Thermal Transfer Printer

4B-2084TA/4B-3064TA

THERMAL TRANSFER/ DIRECT THERMAL BARCODE PRINTER

USER'S MANUAL

Please keep user manual for reference

Contents

1. Introduction

1.1 Product Introduction

Thank you very much for purchasing barcode printer.

The slidable paper sensor supports a wide range of paper types and can be used in a variety of printing materials, including paper rolls, paper slicing and folding labels. In addition, other commonly used barcode papers can be used.

The simulation models are built in font of high quality and efficient (True Type font) and font engine. With flexible firmware design, user can also download the True Type Font from PC into printer memory forprinting labels. Besides the scalable font, it also provides a choice of five different sizes ofalphanumeric bitmap font, OCR-A and OCR-B fonts. By integrating rich features, it is the most cost-effective and high performance printer in its class!

When printing the label format, please refer to the information provided by your label editing software. If you need to write your own instructions, please refer to

TSPL, ZPL, DPL, EPL instruction manual.

- Applications
    - Manufacturing & Warehousing
        - Work in Progress
        - Item Labels
        - Instruction labels
        - Agency labels
    - Healthcare
        - Patient Identification
        - Pharmacy
        - Specimen Identification
    - Parcel Post
        - Shipping/ Receiving Labels
    - Small Office/ Home Office
    - Retail Marking
        - Price tags
        - Shelf labels
        - Jewelry tags

1.2 Product Features

1.2.1 Printer Standard Features

The printer offers the following standard features.

<table>
<tr><th>Product standard feature</th><th>203 dpi models</th><th>300 dpi models</th></tr>
<tr><td>Thermal transfer printing</td><td>○</td><td>○</td></tr>
<tr><td>Direct thermal printing</td><td>○</td><td>○</td></tr>
<tr><td>ABS plastic enclosure</td><td>○</td><td>○</td></tr>
<tr><td>Position adjustable gap sensor</td><td>○</td><td>○</td></tr>
<tr><td>Position adjustable black mark sensor</td><td>○</td><td>○</td></tr>
<tr><td>Ribbon sensor</td><td>○</td><td>○</td></tr>
<tr><td>Head open sensor</td><td>○</td><td>○</td></tr>
<tr><td>USB 2.0 (full speed) interface</td><td>○</td><td>○</td></tr>
<tr><td>8 MB SDRAM memory</td><td>○</td><td>○</td></tr>
<tr><td>8 MB FLASH memory</td><td>○</td><td>○</td></tr>
<tr><td>microSD memory card reader for memory expansion up to 4 GB</td><td>○</td><td>○</td></tr>
<tr><td>Real time clock</td><td>○</td><td>○</td></tr>
<tr><td>One power switch, one feed button and LED</td><td>○</td><td>○</td></tr>
<tr><td>Standard industry emulations right out of the box including Eltron® and Zebra® language support</td><td>○</td><td>○</td></tr>
<tr><td>Internal 8 alpha-numeric bitmap fonts</td><td>○</td><td>○</td></tr>
<tr><td>Fonts and barcodes can be printed in any one of the four directions (0, 90,180, 270 degree)</td><td>○</td><td>○</td></tr>
<tr><td>Embedded font</td><td>○</td><td>○</td></tr>
<tr><td>Downloadable fonts from PC to printer memory</td><td>○</td><td>○</td></tr>
<tr><td>Downloadable firmware upgrades</td><td>○</td><td>○</td></tr>
<tr><td>Text, barcode, graphics/image printing (Please refer to the XPL programming manual for supporting code page)

<table>
<tr><th colspan="2">Supported bar code</th><th>Supported image</th></tr>
<tr><th>1D bar code</th><th>2D bar code</th><th rowspan="2">BITMAP,
BMP,
PCX
(Max. 256 colors graphics)</th></tr>
<tr><td>Code 39,
Code 93,
Code128UCC,
Code128 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</td><td>PDF-417,
Maxicode,
DataMatrix,
QR code,
Aztec,
GS1 DataBar Composite code</td></tr>
</table>
</td><td>○</td><td>○</td></tr>
</table>

1.2.2 Printer Optional Features

The printer offers the following optional features.

Product option feature	User options	Dealer options	Factory options
LCD Operation Panel			
Internal Ethernet print server (10/100 Mbps) interface	-	-	○
Serial RS-232C (2400-115200 bps) interface	-	-	○
TF card module	-	-	○
Bluetooth module	-	○	○
WiFi module	-	○	○
RTC module			
Cutter module (Full cut) Paper thickness: 0.06~ 0.19mm, 500,000 cuts 0.20~ 0.25mm, 200,000 cuts **Note:** **Except for the linerless cutter, all regular/heavy duty/care label cutters DO NOT cut on media with glue.**			
External roll mount with 3” core (8.4 OD) label spindle			
Extended plate for external roll mount			

1.3 General Specifications

General Specifications	
Physical dimensions	246 mm (D) x 223 mm (W) x 204 mm (H)
Weight	2.47 kg
Electrical	External universal switching power supply Input: AC 100-240V Output: DC 24V 2.5A, 60W
Environmental condition	Operation: 5 ~ 40˚C (41 ~ 104˚F), 25~85% non-condensing Storage: -40 ~ 60 ˚C (-40 ~ 140˚ F), 10~90% non-condensing

1.4 Print Specifications

Print Specifications	203 dpi models(4B-2084TA)	300 dpi models(4B-3064TA)
Print head resolution	203 dots/inch (8 dots/mm)	300 dots/inch (12 dots/mm)
Printing method	Thermal transfer and direct thermal	
Dot size (width x length)	0.125 x 0.125 mm (1 mm = 8 dots)	0.084 x 0.084 mm (1 mm = 11.8 dots)
Print speed (inches per second)	4B-2084TA: 2, 3, 4, 5 6, 7, 8 ips (1ips = 25.4mm/s)	4B-3064TA: 2, 3, 4, 5, 6 ips (1ips = 25.4mm/s)
Print speed for peel mode & cutter mode		
Max. print width	104 mm (4.09”)	108 mm (4.25”)
Max. print length	1,778 mm (70”)	889 mm (35”)

1.5 Ribbon Specifications

Ribbon Specifications	
Ribbon outside diameter	Max. 67 mm
Ribbon length	300 meter
Ribbon core inside diameter	1 inch (25.4 mm)
Ribbon width	Max. 110 mm
	Min. 40 mm
Ribbon wound type	Outside wound

1.6 Media Specifications

Media Specifications	203 dpi models	300 dpi models
Label roll capacity	200 mm (8”) OD	
Media type	Continuous, die-cut, black mark, fan-fold, notch	
Media wound type	Printing face outside wound & Printing face inside wound	
Media width (label + liner)	Max. 115 mm (4.52”) Min. 25.4 mm (1.0”)	
Media thickness (label + liner)	Max. 0.25 mm (10 mil) Min. 0.06 mm (2.36 mil)	
Media core diameter	25.4 mm~38 mm (1”~1.5”)	
Label length	10~1,778 mm (0.39”~70”) Note: If your label length is less than 25.4mm (1”), we recommend you to use the perforation at the gap for easier tear away.	10~889 mm (0.39”~35”)
Label length (cutter mode)	Max. 1,778 mm (110”) Min. 25.4 mm (1”)	Max.889 mm (35”) Min. 25.4 mm (1”)
Gap height	Min. 2 mm (0.09”)	
Black mark height	Min. 2 mm (0.09”)	
Black mark width	Min. 8 mm (0.31”)	

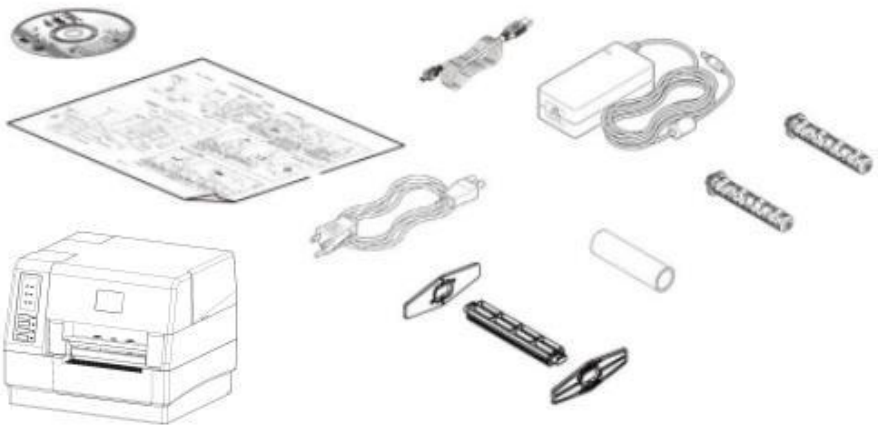
2. Operations Overview

2.1 Unpacking and Inspection

This printer has been specially packaged to withstand damage during shipping. Please carefully inspect the packaging and printer upon receiving the barcode printer. Please retain the packaging materials in case you need to reship the printer.

Unpacking the printer, the following items are included in the carton.

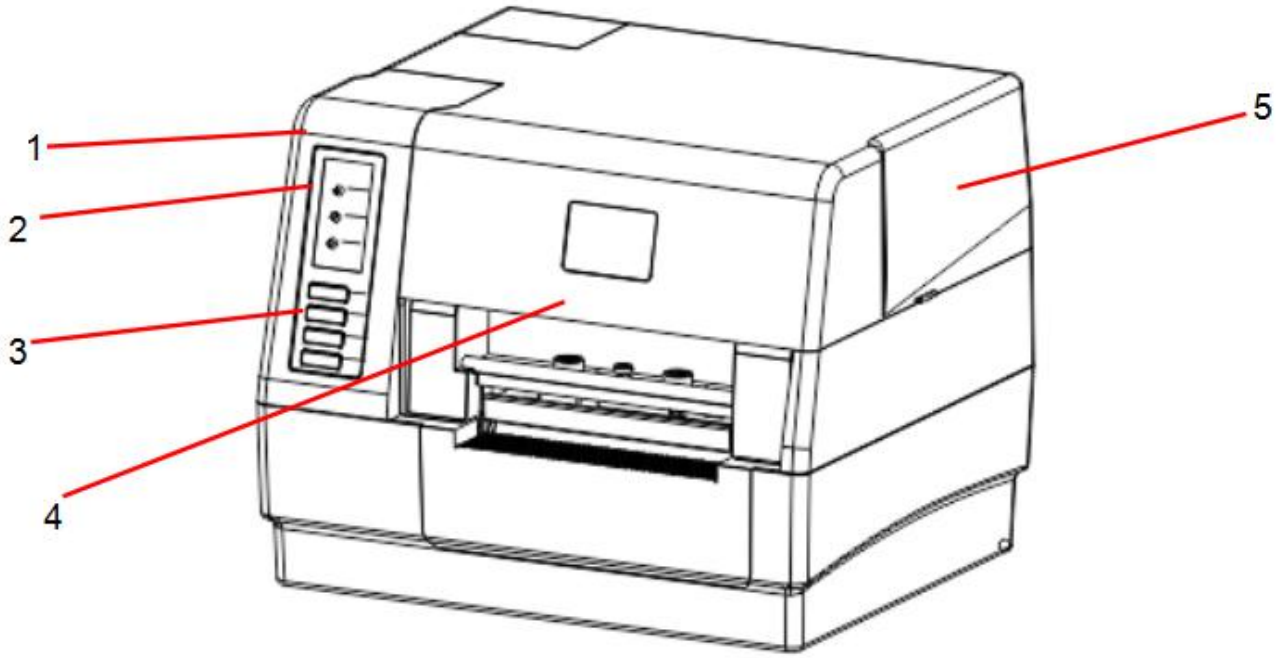
- One printer unit
- One Windows labeling software/Windows driver CD disk
- One quick installation guide
- One power cord
- One auto switching power supply
- One USB interface cable
- Two ribbon spindle
- One ribbon paper core
- One label spindle
- Electronic surface



If any parts are missing, please contact the Customer Service Department of your purchased reseller or distributor.

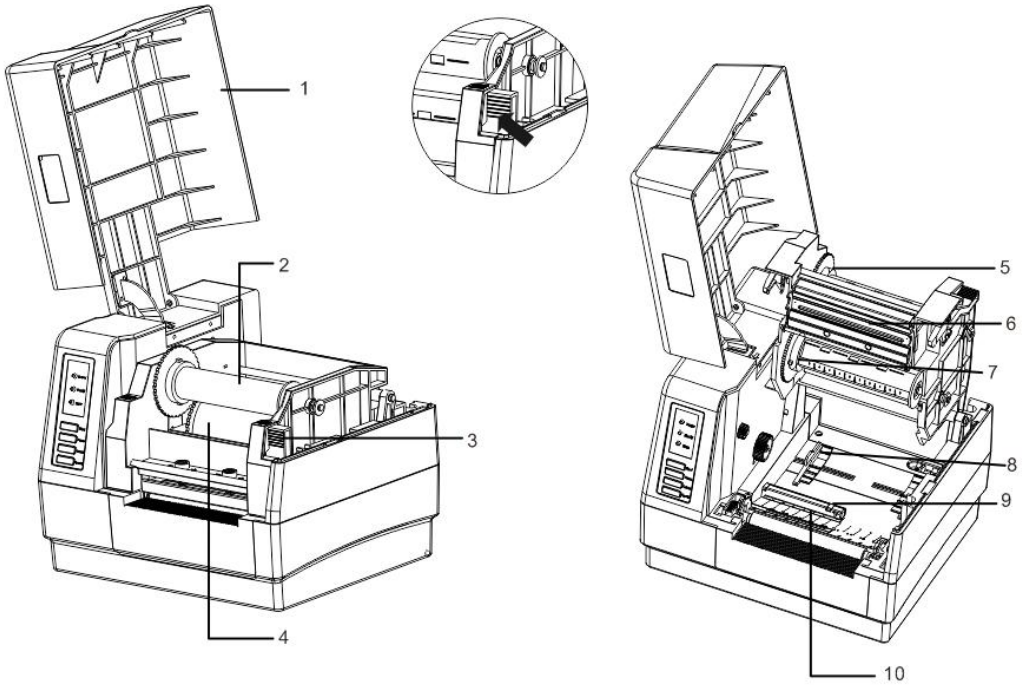
2.2 Printer Overview

2.2.1 Front View



1. LED indicator
2. Screen (Optional)
3. Buttons
4. Paper exit chute
5. Top cover open tab

2.2.2 Internal View



1 Printer top cover

2 Ribbon rewind spindle

3 Open cover switch

4. Ribbon supply spindle

5. Rewind spindle

6 Printing head

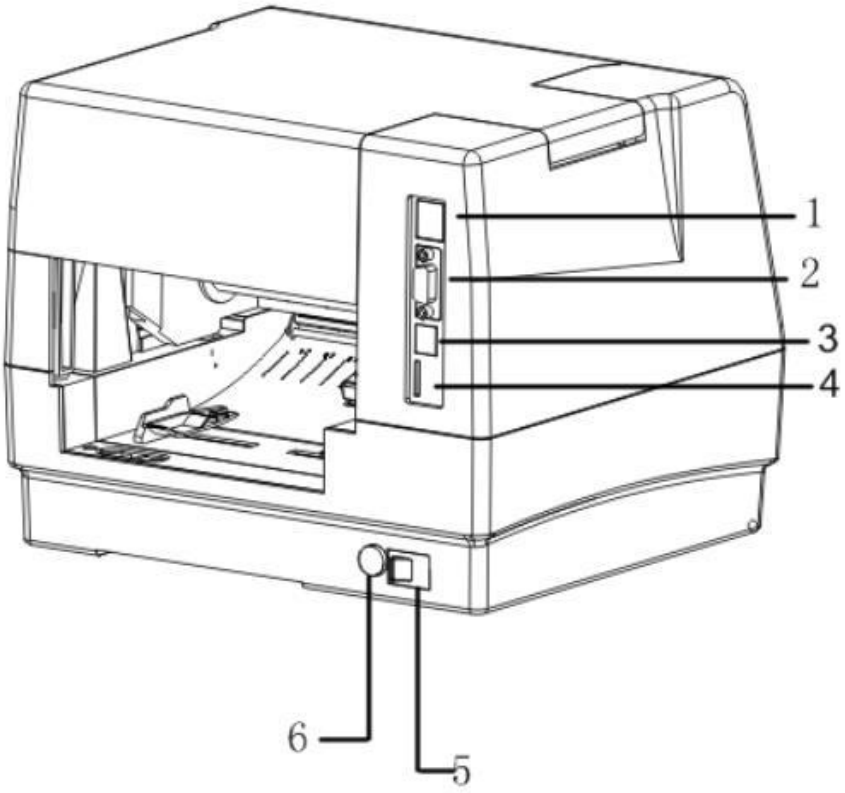
7 Supply hub

8. Media guide

9 Gap sensor

10 Black mark sensor

2.2.3 Rear View



1. Internal Ethernet interface (Option)
2. RS-232C interface (Option)
3. USB interface
4. microSD card slot
5. Power switch
6. Power jack socket

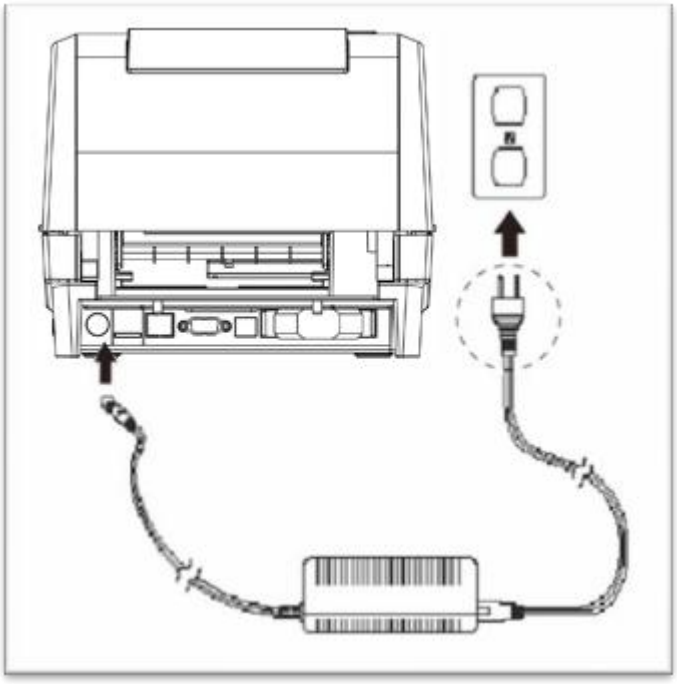
Note:

The interface picture here is for reference only. Please refer to the product specification for the interfaces availability.

3. Setup

3.1 Setting up the Printer

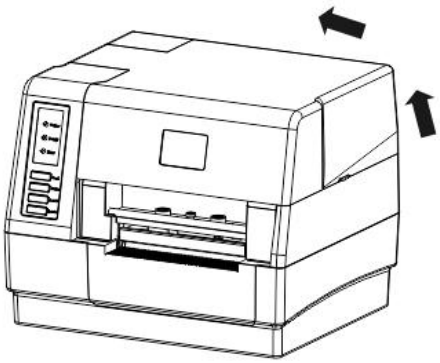
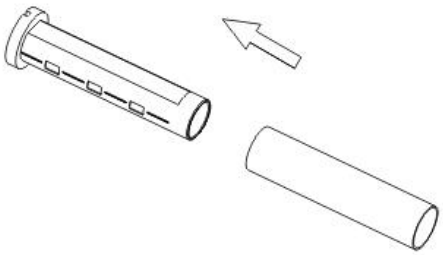
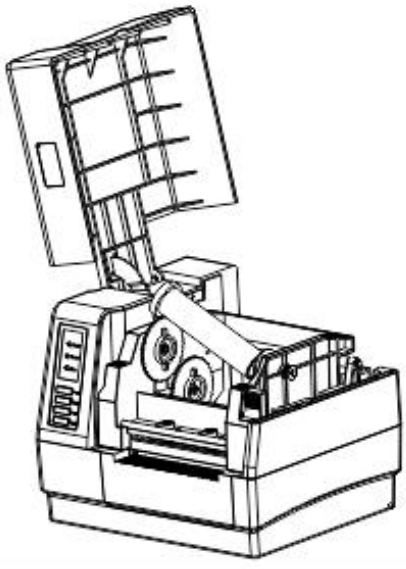
1. Place the printer on a flat, secure surface.
2. Make sure the power switch is off.
3. Connect the printer to the computer with the provided USB cable.
4. Plug the power cord into the AC power cord socket at the rear of the printer, and then plug the power cord into a properly grounded power outlet.

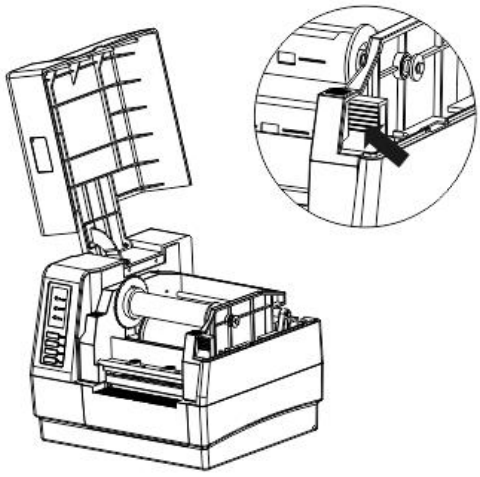
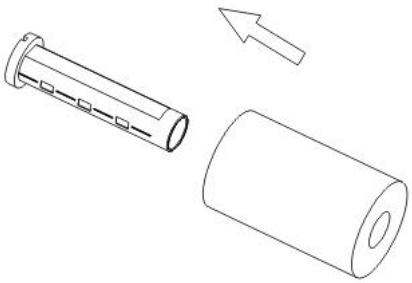
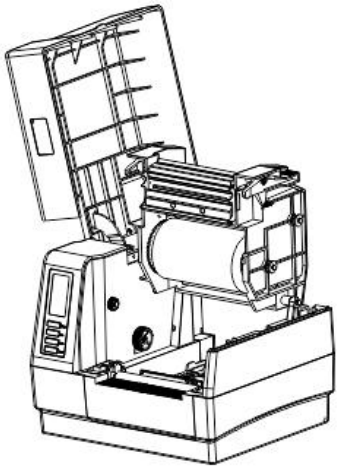


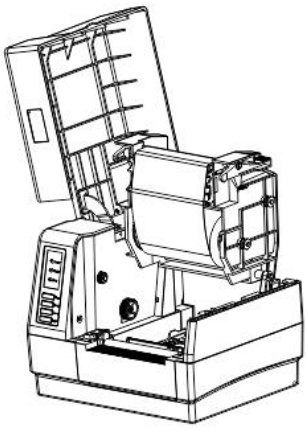
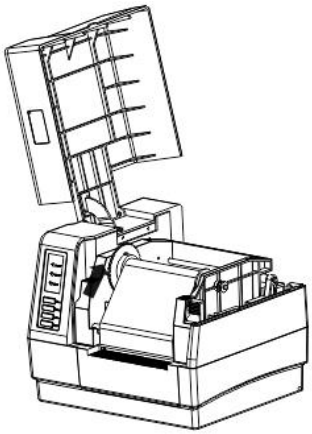
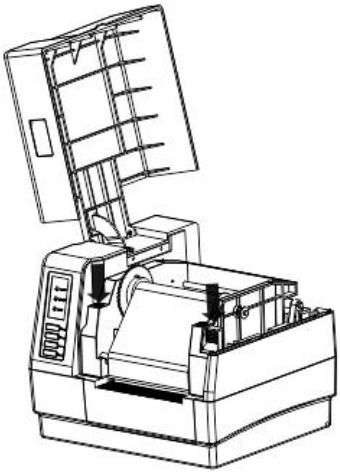
Note:

* Please switch OFF printer power switch prior to plug in the power cord to printer power jack.
* The interface picture here is for reference only. Please refer to the product specification for the interfaces availability.

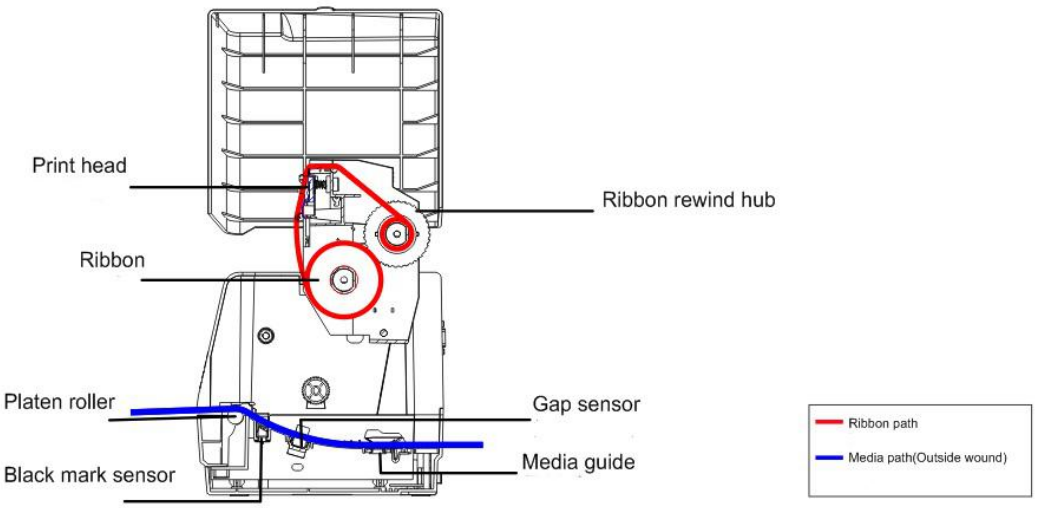
3.2 Loading the Ribbon

	1. Open the top cover by rotating it to the left
	2. Insert the paper roll to the ribbon rewind spindle.
	3. Insert the left side of ribbon rewind spindle to the ribbon rewind hub first then insert the right side of ribbon rewind spindle to the hole at the right side of ribbon mechanism

	4. Push the print head open switch forward (as shown) to open the print head
	5. Insert the ribbon into the ribbon supply spindle
	6. Press the right side (round end) of the supply spindle into the ribbon support block, and then put the left side into the slot.

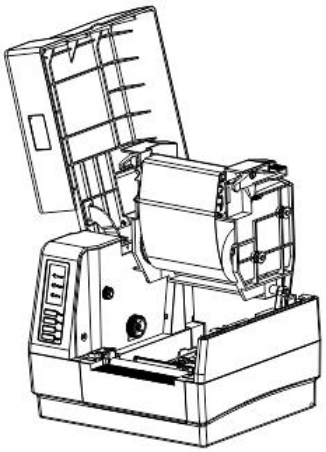
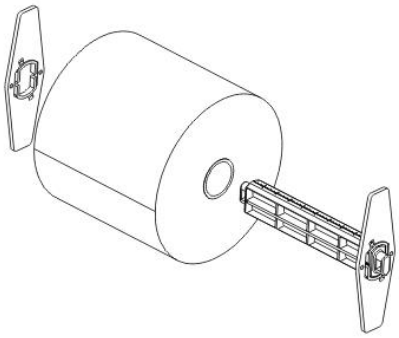
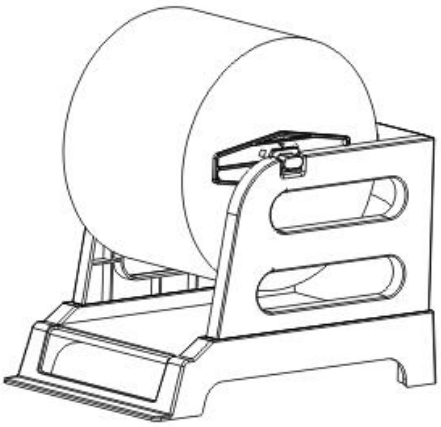
	7. Pass the ribbon through the print head and flatten it on the ribbon rewind spindle (empty roll)
	8. Rotate the ribbon recovery wheel in the direction of the arrow above until the black area of the ribbon covers the print head and wind the ribbon so that there are no wrinkles on the ribbon.
	9. As shown in the left figure, press down on the arrow at the top of the figure to close the print head. Please confirm that the print head is completely closed to ensure print quality

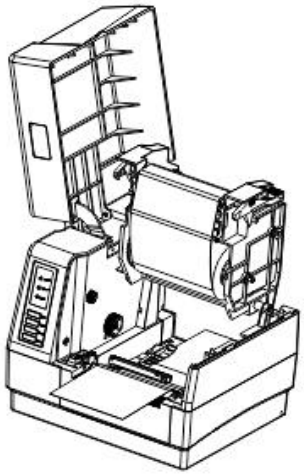
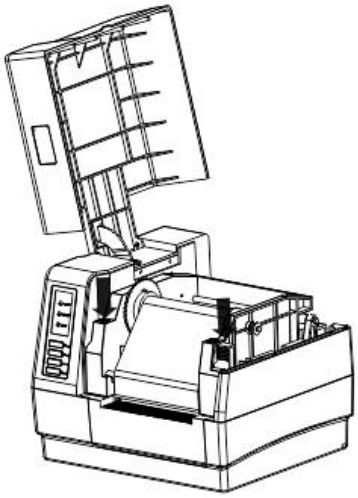
- **Ribbon loading path**

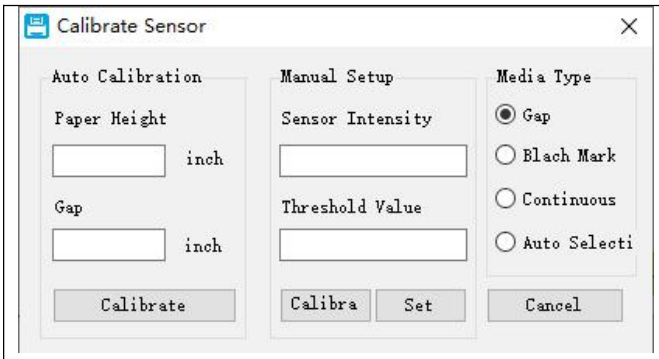


3.3 Loading the Media

3.3.1 Loading the Roll Labels

	1.Open the printing head
	2. Load the paper roll into the label supply hub and use paper roll Fixing the paper roll to the center of the supply hub
	3. Place the paper roll correctly on the paper roll. (If you are using a 4-inch wide paper roll, you can remove the fixed piece and use the paper roll directly.)

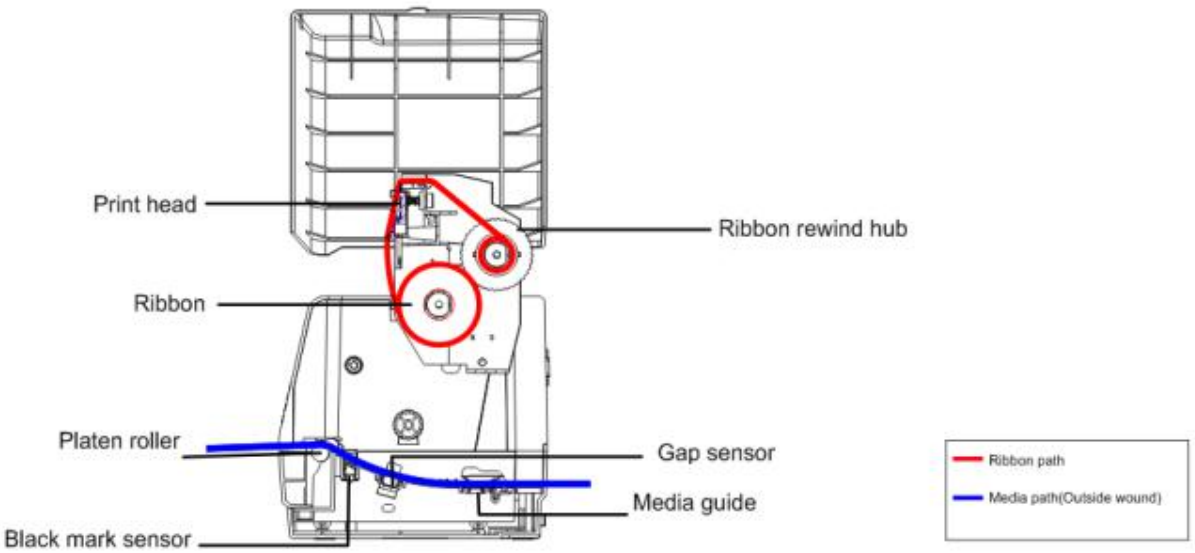
	4.Pull the front end of the paper out (print side up), and pull the paper through the rubber roller after passing under the paper guide and the paper sensor. Adjust the paper guide to the same width as the paper and slightly touch and lock the rear switch
	5. Press down on the arrow at the top of the figure to close the print head. Make sure the printhead is completely closed to ensure print quality.



6. Pull the leader of the ribbon through the print head and stick the leader of the ribbon onto the ribbon rewind paper core.

Note: The media sensor position is moveable. Please make sure the gap or black mark is at the location where media gap/black mark will pass through forsensing.

Media loading path



4. LED and Button Functions

This printer has one button and one three-color LED indicator. 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.

4.1 LED Indicator

LED Color	Description
Blue/ Solid	This illuminates that the power is on and the device is ready to use.
Blue / Flash	This illuminates that the system is downloading data from PC to memory or the printer is paused.
Purple	This illuminates that the system is clearing data from printer.
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.

4.2 Regular Button Functions

1. Feed labels

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

2. 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. Cancel button

While the printer is printing, pressing the Cancel button to cancel the printing job.

4. Repirnting button

When the printer is ready, pressing the repirnting button to repeat the last print job.

4.3 Power-on Utilities

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

Please follow the steps below for different power-on utilities.

1. Turn off the printer power switch.
2. Hold on the button then turn on the power switch.
3. Release the button when LED indicates with different color for different functions.

Power on utilities	**The LED color will be changed as following pattern:**						
LED color ***Functions***	Purple	Red (5 blinks)	Purple (5 blinks)	Bule (5 blinks)	Bule/Purple (5 blinks)	Red/Purple (5 blinks)	Solid bule
1. Ribbon sensor calibration and gap / black mark sensor calibration		*Release*					
2. Gap / black mark sensor calibration, Self-test and enter dump mode			*Release*				
3. Printer initialization				*Release*			
4. Set black mark sensor as media sensor and calibrate the black mark sensor					*Release*		
5. Set gap sensor as media sensor and calibrate the gap sensor						*Release*	
6. Skip AUTO.BAS							*Release*

4.3.1 Ribbon and Gap/Black Mark Sensor Calibration

Gap/black mark sensor sensitivity should be calibrated at the following conditions:

1. A brand new printer
2. Change label stock
3. Printer initialization

Please follow the steps below to calibrate the ribbon and gap/black mark sensor.

1. Turn off the power switch.
2. Hold on the button then turn on the power switch.
3. Release the button when LED becomes red and blinking. (Any red will do during the 5 blinks). It will calibrate the ribbon sensor and gap/black mark sensor sensitivity.

The LED color will be changed as following order：
Blue,red → red (5 blinks) → blue,red (5 blinks) → blue (5 blinks) → blue,red (5 blinks) → Blue,red (5 blinks) → solid blue

Note:
Please select gap or black mark sensor by sending GAP or BLINE command to printer prior to calibrate the sensor.
For more information about GAP and BLINE command, please refer to TSPL programming manual.

4.3.2 Gap/Black Mark Calibration, Self-test and Dump Mode

While calibrate the gap/black mark sensor, printer will measure the label length, print the internal configuration (self-test) on label and then enter the dump mode. To calibrate gap or black mark sensor, depends on the sensor setting in the last print job.
Please follow the steps below to calibrate the sensor.
1.Confirm the ribbon loading properly
2. Turn off the power switch.
3. Hold on the button then turn on the power switch.
4. Release the button when the color of LED is blue / red,blinking simultaneously.

- The LED color will be changed as following order.
  Blue / red → red (5 blinks) → blue/ red (5 blinks) → blue (5 blinks) → blue/red (red blinks 5 times) → red/blue (5 blinks) → solid blue

5. It calibrates the sensor and measures the label length and prints internal settings then enter the dump mode.

Note:
Please select gap or black mark sensor by Diagnostic Tool or by GAP or BLINE command prior to calibrate the sensor.
For more information about GAP and BLINE command, please refer to TSPL2 programming manual.

■ Self-test

Printer will print the printer configuration after gap/black mark sensor calibration. Self-test printout can be used to check if there is any dot damage on the heater element, printer configurations and available memory space.

Printer model name & Main board firmware version

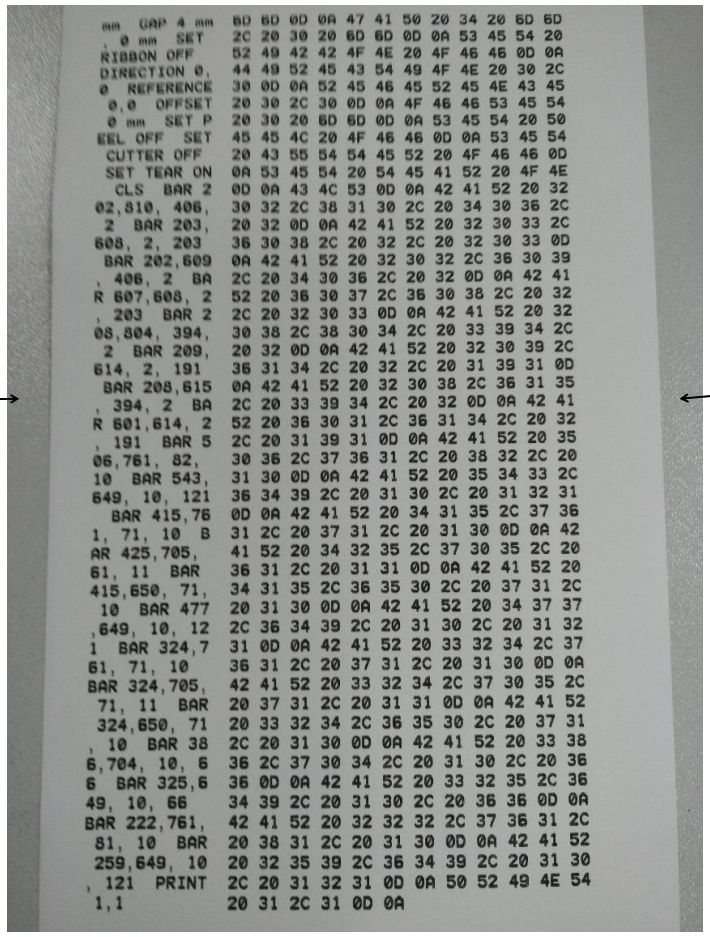
Printer serial number
Printed mileage
Main board firmware checksum
Serial port setting
Code page
Country code
Print speed
Print darkness
Label size (width, height)
Black mark or gap size (vertical gap, offset)
Sensor sensitivity

File management information

Dump mode

Printer will enter dump mode after printing printer configuration. In the dump mode, all characters will be printed in 2 columns as following. The left side characters are received from your system and right side data are the corresponding hexadecimal value of the characters. It allows users or engineers to verify and debug the program.

ASCII Data →



← Hex decimal data related to left

Note:

1. Dump mode requires 4” wide paper width.

2. Turn off / on the power to resume printer for normal printing.

4.3.3 Printer Initialization

Printer initialization is used to clear DRAM and restore printer settings to defaults. The only one exception is ribbon sensitivity, which will note be restored to default.

Printer initialization is activated by the following procedures.

1. Turn off the power switch.
2. Hold on the button then turn on the power switch.

- The LED color will be changed as following:
  Blue/red (5 blinks) ⟶ red (5 blinks) ⟶ Blue/red (5 blinks) ⟶ blue(5 blinks) ⟶ blue/red (red 5 blinks) ⟶ Red/blue (blue 5 blinks)⟶ solid blue

2. Release the FEED button when the power indicator is blinking blue, and the printer will reset.

Printer configuration will be restored to defaults as below after initialization.

Parameter	Default setting
Speed	200mm/sec (8 ips) (203DPI) 152.4mm/sec (6 ips) (300DPI)
Density	8
Label Width	4” (101.5 mm)
Label Height	4” (101.5 mm)
Sensor Type	Gap sensor
Gap Setting	0.12” (3.0 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

4.3.4 Set Black Mark Sensor as Media Sensor and Calibrate the Black Mark Sensor

Please follow the steps as below.

1. Turn off the power switch.
2. Hold on the button then turn on the power switch.
3. Release the button when LED turns blue/purple after 5 blue blinks. (Any blue/purple will do during the 5 blinks).

■ The LED color will be changed as following:

Blue/red (5 blinks) ⇨ red (5 blinks) ⇨ Blue/red (5 blinks) ⇨ blue (5 blinks) ⇨ Blue/red (5 blinks) ⇨ Red/blue solid blue

4.3.5 Set Gap Sensor as Media Sensor and Calibrate the Gap Sensor

Please follow the steps as below.

1. Turn off the power switch.
2. Hold on the button then turn on the power switch.

3. When the power indicator is solid red and blue blinks, release Feed button. At this time, the printer will correct the gap sensor, and finally the blue is solid.

- The LED color will be changed as following:

  Blue/red ⇨ red (5 blinks) ⇨ Blue/red (5 blinks simultaneously) ⇨ blue (5 blinks) ⇨ blue/red (5 blinks) ⇨ red/blue (blue blinks 5) ⇨ solid blue

4.3.6 Skip AUTO.BAS

XPL programming language allows user to download an auto execution file to flash memory. Printer will run the AUTO.BAS program immediately when turning on printer power. The AUTO.BAS program can be interrupted without running the program by the power-on utility.

Please follow the procedures below to skip an AUTO.BAS program.

1. Turn off printer power.
2. Press the FEED button and then turn on power.
3. Release the FEED button when LED becomes solid blue.

- The LED color will be changed as following:

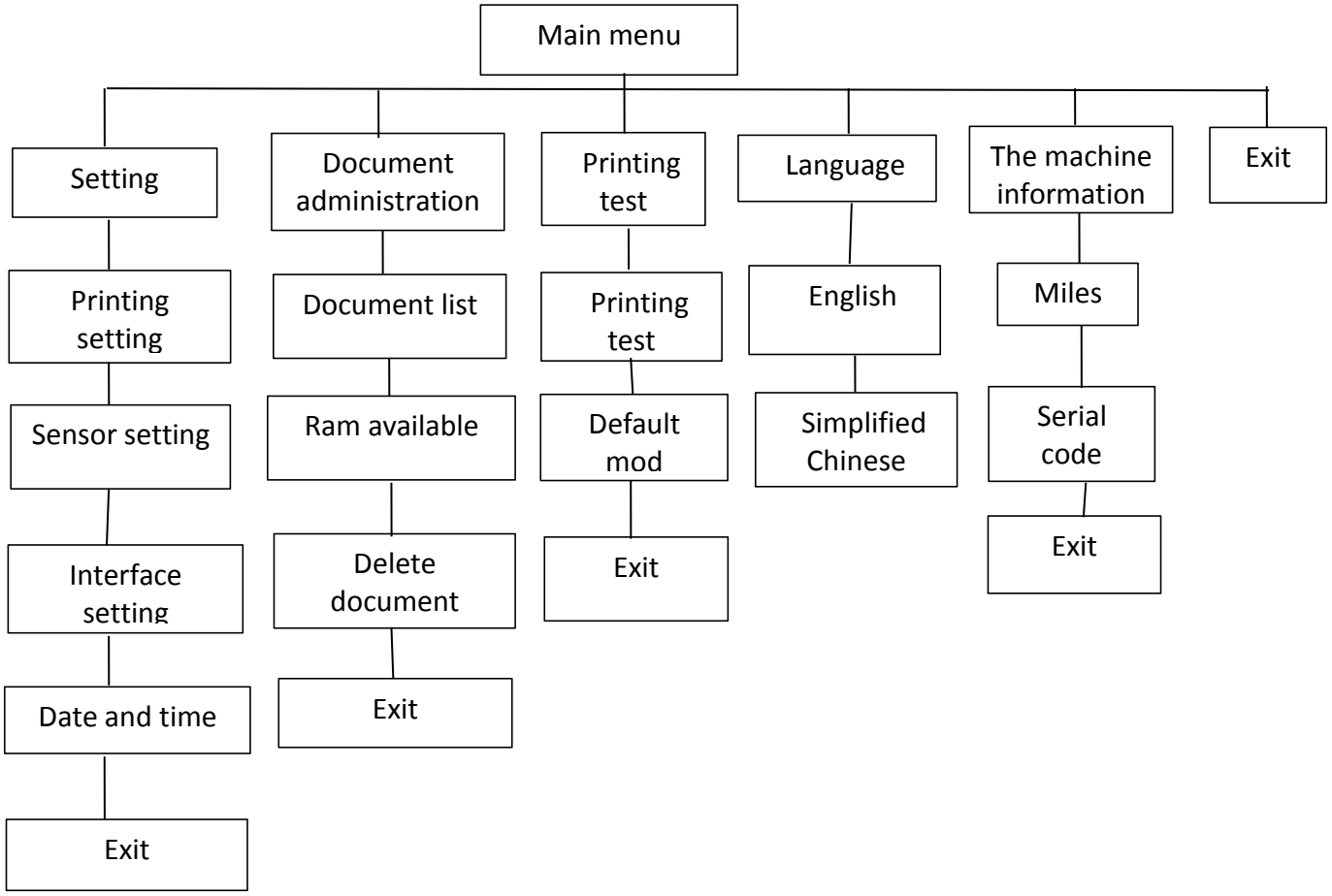
  Blue/red ⇨ red (5 blinks) ⇨ blue/red (5 blinks simultaneously) ⇨ blue (5 blinks) blue/red (red blinks 5) ⇨ red/blue (blue blinks 5) ⇨ solid blue

4. Printer will be interrupted to run the AUTO.BAS program.

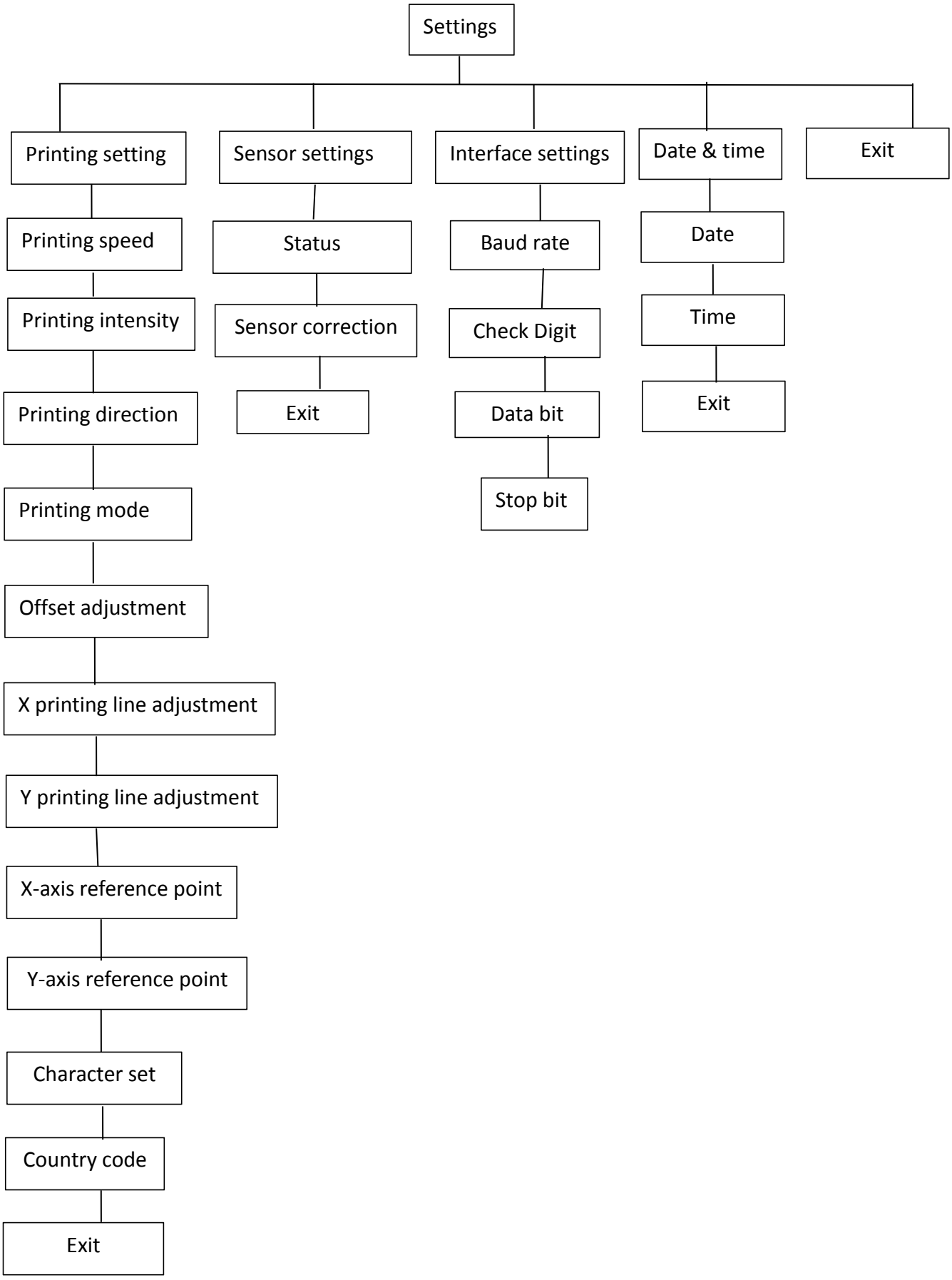
5. LCD operation panel

The LCD display version of this printer has four buttons, namely menu, up, down, and feed. The menu button and feed button are respectively served as the “confirm” and “return” buttons after entering the menu.

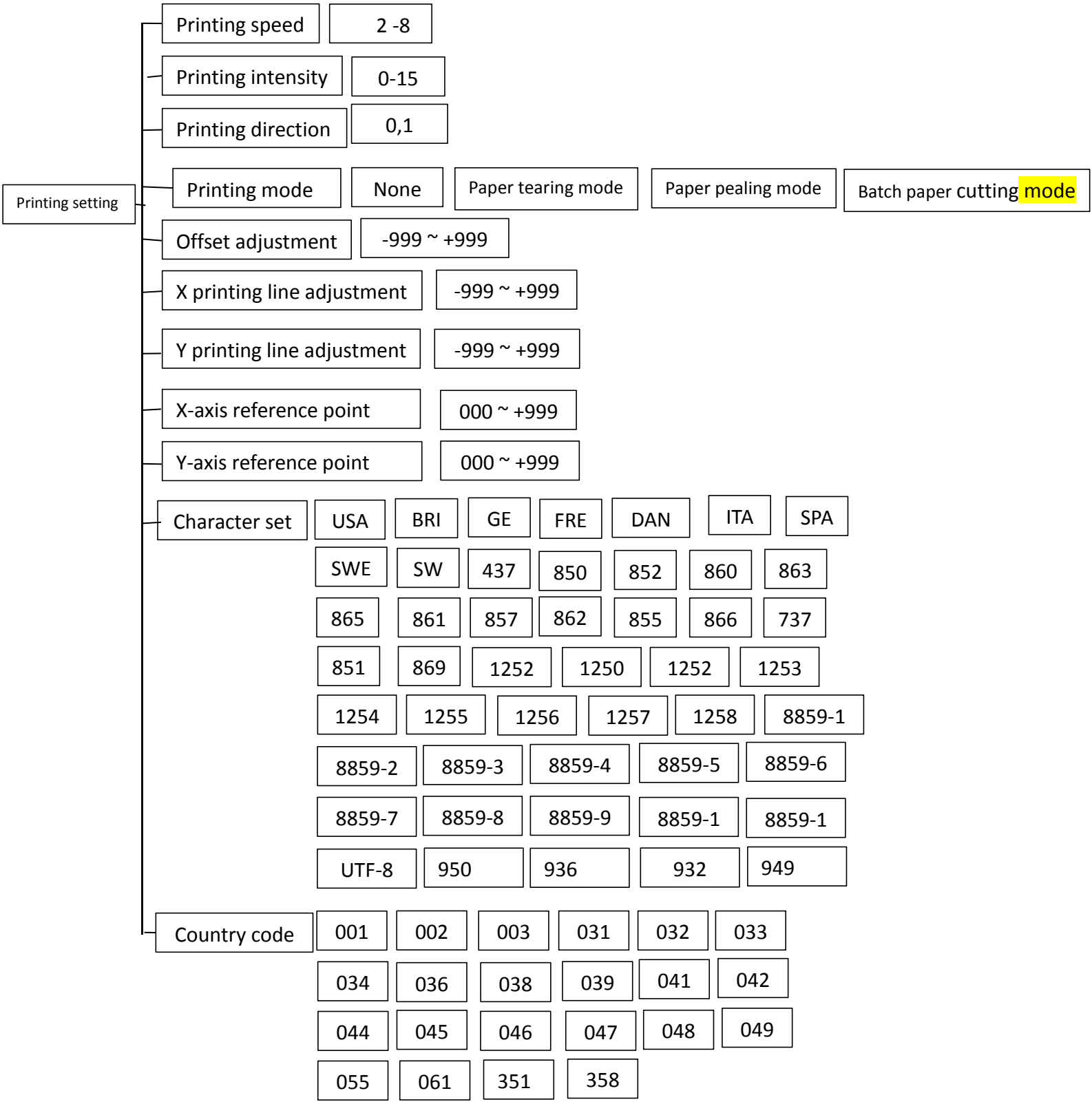
Main menu table



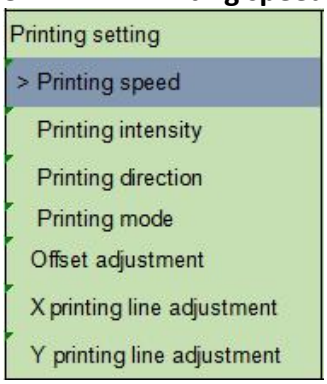
5.1 Setting

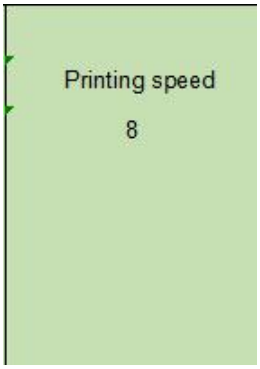

Settings
Printing setting
Sensor settings
Interface settings
Date & time
Exit
Printing speed
Printing intensity
Printing direction
Printing mode
Offset adjustment
X printing line adjustment
Y printing line adjustment
X-axis reference point
Y-axis reference point
Character set
Country code
Exit
Status
Sensor correction
Exit
Baud rate
Check Digit
Data bit
Stop bit
Date
Time
Exit

5.1.1 Printing setting



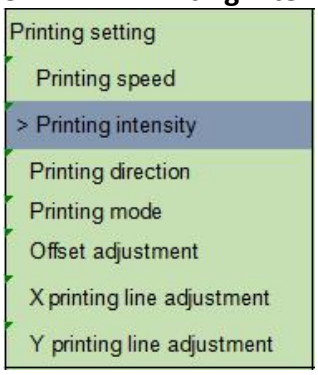
5.1.1- 1.1 Printing speed setting

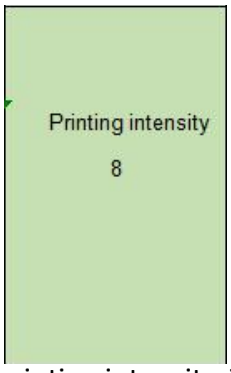




Use this option to set the printer's printing speed. The adjustment range is 2 ~ 8 ips, and the interval between increase or decrease is 1 ips.
Press UP button to increase thenumerical value .
Press DOWN button to decrease the numerical value.
Press MENU button to confirm the setting.
Press FEED button to cancel the setting and range to the previous menu.

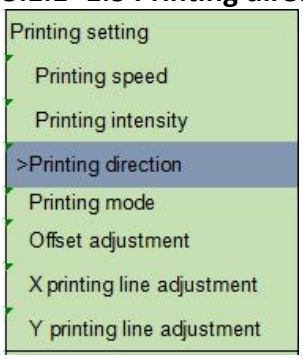
5.1.1- 1.2 Printing intensity setting

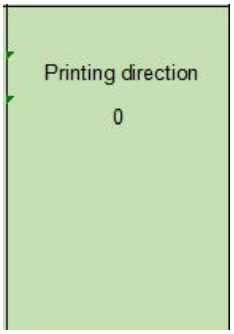




Use this option to set the printer's printing intensity. The adjustment range is 0-15 , and the interval between increase or decrease is 1.
Press UP button to increase the value.
Press DOWN button to decrease the value.
Press MENU button to confirm the setting.
Press FEED button to cancel the setting and range to the previous menu.

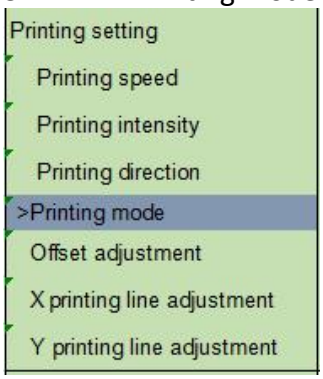
5.1.1- 1.3 Printing direction setting

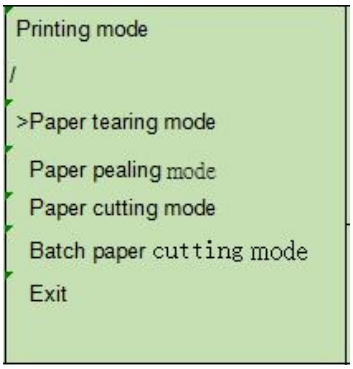




Use this option to set the printer's printing intensity. The adjustment range is 1 or 0 , and the interval between increase or decrease is 1.
Press UP button to change the numeric to 1.
Press DOWN button to change the numeric to 0.
Press MENU button to confirm the setting.
Press FEED button to cancel the setting and range to the previous menu.

5.1.1- 1.4 Printing mode setting





Use this option to set the printer's printing mode . When this option is entered, this ">" diagram refers to the current printing mode.

.

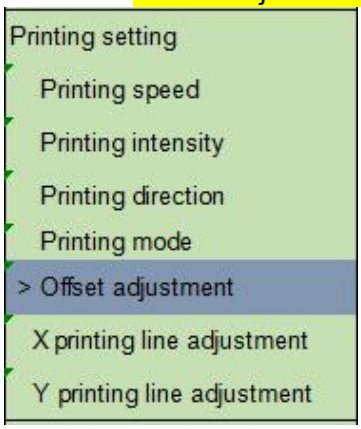
Press DOWN button to move the cursor left or right.

Press UP button to set the range" + - "or "0 ~ 9 ".

Press MENU button to confirm finish.

Press FEED button to cancel the setting and return to the previous menu.

5.1.1 - 1.5 Offset adjustment



This option can be used to adjust the stopping position after the label is printed. When using the paper pealing or cutting function, it can be used to adjust the position where the label is stopped. When printing the next label, the part that is pushed out or pushed less will be printed.

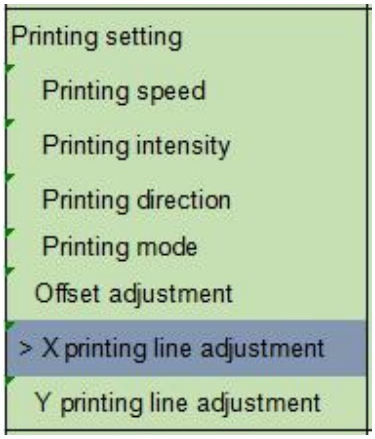
Press DOWN button to move the cursor left or right.

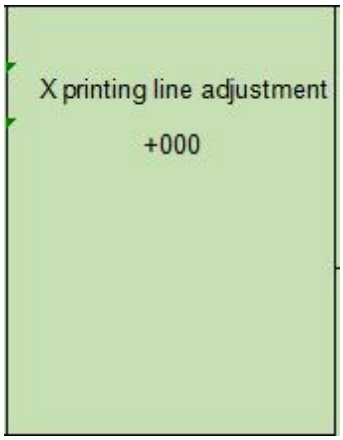
Press UP button to set the range" + - "or "0 ~ 9 ".

Press MENU button to select Done.

Press FEED button to cancel the setting and return to the previous menu.

5.1.1 - 1.6 X & Y printing line adjustment

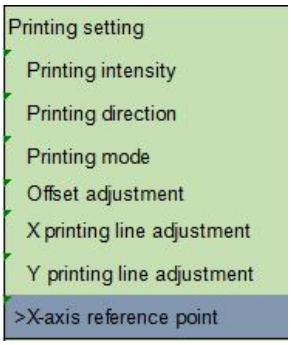


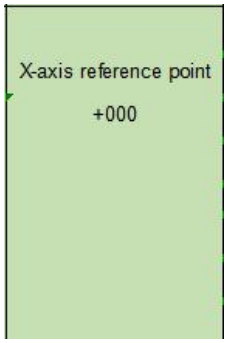


Use this option to adjust the label printing position and the label stopping position.

Press DOWN button to move the cursor left or right.
Press UP button to set the range” + - “or “0 ~ 9 “.
Press MENU button to select “Finish”.
Press FEED button to cancel the setting and return to the previous menu.

5.1.1 - 1.7 Reference point

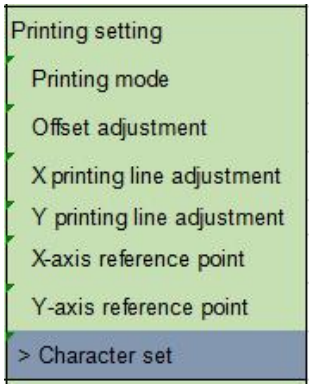


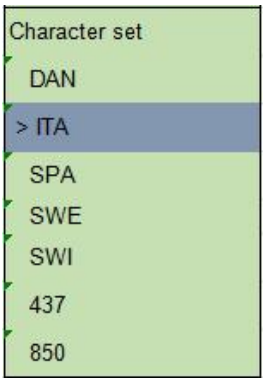


Use this option to adjust the reference coordinates on the label relative to the origin.

Press DOWN button to move the cursor left or right.
Press UP button to set the range” + - “or “0 ~ 9 “.
Press MENU button to select Done.
Press FEED button to cancel the setting and return to the previous menu.

5.1.1 - 1.8 character set

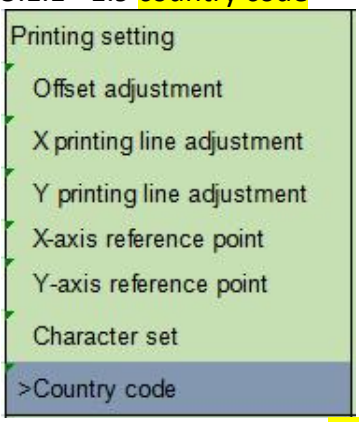


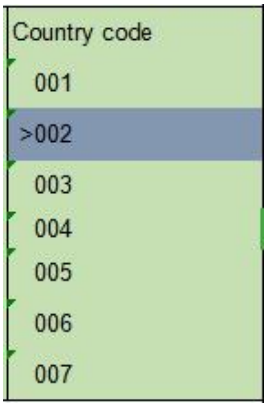


Use this option to set the printer's character set. When this option is entered, this ">" diagram refers to the currently set mode.

Press UP and DOWN button to select the mode you want to set up or down.
Press MENU button to complete the setting.
Press Feed button to cancel the setting and return to the previous menu.

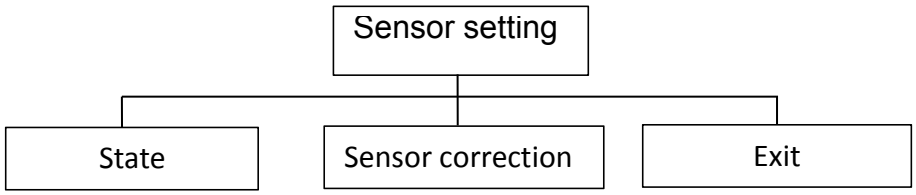
5.1.1 - 1.9 country code



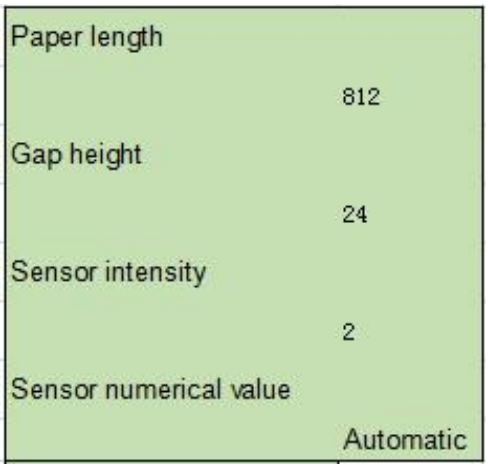


Use this option to set the country code of the printer. When this option is entered, this ">" diagram refers to the currently set mode.
Press UP and DOWN button to select the mode you want to set
Press MENU button to complete the setting
Press FEED button to cancel the setting and return to the previous menu.

5.1.3 Sensor setting



5.1.3.1 Sensor State

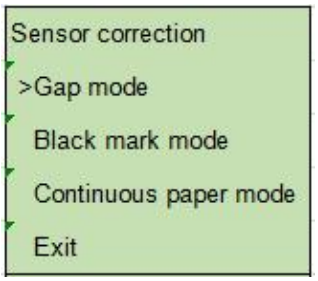


The secondary option allows you to view the sensor status of the printer. When you enter this option you can see the following information.

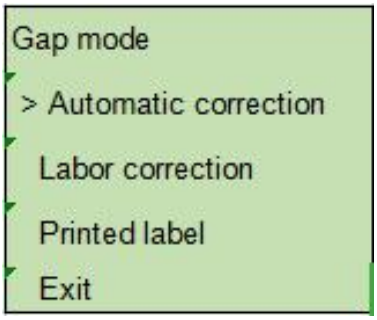
5.1.3.2 Sensor calibration
This option sets the sensor's detection mode and the sensor required for calibration according to the label paper used. It is recommended to perform a sensor calibration again whenever the label is replaced.

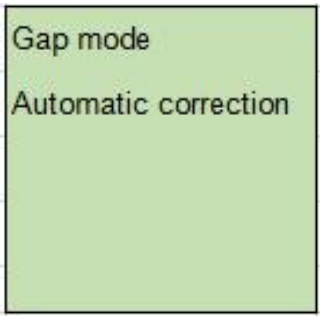
A. gap mode

Press the up and down keys to select the sensor type.
Press the Menu button to complete the setting.
Press the eject button to cancel the setting and return to the previous menu.

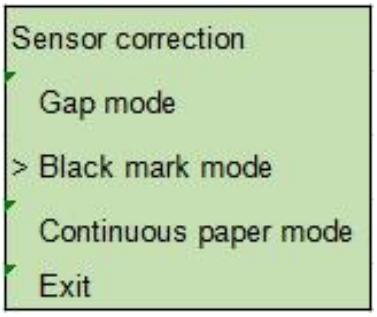


Automatic gap correction
When this option is entered, the above message will appear and the printer will enter 2~3 pieces of label paper for sensor correction. When the calibration is completed, it will return to the previous menu.

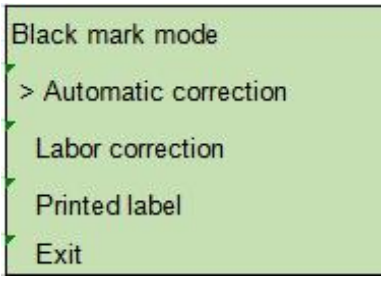


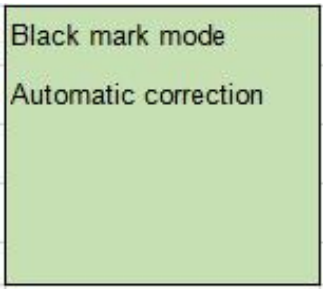


B. Black mark mode



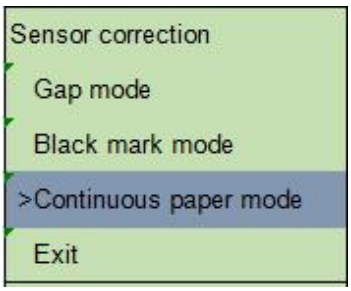
Automatic black mark correction





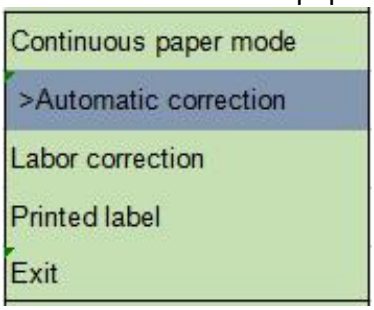
When entering this option, the LCD display will display the above information, and the printer will take 2 ~ 3 pieces of paper for sensor calibration.

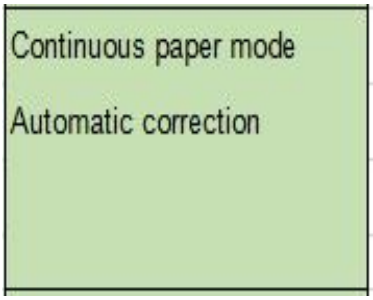
C. Continuous paper mode



Press UP and DOWN button to select the sensor type and press the menu key to complete the setting.

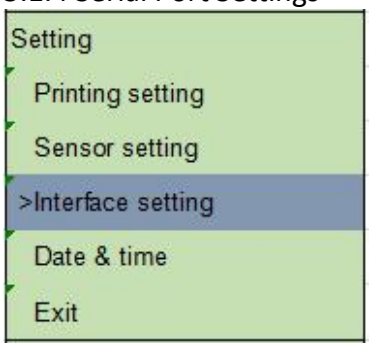
Automatic continuous paper correction



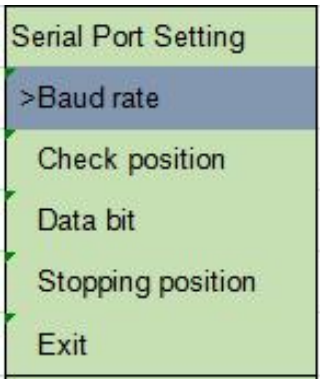


When you enter this option, you will see the above message and the printer automatically corrects the paper for the sensor. When the calibration is completed, it will return to the previous menu.

5.1.4 Serial Port Settings



5.1.4.1 Baud rate



This option sets the transmission speed of the printer RS-232.
When this option is entered, this ">" diagram refers to the currently setting mode.

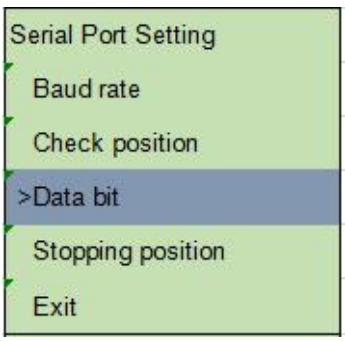
Press UP and DOWN button to select the mode you want to set
Press MENU button to complete the setting.
Press FEED button to cancel the setting and return to the previous menu.

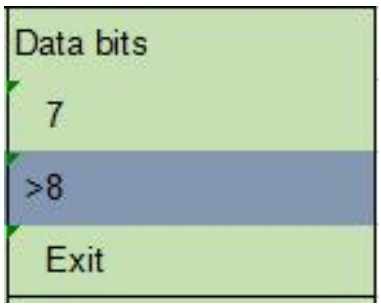
5.1.4.2 Parity test

This option sets the RS-232 check digit. When this option is entered, this ">" diagram refers to the current setting mode.

Press UP and DOWN button to select the mode you want to set up or down.
Press MENU button to complete the setting.
Press FEED button to cancel the setting and return to the previous menu.

5.1.4.3 Data bits

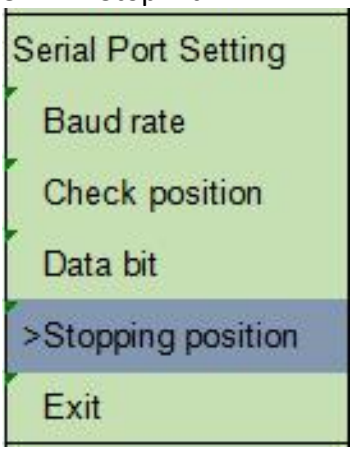


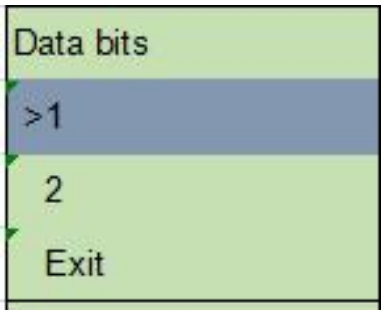


This option sets the RS-232 data bits. When this option is entered, this ">" diagram refers to the currently set mode.

Press UP and DOWN button to select the mode you want to set up or down.
Press MENU button to complete the setting.
Press FEED button to cancel the setting and return to the previous menu.

5.1.4.4 Stop Bit



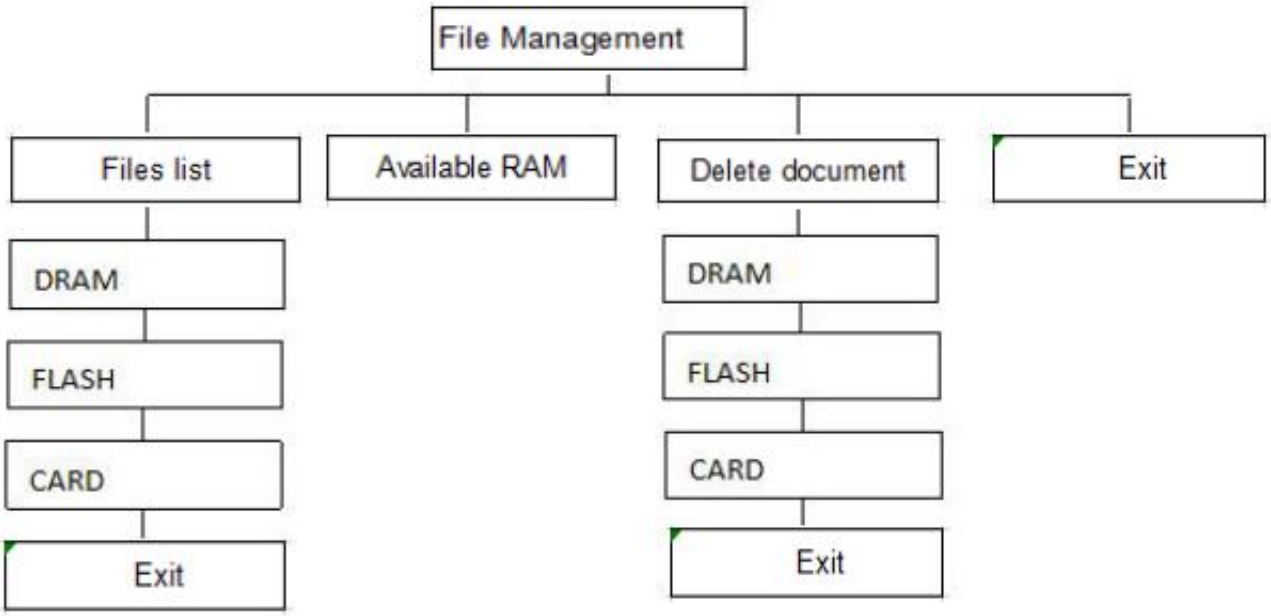


This option sets the stop bit of the RS-232. When this option is entered, this ">" diagram refers to the currently set mode.

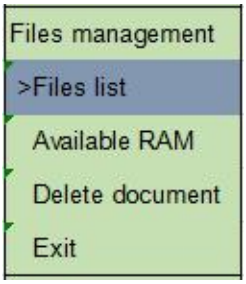
Press UP and DOWN button to select the mode you want to set up or down.
Press MENU button to complete the setting.
Press FEED button to cancel the setting and return to the previous menu.

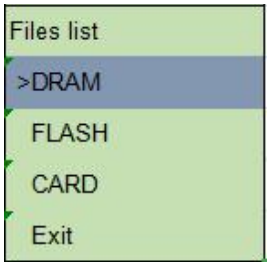
5.2 File Management

This option allows you to view the usage of memory Flash TF card in printer and file management.



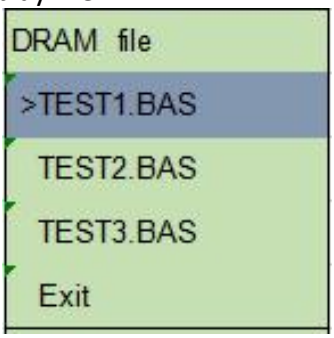
5.2.1 List of files

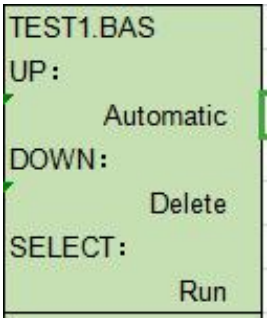




This option can display, delete, and execute (.BAS) documents stored in memory.

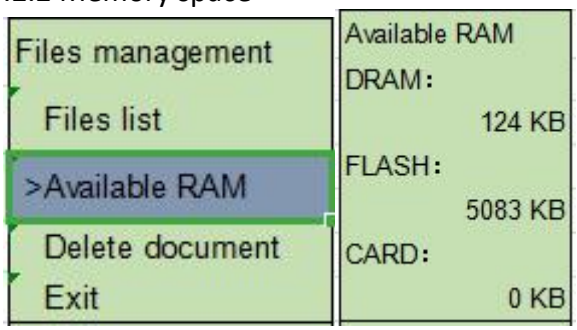
Display file:





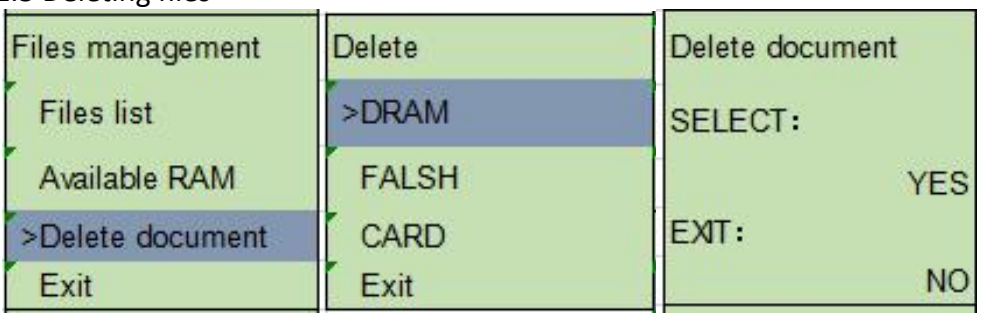
Delete file: press DOWN button to delete the file
Execute file: press MENU button to execute the file

5.2.2 Memory space



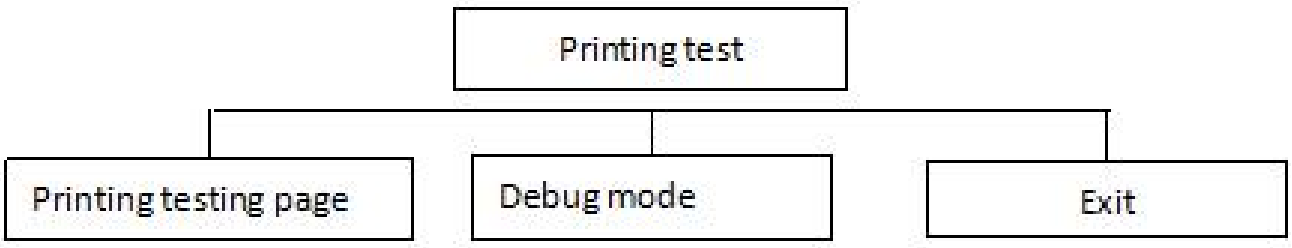
This option allows you to view the remaining memory space.

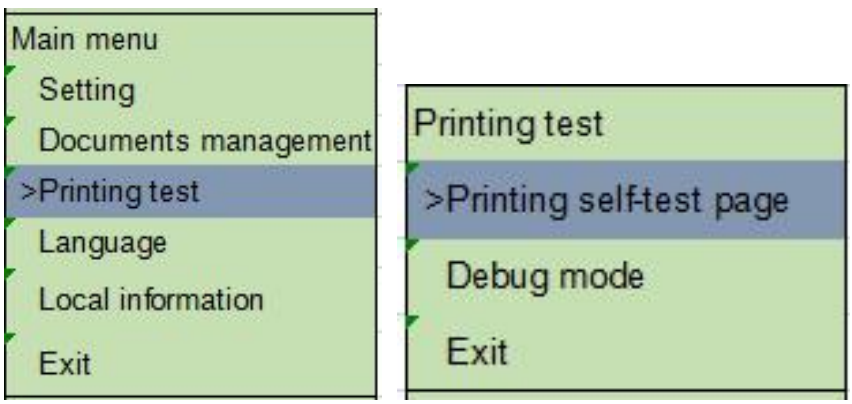
5.2.3 Deleting files



This option deletes files.

5.3 Printing and debugging

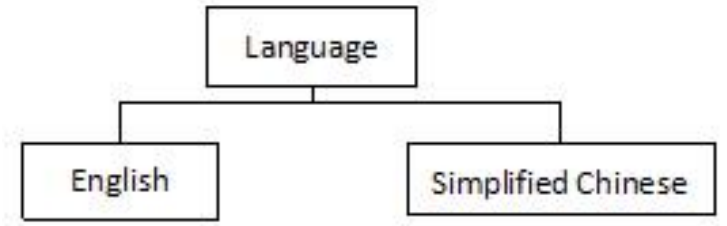


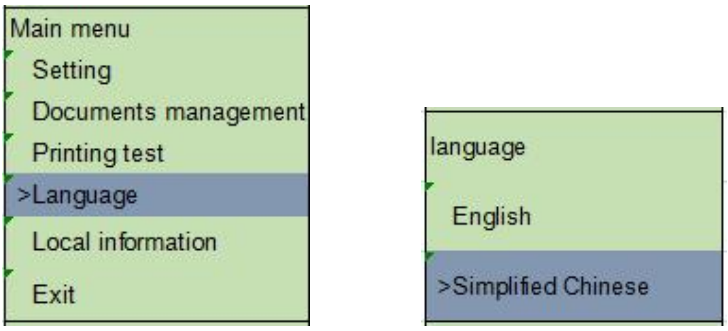


5.3.1 Printing a Self-Test Page
When you choose to print a self-test page, the printer automatically prints out the printer's internal settings.
5.3.2 Debug Mode
When this feature is selected, the printer will enter debug mode.

Note: Printing the self-test page and debug mode is the same as without the LCD version.

5.4 Language

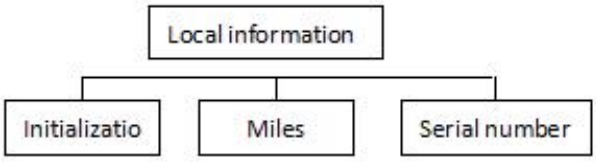


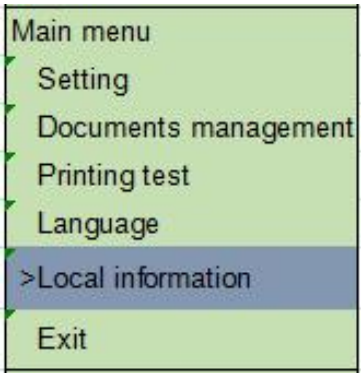


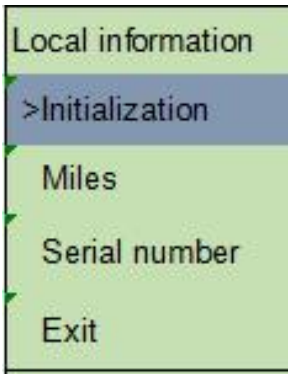
This option sets the language displayed on the screen. When this option is entered, this ">" diagram refers to the current setting mode.

Press UP and DOWN button to select the mode you want to set .
Press MENU button to complete the setting.
Press FEED button to cancel the setting and return to the previous menu.

5.5 Local Information







This option initializes the printer or looks at the serial number and the number of miles printed.

Press UP and DOWN button keys to select the mode you want to set

Press MENU button to complete the setting.

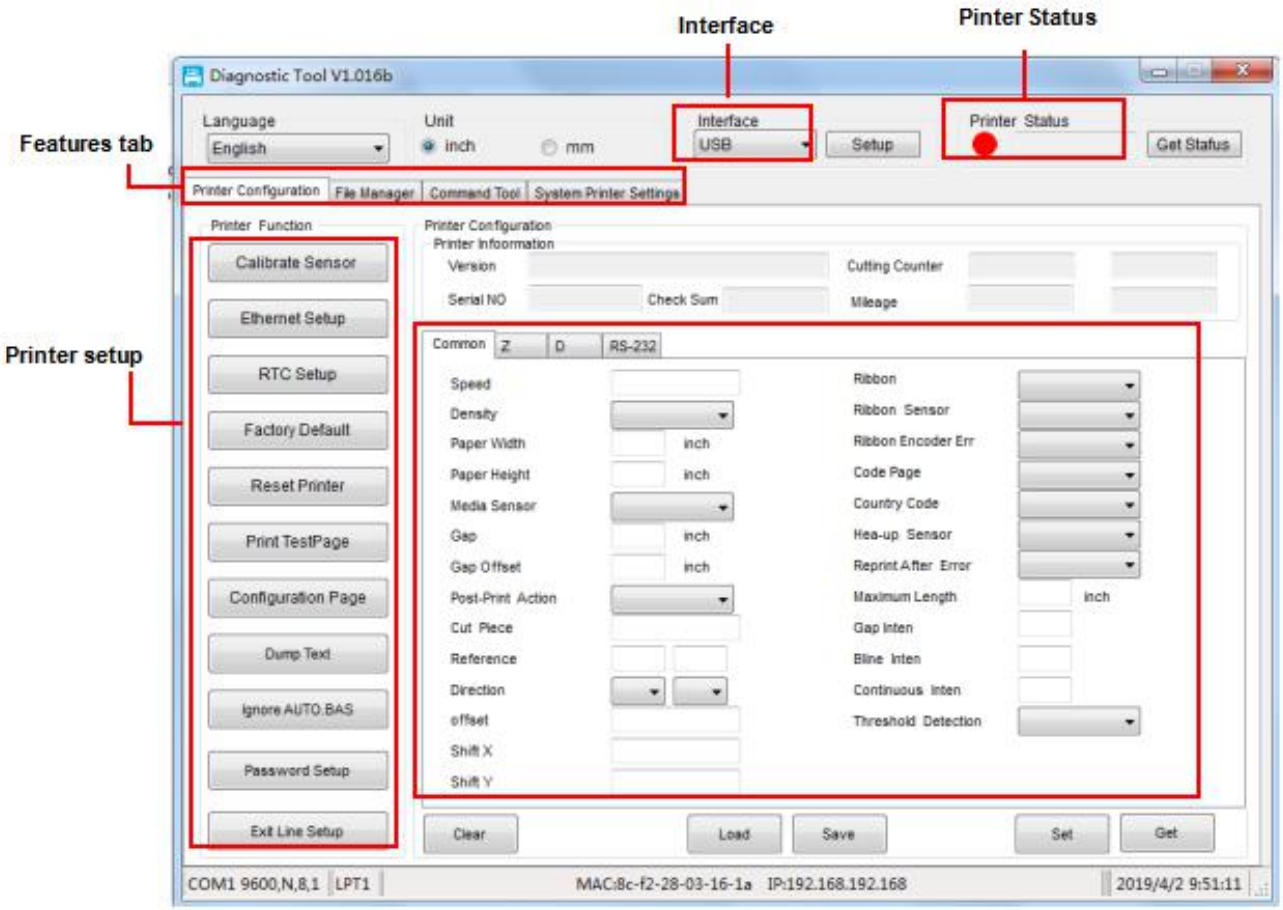
Press FEED button to cancel the setting and return to the previous menu.

6. Diagnostic Tool

ZHUHAI HENGQUAN's 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; create a printer bitmap font; 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.

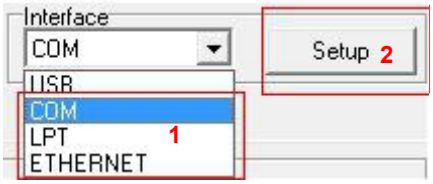
6.1 Start the Diagnostic Tool

1. Double click on the Diagnostic tool icon Diagnostic Tool.exe to start the software.
2. There are four features (Printer Configuration, File Manager, Bitmap Font Manager, Command Tool) included in the Diagnostic utility.



6.2 Printer Function

1. Select the PC interface connected with barcode printer.

<table>
<tr>
<td>The default interface setting is USB interface. If USB interface is connected with printer, no other settings need to be changed in the interface field.</td>
<td> 
</td>
</tr>
</table>

2. Click the “Printer Function” button to setup.
3. The detail functions in the Printer Function Group are listed as below.

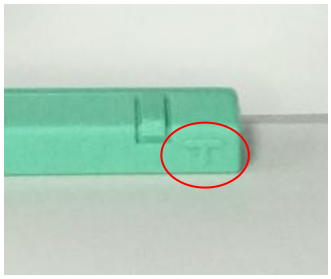
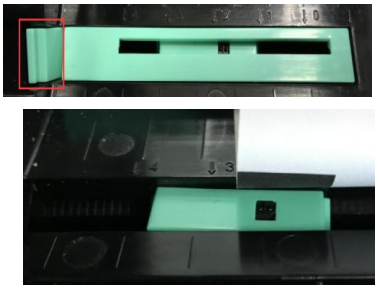
Function	Description
Calibrate Sensor	Calibrate the sensor specified in the Printer Setup group media sensor field
Ethernet Setup	Setup the IP address, subnet mask, gateway for the on board Ethernet
RTC Setup	Synchronize printer Real Time Clock with PC
Print Test Page	Print a test page
Reset Printer	Reboot printer
Factory Default	Initialize the printer and restore the settings to factory default. (Please refer section 4.3.3)
Dump Text	To activate the printer dump mode.
Ignore AUTO.BAS	Ignore the downloaded AUTO.BAS program
Configuration Page	Print printer configuration (Please refer section 4.3.2)
Password Setup	Set the password to protect the settings

6.3 Calibrating Media Sensor by Diagnostic Tool

6.3.1 Auto Calibration

1. Make sure the media is install ready and print head mechanism is closed. (Please refer to section 3.3.)

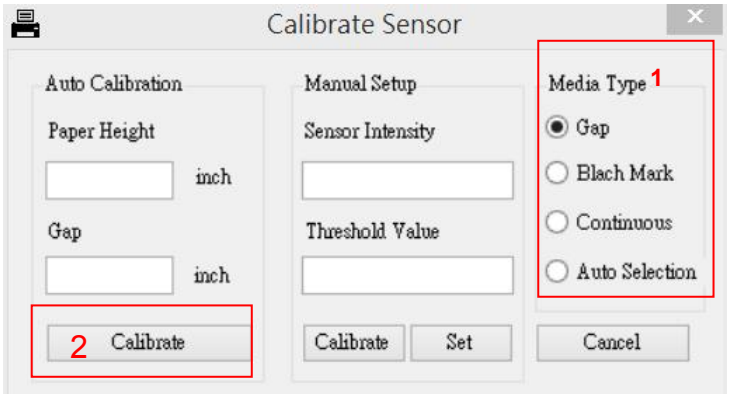
   Note: The media sensor position is moveable. Please make sure the gap ( ) or black mark is at the location where media gap/black mark will pass through for Sensing.

Gap sensor	Black mark sensor
	

2. Turn on the printer power switch.
3. Open Diagnostic tool and set interface. (The default setting is USB.)

 The default interface setting is USB interface. If USB interface is connected with printer, no other settings need to be changed in the interface field.	

4. Click the “Calibrate Sensor” button.
5. Select the media type and click the “Calibrate” button.

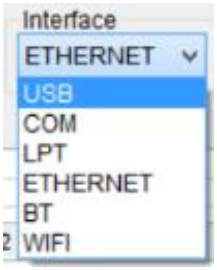


6.4 Setting Ethernet by Diagnostic Utility (Option)

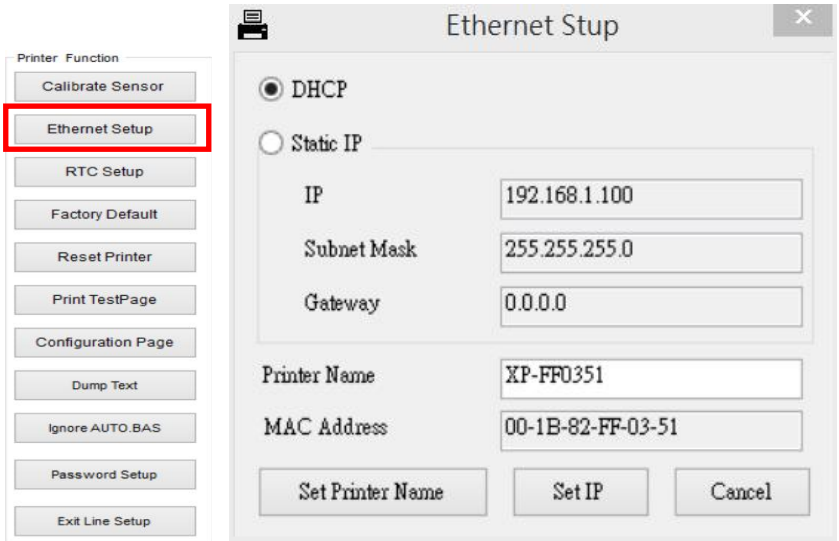
The Diagnostic Utility is enclosed in the CD disk \Utilities directory. Users can use Diagnostic Tool to setup the Ethernet by RS-232, USB and Ethernet interfaces. The following contents will instruct users how to configure the Ethernet by these three interfaces.

6.4.1 Using USB interface to setup Ethernet interface

1. Connect the USB cable between the computer and the printer.
2. Turn on the printer power.
3. Start the Diagnostic Utility by double clicking on the Diagnostic Tool.exe icon.
4. The Diagnostic Utility default interface setting is USB interface. If USB interface is connected with printer, no other settings need to be changed in the interface field.

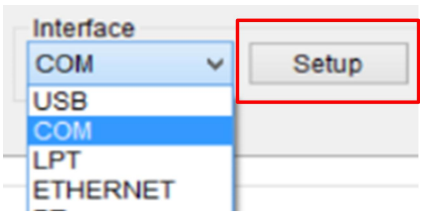


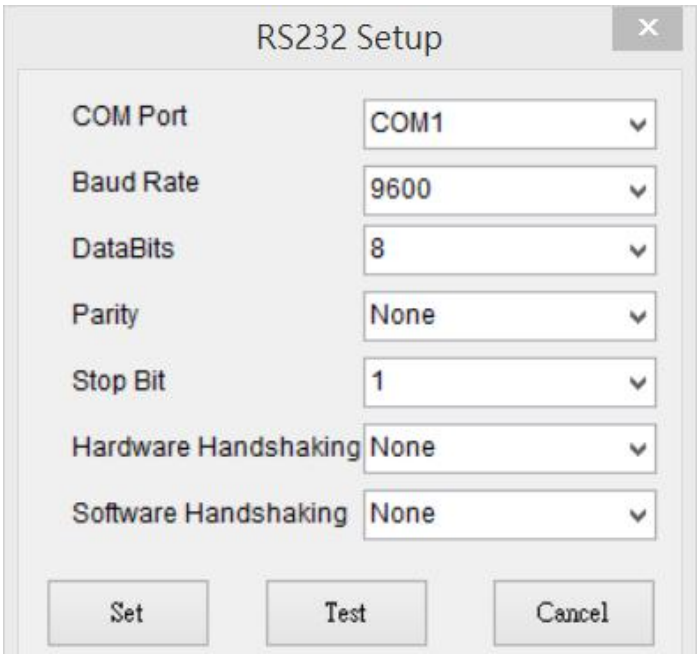
5. Click on the “Ethernet Setup” button from “Printer Function” group in Printer Configuration tab to setup the IP address, subnet mask and gateway for the on board Ethernet.



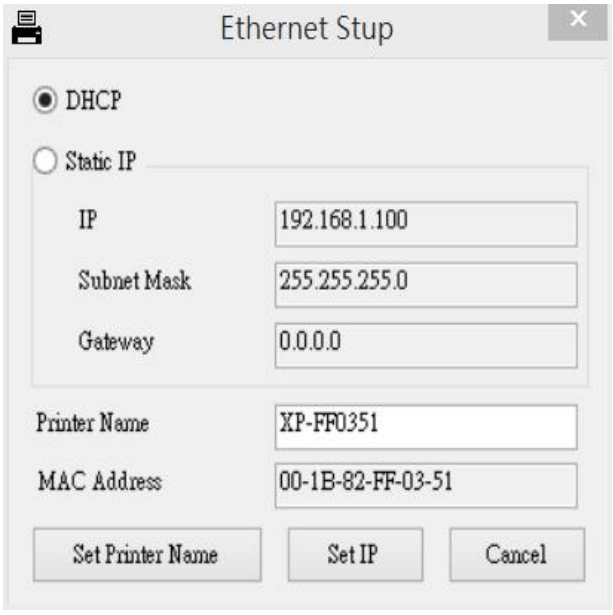
6.4.2 Using RS-232 interface to setup Ethernet interface

1. Connect the computer and the printer with a RS-232 cable.
2. Turn on the printer power.
3. Start the Diagnostic Utility by double clicks on the Diagnostic Tool.exe icon.
4. Select “COM” as interface then click on the “Setup” button to setup the serial port baud rate, parity check, data bits, stop bit and flow control parameters.



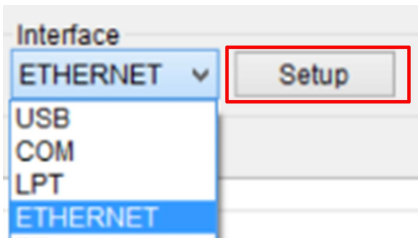


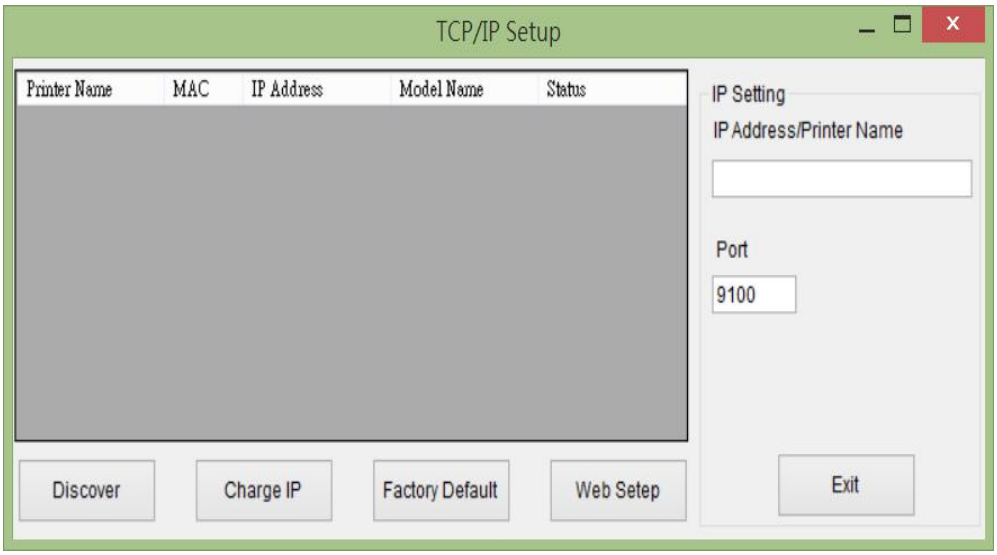
5. Click on the “Ethernet Setup” button from printer function of Printer Configuration tab to setup the IP address, subnet mask and the gateway for the on board Ethernet.



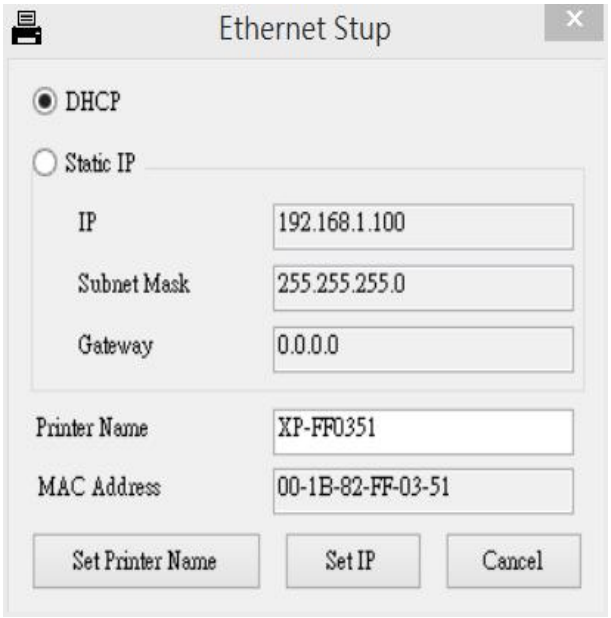
6.4.3 Using Ethernet interface to setup Ethernet interface

1. Connect the computer and the printer to the LAN.
2. Turn on the printer power.
3. Start the Diagnostic Utility by double clicks on the Diagnostic Tool.exe icon.
4. Select “Ethernet” as the interface then click on the “Setup” button to setup the IP address, subnet mask and gateway for the on board Ethernet.





5. Click the “Discover Device” button to explore the printers that exist on the network.
6. Select the printer in the left side of listed printers, the correspondent IP address will be shown in the right side “IP address/Printer Name” field.
7. Click “Change IP Address” to configure the IP address obtained by DHCP or static.



The default IP address is obtained by DHCP. To change the setting to static IP address, click “Static IP” radio button then enter the IP address, subnet mask and gateway. Click “Set IP” to take effect the settings.

Users can also change the “Printer Name” by another model name in this fields then click “Set Printer Name” to take effect this change.

Note: After clicking the “Set Printer Name” or “Set IP” button, printer will reset to take effect the settings.

8. Click “Exit” button to exit the Ethernet interface setup and go back to Diagnostic Tool main screen.

Factory Default button

This function will reset the IP, subnet mask, gateway parameters obtained by DHCP and reset the printer name.

Web setup button

Except to use the Diagnostic Utility to setup the printer, you can also explore and configure the printer settings and status or update the firmware with the IE or Firefox web browser. This feature provides a user friendly setup interface and the capability to manage the printer remotely over a network.

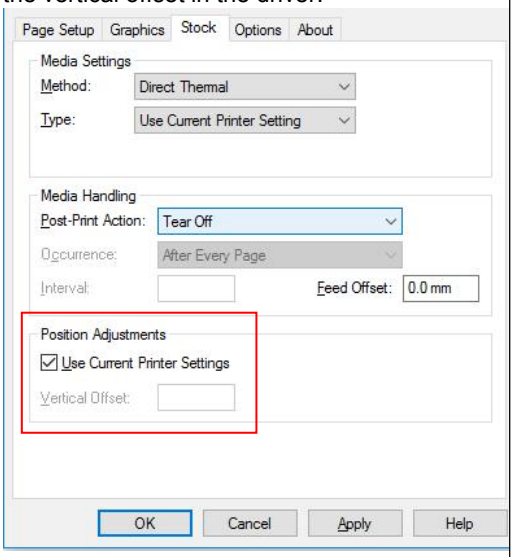
7. Troubleshooting

7.1 Common Problems

The following guide lists the most common problems that may be encountered when operating this barcode printer. If the printer still does not function after all suggested solutions have been invoked, please contact the Customer Service Department of your purchased reseller or distributor for assistance.

Problem	Possible Cause	Recovery Procedure
Power indicator does not illuminate	* The power cord is not properly connected.	* Plug the power cord in printer and outlet. * Switch the printer on.
- The printer status from DiagTool shows "**Head Open**".	* The printer carriage is open.	* Please close the print carriage.
- The printer status from DiagTool shows "**Ribbon End Err.**" Or "**Ribbon Encoder Err.**" -	* Running out of ribbon. * The ribbon is installed incorrectly.	* Supply a new ribbon roll. * Please refer to the steps on section 3.2 to re-install the ribbon.
- The printer status from DiagTool shows "**Out of Paper**".	* Running out of label. * The label is installed incorrectly. * Gap/black mark sensor is not calibrated.	* Supply a new label roll. * Please refer to the steps on section 3.3 to reinstall the label roll. * Calibrate the gap/black mark sensor.
- The printer status from DiagTool shows "**Paper Jam**".	* Gap/black mark sensor is not set properly. * Make sure label size is set properly. * Labels may be stuck inside the printer mechanism.	* Calibrate the gap/black mark sensor. * Set label size correctly.
- "**Take Label**".	* Peel-off function is enabled.	* If the peel-off module is installed, please remove the label. * If there is no peel-off module in front of the printer, please switch off the printer and install it. * Check if the connector is plugging correctly.

Not Printing	* Cable is not well connected to serial or USB interface or parallel port. * The serial port cable pin configuration is not pin to pin connected.	* Re-connect cable to interface. * If using serial cable, - Please replace the cable with pin to pin connected. - Check the baud rate setting. The default baud rate setting of printer is 9600,n,8,1. * If using the Ethernet cable, - Check if the Ethernet RJ-45 connector bule LED is lit on. - Check if the Ethernet RJ-45 connector amber LED is blinking. - Check if the printer gets the IP address when using DHCP mode. - Check if the IP address is correct when using the static IP address. - Wait a few seconds let the printer get the communication with the server then check the IP address setting again. * Chang a new cable. * Ribbon and media are not compatible. * Verify the ribbon-inked side. * Reload the ribbon again. * Clean the print head. * The print density setting is incorrect. * Print head's harness connector is not well connected with printheat. Turn off the printer and plug the connector again. * Check your program if there is a command PRINT at the end of the file and there must have CRLF at the end of each command line.
Memory full **(FLASH / DRAM)**	* The space of FLASH/DRAM is full.	* Delete unused files in the FLASH/DRAM. * The max. numbers of DRAM is 256 files. * The max. user addressable memory space of DRAM is 256KB. * The max. numbers of file of FLASH is 256 files. * The max. user addressable memory space of FLASH is 2560KB.
microSD card is unable to use	* microSD card is damaged. * microSD card doesn't insert correctly. * Use the non-approved microSD card manufacturer.	* Use the supported capacity microSD card. * Insert the microSD card again. * The supported microSD card spec and the approved microSD card manufacturers, please refer to section 2.2.3.
Poor Print Quality	* Ribbon and media is loaded incorrectly * Dust or adhesive accumulation on the print head. * Print density is not set properly. * Printhead element is damaged. * Ribbon and media are incompatible. * The printhead pressure is not set properly.	* Reload the supply. * Clean the print head. * Clean the platen roller. * Adjust the print density and print speed. * Run printer self-test and check the print head test pattern if there is dot missing in the pattern. * Change proper ribbon or proper label media. * The print head mechanism does not latch the print head properly.
Cutter is not working	* The connector is loose. * Cutter jam. * Cutter PCB is damaged.	* Plug in the connect cable correctly. * Remove the label. * Make sure the thickness of label is less than 0.19 mm. * Replace a cutter driver IC board.

Skip labels when printing	* Label size is not specified properly. * Sensor sensitivity is not set properly. * The media sensor is covered with dust.	* Check if label size is setup correctly. * Calibrate the sensor by Auto Gap or Manual Gap options. * Clear the GAP/Black mark sensor by blower.
The printing position of small label is incorrect	* Media sensor sensitivity is not set properly. * Label size is incorrect. * The parameter Shift Y in the * The vertical offset setting in the driver is incorrect.	* Calibrate the sensor sensitivity again. * Set the correct label size and gap size. * If using the software BarTender, please set the vertical offset in the driver. 
Missing printing on the left or right side of label	* Wrong label size setup.	* Set the correct label size.
RTC time is incorrect when reboot the printer	* The battery has run down.	* Check if there is a battery on the main board.
Wrinkle problem	* Ribbon installation is incorrect. * Media installation is incorrect. * Print density is incorrect. * Media feeding is incorrect.	* Please set the suitable density to have good print quality. * Make sure the label guide touch the edge of the media guide.
Gray line on the blank label	* The print head is dirty. * The platen roller is dirty.	* Clean the print head. * Clean the platen roller.
Irregular printing	* The printer is in Hex Dump mode. * The RS-232 setting is incorrect.	* Turn off and on the printer to skip the dump mode. * Re-set the Rs-232 setting.

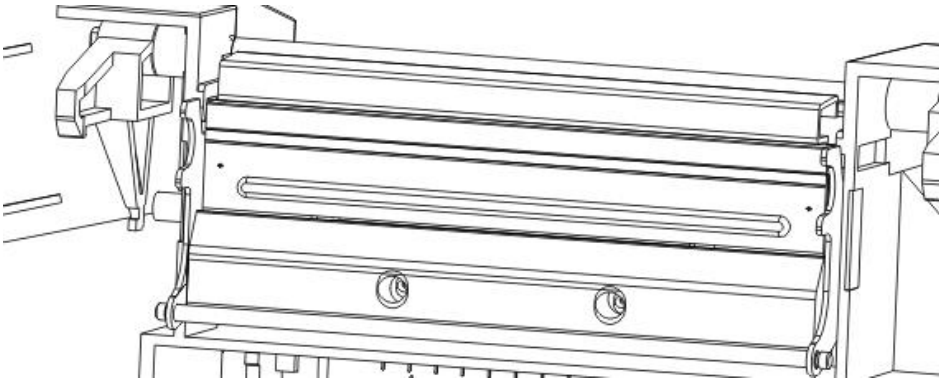
8. Maintenance

This session presents the clean tools and methods to maintain your printer.

1. Please use one of following material to clean the printer.

- Cotton swab
- Lint-free cloth
- Vacuum / Blower brush
- Medical alcohol

2. The cleaning process is described as following,

<table>
<tr><th>Printer Part</th><th>Method</th><th>Interval</th></tr>
<tr><td rowspan="2">Print Head</td><td>1. Always turn off the printer before cleaning the print head.
2. Allow the print head to cool for a minimum of one minute.
3. Use a cotton swab and Medical alcohol to clean the print head surface.</td><td>Clean the print head when changing a new label roll</td></tr>
<tr><td colspan="2">  </td></tr>
<tr><td>Platen Roller</td><td>1. Turn the power off.
2. Rotate the platen roller and wipe it thoroughly with Medical alcohol and a cotton swab, or lint-free cloth.</td><td>Clean the platen roller when changing a new label roll</td></tr>
<tr><td>Tear Bar/Peel Bar</td><td>Use the lint-free cloth with Medical alcohol to wipe it.</td><td>As needed</td></tr>
<tr><td>Sensor</td><td>Compressed air or vacuum</td><td>Monthly</td></tr>
<tr><td>Exterior</td><td>Wipe it with water-dampened cloth</td><td>As needed</td></tr>
<tr><td>Interior</td><td>Brush or vacuum</td><td>As needed</td></tr>
</table>

Note:

Do not touch the printer head directly with your hands. If you touched accidentally, please clean it with a cotton swab dipped medical alcohol.

Please use medical alcohol. Do not use industrial alcohol which will damage the printer head.

If you frequently get error messages from the printer, please often clean your printer's sensor

Equipment for safe use in tropical climate conditions

This is a Class A product. In the living environment, this product may cause radio interference. In this case, users may need to take practical measures to the interference

Update record

Date	Content	Editor
2019/04/21	Release V1.00	Nelson