CET COLOR

X-Press 500Q

USER MANUAL

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COMPANY PROFILE

CET Color is an innovative advanced technology enterprise with independent intellectual property rights, specializing in researching, development, manufacturing and marketing of UV flatbed printing equipment. CET has acquired numerous top-notch experts from the UV flatbed digital printing industry worldwide.

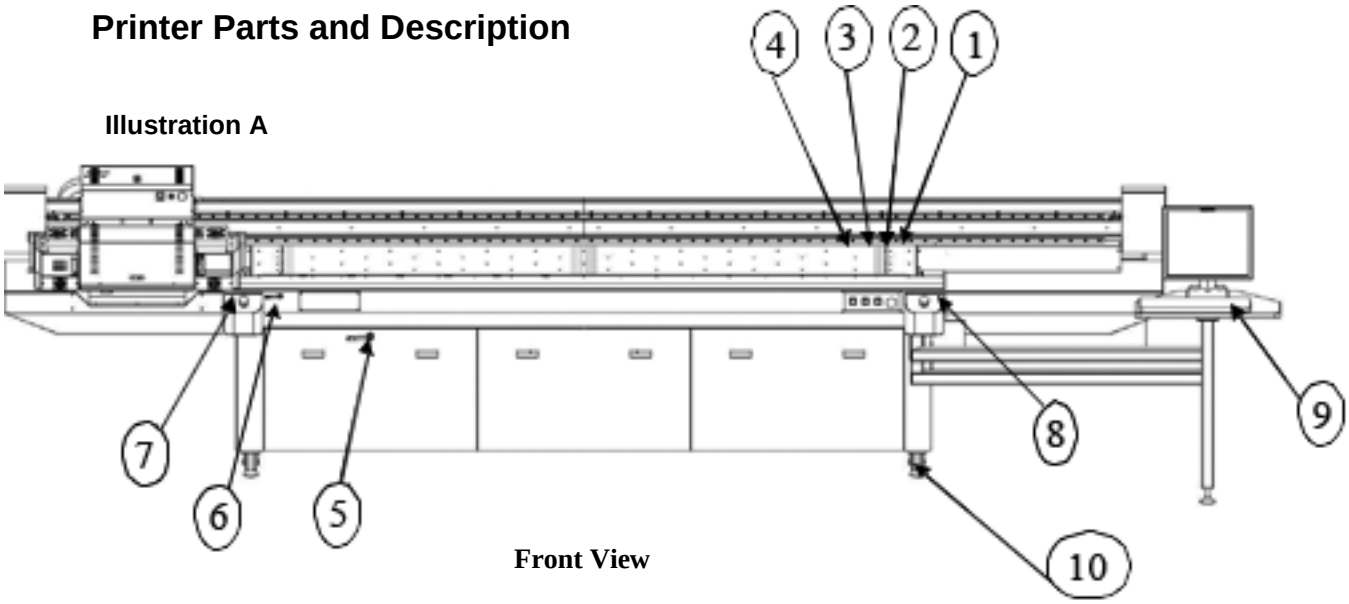
Our printers are ideal for creating all types of sign graphics such as point-of-purchase signage, backlit displays, real estate signage and much more. Using optional white ink, these printers image bright, vibrant color even on transparent and colored media. The customizable print spooler improves imaging workflow with the ability to change print quality without re-ripping. The integrated 4-zone, reversible vacuum table holds media stationary while printing, eliminating the need for cumbersome jigs and extra setup time. The table also has a unique pin registration system for accurate and consistent rigid media placement and full-bleed printing capability eliminates the extra finishing steps of trimming prints.

CET Color has gained the attention of the digital wide-format market by making it possible for small-to-medium size digital service bureaus and sign companies to join the big league of large-format printers with impressive but affordable UV printer and router solutions. From true flatbeds to roll-to-roll, CET Color is focused on supplying you with quality products to accelerate your business. Headquartered in Atlanta, GA, and serving the U.S. and Canadian markets.

Product Overview:

Printer Parts and Description

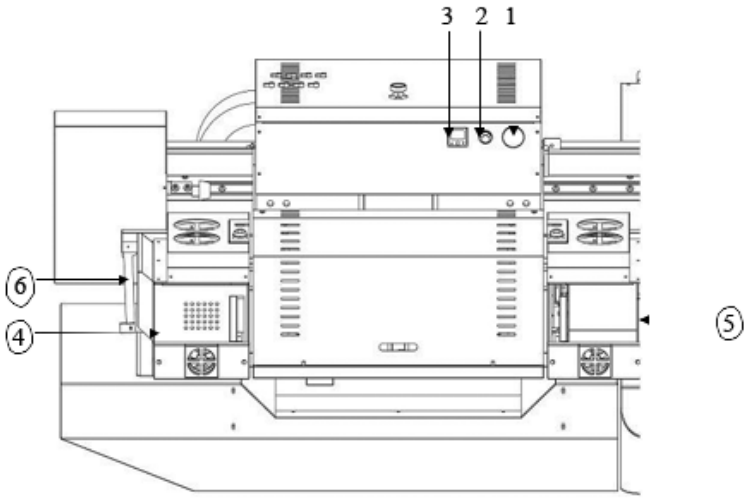
Illustration A



Front View

1. Start Button
2. High Power UV Lamp Button
3. Low Power UV Lamp Button
4. Suction Reversal Lever
6. Registration Pins
7. Left Emergency Stop Button
8. Right Emergency Stop Button
9. Computer Tray
10. Legs

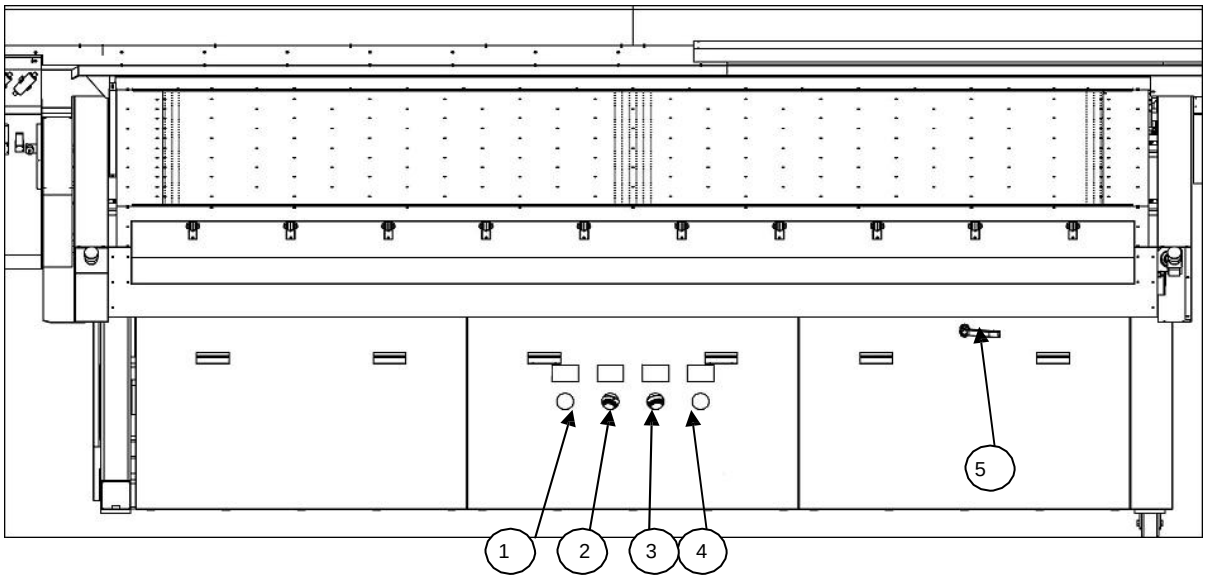
Illustration B



Top View of Carriage

1. Purge Button
2. Pressure Adjustment Valve
3. Negative Pressure Read-Out
4. Left UV Lamp
5. Right UV lamp
6. Crash Detectors

Illustration C



Back View

1. Front-right Vacuum Zone Shut-Off Valve
2. Back-right Vacuum Zone Shut-Off Valve
3. Front-left Vacuum Zone Shut-Off Valve
4. Back-left Vacuum Zone Shut-Off Valve
5. Suction Reverse Knob

Technical Specs

Type No.	CET Color		
Print Head	Ricoh Generation 4 print head		
Head Qty	4-6		
Resolution	720X300,720X900, 720X1200,1440X1200		
Printing Mode	Uni-directional, Bi-directional		
Printing Speed	**6 Pass**	**8 Pass**	**12 Pass**
	30 ㎡/h	22 ㎡/h	15 ㎡/h
Printing Size	8.202 ft × 3.937 ft		
Media Type	Rigid and flexible materials Such as: metal board, glass, wood board, organic glass, ceramic tile, textile , and paper		
Media Thickness	Maximum 3.937”		
Ink Type	environmental UV curing ink (without VOC)		
Special ink type	UV white, UV clear varnish		
Ink Color	C, M, Y, K,White, and Varnish		
Formats	Adobe Postscript Level 3 / .PDF / .JPEG / .TIFF / .EPS / .AI		
Net. Weight	2,645 lb.		
Dimension	4’3” [H] × 6’4” [W] × 15’9” [L]		
Power Consumption	30A (x2)		
Power Supply	220VAC , Single phase, 50 / 60 Hz (x2)		
Environment	Separate working room cleaning and ventilated Temperature：68ºF～86ºF (20ºC～30ºC) Humidity：40% ～ 60% Ventilation: Exhaust fan with 600cfm volume		

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Chapter 1: Safety

1.1 Safety Information

CET COLOR printer uses the following chemical substances

- Various types of printing media
- UV Ink
- Cleaning liquid (UV Flush)

1.2 Solvent and Ink Properties

- Solvent and Ink are flammable.
- Eye contact with the ink and solvent will damage the cornea.
- Contact lens should not be worn when operating printer or when there is no proper ventilation.
- Wear safety glasses and gloves while flushing print heads, ink tube or moving the ink bottles or containers.
- Solvent and ink can be irritating to eyes, throat and skin. Inhaling ink fumes will result in dizziness or other symptoms.

This caution symbol represents danger. If this sign is ignored it may lead to serious injury or damage to the printer.

1.3 Danger of Fire and Explosion

Open flames, heat energy or sparks around the printer can trigger fire and explosion.

- No smoking, pilot lights, open flames, stoves, heaters or halogen lights should be used within 5m of the printer.
- No portable spark-producing equipment (static, electrical or mechanical)

1.4 Anti-ultraviolet radiation

- Wear protective UV glasses and gloves when operating the machine and avoid being too close to UV lights.
- When performing maintenance task UV lights must be shut off and all UV protection doors should be closed.

1.5 Proper Ventilation and Exhaust System

- Before operating printer, make sure the ventilation exhaust system is functioning correctly to avoid accumulation of flammable fumes in the area

1.6 General Safety Information

- Push the emergency stop button immediately when necessary to stop the printer.
- Release the emergency stop button before using the machine again.
- Avoid staring directly into UV light, this is harmful to your eyes.
- Immediately rinse any ink spatter that comes in contact with skin.
- Avoid standing in close proximity of the carriage

Initial setup and installation must be performed by a trained technician. After the printer has been properly installed, please read the user guidelines below to perform any further installation and make changes to configuration as needed.

1.7 Specific space requirement for printer

The designated space for the printer should be cleared and prepared before the printer is set up.

- Recommended working area size: bigger than 24.6 ft (L)X 16.4 ft (W)
- Air humidity: 40％～70％RH
- Air purifier
- Input power higher than 30A/220V; ground voltage less than 3V while printer is running.
-

1.8 Materials and tools needed

1. Powder-free latex gloves
2. Lint-free cloth
3. 99.9% (CH3) 2CHOH
4. Paper towels
5. Allen wrench
6. CET solvent
7. Grease or lithium lubricant
8. Phillips screwdriver
9. Box cutter
10. Plastic syringe
11. High pressure air gun (only for hybrids)

Chapter 2: CET X-Press 500Q controller

2.1 Overview

CET X-Press controller is a simultaneous peripheral operation on-line, better known as spooler software. Our controller allows you the ability to control operational tasks and movements of your printer. The controller consists of three main screens:

1. **Test and calibrations**
    - Control panel
    - Test and calibration printing
    - Color module calibration
    - Bi- direction offset and step calibration
    - Printing configuration

2. **Print mode**
    - Layout
    - Printing mode
    - White and varnish
    - White ink limit control
    - Circular printing
    - Solidification

3. **Control system configuration**
    - Heads temperature
    - Head voltage and pulse width
    - Clean spray
    - UV lamp shutter
    - Other control options
    - Status of ink supply system

4. **CET printer controller**
    - PRT/PRN file
    - Space in between

5. **Carriage height adjustment**
    - Carriage height adjustment
    - Fine adjustment

2.2 testing calibration

Media move reverse

Carriage move back to park position

Media move forward

Carriage move to right

Terminate the movement of carriage

Lift carriage to top

Lower carriage to purge position

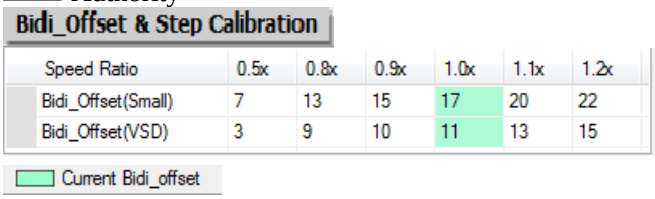
Purge print head - The print head will purge automatically by spraying ink at a frequency. This process will continue for two minutes then close automatically. You can terminate the process by click the button again.

Revise height datum - Click to revise the original point of height sensor. This only needs be to run upon installation or reinstallation of the printer system software.

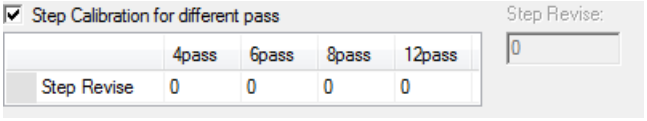
Motor driver reset

System fault diagnosis - The diagnostic program will check the movement system, carriage height adjustment system, raster strip, raster reader, communication of PCB and data transfer system.

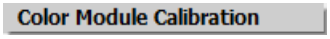
Authority

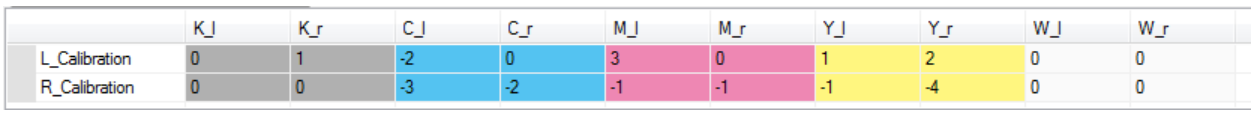


Bi directional setting control panel



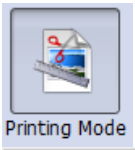
Stepping setting control panel

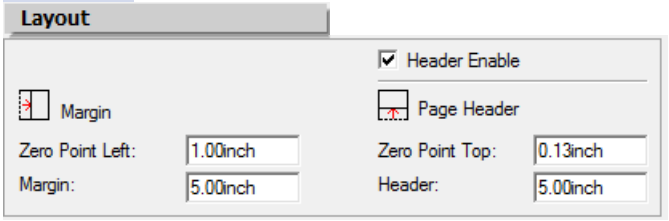




Left and right setting control panel

2.3 Printing Mode

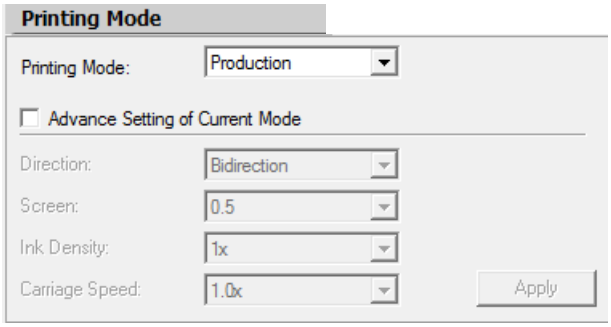




Left & Front edge margin/zero point

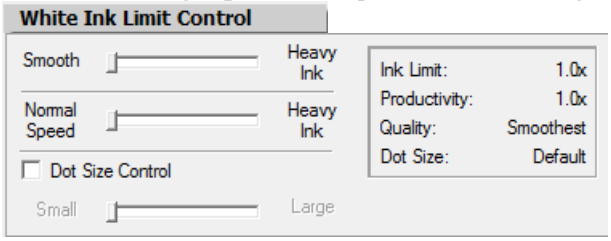
Margin - is the distance from the left side of the bed at which the printer will start to lay down the image.

Header- is the distance from the bottom of the bed at which the printer will start to lay down the image.

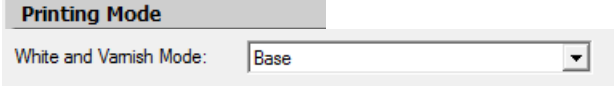


Mode of printing & mode options- You will get different printing quality by choosing different **Printing Modes**, each one has a default parameter. You can change these parameters to define the mode.

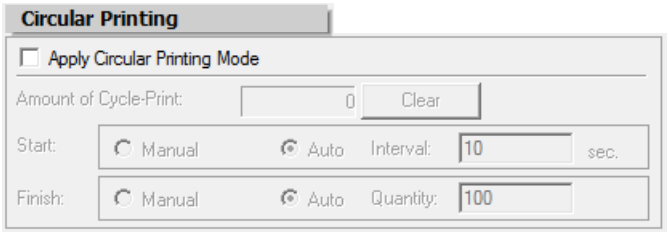
- **Direction** – Bidirectional or Unidirectional.
- **Screen**- layout of dots of each pass. 0.25 is best quality @ the most number of passes. 1.0 poor quality @ the least number of passes.
- **Ink Density** - increases the ink limit of each color through multiple pass number.
- **Carriage speed** -The speed level of carriage when printing. Different speed levels will use different Bidi_Offset.



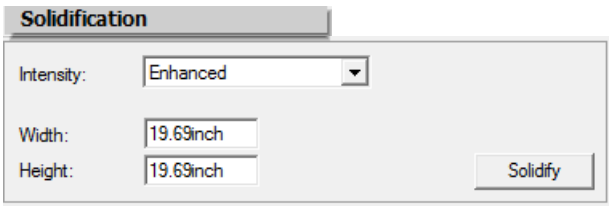
White ink limits



White ink coverage

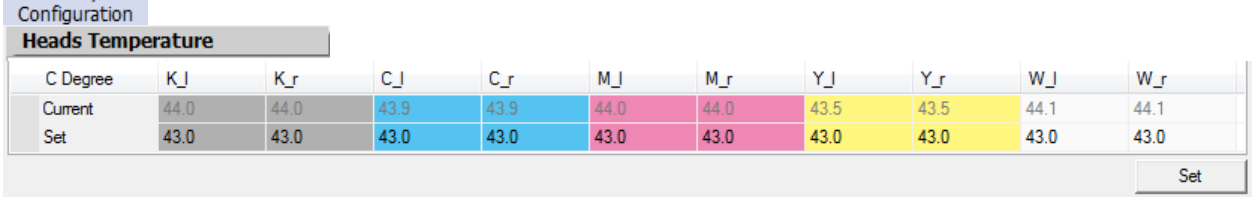


Time in between prints & number of copies

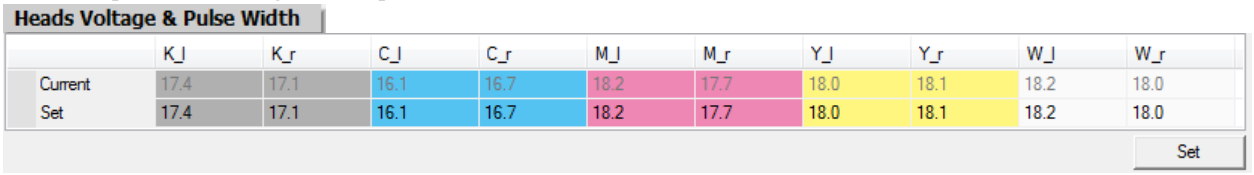


Varnish coverage

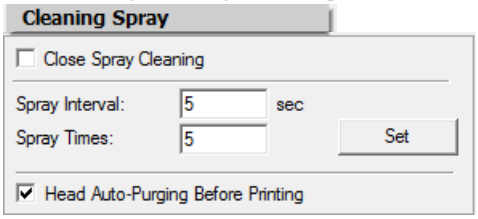
2.4 Control System Configuration



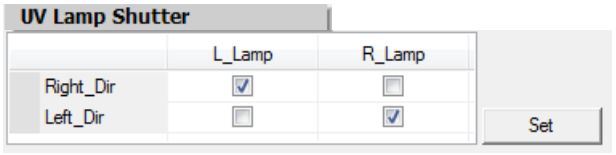
Head temperature setting control panel



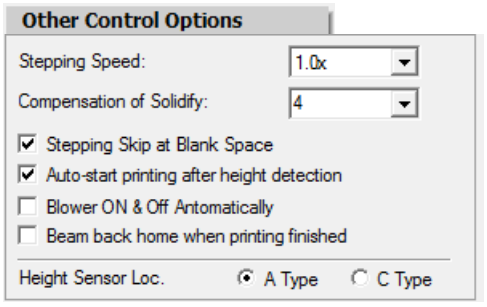
Head voltage setting control panel



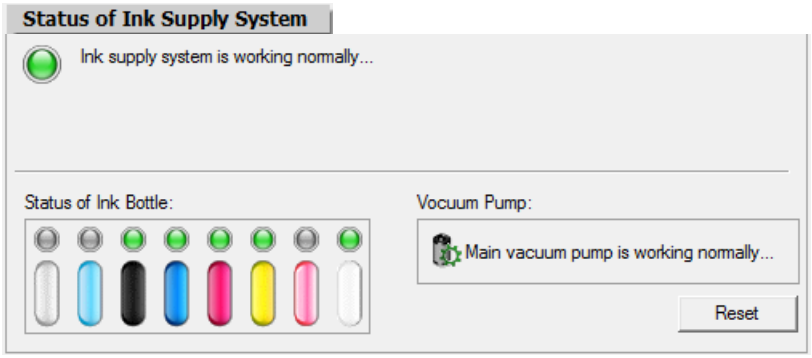
Cleaning spray setting control panel



UV actuation setting control panel

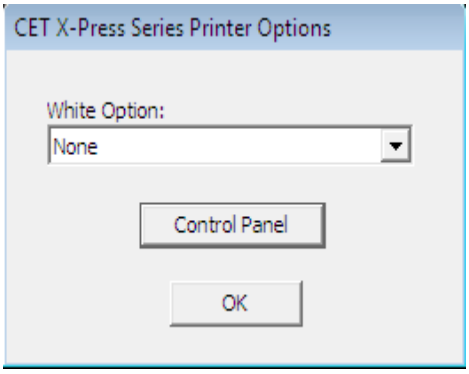


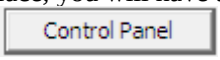
Additional settings

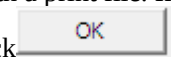


Status of the ink system

2.5 CET Printer controller



Interface between calibration settings & CET printer controller. With the interface, you will have an option of white coverage with a print file. If you want to go into the calibration settings click 

when printing a ripped file click 

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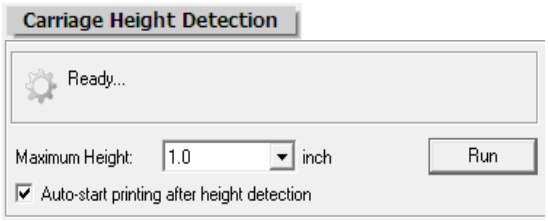
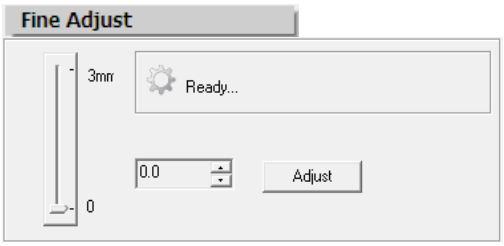
Open file to print

Device



Automatic height detection. It is important to always run "Carriage height detection" when you place new media on the print area. You are now ready to print



Fine adjustment

2.6 Printer motion axis

Y axis - While standing in front of your control panel the Y axis is from front to back

- Motor servo drivers (left & right)
- Encoder motors (left & right)

X axis - While standing in front of your control panel the X axis is from left to right

- Motor servo driver
- Encoder motor

Z axis – Is up and down of the head carriage

- Motor driver
- Driver motor
- Potentiometer

Chapter 3: Basic operations of X-Press 500Q

This chapter will introduce how to operate the X-Press 500Q printer. It consists of 3 sections:

- How to turn on the printer.
- How to open job settings
- How to finish a print job.
- How to switch the printer off.

3.1 How to turn on the printer

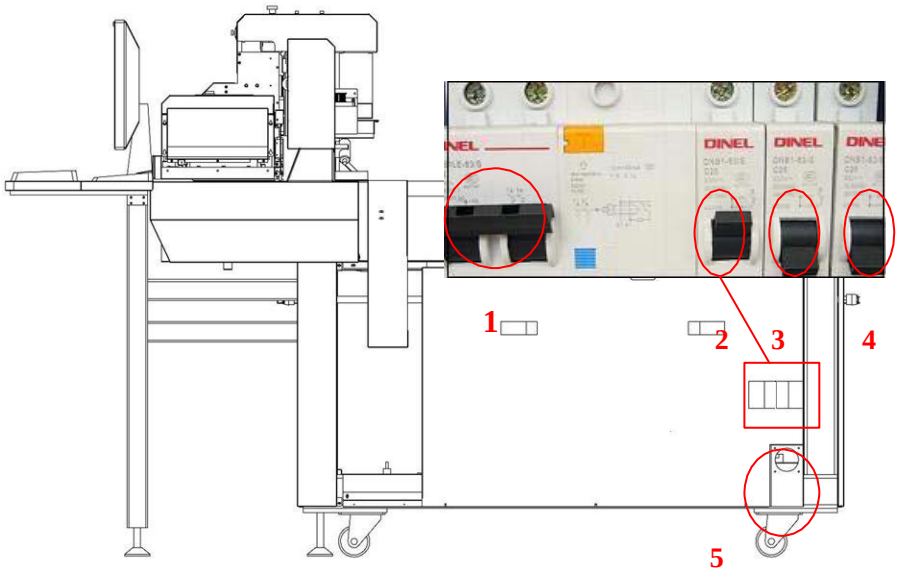
Assistance from a trained technician may be necessary if you are handling this printer for the first time.

Follow the Steps below:

Step 1: Connect the main power⑤ (as indicated in below illustration), switch the main breaker① ON, and switch the system power breaker② ON.

Important: Leave the printer on if it is to be used daily. Turn the printer off if it is not going to be used for 2 or more days.

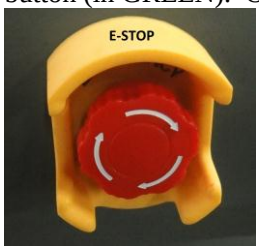
Step 2: Turn UV lamp breaker③ ON, Turn suction breaker④ ON.



Starting your CET Color printer is an important task that needs to be performed every day.

Step 2 Turn on the computer

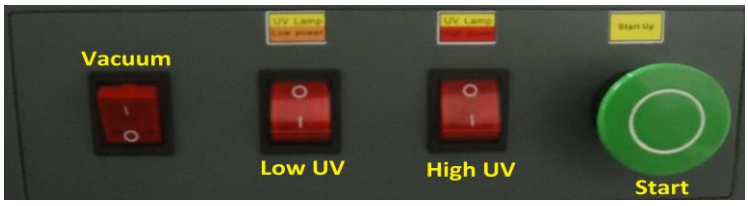
Step 4 Check to see that all emergency stop buttons (total 4 pcs, in RED) are **NOT** engaged. Next, press the **START** button (in GREEN). Once the printer is turned on, its system will start communicating with the computer.



Located on all four comers

Step 5 Ensure that the negative pressure is displayed and reads -3.5. (Note: there are slight variations between different models.) You can use the Pressure Adjustment valve to achieve normal negative pressure.

Step 6 Turn on **Suction Switch**. Use the **Suction Reversal Lever** to suction position.



Step 7 Load paper and run a **Nozzle Test**. Compare test results with previously printed results to see if there are any new nozzles lines missing. If so, you will need to purge the print heads to recover it immediately.

Step 8 Let your machine drip at -1.5 for 15 minutes while setting your spray cleaning to 1 second interval with 25 pulses.

Step 9 Reset your negative pressure to -3.7 and close the spray cleaning.

Step 10 Purges and Wipe your print heads with a lint free cloth.

Step 11 On the Testing and calibration page, press the purge print head button (the one with the rain drop icon). It will run for 2 minutes and shut off.

Step 12 Run your nozzle test.

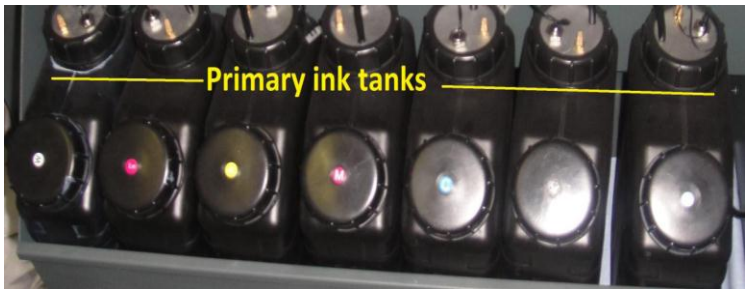
Step 13 Repeat steps 8 to 12 until there are no missing nozzles

3.2 How to load ink into print-head

The most important part in the process of loading ink into print-head is to avoid any air bubbles. Any presence of air bubbles in print-head will results in uneven ink coverage

Follow the steps below:

Step 1 Fill Ink tanks.
Simply open ink reservoirs (Primary Ink Tanks) and pour in ink out of a new bottle.



Step 2 Flush print heads.

Step 3 Turn printer on.

Step 4 Open CET print controller. Go to the control panel. Turn off cleaning. Ink pumps will time out when lines are first being filled. A three beep audible tone will be heard. In the **control systems and configurations** section, under **Status of ink supply system** there is a **Reset** button. Continue to hit **Reset** until ink pumps stop timing out. At that point all ink lines and secondary tanks are full.

Step 5 Adjust negative pressure to about -2.0 kPa.

Step 6 Open sub tank valves for one print head. Purge solvent and air bubbles out of vent tube. To do this, remove cap from vent tube and point tube downward so that waste falls into waste tray. Press the ink purge button several times, holding it down for a few seconds and pausing for a several seconds in between. Continue to do this until you see no more solvent or air bubbles coming out of the vent tube. Once you see a steady flow of ink coming out of the vent tube, replace cap on the vent tube and close sub tank valves.

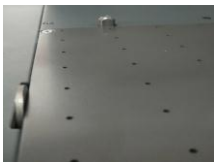
Attention: Alarm (double beep) will sound when you spend excessive time purging the ink. Please make sure the purging pressure of the ink does not go too high and keep the purging time to a minimum.

Step 7 Repeat previous step with every other print head.

Step 8 Open all sub tank valves and turn on **Spray cleaning.** Drip print heads until you achieve an adequate nozzle test.

3.3 How to load media

- To load media with. Lift registration pins. load media and align to registration pin.

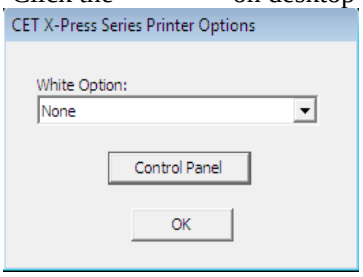


- To unload media: Turn off vacuum and unload media
- To load media with vacuum on, use vacuum reversal lever to reverse suction to blow. Lift registration pins. Load media and align to registration pins. Change blow back lever to suction. Lower registration pins.

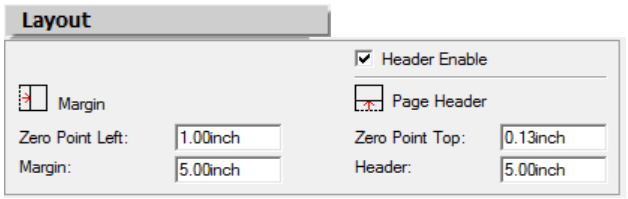
- To unload media: reverse suction to blow. Unload media.

3.4 How to open job setting

Click the on desktop

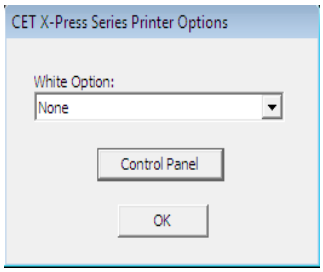


Click OK once in "parameter settings" Click Printing Mode

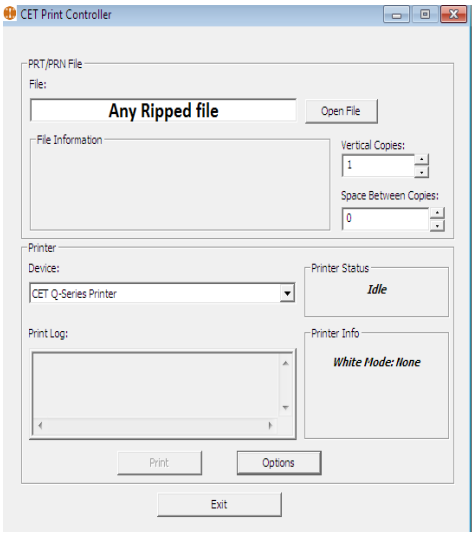


When you want to start your printing jobs at a fix point, please keep the "Header Enable" checked, f unchecked, the printing will begin from the finish position of last print in Y axis direction

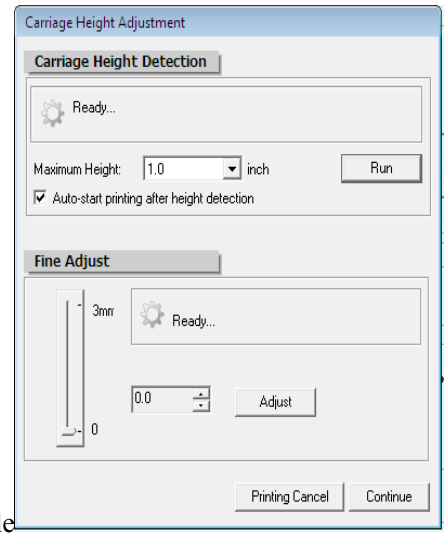
Click OK at the bottom of the of the printing mode screen.



Click OK



Click "Open file



A rule to follow: Always run "Carriage height detection" when you place new media on the print area. You are now ready to print

3.5 How to Print

Printing Mode: Select the desired printing mode.

There are 4 printing modes: **Draft, Production, High Quality, and Heavy Ink.**

	Draft	Production	High Quality	Heavy Ink
Direction	Bi-directional	Bi-directional	Uni-directional	Uni-directional
Screen	1.0	0.5	0.33	0.25
Ink Density	1X	1X	1X	2X

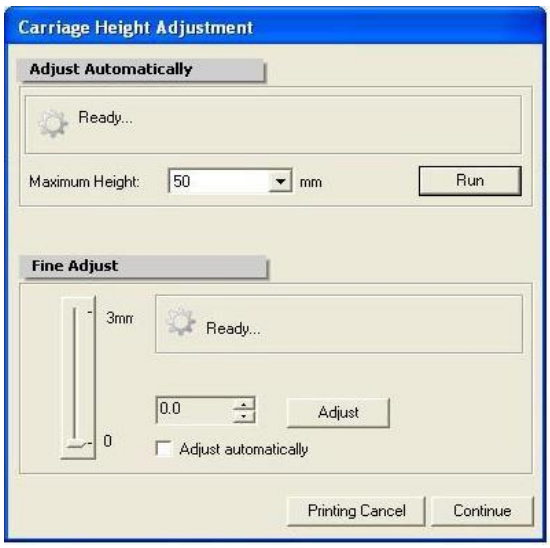
These are the default settings

- **Draft mode** is fast speed Low quality.
- **Production mode** is medium speed medium quality.
- **High quality mode** is low speed high quality.
- **Heavy ink mode** is double strike.

These default parameters can also be changed in **Advance setting.**

- **Direction:** Speed of Bi-directional is 2 times faster than Uni-directional but, the printing quality of Uni-directional is superior.
- **Screening:** Displays time needed to finish printing passes. Lower number equals more passes and it will also result in better quality of print.
- **Ink Density:** The normal ink density is 1X. As ink density increases by 1x, the printing time will be doubled.
- **Solidification:** If varnish printing is needed, users will need to setup Solidification.

Click PRINT button to see the Carriage Height Adjustment window as below:



Important: As you change the printing media, it is important to run "**Adjust automatically"** before you click **Continue**. If the media is not smooth and flat, it is strongly advised that you use the **Fine Adjust** function to increase the height by about 1-3mm.

Click **Continue** to start printing.

3.6 How to turn the printer off

If all the printing has been completed, you can switch the printer off.

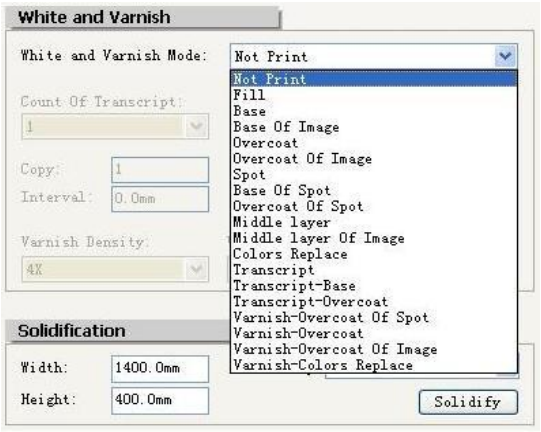
Step 1 Prepare media for a Nozzle Test. Compare it with the previously printed nozzle test to check for blocked nozzles. If blocked, you will need to recover it immediately.

Step 2 Turn off UV lamp, Fans and computer.

3.7 White and Varnish Printing

1. White and varnish printing mode

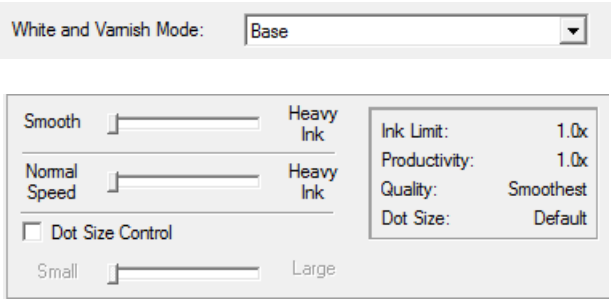
Run RIP → double click X-PRESS → click Setting →click Printing Mode, then enter into the window of white and varnish setting. (see below):



Description of white and varnish mode:

White and varnish mode	Description
Not Print	If the printer is not equipped with white or varnish, select “not print”.
Fill	Fill the empty area with white
Base	Fill the whole printing area with white as the base.
Base of Image	Fill the image area with white as the base.
Overcoat	Cover the whole area with white as the top layer.
Overcoat of Image	Cover the image area with white as the top layer.
Spot	Print white as a spot color.
Base of Spot	Print white as a spot color as the base of print image area.
Overcoat of Spot	Print white as a spot color as the top layer of image.
Middle Layer	“Image-white-image” 3 layer printing in the whole area. Mainly used on transparent material.
Middle Layer of Image	“Image-white-image” 3 layer printing in the image area only. Mainly used on transparent material.
Colors Replace	All colors will be replaced by white. The image output in white only.
Transcript	Advance function. (Please consult technician)
Transcript Base	Advance function. (Please consult technician)
Transcript-overcoat	Advance function. (Please consult technician)
Varnish-Overcoat of Spot	Cover the whole area with varnish.
Varnish-Overcoat	Cover the spot color area with varnish
Varnish- Overcoat of Image	Cover the image area with varnish
Varnish-color replacement	A color will be replaced by varnish.

2. White Printing Operation

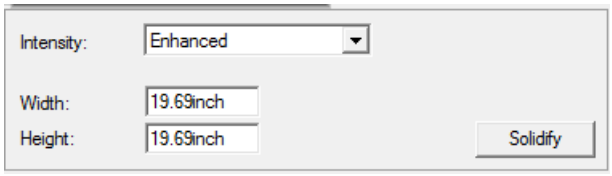


3. Varnish Printing

The most common used mode for varnish printing is Varnish-color replacement.

Follow the steps below:

Step 1 Finish printing.
Step 2 Close UV lamp.
Step 3 Select varnish-color replacement, select C, M, Y, K 4 colors.
Step 4 Setup the printing mode as **Draft Mode**, and choose resolution **600X600DPI**.
Step 5 Start printing with UV lamps closed. (Repeat several times for a three-dimensional effect.)
Step 6 Open UV lamps after completing the **Varnish Printing**.
Step 7 Select the solidification parameters. (see below):



Intensity options**:** Slight, Middle, and High.
Width and Height: the solidification size should slightly overprint on the varnish layer.

Step 8: When the varnish printing has finished, click **Solidify** to start setting the ink.

Important: The solidify printing should be done after the varnish lay down has been finished and completely dried.

Chapter 4: Daily Printer Maintenance

This chapter will introduce how to maintain the printer and keep it in good working condition and extend its life. It includes 2 sections:

4.1. Routine maintenance

1. Maintenance schedule of the printer.

In order to keep the printer in good working condition, it needs to be cleaned thoroughly and maintained on regular basis.

Change Ink filters every 13 liters (per print head)

Change Lamps every 500 Hours or as needed

- **Daily maintenance items:** Wipe dust from the bed, clean the quartz glass in UV lamp housings, clean the bottom of the jet plate, wipe print heads with lint free cloth and print **Nozzle Test**.
- **Weekly maintenance items:** Remove dust from all fans, empty the waste tray, wipe heads with lint free cloth saturated in solvent.
- **Monthly maintenance items:** Double check Bi-Directional offsets, lubricate rail with white lithium grease, clean inside of lamp housings with isopropyl alcohol, clean any ink or dust residue on height detection sensor, replace UV lamp filters, and visually inspect wires for wear.

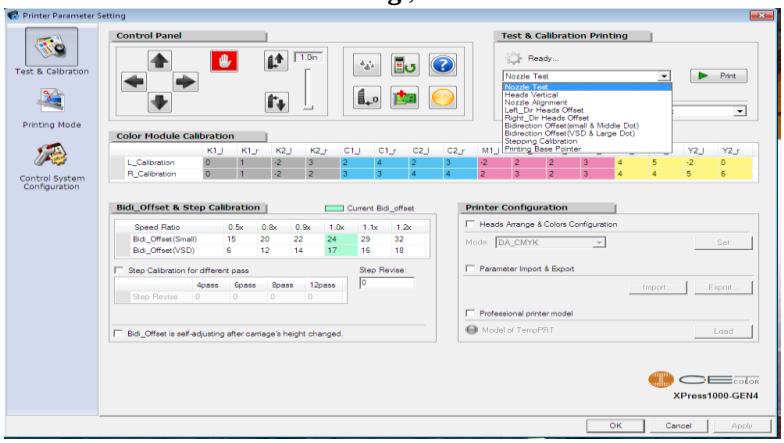
NOTE: It would be helpful to print and attach this maintenance wear page to your computer desk. The first thing to do each day is to maintain the printer according to the list and record in the log daily.

4.2. How to print and analyze the nozzle test stripes

In order to protect the print heads, you need to clear any nozzle problems immediately. Otherwise, it may cause permanent nozzle damage. As a result, the first item on daily maintenance should be printing **Nozzle Test** to verify the status of print head.

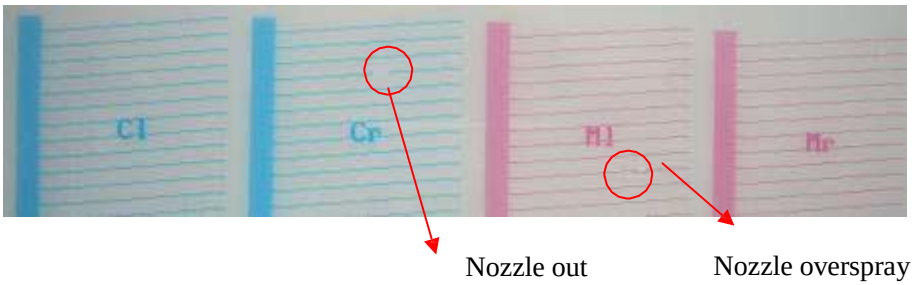
1. How to print the nozzle test

Double click → click **setting** , then choose **Test & Calibration**, as shown below:



Choose **Nozzle Test**, then click **Print**, after finishing height measurement, printing will start automatically. Nozzle test results will print as shown below:

Illustration



2. Analysis of Nozzle Test

Using a loop, analyze the **Nozzle Test**. Each short line corresponds to each nozzle orifice. Check the lines to verify the status of each nozzle. Usually, the most common nozzle problems will include the following:

- **Nozzle out:** As shown in above illustration, the line in the circle is *missing*. This indicates that the corresponding nozzle is blocked.
- **Nozzle overspray:** as shown in above illustration, the line is *not horizontal*. This indicates possible debris on the nozzle surface.
- **Nozzle spray delay**: one line is not connected with its neighboring line in the horizontal direction. This indicates that there may be debris on the nozzle surface

3. Recovering nozzles by dripping print heads

Step 1 Turn the negative pressure down to about -2.0 kPa.

Step 2 If you wish to drip only certain colors, you must

- Turn off the cleaning spray.
- Close the sub tank valves for the colors you do not wish to drip.

NOTE You may wish to drip anywhere from a few minutes to an hour depending on how many nozzles are missing.

Step 3 To check print heads, turn pressure back up to normal operating value, wipe heads

Step 4 Print a nozzle test.

NOTE: If some nozzles remain out, repeat step 1 to step 3 until sufficient nozzles are recovered.

4. Solutions to fix misfiring nozzles.

1. Reinforced spraying

This solution is suitable in most cases. See below for recommended steps:

Step 1 Lower the negative pressure to wet the head surface.

Step 2 Click Purge print head

Step 3 Wait 15 minutes then recover the normal negative pressure (-3.5+). Clean head surface with lint-free cloth and check the result. If the problem still persists, repeat the step 1～ 3.

5. Ink pressure at lower negative pressure.

Follow the steps below:

Step 1 Make sure negative pressure is normal then ensures the sub-tank valves connected with the targeted heads are completely open

Step 2 Lower the negative pressure to -2.5KP, push the **Purge** button with a force of about 5-10Kpa.

Step 3 Recover the normal negative pressure. Clean head surface with non-woven fabric, and check the spraying results. If the problem persists, repeat the step 1～ 3.

6. Ink pressure at higher negative pressure.

If lowering the negative pressure **did not** solve the problem, please try increasing the negative pressure.

Follow the Steps below:

Step 1 Make sure the negative pressure is – 3.5 +

Step 2 Lower the negative pressure to -2.5KP, push the ink load button with a force (about 30Kpa)

Step 3 Recover the normal negative pressure. Clean head surface with lint-free cloth, and check the spraying results. If the problem persists, repeat the step 1～ 3.

Chapter 5 Error handling and troubleshooting

This chapter will mainly cover the errors which may occur during printing and the relevant solutions to resolve the issues.

5.1. Equipped alarms and solutions

The printer CET XPRESS is equipped with 6 different alarms. Below is the description and relevant solutions:

Alarms	Description	Solution
[1 beep]	The main vacuum pump is damaged, and the spare pump Was engaged.	Replace the main vacuum pump immediately
[2 beeps]	Negative pressure is out of the limited range -3.4 to – 4.0. The power supply for vacuum pump was cut off by system automatically.	It is normal to have the pressure rise above -.20 when you push the Purge button; the negative pressure may exceed -4.0 when it stops printing. Use the pressure adjustment regulator to make any changes.
[3 beeps]	The working duration of the ink pump is too long and exceeded the limited time.	There are 2 possible causes: 1. Ink is empty. 2. Ink pump is damaged. Find the actual cause and replace ink or ink pump accordingly.
[4 beeps]	Communication errors	If the alarm rings only once and stops, it is normal. But if it rings continuously, there may be a problem with a communication cable or headboard. Please contact tech support.
[5 beeps]	Ink overflowing.	The liquid level sensor failure or improper handling of ink tube might cause the ink overflow.
[6 beeps]	Ink bottle low	Check ink level in main ink tanks. Low level ink = Refill inks Normal level of ink = Unplug ink tank from power

5.2. Negative pressure system errors

1. Unstable Negative Pressure System

Solution:

- Check for leakage in the air tube.
- Check the duration of use of the negative pressure pump.

2. The negative pressure instrument displays zero

Solution:

When this occurs, ink will drip from the print head. First, close the sub-tank valves to stop ink from dripping. Next turn power off and investigate the cause of the problem.

- Broken Vacuum pump: Replace the vacuum pump immediately.
- Detached Air Tube: Reconnect the air tube.

5.3. Ink system Errors

The most common ink system errors are caused by ink overflowing and dripping.

1. How to resolve ink overflow

Step 1 Overflow may be caused by damaged **liquid level sensor**, or mishandling of ink tube while removing.
Step 2 Close all Sub-tank valves. Turn printer off.
Step 3 Open the ink tube lid at the bottom of negative pressure tank and remove ink.
Step 4 Open the top cover of negative pressure tank and clean thoroughly.
Step 5 Turn printer on. Open the Sub-tank valves with ink overflow. Push the ink purge button to get rid of the excess ink.
Step 6 Replace ink clogged air tube being careful not to damage the sealed tapered surface of the connector.
Step7 Open all Sub-tank valves and recover the normal negative pressure.

2. How to correct ink dripping

Because ink dripping is closely related to negative pressure, please check the negative pressure display instrument before proceeding.

- **When the negative pressure is lower than normal**

Solutions:
Step1 Close all sub tank valves, and switch off the printer.
Step2 Inspect air tubes for leakage.

Step 3 If no leakage; check usage time of vacuum pump.

- **When the negative pressure displays zero**

Solution:

Step 1 When this happens, ink will drip from the print head. The first step is to close the Sub-tank valves to stop the ink flow. Turn the power off and find the cause of the problem.

Step 2 Check for damaged vacuum pump. If damaged, replace the vacuum pump immediately.

Step 3 If the vacuum pump is not damaged, check air tube which may be disconnected.

5.4 Carriage collision or print head scrapes media

1. **How to avoid carriage collision**

- When printing on heat sensitive media or media that is not rigid, it is advised that you run the **"Fine Adjust"** function (As shown in illustration 1) or increase the height of UV lamp case manually (As shown in illustration 2)

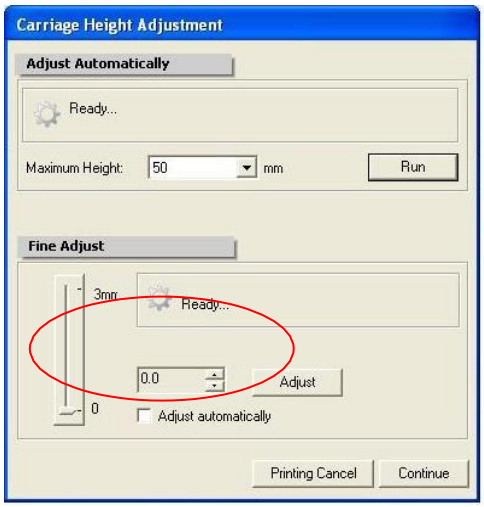


Illustration 1

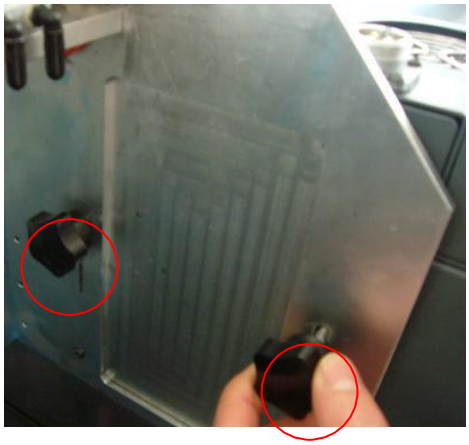


Illustration 2

- If the media is heat sensitive and media size is very small, it is essential to use some type of thin material to cover the empty area of printing table to increase the suction and reduce the distortion of the printing media.
- Run **"Adjust Automatically"** each time a different media is loaded.
- The probe of height measurement has some distance from the base point. If the media is small, the probe cannot sense the media. In order to avoid this error, it is crucial to load the media in the area where the probe can reach first. After the probe has taken the measurement, you can move the media to your desired printing area.

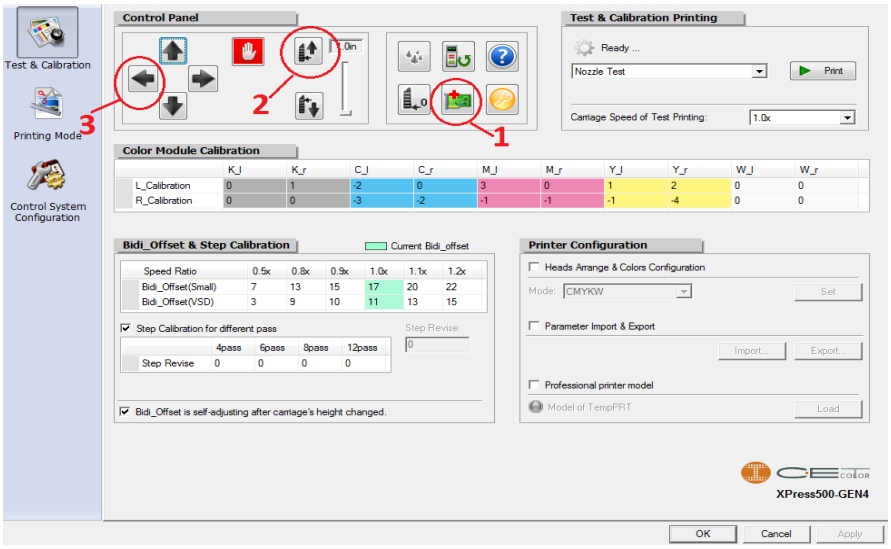
2. How to deal with carriage collision

In most cases when carriage collision occurs, crash sensors will collide with media first. The system should signal an alarm and printing will stop immediately. This collision will not damage print head. When this occurs, follow the steps below:

Step 1 Go into the **Test & Calibration** window, and click the **RESET** icon (as shown in illustration NO.1)

Step 2 Remove the media. If necessary, click the **UP** icon (as showed by below illustration No. 2) to lift the carriage before removing the media.

Step 3 Click **Left Arrow** icon (as showed by below illustration No. 3) to bring the carriage to the original position.



Step 4: start printing.

Important: If the print head touches the media during collision, it is strongly advised that you perform a Nozzle Test immediately to check for any damages. If the head was damaged, Replace immediately.

5.5 Carriage running errors

1. Carriage does not respond or stops suddenly

In most cases, the system will give an error message when carriage is functioning incorrectly. Check error code for accurate diagnostic.

"**EIPNFT**" Power supply is broken
"**EOUCUR**" Current draw is too large
"**EENCOP**" Encoder cables are broken
"**EESTOP**" Emergency stop due to collision
"**P-B-B**" Crash sensor tripped

After above causes have been resolved, the carriage operation will be restored.

2. Pause of carriage at both ends of the printer is excessively long.

A. Image file may be too big to RIP in a short time. In order to avoid this problem, choose "**FULL RIP**". With this option, the image file will start printing ***after*** RIP has finished processing the file 100%.

B. The system may have been affected by a computer **virus**. Run anti-virus software.

5.6 Height measurement system error

If the measured height is different checks display on the data setting in software and check the spring switch in height measurement probe. Distance between the measurement probe and media should be 2mm.

To change the measurement, unload the right UV lamp case, and the height measurement probe (will appear). Make adjustment accordingly.

5.7 Quality Control

Problem	Solution
Horizontal stripe on print	• Adjust the horizontal alignment. • Adjust the Left_Dir & Right_Dir offset
Prints appear to be faint, with not enough density.	• Check the distance between print head and media. Usually it should be set at 2mm. If the print head is set too far from the media, it will print with less density. • Check the surface of print head. Clean it thoroughly. • Adjust the alignment
Color is printing too dark or too light.	• Go to: **Job setup Advanced setup Color adjustment,** and adjust the **total ink limit** about 10-30%
Color is not bright enough.	• Adjust the Left_Dir & Right_Dir offset • Go to: **Job setup Advanced Setup Color Adjustment,** and adjust the **brightness**.
Noticeable change in color from top to bottom, or missing / irregular lines on image.	• Check the vertical aligning adjustment. • Change diffusing method between FX-2 and J-STOCH.
The margin line is not straight	Adjust alignment.

5.8 Errors Messages

Sometimes the software might generate an error report. Usually, clicking “confirm” should solve the problem. If the error persists, please copy the error report and send it todealer,tech@cetcolor.com and call 404-505-1890.

The 2 most common error messages:

“**Loading picture or nesting picture failed**”

Solution:

Try to reloading image.

“**The picture can not be RIP correctly.**”

Solution:

Change “save the image” to one of these formats: EPS, PSD, TIFF, or PDF.

5.9 Symptoms

Symptom: (Fuzzy nozzle test)

- Voltage is low
- Temperature is low
- Carriage to media gap is more than 5mm

Symptom: (Ink starvation)

- Excessive printhead voltage
- Secondary ink filter clogging
- Air in the ink lines in between the secondary ink tank and print head
- Low printhead/ink temperature

Symptom: (Ink starvation or overspray Ricoh heads and 50 series)

- Set temp to 43(white 45)
- Start with 12 volts to print heads then increase
- Print testing at .8 or .9 speed for the nozzle test

It comes down to temp voltage and last chance filters

- Check incoming voltages- needs to have 220v minimum
- Purge from vent tube, and observe strength of supply of ink.
- purge from below secondary ink filter to check filters for clogs
- Remove filter and purge from secondary ink tank
- Flush heads

Symptom: (Bad stream from secondary ink tank, you may need to clean secondary ink tank.)

- Make sure you have new secondary Ink filters.
- Raise negative pressure
- Check for loose ink system fittings
- Check for the position of the sub tank valve
- Check for ink flow by purging the printhead
- Check ink supply tubes from the sub tank to the print heads.

Symptom: (Missing nozzle not firing during cleaning/ at home station with X-Press 500

- Check green LED on top of heads
- Swap connections to test cable to confirm its power board, cable or connect board
- Check connection to power board (white cables)

If all heads are not jetting, problem it could be a heater board (rectifier) or radial transformer

Symptom: (negative pressure fluctuates)

- Ink in the negative pressure lines and verify it is lit
- Ink in the overflow tank
- failing negative pressure pump
- Under voltage on the negative pressure pump

Symptom: (not able to print nozzle test)

- Power board failure (for spectra heads, green LED on the printhead connection board is an Indicator of correct functioning)
- Print head control board channel failure (if there is a green LED on the printhead connection Board)
- Print head failure
- Print head data cable failure
- Print head connection board failure
-

Symptom: (25% nozzles missing at nozzle test)

- Air trapped in the ink lines or pockets on the last chance filters
- Clogged particles on the printheads
- Insufficient ink prime

Symptom: (Banding Caused by missing nozzles)

- Drip print heads
- Clean print heads
- Purge print heads

Symptom: (Glossy banding- see gloss then no gloss)

- UV shutters not even
- Only 1 UV lamp curing
- Bulbs are weak
- Glass on UV lamp dirty

Symptom: (Light dark banding- color shift/ dark color then light color)

- Stepping

Symptom: (Vertical Banding)

- Belt tension

Symptom: (Carriage does not come down)

- There is a screw that mounts on the Z-lift that may cause the circuit to stop
- Screw may need to be adjusted
- Also you may observe metal shavings that will indicate this screw is rubbing against the carriage

Symptom: (Carriage assembly begins printing then stops in the middle of platform)

- Raster strip reader failure
- Raster strip reader misalignment with

Symptom: (Device busy, check raster strip location plate)

Avoid updating driver *if you have to physically remove the TE3000 file from the System 32 folder.*

- Re-seat PCI card in another slot
  data is not fully transmitted from PCI card to head board
- Head board could be faulty
- INI file in printer file---slide mode must be set to 4

Symptom: (Green LED not lit on print head while printing)

- Power board

Symptom: (Ink drops on print)

- Check for lint under carriage
- Check for leaks on print head
- Check "**Y**" connections on print head tubing
- Check sub tank connections

Ink related issues

1. Print nozzle test
2. Make sure voltages are set and are being read.
3. Check to see if secondary ink tank is warm
4. If not warm, take a look at the heater board (2LED//120 V and heater)
5. Ink not curing---bulbs to weak- bulbs last 500 hours

Symptom: (Splitter has error)

- Printing with white
- Printing does not work at .75 screen- try 1.0, .5 .33

Unsuccessful ACK

- Head board
- PCI card

Symptom: (Printer returns and unsuccessful ACK, printer status fails)

- External Device board fail
- External Device to printhead board cable fail
- PCI Card failed

Symptom: (UV lamps will not power on)

- UV power cable failure
- UV bulbs are overheating (check for functionality of fans and UV filters)
- UV power supply breaker failure
- UV bulb failure (swap UV bulbs in between lamps to verify)
- Igniter failure

Weekend Shut Down Procedures

At the end of the work week, machine should bet set to idle over the weekend.

Step 1-Turn off Sub Breaker for Suction (the far right Sub breaker)

Step 2-Turn off Sub Breaker for UV system (the middle Sub breaker)

Step 3- Verify that your negative pressure is set to above 3.2 and below 4.2

Step 4- Leave on the System sub breaker (the left Sub breaker)

Step 5- Leave on the Main breaker

NOTE: Make *sure your computer is set to never 'go to sleep' (You can do this by going to the control panel, power options and selecting "never sleep")*

These simple procedures will ensure that your negative pressure will remain constant as well as your temperatures and voltages. Your printer should be in working condition when you return.