

INSTALLATION MANUAL OF KEJIE KR 2513



Foreword

This installation guide briefly describes the operational aspects of the **KEJIE KR 2513** machine. It provides step-wise instructions for installing the machine with visual screens for easy and better understanding. It also describes the error messages encountered while working with the machine and the appropriate remedial actions required by the user.

This guide serves as a reference tool for the service engineer to install the **KEJIE KS 2513** machine without anyone else's assistance. The information provided in this document ensures its uniqueness and language quality. Please read this document carefully and follow all the instructions for safe and proper product use.

Disclaimer

The information and instructions provided in this installation manual have been checked for accuracy, uniqueness, and reliability.

“No part of this document shall be reproduced or used by externals without prior permission”.

The reference table is shown in the below table:

Doc Type	Doc Code	Version	Machine Name	Date of Issue
Installation Manual		1.0	KEJIE KR 2513	2025

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1. Site Layout

The **Site Layout** of the machine is shown below:

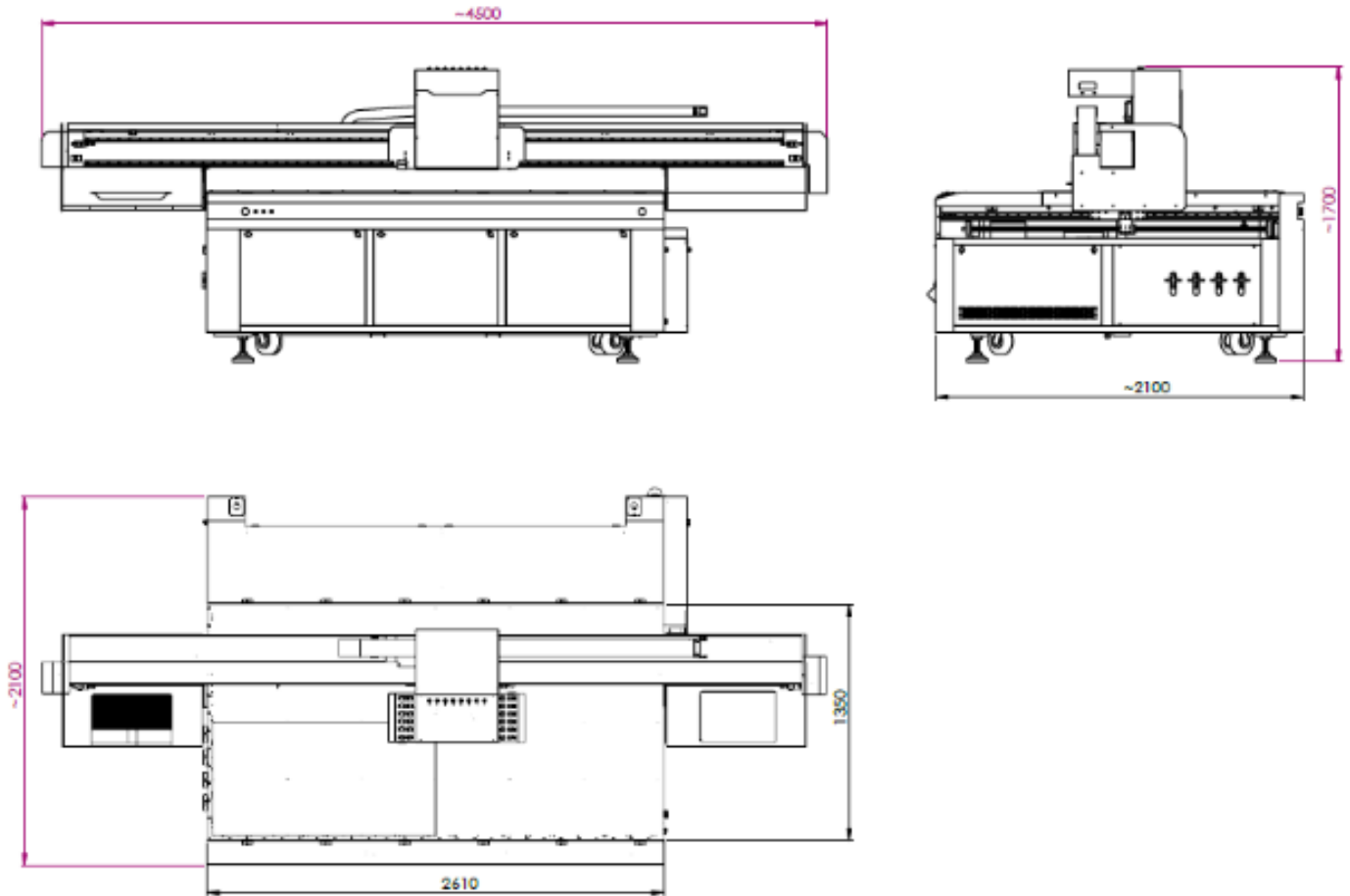


Figure 1: Site Layout of the Machine

Machine Dimension (L x W x H): 4500 x 2100 x 1700 mm

Dimension with Packing (L x W x H): 4830 x 2390 x 1840 mm (LxWxH)

Floor Plan

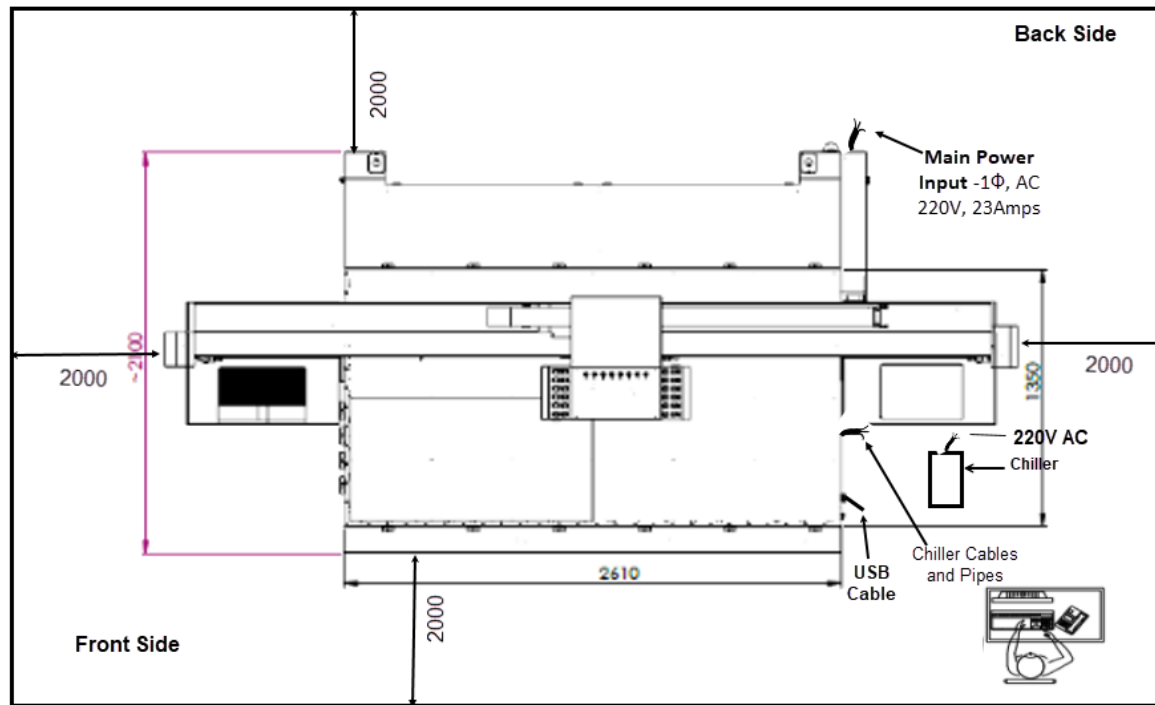


Figure 2: Room Layout

Dimensions are in mm(millimeter)

2. Site Preparation

System Requirements

The **System Requirements** are given as follows:

Table 1: Recommended System Requirements

Requirements	Specifications
Operating System	Windows 10 (64bit)
Processor	Intel Core i7
RAM	8 GB or More
Hard Disk	1TB
Solid State Disk (SSD)	128GB
USB Port	USB 3.0

Tool Requirements

The **Tool Requirements** for printer installation are given as follows:

- Magnifying lens (Carry by Engineer)
- Multimeter (Carry by Engineer)
- Wire Cutter
- Nose plier
- Screw driver set
- Allen key set
- Tapper Gauge

Environmental Requirements

The printer should be installed in a clean, dust-free environment, with temperature and relative humidity range which are given below:

- **Power ON** : Temperature: 18 to 28°C
Humidity: 20 to 60%RH (Non-condensing)
- **Power OFF**: Temperature: 5 to 40°C
Humidity: 20 to 80%RH (Non-condensing)

3. Safety Precautions

Before operating the printer and Centre software for the first time, please read the document carefully and follow all the usage instructions. While using the printer, kindly follow all the safety instructions which are given below:

Fire Prevention

Inks and solvents must be enclosed in a special storage cabinet for inflammable liquids or within a separate storage room. They must be identified to meet the professional requirements of safety regulations. Ink storage must strictly comply with local fire regulations for the use and storage of combustibles.

Ventilation

The storage room must have sufficient ventilation to prevent the danger caused by volatile gas accumulation.

Note: Solvent gas specific gravity is greater than the air, it would accumulate near the floor. Installation work near electrical equipment must confirm the GB/T standards, national electrical regulation requirements for level II sites, and installation by a corresponding qualification of the professional electrical contractor.

UV Light Precaution

- Never look directly at the UV light.
- Wear protective eyewear
- Protect your skin and eyes from exposure to UV radiation sources. UV radiation can cause skin burns, eye damage, etc.

Ink Related Precaution

- UV ink causes Skin and eye irritation with the potential to induce or cause an allergic reaction. So always wash your hands with soap and water after working with ink. Wear safety goggles and protective gloves always.

4. Electric Requirements

Before installing the printer, the below-mentioned electrical requirements should be confirmed:

- Total Power Consumption is 5KW.
- Machine needs
- Uninterrupted power supplies (flicker-free) should be provided as it has a digital circuit.
- Exclusive Earthing should be required for the printer and should not be shared with UPS and Building's common Earth.
- Printer and computer must share the same exclusive earthing.

Proper Earth Connection

Trouble-free printing depends on the earth connection provided to the machine. In some cases, the media generates static and excessive charges that can damage the Print Head and affect the placement of printing dots. Thus, one should provide the proper earth connection before using the printer.

Precautions:

- A separate earth connection should be provided to the machine
- The earth resistance should be in the range of 4-5 ohms

Note: Ensure that the earth point for the Printer and PC should be same for the safety of interfaces.

5. Preparation before Installation

To install the printer, follow the below-mentioned instructions:

- Prepare the site as per the requirements like environmental temperature.
- Configure the PC according to the given system specification, viz., RAM, operating system, processor, and storage space.
- Arrange the machine handling tools to avoid delays in unloading.
- Install the Printer manager software by following all the instructions in the Installation Guide.
- If any packaging damage is found, immediately report the same to the dealer.
- It is preferable that at least two operators with proficient computer skills and printing experience be present for training during the installation.
- Keep the consumables like media and inks, ready in advance to avoid any delay in installation.

6. Handling Precautions

While handling the printer, the below-mentioned instructions should strictly be followed:

- **Printer**
 - Follow all the safety and handling precautions
 - Avoid excess load on the printer
 - Do not cover the ventilation area of the printer
 - Properly cover the printer while it is not in use
 - Assemble the printer in the specified site area with relevant temperature and humidity
 - Proper power cable fitting and port availability
- **Print Head**
 - Avoid losses due to Print Heads dry-out situations
 - Clean Print Heads timely to avoid nozzle or any other blockage
 - Perform nozzle test every time while starting printing
 - Appropriately calibrate the Print Head for high-quality printing
- **Ink**
 - Use recommended ink only
 - Do not shake the ink bottle
 - Store ink in the mentioned site area to avoid drying or damage

7. Unpacking and Unloading the Printer Box

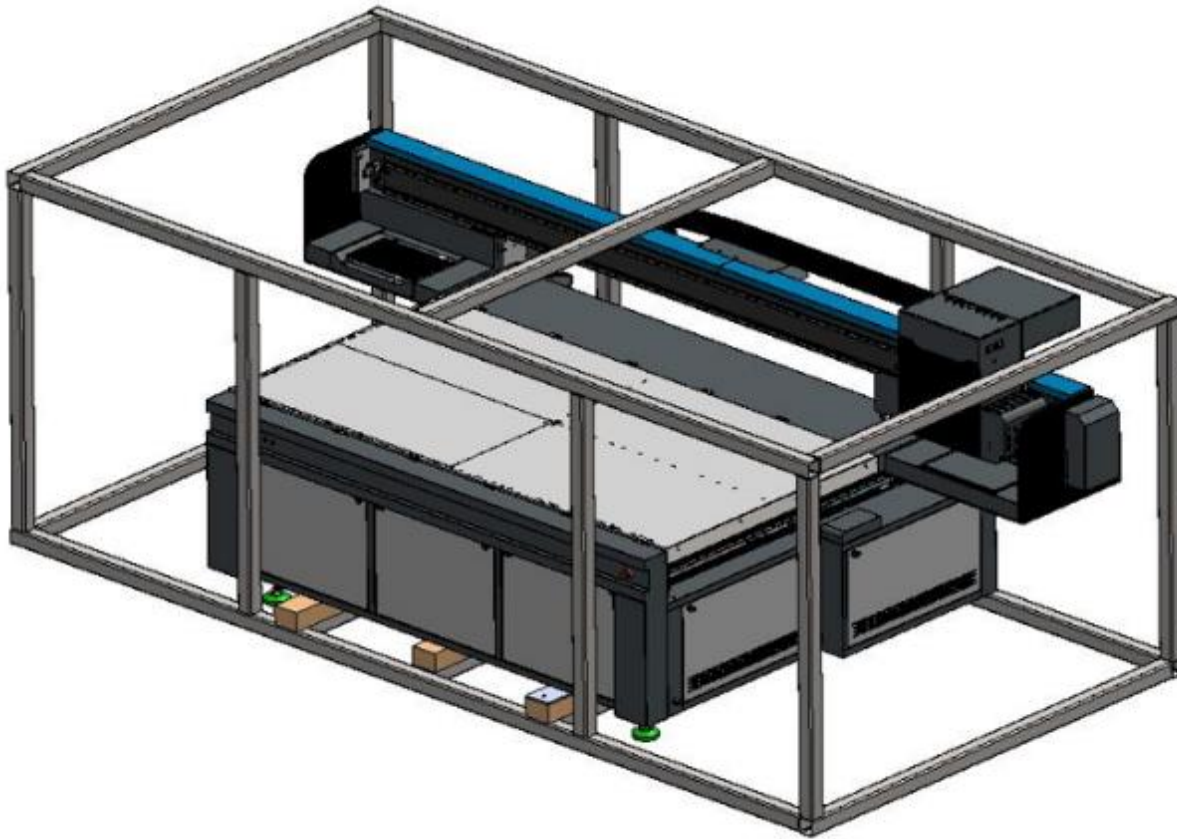


Figure 3: Machine packed in iron frame

Unpacking the Machine

Note: Packing may vary from country to country.

Follow these steps to unpack the machine from iron pallet:

Step 1 Separate the upper part from the lower part of the iron pallet. For this, pull up the top frame of the iron cage to remove it, it is just sitting/resting over iron pillars (not screwed). For reference, please see the below image.



Figure 4: Removing Top Pillar

Step 2 Remove all the side iron pillars by pulling them up, in the same way as done for top frame.



Figure 5: Removing Side pillars

Step 3 Machine is attached to the pallet with 3 L-shaped brackets. To detach the machine, we need to unscrew 6 M8 screws. Remove all the screws (6 Nos) (4 in front and 2 in backside) which are used to fix the machine with the lower pallets. The location of the L brackets is shown in below figures.

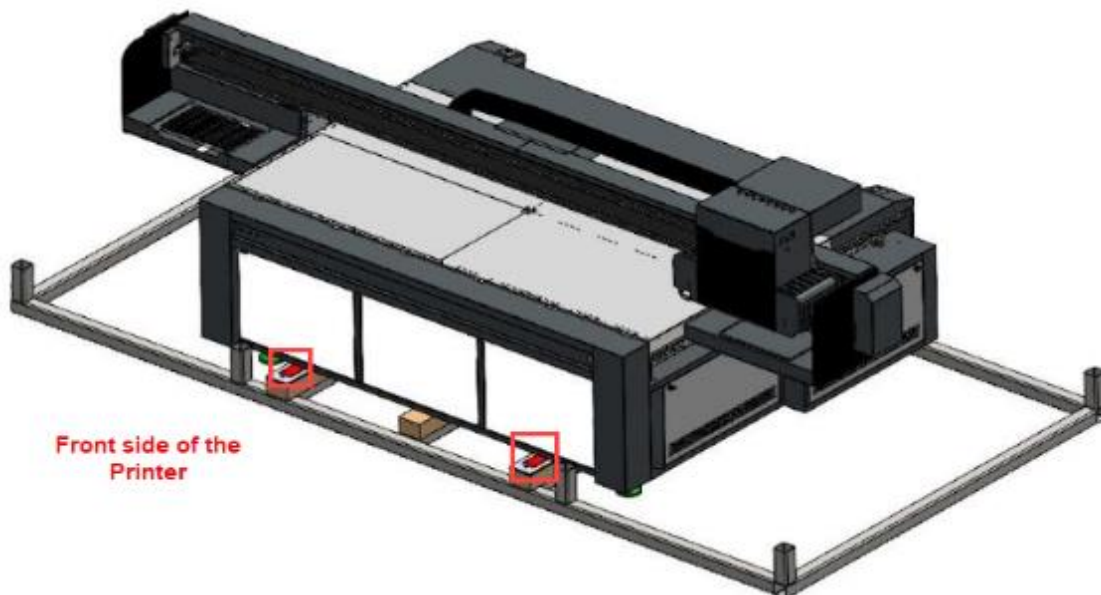


Figure 6: Front Side of Printer with L brackets

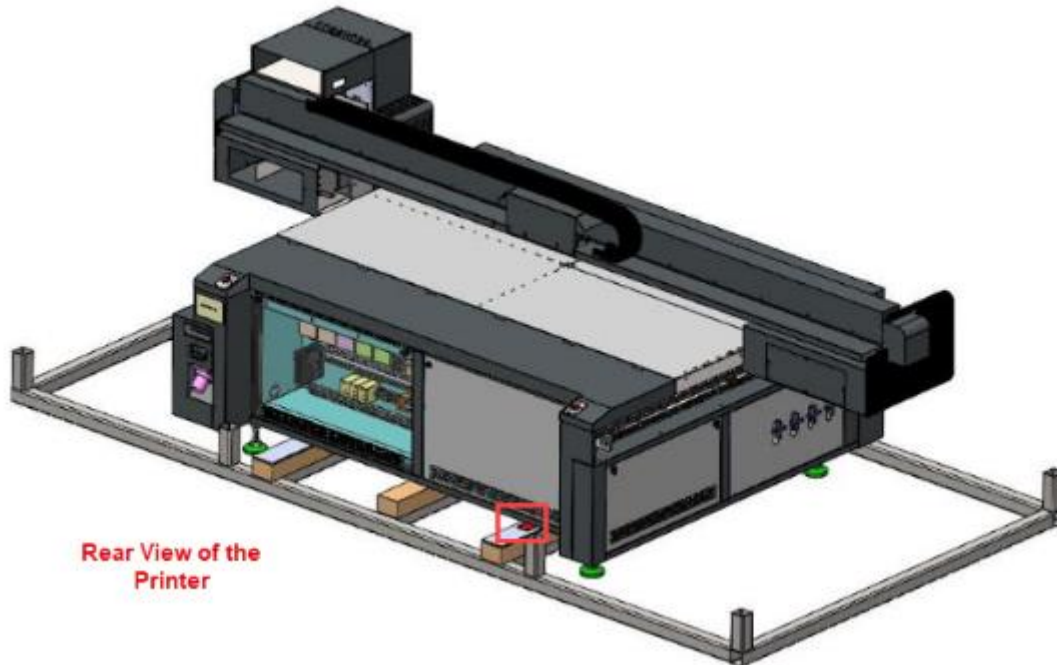


Figure 7: Rear View of Printer with L bracket

Note: To gain access and remove the screw, we must remove the front 2 doors and rear left side door.

Step 4 Lift the machine and remove it from the pallet with a forklift. Remember to lift the machine from the wider sides only.

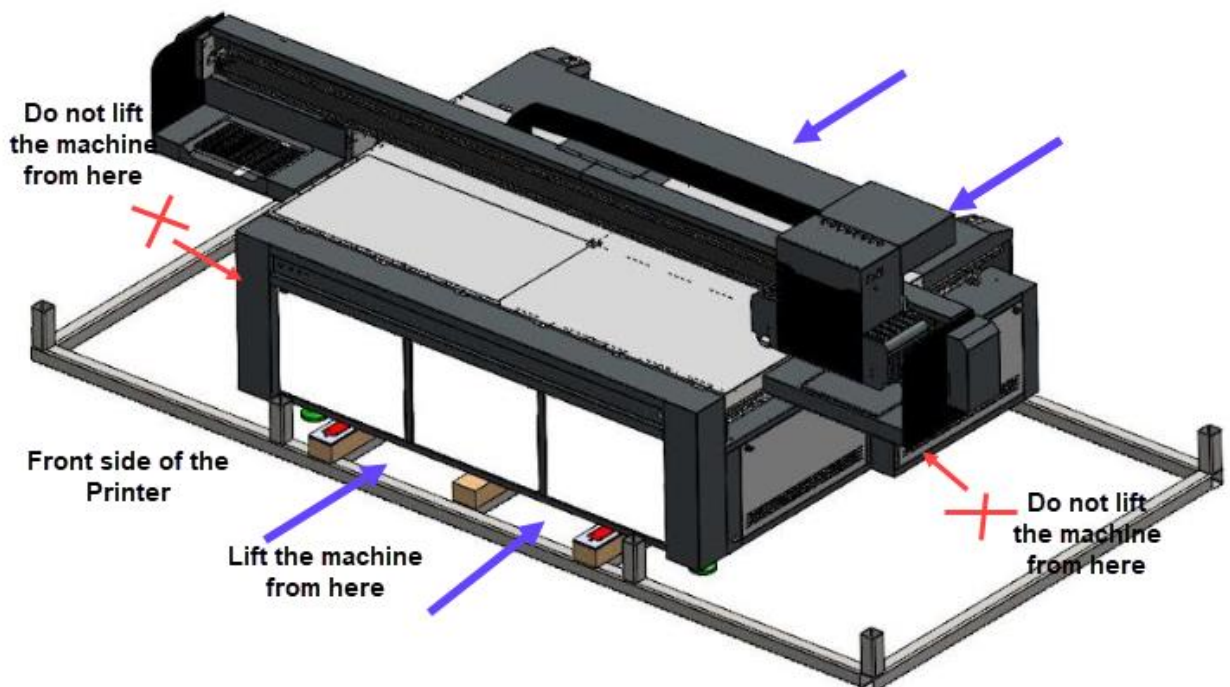


Figure 8: Machine lifting position

Step 5 After this, land the machine on the leveled surface. Before entering the room, note that the orientation of the printer should be as per the room plan.

Note: Do not lift the extreme ends of the machine by machine or hand, as it may result in serious damage (sensitive areas).

Now, the machine is unpacked.

Caution:

Do not move or unload the machine until you have ensured that the place where it is landed is even or level.

Precautions:

- Do not lift from the extreme ends of the machine
- Do not tilt the machine
- Do not drop the machine
- Do not climb or stack anything over the printer machine.

Machine and Tool Requirements

The **Machine and Tool Requirements** are shown as follows:

- Forklift
- Crane
- Heavy-duty lifting belt/sling
- Powered screw/nut driver

Unloading the Machine

The machine's net weight is 1650 Kg(approximately). After packing, the weight increases to approximately 1850 kg.

Follow these steps to unload the packed machine:

Step 1 Use rope to tie the packed machine to the crane. The machine (along with the “Pallet”) should be unloaded from the truck and placed it the leveled and cleaned surface where it is to be installed.

Note: Ropes tied to pallets and cranes during unloading must keep the machine in perfect balance while lifting.

Or

Instead of rope, the user can also unload the packed machine with the help of two forklifts.

For this follow the below steps:

- Using 1st forklift, pull out a portion of the machine from the container/lorry.
- Place the 2nd forklift from the side for centering and balancing the box.
- Let the truck/lorry move forward.

Step 2 Place the packed machine on a leveled and clean surface where it is to be installed.

Leveling

The machine is equipped with 4 levelers, 2 each on the front and back sides. Once the machine is placed on the surface, it must be fixed with these levelers.

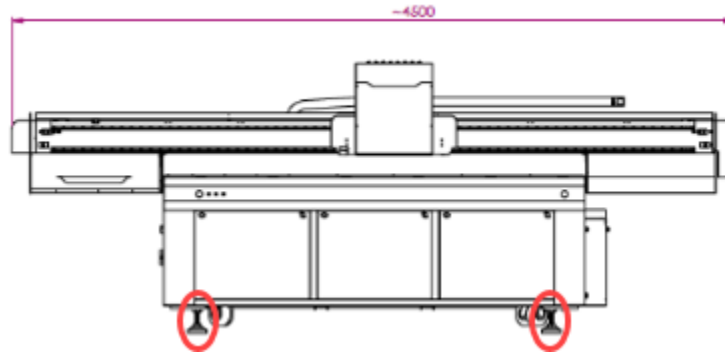


Figure 9: Machine Levelers

Open Carriage Lock

Carriage of the printer is locked while in transportation to restrict its movement. Remove this lock once the printer is getting installed.



Figure 10: Carriage Lock

Chiller Unit

Connect the following to the chiller unit, as shown below.

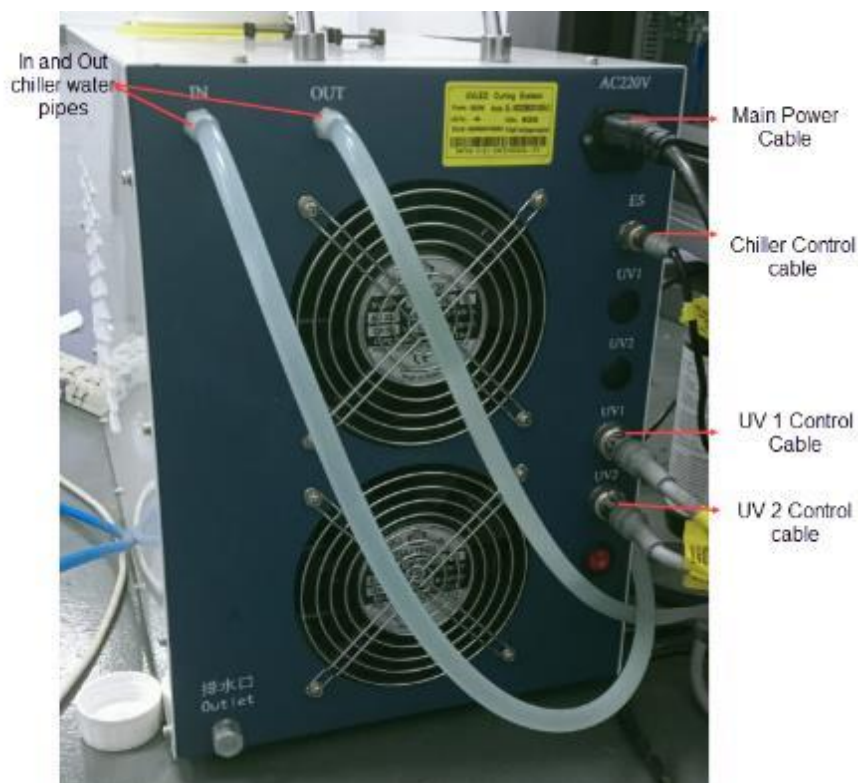


Figure 11: Connecting Cables to the Chiller Unit

Locate the Chiller pipes and Connect cables hanging from cable chain at the right side of the printer.

- Chiller pipes to the IN and Out port
- Left and right UV lamp to the UV1 and UV2 ports
- Chiller control cable to ES port

Lastly Connect the Main Power cable

8. Switch ON Procedure

Follow these steps to switch ON the printer:

- Step 1** Check and maintain the room temperature for smooth printing operations.
- Step 2** Check Ink Level.
- Step 3** Check the Waste tray if full.
- Step 4** Release the **Emergency** button if pressed.
- Step 5** Check the coolant level in the Chiller Unit and fill it if required.
- Step 6** Switch ON the Chiller unit, as shown below:



Figure 12: Switch ON UV Lamps

- Step 7** Switch ON the printer from the main power and MCB, as shown below:



Figure 13: Switch On the Main Power Button

- Step 8** To initialize the machine, first open the Printer Manager and prepare it for use. Then, the machine starts initializing automatically. Firstly, the machine initializes the Z-axis, and then the sequence is **Z-axis→X Axis→Y Axis→ Again Z Axis** comes down.
- Step 9** Place the media (refer to [Media Loading](#)).
- Step 10** Switch ON the Print Bed vacuum by pressing the **Bed Vacuum** button available on the front left side of the machine, as shown below:



Figure 14: Bed Vacuum Button

Note:

- a. Carriage path must be obstacle-free.
- b. Ensure that Z height must be enough to move smoothly over the print bed.

- Step 11** Switch ON the required vacuum chambers by moving the Vacuum Chamber knob, as shown below:

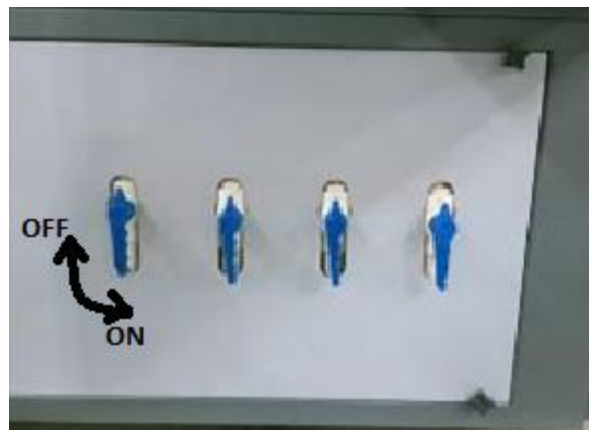


Figure 15: Switch ON the Vacuum Chamber

9. Printer Manager Software Installation

1. Installing Setup printer manager

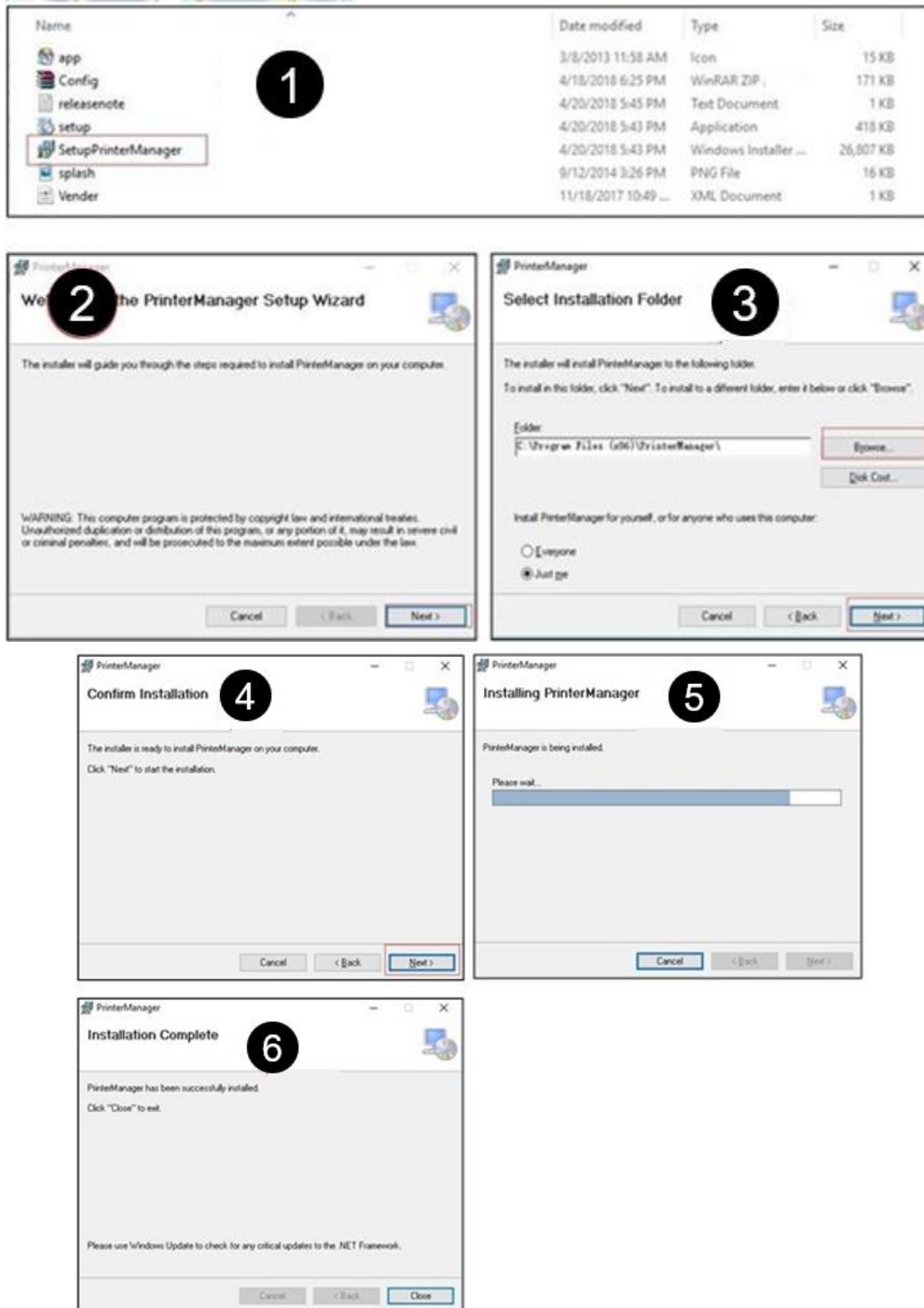


Figure 16: Installing Printer Manager

Note:

1. Open the software installation program, select, and click the setup printer manager icon.
2. Next select the installation software path, and continue clicking next until the installation is completed
3. Click Close.
4. The desktop will generate a printer manager software icon.

2. The software finds the driver location “C:\Program Files (x86) \Printer Manager\Setup”.

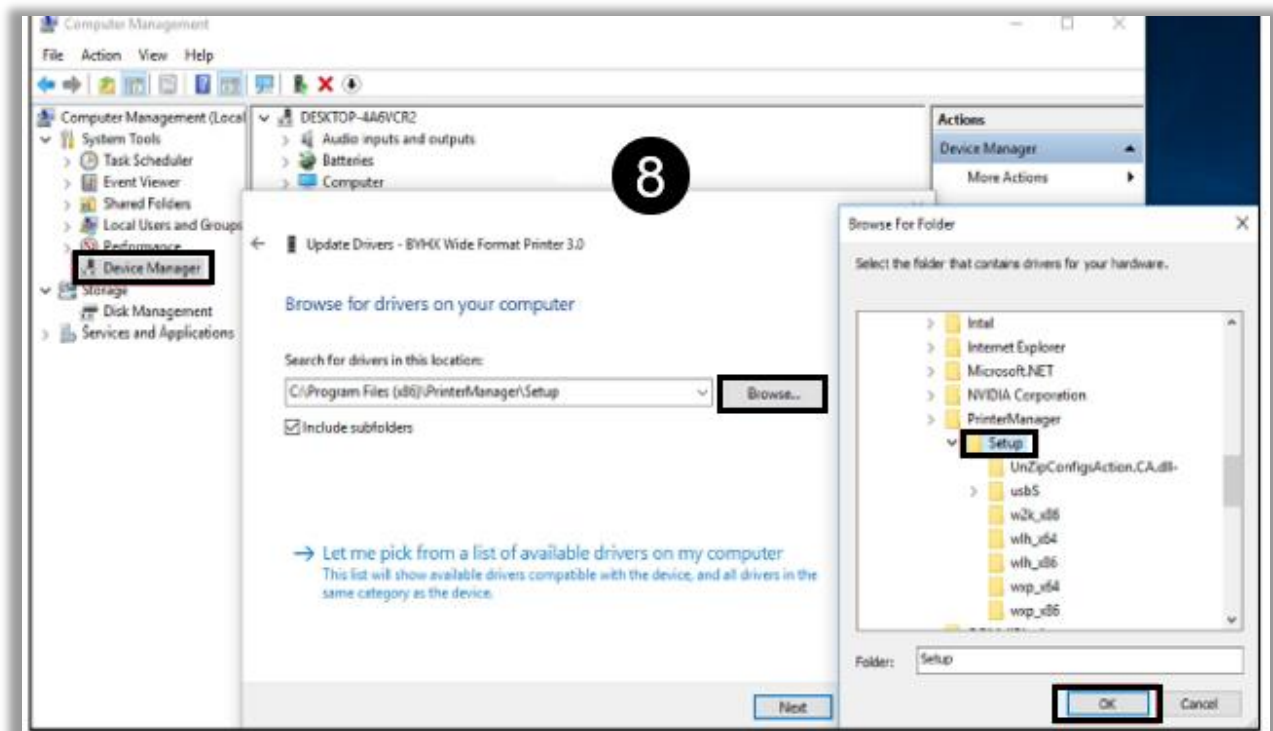
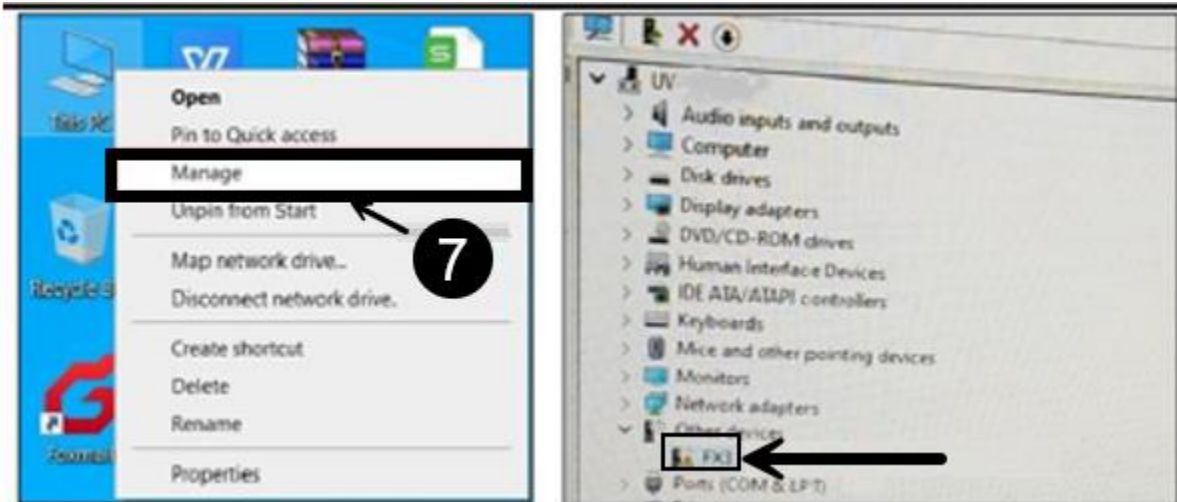




Figure 17: Driver Location

Note: Right-click on My computer icon→admin→device manager→USB controller→FX3 icon→ right-click update driver→browse my computer to find driver software→browse →C:\Program Files (x86) \Printer Manager\Setup path. Automatic search until complete.

10. Print Manager Software Operation

1) Double click Run printer manager

2) Put Time password.

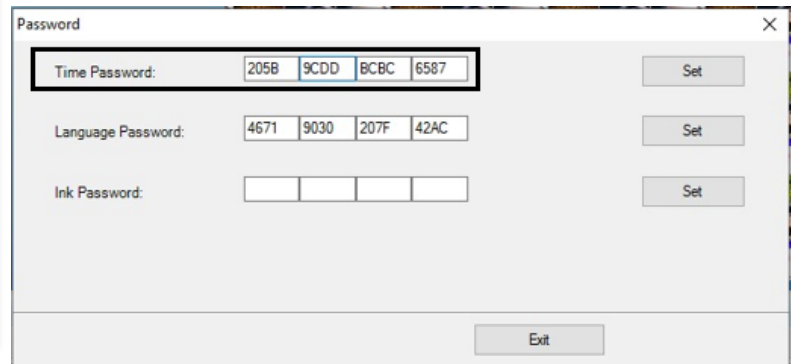
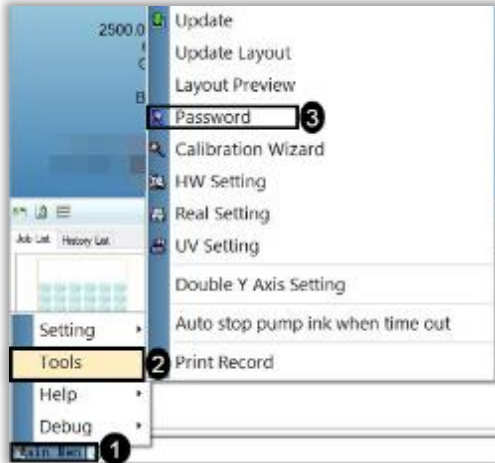


Figure 18: Time and Language Password

- **Time Password:** Each machine's initial password lasts 240 hours, and the software prompts for a new password for the remaining 100 hours. Users need to find a dealer to prepare the password input in advance to ensure that the device is not locked.

Note: If password is already set, then no need to set it again.

3) Setting Feather type, Feather Quality, and X div speed.

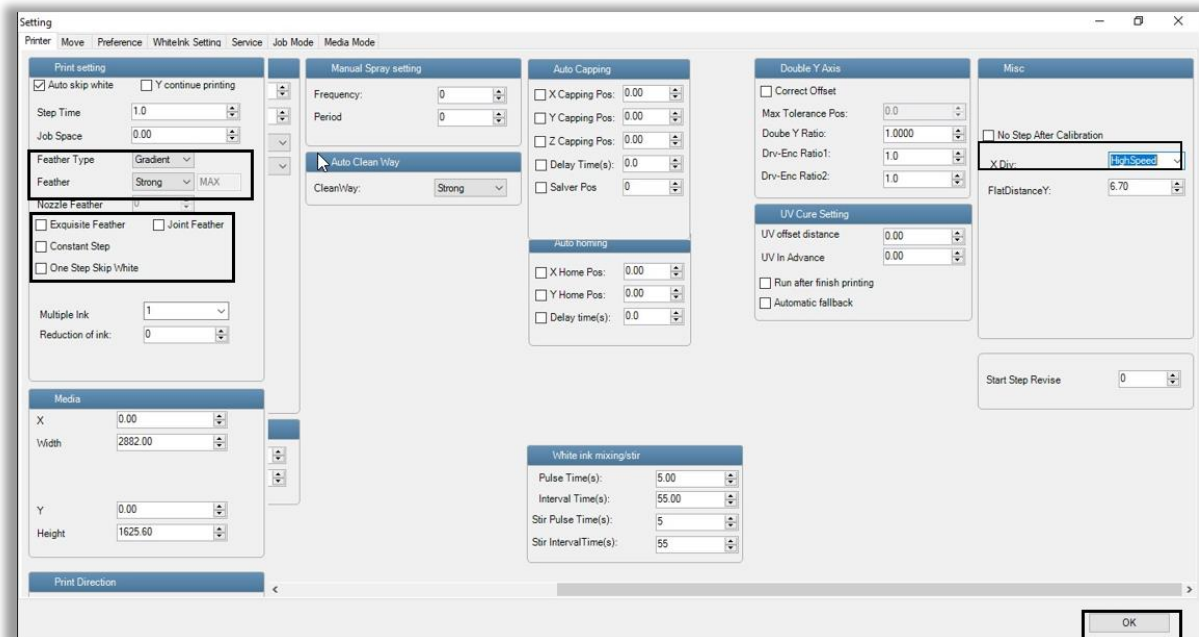


Figure 19: Setting Window

- **Feather type commonly used** (gradient/uniform: solid color block with uniform printing effect good, color block with gradient printing speed).
- **Feather size:** Select according to print picture quality (strong+fine+sprinkler room+constant step).
- **X Div:**
 - Select high precision when calibration printhead alignment (select VSD_1_317DPI in the calibration wizard).
 - Select high speed when printing pictures, and select the software interface "Speed select VSD_1".

4) Setting the margins and offset

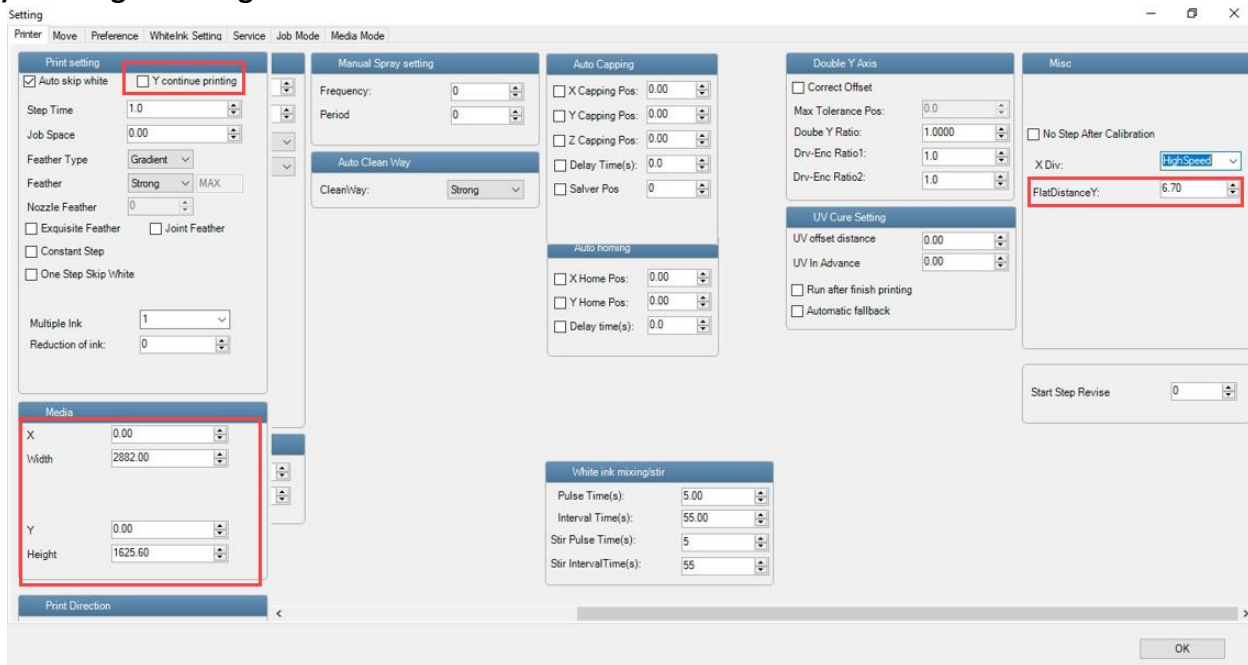


Figure 20: Set margin and offset

5) Move Speed setting

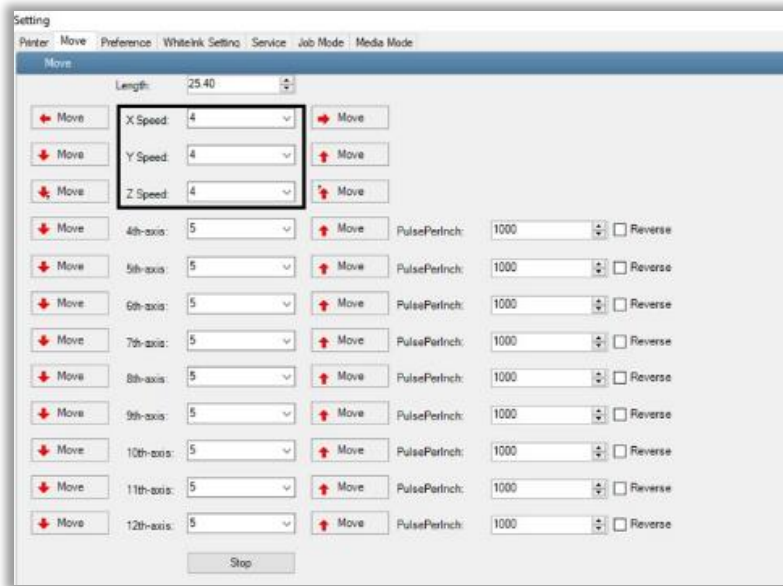


Figure 21: Move Speed Setting

Note: Open the software interface→ edit job→ move settings→ X, Y, Z speed settings (Use numbers to represent speed→ Save, Exit come into effect.

6) Unit Settings

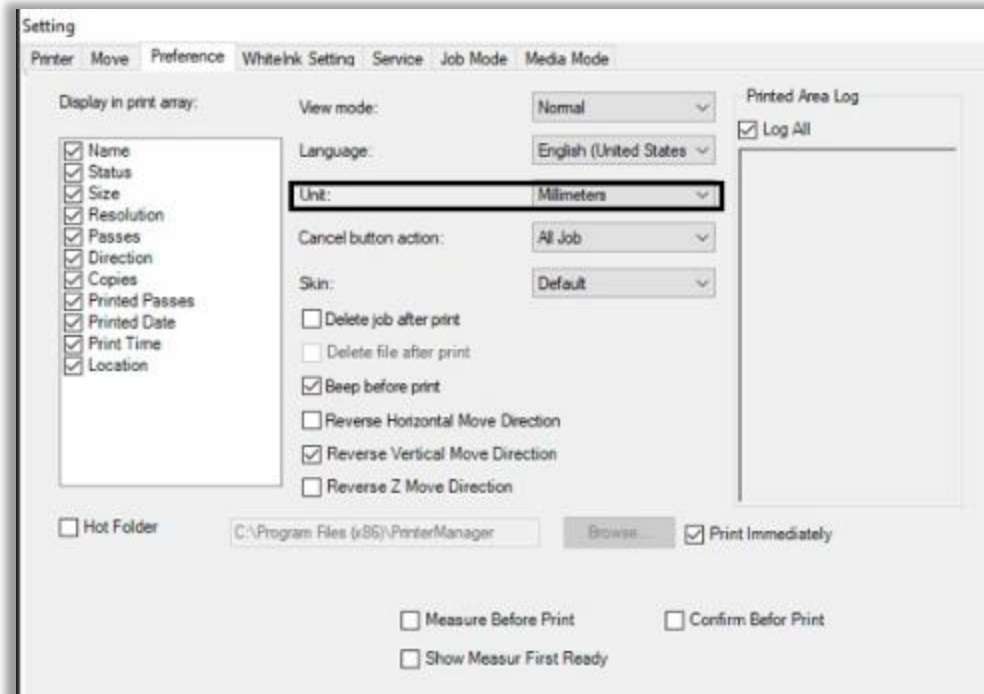


Figure 22: Measurement Unit

Note: Open the software interface→ edit job→ personality setting→ unit→ select mm→ OK, Press the Emergency button to restart the machine and for the software to take effect.

7) White Ink Setting

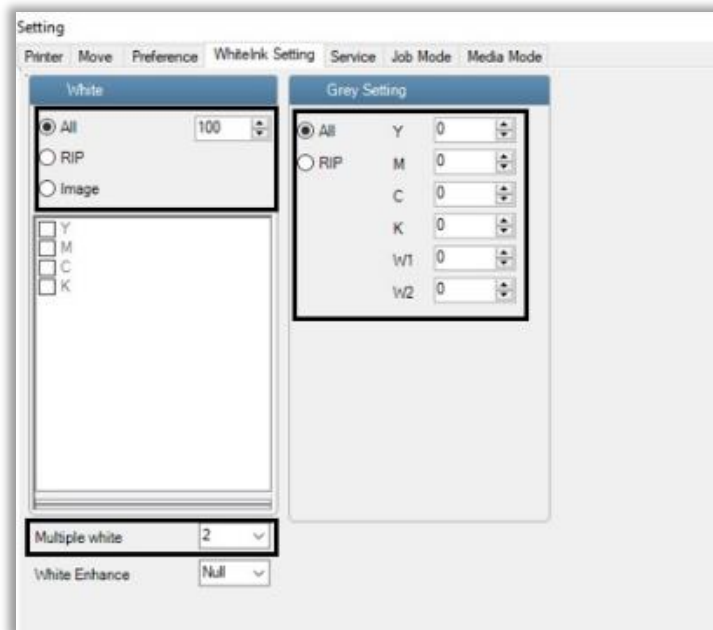


Figure 23: White Ink Setting

Note: White ink/gloss ink selection for printing.

- **All:** Print white ink/gloss on full width according to pattern size.
- **RIP:** First Photoshop fills the spot color layer, then Photoprint processes the image with the spot color layer, and prints spot color white ink/varnish.
- **Image:** Print white ink/light oil according to the pattern color (print white ink/light oil according to the pattern color; print white ink/light oil according to the pattern color).

8) Service Setting

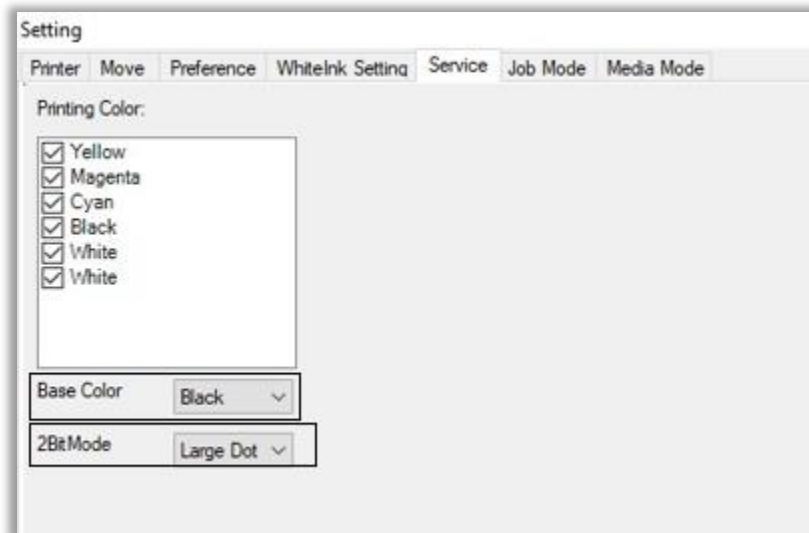


Figure 24: Service Setting

Note: Select calibration reference color and print ink print size settings.

9) Job mode

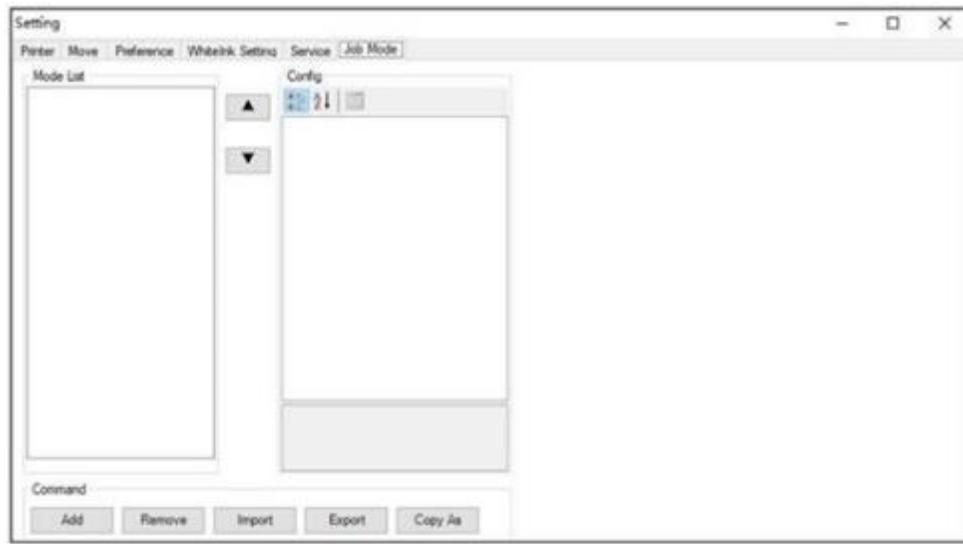


Figure 25: Job Mode

Note: Set fixed options such as save Print Mode, Pass number, Speed, Direction, Feather selection, etc.

10) LED lamp settings

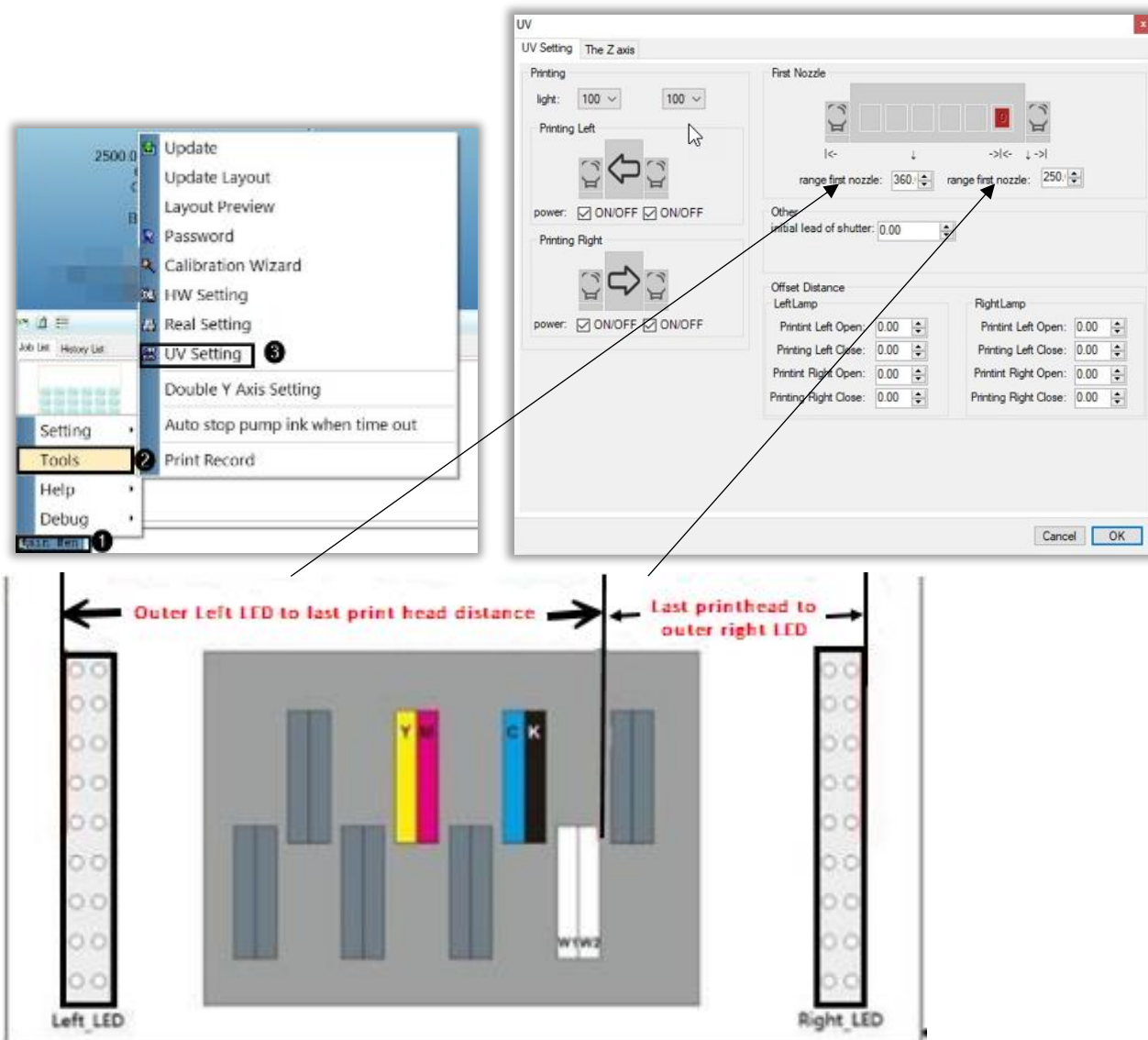


Figure 26: LED Lamp Setting

For finer adjustment, we can use the left and right lamp settings as shown below.

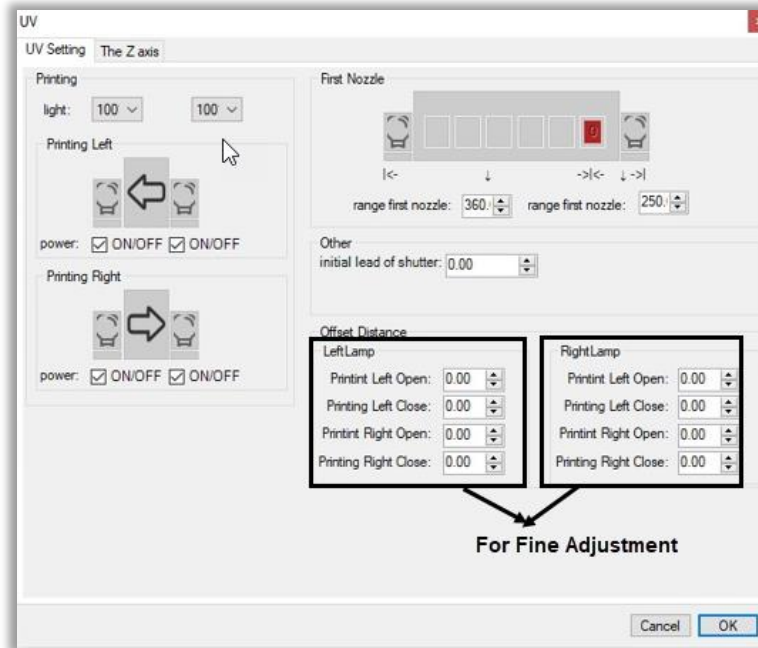


Figure 27: Left and Right Lamp Option

Note: Setting UV lamp on distance: main menu→ tools→ UV lamp setting→ modify left and right light on distance (left: left LED lamp to the last printhead distance, right: the previous printhead to the right LED lamp distance) unit mm.

Note: Move the carriage to the table for adjustment and height adjustment.

Z Setting

Step 1 Click the Z home icon () to move the Head plate to top most position. Measure the height from bed to head plate base and set the measured value on Z Max'.



Figure 28: Z Home Icon

Step 2 Open Z setting screen by clicking the Z setting icon() as shown below.

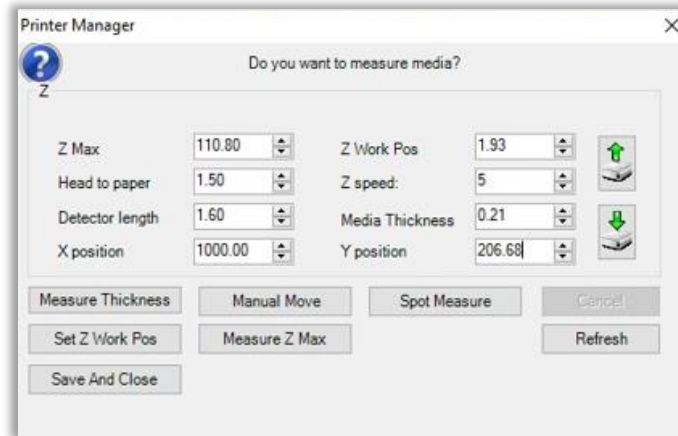


Figure 29: Z setting Screen

Step 3 Set 'head to paper' height to 1.8~2.0mm.

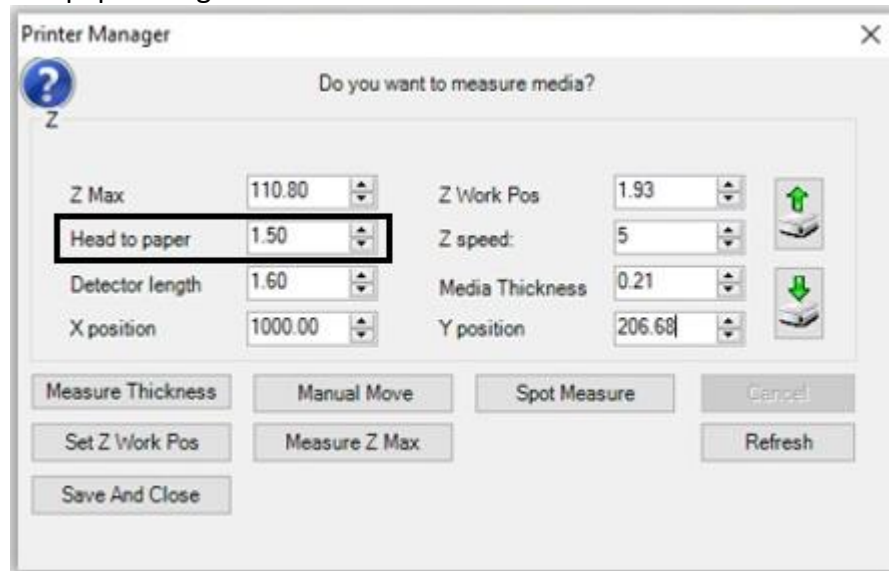


Figure 30: Head to Paper Option

Step 4 Set the detecting position (X and Y position on the bed).

Step 5 Click the Measure thickness button. Z will go up and come down to the specific position.Y position defined. Verify the head plate base-to-bed gap. Adjust the detector length if the physical height differs from head to paper height. Increase the detector length if the measured gap is less than the set value, or vice versa.

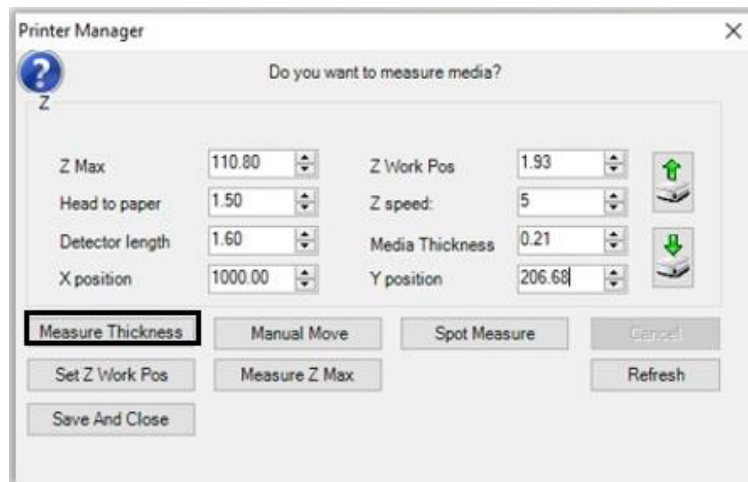


Figure 31: Measure Thickness Option

Step 6 To detect the media thickness, place the media to be printed in the range of defined X and Y positions and press the **Measure thickness** button again.

Step 7 Check the media thickness value and verify by measuring the media thickness. It should be same as media thickness value.

If the measured media thickness differs, adjust the Z Max value (increase the Z Max value if measured thickness is less than set value, or vice versa)

Step 8 Save and close.

Run the full (2500/1300 MM) dry print command (without Ink and Head) to verify the printer's functioning like XYZ axis, sensors, Limit Switch, etc.

Now, printer is ready

11) Software operation interface

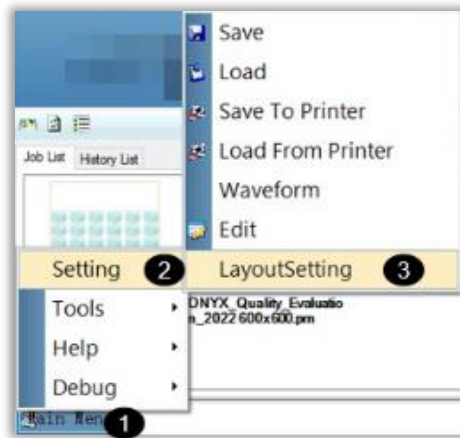


Figure 32: Software Operation Interface

1	Add job	8	Spray	15	Up Move	22	Settings	29. Layout setting
2	Delete job	9	Stop	16	Z Down	23	Stop	30. Bi direction
3	Print	10	Clean Individual Color Channel	17	Z Up	24	X origin setting	31. Use file setting
4	Pause/continue	11	Left move	18	X Home	25	Y origin setting	
5	Finish	12	Right move	19	Y Home	26	Pass number	
6	Nozzle check	13	Setting Print Origin Icon	20	Z Home	27	Speed	

7	Auto Clean	14	Down Move	21	Z Axis Thickness	28	Print Direction	
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12) Layout Setting



Layer 1 Option

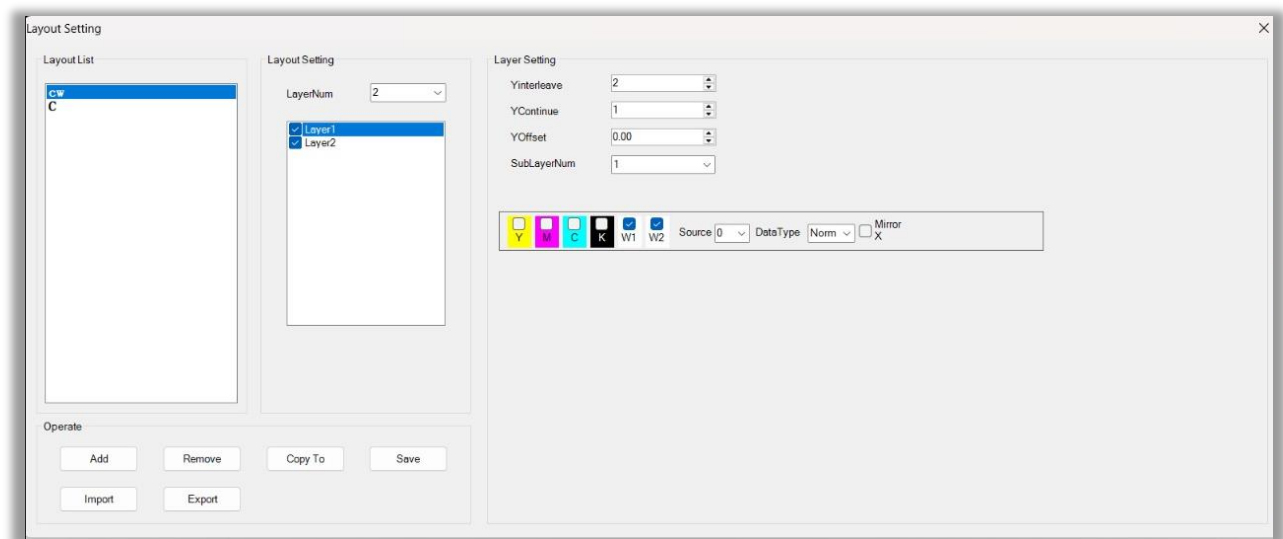


Figure 33: Layer 1 Option

Layer 2 Option

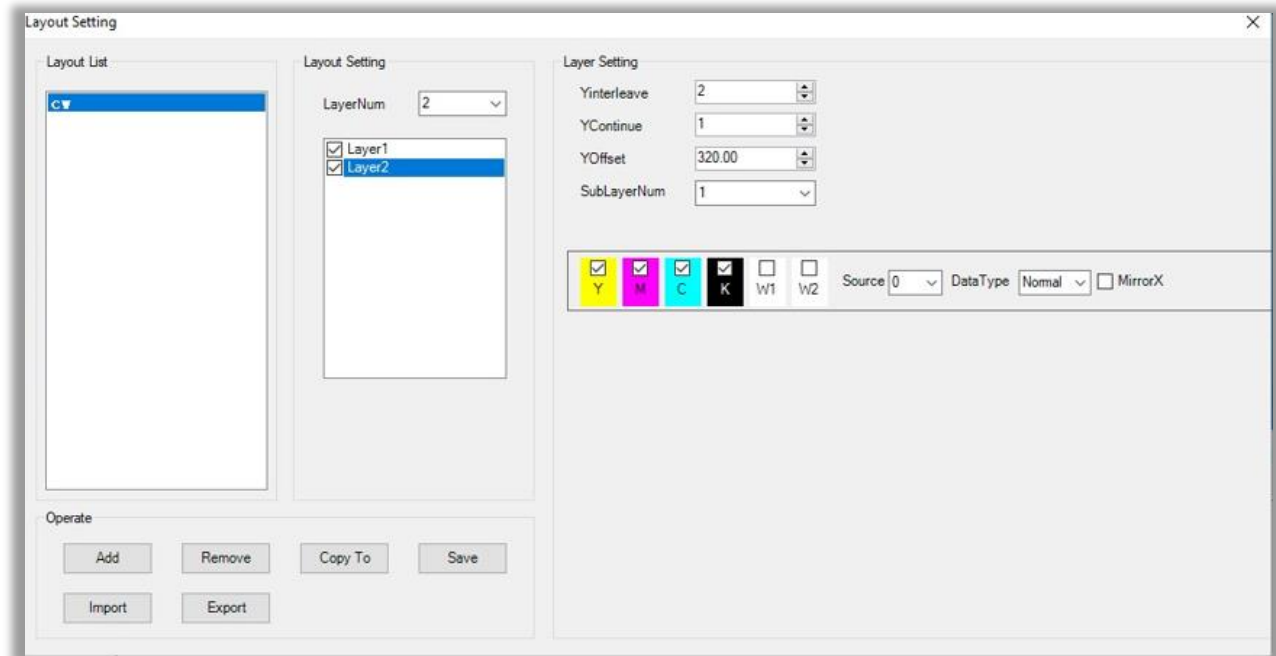


Figure 34: Layout Setting (Layer 2 option)

Note: Layer number: Select the number of layers to edit various printing methods (CWC, CW, WC,WCW.)

11. Head Installation

Only an authorized service engineer should install print heads. If the Print Head is not installed correctly, it can damage the printhead and affect the printing quality.

Note: Do not apply much pressure on Print Head while handling it.

Follow these steps to install the Print Head:

Step 1 Switch OFF the printer.

Step 2 Ensure that air valves are closed.



Figure 35: Closing the Sub Tanks

Step 3 Remove the carriage cover.



Figure 36: Removing Carriage Cover

Step 4 Fix the Head drive board on its mounting plate by tightening all the screws provided with the machine, as shown below:



Figure 37: Fixing Head I/O Board

Step 5 Mount the Head Driverboard with plate in the mounting bracket as shown below.

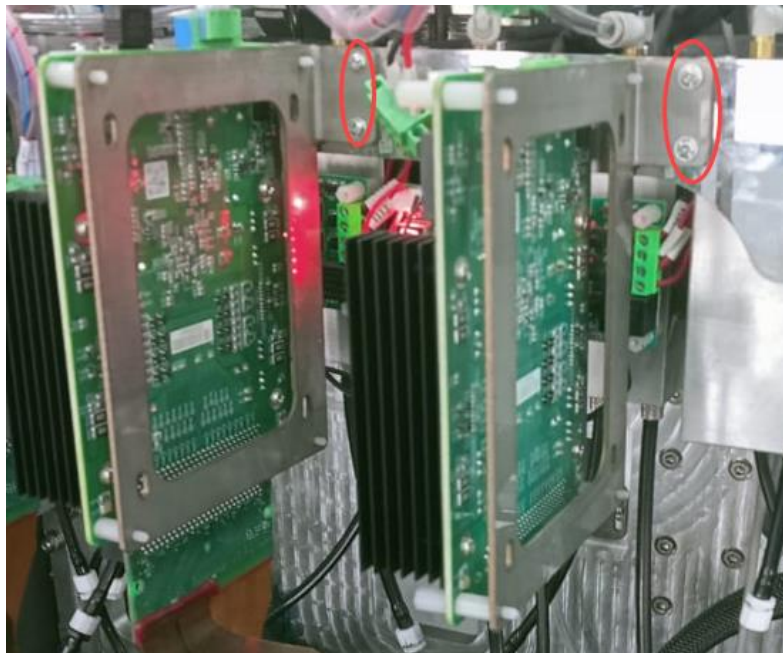


Figure 38: Head Drive Board Mounted in Mounting Bracket

Step 6 Now connect power supply, as shown below:

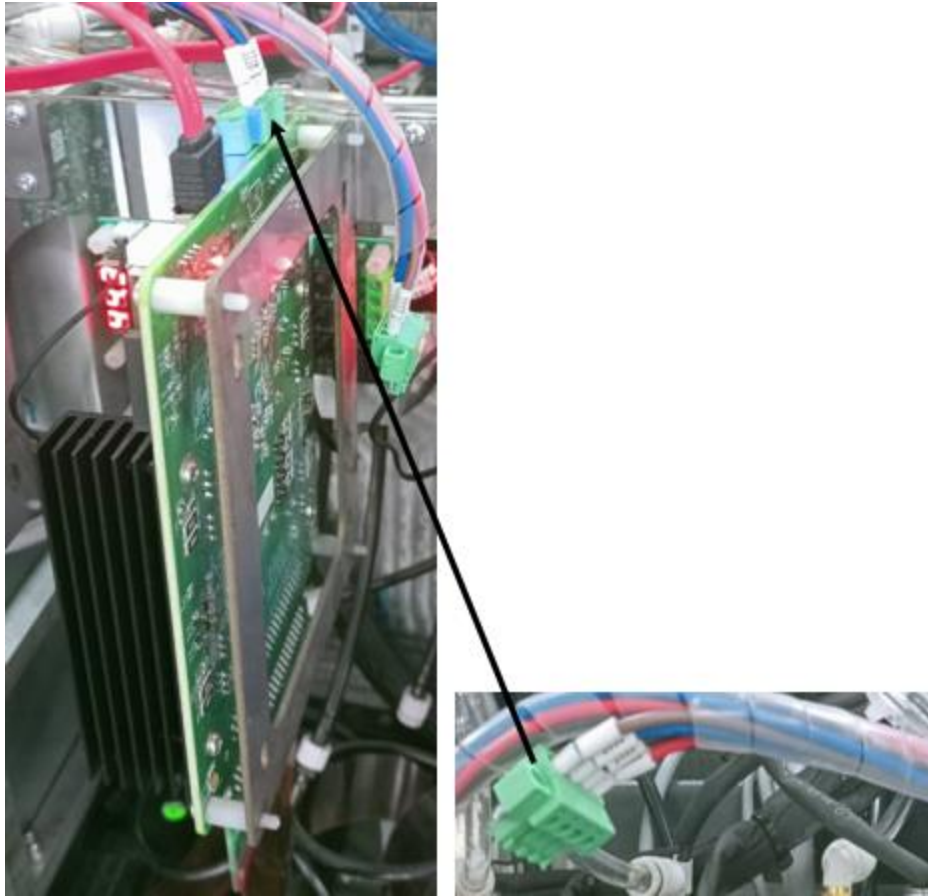


Figure 39: Connect Power Supply

Step 7 Remove the print head nozzle cover and fix the Ink Inlet pipes as per the length required, as shown below:

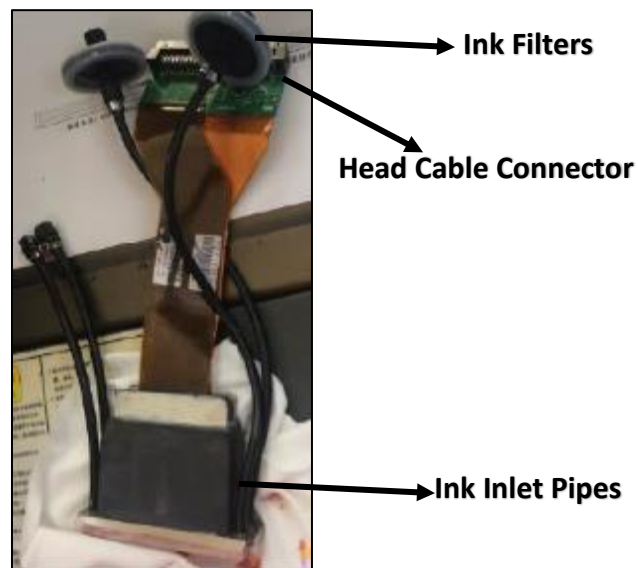


Figure 40: Fixing ink Inlet Pipes

Step 8 Mount the print head on the head plate as per the layout.

Step 9 Fix all the screws front and back side on the Head Plate, as shown below:

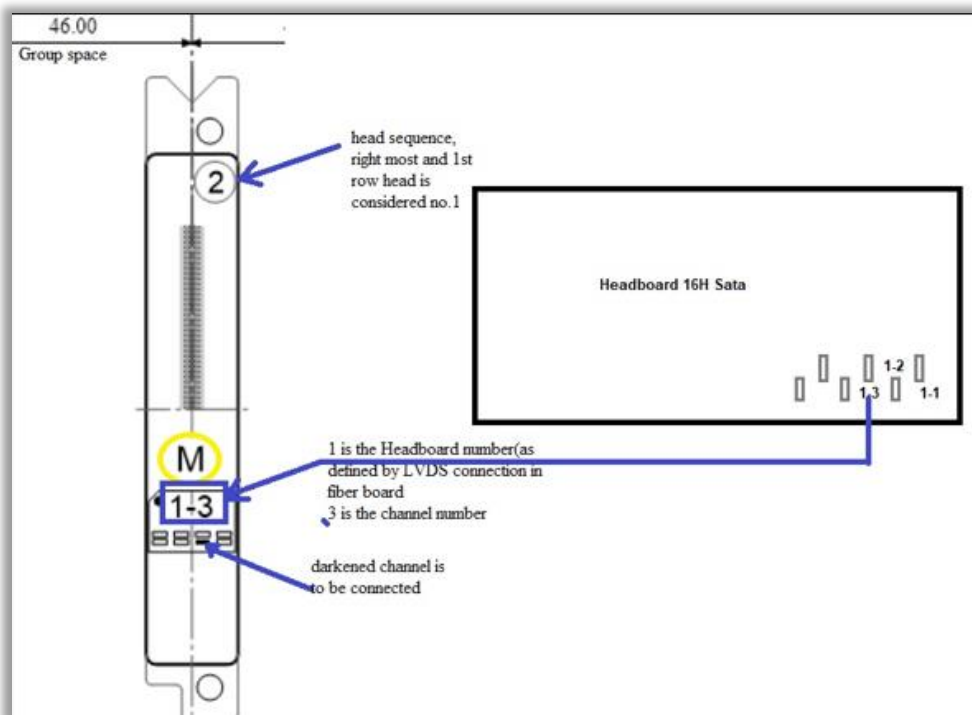


Figure 41: Mounting Print Heads

Step 10 Connect ink inlet pipes to the sub-tanks.

Step 11 Connect the Head cable connector to the Head drive board.

Step 12 Connect one end of the sata cable to the Head drive board and another to the Head board in the slot (as per mentioned in the layout).



The headboard (from the front side of the printer) is shown below:

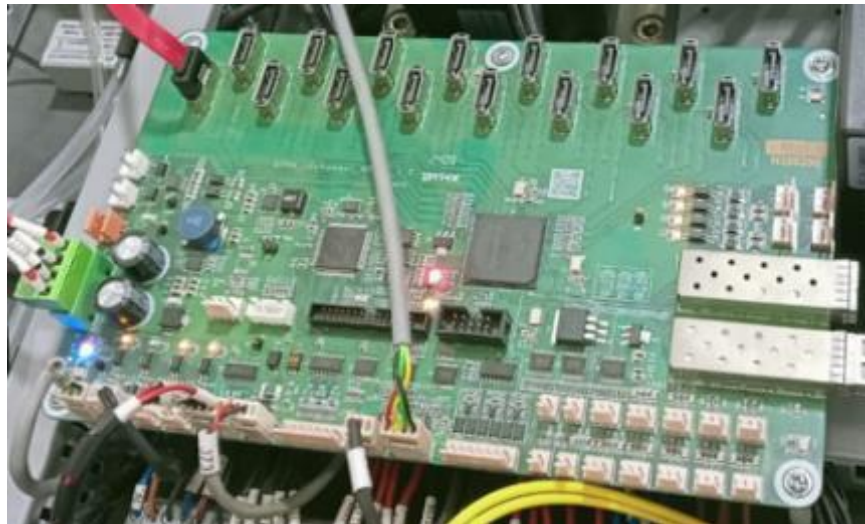


Figure 42: Head Board

Note: Head cable connector pins are very delicate and tend to bend/peel off, care not to damage these while inserting/handling.

Set Temperature

The user needs to set the Nozzle temperature. For that first select Real Setting from Tools option, as shown below.

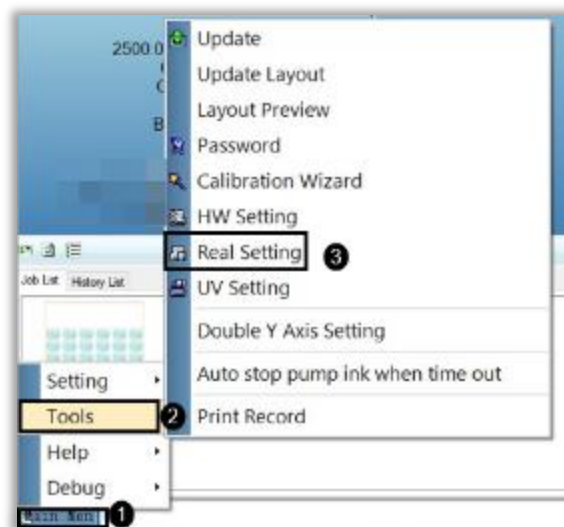


Figure 43: Real Setting Option

The following page opens after selecting the Real setting from where user can set the temperature.

Temperature

Temperature and Voltage

Head	G0W1,W0	G1K,C	G1M,Y
Set Temperature	50.0	44.5	44.6
Nozzle Temp	49.9	44.5	44.6
Voltage Adjust	4.0	0.1	0.2
	4.0	0.1	0.2
	4.0	0.1	0.2
	4.0	0.1	0.2
CurrentBaseVol	16.5	16.5	16.5
	16.5	16.5	16.5
	16.5	16.5	16.5
	16.5	16.5	16.5
Head Voltage	15.4	15.0	14.8
	15.3	14.9	14.9
	15.4	14.9	14.9
	15.4	14.9	15.0

Export
Import
Default Value
ApplyToBoard
Refresh

Cancel
OK

Figure 44: Temperature setting

Note: Head Voltage will be read by software automatically

12. Ink Filling

Please use the recommended ink in the printer for high printing quality and long life of print and PrintHead.

Follow these steps to fill the ink in the printer

Step 1 Open the right door of the printer to find out main tanks.

Step 2 Fill the recommended ink in the main ink tank (as per the color sticker) as per the requirement, as shown below:



Figure 45: Main Ink Tanks

Note: Main tanks are equipped with an ink level sensor which beeps once the ink level goes down.

Step 3 Fix the sub ink tank connectors to the ink refilling pins in the Head Board, as shown below:

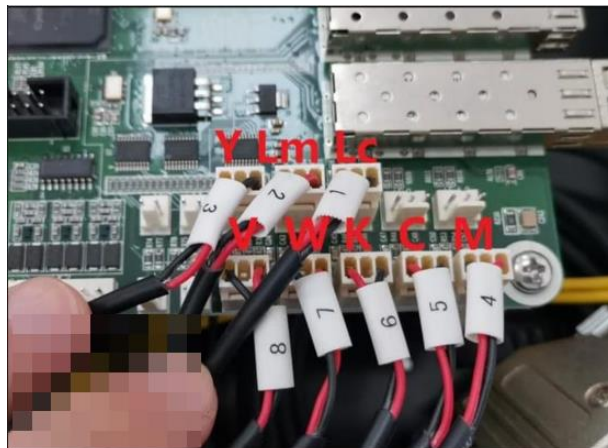


Figure 46: Connecting Sub Ink Tank Connectors

Ink gets filled in the Sub tanks shown below:

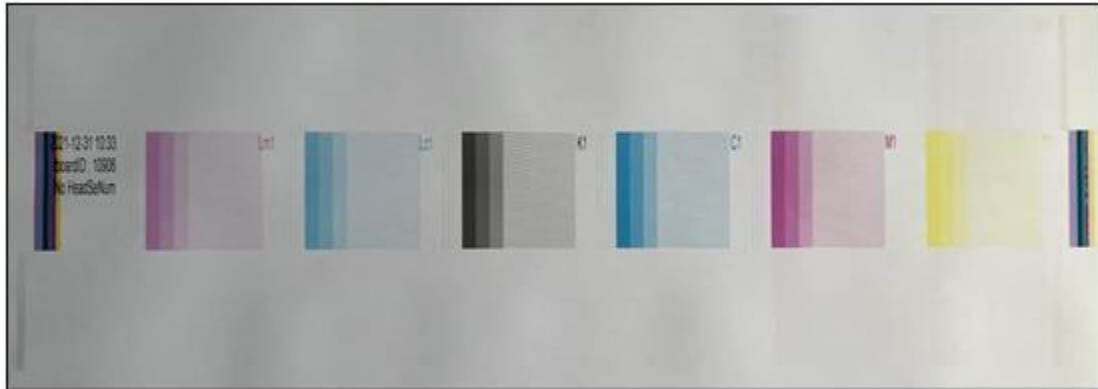


Figure 47: Sub Ink Tanks with Heaters

The sub ink tanks are equipped with Heaters to maintain the temperature of inks and float sensors indicate if ink level goes down.

13. Printhead Calibration

Click the nozzle check icon as shown in the below figure



This check nozzle is good.

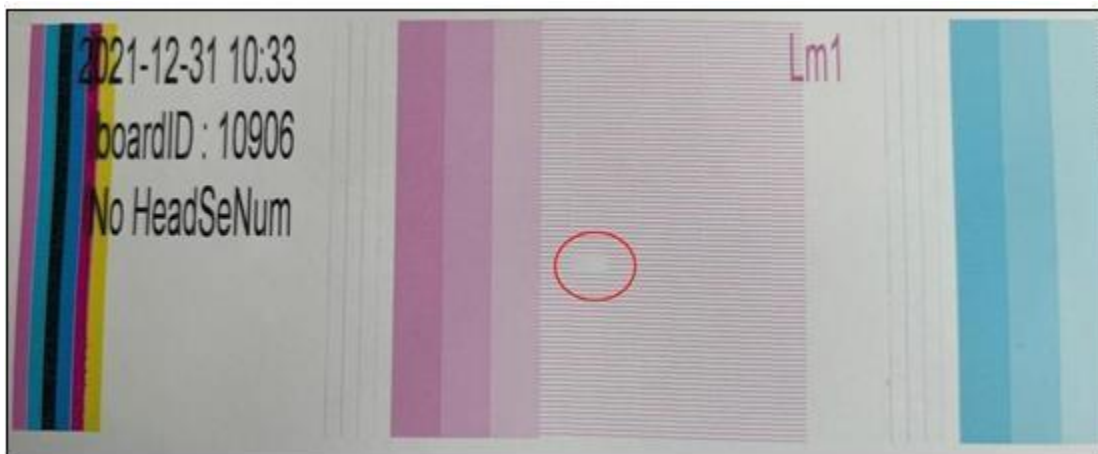


Figure 48: Check Nozzle

This check nozzle is bad (missing 3 nozzles) and needs cleaning.

Note: If the printhead has a blocked hole phenomenon, the user must clean the blocked jet hole in time to open, to avoid a long time to block the nozzle print has a white channel phenomenon.

1) Printer manager software interface choose speed VSD_1.



Figure 49: Speed Selection

2) Change setting→printer→choose X div (new calibration/high precision)

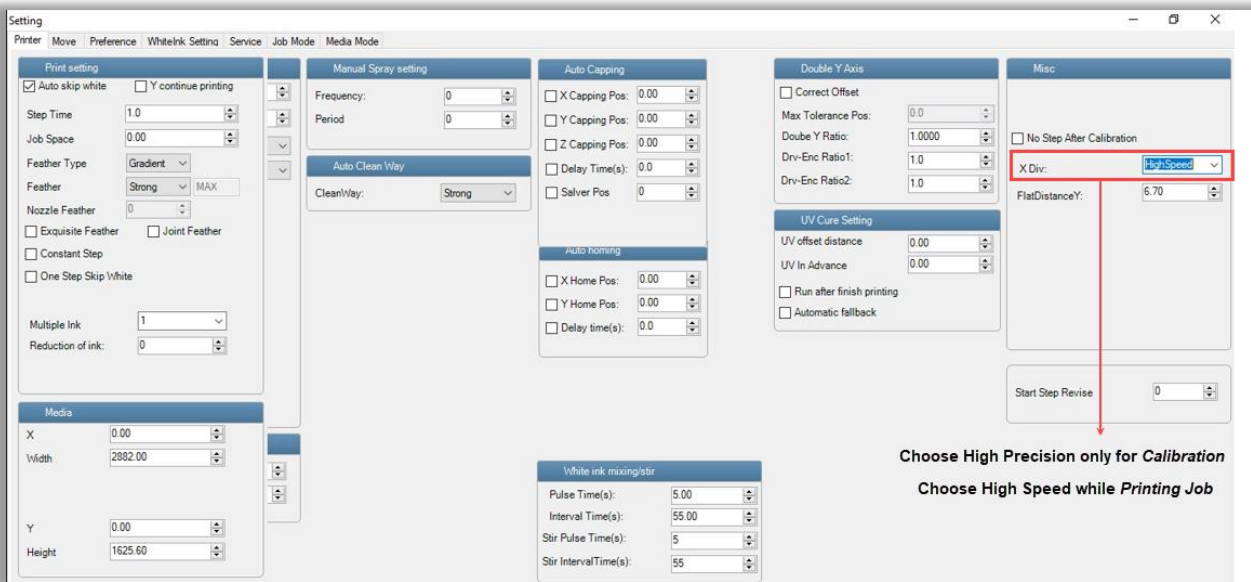


Figure 50: X-Div Option

3) Main menu→ Tools→ Calibration Wizard→ Next→ Step Interface, First Print Base Step (1 pass).

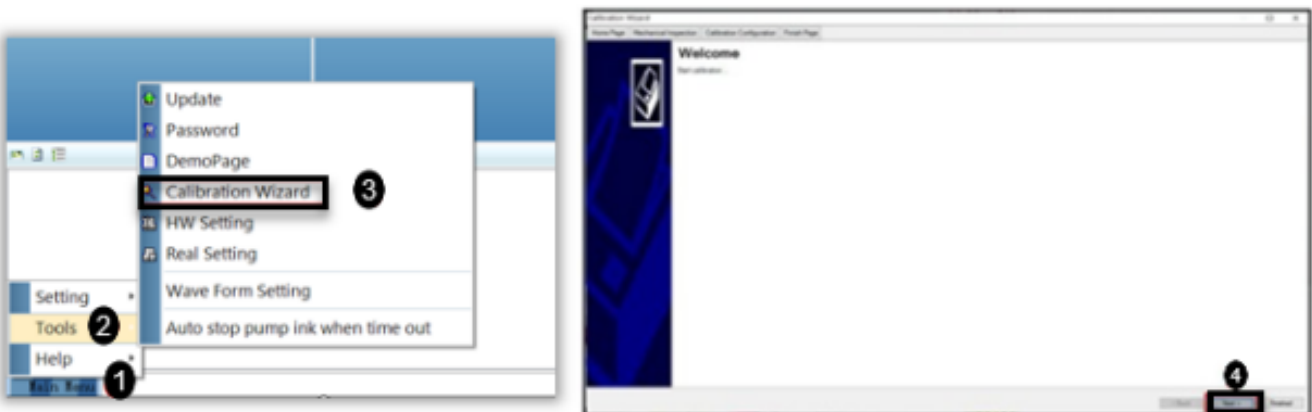


Figure 51: Calibration Wizard

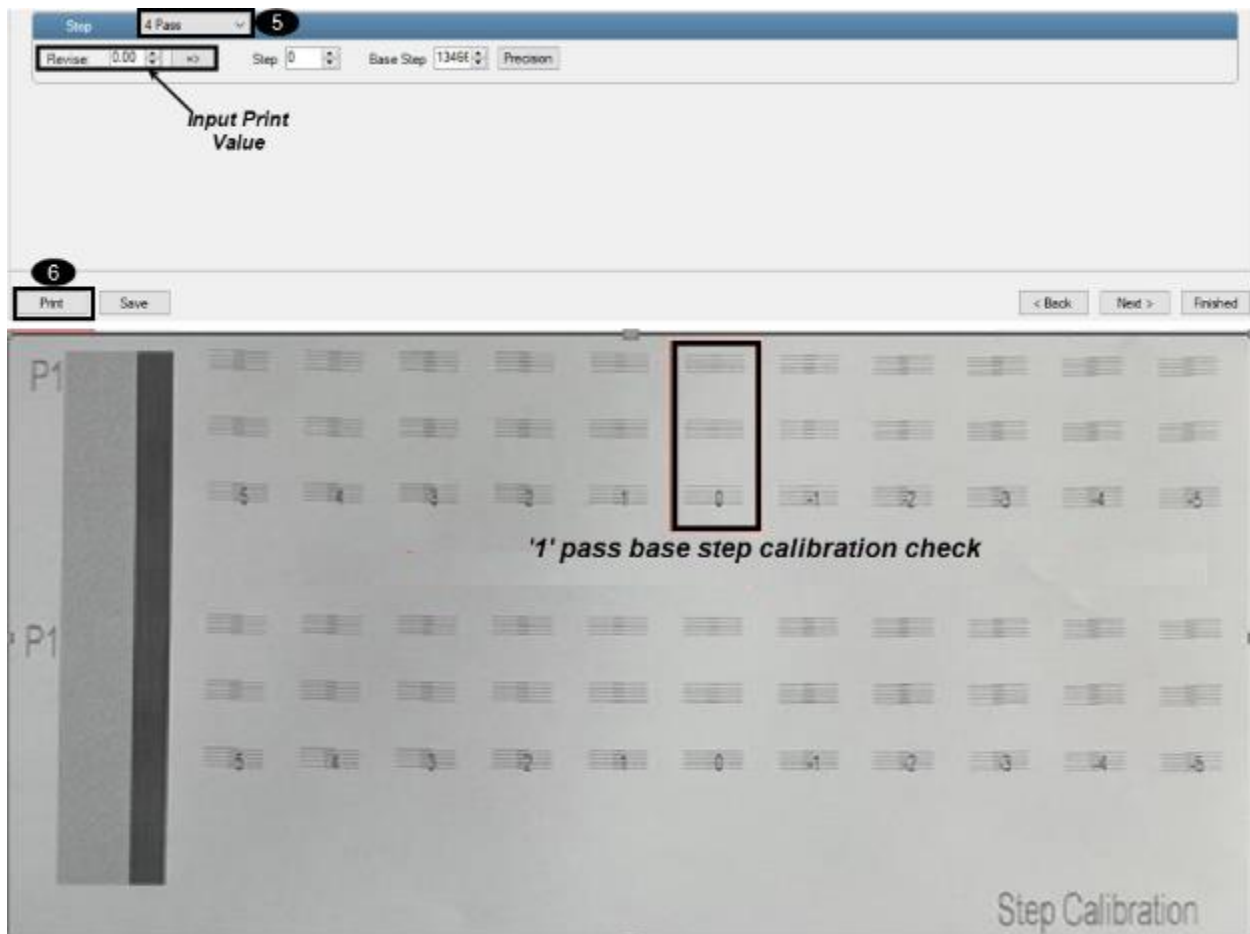


Figure 52: 1 Pass Calibration Check

Note: There are six overlapping groups when printing the stepper calibration diagram. Look at the three groups above, select the cross-section, and fill in the corresponding number in the revised column. The software will automatically calculate the step value once the user clicks the arrow button next to it.

4) Mechanical Calibration

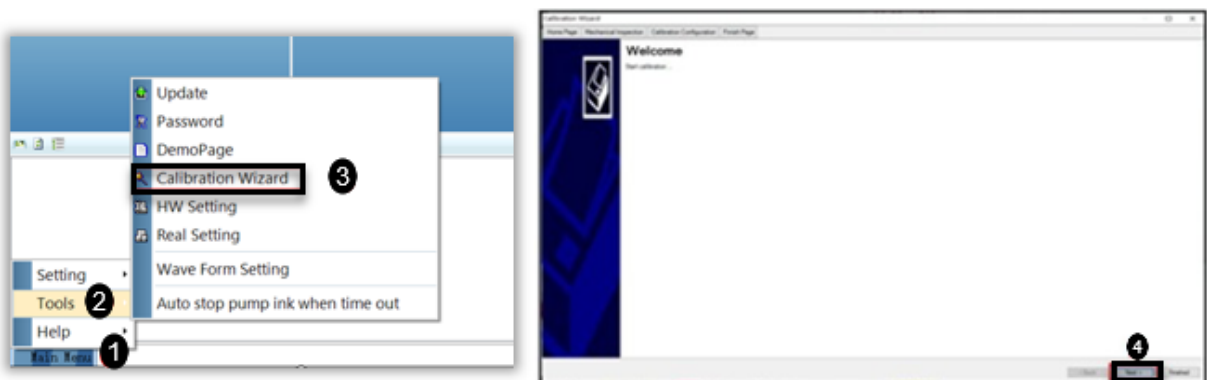
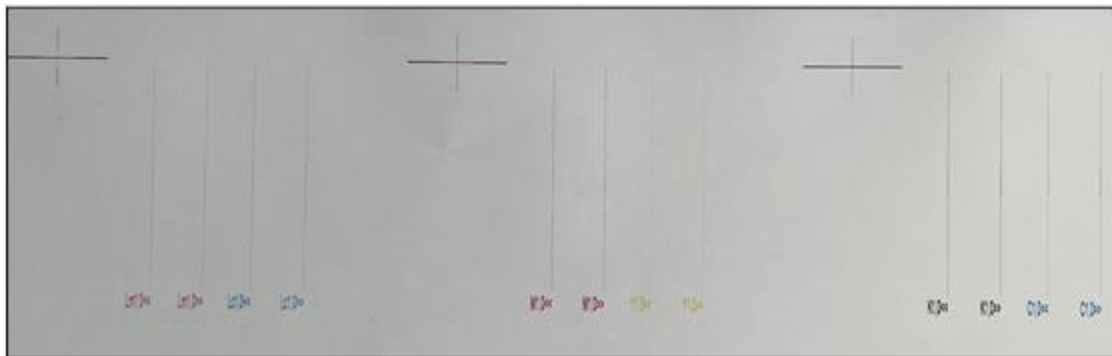




Figure 53: Mechanical Check

Main Menu→Tools→Calibration Wizard→Next→Mechanical Check→Angle check→Vertical check

- I. Angle Check Alignment
- 1 Row arrangement



Row arrangement

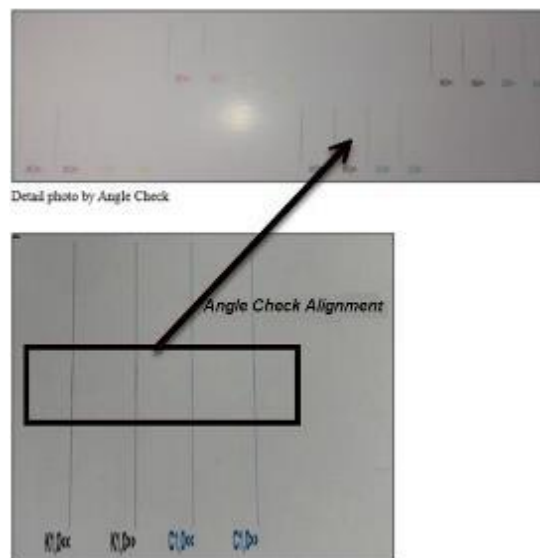


Figure 54: Angle Check Alignment

Note: Observe the print pattern and for the lines that are not aligned straight. Manually adjust the printhead orientation and recheck by printing the angle calibration until the top and bottom lines are aligned.

II. Vertical check alignment

1st Row arrangement

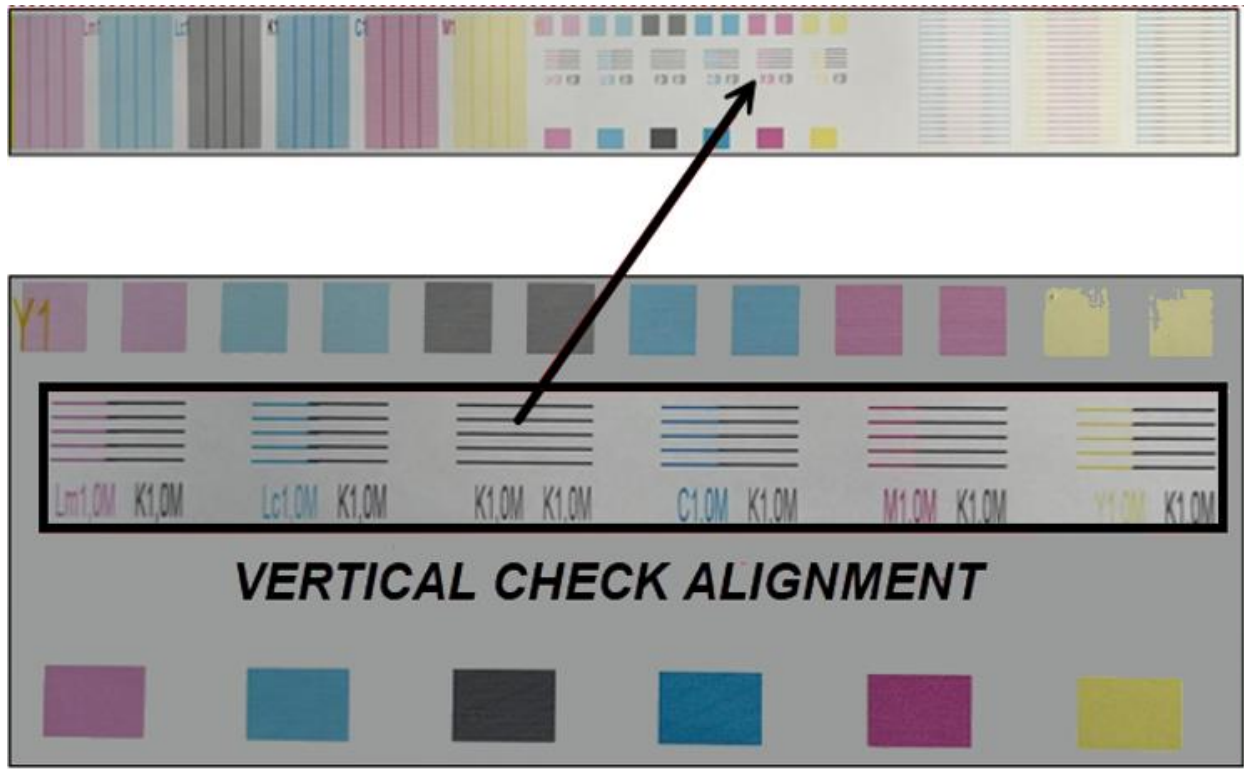


Figure 55: Vertical Alignment

Note: Only alternate colors (right color of one head to right color of subsequent head) need to be aligned. Do not try aligning both colors of the same print head, it can never be aligned.

Observe the print pattern and for the lines that are not aligned straight, manually adjust the printhead (front or back) and recheck by printing again, until the base printhead baseline and calibration printhead line is in straight line.

2nd Row arrangement

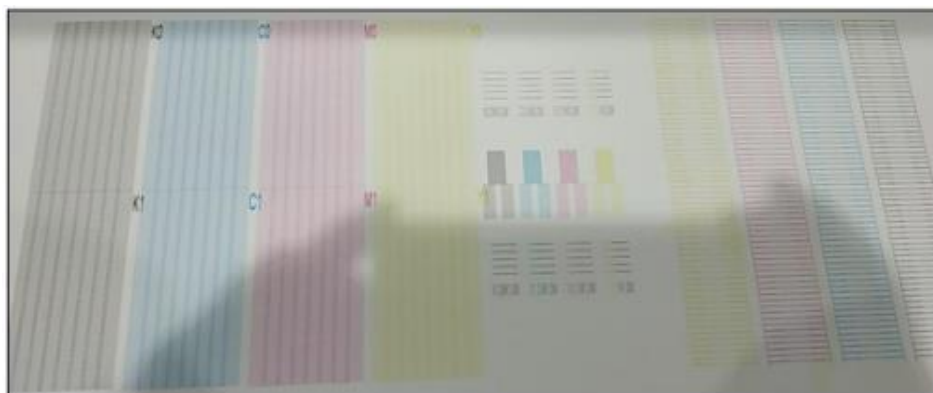


Figure 56: Row Arrangement

Note: First, align the base color of row 1 with the base color of row 2. Then, check the printed pattern and manually adjust the printhead until the base printhead baseline and calibration printhead line level are wholly aligned.

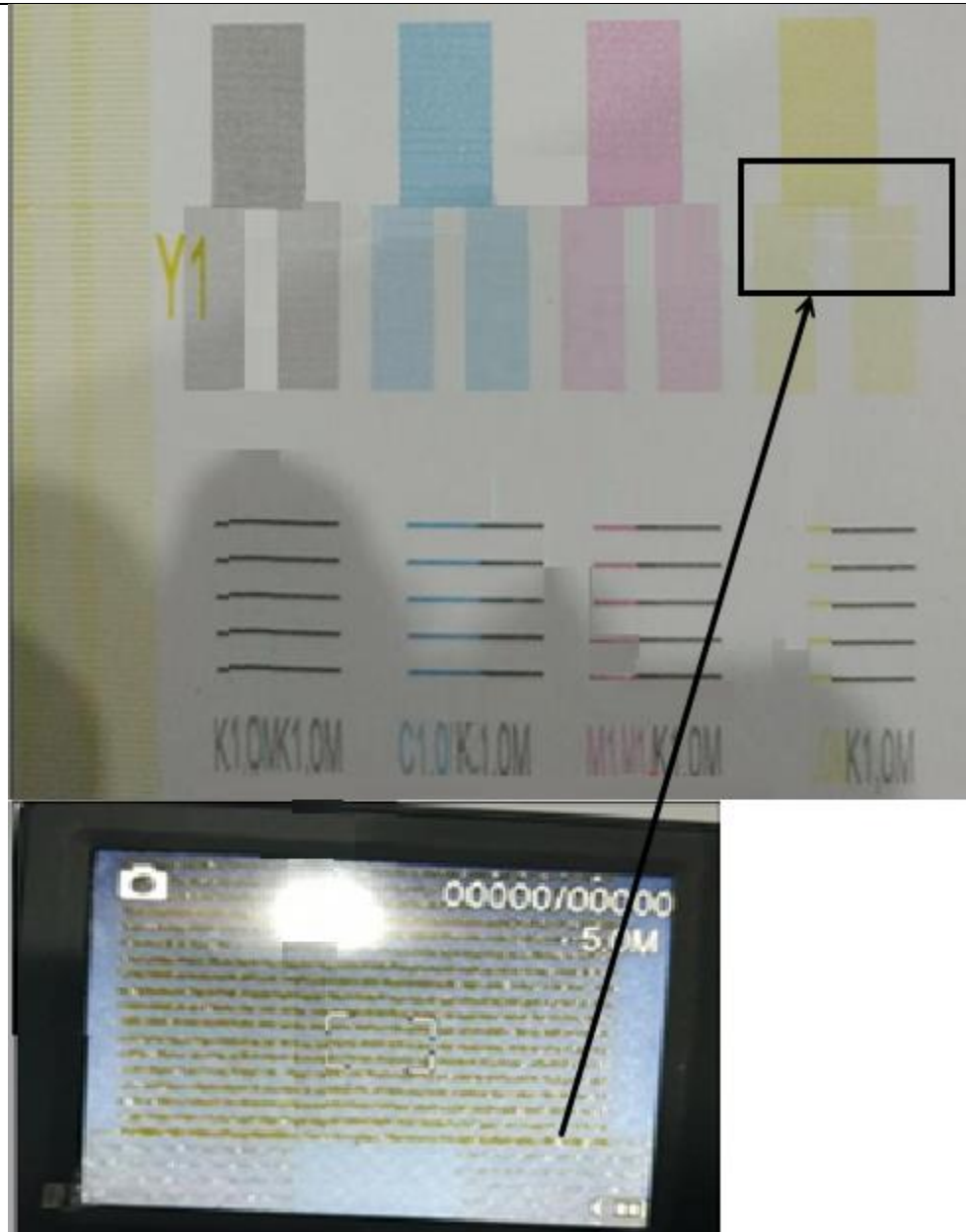


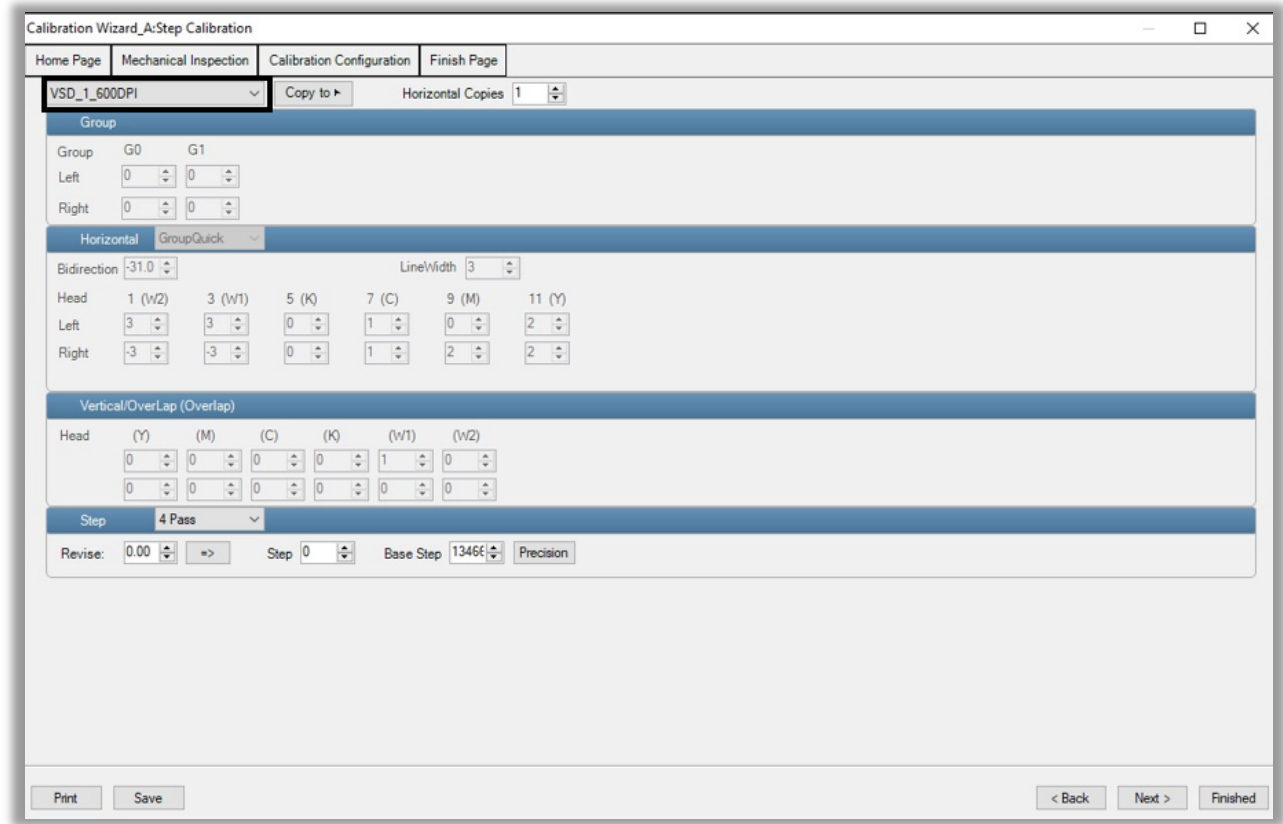
Figure 57: Detail Vertical Check

Note: 2nd row printhead topmost nozzle needs to overlap with bottom most nozzle of 1st row

5) Printhead calibration

Calibration is to be done for both VSD1_363 and VSD1_726 both in high precision

Click the drop-down menu, and choose VSD_1_363DPI



Group	
Group	G0
Left	0
Right	0

Horizontal	
Bidirection	GroupQuick
-31.0	3

Head	1 (W2)	3 (W1)	5 (K)	7 (C)	9 (M)	11 (Y)
Left	3	3	0	1	0	2
Right	-3	-3	0	1	2	2

Vertical/OverLap (Overlap)	
Head	(Y)
	0

Step: 4 Pass

Revise: 0.00 => Step: 0 Base Step: 13466 Precision

Figure 58: Printhead Calibration

Note: When we select VSD_1_363DPI from the drop-down menu and then click Next, the subsequent fields on the left and right will be enabled, and after printing patterns, parameters can be entered. Ensure to reset the values to 0 in base color.

6) Group (Left/Right)

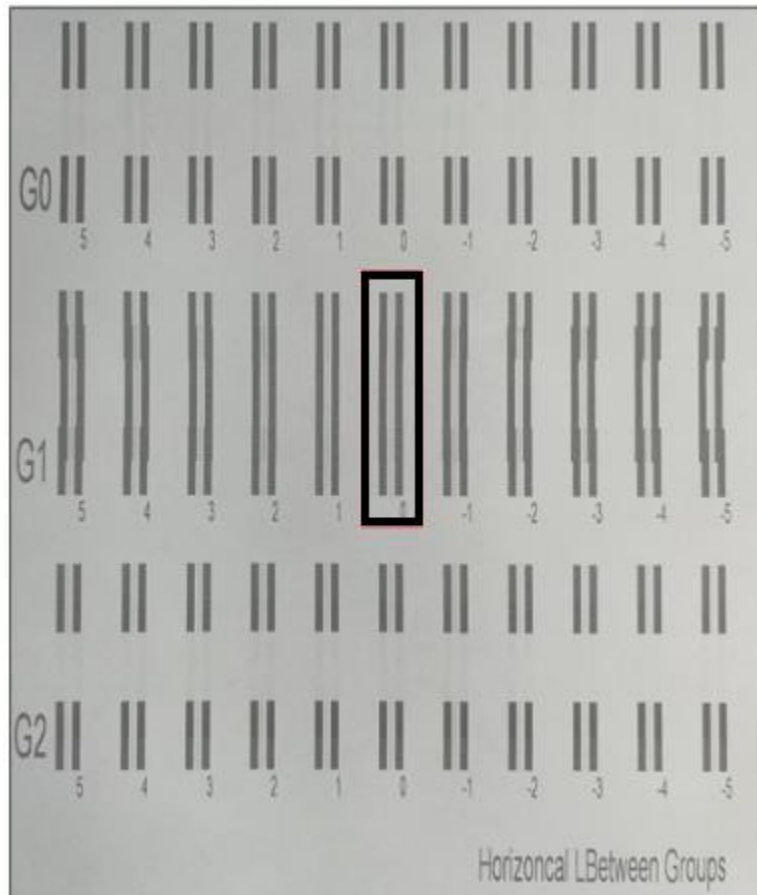
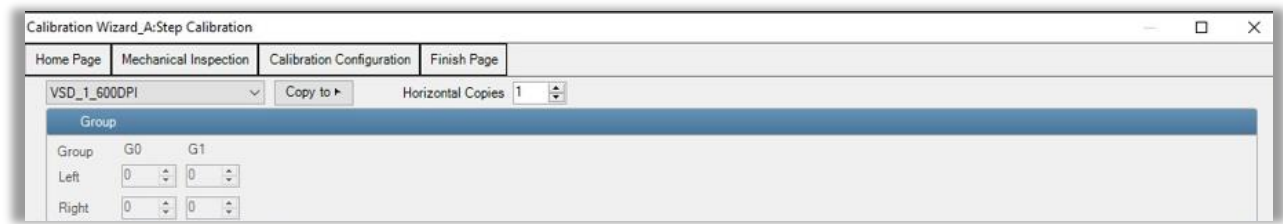


Figure 59: Group(left/right)

Note: Group 1, Goup2 needs to align with Group0. Find the straight-line pattern number and Enter /add number in required field in the software.

7) Bidirectional Calibration (group all calibration) (Line width 1)

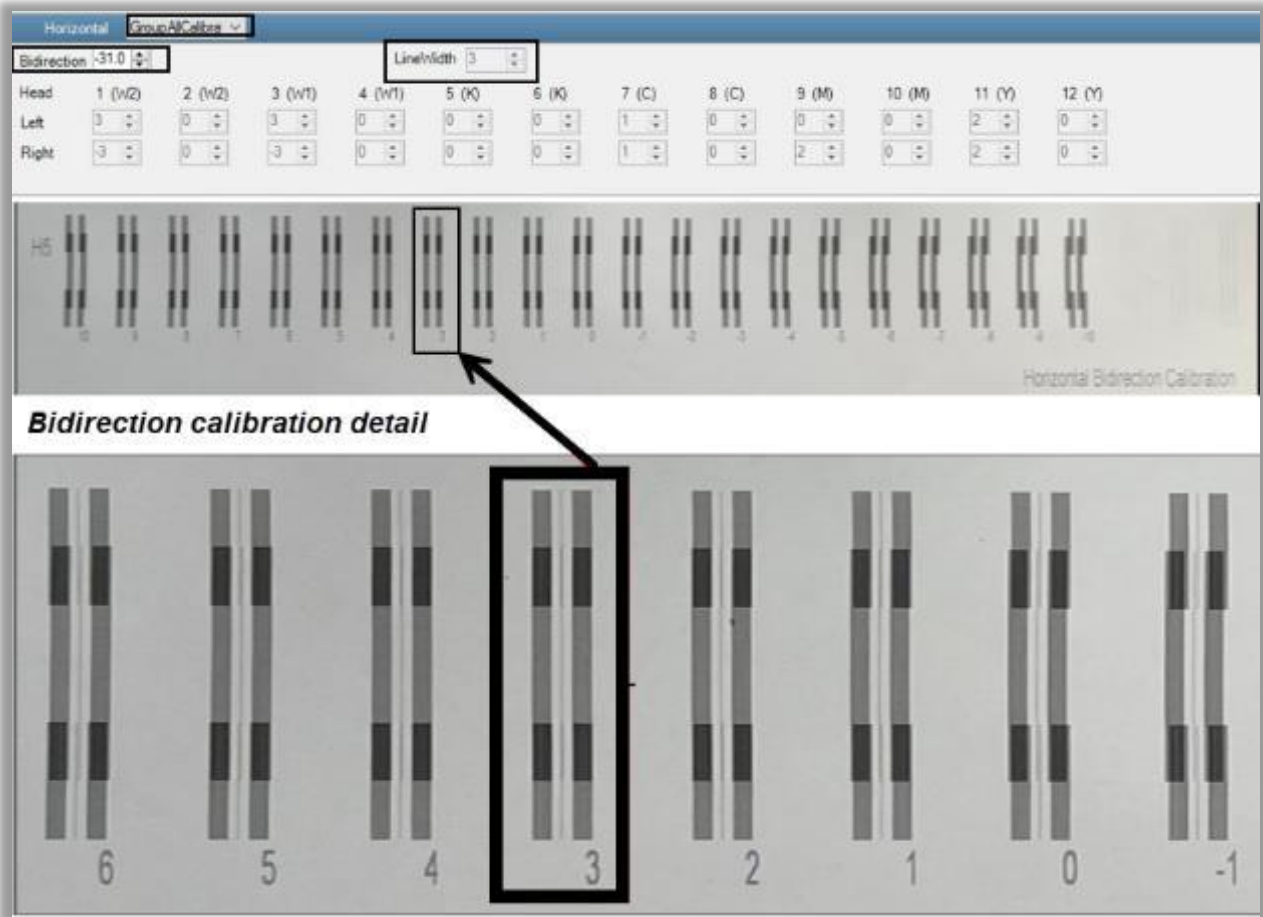
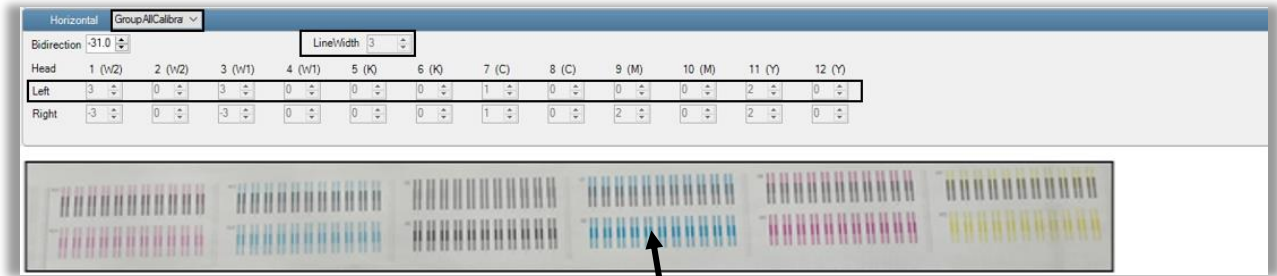


Figure 60: Bi-direction calibration

Note: Find the straight-line pattern and enter to the corresponding value box.

8) Left Calibration (group all calibration) (Line width 1)



Horizontal Calibration detail

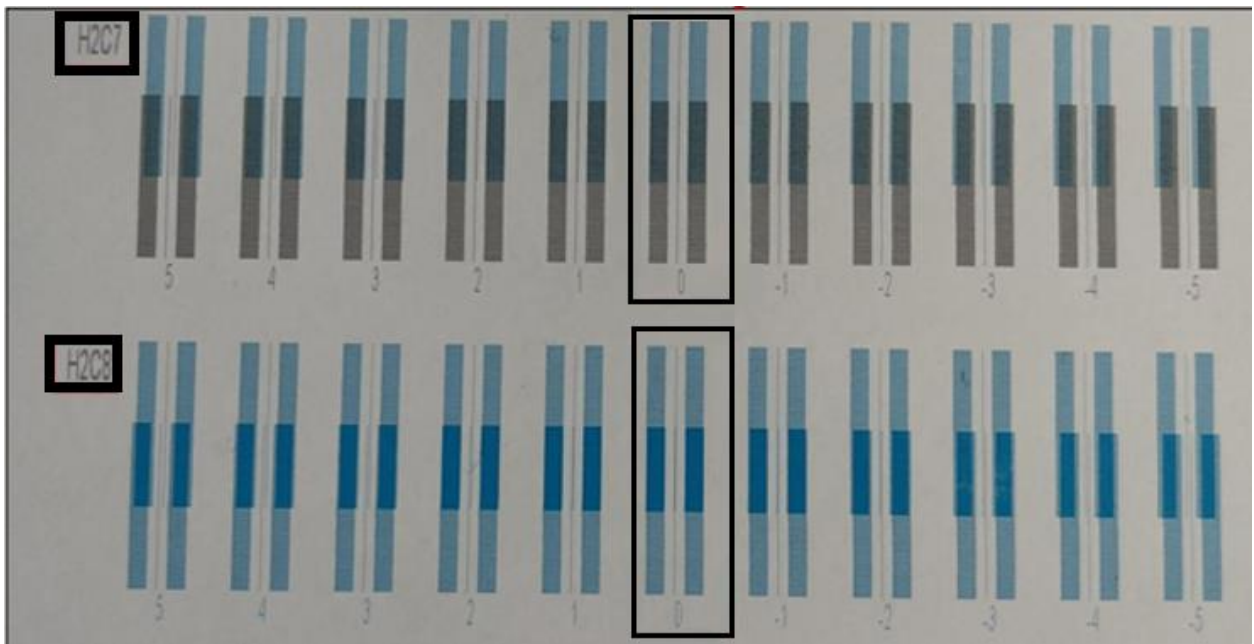


Figure 61: Left Calibration

9) Right Calibration (group all calibration) (Line width 1)

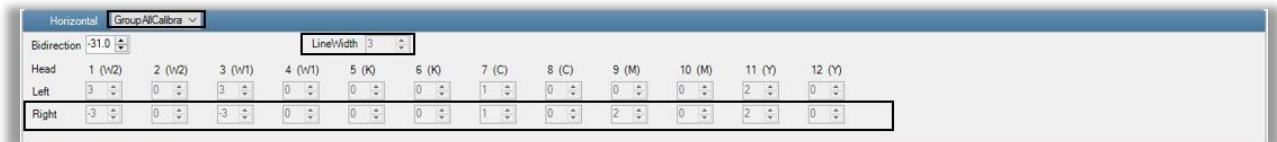


Figure 62: Right Calibration

Note: Find the straight-line pattern and enter to the corresponding value box.

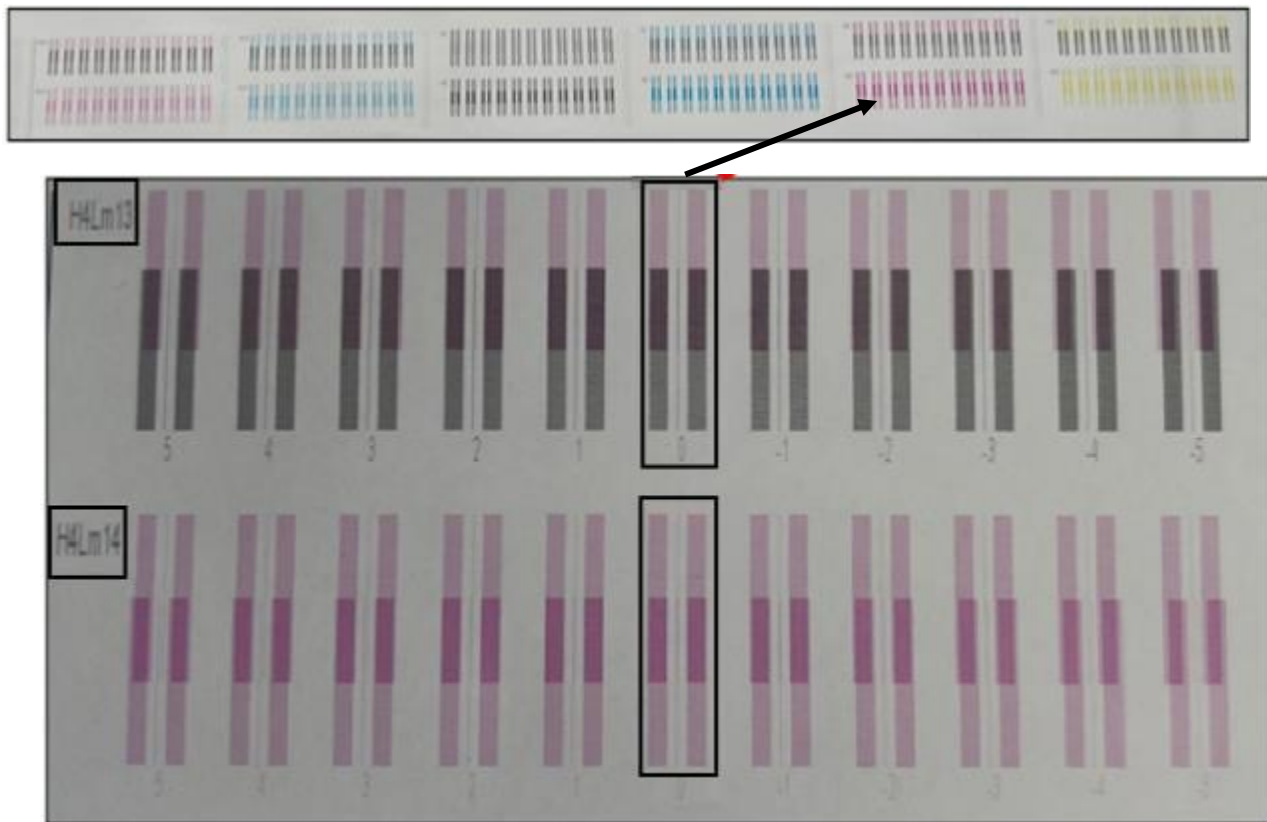


Figure 63: Horizontal Calibration

10) Vertical Calibration

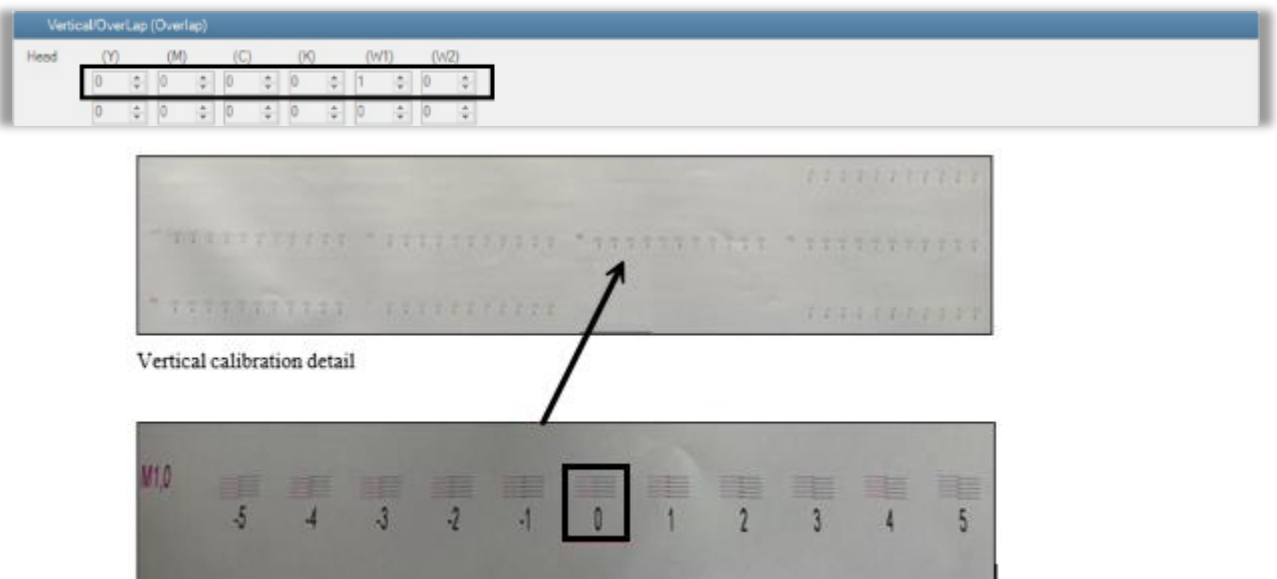


Figure 64: Vertical Calibration

Note: This calibration is only required if the print heads cannot be moved vertically to align properly. Find the straight-line pattern and enter the corresponding value box.

11) Overlap Calibration

OverLap										
Head	(Y)	(M)	(C)	(K)	(Lc)	(Lm)	(V1)	(V2)	(V1)	(V2)
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0

Figure 65: Overlap Calibration

Note: Above option is not required

12) "6 and 8 pass" step calibration

Step: 4 Pass

Revise: 0.00 => Step: 0 Base Step: 13466 Precision:

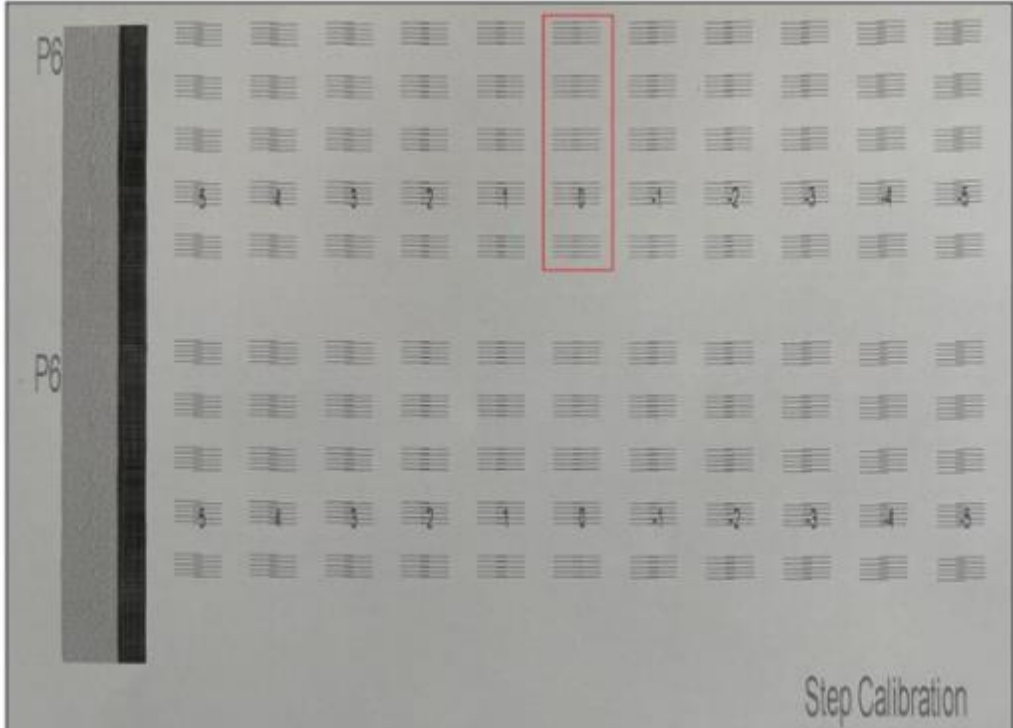


Figure 66: 6 pass step calibration

Note: There are ten groups of overlapping areas when printing the stepper calibration diagram. Look at the five groups above, select the cross-section, and fill in the corresponding number in the revised column. Click the arrow button next to it, the software will automatically calculate the step value

13) Finish

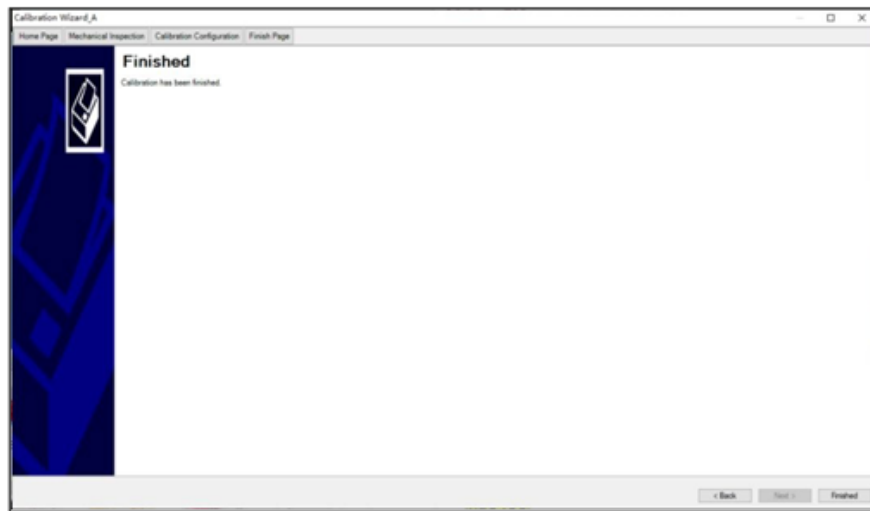


Figure 67: Finish Calibration Page

14) Save parameter to computer→Load saved parameters from computer

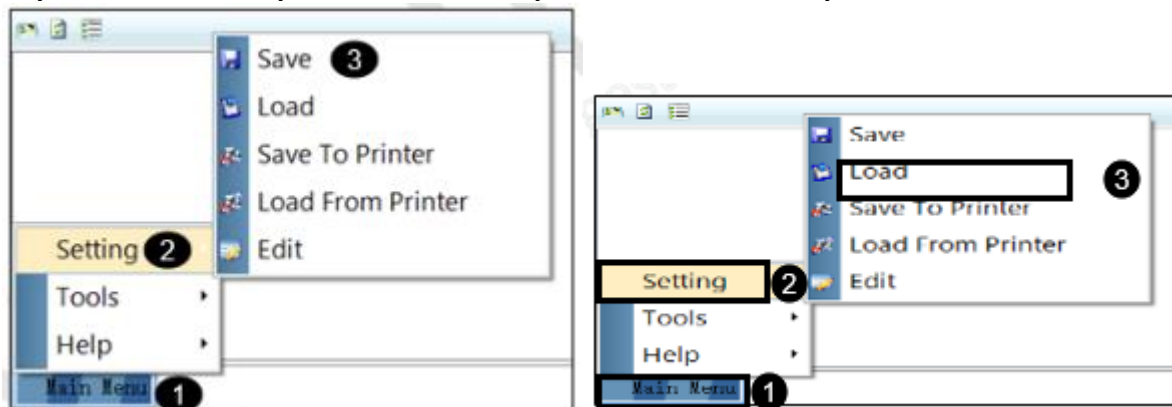


Figure 68: Load From Computer Option

Note: Save the calibration parameters to the computer parameters file, which can be imported into the computer to save the parameters file after updating or reinstalling the software

15) Save parameters to printer(mainboard)→Load parameters from printers

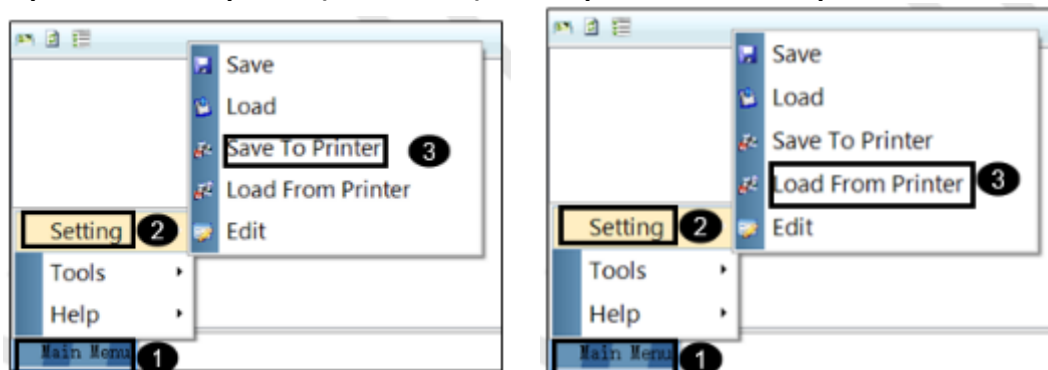


Figure 69: Load From Printer Option

Note: Save the calibration data to the printer mainboard for storage. After updating or reinstalling the software, you can import the parameters from the mainboard to the software

16) Printer Setting→Printer→X div (high speed)

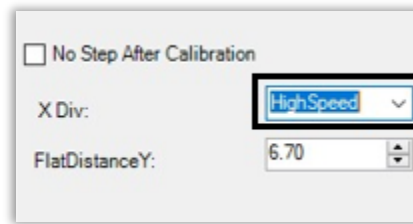


Figure 70: X-Div High Speed

Printer and RIP software supports following resolutions

726 x 900 dpi ICC	6 pass	Speed VSD_1
726 x 1200 dpi ICC	8 pass	Speed VSD_1



Figure 71: Pass and Respective Speed

14. Negative Pressure Adjustment

Understanding Negative Pressure

Condition after purging:

1. Press the Purging button a little, and observe Ink drops on the nozzle plate.



Figure 72: Purging Button

2. It should neither drop nor sucks back fast, if the drop gets suck back in approx. 10-15 secs, negative pressure is considered to be OK) (as shown in the image below).



Figure 73: Nozzle Plates

3. Ink drops easily from the head
Increase the negative pressure
e.g.- If -4.0, make it -4.1)
4. Ink drops disappear fast in few secs (sucked up by the head)

Reduce the negative pressure
(E.g. If -4.0, make it -3.9)

Above conditions can clog the nozzle on the running print.

Negative Pressure Schematic

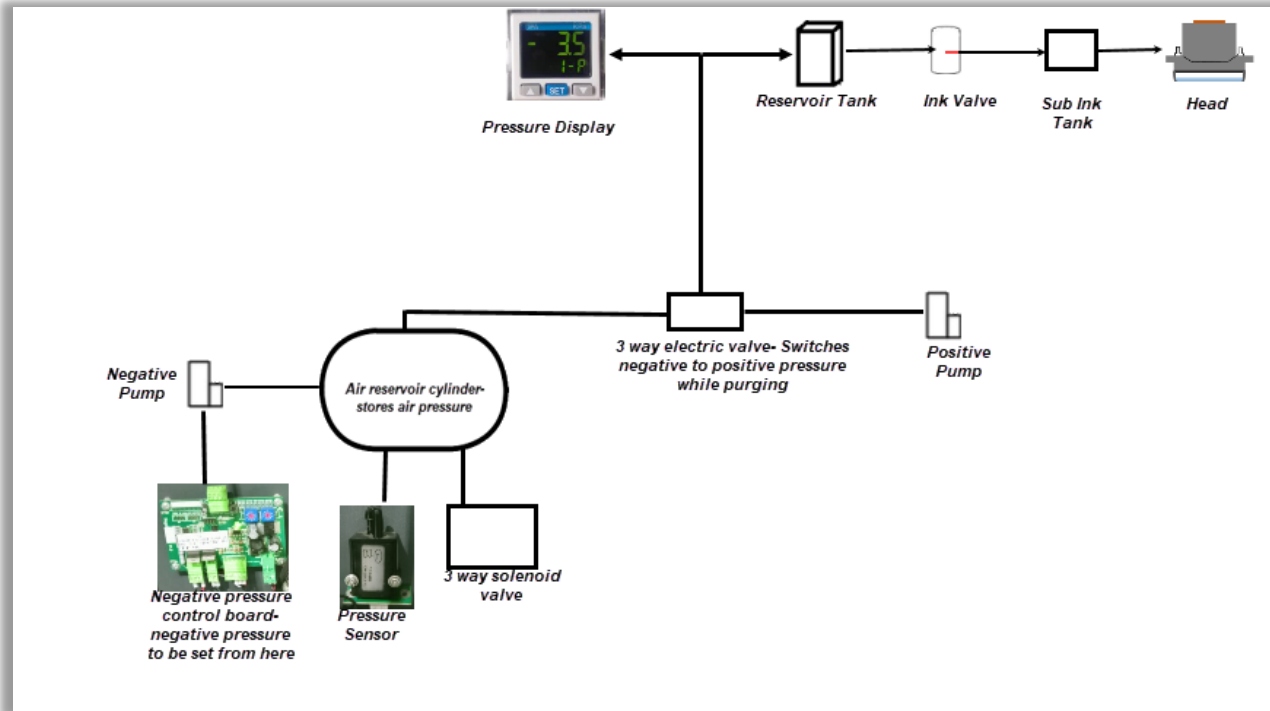


Figure 74: Negative Pressure Schematic

Negative Pressure System Working

Pressure adjustment must be made in the negative pressure control board (mounted on the reservoir cylinder only).

There are two negative pressure control boards, one for color, and other for white.

Negative Pressure Settings



Figure 75: Negative Pressure Settings

The **Negative Pressure Control Board** is shown in the image below:



Figure 76: Negative Pressure Control Board

Setting Procedure – Negative Pressure Control Board

Each board has two adjustable knobs, left is for the main digit (3), and the right is for the decimal digit (.8) The change in values will be displayed in the negative pressure displays mounted on the carriage.



Figure 77: Negative Pressure Control Board

Note: White negative value may be higher than the color value. Default values will be

Color: 3.8(approx.)

White 4.1(approx.)

15. Media Loading

Follow these steps to load the media on the machine:

Follow these steps to load media:

- Step 1** Place the media on the Print Bed. Align it with the help of scale marked on the sides of bed.
- Step 2** Switch ON the Print Bed vacuum by pressing the **Bed Vacuum** button available on the front side of the machine, as shown below:



Figure 78: Turning ON the Bed Vacuum Button

- Step 3** Switch ON the required vacuum chambers by moving the Vacuum Chamber knob, as shown below:

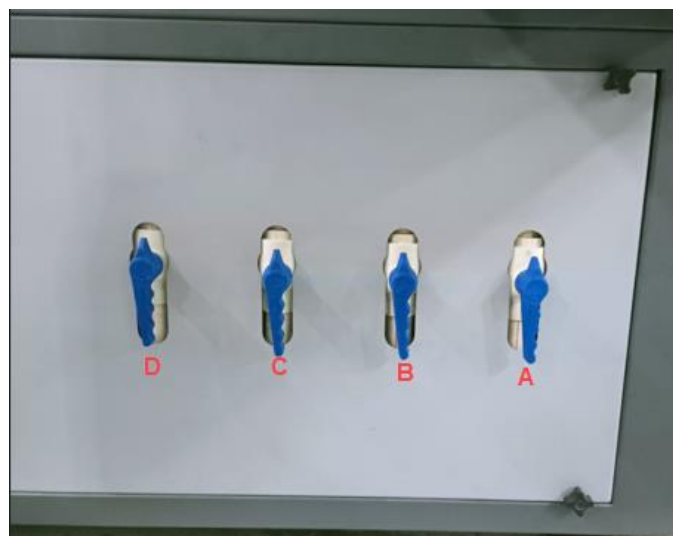


Figure 79: Switch ON the Vacuum Chamber

The classification of Vacuum Chamber on the Print Bed is shown below:

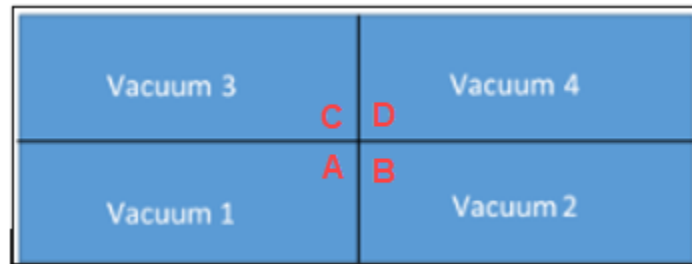


Figure 80: Classification of Vacuum Chamber on the Print Bed

Step 4 Set the head height using the **Measure paper width** icon on the Quick Access Toolbar.

Note: In the case of soft media, the user needs to manually feed the value of media thickness, print head to media height, and lifter height by verifying it.

16. Checking Status

Note: 1. Before giving the nozzle test, the user needs either do measure media to verify if the Z print gap is correct to avoid any damage to print head, bed, and carriage assembly

2. Nozzle check and calibration do not follow the Y continue, which means the gantry will not move to set Y margin while printing nozzle check and calibration checks.

Before giving print command, provide the printing parameters like print origin (X and Y), printing direction, and speed. To check the status of print head nozzles, click on the Nozzle icon, as shown below:



Figure 81: Status of Head Nozzles

The **Test Result** is shown in the image below:

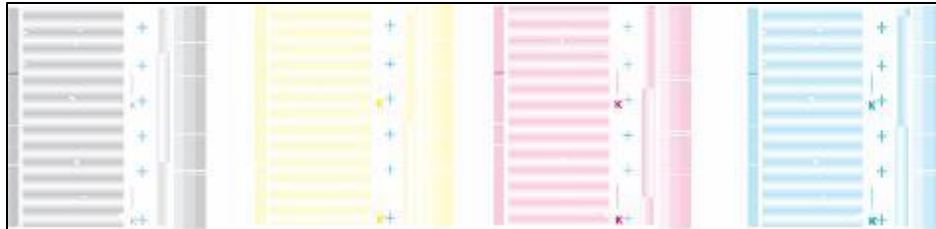


Figure 82: Test Result

17. Maintenance

Machine Maintenance

To keep the machine in a good working condition, one must regularly perform the following tasks:

- Before printing, one should issue the nozzle test command to check the print head's nozzle status. In case, the nozzles are blocked or the test result is not good, then one should perform a head cleaning process to clean the print head's nozzles (Refer to Head Cleaning section).
- Print head nozzle surface area should be cleaned by following the instructions in the Head Cleaning section for a long life.
- Every day after working, one should check the condition of print head nozzles by performing the nozzle test. Additionally, print head nozzles should be kept out from light to avoid a dry-out situation.
- Weekly perform a thorough cleaning of the workshop to maintain a good working environment; remove dust from equipment; clean all transmission parts and give transmission bearings lubricating oil.
- Monthly carefully examine equipment parts and sum up the machine parts situation.
- Every three months the ink system should be thoroughly cleaned to keep good printing quality.

Equipment Cleaning

Follow the below given instruction during the equipment cleaning process:

- Avoid splashing liquid and dropping on/in the circuit board or the power line.
- Should clean the circuit boards using the low-power hair dryer.
- Sensitive devices, like sensors and raster, should be cleaned using the liquid solution provided by the machine.
- Use a clean cloth to clean up the dust and residual oil on the tracks.

Power System Maintenance

Follow the below-given instructions to perform the power system maintenance:

- Static electricity and ground wire should always be checked whether loose or disconnection.
- Towlines (containing power lines and data lines) should be inspected regularly for broken links, false links, or several lines twisted together.
- One should regularly monitor the power supply system, as due to long working hours, the machine can behave abnormally, such as changing the output voltage of the power supply, the power potential overheating temperature, aging of wires, etc.
- Some parts of the machine viz. UV lamps and motors generate lots of heat during work. Thus, one should arrange proper ventilation for long life of the machine.

Control System Maintenance

Follow the given instructions for control system maintenance:

- **Static Discharge**
 - One must discharge the machine's electrostatic waste before touching its electronic components and parts.
 - Do not touch the pin connectors and welded joints on circuit boards and integrated circuit boards.
- **Control Wiring Maintenance**
 - Check the control wiring of the machine whether loose or disconnected.
 - Check high-power output terminals whether loose or disconnected, such as the input and output terminals of air switches, contactors, and relays.
 - Check the power system whether can provide the rated voltage to all parts of the machine or not for smooth and stable operations.

Mechanical System Maintenance

Follow the below-given instructions for maintenance of the mechanical system of the machine:

- The floor should be dust-free treatment before opening the machine.
- Give lubrication oil to all the machine parts and the lubrication oil should with adhesion force between 30cst to 150cst.
- Carefully install the print heads. In case, print heads are not properly installed then it may cause head damage and bad printing results.
- Check the tightness of the carriage belt for quality printing.
- Lubricate regularly to all parts of transmission bearings.
- If the slider is not running smoothly, remove the same and clean it using the chemical provided by the machine.

Encoder System Maintenance

Follow the below-given instructions for maintenance of the encoder scale:

- Clean ink and dust from the Encoder ruler.
- Check all the installation and connection screws carefully, if loose.
- Clean the surface of the Encoder Ruler and the direction Encoder for effective working.
- Encoder sensors should be kept carefully. In case the encoder ruler gets broken due to any reason, then the sensor is inactive or not working.
- Keep water, ink, and oil away from the Encoder ruler to avoid Encoder ruler error.
- Encoder sensor should not work in a corrosion environment, thus environmental conditions should be according to the environment condition.

Ink Supply System Maintenance

Follow the below instructions for maintaining the ink supply system

- Appearance Inspection
- Check for any leak between joints, ink tanks, and valve seating.
- Check for any cuts on ink tubes.
- Filter Replacement
- Check the disk filters which should be changed after 3 months or 800 hours working.
- Ink Tank and Pump Cleaning
- Check for ink impurities in the ink pumps and clean the pump with flush water to avoid ink clogging

Computer Maintenance

Follow the instructions for computer maintenance:

- Select the advanced configuration computer to perform printing operations.
- High-speed interface cards should be used.
- Install the computer's necessary control procedures, processing software, and antivirus software for speed operations.
- Should use the advanced backup control software and related procedures for security purposes.
- Do not use the computer to surf the internet.
- Do not insert or pull out a USB cable when the machine or computer is ON.

Using and Maintaining Print Head

Print head is a key component of the printer, and must be used and maintained correctly to guarantee a good printing effect and print head life. Pay attention to potential problems caused by the environment, heat and moisture, collision, cleaning, etc.

Follow the instructions given below for the long life of the machine:

- Print head should work with environment temperature 18~28, humidity 35%~80%, dust-free and exhaust condition.
- Keep the carriage exhausted to ensure the print head with optimum heat abstraction.
- Print head nozzle is made of thin film, thus be careful while storing, loading, unloading, cleaning, and soaking, to prevent it collisions or short circuits.
- Prevent the print head from severe shock, otherwise it will damage the piezoelectric ceramic oscillation in the head.
- Print head must be cleaned with flush water to remove ink stains and stoppage.
- Keep the print head in a liquid to avoid a dry-out situation.
- Keep the print head away from light to avoid a dry-out situation.
- Prevent the object or human body from static contact with the print head.
- Print head nozzles should be kept away from hands, ink, flush, etc.
- Should be kept clean and prevent oxidation.

18. Troubleshooting

1. “Printer Not Initializing”

Problematic Parts	Reasons	Correction Steps
1. Emergency Switch	Switch is Pressed	Release the Emergency Switch
2. 220V AC	No power supply to the Head Board	Check the Input/output Volt. Check MCB and ON it, if not.
3. 24 VDC	No power to SMPS output	Check SMPS Output Power. Check 24 V power supply and replace the Power Supply, if faulty. Check the 24 V Power Supply cable and replace it, if required.
4. Servo Driver	Error in display No power to Servo Motor	Check and try to resolve the error on the display screen. Check the power connection and replace it, if faulty.
5. Main Board	Factory settings are disturbed Fault in Main Board	Correct the factory settings Replace the Main Board, if faulty
6. Head Board	Fault in Head Board	Replace the Head Board, if faulty
7. Encoder Sensor	Fault in Encoder Sensor	Replace the Encoder Sensor.

2. “Printer Manager Not Showing “Ready”

Problematic Parts	Reasons	Correction Steps
1. USB Driver	Driver is not installed	Install the printer driver, if not installed (Refer to the Installation of Printer manager section)
2. USB Cable	USB Cable is loosely connected to the printer. USB Cable is faulty	Check and tighten the USB cable. Replace it, if faulty
3. Printer Not Initialized	Refer to Printer Not Initialized Section.	

3. “Ink Not Filling”

Problematic Parts	Reasons	Correction Steps
1. Main Tank	Main tank is empty	Refill the Main Tank
2. Ink pump	Ink pump is not working Connectors are loose	Replace the pump, if faulty Tighten the connectors, if loosen
3. Sub tank float connector	Connectors are loose Float Sensors are not connected	Tighten the connectors to the Head Board. Replace Sub tank, if Float Sensor is faulty.
4. Ink pipes	Ink pipes are having cuts	Replace the ink pipes, if faulty

4. “Ink Drop Formation”

Problematic Parts	Reasons	Correction Steps
1. Negative Pressure	Negative Pressure is not working	Set the parameters of negative pressure

5. “Head Nozzles Not Firing”

Problematic Parts	Reasons	Correction Steps
1. Print Head	Print Head is not cleaned	Clean the Print Heads
2. Head Cables	Head cables are loosely connected Head Cables are faulty	Tighten the Head Cable Replace it, if faulty
3. Ink Pipes	No ink in ink pipes Cuts in ink pipe Loose connection	Refill ink Replace ink pipe, if faulty. Check the connection and fix it, if loose.

6. “Print Stops In Between Printing”

Problematic Parts	Reasons	Correction Steps
1. USB Cable	Cable is loose Cable is faulty	Tighten the USB cable Replace it, if faulty
2. File Size	File size exceeded the limit	Use compatible and small-size images for printing.
3. Ground Wire	Ground wire is disconnected	Connect the ground wire to the system.
4. Encoder Scale	Encoder scale has ink stains	Cleaned the Encoder Scale Check and Replace Encoder Scale, if faulty.
5. Ripped File	Ripped file is having error	Carefully read the error and resolve it.

7. “Print Margin Is Shifting Or Junk Printing”

Problematic Parts	Reasons	Correction Steps
1. Encoder Scale	Encoder Scale is having ink stains	Clean the Encoder Scale
2. Encoder Sensor	Encoder Sensor is not clean	Clean the Encoder Sensor
3. Pulley or Belt	Pulley or belt is slipping	Check and replace it, if required
4. Data Cable	Data cable is faulty	Replace the Data Cable

8. “Print Is Blur (Not Sharp)”

Problematic Parts	Reasons	Correction Steps
1. Print Head	Improper head alignment	Correctly Align the Print Heads (Refer to the Head Alignment section).
2. Ink	Recommended ink is not used Ink is stored at unfavorable environment.	Only use the recommended ink Ink is stored at favorable environment.

9. “Lines In Print”

Problematic Parts	Reasons	Correction Steps
1. Head Nozzles	Head nozzles are blocked	Clean the Print Head
2. Feed Adjustments	Incorrect feed steps	Correct the feed steps using the Calibration Wizard.
3. Head Alignment	Head alignment is incorrect	Refer to the Head Alignment section
4. Feed Motor	Feed Motor or Driver is faulty	Replace the Feed Motor or Driver

10. “UV Lamp Not Working”

Problematic Parts	Reasons	Correction Steps
Power Supply	No Power Supply to the UV Lamp	Check and correct the power supply settings.
UV Lamp Settings	UV Lamp settings are incorrect	Correct the UV Lamp settings
UV Lamp Control Board	UV Lamp Control Board is faulty.	Check and replace the UV Lamp Control Board.
UV Lamp	UV Lamp is faulty or aged	Check and replace it, if required

11. “Negative pressure drop/not working”

Problematic Parts	Reasons	Correction Steps
Negative Pressure Switch	Negative Pressure switch program is disturbed or value is incorrect.	Check and replace it, if required
Ink	Ink overflowed from sub tank and filled in reservoir.	
Vacuum	Vacuum is not generated by pump (pump failure).	Check and replace the pump
Vacuum Pump	Vacuum pump connector is loose	Tighten the Vacuum Pump connector.
Ink/Air Tube	Any ink/air tube having leakage/cut/loose on fitting joints	Check and replace it, if required.

12. “Media not sticking to Bed”

Problematic Parts	Reasons	Correction Steps
1. Vacuum Pump	Vacuum pump is not ON	Switch ON the Vacuum Pump
2. Vacuum Settings	Incorrect vacuum settings adjustment.	Correct vacuum settings
3. Run Button on the Vacuum Regulator	Run button is not pressed after settings.	After adjusting vacuum pump setting, press the Run button.

13. “Print not drying”

Problematic Parts	Reasons	Correction Steps
1. UV Lamp Settings	UV Lamp settings are incorrect	Correct the UV Lamp settings
2. Lamp Intensity	UV Lamp Intensity level is low	Control the frequency of UV Lamp using the Left or Right Lamp regulator Set the printing parameters
3. UV Lamp	UV Lamp is aged	Check and replace, if required (Contact to factory for more details)

14. “UV Lamp Shutter Not Working”

Problematic Parts	Reasons	Correction Steps
1. UV Lamp Settings	UV Lamp settings are incorrect	Correct the UV Lamp settings