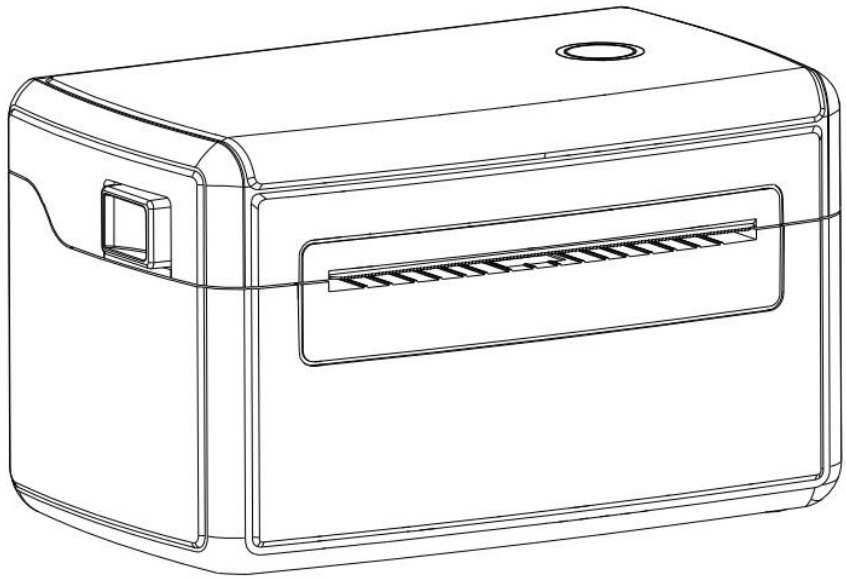
HOP-HQ450 Thermal Barcode Printer

User Manual Rev1.0



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1. Product Introduction

Thank you for your purchasing of the HOP-HQ450 series thermal bar code printer. This printer will provide you with safe, reliable and efficient printing quality. At the same time, this printer is in high quality and easy to operate, it is your best choice.

1.1 Safety warning

⚠ **Warning:** The print head is a heat-generating part. Do not touch the print head and surrounding parts during and just after printing.

⚠ **Warning:** Do not touch the surface of the printer head and the connecting part to avoid damage to the print head due to static electricity.

⚠ **Warning:** Do not touch the tearing blade to avoid injury.

⚠ **Warning:** The printer instructions must be strictly followed to configure and use the printer, so as not to harm the human and damage the device.

⚠ **Warning:** Before operating and using the printer, please read the following precautions carefully.

⚠ **Warning: This product is only suitable for use in areas altitude below 2000 meters, and is only suitable for use in areas with non-tropical climate conditions.**

1.2 Notes

- The printer should be installed in a flat and stable place;
- Leave enough space around the printer for operation and maintenance;
- The printer should be far away from water source and avoid direct sunlight, strong light and heat source;
- Do not use and store the printer in places with high temperature, high humidity and serious pollution;
- Avoid placing the printer where there is vibration and shock;
- Avoid Moist air forming dew on the surface of the printer. If it has formed, do not turn on the power of the printer before the dew disappears;
- Connect the power adapter of the printer to an appropriate grounded socket, avoid using the same socket with a large motor or other equipment that can cause power supply voltage fluctuations;
- If the printer will not be used for a long time, please disconnect the power supply of

the printer;

- Avoid water or conductive substances (such as metal) from entering the printer. Once it occurs, turn off the power immediately;
- The printer must not print without paper, otherwise it will seriously damage the printer rubber roller and print head;
- When connecting or disconnecting each interface, you must turn off the power to avoid damage to the printer control circuit;
- When the printing effect meets the usage requirements, it is recommended that the user set the low-level printing density as much as possible to avoid affecting the service life of the print head;
- Users are not allowed to dismantle the printer for maintenance.

2. Overview

2.1 Introduction

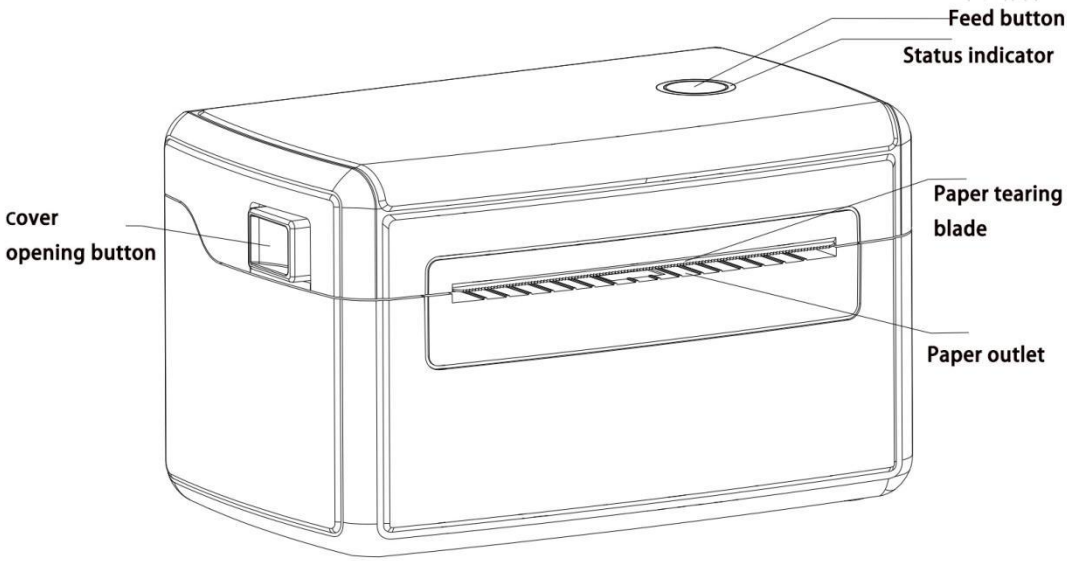
This barcode printer can meet the needs of real-time, batch printing labels, and can be widely used in transportation, postal, commercial logistics and other fields. This barcode printer can be connected to related devices through a standard USB interface (Bluetooth/W|F| optional). It is direct thermal method printing. The following type label papers are all supported:Continuous, gap, black mark, fan-fold, punched hole,label paper, tag paper card.

HOP-HQ450 printer is direct thermal printing method. The printing speed can be adjusted to 2.0, 3.0, 4.0, 5.0 inches per second. The printer support 1D and 2D barcodes. Support 4 different label printing directions. Through the zoom function, the font can be enlarged 1-10 times. Therefore, you can greatly improve the efficiency of label printing in a short time.

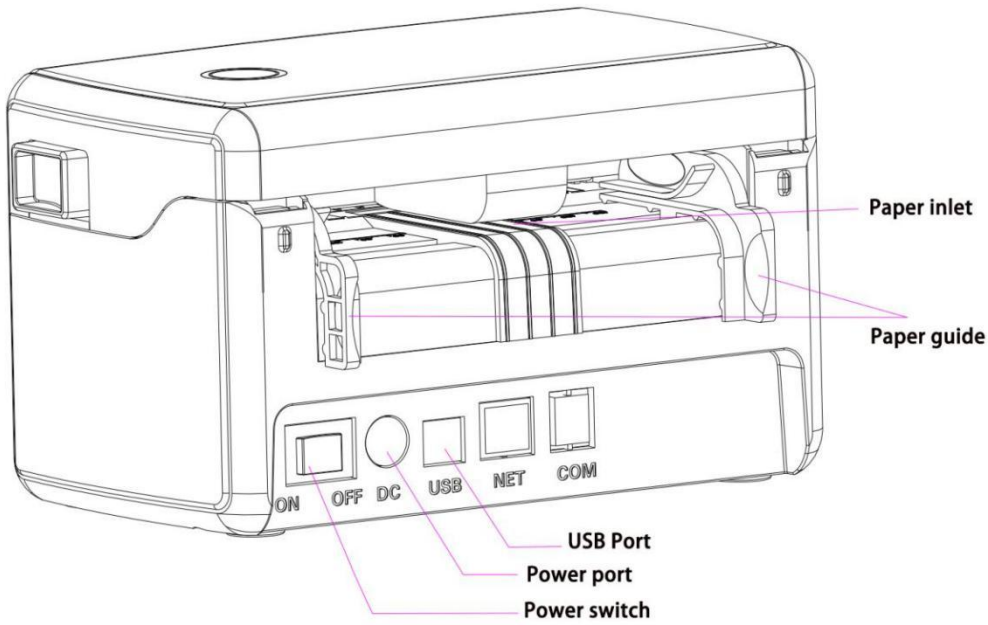
2.2 Main features

- Maximum printing speed 6 inch/sec;
- Support TSPL, ZPL, EPL, DPL multiple command sets;
- Support different sizes of thermal label paper;
- Meet the medium range from 37mm -115mm, easy to operate;
- Automatic paper detection and positioning function;
- Temperature self-adaption control;

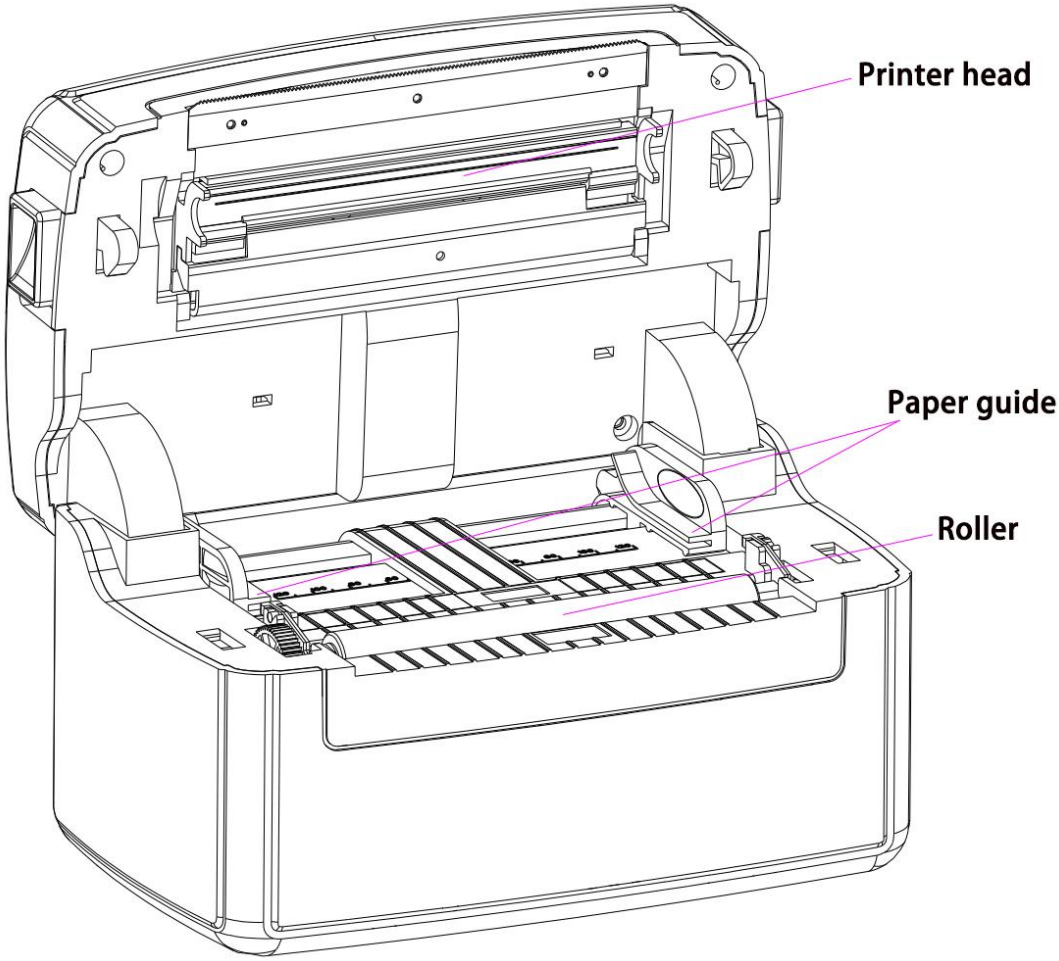
3. Appearance and Components



Picture 1



Picture 2



Picture 3

4. Installation and operation

4.1 Printer installation

1.Put printer on a stable place and make sure the power is turned off.

2.Insert the USB cable one side to the printer, and the other side to the computer.

3.Insert the power cord one side with printer, and the other side to an AC socket

Note: When inserting the power cord into the printer, make sure that the printer power switch is turned off.

4.2 Label paper installation

1. Push both side buttons forward, to open the top cover of the printer.
2. Place the label roll on the roll holder. (printing side up).
3. Pass the label through the groove in the middle of the lead and pull the label over the rubber rollers.

4. Close the printer cover.

4.3 LED indicator and button function

The printer has a feed button and an indicator light that will display three colors. Press the feed button or power switch according to the indicator lights of different colors, it can enable the printer to have multiple functions, such as: feeding paper, pausing action, calibrating label sensor, printing self-test values, initializing the printer, etc., see followings:

4.3.1, LED Indicators

1: Power on: The blue light is on and the buzzer sounds once

2: Open Cover: The red light is on and the buzzer sounds once

3: Close cover and auto feed one paper by printer itself: The blue light is on

4: When the cover is closed, the blue light turns on, the motor rotates. If no paper is detected, the motor stops, the pink and red light flashes alternately. After reloading the paper, press the paper feed button, feed out one paper, and the light turn to blue.

5: When lack of the paper: the pink and red light flashes alternately. After reloading the paper, press the paper feed button, feed out one paper, and the light turn to blue.

6: When printing is paused: the red light and the blue light flash alternately

4.3.2, Key functions

Feed: When the printer is ready (LED blue light), click the feed button and the label will come to the front of the next label sheet.

Print Pause: While the printer is printing, clicking the button will pause the print. At this point, the power indicator flashes blue and pink alternately. And you click the button again, the print returns to normal.

4.4 Calibrate paper operation

In the power-off state, press the paper feed button and then turn on the power switch, keep press the feed button until you see the indicator light: pink flash--red light and pink light flash alternately, then you release the paper feed button. At this time the printer will automatically feed the paper to calibrate the paper, and when the automatic paper feeding stops,the calibration is

completed. Now Printer can be used normally.

Note: Please use the diagnostic tool or the GAP / BLINE command to confirm the type of label to be detected before doing label paper sensor calibration; for more information on GAP and BLINE commands, please refer to the programming manual

4.5 Print a self-test page

In the power-off state, press the paper feed button and then turn on the power switch, keep press the feed button until you see the indicator light: pink flash--red light and pink light flash alternately---pink light flashes,then you release the paper feed button. At this time, the printer will print out a self-test page after calibrating the paper once. After the self-test printing is performed, the printer system will enter the debug mode. In debug mode all messages are printed in machine code. The ASCII string on the left is the data received by the system. The right part data is the hexadecimal code corresponding to the left ASCII string. This function is for users or engineers to debug the program. You only need to turn off the power to jump out of debug mode and return to normal printing mode.

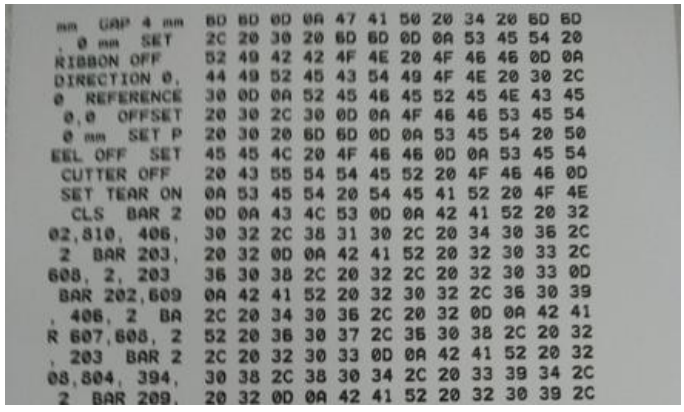
Note: 1.All debug mode data need to use 4 inches wide label paper

2.Turn off the power to exit the debug mode and return to the normal printing mode or press the FEED button to return to the standby state

The content and description of the self-test page are as follows:

Self test page content	Content description
PRINTER INFO. // // //	
HQ4500 Version: 1.001EZ	Printer model and firmware version number
SERIAL NO:	Printer serial number
MILAGE: xx	Miles printed
CHECKSUM: xxxxxxxx	Checking code
SERIEAL PORT: xxxx,N,8,1	Serial Info.
CODE PAGE: xxx	Code Page info.
COUNTRY CODE: 001	Country code
SPEED : x INCH	Current default set speed
DENSITY: xxx	Current default set density
SIZE: x, y	Setting label size
GAP: x, y	Setting gap size
TRANPARENCE: x	Current sensor intensity in use
BT: YES/NO	Have bluetooth or no
BT NAME: HQ4500	Bluetooth name
BT PIN: xxxx	Bluetooth Paring code
BT ADDRESS: xxxxxxxxxxxx	Bluetooth address
BT VERSIONS: xxxxxxxxxx	Bluetooth versions
**********	
FILE LIST:	File list
DRAM FILE: 0 FILE(s)	Number of files downloaded to RAM
PHYSICAL DRAM: 2048 KBYTES	Max RAM size
AVAILABEL DRAM: 256 KBYTES FREE	Current RAM size
PHYSICAL FLASH: 0 KBYES	FLASH size
AVAILABEL FLASH: 0 KBYTES FREE	Current FLASH size
END OF FILE LIST	
**********	
NOW IN DUMP MODE	

Debug Mode Data Description

The data on the left is the command ASCII string received by the printer		The right part of the data is the hexadecimal code corresponding to the ASCII string of the received command

4.6 Initialize the printer

The printer initialization function is to clear the downloaded files in the memory (DRAM), and restore the printing parameters to the factory settings. The way it works is: In the off state, press and hold the paper feed button and turn on the switch, the indicator light will flash pink at first, and then

turn to blue light and pink indicator light to flash cyclically, wait until the pink indicator light flashes, and then continue to wait until pink and blue light Release the button when the indicator light flashes alternately, the printer will be restored to the factory state at this time, and all user-set parameters will be erased.

After initialization, the printer configuration is restored to the following default values:

Parameter	Default Values
Speed	127 mm/sec (5 ips) (203DPI)
Density	10
Label width	4” (100 mm)
Label height	5.91”(150mm)
Sensor type	Gap sensor
Gap setting	0.12”(3mm)
Printing direction	0
Reference point	0,0 (upper left corner)
offset	0
tear off mode	On
peel mode	Off
Serial port settings	9600 bps, none parity, 8 data bits, 1 stop bit
character	850
country code	001
clear flash	No

4.7 skip auto.bas procedure

The TSPL2 command language allows the user to load an automatic execution file (AUTO.BAS) into the flash memory. After the printer is turned on, it will automatically execute according to the file loaded by the user. When you want to skip the AUTO.BAS boot after booting, you can use this boot function to ignore this automatic execution file.

In the power-off state, press and hold the paper feed button and then turn on the switch, the indicator light will flash pink at first, then turn to blue light and the pink light will flash alternately, wait until the pink indicator light flashes and then turn to pink and blue lights flash alternately, continue to wait until the blue light flashes and release the button, now the printer will skip the auto.bas procedure.

5. Specifications

Items		Parameters/Descriptions
Control Panel		Power switch,Feed button,LED indicator (Red blue LED
Sensor		Gap sensor,Black mark sensor (removable in full print format),Print head up sensor,Temperature Sensor (THP)
Outside Paper Diameter		8 inch roll-type thermal label paper or foldable thermal label paper
Label	Paper Width	37.5 ~ 123 mm (1.5inch ~ 4.84inch)
	Label Type	Continuous, gap, black mark, fan-fold, punched
	Paper Thickness	0.05mm-0.26mm
	Paper Type	Stack or Roll type paper
Open		Shell way
Print Method		Direct thermal
Print Location		Print centered
Resolution		203 dpi(Speed=6.0inch)
Print Density		1-15 density Level
Speed		6.0inch/Sec
Min.height		37.5mm
Max Media Size		123mm
Max Printing Size		108mm (4.25inch)
Max Height		1770mm
Memory		8MB Flash Menmory/8MB SDRAM
Interface		USB2.0(Standard USB-B)/Bluetooth(Optional)/WIFI(Optional)
Built-in font library		Eight bitmap fonts/Windows fonts available for download via
1D Barcode		1D barcode：Code 39, Code 93, Code 128UCC, Code 128 subsets A, B, C, Codabar, Interleaved 2 of 5, EAN-8,EAN-13, EAN-128, UPC-A, UPC-E, EAN and UPC 2(5) digits add-on, MSI, PLESSEY, POSTNET, China POST, GS1 DataBar, Code 11
2D BarCode		2D barcode：PDF-417, Maxicode, DataMatrix, QR code, Aztec
Rotation		0°、90°、180°、270°
Emulaion		TSPL2、EPL、ZPL、DPL
Driver		（1）Windows：XP.7.8.10(32-bit and 64-bit systems included)； （2）Mac：v10.6.8/v10.7.x/v10.8.x/v10.9.x/10.10.x 10.11.x etc； （3）Linux：centos 7.0 X64/ubuntu 12.04 X86 and X64 version；
Paper Diameter		8.0 inch
TPH Working Life		Over 100,000,000 pulses or over 50 km
Gear Working life		More than 200 kilometers
Power Adapor		Input：AC 110V~260V/50Hz/60Hz Output：DC 24V—2.5A
Using Environment	working altitude	Only suitable for safe use in areas below 2000m above sea level
	working environment	5℃～50℃（non-condensing）
	storage environment	-20℃～60℃（non-condensing）
	Working humidity	20%～85% RH（non-condensing）

	Storage humidity	5%～95% RH（non-condensing）

6. Maintenance

Take this simple printer maintenance procedure not only to ensure the printing quality,but also extend the life of the printer. The following are some of our recommended maintenance.

Please use the tools listed below to clean and maintain your printer:

■ Cotton swab

■ Cotton

■ Air spray gun or vacuum tool

■ 100% alcohol (industrial alcohol)

Pls follow the below cleaning steps :

Printer parts	**method**
Print head	①Please turn off the printer ②Let the print head cool for at least one minute ③Wipe the surface of the print head with cotton 100% alcohol
Rubber roller	①Please turn off the printer ②While turning the rubber roller, carefully wipe the rubber with 100% alcohol on cotton cloth or cotton
Outside	Wipe the outside with a damp cloth
Inside	Use an air gun or vacuum cleaner to remove dust from the machine

⚠ Attention:

■ The daily maintenance of the printer must ensure that the power is turned off;

■ It is not allowed to touch the surface of the print head with hands and metal objects, and do not use tools such as tweezers to scratch the surface of the print head, printing roller and sensor

■ Do not use gasoline, acetone and other organic solvents to wipe the print head and rubber roller, medical alcohol may damage the print head;

■ After the gap sensor is cleaned, the paper gap check should be re-checked;

■ Wait for the alcohol to completely evaporate before turning on the power to continue printing.

7. Troubleshooting

The contents below are some common problems and their solutions for users. Usually it will be work, but if it still not work after the following suggestions, pls contact the customer service department of our dealer or manufacture to get more help.

Problems	Possible Reasons	Solutions
Online indicator is off	■ The cable connection is not well connected to printer port ■ Printer Power switch is not turned on	■ Check the socket, power cable, adaptor cable is well connected with printer. ■ Turn on power switch
	■ The printer cover is not closed well	■ Please close the cover well
	■ Run out of Label Paper ■ The label installation path is incorrect ■ Incorrect detection of gap sensor	■ Put new label paper inside ■ Please refer to label paper installation steps, re-install, re-adjust the specifications and print
	■ There may be label paper or debris stuck inside the printer	■ Clean the inside of the machine
The printer cannot print	■ Check if the transmission line has connected to the machine	■ Reconnect the transmission line ■ If you are using a USB cable, please confirm that the port in the computer drive is selected correctly ■ Replace new transmission line ■ Clean the print head ■ The printer density setting is incorrect
Storage is full (FLASH/DRAM)	■ FLASH/DRAM full of storage	■ Clear unnecessary files inside FLASH/DRAM ■ DRAM can store up to 256 files, the maximum capacity is 1024KB, the number of file is related to the content size of a single file ■ FLASH can store up to 256 files, The maximum capacity is 1024KB, the number of file is related to the content size of a single file

Poor print quality	■ Incorrect label paper installation ■ Dust or adhesive accumulation on the print head ■ Improper setting of printing density ■ Printer head damaged	■ Re-install the paper roll ■ Clean the print head ■ Clean the rubber roller ■ Adjust the printing density and speed of the printer ■ Print out the self-test page, check and judge whether the print head is damaged. If the print head is damaged, please return to the factory to replace ■ Replace the appropriate label paper ■ If the thickness of the label exceeds 0.22 mm, the printing quality may be reduced ■ Close the printer cover in place
Paper skipping occurs when printing	■ Incorrect or incomplete label size setting ■ The label sensor is covered by obstacle, which results in incorrect detection	■ Re size and print ■ Moderately reduce the gap value and print it ■ Clean the obstacle on the sensors
Content on left and right sides to be printed are lost	■ Incorrect label size setting ■ Exceeded maximum print width	■ Set the correct label size ■ Change the paper roll within the maximum width
There are wrinkles in printing	■ uneven pressure on printer head ■ incorrect label paper installation ■ printing density setting is incorrect ■ incorrect label paper feed	■ Please select the appropriate label printing density ■ Please adjust the label width limiter to fit the current label
Gray lines appears on black label paper	■ Printer head is dirty ■ Rubber roller is dirty	■ Please clean the print head ■ please clean the rubber roller (Refer to the method recommended in Article 9 for specific operation methods and steps)
Unstable printing	■ Printer in hex dump mode	■ Turn the printer off and on again, and jump out of dump mode