

# **CALCA ULTRA PRO**

## **DTF Printer**

# **User Manual**



## **CALCA-DTF-TF240**

Thank you very much for choosing our CALCA brand series DTF printer, please read the manual carefully, including the operation and maintenance to ensure the best output and the lifetime of the machine.

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## About DTF

Direct Transfer Printing is a revolutionary new printing technique that's more affordable and accessible compared to DTG, screen printing, sublimation or laser white toner transfers.

## What Sets DTF Apart from Other Transfers?



- ✓ A great option for small orders.
- ✓ No cutting and weeding required.
- ✓ Crisp, defined edges and images from start to finish.
- ✓ Low cost on waste.
- ✓ Low investment – high reward (Print Cost: \$0.007/inch<sup>2</sup>).

## Works on Most any Fabrics

DTG technology works best on cotton pre-treated fabrics while DTF opens the door to a wide range of choices and is capable of printing onto non-treated cotton, silk, polyester, denim, nylon, leather, 50/50 blends, and more. It works equally well on white and dark textiles.



1 Create your design



2 Printing



3 Shaking powder



4 Bake



5 Heat Press



6 Finishing

## **Specifications**

24.4inch (620mm) Maximum print width

4 Epson I3200-A1 Printheads (CMYK + WWW)

Printer Size: 70.3in x 31.1in x 63.5in (1785mm x 790mm x 1613mm)

Printer Weight: 396lbs (180kg)

Speed: 6 pass: 18m<sup>2</sup> / h; 8 pass: 12m<sup>2</sup> / h

1 Liter per color ink bottle capacity

Printing Software: CALCA DTF Fairy Rip / Flexi PhotoPrint Rip

Printing Resolution: 1440 / 2160 / 2880dpi

Print Head Cleaning: Automatic

Platform Suction Adjustment: Yes

Rewinding Function: Automatic

Heating Sections: Pre-heater, rear heater: 86°F-149°F (30°C-65°C)

### **Requirements:**

- > Working Power Supply: AC 110V / 220V, 50HZ / 60HZ, 1 phase.
- > Current: 5.5A (220V), 11A (110V)
- > Operating System: XP / Win7 / Win10
- > Temperature control set to 68°F - 95°F (20°C - 35°C) and 45 - 65% humidity.

## **I. Notice on Safety Using**

### **1.1 Risks might present**

Read the instructions carefully as they contain important information regarding proper, efficient and safe installation, use and maintenance of the unit.

The installation of this unit must be carried out in accordance with the manufacturer's instructions.

Switch off the unit in case of failure or malfunction and contact your distributor for service information.

### **1.2 Symbols**



This symbol informs about a situation where a safety risk might be at hand. Given instructions are mandatory in order to prevent injury.



This symbol informs about the right way to perform in order to prevent bad results, appliance damages or hazardous situations.



This symbol informs about recommendations and hints that help to get the best performance out of the equipment.

### **1.3 Safety**

#### **1.3.1 Safe use of the appliance**



For your safety. Do not store or use gasoline or other flammable vapors or liquids in the vicinity of this or any other appliance.

#### **1.3.2 Other prohibitions**



Using any parts other than genuine CALCA approved manufactured parts can void the warranty.



Improper installation, adjustment, alteration, service or maintenance can cause property damage or major injury. Read the installation and operating instructions thoroughly before installing or servicing this equipment.

### 1.3.3 Caution

**CAUTION**

Users must pay attention to content have this mark; it might be caused by misoperation.

## 1.4 Notice before starting it

This machine is a high voltage equipment, in order to use the machine better please be aware of following specification.

### 1.4.1 Placement instructions

#### Installation And Placement

- ① The equipment should be placed in a dry and ventilated environment
- ② The equipment must be placed horizontally
- ③ Keep your computer system away from potential sources of electromagnetic interference, such as a speaker or wireless telephone set.

### 1.4.2 Power connection instructions

#### Electricity Parameters

Rated voltage: AC110V / 220 V, 1 phase

Rated current: 11A / 5.5A, 1200W

Rated power: 1200W

The access power must be consistent with the rated power of the equipment, and the guage number of the access power supply line must meet the rated requirements.

**Please only use the power type identified on the printer's label.**

Do not use a damaged or broken power cord. If you use an additional power cord, remember that the total amperes of the device inserted in the additional power cord should not exceed the rated ampere of the power supply. In addition, please remember that the total ampere of all devices inserted wall outlet should not exceed the amp rating of the wall outlet.

#### Ground Connection



Before the power-on, the ground wire must be connected properly.

**Those who are sensitive to static electricity should take protective measures when operating the equipment.**

Those who are allergic to static electricity should wear an anti-static wristband or anti-static gloves.

**NOTE:** The machine must be inserted in the ground wire. In dry air conditions, static can be a dangerous issue, especially when using PET media (and more so when the paper feeding speed is very fast).

Electrostatic charge can cause damage to the printer and the board.

The grounding wire is the best method to avoid this. During operation, ensure that the user's hands have been discharged (through contact with ground or electrostatic equipment). Otherwise, damage may occur to the board or nozzle.

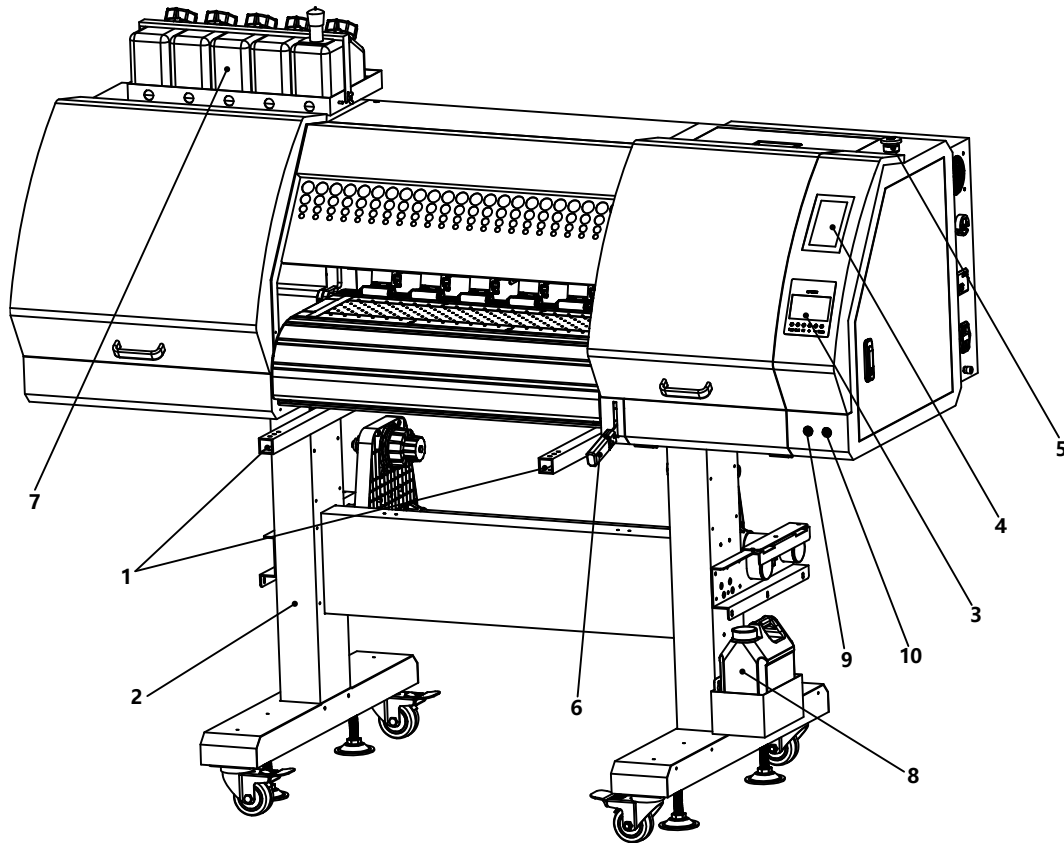
#### **1.4.3 Precautions for operation**

- > The printer must be monitored during operation.
- > Do not unplug the printer or other relevant data cables until the machine is switched off.
- > **Do not unplug the print cables or power cable while the machine is on or in operation, as it may cause damage to the main board.**
- > Please do not place tools or other items on the printing platform or cover plate of the machine, so as to avoid unnecessary losses caused by improper cleaning before the machine is running.
- > Before handling your printer, make sure that your printing carriage is fixed in the primary position.
- > Perform regular maintenance on the printer to reduce the impact of dust and ink on the printer.

## II. Printer's Parts Identification

### 2.1 Printer body

#### 2.1.1 Front views



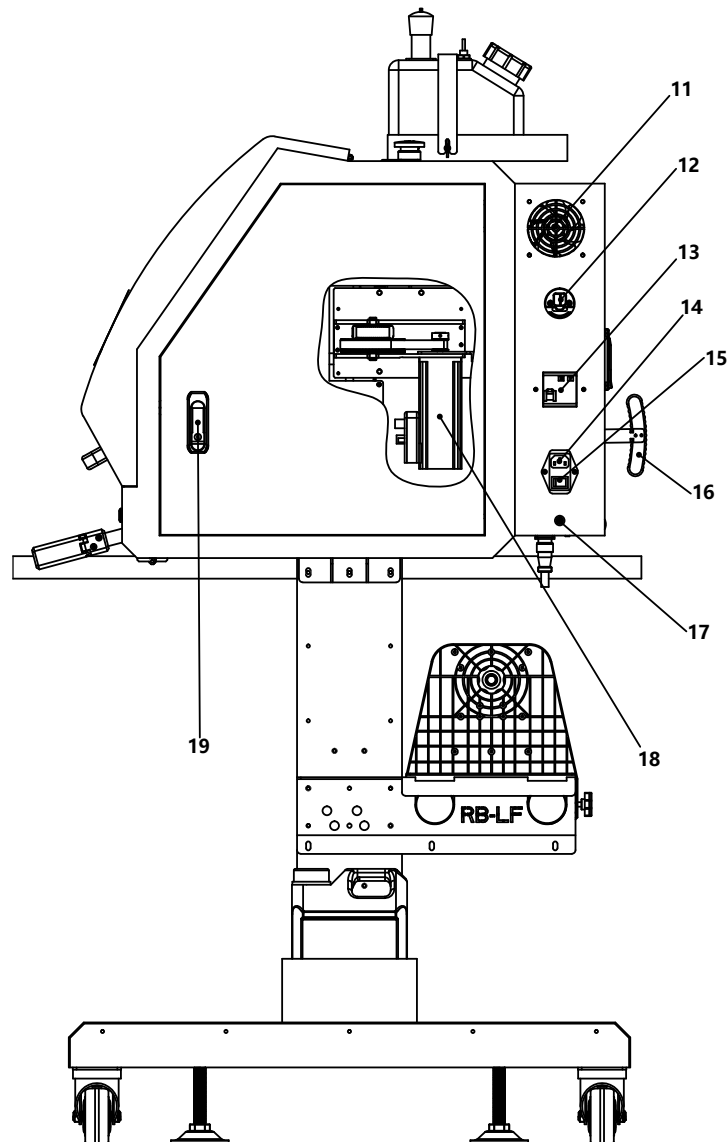
1. **Printer lifting rod:** To fix the wooden box floor during transportation to fix the printer and lift the printer when installing the printer for the first time, The lifting lever can be removed after the printer is installed.
2. **Printer floor stand:** The support frame of the printer. ("The Floor stand Rack Assembly" in section 3.3)
3. **Platform heating air suction control board:** Set the front, middle and rear heating of the platform.
4. **Operation panel:** To adjust and set the operation and internal configurations of the printer. ("Operation panel diagram" On section 2.2)
5. **Emergency stop switch:** Pressing when stopped in an emergency.
6. **Media pressing handle:** Lift the wheel to install the printing materials.
7. **Bulk ink supply bottle:** A device for storing ink.

**8. Waste ink bottle:** A bottle for storing waste ink.

**9. LED switch:** Printing platform light.

**10. White ink circulation switch.**

## 2.1.2 Right side views



**11. Heat dissipation fan:** Do not block the air outlet when the machine is working.

**12. Line buckle:** To fix data line.

**13. Protection switch:** Leakage protection device.

**14. Switch control of the main power supply.**

**15. Media pressing handle at rear:** Lift the wheel to install the printing materials.



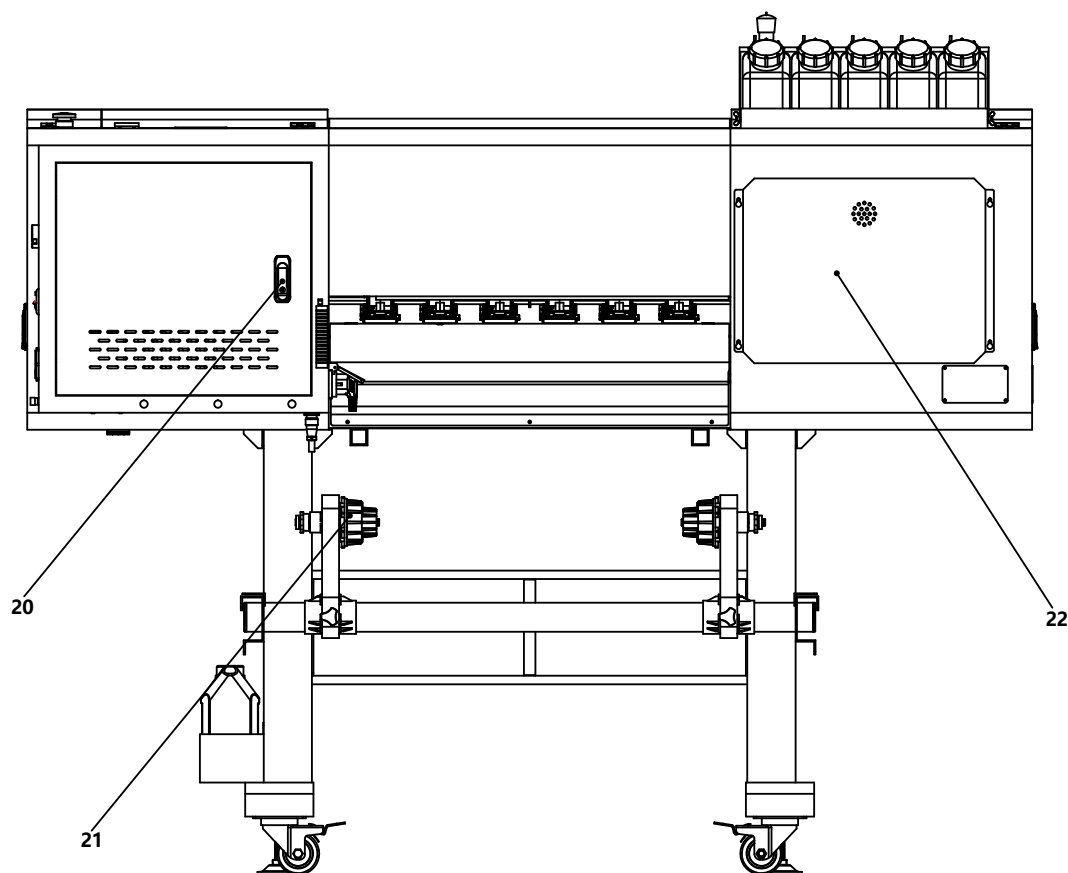
**16. The main power supply plug.**

**17. Ground wire terminal column:** External grounding wire to ensure that the machine is free. From static electricity or external electric field interference.

**18. X axis motor:** X axis driving electric unit.

**19. Right box door:** Integrating internal X axis electric unit, control panel and temperature control board and other circuit equipment, only accessible for professionals.

### 2.1.3 Rear views



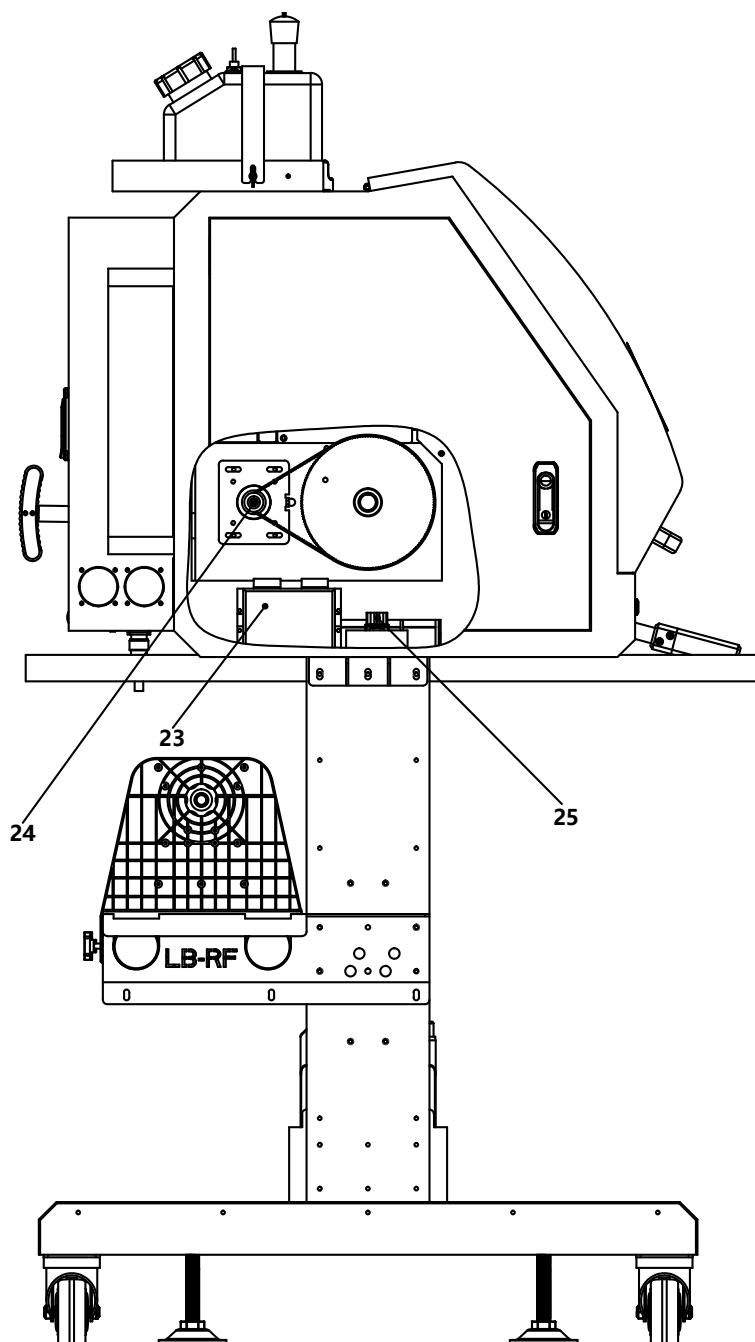
**20. Circuit box:** Power supply inside

**21. Damping dispenser:** A device for placing printing materials.

**22. Ink supply system inside:** Do not open it for a non-professional person.



### 2.1.4 Left side views

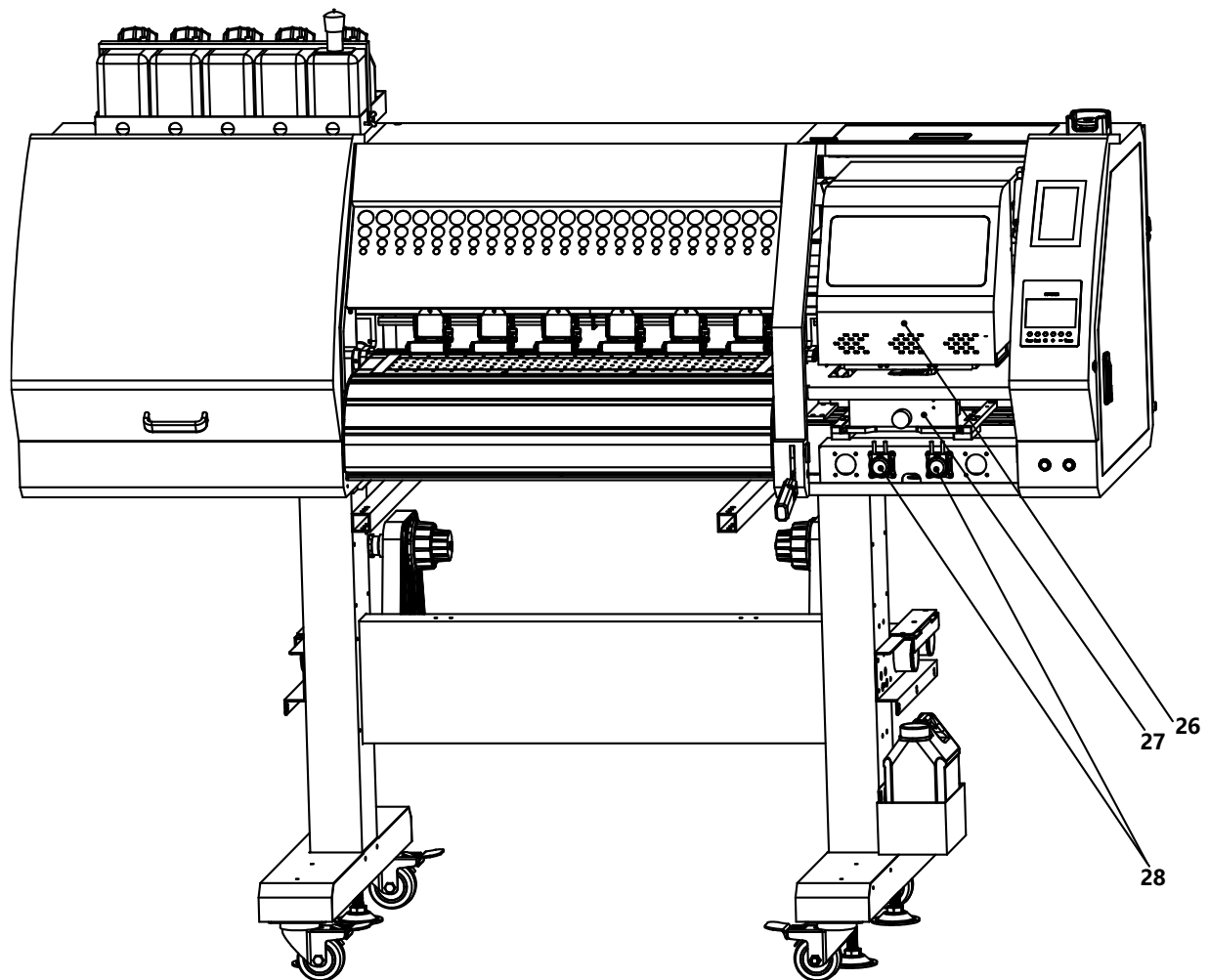


**23. Y-axis motor driver**

**24. Y-axis motor**

**25. White ink cycle speed control knob**

### 2.1.5 Right cover inside diagram



**26. Carriage unit:** Please refer to “Carriage Diagram” section 2.3

**27. Ink station:** The ink pumping and moisturizing device of the nozzle.

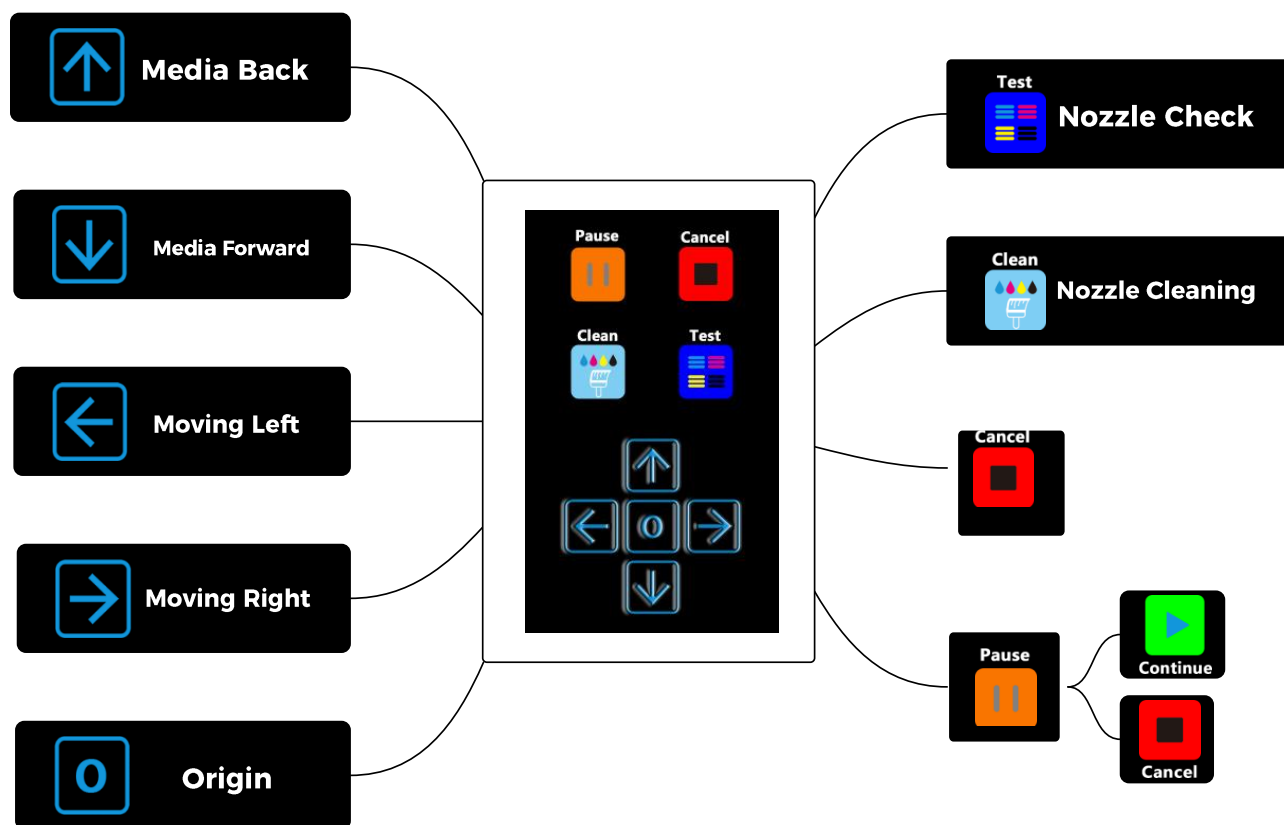
When the machine is not working, the cap top must be used to seal the nozzle.

**28. Ink pumping system:** Elements for pumping ink at ink station.

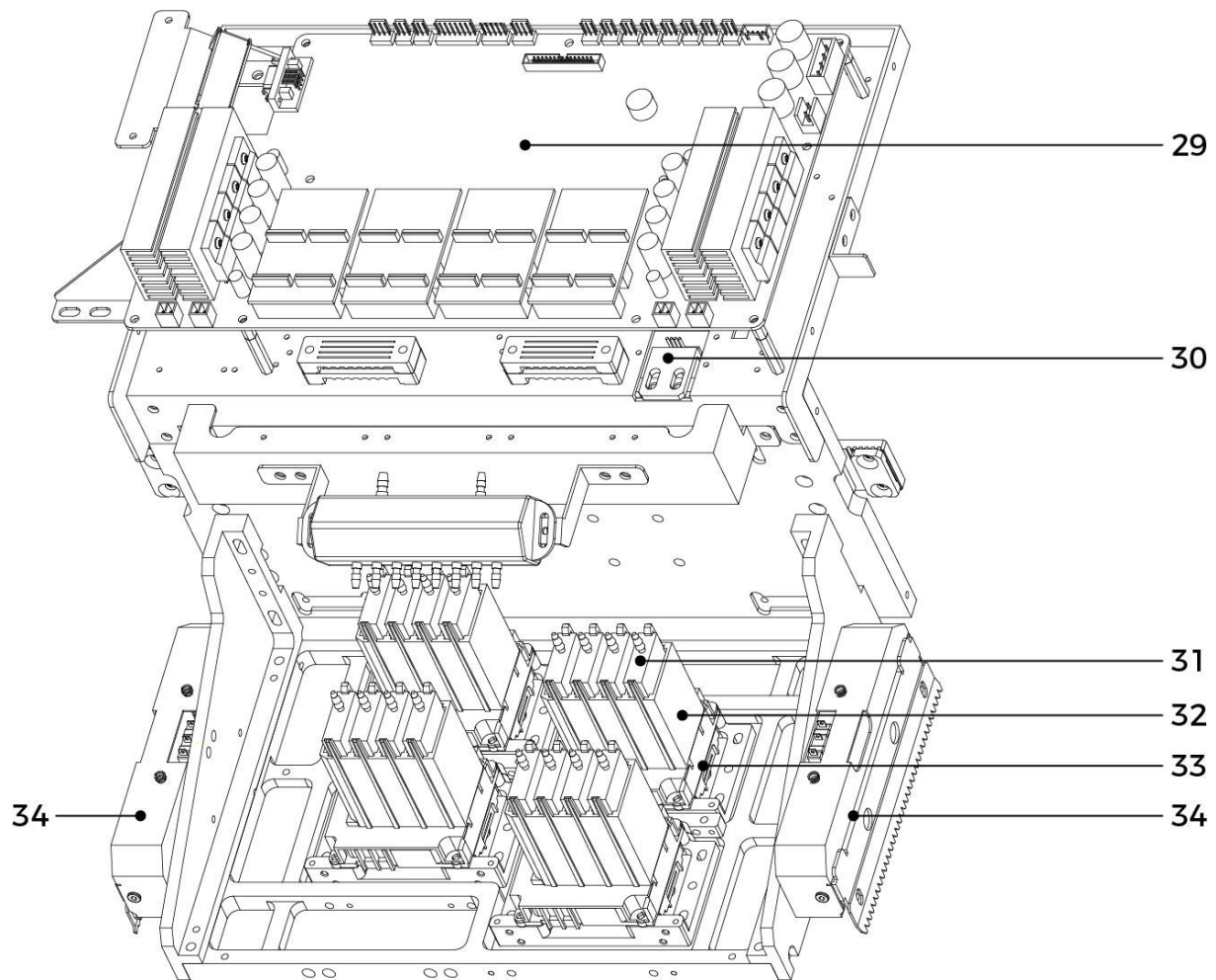
## 2.2 Operation panel diagram



The screen shows before connecting to the computer.



## 2.3 Carriage diagram



**29. Print head board:** Board driving printer jet ink. Machine online, data transmission, inkjet system.

**30. Linear encoder:** X axis grating scale reading element.

**31. Ink damper:** Ensure the continuous supply of ink and filter impurities.

**32. Ink damper holder:** Prevent the ink damper from loosening.

**33. Print head:** Ink output, the nozzle status directly affects the printing effect.

**34. Anti-Collision device:** Prevents printhead collision.

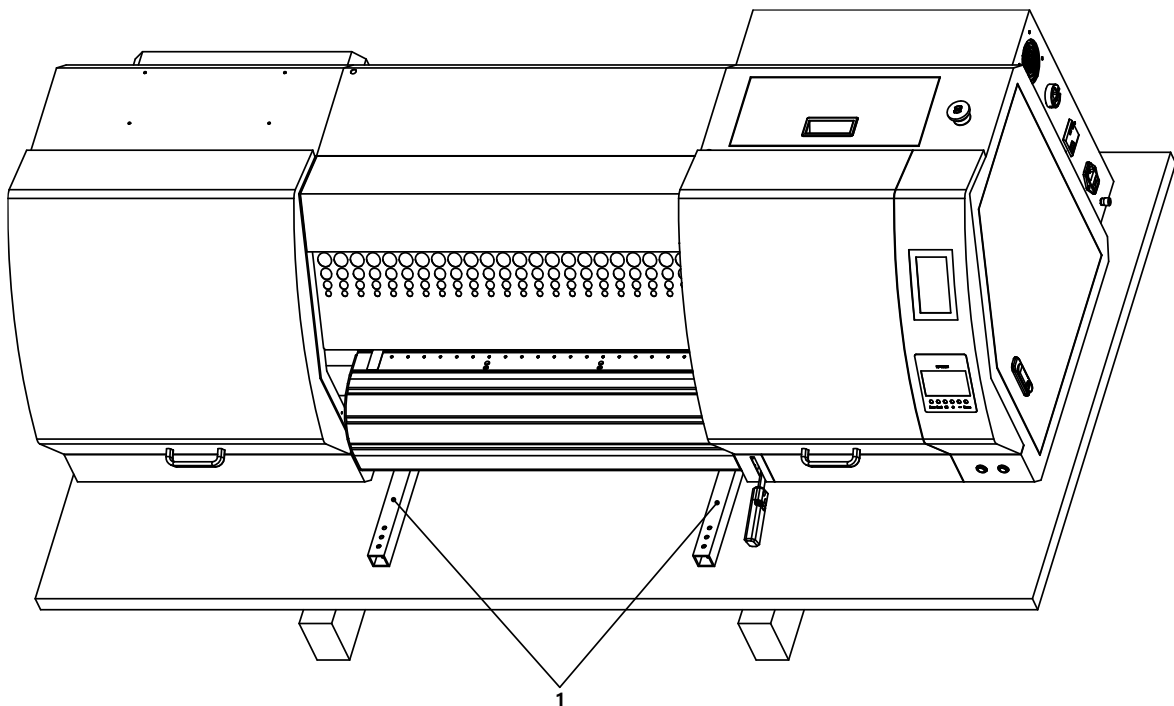
### III. Printer Installation

#### 3.1 Installation precautions

1. Before unpacking, check if there is damage on the packing and the machine during transportation.
2. After unpacking, check if the service parts are correct as the packing list.
3. The installing place should be provided enough space for operating and free of dust, no vapor, no corrosive gas, no combustible or explosive substance around. Keep the machine away from wind blowing place, otherwise will affect printing quality.
4. After installation, adjust each caster to reach level ground. The casters only be used on even ground for short distance movement.

**Notice:** Please move carefully since it is a heavy equipment.

#### 3.2 Printer unpacking



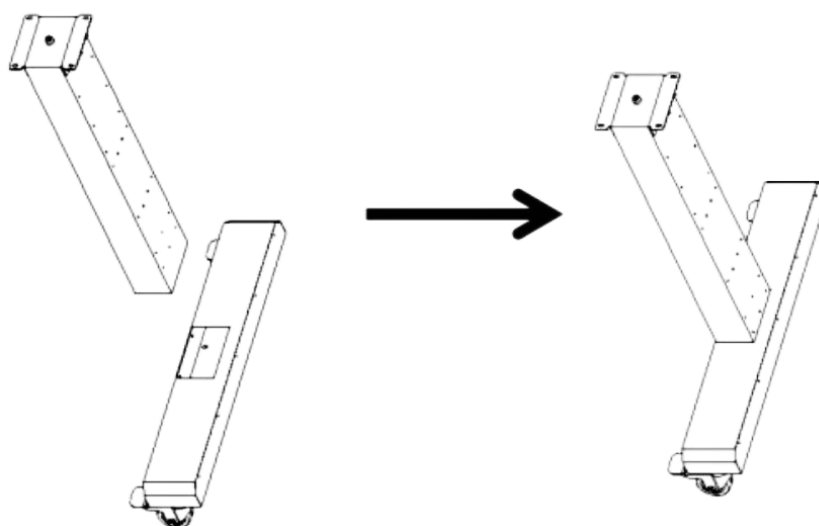
Open the wooden box and remove all the screws that fix the lifting rod of the machine on the bottom plate of the wooden box.

### 3.3 The stand floor rack assembly

1. Take out the parts from the packing.
2. Assembling two legs and all shafts according to the picture.

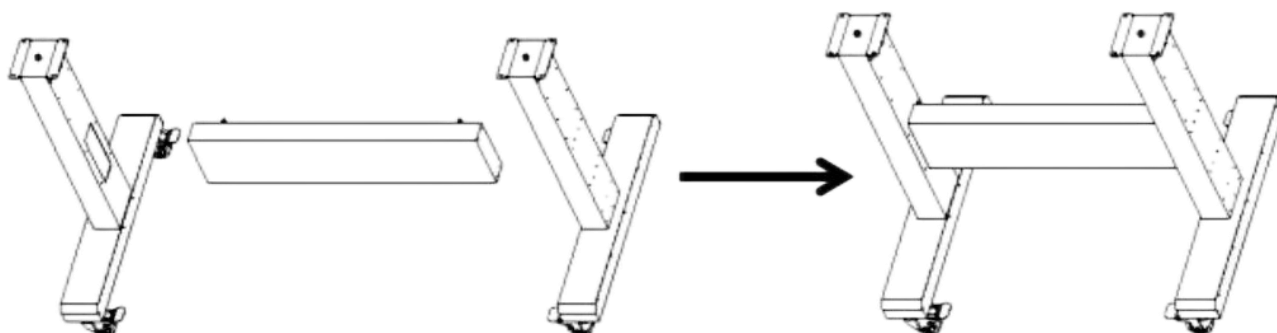


#### 3.3.1 Installation diagram



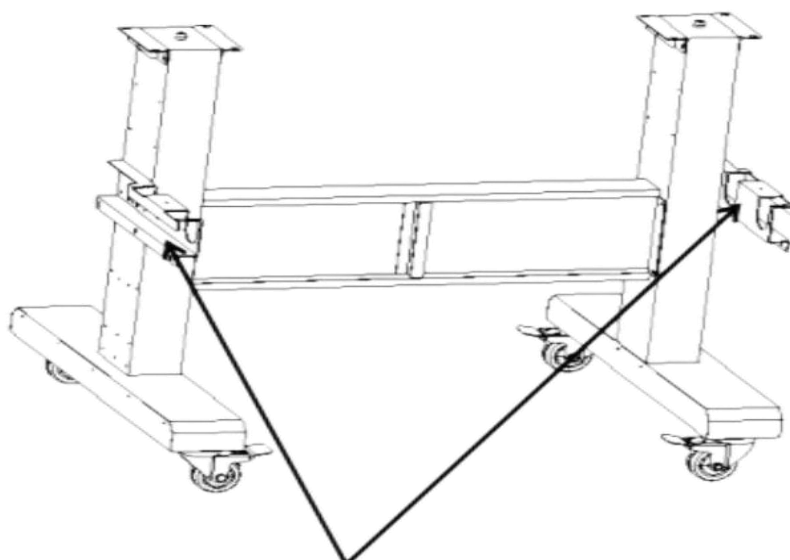
Fix the stand bars with six screws.

### 3.3.2 Installation of Cross Bar

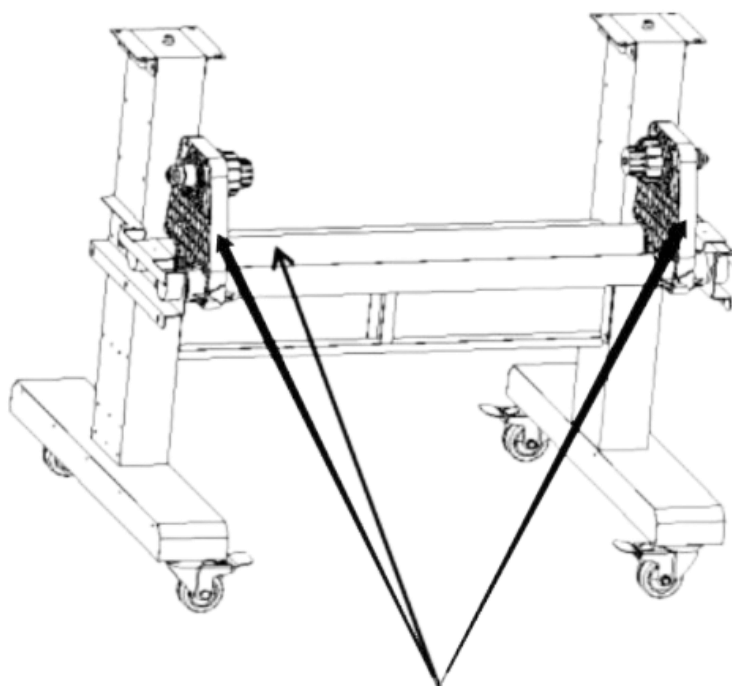


Fix the cross bars and the stand bars together with 12 screws.

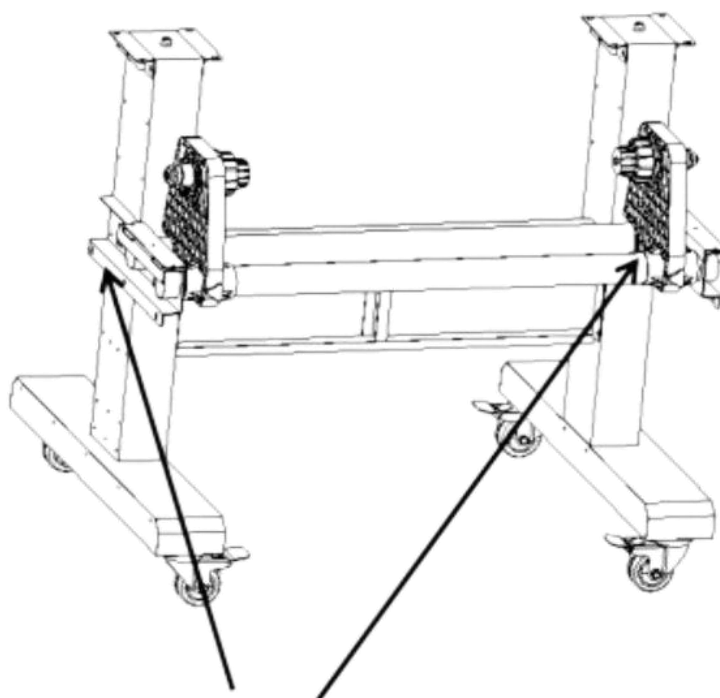
### 3.3.3 Roller installation



Install the both sides of the brackets



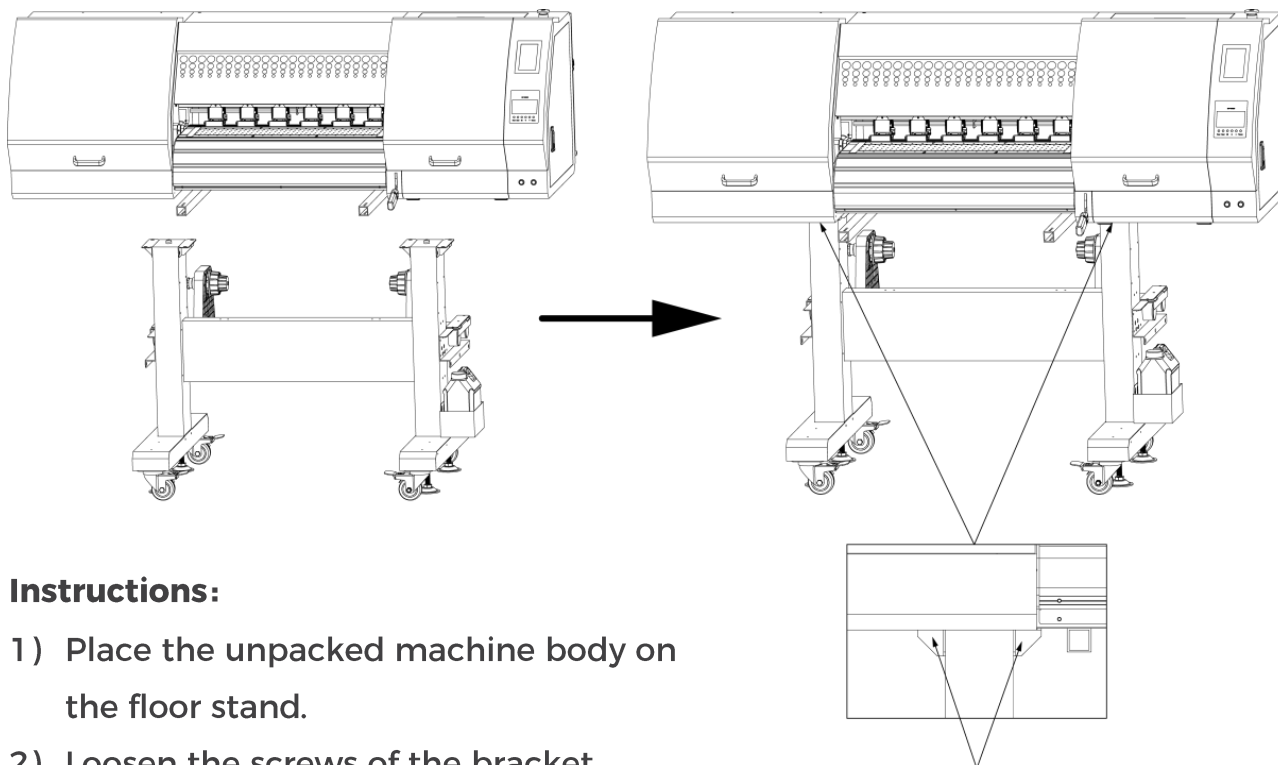
Place two steel pipes and flange plates on the pipe holders.



Fix the steel pipe pressing plate on the pipe frame.



## 3.4 Machine body assembly

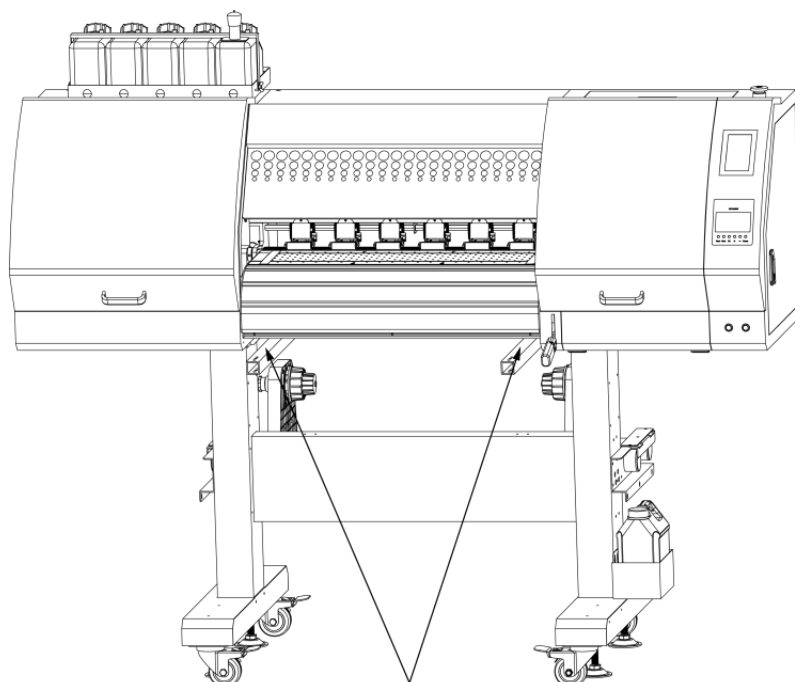


### Instructions:

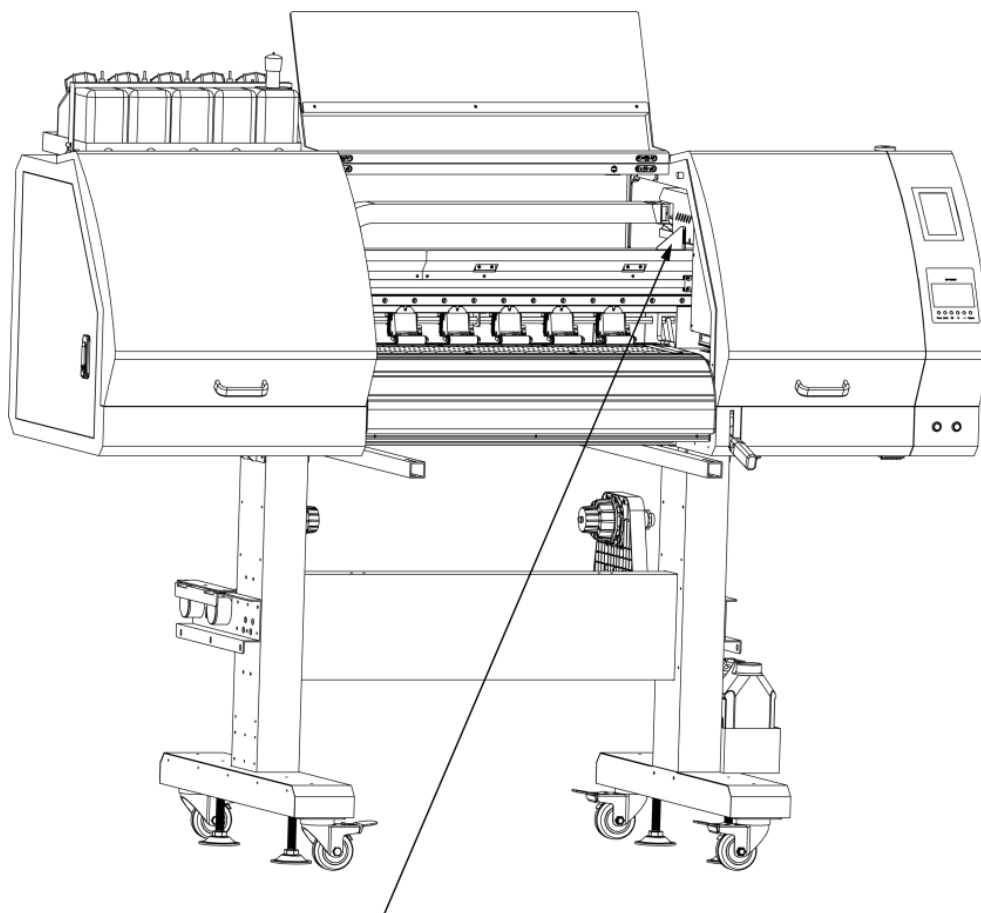
- 1) Place the unpacked machine body on the floor stand.
- 2) Loosen the screws of the bracket connecting plate, and then tightened with machine.

Stick to the bottom beam and stand bar.

## 3.5 Remove the lifting rod and carriage fastener

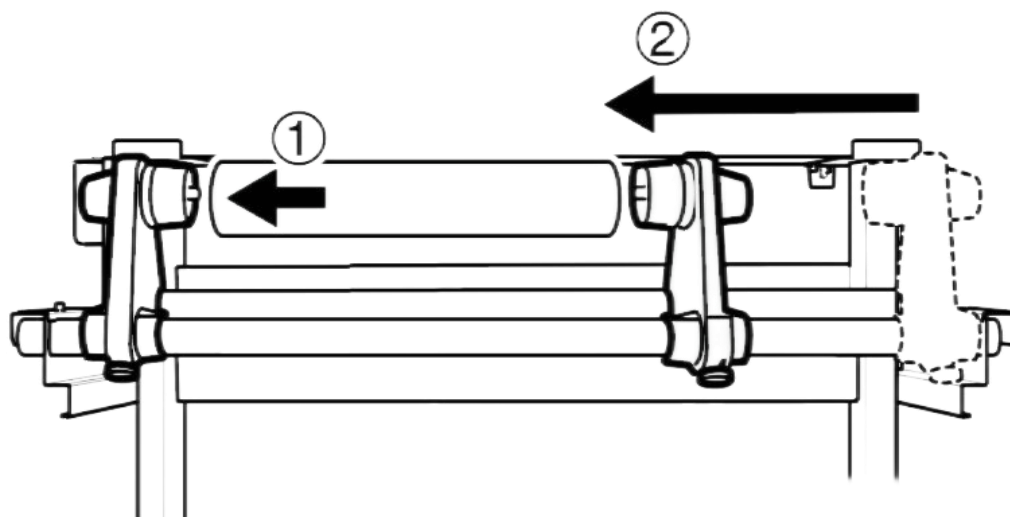


Remove the two lifting rods.

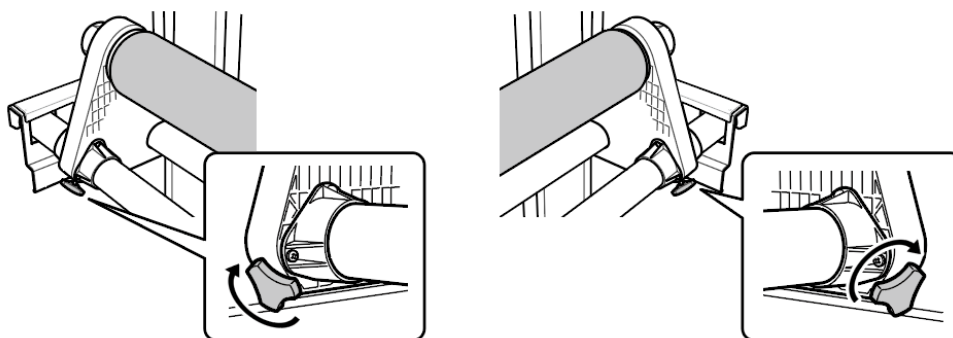


Remove the carriage fastener.

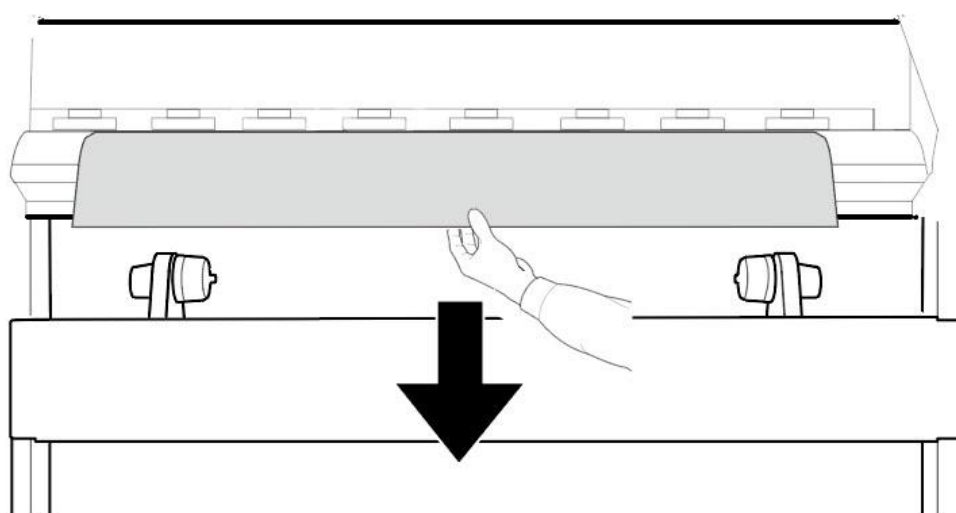
### 3.6 Media loading



As shown in the figure, fix the coil bracket on the left, load the media roll, closed with the right coil bracket.



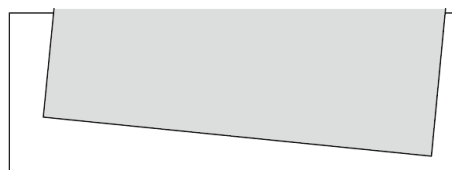
Tighten the screws and secure the roll bracket.



Run the media through the print platform.



Available



Unavailable

Keep the media parallel to the platform

## Usable Size

**Maximum print width:** 24in (620mm)

**Maximum thickness:** 0.05in (1.3mm)

**Roll outer diameter:** 5.9in (150mm)

**Printing media core diameter:** 2 or 3 inches

**Printing media weight:** 44lbs (20kg) or less

**Media heater:** Pre/rear heater (Can be controlled separately)

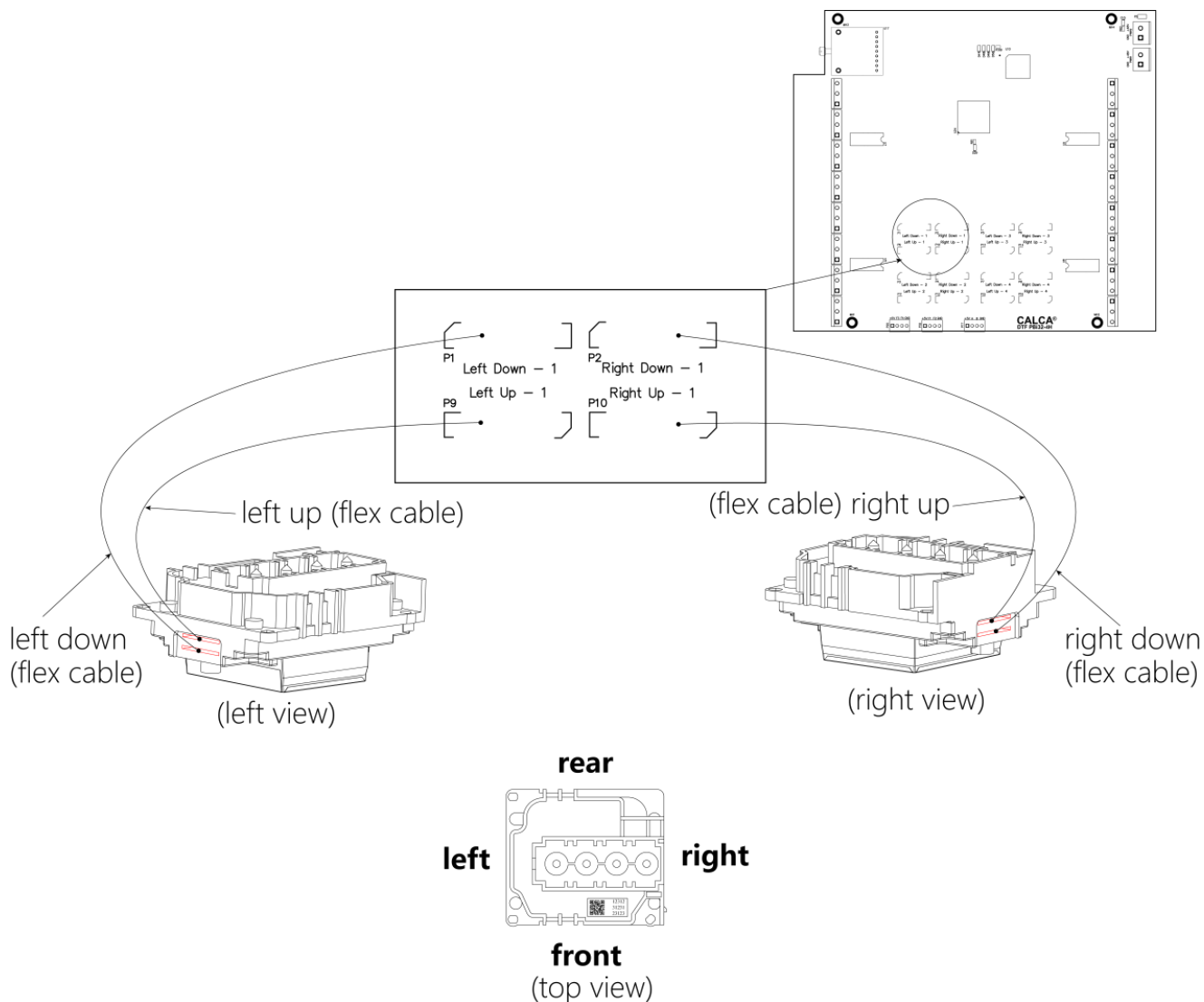
**Cautions when handling DTF printing media:**

- > Please use recommended media. Contact CALCA sales for recommended media.
- > Be aware of expansion and contraction of media from temperature and humidity.  
After opening an unopened media, leave the media for approximately 30 minutes to adjust to environments.
- > Do not use media with folds, scratches, tears, curvatures, winding curl and weaving.
- > Do not leave a roll media set in the product for a long time. The media can be curled becoming unsuitable for printing.

When not using for a long time, remove the roll media and store in its original package box.

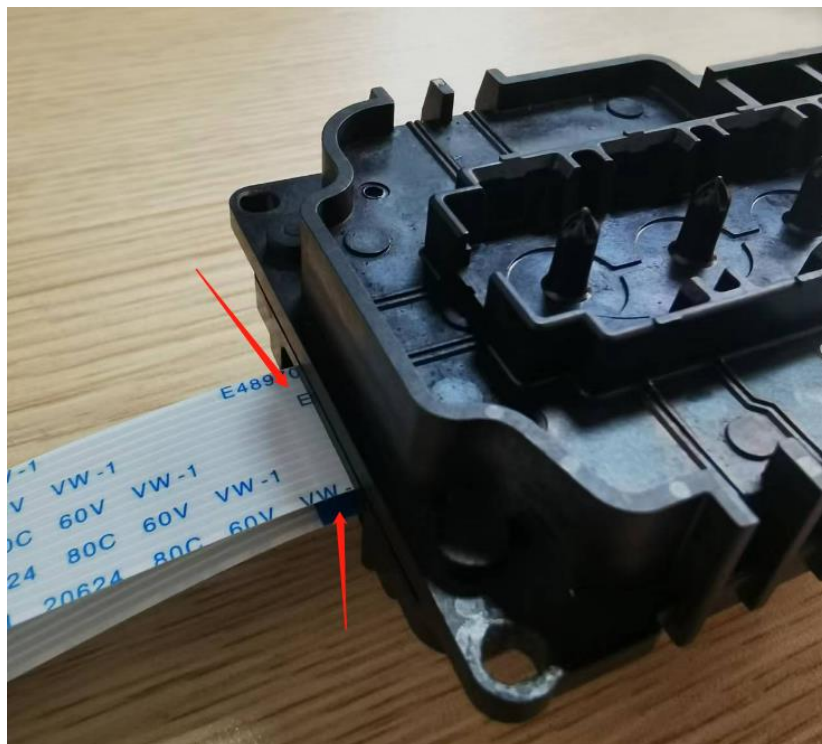
### **3.7 Printhead installation**

- 1. Schematic diagram of the printhead wiring, taking the installation of one printhead as an example:**

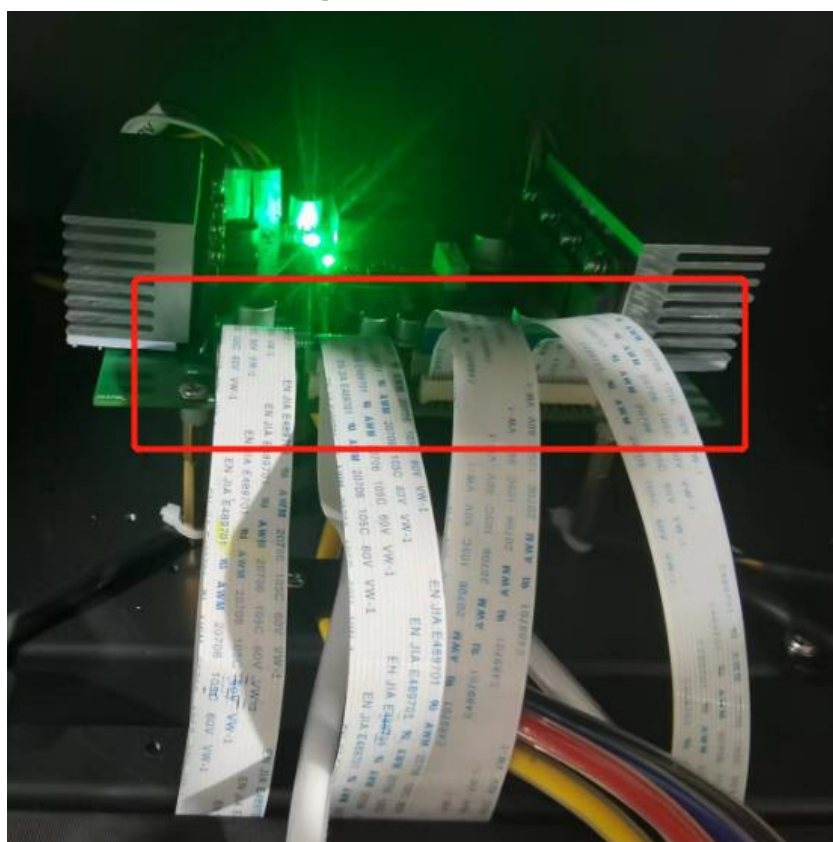


## 2. Insert the printhead data cable:

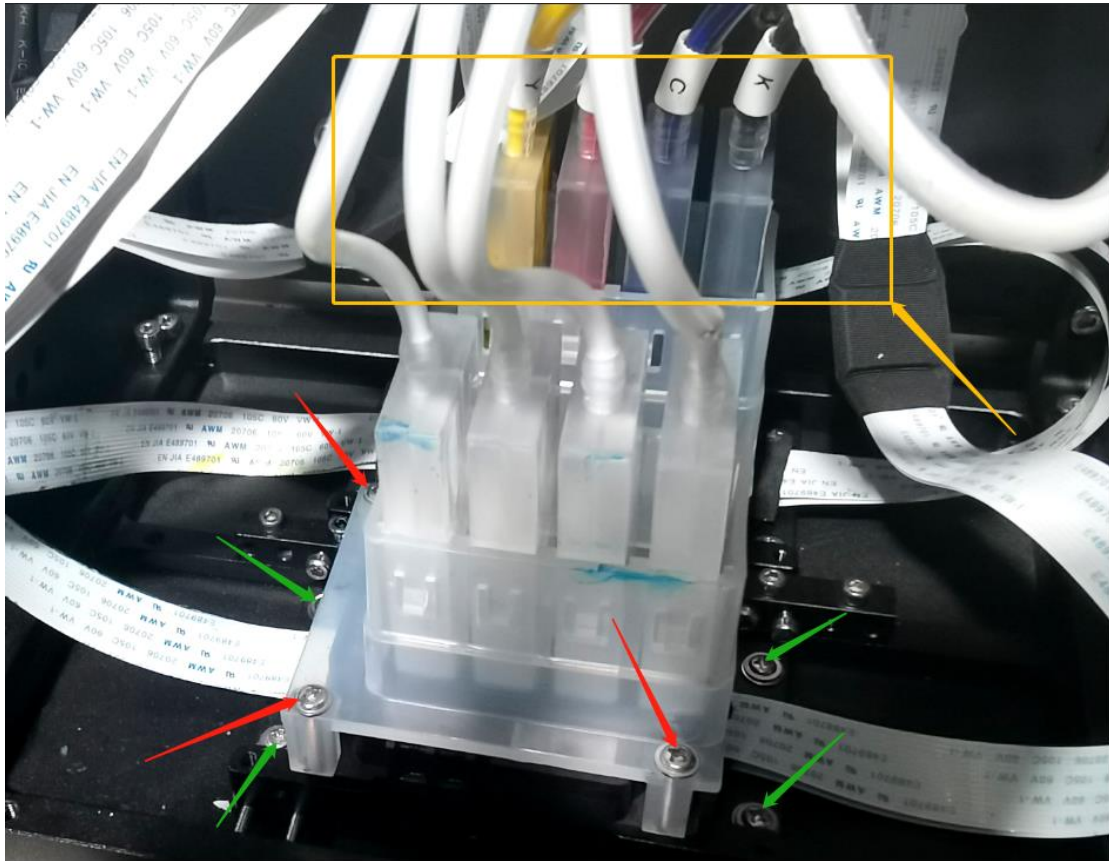
Confirm that the cable is fully inserted into the interface, pay attention to the front and back of the cable, the blue side of the upper interface line is facing down, and the blue side of the lower interface line is facing up, as shown in the figure below:



### 3. Insert the data cable into the printhead board:



## 4. Install the printhead to the carriage:



- A. The 3 screws pointed by the red arrows fix the ink damper holder and the printhead to the printhead adjustment frame.
- B. The 4 screws pointed by the green arrows fix the printhead adjustment frame to the bottom plate of the carriage.
- C. Install the ink damper, pay attention to the color sequence of the ink damper of the CMYK printhead: YMCK from left to right.

## 5. Fill ink:

- A. Fill ink (CMYKW) into bulk ink supply bottle;
- B. Power on the printer and connect it to the computer, confirm that the white ink circulation and white ink stirring are working normally.
- C. According to the following settings:



Left Right Forward Backward Origin Test Cleaning

Settings Motor config Nozzle calibration Nozzle layout Cleaning settings Auxiliary settings Version information Running test File printing Logging system

Clean unit lifting motor parameters

Ink station back to the origin direction ☒ 0 ☐ 1 Back to origin

Station moving: 5000 Impulse Confirm

Motor speed: 25600 Impulse(second)

Moisturizing height: 67000 Impulse Confirm

Suction height: 67000 Impulse Confirm

Flash height: 9000 Impulse Confirm

Scraping height: 35000 Impulse Confirm

Ink suction

Duration of suction: 25 s Suction test

Suction interval: 2 s

Num of suction: 1

Waiting time: 7 s

Suction of waste ink: 4 s

Flash spray

Flash frequency: 1000 HZ

Num of flash: 2 Flash spray

Single flash time: 2000 ms

Flash interval: 500 ms

Pump system

Nozzle check	Position (mm)	Pump interface
<input checked="" type="checkbox"/> 1	100	0
<input checked="" type="checkbox"/> 2	100	1

Wiper running width: 60.0000 mm Wiper test

Origin to station distance: 11 mm Position test

Speed during cleaning

Acceleration or deceleration time: 30 ms

Carriage speed: 20 mm/s

Cleaning test

Save

The ink pump pumps ink for 25 seconds\*----->Perform cleaning----->Perform test

Ink suction

\* Duration of suction: 25 s Suction test

\*Here it is restored to 2S after the ink filling is completed

If a perfect test strip is printed, the ink filling process is over. otherwise, repeat the above process until a perfect test strip is printed.



Perfect state of the nozzles

**6. For printhead calibration, refer to Chapter 6.**



## 3.8 Ink Bottle Installation

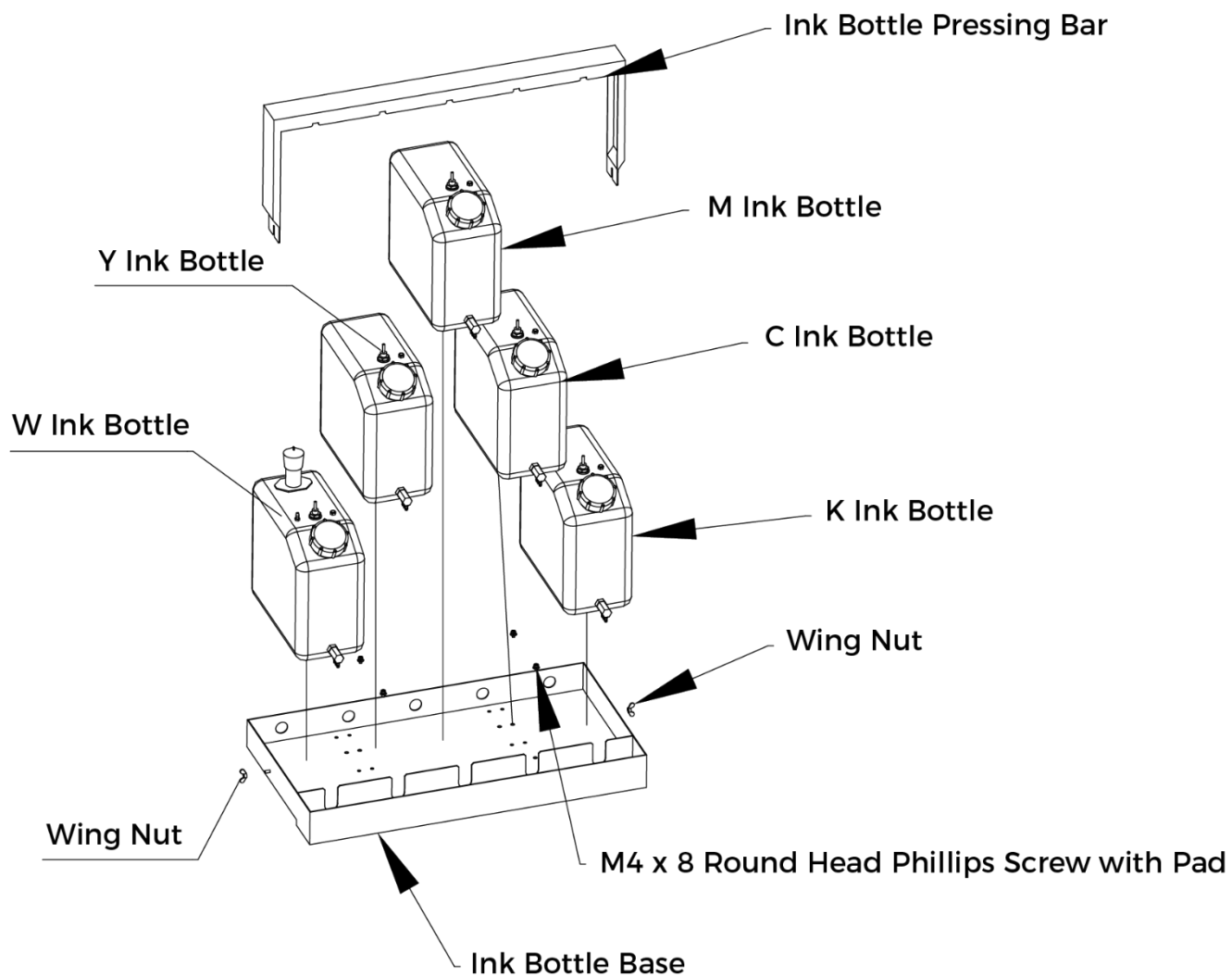


Figure 1

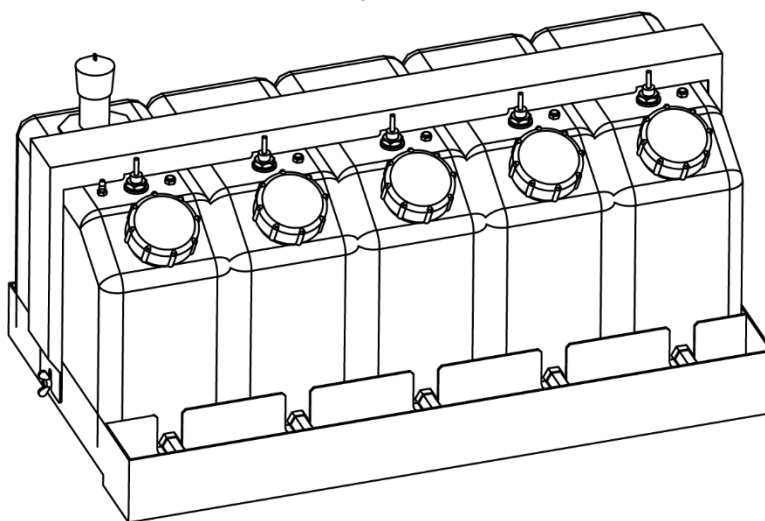


Figure 2


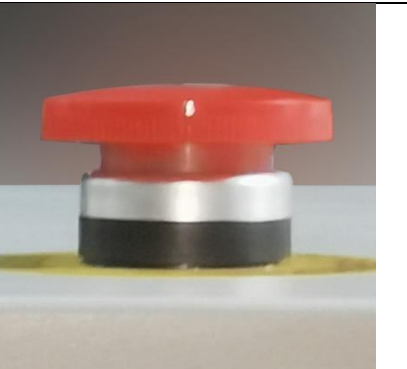
### Installation steps:

1. Place the base of the ink bottle on the top of the left box.
2. Secure to the top with 4 M4 x 8 round head Phillips screws with pads.
3. Place the CMYKW ink bottle in the ink bottle base in sequence according to the direction shown in the figure.
4. Press the 5 ink bottles with the ink bottle pressing bar as shown in the figure 1.
5. Tighten the left and right wing nuts.
6. Figure 2 shows an example after installation finished.

### 3.9 Inject ink

Put the ink into the ink bottle according to the instructions on the label, note that the color of the ink needs to be the same as the color of the corresponding label on the main ink bottle.

### 3.10 Turn on the printer

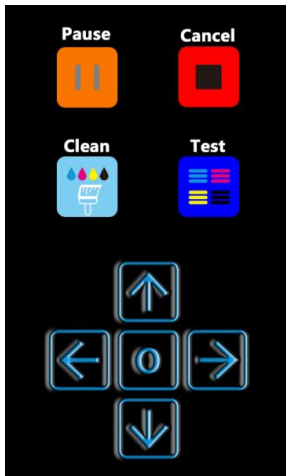
	<p>Ensure that the circuit breaker kept in ON.</p> <p>Rear power switch on the right side of the printer.</p> <p>Reset - Press Before Switching On.</p> <p>Test - Push Monthly.</p>
	<p>Keep the emergency switch standby.</p>




## Turn on

Always use the power switch to turn the printer off (rear power switch on the right side of the printer). Do not unplug the printer or other relevant data cables until the machine is switched off.

## 3.11 Turn off the printer



1. Click the origin .



2. Shut down the main power supply.

## IV. IP Setting And Calibration Tool Tutorial

### 4.1 Computer configuration requirements

Configuration List		
1	System	WIN7/10/11 64 bits
2	Processor	Intel Core 10gen I5 CPU or above
3	Memory	8GB or above
4	Hard disc	500GB above, SSD recommended.
5	Chip set	INTEL
6	Data transmission	1000M Ethernet port

### 4.2 System data transmission

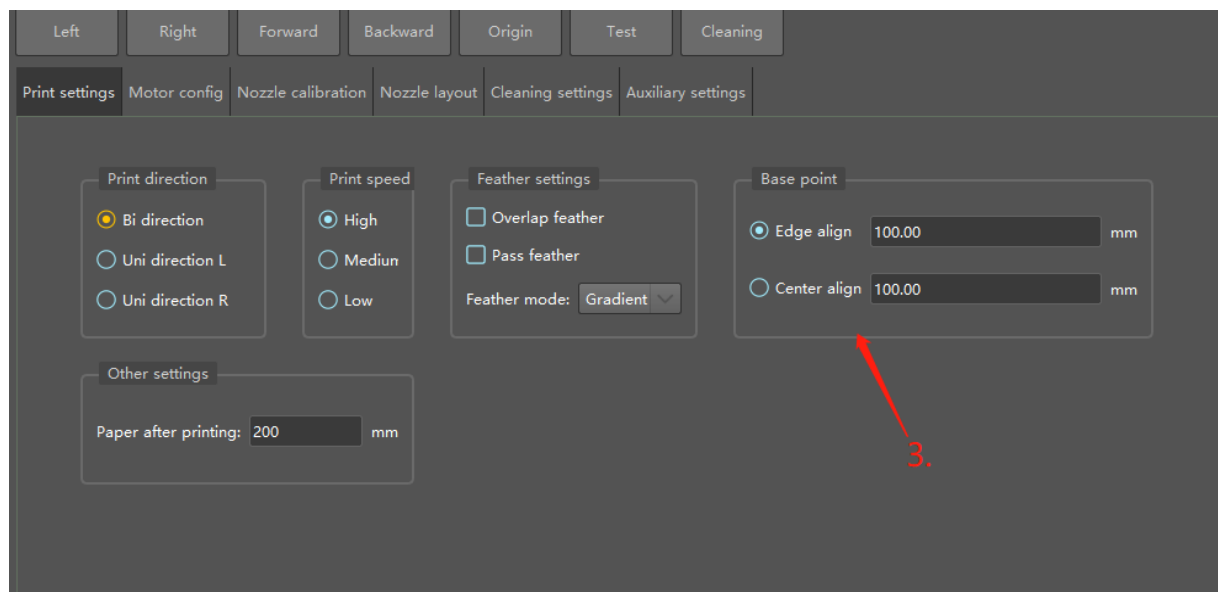
A 1000M Ethernet port is required to connect the data transmission of the printer to the computer.

Computer network IP: 192.168.125.92

Main board IP: 192.168.125.64



### 4.3 Print setting

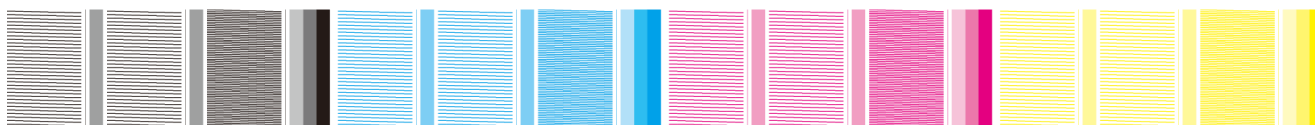


Adjust the positioning parameters so that the picture is correctly printed in viewing.

## 4.4 Nozzle test and cleaning



Clicking this button on the operation panel, the nozzles will print the following patterns:



They show the perfect state of the nozzles.

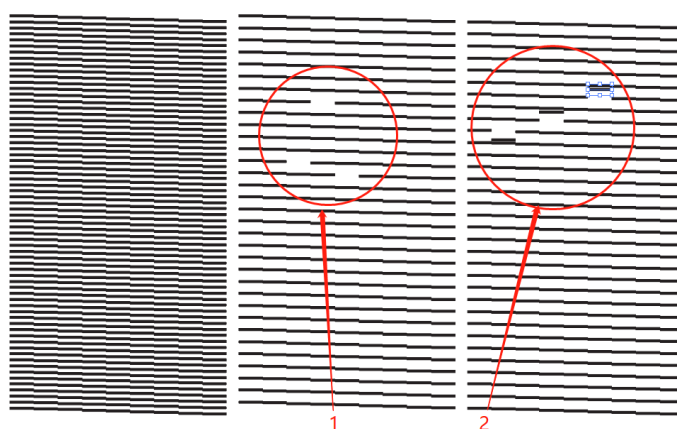


Figure 1 shows the printing blank, and Figure 2 shows the deviation.

You need to clean the nozzles. Please click

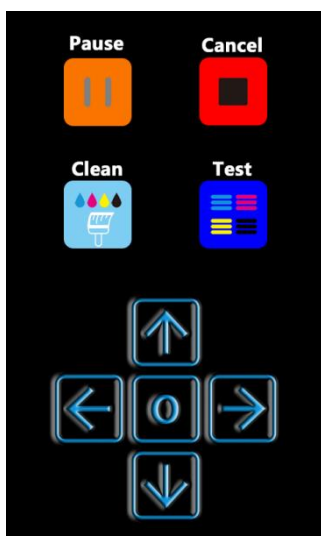


on the operation panel,



click , clean the nozzles, test nozzles again. If something wrong with the nozzle test, please contact your engineer for a check.

## 4.5 Receive the printing data from the computer



Operation Panel

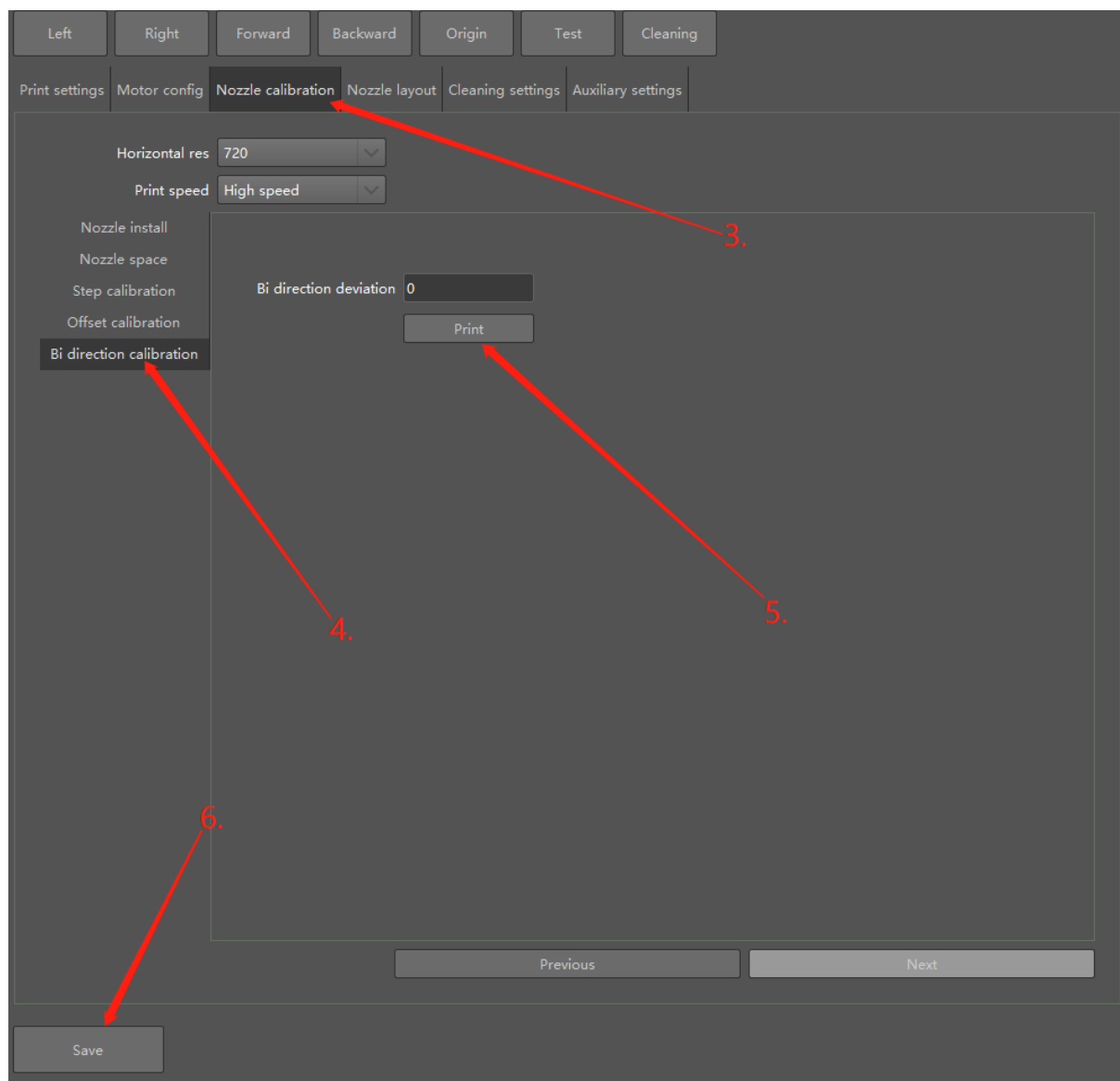


LOGO

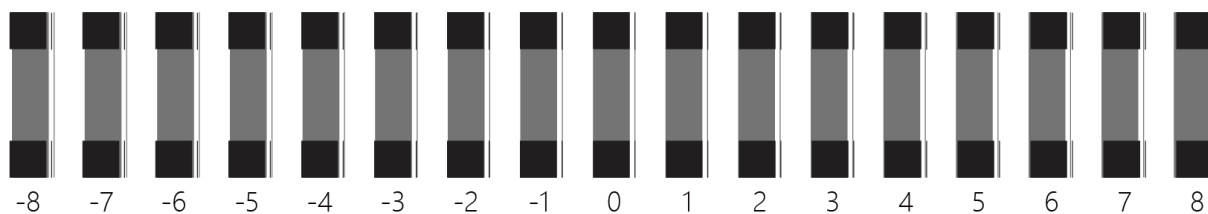
When the operation panel displays the operating interface rather than continuously showing the LOGO, the printer is available for your operation.

## 4.6 Bi direction calibration



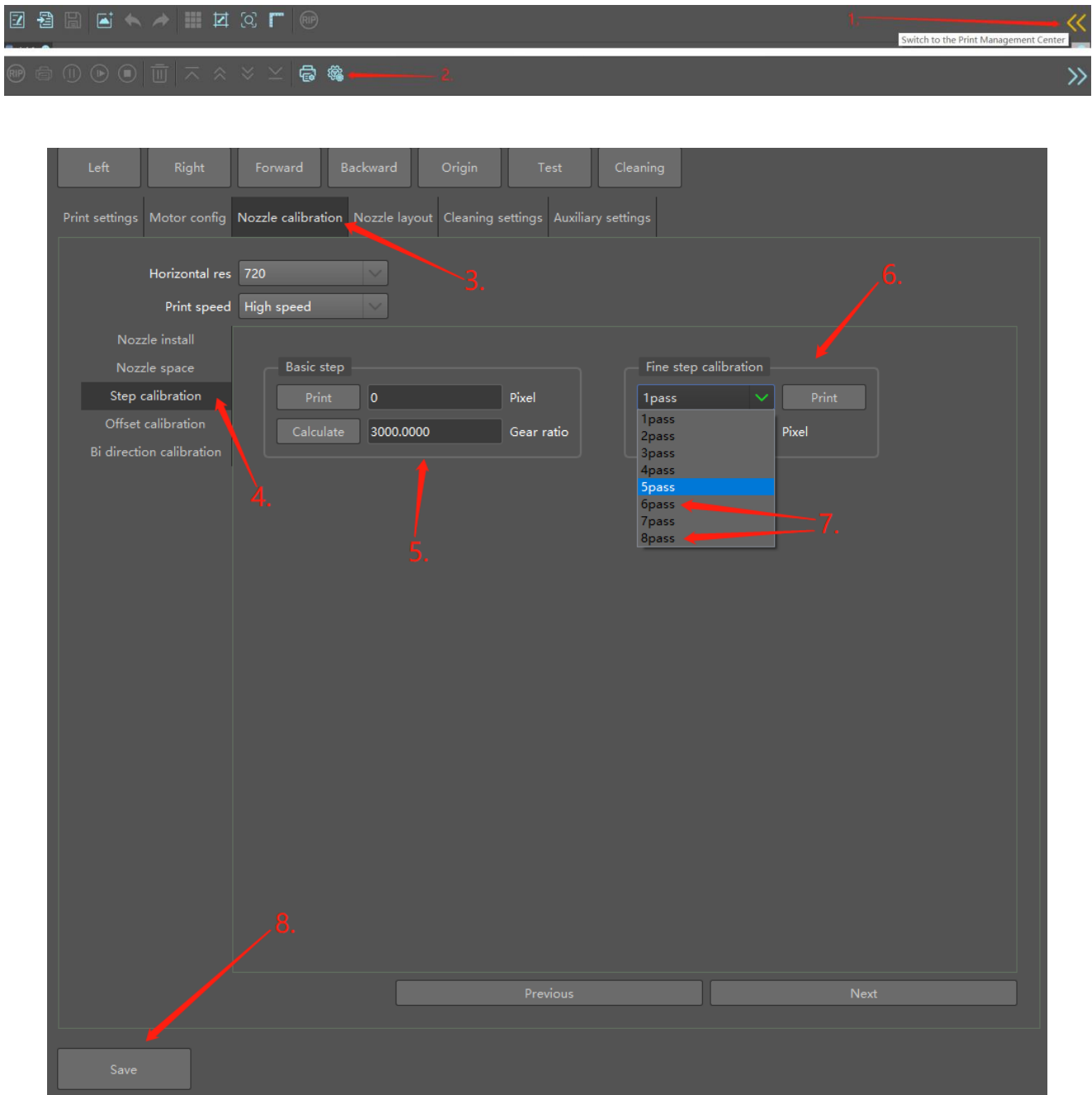


Enter the printer setup interface and print the following calibration test:



Adjust the parameters according to the alignment, and then save the modifications.

## 4.7 Step calibration



Enter the printer setup interface and print step calibration test, first to make the basic step calibration, adjust the parameters according to the alignment, and then save the modifications.



After the basic calibration, we can keep on with fine step calibration, It is the same processing as basic calibration in 6pass and 8pass mode.



## V. CALCA DTF Fairy Rip Software Operation

Please refer to “**CALCA DTF Fairy Rip Software Operation Manual**”, Or look at the setup video.

### DTF FAIRY RIP SOFTWARE SETUP VIDEO

#### Scan this QR Code

for a video walkthrough of the CALCA Ultra Pro 24in Printer Software setup and operation video!



Or go directly to this link: <https://www.youtube.com/watch?v=iCI0leRQfHY>

## **VI. 4 H Calibration Guide**

### **6.1 Calibration steps**

#### **6.1.1 Calibration sequence**

Nozzle install -> Nozzle space -> Step calibration -> Offset calibration -> Bi direction calibration

#### **6.1.2 Physical calibration**

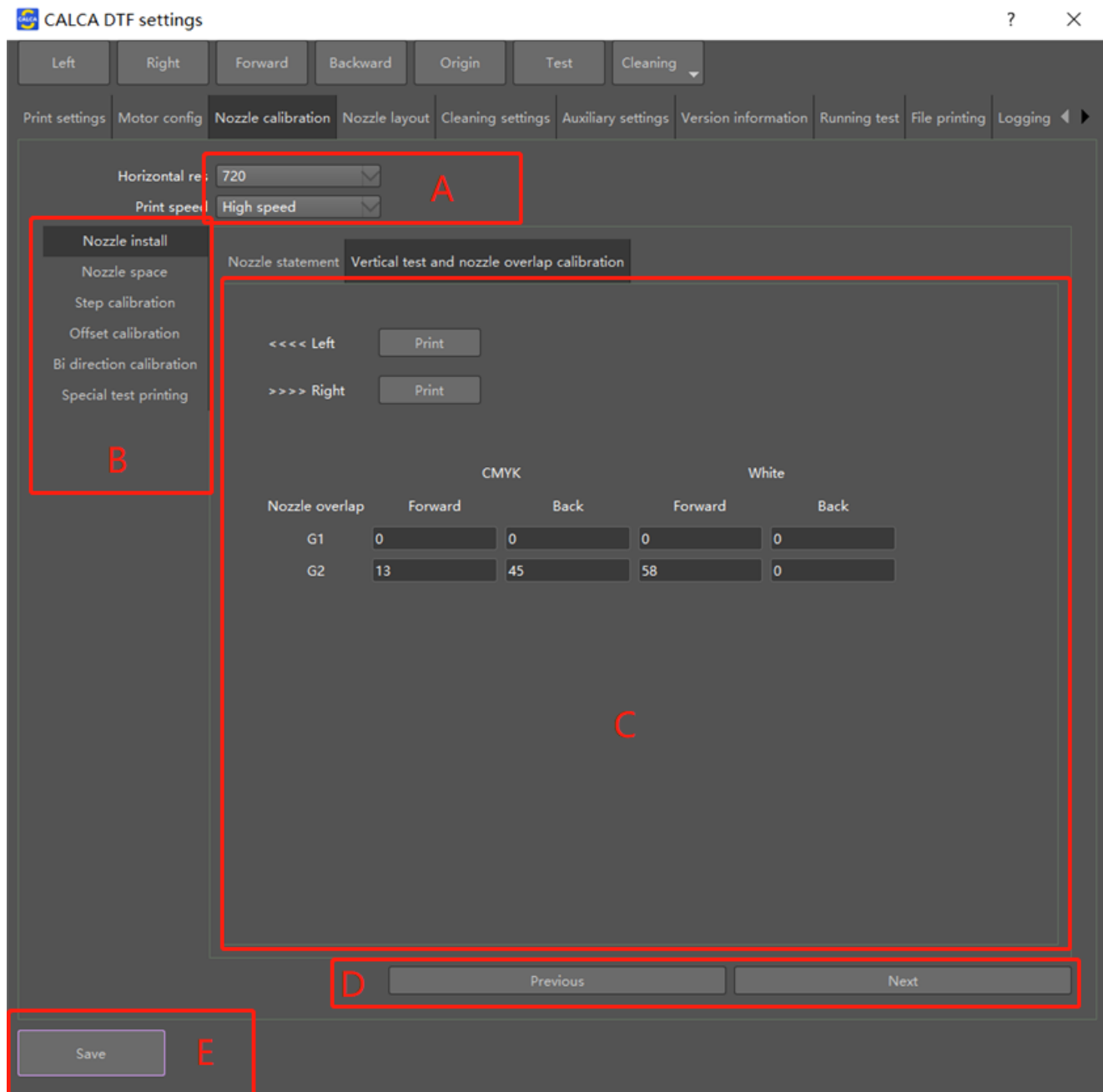
1. **Print head test:** Check the state of the nozzle, check whether there is broken line, then clean the nozzle to reach the state of continuous output.
2. **Vertical alignment:** Test whether the nozzle row is perpendicular to the printing direction and parallel to the forward direction of the media.

#### **6.1.3 Software calibration**

1. **Nozzle space calibration:** Align the multiple printheads.
2. **Step calibration:** Confirm the accuracy of forward movement distance of the media.
3. **Offset calibration:**
  - 1) **Offset on the same color:** Calibrate the distance of two rows of printing directions of each color.
  - 2) **Basic offset:** Take K as the base alignment to calibrate all other colors.
  - 3) **W/CMYK calibration:** Calibrate the vertical and horizontal deviation of the W and CMYK.
4. **Bi direction calibration:** Calibrate the offset of the two-way printing point.

## 6.2 Calibration interface

### 6.2.1 Main interface



The calibration interface is comprised of the following areas:

#### A: Calibration of the general parameter selection

- 1) **X Direction resolution:** select the print calibration parameters with different printing resolution.
- 2) **Print speed:** Select the print calibration parameter at different printing speeds

## B: Test printing selection

- 1) **Physical calibration:** nozzle check, vertical calibration
- 2) **Nozzle overlapping:** Including nozzle group overlapping
- 3) **Step calibration:** Contains step calibration test printing and value settings
- 4) **Offset calibration:** Including the same color calibration, basic offset, W with CMYK calibration test printing and value settings.
- 5) **Bi direction calibration:** Including Bi direction test printing and value settings
- 6) **Special test printing:** Including some specific tests.

## C: Calibration areas

Operational areas

## D: Calibration guiding

Simplified calibration and process transfer

## E: Save

Each calibration parameter is modified until it is saved

## 6.3 Calibration instruction

### 6.3.1 Print head installation

#### 6.3.1.1 Nozzle status

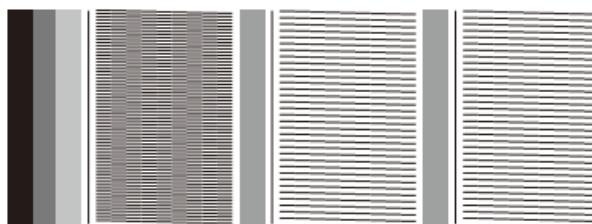
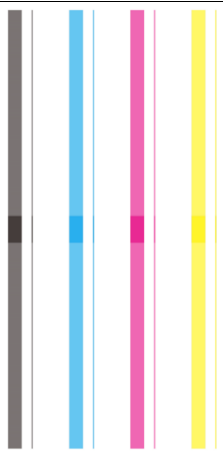
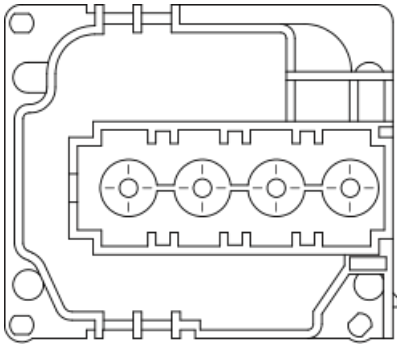
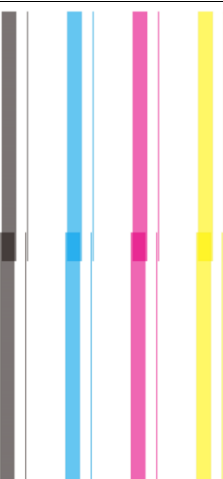
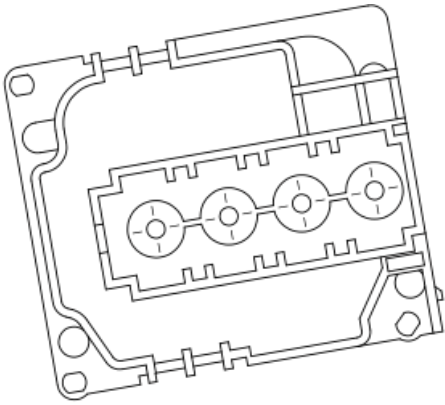

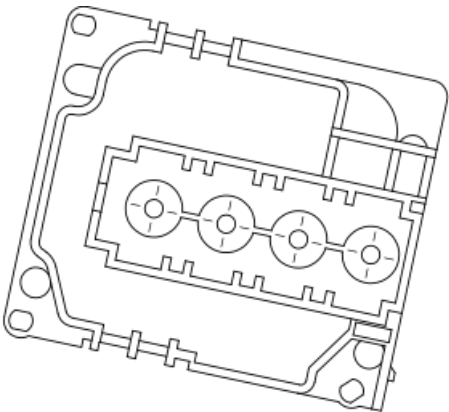


Figure 3.1

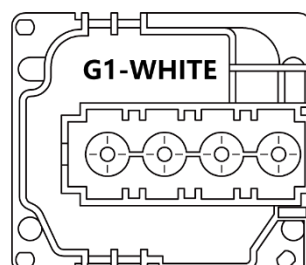
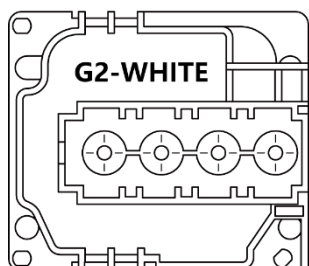
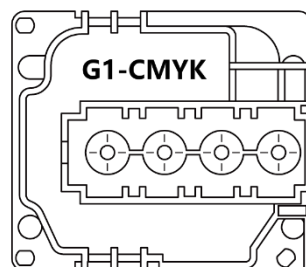
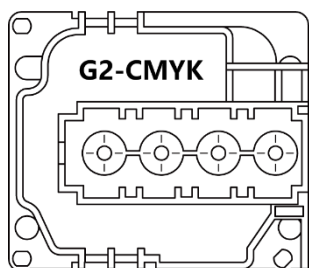
Print the test to check the status of the nozzle and see if there is a broken line. If any, clean the nozzle again until the nozzle status is restored or less breakage.

## 6.3.1.2 Vertical calibration

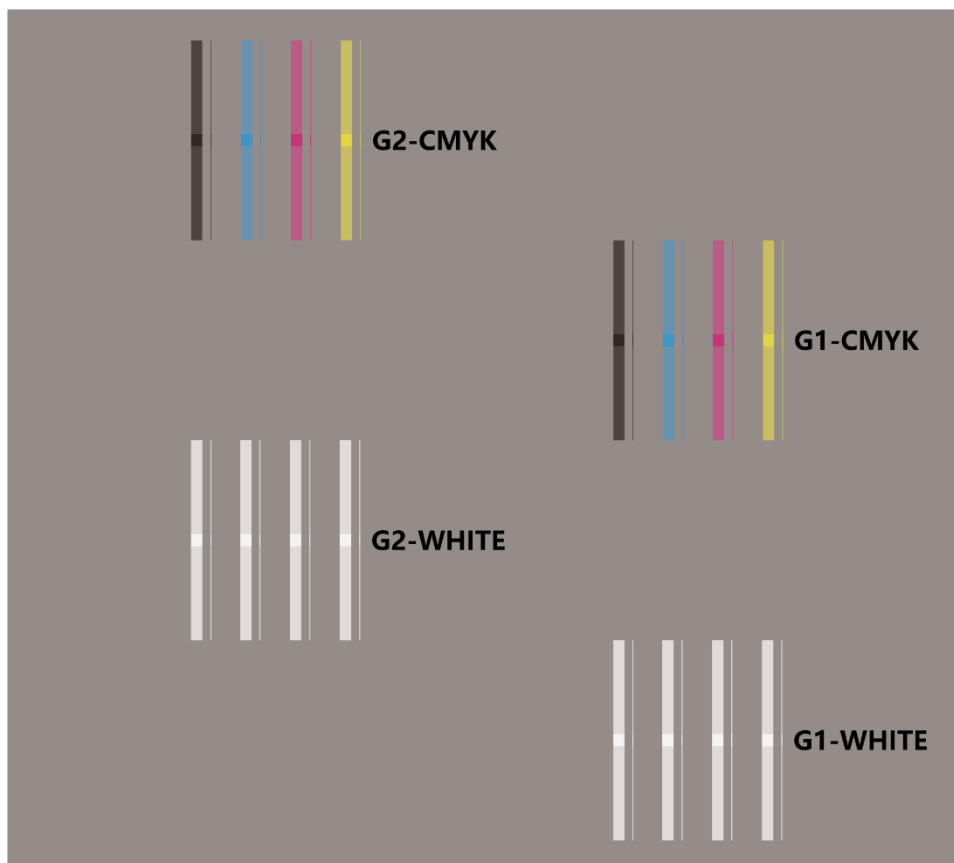
Vertical test printing shown as below

		<p>Normal. No adjustment</p>
		<p>Nozzle deflected counterclockwise  Need clockwise rotation correction</p>
		<p>Nozzle deflected clockwise.  Need counterclockwise rotation correction</p>

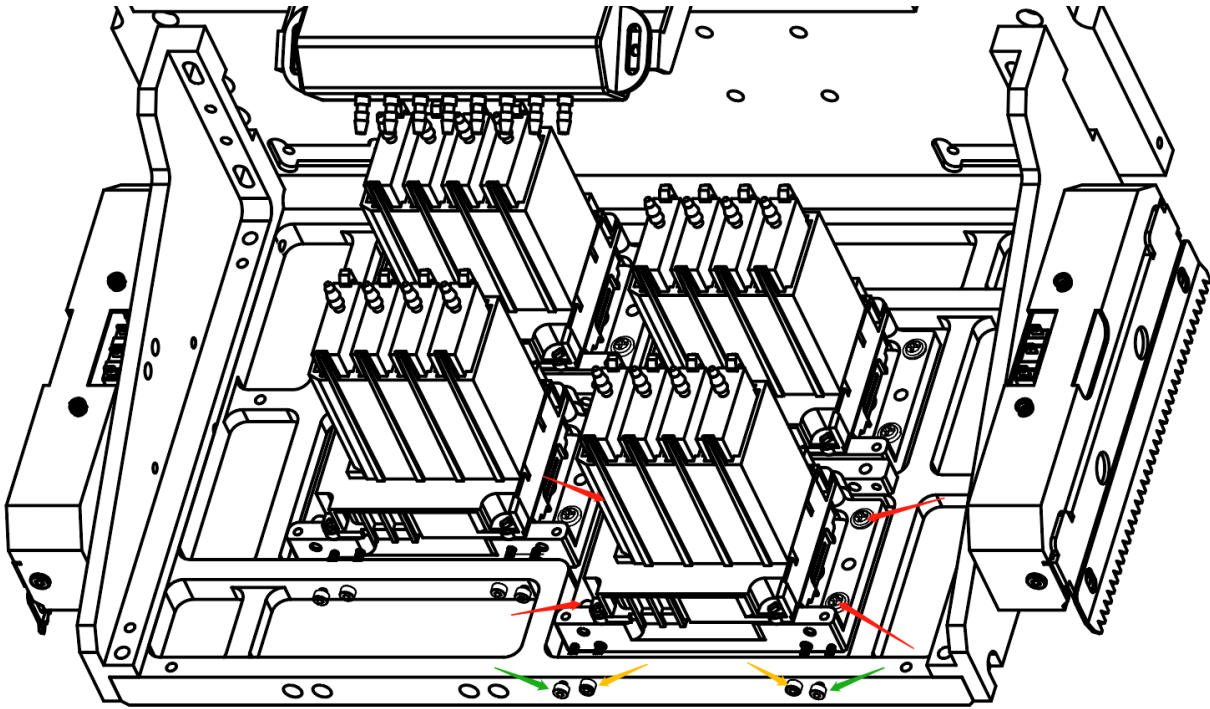
## Nozzle layout (top view):



## Test printing layout:



## Nozzle adjustment method:



- A. The red arrow points to the fixing screws of the print head adjustment frame, and 4 screws need to be loosened when adjusting the print head.
- B. The green arrow points to the auxiliary positioning screw of the print head adjustment frame, loosen the screw during adjustment, and let the screw touch the adjustment frame after adjustment.
- C. The yellow arrow points to the adjustment screw of the print head adjustment frame.
  - a) When the screw on the left is turned clockwise or the screw on the right is turned counterclockwise, the nozzle will rotate counterclockwise.
  - b) When the screw on the left is turned counterclockwise or the screw on the right is turned clockwise, the nozzle will rotate clockwise.
- D. When it is necessary to move the front and rear positions of the nozzle to adjust the overlapping space (6.1.3.3) , the left and right adjustment screws are adjusted at the same angle in the same direction (pull clockwise, push counterclockwise).

## 6.3.1.3 Nozzle overlapping

Nozzle stitching confirm

Adjusting the vertical position causes the movement of the nozzle. It is necessary to confirm whether the nozzle overlapping space is sufficient before adjusting the physical position.

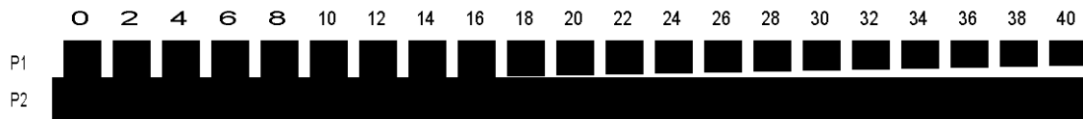


Figure 3.5

As shown in Figure 3.5, the nozzle 1 and the nozzle 2 overlap 16 holes. Generally, the nozzle should overlap between 10 and 20 holes.



Figure 3.6

If the printing is shown in Figure 3.6, there is no overlapping hole between nozzle 1 and nozzle 2, so it is necessary to move the nozzle 1 down or move the nozzle 2 up.

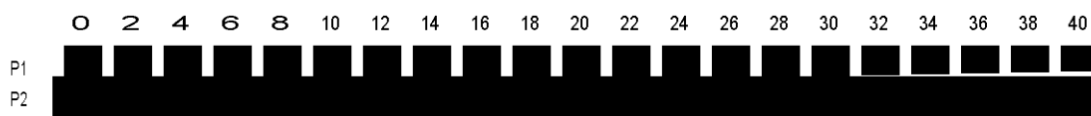


Figure 3.7

If the printing is shown in Figure 3.6, indicating that the overlapping between nozzle 1 and nozzle 2 is 30 holes, it causes excessive overlapping, it is necessary to move the nozzle 1 up or move the nozzle 2 down.

## 6.3.2 Nozzle stitching

### Nozzle horizontal group space calibration



Shown in this interface as below:

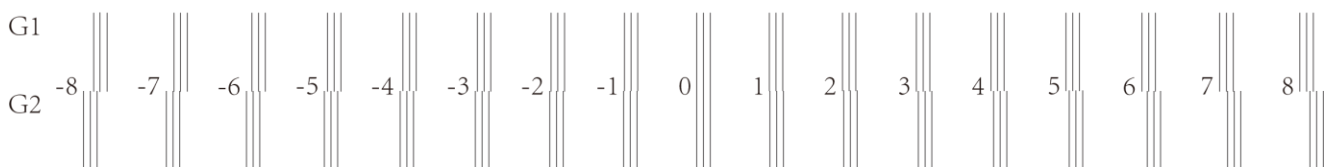
Horizontal res: 720  
Print speed: High speed

Horizontal group space

<<< Left Print >>> Right Print

	CMYK	White		CMYK	White
G1	0	0	G1	0	0
G2	-2838	-2824	G2	-2838	-2823

The test print shown as below:



## Calibration requirements:

1. Calibrate to the left and to the right respectively, with the same method;
2. CMYK nozzle and the W nozzle should be calibrated separately, according to the process of CMYK calibration;
3. On the test printing, the line segment of G1 coincides with G2 at the calibration value of 0.

## Calibration steps:

Print the test and find the calibration value of the overlapping. If the calibration value is 3, fill in -2821 ( $-2824 + 3$ ).

### 6.3.3 Step calibration

#### Step calibration interface

Step calibration

Basic step

Print 0 Pixel

Calculate 6220.3040 Gear ratio

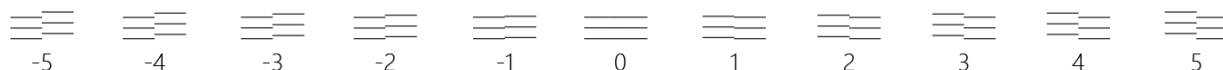
Fine step calibration

1pass Print

0 Pixel

## 6.3.3.1 Basic step calibration

Click the print button and print the calibration diagram as shown below:

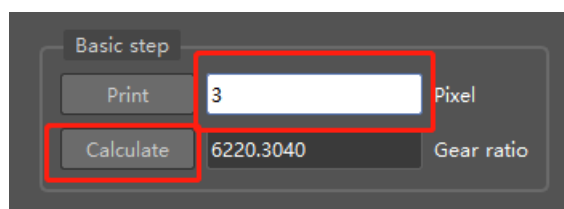


### Calibration requirements:

Print calibration test, value 0 means no deviation in 3 horizontal line segments.

Calibration steps:

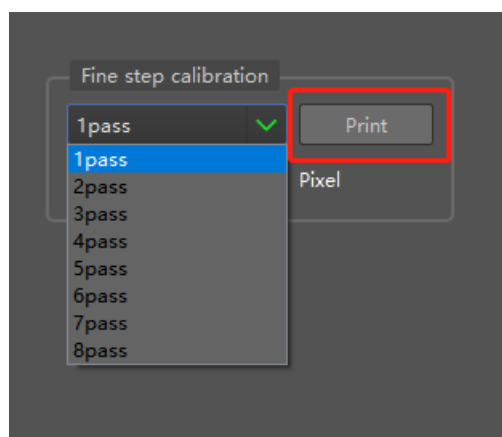
Print the calibration test, if the calibration value is 3, fill in 3 and then calculate and save.

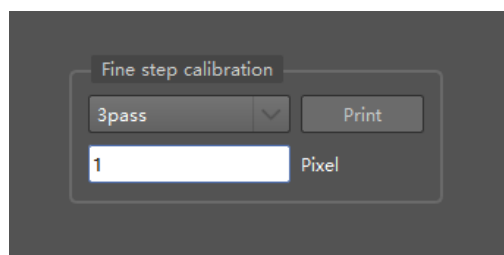


## 6.3.3.2 Fine step calibration

### Instructions:

Only after the basic step calibration is completed, the multi-pass printing has a fixed step error probably, then the step fine calibration is adjusted. If there is a deviation within a small range, take the average value for adjustment.

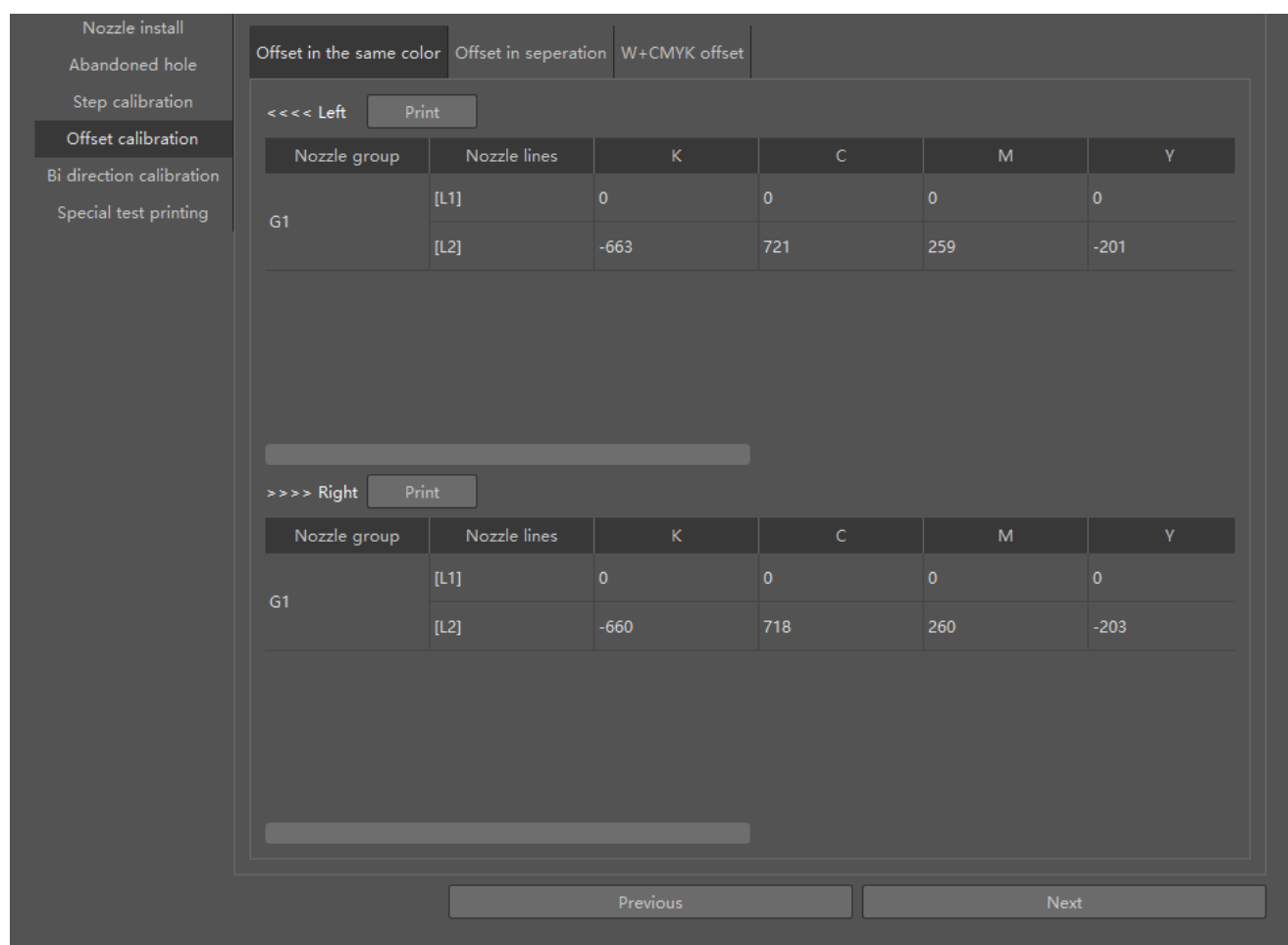




## 6.3.4 Offset calibration

### 6.3.4.1 Offset on the same color

#### Calibration interface:



Calibrate to the left and right respectively with the same processing.

#### Calibration requirements:

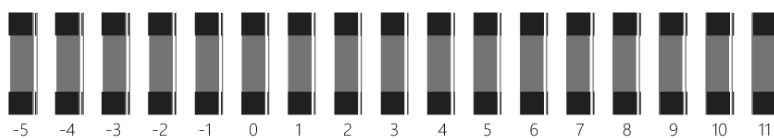
On the calibration printing, the value 0 shows a full overlap between the line and color blocks.

#### Calibration steps:

Print the calibration test and find the calibration value of the line and color block.



If the calibration value of K is 3, fill in -660 ( $-663 + 3$ ).



<<<< Left		Print			
Nozzle group	Nozzle lines	K	C	M	Y
G1	[L1]	0	0	0	0
	[L2]	-663	721	259	-201

## 6.3.4.2 Basic offset

Basic offset interface:

Offset in the same color

Offset in seperation

W+CMYK offset

<<<< Left

Print

	K	C	M	Y	W1(K)	W2(C)	W3(M)	W4(Y)
G1	691	-1	231	462	691	0	230	461

>>>> Right

Print

	K	C	M	Y	W1(K)	W2(C)	W3(M)	W4(Y)
G1	691	1	229	459	691	0	230	461

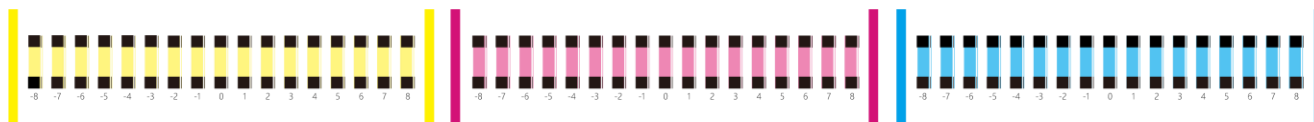
Calibrate to the left and right respectively with the same processing.

## Calibration requirements:

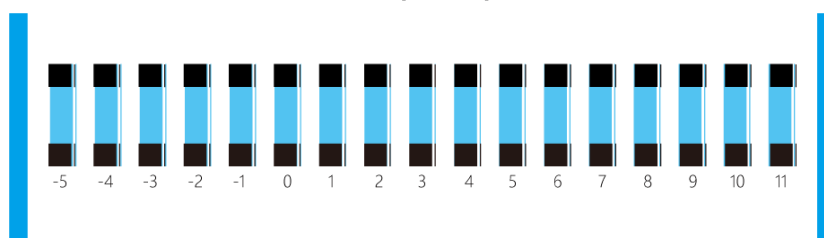
On the calibration printing, the value 0 shows a full overlap between the line and color blocks.

## Calibration steps:

Print the calibration test and find the value of the line and the color block.



If the calibration value of C is 3, fill in 3 (0 + 3).



<<<< Left		Print						
	K	C	M	Y	W1(K)	W2(C)	W3(M)	W4(Y)
G1	691	0	231	462	691	0	230	461

## 6.3.4.3 W/CMYK offset

### Calibration interface:

Offset in the same color
Offset in separation
W+CMYK offset

Print

Horizontal offset
-10

Vertical offset
1594

## Calibration requirements:

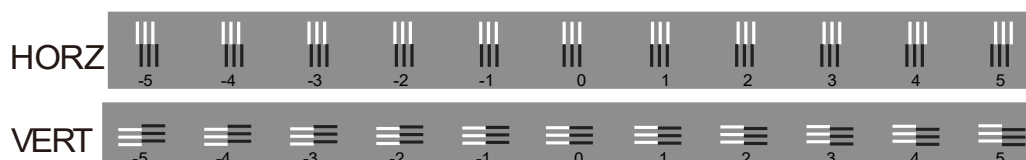
On the calibration printing, the value 0 shows a perfect position.

## Calibration steps:

Print the calibration test, find the value in the row of HORZ on the figure.

If the value is 3, fill in -7 ( $-10 + 3$ ) in the horizontal color column, and find the value in the row of VERT on the figure.

If the value is -5, fill in 1589 ( $1594 - 5$ ) in the vertical color column, and then save and print for confirmation.



Offset in the same color

Offset in separation

W+CMYK offset

Print

Horizontal offset -10

Vertical offset 1594

## 6.3.5 Bi direction calibration

### Calibration interface:

Horizontal res 720

Print speed High speed

Nozzle install

Abandoned hole

Step calibration

Offset calibration

Bi direction calibration

Special test printing

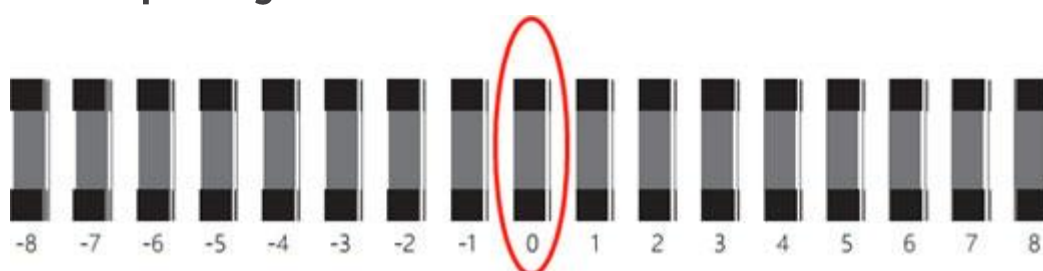
Color

White

Bi direction deviation 17 17

Print

### Calibration test printing:

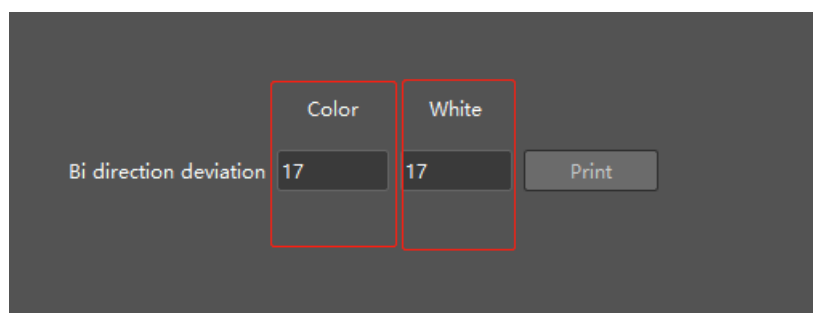


## Calibration requirements:

On the calibration printing, the value 0 shows a perfect position.

## Calibration steps:

Print the calibration test and calibrate the color and white respectively. If the color bidirectional value is 2, fill in 19 ( $17 + 2$ ), and it is the same way to calibrate the white.



The screenshot shows a dark gray interface with a table-like structure for calibration. The table has two columns: 'Color' and 'White'. The 'Bi direction deviation' label is positioned to the left of the 'Color' column. Both the 'Color' and 'White' input fields contain the value '17'. A 'Print' button is located to the right of the 'White' input field. Red rectangular boxes highlight the 'Color' and 'White' input fields.

	Color	White	
Bi direction deviation	17	17	Print



## VII. Troubleshooting

This chapter provides information on possible causes of machine errors/damage and recovery actions.

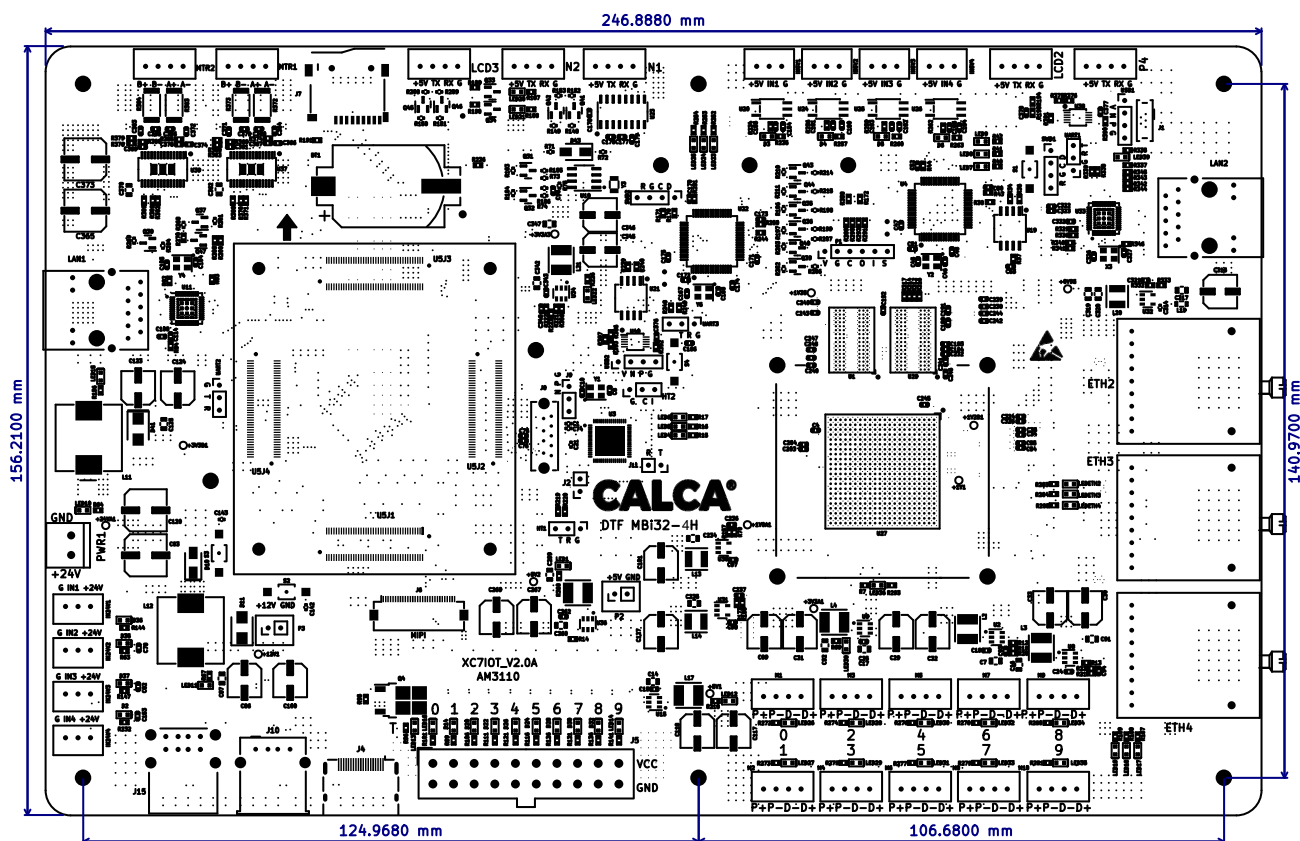
### 7.1 Error information & solution

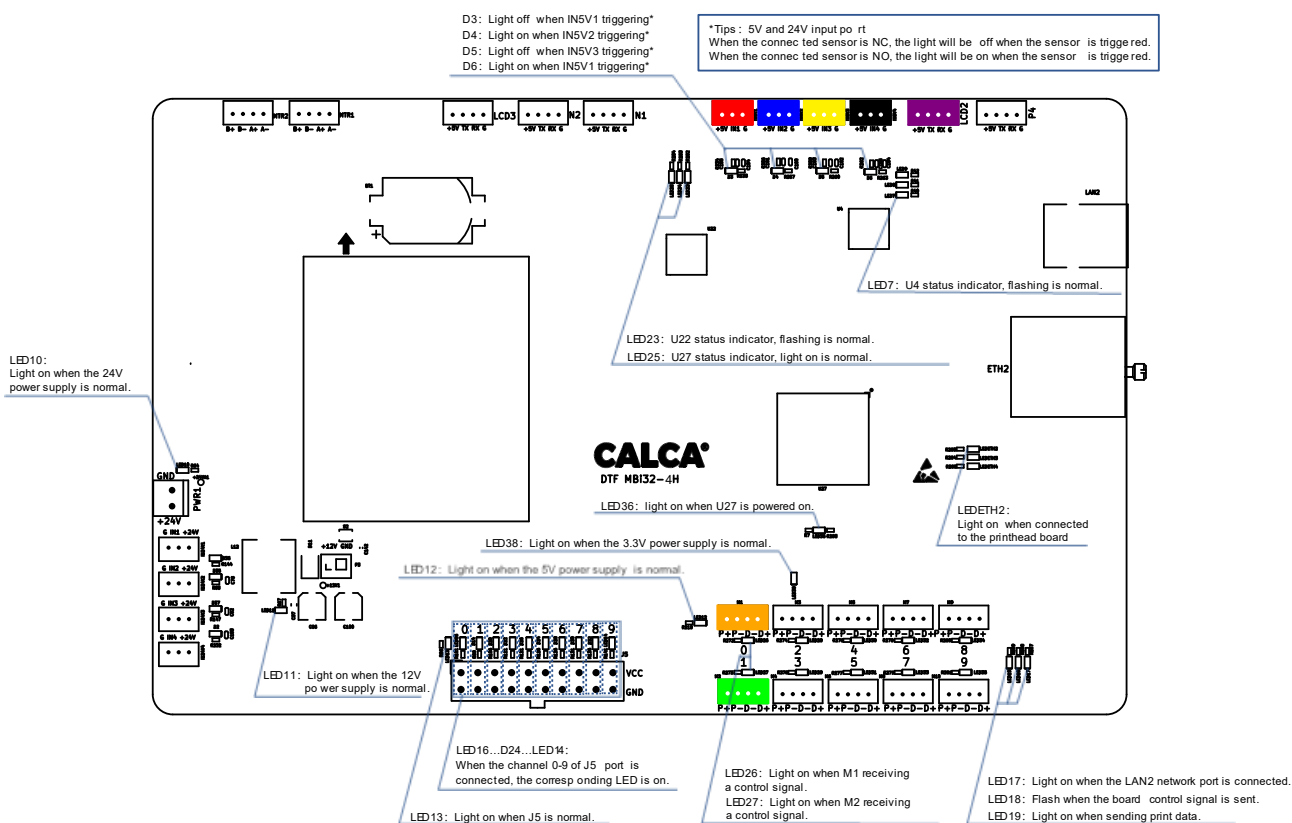
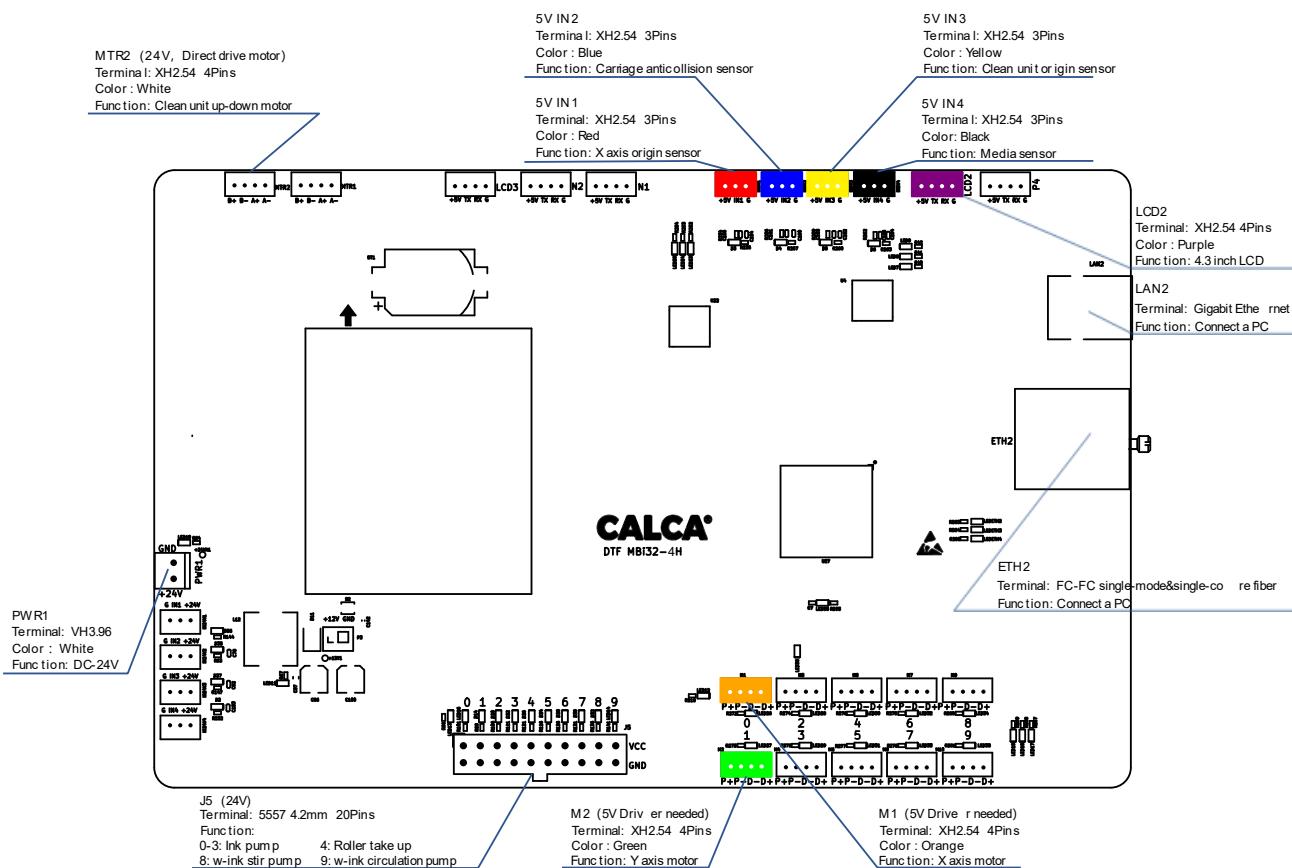
Type	Code	Error Information	Error Analyze	Solution
Serious	1001	Ink channel not support		
Serious	1002	Grayscale level not support		
Serious	1003	X resolution mismatched		
Serious	1004	Y resolution mismatched		
Serious	1005	The print width exceeds the maximum.		
Serious	1011	Mainboard not connected.	<ol style="list-style-type: none"> <li>1. The device is not powered on.</li> <li>2. Errors in mainboard's running.</li> <li>3. The printing software is disconnected from the device.</li> <li>4. The computer IP is not set correctly.</li> <li>5. The computer network drives wrong.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check the status of the mainboard.</li> <li>2. Check the connection between the computer and the device.</li> <li>3. Confirm the computer IP.</li> <li>4. Check the network driver.</li> </ol>
Serious	1012	The mainboard register failed to read and write.	The mainboard is disconnected from the printing software.	Check the mainboard status.
Serious	1013	Timeout when waiting for the motor to stop.	<ol style="list-style-type: none"> <li>1. Motor stop signal is not received in the defined time.</li> <li>2. Printing software is disconnected from the mainboard.</li> </ol>	<ol style="list-style-type: none"> <li>1. Restart the device.</li> <li>2. Check the mainboard status.</li> </ol>
Serious	1014	The mainboard failed to transmit the data.	The mainboard is disconnected.	Check the mainboard status.
Serious	1015	Mainboard reset failed.	<ol style="list-style-type: none"> <li>1. The device is powered off.</li> <li>2. The printing software is disconnected from the device.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check the status of the mainboard.</li> <li>2. Check the connection between the computer and device.</li> </ol>
Serious	1016	The execution of mainboard instruction failed.	<ol style="list-style-type: none"> <li>1. Mainboard is powered off.</li> <li>2. The printing software is disconnected from the device.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check the status of the mainboard.</li> <li>2. Check the connection between the computer and the device.</li> </ol>
Serious	1017	The carriage acceleration distance is not enough.	<ol style="list-style-type: none"> <li>1. The distance between the origin position and the start printing position is less than the carriage acceleration.</li> <li>2. The actual acceleration distance of the carriage is less than the set one.</li> </ol>	<ol style="list-style-type: none"> <li>1. Add the base point in the print settings.</li> <li>2. Increase the carriage acceleration distance.</li> </ol>

Serious	1018	1. Check whether the printing width exceeds the setting. 2. Check whether the maximum distance of the carriage matches the device in the motor setting.	1. The print picture is too wide and the print will exceed the set range of motion. 2. The maximum range of motion of the car is set too small, and the printing distance is not enough.	Match the range of motion setting to the actual maximum motion limit.
Serious	1041	The print head board is not connected.	1. The device is not powered on. 2. The print head board is abnormal. 3. The printing software is disconnected. 4. The computer IP is not set correctly. 5. The computer network is abnormal.	1. Check the status of the print head board. 2. Check the connection between the computer and the device. 3. Confirm the computer IP. 4. Check computer network.
Serious	1042	The print head board communication failed.	1. The print head board is powered off. 2. The print head board is abnormal.	Check the status of the print head board.
Serious	1043	The print head's power on is failed.	1. The print head board is abnormal. 2. Error in network connection.	Check the status of the print head board.
Serious	1044	The print head's power off is failed.	1. The print head board is abnormal. 2. Error in network connection.	Check the status of the print head board.
Serious	1061	Media sensor not triggered	1. Media not reach on the platform. 2. Error in media sensor.	1. Reset the media loading. 2. Check the media sensor.
Serious	1062	Manually cancel the printing		
Serious	1063	Carriage anti-collision sensor triggered	1. Uneven media scraping triggered the anti-collision sensor. 2. Carriage movement exceeds the limit to make a collision 3. Anti-collision false triggering.	1. Return to the origin after power cut off. 2. Check carriage motion imitation. 3. Check the anti-collision sensor.
Serious	4001	The print head type for the configuration parameter is not supported.		
Serious	4002	Customized print head type for the configuration parameter is not supported		
Serious	4003	The physical accuracy of the customized print head is not recognized, not support mixing.		
Serious	4004	The customized virtual print head layout is not recognized, not support mixing.		
Serious	4005	The nozzle overlapping configuration parameter is incorrect.		

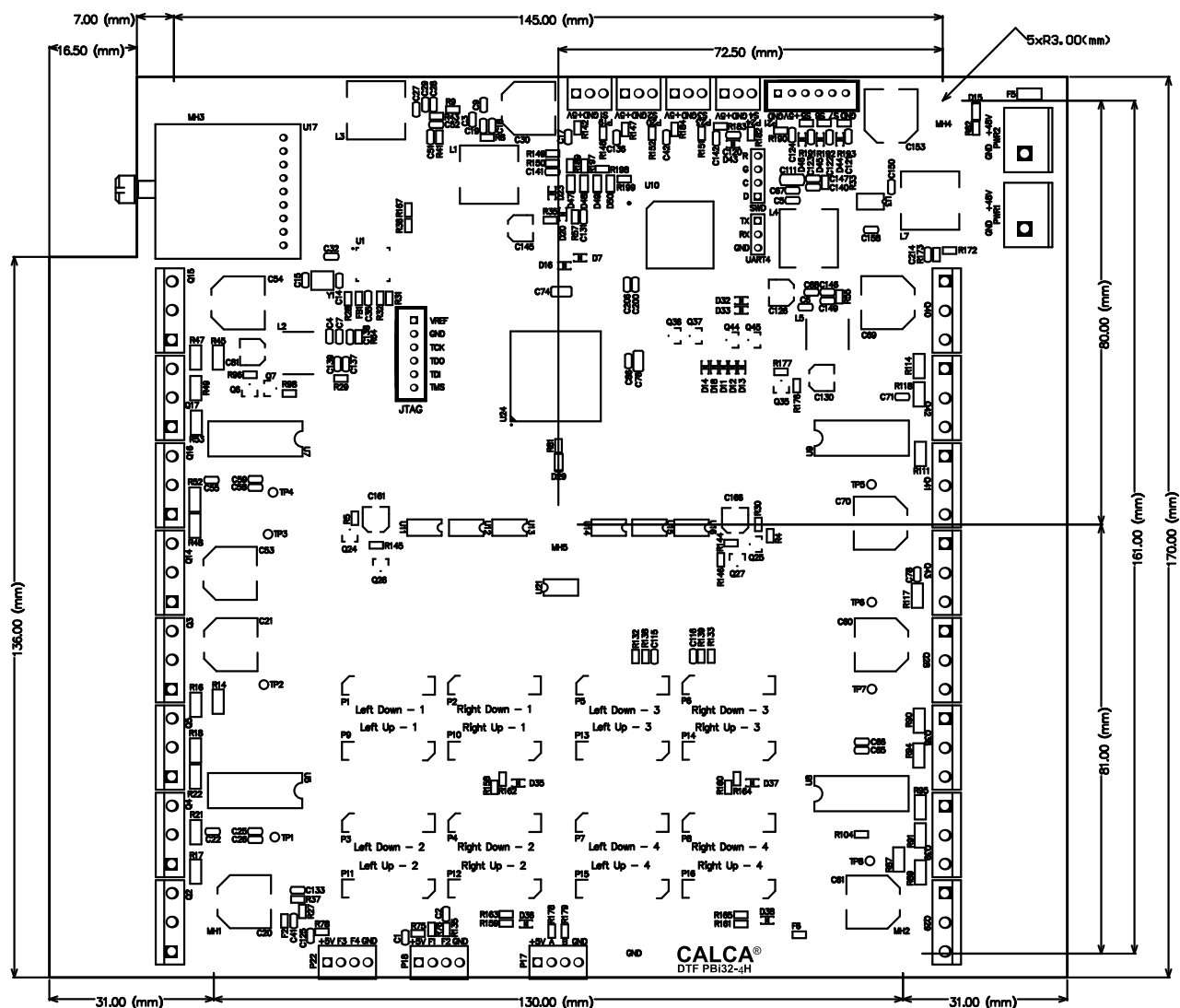
## 7.2 Exploded View Board

### 7.2.1 CALCA mainboard





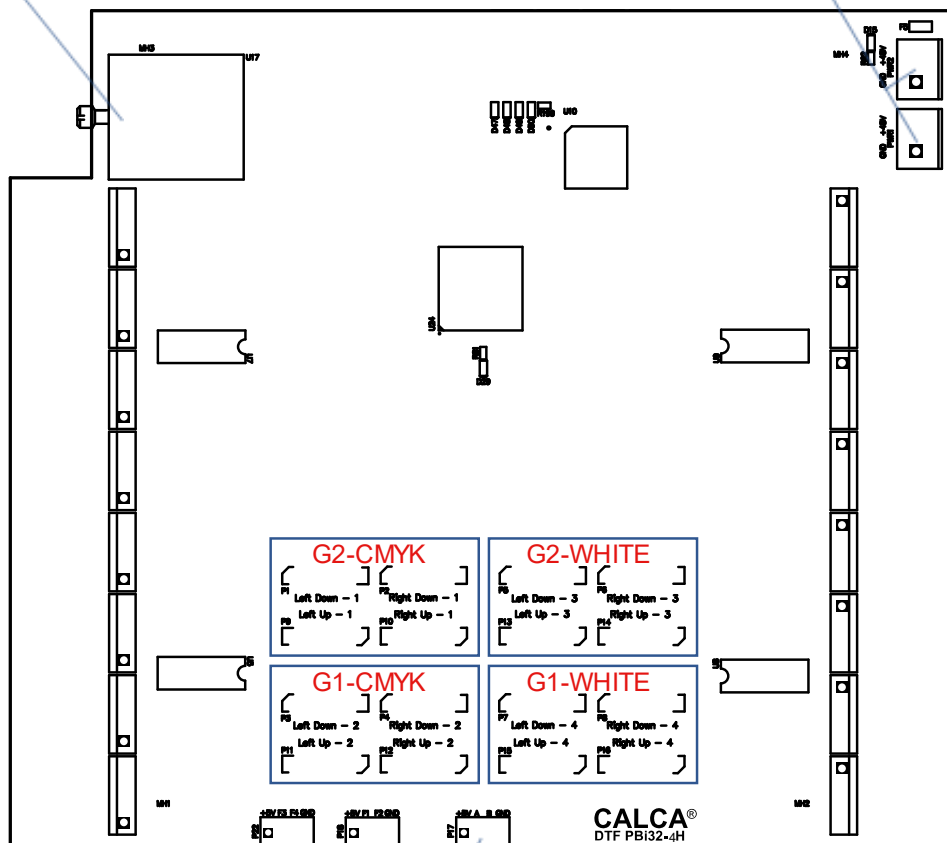
### 7.2.2 CALCA head board



U17

Terminal: FC-FC optical fiber  
Function: Connect the main board

PWR1, PWR2(PWR2 standby interface)  
Terminal: KANGNEX/WJ2EDGVC-5.08 2Pins  
Function: DC-48V



P17  
Terminal: XH2.54 4Pins  
Function: Linear encoder

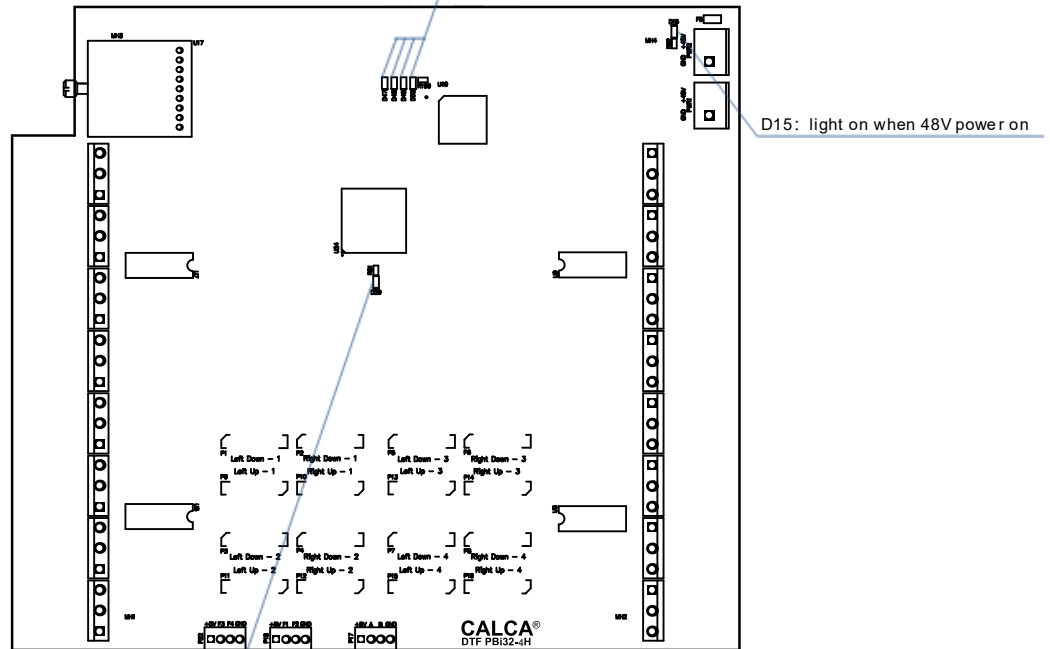
D47、D48、D49、D50: Running status indicator light

When all the printheads are not powered on, if optical fiber is not connected, the 4 indicators will flash at the same time, when connected the 4 indicators will slowly flash at 1Hz frequency at the same time;

After the PH1 and PH2 power on, D47 and D48 will light on, and after power off, D47 and D48 will restore the flashing at 1Hz frequency;

After the PH3 and PH4 power on, D49 and D50 will light on, and after power off, D49 and D50 will restore the flashing at 1Hz frequency;

During the normal power-on and power-off process of all the printheads, D47-D50 will flash briefly.



D29: U24 Running status indicator light

When U24 is running normally, it is about 1Hz frequency flashing state;

If an error occurs during the operation, the light will keep on,

and it will flash again after the software clears the error;

It will flash when the printhead is printing, and the frequency is related to the printing frequency.

## **VIII. Maintenance**

### **8.1 Remarks**

#### **1. Power supply**

Confirm the voltage stability of AC110V, 60Hz, it is recommended to use the voltage regulator, the ground wire must be installed.

#### **3.Environment**

Please keep the machine working environment meeting the requirements of equipment operation (temperature 68-95°F, humidity. 45-65%), there must be no strong magnetic field or the equipment causing a lot of dust, try to avoid strong light exposure affecting the sensitivity of the sensor.

#### **3. Ink**

Add the ink when the buzzer rings, check the remaining inks amount before running every day, and avoid adding the ink during printing.

The ink should be kept in the adequate environment, avoid strong light and ensure good ventilation.

Use the correct water-based cleaning solution.

Pour waste ink daily, empty the waste ink bottle in a long-term transportation. be careful to keep vertical and not shake when removing the waste ink bottle from the printer, please dispose it lawfully.

### **8.2 Maintenance overview**

In terms of running, the surface of the platform must be cleared to avoid nozzle scratching. The dent on the surface of the nozzle is regarded as man-made damage, and the scratch is judged as man-made damage.

1. When cleaning the printer, please close the main power and unplug the power cable.
2. The machine should keep clean at any time during daily use to avoid dust deposition.
3. Do not wipe the surface of the nozzle without training and authorization, which may cause damage to the nozzle.
4. Do not touch the print head or make the print head touch any other



substance. Clean the dust around the print head, and gently wipe with a special cloth and cleaning liquid.

## 8.3 Routine checking

1. Before daily operation, check the nozzle status to avoid quality problems such as broken lines, oblique spray and ink splashing. If the above problems occur, the nozzle should be cleaned in time to ensure the printing quality and avoid the physical damage caused by the ink outage for a long time.
2. Check the rubber ring on ink stack cap and the status of wiper every week, if irreversible deformation occurs, it must be replaced.
3. Clean the guide rail once a quarter (Do not use water to clean, wipe the dust with non-woven cloth) with special lubricating oil.
4. The machine will rest for 30 minutes for every 8 hours.
5. If the machine needs to stop working for more than 1 week (power off), the ink circulation needs to take measures to deal with blockage, please contact the engineer. Avoid Long-term absence of running, it poses the risk of blockage and cause the no recovery after the ink loading.

## 8.4 Day/weekly/monthly maintenance

### 8.4.1 Daily maintenance

<p><b>DAILY (AM)</b></p>	<ul style="list-style-type: none"> <li>&gt; <b>Shake leftover white ink</b></li> <li>&gt; Turn <b>printer on</b></li> <li>&gt; Increase <b>White Ink Circulation</b> motor</li> <li>&gt; Execute “<b>Fill Ink</b>”</li> <li>&gt; Execute “<b>Cleaning</b>”</li> <li>&gt; Pull <b>media to the front</b></li> <li>&gt; Perform “<b>Nozzle Check</b>”</li> </ul> <p><b>Add the ink</b> when the buzzer ring, check the remaining ink amount before running every day, and avoid adding the ink during printing.</p>
	<ul style="list-style-type: none"> <li>&gt; <b>Retract media</b></li> </ul>

## DAILY (PM)

- > Clean the **vacuum bottom platen**
- > Move **printhead carriage to left side**
- > **Clean / wipe capping station rubber gaskets & wiper blades** w/ cleaning swab
- > **Clean around head** with cleaning solution
- > **Pour cleaning solution** into **capping station rubber gaskets**
- > **Engage printhead** back to capping station
- > **Turn printer off**
- > **Cover printer**

**Pour waste ink daily:** Empty the waste ink bottle in a long-term transportation, be careful to keep vertical and not shake when removing the waste ink bottle from the printer, please dispose it lawfully.

### 8.4.2 Weekly maintenance

#### > Check Ink Bottle

Check to see if there is any ink that needs refilling.

Check to see if stirring device on the white ink bottle is functioning.

#### > Check Waste Bottle – Empty the bottle

#### > Clean Encoder Strip

Use a microfiber cloth / lint-free wipe & 90% or higher isopropyl alcohol, and wipe the strip gently to remove any dust, debris, ink build-up.

#### > Clean Media Rollers

Use a microfiber cloth / lint-free wipe to wipe any dust/debris from the media / film. **DO NOT USE ALCOHOL.** You may use cleaning solution, but make sure that the rollers are fully dried before use.

#### > Clean Tension Sensor

Use a microfiber cloth / lint-free wipe & 90% or higher isopropyl alcohol, and wipe the strip gently to remove any dust/debris.

### 8.4.3 Monthly maintenance

- > Shake the Color Ink bottles for 30 seconds.

### 8.4.4 As needed

- > **Media replacement:** Whenever you replace your film with a new film, take time to clean the media rollers. Disengage the roller and thoroughly clean the rubber. roller with a microfiber cloth or lint-free wipe to wipe any dust/debris from the media/film.
- > **Keep all exterior surfaces clean:** Use a microfiber cloth to clean the outside surface. DO NOT spray any liquid, as it may damage the board inside.

### 8.4.5 Long-term storage (1-2 weeks)

- > **Clip the ink tubes** from the ink bottle and before the damper
- > **Wet Cap**

### 8.4.6 Long-term storage (2+ weeks)

- > **Empty the Ink Bottle**
- > **Pour all inks** back into the original ink bottles
- > **Pour cleaning solution** into the ink bottles and fill until you see the cleaning solution in the dampers and through the ink waste bottle.

## 8.4.7 Routine maintenance form

	Weekly	Monthly	As Needed	Long Term Storage (1-2 weeks)	Long Term Storage (2+ weeks)
Check Waste Bottle					
Check Ink Bottle					
Clean Encoder Strip					
Clean Media Rollers					
Clean Tension Sensor					
Shake Color Ink Bottles					
Media Replacement					
Clean Exterior Surfaces					
Clip Ink Tubes					
Wet Cap					
Empty Ink Tank					
Pour Cleaning Solution					

## 8.5 Wearing parts maintenance

### Daily maintenance on nozzle and ink station

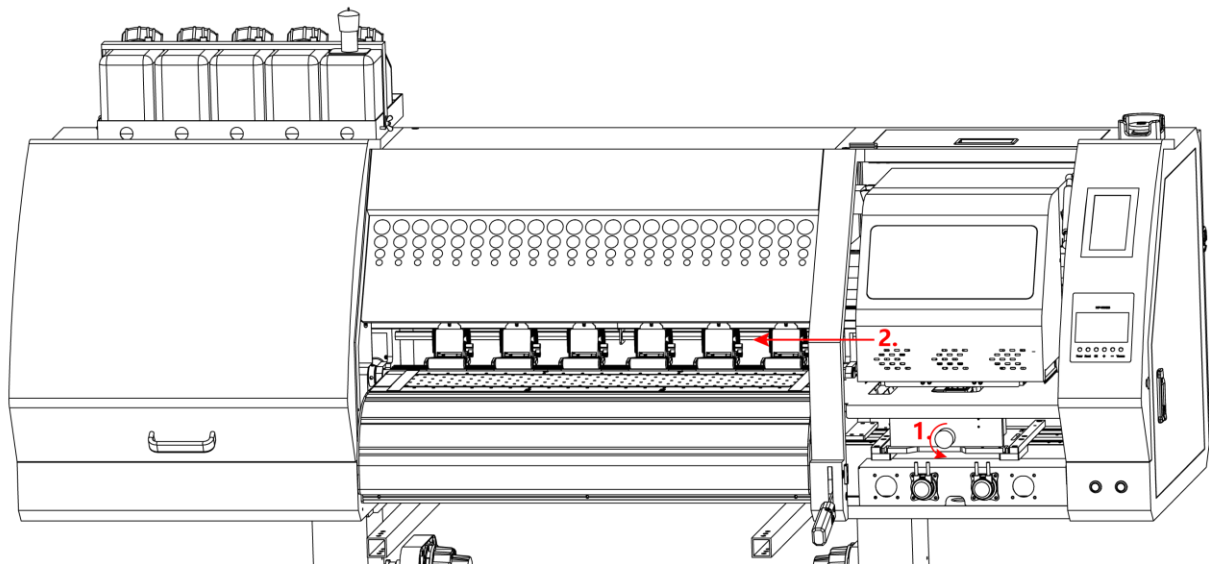
#### Preliminary preparation

Cleaning liquid (or pure water), non-woven cloth, cotton swab

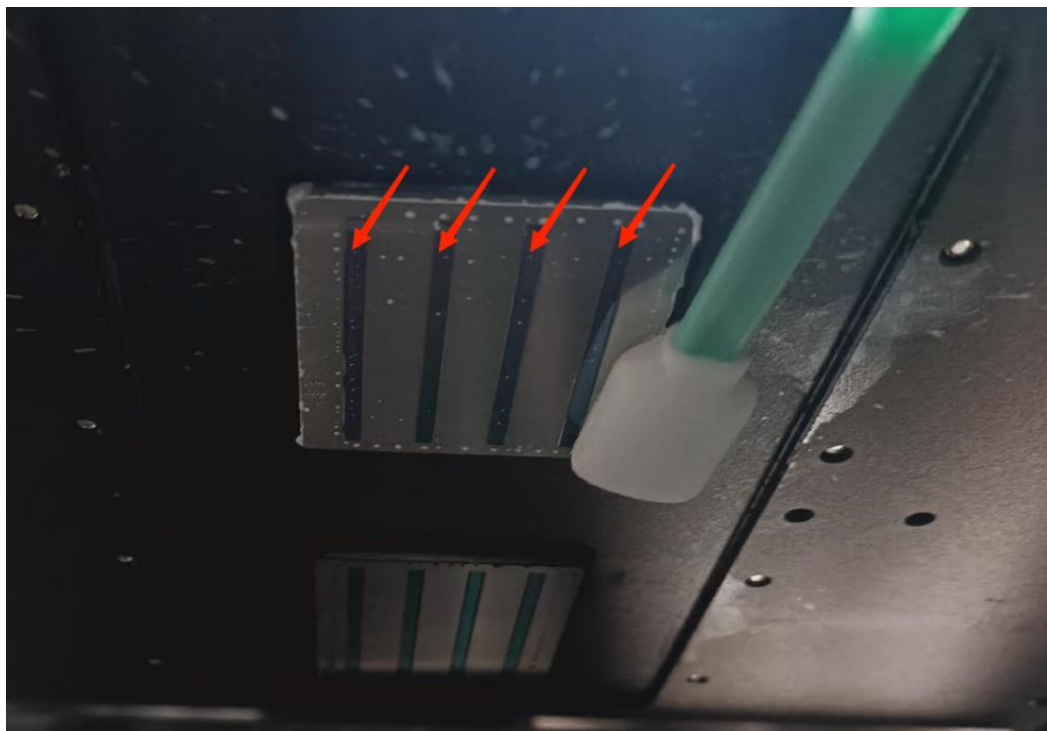


## 8.5.1 Nozzle maintenance

1. Unlock the ink station and move the carriage to the left end of the platform, as shown in the figure;

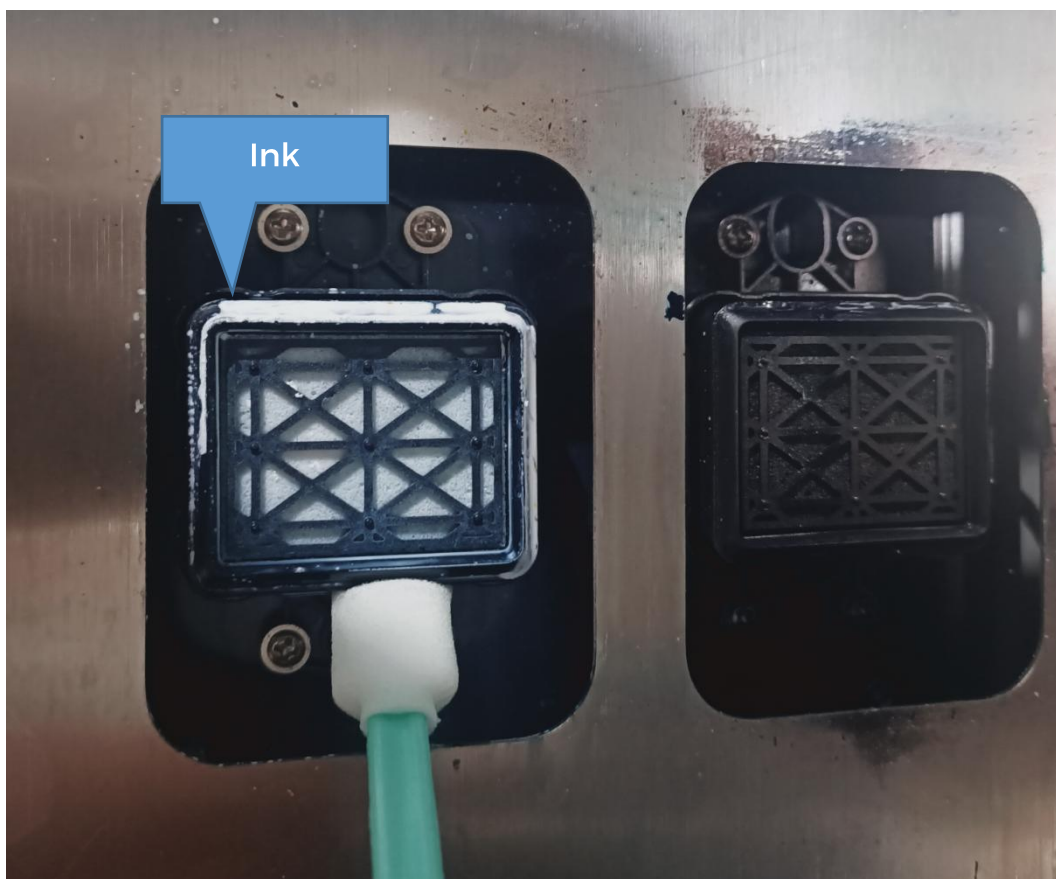


2. Wipe the nozzle side with cotton swab dipped with cleaning liquid or purified water, and wipe the ink block around the surface of the nozzle. Pay attention to the nozzle chip shown in the picture, it cannot be cleaned with swab.



## 8.5.2 Ink station maintenance

Wipe the ink station cushion with cotton swab dipped with cleaning liquid or purified water.



After wiping, use non-woven cloth to clean the excess cleaning fluid and ink, you can see the restoration shown in following figure:



### 8.5.3 Wiper maintenance

Clean the wiper with cotton swab dipped with cleaning liquid, and dry it with non-woven cloth.



You can see the restoration shown in following figure:





After maintenance, it is necessary to driver the carriage back to the origin, and make the nozzle and ink absorption cushion sealed.



## **IX. Warranty**

- > Lifetime **Technical Support**
- > Limited to **2-year warranty** on **non-consumable parts**
- > Warranty on parts only for printer(s) using CALCA DTF inks, films, and printer(s) under proper maintenance and usage.
- > The use of non-CALCA ink and film will void any warranties offered for the CALCA DTF Roll Printer.

Company or person requesting warranty repair shall contact CALCA for pre-authorization and selection of a qualified repair technician to service the equipment prior to performing service on the equipment. Failure to request pre-authorization for service repair and selection will result in denial of a warranty claim.

CALCA will not be liable for labor or material costs associated with graphic production, graphic application, equipment downtime or any other consequential damages including loss of profits or potential business sales, arising out of a warranty claim. It is the user's responsibility to secure the equipment and surrounding area to prevent damage from damages arising from a warranty claim. CALCA is not responsible for damages from improper care, maintenance or repair of equipment associated with normal operation.