OPERATING INSTRUCTIONS

(Original instructions)

MHM Digital V pro

Preface

Dear Customer,

congratulations and thank you for choosing the MHM Digital V Pro. The MHM Digital V Pro is an extremely reliable and cost effective digital printing machine. The machine is almost insensitive to external influences, such as temperature and humidity. No flash cure is necessary. It is designed to provide the highest standards of performance and reliability during its guaranteed long operating life. Highly innovative and precise MHM technology provides a combination of the finest built quality along with optimal safety. We trust that these Operating Instructions will assist you in becoming familiar with the safe and efficient operation of the Digital V Pro.

Important Note:
Due to our policy of continuous improvement, we reserve the right to change specifications without prior notice. Therefore, certain individual fittings and components may differ slightly from the model detailed in this document. For any further questions regarding your MHM Digital V Pro, please contact the MHM service team.

Wishing you every success with your future production.

Machines Highest Mechatronic GmbH

Important Advice Regarding These Operating Instructions

These Operating Instructions form an integral part of the MHM Digital V Pro and must be made available to all authorized personnel at all times. No particular sections or pages must be removed from these Operating Instructions, and any missing sections or pages should be replaced immediately, in particular with regard to section *"Safety Instructions"***.**

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Content:

1. Safety Instructions

This section describes the safety instructions for the correct and safe operation of the MHM Digital V Pro. In addition, this section also contains references to the European rules and regulations concerning the guarantee of industrial safety along with safety at the workplace. These rules and regulations provide the basis for these operating instructions. Owing to its complex design, the Digital V Pro must only be operated and maintained by suitably skilled staff.

Installation, operation or maintenance of the Digital V Pro by persons who have not been suitably trained, introduced or acquainted with the system and informed regarding the possible dangers may result in:

1. Failure of essential functions of the Digital V Pro.
2. Danger to persons through electrical or mechanical actions.
3. Material damage to the Digital V Pro.

1.1. Description of Key Words and Symbols in the Operating Instructions

In these operating instructions classified key words and symbols are used to identify dangers and items that require special attention.

Symbol	Key word	Meaning
	DANGER	This symbol indicates possible risk for life.
	CAUTION	This symbol indicates danger of damage to property and/or environment.
	NOTE	This symbol indicates useful additional information and operating suggestions.

1.2. Qualification of Operating and Service Staff

The MHM Digital V Pro is built in accordance to all appropriate safety regulations. Nevertheless, the Digital V Pro must only be operated and maintained by suitably skilled staff. ‘Qualified personnel’ refers to people who are able to carry out the required procedures and be able to recognize as well as prevent potential risks, as a result of their training and experience. If casual workers are employed for assistance work they must be particularly informed regarding existing and potential dangers and instructed accordingly.

1.3. Maintenance Safety Instructions

When performing any printer maintenance procedures, follow these safety instructions:

- Always wear suitable personal protective equipment when performing printer maintenance. Should any waste ink or cleaning agent solution come in contact with your skin or enter your eyes or mouth, immediately take the following actions:
  - If fluid gets on to your skin, immediately wash it off using soap and water. Consult a physician if the skin appears irritated or discolored.
  - If fluid gets in your eyes, rinse immediately with water. Failure to observe this precaution could result in bloodshot eyes or mild inflammation. If problems persist, consult a physician.
  - If fluid gets in your mouth, consult a physician immediately.
  - If fluid is swallowed, do not induce vomiting and consult a physician immediately. If vomiting is induced, fluid may get caught in the trachea which can be dangerous.
  - If you notice that the cleaning agent has changed color or emits a bad odor, stop using it and open a new cleaning agent.
  - Close the fluid lid securely after used, and store it out of reach of children. Avoid storing it in locations subject to high temperatures, high humidity, and direct sunlight.
  - Wash your hands thoroughly with soap and water after any fluid usage.
- Store ink cartridges, waste ink and cleaning agent out of the reach of children.
- Wash your hands thoroughly after performing any maintenance procedure.
- Touch a metal object before starting operations to disperse any static electricity.
- To prevent the print head from drying out, finish cleaning the suction cap and replacing the head cleaning set within 10 minutes.
- Do not touch any parts or circuit boards other than the parts you are maintaining. This may cause a malfunction or decline in print quality.
- Always use new cleaning swabs to avoid getting the printer parts dirty.
- Do not touch the tip of the cleaning swabs with your hand. Oils on your hand may compromise cleaning ability.
- Do not use water or organic solvents such as alcohol on the suction cap or the wiper unit. If ink is mixed with water or alcohol, it may solidify.
- Do not wipe the suction cap with organic solvents such as alcohol. Otherwise a print head malfunction may occur.

1.4. Safety Instructions for the Operating Staff

	All cabinets and covers of the Digital V Pro must always be kept closed. Open cabinets and covers are extremely dangerous as live electrical components are accessible.
	Mechanical or electrical failures must only be repared by an MHM authorized / approved technician.
	Any modifications or changes to the Digital V Pro settings should only be carried out by an MHM authorized / approved technician.

1.5. Other Valid Rules and Regulations

The customer must comply with all regulations applicable in the country where the machine is located.

2. Intended usage of the machine

The MHM Digital V Pro is intended for the printing of substrates (usually textiles such as T-shirts, but also paper or similar materials) by means of digital printing in combination with an MHM carousel- or oval screen printing machine.

Any other use of the Digital V Pro than described above may result in danger to persons or material damage and is therefore forbidden.

3. Data

This section details the Digital V Pro technical specifications.

NB: As our policy is one of continuous improvement, we reserve the right to change specifications without prior notice.

3.1. Serial Number and Year of Manufacture

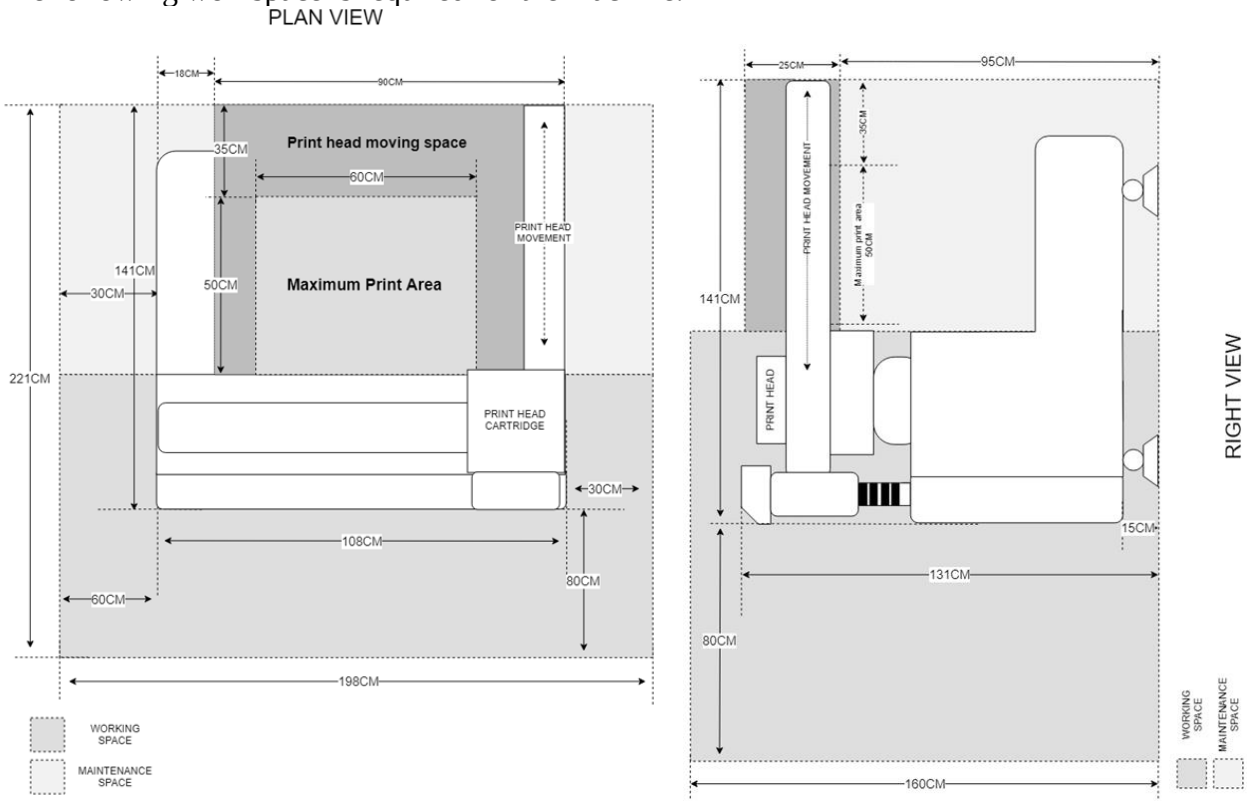
Serial number and year of manufacture are indicated on the unit's type plate.

3.2. Printer specification

Print Heads	2 heads/Micropiazo	
Max. print area	460 mm x 460 mm	
Max. printing resolution	720 x 1200	
Production speed	± 200 pcs per hour	
Printer dimension (WxHxL)	1080 mm x 1310 mm x 1410 mm	
Weight	250 kg	
Power requirement	220 V	
Power consumption	~ 500 W	
Optimal working environment	Temperature > 20 °C	Humidity > 35 %
Ink technology	CSC REi Technology	
Ink colors	Cyan, Magenta, Yellow, Black	
Ink compliances	Nike Rsl, Adidas Rsl, ECO Passport by OEKO-Tex	
	Software included	Operating system
Printer	ZEUS V Printer Controller	Windows 7 and above
RIP	Caldera	Linux Debian 2.3/8.6/8.8

3.3. Workspace

The following workspace is required for the machine.



3.4. Ink consumption

Two examples of expected ink consumption:

Design Leopard
Resolution: 720x1200 dpi | Colors: 4 Colors | Size: 250x180mm (9,8x7")

Ink consumption [ml]	
Cyan	0,0179 ml
Magenta	0,0427 ml
Yellow	0,0466 ml
BlacK	0,0309 ml
Total amount	0,1381 ml
Pcs per Liter	7 241 Pcs
Prize per Liter	100 €
Price per Print	0,014 €

Design Roboter
Resolution: 720x1200 dpi | Colors: 4 Colors | Size: 250x180mm (9,8x7")

Ink consumption [ml]	
Cyan	0,0306 ml
Magenta	0,0299 ml
Yellow	0,0845 ml
BlacK	0,0434 ml
Total amount	0,1884 ml
Pcs per Liter	8 554 Pcs
Prize per Liter	100 €
Price per Print	0,019 €

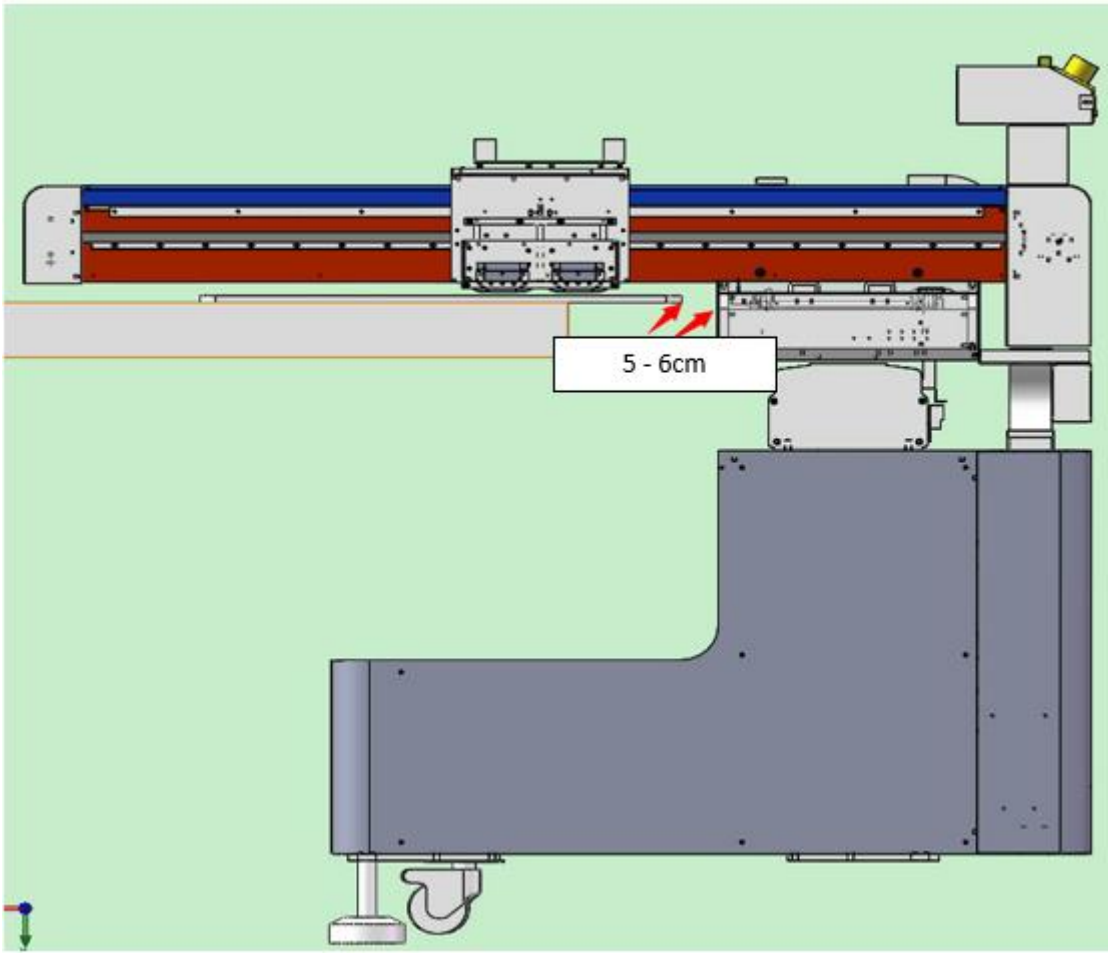
4. Installation and alignment

NOTE

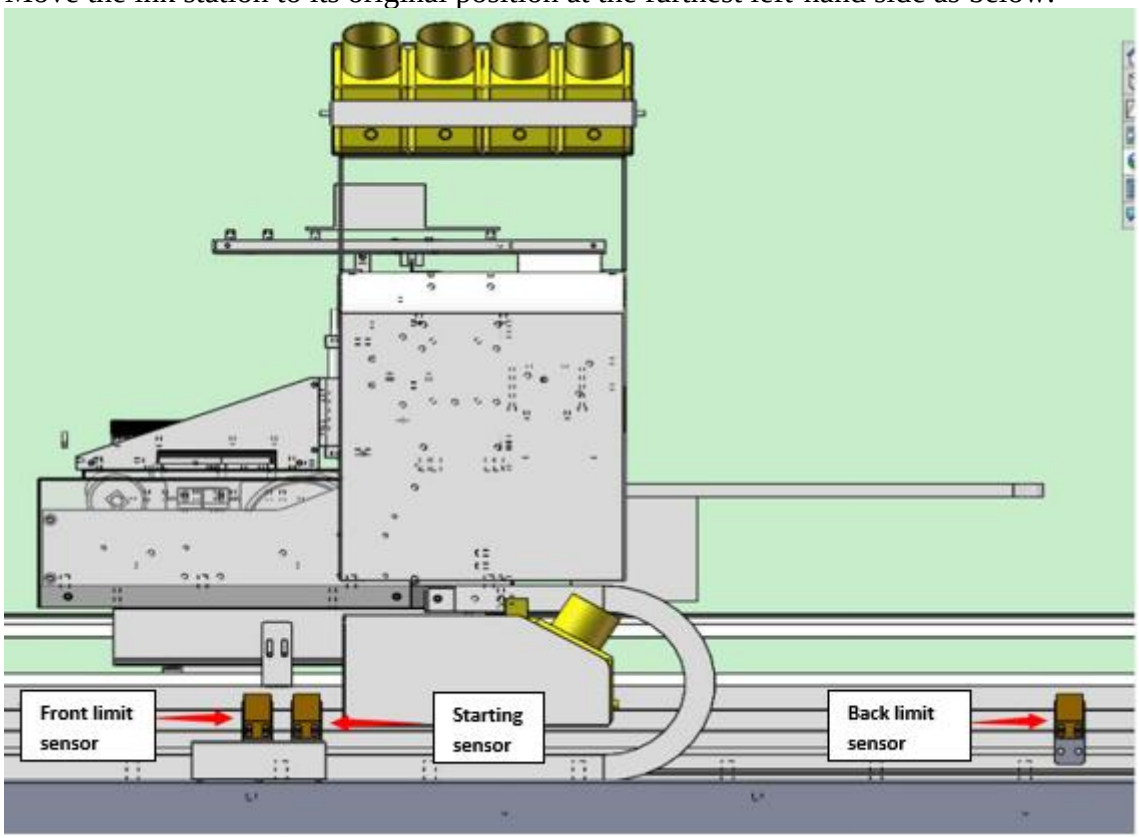
Upon delivery of the MHM Digital V Pro the consignment must be examined for external damage immediately. In the case of any damages, they must be documented and reported to Machines Highest Mechatronic GmbH within 24 hours.

4.1. Printer installation

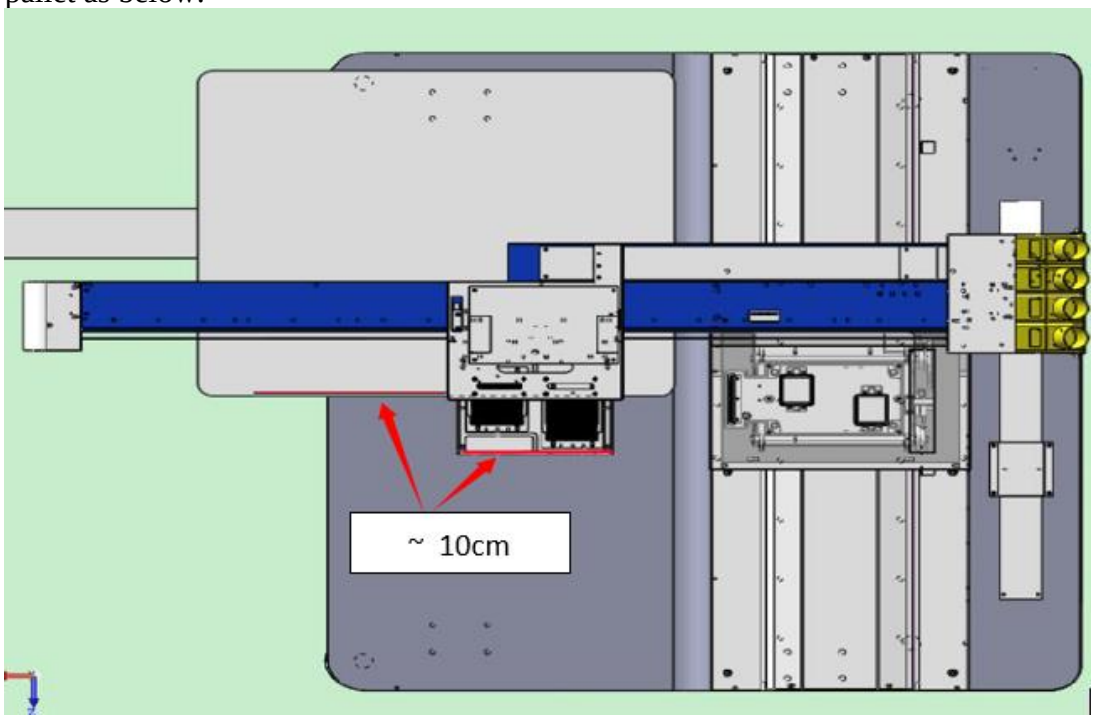
1. Position and adjust the height of the Digital V Pro by adjusting its leg until the ink station is placed higher than the printing press pallet. Make sure the off-contact of the pallet is at 0.
2. Adjust the position of the print head. Make sure the distance between the ink station and printing press pallet is at least 5cm-6cm away.



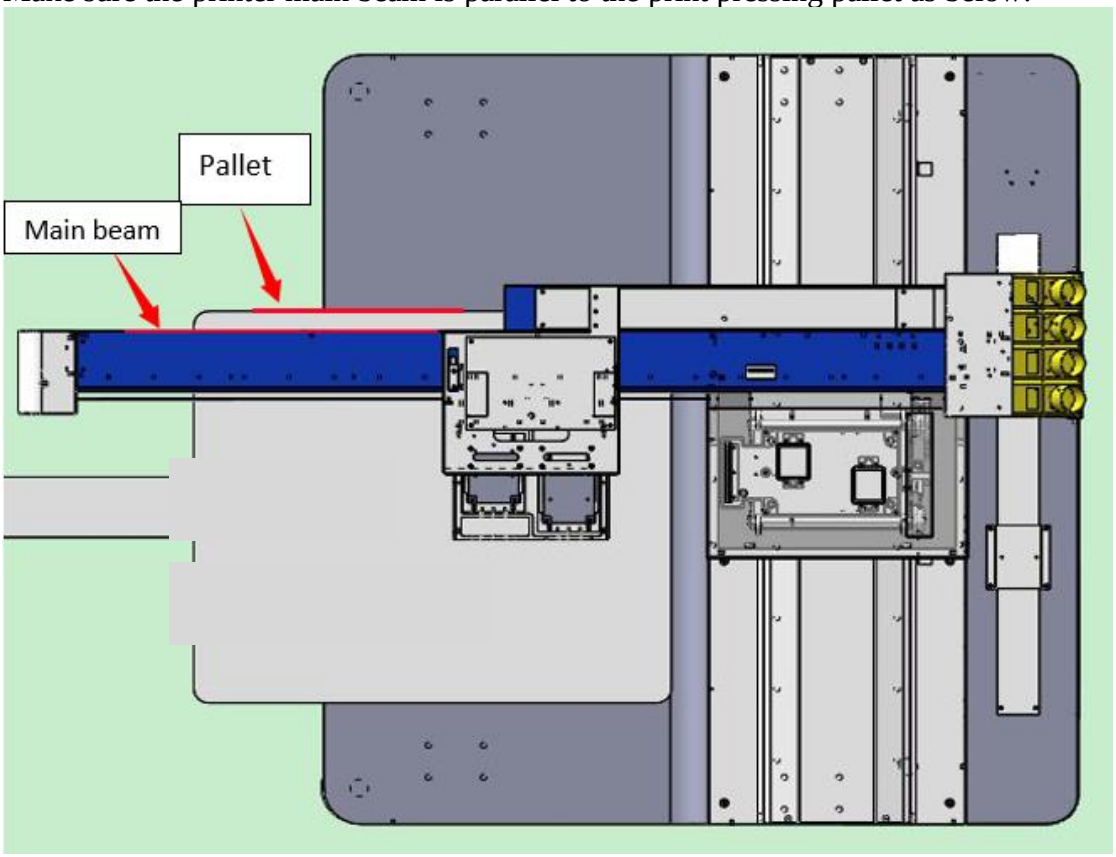
3. Move the ink station to its original position at the furthest left-hand side as below:



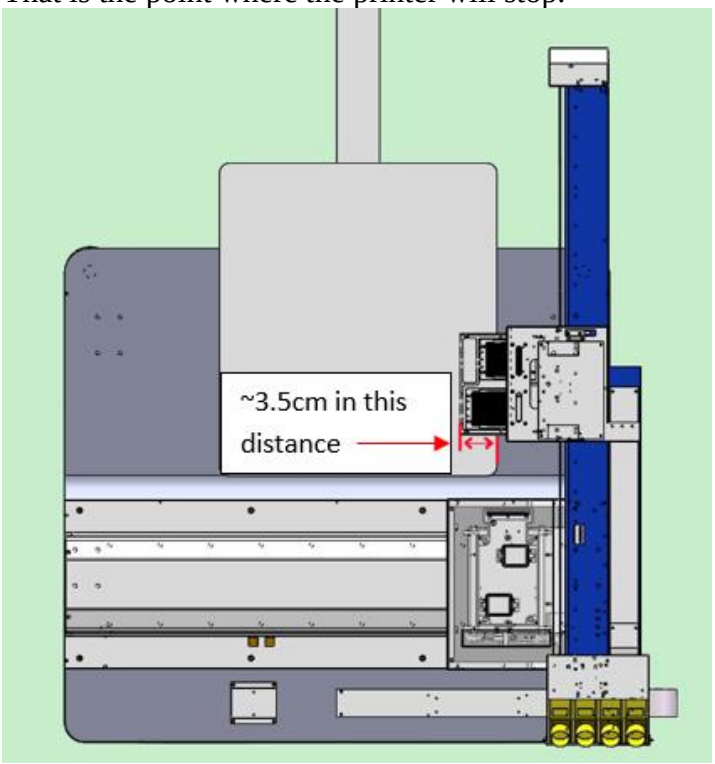
4. Move the ink station out and adjust the ink station 10 cm aside from the print pressing pallet as below:



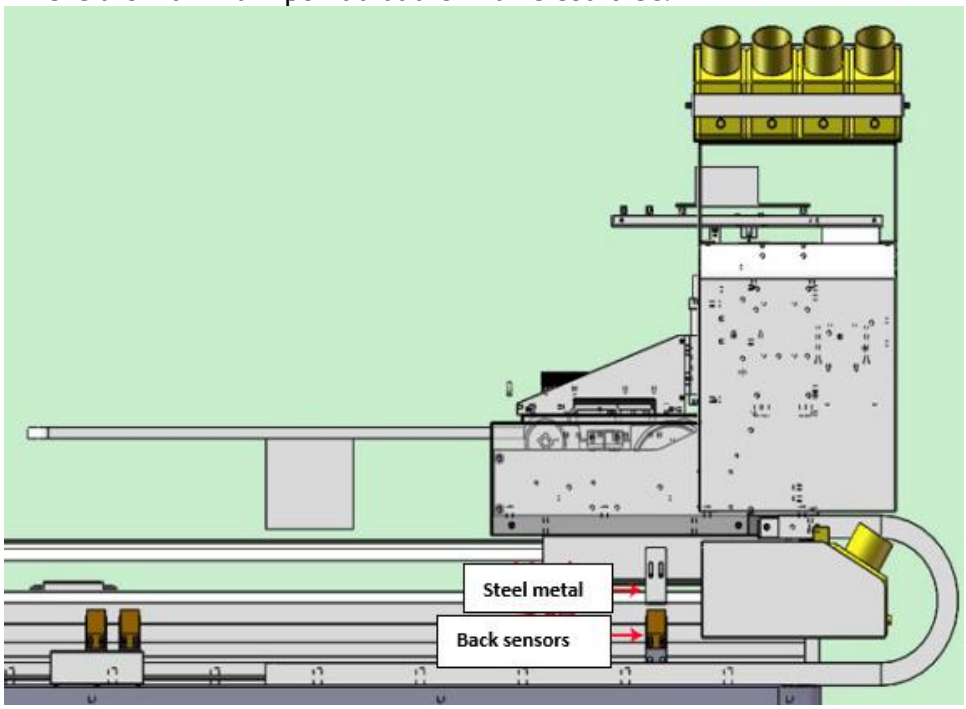
5. Make sure the printer main beam is parallel to the print pressing pallet as below:



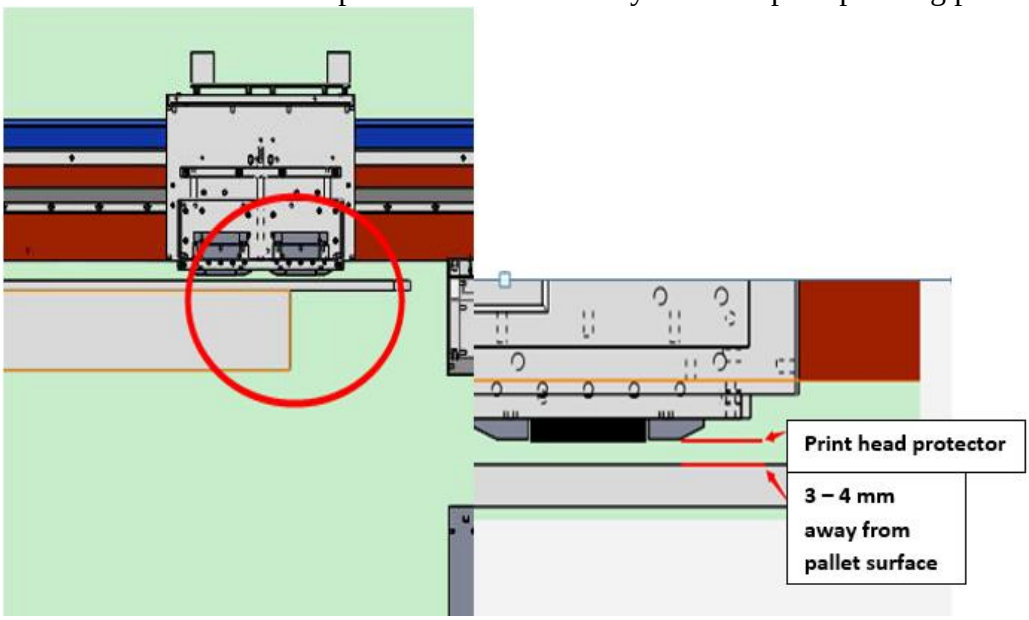
6. Adjust the printer y-axis until it left 3.5 cm away from the print pressing pallet as bellow. That is the point where the printer will stop.



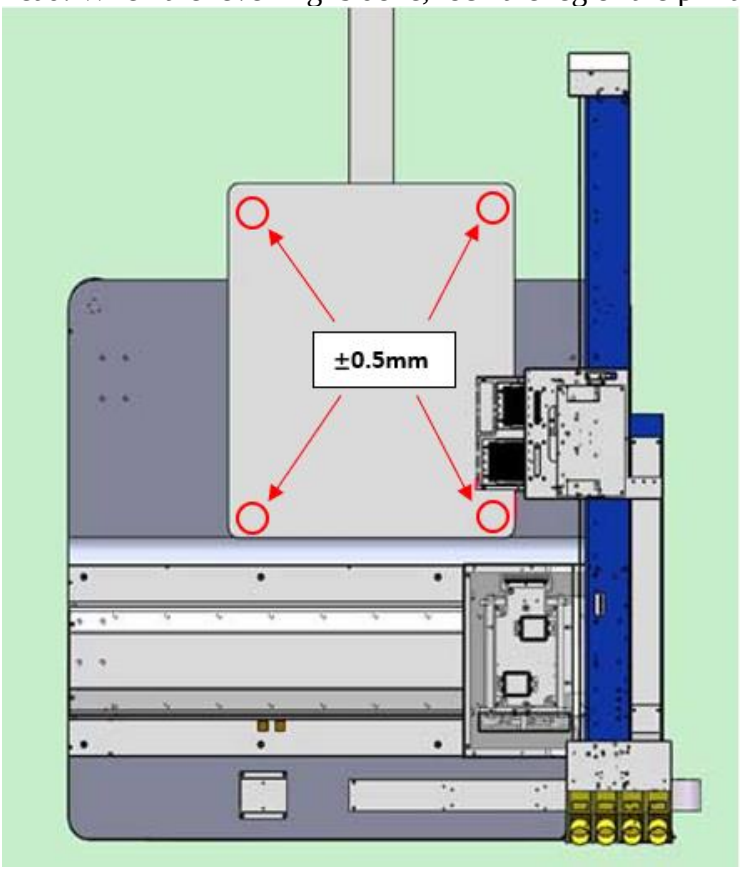
7. Observe the steel metal and the back sensors. Adjust them to make sure they were aligned. This is the maximum point that the Y-axis could be.



8. Make sure the base of the print head is 4mm away from the print pressing pallet.



9. Level the printer until the reading of the 4 corners are only 0.5mm differences to the print head. When the levelling is done, lock the leg of the printer to make sure it does not move.



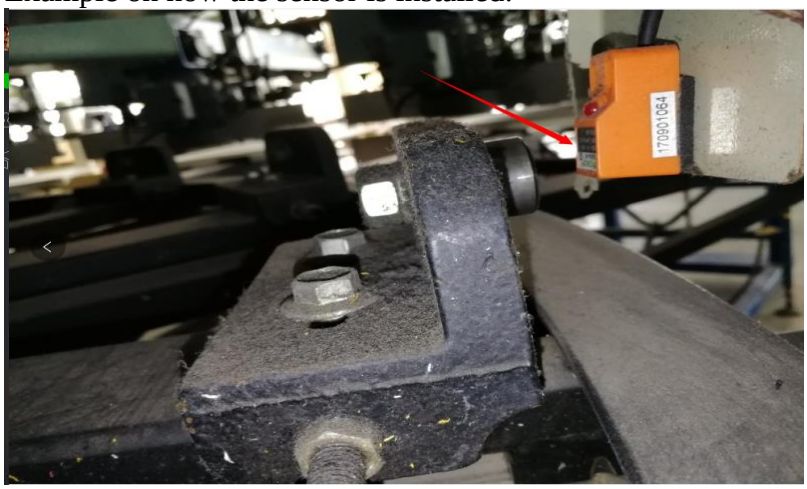
10. There is an orange sensor as below which is not installed yet.

11. Attached the sensors to the carousel printer where it would be able to detect the printing pallet while not affecting the turning table.

NOTE

The position of the sensor will vary from different printing press.

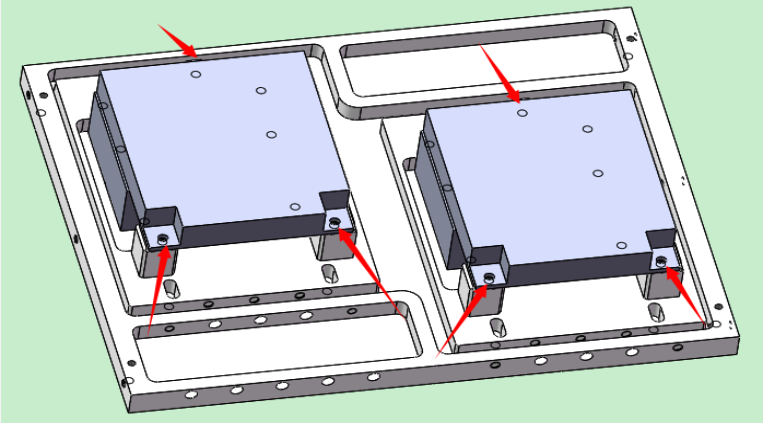
Example on how the sensor is installed:



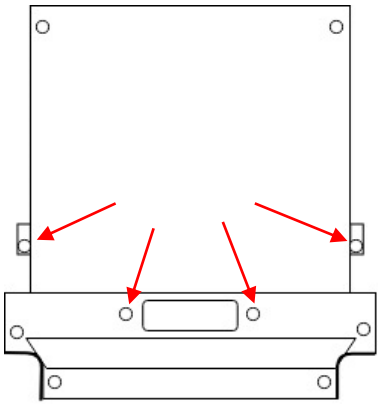
The sensor should face downward and when the print pressing pallet move upwards the sensor will light up. Please make sure the distance between the sensor and print pressing pallet Is within 1mm-3mm when the pallet is raised. Check if the sensor was functioning well on different pallet and off-contact. The sensor will light up if the print pressing pallet is move up.

4.2. Print head installation

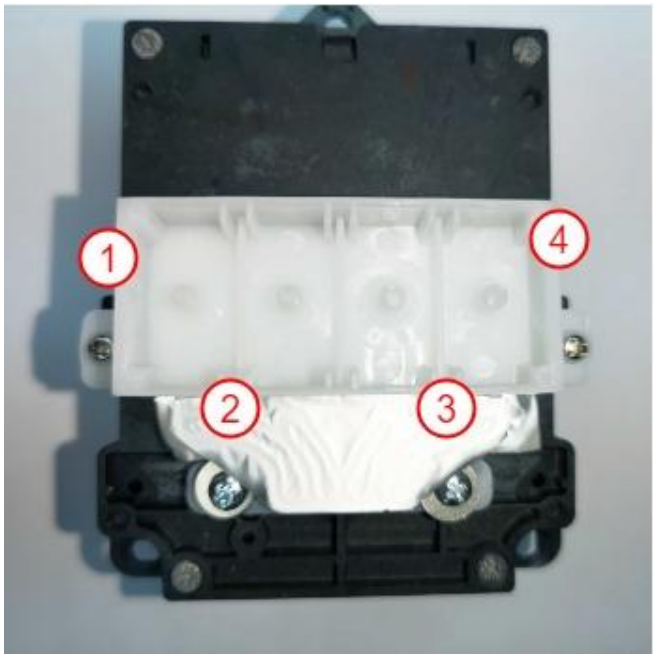
1. On the print head cartridge, unscrew the screw from the point that the red arrows indicate.



2. Damper connector. From the top view of the print head, remove the screw from the indicated position.



Install the connector on top of the damper as shown. Make sure the rubber seal is properly installed and the screw is in correct position.

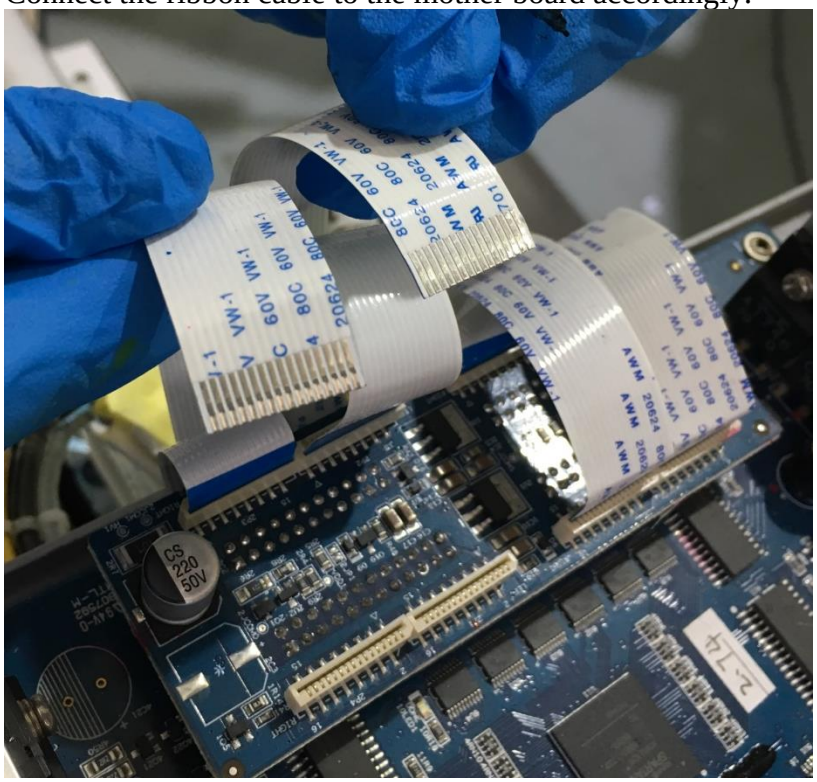


Attach the damper to the connector.

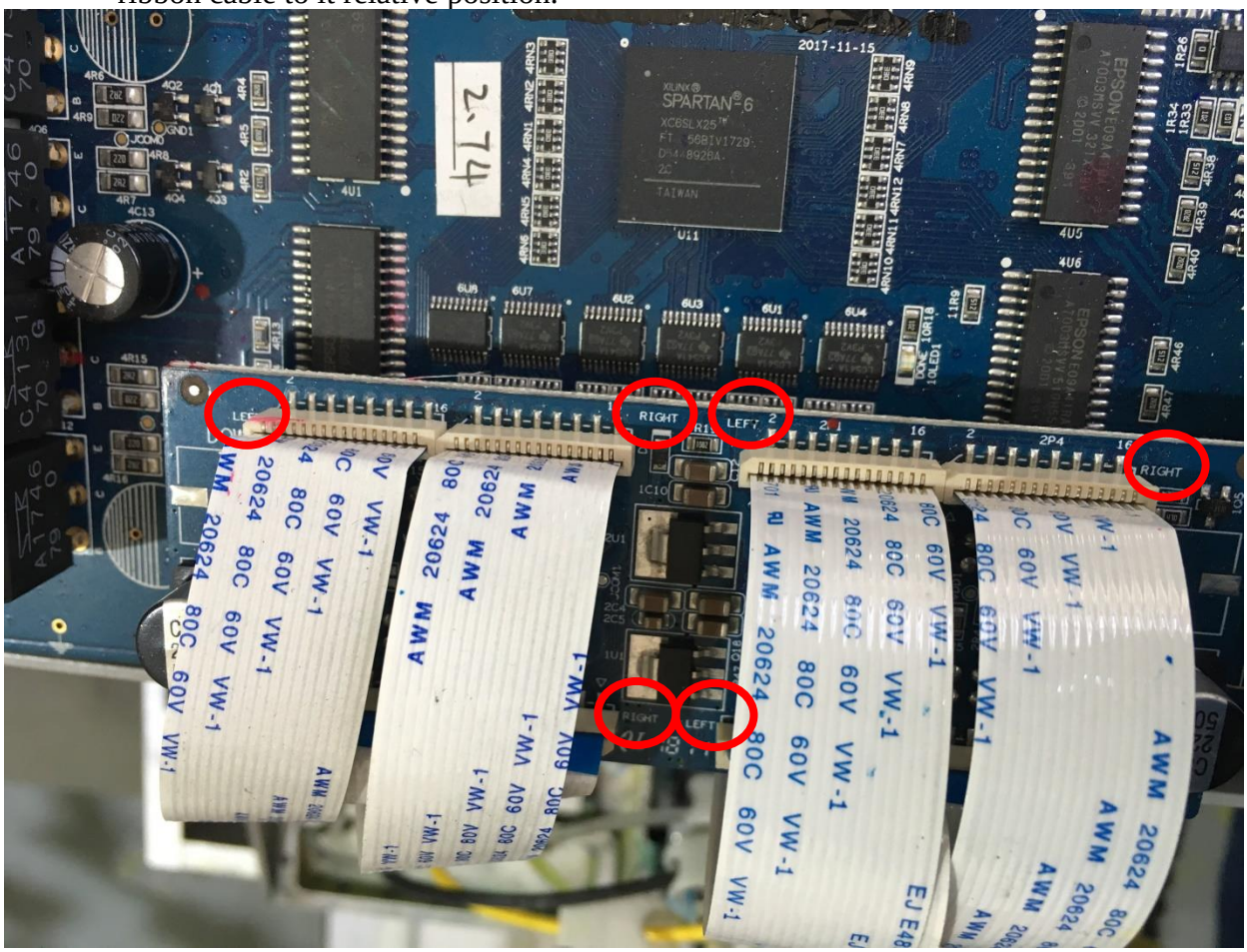
3. Ribbon cable connection

Connect the ribbon cable as below on both left and right side of the print head. The ribbon cable will be facing opposite side. Each print head is connected with 4 ribbon cable.

Connect the ribbon cable to the mother board accordingly.



Look at the mother board. “Left” & “Right” is written on the mother board. Insert the ribbon cable to it relative position.

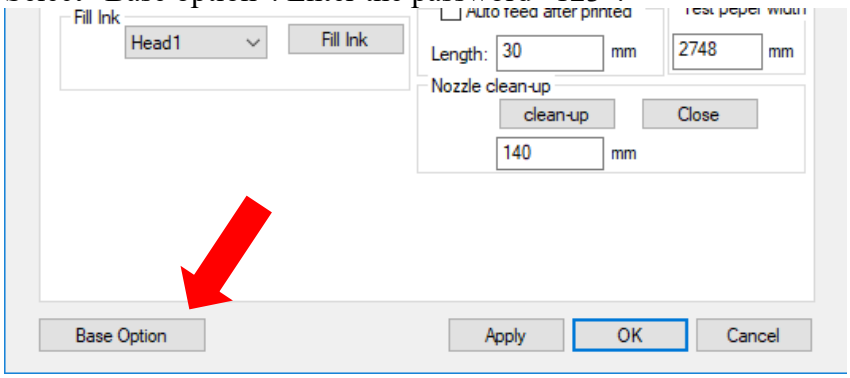


4.3. Ink station alignment

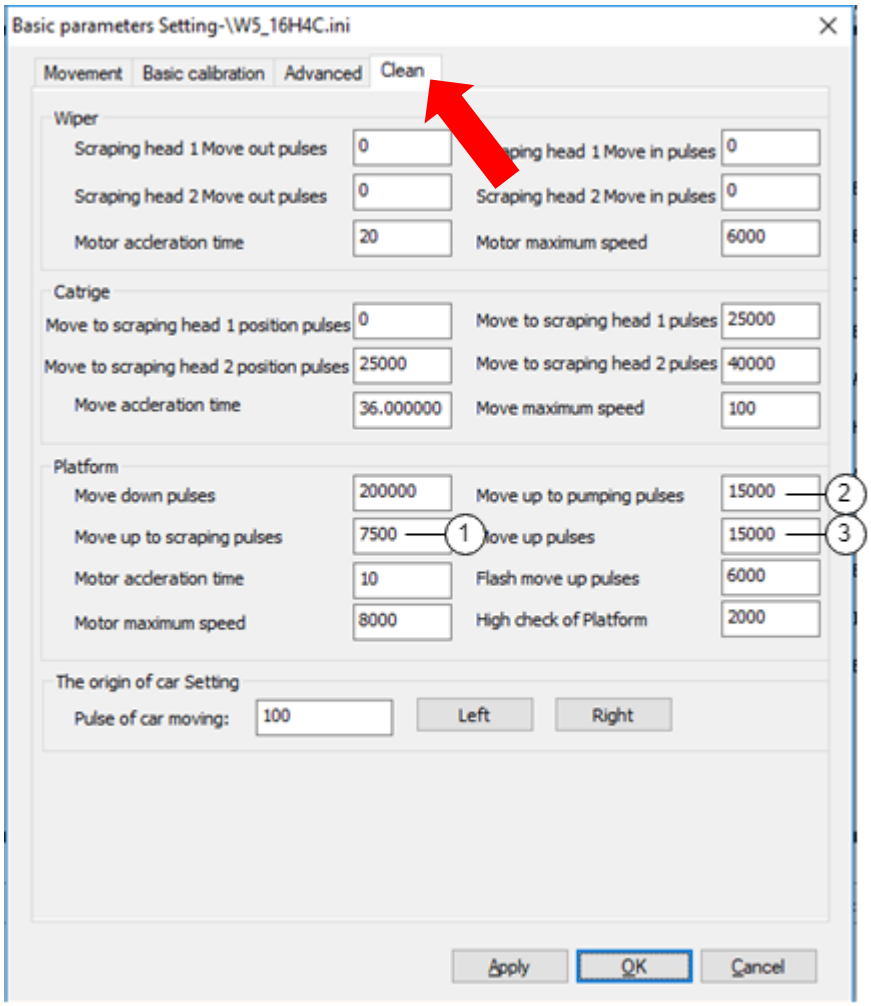
Ink station functions included to clean and protect the print head. Ink station alignment is required under the following situation:

- The anti-drying caps are **NOT** fully covering the nozzles.
- Cleaning wiper **NOT** able scrap of excess ink from the nozzles cleanly.
- The height of the print head cartridge had been adjusted.

1. Select “Setting”  from the main screen.
2. Select “Base option”. Enter the password “123”.

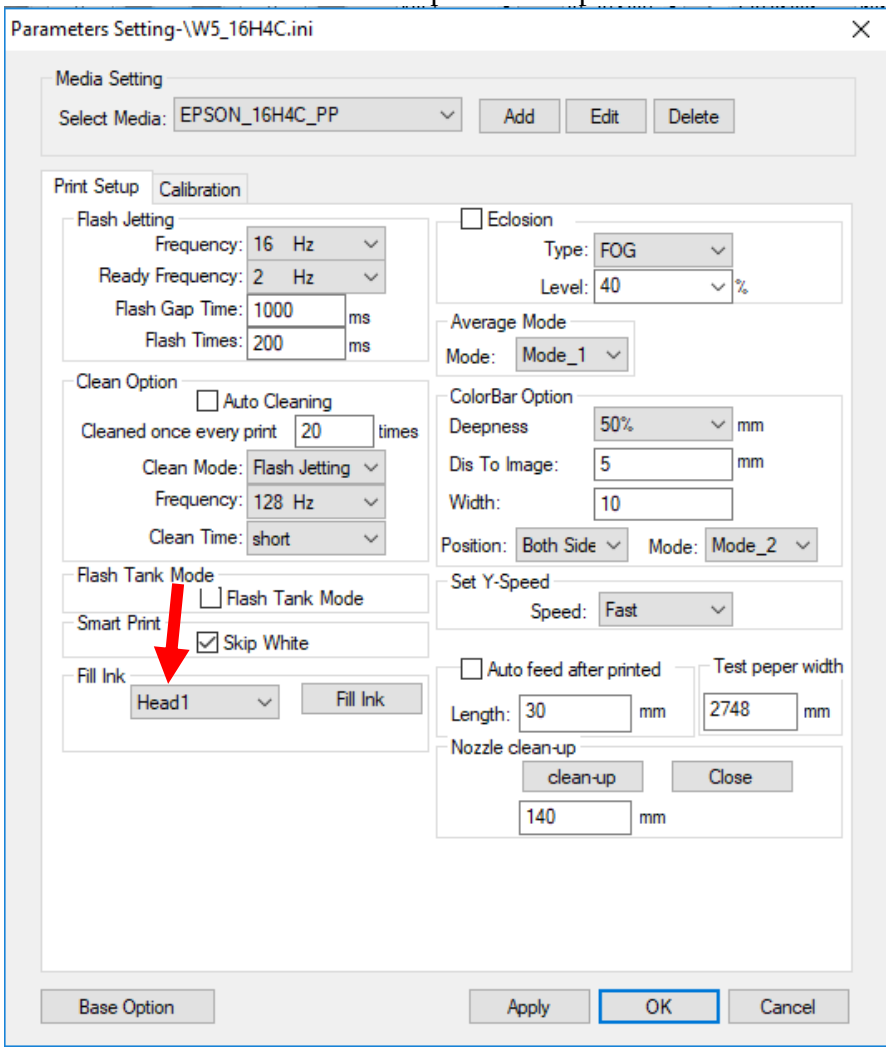


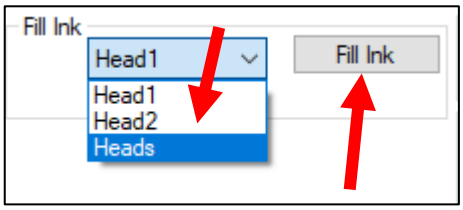
3. Select the “Clean” tab.



4.4. Ink Filling

1. There are 4 different ink bottles which are black (K), cyan (C), magenta (M) and yellow (Y).
2. Clean the ink bottle then add the ink respectively into its ink bottle.
3. After the ink had been filled, turn on the software and click the setting  icon.
4. The following window will pop out. Under “Fill Ink” column, select “Heads”, click fill ink. Observe the ink flow and stop when the print head is filled with ink.





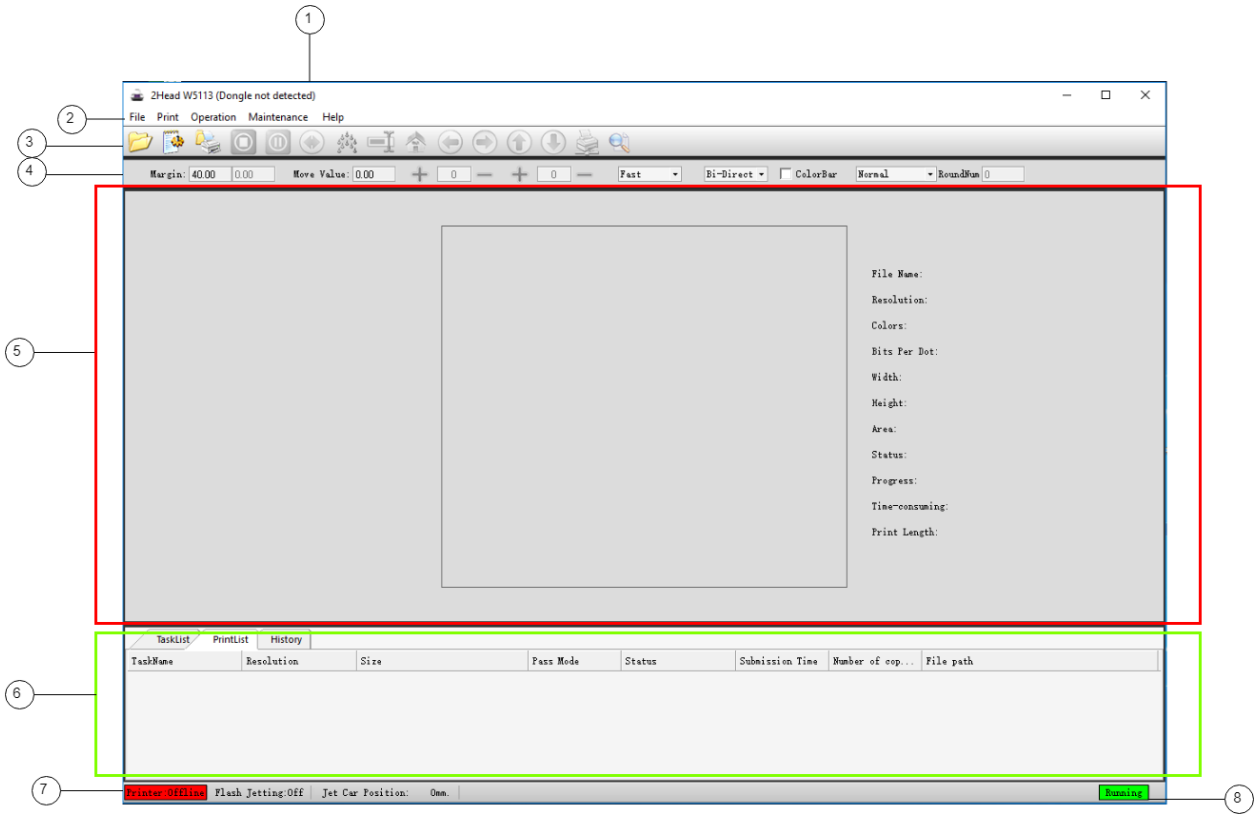
5. Operating the printer controller

5.1. System requirements

Operating System	Windows 7 / 8 / 10 64bit
Processor	Intel i5 2.3Ghz or higher
Memory	4 GB RAM or higher
Storage	1GB available in hard disk

5.2. User interface

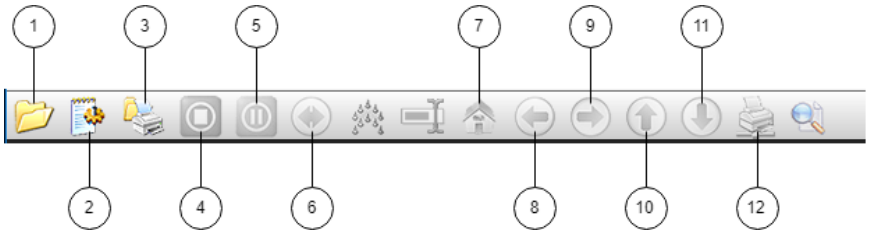
5.2.1. General view



Main menu

No.	Name	Description
1	Title bar	Display the status of USB Dongle
2	Menu bar	Drop down menu for the controller
3	Toolbar	Display icons that indicate each menu items
4	Adjustment bar	A menu to adjust the general setting for printing
5	Preview/status area	Display an image of files to be print, and status of printing
6	Task list	Display printing task, queue and history
7	Printer status	Display the connection status for printer
8	Software status	Display the controller software status

5.2.2. Toolbar



Toolbar

No.	**Name**	**Description**
1	Open	To input file for printing
2	Setting	Display setting for controller software
3	Print	Print printing file
4	Stop	Cancel printing
5	Pause	Pause printing
6	Clean	Display cleaning option
7	Reposition	Return print head cartridge to starting position
8	Move Left	Move print head cartridge outwards
9	Move Right	Move print head cartridge inwards
10	Feeder forward	Move print head cartridge to right
11	Feeder backward	Move print head cartridge to left
12	Test Print	Display test print option

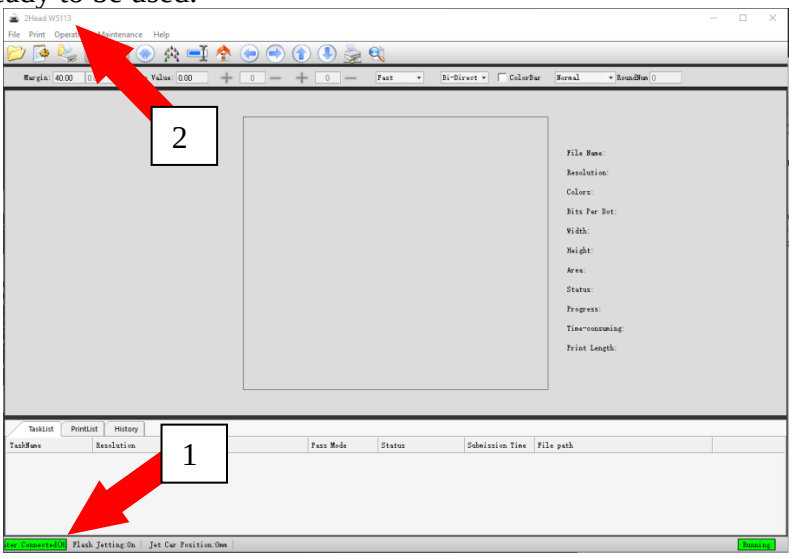
5.3. Installing the software

1. Extract “PrintExp.zip” to the designated location on your computer.
2. In “PrintExp -> VC_x86Runtime”, install all the following software:
   - **a.** VC_x86Runtime.exe
   - **b.** VC_x86Runtime1.exe
   - **c.** vcredist_x64.exe
   - **d.** vcredist_x86.exe
   - **e.** vcredist2010_x86.exe

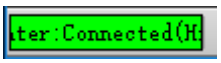
NOTE

Failed to install any of the software may result in the printer controller not fully functioning.

3. In “PrintExp -> USB Device Driver”, open the folder based on your system type (32bit/64bit).
4. Double click on “setup.exe” and follow the wizard to complete the printer driver installation.
5. Make sure you have properly connected the Printer controller dongle and USB from printer. Turn on the printer after all installation.
6. In “PrintExp” Folder, run “PrintExp.exe” in administrator mode.
7. The following status shown that the USB driver is successfully installed and the printer controller is ready to be used.



Main menu



1: Printer connection status

2: Dongle connection status (Dongle detected)

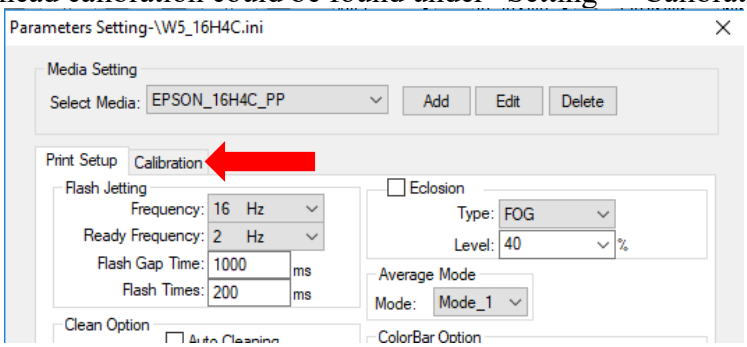
5.4. Using the software

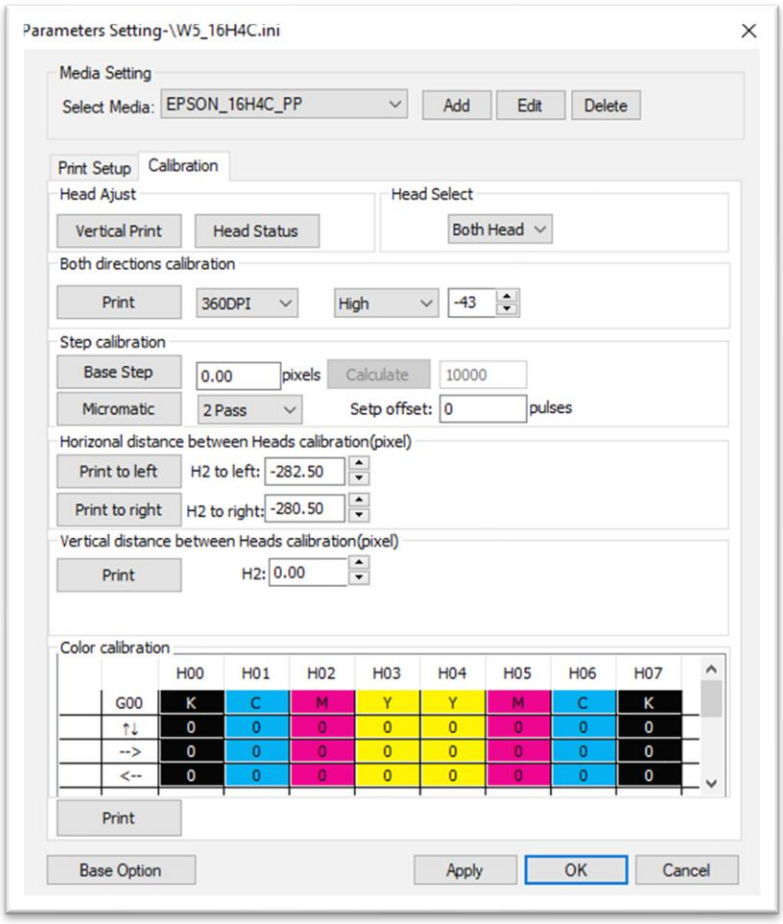
5.4.1. Print head calibration

NOTE

Before each print please raise the pallet up for the sensor to receive the printing signal.

The setting for Print head calibration could be found under “Setting -> Calibration”.



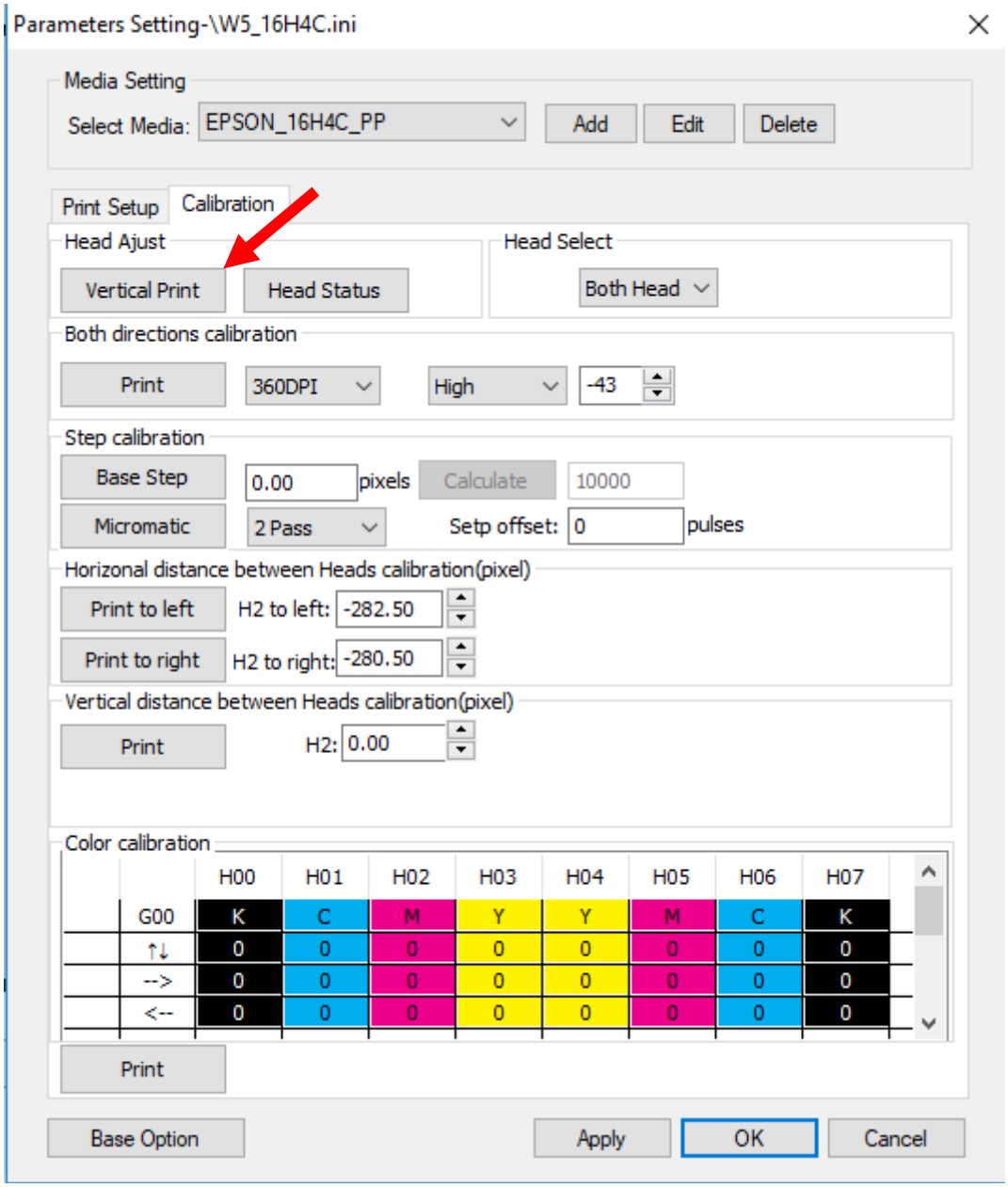


5.4.1.1. Vertical Print

NOTE

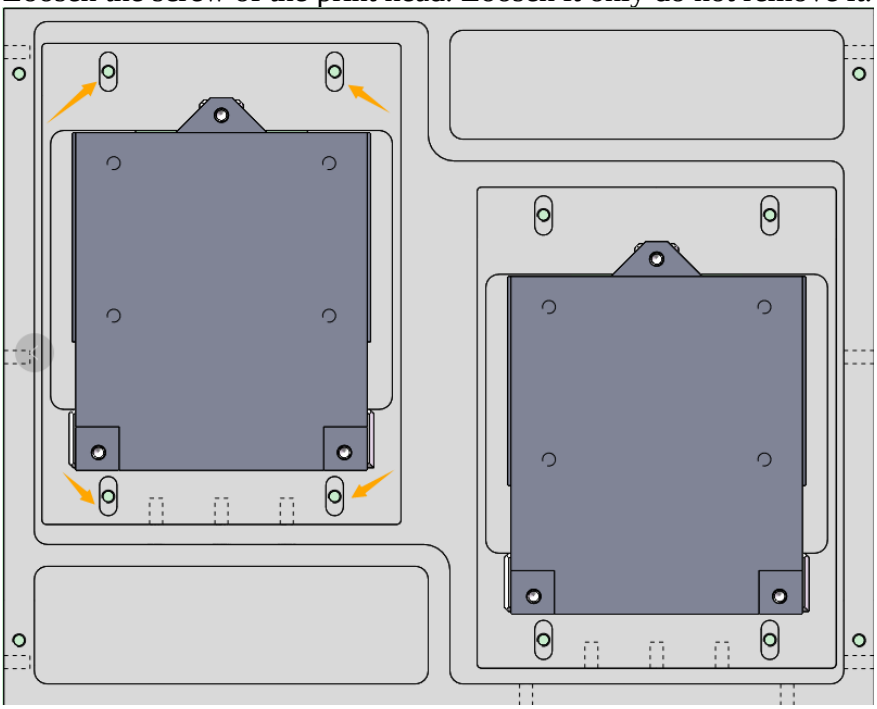
The following alignment may include adjustment on print head cartridge and require proper handling.

1. Select “Vertical Print”

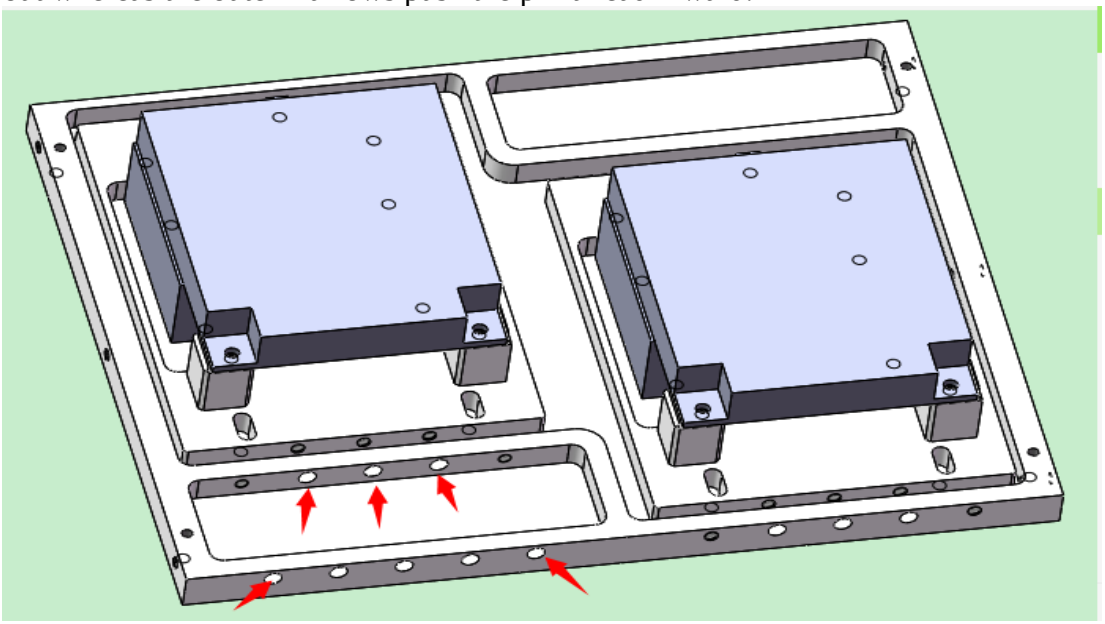


2. In the following figure, the point where the red arrow pointed show the print head was not aligning. Hence, alignment should be done.

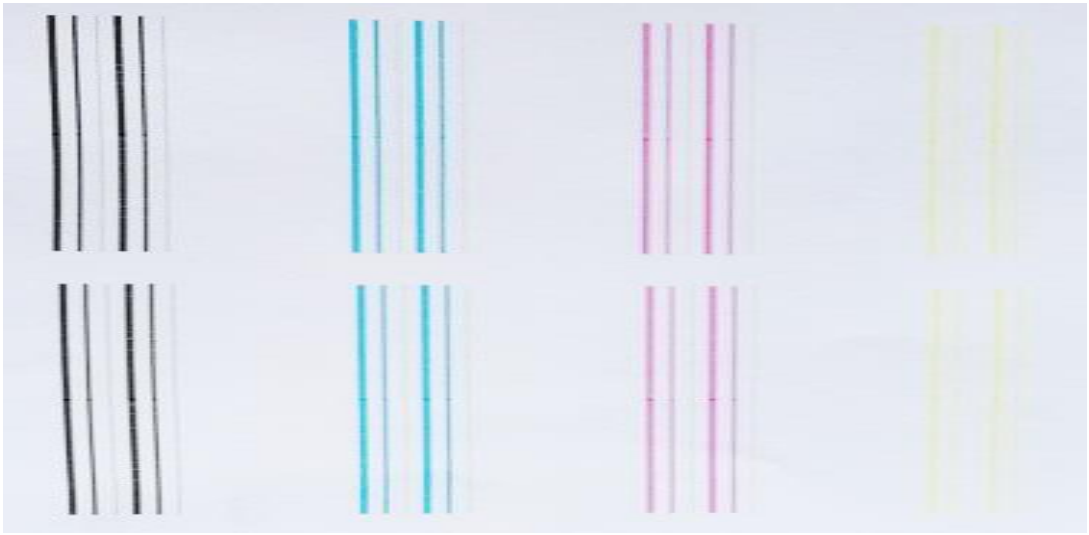
3. Loosen the screw of the print head. Loosen it only do not remove it.



4. In the following figure, it consists of 5 red arrows. The inner 3 arrows move the print head out whereas the outer 2 arrows push the print head inward.



5. For example, the condition in step 2 figure, the line was toward right. So we should loosen the screw of the first red arrow and tighten the screw of the second arrow. Tighten the screw that we loosen at step 3. Print and check the alignment again. If the line was not straight, redo the step 1-4 until you get a straight line. Following is a figure of perfect vertical alignment.

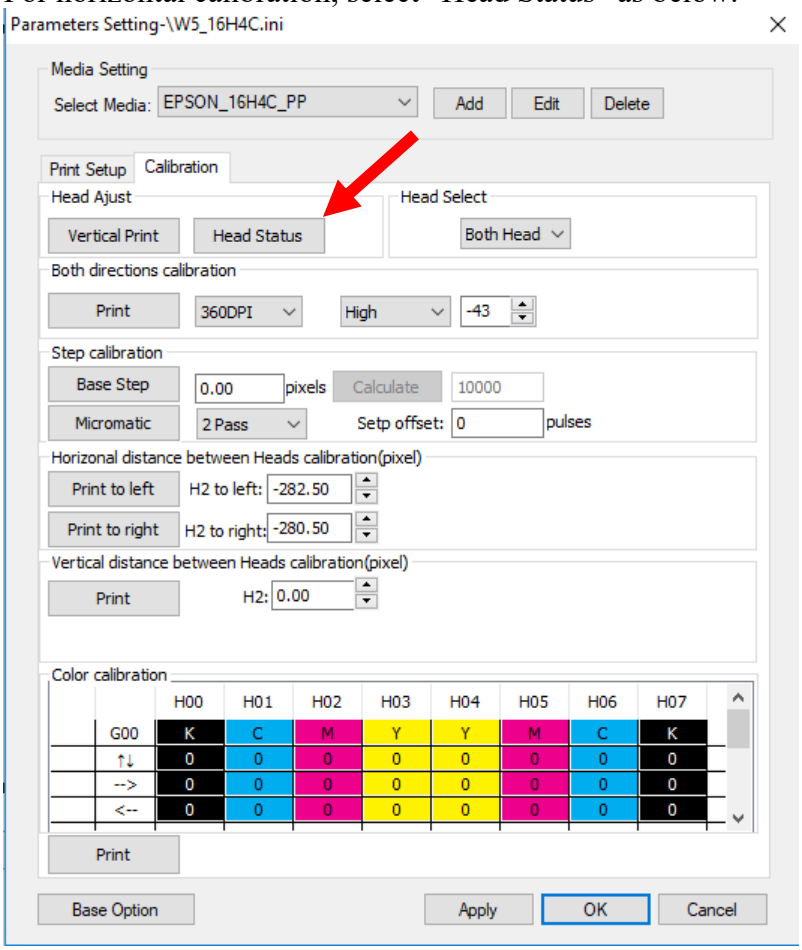


5.4.1.2. Head Adjusts

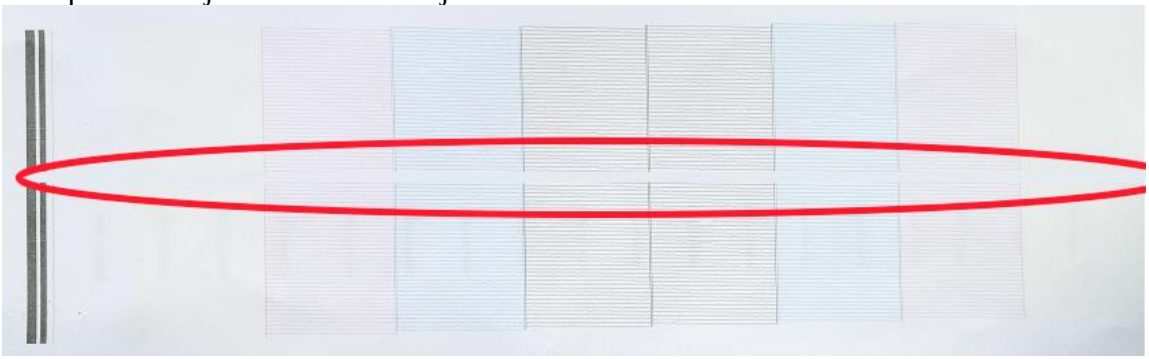
NOTE

The following alignment may include adjustment on print head cartridge and require proper handling.

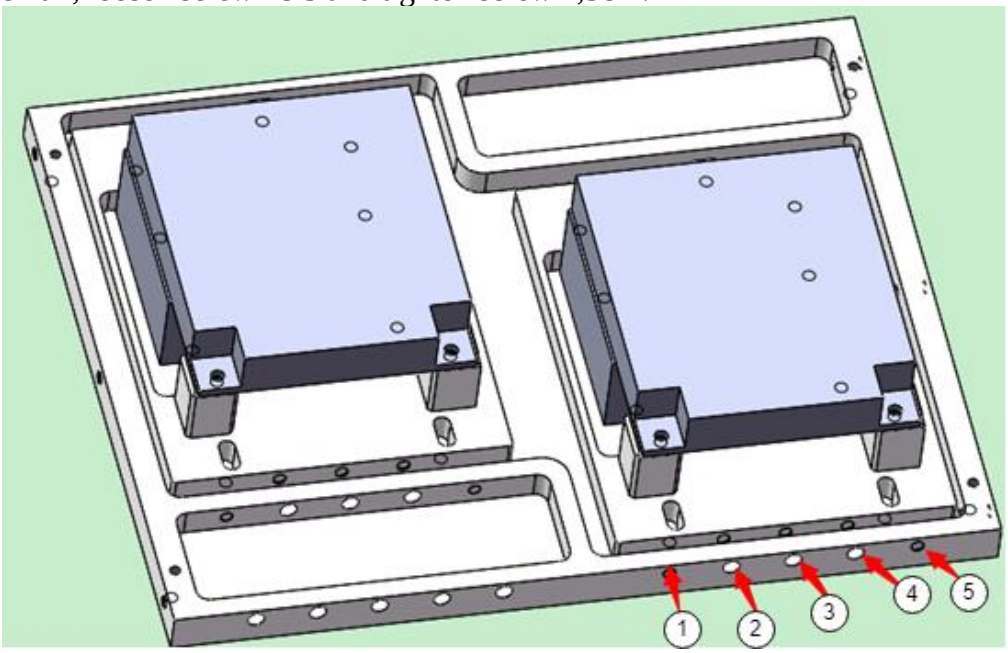
1. For horizontal calibration, select “Head Status” as below.



2. Following is an example of printed line, observe the red circled area. It is the point where both print head joined. We will adjust based on the difference of its distance.



3. If the distance is large, please loosen screw 2,3,4 and tighten screw 1 & 5. If the distance is small, loosen screw 1&5 and tighten screw 2,3&4.

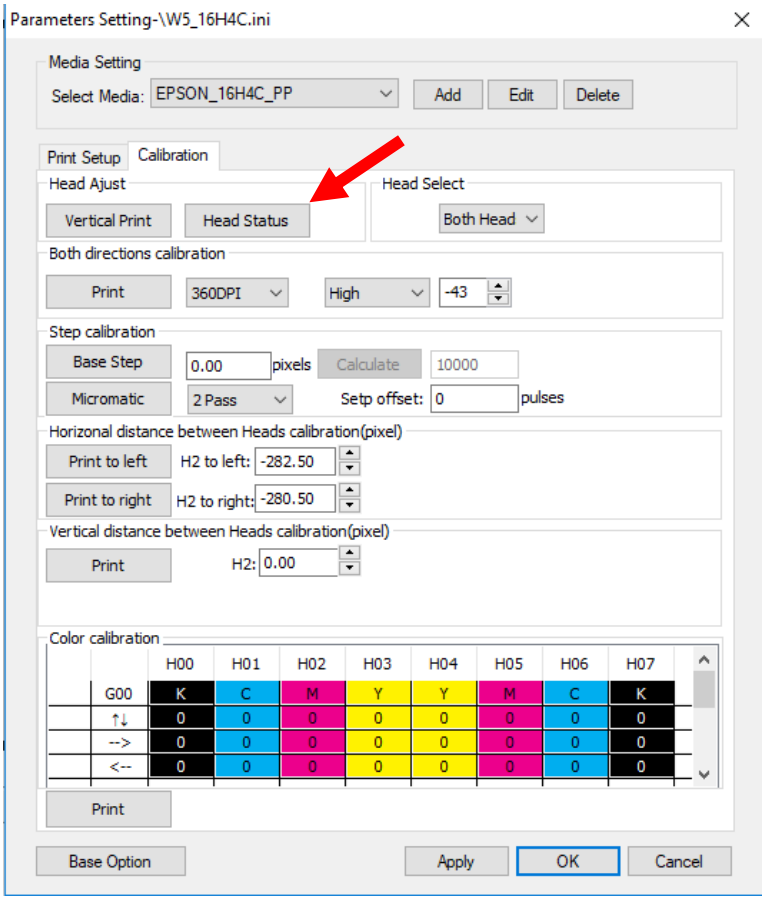


4. Print the head status to check its alignment. If is not aligned, repeat step 2&3 again.

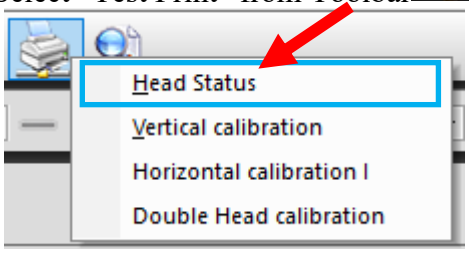
5.4.1.3. Nozzle check

1. Press the home button for the printer to move back to its original position.
2. Place a paper on the pallet to check the printing result.
3. There's 2 way to select nozzle check function:

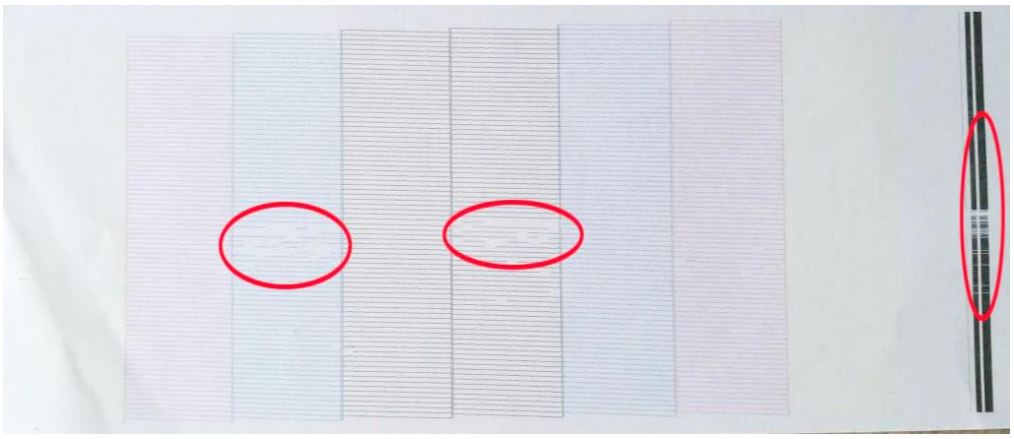
i. Select "Setting"  , then select "Calibration" tab. Before the nozzle check, please make sure the height difference between the medium and print head is within 3-4mm. Click "Head Status" for nozzle check.



ii. Select "Test Print" from Toolbar  , then select "Head Status"



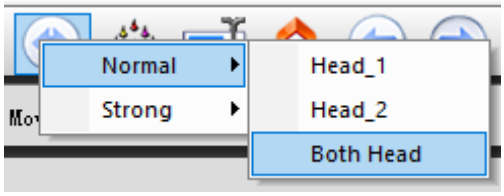
4. A print head cleaning is necessary if the nozzle check pattern comes out with the following sign.



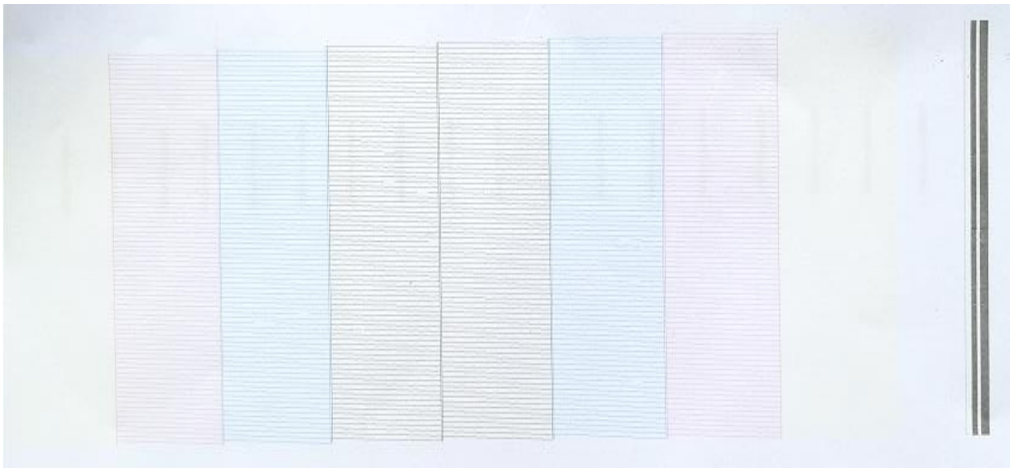
5. Click the “Clean” icon  . Select as following.

NOTE

Strong cleaning will consume more ink than normal cleaning.

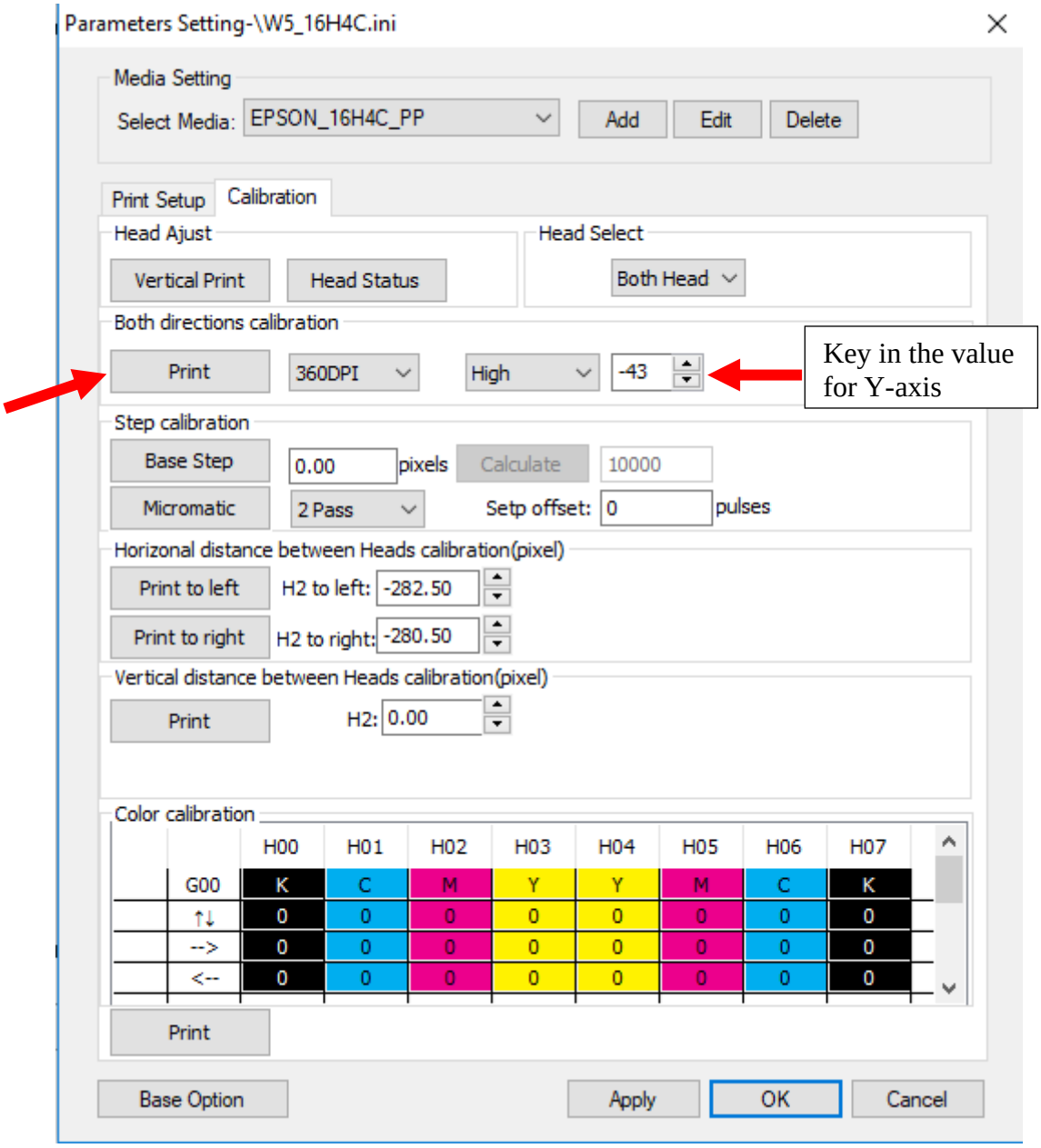


6. Conduct nozzle check again. If the result is good, then no need to clean the print head again. Following diagram, show a good condition of nozzle check.



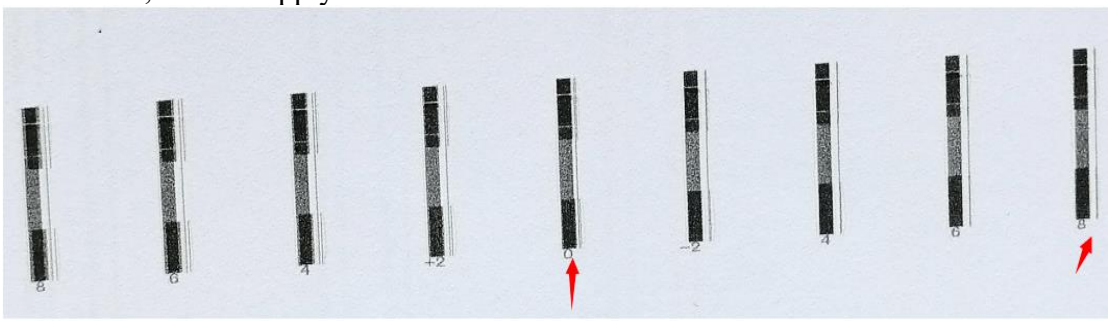
5.4.1.4. Both directions calibration

1. Select “Print”



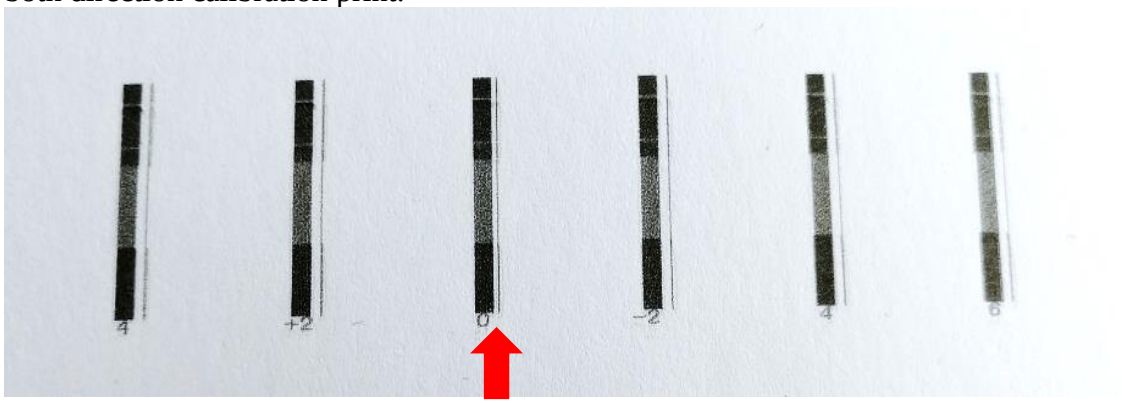
Both direction calibration

2. Observe the following pattern. At point "-8", the lines overlap with each other closely. Hence this is the best point. Change the value of Y –axis, by minus 8 to the value of Y-axis. Then, select "Apply" and "OK".



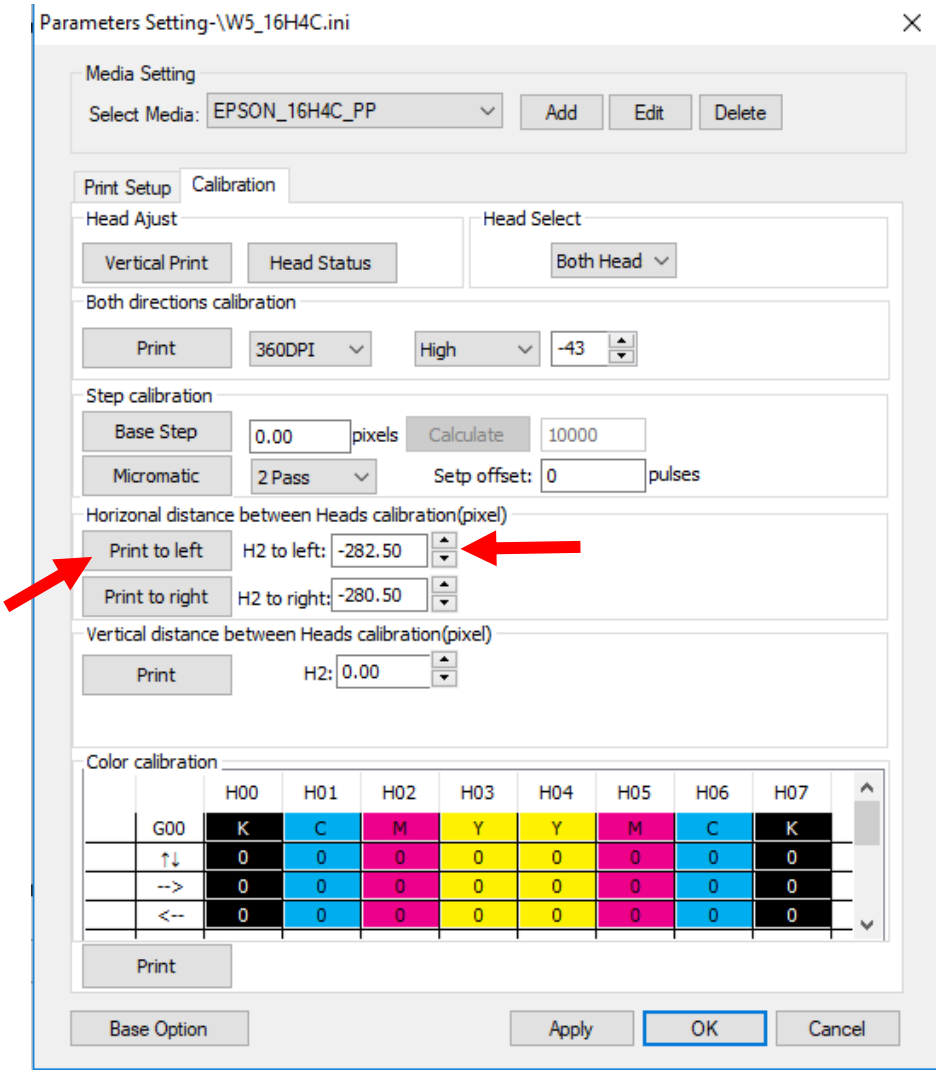
Both Direction Calibration pattern (1)

3. Print it again. If at point "0" the line overlaps perfectly then calibration for both directions had been done. If not, please continue with step 1 & 2. Following is a figure of a good both direction calibration print.

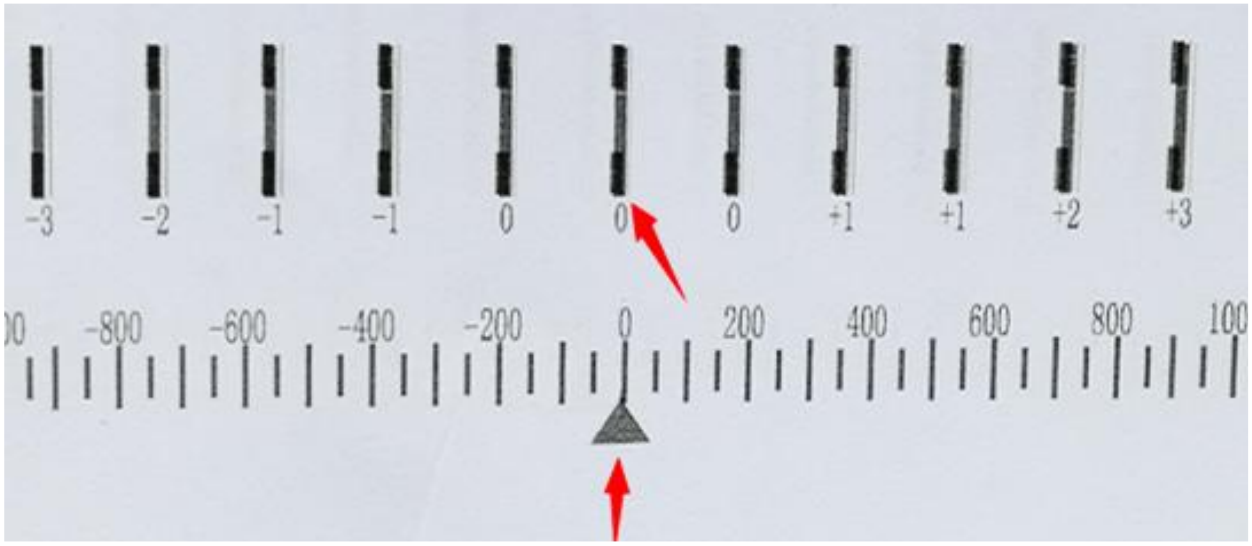


5.4.1.5. Horizontal distance between heads calibration.

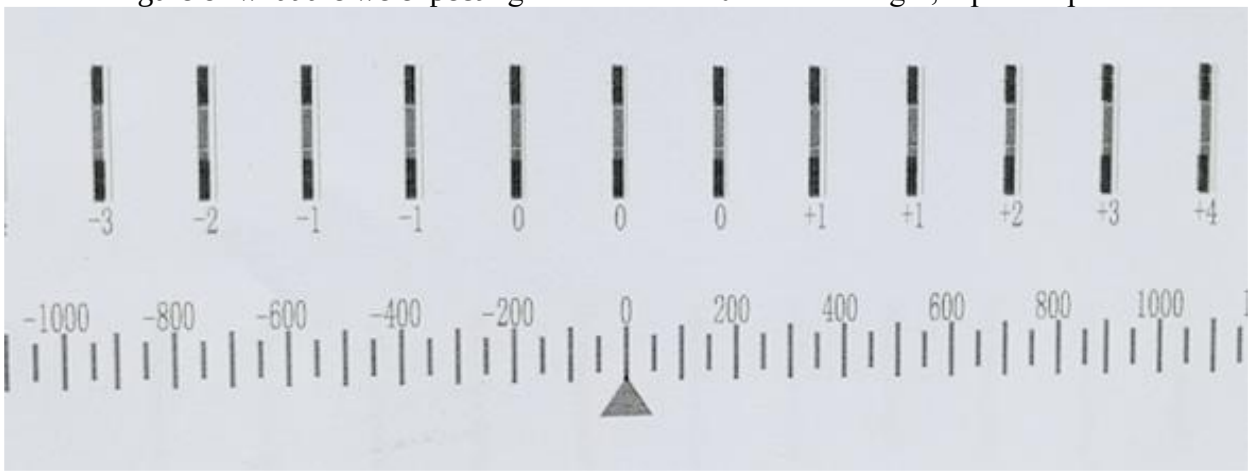
1. Select “Print to left”



2. It will print something similar as following figure. The point where the arrow pointing should be the baseline. “-3” show a straighter line. The value for “H2 to left” should -3 in this case.



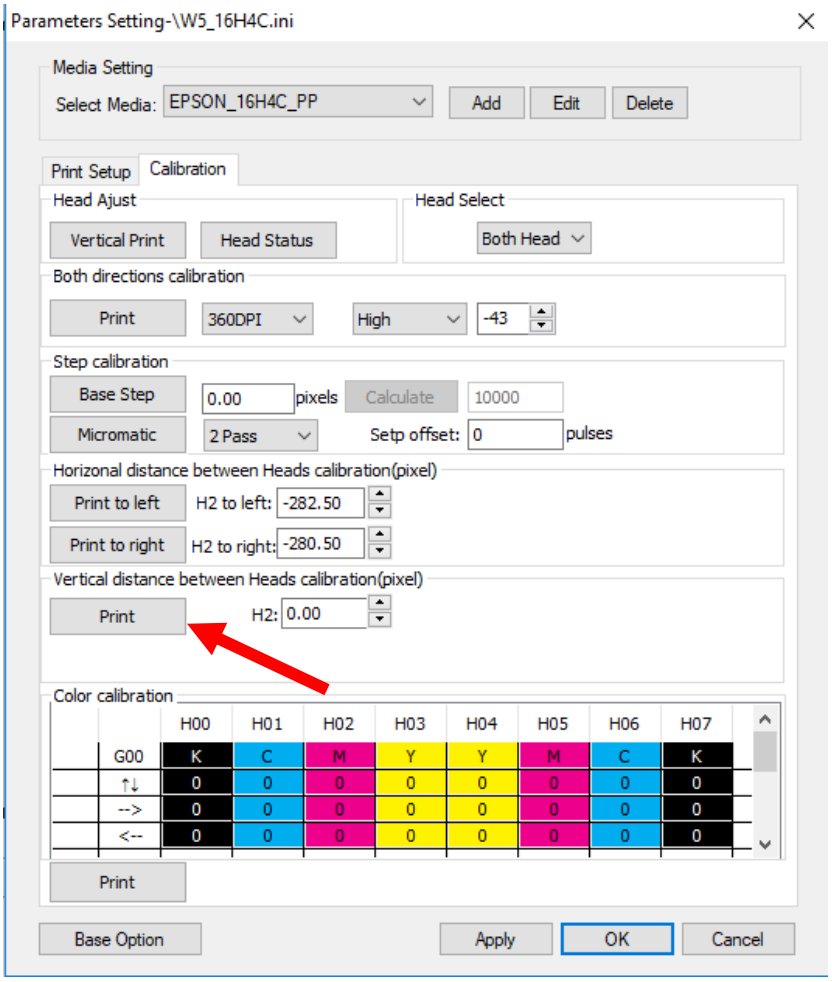
3. Print it out again to check the alignment, the line at “0” should be straight. Following is a figure of what are we expecting. If the line at “0” is not straight, repeat step 1&2.



4. Repeat step 1,2 and 3 for “Print to right” option.

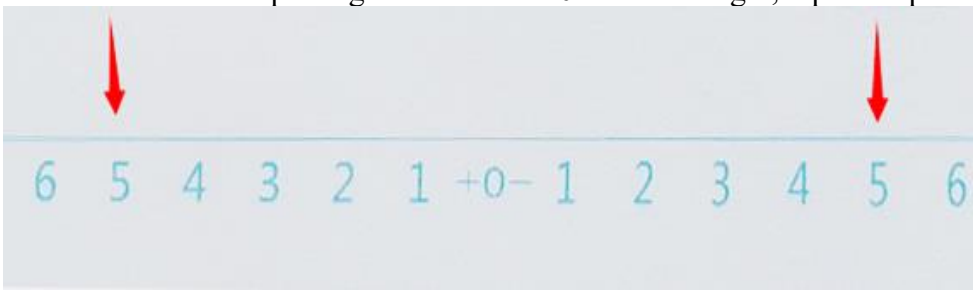
5.4.1.6. Vertical distance between head calibration

1. Select “Print” at vertical distance between head calibration



2. Following is the printed sample, “0” is the baseline. Observe the figure at which point both line stick together. At “5”, both line stick together so key in the value at H2 as -5.

3. Print it out again to check the alignment, the line at “0” should be straight. Following is a figure of what are we expecting. If the line at “0” is not straight, repeat step 1&2.

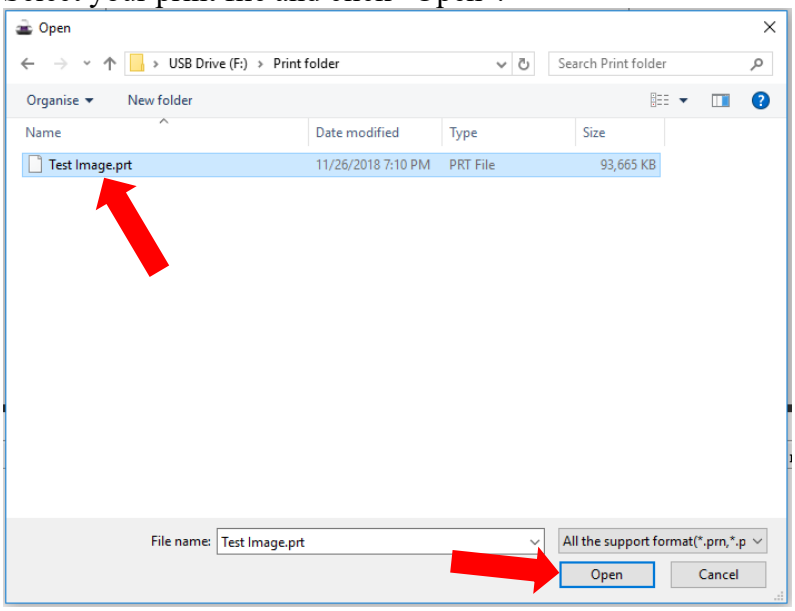


5.4.2. Printing

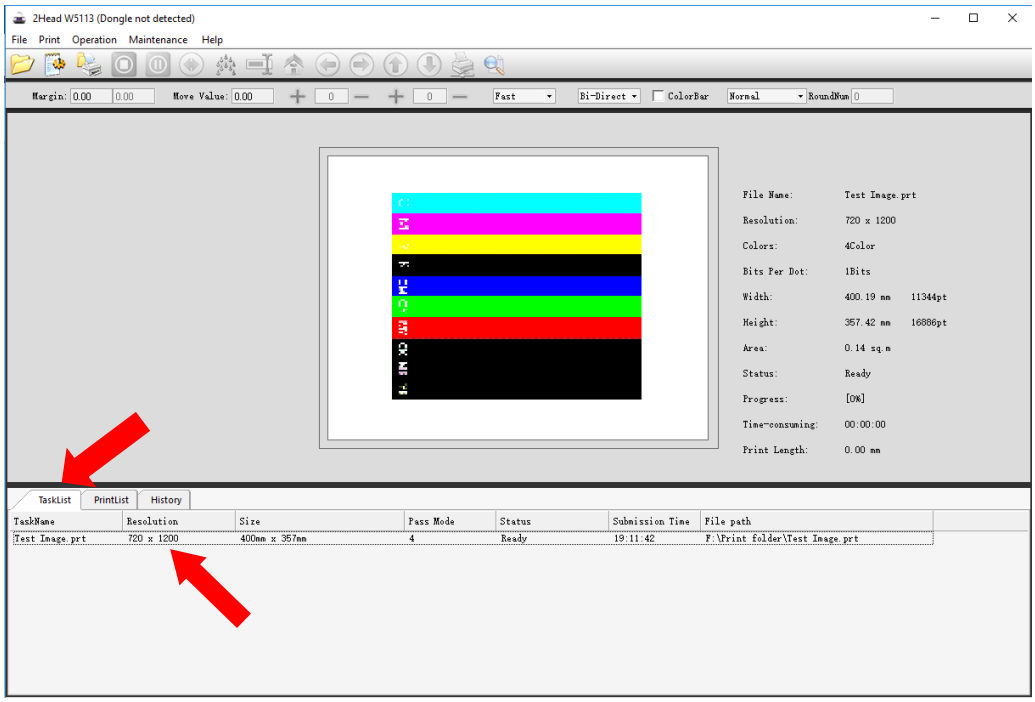
5.4.2.1. Selecting print file

Supported print file format: *.prn and *.prt. To select a print file from your system:

1. **Browse external folder**
   - 1.1 Select the following icon  on Toolbar.
   - 1.2 Select your print file and click “Open”.



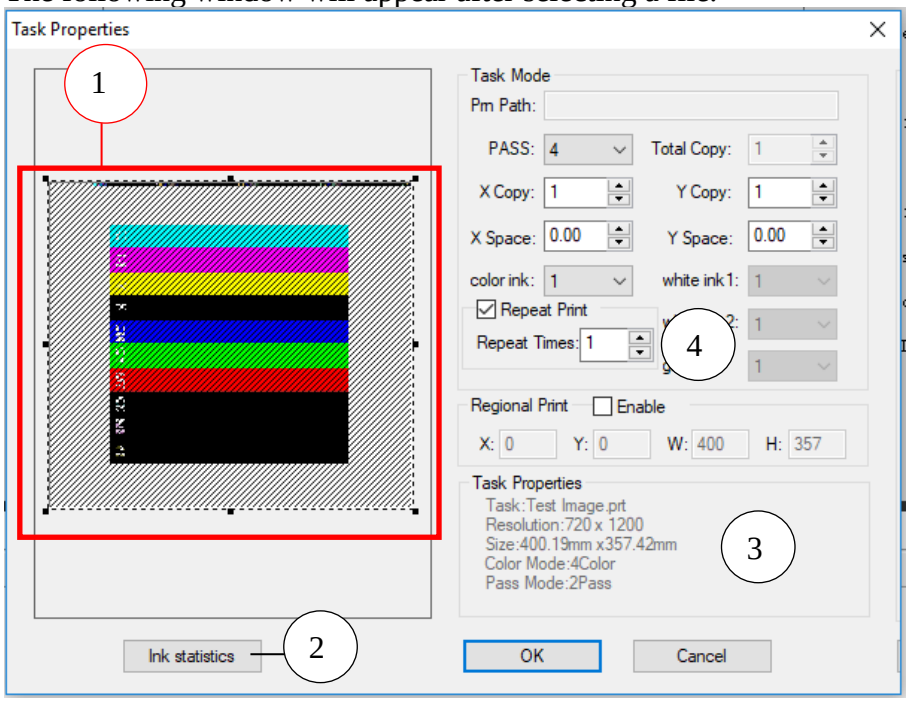
2. **Select from Task list.**



If user had already set the folder for print file, the print file will automatically appear on “Task List”.

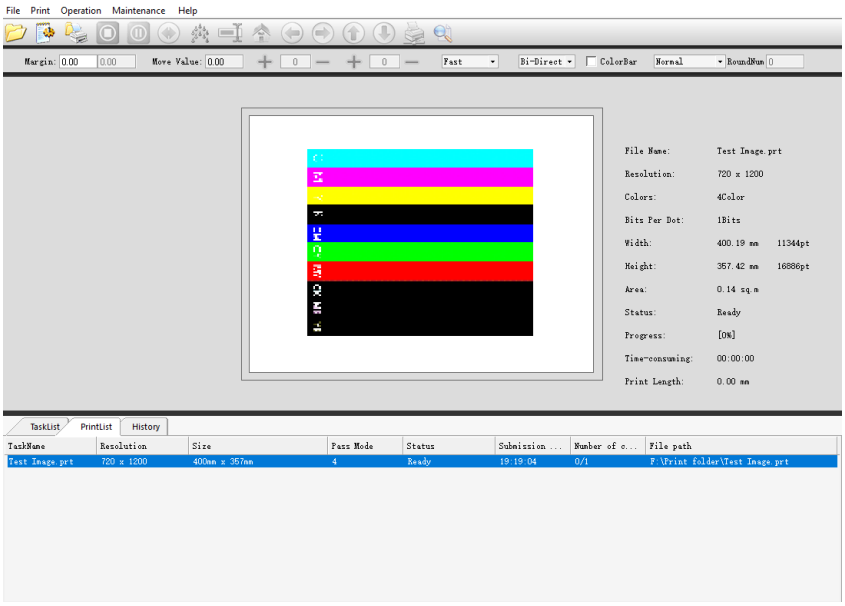
- 2.1 Select “Task List” tab.
- 2.2 Double click on the print file.

The following window will appear after selecting a file.



No.	Name	Description
1	Print Preview	A small preview for your print file. ***Note: A thumbnail will be generated if the print file does not contain one.***
2	Ink statistics	Display the estimated ink required for the print
3	Task Properties	Display the properties for the file
4	Repeat Print	Display the number of prints. This could be change based on user requirement.

Select “OK” to confirm the print.



The file is now on “Print List” and ready to print.

5.4.2.2. Printing a file

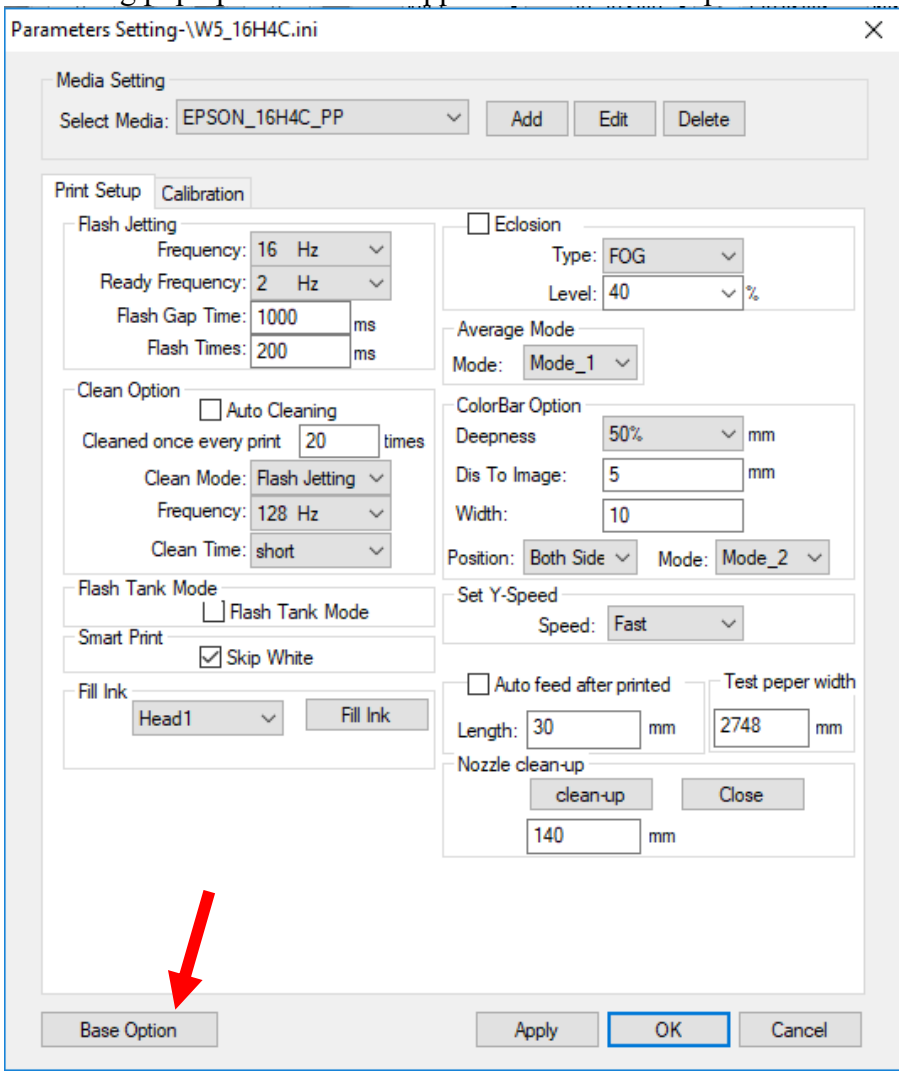
Method 1: Click on the “Print”  icon on the toolbar to print the prepared file on Print list.
Method 2: Right click on file under Print list and select “Print”
Method 3: Shortcut (Ctrl + P) to print the selected file.

The following properties of the print could be adjusted through the Adjustment bar before printing:

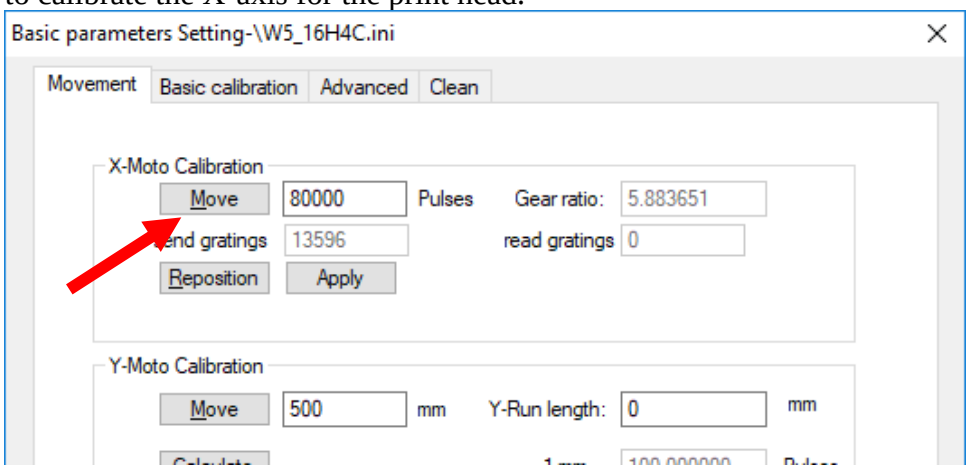
- X-margin position
- Direction of printing (To right, To left and Bi-direction)

5.4.2.3. Calibrating X-axis

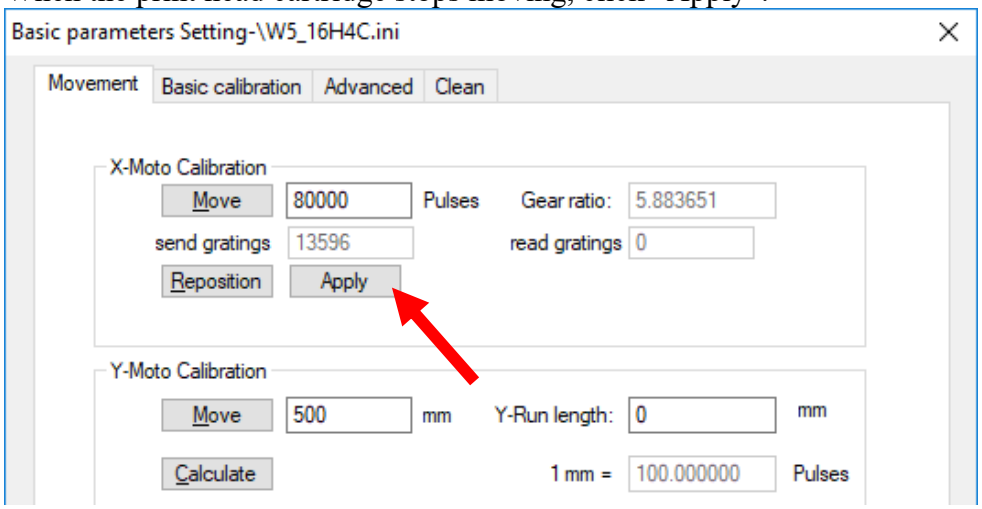
1. Select this icon  .
2. Following pop up window will appear. Select “Base Option”.



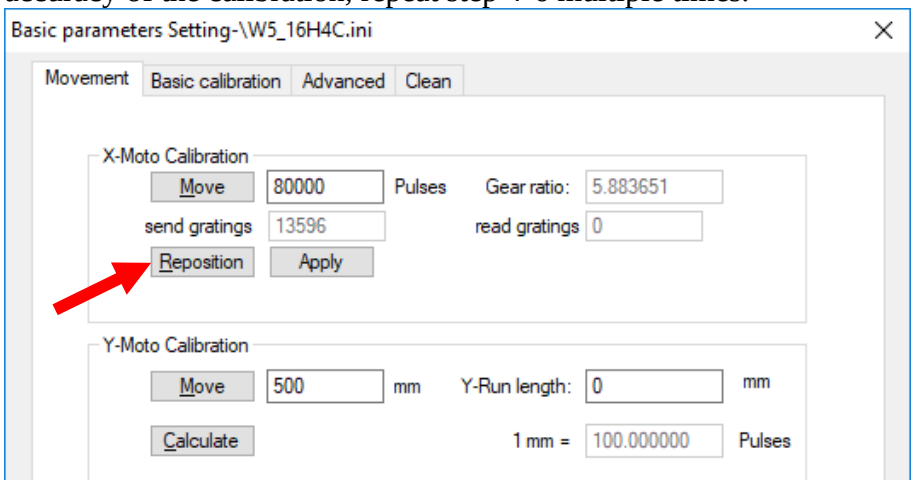
3. Key in password “123”.
4. A pop-up window as below will appear as following. Click “Move” at X-Moto Calibration to calibrate the X-axis for the print head.



5. When the print head cartridge stops moving, click “Apply”.

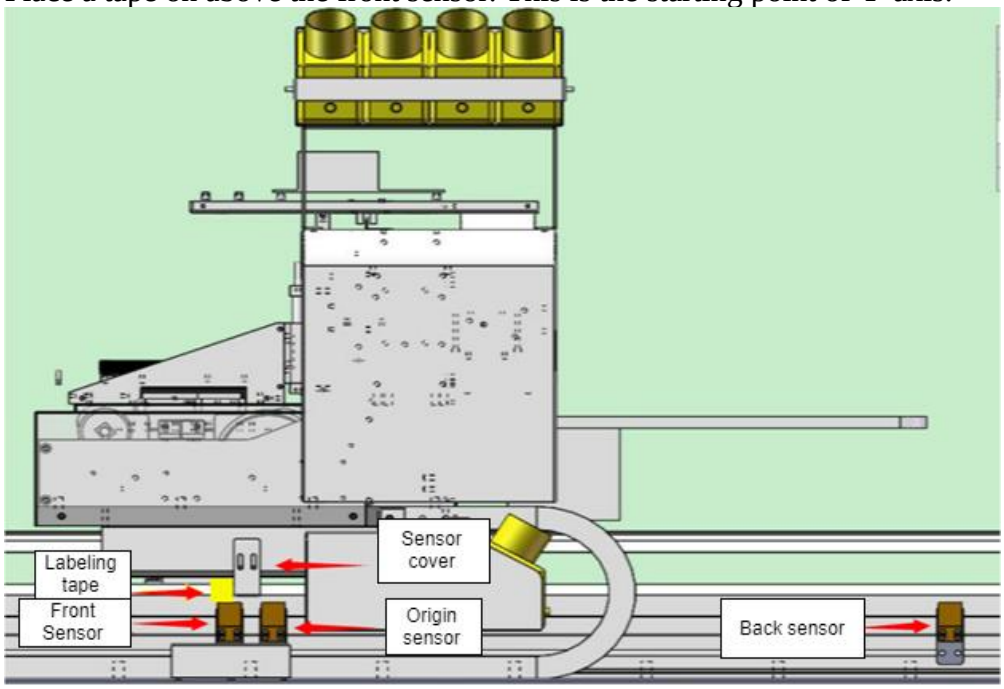


6. Click “Reposition” for the print head to move back to its original position. To ensure accuracy of the calibration, repeat step 4-6 multiple times.

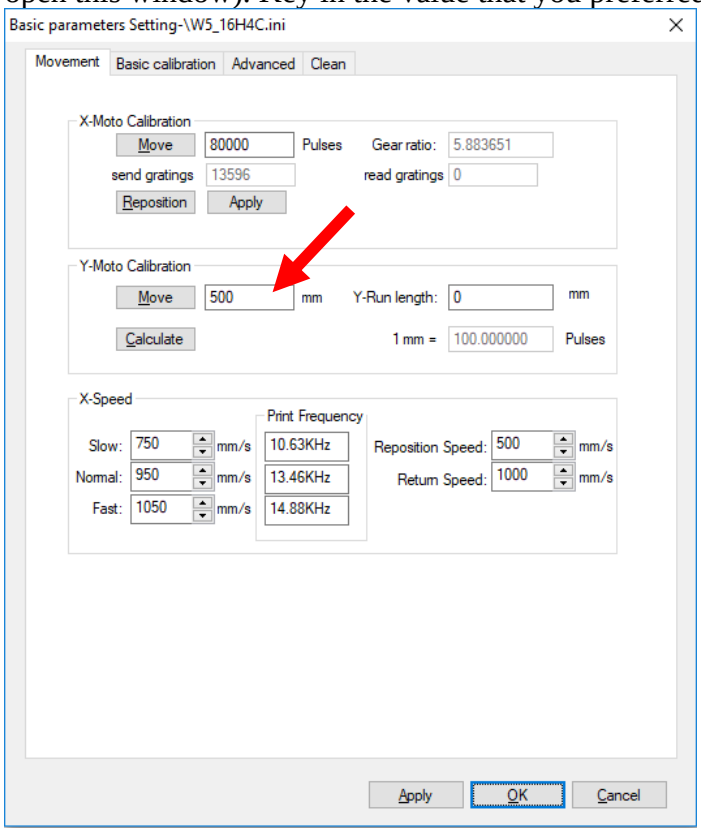


5.4.2.4. Calibrating Y-axis

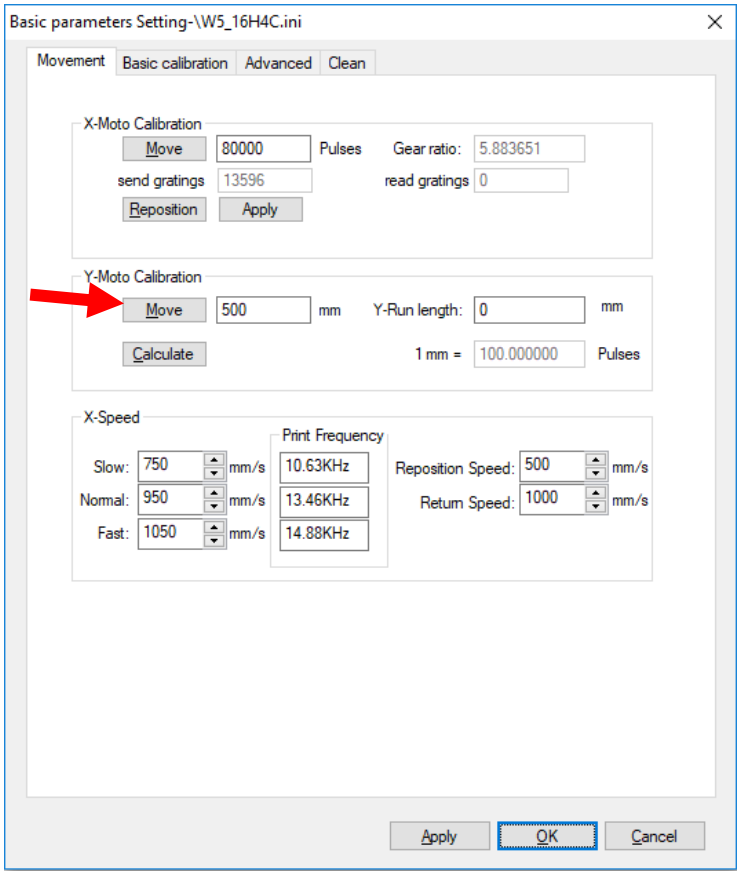
1. Click  for the print head to back to its original position.
2. Place a tape on above the front sensor. This is the starting point of Y-axis.



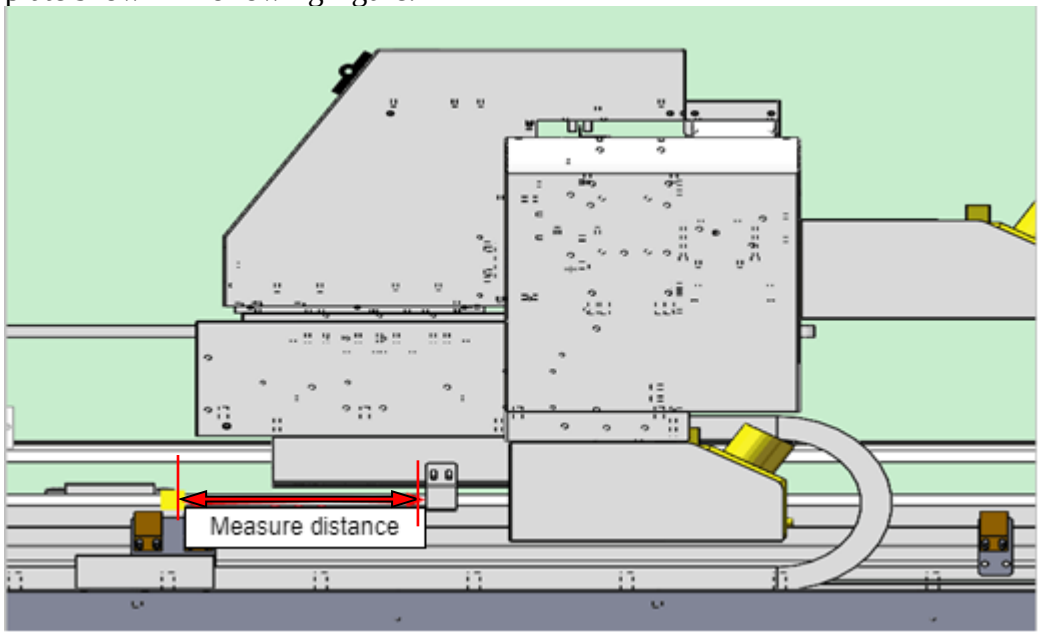
3. Open up “Basic parameters setting” window. (Refer to calibration for X-axis on how to open this window). Key in the value that you preferred at Y-moto calibration.



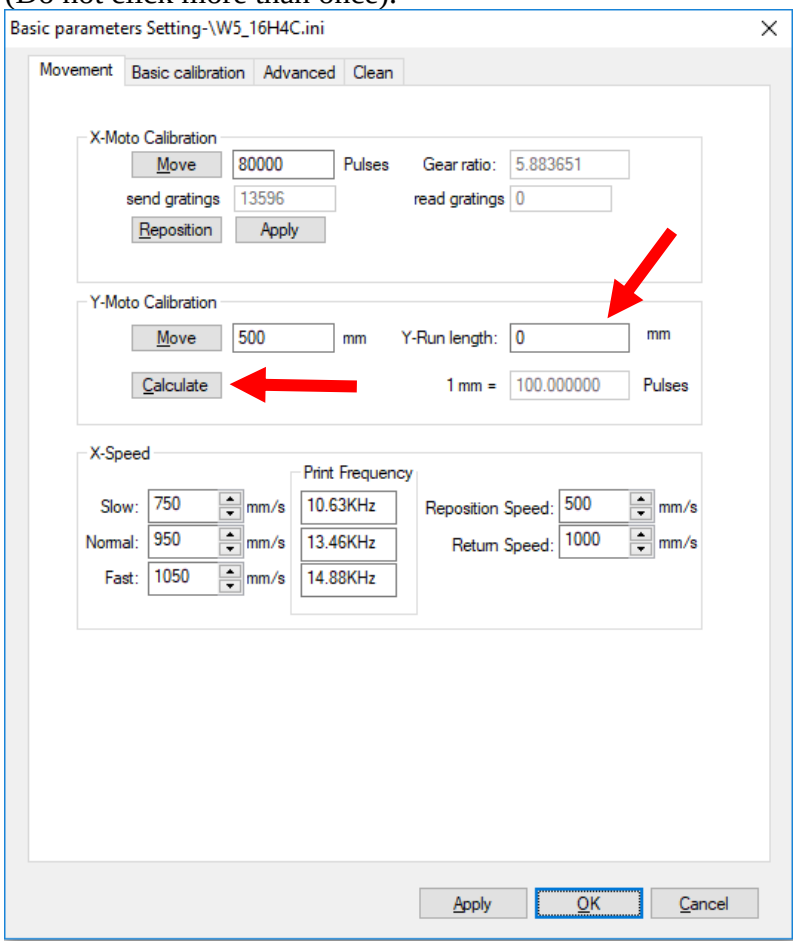
4. Select “Move” at Y-Moto Calibration.



5. Use a ruler to measure the exact distance of the tape that you paste in step 1 and the metal plate shown in following figure.



6. Key in the exact value that you measured in step 5 in Y-Run length. Then click “Calculate” (Do not click more than once).



7. Click “Apply” then “OK”. Calibration for Y-axis had been done.

5.4.2.5. Synchronizing printer

To synchronize the Digital V Pro with the adapted carousel screen printing machine, user must first print their desired image to get the exact time for a print.

1. Getting registration.
   a) Print the desired image on a piece of clean white fabric.
   b) Fully flash dry the printed fabric and move the pallet to the screen.
   c) Get the registration of the printing screen based on the DTG printed sample.

Adding crop mark in the image on unwanted area may ease up this process.

2. Estimating time
   a) Print the desired image on a piece of fabric.
   b) The printer has a buffered time of 2-3 second between every printing. Sum of the total time for a piece of printing and the buffer time (3 seconds) will be the total required time for a print to finish.
   c) User could set the flash time from b) to synchronize the print press with the Digital V Pro

Based on working condition, user could increase/decrease the flash time to increase production.

6. Maintenance

To maintain optimum print quality, you need to periodically perform various maintenance tasks, and clean and replace parts.

Before cleaning the suction cap, replacing the head cleaning set, disposing of waste ink, cleaning the encoder strip (carriage scale) or cleaning around the print head, have the following equipment handy:

- Mask, gloves, and protective eye wear (commercially available)
- Printer cleaning kit (one kit supplied)
- Metal or plastic tray (commercially available) for holding used cleaning items
- Soft clean cloth

6.1. Ink Refiling

Refill the ink when it reaches low level. Failure on refilling the ink on time might cause air trap in print head, resulting damage on print head. Should any spilling occurred, immediately wipe off the excess ink with a cloth, as it may leak into the machine and cause damage.

6.2. Print Head Maintenance

You need to maintain the print head if lines or other discrepancies appear in the printed image, or if you notice the print quality has declined. Print head maintenance keeps the print head in optimum condition to ensure the best print quality. Perform the following maintenance as necessary:

- Nozzle Check: Check for clogged nozzles before large print jobs or if you have not used the printer for an extended period of time. Inspect the printed check pattern and clean the print head if you notice faint or missing areas.
- Head Cleaning: Clean the print head if you notice faint printing or gaps in the printed result. This cleans the surface of the print head to improve the print quality.

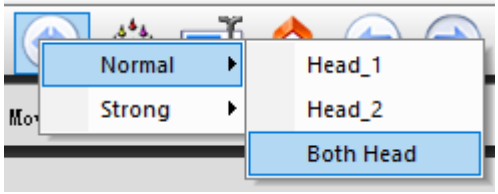
Please refer to printer controller chapter for nozzle check details.

6.3. Manual cleaning

If printed image still appear lines or gap after cleaning, it might due to fabric fiber or excess ink that contaminated at the print head nozzles over time. Manual cleaning is required to clean off this residue.

1. Remove the lid and the seal of the cleaning agent bottle.
2. Pour a small amount of ink cleaning solution into a clean container.
3. Place a cleaning swab in the cleaning agent and let it soak in. Make sure that the solution does not drip from the cleaning swab when you remove it from the cup.

4. Click this icon  on the toolbar to move the print head out of its station.
5. Observe the print head. Use the cleaning swab to clean the print head. Wipe the excess ink with the cleaning swab. Notes: Do not reuse the cleaning swab if it is dirty.
6. Clean the ink station and cleaning squeegee if there is ink leakage stain.
7. Click this icon  for the print head back to its original position.
8. Normal clean the print head as following.



9. Conduct nozzle check to check its condition.

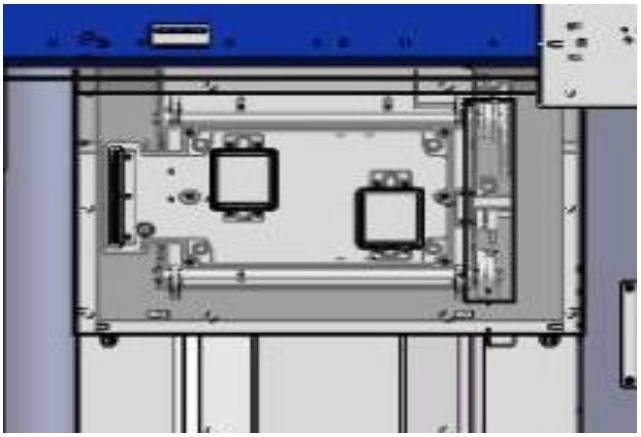
6.4. Nozzle clog

When the humid of the surrounding are too low, and software cleaning are unable to fully unclog the nozzle, this steps could help on recovering the clogged nozzles.

1. Moved the print head cartridge out  exposing the caps.
2. Using a clean syringe, fill the caps with cleaning agent.
3. Reposition the print head.  Make sure that the nozzles are fully submerged into the cleaning agent. (Caps cover the nozzles fully.)
4. Set for 1-3 minutes.
5. Run the “Clean” function.
6. Do a nozzle check.

6.5. Ink Station Maintenance

Ink station maintenance ensures that print head is properly clean to produce a good printing. Ink station maintenance is required when cleaning of print head could not be done properly, or leaking is found after cleaning of ink charge. A proper maintenance of ink station will help prolong the life span for print head, and ensure the quality of print.



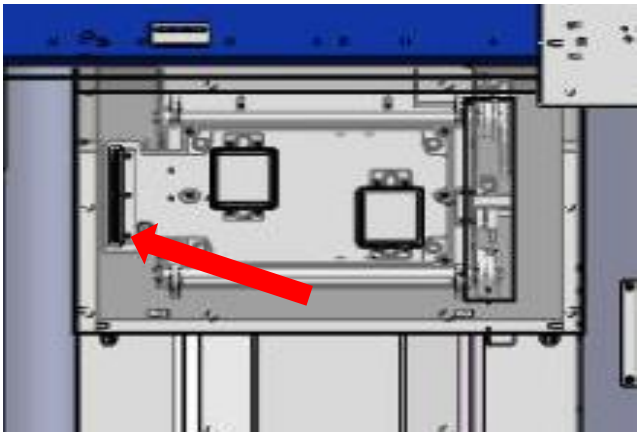
Ink station

6.6. Head Cleaning Wiper

Head cleaning wiper is required to scrap off any excess ink on the print head in event of print head cleaning. Excess ink that remains on top the wiper may dry off and accumulate over time. Unclean wiper will fail to clean the print head nozzles perfectly and may cause damage on the print head and printing image.

If you notice obvious ink build up on the wiper, use a piece of cloth to wipe off the excess ink.

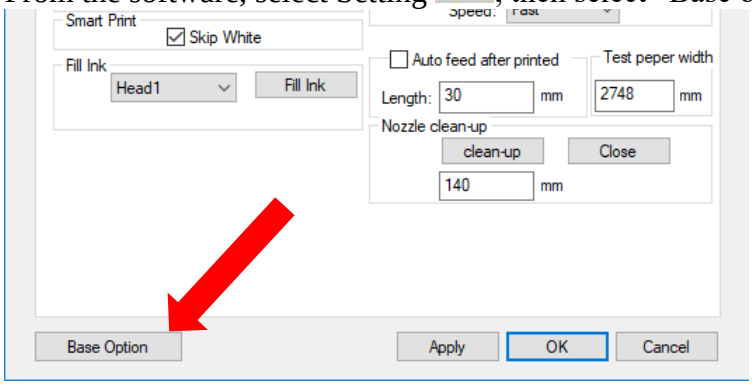
If the problem remain, it might due to the setting for the wiper to perfectly clean the nozzle if off. In this case, the setting needs to be readjust by using the software.



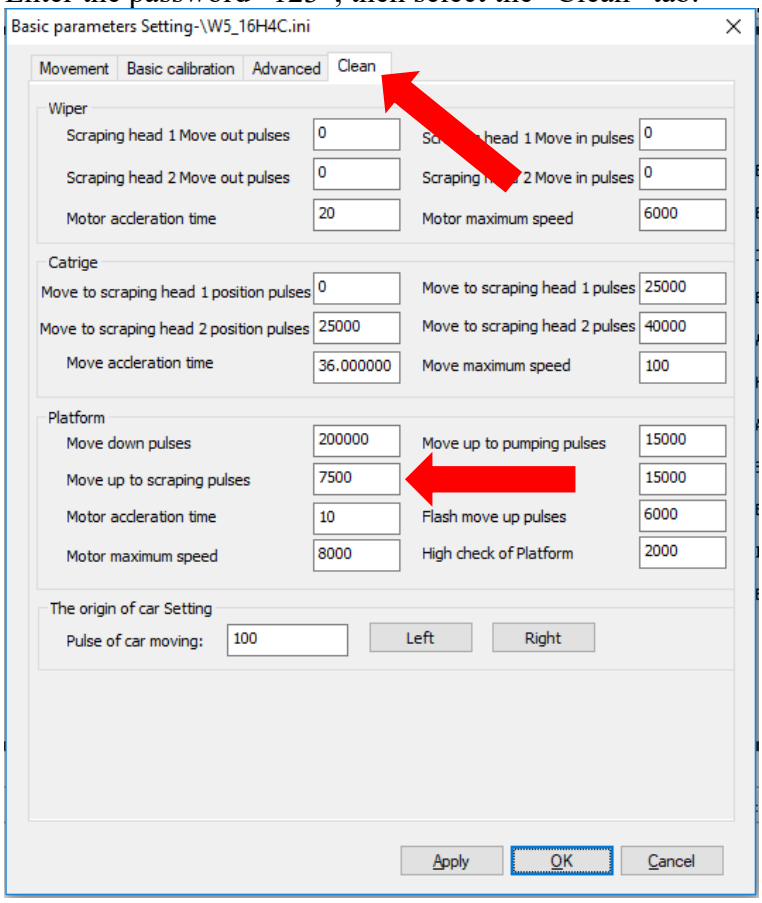
Position of wiper

6.6.1. Adjusting the head cleaning wiper

1. From the software, select Setting  , then select “Base option”

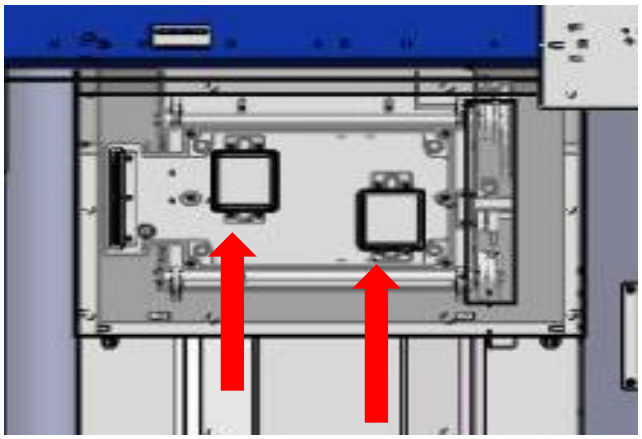


2. Enter the password “123”, then select the “Clean” tab.



3. Adjust the value in “Move up to scraping pulses”. Increase will increase the raised height for the wiper during cleaning and vise versa. You could check by performing a cleaning in the software. Repeat the steps untill the print head could be clean perfectly.

6.7. Anti-drying Caps (Ink suction cap)



The anti-drying caps (or ink suction caps) are required to ensure the ink cycle is smooth from printing to cleaning. Ink may build up on the surrounding rubber of the cap, or the filter on the cap is clogged, causing the print head unable to be clean properly and may cause damaged to the print head. If you notice that ink could not flow out of the print head directly, of waste ink unable to flow down the ink cap properly, maintenance are required on the caps.

6.7.1. Cleaning the caps

Ink may build up on the surrounding rubber of the caps, cause the caps unable to seal tight with the printhead and suck out the ink properly overtime. In such event, use a piece of cloth to wipe off the excess ink. Check with cleaning function if the ink could be vacuum properly by observing the ink droplets on the nozzles.

6.7.2. Cleaning the caps filter

If inks are spilled out during ink filling or print head cleaning, it might due to the filter of the caps had clogged, causing the waste ink unable to flow pass smoothly.

1. To unclogged the filter, first moved the print head cartridge out  exposing the caps.
2. Using a clean syringe, fill the caps with cleaning agent.
3. Reposition the print head  .
4. Set for 1-3 minutes.
5. Run the “Clean” function.
6.

Repeat if the problem remains.

6.8. Daily Maintenance

6.8.1. Cleanliness

1. Make sure the hygienic of the printer and the working environment. Dust will increase the friction of the printer which will reduce its life time.
2. Do not place any foreign object on the printer to prevent accident happened.
3. Clean the axle. Make sure it does not stain with grease or dust to prevent them affect other accessories.
4. Use a piece of wet cloth to wipe and clean the surface of the printer to prevent any ink dry of and stain the printer.

6.8.2. Moisturizing

1. Pay attention on the humidity and surrounding temperature. If the temperature is too high, ink dry out easily, it will affect the printing quality and clog the print head easily.
2. When the print head is not in use please make sure it is back at its original position. Do not hang it in the air for a long period of time.
3. If the external printer is not able to absorb ink efficiently, please change it immediately. Otherwise, the print head is not air tight enough will cause it to dry out.
4. If the machine had not been use for a long period, please conduct nozzle check for the ink to flow through it.

6.8.3. Lubrication

Please apply lubricant oil on moving parts.

6.8.4. Print Head Maintenance

1. Perform nozzle check before switching off the printer.
2. Perform nozzle check daily to check the condition of the printer.

7. Optional Equipment and Replacement parts

The following optional equipment and spare parts are available:

- Print head
- Damper
- Scraper
- Tube
- Waste ink bottle
- Ink bottle
- Printer Cleaning kit
- Printer Maintenance Kit
- CSC Ecosol E1 DTG ink kit (CMYK)
- CSC Ecosol E1 DTG ink + print paste kit (CMYK + White)

8. Troubleshooting

Carry out the following activities in the event of problems:

Printer Malfunction

On the right lower corner of the printer software, click the “Warning” signal. It will pop up a window that shown the error report and solution to the error.

Waste ink did not flow out after head clean

1. Check if the motor is functioning.
2. Check the print head and ink station, make sure both are air tight.
3. Check the tubing make sure it is not leaking or folded.
4. Change the ink suction cap.

Double image formed when printing

1. Check the distance between the print head and medium is within 3mm.
2. Check the alignment again and align it back again.

Printed image is wavy.

1. Nozzle check if its formed dotted line.
2. Nozzle check if the ink overflow.

9. Terms of the Guarantee

The terms of the guarantee are detailed in the General Terms and Conditions of Machines Highest Mechatronic GmbH.

10. Support, Customer Service and Hotline

In case of any problems or additional questions, please turn to your appropriate service partner.