Label printer

User's Manual

Declaration

Information in this document is subject to change without notice. Our company reserves the right to improve products as new technology, components, software, and firmware become available. If users need the further data about these products, please feel free to contact our company or your local distributor.

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Warnings and Cautions

⚠ Warning: Must comply with warning to avoid bodily harm or damage to device.

⚠ Caution: Provides important information and prompts for printer operation.

Following certifications have been approved:

ISO9001 Quality Control System Certification

ISO14001 Environmental Management System Certification

OHSAS18001 Occupational Health and Safety Management System Certification

IECQ QC 080000 Hazardous Substance Process Management System Certification

Safety Instructions

Before installing and using the printer, please read the following items carefully.

1 Safety warning

The print head ⚠ a thermal element and it is at a high temperature during printing or just after operation, therefore do not touch it or its peripherals for reasons of safety.

The print head ⚠ an ESD-sensitive device. To prevent damage, do not touch either its printing parts or connecting parts.

2 Caution

1) Install the printer on a flat and stable place.
2) Reserve adequate space around the printer so that the operation and maintenance can be performed conveniently.
3) Keep the printer far away from water source and do not expose the printer to direct sunlight, strong light and heater.
4) Do not use or store the printer in a place exposed to heat of fire, moisture and serious pollution.
5) Do not place the printer on a place exposed to vibration and impact.
6) No dew condensation is allowed to the printer. In case of such condensation, do not turn on the power until it has completely gone away.
7) Connect the AC adaptor to an appropriate earthing outlet. Avoid sharing the same one outlet with large power motors and other devices that may cause voltage fluctuation.
8) Disconnect the printer power when the printer is deemed to spare for

a long time.

9) Avoid water or other electric materials entering into the printer. In case that this happens, turn off the power immediately.

10) Do not allow the printer to printing without recording paper in, otherwise the TPH and platen roller will be damaged a lot.

11) To ensure print quality and normal lifetime, use recommended consumables or the ones with same quality.

12) Turn off the printer before connecting or disconnecting interfaces connectors to prevent control board from damages.

13) Set the print darkness to a lower grade as long as the print quality is acceptable. This will help to keep the TPH durable.

14) Avoid turning on and off the printer frequently. After the printer is turned off, turn on the printer at least two seconds later.

15) Do not disassemble the printer without permission of a technician for repairing purpose.

16) Keep this manual carefully at hand for ready reference.

Contents

1 Overview

1.1 Outline

LP46 Trio printer has a smart appearance and high performance, which is an ideal label printer for office use. It can apply to many fields, such as real-time label printing, product label batch printing, transportation and logistics label printing, ticket printing at railway, airports and stations, postal bag tab printing, etc.

This product can be connected with the peripheral equipment via serial or other interfaces, at the same time it can provide common drivers for the operation systems as Windows XP / Windows server 2003 / Windows Vista / Windows server 2008 / Windows 7 / Windows 8 / Windows8.1 / Windows 10.

Main features:

➢ Thermal / thermal transfer printing.

➢ Low noise and high-speed thermal printing.

➢ Easy and quick paper loading.

➢ Use 32 bit hi-speed micro-processor.

➢ Use Auto-suitable control of heat history and temperature.

➢ Use new TPH which has long lifetime and hi-quality of printout.

➢ Support continuous paper, label paper, marked paper and perforated paper.

1.2 Unpacking and checking

Unpacking the printer carton and check whether the parts is short or damaged according to the packing list. If there is, please contact the

agent or the manufacturer.
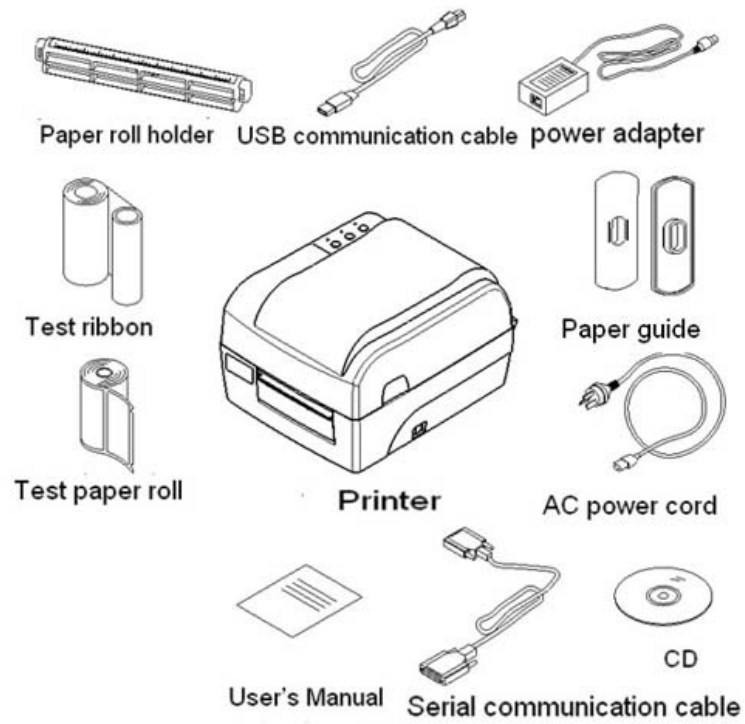
Figure 1.2.1

1.3 Appearance and parts
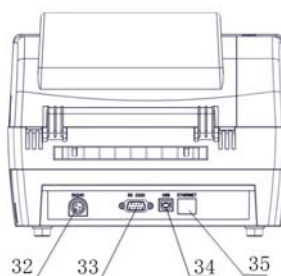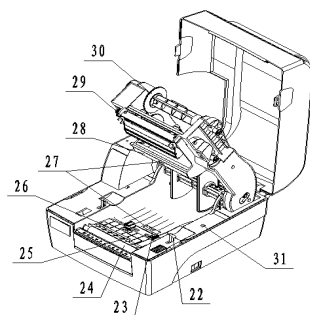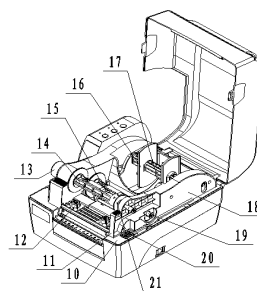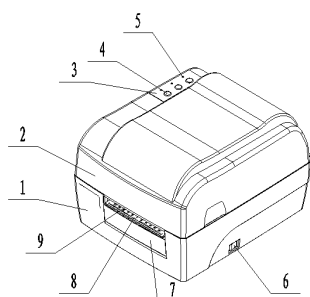
1—Bottom cover	2—Top cover
3—Left cover	4—Button
5—LED	6—Power switch
7—Turning plate	8—Tear-off bar
9—Scale label	10—Platen roller holder
11—Ribbon holder	12—TPH pressure adjusting knob
13—Ribbon baffle	14—Ribbon rewinding shaft
15—Ribbon release shaft	16—Paper guide
17—Paper roll holder	18—TPH cable cover
19—Manual ribbon bushing	20—TPH lift-up button
21—Ribbon end cap	22—Locking hook

23—Paper guide block	24—Platen roller
25—Reflective sensor	26—Sensor top cover
27—Transmissive sensor	28—Transmissive sensor cover
29—TPH	30—Ribbon rotation thumbwheel
31—TPH micro-switch	32—Power adaptor interface
33—Serial interface	34—USB interface
35—Ethernet interface	

1.4 Main modules

1) Button and LED (4, 5)

   Indicate the printer status and execute its print functions.

2) Power switch (6)

   Turn off the power when pressing "O", and turn on the power when pressing "－".

3) Paper roll holder (17) and Paper guide (16)

   Hold paper roll and prevent it sliding in paper output path.

4) Paper guide block (23)

   Prevent paper sliding in paper output path.

5) Reflective sensor (25)

   Verify and position the black marked paper.

6) Transmissive sensor (27)

   Verify and position the label paper.

7) TPH micro-switch (31)

   Check TPH open or closed status.

2 Printer mount

2.1 Printer installation position

The printer should be placed on the flat table surface where water, moisture or dust should be prevented. When mounting it, the slanting extent shall not exceed 15°.

2.2 Paper installation

1) Push the top cover upward with both hands according to the arrow shown in figure 2.2.1 to open it;

2) Press down the TPH lift-up button, and turn the ribbon holder up to the angle shown in the figure (stop the turning when a slight sound "flip-flop" is prompted) (see figure 2.2.2);
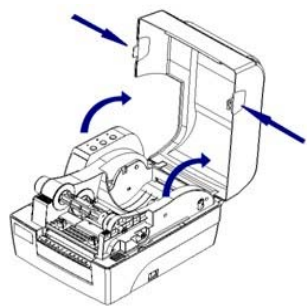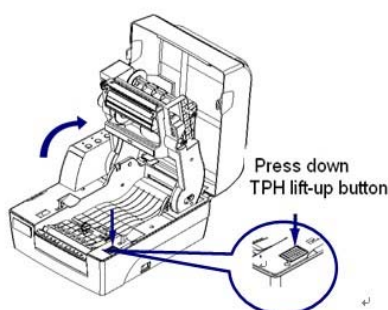
Figure 2.2.1   **Figure 2.2.2**

3) Load a paper roll on the paper roll holder and install one paper roll guide on each side of the paper roll;;

4) Place the paper roll on the paper holder into the paper cabinet, then pull out the front end of the paper and place it in the print path flatly, and hold the paper with the right and left paper guides (See figure 2.2.3);
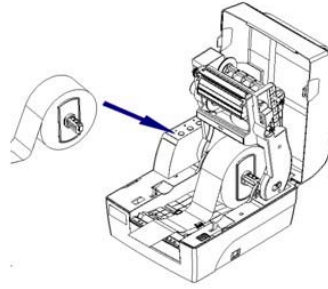
Figure 2.2.3

5) The ID of paper roll has two sizes: 25mm (1 inch) and 38mm (1.5 inch). For different ID of paper roll, the methods to place the paper roll holder into the paper cabinet are different. Detail operation refer to figure 2.2.4 and figure 2.2.5.

Paper roll ID is 25mm(1inch)

Paper roll ID is 38mm(1.5inch)
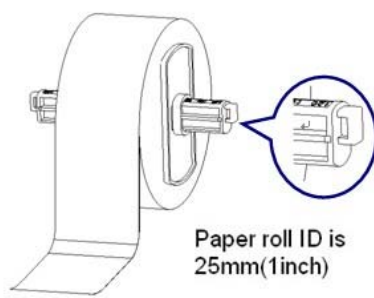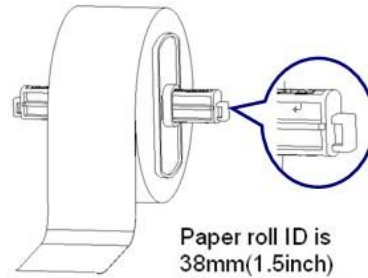
Figure 2.2.4   **Figure 2.2.5**

Note:

✧ The print side should be upside. If it is the marked paper, please place black mark downwards.

2.3 Ribbon installation

1) Slightly pull the manual bushing of ribbon release shaft outward, then take off the ribbon release shaft and put it into the ribbon

core axis according to the arrow shown in the figure (See figure 2.3.1);

2) Lift up the ribbon holder to the position at about 30° (When a slight sound "flip-flop" is prompted, the ribbon holder will keep at this position). Pull the manual bushing outward slightly until the ribbon release shaft is at the original position, then release the manual bushing and the installation of ribbon release shaft is finished (See figure 2.3.2);
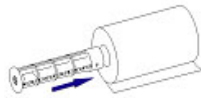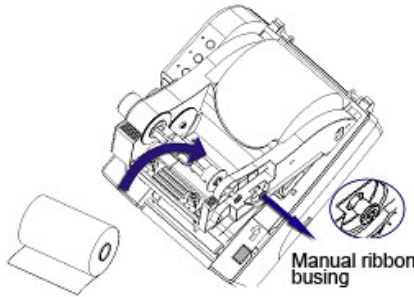
Figure 2.3.1   **Figure 2.3.2**

3) Lead the front end of ribbon go under the TPH and rewind it onto the ribbon retraction shaft (see figure 2.3.3). Turn the ribbon wheel to tight it up (the loaded paper roll and ribbon see figure 2.3.4);

Ribbon rotation thumbwheel
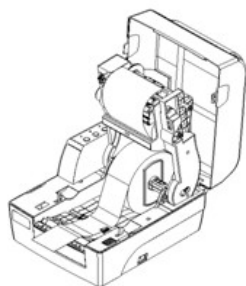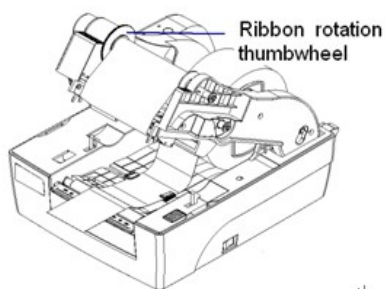
Figure 2.3.3   **Figure 2.3.4**

4)   Press down the ribbon holder until it is locked, then close the top cover (see figure 2.3.5).
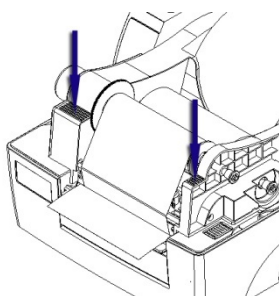
Figure 2.3.5

Notes：

✧ Select the print mode:

If select the thermal transfer mode, ribbon is need to be installed;

If select thermal mode, ribbon is not needed. In normal condition, the ribbon should be wider than the paper.

✧ During the installation of ribbon, be careful not to cockle or damage the ribbon.

2.4 Connecting power adapter

1) Ensure the printer is turned off;

2) Connect one end of the AC power input cable to power adapter, and then insert the other end of the power adapter into the power adapter interface on the back of printer;

3) Insert the other end of AC power input cable into the 220V power socket.

⚠️**Caution:**

✧ If leaving the printer idle for a long time, please disconnect the power of printer.

2.5 Connecting communication cable

1) Ensure the printer is turned off;

2) Insert the communication cable into the suitable interface, and fix it with screw or latch spring of the plug;

3) Connect the other end of the communication cable to the host.

⚠️**Caution:**

✧ Don't connect or disconnect the serial communication cable when the power has not been turned off.

2.6 Starting the printer

2.6.1 Turn on the printer and conduct self-test

1) Be sure that power adapter and communication cable are connected, then turn on the printer power switch;

2) The printer starts self-test. After the self-test, buzzer will beep one time;

3) If power-on action is set, the printer will perform power-on action.

Note: The power-on action refers to the actions performed automatically after the printer is turned on, including feeding one label, starting calibration automatically (only valid when non-continuous paper is used). The power-on action can be set via commands or configuration tool.

⚠ **Caution:**

✧ If the printer cannot start or work normally, please contact with the distributors or manufacturer.

2.6.2 Print self-test page

1) Install the media, and turn on the printer. The printer will feed paper and print self-test page (see Appendix 2.1) through button operations (for the detailed operation methods, please refer to 3.1.3 FEED button function);

2) The self-test page lists the current configuration information of the printer.

2.7 Installing the driver

The installation program of the driver is included in the CD packed with the printer.

➢ The 32-bit operating systems supported by the driver are as follows:

Windows XP / Windows server 2003 / Windows Vista / Windows server 2008 / Windows 7 / Windows 8 / Windows 8.1 / Windows 10

➢ The 64-bit operating systems supported by the driver are as follows:

Windows XP / Windows server 2003 / Windows Vista / Windows server 2008 / Windows 7 / Windows 8 / Windows 8.1 / Windows 10.

1) Run "Setup.exe" in the driver package, it will display the related information of current driver, and then click "Next" button;
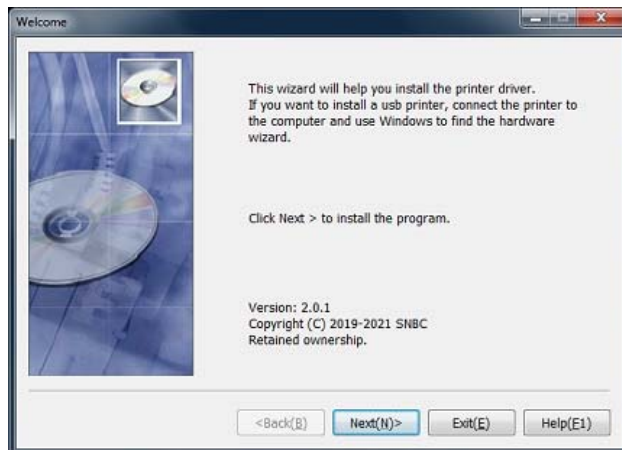
2) Click "Install Printer" to install the printer driver, and click "Uninstall Printer Driver" to uninstall the printer driver;
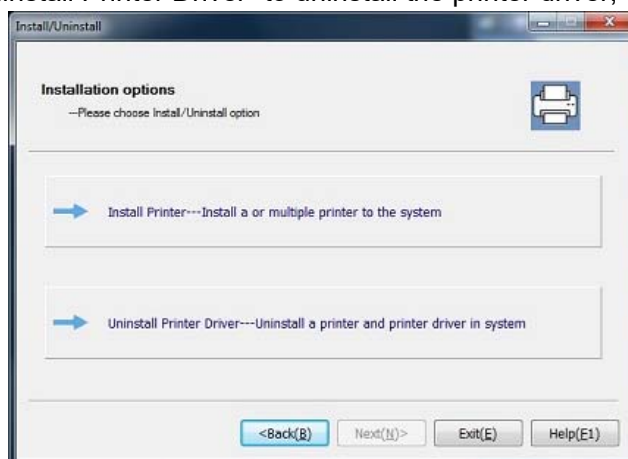
3) Read the relevant software license agreement carefully. If you accept all the terms in the agreement, click "I Accept", and then click "Next";

4) Select the installed printer. If you want to set the printer as the system default printer, tick the box before "I'm going to set the printer to Windows default printer" and click the "Next" button.
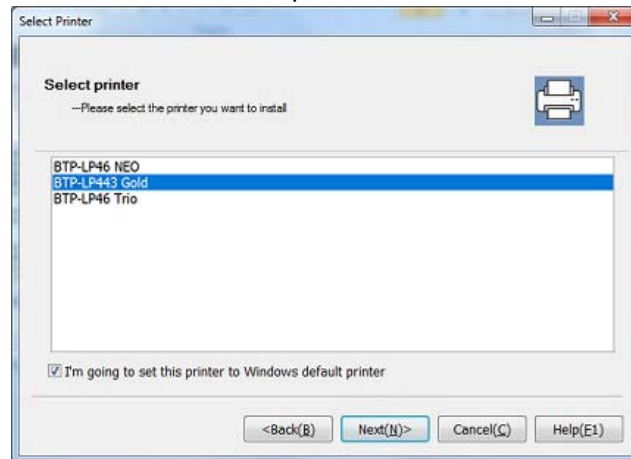
5) Adds all the enumerated ports to the list. Select "LPT1" as the default print port, and click "Install" to start the installation. If other printers are installed on the port, there will be a pop-up box for you to determine whether to continue the installation, select "Yes" to continue the installation, and select "No" to re-select the port.
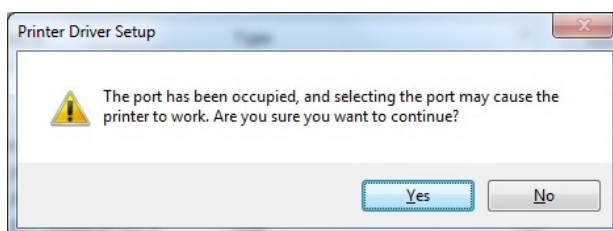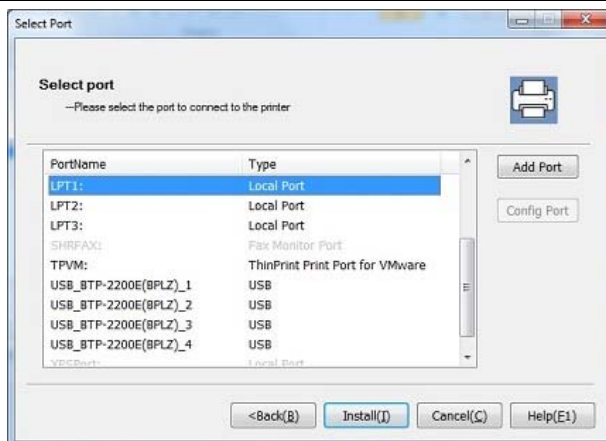
6) After the driver is installed successfully, the paper parameters and other driver parameters can be configured. After modification, you can click the "Finish" button to end the installation, and click the "Install Next" button to continue to install other models.

3 Printer operation

3.1 LED, buzzer, feed button

3.1.1 LED function

LED name	Status	Explanation
Power LED (green)	Always on	Printer is in idle or working status.
	Flashes quickly	Printer is busy (printer is processing the commands)
Pause LED (Yellow)	Always off	Printer is in standby status.
	Always on	Printer is in pause status.
		Wait to confirm that the label have been taken away in tear-off mode.
Error LED (red)	Always off	Printer is in standby status.
	Flashes	Printer has errors.

3.1.2 Button function

Button	Function	Explanation
FEED	Feed paper	In standby status, after pressing down "Feed" button for a short time, the printer will feed one label for non-continuous paper or will feed paper all the time until releasing the button for continuous paper.
	Set function	The LED flashes quickly when press the FEED button for a long time, and the LED flash times indicates the selected function when release the button.
PAUSE	Pause	In standby status, after pressing down "Pause" button, the printer enters pause status, and the printer will back to standby status after pressing down "Pause" button again.

Button	Function	Explanation
		During printing, after pressing down "Pause" button, the current print job shall be stopped, and the printer will continuous the last print job after pressing down "Pause" button again.
	Confirm label is taken away	In tear-off mode, when paper presence detection sensor is not configured, the "Pause" LED will be on after print one label, and user can press down "Pause" button to confirm that the label has been taken away, then the printer shall retract paper and start to print next label.
CANCEL	Cancel print job	Press "Pause" button to stop current print job, and then press "Cancel" button to cancel the print job.

3.1.3 FEED button function

LED flash times	Button function
Power LED flashes once	Print the self-test page information
Power LED flashes twice	Calibrate the paper
Power LED flashes for three times	Enter in the AirKiss mode
Power LED flashes for four times	Recover the factory settings
Power LED flashes for five times	Print the sensor waveform

Note: Short press means the duration from pressing down the button to the time when the button uplifts is less than 0.5s. Long press means the duration of pressing down the button is more than 1s.

3.1.4 Buzzer function

1) The buzzer beeps for a short time when the printer is turned on or reset;

2) The buzzer beeps many times when an exception occurs. For the

details, please refer to 5.1 Troubleshooting.

3.2 Print head pressure adjustment

TPH pressure adjustment device has two adjusting knobs, each of which has four levels indicating different TPH pressures. When turning the knob in clockwise, the TPH pressure increases along with level number. (See figure 3.2.1). In normal print, follow the pressure level of factory default settings, normally at level 2 or 3.
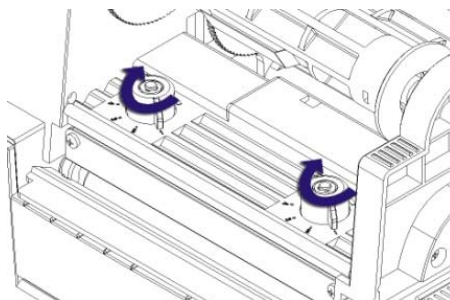
Figure 3.2.1

In following cases, you need to do the adjustment:

1) When the TPH pressure in using doesn't meet the requirement (for example, rewinding ribbon not smoothly), turn the adjusting knob to increase it.

2) In using different width label for the print, different level can be selected (only for reference, please see the table as below)

Label width	Left level	Right level
25mm	1	1
51mm	2	2
75mm	3	3
110mm	4	4

⚠️ **Caution**:

✧ It is recommended to use the TPH pressure as low as possible under the condition that the printout meets the requirement.

3.3 Sensor position adjustment

When the paper width is changed, the sensor position can be adjusted according to the following methods:

1) According to the marked position of the media, measure the sensor position required in advance.

2) Push the latch according to the arrow on top cover, then turn and take off top cover of the sensor (see figure 3.3.1).

3) Pull the sensor latch to move the sensor to the required position (refer to the direction shown in the figure 3.3.2).

4) Press down top cover latch and assemble the top cover;
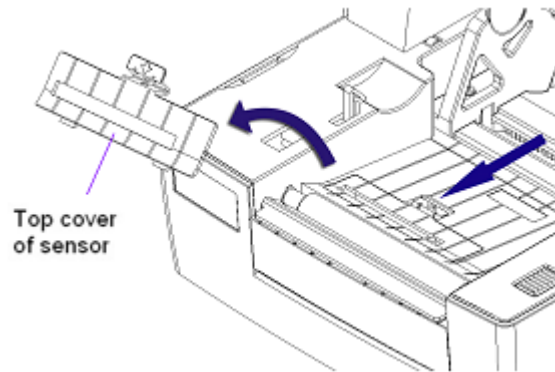
Figure 3.3.1
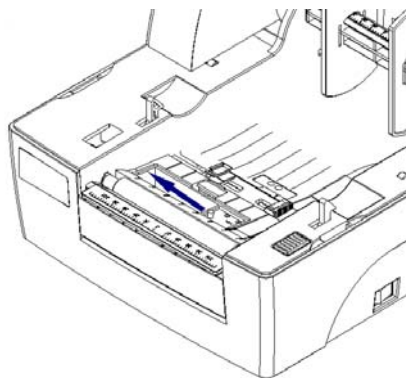
Figure 3.3.2

3.4 Print position adjustment

1) Adjust vertical print position

When the situation like figure A or B occurs, adjust the vertical print position to figure C.
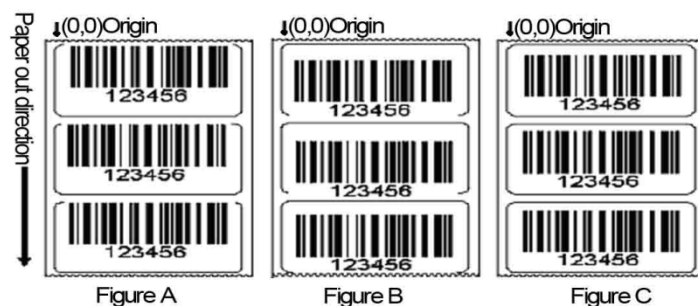
Figure 3.4.1

⚠ **Caution:**

✧ Figure A indicates that the print position is upper than the correct position. Adjust it in the negative direction (The data symbol in the option "Vertical position adjustment" is "+");

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✧ Figure B indicates that the print position is lower than the correct position. Adjust it in the positive direction. (The data symbol in the option "Vertical position adjustment" is "-").

2) Adjust horizontal print position

When the situation like figure D or E occurs, adjust the horizontal print position to figure F **.**
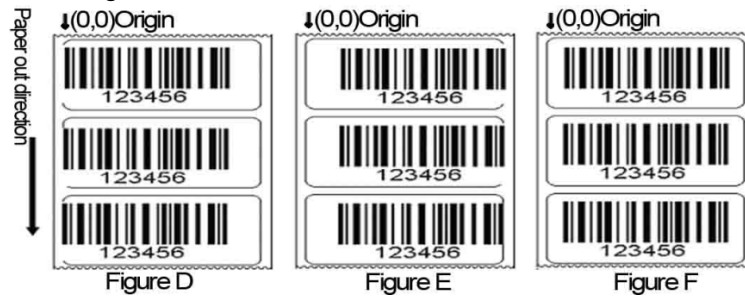
Figure 3.4.2

⚠**Caution:**

✧ Figure D indicates that the print position is on the left of the correct position. Adjust it in the positive direction (The data symbol in the option "Horizontal position adjustment" is "+");

✧ Figure E indicates that the print position is on the right of the correct position. Adjust it in the negative direction. (The data symbol in the option "Horizontal position adjustment" is "-").

3) Adjust tear-off position

When the situation like figure G or H occurs, adjust the tear-off position to figure J..
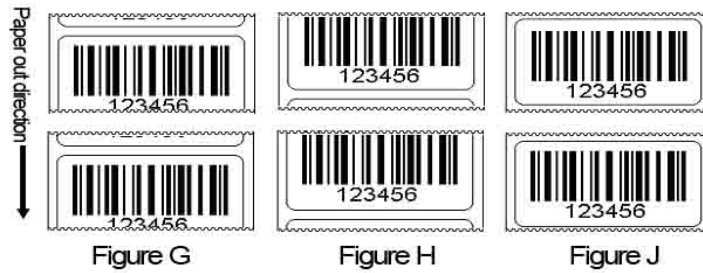
Figure 3.4.3

⚠ **Caution:**

✧ Figure G indicates that the tear-off position is upper than the correct position. Adjust it in negative direction; (The data symbol in the option "Tear-off position adjustment" is "-");

✧ Figure H indicates that the tear-off position is lower than the correct position. Adjust it in positive direction. (The data symbol in the option "Tear-off position adjustment" is "+").

4 Routine maintenance

Clean the print head, platen roller and sensor every month according to the following steps. If the printer works in a tough environment, the maintenance times can be properly increased.

4.1 Cleaning print head

When any of the following cases occurs, the print head should be cleaned:

➢ Printout is not clear;

➢ Feed or retract paper with big noise;

➢ Something else sticks onto the print head.

Follow the steps below to clean the print head:

1) Turn off the printer and open the top cover;

2) Lift up the top cover and find the print head. Wait for print head to cool down completely if it has just finished the printing;

3) Wipe off the dust and stains on the surface of the print head with alcohol cotton ball (it should be wrung out);

4) Wait for 5 to 10 minutes until the alcohol evaporates completely, press down print head module, and close the top cover.

4.2 Cleaning the sensor

When any of the following cases occurs, the mark sensor should be cleaned:

➢ During printing, the printer sometimes misinforms paper end;

➢ The printer does not alarm when paper end;

➢ The printer cannot identify marks effectively.

Follow the steps below to clean the mark sensor:

A. Transmissive sensor

1) Turn off the printer and open the top cover;

2) Wipe off the dust and stains on the surface of the transmissive sensor with alcohol cotton ball (it should be wrung out);

3) Wait for 5 to 10 minutes until the alcohol evaporates completely, and close top cover.

B. Reflective sensor

1) Turn off the printer and open the top cover;

2) Find the reflective sensor and take off the top cover board of it;

3) Wipe off dust and stains on the surface of sensor with alcohol cotton ball (it should be wrung out);

4) Wait for 5 to 10 minutes until the alcohol evaporates completely, close the top cover board of the sensor, and close the top cover.

4.3 Cleaning platen roller

When any of the following cases occurs, the platen roller should be cleaned:

➢ Printout is not clear;

➢ Feed and retract paper with big noise;

➢ Something else sticks onto the platen roller.

Follow the steps below to clean the platen roller:

1) Turn off the printer and open the top cover;

2) Uplift the top cover and find the platen roller. Wait for the platen roller to cool down completely if it has just finished printing;

3) Wipe off the dust and stains on the surface of the platen roller with alcohol cotton ball (it should be wrung out) while turning the platen roller;

4) Wait for 5 to 10 minutes until the alcohol evaporates completely, and close the top cover.

⚠ **Caution**

✧ Before starting routine maintenance of printer, make sure the printer is turned off;

✧ Do not touch the surface of print head with hands or metal. Do not use forceps in case it scratches the surface of the print head, platen roller and sensor;

✧ Do not use organic solvent like gasoline, acetone etc. to clean the print head or platen roller;

✧ Do paper calibration again after cleaning the paper end sensor;

✧ Please wait for alcohol to evaporate completely before starting printing.

5 Troubleshooting

When the printer has a malfunction, please handle it with reference to this charter. If it still can not be cleared, please contact your local dealer.

5.1 Troubleshooting

The error LED flashes and the buzzer beeps when an error or exceptional status occurs. At this time, the printer stops the printing. Please handle it with reference to the following method:

Error indication mode:

Error	Buzzer	Error LED
Print head up	2 beeps	Flash 2 times circularly
Paper end	3 beeps	Flash 3 times circularly
Ribbon out	4 beeps	Flash 4 times circularly
Abnormal temperature of print head	No beep	Flash 5 times circularly
Mark location failure	No beep	Flash 6 times circularly
Mark calibration error	No beep	Flash 7 times circularly

Troubleshooting methods:

Error	Reason analysis	Solutions
Print head up	Print head is lifted up.	Please press down the print head.
	The micro switch has a failure.	Contact the maintainer.
Paper end	Paper roll is used up or no paper roll is installed.	Install a paper roll.
	Paper jam	Clear the paper jam.
	Paper roll surface is dirty or damaged.	Please skip the dirty or damaged part.
	Paper roll breaks away from the mark sensor.	Install a paper roll again.

	The surface of mark sensor is dirty.	Clean mark sensor surface.
	The position of reflective sensor is not correct.	Adjust the sensor position according to the description in 3.5.
	Paper roll type does not match with mark sensor type.	Set the paper type in printer driver to make it consistent with actual paper type.
Lack of ribbon	Ribbon is used up	Install ribbon
	Ribbon is jammed	Clear up the ribbon
	Ribbon sensor has failures	Replace the ribbon sensor
Print head temperature abnormal	Operating environment temperature is too high, causing overheating print head.	Please improve ventilation condition. The printer can return to normal with the fall of temperature.
	Print darkness is too high.	Lower the print darkness properly.
	Paper is jammed in the path, causing heat accumulation and overheating print head.	Clear paper jam. Check if the print head test pattern is normal or not after the temperature of print head drops. If normal, the printer can continue to work; otherwise please replace the print head.
Mark location failure or mark calibration failure	Paper type does not match with sensor type.	Set the paper type in printer driver to make it consistent with actual paper type.
	Something wrong with marked paper (for example: no mark or unclear mark)	Use the required media.
	Mark height is less than the required height.	

Table 5.1.1

5.2 Print quality problems

Malfunction	Reason	Solution
Printout is unclear or has stains.	Print head or platen roller is dirty.	Clean the print head or platen roller.
	Paper does not meet the requirement.	Use recommended paper.
	Print darkness is too low.	Increase print darkness.
	Paper is not installed correctly.	Install paper roll correctly.

Table 5.2.1

Appendix

Appendix 1 Technical specification

Appendix 1.1 Main technical specifications

Item		Parameters
Printing	Resolution	203DPI
	Print method	Thermal/Thermal transfer
	Print width (Max.)	108mm
	Print speed (Max.)	127mm/s
	CPU	32bit RISC microprocessor
	Memory	FLASH:8MB SDRAM:32MB Extended FLASH: 16MB
	Print head temperature detection	Thermal resistor
	Print head position detection	Micro switch
	Paper mark detection	Photoelectric sensor
	Paper existence detection	Photoelectric sensor
	Communication interface	Standard configuration: RS-232 serial interface, USB interface, Ethernet interface; Optional: WIFI or Bluetooth interface
Media	Paper type	Continuous paper, label paper, marked paper, etc.
	Paper roll OD (Max.)	127mm(5寸)
	Paper roll width (Max.)	118mm
	Paper roll ID	25mm(1 inch) /38mm(1.5 inch)
	Ribbon length (Max.)	300m
	Ribbon ID	25mm

	Paper out mode	Tear off
Character Barcode Graphics	Character enlargement/rotation	Support four types of rotation printing (0°, 90°, 180°, 270°) Bitmap fonts can be enlarged up to 10 times. Vector fonts can be zoomed without scale.
	Character set	7 bitmap fonts and 1 vector font are built-in.
		User-defined bitmap and vector fonts can be downloaded into the printer.
	Graphics	Plain bitmaps in binary system, HEX, PCX, and BMP files can be downloaded to FLASH or RAM.
	Barcode	1D barcode: Code39, Code93, Codabar, Code128(Subsets A, B, and C), EAN-13, EAN-8, UPC-A, UPC-E, UPC/EAN Extensions, Planet Code, Standard 2 of 5, Industrial 2 of 5, Interleaved 2 of 5, LOGMARS, GS1 DataBar(RSS) 2D barcode: PDF 417, MicroPDF417, QR Code, DataMatrix, MaxiCode, GS1 Composite
Operation interface	Button, LED	3 buttons, 3 LEDs
Power adapter	Input	AC 110～240V, 50/60Hz
	Output	DC 24V, 2.5A
Environmental requirements	Operating environment	+5℃～45℃, 20%～90%(40℃)
	Storage environment	-40℃～60℃, 20%～93%(40℃)
Physical features	Overall size	300mm(L) ×252mm(W)×190mm(H)
	Weight	About 3.5 Kg

Table appendix 1.1.1

Appendix 1.2 Technical specifications of paper

1)   Specifications of continuous paper (unit: mm)

Type	Illustration	Index
Continuous paper without adhesive	Paper without adhesive	Print paper width: $18 \leq a \leq 120$
Continuous paper with adhesive	Paper with adhesive	Base paper width: $18 \leq a \leq 120$ Print paper width: $18 \leq b \leq 118$ Paper margin width: $c \leq 1$

Table appendix 1.2.1

2)   Discontinuous paper specifications (unit: mm)

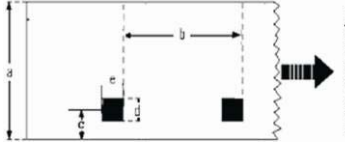| Type	Illustration	Index
Discontinuous label paper with adhesive		Base paper width: $18 \leq a \leq 120$ Paper margin width: $b \leq 1$ Label width: $18 \leq c \leq 118$ Label height:: $d \geq 10$ Gap width: $e \geq 2$
Discontinuous punched paper without adhesive		Punched paper width: $18 \leq a \leq 120$ Punched paper height: $b \geq 10$ Detection hole position: $c \leq a/2$ Detection hole width: $d \geq 5$ Detection hole height: $e \geq 2$

Discontinuous marked paper without adhesive		Marked paper width: 18≤a≤120 Marked paper height: b≥10 Mark position: c≤a/2 Mark width: d≥10 Mark height: e≥4

Table appendix 1.2.2

Appendix 2 Self-test page

Self-test page includes printer configuration information, printer internal fonts and print head test information. The printer configuration information and printer internal fonts reflect the current internal configuration of the printer, and the print head test information reflects the status of the print head.

Printer configuration information

Printer configuration information (BPLZ) (this information is related to the configuration of the printer.)

          PRINTER CONFIGURATION
LP46 Trio……………………..…………..MODEL
FV2.****………………………………… MAIN FIRMWARE
BPLZ………………………………..…COMMAND
7………………………………………… DARKNESS
+0………………………………………... TEAR OFF
TEAR OFF……………….…………… PRINT MODE
CONTINUOUS…………………..……... MEDIA TYPE
MEDIA………………………………… SENSOR TYPE
MANUAL……………………………. SENSOR SELECT

DIRECT-THERMAL…………………… PRINT METHOD

56………………………………….. PRINT WIDTH

640. ………………………………… LABEL LENGTH

11IN 300MM…………………………. MAXIMUM LENGTH

CONNECTED………………………….. USB COMM

NONE…………………………………… PARALLEL COMM

115200………………………………... BAUD

8 BITS…………………………………. DATA BITS

NONE…………………………………… PARITY

HARD………………………………… HOST HANDSHAKE

NONE………………………………… PROTOCOL

<~>   7EH………………………… CONTROL CHAR

<^>   5EH………………………... COMMAND CHAR

<,>   2CH………………………… DELIM. CHAR

NO MOTION…………………………. MEDIA POWER UP

NO MOTION…………………………. HEAD CLOSE

DEFAULT…………………………….. BACKFEED

+0……………………………………… LABEL TOP

+0……………………………………… LEFT POSITION

125mm/s……………………………… PRINT SPEED

125mm/s………………………………. FEED SPEED

125mm/s………………………………. BACKFEED SPEED

203DPI………………………………... RESOLUTION

16360K…………………………………R: RAM

1472K…………………………………...E: ONBOARD FLASH

NONE………………………………….. FORMAT CONVERT

0123456789…………………………… SERIAL NUMBER
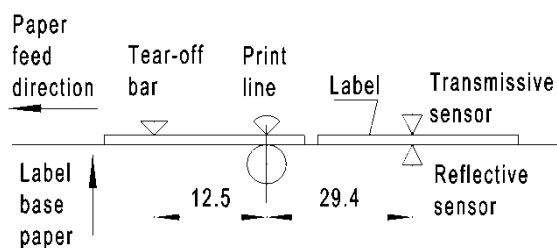
Appendix 3 Print and paper out position

Figure appendix 3.1

⚠ **Caution**

✧ To take marked paper for example, the figure above explains the print and paper out position;

✧ Discontinuous paper locates by the front edge of the mark;

✧ Refer to Section 3.4 to adjust the print and paper out position

Appendix 4 Communication interface

Appendix 4.1 Serial interface

1) Interface signal

Pin	Signal name	Signal direction	Function
1	None		
2	RXD	Input	Data input
3	TXD	Output	Data output
4	DTR	Output	Data terminal ready
5	SG	─	Signal ground
6	DSR	Input	Data device ready
7	RTS	Output	Request transmission
8	CTS	Input	Allow transmission
9	FG	─	Frame ground

Table appendix 4.1.1 printer signal and status

2) Wiring diagram

```
PC              Printer
TXD---------------RXD
RXD---------------TXD
CTS---------------RTS
RTS---------------CTS
SG -----------------SG
```

Note:

The following connection method can be used, which only needs 3 wires. This method applies to small data amount or XON/XOFF flow control:

```
PC              Printer
TXD---------------RXD
RXD---------------TXD
SG ----------------SG
```

Appendix 4.2 USB interface

USB interface meets USB1.1 protocol standard and is optional.

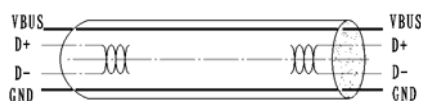USB interface transmits signal and power via a four–wire cable, as shown in the following figure:

Figure appendix 4.2.1 USB cable

Wire D+ and D- in figure appendix 4.3.1 are used for signal transmission, and the VBUS is +5V.

Appendix 4.4 Ethernet interface

Ethernet interface meets the standard communication protocol of 10/100M BASE-T in IEEE802.3, and the Ethernet interface is optional.

PIN	Signal name	Signal direction	Function
P1	TX+	Output +	Difference data signal output+
P2	TX-	Output -	Difference data signal output-
P3	RX+	Input +	Difference data signal input+
P4	Reserved	——	——
P5	Reserved	——	——
P6	RX-	Input -	Difference data signal input-
P7	Reserved	——	——
P8	Reserved	——	——
G+	VCC	Power	SPEED_LED power
G-	SPEED_LED	Output	SPEED LED signal
Y-	LINK_LED	Output	LINK LED signal
Y+	VCC	Power	LINK_LED power

Table appendix 4.4.1 Ethernet signal list