

LED UV Flatbed Printer User's Manual



Preview

Thank you for purchasing CALCA Printer.

In order to make the customer master the printer, we composed the user's guide 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 performs well and 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 Gateway Digital Eco flatbed printer and UV flatbed printer. This UV printer is with 270mm*420mm printing size and USB2.0 interface.







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

Contents

Chapter 1	Safety Precautions.....	3
1.1	Operating Precautions	4
1.2	Routine Inspection and Daily Maintenance.....	4
1.3	Other Note.....	6
1.4	Consumable parts	6
Chapter 2	Installation of Printing Software.....	7
2.1	Preparation before installing.....	7
2.2	Installation of printing software.....	7
2.3	Maintop software and printer procedure installation.....	8
Chapter 3	Printer Installation.....	10
3.1	Working Condition.....	10
3.2	Environment Requirement.....	10
3.3	Printer Installation.....	10
3.4	Electrify and Electricity off	10
3.5	Storage and Disposal of Ink.....	12
3.6	LED UV ink curing lamp.....	12
Chapter 4	Maintenance.....	13
4.1	Print head maintenance.....	13
4.2	Other Parts Maintenance.....	16
Chapter 5	General errors & Troubleshooting	19

The company reserves the right to modify technical parameters and contents in the Guide without notification. And the company is not responsible for the loss caused by the contents in the Guide 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 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 ask the doctor for help. Put the ink out 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 danger of fire, electric shock or other serious accident.
	Please power off the printer and pull off 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 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 line before you power off the printer.
	Put the printer on level surface. If the printer is unlevel, normal printing work might be affect.
	Since the printer using eco-solvent inks, please pay attention to your local regular rules about eco-solvent inks.
	Pull out the plug gentle, 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. 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 straightly the LED ink curing lamp when printing (Please wear UV proof glasses).

1. 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 grating strip is clean.

d. Print nozzle test lines on the paper firstly after switching on: print in Gateway software. Test lines are used to check if the nozzles clogged or not. Each nozzle corresponds to its each short line, in which caused missing line called Broken, and blurred line called Oblique. It should be to do some cleaning in view of the above two cases.

e. Please check before printing if the materials are placed properly so as not to scratch the print head under printing.

f. Before each printing lease print test lines to check the status of printhead and do timely cleaning.

g. Plead do not use the printer until you have a professional training, otherwise it will cause unpredictable problems.

h. Check daily if there is ink at the bottom of LED UV curing lamp. Please wipe it with alcohol and do regular cleaning if there is ink.

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

(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 ink pipes and print head, otherwise it will cause the printer out of condition.
- c. When not using the printer for a long time, you should switch on at least once and print a test to check the status of print head. Print a small image if it is in good condition. Then moisture the print head as usual.
- d. Always check the ink level and timely add inks. When the ink level in the cartridge is too low, the alarm will ring. Then check which cartridge corresponding indicator light goes on. Add ink to that cartridge until the alarm disappear (Each cartridge corresponds to an indicator light).The ink will be frozen if stored below 0℃ or the ink suffer from the cold at low temperature in transportation. You should put the ink in ambient temperature for at least 24 hours. You can reuse after it returns to normal. If inks are removed from a cold place to a warm place, condensation may occur. Only when the inks are put in normal circumstances for at least 3 hours after condensation disappear, it can be reused.
- e. Do not make the grating contaminated by ink, cleaner and other stains. Keep grating and guide rail clean. We can use alcohol to wipe if grating strip is contaminated by dirt. Put a thin layer of grease or lubricant on the guide rail after cleaning it. When doing this, please be careful not to dirty the grating strip.

f. Print head Cleaning and maintenance

- (1) Print head cleaning: when the test lines are intermittent, please clean the print head on time. Click the “clean” button and then choose general or deep automatic clean (normally choose general cleaning)
- (2) Print head maintenance: Over 4 hours not using the printer, please wetted the print head, and then power off the printer. Print head wetted: inject a little flushing liquid into moisturizing pad, not too much. Moisturizing can be done by clicking the print head moisturize button in control software”.
- (3) Over 7 days not using printer, please remove the print head from printer, and clean the head with specified cleaning liquid. After cleaning, put a piece of non-wove cloth with a little flushing liquid under the print head, and then wrap it with cling film, and put away in a dry & clean place.

g. Ink system cleaning and maintenance

After remove the print head from the printer, please drain inks from ink tanks and ink lines. And wrap the dampers with cling film.

1. 3. Other Note

1. 3.1 Do not move the printer during printing, or put heavy things on it. The printer should be fixed in a certain position, and keep the position level.

1. 3.2 If the printing substrates scrape the print head, please press “stop” button on the control panel or click “stop” button in software immediately. After adjust the printing height in software again, and continue printing. (If the print head is seriously scraped, turn off the printer first, and then turn on to check the print head status)

1. 3.3 If the printed quality is not good, please check the ink spraying and calibrate printer’s vertical and stepper. If bidirectional print, please check bidirectional. If the above items are okay, please contact our technicians.

1. 3.4 Clean

(1) Keep the printer clean; do not put things on the flat table

(2) Clean the wiper, and pump ink pad often. Please move the cartridge to left original point, use non-wove cloth to clean, and do not extrude the wiper.

1. 4. Consumable parts

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

4.2 Do not use expired ink.

4.3 Put exhausted ink tank into plastic bag as it is industrial wastes.

4.4 Take care! Do not stain ink on skin or cloth. If smeared, please use the soup water to clean immediately

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

4.6 When add ink or pick up the wasted ink, please pay attention to ink spilling on the floor.

4.7 Store ink under dry place without sunshine. Do not put inks in sunshine or in hot temperature or the ink will go bad.

Chapter 2 Installation of Printing Software

2. 1. Preparation before installing

Recommended computer hardware configuration:

CPU: 2.5GHZ or above

Internal Memory: 2.00G or above

Frame buffer: 512MB or above

2. 2. Installation of printing software

(1). Find software CD in the packing case of machine

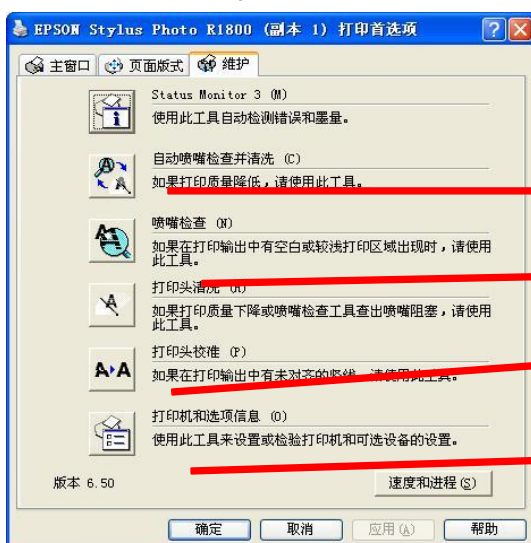
And then put it in the CD-ROM drive;

And open and double click the picture shown in right side.

And the installation will be finished finish installing automatically.



(2). Illustration of printer drive.



【Check printer current condition, and include errors.】

【Print nozzles checking】

【Print head cleaning (software cleaning) 】

【Calibration of print head (for blurred image error)】

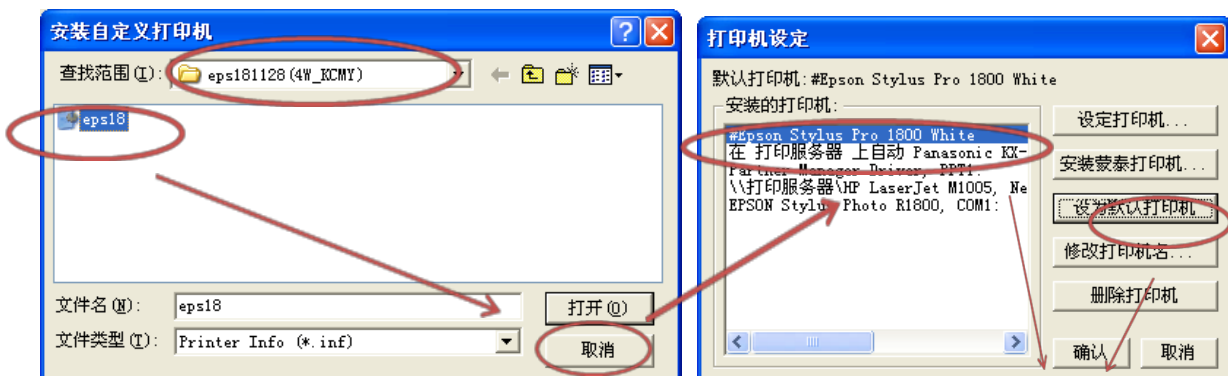
2. 3.Maintop software and printer procedure installation

The installation can be set from CD drive, or copy the file from CD drive, and then install it.
(Attention: if installing through copying file, should begin from setup. exe)

Installation of Maintop

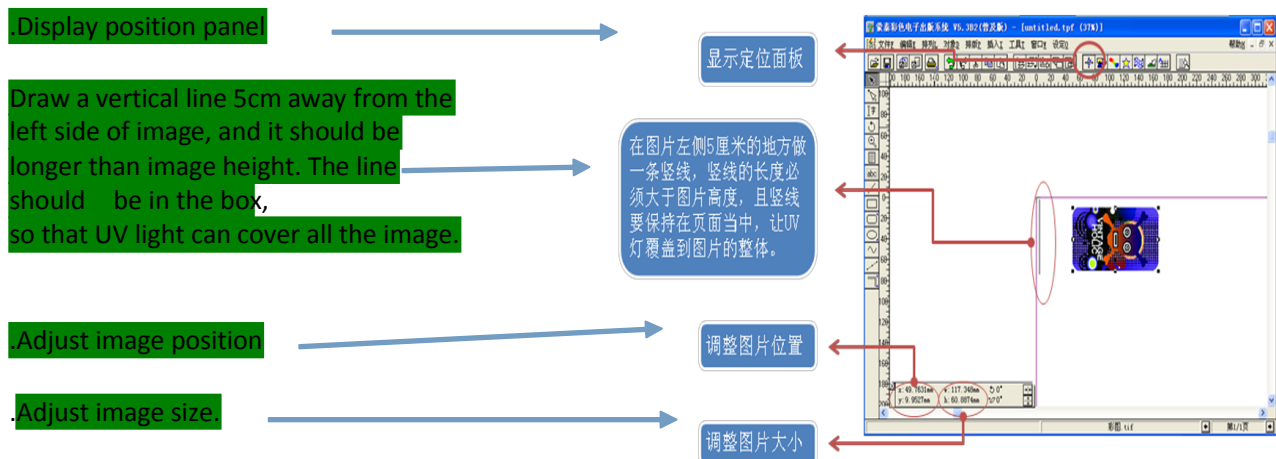
Open Maintop, click according to the following process:

File – Printer setup – Install – Custom – Install

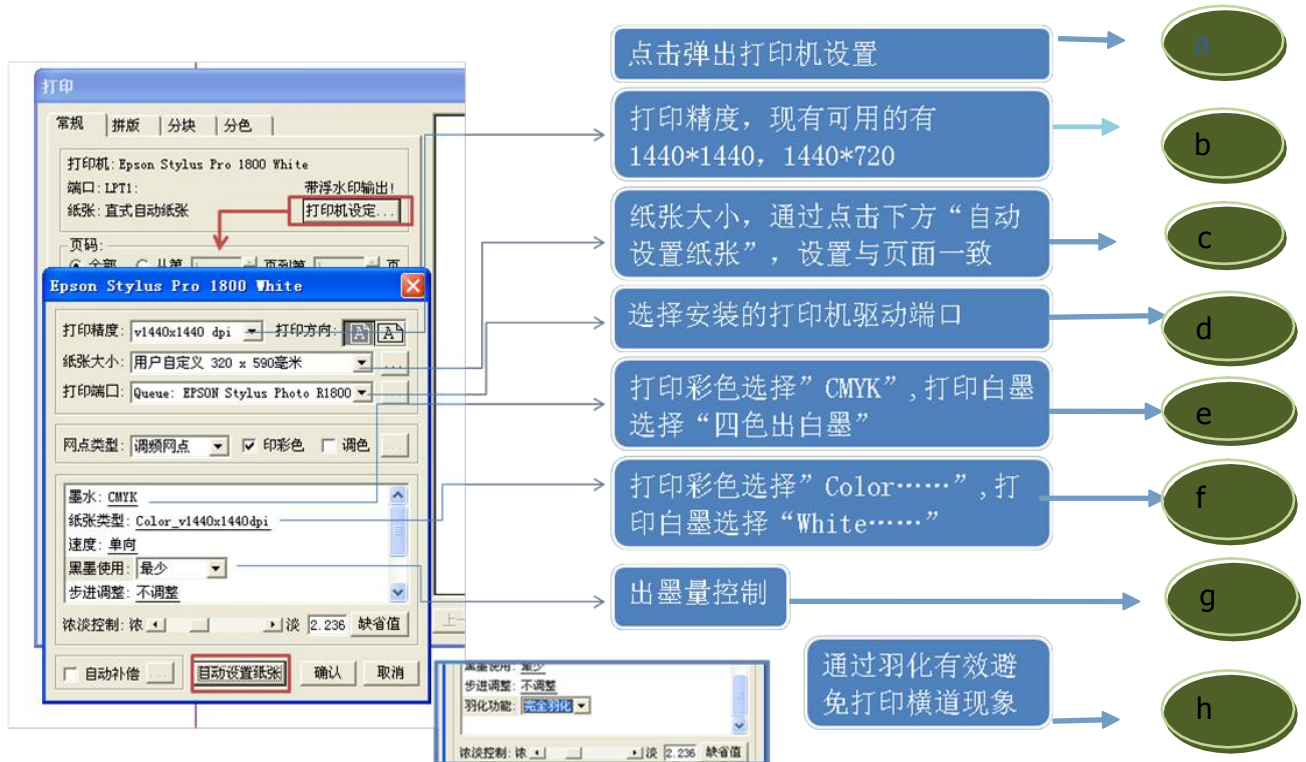


Find Maintop printer drive from CD, set Maintop printer as acquiescence printer.

1) Maintop printer position



2) Printer function setting.



- Click to open printer setup
- Printing resolution, 1440*1440dpi, & 1440*720dpi are available
- Paper size, click “set paper automatically”, consistent with page settings
- Choose the printer driver port
- Color ink printing choose “CMYK”, White ink printing choose “CMYK+4W”
- If printing color ink choose “Color……”, if printing white ink choose “White……”
- Ink volume controlling
- Avoid effectively stripes through feather.

Chapter 3 Printer Installation

3. 1. Working Condition

3. 1.1 Temperature and Humidity.

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

3. 1.2 Power requirement.

Power socket must be with ground terminal. The cable should be with brass core and must be underground no less than 650mm. Printer and computer should use the same earthed cable to avoid circulation. Computer power should be at 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.

3. 2. Environment Requirement

3. 2.1 Please do not put the printer in below places.

- a. Unstable surface.
- b. Ubiquitous place.
- c. Shaking or with electromagnetic interference places.
- d. Humid and dusty place. (Suggest one hundred thousand time grade.)
- e. The line or lighting circuit grounding.

3. 2.2 Do not put heavy goods or stand on the printer.

Do not turn upside down.

Do not cover the air vent.

Do not use damaged cable.

Do not touch pull out plug with wet hands.

3. 2.3 Before clean the printer, please turn the power off and disconnect the cable. Please keep the printer standard when carrying.

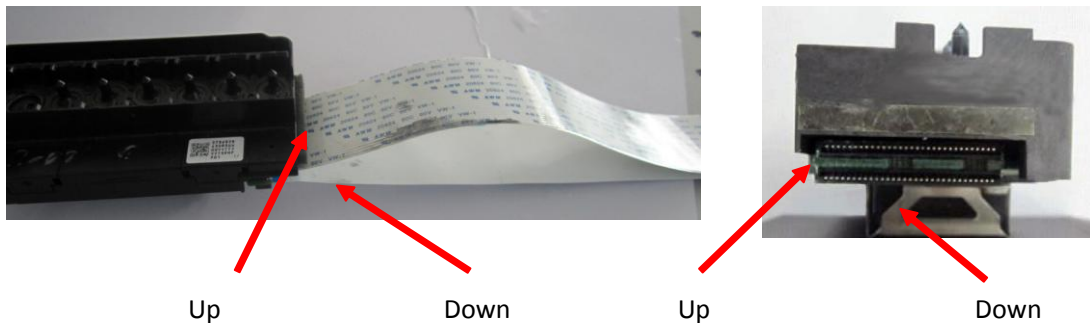
3. 2.4 Do not open the printer cover and all the boards, powers and connectors.

3. 3. Printer Installation.

3.3.1 Instal the printhead.

Please make sure the power is turn off otherwise it will cause print head and mother board damage. Please follow:

- a. Please connect two 31P cables into the print head connector. Take care. Don't damage the metal head.



- b. Put the print head into the print head carrier and fastened with screw. (There are 3 screws.)

3.3.2 Instal Ink System.

- a. Put the ink bottle into the bottle holder.
- b. Connect the ink bottle with the print head through two way connector.
- c. Connect the dumper with the other end of the two way tube.
- d. Fill ink into the bottle. And suck the ink with syringe at the end of waste ink tank. (Suck until no air in the ink.)
- e. Connect dumpers to the print head following the right color.
- f. Press auto clean from the software. Then print test lines to test the situation of the print head.

3. 4. Electrify and Electricity off

- (1) Before electrifying, please make sure the external power supply is connected with earthing end.
- (2) Put in the printer plugs, and press the power button.

(3) Usage of Emergency stop switch: In an emergency, please use emergency stop switch to pause the printer. Turn the emergency stop switch clockwise.

3. 5. 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 long time on using ink, please wobble the ink bottle gently to avoid the sediment of it.

(3) Please don't put the ink near fire. It will cause fire disaster.

(4) Note: Don't drink ink. If the ink splashed into your eyes, wash your eyes with clean running water and please go for a doctor when necessary. Remember that don't try to vomit when drink it. Please ask the doctor for help.

(5) Notes for waste ink bottle disposal

Put waste ink bottles into plastic bag as industrial wastes. Please refer to the related regulations.

(6) The validity of ink. Please don not use the overdue ink. Otherwise, it may affect the print quality, and even cause machine problems.

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

(8) Exhausted ink bottles should be put safely. Waster ink bottle should be put in specified place. Please replace with new bottle when necessary.

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

3. 6. LED UV ink curing lamp

Please fill up water tank (in control box) with pure water before electrifying. And please make sure the control box is electrified and check if water can circulation normally in water tank. If not, it will cause damage to LED UV lights.

LED UV Light Control Box is shown as below:

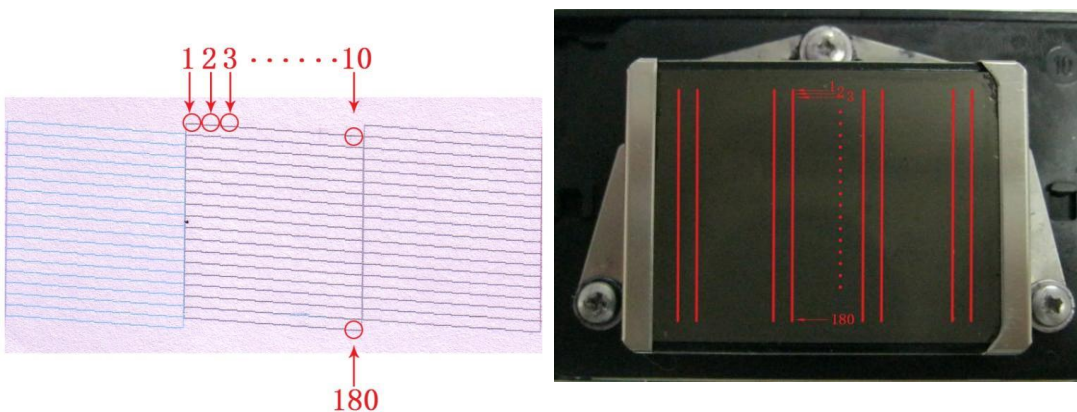
Chapter 4 Maintenance

4.1 Print head maintenance

The printer uses UV ink. Since ink volatilization or the UV light shining might cause the print head clog. When the printer is not in use or power off, the carriage will move back to the right side to protect the ink from exposing in air. So the capping station is very important part which will keep the nozzles away from the air. If the capping is with air leaking problem, please replace it immediately.

Print head Daily Maintenance

Turn on the printer every day and click “Nozzle checking” to protect the print head. And you can check if the print head is clogged by “Nozzle checking”.

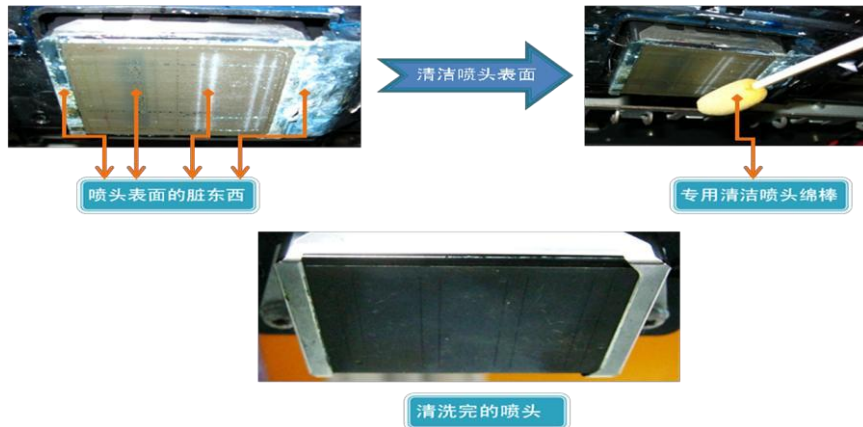


Print Head maintenance in printing process

Since the substrates cannot absorb all the uv inks, and the uv light will solidify the uv inks, the print head will be blocked, So, we need to clean the print head by software after one hour printing. If print substrates with very smooth surface, please clean the print head in software every half hour for example mirror, ceramic , glass, etc.



Print head surface clean



We suggest clean the printhead with flush water every day, or the nozzle will be blocked.

1. If the nozzle blocked:

- 1) If not heavily blocked, you can clean it by software: maintenance-nozzle cleaning.
- 2) Suck the waste ink tube with syringe. When suck the tube, make sure the ink won't go back.



- 3) Clean the print head with flush water, push 5-10ml flush water into print head by syringe.



Attention please: hold the tube by left hand, and no push the syringe too hard or the print head might leak after cleaning.

4) Clean the print head surface before dip it in cleaning liquid. Dip the print head into cleaning liquid for an hour or so, and then clean the print head with cleaning liquid. And at last print testing lines.



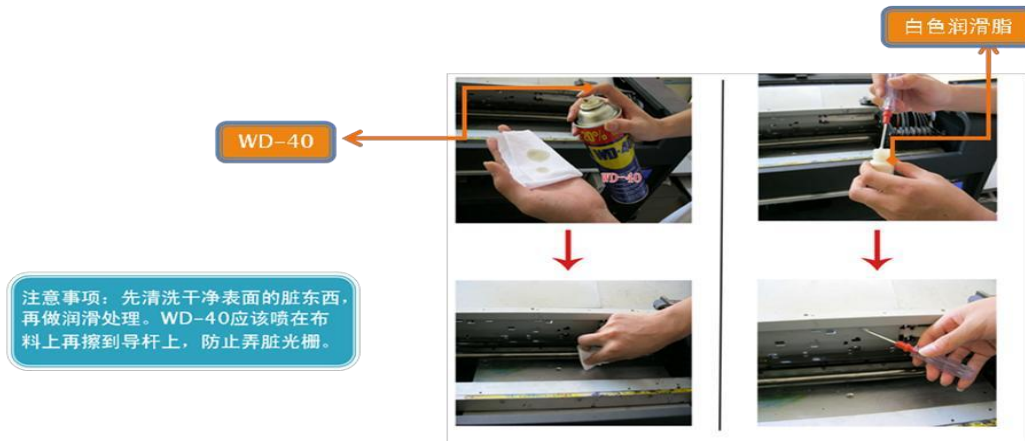
If you do not use the printer for a long time, please protect the print head carefully: clean out the ink in print head, and put the print head wet liquid on the surface of print head. After you come back and use the printer again, you should clean the print head with flush water first, and add ink to use the printer.

Notice:

When we push the wet liquid into print head, please stop push when there is wet liquid come out from the nozzle

4.2 Other Parts Maintenance

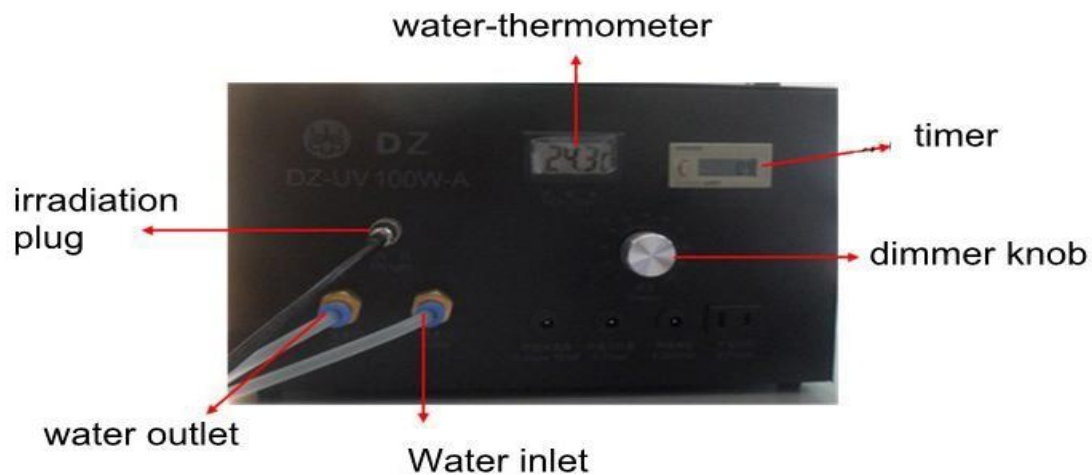
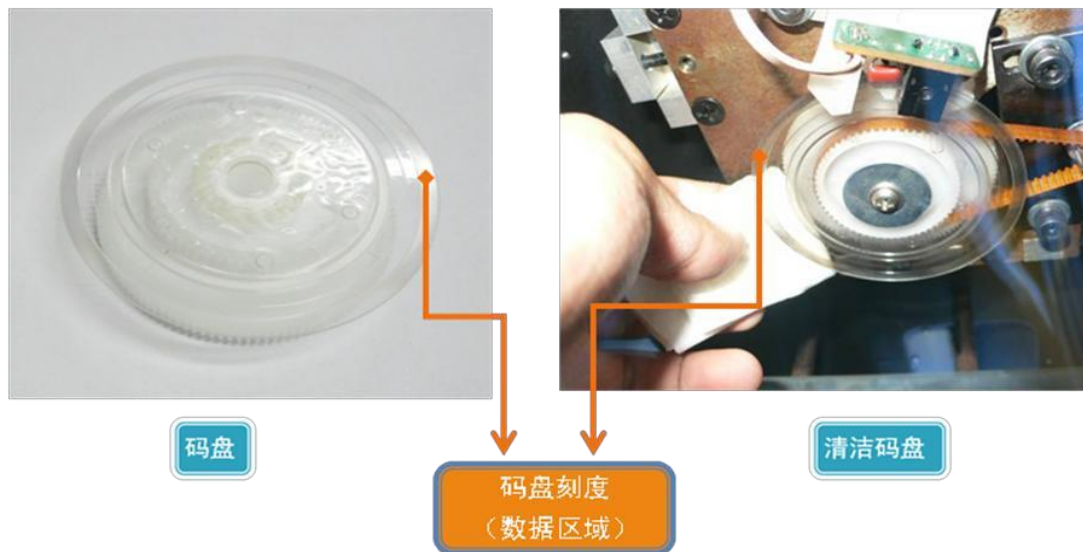
4.2.1 We suggest to clean the guide bar and guide unit with WD-40 first. Put some WD-40 oil on cloth to clean the guide, and use white oil lubricant grease.



4.2.2. The raster information is for X axis moving and the date is read by raster sensor, so we have to clean the raster by alcohol often. (Medicinal alcohol is recommended.)



4.2.3. The data in the code disc is for Y axis moving. It is read by code disc sensor. So we have to clean the edge of code disc by alcohol often.



Dimmer knob: Adjust LED lights duty.

Water-thermometer: Shows the temperature of cooling water in the tank.

4.2.4. Print head protector(capping):

Protect the print head and suck the inks while cleaning. If long time no using the printer, the ink

will dry inside the capping and pump. So please clean the capping & pump before the long holiday.

The way to clean the capping and pump: move out the ink carriage, put the cleaning liquid on capping, then suck the wasted ink (do this step 3 or 4 times). Finally, put the wetter onto the capping.

4.2.5. How to Use UV lamp?

1) Machine connection: Before refill water into water tank, first turn the power to “0” scale;

Connect the Outlet and Intake with tube; Make sure power off, and plug the power cable.

2) Refill water: Open the filling cover on the top of the water tank , and turn the cover to the

biggest hole, and refill the water with the water bottle, need the total of 500ML water or until the water tank is full. After refilling please close the cover. When refilling make sure there is no water leaks out.

3) Adjust the UV Lamp: After adjust pump, Please turn the power key slowly (from 0

to 100) ,to observed the Lamp is working properly. LED-UV Lamp is able to adjust form dark to light, it means fine. When to turn off the Lamp: Turn the power key to 0 and turn 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. The relay(14pin) connection not OK, change another one
		b. Wheel sensor is dirty or damage
		c. Motor driver damaged
3	The printout is not clear & has shadow	a. The relay(14pin) connection not OK, change another one
		b. Wheel sensor is dirty or damage
4	UV lamp cannot cure the ink or the ink not dry completely	a. check the led lamp ok or not
		b. check the led lamp dirty or not
		C . check the led power ok or not
5	The uv ink will be off after printing	a. check the material if need coating or not
		b. Clean the material before putting coating on it
		c. Wait the coating dry before printing
		d. check the led lamp power
6	General error, the Ink & Cancel lights blinking together	a. Cancel the printing job, and restart the printer
		b. The guide steel is dirty, clean it, then restart the printer
		c. The wheel or wheel sensor are damage. Change new ones
7	Wheel runs fast, then general error shows	a .Wheel sensor position not correct. Readjust the position
		b .Wheel sensor is damaged
8	The ink carriage move fast and hit the left side	a . Raster is dirty, please clean it.
		b . Raster sensor is damaged