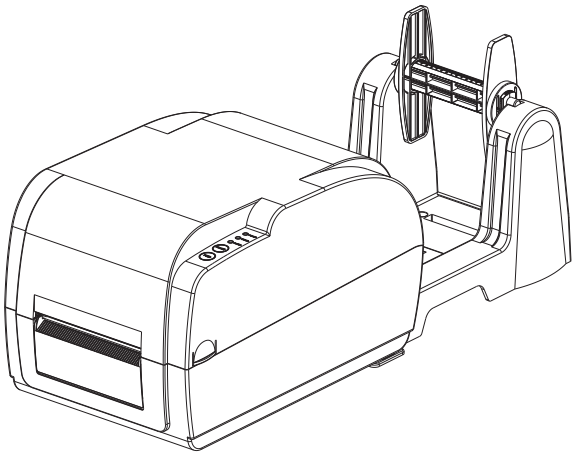
User's Manual

Thermal Transfer Barcode Printer



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1.The printer

1. 1 Introduction

This series printer is built with 2 sets of gear to drive motor, with capability of handling 300 meters long ribbon and large label roll. Printer inner volume is fit for 5" OD (Outer Diameter) paper roll, if using external paper holder, you can install 8.4"OD industrial grade label roll.

This printer is designed for real-time and batch label printing, with serial, parallel, USB and Ethernet connection port. Direct thermal printing and thermal transfer printing modes are all in one printer body, so you can choose various kinds of printing materials, for example: thermal paper, plain paper, coated paper, silver paper, plastic paper etc.

Common 1D barcode and 2D barcode fonts are built inside printer, also it support 4 direction printing, characters can be enlarged from 1 to 10 times. Besides, it supports 5 different size bitmap fonts, OCR-A and OCR-B fonts, together with 300dpi higher print resolution, this series printer are your best choice among the same class.

Declaration: This is a class A product, fit for Non Tropic regions installation. This product may cause radio interference in life environment, users may need to take adequate preventive measures.

◆ Application Field

Manufacturing & Warehousing logistic industry

- Product labeling and marking
- Warehouse management label
- Category marking label
- Operation instruction marking label
- Distributing instruction marking label

Healthcare

- Patients marking
- Medicine marking
- Specimen marking

Parcel Post

- Mailing label

Office & Studio

Retail

- Price Label marking
- Product item marking
- Jewelry product marking

1. 2 Product features

1. 2. 1 Standard equipment

Product standard	300 DPI
Ribbon printing	○
Direct Thermal printing	○
ABS plastic housing	○
Gap sensor	○
Ribbon sensor	○
The print head open sensor	○
USB 2.0(full speed)Communication interface	○
2 MB SDRAM Memory	○
2 MB FLASH Memory	○
Feed button & LED indicator	○
Built-in 8 kinds of dot matrix fonts	○
The character and the bar code can be printed in four directions (0,90,180,270 degree).	○
Built in simplified Chinese, traditional Chinese and Korean font for programming.	○
Can print text, bar code, pictures Support bar code: 1D Barcode: Code 39, Code 93,ITF, EAN 128, Code 128 subsets A,B,C, Codabar, EAN–8,EAN–13, UPC–A,UPC–E, EAN and UPC 2(5) digits add–on,MSI,MSIC, PLESSEY,CPOST, ITF 14,EAN 14 Support bar code: 2D Barcode: QR code Support picture: BMP, PCX	○

1. 2. 2 Optional accessories

External stand is standard accessory for

1. 3 Specifications

Printer size	186(W)x180(H)x290(D)
Printer weight	2.4KG
Power Supply	Input: AC 100-240V Output: DC 24V 2A
Environment	Storage Environment: -10~50℃(-10～140℃) , Humidity : 10~90%, no condensation Operation Environment: 5~45℃(41~104 ℃) , Humidity : 25~85%,no condensation

1. 4 Printing specification

The print head	300 dots/inch(12dots/mm)
Print mode	Ribbon / thermal
Dot size (width X length)	0.084 × 0.084 mm (1 mm = 11.8 dots)
Print speed (inches per second)	2~4 inch/s
Maximum print width	81 mm(3.18")
Maximum print length	1524 mm(60")
Pulse excitation	$1X10^8$ pulses
Thermal print head reliability	50km

1. 5 Ribbon specification

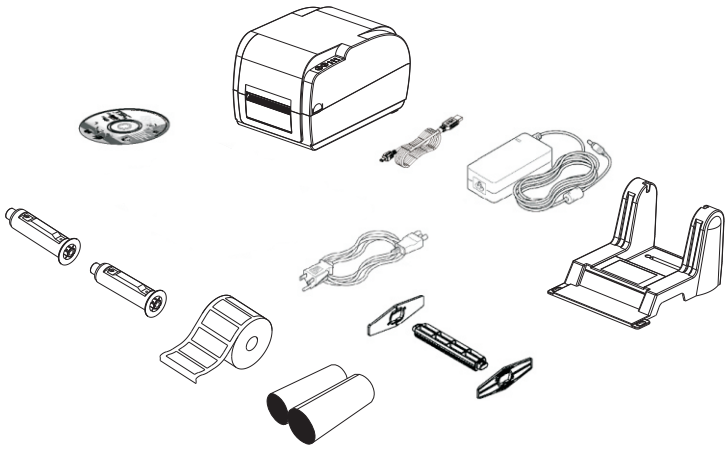
Ribbon diameter	Max. 67 mm
The ribbon length	300 m
The ribbon axis size	1 inch (25.4 mm)
The ribbon width	Max. 90 mm
	Min. 30 mm
Ribbon winding way	Outward winding

1. 6 Paper specification

The maximum capacity of internal paper roll diameter	127 mm(5")OD
Paper type	Continuous paper , paper with interspaces , folding paper ,sprocket paper
The paper winding way	Printing side outward or inward winding
The width of the paper (upper & bottom paper)	Max. 90 mm(3.54")
	Min. 20 mm(0.78")
The thickness of the paper (upper & bottom paper)	Max. 0.254 mm(10 mil)
	Min. 0.06 mm(2.36 mil)
Roll axis size	25.4 mm~38 mm(1"~1.5")
Label length	10~1524 mm(0.39"~60")
	Note : If label length less than 25.4mm(1 inch),label paper with perforations are recommended, labels can be torn off easily.
Gap size	Min. 2 mm(0.09")

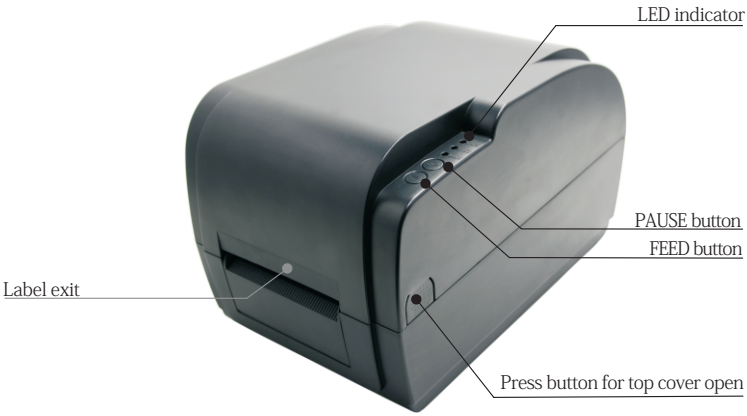
2.

2. 1



2. 2 Printer components

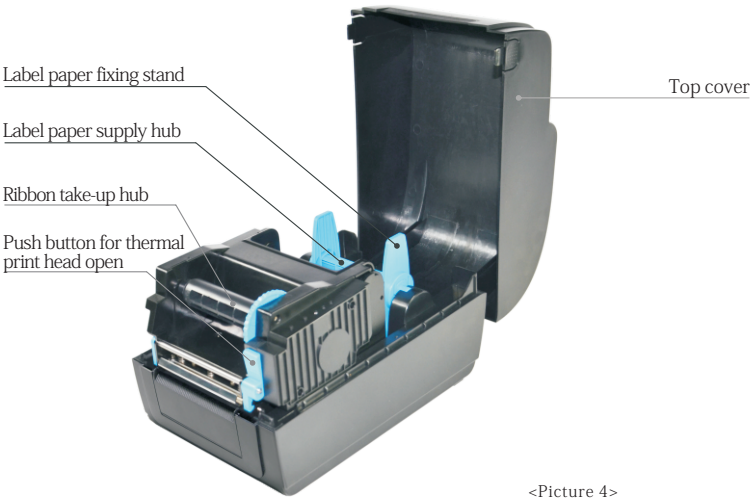
2. 2. 1 Appearance



<Picture 2>

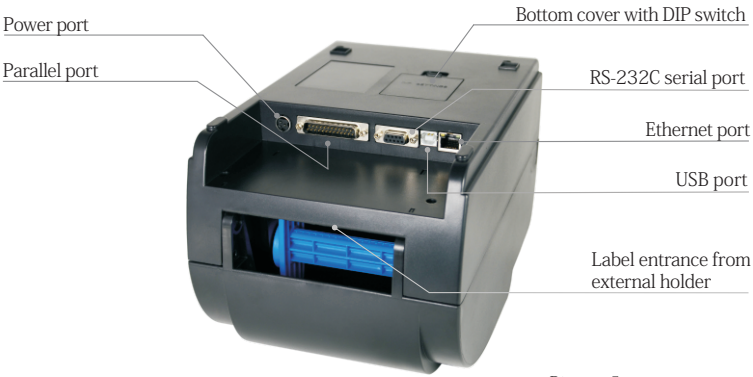
<Picture 3>

2. 2. 2 Internal



<Picture 4>

2. 2. 3 The bottom

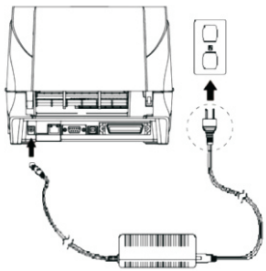


<Picture 5>

3. Installation

3. 1 Cable connection

1. Please put the printer on the stable surface.
2. Make sure printer power is turned off, please do not plug the power cable when the printer power is turned on.
3. Connect serial or USB or Parallel or Ethernet cable to printer and PC.
4. Connect power plug to power supply socket.



<Picture 6>

3. 2 Ribbon installation

1.Press two press buttons on left and right side to open printer top cover

2.Put empty paper tube into ribbon take-up hub if you buy new ribbon which one side is no contact with paper tube.
After that, install ribbon take-up hub left side and right side onto printer.

Remark: Factory standard ribbon two sides already fixed well on paper tube. Go ahead to step 3 instead of step 2.

3. Press the Push button to open print head.

4.Insert black ribbon supply hub into new ribbon. Then install ribbon and supply hub from left side to right side, refer to picture.

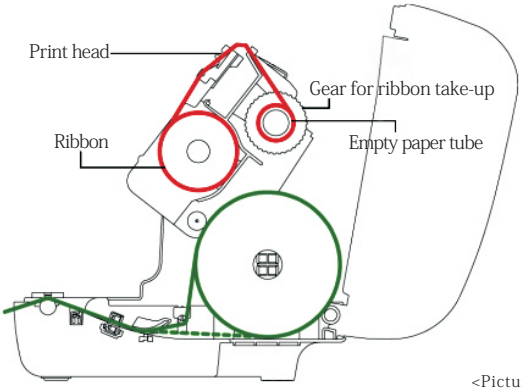
5.If install factory supplied new ribbon, please refer to step 2: install ribbon and ribbon take-up hub.

If you buy and use new ribbon, firstly you roll up the ribbon onto the empty paper tube.

After that please adjust the big blue gear according to the direction of arrows to let ribbon touch the take-up hub flatly and smoothly without wrinkle.

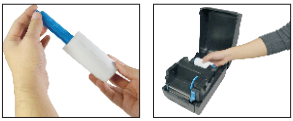
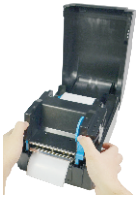
6.Close the print head by pressing two arrow locations, Confirm print head two sides are closed correctly to ensure you get printing in good quality.

● Ribbon installation diagram

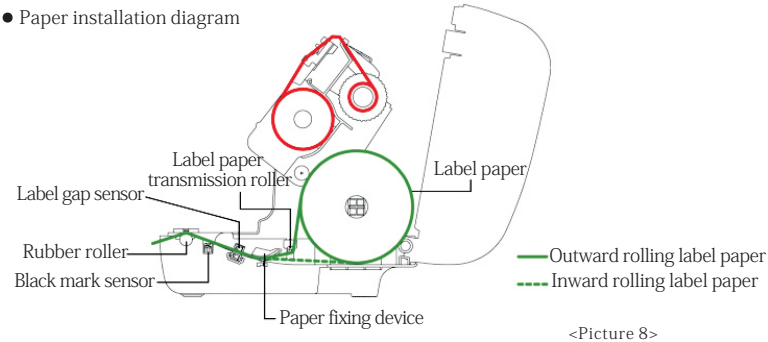


<Picture 7>

3. 3 Paper installation

	1.Open printer top cover; Insert blue label supply hub into label roll and fix onto printer.
	2.Press Push button to open print head to install label paper same as picture showing.
	3.Close the print head by pressing two arrow locations. Confirm print head two sides are closed correctly to ensure you get printing in good quality.
	4.Close printer top cover.

● Paper installation diagram



<Picture 8>

4. LED Indicator and Function

There’ re two buttons and three LED indicators, many functions can be realized through using different button, indicator and power on/off switch.

4. 1 LED indicator

4. 1. 1 Direct thermal printing

LED Indicator status	Descriptions
Power indicator is on, Error indicator is off	Printer is powered on and in normal printing status
Power indicator flashes every 640ms, Error indicator is off	Printer is paused
Power indicator is off, Error indicator goes on for 80ms, then goes off for 160ms, printer start beeping.※	Printer cover is opened
Power indicator is off, Error indicator goes on for 500ms, then goes off for 6s	Label gap detection error
Power indicator is off, Error indicator flashes every 160ms, after two times flashing, Error indicator goes off for 320ms, printer start beeping. ※	Paper out
Power indicator is off, Error indicator flashes every 160ms,after three times flashing,Error indicator goes off for 320ms, printer start beeping. ※	Black mark detection error
Error indicator flashes every160ms.	Printer overheated protection mode is activated. After 1 minute, the printer CPU will check print head temperature again. When temperature return normal, printer will work normally.

※ Beeper function can be enabled through setting DIP switch.

4. 1. 2 Thermal transfer printing

LED Indicator status	Description
Ribbon indicator is on	Ribbon is installed successfully
Ribbon indicator flashes every 300ms, beeper sounds every 2.4s ※	Ribbon improperly installed: no ribbon, or ribbon end, or ribbon broken

※ Beeper function can be enabled through setting DIP switch.

4. 2 Button Function

4.2.1 Paper feeding

When the printer is ready (Blue LED lights),press FEED button , label will feed one by one.

4.2.2 Printing pause

when you press PAUSE button during printing is in progress, printing job will be paused, At this moment, POWER indicator will flash, again press PAUSE button, printing job will continue.

4. 3 Power on Function

Power on functions can be used to set or test printer hardware and enabled by pressing different buttons and checking different LED indicators while you turn on the printer power, please follow below instructions:

Function	Descriptions
Self-test page	A.Turn off the printer. B.Make sure the paper roll is installed correctly and the printer top cover is closed. C.Press and hold FEED button and turn on the printer. Self-test page will be printed, then release FEED button. Note: You can use this function to check if printing function is normal or not.
Print DIP Switch page	A.Turn off the printer. B.Make sure the paper roll is installed correctly and the printer top cover is closed. C.Press and hold PAUSE button and turn on the printer. When paper is feeding and then release PAUSE button, DIP switch functions details will be printed out.
Debugging Mode	A.Turn off the printer. B.Make sure the paper roll is installed correctly and printer top cover is closed. C.Press and hold PAUSE and FEED button, and turn on the printer. When Power indicator(blue) and Error indicator (red) are on at the same time, release PAUSE and FEED button, printer goes to Debugging Mode, and you will find below page printed out: ********** * NOW IN DUMP MODE * ********** Please put 3" label paper, all label data received in this mode will be printed by machine code. Right side is ASCII character strings, left side are hexadecimal value of ASCII character strings. This function is for user or engineer to debug the program. If you turn off printer and then turn on, printer will go back to normal printing mode.

Skip AUTO.BAS program	User can use TSPL2 command to save a code auto-running file (AUTO.BAS) into flash. When turn on printer, printer will run the program automatically. If you want to skip AUO.BAS program on power-up, then follow below steps: Press and hold PAUSE and FEED button, then turn on the printer. When Power indicator (blue) is off and Error indicator(red)is on, release PAUSE and FEED button, printer will skip running AUTO.BAS program, and then Power indicator will be on.
Ribbon Detection	When printer power turn on, printer will automatically detect ribbon status, to check if ribbon installed, or ribbon end, or work normally. After ribbon detecting, printer will be set to thermal transfer printing mode or direct thermal printing mode. If no ribbon, system will go to direct thermal printing mode and close ribbon rolling motor
Printer Initialization	A.Turn off the printer. B.Press and hold PAUSE and FEED button, then turn on the printer. When Power indicator(blue)is on and Error indi -cator (red) is off, release PAUSE and FEED button, all data in printer DRAM will be cleared and printer setting will be restored to factory default setting. Then power indicator will be on and printer goes to ready status. Note: Factory default settings do not include ribbon setting.

* The printer default values are as below.

Parameter	Default setting
Speed	4inch/sec (101.6mm/sec), 300dpi
Density	7
Gap	0mm
Direction	Printing content are placed on page from top to bottom
Reference	Top left corner from printing direction
SHIFT	0
OFFSET	0
SET TEAR	ON
SET HEAD(Cover open detect)	ON
Set PRINTKEY	OFF
SET REPRINT	OFF
SET KEY1(FEED)	ON
SET KEY2(PAUSE)	ON
CLEAR RAM	CLEAR
CLEAR FLASH	NOT CLEAR

5.Troubleshooting

Below table contains common problem descriptions and the solution which we can use in daily operation. If you follow below method and the failures still do not remove, please contact the local distributor or factory for further support.

Problems	Possible Reasons	Solution and Suggestion
Power indicator not "ON"	Plug to AC outlet and plug to printer not well connected	Check power connector and AC outlset if plugs are correctly connected
	Printer power not turned on	Turn on power switch
	Print head not well closed	Close print head by pressing whole print head mechanism (or 2 arrow locations)
	Ribbon end	Change new ribbon
	Ribbon improperly installed	Refer to Ribbon Installation steps in User Manual to re-install ribbon
	Label paper end	Change new label paper
	Label paper improperly installed	Refer to Paper Installation steps in User Manual to re-install paper
	Gap sensor detection error	Adjust paper specification and print again
		Clear jamed paper
Not printing	Label paper jamed inside printer Serial cable improperly connected	1. Check if Pin configuration in cable two sides are matching each other; 2. Check if baud rate setting on PC and printer are the same, If in TPSL comma -nd mode, We suggest 9600, n, 8, 1 to ensure higher reliability. 3. Change a new cable.
	Ethernet cable improperly connected	1.Check if RJ-45 green/orange LED indicator is on. When printer receive and process printing data, LED will be orange color; 2.Check if printer IP is assigned in DHCP mode. 3.Check if fixed IP address is correctly set in printer property. Wait for some minutes to make sure printer is connect -ed server and printing a selftest page to confirm printer IP address. 4.Change a new ethernet cable.
	USB cable improperly connected	Check if USB cable connected well or change a new cable
	Ribbon non standard	Check if ribbon model and specification

Not printing	Ribbon printing side wrong installed	Check and re-install ribbon to make sure printing side touch label paper
	Print head not clean	Clean print head and print again
	Print density setting wrong	Suggest density set to be 7
	Print head cable not well connected	Re-connect print head cable
	Step Motor cable not well connected	Re-connect step motor cable
	Command setting wrong	Check if there is PRINT command at the end of printing file; or if there is CRLF command at the end of every line.
Not good printing quality	Ribbon and label improperly installed	Re-install ribbon and/or label
	Too much dust or adhesive on print head	Clean print head and print again
	Print head damaged	Take selftest page to check if printing are completely to confirm if necessary to change new print head
Data miss printing in one or two sides	Label paper size wrong setting	Check if label size set correctly and same as your label paper
Ribbon wrinkle	Print head unbalanced stress; ribbon & label improperly installed; Label feeding not smoothly	Reset the label print density and adjust paper width fixing stand to fit your label paper size.
Printing not stable	Printer in HEX Dump mode or RS-232 setting wrong	Restart your printer and leave Dump Mode or reset RS-232 PARAMETER

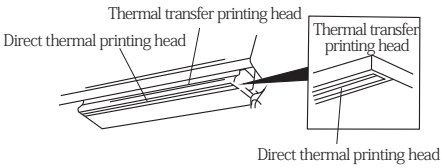
6.Maintenance

To ensure the printing quality, please proceed this maintenance section to keep your printer in good conditions and extend its life as well.

Please use one of following material to clean the printer.

★ Cotton swab
★ Lint-free cloth
★ Vacuum cleaner or air brush
★ 100% ethanol

The cleaning process is described as following：

Parts to be cleaned	Step	Recommend cleaning frequency
Print head	1.Turn off the printer. 2.Allow the print head to cool for at least one minute. 3.Use a cotton swab and 100% ethanol to clean the print head surface.	When change new label paper
		
Rubber roller	1.Turn off the printer. 2.Rotate the platen roller and use a cotton swab to clean with 100% ethanol.	When Change new label paper
Paper tear bar	Use a cotton swab and 100% ethanol to clean.	When necessary.
Sensor	Use air brush or vacuum to clean dust of sensor.	Monthly.
Inner side of printer	Use air brush or vacuum to clean the dust.	When necessary.

Note：

※ Always turn off the printer power before cleaning the printer.
※ Do not touch print head by finger.
※ Please use 100% ethanol, Do not use medical alcohol to avoid damage to print head.