# DC 420 SERIES LABEL PRINTER

## DC 421PRO AND DC423 PRO

# TABLE OF CONTENTS

# 1- INTRODUCTION

**The printer can meet the needs of real – time and batch printing of labels and is connected to other equipment through standard serial interfaces, parallel interfaces, USB interfaces and network ports. It provides thermal and thermal transfer printing methods. The Printer can support wide range of printing paper types and a variety of printing materials, including paper rolls, thermal paper and folded label paper. In addition, other commonly used barcodes can be used.**

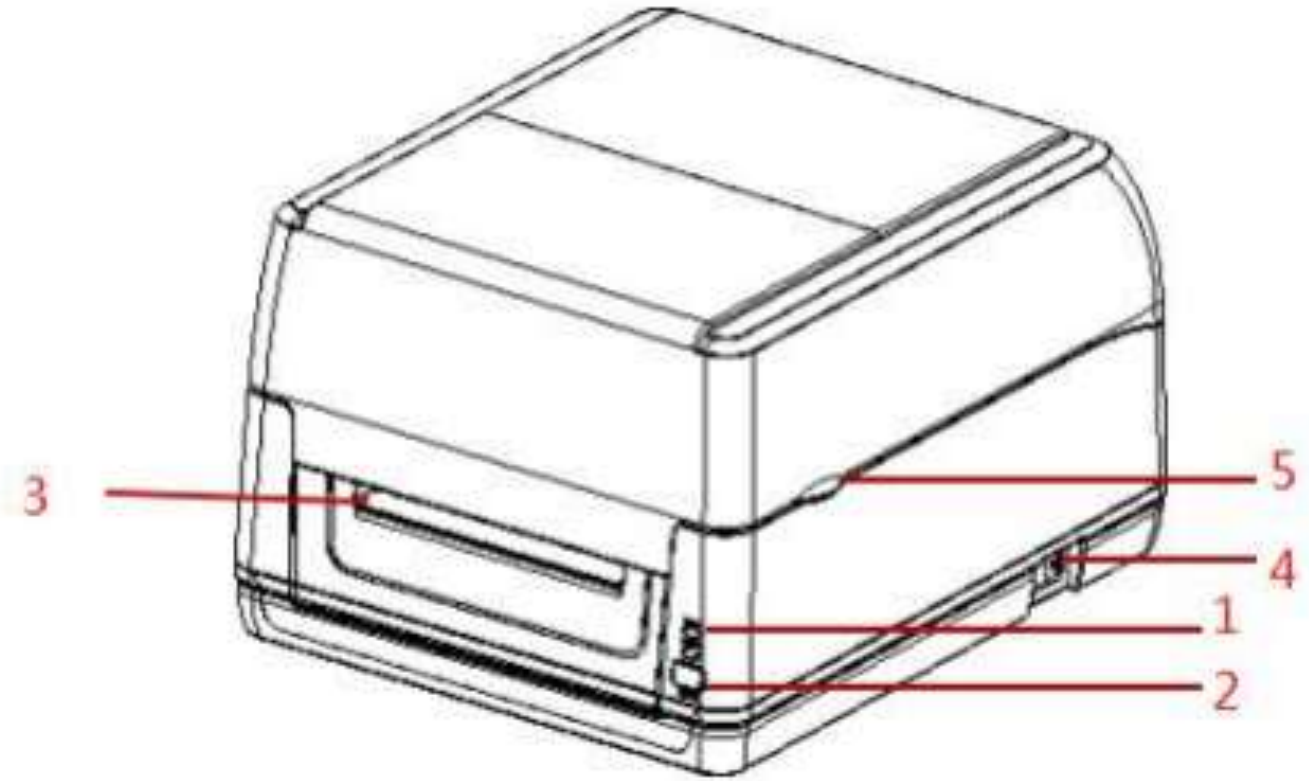
**Many common 1D Barcodes and QR codes are built into this model. It supports four different printing directions.**

# MAIN FEATURES

- **High Printing Quality**
- **Low Noise**
- **The Attractive Appearance**
- **Reasonable Structure, Simple use and maintenance**
- **High Speed, Stable and easy to use**
- **Automatic correction of Label**
- **Easy to replace label and Ribbon**

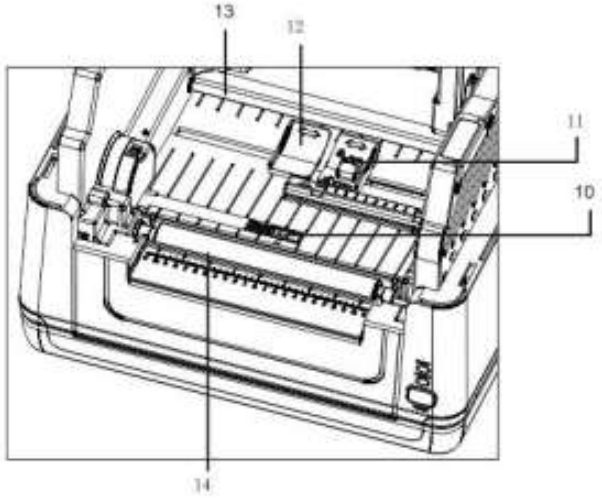
# 2- APPEARANCE AND COMPONENTS

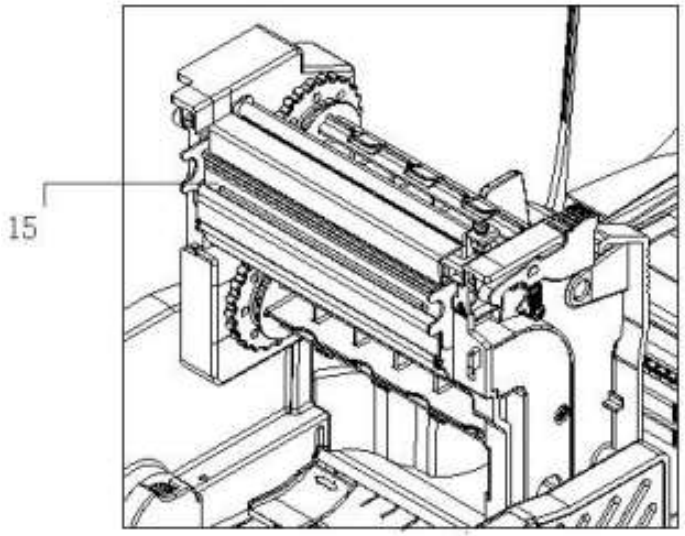
## Front View

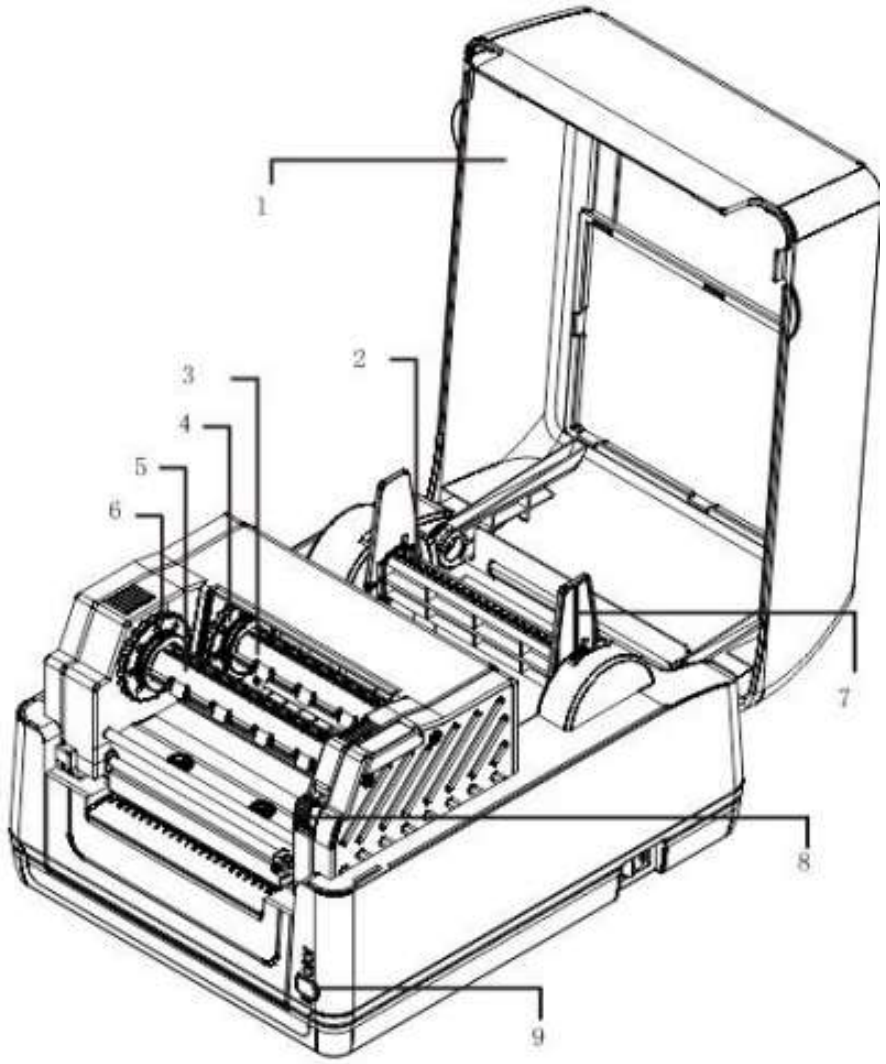



| NO. | Name |
|---|---|
| 1 | LED indicator |
| 2 | Feed key |
| 3 | Paper exit chute |
| 4 | Power switch |
| 5 | Top cover open tab |

# Interior View-

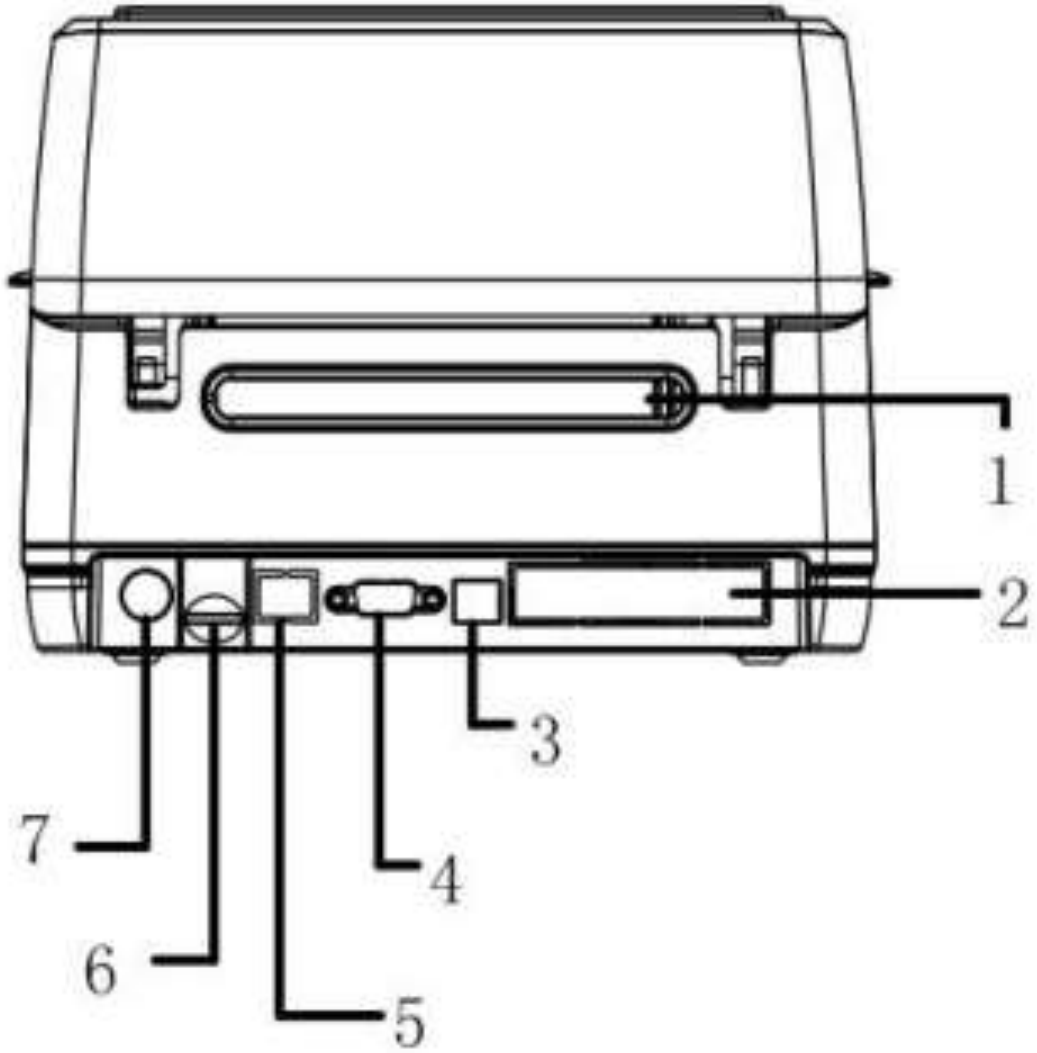



| NO. | Name |
|---|---|
| 1 | Upper cover of printer |
| 2 | Paper roll holder |
| 3 | Carbon belt supply shaft |
| 4 | Carbon belt supply roller |
| 5 | Carbon belt recycling shaft |
| 6 | Carbon belt recovery roller |
| 7 | Paper roll fixing piece |
| 8 | Print head cover opening key |
| 9 | Paper feed button |
| 10 | Black label sensor |
| 11 | Paper clip limit switch |
| 12 | Paper clip stopper |
| 13 | paper guide shaft |
| 14 | Rubber roller |
| 15 | Print head |

# Rear View



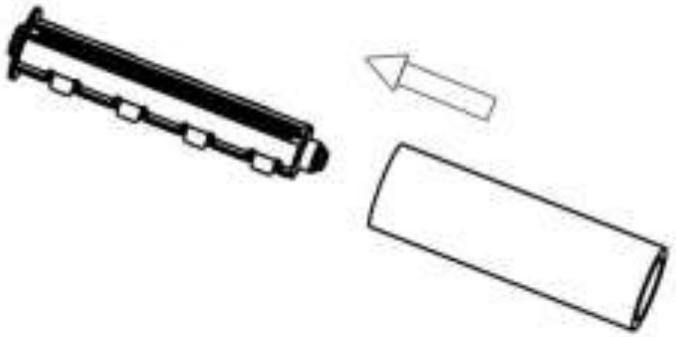
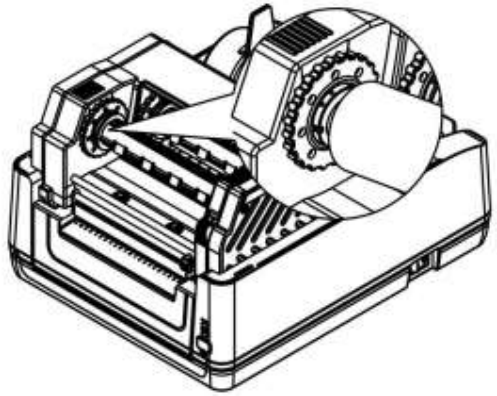
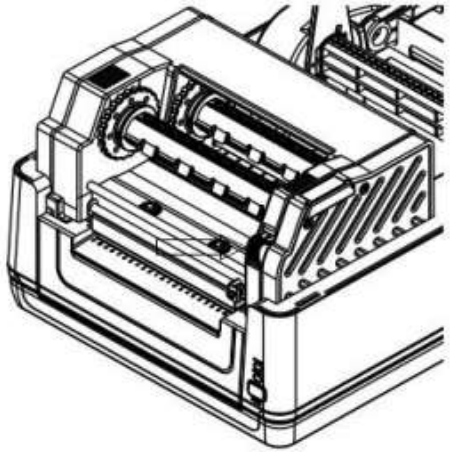

| NO. | Name |
|---|---|
| 1 | External paper inlet |
| 2 | Parallel port (optional) |
| 3 | USB interface |
| 4 | RS-232C serial port (optional) |
| 5 | Network port (optional) |
| 6 | MicroSD card slot |
| 7 | Power supply connector |

# 3- TECHNICAL PARAMETERS

| | |
|---|---|
| **Resolution** | 203 DPI |
| **Print method** | Thermal Transfer / Direct Thermal |
| **Print speed** | 127 mm (5") / s Max. |
| **Max.print width** | 104 mm (4.09") |
| **Max.print length** | 1778 mm (70") |
| **Media** | |
| **Media type** | Continuous, gap, black mark, fan-fold and punched hole |
| **Media width** | 25.4~118mm (1.0"~4.6") |
| **Media thickness** | 0.06~0.254 mm (2.36~10mil) |
| **Media core diameter** | 25.4 ~ 76.2 mm (1 "~ 3 ") |
| **Label length** | 10 ~ 1778 mm(0.39" ~ 70" ) |
| **Label roll capacity** | 127 mm (5") OD (External Diameter) |
| **Ribbon capacity** | Max.300m |
| **Ribbon width** | 110 mm |
| **Performance Features** | |
| **Processor** | 32-bit CPU |
| **Memory** | 8MB Flash Memory/ 8MB SDRAM/ Flash memory can be expanded Max.4GB |
| **Interface** | USB+Serial+Ethernet |
| **Sensors** | ① Gap sensor ② Cover opening sensor ③ Black mark sensor ④ Ribbon sensor |
| **Fonts/Graphics/Symbologies** | |
| **Internal fonts** | 8 alpha-numeric bitmap fonts, Windows fonts are downloadable from software. |
| **1D barcode** | Code 39, Code 93, Code 128UCC, Code 128, subsets A, B, C, Codabar, Interleaved 2 of 5, EAN-8,EAN-13, EAN-128, UPC-A, UPC-E, EAN and UPC 2(5) digits add-on, MSI, PLESSEY, POSTNET, China POST, GS1 DataBar, Code 11 |
| **2D barcode** | PDF-417, Maxicode, DataMatrix, QR code, Aztec |
| **Rotation** | 0°、90°、180°、270° |
| **Emulation** | TSPL、EPL、ZPL、DPL |
| **Physical Features** | |
| **Dimension** | 282 mm (D) x 232 mm (W) x 171 mm (H) |
| **Weight** | 2.56 kg |
| **Reliability** | |
| **Print head life** | 30 km |
| **Software** | |
| **Driver** | Windows / Linux / Mac |
| **SDK** | Windows / iOS / Android |
| **Power supply** | |
| **Input** | AC 110-240V,1.8A, 50-60Hz |
| **Output** | DC 24V, 2.5A, 60W |

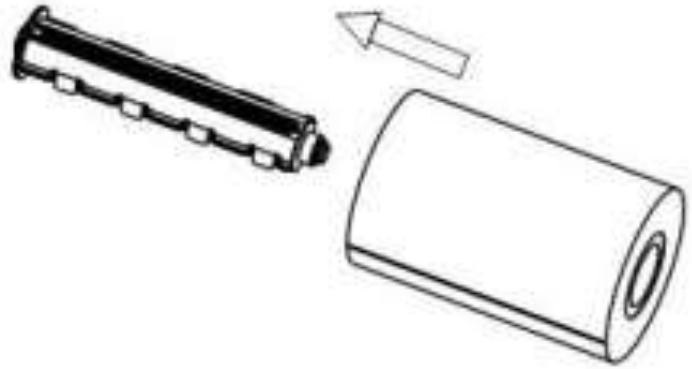
# 4- RIBBON & LABEL LOADING

## RIBBON LOADING 1/2-

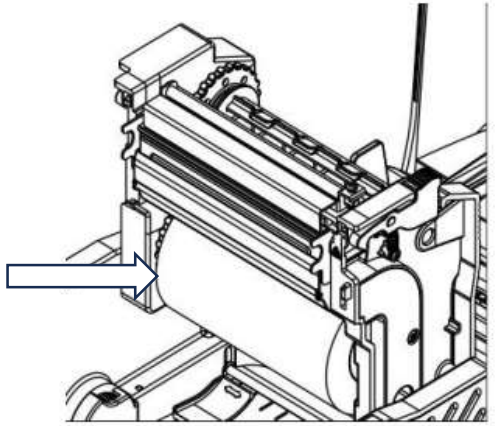
| | |
|---|---|
| **1- Open the Top cover of printer.**<br>  | **2- Put the Ribbon Spindle into empty Ribbon core .**<br>  |
| **3- Press the left side of ribbon spindle into the corban belt recovery roller (Green Color) and then install right side.**<br>  | **4- Press the printhead open switch to open the printhead cover.**<br>  |

# RIBBON LOADING 2/2-

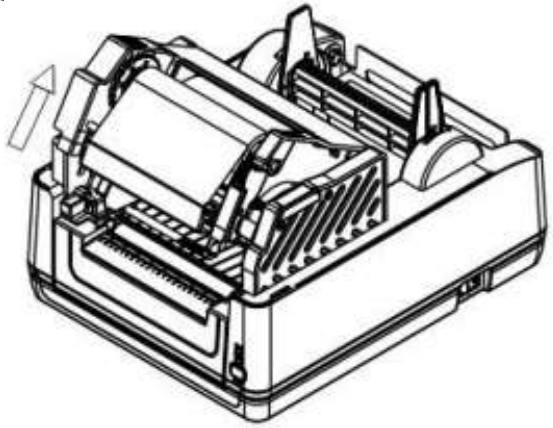
**5- Insert another ribbon spindle into a new ribbon roll.**



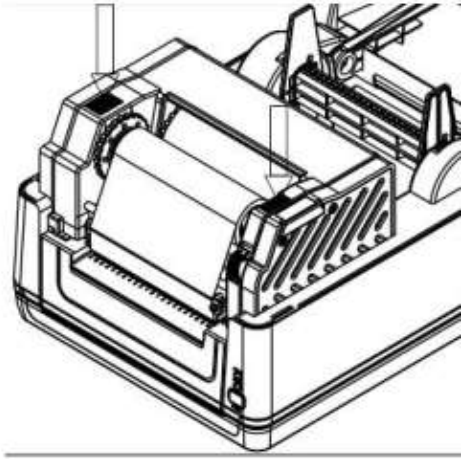
**6- Press the left side of ribbon spindle into the corban belt Supply roller (Green Color) and then install right side.**



**7- Wrap the ribbon tap around the printhead and stick it on the empty ribbon core and Rotate the carbon belt recycling wheel until the black area of the Ribbon covers the print head.**



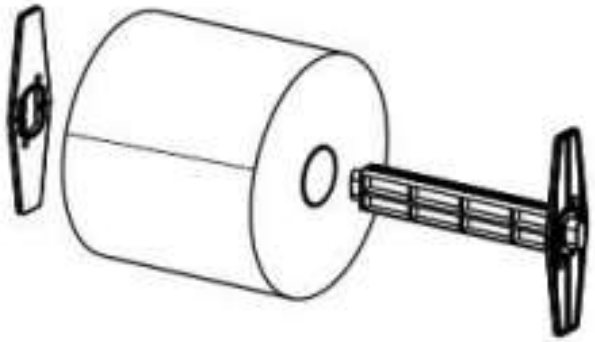
**8- Close the Printhead and make sure that the print head is completely closed to ensure the print quality.**



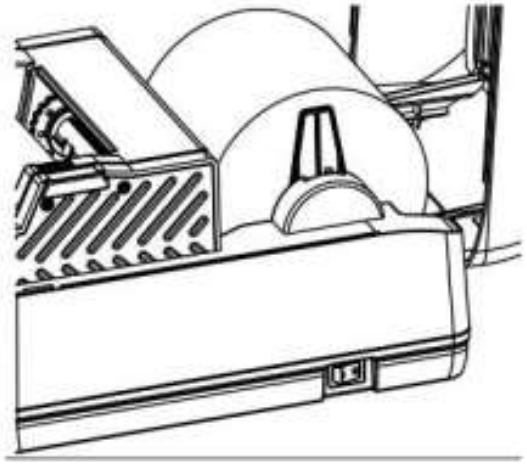
# LABEL/MEDIA LOADING

**1- Open the Top cover of printer.**

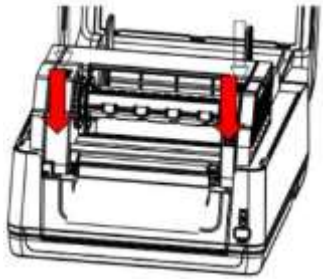
**2- Load the label roll into the Label spindle .**



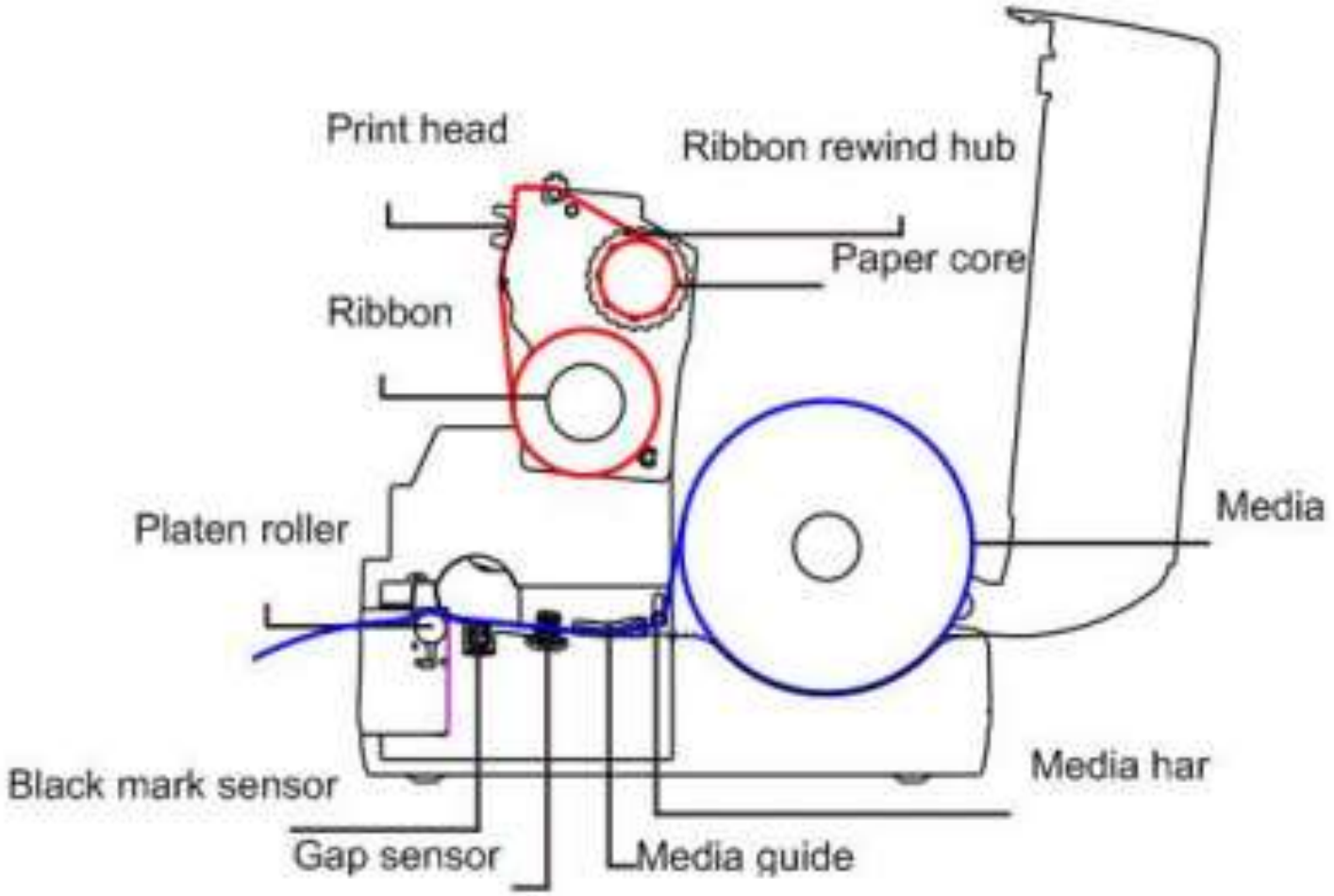
**3- Place the paper roll on the paper roll rack.**



**4- Press the printhead open switch to open the printhead cover.**
**Pull out the front end of the paper (the printing side is up), pass under the paper guide and the gap sensor, and then pull the paper through the rubber roller, and adjust the paper guide. Close Printhead.**



# LABEL/MEDIA AND RIBBON LOADING PATH




**1-Ribbon Path - Red Mark**

**2- Label Path - Blue Mark**

# 5- FUNCTION OF PRINTER LED INDICATOR AND BUTTON

**This printer has a Button and red , blue indicator lights. By indicating the LED with different color and pressing the button, printer can feed labels, pause the printing job, select and calibrate the media sensor, print printer self-test report, reset printer to defaults (initialization).**

**Please refer to the button operation below for different functions-**

## 1. LED INDICATION-

| LED Color | Description |
|---|---|
| Blue/ Solid | This illuminates that power on, printer standby to print, printer clearing data. |
| Blue / Flash | This illuminates that the system is downloading data from PC to memory or the printer is paused. |
| Red / Solid | This illuminates printer head open, cutter error. |
| Red / Flash | This illuminates a printing error, such as head open, paper empty, paper jam, ribbon empty, o memory error etc. |

## 2.GENERAL/REGULAR BUTTON FUNCTION-

- **FEED LABELS-**

**When the printer is at ready states (Blue/ Solid), press the button to feed one label to the beginning of next label.**

- **PAUSE THE PRINTING JOB-**

**When the printer is at printing states, press the button to pause a print job. When the printer is paused the LED will be blue blinking. Press the button again to continue the printing job.**

# 3. POWER ON FUNCTION-

There are mainly 3 power-on function to set up and test printer hardware. These function are activated by pressing FEED button then turning on the printer power simultaneously and release the button at different color of LED.

**A-** SENSOR CALIBRATION

**B-** SELF TEST PAGE

**C-** RESTET DEFAULT

## A- SENSOR CALIBRATION-

Sensor should be calibrated at the following condition

1. A brand new Printer
2. On Changing label Stock
3. If printer has reset default

Please follow the steps below to calibrate the sensor.

- Please confirm that Ribbon and Label are properly installed ( Do not need ribbon if using DT Label).
- Turn off power switch.
- Press and Hold the Feed button then turn on the power switch.
- Release the feed button when the red LED starts blinking and the blue LED turns off.

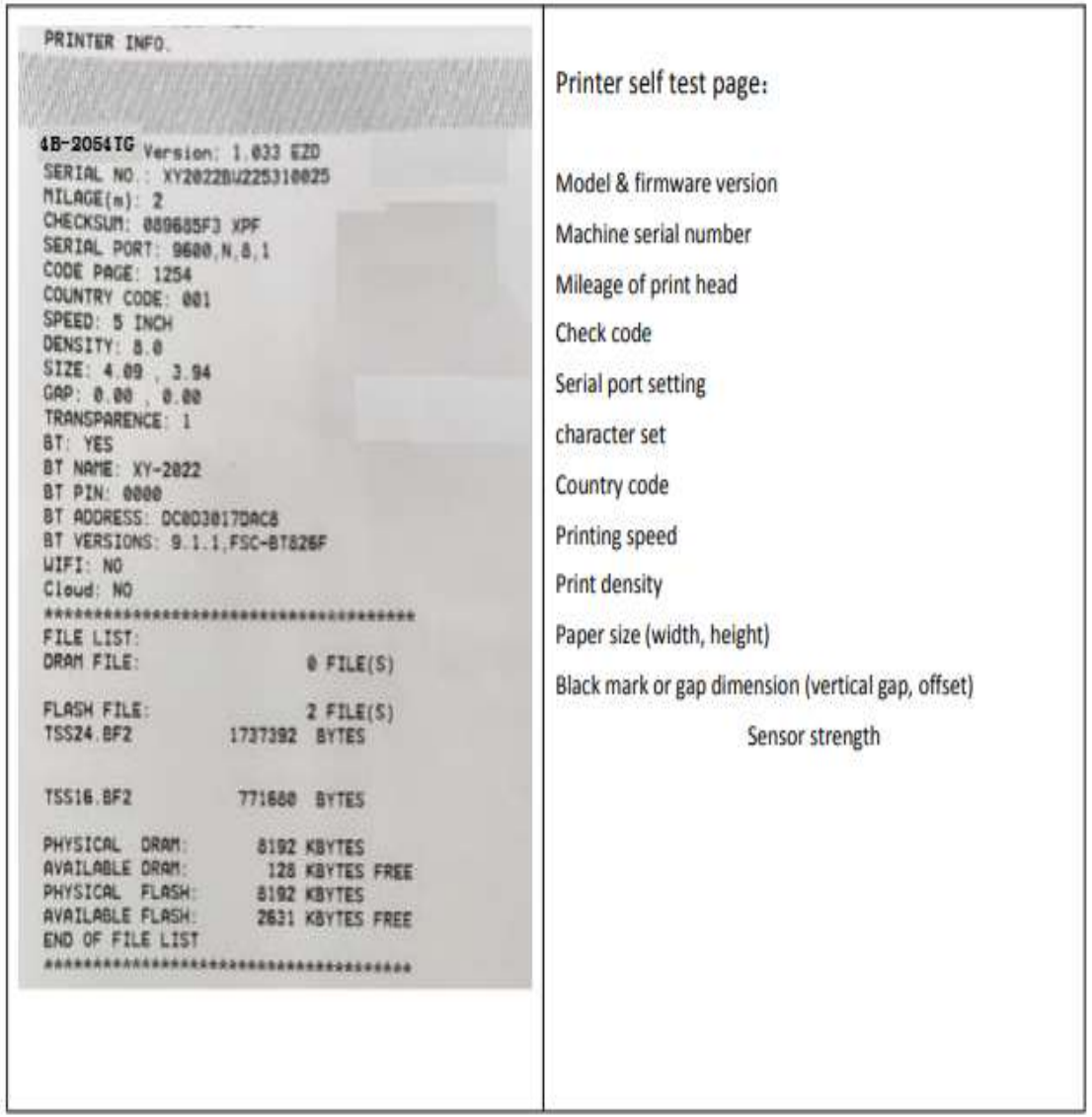
Some blank label will feed out and label will stop at tear off position. Now press feed button once and if one label is feeding, means sensor has successfully calibrated.

# B. SELF TEST PAGE-

**Please follow the steps below to print a self test page-**

- **Please confirm that Ribbon and Label are properly installed ( Do not need ribbon if using DT Label).**
- **Turn off power switch.**
- **Press and Hold the Feed button then turn on the power switch.**
- **Release the feed button when blue & red LED start blinking simultaneously.**

**It will print internal settings of printer and will enter in dump mode. Restart once to exit dump mode.**



# C. RESET DEFAULT-

**Reset function is used to clear DRAM and restore printer settings to defaults.**

**Please follow the steps below to reset printer-**

- **Turn off power switch.**
- **Press and Hold the Feed button then turn on the power switch.**
- **Release the feed button when the Blue LED starts blinking and the Red LED turns off.**

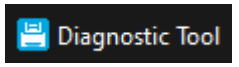
**Printer configuration will be restored to defaults.** ➡

| Parameter | Default setting |
|---|---|
| Speed | 127 mm/sec (5 ips) (203DPI)<br>101.6 mm/sec (4 ips) (300DPI) |
| Density | 8 |
| Label Width | 4" (101.5 mm) |
| Label Height | 2.5" (63.5 mm) |
| Sensor Type | Gap sensor |
| Gap Setting | 0.078" (2.0 mm) |
| Print Direction | 0 |
| Reference Point | 0,0 (upper left corner) |
| Offset | 0 |
| Tear Mode | On |
| Peel off Mode | Off |
| Cutter Mode | Off |
| Serial Port Settings | 9600 bps, none parity, 8 data bits, 1 stop bit |
| Code Page | 850 |
| Country Code | 001 |
| Clear Flash Memory | No |
| IP Address | DHCP |

# 6- DIAGNOSTIC TOOL

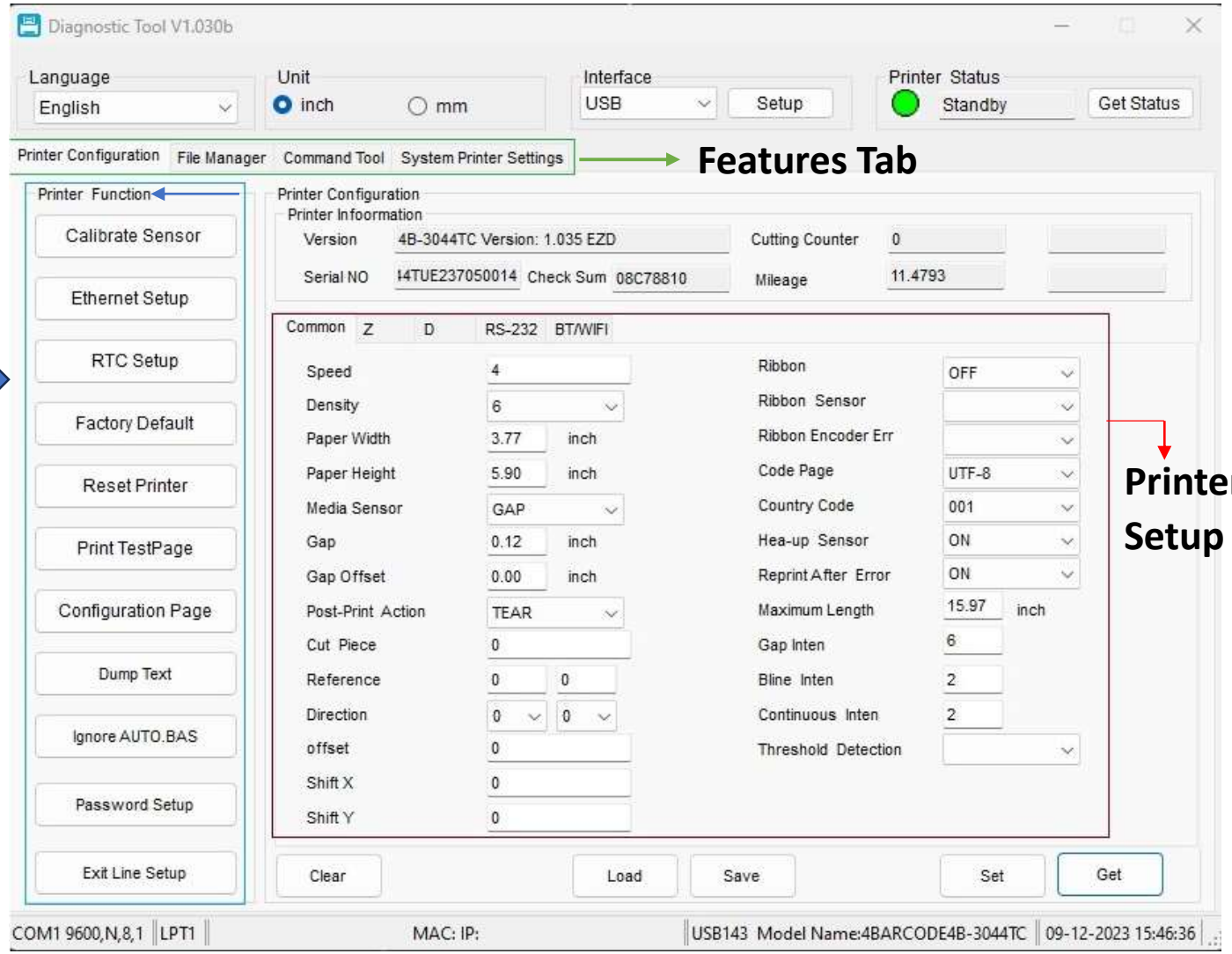
**Diagnostic Utility is an integrated tool incorporating features that enable you to explore a printer's settings/status, change a printer's settings, download graphics, fonts and firmware, and send additional commands to a printer. With the aid of this powerful tool, you can review printer status and settings in an instant, which makes it much easier to troubleshoot problems and other issues.**

## To Start Diagnostic Tool-

**Double click on Diagnostic Tool icon** 

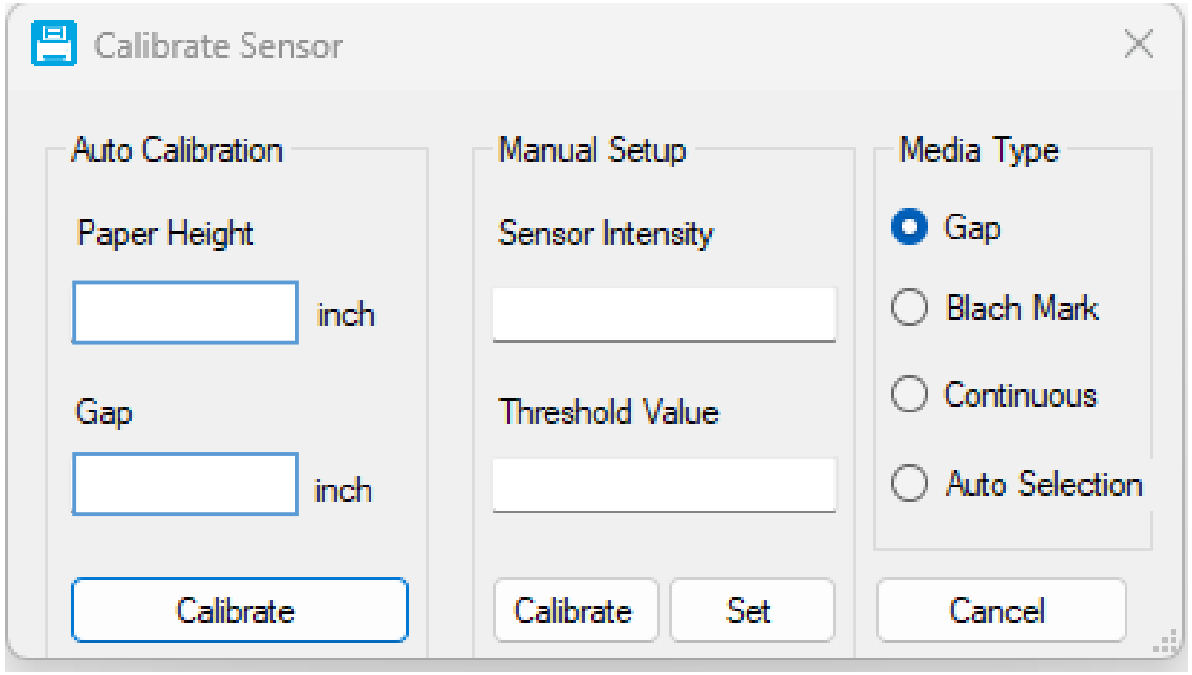
**to start the application.**

**You will find there Interface, Printer Status, feature tab, Printer Function , printer setup etc.**



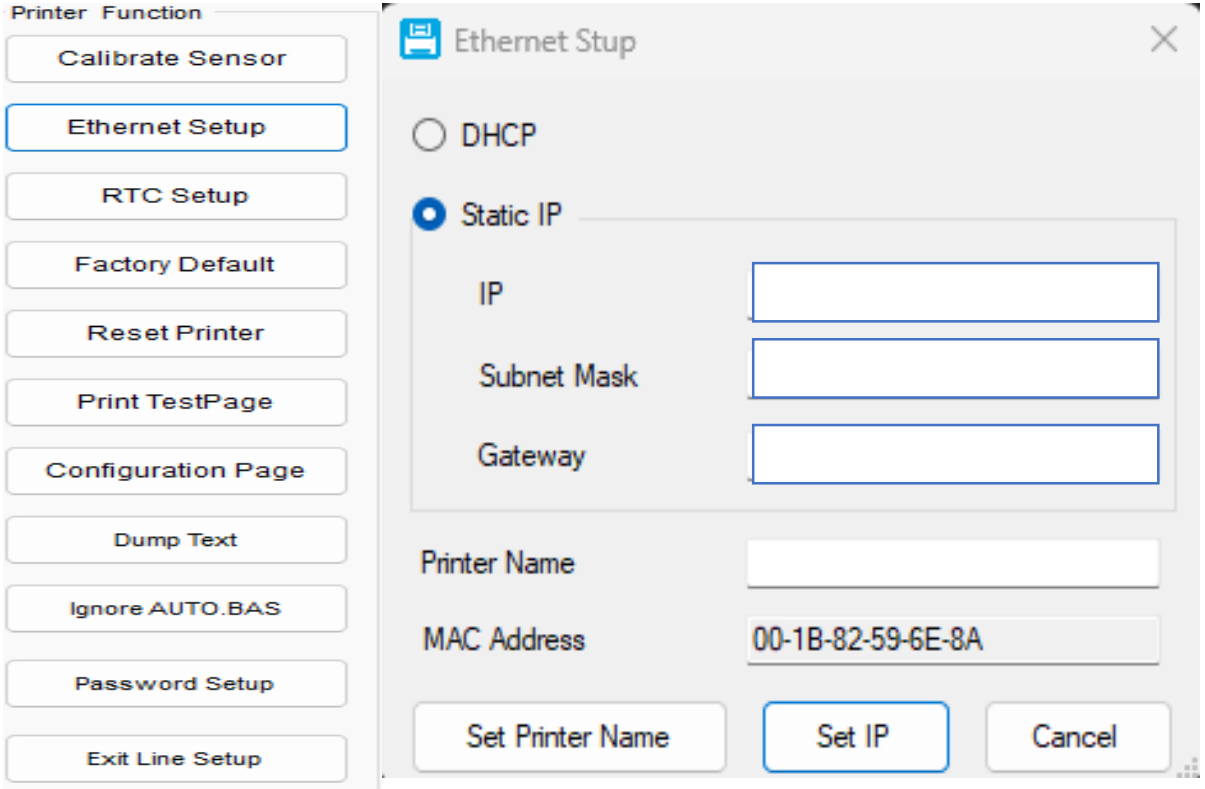
# Calibrating Media Sensor by Diagnostic Tool-

1. Make sure the media is install ready and print head mechanism is closed.
2. Turn on the printer power switch.
3. Open Diagnostic tool and set interface. (The default setting is USB ).
4. Click the “Calibrate Sensor” Option.
5. Select the media type and enter the media height and gap and click on calibrate.



# Configuring IP Address by Diagnostic Tool-

1. Connect the USB cable between the computer and the printer.
2. Turn on the printer power.
3. Open Diagnostic tool and set interface. (The default setting is USB ).
4. Click on the “Ethernet Setup” button from “Printer Function” group.
5. Now select Static IP and enter required IP Address, Subnet Mask, Gateway and Click on Set IP.



# 7- TROUBLESHOOTINGS (FAQ) 1 / 2

| PROBLEM | POSSIBLE CAUSE | SOLUTION |
|---|---|---|
| • If printer is not Getting On | • The power Adapter is not properly connected. | • Plug the power Adapter in printer and Power socket<br>• On the power button of printer. |
| • If Printer Status from Diagnostic Tool shows "**Ribbon end error**" or **"Ribbon encoder error"** | • Running out of ribbon.<br>• The ribbon is installed incorrectly. | • Load a new ribbon roll.<br>• Re-install the ribbon. |
| • If Printer Status from Diagnostic Tool shows "**Out of Paper"** | • Running out of label.<br>• The label is installed incorrectly.<br>• Sensor is not calibrated.<br>• Misplaced media sensor. | • Load a new label roll.<br>• Re-Install the label roll.<br>• Calibrate the sensor.<br>• Adjust the position of sensor according to Label. |
| • Poor Print Quality | • Media is loaded incorrectly<br>• Dust or adhesive on the print head.<br>• Print density is not set properly.<br>• Label and ribbon incompatibility. | • Reload / change the media Roll.<br>• Clean the print head and platen roller.<br>• Adjust the print density.<br>• Use right ribbon according to Label. |
| • Missing printing on left & right, up and down of label. | • Wrong label size setup.<br>• Wrong value of row and column. | • Set the correct label size.<br>• Set the correct value of row & column. |

# 7- TROUBLESHOOTINGS (FAQ) 2 / 2

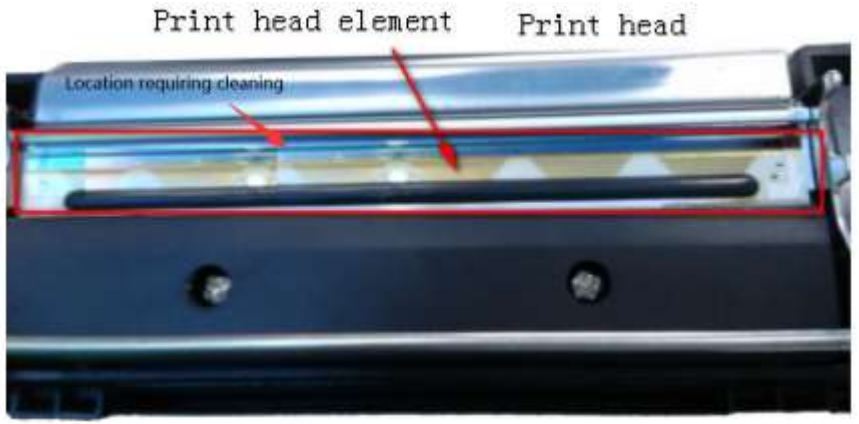
| PROBLEM | POSSIBLE CAUSE | SOLUTION |
|---|---|---|
| • If label skips and not printing at proper position. | • Wrong Label Size<br>• Sensor is not calibrated | • Set the correct label size.<br>• Set the correct value of row & column. |
| • Blank label Printing. | • Incorrect Label Size.<br>• Printhead module is not locked properly.<br>• Power adapter is not giving required voltage. | • Correct the Label Size.<br>• Lock printhead module properly<br>• Check with another power adapter |
| • No any printout while giving print command. | • Printer may be off.<br>• USB Cable not connected properly.<br>• USB Cable may be damage.<br>• Wrong port selected in driver.<br>• Pending documents in printer driver | • Do power on of printer.<br>• Re-connect USB cable<br>• Check with another USB cable<br>• Select correct port in Printer driver.<br>• Clear the pending documents from printer driver. |
| • Printer is printing Junk value | • The printer is in Hex Dump mode. | • Restart Printer to exit Hex Dump mode. |

# 8- MAINTENANCE

## 1. CLEANING THE PRINTHEAD -

A thermal print head  is the most important, delicate, and expensive component of direct thermal printers and thermal transfer printers.

Therefore, performing a routine cleaning of thermal print head is best to avoid poorer print quality and extend Print head life.




Follow the steps below to clean a print head-

1. Turn off the printer and disconnect the power Adapter.
2. Open the printhead assembly and allow the print head to cool for a minimum of one minute.
3. Take some Isopropyl Alcohol on a clean cotton swab and gently wipe it on the printhead.
4. Let the printhead dry before resuming printing.

# 2. CLEANING THE PLATEN ROLLER -

Follow the steps below to clean a Platen Roller-

1. Turn off the printer and disconnect the power Adapter. If printer is loaded with print media, remove it as well.
2. Open the printhead assembly and locate the platen roller.
3. Take some Isopropyl Alcohol on a clean cotton swab, Rotate the platen roller and wipe it thoroughly.
4. Let the platen roller dry before resuming printing.

# 3. CLEANING THE SENSOR -

Follow the steps below to clean a Sensor-

1. Turn off the printer and disconnect the power Adapter. If printer is loaded with print media, remove it as well.
2. Open the printhead assembly and locate the sensor.
3. Use a cotton swab and isopropyl to clean sensor , you can also use a blower to remove dust.


Thank
You