



India's largest manufacturer of digital inkjet printers

# SONIQDUO

SOLVENT PRINTER

USER MANUAL



## Foreword

This user manual is briefly describing the operational aspects of the **SoniQ Duo** machine. In this document, the step-wise instructions for handling various aspects of the machine with visual screens are provided for easy and better understanding. It also describes the error messages encountered while working with the machine with appropriate remedial actions required to be taken by the user.

This manual serves as the reference tool that guides their customers on how to use or operate the **SoniQ Duo** machine without anyone else assistance. The information provided in this document ensures its uniqueness and language quality. For safe and proper use of the product, please read this manual carefully and follow all the instructions.

### Disclaimer

The information and instructions provided in this user manual have been checked for accuracy, uniqueness, and reliability. ColorJet Group reserves all the rights to modify and revise this manual as per the company requirements without any prior notice.

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

The reference table is shown in the below table:

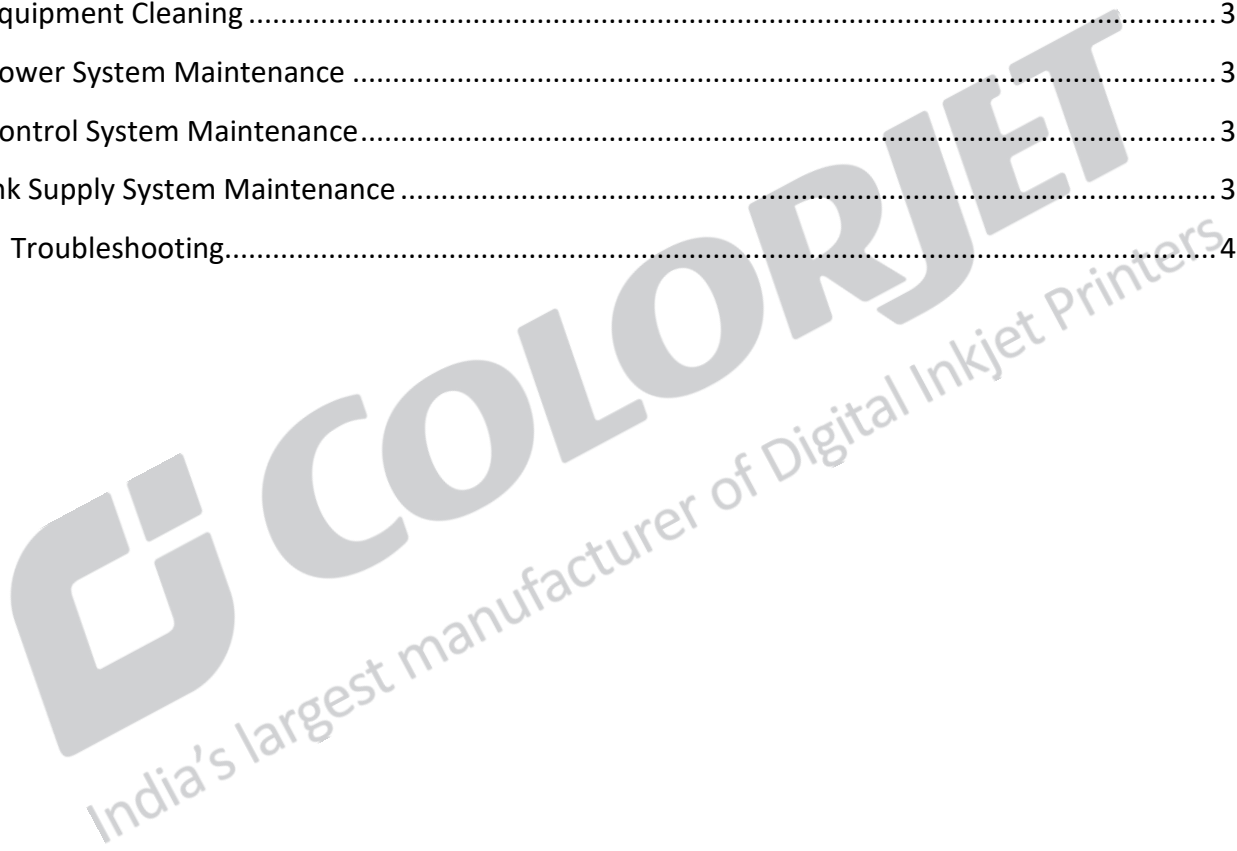
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## 1. About Document

### Purpose

The purpose of this document is to guide and educate the targeted audience about the Printer and its Printer Manager software so that they can easily and effectively handle and use it as per their requirements. Additionally, this document provides step-wise instructions for handling various aspects of the printer and its related software with the help of graphical screens for easy and better understanding. Moreover, the document also describes commonly encountered problems while working with the printer and Printer Manager software with appropriate remedial actions.

### Intended Audience

This document is meant for all the users who want to use the Printer for their printing business. Sometimes, the targeted audience has little knowledge about the printer but in most cases, the targeted audience is familiar with the terminologies of printer and printing business. Thus, this document is designed to facilitate both types of users.

## 2. Machine Specifications

**Machine Specifications** are shown in the table below:

SONIQ DUO		
Model		SB4412      SB8412
Printing Technology	Drop on demand, Piezoelectric inkjet	
Print Heads	Industrial Grade Jetting Assemblies	
No. of Heads	4	8
Media	Width	3300 mm (129 in)
	Thickness	Maximum 3.0 mm (120 mil) with liner (flexible)
	Roll Outer Diameter	Maximum 300mm (12 inch), 50.8 (2 in)
	Take up Roll Diameter	Maximum 180mm
	Roll Weight	Maximum 90 kgs
	Core Diameter	76.2mm (3 inch)
	Types	SAV, PAV Banner, Backlite Film, Window Film, Fabric (Solvent Base)
Printing Width	Maximum 3200mm (126 inch)	
Inks	Types	Solvent/Mild Solvent inks
	Color	4 Colors (CMYK)
Printing Resolution (dots per inch)	Maximum up to 1440 dpi	
Distance Accuracy	An error of less than $\pm 0.3$ % of distance travelled, or $\pm 0.3$ mm, whichever is greater	
Media Heating Systems	Pre Heater and Post Heater, setting range for the preset temperature: 30 to 60°C. Dryer setting range for the preset temperature: 30 to 60°C	
Connectivity	High-Speed USB	
Power Requirements	AC 220 V $\pm 10\%$ , 40 A, 50/60 Hz	

Dimension		4700mm X 1000mm X 1450mm (WxDxH)		
RIP Software		FlexiPrint		
Weight (approx. with stand)		Net Weight: 550 KG, Gross Weight: 742 KG		
Environmental	Power ON	Temperature: 18 to 28°C Humidity: 35 to 80%RH (non-condensing)		
	Power OFF	Temperature: 5 to 40°C Humidity: 20 to 80%RH (non-condensing)		
<b>Print Mode</b>	<b>Print DPI</b>	<b>Passes</b>	<b>Sqft/HR (4Heads)</b>	<b>Sqft/HR (8 Heads)</b>
Mode 1	360X360	2	1232	2218
Mode 2	360X540	3	830	1540
Mode 3	360X720	4	664	1227
Mode 4	720X720	4	348	646
Mode 5	720X1080	6	232	442
Mode 6	720X1440	8	177	345

### 3. Machine Overview

SoniQ Duo is a 3.2-meter Solvent Printer engineered to redefine the standards in both indoor and outdoor signage production. With 8 high-speed KM heads, it offers unmatched upgradability and ensures future-proof performance. Delivering quality at 2218 Sqft/hr, it is perfect for indoor and outdoor needs.

#### Front View

The front view of the machine is shown below:

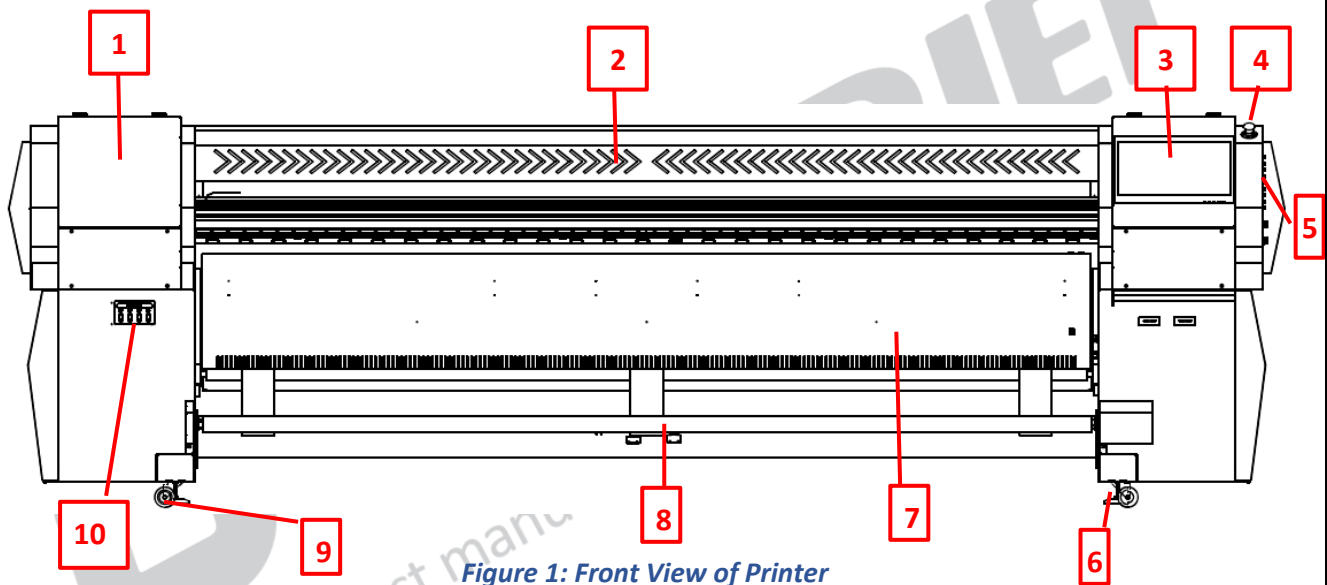


Figure 1: Front View of Printer

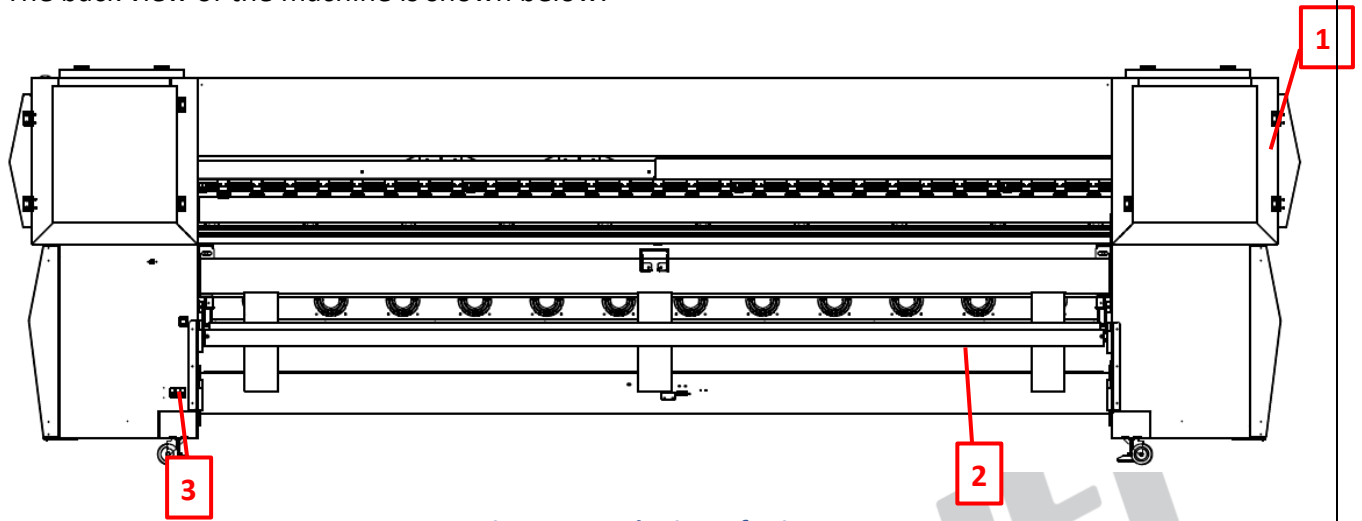
Table 1: Different Parts of SoniQ Duo

1. Carriage Unit Location	2. Front Cover
3. Console (TFT Screen)	4. Emergency Switch
5. Control Panel Unit	6. Leveler
7. Dryer Fan Unit	8. Take-up Roller
9. Wheel	10. Ink Refilling Switch



## Back View

The back view of the machine is shown below.



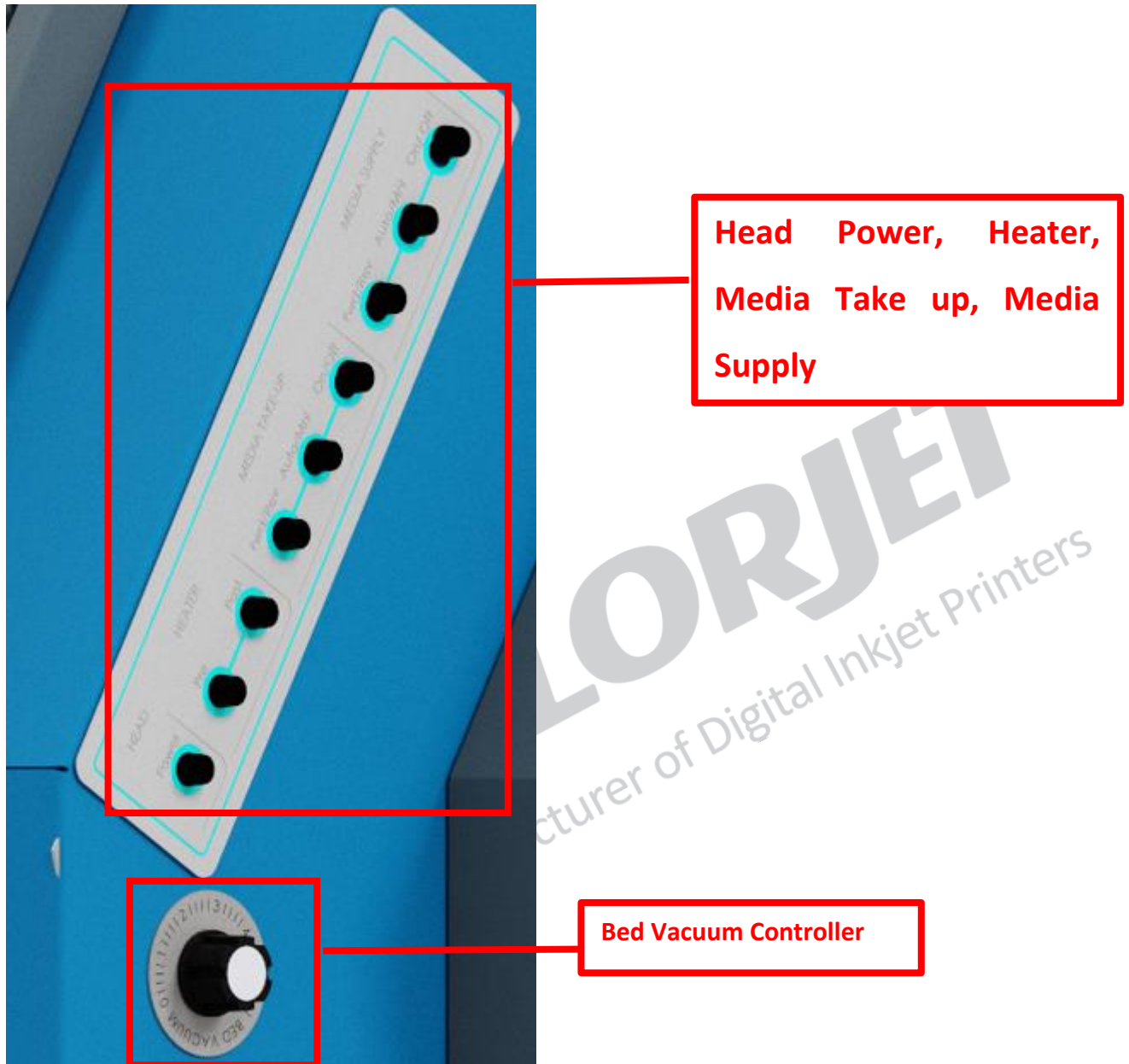
*Figure 2: Back View of Printer*

*Table 2: Different Parts of the Machine*

1. Media Lever (inside the machine)	2. Supply Roller
3. Power Inlet (Machine and Heater Switches)	



The detailed view of the controls is shown in the image below



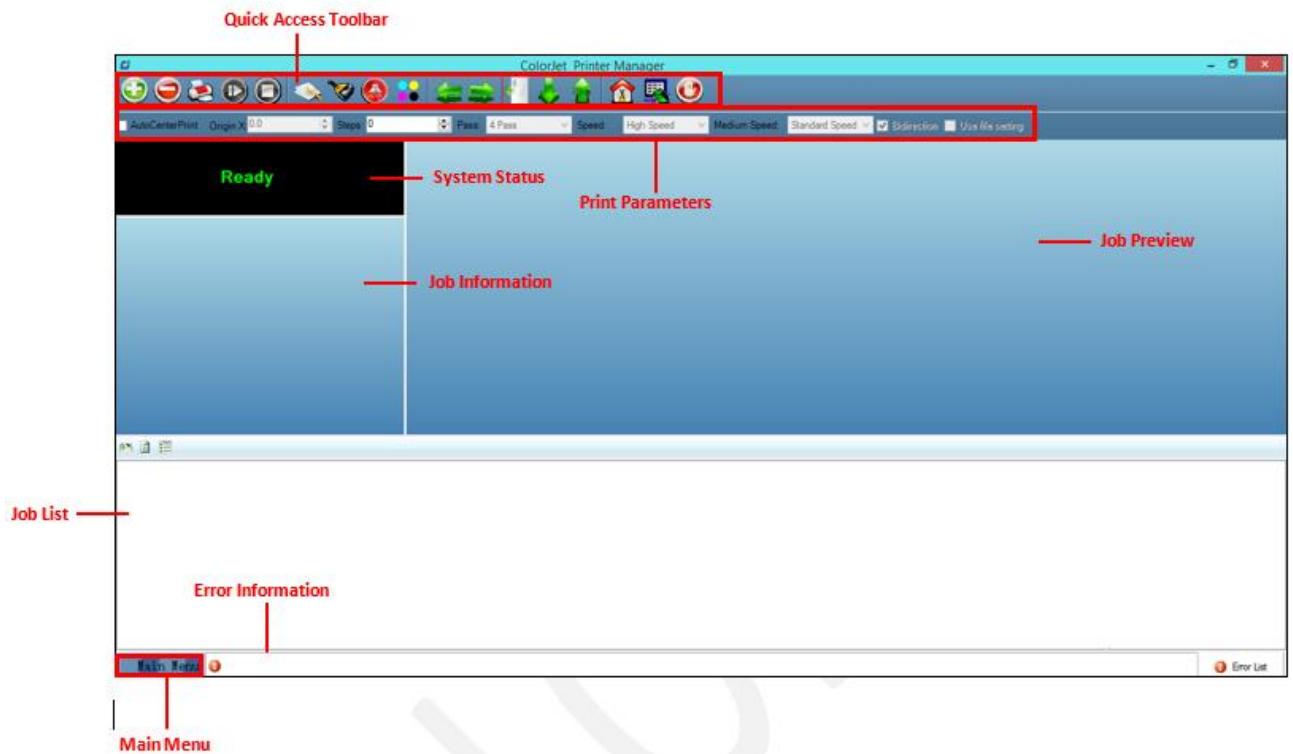
*Figure 4*

The description of the different parts of the machine is given below:

- **HEAD Power:** Turn ON/OFF the print head power.
- **HEATER:** Turn ON/OFF the pre- and post-heaters.
- **MEDIA TAKE-UP:** Enable to turn ON/OFF, control different modes; auto/manual, and change direction forward/reverse of the media take-up.
- **MEDIA SUPPLY:** Enable to turn ON/OFF, control different modes; auto/manual, and change direction forward/reverse of the media supply.

## 4. Getting Familiar with Printer Manager Interface

The User Interface of the Printer Manager software is shown below:



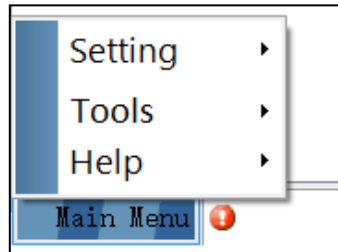
**Figure 5: Printer Manager Screen**

The description of the Printer Manager window is given as below:

<b>Main Menu</b>	Consists of several sub-menu options viz. Settings, Tools, and provide a variety of functions in a well-organized manner.
<b>Quick Access Toolbar</b>	Displays commands that are used more frequently like <b>Add Job, Delete Job, Print Job, Pause or resume, Abort job, Check nozzle, Move left, Move right, Move forward, Move backward, Z Move Down, Z Move Up, Move carriage to origin</b> , and more.
<b>Job Information</b>	Displays the properties of the selected job like File Name and Path, Status, Print Size, Print Area, DPI, Pass, and more.
<b>Job Preview</b>	Shows the preview of the selected job and printing status progress in this area.
<b>Job List</b>	Displays the thumbnail preview of added jobs.
<b>Error Information</b>	Displays the system-generated error messages.

## 5. Main Menu Options

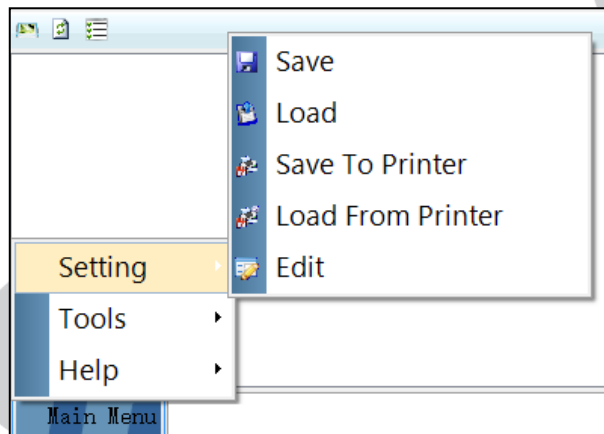
The **Main Menu** options are shown in the image below:



*Figure 6: Main Menu*

### Setting Menu

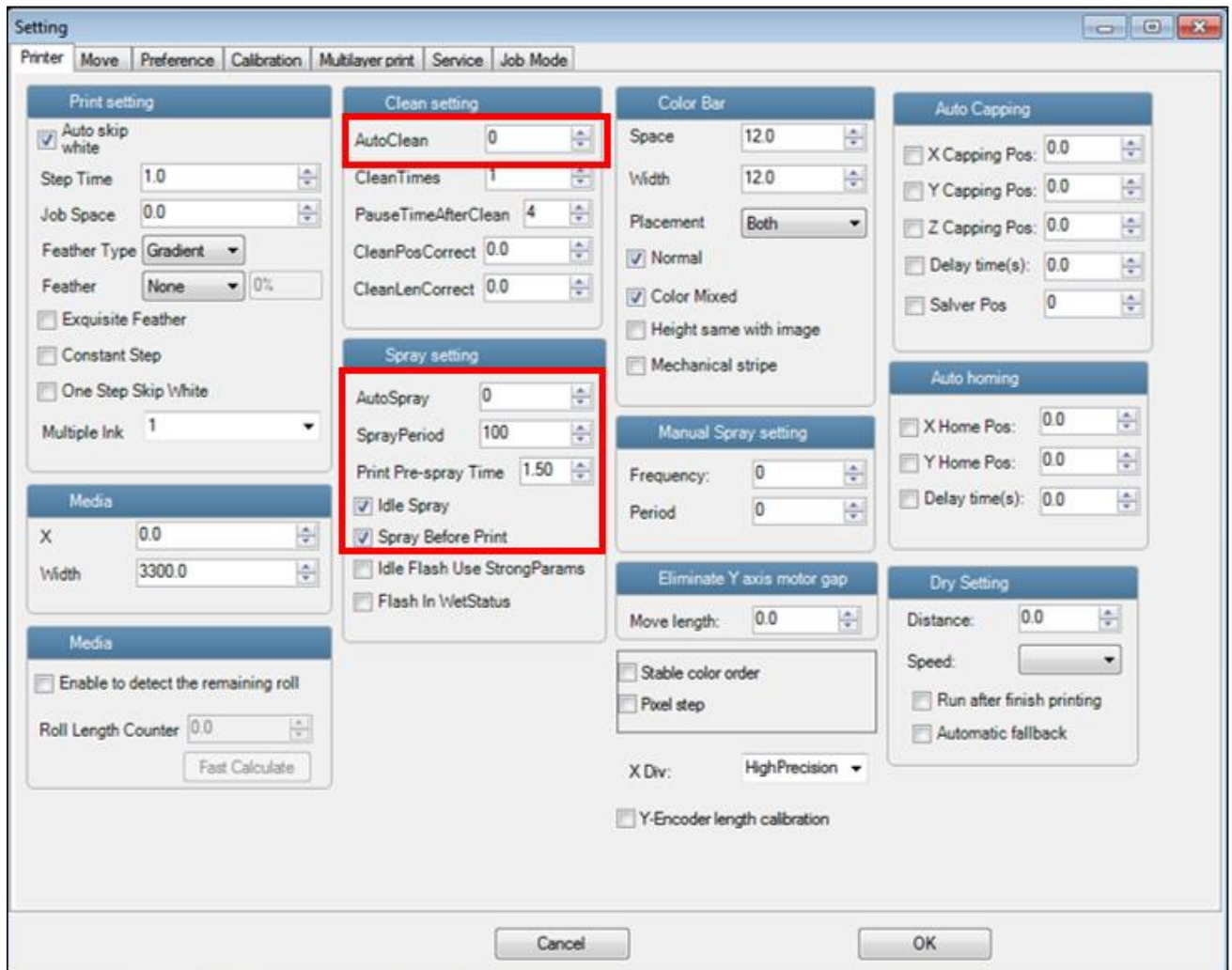
The **Setting** menu options are shown in the image below:



*Figure 7: Setting Menu Option*

- **Save:** Using this option, the user can save the default settings of the machine. An XML file will be created for further reference when the setting is saved.
- **Load:** Using this option, the user can load the previously saved machine's settings.
- **Save To Printer:** When the user clicks on this option, all the current settings get saved on the Main Board of the machine.
- **Load From Printer:** When the user clicks on this option, the printer settings get saved from the Main Board to Printer Manager software.
- **Edit:** Using this option, the user can edit the previously made Printer settings. On clicking the **Edit** option, the **Setting** window with Printer, Move, Preference, and Calibration tabs appear.

The **Settings** window with the **Printer** tab is shown in the image below.



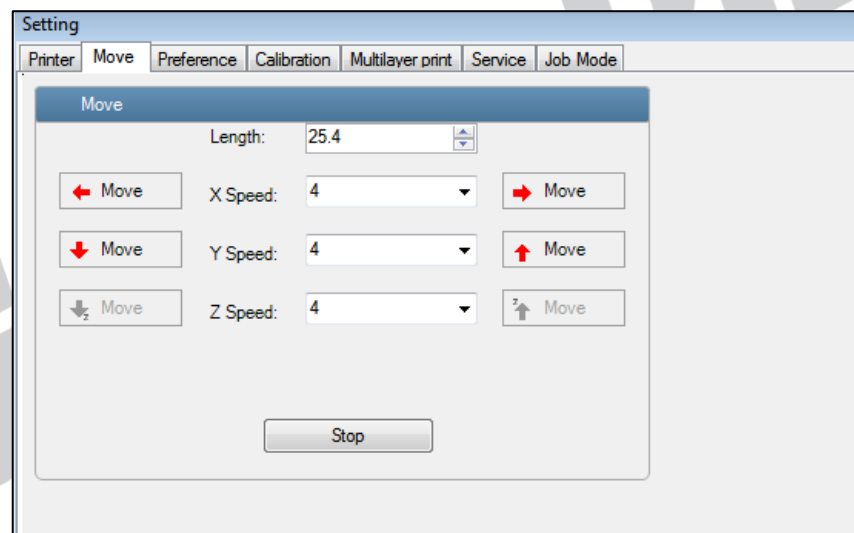
**Figure 8: Setting Window**

Describing the different sections of the Setting window, as given below:

- **Print setting**
  - **Auto skip white:** Enable to auto skip the white space in the image during printing.
  - **Step Time:** Set the time interval of the feed motor during printing.
  - **Job Space:** Set space between multiple jobs.
  - **Feather:** Feather type should be “**Gradient**” only and the intensity percentage of the feather is to be 5-100 as per the media type.
  - **Multiple Ink:** Enable to select the color depth of an image according to the passes. The available options are Default, Double, and More.
- **Color Bar**
  - **Space:** Specify the distance of the color bar from the image.

- **Width:** Set the width of the color bar.
- **Placement:** Enable or disable the color bar and its placement viz. left, right, or both.
- **Height same with image:** If enabled, the height of the color bar is same as the image height.
- **Spray setting**
  - **Auto Spray:** Set the duration (number of passes) for auto spraying.
  - **Spray Period:** Define the duration for spraying (set as 100). If the duration increases, spray frequency decreases.
  - **Print Pre-spray Time:** This is the duration of the spray before the start of print.  
This option works when the **Spray Before Print** option is enabled.
  - **Idle Spray:** Spray during carriage at home position. This option must be enabled.
  - **Spray Before Print:** This option enables spray before the start of print.

The **Move** tab is shown in the image below:

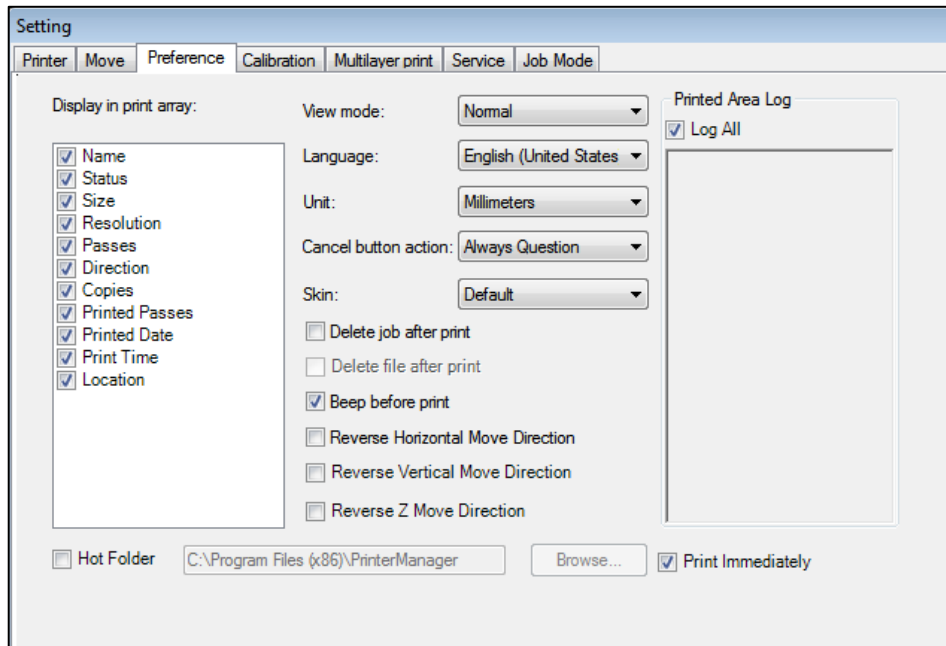


**Figure 9: Move tab**

**Note:** X and Y manual speed can be selected using the **Move** tab



The **Preference** tab is shown in the image below:

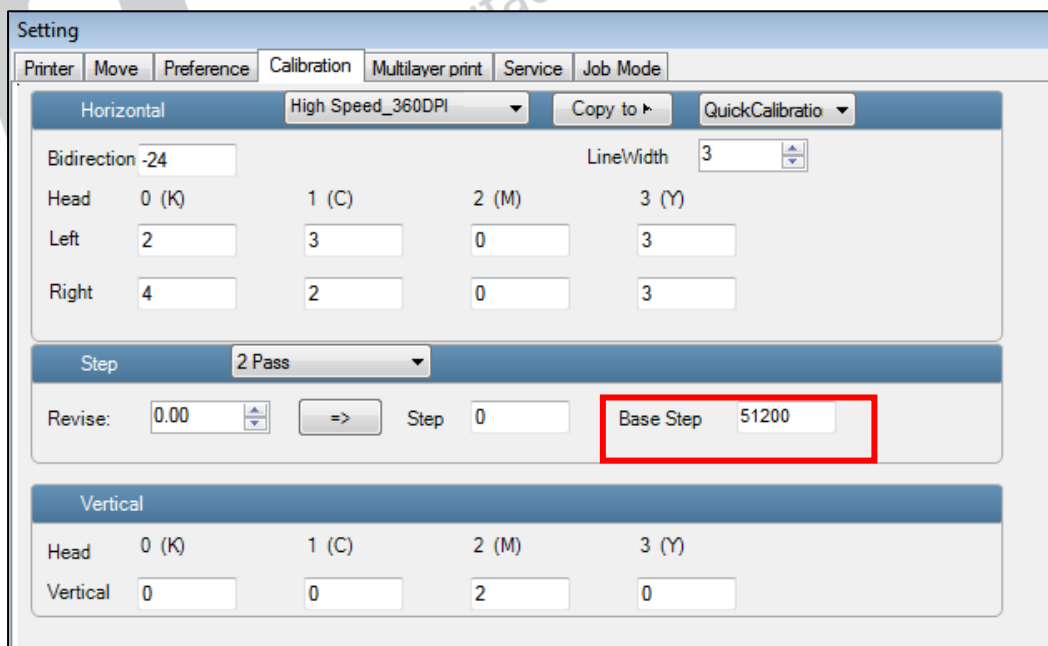


**Figure 10: Preference Tab**

Description of different options available under the Preference tab:

- **View Mode:** Enable to set the Printer Manager screen view.
- **Language:** Enable to change the language of the Printer Manager.
- **Unit:** Enable to set the measuring unit like Millimetre.

The **Calibration** tab is shown in the image below.

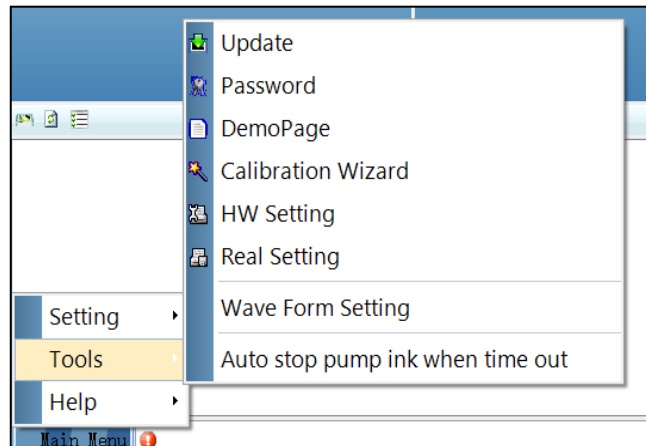


**Figure 11: Calibration Wizard**



## Tools

The **Tools** menu options are shown in the image below:

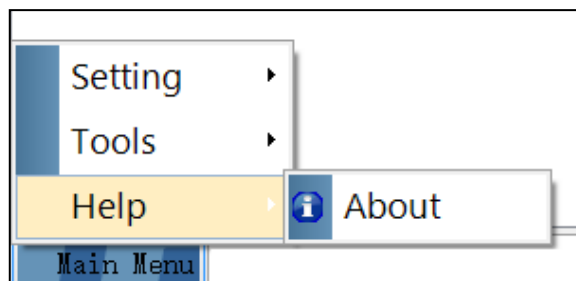


**Figure 12: Tools Menu**

- **Update:** This option enables application's latest changes and updates on the machine. This option supports the .dat file format.
- **Password:** This option enables to feed of the time and language passwords of the printer.
- **Calibration Wizard:** Using this option, the user can perform different types of calibration viz. Angle Check, Vertical Check, Nozzle Check, and more. For more details, please read the “**Calibration Wizard**” section carefully.
- **HW Setting:** Helps the user to select the encoder type of the printer as per the compatibility either linear or servo.
- **Real Setting:** Enables checking and resetting the temperature as well as the voltage of each Print Head.
- **Auto stop pump ink when time out:** Enable or disable the pump automatically when time out occurs.

## Help Menu

The **Help** menu option is shown in the image below:



**Figure 13: Help Menu**

- **About:** Enable to view the details about Printer Manager software viz. software version and copyrights.

## 6. Getting Ready for Printing

Follow these steps to switch ON the printer:

- Step 1** Check Waste Bottle.
- Step 2** Check Ink Level.
- Step 3** Release the Emergency button if pressed.
- Step 4** Maintain the room temperature.
- Step 5** Move the carriage manually away from the Home position.
- Step 6** Switch ON the printer from the main power or board.
- Step 7** Switch ON the *print engine and heater power buttons*, as shown below:



*Figure 14: Print Engine and Heat power*

- Step 8** Load the media (refer to the [Media Loading section](#)).
- Step 9** Turn on the computer system and open the printer manager software.

- Step 10** Perform purging.
- Step 11** Check the print head nozzles status by issuing the Nozzle Test command. If the nozzle test result is not OK or nozzles are blocked, clean the Print Head by performing the steps given in the **Head Cleaning** section.
- Step 12** Rip the image file using the ripping software provided with the machine.
- Step 13** Set the print origin to specify the printing starting position.

Now, the printer is ready for printing.

## Loading Media

Follow these steps to load the media:

- Step 1** Lift the Media Lever which is shown below.



*Figure 15: Media Lever*

- Step 2** Unwind the media roll to reach near the platen and hold it.
- Step 3** Insert the taken-out media between the platform and the pinch roller.
- Step 4** Pull the media out in front of the machine.
- Step 5** Hold the media firmly and push down the Media Lever.

**Step 6** Turn on the Supply Auto/Supply switch in auto mode and carefully observe the direction of media either reverse or forward.

**Step 7** Install the media clamps shown below from both ends:



**Figure 16: Media Clamp**

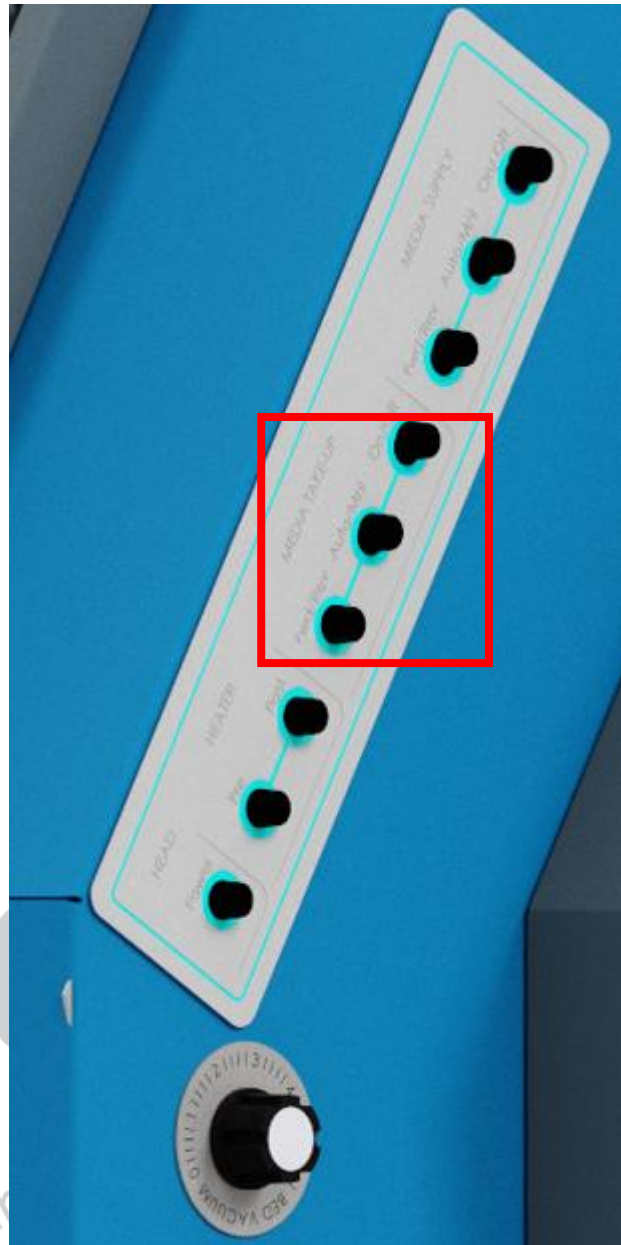
**Note:** Please take care of the following points while handling the media:

- Media should be even
- Media roll sides (edges) should be straight or even.
- Media clamp should be properly and evenly placed on the media edges. In case, media clamps are damaged or bent then replace them immediately.
- Carefully monitor media shifting (may cause wrinkles) and head nozzles get damaged.

**Step 8** Pull enough media so that it reaches the Take Up roller (Optional) or let the media down by issuing the Print command).

**Step 9** Paste the front edge of the media on the core.

**Step 10** Turn on the Take Up System and observe the media direction (either reverse or forward), as shown below.



**Figure 17: Enabling Take Up System**

**Step 11** Move the media forward so that it rolls easily over the Core.

**Step 12** Adjust the bed vacuum to firmly hold the media as per the media type, using the **Bed Vacuum** regulator.

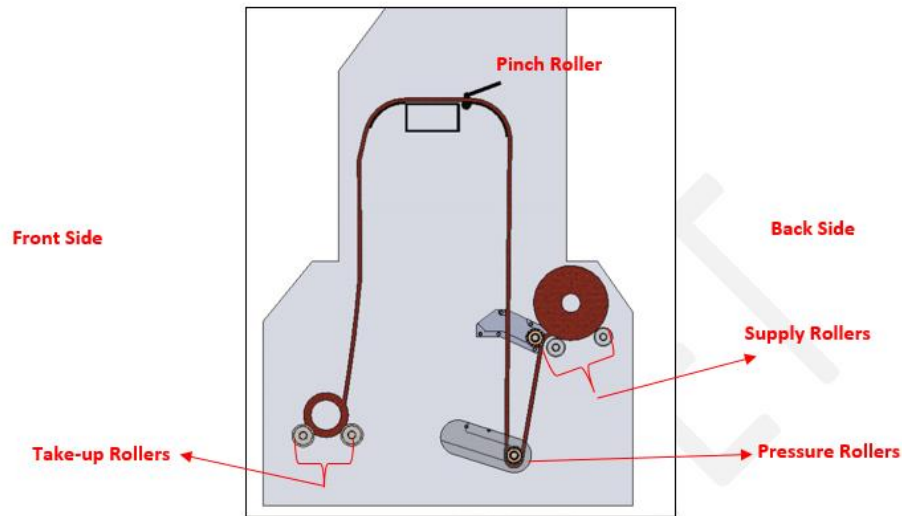
Now, the media gets loaded.

**Note:** Before issuing the Print command, verify the following things:

- Check the Waste Bottle and empty it, if required.
- Check the ink level in the main tanks and refill it, if required.



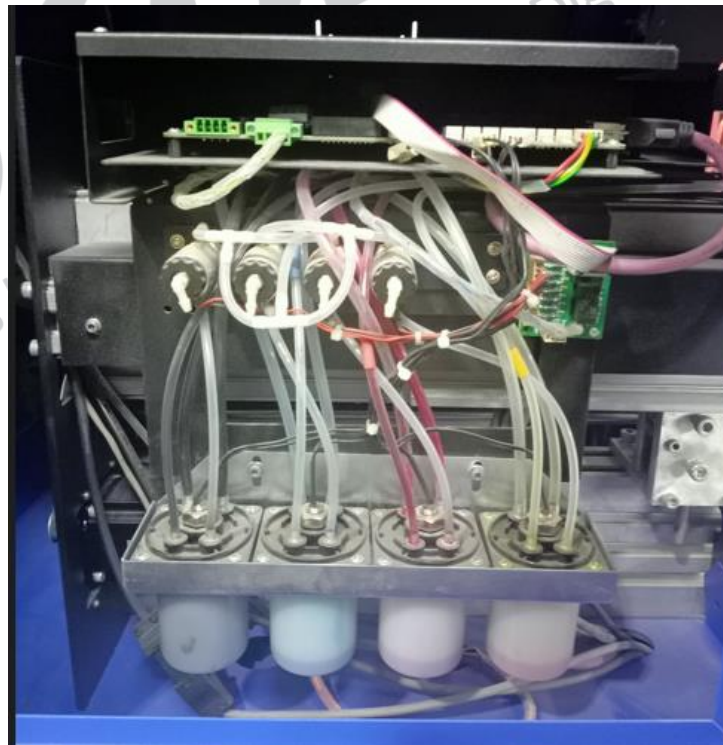
The Media path is shown below.



*Figure 18: Media path*

## Ink Refilling

Please use the recommended ink in the printer for high printing quality and long life of print and print heads. To refill ink, open the left door of the printer and replace ink bottles, if empty. Ink gets filled in the Sub tanks shown below:



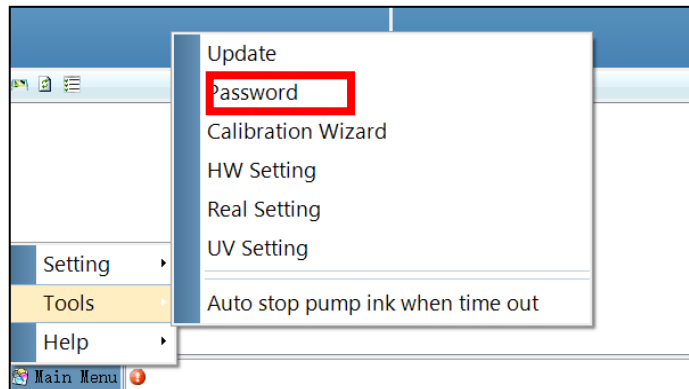
*Figure 19: Ink Sub tank*

## Feeding Password

The Password option enables the operator to feed or update the password of the printer. On clicking the **Password** option under the **Tools** menu, the **Password** window appears with two options viz. *Time Password and Language Password*.

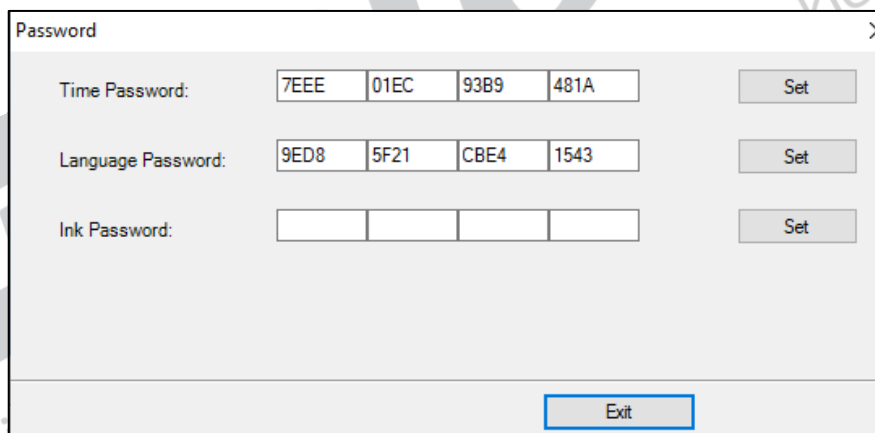
Follow these steps to change the passwords of the printer:

**Step 1** : Click on the **Main Menu**→**Tools**→**Password** path, as shown below:



**Figure 20: Selecting Password option**

The **Password** window appears on the screen as shown below:



**Figure 21: Password Window**

**Step 2** : Feed Password in the **Time Password** field.

**Note:** The length of the password field must be 16 digits.

**Step 3** : After feeding the passwords, click on the **Set** button.

**Step 4** : Click on the **Exit** button to close the **Password** window.

**Step 5** : Restart the printer.

**Note:** When "**First Warning**" appears, kindly contact Head Office with the following screen:

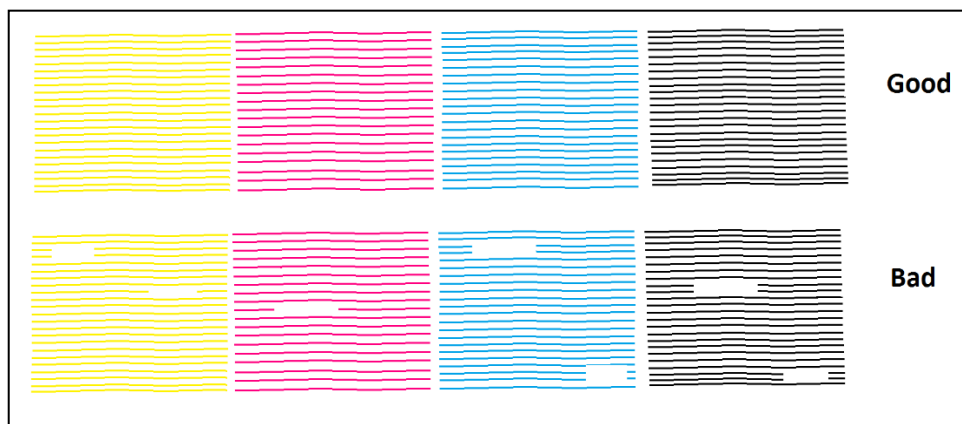
- Password Screen
- About Screen

## 7. Printing

### Nozzle Testing

Before starting with calibration tests, the Print Heads should be checked for blockage. Each Print Head has multiple tiny nozzles through which ink drops emerge and get deposited onto the print medium. Any nozzle blockage can compromise the print quality by forming discolored horizontal streaks or bands.

The good and bad nozzle test results are shown in the image below:



*Figure 22: Good and Bad Nozzle test result*

To check the nozzle, click on the **Check Nozzle** icon available on the **Quick Access Toolbar**, as shown below:



*Figure 23: Check Nozzle Icon*

In case of blockages, refer to the **Head Cleaning** section to perform head cleaning before proceeding to other calibration steps.

### Print Head Calibration

The Print Head calibration is categorized into the following types:

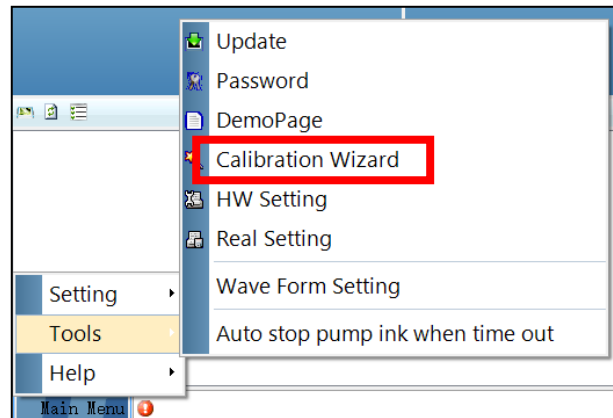
- **Mechanical Check** includes Vertical Check and Angle Check
- **Software Calibration** includes Bi-direction, Horizontal Calibration and Step Calibration

**Note:** Mechanical checks are only performed by the Service Engineer.



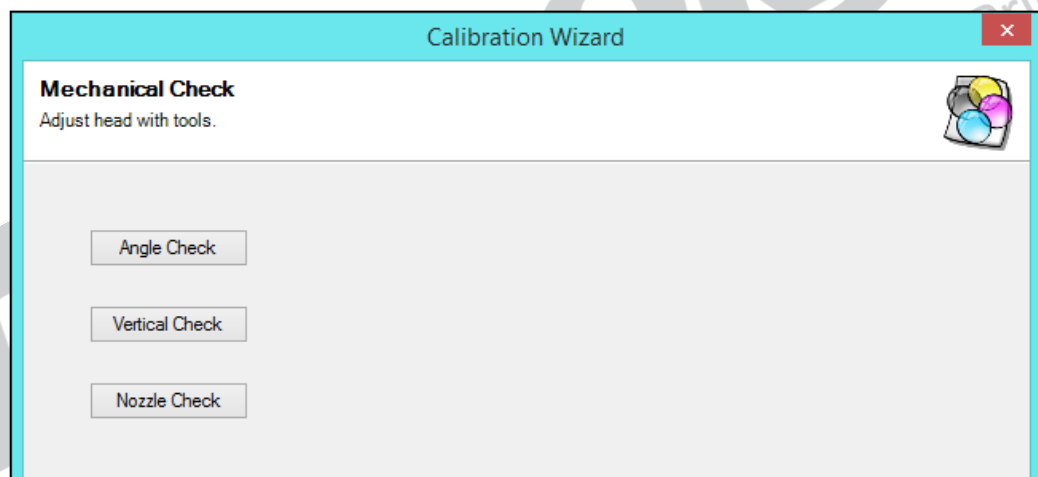
## Calibration Wizard

Print Heads should be calibrated to ensure good printing quality. To open the Calibration Wizard, *click* on the **Main Menu→Tools→Calibration Wizard** path, as shown below:



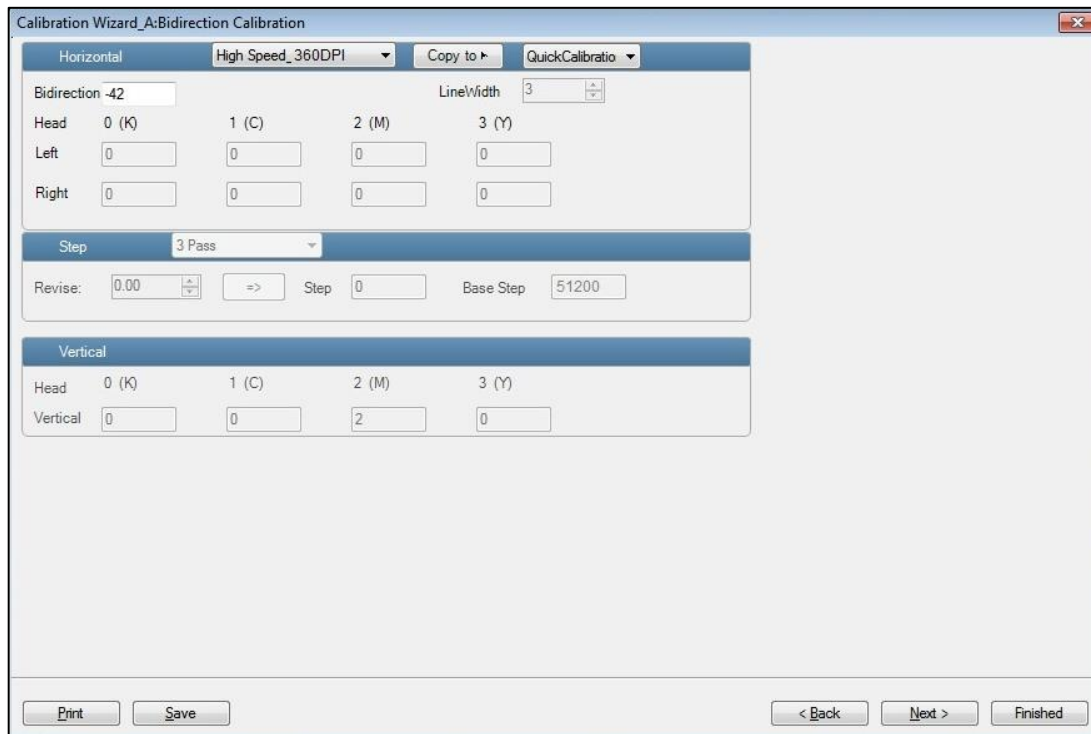
*Figure 24: Calibration Wizard option*

This brings up the calibration wizard which is shown below:



*Figure 25: Calibration Wizard Window*

Click on the **Next** button to redirect to the software calibration screen, as shown in the below images:



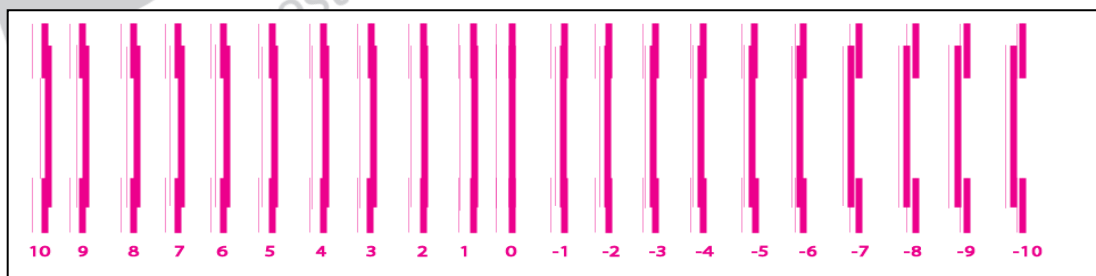
**Figure 26: Printer Calibration Option**

**Note:** Calibration must be performed for every pass, and speed for higher accuracy and quality.

### Bi-direction Calibration

Bi-directional calibration is performed to achieve dot placement accuracy between the “Left to Right” and “Right to Left” print sweeps. If the bi-direction offset value is correct, the Left to Right test print align accurately with the Right to Left test print at the “0” position. In case of an error in the Bi-directional offset, the Left to Right and Right to Left print aligns at some other point on the scale.

The **Bi-direction Calibration Result** is shown in the image below:



**Figure 27: Bi-directional Calibration Output**

Based on the above figure, the user can notice that the Bi-direction calibration is good at the “0” position. The correction value is “0” which means the user need not correct the bi-direction value. Sometimes, the correction value can be either positive or negative. If the correction value is positive, then there is a need to add it in the current bi-direction adjust value or subtract the same if negative.

## Horizontal Calibration

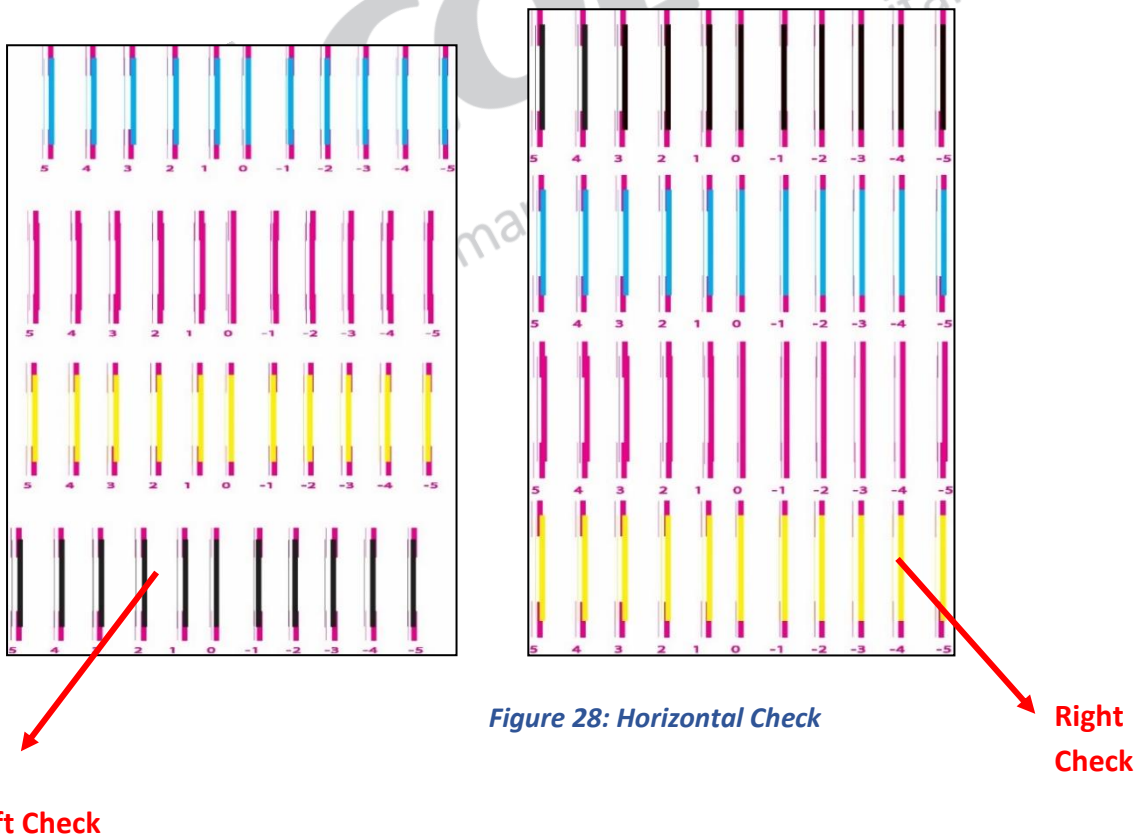
Horizontal Calibration checks left and right alignment and corrects it by adding or subtracting the correction value from the default set value. It must be performed for each print mode, whichever is required.

### Left to Right and Right to Left Calibrations

Left to Right Calibration is performed to achieve dot placement accuracy of all colors (Black, Cyan, and Yellow) with respect to Magenta during the carriage's left-to-right print sweep. Similarly, Right to Left calibration is used to achieve dot placement accuracy during the carriage's right-to-left sweep.

When the position of the test head is correct, then it aligned perfectly with the reference color at the "0" position, indicating that the error position is "0". If the test Print Head's position saved in the system is inaccurate then it does not align at the "0" position, but at some other point on the calibration scale. The position at which the test head aligns perfectly with the reference head indicates the position error.

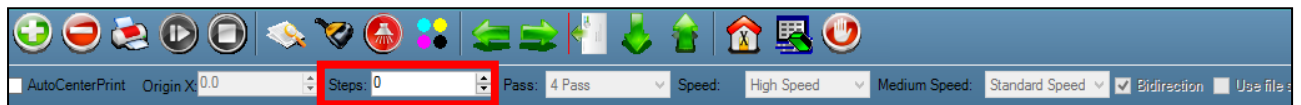
The **Left Calibration** and **Right Calibration** Results are shown in the image below:



## Step Calibration

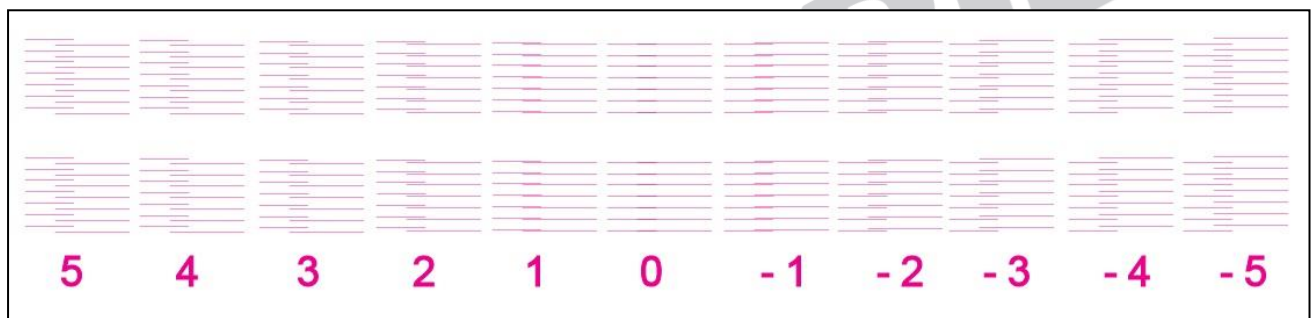
The printer step calibration is performed to verify and correct media feeding. The printer prints a complete image pass-by-pass. A pass is the horizontal carriage sweep perpendicular to the media movement. After each pass, the printer moves the media forward for the next pass. This movement of media is called a step. The distance by which the media is moved is called the step size and it must be accurate. Step size errors cause horizontal white or dark bands to appear in the print output.

Step size needs to be adjusted for multiple factors like thickness and roughness of the print media etc. Step calibration should be used to fine-adjust the step size and must be done for each desired pass. On the fly, the Step value can be adjusted using the Steps field, as shown below:



**Figure 29: Step Option**

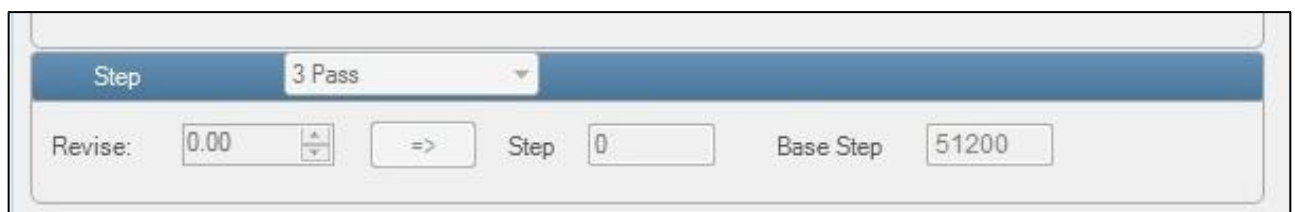
The **Step Calibration Result** image is shown as below:



**Figure 30: Output of Step Calibration**

From the above figure, the user gets the accurate step adjustment correction value. The correction value is either positive or negative. If the value is positive, then add it to the current step adjust value for the Print Head calibration. On the other hand, if the value is negative, then subtract the value from the current step adjust value. From the above, it can be concluded that the pattern is corrected at the "0" position.

The **Step Calibration** and its parameters are shown in the image below:



**Figure 31: Step Calibration Parameters**

**Note:** The base Step value should be 51200.

Follow these steps to perform step calibration:

- Step 1** Select the desired pass from the list and click on the **Print** button
- Step 2** Feed the correction value in the **Revise** field (the correction value is up to two decimal places)
- Step 3** Click on the => icon (Refer to Fig 31) on the Step Calibration window. The correction value result will be reflected in the **Step** field (Refer to Fig 31). The same step value will also be displayed in the **Steps** field on the **Quick Access Toolbar**.

## Setting Print Origin

Print origin sets the print starting point with the rightmost print head position as the reference point. It can be set in two ways; by moving and positioning the carriage and by typing the offset value directly in the given field.

Follow these steps to change the print origin:

- Step 1** Move the carriage to the position from where printing is to be started by *clicking* on the left and right buttons on the **Quick Access Toolbar**, as shown below:

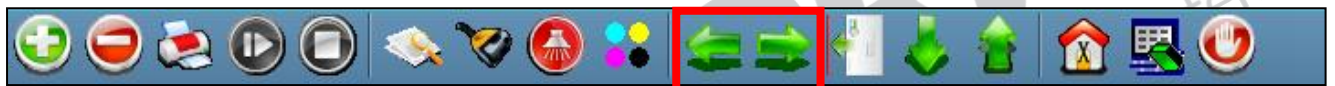


Figure 32: Adjusting Carriage position

- Step 2** After positioning the carriage, *click* on the **Set print origin** icon on the **Quick Access Toolbar**, as shown below:



Figure 33: Set Print Origin Option

On clicking the **Set print origin** icon, the current position of the carriage gets updated in the **Origin X** text box, as shown below:

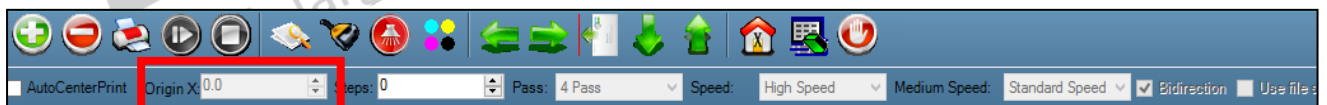
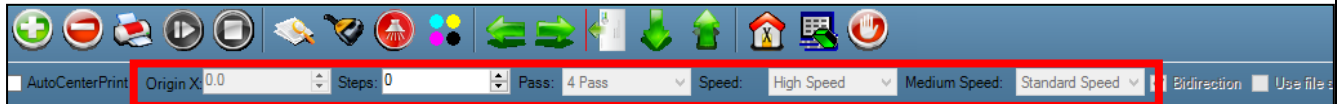


Figure 34: Displaying Origin Value

Now, the printing origin gets set. The user can manually enter the print origin value in the Origin X field under the Print Parameter section.

## Setting Print Parameters

Using the Printer Manager, user can manually change print preferences as per the printing requirements such as print origin, printing speed, no of steps, and more as shown below:



**Figure 35: Setting Printing Parameters**

The description of printing parameters is given as follows:

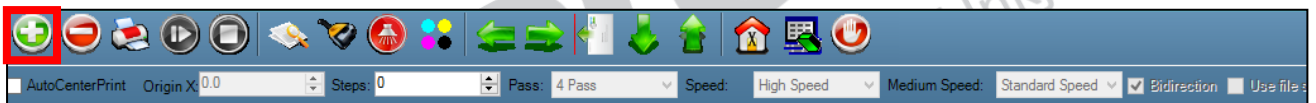
- **Origin X:** Directly enter the print origin value.
- **Steps:** Remove step size errors in the current print job by specifying the number of steps.
- **Pass:** Choose the number of passes with which the print job should be printed. Passes selected should be compatible with the Y DPI of the image selected. Increasing the number of passes improves the print quality but at the cost of printing time.
- **Speed:** Choose the printing speed like High Speed, Medium, and Low.
- **Medium Speed:** Set the Y printing speed viz. Standard Speed and Low.

## Adding Jobs

There are two ways to add jobs in the Job List area viz. the Add Job button and right-click on the Job List area.

Follow these steps to add jobs in the Job List area:

**Step 1** Click on the **Add Job** button on the **Quick Access Toolbar**, as shown below:

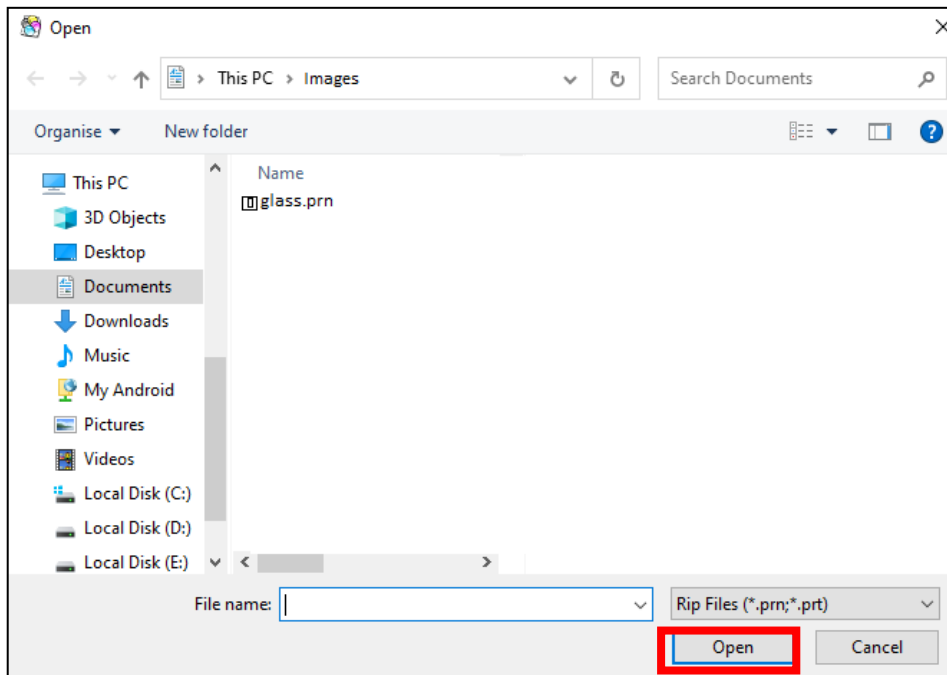


**Figure 36: Add Job Button**

The **Open** window appears on the screen.

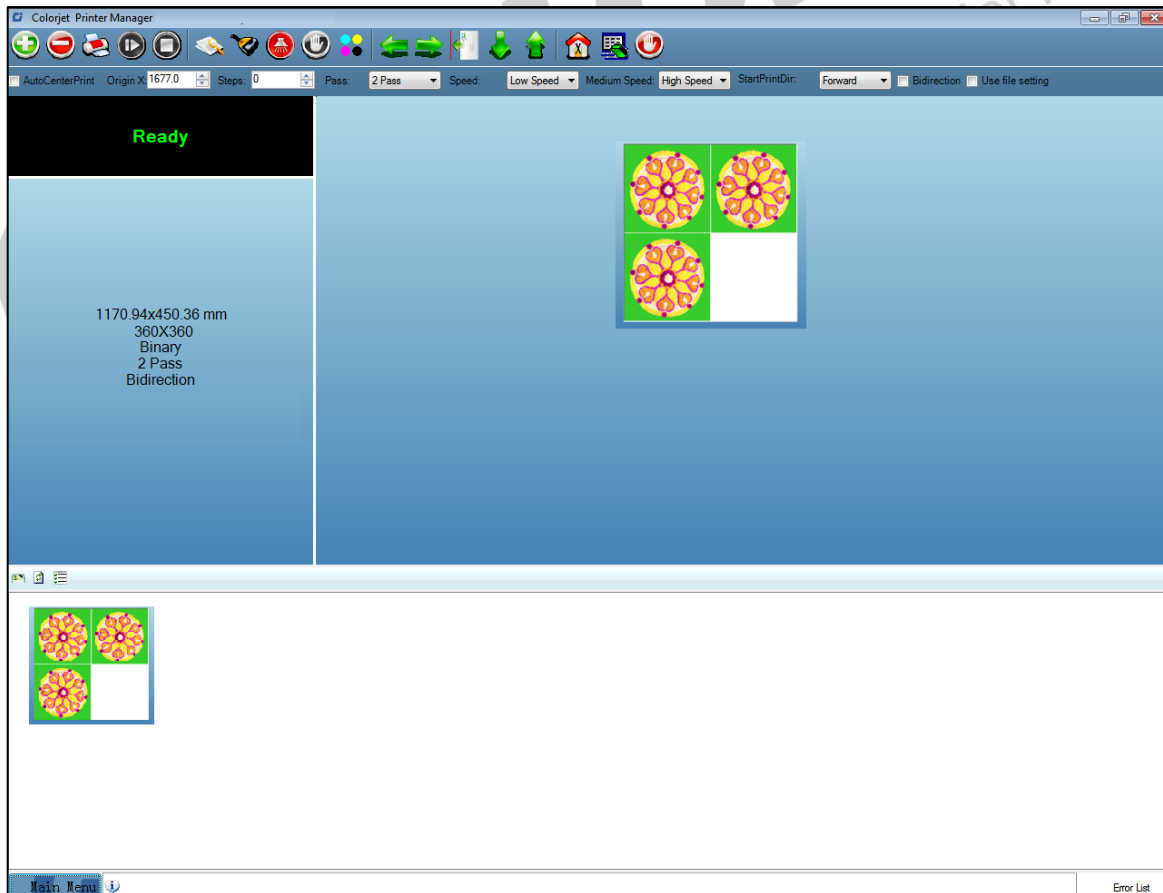
**Step 2** *Navigate* to the location where the image file with extensions “.prt” and “.prn” is stored (Refer to Fig 37).

**Step 3** Click on the **Open** button to add the file to the **Job List** area, as shown below:



**Figure 37: Adding the Job**

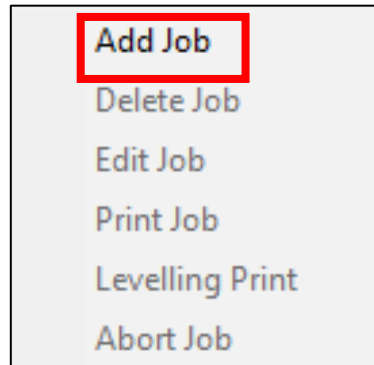
Now, the selected image appears in the Job List area, as shown below:



**Figure 38: Displaying Added Job and its detail**



Once a file has been added its information such as file path, size, resolution, and number of passes can be viewed in the Job Information area. Users can also add a job simply by right-clicking on the Job List area and selecting the **Add Job** option from the context menu, as shown below:



*Figure 39: Add Job Option*

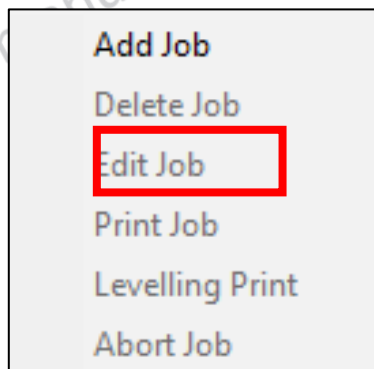
On selecting the **Add Job** option, the **Open** window appears, and follow the above-mentioned steps to add more jobs. **Note:** To delete the selected job, *click* the **Delete job** icon on the **Quick Access Toolbar**.

## Editing Job

Follow these steps to edit the selected job:

**Step 1** Select the job details that need to be edited from the **Job List** area and right-click.

**Step 2** Select the **Edit** option from the context menu, as shown below:



*Figure 40: Selecting Edit Job Option*

**Step 3** Select the desired checkbox in front of the Clip, Reverse Print, and Tile options. Clicking on any option will enable its related parameters on the right pane and the user can edit them as per the requirements. In our case, we have selected the **Clip** checkbox



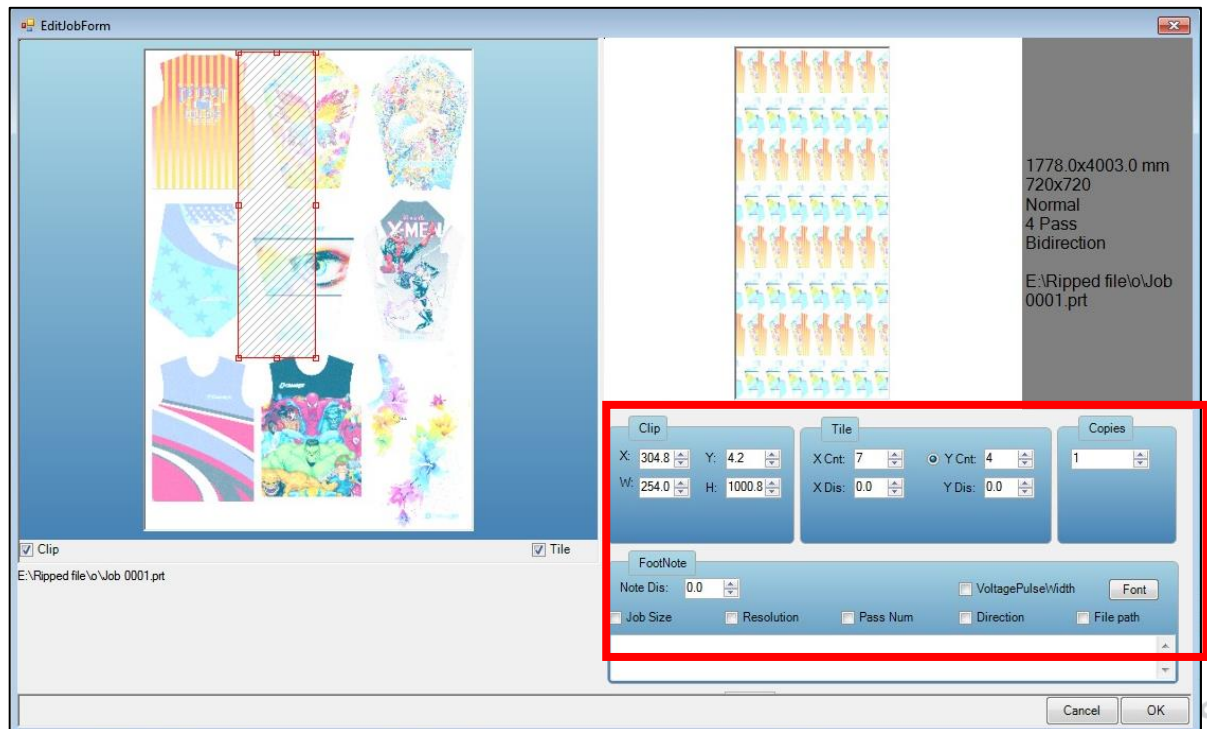


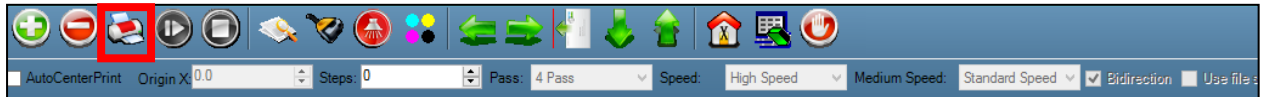
Figure 41: Edit Job from Window

- **Clip:** By enabling this, a portion of the image can be selected by dragging the image preview. Its height and width can be adjusted. Also, the crop margins can be adjusted in the x and y direction.
- **Tile:** By enabling this, the desired number of counts in the x and y directions can be printed. Also, the distance between each count can be adjusted.
- **Copies:** Feeding any number of copies will repeat the prints in the Y direction. Careful, the Print will stop and restart after each copy.
- **Footnote:** The user can add footnote printing with each printed image. The parameters required can be selected.

**Step 4** After making the desired changes, *click* on the **OK** button to apply the settings

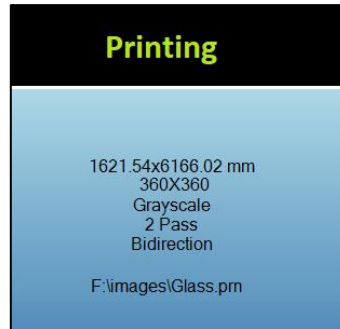
### **Ripping and Printing**

Ripping is an independent process that converts a raw image file into a machine-readable format and gets the file ready for printing. The Rip software supports PDF, TIFF, JPEG, EPS, psd, and bmp file formats. After ripping the image file, the output file will be in **“.prt”** or **“.prn”** file format. Thus, the user should first rip the image file before printing and then issue the Print command. While ripping, the color profiles are used to automatically perform the color corrections in the image. Now, the user can print an image on the selected media simply by clicking on the **Print Job** button available on the **Quick Access Toolbar**, as shown below:



**Figure 42: Print Job Command Icon**

After issuing the Print command, the printing gets started and its progress details are displayed in the Job Information area, as shown below:



**Figure 43: Printing Details**

## DPI and Print Mode

**Table 3: Displaying the DPI and Print Mode**

Print Mode	DPI	Passes
Mode 1	360 x 360	2
Mode 2	360 x 540	3
Mode 3	360 x 720	4
Mode 4	720 x 720	4
Mode 5	720 x 1080	6
Mode 6	720 X 1440	8

## Pausing and Canceling Printing

If the user finds any defect during the printing process, they can immediately pause or cancel the current printing job using the Pause or Resume and Abort Job buttons available on the **Quick Access Toolbar** as shown below:



**Figure 44: Pause or Resume Command**

Similarly, the user can abort the process by right-clicking on the selected Job in the Job List area and selecting the **Abort Job** option from the context menu.

**Note:** The keyboard shortcut for pausing and resuming is **Ctrl+TAB**.

## 8. Head Cleaning

The Print Head is a delicate part that needs to be cleaned as per recommendation to have a long life and to ensure consistent print quality. The following sections give recommended steps to clean the Print Heads.

### Head Wiping

In Head Wiping, extra ink below the heads is to be wiped using the head wiper, as shown below:



**Figure 45: Displaying Head Wiping**

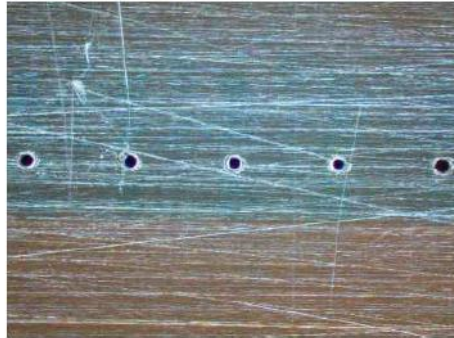
**Note:** For head wiping, please use only the head wiper handle provided with the machine.

Please strictly follow the below-mentioned instructions:

- While using the head handle wiper, the user needs to bend down to position it properly.
- Do not move the wiper on the sides of the nozzle plate, it may attract the dried ink residues along with dust.
- Do not pull the wiper blade from the head plate area, it may sprinkle inks over your body/clothes.
- Keep the wiper on a clean surface (over a flex or cloth piece spread).

- Do not use cotton cloth or tissue to wipe the print head.
- Do not apply force while wiping the residue inks from heads after purging.
- Do not use expiry ink and store the ink in a favorable environment.
- Clean the head wiper every time after the head wiping process.
- Purging to be performed not more than 2 to 3 seconds.
- Avoid head damage due to media and Print Head conflict.
- Print head nozzles is to be kept clean, and dust-free, and prevent oxidation.

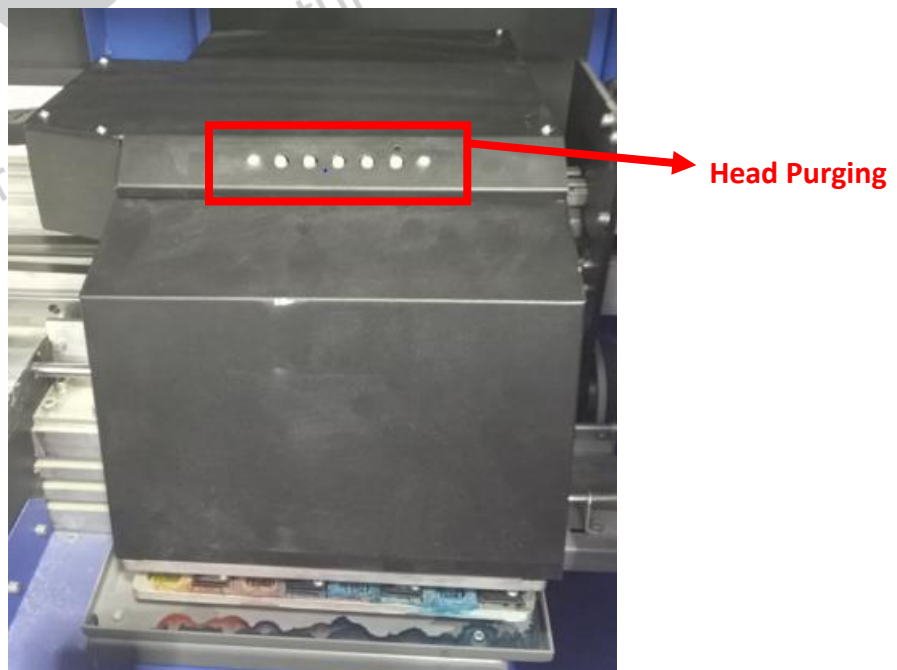
Due to incorrect wiping, the nozzle film gets damaged as shown below:



*Figure 46: Damaged Nozzle Film*

## Head Purging

Head purging refers to the method in which heads are cleaned by forcing pressurized ink through the nozzles. If the printer is idle for more than 10 minutes, please perform the purging process. In the printer, the **Head Purging** button for each color is available on the carriage, as shown in the below figure:



*Figure 47: Head Purging Button*

**Note:** If nozzles are found blocked even after normal purging, then try the powerful purging (the “P” switch in the purging board must be kept pressed for a few seconds and then the required color switch must be pressed).

## Head Spraying

Head spraying clears the mixing of colors during wiping, and may also clear a few dry nozzles. When heads are sprayed, all the nozzles are actuated at a high rate which helps in opening a few dry nozzles of the printer. To perform head spraying, *click* on the **Spray** button available under the **Quick Access Toolbar**, as shown below:



Figure 48: Spray Button

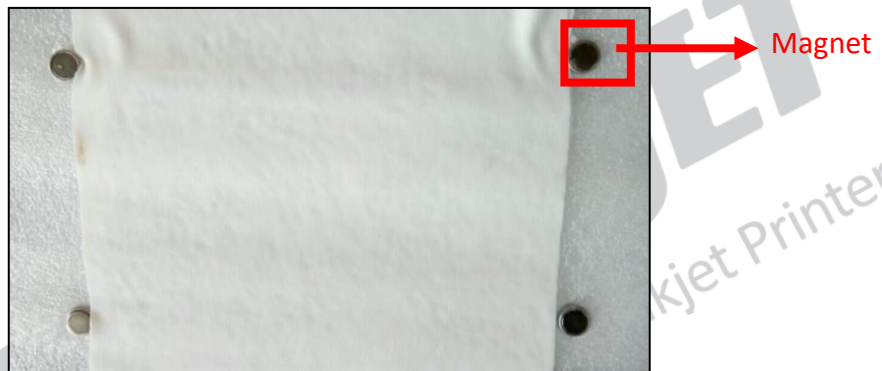


## 9. Shutdown and Capping the Printhead

Capping refers to the process of protecting the Print Head from becoming dry.

Perform the following steps to cap the Print Head:

- Step 1** Move the Carriage manually toward the home position.
- Step 2** Clean the Print Head using different head cleaning methods viz. head wiping, head purging, and more.
- Step 3** Switch OFF the printer from the main power button.
- Step 4** Wet the tissue with the head cleaning solvent.
- Step 5** Put the wet tissue on the Night Plate. The Night Plate has four magnetic points on the corners of it. The **Night Plate** with wet tissue is shown below:



*Figure 49: Putting Wet Tissue on the Night Plate*

- Step 6** Engage the Night Plate with the Head plate by aligning the magnets below the head plate screws, as shown below:

**Note:** Be careful while doing this process. The nozzles must not be touched/scratched during this process.



*Figure 50: Engaging Night Plate with Head Plate*

Now, Print Heads are capped properly and protected from being dried.

## 10. Maintenance

### Print Head Maintenance

The Print Head is an important and delicate part of the printer. Thus, it must be handled with care to ensure the long life of the machine. Pay attention to potential problems caused by the environment, heat and moisture, collision, cleaning, etc. For print head maintenance, the following instructions to be taken care of:

- Perform the nozzle test daily 2-3 times before printing to monitor the blockage in the head nozzles.
- Use the print head in specified environmental conditions viz. Temperature 20-25 degrees Celsius with humidity 55%, dust-free and exhaust condition.
- Avoid ink spilling on the print head and head cables and if there is ink in the print head, immediately inform the engineer.
- Avoid head damage due to media and Print Head conflict.
- Color bar should be ON.
- Do not use expiry ink and store the ink in a favorable environment.
- Prevent the object or human body from static contact with the print head.
- Print head nozzles is to be kept clean, and dust-free, and prevent oxidation.

### Equipment Cleaning

- Turn OFF all power switches to the machine while cleaning the machine equipment.
- Avoid splashing liquid and dropping on/in the circuit board or the power line.
- Careful while cleaning sensitive devices, like sensors and rasters.
- Use a clean cloth to clean up the dust and residual oil on the tracks.
- Should keep water, ink, and oil away from the Encoder scale.

### Power System Maintenance

- Ground wire be always checked whether loose or disconnected.

### Control System Maintenance

#### Static discharge

- The operator must discharge his electrostatic charge before touching the electronic components and parts.
- Do not touch the pin connectors and welded joints on circuit boards, or integrated circuit boards.

### Ink Supply System Maintenance

- Check for leakage between the joint & ink tank and joint & valve settings.
- Check for damages on ink tubes.
- Check Ink impurities in the ink tanks as this will affect the ink supply.

## 11. Troubleshooting

### **PRINTER NOT INITIALIZING**

- Encoder scale has ink stains (print shows vertical color bands)
- Encoder sensor is not cleaned
- Emergency button is pressed

### **PRINTER MANAGER NOT SHOWING "READY"**

- The USB cable is not connected to the computer or loose
- USB cable is faulty

### **PRINT STOPS IN BETWEEN PRINTING**

- USB cable is loose or faulty
- Open heavy files that can slow down the data transfer
- Ground wire is disconnected
- Encoder scale is having ink stains
- Pulley or belt is slipping
- Ripped file has an error

### **PRINT MARGIN IS SHIFTING, OR JUNK PRINTING**

- Encoder scale is having ink stains
- Encoder sensor is not clean
- Pulley or belt is slipping
- Data cable is faulty

### **PRINT IS BLUR (NOT SHARP)**

- Improper printer calibration – bi-directional and step
- Improper head mounting and calibration
- Selection of incorrect resolution (dpi)

### **LINES IN PRINT**

- Head nozzles are blocked
- Incorrect step calibration

### **HEATERS NOT WORKING**

- Check if the inlet power cord is connected
- Check the set temperature in the controller



### **HEAD NOZZLES NOT FIRING**


- Clean heads using head cleaning techniques and verify by performing nozzle testing
- Check if any air lock or no ink in the ink pipes
- Check the ink and air pipe for any cuts or loose connection

### **TAKE – UP NOT WORKING**

- Take-up switch is not ON or not in Auto mode

### **MEDIA SUPPLY NOT WORKING**

- Supply switch is not ON
- Media is not in sensor range

The logo for ColorJet, featuring a stylized grey 'C' icon followed by the word 'COLORJET' in a large, grey, sans-serif font.  
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