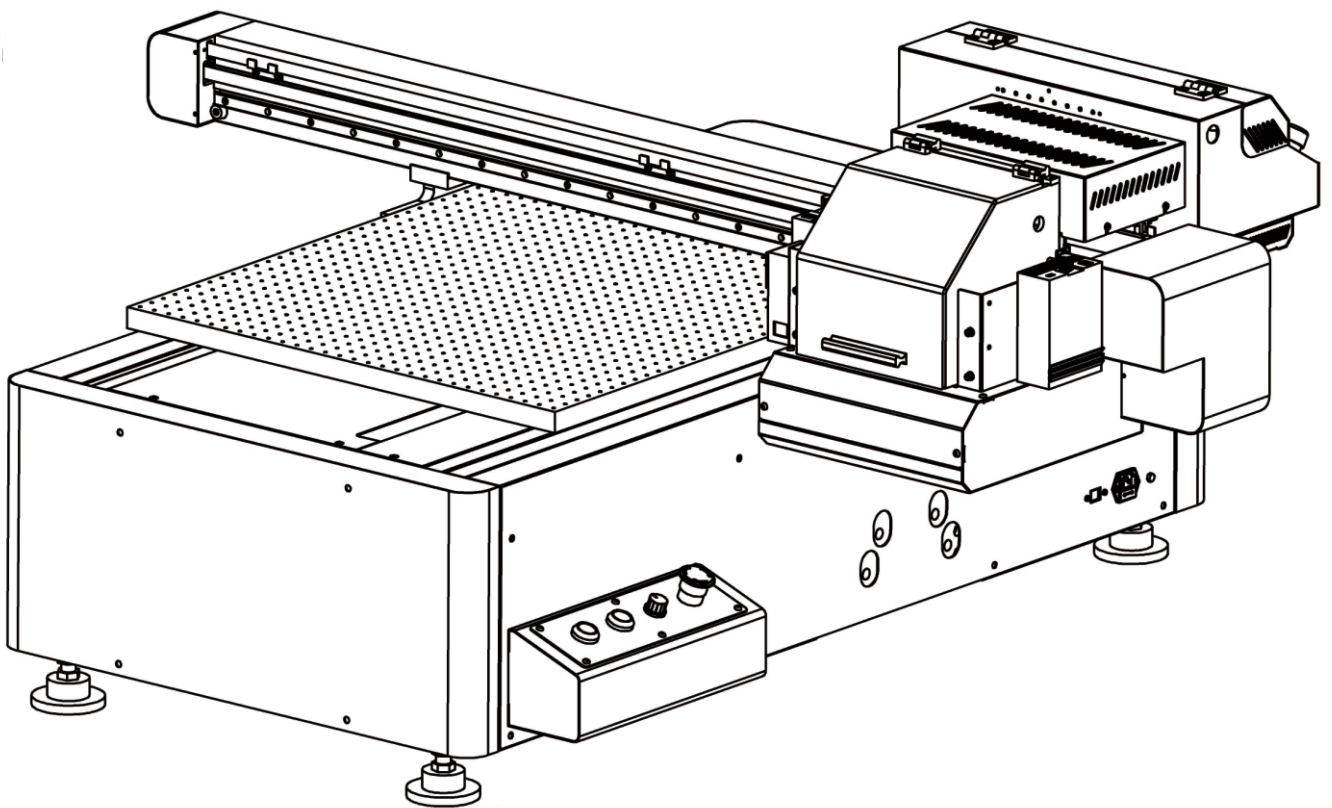# UV6090 FLATBED PRINTER INSTRUCTION MANUAL

Preface

First of all, we hereby extend sincere thanks to our dear customers for purchasing UV6090 flatbed printer.
UV curable ink (LED UV ink) is adopted for application of UV6090 flatbed printer.
Reading this instruction manual beforehand could make the printer in your hand to be applied most effectively.

About this manual

- This manual contains operations and maintenance for UV6090 flatbed printer.
- Before printer applied, please carefully read and understand contents herein contained; in addition, please store this manual at a place available for reading anytime.
- Please make sure to give this manual to operator for this printer.
- For your easier understanding, we elaborately prepare this manual, please feel free to contact with local dealer or our company if any question.
- Description herein contained is subject to modification without noticing for correction. We hereby beg for your kind forgiveness.

Content

Detailed instructions to this printer
Installation site

• Before installation, make sure to reserve enough space.
• Printer dimension and easy operation must be taken into consideration.
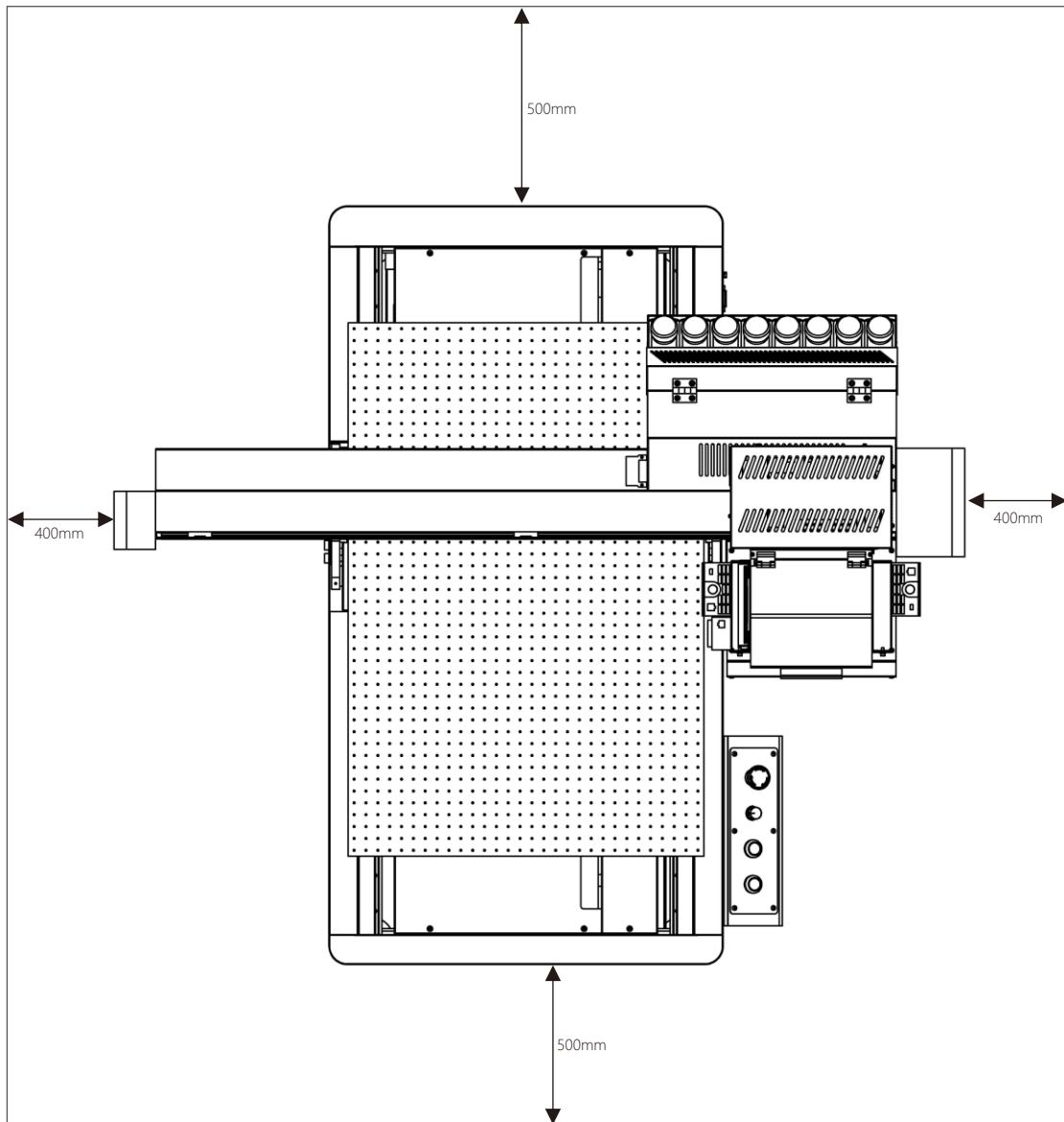
Debugging operations

Printing operation flow

⚠ CAUTION • The printer must be installed in accordance with this page operation procedures completed;

Printer installation

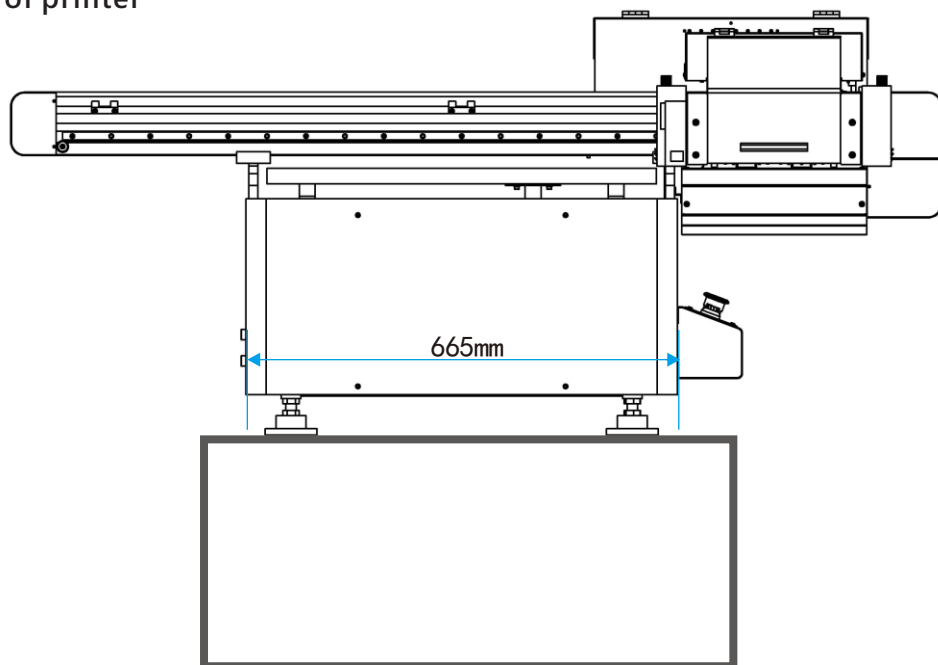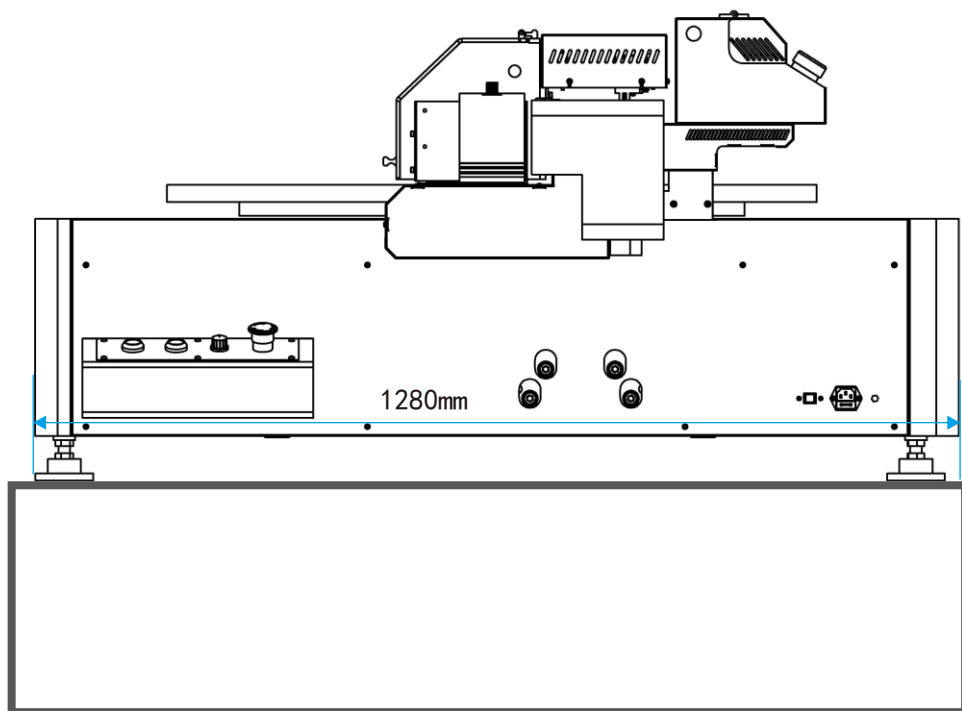Take the printer as well as accessories out of wooden box, and place the printer on workbench. Please make sure the workbench is firm and well fixed.

Front face of printer

665mm

Side face of printer

1280mm

Remove anchor screw

· Anchor screws at left and right side of the printer must be removed.
· If the screws are not removed, the printer may get damaged, or even can not work properly.
· If the machine needs to be transported, secure the left and right sides with screws again.
· There are problems in the process of releasing and stopping transportation.

Right side of printer

Handling location

Remove 4 screws using a hexagonal wrench in 8 mm

Left side of printer

Remove 4 screws using a hexagonal wrench in 8 mm
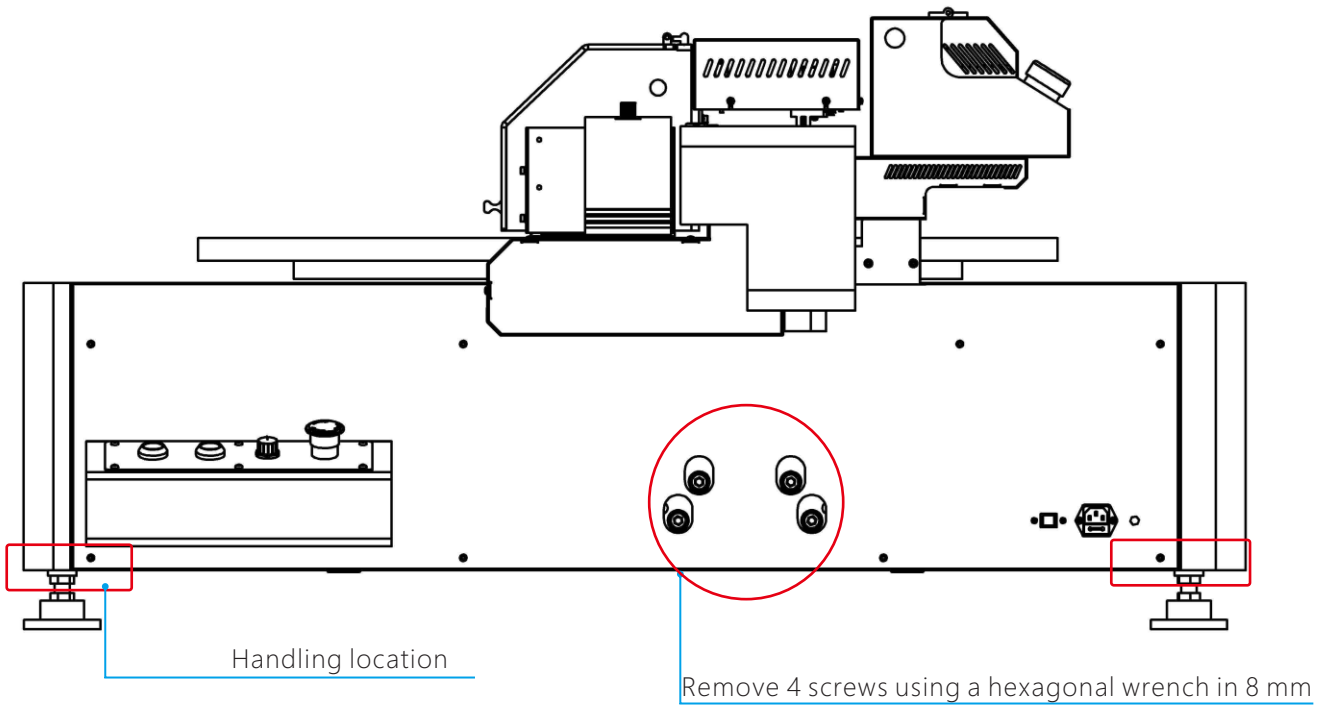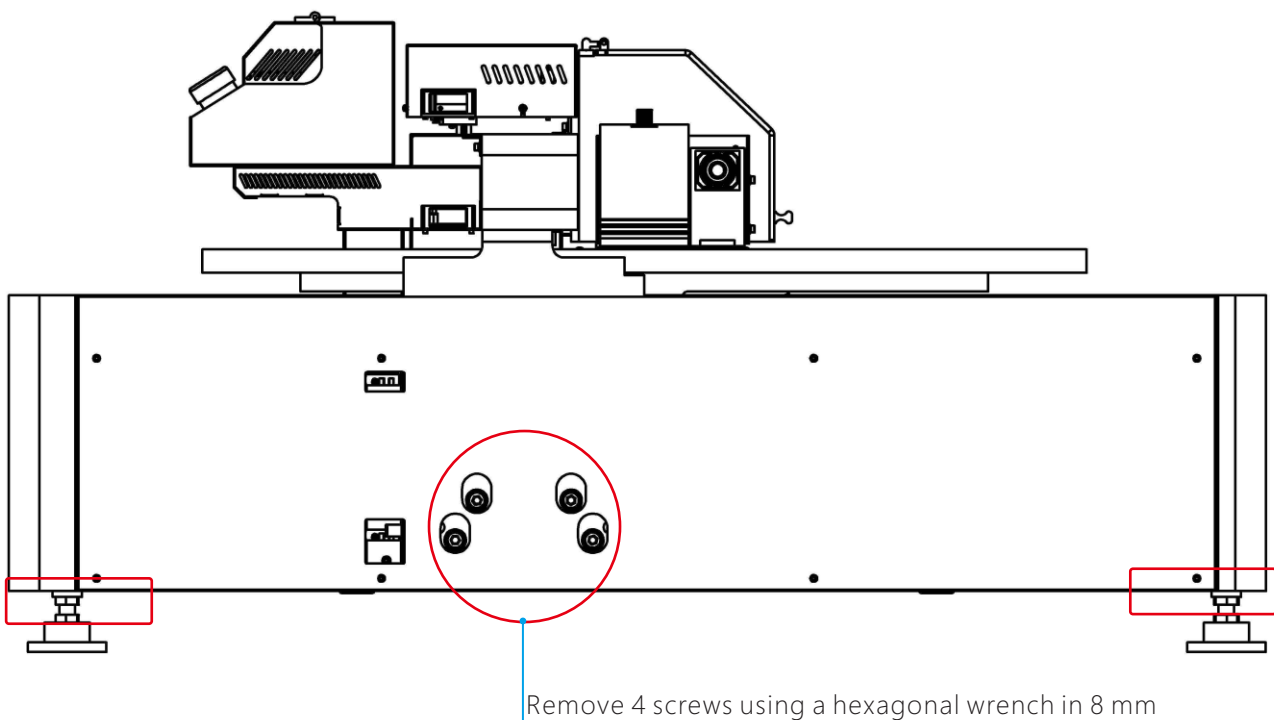
Photoprint 12 software installation

CAUTION

• Please refer to PhotoPrint12 installation instructions.
• Please refer to PhotoPrint12 installation section.

Print control center software installation

1   Please search for ,folder in attached USD flash disk.Copy the entire folder into specified hard disk, and double click to open the folder.

2   please search for ,folder among file directory. Right-click the folder and select "add shortcut to desktop".
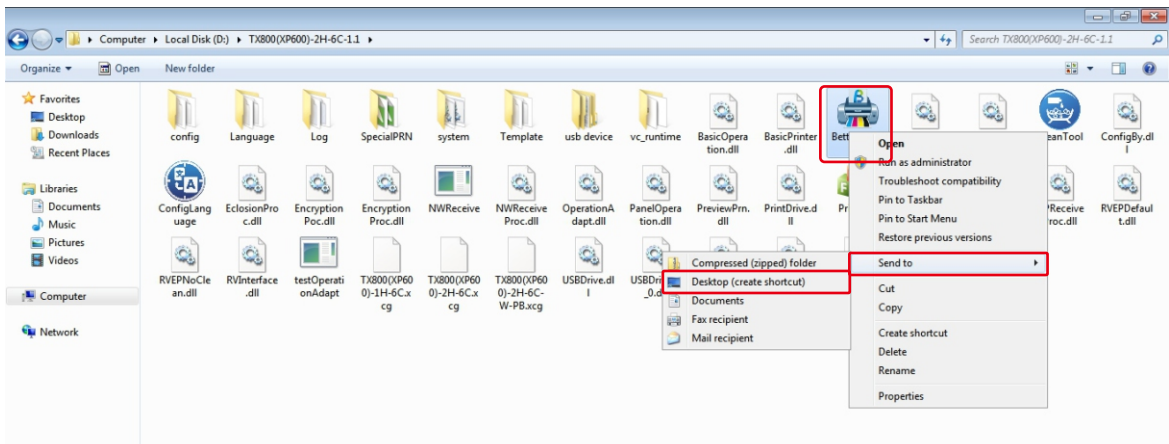
3   In the file directory, find the folder,Install the corresponding printer USB driver according to the computer system type.
• Windows10 the system installs the printer USB driver, the driver digital signature must be disabled.

About print control center

Task browse

Add

Y direction movement

Z direction movement

X direction movement
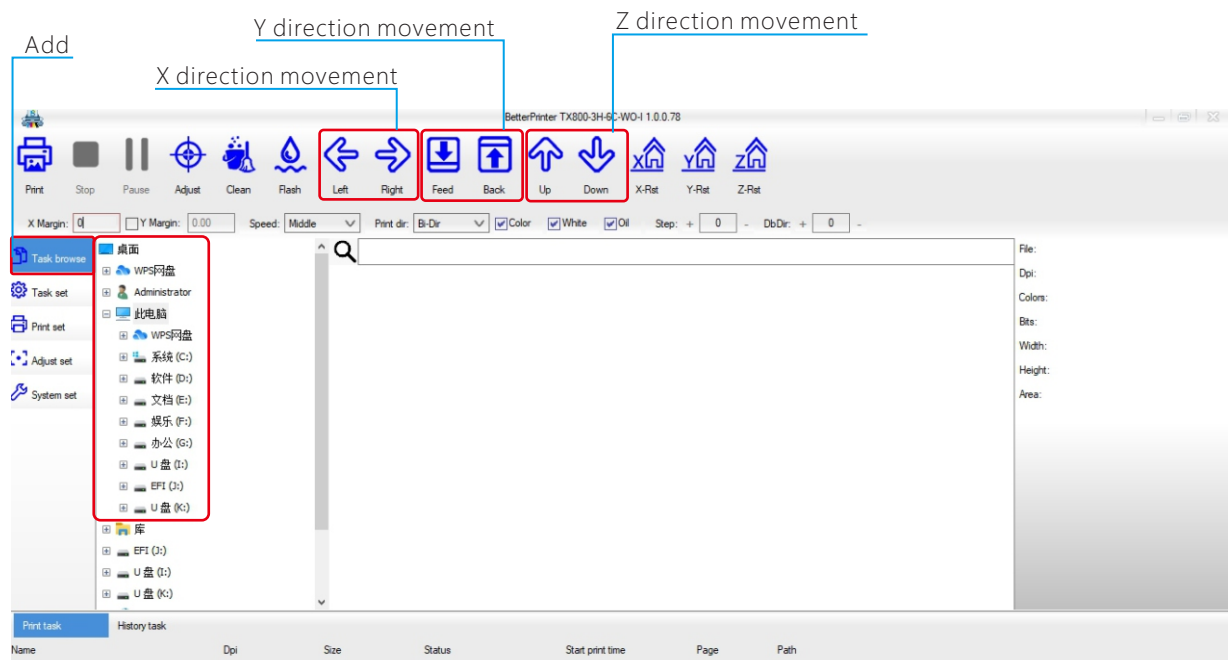
Work status

Task Setting

Margin(X/Y), click for activation

print

Print speed

Print Direction
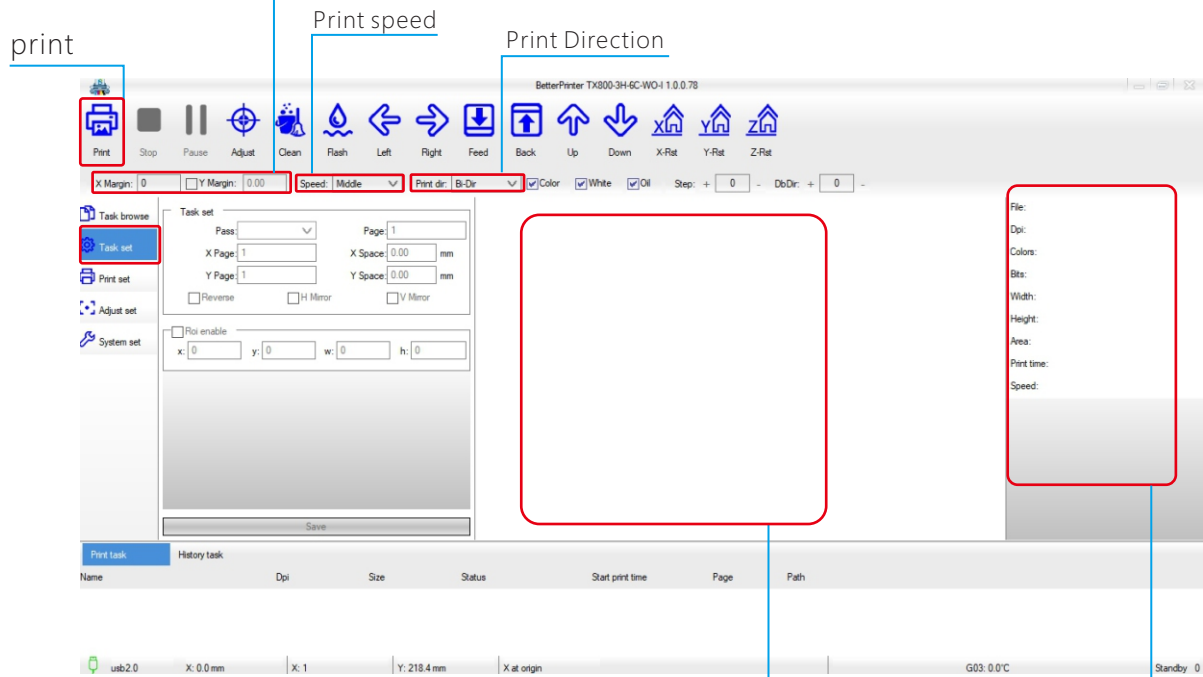
Print picture

Print parameters

Difinition of print orientation

back

left

X

right

feed

Y

Z

up

down

Turn on the printer powe

CAUTION
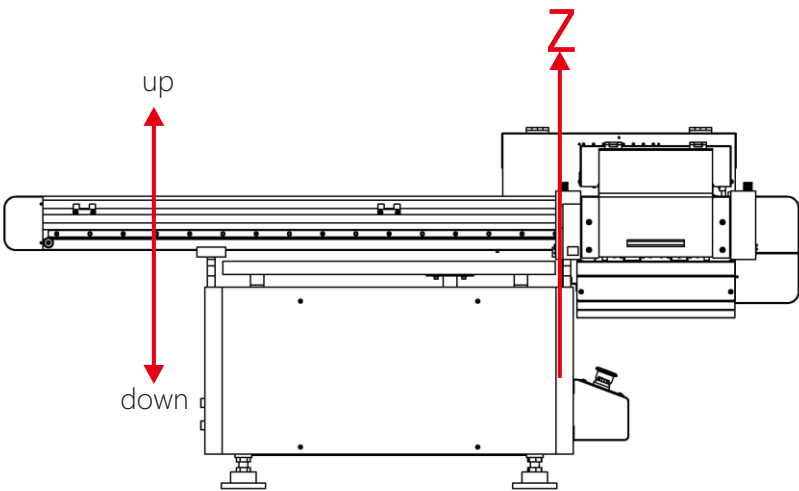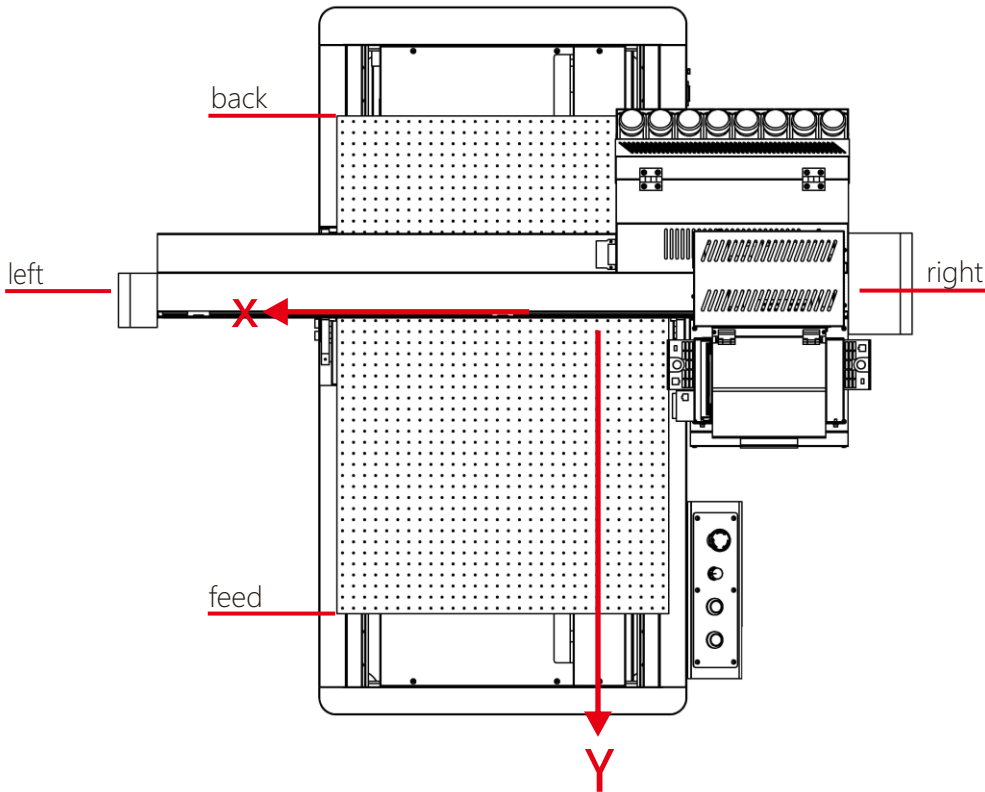
• Turn on the host power switch to let the printer be subject to initialization. The print bus would move to the left side, so please do not put your hands or other things on the print platform to avoid dangerous incidents.

1

Push host switch

• Push the host switch on the left side of operation panel, while the indicator light is on.
• In case that the indicator light is not on when pushing the power button, please make sure whether the main power cable at the back side of the printer is well connected.
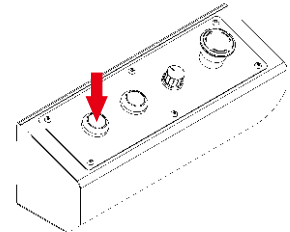
2

Initialization

• The printer is subject to initialization and would wait for print bus and ink station. restoration, featured by ink station getting down to original position, and the print bus moving to the left.

3

Turn on power switch of computer connecting to the printer

• Double click on print control center software, and wait for software initialization.
• Printer would be well connected if "printer: connected（USB2. 0）" is indicated at lower left corner of control center interface of print software.

BetterPrin...

Start icon
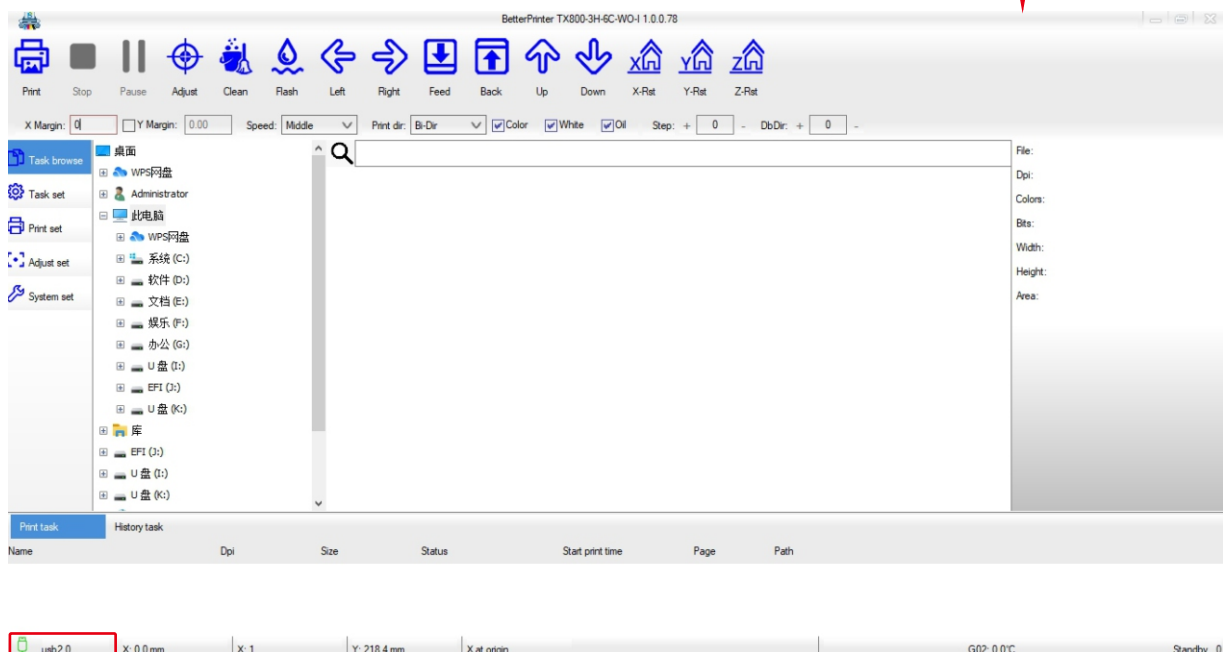
Completion of printer connection

Print picture

Start printing

• Printing could not be performed if errors indicated in print control center software. Please check error reasons and start printing until error disappearing.

1

Media height setting
• Follow page 19.

2

Open print control center software, click the task browse button
• Select the location where you want to print the file, select the file you want to print, and double-click to open.
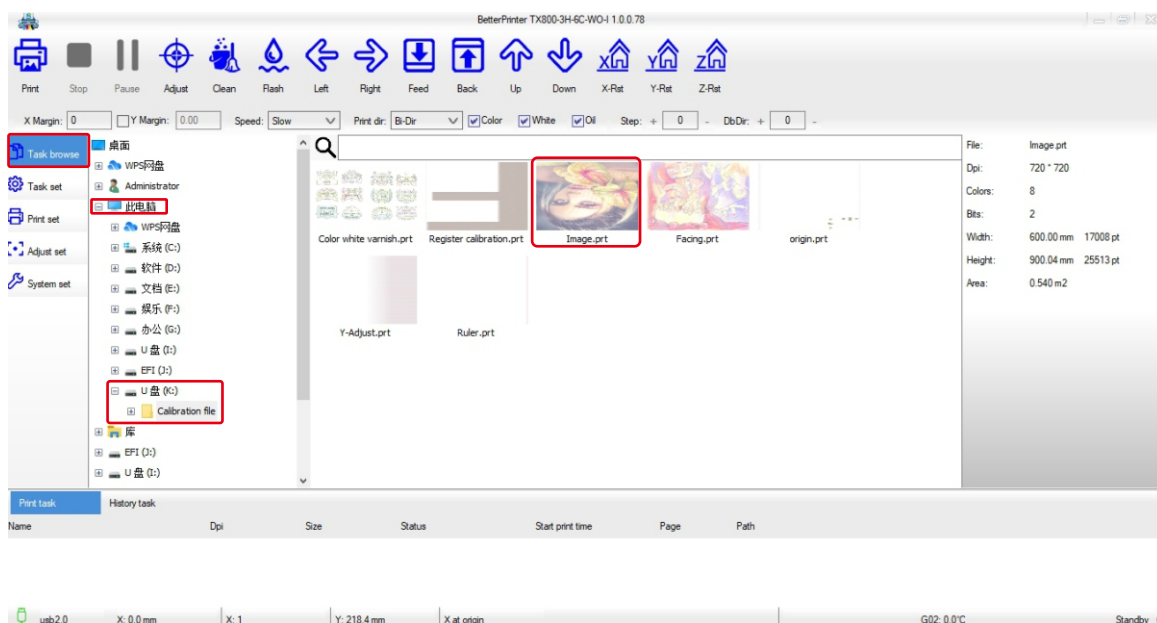
3 The picture to print

•Display print parameters.
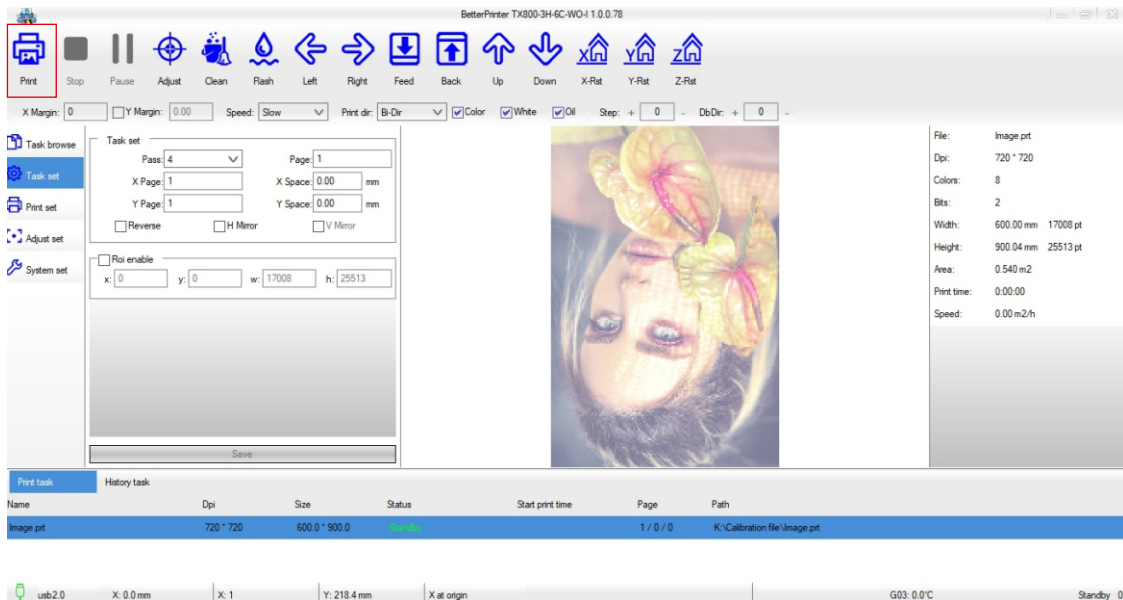
4 Take the media away after print completion

• Close absorption fan.
• Take the media away.

CAUTION
• Open print control center software, and click ⊗ Stop button
• Open print control center software, and click ⏸ Pause button
• Press Delete key on keyboard to delete selected data in printing list.

WARNING
• During the printing process, printing media may curl up by the heat of LED UV light, and lead to printing pause. Please use new media to restart the printing.

Power off

When turning off the power, please make sure whether there is data in printing progress.

1

Close print control center software
• The machine performs initial action, waiting for reset of trolley and ink station.
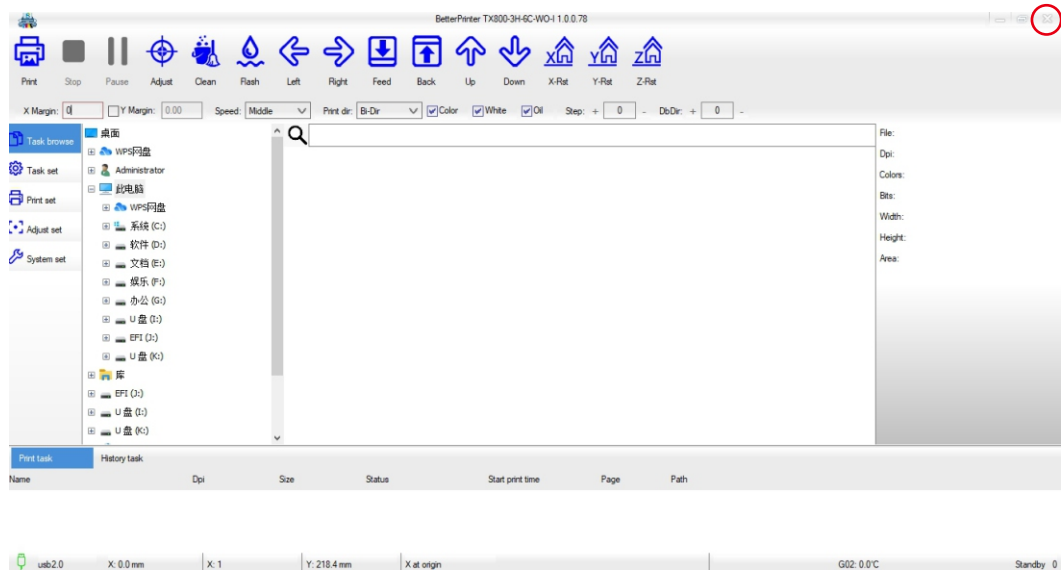
2

Press absorption fan button, and close absorption fan
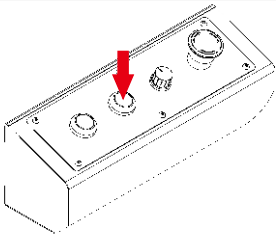
3

Press host switch button, and close host power

• Please reconfirm that the ink pad is fully absorbed with the sprinkler.
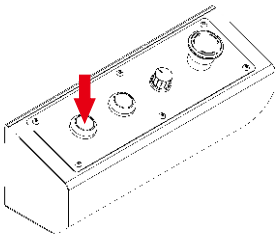
Calibration operation flow

Calibration process

1	Inject ink into ink tank	14 Page

2	Nozzle installation	15 Page

3	Install ink capsule	19 Page

4	Turn on the printer powe	8 Page

5	Head Cleaning	23 Page

6	Print Head Status	24 Page

7	Vertical calibration	26 Page

8	Bi-Dir calibration	30 Page

9	Color register calibration	32 Page

About ink

Inks to be selected are indicated in the following table:

Types	Colors	
UV ink	M	Magenta
	C	Cyan
	Y	Yellow
	K	Black
	Lm	Light magenta
	Lc	Light cyan
	V	Glossy oil
	W	White

Inject ink into ink tank
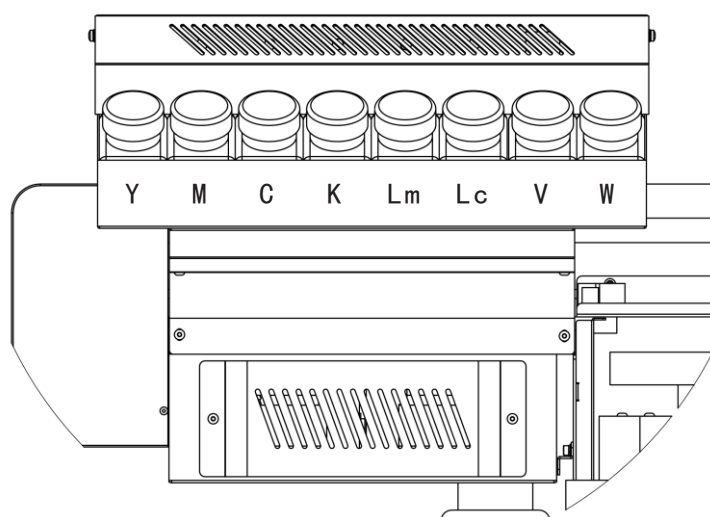
⚠ **CAUTION** • Please confirm color sign for each ink tank, and then inject ink with right color intocorresponding ink tank.

• Please select to use designated inks by our company. Do not use non-original inks, or malfunctions may be occurred. Our company is not responsible for any and all problems caused by application of non-original inks.
• Do not directly get in touch with the ink. In case of skin contact accidentally, please wash with soapy water or clean water; in case of eyes contact, please flush with plenty of clean water and seek for medical advice and treatment.
• Ink must be stored at low temperature and in poor light conditions.
• When the stored ink is shifted from cold place to warm place, please place it at ambient temperature for 3hrs before applying.
• Please use up the ink within 6 months after ink bottle opened. If the rest ink can not be used for a long period of time after opening, printing quality may be lower once applied.
• Please keep the ink out of reach of children.
• Do not shake the ink bottle violently. Shaking violently or upturning may lead to ink leakage.

Inject ink into ink tank

Please inject ink into ink tank in case of the following:

When red indicator light at front part of ink tank is on
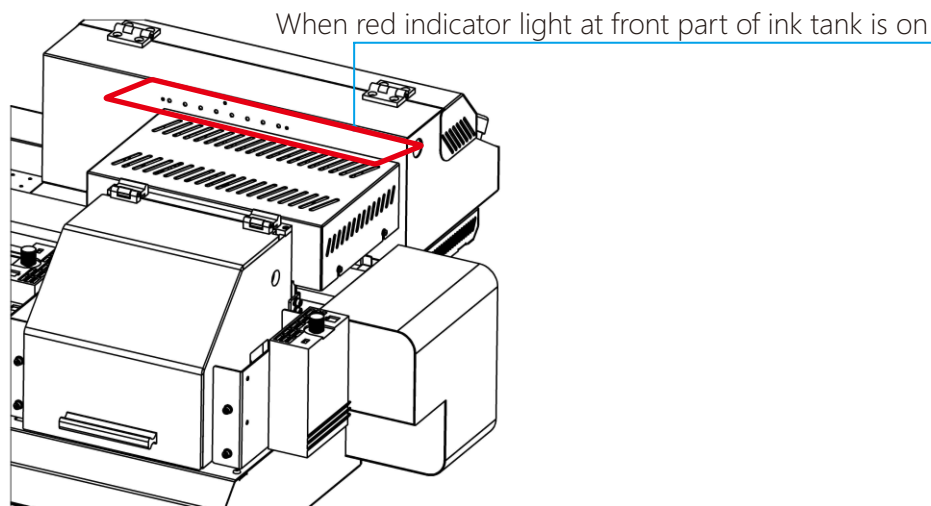
1

Open ink station cover
- Please open ink station cover in counter-clockwise direction.
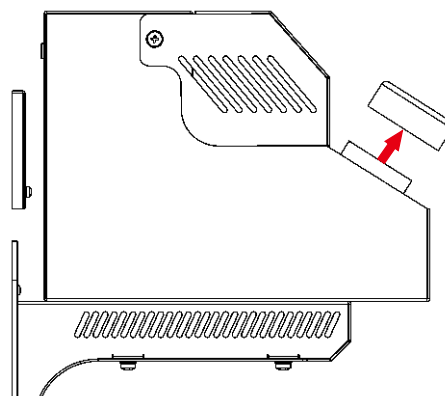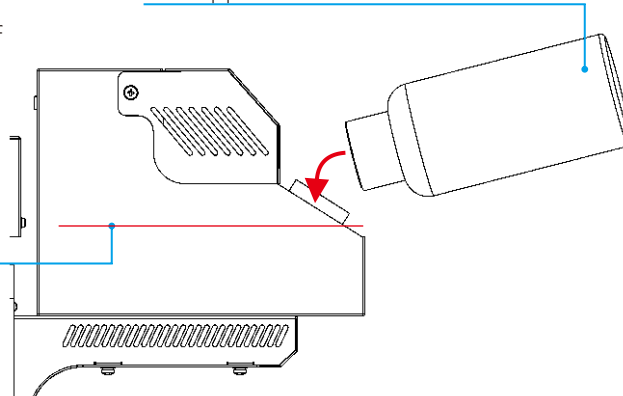

2

Inject ink
- Please rotate ink station cover in clockwise direction after completion of ink injection.
- Please slowly wag white ink from side to side for more than 10 times when injecting white ink.

Do not exceed this line during ink

Please make sure whether color of ink is overlapped

Nozzle installation

In order to ensure normal inking and perfect printing, nozzle should be kept wet and unobstructed. In addition, nozzle pipe and nozzle port should not be penetrated into other liquid, and be kept dry, or nozzle may get burned once starting the printer.

> ⚠️ **CAUTION**
> •Please make sure FFC port is dry without ink, or nozzle will get burned once starting the printer.
> •Nozzle FFC is prohibited from being inserted upside down, or nozzle will get burned once starting the printer.
> •Please pay attention to insert direction of metal scrap at nozzle FFC port. Metal scrap should not be scraped or curled up.
> •Nozzle must be disassembled under professional instructions.

Nozzle FFC (Flexible Flat Cable) port

upper nozzle port
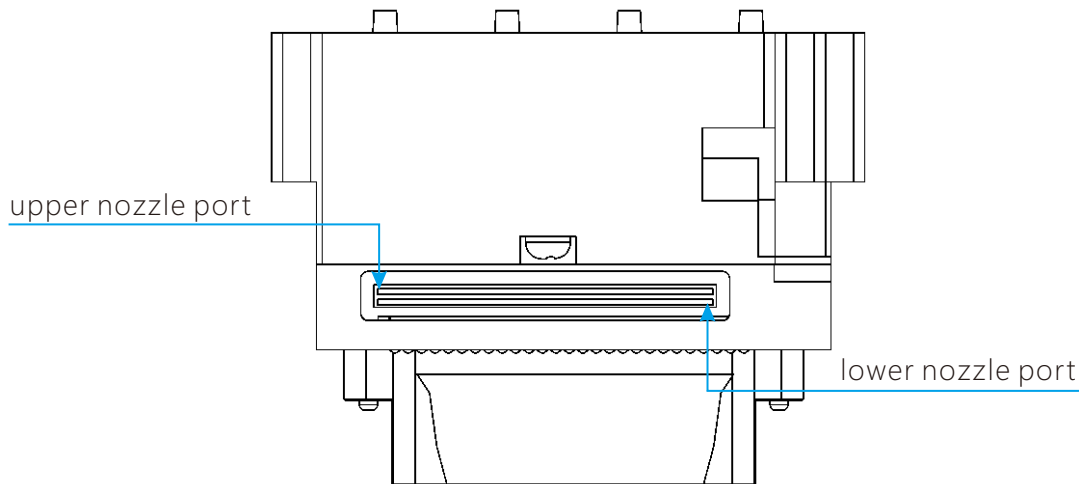
lower nozzle port

FFC connecting to lower nozzle port

Please pay attention to insert direction of metal scrap at nozzle FFC port. Nozzle FFC should be well inserted into the end of port.

lower nozzle port

nozzle FFC metal scrap

nozzle FFC

nozzle FFC metal scrap

upper nozzle port
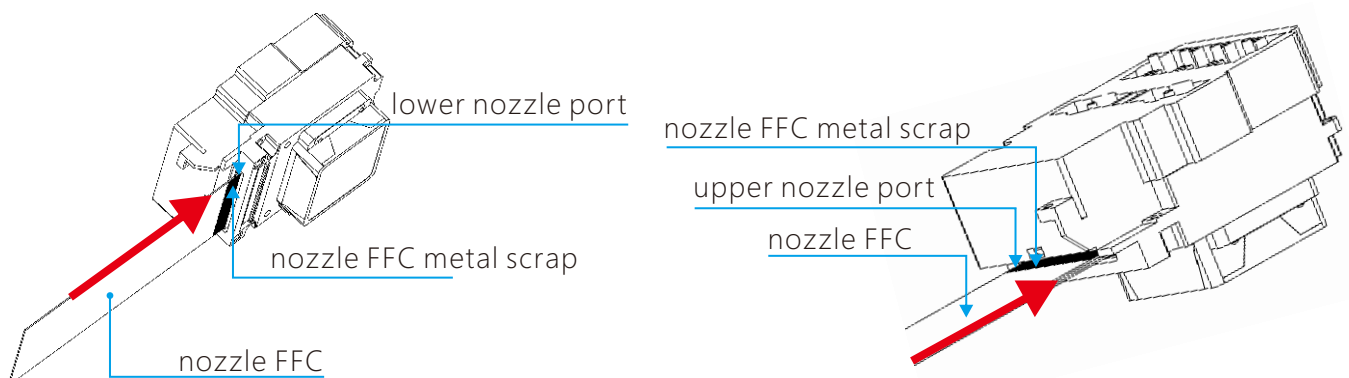
nozzle FFC

Nozzle color sequence of print bus

Glossy oil ink nozzle

white ink nozzle

color ink nozzle

Nozzle fixation

Before nozzle fixation, please make sure the nozzle FFC is well connected.Please make sure the nozzle FFC is correctly inserted once again.

nozzle bolts (QTY: 4) need to be fixed

Mainboard FFC port

white ink nozzle

lower nozzle port

upper nozzle port

lower nozzle port

lower nozzle port

upper nozzle port

upper nozzle port

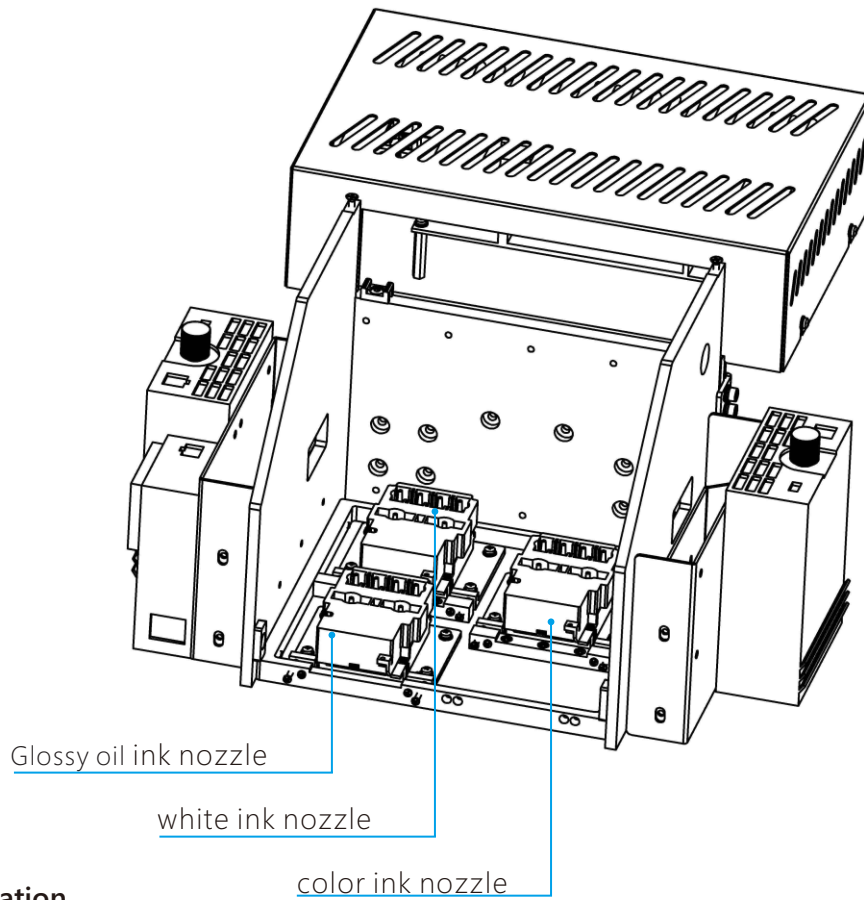Glossy oil ink nozzle

color ink nozzle

FFC connecting to upper nozzle port

Please pay attention to insert direction of metal scrap at nozzle FFC port. Nozzle FFC should be well inserted into the end of port.
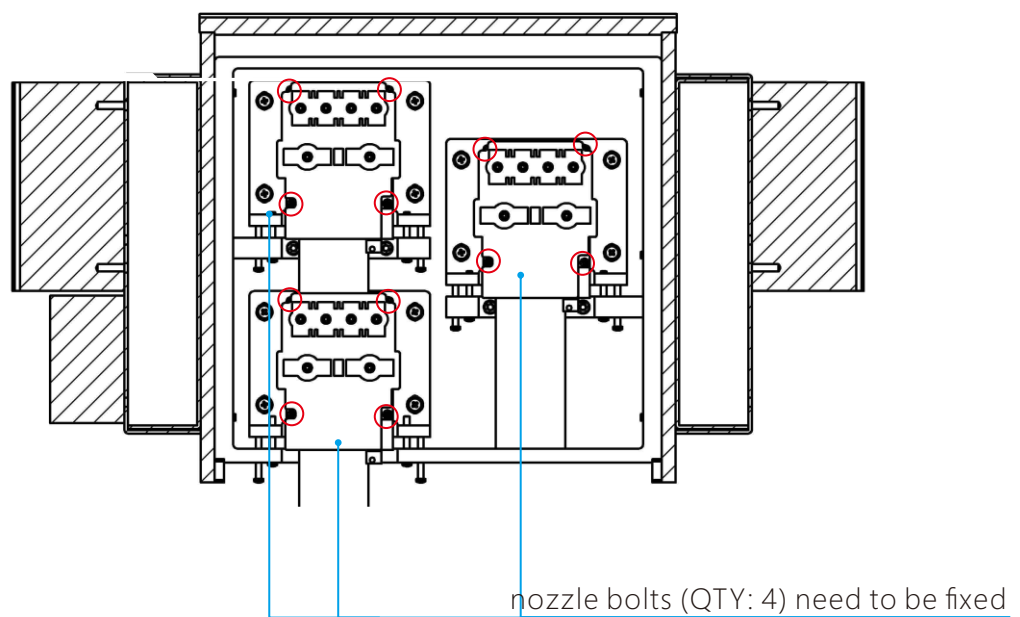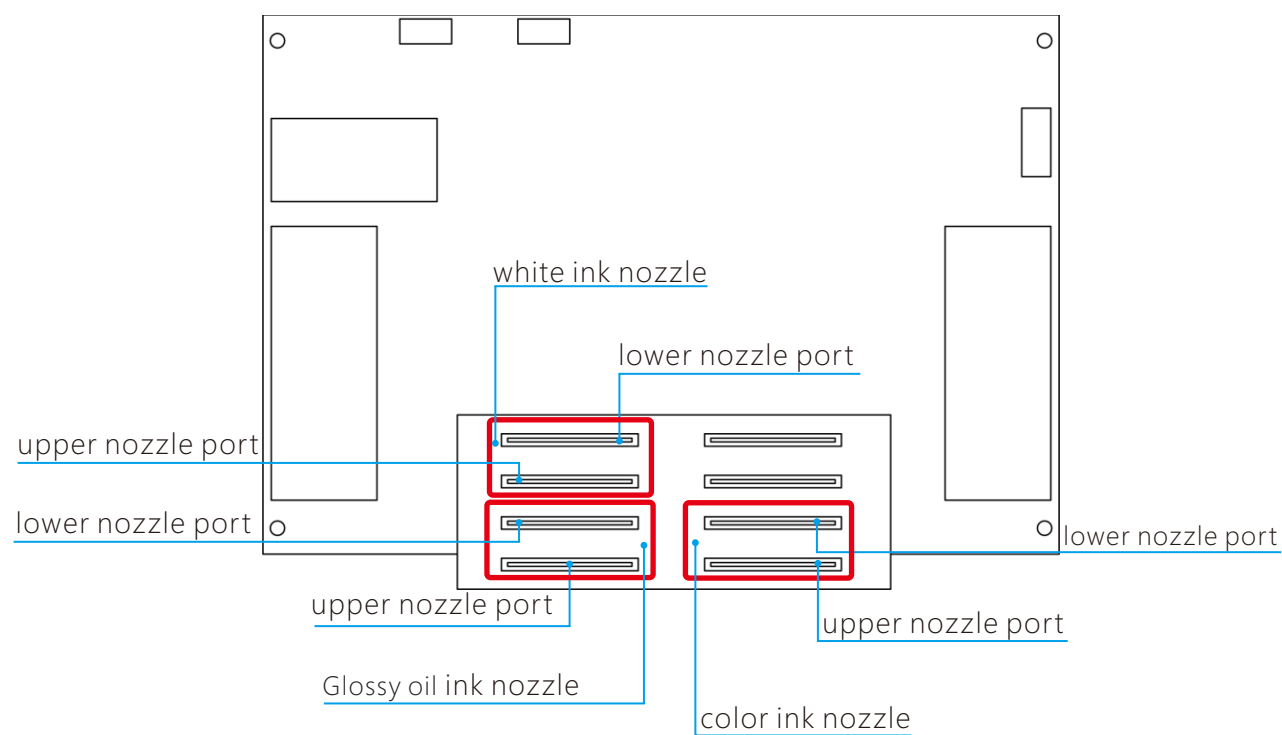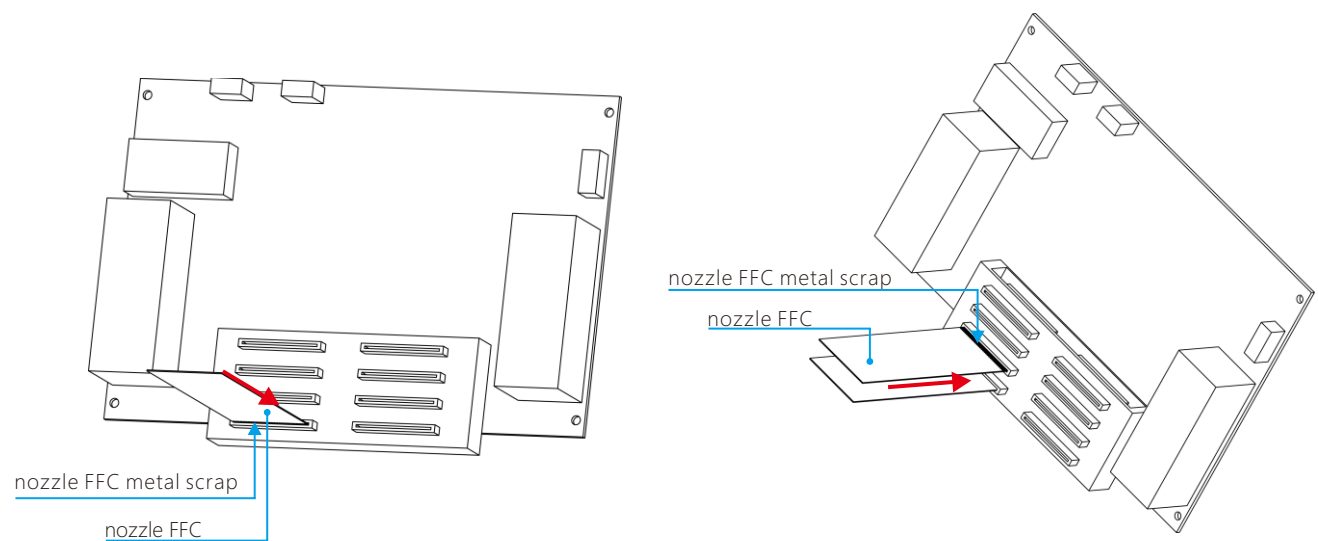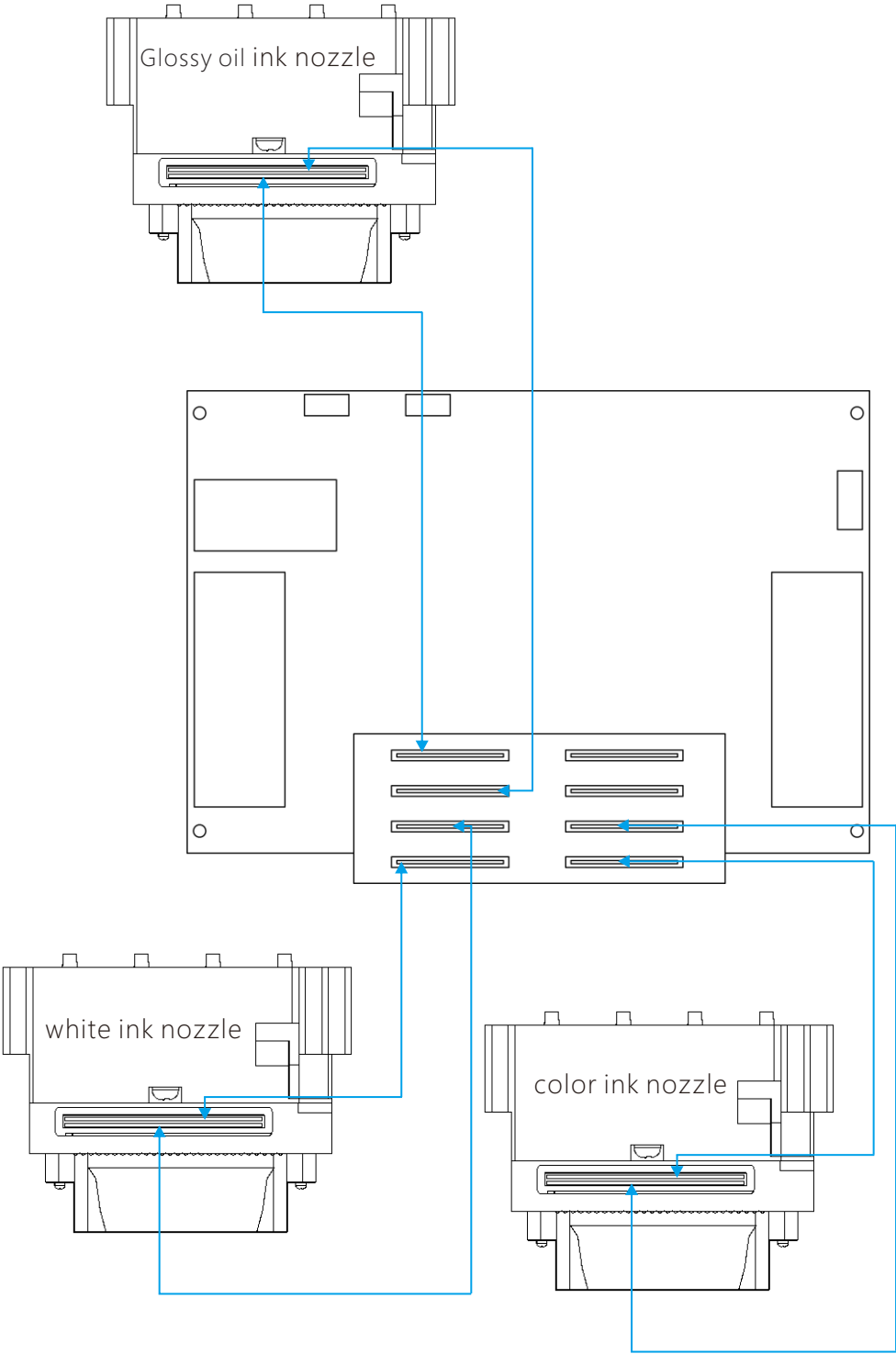

nozzle FFC metal scrap

nozzle FFC

nozzle FFC metal scrap

nozzle FFC

Connect mainboard with nozzle

Glossy oil ink nozzle

white ink nozzle

color ink nozzle

Install ink capsule

ink extraction

When installing the ink capsule, please take and put the ink capsule.

Before installation, an injector needs to be prepared to draw half injector of ink, so as to ensure that the ink capsule is free of air and is filled with ink.When the injector is inserted into the ink capsule, please pay attention to point the injector at the mouth of ink capsule. When the injector is slowly drawn, please look carefully at the side face of the ink capsule, because the side face may get inward concave. Then, stop and wait for a while. Slowly draw the injector once again when the ink capsule recovers.

correct

insert pinhead of injector into ink capsule
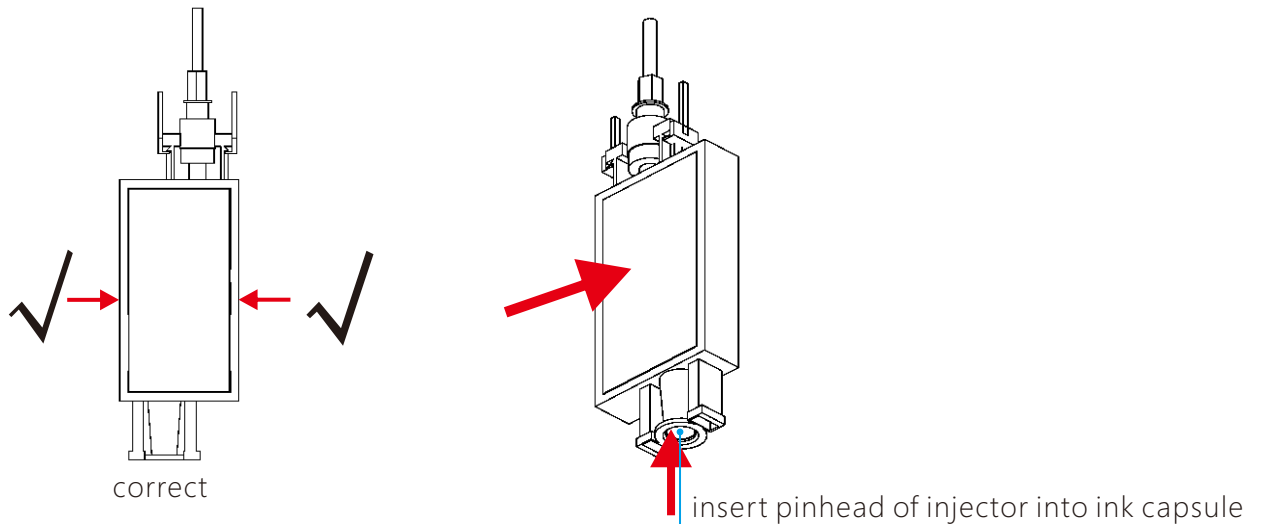
Connect ink capsule with nozzle

Please correctly fetch and place ink capsule and pay attention to installation direction during the installation. Please install ink capsule according to figures indicated from smallest to largest during the installation.

ink capsule
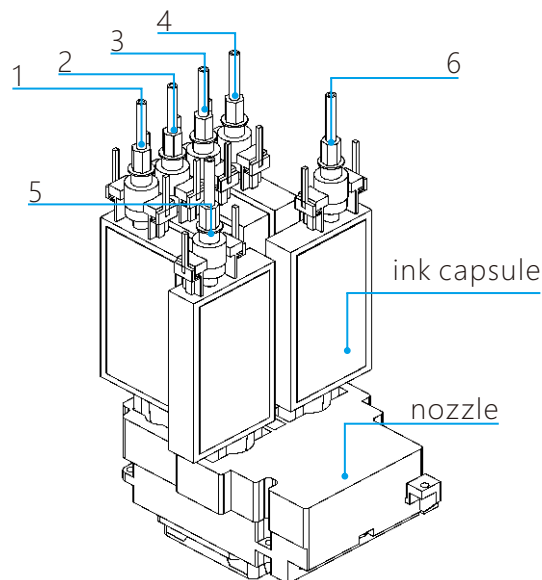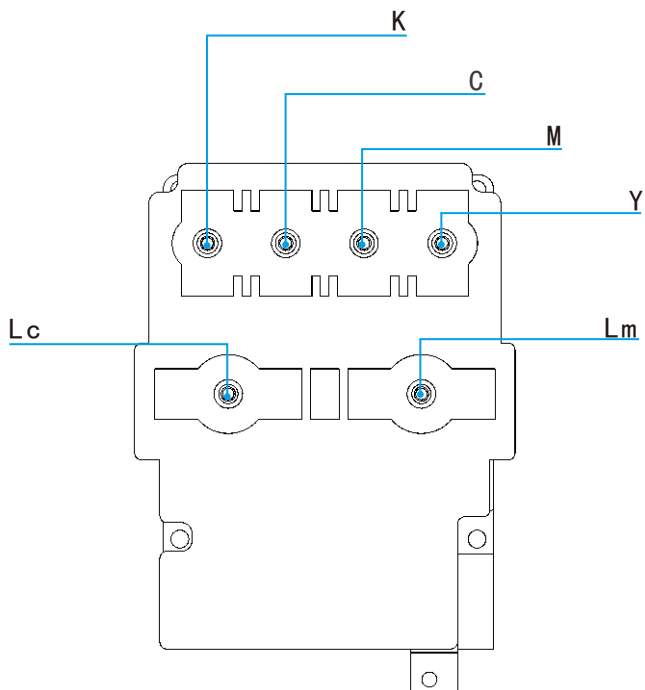
nozzle

⚠ WARNING   • ink capsule may get damaged if injector is forcefully drawn.

Color sequence of white ink nozzle

W
W
W
W
W
W
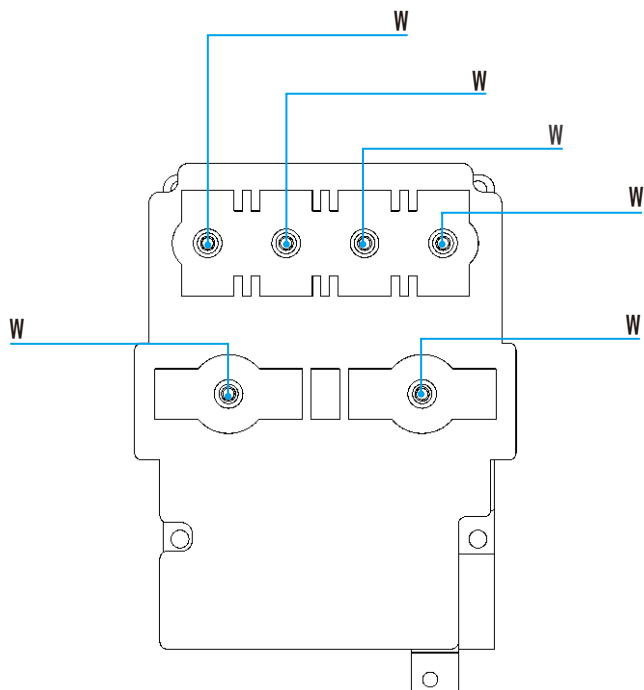
Color sequence of color ink nozzle

K
C
M
Y
Lc
Lm

Color sequence of Glossy oil ink nozzle

V
V
V
V
V
V
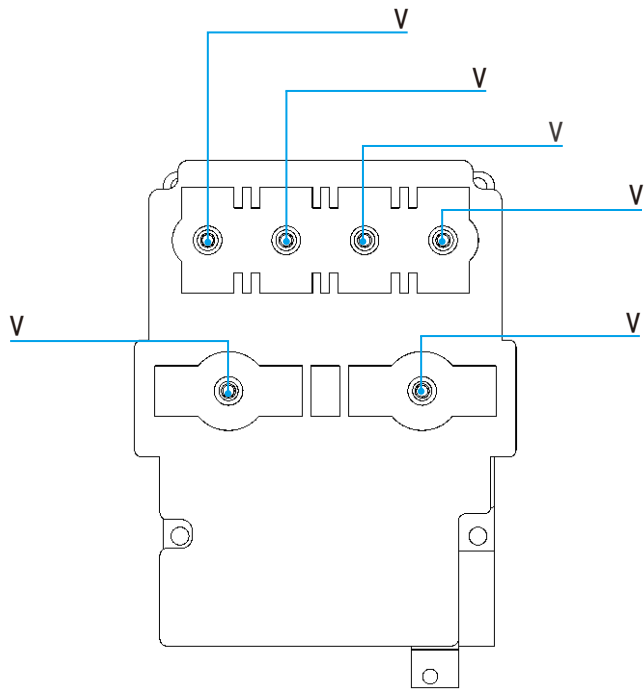
Media height setting

- In avoidance of media floating, please start absorption fan after setup.
- When media within absorption area can not completely cover the absorption hole, please cover the absorption hole with paper, film or adhesive tape.
- Media should be fixed with adhesive tape, because all edges of the media may be deformed once heated.
- Please pay attention to the distance between the print head and print media, because the print head would get damaged if close enough, while print quality would be influenced if too far.
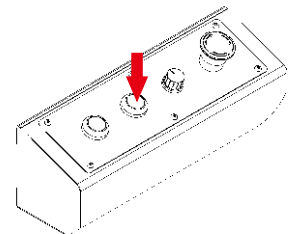
---

1 **Please align the media to the print origin at the lower right end of the working table**

- When you need to change the print origin, change the X white edge and Y white edge, Y white edge selection is valid.
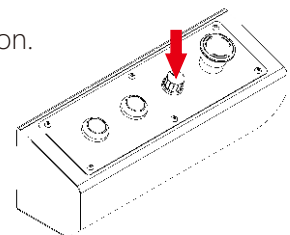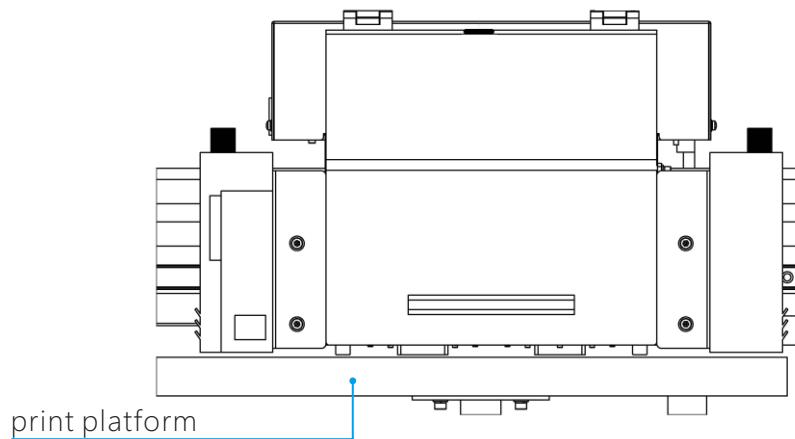
---
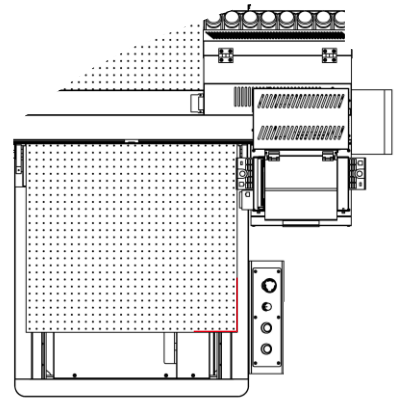
2 **Push suction switch button**

---

3 **Rotate suction speed control switch**

- Please rotate suction speed control switch in clockwise direction.

4

Click ⬆ ⬇ button to adjust media height

print platform

5

Distance between print head and print media
- Open print control center software, click ⬅ button to make the print bus slowly moved to the left until the print bus is completely above the print media, then make sure for anther time that the distance between the print head and the print media is within≤1.5mm.

print media

print platform

distance (≤1.5mm)
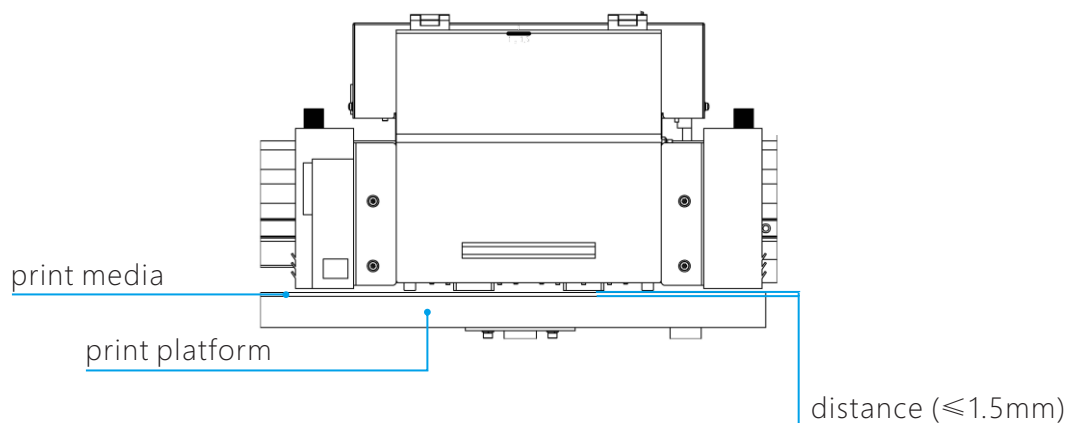
6

Print bus restoration
- Open print control center software, click 🏠 button to restore the print bus.

⚠️ **CAUTION**
- Setup media thickness will be saved and kept in the system all the time, unless re-setup.
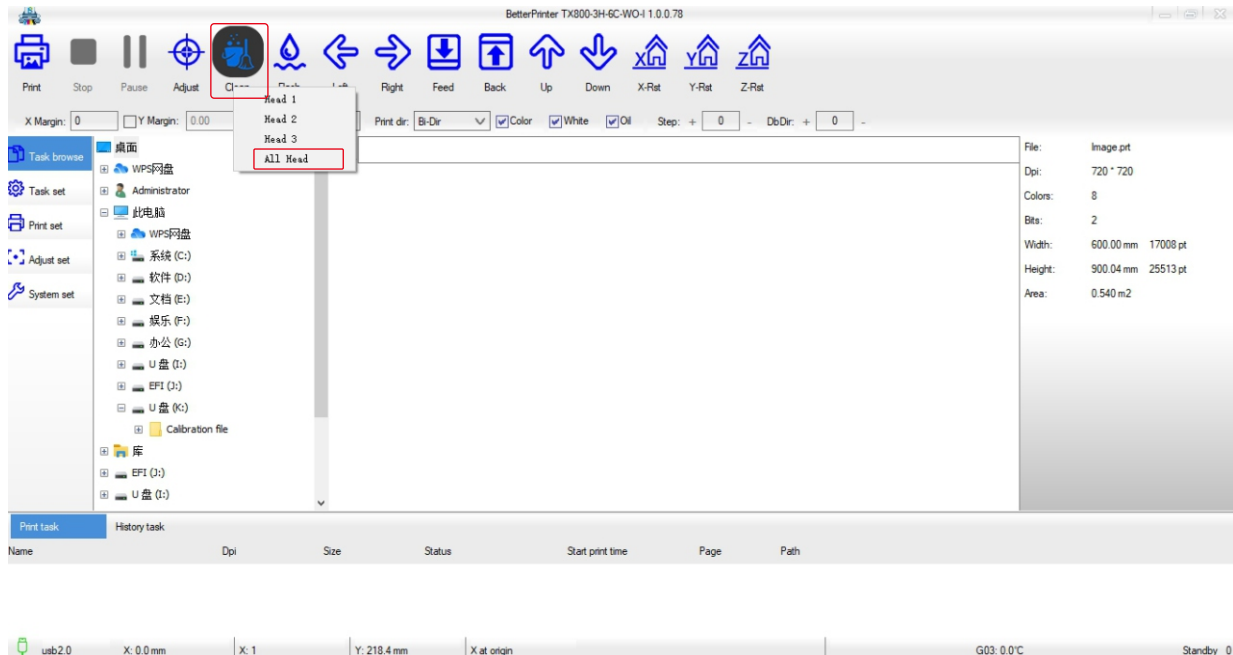- Setup media thickness will not be eliminated after power off.

Heads cleaning

Nozzle cleaning should be performed if abnormal test pattern occurs.

1

Open print control center software, click **button**

• Select the normal cleaning mode in the cleaning button drop-down menu, and click double head mode.

2

Start cleaning

• Wait for cleaning finished.

3

Run test print to confirm test result

• If test result is still not satisfactory, run nozzle cleaning for another time until test result is normal.
• Make sure to open spray function and click button. Whether spray function is open could be checked at lower left corner of print control interface.

Print head status

Test printing should be done in pre-set direction, to ensure whether imperfect printing (indistinct printing or ink pulling to nozzle problem) circumstances like nozzle blocking exist.
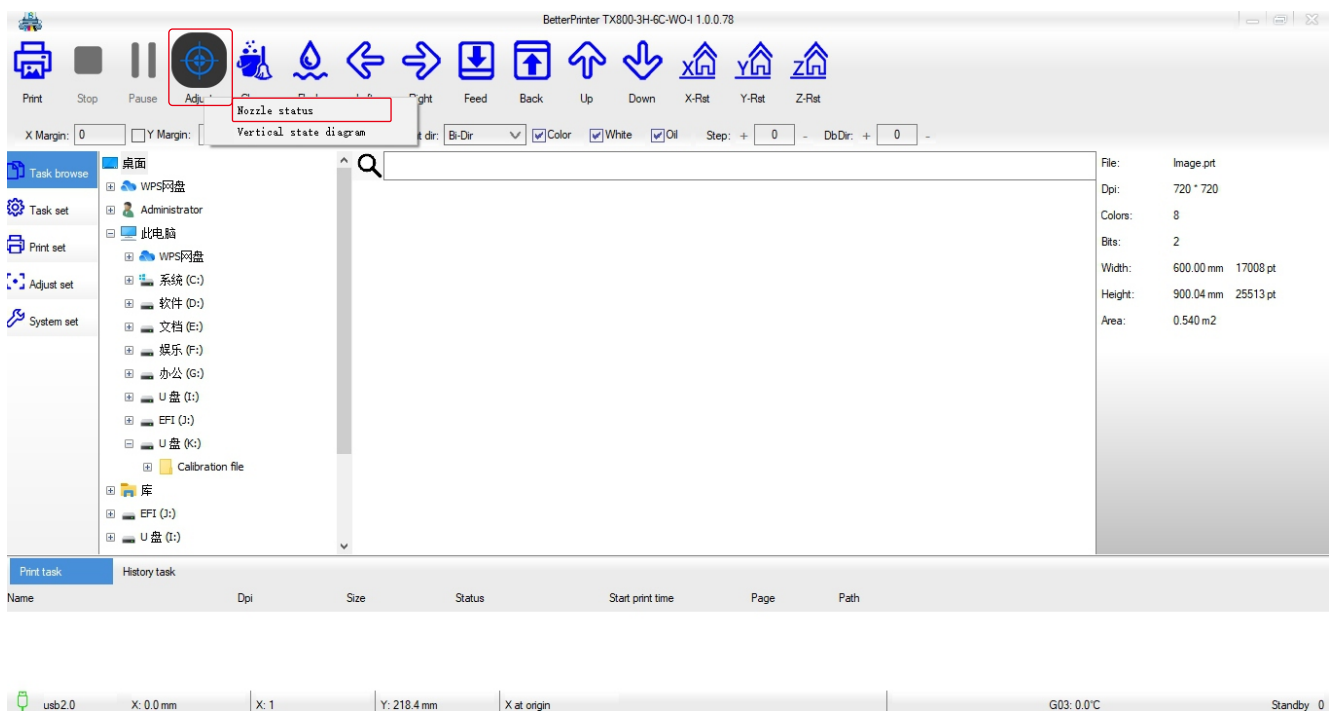
Before test printing, please make sure:
• Whether print media is well set.
• Whether print media thickness is well set.
• To confirm print quality on transparent film if white ink or clear ink applied.

1

Open print control center software, and click ⊕ button

• Select nozzle status option in the pull-down menu, then single click nozzle status.
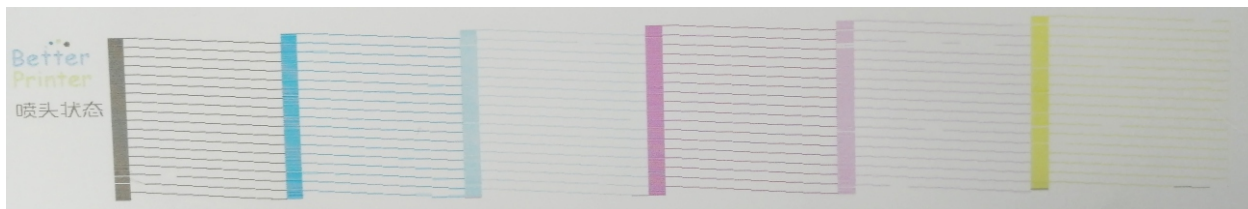

2

Print result confirmation

• Run data print if test result is normal.
• Run nozzle clean if test result is abnormal.

3 Test result

• Color sequence of nozzle from left to right is: K/C/Lc/M/Lm/Y.

4 Abnormal test results

normal pattern	abnormal pattern	
	serious block	nozzle block
	many pieces of lines segment missing	several pieces of lines segment missing

⚠ CAUTION

• Nozzle status of other colors of ink subject to the methods above.
• Print quality needs to be confirmed on transparent film if white ink or clear ink applied.

Vertical calibration

1

Open print control center software, and click ⊕ button

• To select vertical calibration option on pull-down menu by clicking test button, and click vertical calibration.
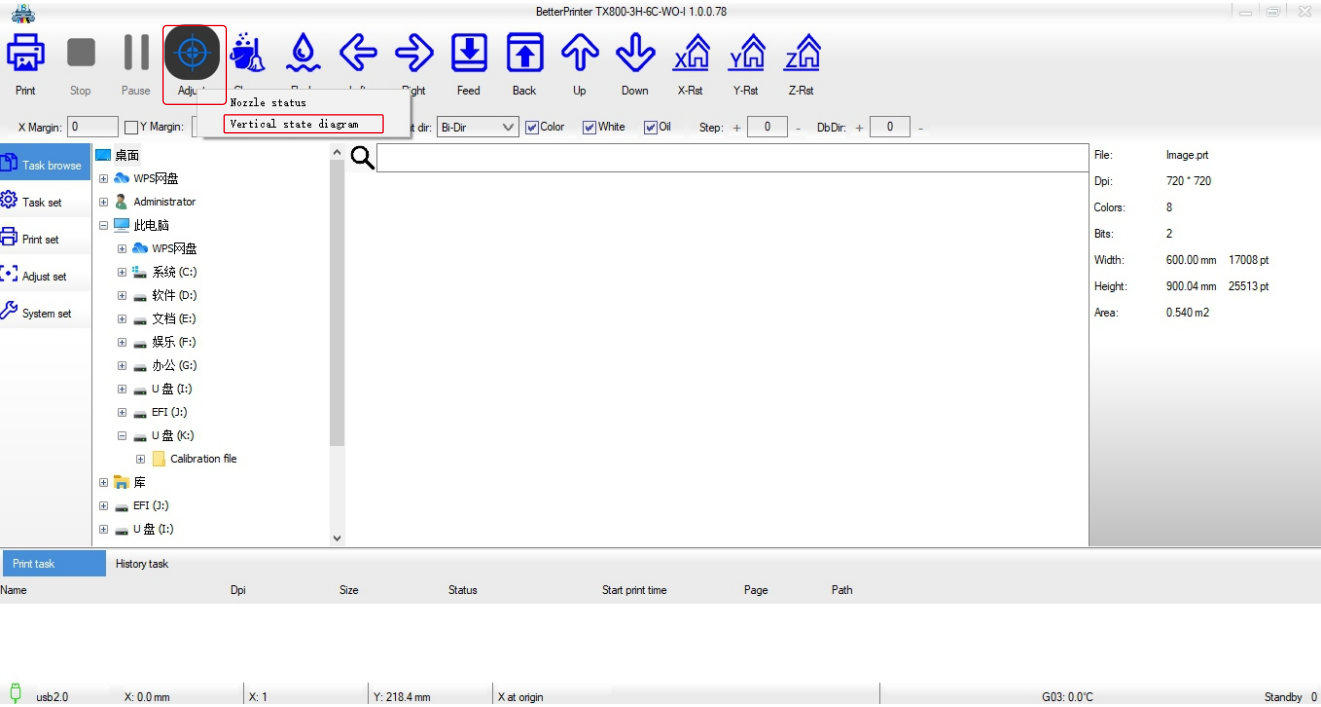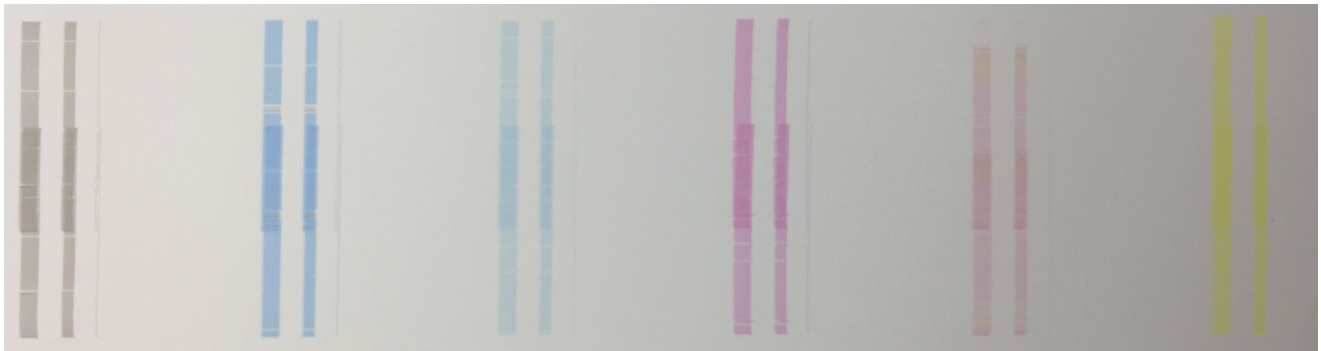
2

Vertical calibration pattern

3 **Vertical calibration judgment**

• To check whether upper line and lower line are perfectly overlapped after printing test pattern.

upper line and lower line are perfectly overlapped

upper line and lower line are not overlapped
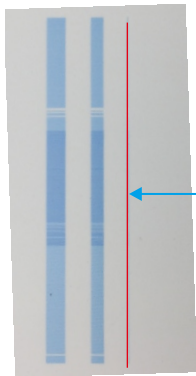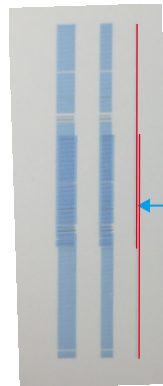
normal   abnormal

4 **Vertical calibration adjustment**

• Loosen fix screw of nozzle plate to let nozzle adjustment plate move back and forth.

Left (L)   Right (R)
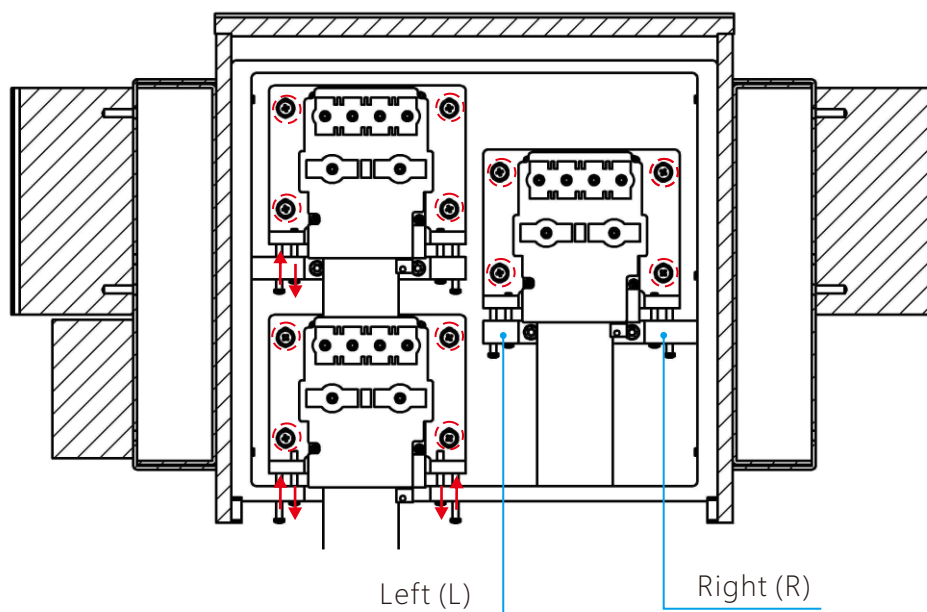
5 Vertical calibration adjustment

• Contrast to illustration below, vertical calibration adjustment only needs to be done on either direction only.

Direction needs to be adjusted

Right

CAUTION
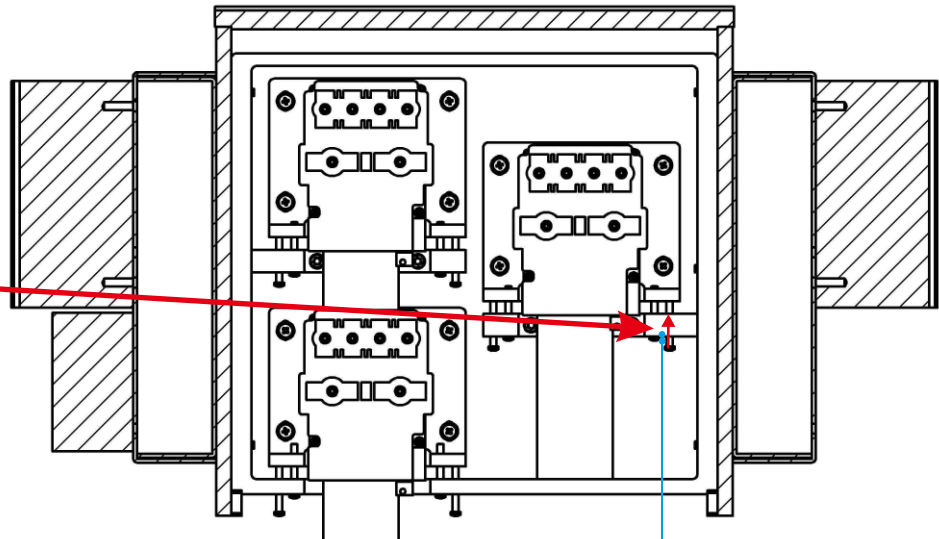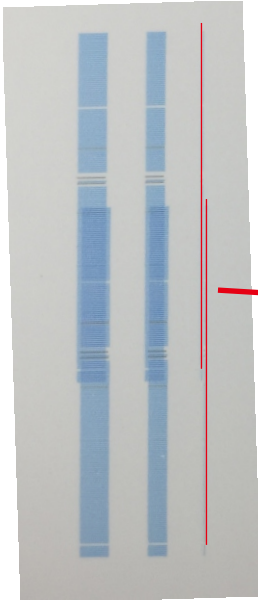
• Screw adjustment value is out of specific data, and is subject to personal test. Whether adjustment is correct needs to be verified via vertical calibration printing once again.
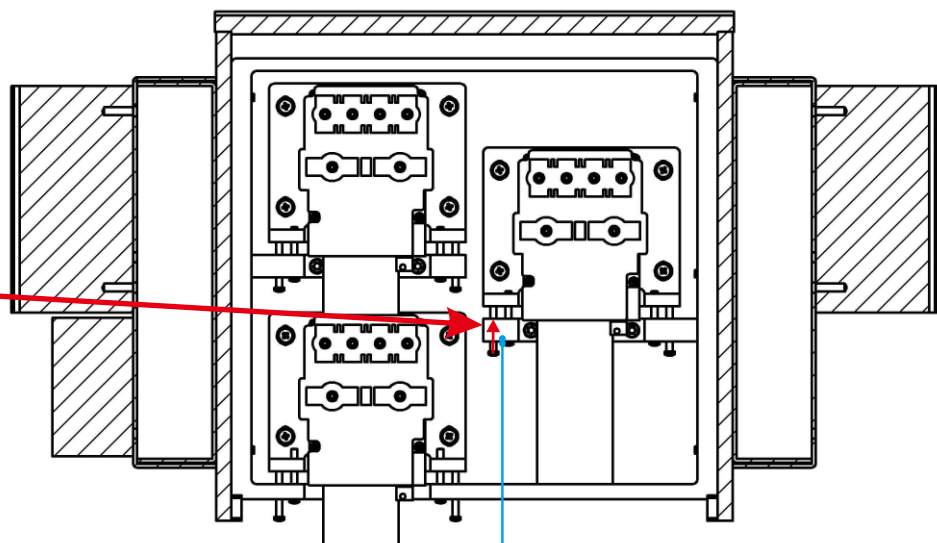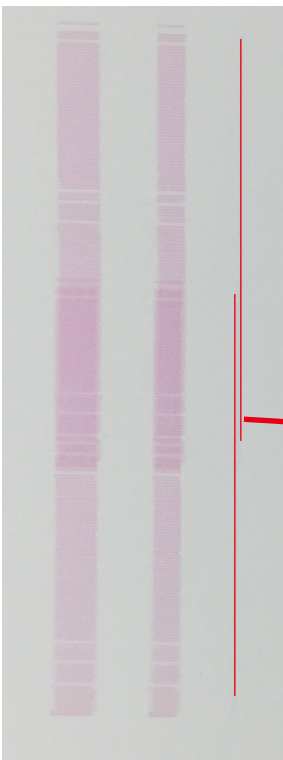
Left

Direction needs to be adjusted

6

Print vertical calibration once again

• Upper line and lower line must be overlapped for final result of test pattern.
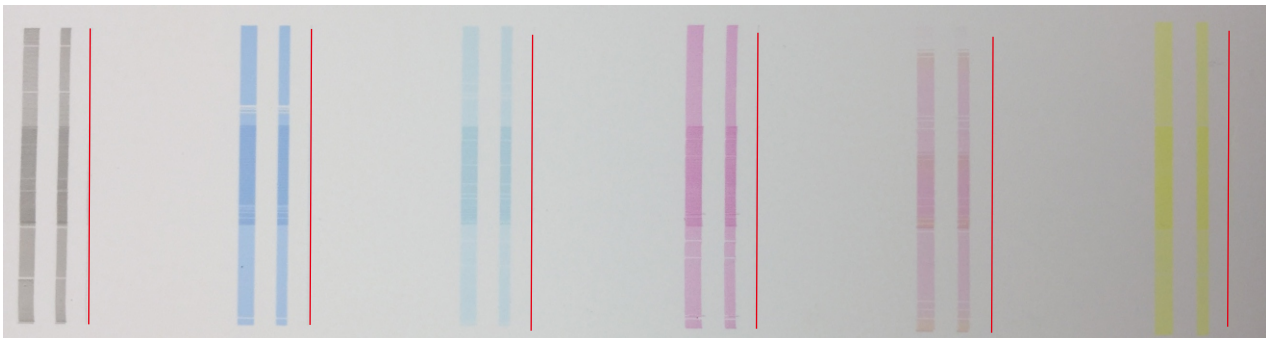
7

Fix nozzle plate

• Tightly fasten screws fixing the nozzle plate.
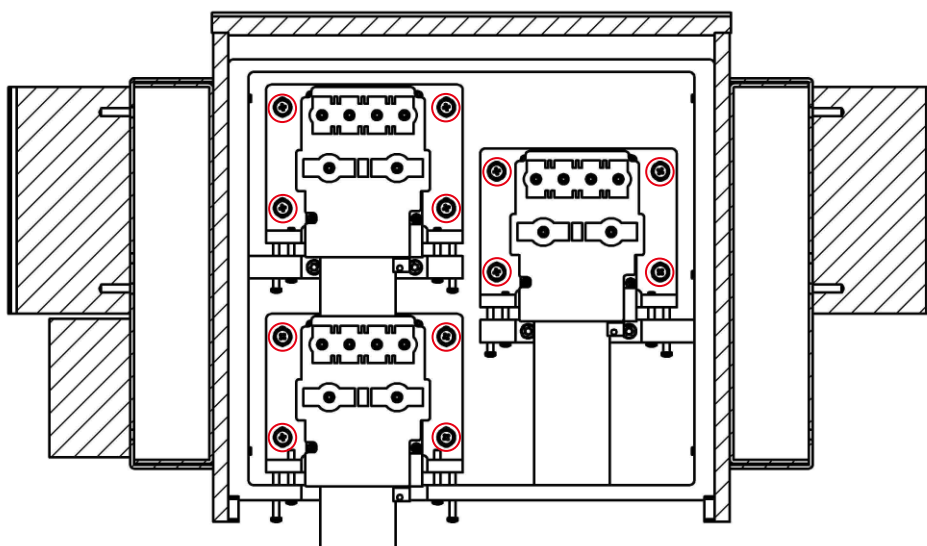
Bi-Dir calibration

1

Open print control center software, and click Calibration setting button
• To select calibration setup from system maintenance options.
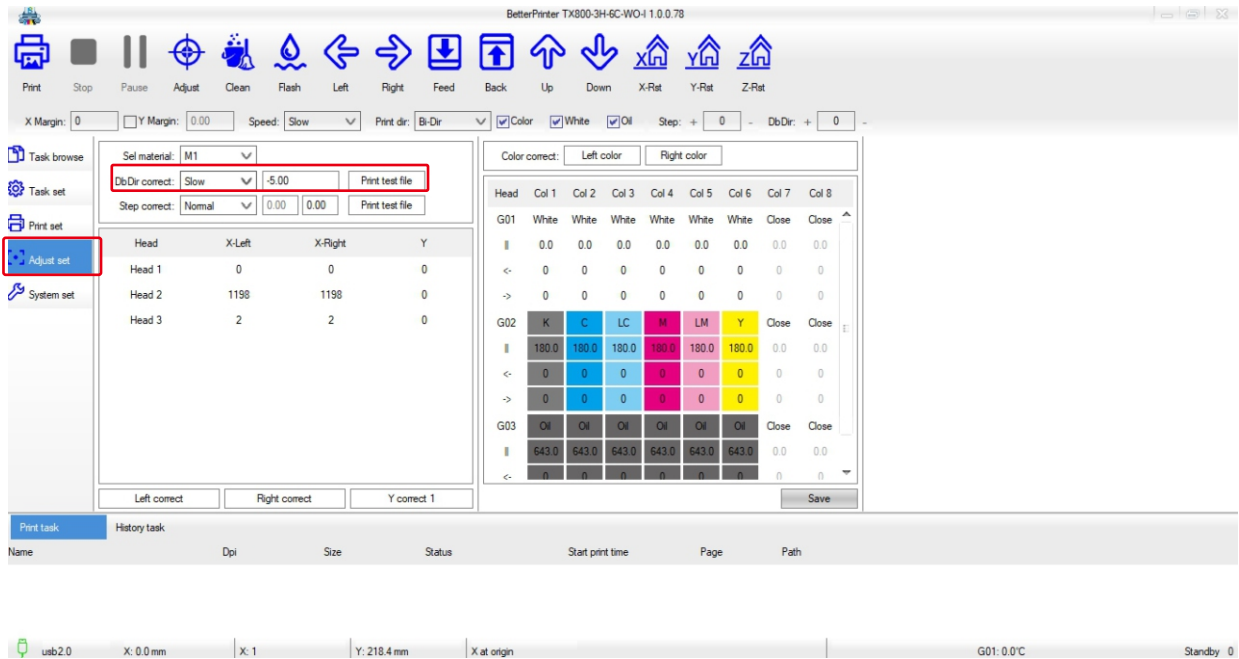
2

Select slow speed

• To click [Print] ,in bi-dir calibration area.
• Select [Slow ▾] medium speed and high speed by clicking on the triangle arrow.
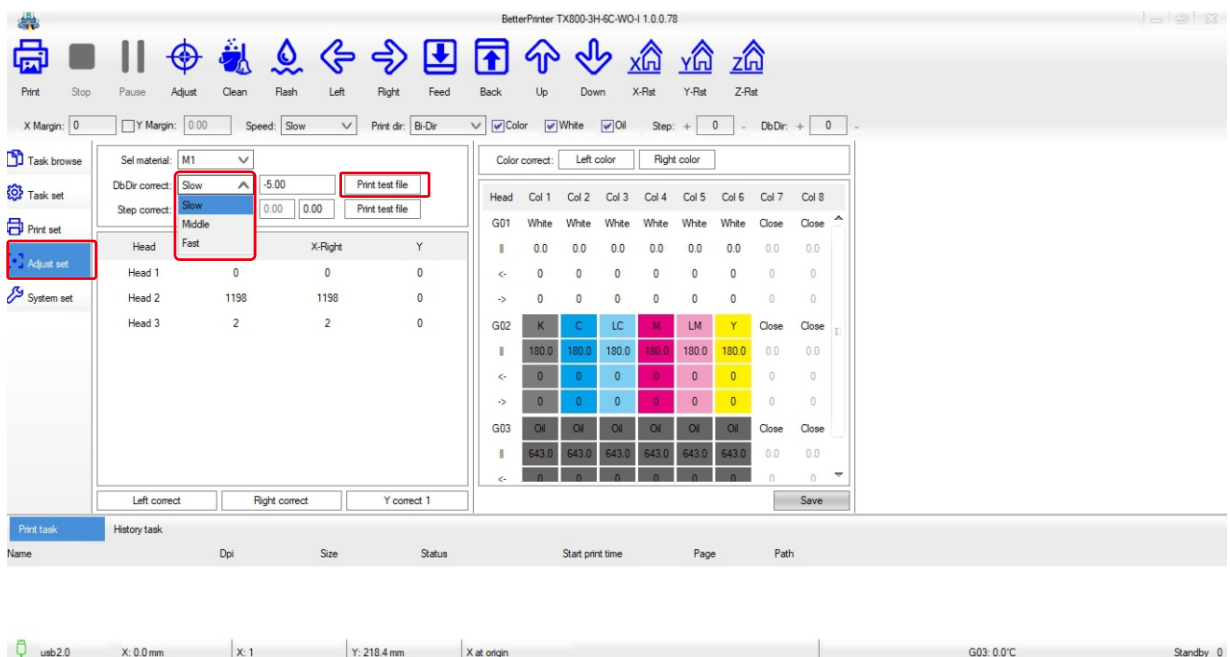
3 Bilateral test pattern

- After printing the test diagram, check to see if the upper and lower thin lines in the box above the number coincide, such as "- 2" coincidence.
- When the settings are complete, click the Save parameters button.

To subtract 2 from original value,Calculation formula: -9-2=-11,Fill the blank with -11
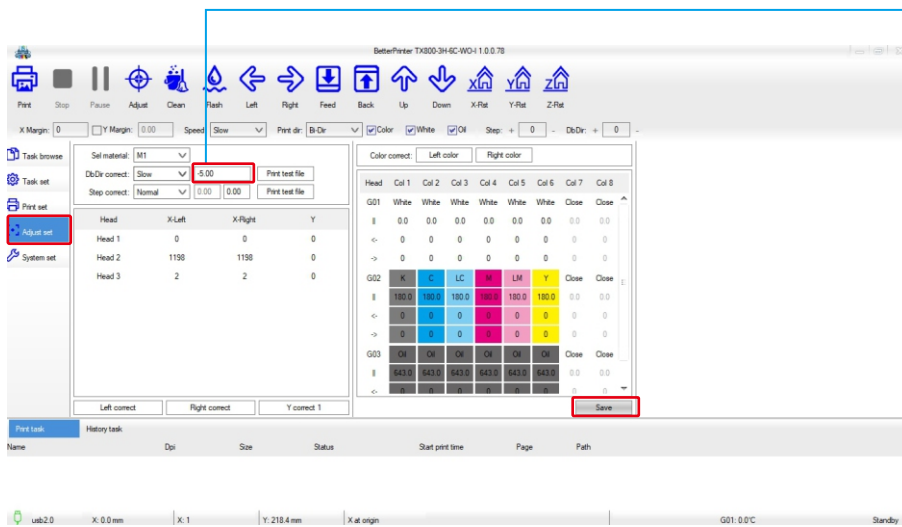
4 Print test pattern once again

- Click Print ,in bi-dir calibration area.
- Upper line and lower line in rectangle shape above 0 must be overlapped for final result of test pattern.
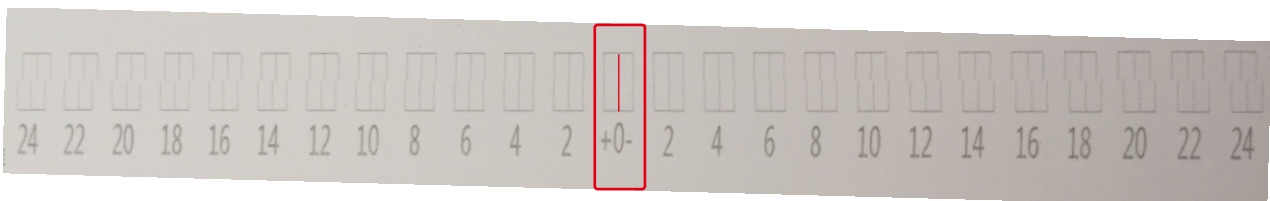
correct

⚠ CAUTION
- Bi-dir calibration at medium normal and fast speed is the same with bilateral calibration at slow speed.

Color register calibration

1

Open print control center software, click Task browsing button
- Please search for 📁,folder in attached USD flash disk.
- Double-click to open the selected file.
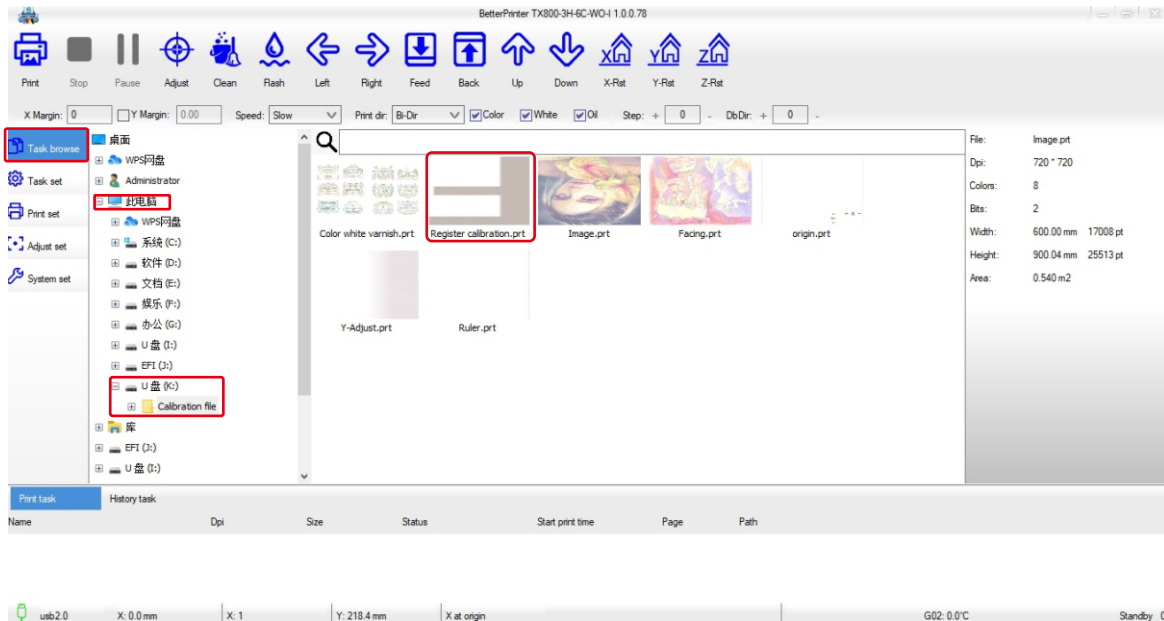
2

Print picture
- Click 🖶 button to print.

3

Color calibration adjustment
- The printer will print with white ink first, and then print with color ink.
- Edge of color ink and reference edge of white ink must be perfectly and completely overlapped.

G01Adjust CH01—CH06   G02Adjust CH01—CH06

Edge of color ink   Edge of Glossy oil ink

Reference edge of white ink

Negative Value ← → Positive Value

Adjust deviation value for nozzle 2

Positive Value

Edge of color ink

Edge of Glossy oil ink

Reference edge of white ink

Adjust deviation value for nozzle 3

Negative Value
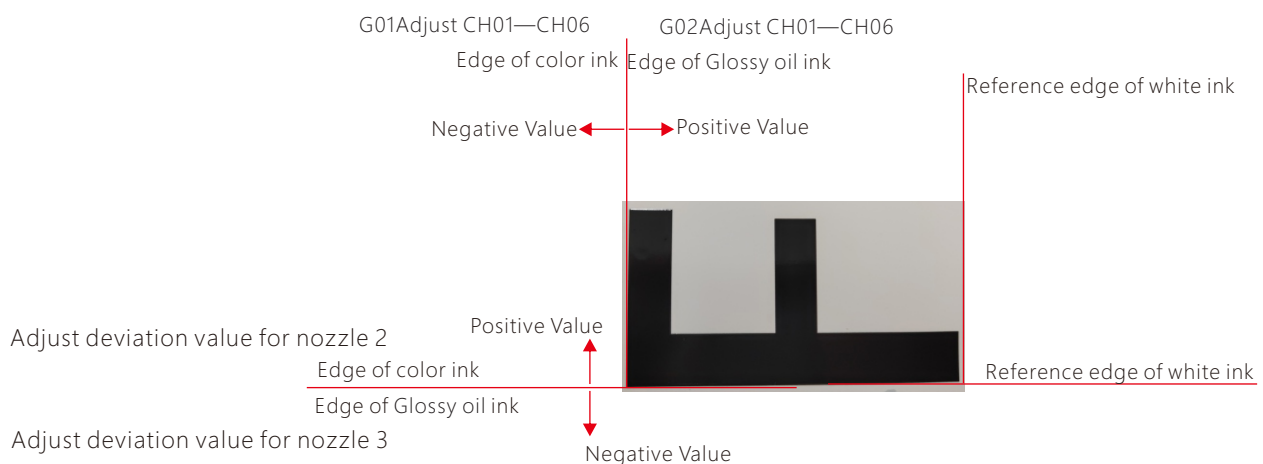
4

Calibration adjustment of color register
- It is recommended to add or subtract 4 from original value for each calibration adjustment.
- As shown above, it is determined that the original value needs to be added or subtracted according to the actual situation, and then print again.
- When the settings are complete, click the Save parameters button.

Adjust deviation value for nozzle 2

Adjust deviation value for nozzle 3

G02 Adjust CH01—CH06

G01 Adjust CH01—CH06
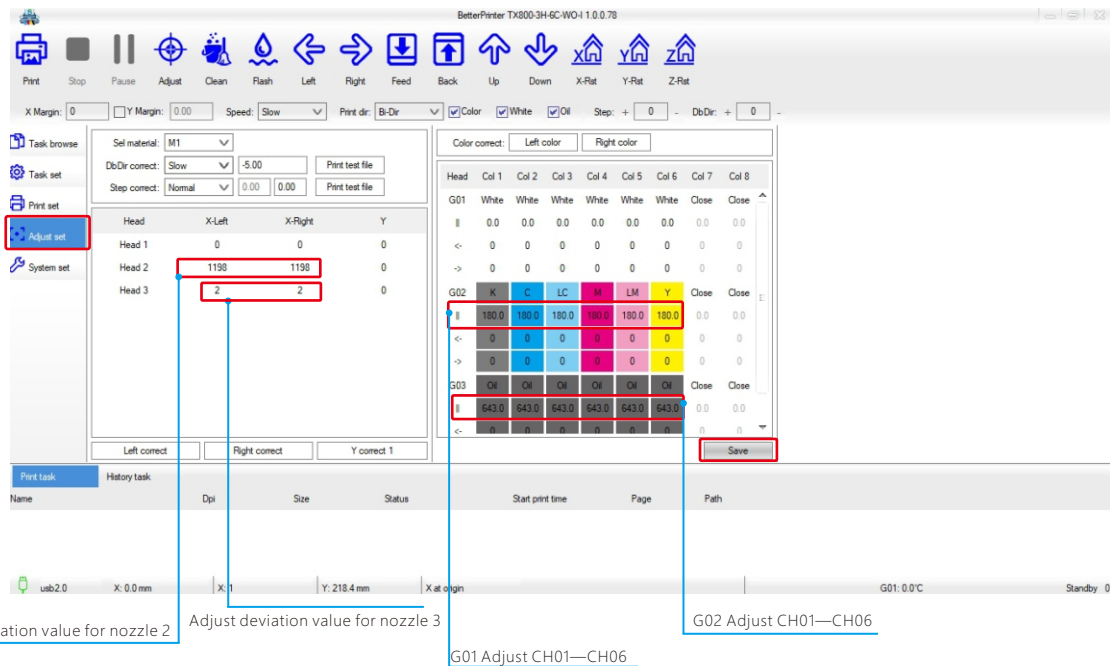
5

Print data again
- Whether edge of color ink and reference edge of white ink are perfectly and completely overlapped. Value needs to be adjusted for another time if not overlapped.
- Edge of color ink and reference edge of white ink must be perfectly and completely overlapped.

Daily maintenance

Printer maintenance should be performed based on application frequency or at regular intervals, to maintain print accuracy and prolong service life.

In case of printer out of application for long time

• Please pull host power cable at back side of the printer.
• Please take away print media.

Notes to maintenance

- Do not tear this printer, otherwise you may get electric shock or the printer may get damaged.
- Do not let water vapor get into internal part of this printer, because internal part of printer dampened may result in electric shock or printer damage.
- Before maintenance, please turn off main power switch and pull power plug, to avoid accidental incidents.
- Do not use petrol, diluents or any other chemical agent containing abrasive agent, to avoid printer cover surface damage or printer cover deformation.
- Do not apply lubrication or similar matters to any component inside the printer, to avoid malfunction.
- UV curable ink (UV ink) blending with water and/or alcohol may generate condensation product, as a result, please pay close attention not to let nozzle surface and nozzle perimeter zone be stained with water or alcohol.
- UV curable ink (UV ink) is adopted for application of this printer.
- Make sure to ware a pair of gloves during maintenance.

CAUTION

Waste ink treatment

Ink used for nozzle cleaning would be discharged into waste ink bottle.
Please regularly check waste ink bottle, and immediately discharge waste ink once the bottle is full.

> **CAUTION**
> - Nozzle cleaning should be performed after completion of ink discharge.
> - Do not let waste ink overflow during waste ink bottle treatment.
> - Please perform waste ink treatment in time when waste ink accounts for half of the bottle.

Treatment of waste ink in waste ink bottle

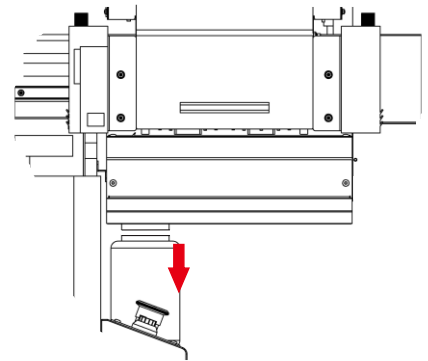**1**   **Take down waste ink bottle**
- Please rotate waste ink bottle in clockwise direction.
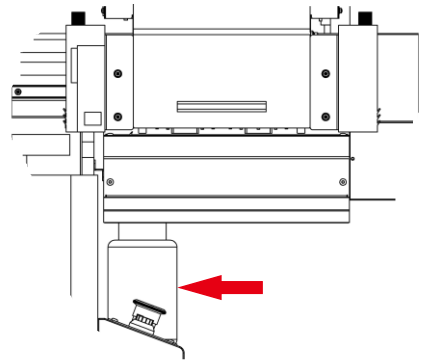
2   **Take out waste ink bottle**
- Please tightly hold the waste ink bottle and slight rotate down, and then take out the waste ink bottle.

3   **Pour out waste ink**
- Pour the waste ink into another covered bottle.

4   **Install waste ink bottle**
- Please refer to reverse operation of abovementioned.

Scraper cleaning

Scraper is used to scrap ink which adheres onto surface of nozzle of print head.
Scraper may be get dirt by ink and dust during printer working.
Please clean scraper frequently in order to maintain the nozzle in good condition.

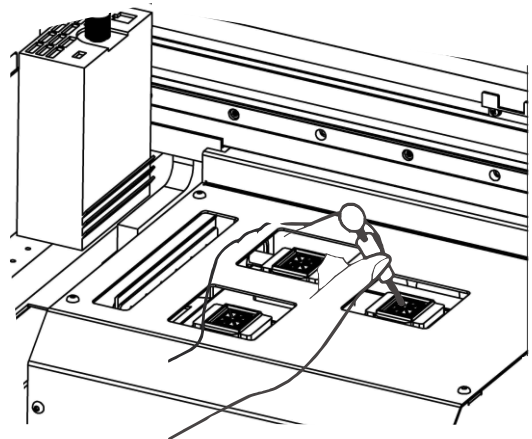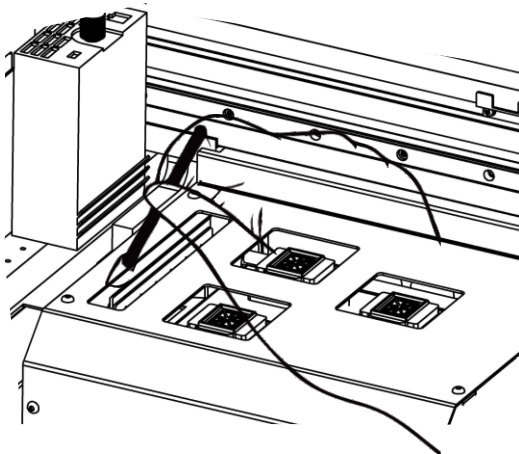**1**   **Open print control center software, and click ⊕ button**
- Move the print bus out of ink station to the left.

scraper   ink station

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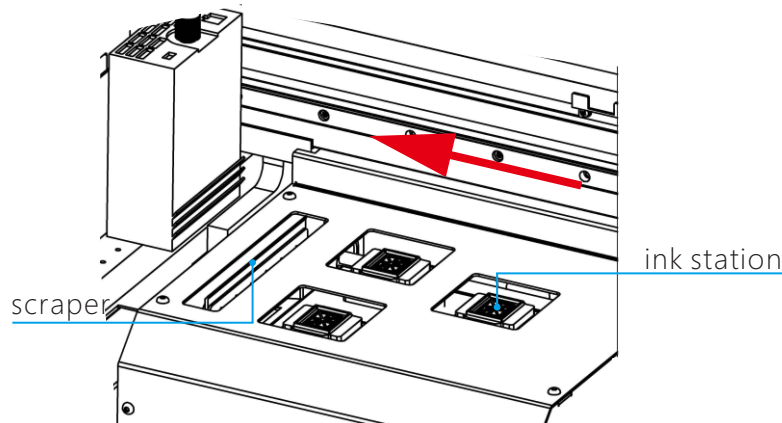
2   **Dip cleaning bar with cleaning agent to wipe dirt on the scraper**
- Please wipe the place indicated in the illustration.
- Please replace the scraper with a new one if getting too much dirt.
- Please pay attention not to mistake forward face for backward face during new scraper installation.

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3   **Print bus restoration**
- Open print control center software, and click 🏠 button to wait for completion of print bus restoration.

Appendix

Printer specifications

Item		Specification
Print nozzle		On-demand piezoelectric nozzle (3 nozzles in staggered arrangement)
Print DPI		720X720dpi、720X1080dpi、720X1440dpi
Print range		Width: 600mm, Length: 900mm
Ink	Type	UV ink
	Color	C/M/Y/K/Lm/Lc +V+W
	Ink cartridge capacity	500mL
Print height		≤150mm
Curable mode		Double UV-LED light+Single UV-LED light
Ambient temperature		15−30℃
Ambient humidity		35−65%RH
Power source		AC220V 50/60Hz
Power		800W
Print port		USB2.0
File format		Tiff、Jpg、Eps、Pdf
Dimensions (LxWxH)		1280X1435X650mm
Weight		≤120Kg