point of the material and the zero position when the machine is designed.
	Print Pos Y Offest	The distance between the Y material of the platform model and the zero position.
	Reverse Lenght	The current remaining length of the material (only used to install the Y feed code system), the tablet does not need to be set
	Images distance	When printing multiple frames, the space between the Y-direction screens.
	Roll Advance Before Print	tablet does not need to be set
Colorbar Option	Valid Pump Time	Control the working time of white ink circulation pump (time for each work)
	Pump Timer	Control the working cycle of white ink circulation
		pump (how often to work)
	Clorbar width Unit	Set the width of the printed color bars
	Clorbar Distance to image	Set the distance between the color bar and the screen
	Distance Btw Colors	Set the separation distance between color bars, when 0, the color bars overlap
	Colorbar position	The position of the color bar can be set on the left or right side of the screen
	Color Delay Time	tablet does not need to be set
UV PlatFrom Setting	Lamp1 Distance	UV lamp 1 position from zero nozzle
	Lamp2 Distance	UV lamp 2 position from zero nozzle
	Door Open Ahead Len	The distance the light is turned on in advance
	UV Curing Configration	The distance after printing varnish is cured
	UV lamp 1 Left and right are effective	Left and right are effective. Check to control the corresponding printing direction of UV lamp
	UV lamp 2 Left and right are effective	
Spot Proc	Data Source	Select different printing data of white ink (RIP Color is recommended)
	White Thickness	Choose the print thickness of white ink(1 is recommended)
	White pass volume	Choose the amount of ink on white(80% is recommended)
	Varnish Thickness	Choose the print thickness of varnish ink(1 is recommended)
	Varnish pass volume	Choose the amount of ink on varnish(80% is recommended)
	Varnish source	Select different printing data of varnish ink (RIP Data is recommended)
	Lay Mode	Tablet machine needs to choose Normal mode
PrintHead Protected	Idle Flash Freq	Set the flash frequency of the nozzle when the printer is in standby, to prevent the nozzle from clogging for a long time when the nozzle is not

		working (standby flash is effective when the head is at zero position). Recommended value 16 HZ
	Hi-Freq Flash Freq	Set the frequency of high-speed flashes when printing resumes before printing starts and after printing pauses.Recommended value 128 HZ
	Interim Flash Period	Specify how often the nozzle flashes once. Recommended value 5 sec
	Interim Flash Valid Time	Specify the time to spray the nozzle once.Recommended value 0.1 sec.
	Other parameters need not be set for tablet machines	
Others	Y Idle Position	tablet does not need to be set
	Carriage motion buffer	The distance from the start of the car to the starting point of printing when printing
	Media advance speed	There are four gears to choose from when specifying the material feed speed during printing. The slower the speed, the higher the feed accuracy. The selfadaptive gear is that the feed speed automatically matches the running speed of the vehicle head, which is related to the running speed of the vehicle head, motion buffer, and acceleration.
Pass Feather Option	User define depth	Refers to the number of nozzles used for the feathering effect, 0-500 can be set. 0 means no feathering, the higher the number, the greater the feathering.
	Feather Mode	When this function is selected, it can weaken the step line generated when the step system is not ideal.(User Uniform)
	Feather Level	Feathering intensity
	Shrink Edge	White shrinkage (White shrinkage (to prevent white edges from emerging))
	The stronger the Feather, the better the effect and the slower the speed	
Funtion	Skip White	Intelligent X-direction and Y-direction skip printing, automatically identify blank areas and skip quickly
	CB follow image	The color bar is the same height as the printed
		picture
	X Insert Print	Need user
	Ink Exceotion Warn	When this function pops up, the software will alarm when the liquid level of the ink cartridge is too low.
	Color compensation	Cant user
	Purge Ink In Start	Cant user
	Y Image Space Control	Used to specify the interval value used by the precise control function of the picture spacing

4.5 Task selection

Click "Task Selection" to open the operation page. The page consists of directory browsing, RIP file preview browsing, and printing list.

4.5.1 How to add tasks

1. Select the folder where the RIP file is stored from the directory browsing, and the RIP file preview browsing will display all the recognized RIP files under the file.

2. Click the right mouse button, click refresh.

3. Double-click the RIP file to be printed in the RIP file preview area, the print setting confirmation box pops up, after printing, you can add it to the print queue and start printing immediately.

4.5.2 Task attribute editing

When adding a print job, the system will pop up a print job property setting confirmation box. Allow users to reset the relevant settings when printing.

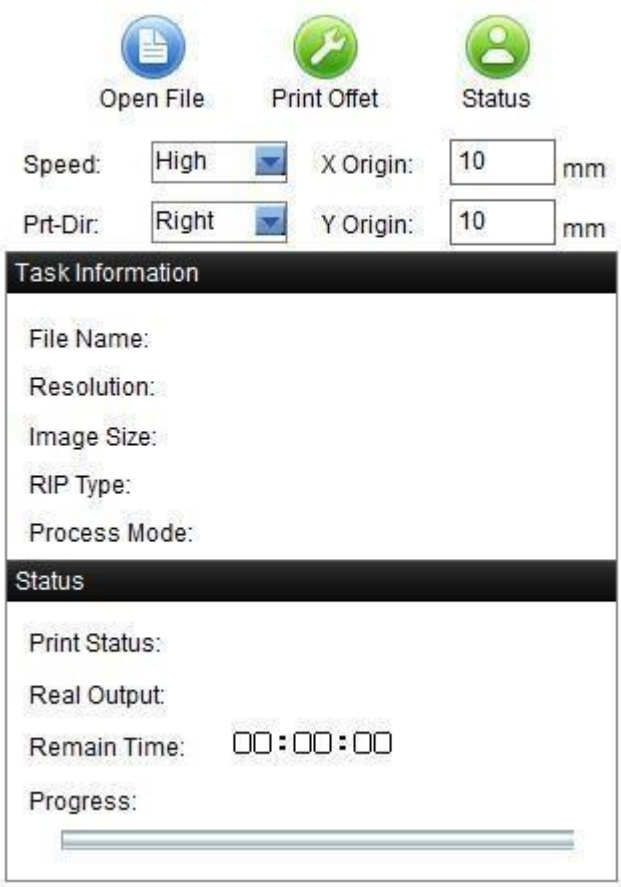
RIP chart information

1. The size, resolution, color number and RIP format of the displayed image W represents the width of the image, H represents the length of the image, X represents the accuracy of the DPI of the image in the direction of movement of the vehicle, Y represents the accuracy of the DPI of the image in the direction of feed, and C represents the number of colors in the image . G represents grayscale. The description indicates which RIP software is used to process the picture.
2. Task name: The name of the print task can be edited. (Not associated with file name)
3. The default setting is the number of PASS required to complete the full ink volume printing. The user can change the setting to achieve the purpose of changing the screen ink volume
4. Varnish thickness, Varnish curing mode Used to set the printing method of Varnish for models installed in Varnish.（Tablet machine does not need to choose）
5. Region printing
   This function is used to select the part of the picture for printing. It can be used for small sample printing to test the output effect of the large screen. The operation method can use the mouse to circle the part to be printed on the pre-view, or output the print in the figure in the regional settings range.
6. Multi copy
   This function is used to batch print out small images, and output multiple copies in X and Y directions. Can be used simultaneously with area printing.
7. Task Setting
   X,Y position: used to set the coordinate position of the printed picture.
   Count: select the number of copies.
   Dir Reverse : When printing is selected, the Y axis will print from the back to the front
   Ingore Color: No color when printing pictures.
   Mirror printing: The image printed when checked is a mirror effect.
   Speed selection: low speed, medium speed, and high speed printing are generally available for printing.
   Ink Volume: Click to automatically calculate the ink value required by the current task

Click the "print" pop-up window,Click "start print" to print immediately (note that the head height needs to be adjusted manually in advance)
Not recommended for other methods of measuring height

4.6 Operation

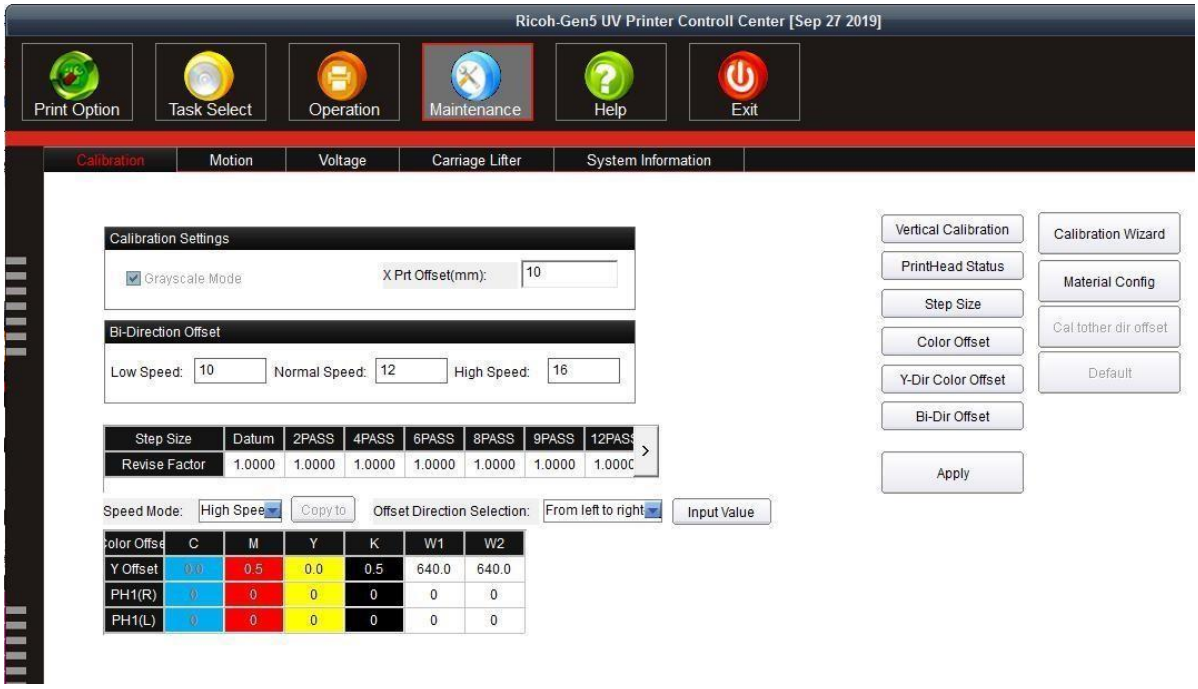
Click "Operation" to open the operation page. This page is used for printing control, printing task information and progress status display, and printing preview.



Open File	Open the text to be printed and add it to the print list
Print Offet	Not user
Status	Print the nozzle status diagram to observe the working status of the nozzle
Speed	During the printing process, the current head movement speed can be dynamically adjusted
Prt-DIR	During the printing process, the current effective printing direction can be dynamically adjusted, and can be set to one-way or two-way printing
Origin	Starting point of printing (coordinates on the platform)
Task Information	Display the size and resolution of printed pictures
Status information	Display the remaining time and output of the current print file

4.7 Maintenance

Calibration

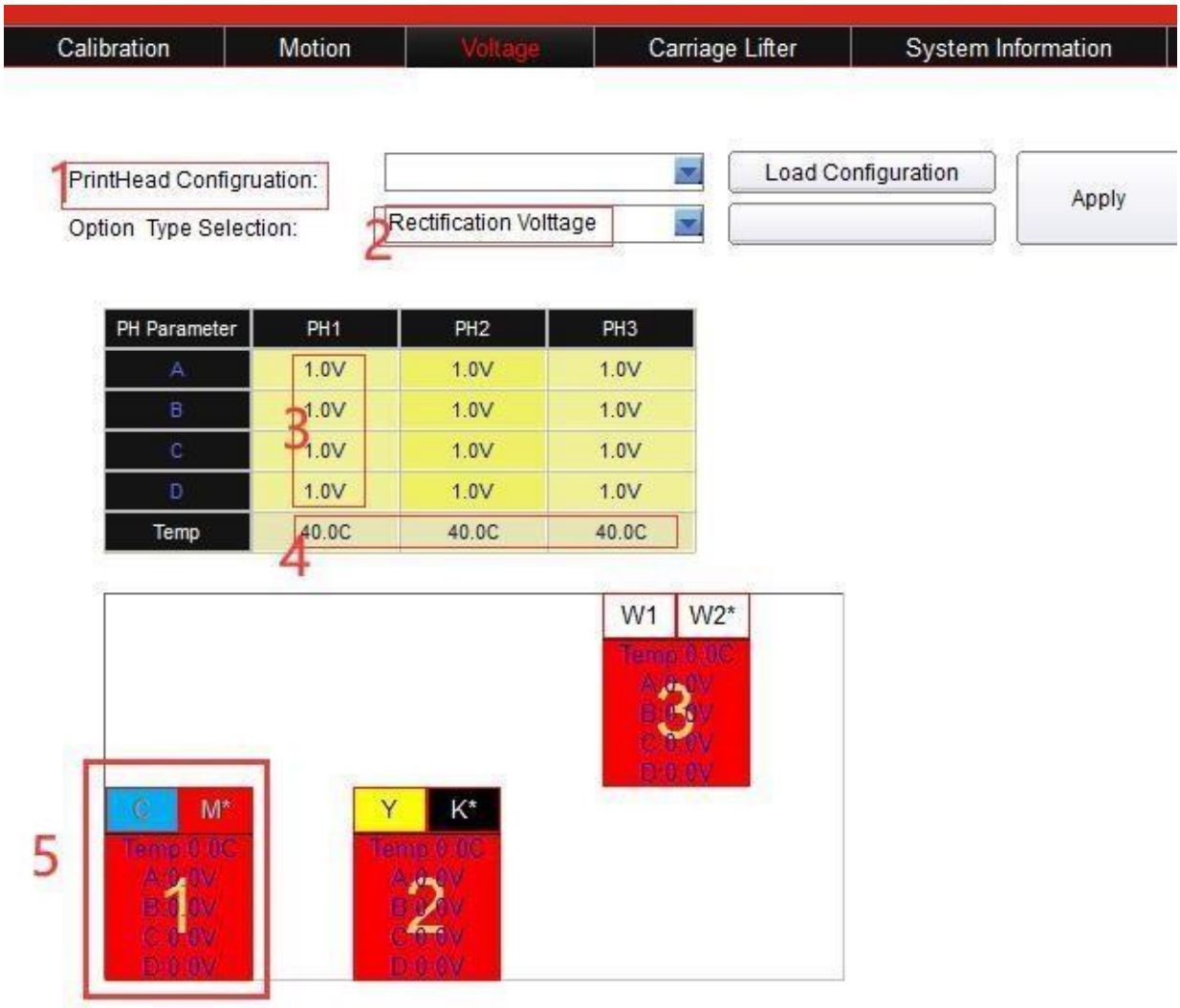


Vertical Calibration	The system detects the vertical installation of the print head by printing a calibration chart.
PrintHead Status	Print the nozzle status diagram to observe the working status of the nozzle
Step Size	The difference between the Y axis motion equivalent coefficient of the system and the absolute positive value of the system and the mechanical difference, adjust the reference step first, and then adjust 4 6 8pass
Color Offset	By changing the value of the corresponding color in the Color Offset table, all
	colors are printed on the same line(X direction)
Y-Dir color Offset	By changing the value of the corresponding color in the Color Offset table, all colors are printed on the same line (Y direction)
Bi-Dir Offset	The deviation value of round trip printing
Apply	Save the modified parameters
Calibration Wizard	Guide the correct calibration steps
Material Config	Tablet machine not used
Cal tother dir offset	Copy the forward correction parameters in Color Offset to the opposite direction
Default	Delete the correction in Color Offset and restore to the default value

Motion

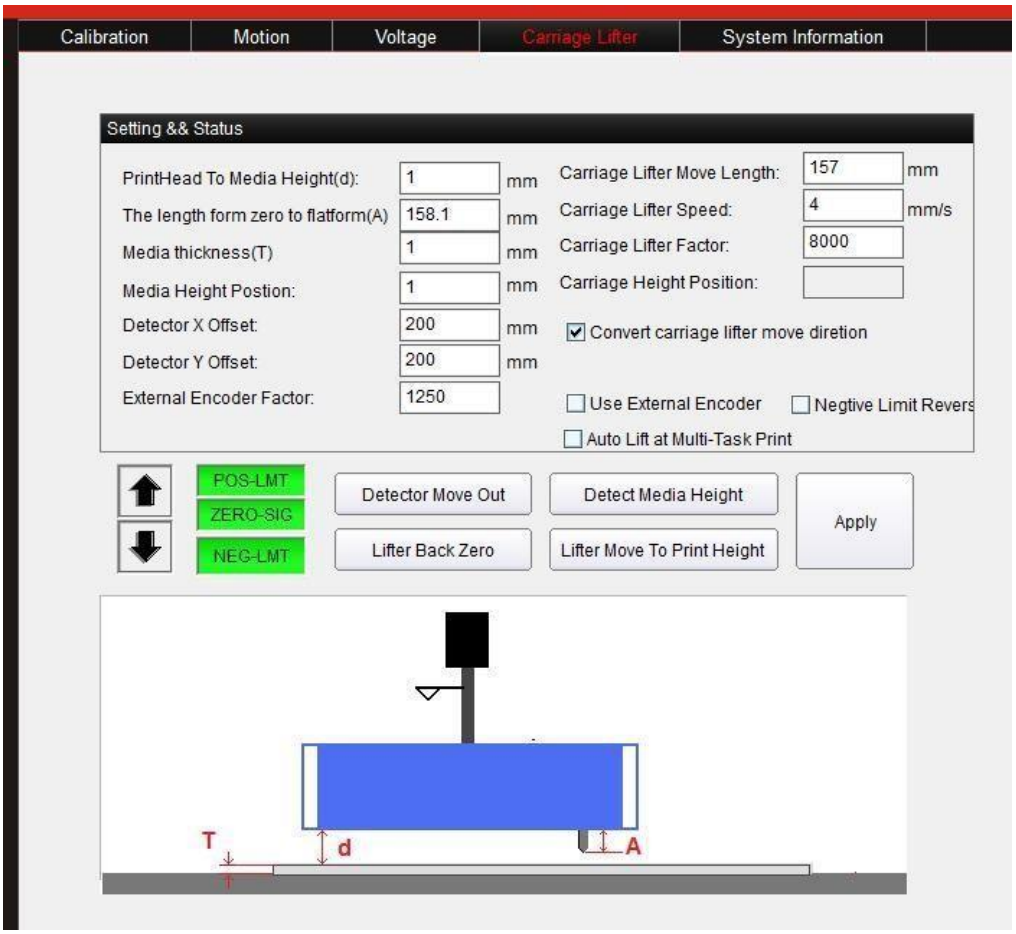
X Speed(Carriage)	Min Speed	Set the speed of carriage reset (speed of manual movement)
	Low Speed	Set the speed of the carriage when printing at low speed
	Normal Speed	Set the speed of the carriage when printing at medium speed
	High Speed	Set the speed of the carriage when printing at High speed
	Max Speed	Set the fastest speed of the carriage
	Acceleration	Set the acceleration of the carriage movement
	Motion Factor	X The equivalent coefficient of the motor pulse and step size, which can be calculated automatically by the measurement button (cannot be modified)
	Move length	Set the distance of manually moving the front of the carriage each time
Y Speed(Forward)	Min Speed	Set manual forward and backward speed
	Low Speed	Set the speed of slow forward and backward
	Normal Speed	Set medium speed forward and backward speed
	High Speed	Set high-speed forward and backward speed
	Max Speed	Set the fastest speed forward and backward speed
	Acceleration	Set the acceleration of the Y movement
	Motion Factor	Equivalent coefficient of Y axis motor pulse and step size (cannot be modified)
	Move length	Set the distance of each manual advance
Mechanism (Only displayed in maintenance operation mode)	Max X Range	Set the maximum travel allowed by the carriage
	Max Y Range	Set the maximum stroke allowed by Y
	X Zero Position	When the machine is working, the standby position of the front of the car, this value is the distance length of the edge finder relative to the reset end
	Y Encoder Factor	Pulse number of Y servo(Coding coefficient)
	Other parameters do not need to be set	

Voltage



Numbering	Features
1	Enter the advanced password, select the nozzle configuration file that matches the ink, load and apply.
2	Rectiffcation voltage: fine-tuning the actual voltage of the nozzle（Standard Voltage does not need to be set）
3	Enter the voltage value that needs to be increased or decreased
4	Set the ink temperature in the print head (40-46 recommended 45)
5	The actual temperature and voltage of the heads

Carriage Lifter



PrintHead To Media Height(d)	That is, the height of the nozzle from the printing medium, generally between 1-2mm
The length form zero to flatform(A)	When the carriage rises to the up and down zero position, the distance between the bottom plate and the platform before this time.
Media thickness(T)	When the automatic height measurement is completed, the software will automatically measure the thickness of the material.
Media Heinght Postion	That is the length of the height measuring probe.(1mm)
Detector X / Y	This function module is the mechanical design distance between the height measuring probe and the zero nozzle
Carriage Lifter Move Length	Limit the distance of the front and rear of the vehicle, set a little greater than the distance between the zero and the front of the platform A
Carriage Lifter Speed	To ensure the readiness of lifting, the speed should not be too fast (4 or 5)
Carriage LifterFactor	Lift motor drive subdivision number/motor movement distance of one revolution (cant be changed)
Carriage Height Position	Display the height of the current carriage
	Other parameters are not required

System Information

System ID	Hardware number and production date of each control card
Machine Type	Represents the model of the inkjet printer to which the control software is applicable
Software Version	Software version number and generation date
Firmware Version	The generation date of the hardware program, MB refers to the control panel, CB refers to the front panel, DP refers to the motion control system
RIP Support	Available RIP software
System Authorzation	When the system uses the installment authorization, each installment has a time limit. After the expiration, you must ask the equipment supplier for the next installment password and enter the system to continue using it. (If no installment information is displayed, unlimited use)

5. Tools and properties

	Tool/Spare parts name	Description
1	Needle Nose Pliers	Cutting metal fuse
2	Ink valve wrench	Open or close the valve of the Sub Tank
3	Adjustable spanner	Adjusting the level of the printer when placed and future maintenance
4	Allen wrench	Loosen or fix the Allen screws for installation and future maintenance
5	Phillips screwdriver Flat Screw drivers	Loosen or fix screws for installation and future maintenance
6	Flush	Cleaning the printhead when clogging
7	Lint-free tissue	Wiping the printhead nozzles
8	Alcohol	Cleaning the printer body
9	Towel	Cleaning the printer body
10	Rubber gloves	Protect your hands when dealing with ink associated process.
11	Grease gun and	Lubricating
12	Lithium lubrication oil	Lubricating
13	Plastic syringe	Cleaning

6.Software error codes

Error code	Solution
93 98	1. usb cable 2. Encryption time
111	1. Reinstall the USB driver 2. Setting Disable driver signing window
112	1. Damaged motherboard 2. Abnormal power supply of the motherboard
122 127	1. Check whether the front motor can work normally 2. Check the connection and working of the front position encoder 3. Check emergency stop button 4. Push the head of the carriage into the middle by hand and restart
123 132	USB connection is not good 1. Replace the computer usb socket 2. Use our usb cable 3. Can't use usb extension cable 4. Accurately connect the computer and equipment to the ground
1190	Enter the advanced password, select the nozzle configuration file that matches the ink, load and apply.

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