

Direct Thermal Printer

# ***GG AT 80DW***

Desktop Barcode Printer

User's Manual

Please keep the user's manual properly for reference

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## Copyright statement

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G&G does its best to ensure that the contents of the manual are correct, but errors are still likely to occur. G&G reserves the right to correct any such errors and declares that it shall not be liable for any consequences caused thereby.

# I. Product

Thank you for purchasing our GG-AT 80DW series thermal barcode printer. This desktop printer will provide you with safe, reliable and efficient printing at a reasonable price. By using it, the roll labels can be printed in a wide range of texts or graphic formats. Meanwhile, its superior function and easy operation make it your best choice among the thermal barcode printers of the same level.

GG-AT 80DW series printer provides thermal printing. The printing speed is adjustable from 2.0(50mm), 3.0(76mm), 4.0(102mm), to 5.0(127mm) inches per second. It applies to a variety of printing materials, including paper rolls and fan-fold labels. In addition, the printer has the built-in 1D and 2D barcodes that are commonly used, a TTF font and eight sets of English numeric fonts in different sizes, and supports printing in 4 different directions. And through the zoom function, the fonts can be enlarged. All these will enable you to improve the label printing efficiency significantly.

## II. Brief

### 2.1 Unpacking and checking accessories

This printer is specially packaged to protect against possible damage in transit. However, since the printer may still be subjected to unexpected damage during transportation, you are kindly required to check the packaging and all units carefully when receiving the printer. In case of obvious damage, please contact the sales dealer directly and indicate the severity of the damage. If necessary, you should keep the packaging materials for returning the printer.

Once you have received your barcode printer, place it on a clean, steady table and carefully remove the packaging. Check if the following items are included:

- One printer      x1
- One disk      x1
- One paper roll shaft (1" core)      x1
- Two baffles for paper roll shaft      x2
- One USB cable      x1
- One power cord      x1
- One copy of quick installation guide      x1

#### Dealer's options:

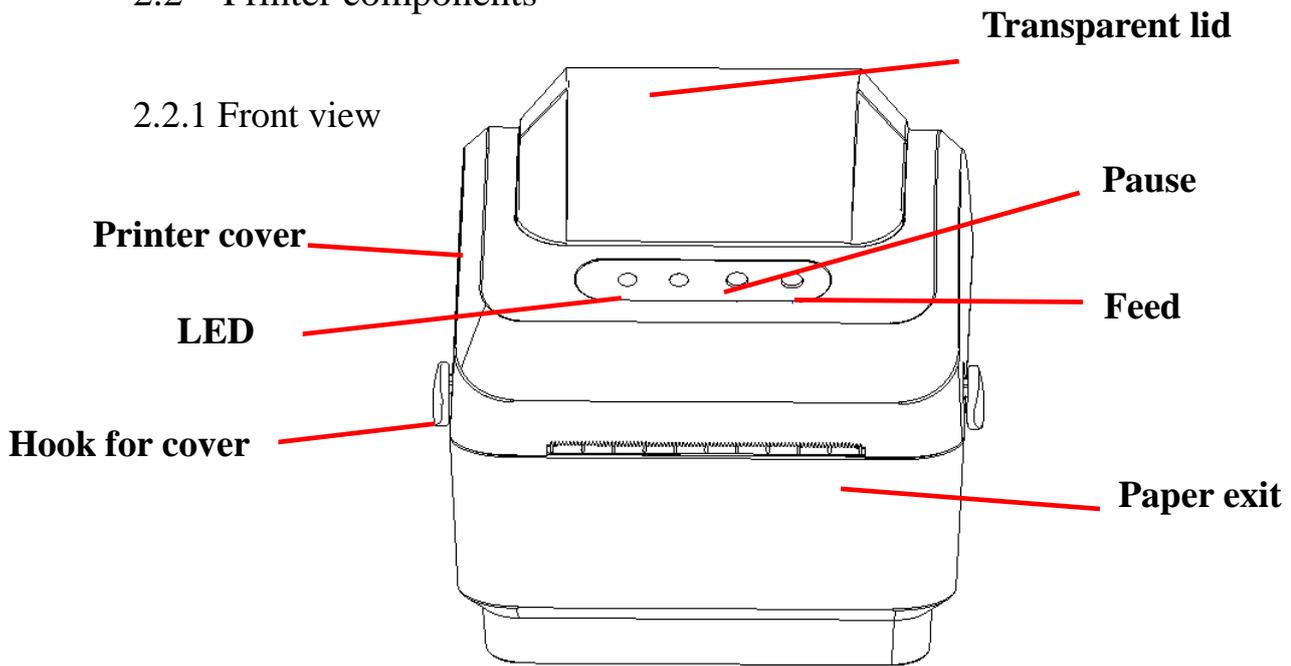
- WIFI (factory optional)
- Bluetooth (factory optional)

#### User's options:

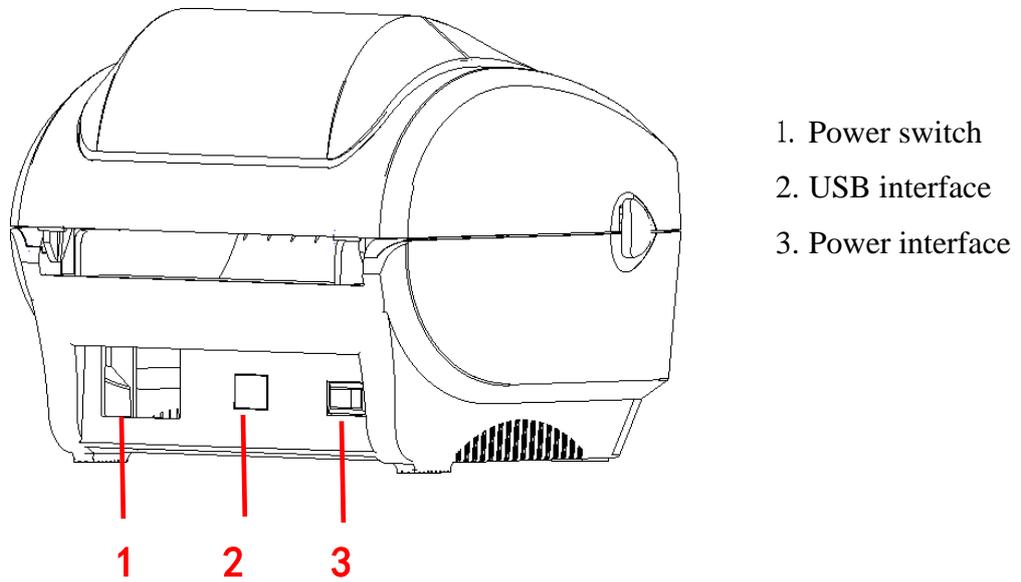
- External paper roll holder (O.D. 214 mm with 1"(25.4 mm) or 3" (76 mm)core)
- Bushing of paper roll shaft: 1.5"(38.1 mm), two

## 2.2 Printer components

### 2.2.1 Front view



### 2.2.2 Rear view



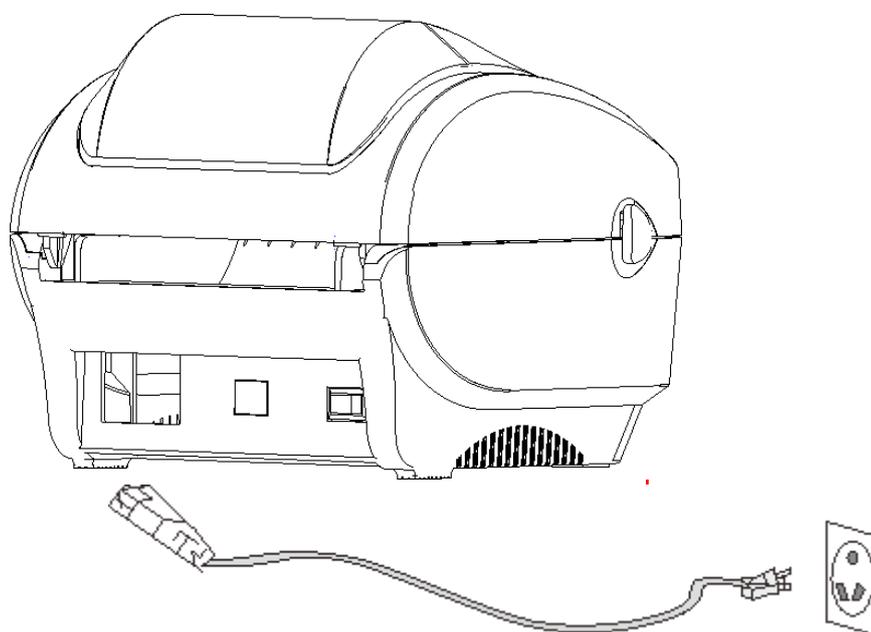
Note: The transmission interfaces of the printer in the picture will vary depending on the model of machine you purchase. For the actual transmission interface, please refer to the catalog specifications.

## III. Installation

### 3.1 Install the printer

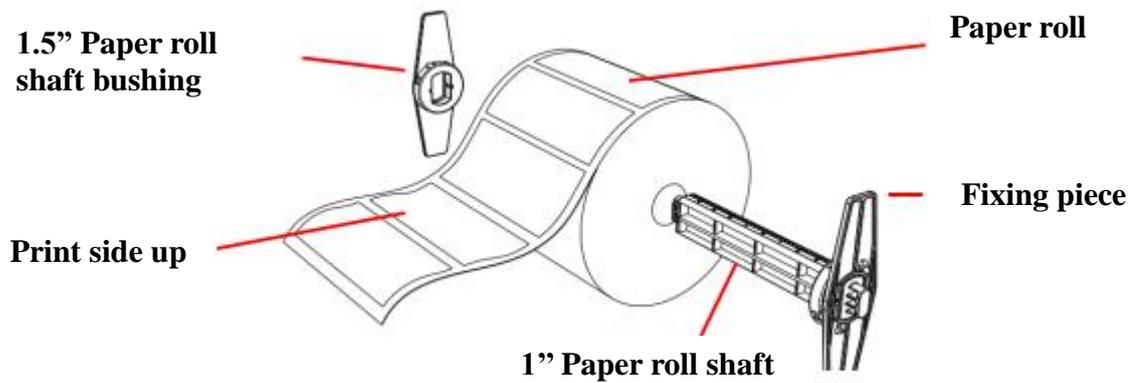
1. Place the printer on a smooth surface and make sure the power is off.
2. Plug one end of the parallel port cable, serial port cable or USB cable into the slot on the back of the printer, and connect the other end of the cable to the appropriate slot of your computer.
3. Plug the power cord into the power slot on the back of the printer and plug the other end into an AC socket.

Note: Make sure the printer power is switched off when you plug the power cord into the power slot on the back of the printer

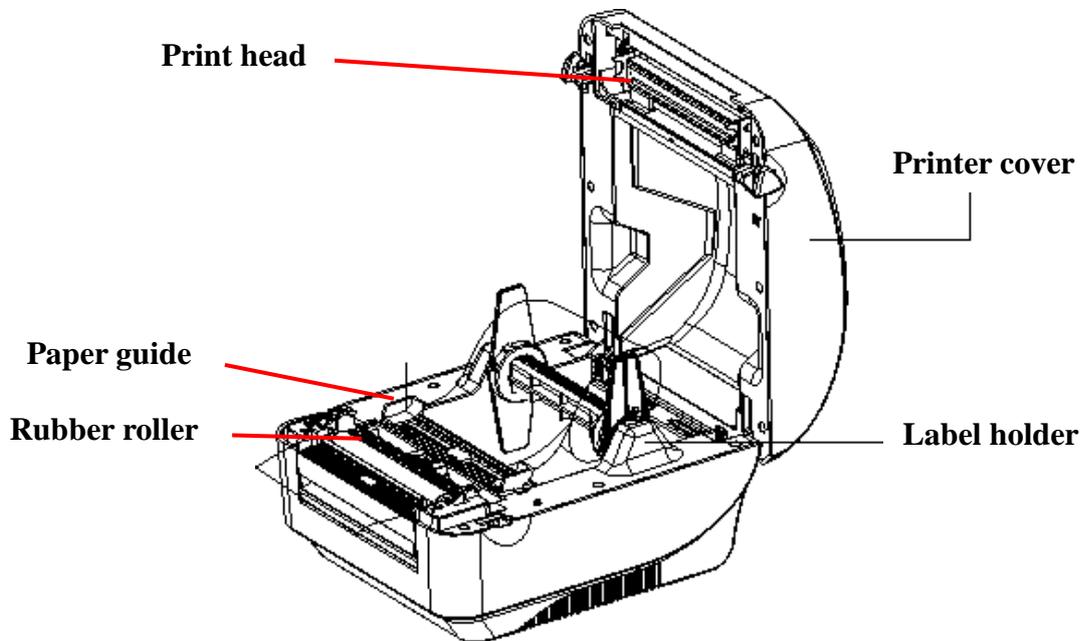


### 3.2 Install the label

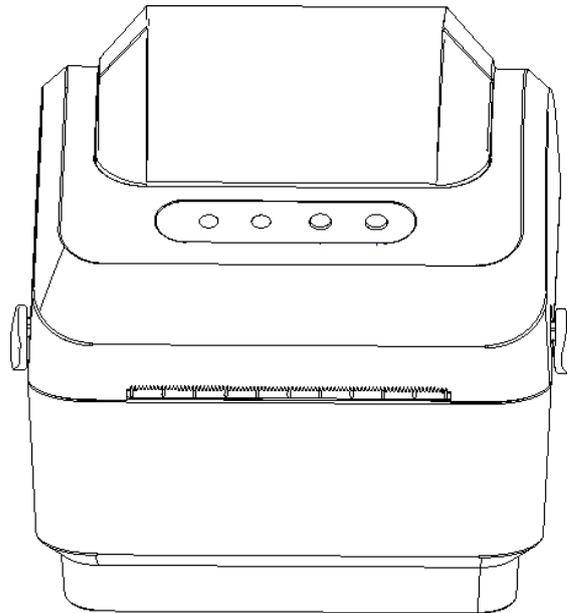
1. Insert the paper roll shaft into the paper roll and insert it into the paper roll shaft bushing. (\*If the paper roll you are using has a core of 1 inch, remove the 1.5" paper roll shaft bushing, and simply use the paper roll shaft only.)



2. Push the printer cover release button forward with both hands to open the printer cover.
3. Place the label roll on the label roll holder. (Print side up)
4. Pass the label through the paper guide and pull the label over the rubber roller.



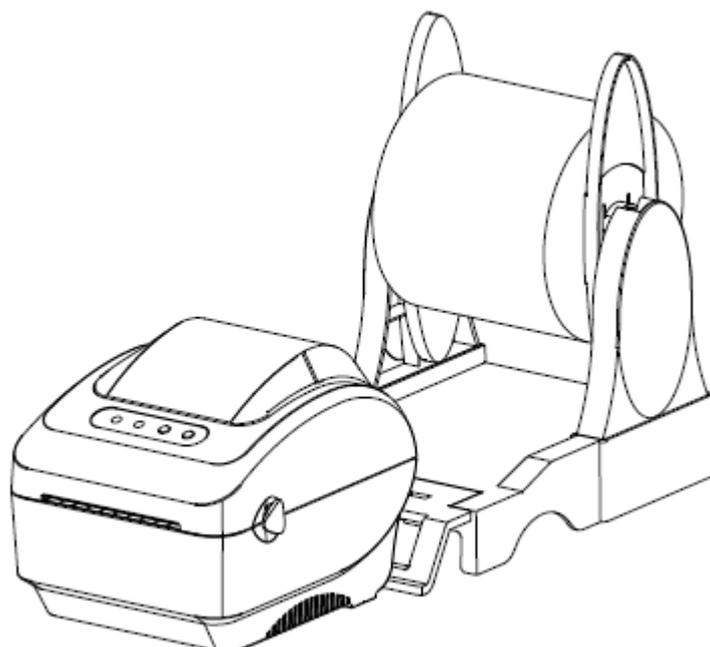
5. Close the printer cover.



Note: To avoid poor printing quality, make sure the printer cover is closed tightly.

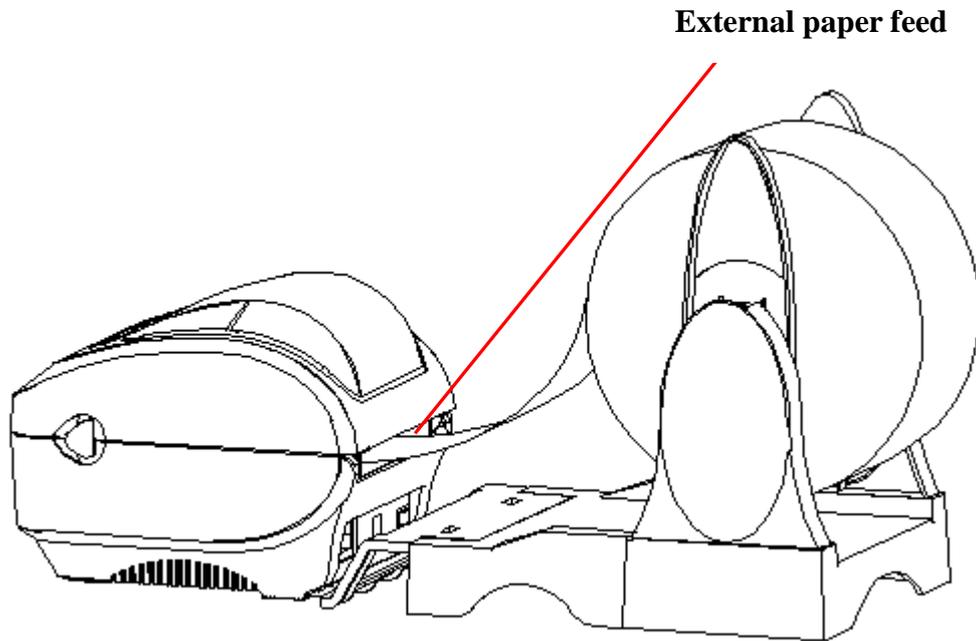
### 3.3 Install the external label holder - optional

1. Fix the external label holder on the bottom of the printer.
2. Place the label roll on the external label holder.



External label holder

3. Push Hook for cover forward with both hands to open the printer cover.
4. Route the label from the external paper feed through the external paper guide and into the printer.



5. Pass the label through the paper guide and pull the label over the rubber roller.
6. Turn the knob so that the paper guide has the same width as the label and contacts slightly the label.
7. Close the printer cover.

## IV. LED indicator and button functions

It has one button and one indicator that can display three colors. Pressing the button in conjunction with different colors or collaborating with the power switch will enable the printer to start multiple functions, such as: feeding paper, pausing the printer, calibrating the label, printing the self-testpage, initializing the printer, etc., Details are described as follows.

### 4.1 LED indicator

LED indicator color	Description
Blue (fixed)	Power on, printer standby to print
Blue (flashing)	The printer is downloading data or the printer is paused
Purple	The printer is clearing data
Red (fixed)	The printer cover is opened
Red (flashing)	Printing errors occur, such as: out of paper, paper jam, or memory error, etc.

### 4.2 General button functions

#### 1. Paper feeding

When the printer is ready (LED blue fixed), click the button and the roll label will advance to the front of the next label paper.

#### 2. Pausing of printing operation

While the printer is printing, clicking the button will pause the operation. At this point, the power indicator light flashes blue. Click the button again to resume the printing.

### 4.3 Boot function

This printer has four boot functions that can be used to set or test the printer's hardware. These functions can be activated by holding down the button and releasing it with the light signal when the machine is started.

Please follow the steps below to start the boot function:

1. Turn off the printer.
2. Turn on the printer while holding down the button.
3. Release the button with the light signal indicating the required function, as listed in the table below.

Boot function	Indicator color cycle mode:					
Indicator light signal	Purple	Blue	Red	Purple	Blue	Blue
Function			(Flashing 5 times)	(Flashing 5 times)	(Flashing 5 times)	(Fixed blue)
1. Gap/black mark sensor detection			Release the button			
2. Gap/black mark sensor detection, printing self-test page and entering the debugging mode				Release the button		
3. Printer initialization (restore factory defaults)					Release the button	
4. Skip the AUTO. BAS program						Release the button

#### 4.3.1 Gap/black mark sensor detection

This test aims to determine the sensitivity of the label paper sensor after the printer is turned on. When the user installs a new paper roll of a different specification or initializes the printer and restores it to the factory default value, the label paper gap sensor needs to be re-measured. The gap detection or black line mark calibration will be completed with your last set value as the reference value. The default value of this printer sensor is set to gap calibration.

Please follow the steps below:

1. Turn off the printer
2. Turn on the printer while holding down the feed button
3. When the indicator light flashes red after the first purple, release the feed button

Indicator color cycle mode:

Purple → Blue → Red (flash 5 times) → Purple (flash 5 times) → Blue (flash 5 times) → Blue (fixed)

Note:

Whether the printer roll label sensor detects the gap or the black mark depends on the **GAP** or **BLINE** commands sent to the printer (with your last set value as the reference value, the default value of the printer sensor is set to gap calibration);

#### 4.3.2 Gap/black mark sensor detection, printing self-test page and entering the debugging

## mode

This test aims to determine the sensitivity of the label paper sensor after the printer is turned on. When the user installs a new paper roll of a different specification or initializes the printer and restores it to the factory default value, the label paper gap sensor needs to be re-measured. The gap detection or black line mark calibration will be completed with your last set value as the reference value. The default value of this printer sensor is set to gap calibration.

Please follow the steps below to calibrate the label paper by the sensor:

1. Make sure that the label paper is properly installed
2. Turn off the printer
3. Turn on the printer while holding down the feed button
4. When the indicator light flashes purple after the first purple, release the feed button  
Indicator color cycle mode:  
Purple ➤ Blue ➤ Red (flash 5 times) ➤ Purple (flash 5 times) ➤ Blue (flash 5 times) ➤ Blue (fixed)
5. The sensor will calibrate the label paper and the printer will print out the self-test page, and finally enter the debugging mode and print out the value
6. Turn the machine off and on again to return the printer to the normal printing mode

### Note:

Before carrying out the label paper sensor calibration, first confirm the type of label to be detected with **Diagnostic Tool** or **GAP/BLINE** commands. For more information on **GAP** and **BLINE** commands, please refer to the **TSPL2 programming manual**

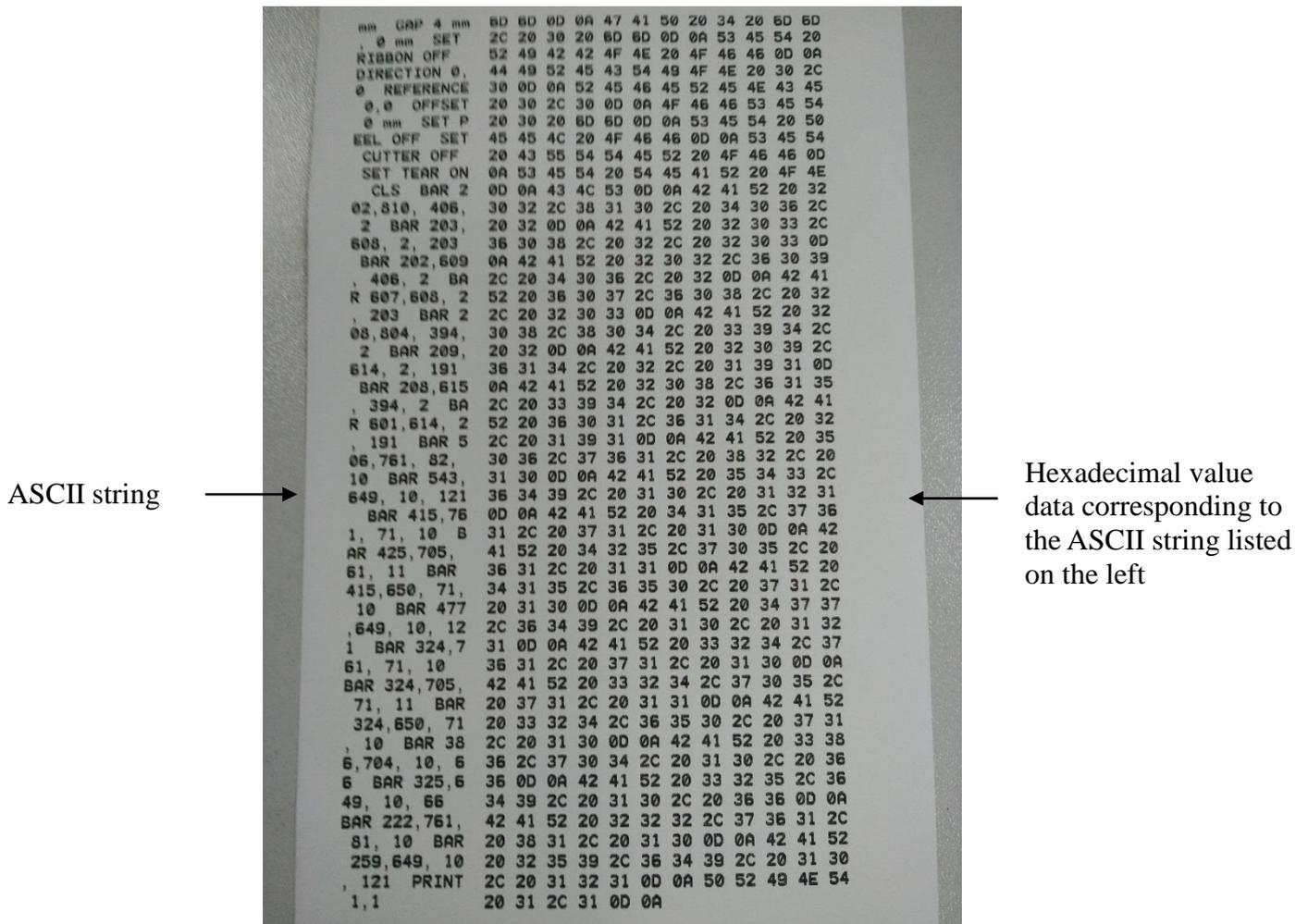
## Self test

When the sensor calibration is completed, the printer prints out the self-test value. Before connecting the printer to your computer, you can use self-test to confirm that the printer is functioning properly. The printed self-test value can be used to check the printing quality of the print head and to know the internal settings of the printer.

Printer internal settings printed in the self-test mode	
<pre> <b>PRINTER INFO.</b>  GG-AT 80DW Version: 1.024 EZD SERIAL NO.: 325BUE18C100009  MILAGE(m): 4312 CHECKSUM: 0796E89A XPF  SERIAL PORT: 9600,N,8,1 ----- COUNTRY CODE: 001 SPEED: 5 INCH  DENSITY: 3.0 SIZE: 1.00 , 0.37  GAP: 0.00 , 0.00 TRANSPARENCE: 2  BT: YES BT NAME: GG-AT 80DW  BT PIN: 0000 BT ADDRESS: DC0D3033030E  BT VERSIONS: 8.5.2,FSC-BT836N WIFI: NO  ***** FILE LIST:  DRAM FILE:                0 FILE(S)  FLASH FILE:                0 FILE(S)  PHYSICAL DRAM:            8192 KBYTES AVAILABLE DRAM:          256 KBYTES FREE  PHYSICAL FLASH:          8192 KBYTES AVAILABLE FLASH:         5083 KBYTES FREE  END OF FILE LIST *****           </pre>	<p>Print head check sample</p> <p>Model &amp; firmware version</p> <p>Machine serial number</p> <p>Print head mileage</p> <p>Check code</p> <p>Serial port setting</p> <p>Character set</p> <p>Country code</p> <p>Printing speed</p> <p>Printing density</p> <p>Paper size (width, height)</p> <p>Black mark or gap size (vertical gap, offset)</p> <p>Sensor strength</p> <p>} Ethernet setting information (optional)</p> <p>} Stored file information</p>

## Debugging mode

After the self-test is printed, the printer system enters the debugging mode. In the debugging mode, all roll labels will be printed in machine code. The ASCII strings on the left are the data received by the system. The data on the right are printed from the strings on the left, in hexadecimal values. This function is provided for users or engineers to debug programs. You only need to turn off and on the power again to leave the debugging mode and return to the normal printing mode.



Note:

1. A 4" wide label paper is required to print all debugging mode data.
2. Turn off and on the power to leave the debugging mode and return to the normal printing mode, or press the **FEED** button to return to the standby state.

### 4.3.3 Printer initialization

The printer initialization function is to clear the downloaded files in the memory (DRAM) and restore the print parameters to the factory default settings.

Please follow the steps below to complete the initialization:

1. Turn off the power
2. Hold down the feed button and turn on the power. At this point, the power indicator light color will cycle as follows

Indicator color cycle mode:

Purple → Blue → Red (5 flashes) → Purple (5 flashes) → Blue (5 flashes) → Blue (fixed)

3. Release the feed button when the power indicator is flashing blue. At this point, the printer will be reset, and then the power indicator will flash Red once, and finally the indicator will be blue ready.

After initialization, the printer configuration is restored to its default values as follows:

Parameters	Defaults
Speed	127mm/sec (5 ips) (203DPI)
Density	8
Label width	3.15" (80 mm)
Label height	7.9" (180 mm)
Sensor type	Gap sensor
Gap setting	0.16" (4.0 mm)
Printing direction	0
Reference point	0,0 (upper left corner)
Offset	0
Tear-off mode	On
Peel-off mode	Off
Characters	850
Country code	001
Clear flash	No

### 4.3.4 Skip the AUTO.BAS program

The TSPL2 command language allows the user to load an auto-execute file (AUTO.BAS) into the flash memory. When the printer is turned on, it will be automatically executed according to the file loaded by the user. When you want to skip the AUTO.BAS after power-on, you can use this boot function to ignore this auto-execute file. This operation is used in production research and development to test the function of the printer. This function will be cancelled before shipment.

Please follow the steps below to skip AUTO.BAS:

1. Turn off the power.
2. Hold down the feed button and turn on the power. At this point, the power indicator light color will cycle as follows.

Indicator color cycle mode:

Purple → Blue → Red (5 flashes) → Purple (5 flashes) → Blue (5 flashes) → Blue (fixed)

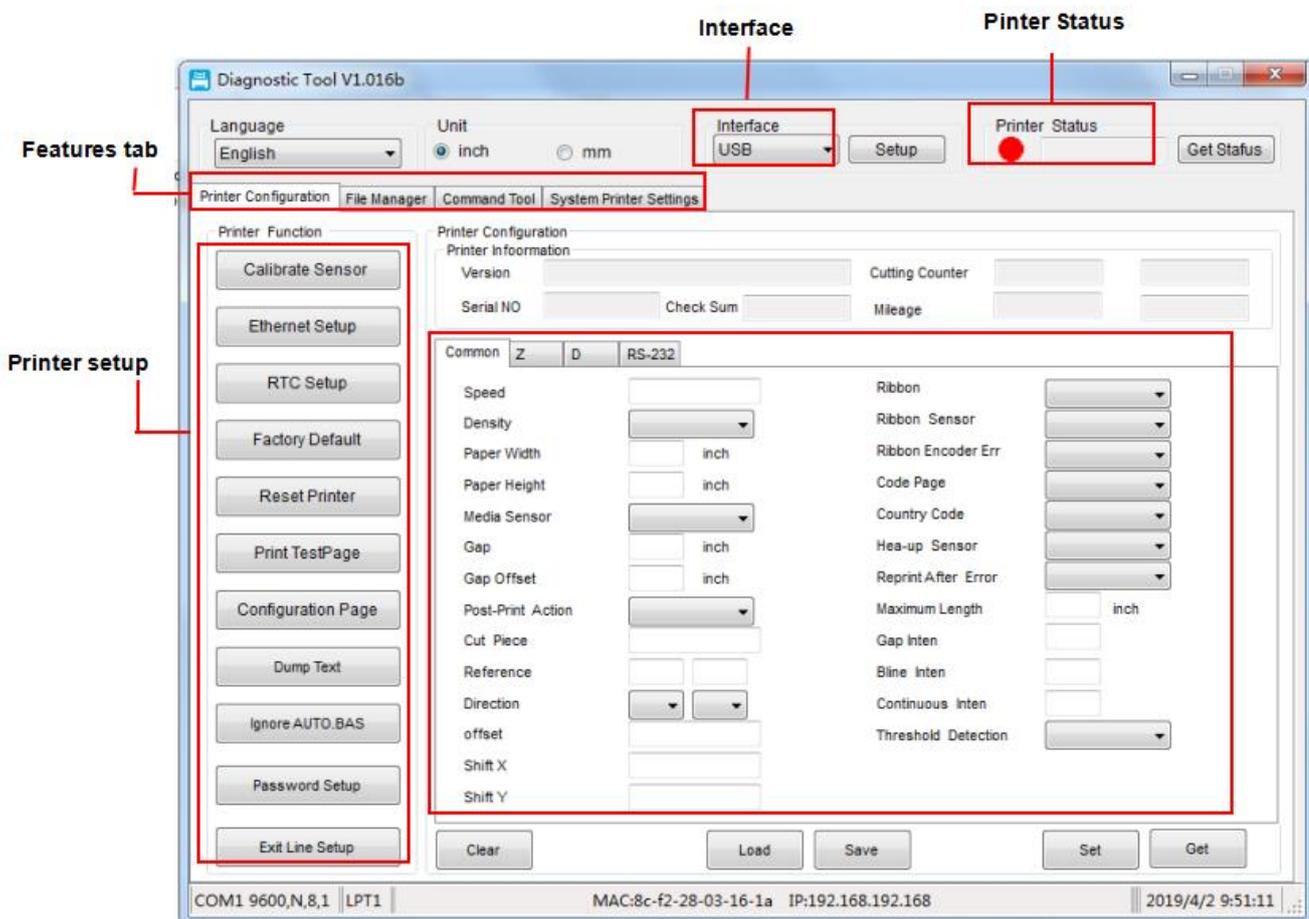
3. Release the FEED button when the indicator light is fixed blue.
4. The printer will skip the AUTO.BAS program.

# V. 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.

## 5.1 Enable the Diagnostic Tool program

1. Move the mouse cursor to the Diagnostic Tool image  Diagnostic Tool.exe 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).



## 5.2 Printer settings

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

Interface

USB v

Setup

Interface

USB v

Setup

- USB
- COM
- LPT
- ETHERNET
- BT
- WIFI

Cutting Counte

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

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.

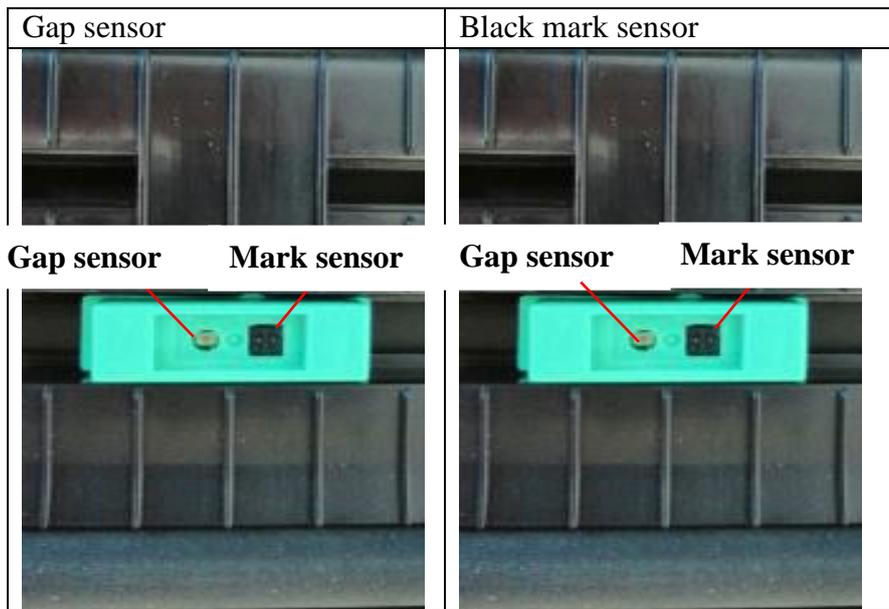
Printer Function	Description
Calibrate Sensor	Sensor Calibration
Ethernet Setup	Set Ethernet network
RTC Setup	Set Printer RTC Time Parameters
Factory Default	Restore Factory Defaults and Reboot
Reset Printer	Restart the Printer
Print TestPage	Print Test Page
Configuration Page	Print Self-test Page
Dump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

## 5.3 Calibrate the paper sensor with the printer diagnostic tool

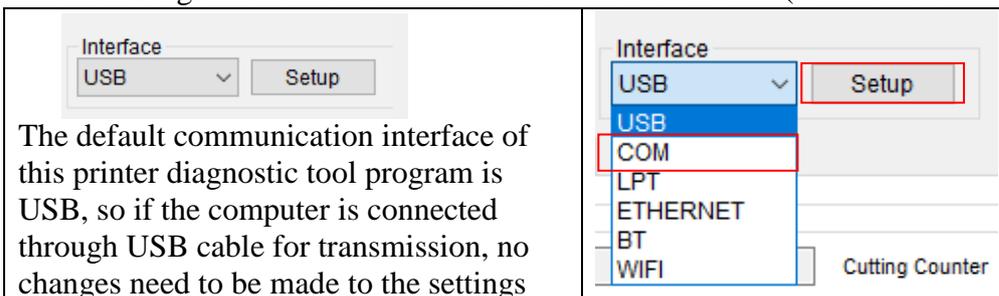
### 5.3.1 Auto correction

1. Make sure the paper is installed correctly and the print head is closed.

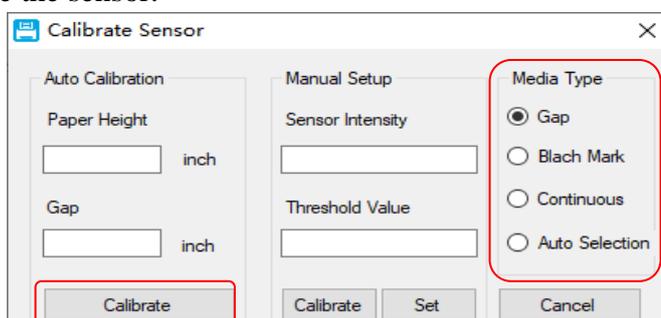
Note: The paper sensor of this model is adjustable. Please make sure that the gap or black mark of the paper will pass through the triangle symbol of the gap sensor (gap sensor position) or the black mark sensor



2. Turn on the printer.
3. Start the Diagnostic Tool and set the transmission interface (the default is USB).



4. Click on "Sensor Calibration".
5. Select the paper type and click on "Calibration". The printer will automatically feed the paper to calibrate the sensor.



## VI. Troubleshooting

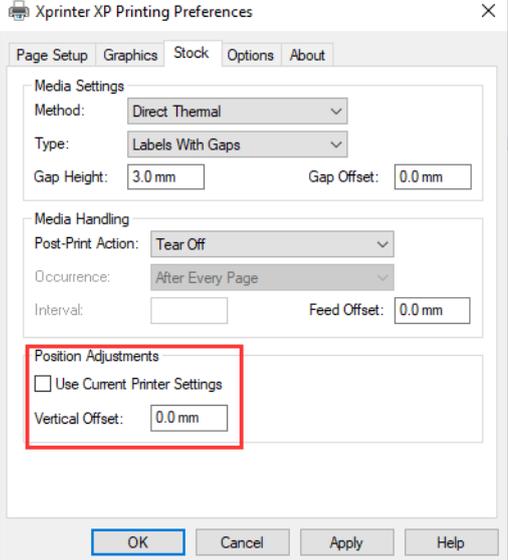
### 6.1 Common problems

The table below shows the common problems the printer operators normally meet and the solutions to them; if you have tried the troubleshooting in the ways we suggest but the printer is still not working properly, please contact the customer service of the vendor for more assistance.

Problem	Possible cause	Solution
- The power indicator is off	<ul style="list-style-type: none"> <li>* The AC socket plug and the power supply plug are not properly connected to the socket of the printer</li> <li>* The printer power is not switched on</li> </ul>	<ul style="list-style-type: none"> <li>* Check the power connector, and make sure that the AC socket and the power supply plug are properly connected to the printer</li> <li>* Turn on the power switch</li> </ul>
- The printer Diagnostic Tool displays "Printer On"	<ul style="list-style-type: none"> <li>* The print head holder is not closed</li> </ul>	<ul style="list-style-type: none"> <li>* Close the print head holder</li> </ul>
- The printer Diagnostic Tool displays "Out of Paper"	<ul style="list-style-type: none"> <li>* The label paper is used up</li> <li>* The roll label installation path is incorrect</li> <li>* The gap/black mark sensor detection is incorrect</li> </ul>	<ul style="list-style-type: none"> <li>* Install new label paper</li> <li>* Refer to the steps of label installation and re-install it</li> <li>* Re-calibrate the label sensor</li> </ul>
- The printer Diagnostic Tool displays "Paper Jam"	<ul style="list-style-type: none"> <li>* The gap/black mark sensor detection is incorrect</li> <li>* The roll label paper size setting is incorrect</li> <li>* There may be roll label paper stuck inside the printer mechanism</li> </ul>	<ul style="list-style-type: none"> <li>* Re-calibrate the roll label sensor</li> <li>* Set the correct label size</li> <li>* Clean the inside of the mechanism</li> </ul>

Problem	Possible cause	Solution
<p>- Unable to print</p>	<p>* The pin of the serial cable in the transmission line slot of the machine is not a 1 to 1 type</p>	<p>* Re-connect the transmission line</p> <p>* If you are using a serial port cable</p> <ul style="list-style-type: none"> <li>- Replace the serial port cable. The pin of the cable must be a 1 to 1 type</li> <li>- Make sure the transmission rate of the printer is set to 9600,n,8,1</li> </ul> <p>* If you are using an Ethernet cable</p> <ul style="list-style-type: none"> <li>- Make sure the Ethernet RJ-45 blue/purple light is on</li> <li>- Make sure it is the purple light that flashes when transferring data via the Ethernet RJ-45 transmission line</li> <li>- Make sure the printer gets an IP address when it is in the DHCP mode</li> <li>- Make sure the IP address setting is correct when it uses a fixed IP address</li> <li>- Wait a few seconds for the printer to contact the server and then check the IP address again</li> </ul> <p>* Replace it with a new transmission line</p> <p>* Clean the print head</p> <p>* The printing density setting for the printer is incorrect</p> <p>* The connection line of the print head is not well connected. Please turn off the printer and reconnect the print head cable</p> <p>* Make sure the stepper motor cable is connected correctly</p> <p>* 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</p>
<p>- The memory space is full ( FLASH / DRAM )</p>	<p>*The FLASH/DRAM memory space is full</p>	<p>* Clear unnecessary files inside FLASH/DRAM</p> <p>* The DRAM can store up to 256 files</p> <p>* User can store up to 256KB in DRAM</p> <p>* The FLASH can store up to 256 files</p> <p>* The maximum a user can store in FLASH is 2560KB</p>

Problem	Possible cause	Solution
<p>- Poor printing quality</p>	<ul style="list-style-type: none"> <li>* There is dust or adhesive buildup on the print head</li> <li>* The printing density is not set properly</li> <li>* The print head is damaged</li> <li>* The print head pressure setting is inappropriate</li> </ul>	<ul style="list-style-type: none"> <li>* Reinstall the consumables</li> <li>* Clean the print head</li> <li>* Clean the rubber roller</li> <li>* Adjust the printing density and printing speed of the printer</li> <li>* Print out the self-test value to check if the print head is damaged. If yes, replace it</li>   <li>* Adjust the print head pressure adjusting knob <ul style="list-style-type: none"> <li>- 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</li> <li>- 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</li> </ul> </li>   <li>* 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</li> <li>* Make sure the print head mount is fully closed</li> </ul>
<p>- Paper skip occurs while printing</p>	<ul style="list-style-type: none"> <li>* The label size setting is incorrect or incomplete</li> <li>* The label has been changed without re-calibrating the sensor</li> <li>* The label sensor is covered by dust, causing incorrect detection</li> </ul>	<ul style="list-style-type: none"> <li>* Make sure the label size setting is correct</li> <li>* Re-calibrate the label sensor</li> <li>* Remove dust from the sensor with an air brush</li> </ul>

Problem	Possible cause	Solution
<p>- The print position is not correct when printing small roll labels</p>	<ul style="list-style-type: none"> <li>* The label sensor setting is incorrect</li> <li>* The label size setting is incorrect</li> <li>* The vertical offset setting of the roll label style in the printer driver is incorrect</li> </ul>	<ul style="list-style-type: none"> <li>* Re-calibrate the label sensor</li> <li>* Set the correct roll label size and roll label gap size</li> <li>* If the BarTender software is used, set</li> </ul> 
<p>- Print missing on both left and right</p>	<ul style="list-style-type: none"> <li>* The label size setting is incorrect</li> </ul>	<ul style="list-style-type: none"> <li>* Set the correct label size</li> </ul>
<p>- The RTC time is not correct after restarting the printer</p>	<ul style="list-style-type: none"> <li>* The battery is dead</li> </ul>	<ul style="list-style-type: none"> <li>* Check the battery on the mainboard</li> </ul>
<p>- Wrinkle problem</p>	<ul style="list-style-type: none"> <li>* The print head pressure is uneven</li> <li>* The label paper is installed incorrectly</li> <li>* The printing density is incorrect</li> <li>* The label paper feeding is incorrect</li> </ul>	<ul style="list-style-type: none"> <li>* For uneven print head pressure, refer to the next section for adjustment</li> <li>* Set the appropriate label printing density</li> <li>* Adjust the label width adjuster to adapt it to the label width</li> </ul>
<p>- Gray lines appear on black label paper</p>	<ul style="list-style-type: none"> <li>* There is dirt on the print head</li> <li>* There is dirt on the rubber roller</li> </ul>	<ul style="list-style-type: none"> <li>* Clean the print head</li> <li>* Clean the rubber roller</li> </ul>
<p>- Unstable printing</p>	<ul style="list-style-type: none"> <li>* The printer is in the Hex Dump mode</li> </ul>	<ul style="list-style-type: none"> <li>* Turn the printer off and on again to jump out of the Dump mode</li> </ul>

## VII. Simple maintenance procedures of the printer

The simple maintenance procedures aim to ensure the printing quality and extend the life of the printer. Below are some of our recommended maintenance procedures.

1. Clean and maintain your printer by using the tools listed below:

- Cotton swab
- Cotton cloth
- Vacuum cleaner or air brush
- Medical alcohol

2. Cleaning steps:

Item	Steps	Recommended frequency
Print head	<ol style="list-style-type: none"> <li>1. Turn off the printer</li> <li>2. Allow the print head to cool for at least one minute</li> <li>3. Wipe the print head surface with a cotton swab dipped in medical alcohol</li> </ol>	When installing a new roll of label paper
		
Rubber roller	<ol style="list-style-type: none"> <li>1. Turn off the printer</li> <li>2. While rotating the rubber roller, carefully wipe it with a cotton cloth or cotton swab dipped in medical alcohol</li> </ol>	When installing a new roll of label paper
Paper tearing-off piece Paper peeling-off piece	Wipe it with a cotton cloth dipped in medical alcohol	When needed
Sensor	Remove dust from the sensor with an air brush or vacuum cleaner	Monthly
Outside of the machine	Wipe it with a wet cotton cloth	When needed
Inside of the machine	Remove dust from inside of the machine with an air brush or vacuum cleaner	When needed

### Note:

Do not touch the print head directly by hand. If your hand touches it accidentally, wipe it with a cotton swab dipped in medical alcohol

Use medical alcohol. Do not use industrial alcohol, which may damage the print head

If your printer displays error messages frequently, clean the sensors of the printer regularly

The equipment can be used safely in tropical climates

This is a Class A product that may cause radio interference in a living environment. In such case,

users may need to take practical measures accordingly