4B-2083A
Desktop Thermal Printer
User Guide



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Proprietary Statement

This manual contains proprietary information. It is intended solely for the information and use of parties operating and maintaining the equipment described herein. Such proprietary information may not be used, reproduced, or disclosed to any other parties for any other purpose without the express written permission.

Product Improvements

Continuous improvement of products is a policy of our company. All specifications and designs are subject to change without notice.

Liability Disclaimer

We takes steps to ensure that its published Engineering specifications and manuals are correct; however, errors do occur. We reserves the right to correct any such errors and disclaims liability resulting therefrom.

Limitation of Liability

In no event shall us or anyone else involved in the creation, production, or delivery of the accompanying product (including hardware and software) be liable for any damages whatsoever (including, without limitation, consequential damages including loss of business profits, business interruption, or loss of business information) arising out of the use of, the results of use of, or inability to use such product, even if we have been advised of the possibility of such damages. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

FCC Compliance Statement

This device complies with Part 15 rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for Class B Digital Devices, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the product manuals, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, the user is encouraged to do one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced RF service technician for help.

The user is cautioned that any changes or modifications not expressly approved could void the user's authority to operate the equipment. To ensure compliance, this printer must be used with fully shielded communication cables.

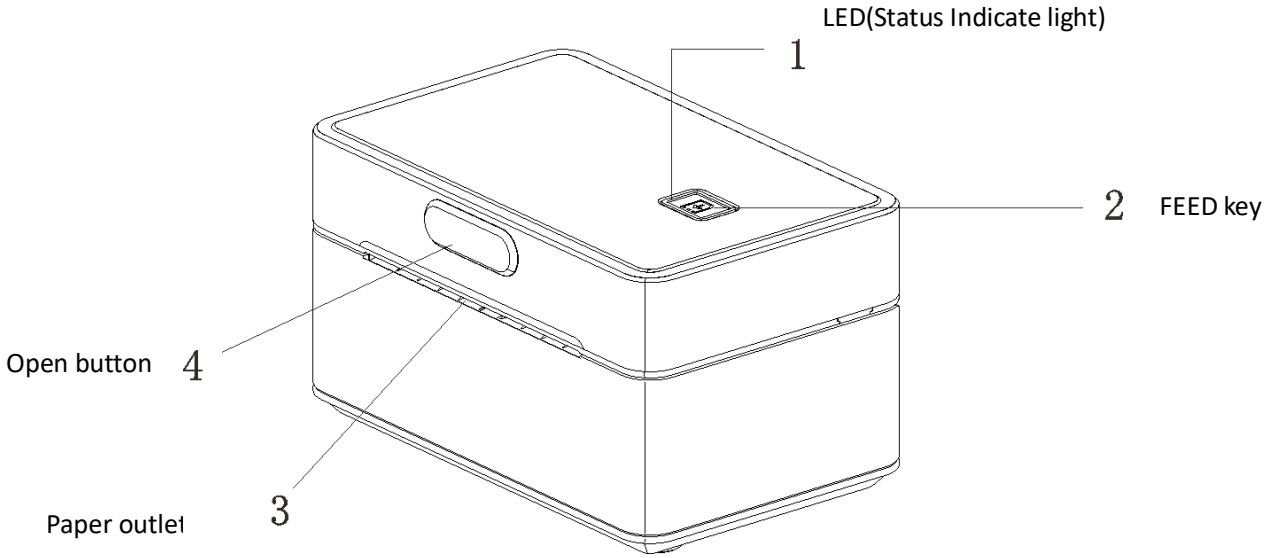
Environmental Management

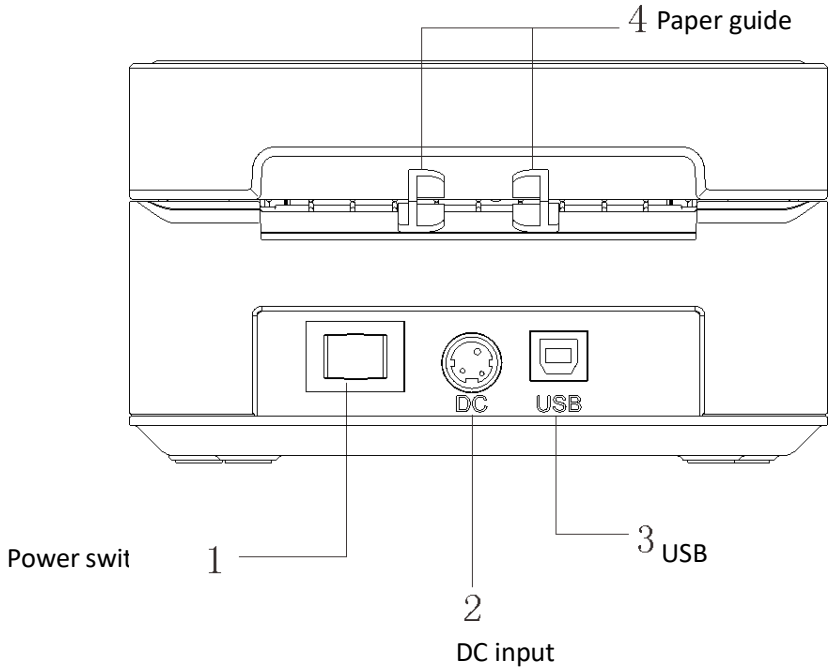


Do not dispose of this product in unsorted municipal waste. This product is recyclable, and should be recycled according to your local standards.

1. Introduction

4B-2083A is a small, high efficient and safe desktop printer. It has 203dpi direct thermal head. It can handle up to 80mm (3.14") wide media. The default speed is set to 200mm/s and it can be set up to 200 mm/s by the driver or other tools. It has a smart feature - media size detection, so you needn't to manually set the media size when you loading a different media.





1.1. Printer Accessories

After unpacking, please check the accessories that come with the package and store appropriately.

- Barcode Printer
- Power Adapter with Cord
- Printer Cable (USB)
- CD
- Quick Start Guide with Warranty Card

1.2. General Specifications

Printer Model	4B-2083A
Printing Features	
Resolution	203 DPI
Printing method	Direct Thermal
Max.print speed	200 mm (8") / s
Max.print width	80mm (3.14")
Max.print length	1778 mm (70")
Media	
Media type	Continuous, gap, black mark, fan-fold and punched hole
Media width	25.4 mm ~ 80 mm
Media thickness	0.06 mm ~0.25 mm
Label length	10 ~ 1778 mm (0.39 " ~ 70 ")
Label roll capacity	External paper roll holder
Performance Features	

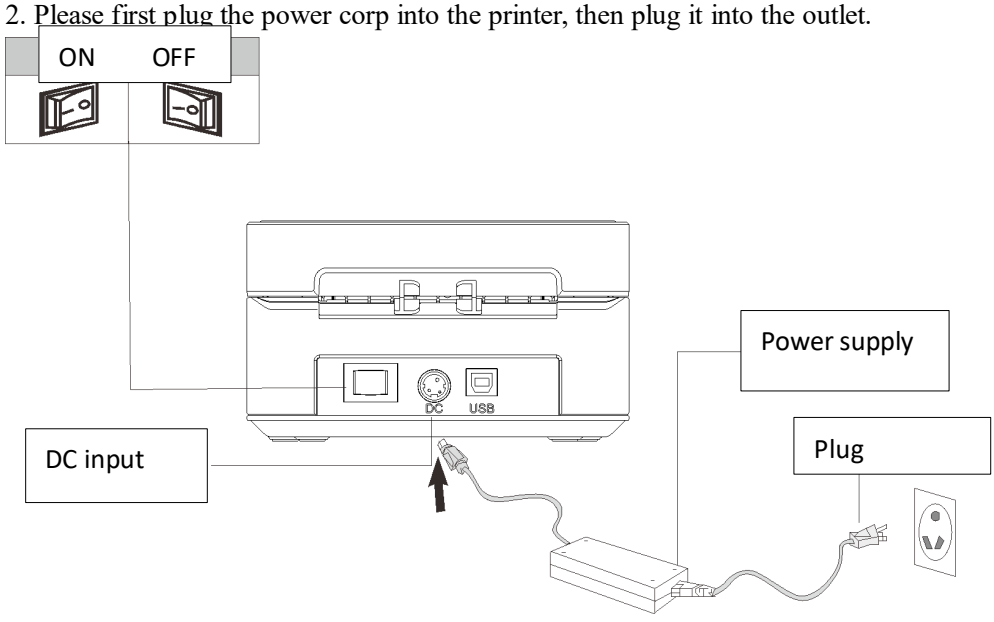
Processor	32-bit CPU
Memory	8MB Flash Memory/8MB SDRAM
Interface	Standard:USB Optional:WIFI/Bluetooth
Sensors	Gap sensor Cover opening sensor Black mark sensor Paper exit sensor
Fonts/Graphics/Symbologies	
Internal fonts	8 alpha-numeric bitmap fonts, Windows fonts are downloadable from software.
1D barcode	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
2D barcode	PDF-417, Maxicode, DataMatrix, QR code
Rotation	0°、90°、180°、270°
Emulaion	TSPL、EPL、ZPL、DPL
Physical Features	
Dimension	150 mm (W) x 95 mm (H) x 86.5 mm (D)
Weight	0.622 kg
Reliability	
Print head life	30 km
Software	
Driver	Windows/Linux/Mac
SDK	Windows/Linux/iOS
Power supply	
Input： AC 100-240V,1.8A, 50-60Hz	

Output：DC 24V, 2.5A, 60W	
Options	
Factory Options	□WIFI □Bluetooth
Dealer Options	□External paper roll holder and 1 "paper roll □Extension board for external paper roll holder □Shipment waybill box
Environmental Conditions	
Operation	5 ~ 40°C（41~104°F），Humidity: 25 ~ 85% non-condensing
Storage environment	-40 ~ 60°C（-40~140°F），Humidity:10 ~ 90% non-condensing

2. Installation

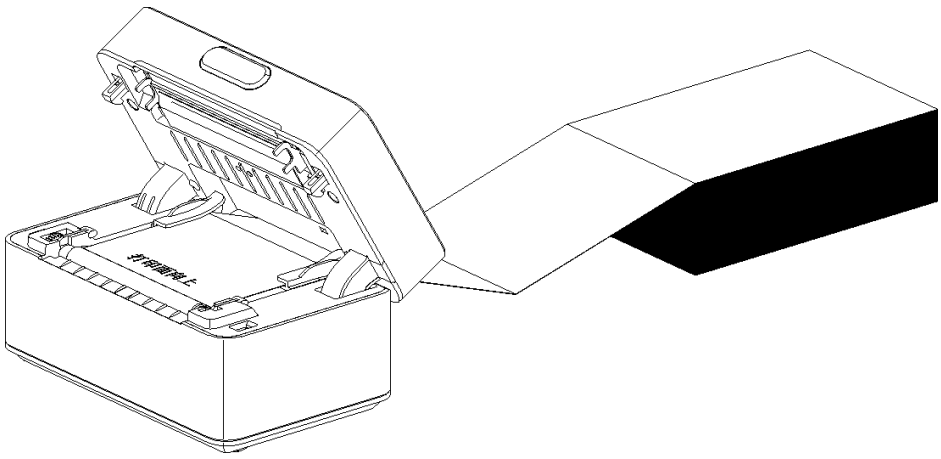
2.1 Setup the printer

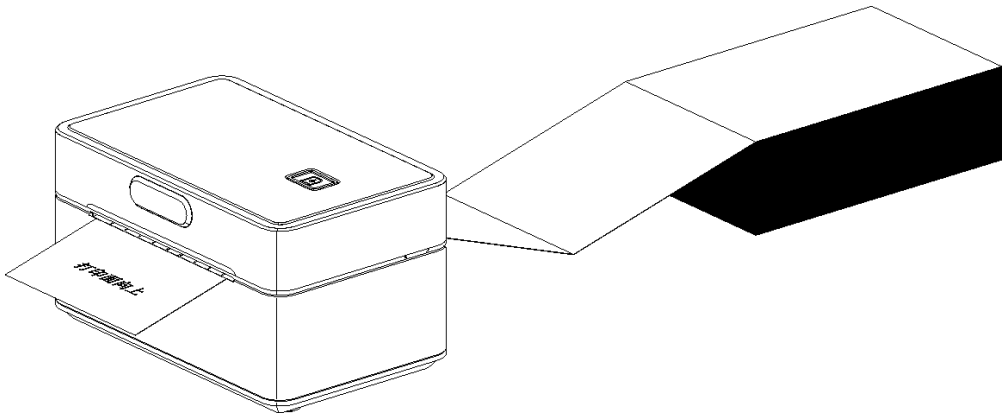
1. Please ensure the printer is powered off. Put it on a stable place.
2. Please first plug the power corp into the printer, then plug it into the outlet.



2.2 Loading paper

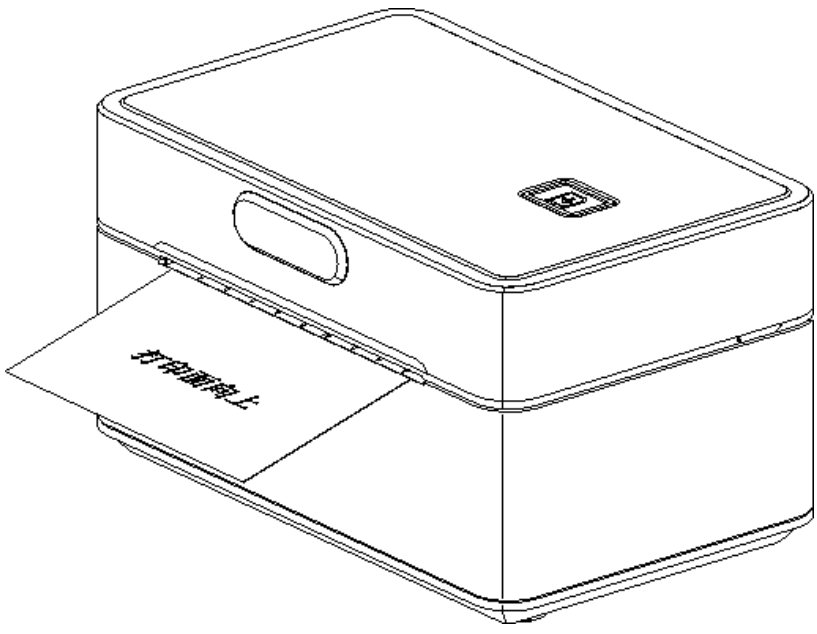
1. Press the opening button, then pull the top cover.
2. Guide the paper through the paper guide, pull it over the roll.
3. Close the cover.





2.3 Single paper loading

In ready status, put a single paper into the paper in(back of the printer), the paper will be auto-loading.



3. LED and FEED key

3.1 LED status indicate light

Color	Description
Blue	Ready for printing
Blue flickering	Downloading data or printing paused.
purple	Cleaning data
Red	Cover is opened
Red flickering	Error happened. No Paper, jam or other errors.

3.2 functions of the FEED key

1. Feeding paper

To press the FEED key when the printer is ready(LED color is blue), the printer will load the next label.

2. Pause the printing job.

To press the FEED key when the printer is printing(LED color is blue flickering), the printing job will be suspended. Press it again, the printing job will be resume.

Note: please do NOT turn off the power when the printing job is suspended, or the data will be lost.

3.3 Boot options

There are four boot options while turning on the printer.

Light color / Function	purple	blue	purple	Red flickering	Purple flickering	Blue flickering	blue
1.run paper gap detection	Keep pressing FEED key while turning on the power			release			
2 run paper gap detection then print self test and go to dump mode.	Keep pressing FEED key while turning on the power				release		
3.revert to the default setting	Keep pressing FEED key while turning on the power					release	
4.skip to load AUTO.BAS	Keep pressing FEED key while turning on the power						release

3.3.1 Paper gap detection

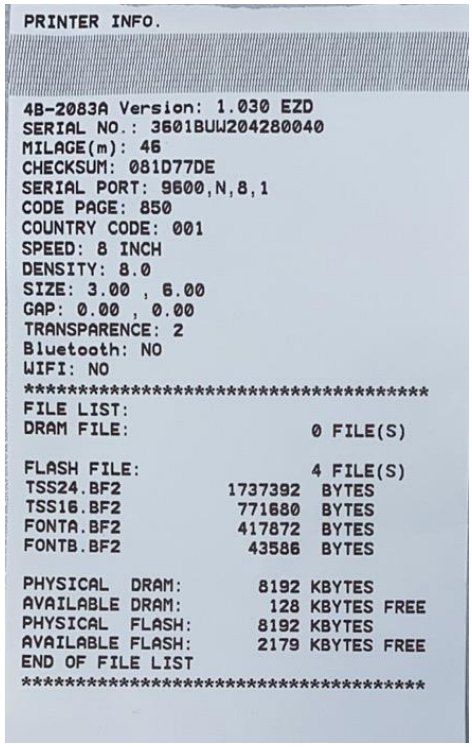
When loading a different paper, or recover the default setting of the printer, we need to run the paper gap detection for correction size of the new paper. Some modules of our printer have the ability auto-detection paper gap, so we needn't run it manually.

Follow the steps below to run paper gap detection.

1. Turn off the printer.
2. loading the paper into the printer.
3. press down the FEED key (don't release) then turn on the printer.
4. release the button while the light color is red flickering.

3.3.2 Self-testing and dump mode.

Self-testing is used for verifying the print quality and settings.



Dump mode

The dump mode is for trouble shooting. Restart the machine will exit the dump mode.
It need’s 3-inch width paper to print full dump data.

3.3.3 Initialize the printer.

Initialize will recover the default settings and remove user files in DRAM. Please run it carefully. Below table is the default settings.

setting	Default value
speed	200.0 mm/sec (8 ips) (203DPI)
density	8
Paper width	3” (76 mm)
Paper high	5.11” (130 mm)
Sensor kind	Gap sensor
Gap	0.16” (4.0 mm)
Direction	0
Start point	0,0 (upper left corner)
Offset	0
Tear-off mode	On
Character set	850
Country code	001
Clean flash	No

3.3.4 Skip to load AUTO.BAS

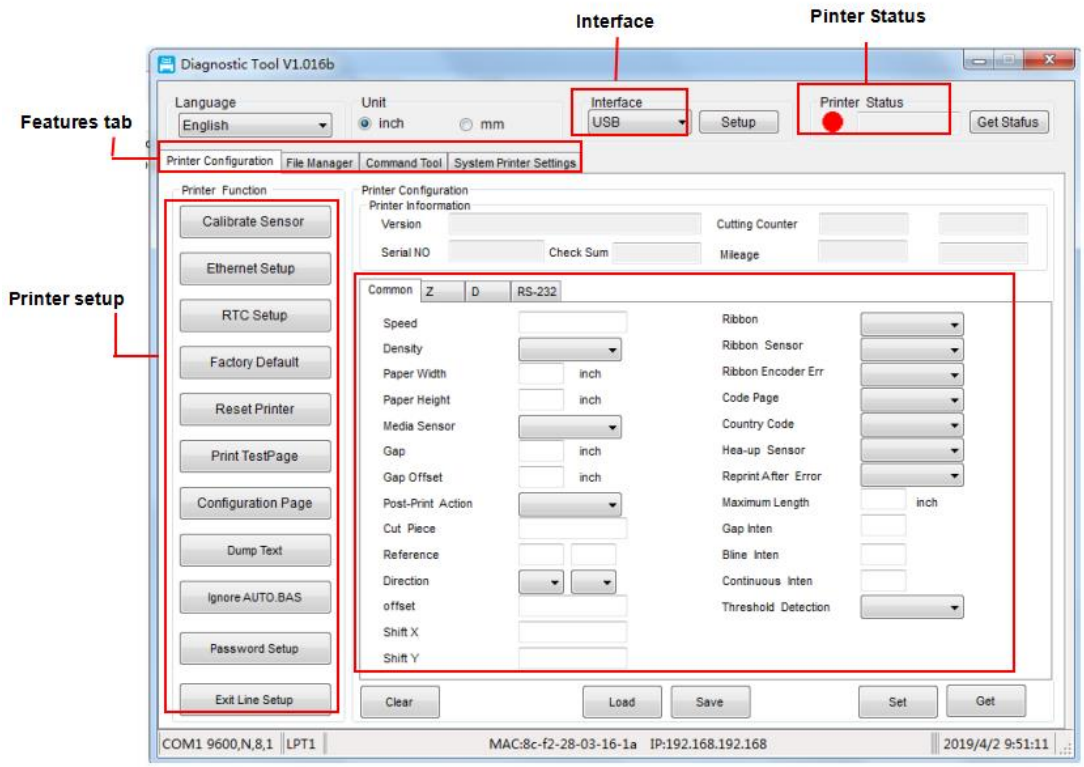
When turn on the printer, the AUTO.BAS file in the flash will be loaded and the commands in this file will be automatically executed. To skip this process, please keep pressing down the FEED key until the LED color become blue while turn on the printer.

4. Printer Diagnostic Tool

Diagnostic Tool is an easy-to-use window-type utility program that allows you to check the current status and settings of the printer, download graphic files, programs, font files, etc., and complete firmware updates according to the actual need. Moreover, it supports creation and download of dot-matrix fonts, transmission of commands or files and so on. By using it, you can complete the printer setup, check the printer status and troubleshoot the printer usage problems more easily.

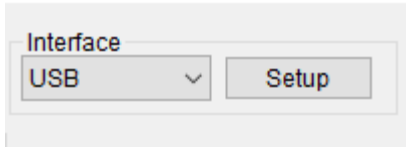
Enable the Diagnostic Tool program

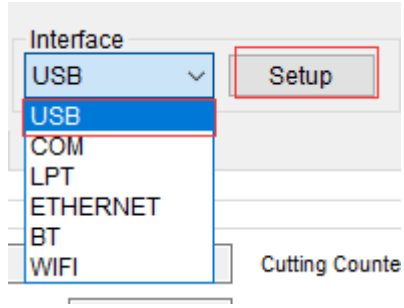
1. Move the mouse cursor to the Diagnostic Tool image and double click the left mouse button.
2. After it is started, the main screen shows 4 management pages (printer settings, file management, communication tools, system printer settings).



Printer settings

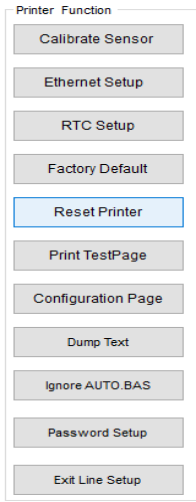
1. Select the connection interface between your computer and the printer.

<table>
<tr>
<td>

The default communication interface of this printer diagnostic tool program is USB, so if the computer is connected through USB cable for transmission, no changes need to be made to the settings</td>
<td>
</td>
</tr>
</table>

2. Click on a function you intend to set in the "Printer Settings".

3. The printer functions in the Printer Settings management page are described as below.

	Description
Calibrate Sensor	Sensor Calibration
Ethernet Setup	Set Ethernet network
RTC Setup	Set Printer RTC Time Parameters
Factory Default	Restore Factory Defaults and Reboot
Reset Printer	Restart the Printer
Print TestPage	Print Test Page
Configuration Page	Print Self-test Page
Dump Text	Enter Printer Debugging Mode
Ignore AUTO.BAS	Ignore the AUTO.BAS File
Password Setup	Set the Diagnostic Tool Password
Exit Line Setup	

5. Maintenance and Adjustment

Thermal Print Head Cleaning Unclear printouts may be caused by dusty print head or label liner glue. Therefore when printing, it's necessary to keep the top cover closed. Also, check and prevent paper/label from being stained or dusty to ensure print quality and to prolong the print head life. Print head cleaning instructions are as follows:

1 . Power-off the printer.

2. Open the top cover.

3. If on the print head (see blue arrow) there's label pieces or other stain, please use a soft cloth with 75% alcohol to wipe away the stain.

Note1 : Weekly cleaning on the print head is recommended.

Note2: When cleaning the print head with soft cloth, make sure there is no any metal or hard particle attached on it.

Note3: You can also clean the print head with the cleaning card that comes with the printer.

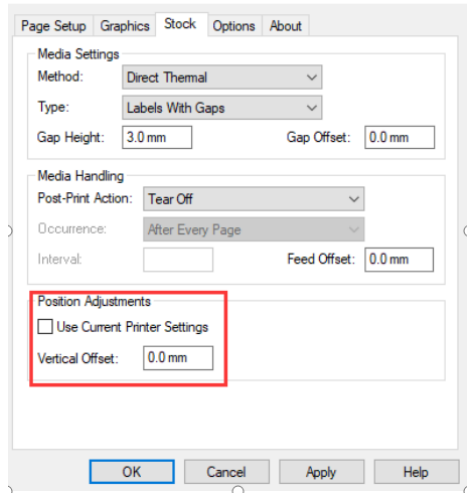
6. Troubleshooting

Problem	Possible cause	Solution
- The power indicator is off	* The AC socket plug and the power supply plug are not properly connected to the socket of the printer * The printer power is not switched on	* Check the power connector, and make sure that the AC socket and the power supply plug are properly connected to the printer * Turn on the power switch
- The printer Diagnostic Tool displays "Printer On"	* The print head holder is not closed	* Close the print head holder
- The printer Diagnostic Tool displays "Out of Paper"	* The label paper is used up * The roll label installation path is incorrect * The gap/black mark sensor detection is incorrect	* Install new label paper * Refer to the steps of label installation and re-install it * Re-calibrate the label sensor
- The printer Diagnostic Tool displays "Paper Jam"	* The gap/black mark sensor detection is incorrect * The roll label paper size setting is incorrect * There may be roll label paper stuck inside the printer mechanism	* Re-calibrate the roll label sensor * Set the correct label size * Clean the inside of the mechanism

Problem	Possible cause	Solution
- Unable to print	* The pin of the serial cable in the transmission line slot of the machine is not a 1 to 1 type	* Re-connect the transmission line * If you are using a serial port cable - Replace the serial port cable. The pin of the cable must be a 1 to 1 type - Make sure the transmission rate of the printer is set to 9600,n,8,1 * If you are using an Ethernet cable - Make sure the Ethernet RJ-45 blue/purple light is on - Make sure it is the purple light that flashes when transferring data via the Ethernet RJ-45 transmission line - Make sure the printer gets an IP address when it is in the DHCP mode - Make sure the IP address setting is correct when it uses a fixed IP address - Wait a few seconds for the printer to contact the server and then check the IP address again * Replace it with a new transmission line * Clean the print head * The printing density setting for the printer is incorrect * The connection line of the print head is not well connected. Please turn off the printer and reconnect the print head cable * Make sure the stepper motor cable is connected correctly * Make sure the PRINT program has PRINT commands at the end of the file, and CRLF at the end of each line of the commands
- The memory space is full (FLASH / DRAM)	*The FLASH/DRAM memory space is full	* Clear unnecessary files inside FLASH/DRAM * The DRAM can store up to 256 files * User can store up to 256KB in DRAM * The FLASH can store up to 256 files * The maximum a user can store in FLASH is 2560KB

Problem	Possible cause	Solution
- Poor printing quality	* There is dust or adhesive buildup on the print head * The printing density is not set properly * The print head is damaged * The print head pressure setting is inappropriate	* Reinstall the consumables * Clean the print head * Clean the rubber roller * Adjust the printing density and printing speed of the printer * Print out the self-test value to check if the print head is damaged. If yes, replace it * Adjust the print head pressure adjusting knob - If it is too light on the left of the printed label, adjust and increase the value of the pressure adjusting knob on the left side. If the value is already "5", but it is still too light, adjust the value of the pressure adjusting knob back to "1" and then adjust the Z-axis adjuster to find the best pressure setting - If it is too light on the right of the printed label, adjust and increase the value of the pressure adjusting button on the right side to improve the printing quality * If the thickness of the label exceeds 0.22 mm, the printing quality may not be good enough. Please increase the print head pressure first * Make sure the print head mount is fully closed
- Paper skip occurs while printing	* The label size setting is incorrect or incomplete * The label has been changed without re-calibrating the sensor * The label sensor is covered by dust, causing incorrect detection	* Make sure the label size setting is correct * Re-calibrate the label sensor * Remove dust from the sensor with an air brush

Problem	Possible cause	Solution

- The print position is not correct when printing small roll labels	* The label sensor setting is incorrect * The label size setting is incorrect * The vertical offset setting of the roll label style in the printer driver is incorrect	* Re-calibrate the label sensor * Set the correct roll label size and roll label gap size * If the BarTender software is used, set 
- Print missing on both left and right	* The label size setting is incorrect	* Set the correct label size
- The RTC time is not correct after restarting the printer	* The battery is dead	* Check the battery on the mainboard
- Wrinkle problem	* The print head pressure is uneven * The label paper is installed incorrectly * The printing density is incorrect * The label paper feeding is incorrect	* For uneven print head pressure, refer to the next section for adjustment * Set the appropriate label printing density * Adjust the label width adjuster to adapt it to the label width
- Gray lines appear on black label paper	* There is dirt on the print head * There is dirt on the rubber roller	* Clean the print head * Clean the rubber roller
- Unstable printing	* The printer is in the Hex Dump mode	* Turn the printer off and on again to jump out of the Dump mode