

RB3358 User's Manual



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Preview

Thank you for purchasing Rainbow Printer.

In order to make the customer master the printer, we composed the user's manual in brief words from all aspects such as the printer, the hardware & software, etc. We suggest you read the guide carefully before installation, since it will help you to use the printer successfully.

There might be some undetected mistakes in the Guide, although we try our best to assure all the information is correct. And there might be the situation that is different from what mentioned in the Guide because of the updating of hardware & software, which will make the printer perform well and be more stable. The hardware & software updating should not affect the use of the printer. If there is any problem during your use, please contact us promptly!

Thanks for using Rainbow Digital Eco flatbed printer and UV flatbed printer. This UV printer is with 270mm*550mm printing size and USB2.0 interface.

This manual introduces the printer's characteristics, parts' name, and how to use the printer such as power & off, ink installation, substrates load, etc.

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The company reserves the right to modify technical parameters and contents in the Manual without notification. And the company is not responsible for the loss caused by the contents in the Manual including mistakes in printing, calculating, listing, etc. If there is any question, please contact us promptly.

Chapter 1 Safety Precautions

| | |
|---|---|
|  | Please use the specified power & voltage on nameplate. Do not connect several printers to the same electric socket or it will cause fire. |
| | Do not contact the inner parts with metal objects or liquids. Or, it might cause fire, electric shock or other accidents. |
| | Do not cut off power with wet hands or electric shock might happen. |
| | As the eco solvent ink is inflammable, so please don't use fire during the printer use. |
| | Don't stain the printer with inks, or the printer surface looks ugly. |
| | Don't eat the ink. Avoid ink sputtering into eyes. If inks in eyes, please wash your eyes with clean water and ask the doctor for help. If ate, don't try to throw it up yourself, please see the doctor promptly. Keep the ink out of the reach of children. |
|  | Please assure the earth end of the printer is secure. Or the static electricity will cause short circuit which will affect the printing effect and the print head lifespan. |
|  | 1. Don't disassemble the printer or modify the printer. Don't fix the printer yourself. There might be risks of electric shock or printer damage. 2. Don't remove the cover in the printer or the printer parts might be damaged. |
|  | Do not use the printer in damp place. If wetted, there might be in danger of fire, electric shock or other serious accidents. |
|  | Please power off the printer and pull out the plug from the socket, under the following circumstances: 1. When there is abnormal noise or smoke or smelly, or there is any wetted spare parts or there is a metal object contacting the socket. Don't put your hand in the printer moving area in case of accidental hurts. |
|  | Only use the specified power type 110V & 220V AC power for choice. |
| | Don't move the print head by hand, or the printer might be damaged. |
| | Power off the printer with the power button. Don't pull out the plug or data cable before you power off the printer. |
| | Put the printer on level surface. If the printer is out of level, normal printing work might be affected. |
| | Since the printer using eco-solvent inks, please pay attention to your local regular rules about eco-solvent inks. |
| | Insert or pull out the plug gently, and do not touch any metal parts on the socket or plug, in case of electric shock. |
| | Do not stain your clothes or skin with inks. If stained, please wash with soap. |

To ensure a safe operation, please notice all the precautions and warnings in the manual:

1. Operating Precautions

Do not use a damaged cable.

Do not remove or insert the plug with wet hands.

Do not touch the bottom of ink curing device.

Do not keep watching the LED ink curing lamp straightly when printing (Please wear UV proof glasses).

Do not overload on the printing platform as it is moving parts.

2. Routine Inspection and Daily Maintenance

1) Routine Inspection

a. Check daily if there is lubricant oil on the guide rail before printing.

b. Check daily if the dampers are connected perfectly with the print head.

c. Check daily if the raster strip is clean completely.

d. Print nozzle test lines on the paper by Rainbow software every day before switching on the printer, which is to check if the nozzles clogged or not. Each nozzle corresponds to its each slim line, in which caused missing line called Broken, and blurred line called Fuzzy, then please do some cleaning.

e. Please check if the materials are placed properly before printing in case of a scratch to the print head during printing.

f. Please print test lines before and after each printing to check the status of print head and do timely cleaning.

g. Plead use the printer after you have a professional training, or there might be unexpected problems.

h. Check the bottom of LED UV curing device every day, if there is ink, please wipe it with alcohol and do regular cleaning.

i. Check daily if the inks stained on the flat cables and please do timely cleaning (If the ink flow into or corrode the cables, please replace before using the printer in case of printer damage).

2) Daily Maintenance

a. Do daily cleaning for covers unit such as ink carriage, waste ink tank etc.

b. When the print head is in poor status, please cut off the power and clean the print head. Use our original cleaner to clean the print head. Do not use other liquid like alcohol in case the printer is out of condition.

c. If stop using the printer for a long time, please switch on once and print a test to check the status of print head. If it is in good condition, print color cubes and then put moisture on the print head as usual.

d. Always check the ink level and add inks timely. The ink will be frozen if stored below 0°C or transported outdoor at very low temperature. Firstly, put the ink at room temperature over 24 hours. Do not use until it returns to be normal. If inks are removed from a cold place to a warm place, there might be condensation. Only if put the ink in normal circumstances over 3 hours, it can be used after condensation is over.

e. Do not stain the ink, cleaner or other dirt on the raster strip and guide rail, please keep them clean. Please use alcohol to wipe if they are dirty. Put a thin layer of grease or lubricant oil on the guide rail after cleaning, please make sure not to dirty the raster strip.

f. Print head Cleaning and maintenance

1) Print head cleaning: when the nozzle test lines are discontinuous or fuzzy, please clean the print head timely. Click the “clean” button in the software and then choose general or deep self-cleaning (normally choose general cleaning). Please remove the print head to do manual cleaning if the test lines are discontinuous seriously.

2) Print head moisture: if finish today's printing job and want to use the next day, only put the print head into the cap top on the right.

3) Please use the cotton stick with cleaner to wipe the print head surface after every two hours of continuous printing

4) If the printing job is over and not to use the printer in short time(48-72hrs), please put the moisturizing pad with moisture on the platform and then move out the carriage on it to keep wetted.

5) Over 7 days not using printer, please remove the print head from printer, and clean the head with specified cleaning liquid. After cleaning, suck the right amount of print head moisture with syringe and inject into the print head (be careful not to squeeze rudely as the moisture is thick and viscous and not like cleaning liquid who has a shower spouting out. If there is moisture on the head surface, that means the head is filled with moisture). Then put a piece of non-woven cloth with a little moisture liquid under the print head, and then wrap it with cling film and put upright in a dry & clean place.

g. Ink system cleaning and maintenance

If remove the print head from the printer and not to use for a long time, please drain inks from ink tanks and ink pipes, then use alcohol to flush the ink system and dampers. And wrap the dampers with cling film.

3. Other Notes:

3.1 Do not move the printer during printing, or put heavy objects on the platform. The printer should be kept in a horizontal position.

3.2 If the printing substrates scrape the print head, please press red “emergency” button on the printer. And do height adjustment by manual, then continue printing.

3.3 If the printing quality is not good, please check the ink spraying and calibrate printer's vertical. If bidirectional printing, please check bidirectional calibration. If the calibration is okay, please contact our technicians.

3.4 Cleaning

(1) Keep the printer clean in daily use; do not put debris on the working table.

(2) Clean the wiper, and cap top often. Please use non-wove cloth to clean, and do not extrude the wiper in case of a damage.

4. Consumable parts

4.1 Use recommended consumable parts (ink, spare parts, flushing liquid, etc.) by Rainbow Company, as there is a possibility that other consumables might affect the printed quality or the printer cannot work.

4.2 Check the waste ink tank at regular intervals in case waste ink overflows. (Remark: wasted ink in wasted ink tank cannot be used)

4.3 When load or remove the wasted ink tank, please pay attention to ink spilling on the floor.

4.4 Storage and Disposal of Ink

(1) It is suggested to use the recommended ink from the manufacturer. Otherwise, it may lead to inferior quality print or printer problems.

(2) Before open the long-term storage ink, please wobble the ink bottle gently to avoid the sediment of it.

(3) Do not put the ink near fire. Or it will cause fire disaster.

(4) Notes for waste ink bottle disposal

Put waste ink bottles into a plastic bag and treat it as industrial wastes. Please refer to the related the relevant legal provisions.

(5) The valid period of ink is 30 days after opening, please do not use if the ink has expired. Otherwise, it may lead to inferior quality print, nozzle clogging or printer failure.

(6) Please store ink in dry and cool place, and always use recommended consumables such as substrates, inks and so on. Otherwise, it may affect the print quality, and even cause machine problems.

(7) The wasted ink tank should be installed safely and always put in specified place. Please replace with new bottle when necessary.

(8) When installing and removing waste ink bottles, please keep the mouth of bottle upwards to avoid ink spilling.

Chapter 2 Installation of Printing Software

1. Preparations before installation

Recommended PC hardware configuration:

CPU: 2.5GHZ or above

Memory: 4.0G and above

Memory: 1GB and above

2. Rainbow RIP software installation and set up

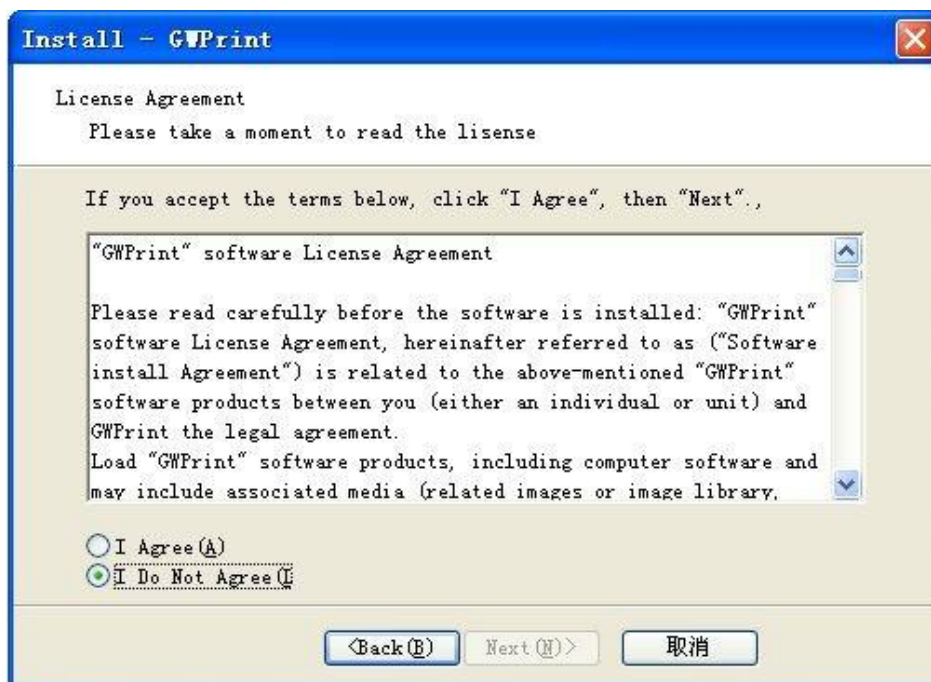
Rainbow RIP software is available to install from U disk, you can also copy files out of the U disk and install. (Note: If you are installing from copying files, you need to run the setup.exe inside the folder to start the installation)

1. Rainbow RIP installation:

Double-click to open U disk GWPrint_A3 _** _* inside the setup.exe to start the installation:



The initial installation procedure is as follows



Click "next" until the software installation is complete.



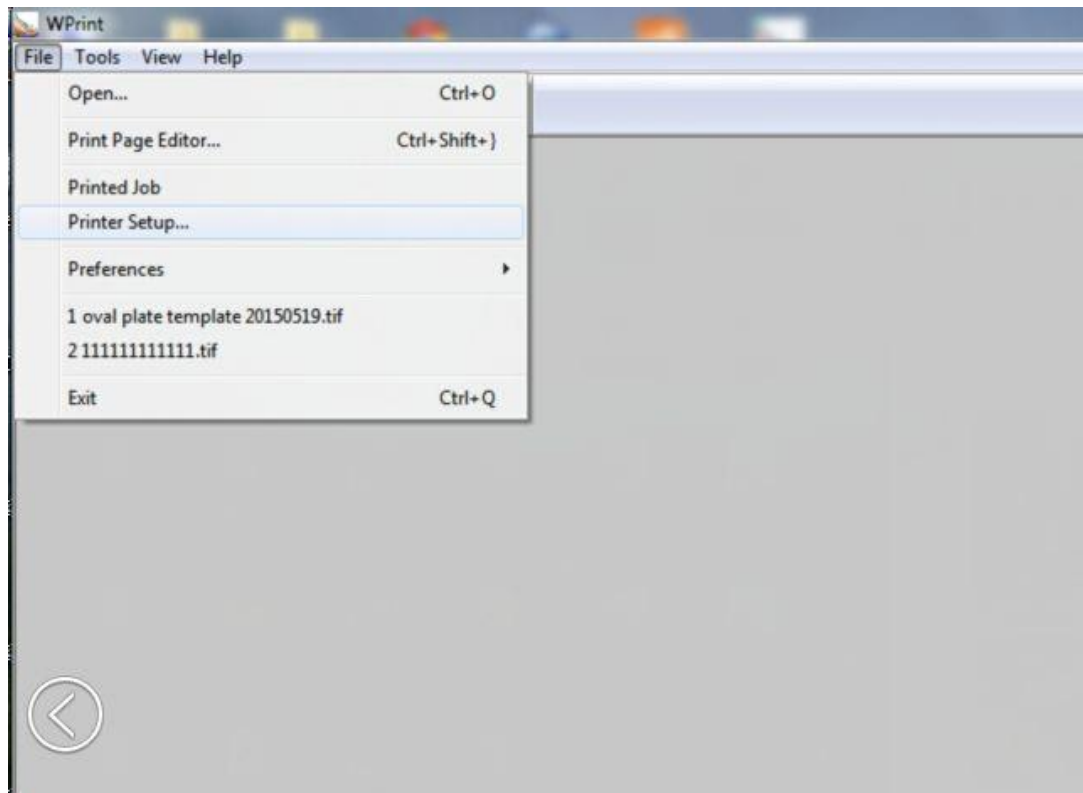
2. Software feature set

2.1 Printer Setup

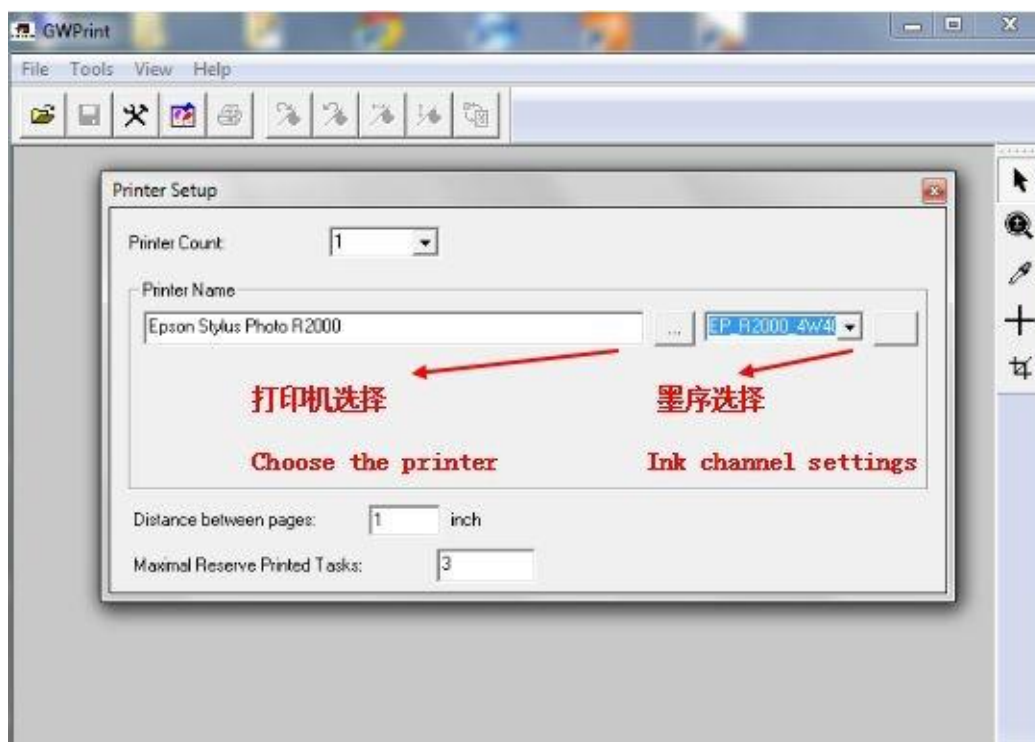
After the software installation is completed, inserting the dongle into the computer USB port. The computer will automatically recognize it, if open the software and it displays the dongle is not recognized, please change a USB port.



In the software, it will display the following screen, open the "Printer setup" option on "File" menu, add and set up the printer.

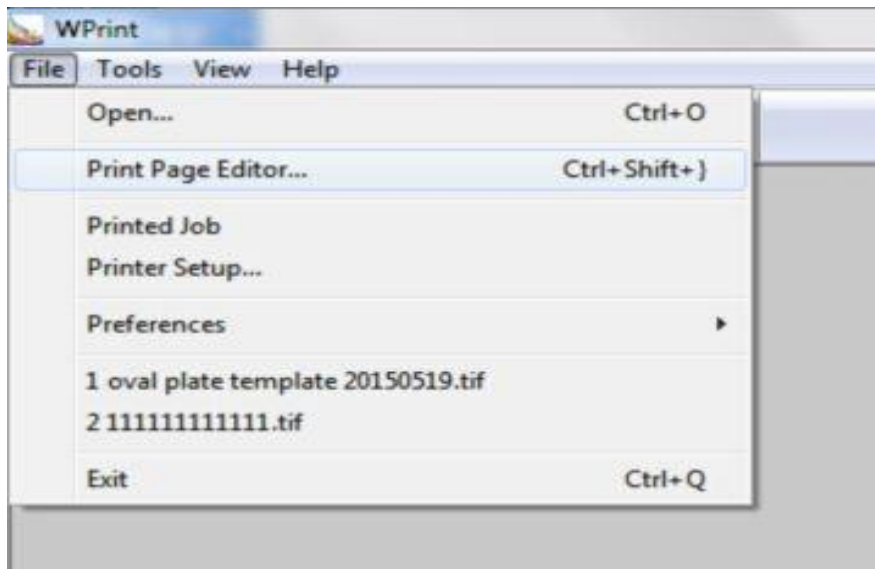


In "printer set up", add the printer model and the ink channel in the program you just installed, one software can simultaneously drive one printer, ink channel selected as EP_R2000_4W4C as below. Please click the red cross to exit the printer settings window after setting.

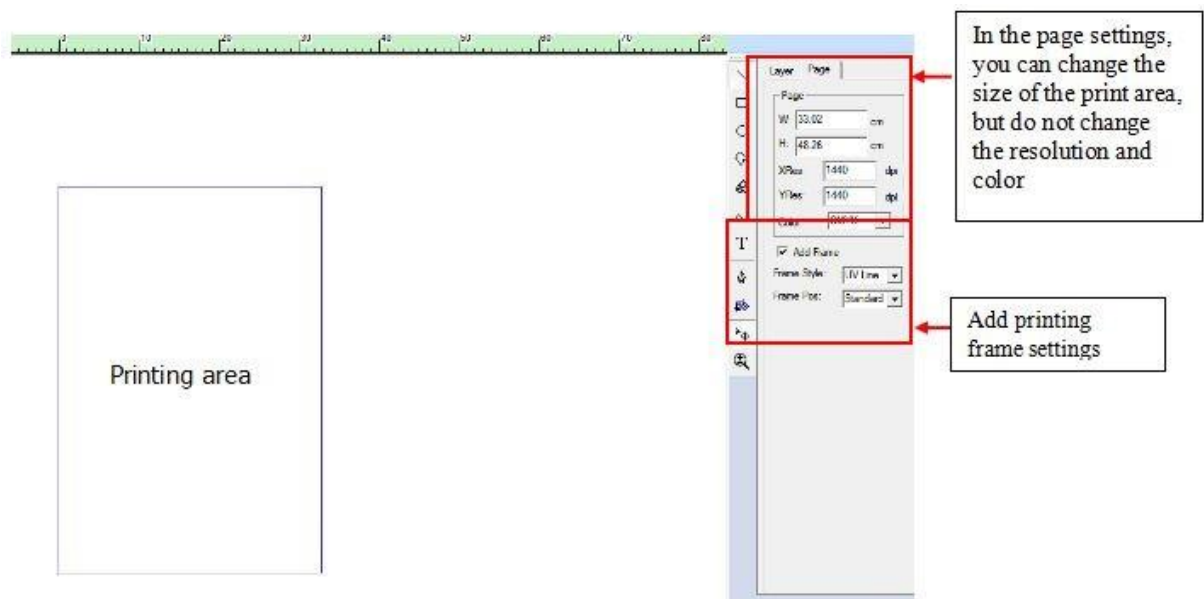


2.2 Printing parameter settings

Open the "Print page editor" option on "File" menu.



Open the print page editor, and the interface shown as below:



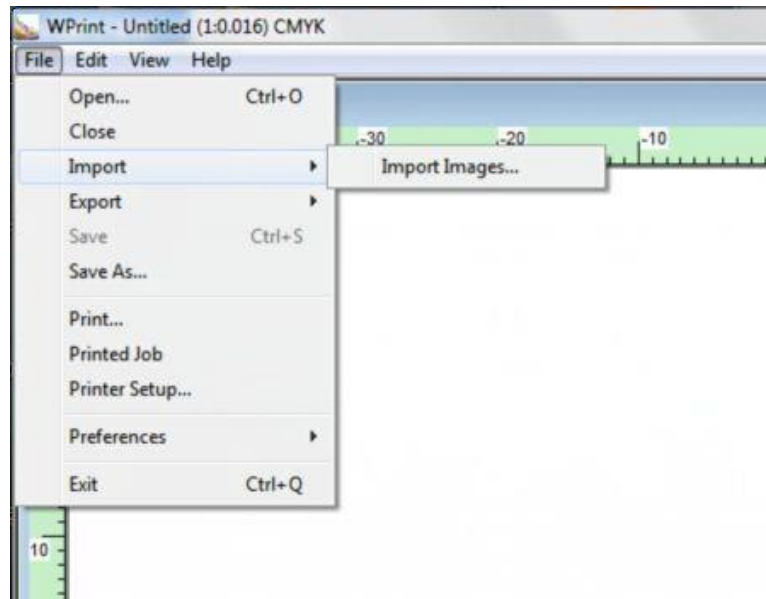
In doing UV printing. We must use the "Add frame" option

Frame Style: UV line

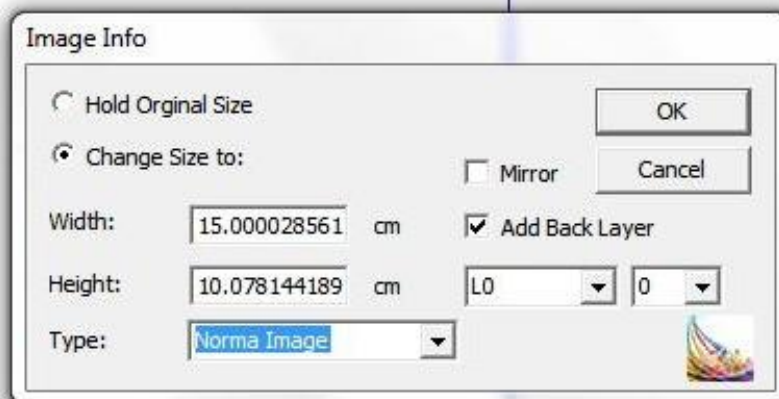
Frame position: Standard

2.3 Import images and settings

Open the "File" menu, then "Import" --- "import images", to load the image you want to print



After opening the picture, it will display an "Image info" window, set the image size and print mode.

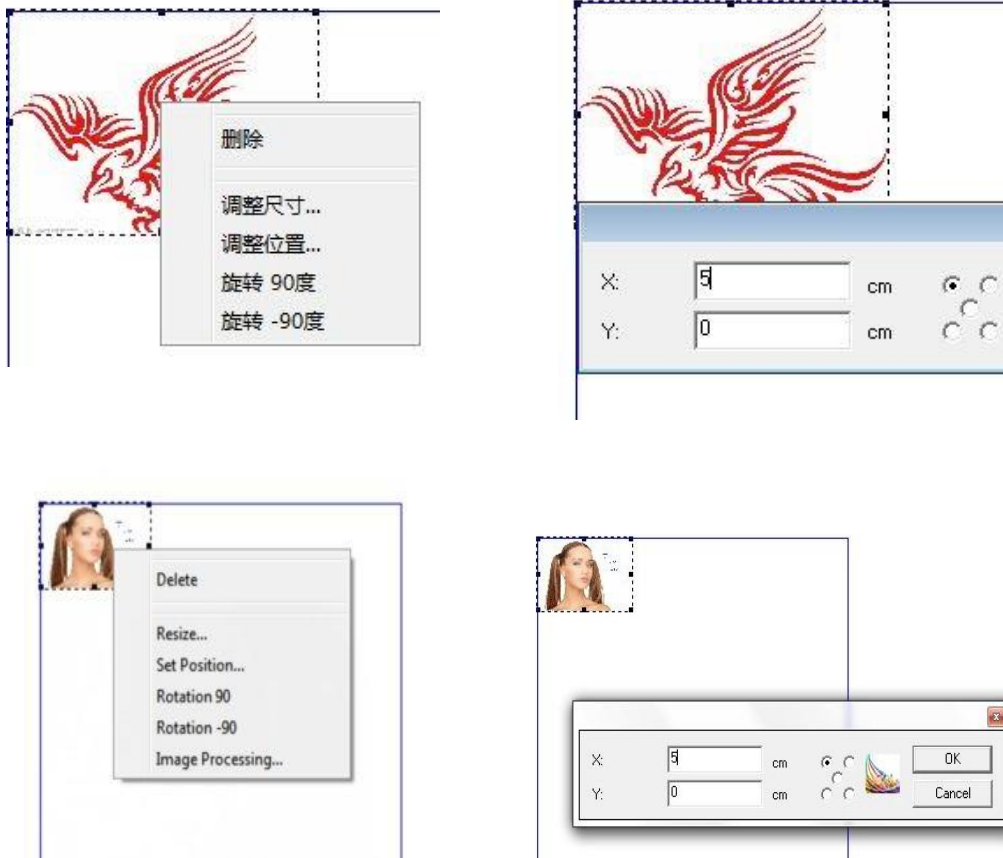


Add back layer: You can automatically generate a back layer as the same size as the image, which is used to print white ink. There are different depth levels of back layer can be selected, the higher level we selected, the more white ink will be printed out.

Image Type: Normal Image --- print in color images

Back mask --- print in white images

After the image is loaded, right-click the image to set its position. If UV printing, the start position of X axis can not be less than 5cm.

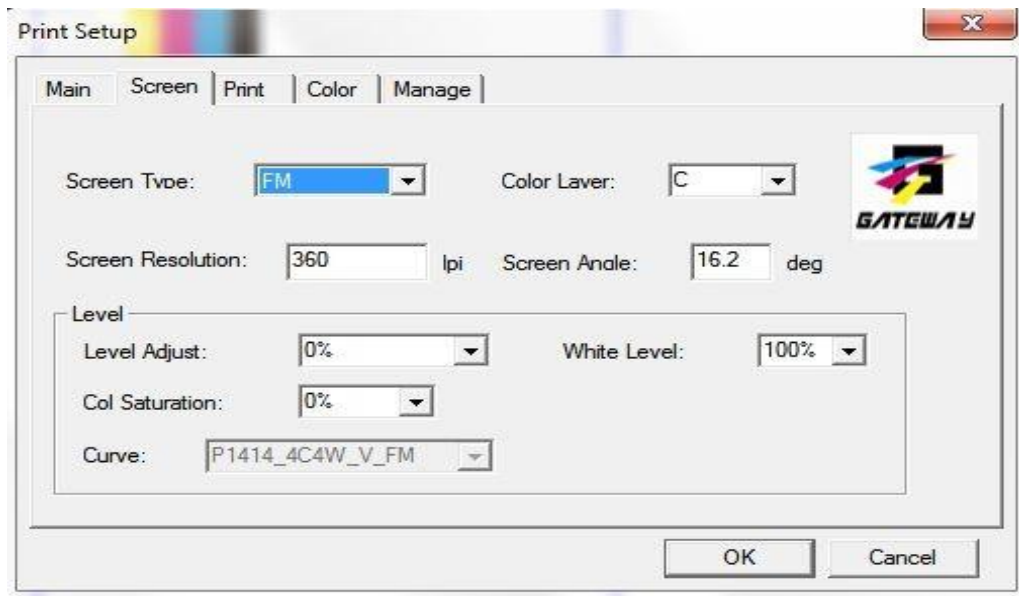


2.4 Print Setup

Open the "File" menu, and select "Print", you can set parameters and print the pictures, but also can print according to the preset "work template".



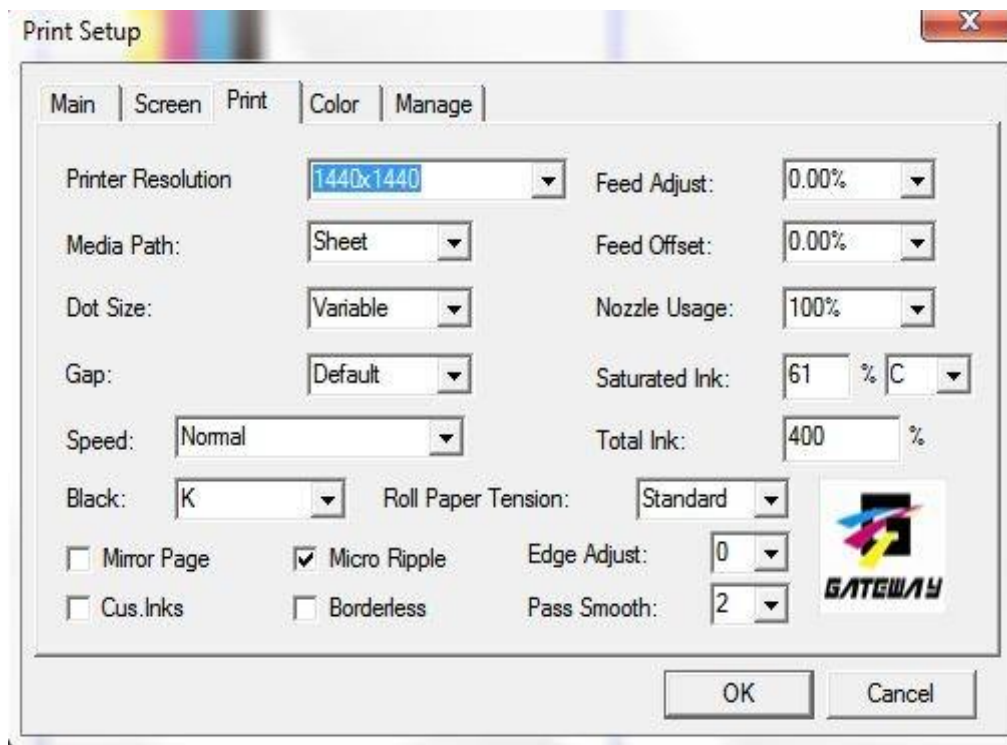
Screen settings



Color saturation: If a picture printed color is darker or lighter, we can adjust it here.

White level: Set print density for underlay white ink printing, maximum 100%

Print settings



Printer resolution: the current printing resolution for images.

Dot size: the current image printing ink dots size. Generally no need to change.

1,2,3,6,7,8 are single dot printing, the ink dot will printed more with the increasing numbers.

Variable, Variable1, Variable2 are multi-dots printing, but also the ink dots will printed more and more with the digital number increasing.

Feed adjust: adjust the platform moving speed before start to print when online, generally no need to adjust.

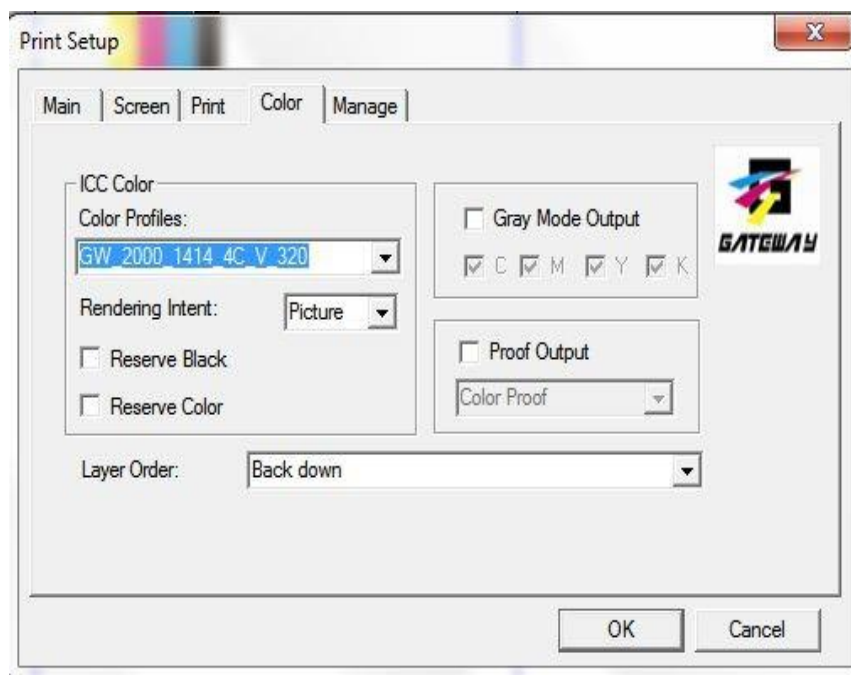
Feed offset: adjusting during the printing process is to amend each PASS forward distance. When our printings have the PASS line, we can do minor adjustments. Generally no need to adjust.

Saturated ink: the maximum ink saturation of a single color set by ICC profile, generally no need to change.

Max. total ink: the maximum volume of four-color ink mixing set by ICC profile, generally no need to change.

Pass smooth: during the printing process, the bigger the value, the greater the intellectual wave printing.

Color settings



Layer Order: one layer----- print white and color separately, only print color ink or white ink at one time.

Back down ---- print white and color together, but print white ink before color ink

Back up----- print white and color together, but print color ink before white ink

Manage settings

In the "manage", we can hide the unnecessary work templates or reuse the former hidden ones.

Chapter 3 Printer Installation

1. Working Condition

1.1 Temperature and Humidity

The best working temperature is 15°C ~ 25°C. The best humidity is 10% ~ 20%.

1.2 Power requirement

Power socket must be with ground wire terminals, which should be copper wire cable and insert no less than 650mm underground. The printer and computer should use the same earthed cable to avoid circuit circulation generating static electricity. The computer power should be connected with the front of the printer power supply at least 3 meters away from printer to avoid electric shock and voltage fluctuations, which will cause computer out of working. Please add noise filter of 220v, 10A to get rid of electric disturbing.

2. Environment Requirement

2.1 Please do not put the printer in below places

- a. Unstable surface
- b. Non-horizontal places
- c. Other machine vibration or electromagnetic interference places
- d. Humid and dusty place (Suggest under one hundred thousand grade.)
- e. The earth terminal of telephone line or lighting circuit

2.2 Do not put heavy objects or stand on the printer.

Do not turn upside down.

Do not cover the air vent.

Do not use damaged cable.

Do not insert or pull out the plug with wet hands.

2.3 Please power off and disconnect the cable before clean the printer. Please keep the printer level when moving.

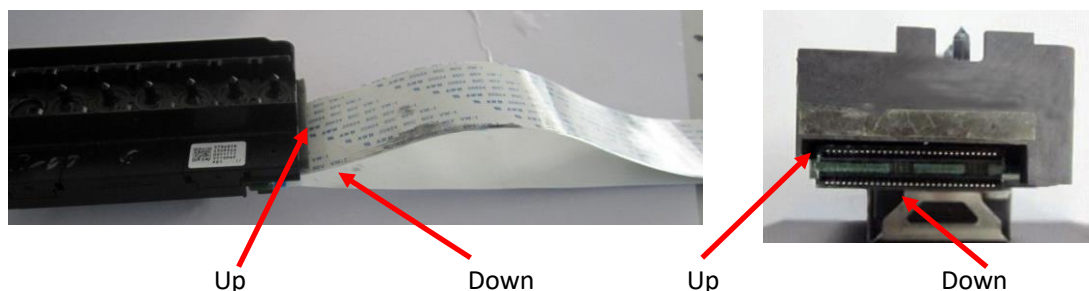
2.4 Do not disassemble the printer and all the interior boards, powers and connectors.

3. Printer Installation.

3.1 Install the Printhead.

Please make sure the power off otherwise it might damage the print head and mother board following procedures:

- a. Please connect two 31P cables into the print head connector. Take care and do not damage the line terminals.



- b. Install the print head at the bottom of carriage unit and lock with 3 screws.

3.2 Install Ink System

- a. Put the ink bottles into the bottle holder.
- b. Connect the ink tubes with the ink bottles correspondingly via two way connector.
- c. Connect the dampers with the other end of the ink tubes.
- d. Fill ink into the bottles. And suck the ink from dampers with syringe. (Suck until no air bubble in the ink.)
- e. Connect dampers with the print head and follow the right color order.
- f. Do self-cleaning in the software. Then print nozzle test lines to check the status of print head.

4. Power on and off

- (1) Please make sure the external power supply is connected with earth end before power on.
- (2) After plug connection, turn on the printer external power and press the power button.
- (3) Usage of Emergency stop switch: In an emergency, please press this switch to stop the printer working. Knob clockwise to turn on this switch.

5. LED UV ink curing lamp

Please fill up water tank (water control box) with pure water before power on. And please make sure the control box is electrified and check if water circulation is normal in water tank. If not, it will damage the LED UV lamp.

LED UV Light Control Box is shown as below:



Knob: adjust LED UV lamp power

Inlet

Outlet

Power cable

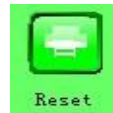
Water-thermometer: Shows the temperature of cooling water
on-off switch

UV lamp signal lines

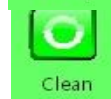
6. Introduction of Control Panel



Printer Power Button



Printing Cancel Button



Cleaning Button, press over 4S to do nozzle cleaning



Platform forward manually, when press over 1.5S, platform keeps moving forward to the front limited position, and it will stop moving if press the button again.



Platform back manually, when press over 1.5S, platform keeps moving to the back limit position and be ready to print, it will stop moving if press the button again.



Platform up, when press over 1.5S, platform keeps moving upward to the top limit position



Micro up adjusting, press once and move up 0.2mm.



Platform down, when press over 1.5S, platform keeps moving to the bottom limit position.



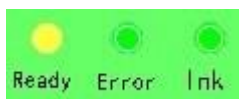
Micro down adjusting, press once and move down 0.2mm.



The front beam LED lighting switch



H: Platform Height Thickness: Substrates thickness setting



The Printer Status Indicator

Ready: manual status - yellow; ready - green; printing – blinking green

Error: After power on, the normal display is green; if paper jam error, the display is red.

Ink: After power on, the normal display is green; if out of ink, the display is red.

When the Error and Ink red light blink together, it means that the printer shows general error, please check printer.

When the Error and Ink red light blink alternately, it means that the printer service requests please use the reset ink software to check the error type, and reset the cleaning count of waste ink when necessary.

Measurement for total height of printing. In the standby status, double-click the button to measure the total printing height, and re-click OK to cancel the measurement, which has been set up in factory, please do not change it randomly.

Press the top right corner of the main screen to enter into the parameter setting.



| | | |
|----------------|----------|-----------|
| Position: | | 0 |
| Print height: | | 0.0 mm |
| UV control: | | AUTO |
| H adjustment: | | Data |
| Printing mode: | | Continous |
| White Ink | Function | OFF |
| | Cycle: | 0 min |
| AUTO Cleaning | Function | OFF |
| | Cycle: | 0 min |

Back

Position: Printing original position, it has been set up in factory, please do not change.

Print height: Total height of printing, it has been set up in factory, please do not change.

UV control: UV Lamp Control



AUTO---Automatic mode, controlled by the UV lamp position

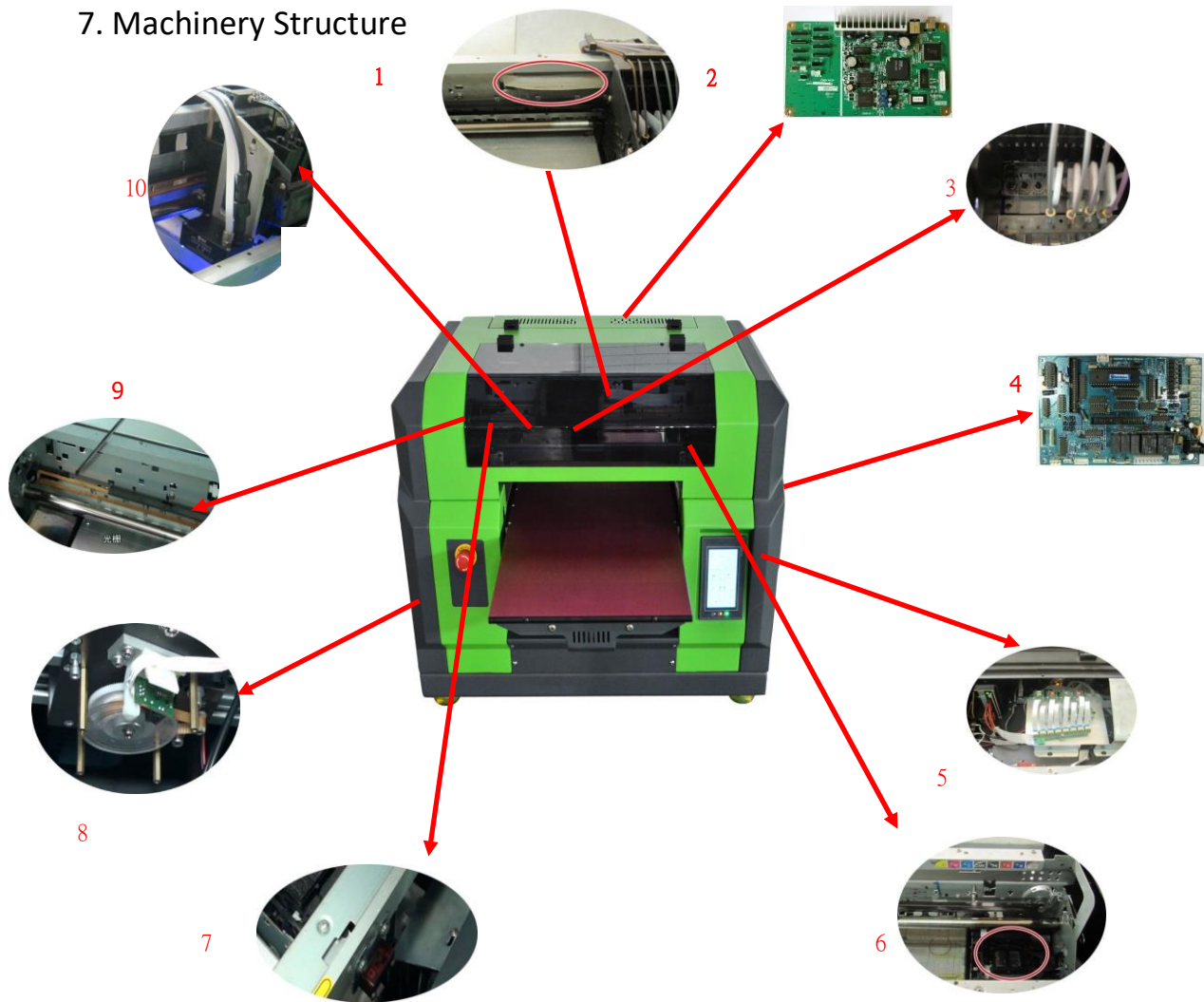
State---State mode, UV lamp will be normally on during printing

H adjustment: Print height setting

Data---Print height is determined by inputting the media thickness automatically.

Manual--- Manually adjust print height

7. Machinery Structure



| | | | | | |
|---|-----------------------|---|------------------------|----|---------------|
| 1 | Printhead Cable | 5 | Ink chip | 9 | Raster stripe |
| 2 | Motherboard | 6 | Capping and pump | 10 | LED UV lamp |
| 3 | Printhead and dampers | 7 | Upward position sensor | | |
| 4 | Signal transfer board | 8 | Wheel and wheel sensor | | |

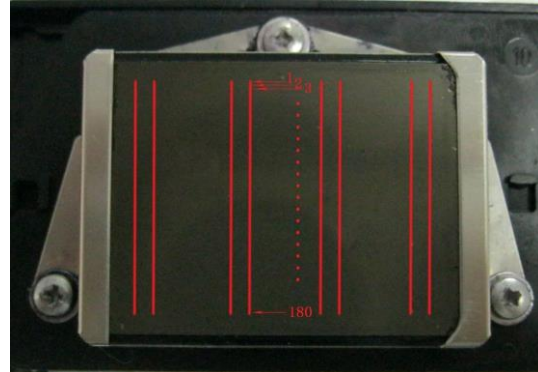
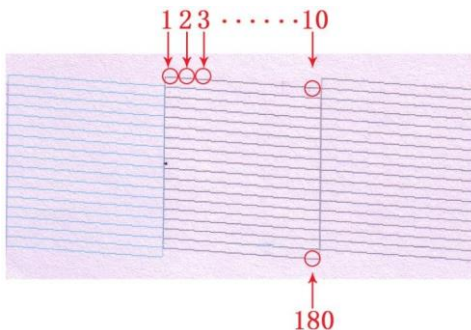
Chapter 4 Maintenance

Section One: Print Head Maintenance

The printer uses UV ink. If the wasted ink remains in the printhead, it might clog the print head since ink is volatile and cured by UV lamp. When the printer is not in use or power off, the carriage will move back to the right side to be protected by cap top, in case that the printhead clogging as inside ink volatilization in the air. So the capping station is very important part which will keep the nozzles away from the air. If the cap top has air leaking problem, please replace it promptly.

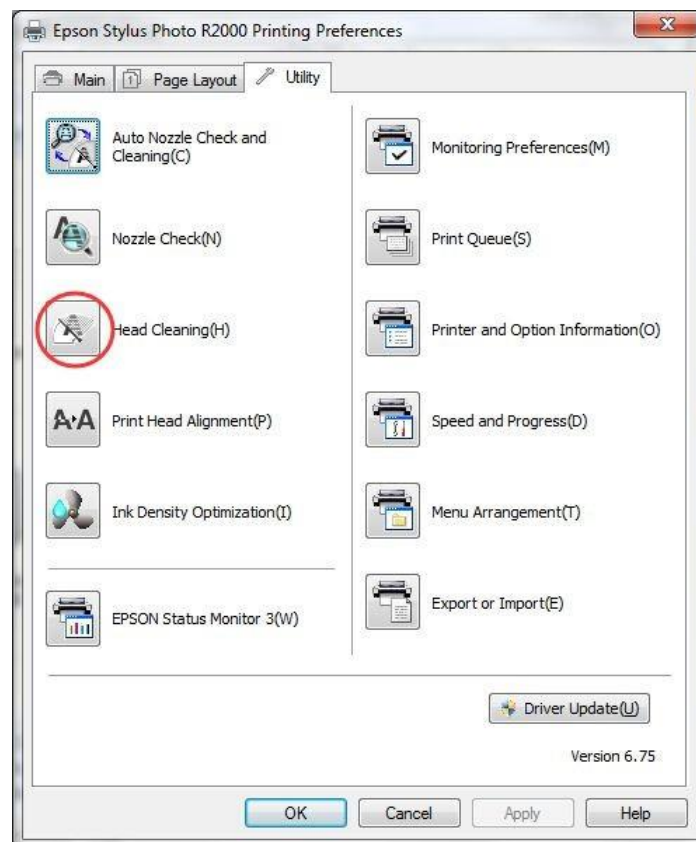
1. Print Head Daily Maintenance

Turn on the printer every day and do nozzle-checking test to protect the print head. And you can check if the print head is clogged through “Nozzle checking”. “Nozzle checking” VS printhead :

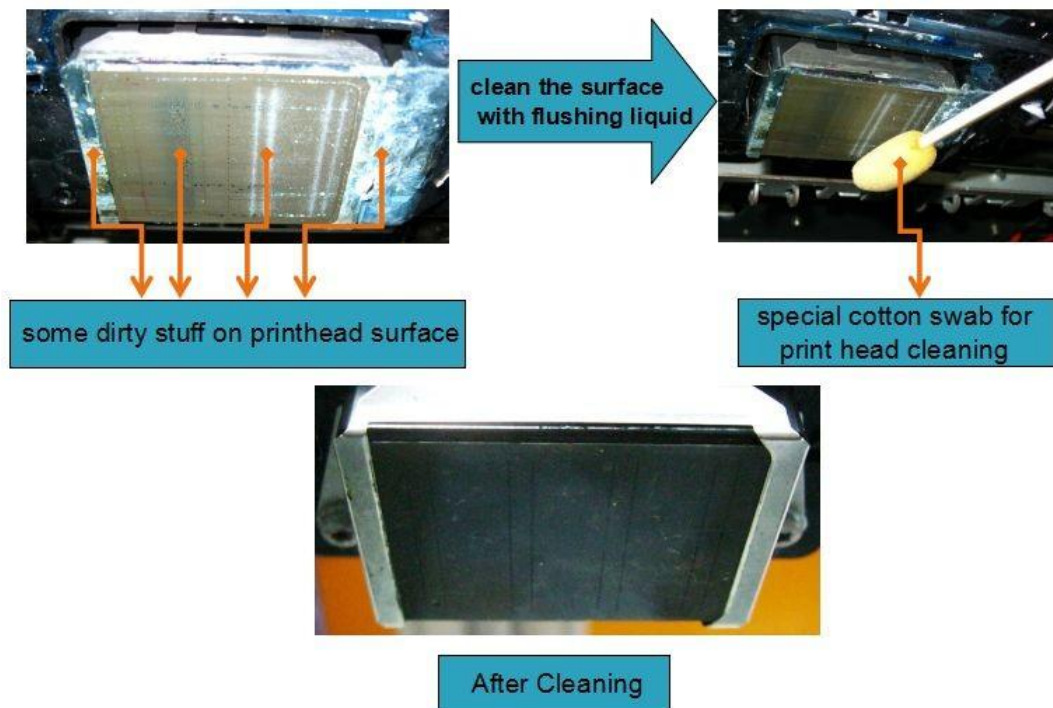


2. Print Head Maintenance in Printing Process

If the substrates cannot absorb all the uv curing light, then the inks will be solidified on the printhead surface due to light scattering, which leads to clog the printhead. So we need to do printhead cleaning in software after one hour printing. If the substrates are highly reflective like mirror, ceramics, glass, please clean the print head in software every half hour.



3. Print Head Surface Clean



4. Methods to Clean Clogging Printhead

- 1) Software cleaning: If slight clogged, please click utility in Epson R2000 printing preference, then choose " Head Cleaning ".
- 2) Use syringe to suck the waste ink, do not let the ink go back when suck the tube.



- 3) Use flushing liquid to clean the printhead, suck 5-10ml flushing liquid into print head by syringe for cleaning. Do the same as the picture, do not push the syringe too hard, or the print head might be damaged after cleaning.



4. Soak the printhead in a container like the picture

Remark : 1) firstly use flushing liquid to clean all the printhead nozzles, then soak the printhead for about one hour, then use flushing liquid to clean the printhead.

2) Put the wetted liquid into print head, it will be okay when wetted liquid come out a little because the wetted liquid is a little dense.



If not using machine for a long time , like a long holiday, you should take some measures to protect printhead from blocking. Firstly, flush the nozzle and clean the ink; Secondly, put wetted liquid into printhead. After vacation , use flushing liquid to clean out the wetted liquid , then install ink. It will be Ok again.

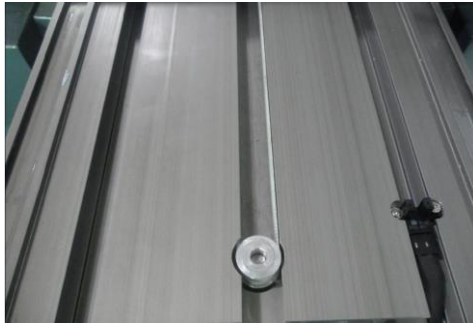
Section Two: Other Parts Maintenance

1. Please use WD-40 lubricating oil for stainless steel staff, and then use lubricating grease for slide guide block.

Remark: Please clean the dirty stuff on the surfaces, and then do lubricating. Put some WD-40 oil on cloth to wipe the guide in case to make the raster stripe dirty.



2. Platform and lifting guide rail: firstly use a cleaning cloth to clean the guide rail slot and lifting guide rail, then wipe grease evenly. Make sure the whole guide rail be stained with grease by moving and lifting the platform for several times manually. It's recommended that do lubricating on the platform guide rail every 5 days (it depends on the usage) and lifting platform for several times a week to have a smooth running.

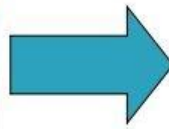


platform guide rail slot



lifting guide rail

3. Raster is to measure the width of the printing. It controls the printhead X axis movement, and its data is read by raster sensor. It's important to keep it clean.

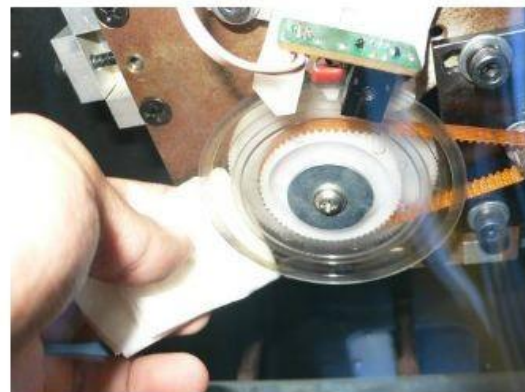


Remark : please use medical alcohol

4. Wheel data controls platform Y axis movement. Its data is read by code wheel sensor. It's important to keep the code wheel clean.



Code Wheel



Clean Wheel

5. Cap Top and Capping Unit:

Cap top and capping station are important parts for printhead protection, cleaning and ink sucking. If not using the printer for a long time, the wasted ink will dry inside the cap top and capping unit. So please clean the cap top & capping unit before a long holiday. The way to do cleaning: please move out the ink carriage, inject the flushing liquid on cap top, then suck out the flushing from wasted ink tube (repeat this step 3 or 4 times). Finally, put the wetted liquid onto the cap top.

6. LED UV lamp usage:

- 1) Machine Connection: Before refill water into water cooling box, first turn the light power to "0" scale; Connect the Outlet and Inlet with tubes; Make sure power off, and plug the power cable.
- 2) Refill Water: Open the knob cover on the top of the water box, and refill the clean water with the water bottle, pour a total of 500ML water or until the water box is full. Please close the knob cover after refilling. Make sure there is no water leaking out .
- 3) Adjust the UV lamp: After pump running and water circulating normally, please turn the power knob slowly (from 0 to 100) to observe the lamp is working properly. It is okay that LED-UV lamp is able to be adjusted from dark to light. When turn off the lamp, please turn the power key to 0 and switch off the power after ONE minute.

Chapter 5 General errors & Troubleshooting

| | | |
|---|---|---|
| 1 | The status monitor on printer driver writes "Media out or not loaded correctly" | a. Check the system READY or not |
| | | b. Check the PF sensor ok or not |
| 2 | Printing table shaking or not stable | a. Transfer board is defective, change another one |
| | | b. Wheel sensor is dirty or damaged |
| | | c. Motor driver is damaged |
| 3 | The printout is not clear & has double image | a. Transfer board is defective, change another one |
| | | b. Wheel sensor is dirty or damaged |
| 4 | UV lamp cannot cure the ink or the ink does not dry completely | a. Check the led lamp is ok or not |
| | | b. Check the bottom of led lamp is dirty or not |
| | | C. Check the led lamp power is high enough |
| 5 | The uv ink will be scratched off after printing | a. Check if spray specified coating on the substrates |
| | | b. Clean the material before putting coating on it |
| | | c. Wait for the coating dry before printing |
| | | d. Check the led lamp power is high enough |
| 6 | General error, the Ink & Cancel lights blink together | a. Cancel the printing job, and restart the printer |
| | | b. The guide steel is dirty, pls clean it, then restart the printer |
| | | c. The wheel is dirty or wheel sensor is damage |
| | | d. Print head cable or print head is damaged, pls change it |
| 7 | Wheel runs fast, then general error shows | a. Wheel sensor position is not correct. Readjust the position |
| | | b. Wheel sensor is damaged |
| 8 | The ink carriage moves fast and hit the left side | a. Raster stripe is dirty, please clean it. |
| | | b. Raster sensor is damaged |