VERVE LED

(VLY 2513)

USER MANUAL

EFFICIENT INDIAN ENGINEERING

Foreword

This user manual is briefly describing the operational aspects of the **VERVE LED (VLY 2513)** 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 which guides their customers how to use or operate the **VERVE LED (VLY 2513)** 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

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The reference table is shown in the below table:

Doc Type	Doc Code	Version	Machine Name	Date of Issue
User Manual		1	**VERVE LED (VLY 2513)**	

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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 as well as use it as per their requirements. Additionally, this document also 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 of the cases, targeted audience is much familiar with the terminologies of printer and printing business. Thus, this document is designed to facilitate both types of users.

2. Specifications

VERVE LED KY2513		
Printing Technology		Drop-on-demand, Piezo Electric Inkjet
Print Head		Industrial Grade Jetting Assemblies
No. of Print Heads		2 to 8
Media	Size	2.56m X 1.68m
	Thickness	Maximum 100mm
Curing System		Dual UV LED Lamps
Printing Size		2.50 m X 1.22 m
Ink	Type	UV LED Curable Ink
	System	Bulk Ink Refillable System
	Colors	CMYK + W
Printing Resolution (DPI)		Maximum 1200 dpi
Distance Accuracy		Error of less than ±0.3 % of distance travelled, or ±0.3 mm, whichever is greater
Connectivity		High speed USB 2.0
Power Requirements		AC 220 V, 30 A, 50/60 Hz
Dimensions (Printer Only)		4900 x 2680 x 1620 mm (LxWxH)
Dimensions (With Packing)		5030 x 2280 x 1890 mm (LxWxH)
RIP Software		Onyx (Colorjet Edition)
Weight		N.W. 1962, G.W. 2162
Environmental		Temperature: 18 to 28℃ Humidity: 20 to 60%RH (non-condensing)
	Power ON	
	Power OFF	Temperature: 5 to 40℃ Humidity: 20 to 80%RH (non-condensing)

3. Machine Overview

The Machine Overview is shown in the image below:
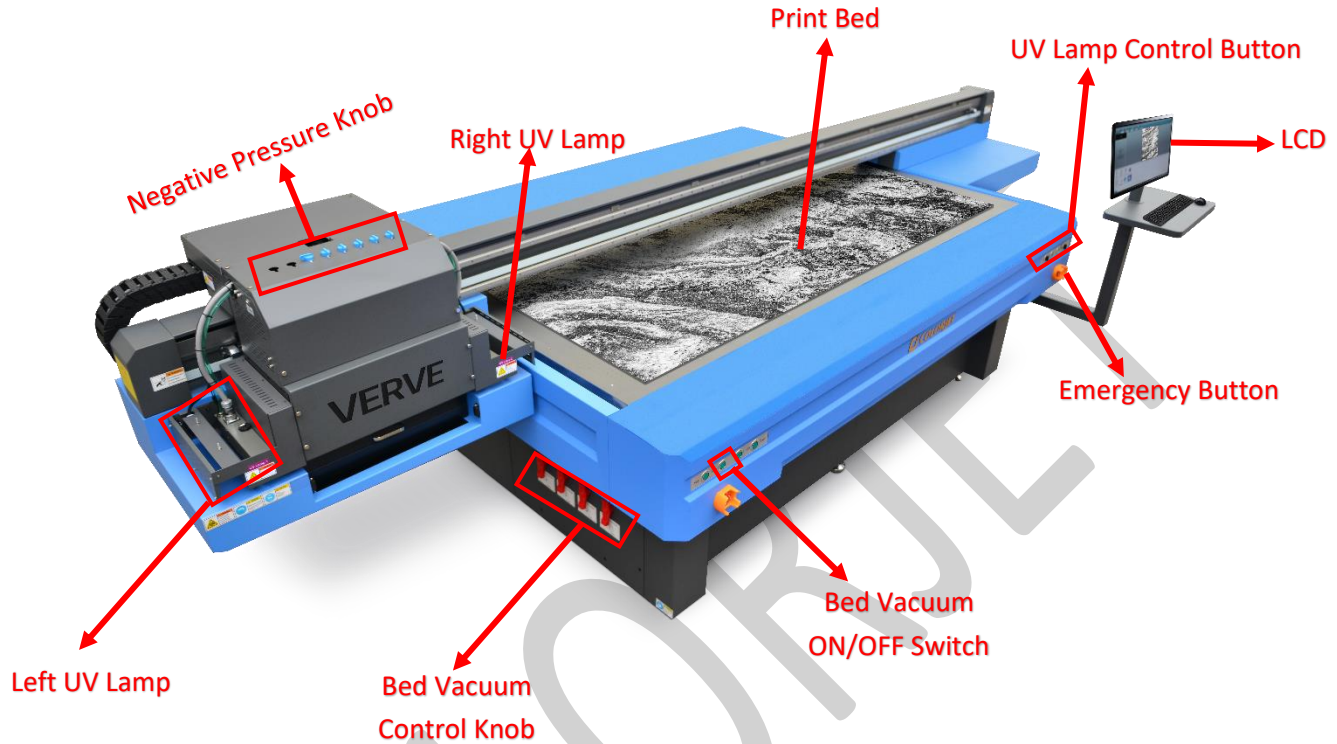
Fig 1: Displaying the Machine View

Table 1: Different Parts of the Machine

1. Left UV Lamp	2. Negative Pressure ON/OFF Knob (Ink Valve)
3. Right UV Lamp	4. Print Bed
5. UV Lamp Control Button	6. LCD
7. Emergency Button	8. Bed Vacuum ON/OFF Button

4. 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: Release the **Emergency** button, if pressed.

Step 4: Switch ON the printer from the main power and MCB. Now, the automatic initialization of the machine gets started. Firstly, the machine initializes the **Z Axis,** then the sequence is **Y Axis→X Axis→ Again Z Axis**.

Step 5: Switch ON the Chiller unit, as shown below:

Fig 2: Displaying the Chiller Unit

Step 6: Place the media on the Print Bed (Refer to the **Loading Media** section).

Step 7: Switch ON the Print Bed vacuum by pressing the **Bed Vacuum** button available on the front left side of the machine, as shown below:
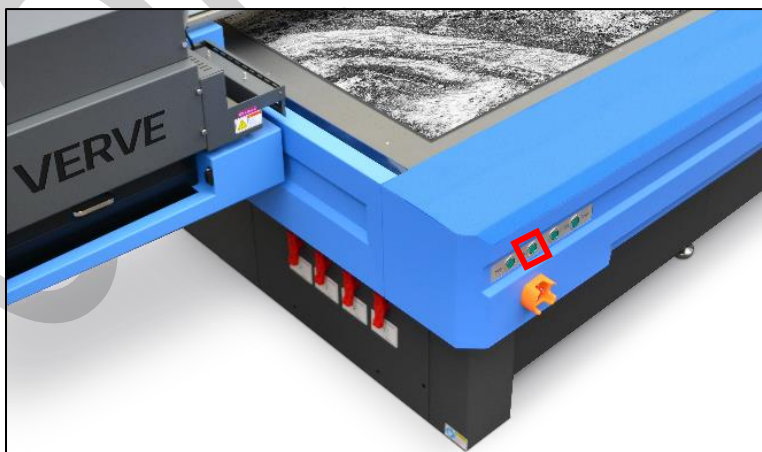

Fig 3: Turning ON the Bed Vacuum Button

Note:

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

Step 8: Set the **Media Height** for printing (Refer to the **Setting Media Height** section).

Step 9: Turn ON the ink valve of each color in the anti-clock direction to open it, as shown below:

Fig 4: Displaying the Ink Valves

Step 10: Press the **Purging** button and clean print heads using the tissue provided with the printer.

Step 11: Perform Nozzle test.

Now, printer is ready for printing.

5. Loading Media

Follow these steps to load media:

Step 1: Place the media on the Print 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:
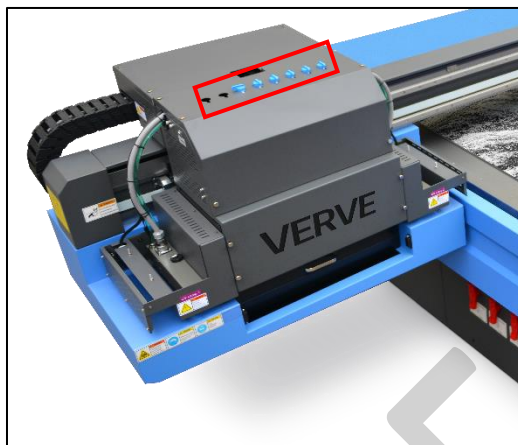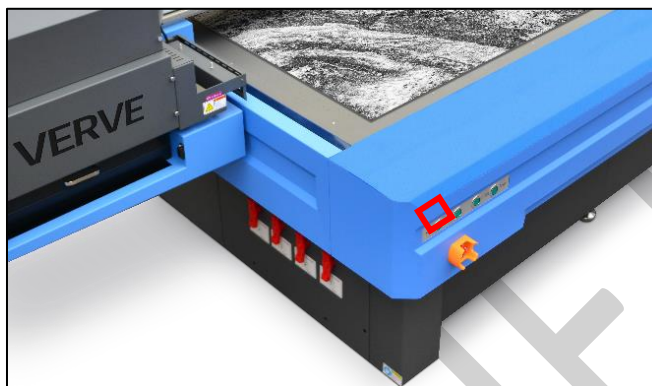

Fig 5: Turning ON the Bed Vacuum Button

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

Fig 6: Switch ON the Vacuum Chamber

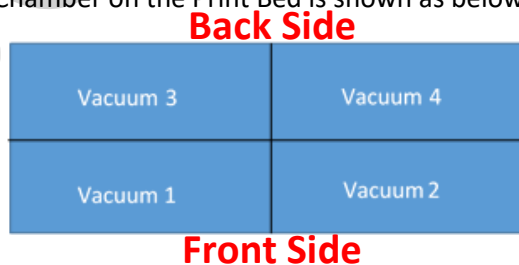The classification of Vacuum Chamber on the Print Bed is shown as below:

Fig 7: 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. (Refer to **Head Height Measurement** section).

6. Ink Filling

Please use the recommended ink in the printer for high printing quality and long life of print and Print Head. Fill recommended ink in each main ink tank as per the color stickers, as shown below:

Fig 8: The Main Ink Tanks

The ink sub tanks are shown in the below image:

Fig 9: The Sub Ink Tanks with Heaters

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

7. Getting Familiar with Printer Manager Interface

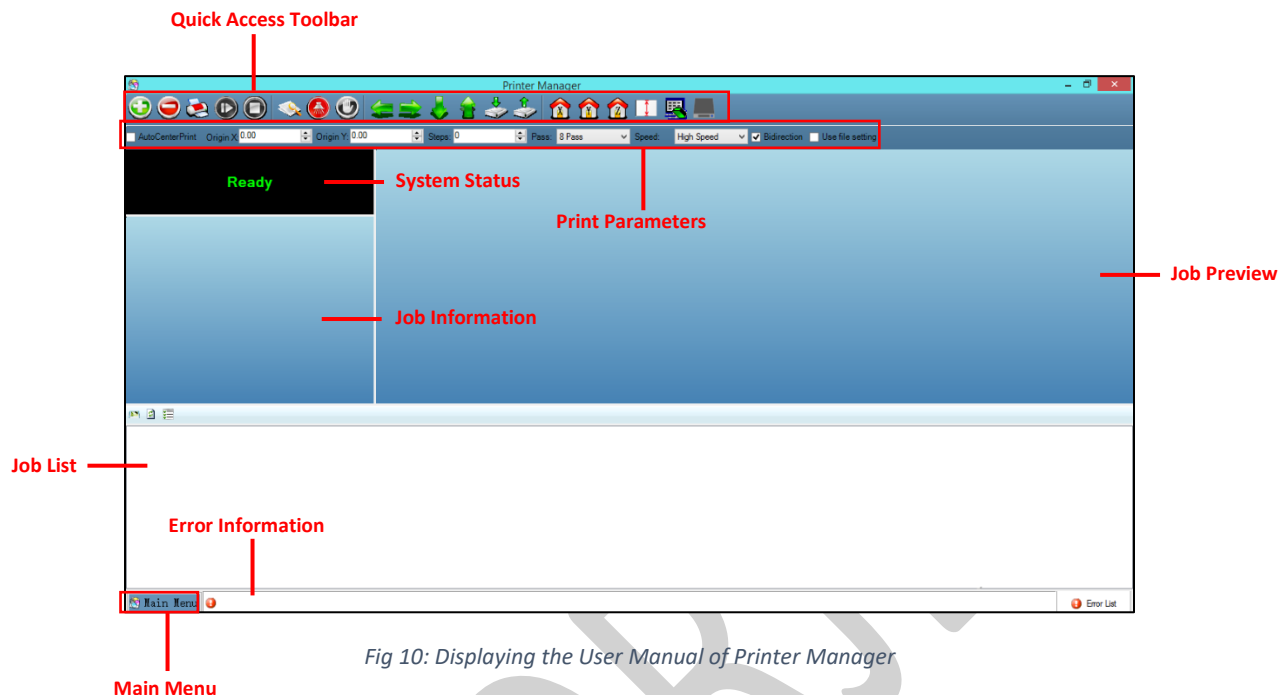The User Interface of the Printer Manager software is shown as below:

Fig 10: Displaying the User Manual of Printer Manager

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

- **Main Menu**: Consist of several sub menu options viz. Settings, Tools, and also provide variety of functions in well organize manner.
- **Quick Access Toolbar**: Display frequently performed actions like Add Job, Delete Job, Print Job, Pause or resume, Abort job, Check nozzle, Auto clean, Move left, Move right, Set print origin, Move forward, Move backward, Move carriage to origin, and Edit job are available as buttons on the Quick access toolbar.
- **Job Information**: Display the properties of the selected job like file name and path, Status, Print Size, Print Area, DPI, Pass, and more.
- **Job Preview**: Show the job preview as well as print progress in this area.
- **Job List:** Displays the thumbnail preview of added jobs.
- **Error message:** Displays the system generated error messages.

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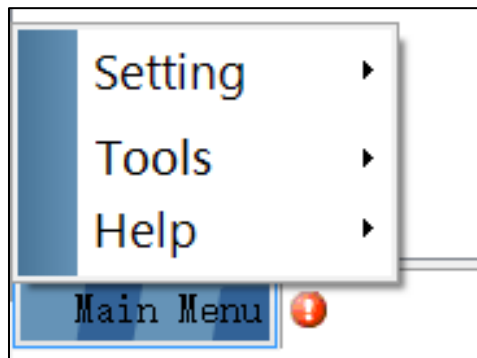
The **Main Menu** options are shown in the image below:

Fig 11: The Main Menu Options

Setting Menu

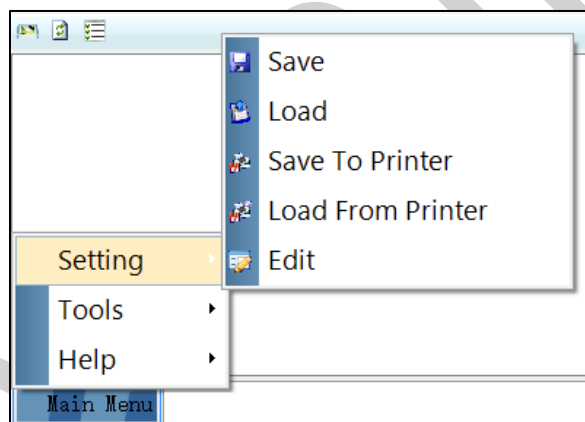The **Setting Menu** options are shown in the image below:

Fig 12: The Setting Menu Options

- **Save**: Using this option, you can save the default settings of the machine. When you save the settings, an .xml file will be created for further references.
- **Load**: Using this option, you can load the previous saved machine's settings.
- **Save To Printer**: When you clicked on this option, all the current settings get saved in the Main Board of the machine.
- **Load From Printer**: When you clicked on this option, the printer settings get saved from Main Board to Printer Manager software.
- **Edit**: Using this option, you can edit the previously made settings of Printer. On clicking the Edit option, the Setting window with Printer, Move, Preference, and Calibration tabs appears on the screen.

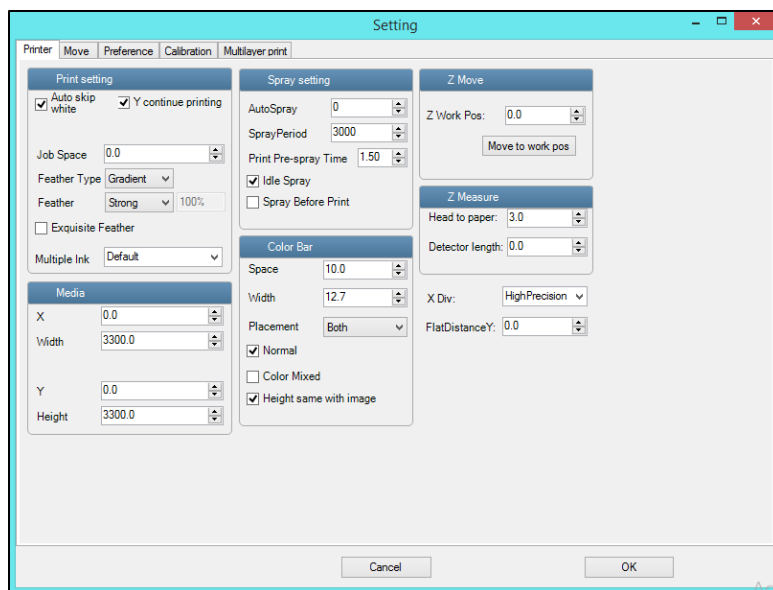The **Setting** window with the **Printer** tab is shown in the below image:

Fig 13: Displaying the Setting Window

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

- **Print setting**
    - o **Auto skip white**: Enable to auto skip the white space in the image during printing.
    - o **Job Space**: Set space between multiple jobs.
    - o **Feather**: Select the type of feather effect and intensity percentage of the feather.
    - o **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**
    - o **Space**: Specify the distance of the color bar from the image.
    - o **Width**: Set width of the color bar.
    - o **Placement**: Enable or disable the color bar and its placement viz. left, right, or both.
    - o **Height same with image**: If enabled, the height of the color bar is same as the image height.
- **Spray setting**
    - o **Auto Spray**: Set the duration (number of passes) for auto spraying.
    - o **Spray Period**: Define the duration for spraying (set as 180). If the duration increased, spray frequency gets decreased.
    - o **Print Pre-spray Time**: This option works when the **Spray Before Print** option is enabled and used for defining the duration, if spray before issuing the Print command.
    - o **Idle Spray**: Spray during carriage at home position. This option must be enabled.
    - o **Spray Before Print**: This option works with the **Print Pre-spray Time** option. When enabled, one can specify the duration, if spray before issuing the **Print** command.

Note: High Precision: 600/1200 DPI ICC Use

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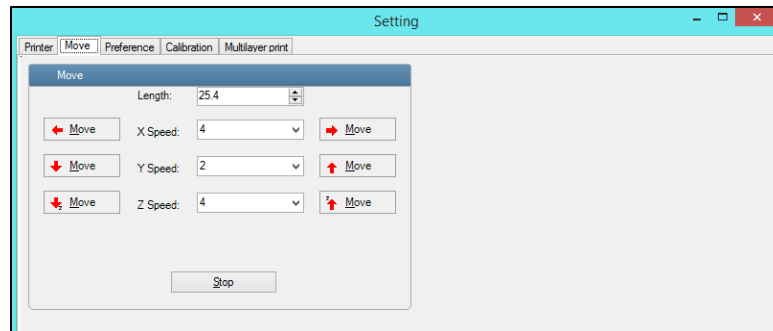

Fig 14: Displaying the Move Tab

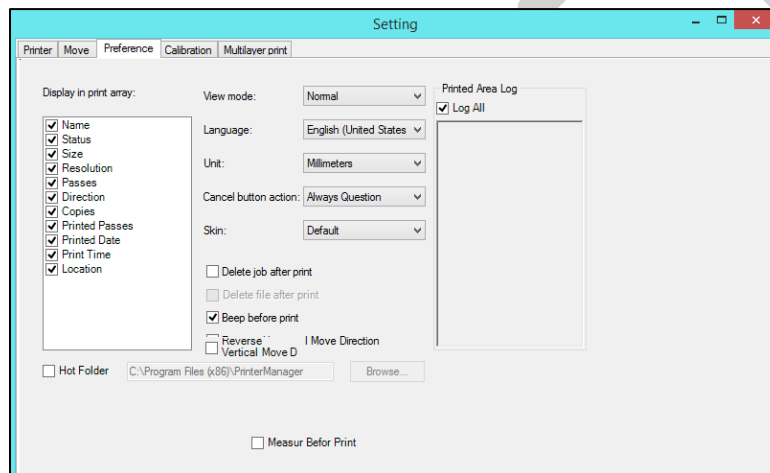The **Preference** Tab is shown in the image below:

Fig 15: Displaying the Preference Tab

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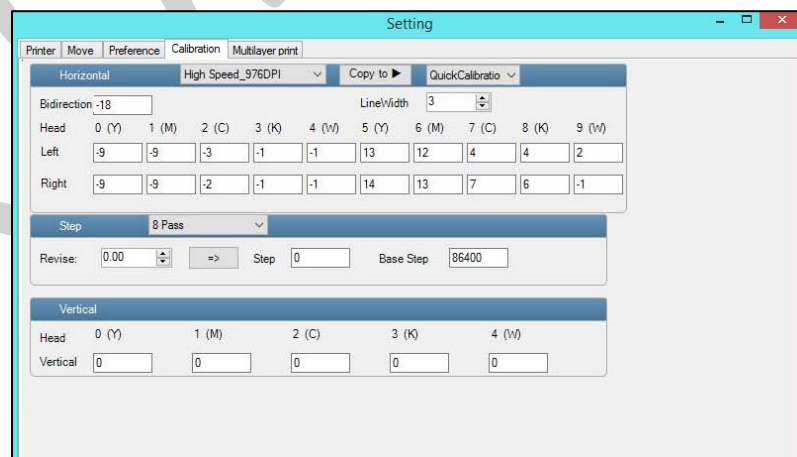

Fig 16: Displaying the Calibration Wizard

The **Multilayer print** tab is shown in the image below:
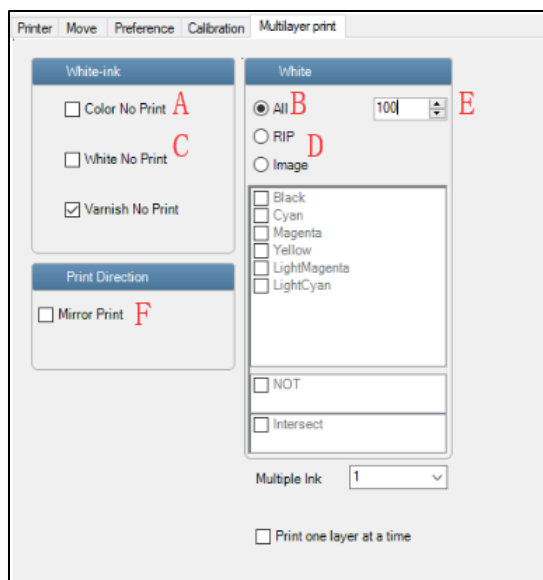
Fig 17: Displaying the Multilayer print

Description of above marked options is given as below:

A. **Color No Print:** Not print color inks
B. **All:** Print full white ink
C. **White No Print:** Not print white ink
D. **RIP:** Spot white (design white area)
E. White ink density, normally 40% to 100%
F. **Mirror Print:** File all mirror prints (This normally use when print transparent glass & acrylic, print in one side and look in another side)

Fig 18: Displaying White not used, it replaced by spot white all times

A. Not Print White
B. Full Cover White
C. Rip White

Tools Menu

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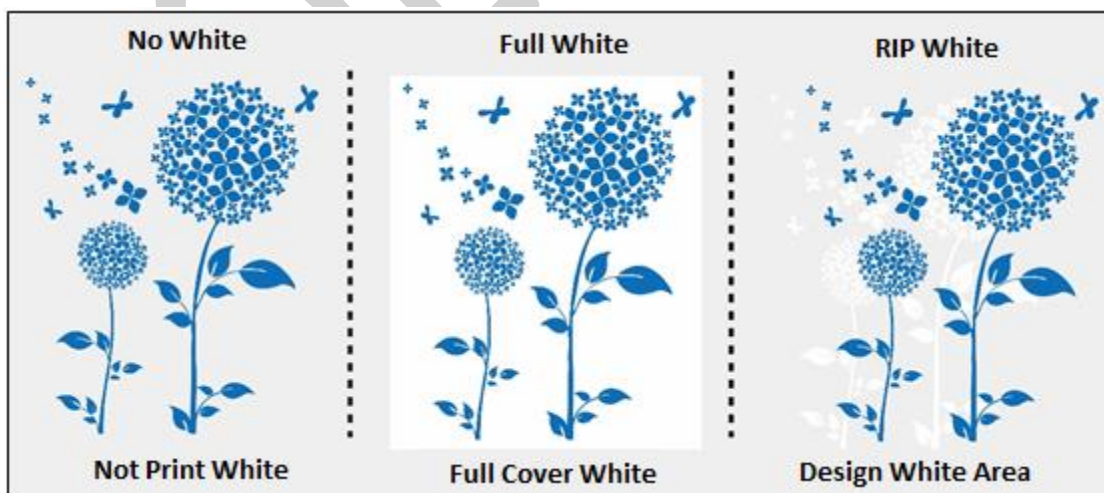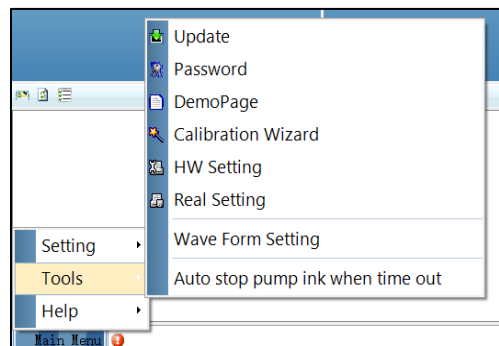

Fig 19: The Tools Menu Option

- **Update**: This option enables to apply latest changes and updates in the machine. This option supports .dat file format.
- **Password**: This option enables to feed the time and language passwords of the printer.
- **DemoPage**: This option displays the bi-direction check output to improve the bi-direction printing capability.
  Note: This option is not for the use of operator.
- **Calibration Wizard**: Using this option, you 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**: This option enables to select the encoder type of the printer as per the compatibility either linear or servo.
  Note: This option is not for the use of operator.
- **Real Setting**: This option enables to check and reset the temperature as well as voltage of each Print Head.
  Note: This option is not for the use of operator.
- **Wave Form Setting**: This option helps in controlling and setting the wave form of the printer with respect to ink, Print Head type, and speed.
  Note: This option is not for the use of operator.
- **Auto stop pump ink when time out**: Enable or disable the pump automatically when time out occurs.

Help Menu

The **Help Menu** is shown in the image below:
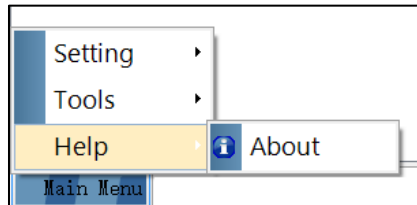
Fig 20: The Help Menu Option

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

9. Printing

Print Head Calibration

The Print Head calibration is categorized into the following types:

- **Mechanical Check**: Includes Vertical Check and Angle Check
- **Software Calibration**: Includes Horizontal Calibration and Step Calibration

Let's discuss the above-mentioned checks and calibration one by one in details.

Note: Mechanical checks are performed by service engineer, thus these checks and their description are not included in user manual.

Opening the 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:
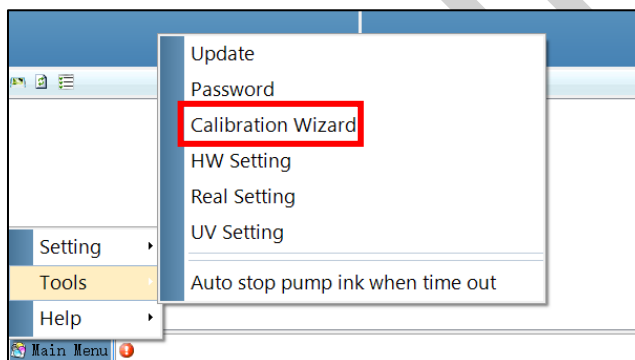

Fig 21: Selecting the Calibration Wizard Option

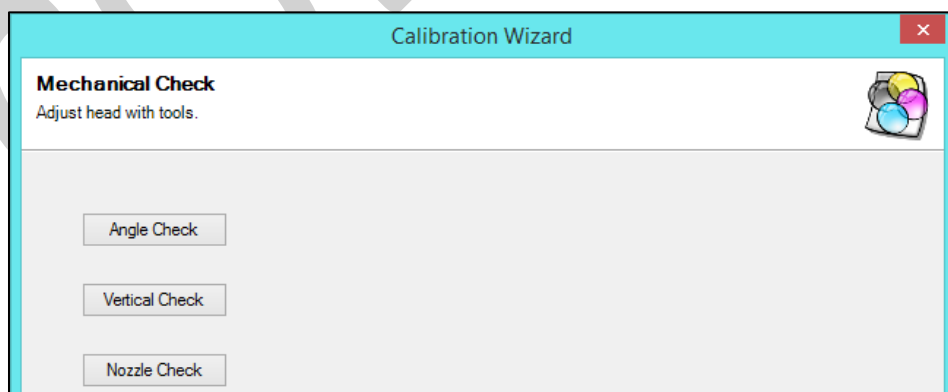This should bring up the Calibration Wizard which is shown below:

Fig 22: Displaying the Calibration Wizard

When you press the **Next** button, we redirect to the software calibration screen, as shown in the below images:

Fig 23: Displaying the Bidirectional Check in Calibration Wizard

Let's discuss each test and their result one by one in upcoming section. Mechanical checks are performed by Service Engineer; thus, these checks are not discussed in the user manual.

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 would align accurately with the Right to Left test print at **"0"** position. In case of error in the Bi-Direction offset, the Left to Right and Right to Left print would align at some other point on the scale.

The **Bi-direction Calibration** result is shown in the image below:
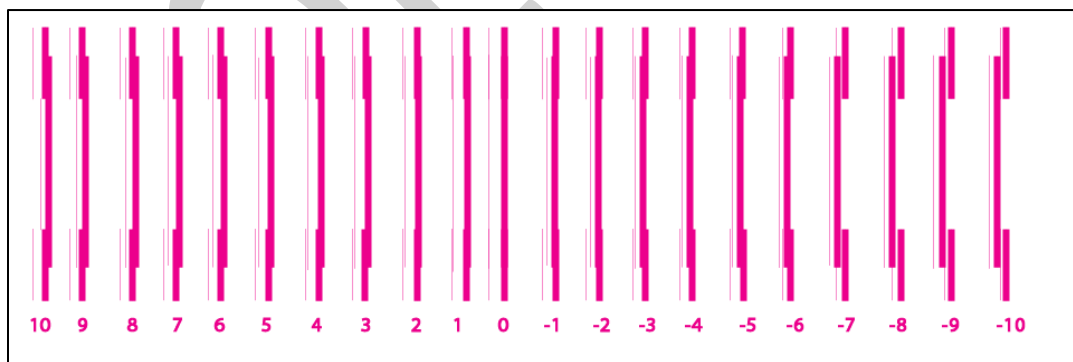
Fig 24: The Bi-Direction Calibration Output

Based on the above figure, you can notice that the Bi-direction Calibration is good at **"0"** position. The correction value is **"0"** which means you need not to correct the bi-direction value. Sometimes, the correction value can either positive or negative. If the correction value is positive, then you need to add it in the current bi-direction adjust value or subtract the same, if negative.

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 has to 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 has to be done for each desired pass. Step value can be adjusted using the Steps field, as shown below:
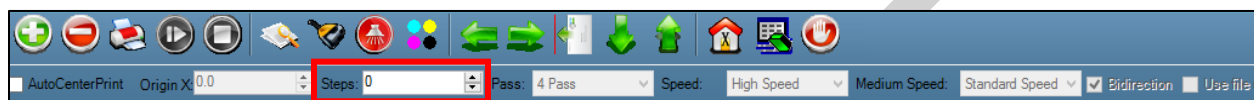
To view the Step Calibration result, click on the **Next** button (Refer to Fig 25) until the Step Calibration screen appears and then click on the **Print** button. The Step Calibration result image is shown as below:
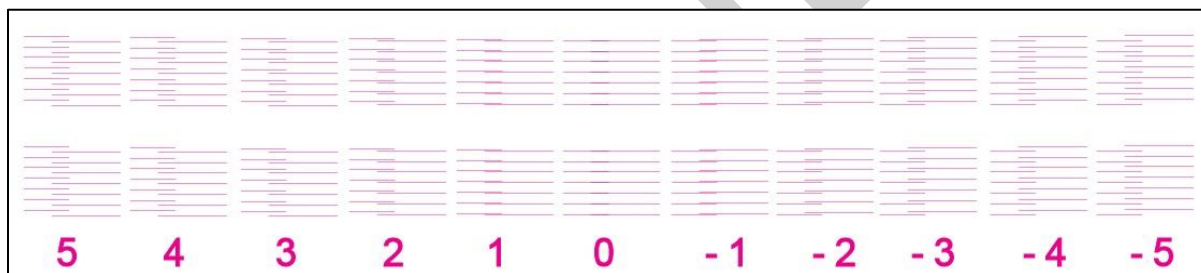

Fig 25: Displaying the Output of the Step Calibration

From the above figure, you get the accurate step adjust correction value. The correction value is either positive or negative. If the value is positive, then add it in 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, you can conclude that the pattern is corrected at **"0"** position.

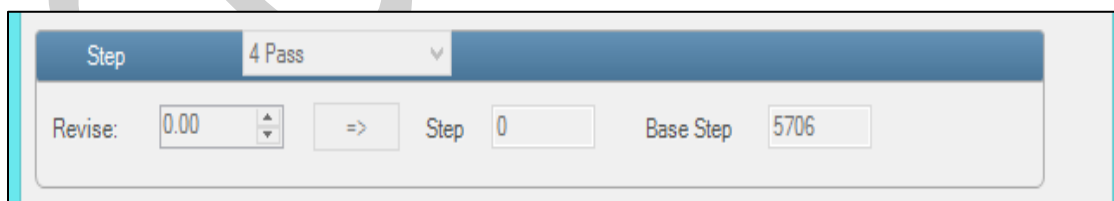The **Step Calibration** and it's parameters are shown in the image below:

Fig 26: The Step Calibration Parameters

Follow these steps to perform step calibration:

Step 1: Select the desired pass from the list and click on the **Print** button (Refer to Fig 26).

Step 2: Feed the correction value in the **Revise** field (the correction value up to two decimal places) (Refer to Fig 26).

Step 3: Click on the **=>** icon (Refer to Fig 26) on the Step Calibration window. The correction value result will be reflected in the **Step** field (Refer to Fig 26). The same step value will also be displayed in the **Steps** field on the **Quick Access Toolbar**.

Setting Print Origin

Follow these steps to set the print origin:

Step 1: If you want to start the printing from home position, then click on the **Move carriage to origin X** and **Move carriage to origin Y** icons on the Quick Access Toolbar, as shown below:

Fig 27: Setting Home Position

Step 2: If you want to start the printing from any position, then X axis and Y axis values in the **Origin X** and **Origin Y** fields, as shown below:

Fig 28: Setting Origin X and Origin Y

Setting Print Parameters

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

Fig 29: Displaying the Print Parameters

- **Origin X**: Specify the Carriage initial position at X direction (Horizontally).
- **Origin Y**: Specify the carriage initial position at Y direction (Vertical).
- **Steps**: Remove step size errors from the current print job by specifying number of steps.
- **Pass**: Choose the number of passes with which the print job should be printed. Increasing the number of passes improves the print quality but at the cost of printing time.
- **Speed**: Choose the printing speed like VSD_1 and more.
- **Print Mode**: Set the mode of printing viz. High Speed and High Precision.

Adding Job

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. Let's discuss both the ways one by one.

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:

Fig 30: Clicking on the Add Job Button

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

Step 2: *Navigate* to the location where the image file with extension "**.prt**" and "**.prn**" is stored (Refer to Fig 31).

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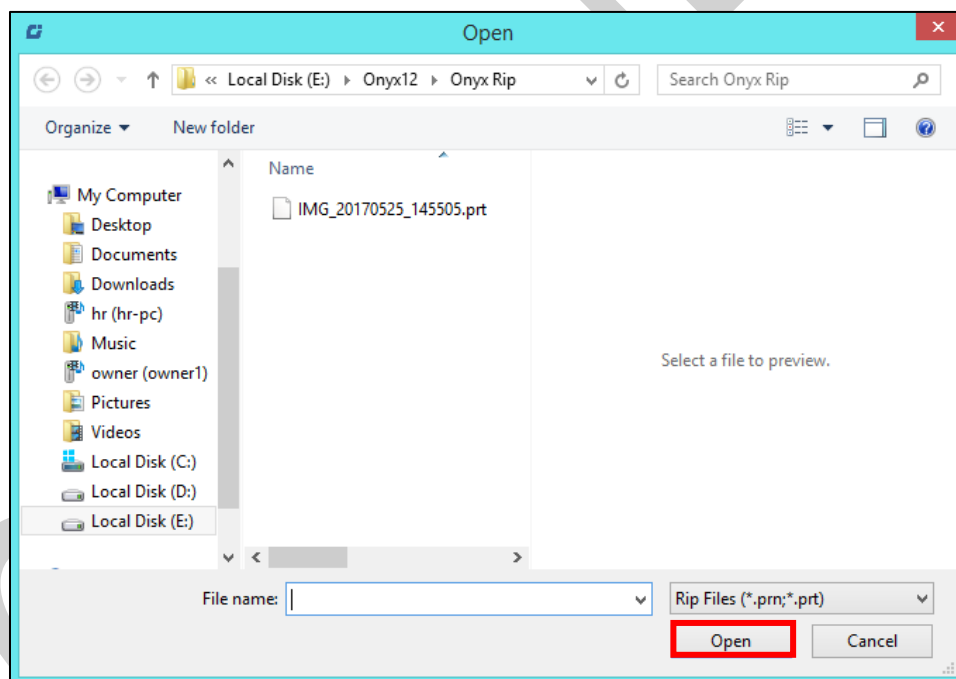

Fig 31: Adding the Job

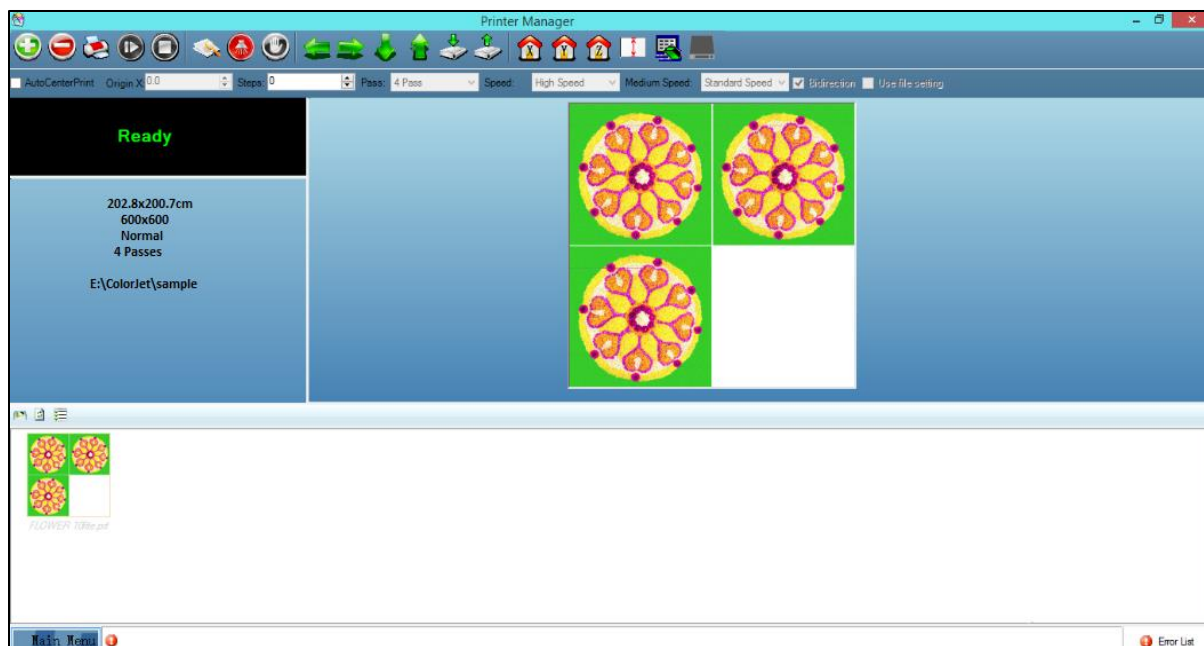Now, the selected image appears in the Job List area, as shown below:

Fig 32: Displaying the Added Job and Their Details

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. User 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:
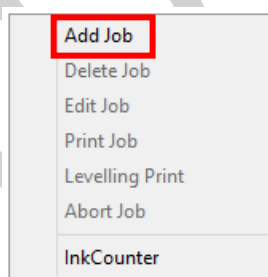

Fig 33: Displaying the Context Menu

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* on the **Delete job** icon on the **Quick Access Toolbar**.

Editing Job

Follow these steps to edit the selected job:

Step 1: *Select* the job of which details you want to edit from the **Job List** area.

Step 2: *Right-click* on the selected job. The context menu appears on the screen.

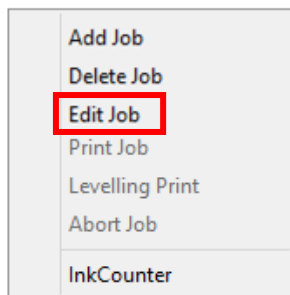**Step 3**: *Select* on the **Edit Job** option from the context menu, as shown below:

Fig 34: Selecting the Edit Job Option

The **Edit Job Form** appears with the list of options viz. Clip, Reverse Print, and Tile.

Step 4: *Select* the desired checkbox in front of the Clip, Reverse Print, and Tile options. On clicking to any option, its related parameters get appeared on the right pane and you can edit them as per the requirements. In our case, we have selected the **Clip** checkbox.

Step 5: After making the desired changes, *click* on the **OK** button to apply the settings, as shown below:
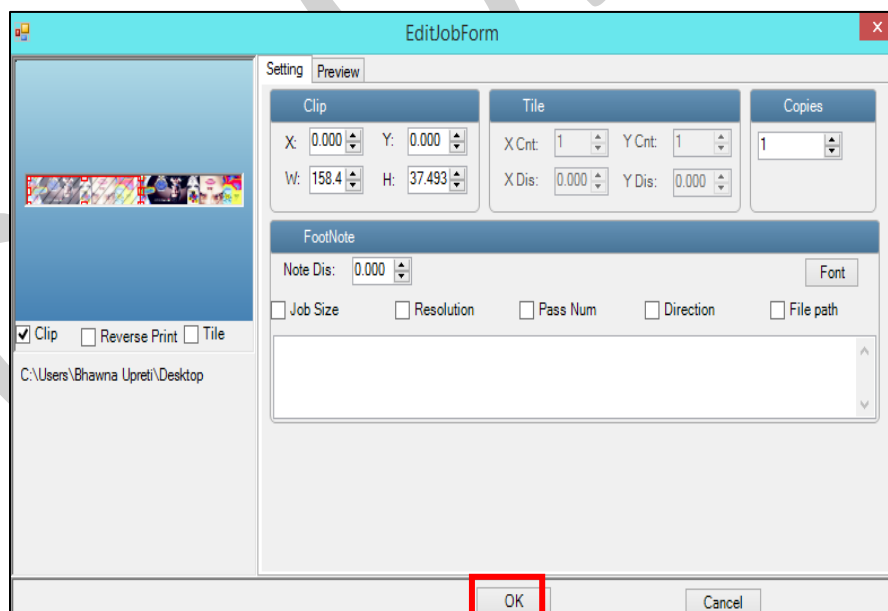

Fig 35: Displaying the Edit Job Form Window

Similarly, you can click on any other option and its related options get enabled in the right pane of the Edit Job form.

Ripping and Printing

Ripping is an independent process which converts a raw image file into the machine-readable format and get the file ready for printing. The Rip software supports the tiff, jpeg, eps, psd, bmp file formats. After ripping the image file, the output file will be in **".prt"** or **".prn"** file format. Thus, you 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, you 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:

Fig 36: Selecting the Print Command

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

Fig 37: Displaying the Printing Details

Pausing and Canceling Printing

If you find any defect during the printing process, you 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:

Fig 38: Issuing the Pause or resume Command

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

Head Height Measurement

Head Height measurement refers to the process of measuring the distance from head to media. The head height is sensed automatically. If it is not done, then use the Z axis button on the Quick Access Toolbar or Setting window for specifying the distance manually.

Follow these steps to adjust the head height:

Step 1: Click on the **Measure paper height** button on the **Quick Access Toolbar**. The Head height measurement window appears, as shown below:

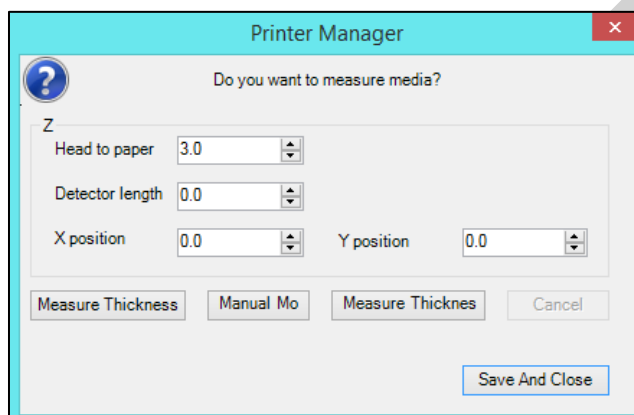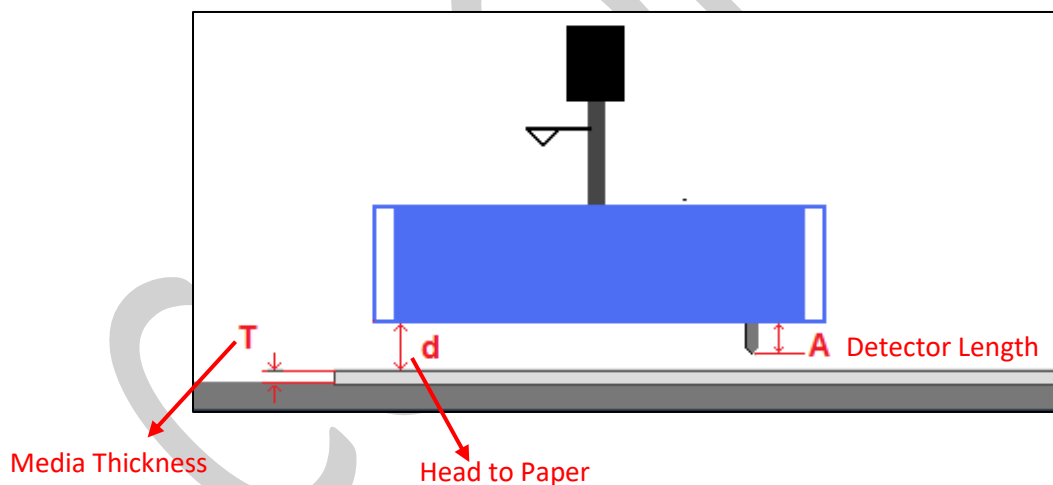*Fig 39: Adjusting Head Height*

Step 2: Enter values in the **Head to paper, Detector length, X position,** and **Y position** fields.

Step 3: Press the **Save And Close** button to save the specified settings. For automatic process, click on the **Measure Thickness** button.

Now, the head height is adjusted as per the media type.

Head Temperature Settings

The Head Temperature and Voltage settings can be viewed simply by clicking on the **Main Menu→Tools→Real Setting**, as shown below:

Fig 40: Opening the Real Setting
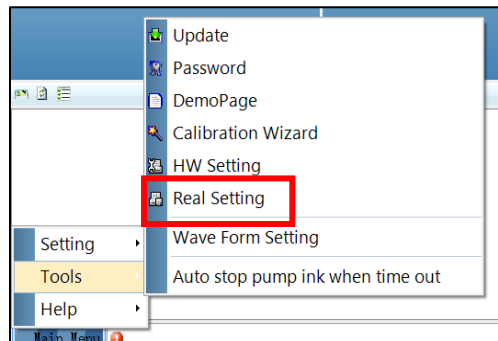
The **Temperature and Voltage** window appears on the screen, as shown in the below:

Fig 41: Displaying the Temperature and Voltage Window

Note: Normally Kyocera head set temperature will be 42 degrees (Range from 36 to 42).

UV Setting

The UV Setting option enables user to control and manage different parameters of both UV lamps viz. Left UV lamp and Right UV lamp. Using the UV window, user can set left and right light setting, enable or disable print to left and print to right options, and most importantly define the range first nozzle as well as initial lead of shutter. To open the UV Setting window, click on the **Main Menu→Tools→UV Setting** path. The **UV Setting** window appears as shown below:
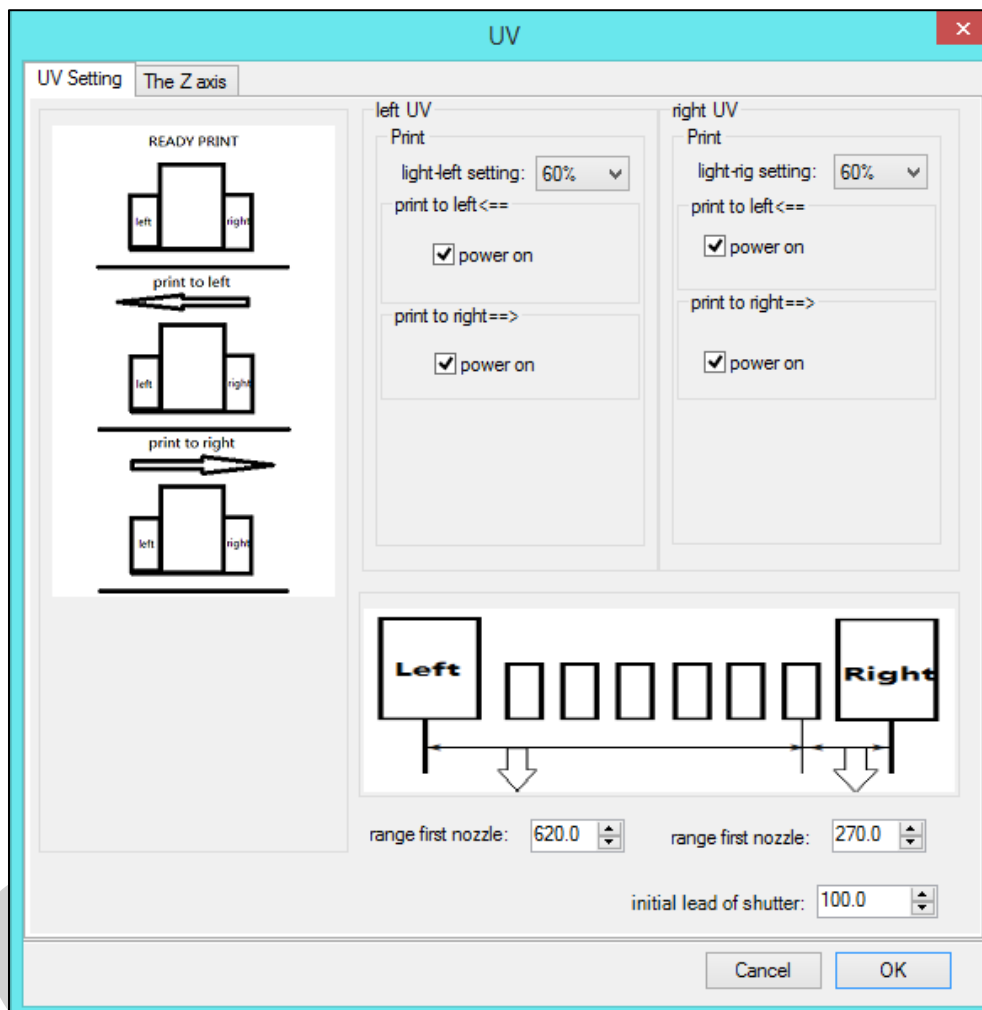

Fig 42: Displaying the UV Setting Window

Note: Please don't make any change in the default settings of the UV Lamps.

Feeding Time Passwords

The Password option enables operator to feed time password of the printer. On clicking **Password** option under the **Tool**s menu, the **Password** window appears with two options viz. Time Password and Language Password. The Time Password helps in setting the running time of the printer.

Follow these steps to change the time and language password of the printer:

Step 1: *Click* on the **Main Menu**➔**Tools**➔**Password** path, as shown below:
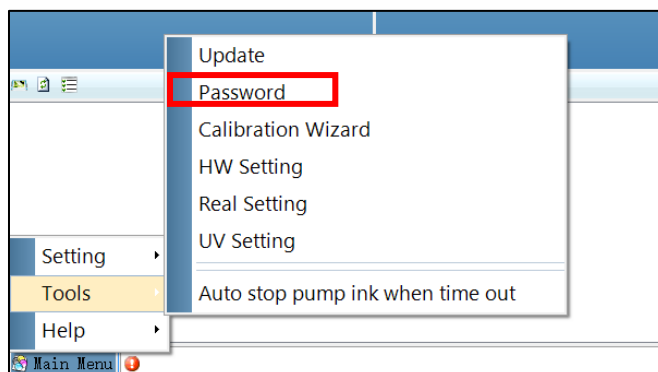
Fig 43: Selecting the Password Option

The **Password** window appears on the screen as shown below:
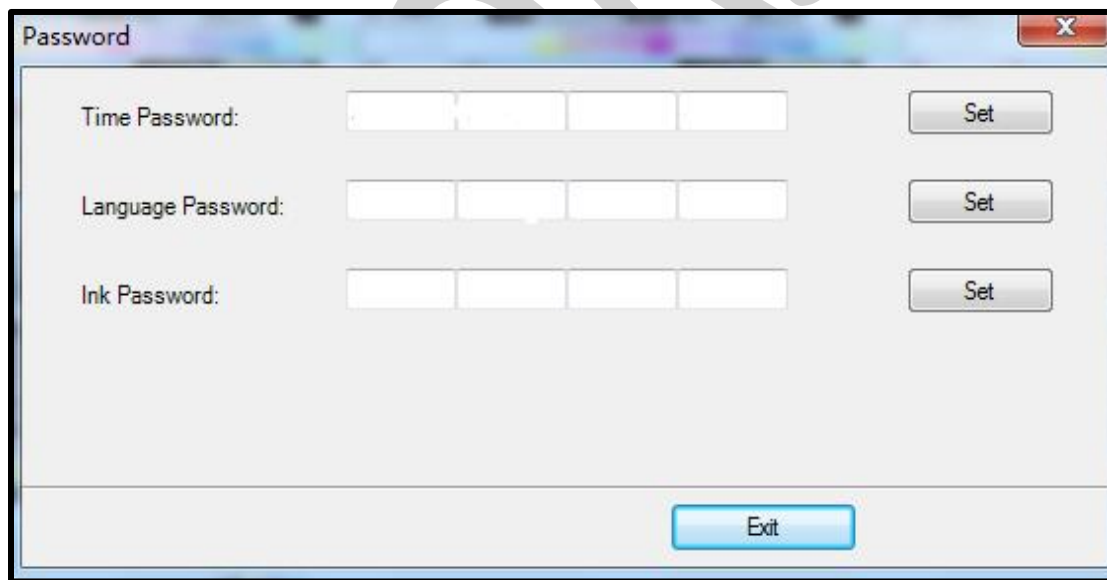
Fig 44: The Password Window

Step 2: *Set* values in the **Time Password** fields as per the requirements (Refer to Fig 44).

Step 3: After feeding the passwords, *click* on the **Set** button in front of both the options (Refer to Fig 44).

Step 4: *Click* on the **Exit** button to close the **Password** window (Refer to Fig 44).

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

10. 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:

Fig 45: Displaying the Good and Bad Nozzle Test Result

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

Fig 46: Selecting the Check Nozzle Button

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

11. Head Cleaning

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

Head Blotting

Head blotting refers to the process in which the head surface area is cleaned with the help of tissue paper or cloth. Blotting removes ink drops adhering to the Print Head nozzle surface. Spread the cloth tissue on the open palms and insert hands below the print head position, without touching the Nozzle Plate, as shown in the image below:

Fig 47: Displaying the Head Blotting Process

Gently touch the nozzle plate using the clean and fresh cloth tissue at two different positions.

Note: Remember!! NOT TO WIPE

Please strictly follow the below mentioned instructions:

- Avoid using the same tissue paper for blotting the Print Heads.
- Blotting with dry and inferior quality tissue paper will damage the nozzle film by making scars.
- Strictly use recommended tissue paper (Contact your dealer for tissue paper).
- Always use wet tissue paper to absorb the residue ink.
- Don't touch hardly, just absorb the residue inks on nozzle plate.
- Softly touch with a lint free bloating tissue paper (duly wet by cleaning solvent) by changing the tissue paper position with respect to nozzle plate.
- Don't apply force while absorbing residue inks with tissue paper after purging.
- Leaving head plate uncapped while printer off, will block nozzles permanently due to ink solidification.
- Color bar should always be enabled while printing and idle spray should always be enabled for long life of the Print Head.

Head Purging

Head purging refers to the method in which heads are cleaned by forcing pressurized ink though the nozzles.

Follow these steps to start the head purging process:

Step 1: Turn ON the Negative Pressure knob of the color on which user wants to perform the purging, as shown below:
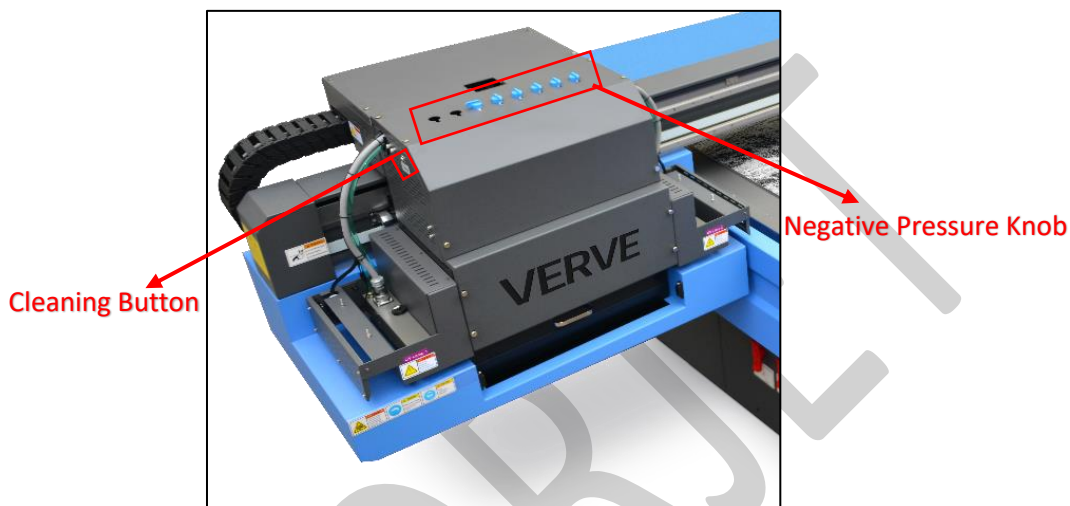
Fig 48: Performing Head Purging

Please make sure that all other colors Negative Pressure knob must be turned OFF.

Step 2: Press the **Cleaning** button to start the purging process (Refers to Fig 48).

Now, the Print Heads get cleaned.

Head Spraying

Head spraying should be performed only when small percentage of nozzles are blocked. This method is used to avoid mixing of colors. When heads are sprayed all the nozzles are actuated at a high rate which helps in opening up dry nozzles of the printer. To perform head spraying, *click* on the **Spray** button available under the **Quick Access Toolbar**, as shown below:

Fig 49: Displaying the Spray Button

12. Switch OFF Procedure

Follow these steps to switch OFF the machine:

Step 1: Perform the Nozzle Test to check Print Head nozzles status.

Step 2: Clean the Print Heads, if required.

Step 3: Close the Printer Manager software.

Step 4: Turn OFF the Chiller unit, as shown below:

Fig 50: Displaying the Chiller Unit

Step 5: Turn OFF the Negative Pressure knob.

Step 6: Switch OFF the printer from the main power.

Step 7: Cover the printer.

13. Maintenance

Print Head Maintenance

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 environment, heat and moisture, collision, cleaning etc. For print head maintenance, the following instructions should be taken care:

- 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 degree 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, it must be wiped dry with clean cloth, and inform engineer
- Avoid head damage due to media and Print Head confliction.
- Color bar should be ON.
- Don't use expiry ink and store the ink at favorable environment.
- Prevent the object or human body with static contact to the print head.
- Print head nozzles should be kept clean, dust free, and also prevent from oxidation.

Maintenance of Machine Motion Parts

- Clean and lubricate guide rail at least once a month and lubricate if required.

Equipment Cleaning

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

Power System Maintenance

- Ground wire should always be checked whether loose or disconnection.

Control System Maintenance

Static discharge

- The operator must discharge his own electrostatic charge before touching the electronic components and parts.
- Don't touch the pin connectors and welded joints on circuit boards, integrated circuit boards.

Ink Supply System Maintenance

- Check for leakage between 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 supplying.

14. Troubleshooting Guide

Printer Not Initializing
- Encoder scale is having ink stains (print shows vertical color bands)
- Encoder sensor is not cleaned

Printer Manager Not Showing "READY"
- USB cable is not connected to the computer or loose
- USB cable is faulty
- Printer is OFF

Print Stops in Between Printing
- USB cable is loose or faulty
- Open heavy file that can slow down the data transfer
- Ground wire is disconnected
- Encoder scale is having ink stains
- Pulley or belt is slipping
- Ripped file is having error
- Media is finished

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 - bidirectional and step
- Improper head mounting and calibration
- Selection of incorrect resolution
- Wrong speed selection instead of high precision

Lines in Print
- Head nozzles are blocked
- Incorrect feed steps

Print Not Dry
- Check UV lamp settings
- Check intensity of UV lamps

Head Not Firing
- Perform nozzle test and clean heads, if required
- Check if any air lock or no ink in the head pipes
- Check the ink and air pipe for any cuts or loose connection

A Color Ink Not Supply

- Damaged float sensitivity
- Power board fault
- Float power line failure
- Ink sheet failure
- Ink path have disclosure
- No ink in the main or sub ink tanks

UV Lamp Not Working

- UV lamp is aged
- Check the power of the UV Controller System
- Check the power of the Chiller unit
- Check the coolant level
- Check the coolant pipe, if cut or bend

UV Ink is not Fully Cured

- Lamp power density is small
- Photo initiator in UV ink is not enough
- Curing time is short or environmental temperature is low
- Distance between lamp and media is too far

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