

DC 420 SERIES LABEL PRINTER

DC 421PRO AND DC423 PRO



1- INTRODUCTION AND FEATURES

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4- RIBBON AND LABEL LOADING

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8- MAINTENANCE

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.

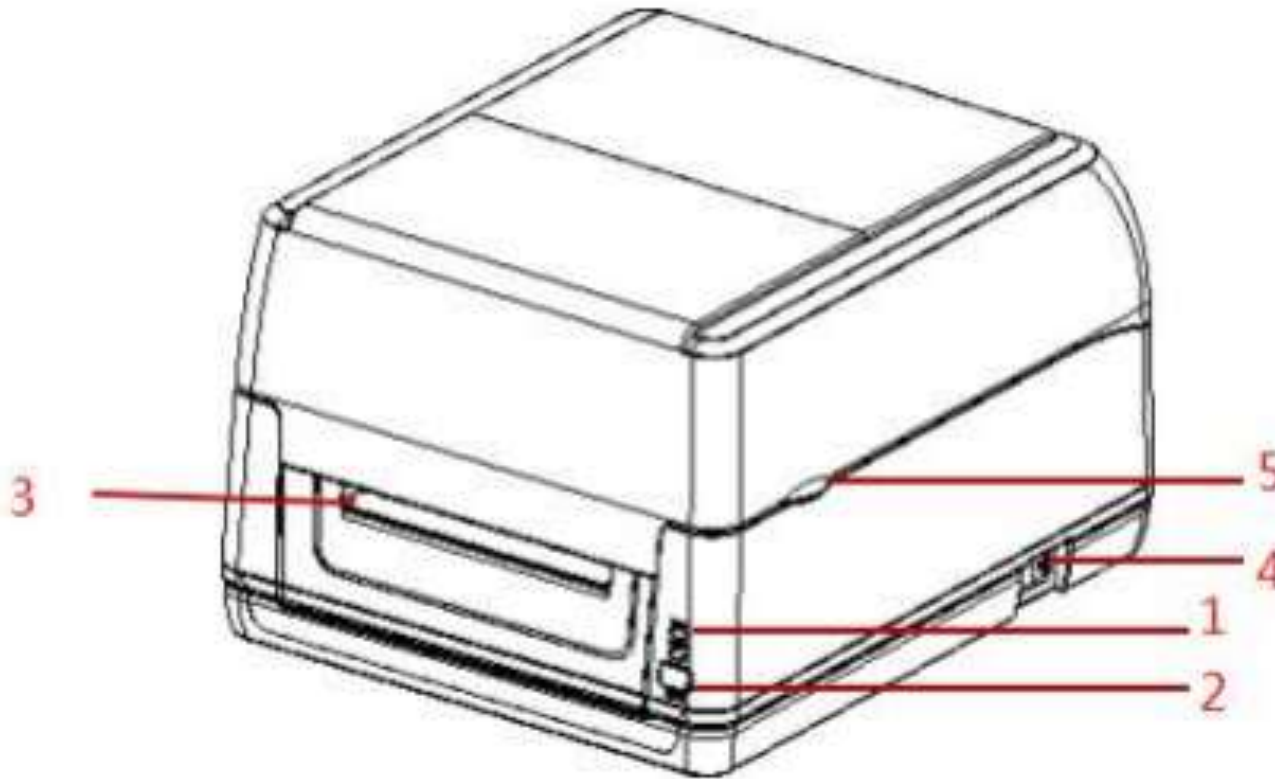
Many common 1D Barcodes and QR codes are built into this model. It supports four different printing directions.

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

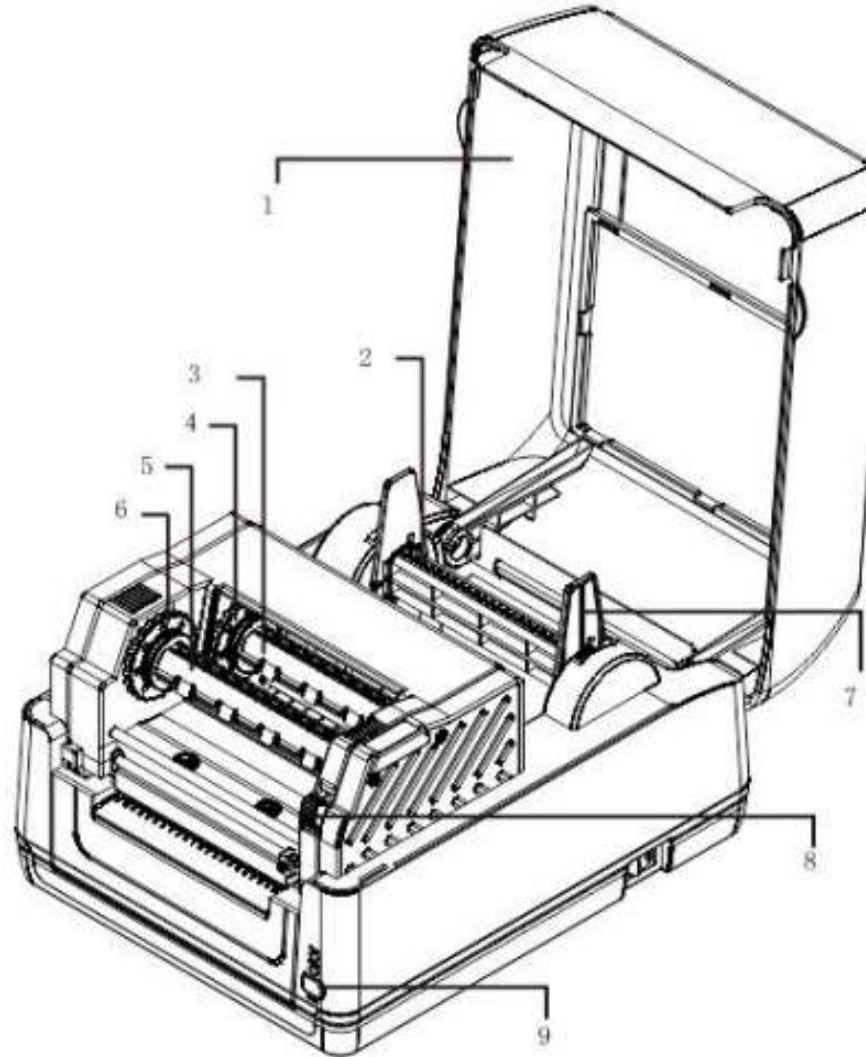
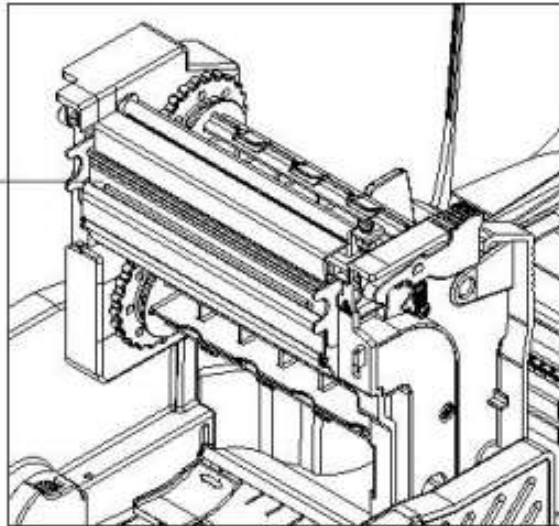
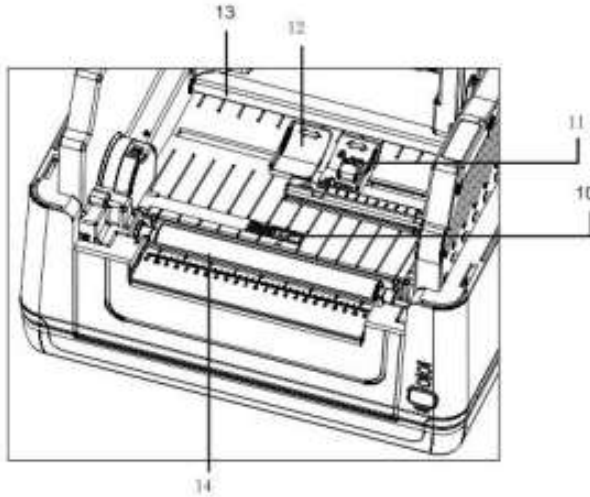
2- APPEARANCE AND COMPONENTS

Front View



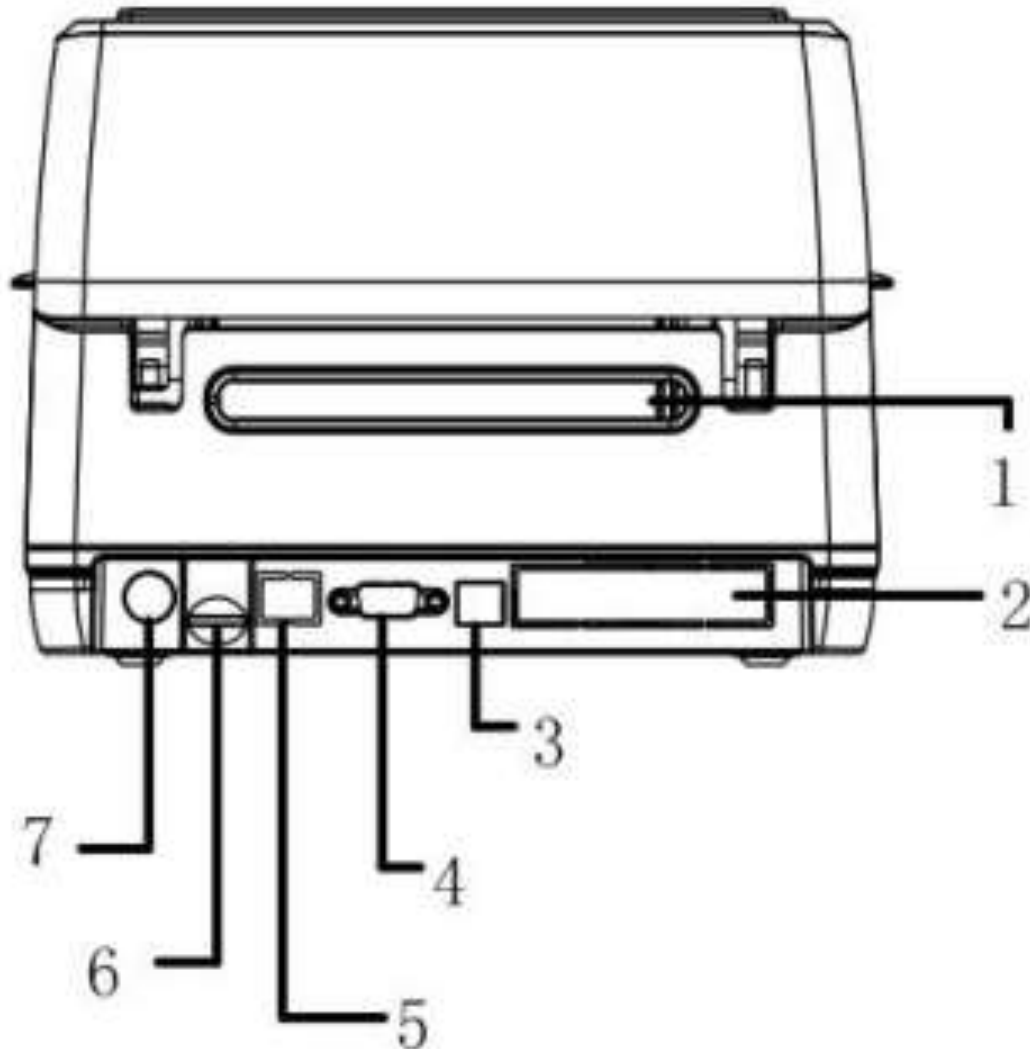
NO.	Name
1	LED indicator
2	Feed key
3	Paper exit chute
4	Power switch
5	Top cover open tab

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

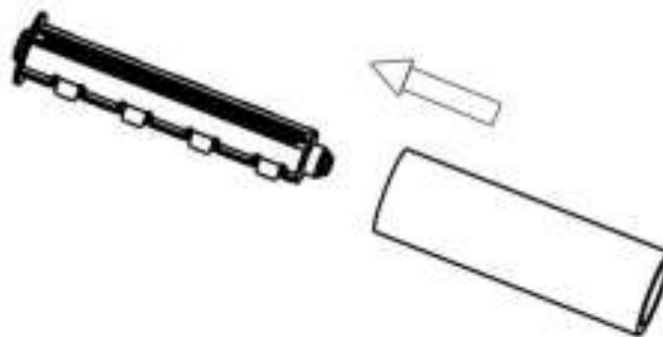
Resolution	203 DPI
Print method	Thermal Transfer / Direct Thermal
Print speed	127 mm (5") / s Max.
Max.print width	104 mm (4.09")
Max.print length	1778 mm (70")
Media	
Media type	Continuous, gap, black mark, fan-fold and punched hole
Media width	25.4~118mm (1.0"~4.6")
Media thickness	0.06~0.254 mm (2.36~10mil)
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

RIBBON LOADING 1/2-

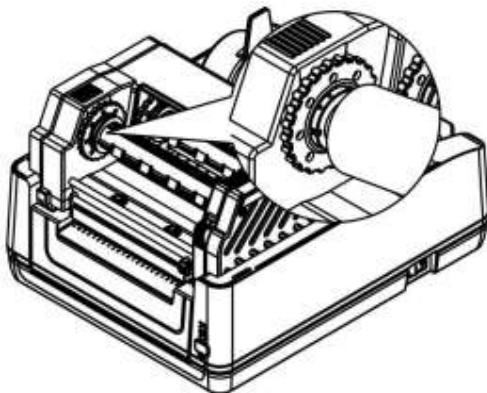
1- Open the Top cover of printer.



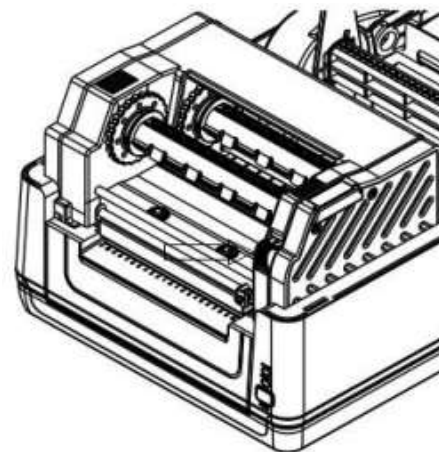
2- Put the Ribbon Spindle into empty Ribbon core .



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

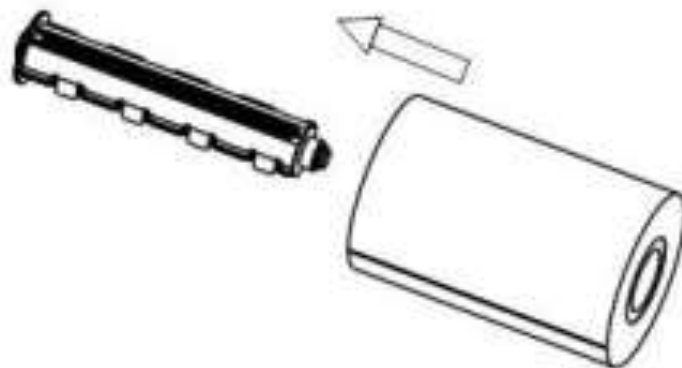


4- Press the printhead open switch to open the printhead cover.

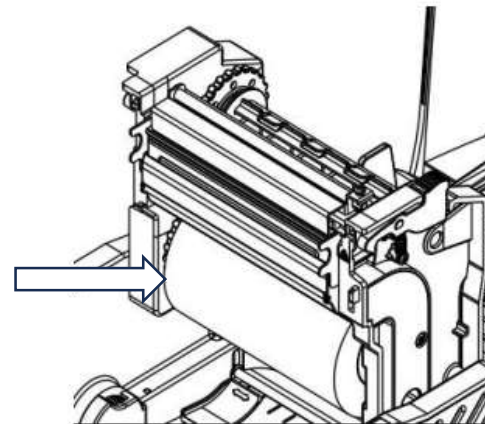


RIBBON LOADING 2/2-

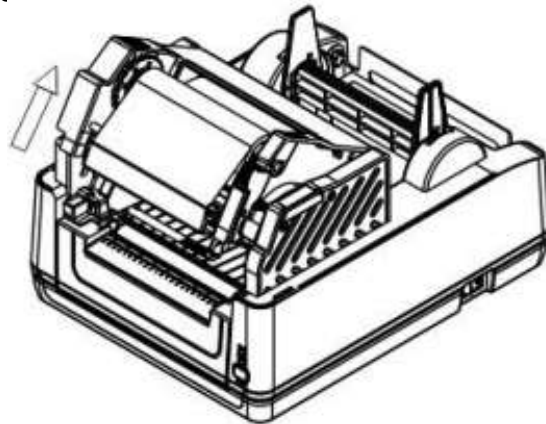
5- Insert another ribbon spindle into a new ribbon roll.



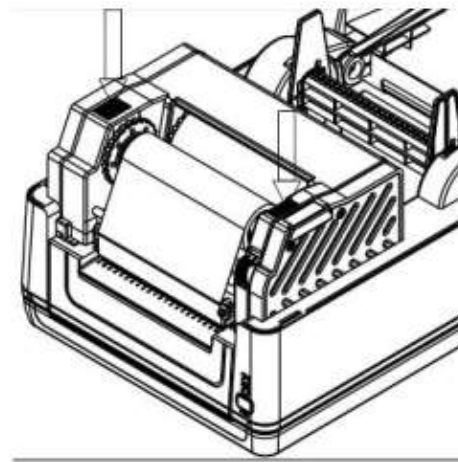
6- Press the left side of ribbon spindle into the carbon belt Supply roller (Green Color) and then install right side.



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.



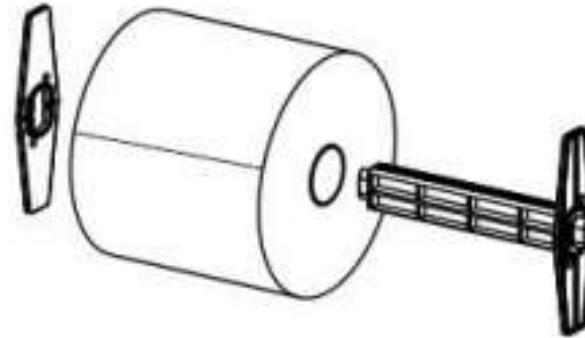
8- Close the Printhead and make sure that the print head is completely closed to ensure the print quality.



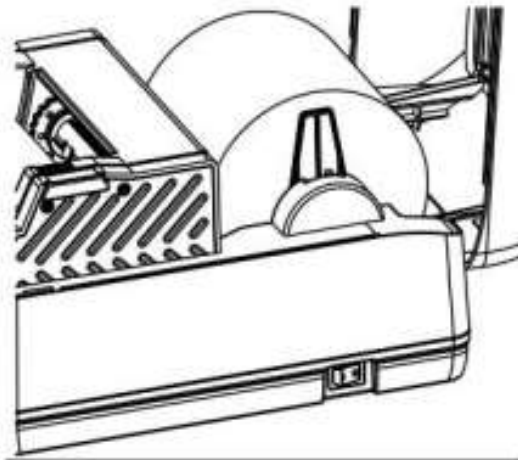
1- Open the Top cover of printer.



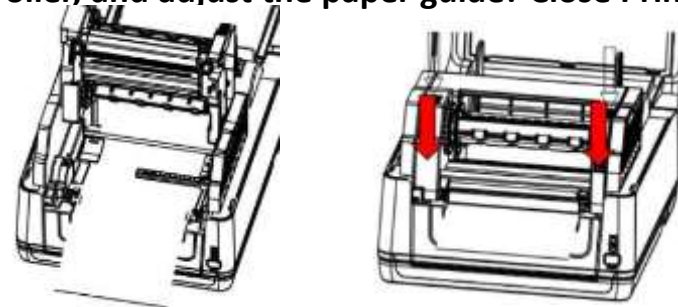
2- Load the label roll into the Label spindle .



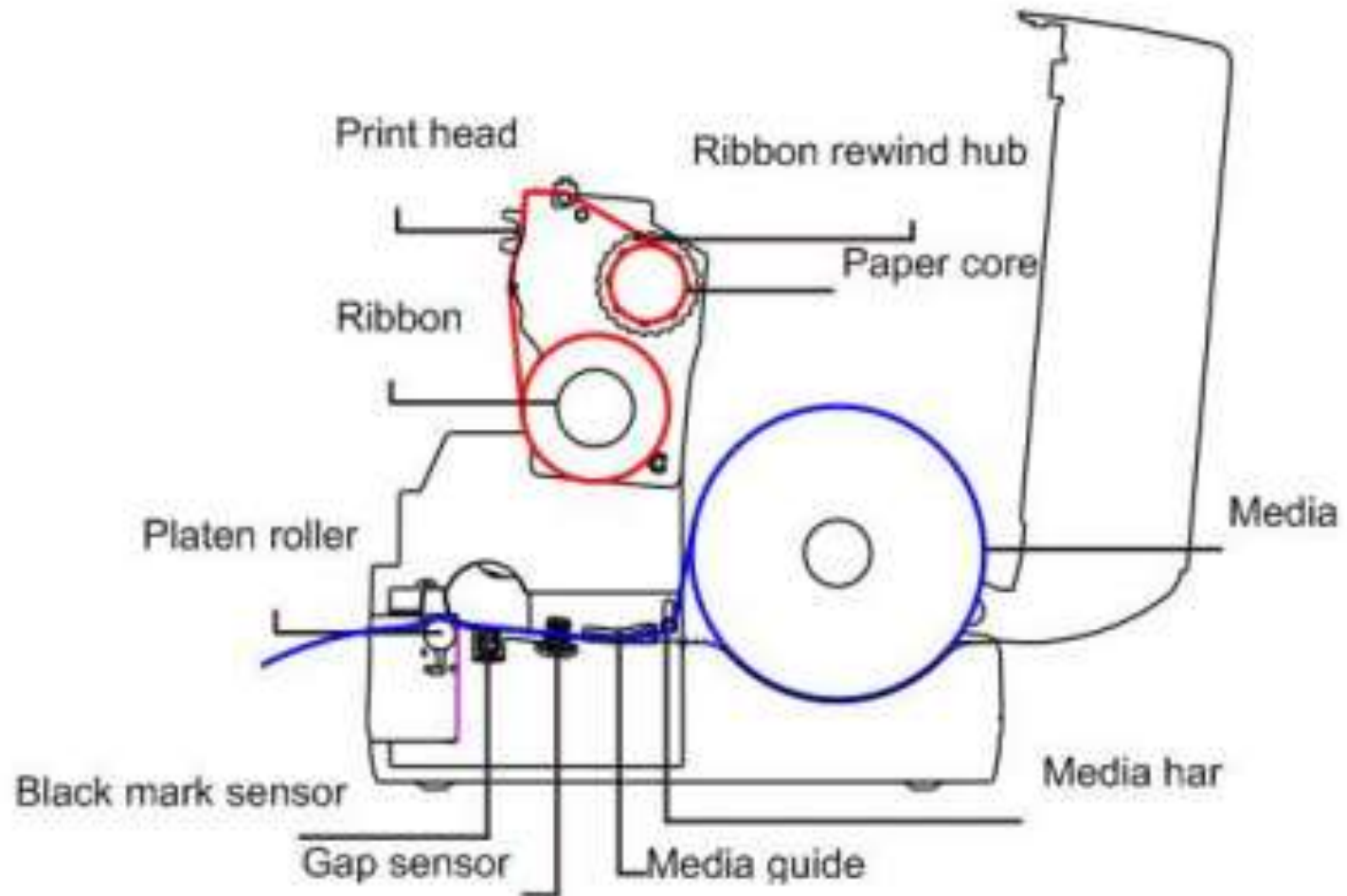
3- Place the paper roll on the paper roll rack.



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, or 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- RESET 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.

 <pre>PRINTER INFO. 4B-2054TG Version: 1.033 E2D SERIAL NO.: XY2022B4225310025 MILEAGE(m): 2 CHECKSUM: 089685F3 XPF SERIAL PORT: 9600,N,8,1 CODE PAGE: 1254 COUNTRY CODE: 001 SPEED: 5 INCH DENSITY: 8.0 SIZE: 4.09 , 3.94 GAP: 0.00 , 0.00 TRANSPARENCY: 1 BT: YES BT NAME: XY-2022 BT PIN: 0000 BT ADDRESS: DC003017D0C8 BT VERSIONS: 9.1.1,FSC-BT828F WIFI: NO Cloud: NO ***** FILE LIST: DRAM FILE: 0 FILE(S) FLASH FILE: 2 FILE(S) TSS24.BF2 1737392 BYTES TSS16.BF2 771600 BYTES PHYSICAL DRAM: 8192 KBYTES AVAILABLE DRAM: 128 KBYTES FREE PHYSICAL FLASH: 8192 KBYTES AVAILABLE FLASH: 2631 KBYTES FREE END OF FILE LIST *****</pre>	<p>Printer self test page:</p> <p>Model & firmware version</p> <p>Machine serial number</p> <p>Mileage of print head</p> <p>Check code</p> <p>Serial port setting</p> <p>character set</p> <p>Country code</p> <p>Printing speed</p> <p>Print density</p> <p>Paper size (width, height)</p> <p>Black mark or gap dimension (vertical gap, offset)</p> <p>Sensor strength</p>
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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) 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

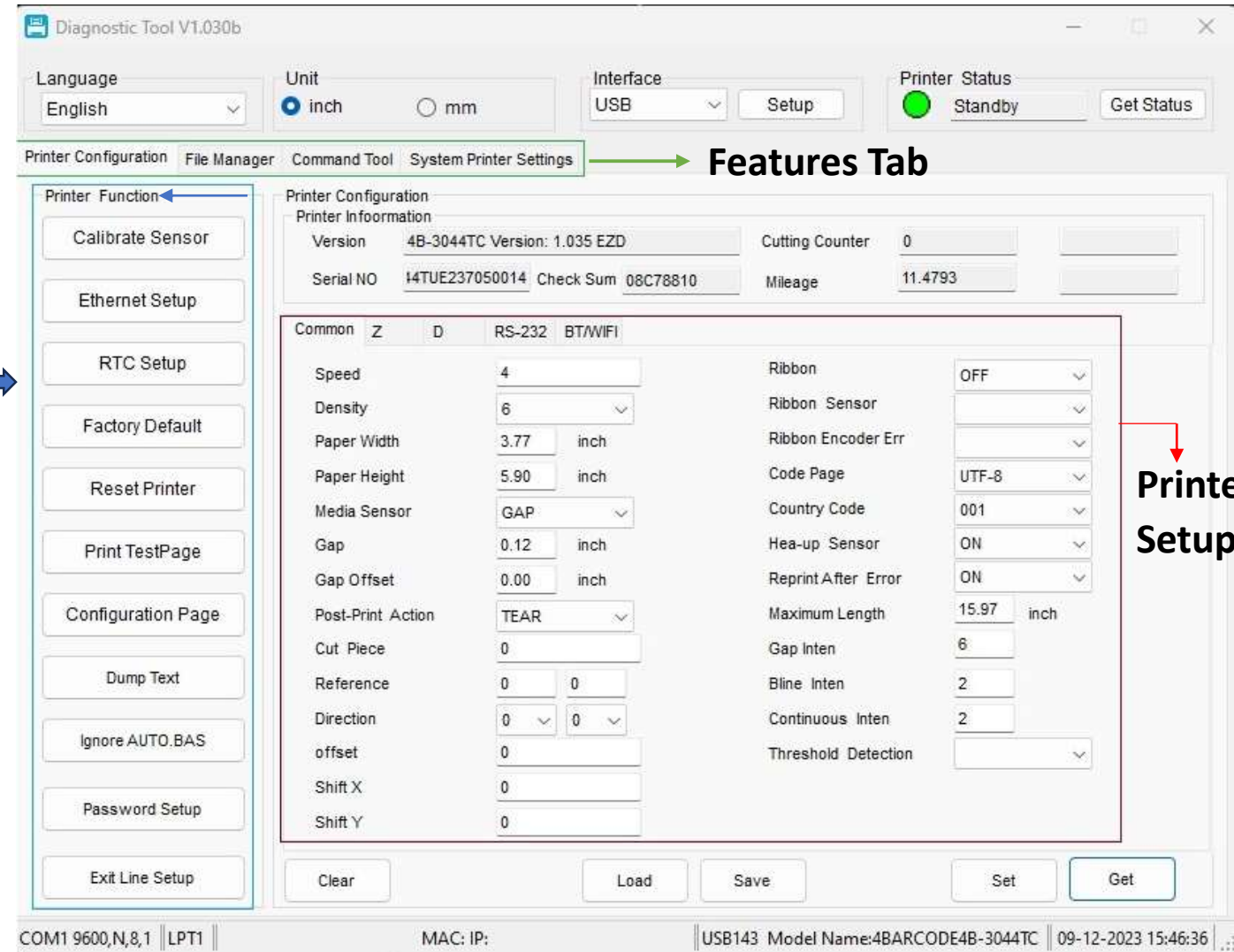
6- DIAGNOSTIC TOOL

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  Diagnostic Tool to start the application.

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



Diagnostic Tool V1.030b

Language: English | Unit: ☒ inch ☐ mm | Interface: USB | Setup | Printer Status:  Standby | Get Status

Printer Configuration | File Manager | Command Tool | System Printer Settings → **Features Tab**

Printer Function

- Calibrate Sensor
- Ethernet Setup
- RTC Setup
- Factory Default
- Reset Printer
- Print TestPage
- Configuration Page
- Dump Text
- Ignore AUTO.BAS
- Password Setup
- Exit Line Setup

Printer Configuration

Printer Information

Version	4B-3044TC Version: 1.035 EZD	Cutting Counter	0
Serial NO	I4TUE237050014	Check Sum	08C78810
		Mileage	11.4793

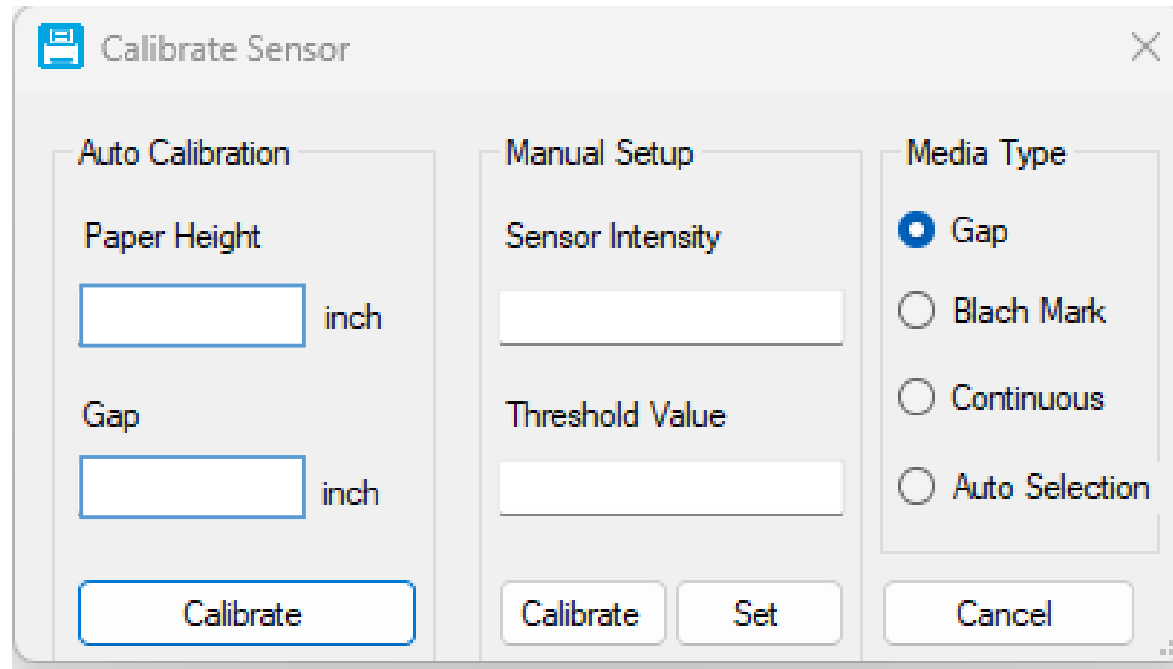
Printer Setup

Common	Z	D	RS-232	BT/WIFI
Speed		4		
Density		6		
Paper Width		3.77	inch	
Paper Height		5.90	inch	
Media Sensor		GAP		
Gap		0.12	inch	
Gap Offset		0.00	inch	
Post-Print Action		TEAR		
Cut Piece		0		
Reference		0	0	
Direction		0	0	
offset		0		
Shift X		0		
Shift Y		0		
Ribbon				OFF
Ribbon Sensor				
Ribbon Encoder Err				
Code Page				UTF-8
Country Code				001
Hea-up Sensor				ON
Reprint After Error				ON
Maximum Length		15.97	inch	
Gap Inten		6		
Blinc Inten		2		
Continuous Inten		2		
Threshold Detection				

COM1 9600,N,8,1 || LPT1 || MAC: IP: || USB143 Model Name:4BARCODE4B-3044TC || 09-12-2023 15:46:36

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.

A screenshot of a software dialog box titled "Calibrate Sensor". The dialog is divided into three main sections: "Auto Calibration", "Manual Setup", and "Media Type".
- The "Auto Calibration" section contains two input fields: "Paper Height" and "Gap", both followed by the unit "inch". Below these fields is a "Calibrate" button.
- The "Manual Setup" section contains two input fields: "Sensor Intensity" and "Threshold Value". Below these fields are two buttons: "Calibrate" and "Set".
- The "Media Type" section contains four radio button options: "Gap" (which is selected), "Blach Mark", "Continuous", and "Auto Selection". Below these options is a "Cancel" button.
The dialog box has a standard Windows-style title bar with a close button (X) in the top right corner and a small icon in the top left corner.

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.

The screenshot displays the DCCode diagnostic tool interface. On the left, a vertical list of buttons under the heading "Printer Function" includes: Calibrate Sensor, Ethernet Setup (highlighted with a blue border), RTC Setup, Factory Default, Reset Printer, Print TestPage, Configuration Page, Dump Text, Ignore AUTO.BAS, Password Setup, and Exit Line Setup. On the right, the "Ethernet Setup" dialog box is open. It features a close button (X) in the top right corner. Inside the dialog, there are two radio buttons: "DHCP" (unselected) and "Static IP" (selected). Below the "Static IP" option, there are three input fields labeled "IP", "Subnet Mask", and "Gateway". At the bottom of the dialog, there are two more input fields: "Printer Name" and "MAC Address" (which contains the value "00-1B-82-59-6E-8A"). At the very bottom of the dialog, there are three buttons: "Set Printer Name", "Set IP" (highlighted with a blue border), and "Cancel".

PROBLEM	POSSIBLE CAUSE	SOLUTION
<ul style="list-style-type: none">If printer is not Getting On	<ul style="list-style-type: none">The power Adapter is not properly connected.	<ul style="list-style-type: none">Plug the power Adapter in printer and Power socketOn the power button of printer.
<ul style="list-style-type: none">If Printer Status from Diagnostic Tool shows “Ribbon end error” or “Ribbon encoder error”	<ul style="list-style-type: none">Running out of ribbon.The ribbon is installed incorrectly.	<ul style="list-style-type: none">Load a new ribbon roll.Re-install the ribbon.
<ul style="list-style-type: none">If Printer Status from Diagnostic Tool shows “Out of Paper”	<ul style="list-style-type: none">Running out of label.The label is installed incorrectly.Sensor is not calibrated.Misplaced media sensor.	<ul style="list-style-type: none">Load a new label roll.Re-Install the label roll.Calibrate the sensor.Adjust the position of sensor according to Label.
<ul style="list-style-type: none">Poor Print Quality	<ul style="list-style-type: none">Media is loaded incorrectlyDust or adhesive on the print head.Print density is not set properly.Label and ribbon incompatibility.	<ul style="list-style-type: none">Reload / change the media Roll.Clean the print head and platen roller.Adjust the print density.Use right ribbon according to Label.
<ul style="list-style-type: none">Missing printing on left & right, up and down of label.	<ul style="list-style-type: none">Wrong label size setup.Wrong value of row and column.	<ul style="list-style-type: none">Set the correct label size.Set the correct value of row & column.

PROBLEM	POSSIBLE CAUSE	SOLUTION
<ul style="list-style-type: none">If label skips and not printing at proper position.	<ul style="list-style-type: none">Wrong Label SizeSensor is not calibrated	<ul style="list-style-type: none">Set the correct label size.Set the correct value of row & column.
<ul style="list-style-type: none">Blank label Printing.	<ul style="list-style-type: none">Incorrect Label Size.Printhead module is not locked properly.Power adapter is not giving required voltage.	<ul style="list-style-type: none">Correct the Label Size.Lock printhead module properlyCheck with another power adapter
<ul style="list-style-type: none">No any printout while giving print command.	<ul style="list-style-type: none">Printer may be off.USB Cable not connected properly.USB Cable may be damage.Wrong port selected in driver.Pending documents in printer driver	<ul style="list-style-type: none">Do power on of printer.Re-connect USB cableCheck with another USB cableSelect correct port in Printer driver.Clear the pending documents from printer driver.
<ul style="list-style-type: none">Printer is printing Junk value	<ul style="list-style-type: none">The printer is in Hex Dump mode.	<ul style="list-style-type: none">Restart Printer to exit Hex Dump mode.

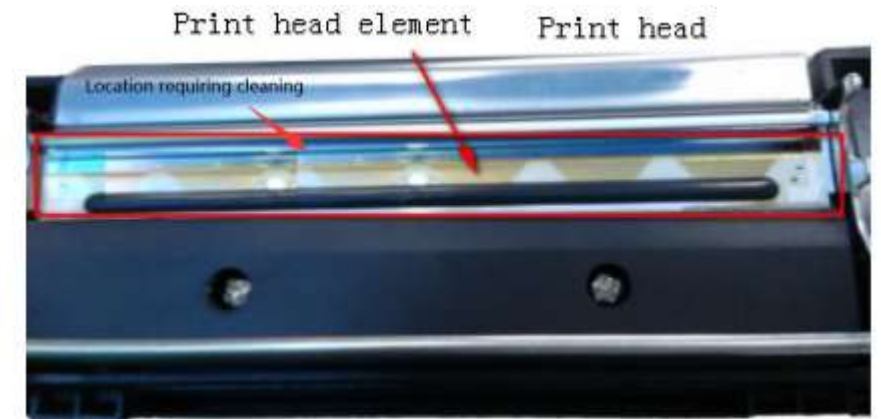
1. CLEANING THE PRINthead -

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.



