# Alere™

# Universal Printer User's Manual

BTP-L560 Shandong New Beiyang Information Technology Co., Ltd

# Content

# Safety Instructions

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

## 1. Safety Warning

⚠ The print head is a thermal element. It is at a high temperature during printing and just after operation. Do not touch it or its peripherals for safety's sake.

⚠ The print head is an ESD-sensitive device. To prevent damage, do not touch the print head.

## 2. Notices

1. Install the printer on a flat and stable surface.

2. Reserve adequate space around the printer so that the operation and maintenance can be performed properly.

3. Keep the printer away from water, and do not expose the printer to direct sunlight, strong light or heat.

4. Do not use or store the printer in a place exposed to heat, moisture or serious pollution.

5. Do not place the printer in a place exposed to vibration or impact.

6. Keep the printer out of moist areas to avoid condensation. If condensation occurs, do not turn on the power until it has completely gone away. Condensation build up could cause electrocution.

7. Connect the printer power to an appropriate outlet. Avoid sharing one electrical outlet with large instruments or other devices that may cause the fluctuation of voltage.

8. Disconnect the power when the printer is not in use.

9. Do not spill water or other conductive materials into the printer (e.g. metal). If this happens, turn off the power immediately.

10. Do not attempt to print when there is no paper installed, otherwise the print head and roller will be damaged.

11. To ensure quality print and normal lifetime, use the recommended paper.

12. Shut down the printer when connecting or disconnecting data cables to avoid damages to control board.

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

14. Do not disassemble the printer.

15. Keep this manual carefully in hand for reference.

# 1. Product Description

## 1.1 Introduction

BTP-L560 printer is a high performance thermal label printer with a simple structure for easy operation. It adopts modular design and can accept up to an 80mm (maximal diameter) paper roll. Equipped with serial and USB ports, the printer provides real-time printing when connected with the testing device.

**Main Features:**

- Thermal printing.
- Low noise, 150mm/s high speed printing.
- Easy paper loading, convenient operation, easy to use.
- 32 bit high speed microprocessor.
- Automatically temperature controlled, and high printing quality.
- ESC/POS programming language.

## 1.2 Material List

Open the packaging, and check the parts according to the packing list. Please contact if there is shortage or damage.



Paper Spool

User Manual

Printer

Power Adapter

Quick Reference Guide
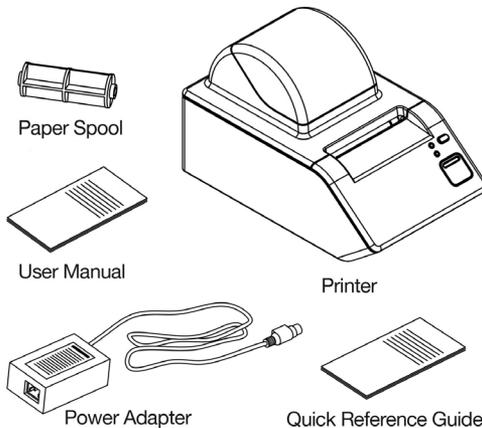
*Figure 1.2.1*

## 1.3 Printer Installation Position

Place the printer on a flat stable surface that is free of moisture, water and dust. The maximum tilt angle should not exceed ±15° during installation.

## 1.4 Power Adapter Connection

1. Ensure the power switch is turned off.
2. Connect the AC power cord with power adapter, and then insert the other end of the power adapter into the power adapter interface of printer.
3. Insert the other end of AC power cord into a 110V/220V wall socket.

### ⚠ Caution:

When the printer is not in use, disconnect the power.

### 1.5  Communication Cable Connection

1.  Confirm the power of printer is turned off.
2.  Insert the data cable to the suitable interface on the back of the printer, and fixed it with a screw or clip spring.
3.  Connect other end of the communication cable to the testing device.

⚠️  **Warning:**

**Don't connect or disconnect the serial or USB data cable when the power is on.**

# 2. Printer Operation

## 2.1  Appearance and Module

The detailed structure of printer is as follows:

1—Window

2—Top cover

3—Tear-off bar

4—Front cover

5—Cover open button

6—LED

7—Feed button

8—Bottom cover

9—Warning label

10—Micro switch

11—Sensor cover

12—Right latch

13—Paper end sensor

14—Paper housing

15—Paper loading label

16—Paper spool

17—Gear

18—Platen roller sleeve

19—Print roller

20—Upper path

21—Left latch

22—Spanner

23—Print head

24—Product label

25—Rubber foot

26—USB interface

27—Interface fixing plate

28—Serial interface

29—Power adapter interface

30—Power switch
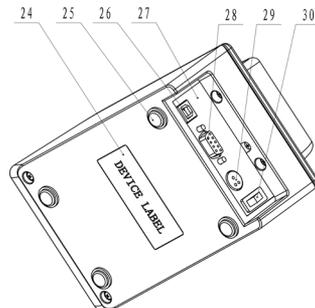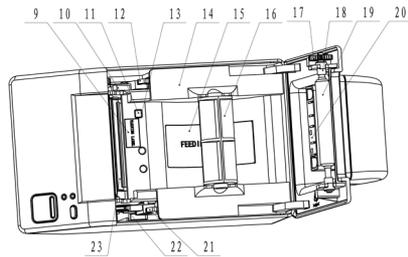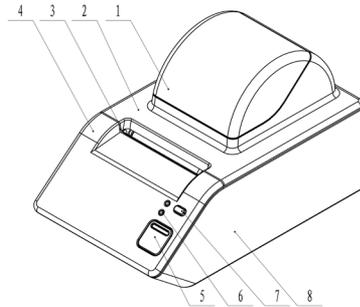
## 2.2 Introduction of Main Module

1. Paper spool (16): to support paper roll.
2. Micro switch (10): to detect print head lift up/press down.
3. Paper end sensor (13): to detect and position media like label paper, etc.
4. Power switch (30): power control switch of printer.

## 2.3 Function of LED and Button

### 2.3.1 Function of LED

| LED name | Status | Explanation |
|---|---|---|
| Power LED (green) | Always On | Printer power is on |
| Error LED (red) | Always Off | Printer is in standby status. |
| | Flashing | Printer error. |

*Table 2.3.1*

### 2.3.2 Function of Button

| Button | Function | Explanation |
|---|---|---|
| Feed button | Press down button to feed paper | For label printing: the printer only feeds one label; for continuous paper (paper without hole cut-outs), the printer does not stop feeding paper until the button is released. |
| | Print self-test page | If turning on the power while pressing down the feed button, the printer will print out the main menu. According to the menu's operation prompt, select "print configuration information" through the feed button. For operation steps, please refer to 2.5.1. |
| | Parameter configuration | Refer to appendix 3 to modify the printer parameters. |
| | Sensor verification | For sensor verification method, please refer to 2.5.3. |

*Table 2.3.2*

### 2.3.3 LED

| Error information | LED Flash Status |
|---|---|
| Out of paper | |
| Print head is lifted up | |
| Print head voltage is abnormal | |
| Print head temperature is abnormal | |
| Can not find the label cut-outs or the printer does not recognize labels | |

*Table 2.3.3*        Alere Universal Printer User Manual      3

### 2.3.4 Function of Button Configuration

Parameters can be configured via long-press time or short-press time according to the printed configuration information. For the detailed configuration information, please refer to appendix 3.

## 2.4 Paper Loading

1.  Press down the cover open button to open the top cover to the position shown in figure 2.4.1.

2.  Open the top cover to the position shown in figure 2.4.2.
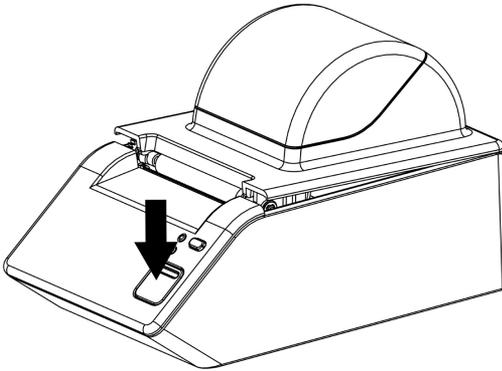


*Figure 2.4.1*
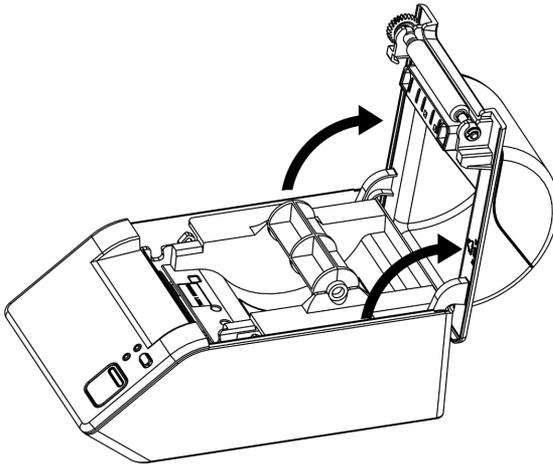


*Figure 2.4.2*

3. Load the paper roll onto the paper roll spool, and put the paper roll spool into the paper housing, as shown in figures 2.4.3 and 2.4.4.
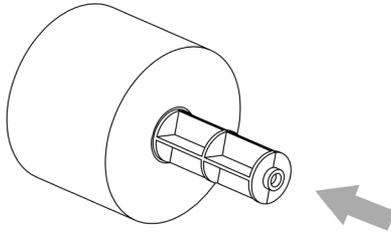


*Figure 2.4.3*
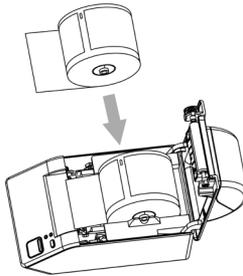


*Figure 2.4.4*

4. Close the top cover.

⚠ **Caution:**

The print side of the paper should be facing down.

## 2.5 Start the Printer

### 2.5.1 Power ON and Self-Test

Ensure the power adapter and the data cables are correctly connected. When turning on the power the green LED will be on and the red LED off.

⚠ **Caution:**

If the printer does not power on or does not work normally after powered on, please contact Alere.

### 2.5.2 Print Self-Test Page

1.  Ensure the printer's power source is connected and the paper roll with spool is loaded into the paper housing.

2.  Ensure the green LED is off and the printer is powered off.

    - Press and hold the feed button.

    - While holding the feed button, turn on the power switch.

    - When the printer starts feeding, release the feed button.

    Press the feed button twice and hold (at least 1s) and the printer will print out the configuration information (for a sample print out, refer to appendix 2) and the prompt information ("Press and Release FEED to continue SELF-TEST printing" and "Press and Hold FEED to configure the printer"), and then it will enter into pause and waiting status with the red LED flashing.

3.  Pressing down the feed button for a short time, the printer will print out character test page, and the self-test page printing is completed. If the feed button is pressed and held down, the printer will print out the interface with the title of "MAIN MENU".

### 2.5.3 Label Verification

**Manual Verification**

1.  Power off the printer.
2.  Install the labels or print paper.
3.  Press down the feed button while turning on the power switch. After the printer starts feeding the paper, release the feed button, waiting for it to finish the printing of the main menu.
4.  Press down the feed button three times, and then hold the feed button down (for at least 1 second). The printer will feed the paper and start the label verification.

- After finishing the verification, the printer enters into standby status; if the mark cannot be found, the printer will distinguish it to be continuous paper.

⚠ **Caution:**

Manual verification of the labels is needed under each of the following situations:

- Install and use of the printer for the first time.
- Re-installation of the printer after being disconnected.
- The sensor is used for the first time after cleaning.
- The label cannot be effectively recognized during print.
- The operation environment is changed.

⚠ **Caution:**

- Once the verification of labels is completed, the printer is ready.
- After the above steps and sensor cleaning, if the printer fails the label verification, please contact Alere.

# 3. Printer Adjustment

## 3.1 Adjustment of Parameters

3.1.1 Adjustment and Adjustment Range

| Adjustment object | Setting range | Remark |
|---|---|---|
| Print darkness | 00—90 | Set the print darkness to a lower grade as long as the print quality is acceptable. This will extend the print head's durability. |
| Darkness difference of label paper and continuous paper | 20—40 | Set the darkness of label paper to be higher than that of continuous paper. Default value is 30. |

*Table 3.1.1*

# 4. Routine Maintenance

Clean the print head, roller and sensor according to the following steps.

## 4.1  Cleaning the Print Head

If the following cases occur, the print head should be cleaned:

- Printout is not clear.
- Paper feeds and retracts with excessive noise.
- Debris on the print head.

The following steps are for print head cleaning:

1. Turn off the power and open the top cover.
2. Wait for the print head to cool down completely.
3. Wipe off dust or particles on the surface of the print head with a soft cotton cloth dampened with 70% isopropyl alcohol. (It should not be dripping.)
4. Wait for 5 to 10 minutes until the alcohol evaporates completely. Press down the print head module and close the top cover.

## 4.2  Cleaning the Sensor Cover

The sensor cover should be cleaned when the following occur:

- During printing, the printer LED flashes the out of paper pattern, when paper is installed.
- The printer does not alarm the paper end LED pattern when there is no paper left.
- The printer does not identify labels correctly.

The following steps are for paper end sensor cover cleaning:

1. Turn off the printer power and open the top cover.
2. Wipe off dust or particles on the dustproof cover surface of the paper end sensor with soft cotton cloth damped with 70% isopropyl alcohol. (It should not be dripping.)
3. Wait for 5 to 10 minutes until the alcohol evaporates completely, press down the print head module and close the top cover.

## 4.3  Cleaning the Print Roller

If the following cases occur, the roller should be cleaned:

- Printout is not clear.
- Paper feeds and retracts with excessive noise.
- Debris on the print roller.

The following steps are for print roller cleaning:

1. Turn off the power and open the top cover.
2. Wait for the print roller to cool down completely.
3. Wipe off dust or particles on the surface of the print roller with a soft cotton cloth dampened with 70% isopropyl alcohol. (It should not be dripping.)
4. Wait for 5 to 10 minutes until the alcohol evaporates completely, press down the print head module and close the top cover.

⚠️ **Warning:**

- **Before starting routine maintenance of the printer, make sure the power is turned off.**
- **Do not touch the surface of the print head with hands or metal. Do not use forceps; this will prevent the print head, print roller and sensors from being scratched.**
- **Do not use organic solvent like gasoline, acetone etc.**
- **Please wait for the alcohol to evaporate completely before printing.**

# 5. Troubleshooting

If the printer has an error, please refer to this chart for troubleshooting steps. If it still cannot be solved, please contact Alere.

## 5.1  LED Status Indication

The red LED flashes when the printer has an error. At this time, the printer will stop printing and the connection between the testing device and printer will be terminated. Please check the pattern that the LED continuously flashes and then troubleshoot per the following:

| Error LED status | Reason | Solution |
|---|---|---|
| Flash twice | Paper end /no paper present | Load paper roll again. |
| | Reflection sensor error | Contact Alere. |
| Flash three times | Print head lifted up | Press down the print head. |
| | Micro switch error | Contact Alere. |
| Flash five times | Abnormal voltage | Check the power supply and power adapter connection to the printer and the wall socket. Visibly inspect both connections for damage as well. |
| | Voltage sampling module error | Contact Alere. |
| Flash six times | Print head temperature is abnormal | Wait until the temperature of the print head returns to normal working range. |
| | Temperature sampling module error | Contact Alere. |

*Table 5.1.1*

## 5.2 Printing Quality Problem

| Malfunction | Reason | Solution |
| --- | --- | --- |
| Printout is unclear or is illegible. | Print head or print roller is dirty | Clean the print head or roller |
| | Paper quality problem | Use recommended paper |
| | Low print darkness | Increase the print darkness |

*Table 5.2.1*

# Appendix

## Appendix 1. Technical Specification

### Appendix 1.1 Main Technical Specifications

| Item | | BTP-L560 parameter |
| --- | --- | --- |
| Printing | Resolution | 203DPI |
| | Print mode | Thermal |
| | Print width (Max.) | 56mm |
| | Print speed (Max.) | 150mm/s |
| | CPU | 32bit RISC kiosk microprocessor |
| | Memory | SDRAM: 2MB   FLASH: 2MB |
| | Print head temperature detection | Thermal resistor |
| | Print head position detection | Micro switch |
| | Paper mark detection | Photoelectric sensor |
| | Communication interface | Standard configuration RS-232 serial, USB interface |
| Media | Paper type | Continuous paper, label paper |
| | Paper OD (Max.) | 80mm |
| | Paper roll width (Max.) | 62mm |
| | Paper out mode | Tear off |
| Character Barcode Image | Character enlargement/rotation | All characters can be enlarged 1–6 times horizontally and vertically.Rotation printing (0°, 90°, 180°, 270°) |
| | Character set | ASCII character<br>International character set: USA, France, Germany, UK, Denmark I, Sweden, Italy, Spain, Japan, Norway, Denmark II<br>Code page: 437, 850, 852, 860, 863, 865, 858, 866, 1252, 862, Katakana, 1253, 737 |
| | | User-defined font: User can define font and download it to FLASH or SDRAM. |
| | Image | Plain bitmap in binary system, which can be downloaded to FLASH or RAM. |
| | Barcode | **One-dimensional barcode:** UPC-A, UPC-E, EAN13, EAN8, CODE39, CODE93, ITF, CODABAR, CODA128, etc.<br>**Two-dimensional barcode:** PDF417, MAXICODE, QRCODE,GS1 etc. |

| Item | | BTP-L560 parameter |
|---|---|---|
| Operation interface | Button, LED | 1 button, 2 LEDs |
| Power adapter | Input | AC 110~240V, 50/60Hz |
| | Output | DC 24V, 1.5A |
| Environmental requirements | Operation environment | +5°C - 45°C, 20%~90% (40°C) |
| | Storage environment | -40°C - 60°C, 20%~93% (40°C) |
| Physical features | Overall size | 193.5mm*113mm*120.5mm (L*W*H) |
| | Weight | 655g |

*Appendix table 1.1.1*

### Appendix 1.2 Paper Technical Specifications

The maximum paper height is decided by the size in the printer's configured memory.

1 Continuous paper specification (unit: mm)

| Type | Figure | Index |
|---|---|---|
| Without adhesives, continuous, strip paper |  without adhesives | Paper width: a=62mm |

*Appendix table 1.3.1*

2 Discontinuous paper (unit: mm)

| Type | Figure | Index |
|---|---|---|
| With adhesives, discontinuous, punched label paper |  | Base Paper width: a=62<br>Label width: b=56<br>Label gap: c=74.8<br>Label height: d=70<br>Label position: e=1.5<br>Detection hole height: f=8<br>Detection hole width: g =3<br>Detection hole position: h=7 |

*Appendix table 1.3.2*

## Appendix 2. Self-Test Page

Printer configuration information contained in the self-test page:

1. Configuration information of printer

Boot Firmware          :FV1.012

Main Firmware          :FV1.011

## H/W Parameters

| | |
|---|---|
| Flash Memory Size | :2M Bytes |
| Flash Logos/Fonts | :512K Bytes |
| Resolution | :203×203 DPI |
| Print Width (max) | :56mm |
| Fixed LeftMargin | :0mm |
| Fixed RightMargin | :0mm |
| Print Speed (max) | :150mm/s |
| Dark Scale | :80 |
| CRCommand | :Disabled |
| Current Codepage | :PC437 |

## Communication Interface

| | |
|---|---|
| Interface Type1 | :RS232 |
| Rx Buffer Size | :4K Bytes |
| Baud Rate | :9600 bps |
| Data Bits | :8 |
| Stop Bits | :1 |
| Parity | :None |
| Handshaking | :DTR/DSR |
| Command CR | :Disabled |
| Data Received Error | :Print '?' |
| Interface Type2 | :USB_ BTP-L560_1 |
| Interface Mode | :WinDriver Mode |
| Rx Buffer Size | :4K Bytes |

## Resident Fonts

| | |
|---|---|
| Font Type | :ELITE |
| Code Page | :PC437, PC850 |
| | :PC852, PC860 |
| | :PC863, PC865 |
| | :PC858, PC866 |
| | :PC1252, PC862 |
| | :PC1253, PC737 |
| | :KATAKANA |

## International Character

:U.S.A

:France

:Germany

:U.K.

:Denmark I

:Sweden

:Italy

:Spain

:Japan

:Norway

:Denmark II

## Bar Code Available

:UPC-A

:UPC-E

:EAN-8

:EAN-13

:CODE 39

:CODE 93

:ITF

:CODABAR

:CODA128

:PDF417

:QRCODE

:MAXICODE

:GS1

## Appendix 3. Button Configuration

The following steps are for the printer button parameter configuration:

1.  Ensure the printer is connected to its power source and paper is loaded. Press down the feed button while turning on the power, then release the feed button, the printer will print out the main menu of button configuration and button operation prompts.

2.  All the numbers in the menus correspond with the times button is pressed down for a short time; the current selection is confirmed by pressing down the button for a long time (at least 1 second).

3.  Pressing down the feed button twice for a short time and once for a long time (at least 1 second), the printer will print out the configuration information and prompt the information ("Press and Release FEED to continue SELF-TEST printing" and "Press and Hold FEED to configure the printer), and then will enter into pause and waiting status with the red LED flashing.

4.  Pressing and holding down the feed button will print out the interface with the title of "MAIN MENU".

5.  Pressing down the feed button three times for a short time and once for a long time, the printer will print out the interface with the title of "CONFIGURATION". Select the configuration according to the number before the menu.

**Menu Structure of Step 1:**

```
                           ┌─────────────┐
                           │  MAIN MENU  │
                           └──────┬──────┘
          ┌───────────────────────┼───────────────────────┐
   ┌──────────────┐       ┌────────────────┐       ┌──────────────┐
   │     Exit     │       │ Print Self Test│       │  Calibration │
   │     > 1      │       │      > 2       │       │     > 3      │
   └──────────────┘       └────────────────┘       └──────────────┘
```

**Menu Structure of Step 4:**

```
                              ┌─────────────┐
                              │  Main Menu  │
                              └──────┬──────┘
   ┌──────────┬──────────────┬───────┼──────────────┬──────────────┐
┌────────┐ ┌────────────┐ ┌────────────┐ ┌───────────┐ ┌──────────────┐
│  Exit  │ │Print Self  │ │Configuration│ │Sensor Test│ │Print Statistics│
│  > 1   │ │Test   > 2  │ │     > 3    │ │    >4     │ │      > 5     │
└────────┘ └────────────┘ └────────────┘ └───────────┘ └──────────────┘
```

**Menu Structure of Step 5:**

```
                           ┌───────────────┐
                           │ Configuration │
                           └───────┬───────┘
   ┌────────┬────────┬────────┬────┼────┬────────┬────────┐
┌──────┐┌──────┐┌──────┐┌──────┐┌──────┐┌──────┐┌──────┐
│Exit  ││Exit  ││Commu-││Mech.&││Print ││Set   ││Font  │
│without││with ││nica- ││Hard- ││Set-  ││Default││Set-  │
│Save  ││Save  ││tion  ││ware  ││tings ││Config││tings │
│> 1   ││ > 2  ││ >3   ││ >4   ││ > 5  ││ > 6  ││ >7   │
└──────┘└──────┘└──────┘└──────┘└──────┘└──────┘└──────┘
```
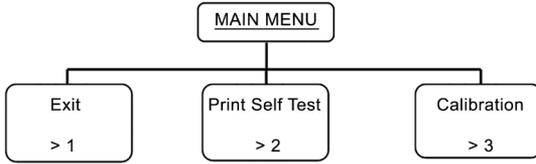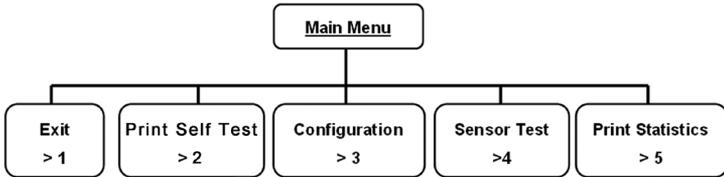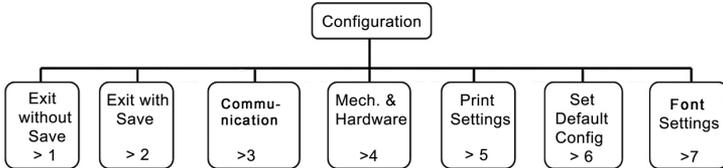
**Communication  >3  Menu Structure of Communication Interface.**

```
                        ┌───────────────┐
                        │ COMMUNICATION │
                        └───────┬───────┘
      ┌─────────────┬────────────┼────────────┬────────────┐
┌──────────┐  ┌──────────┐  ┌──────────┐  ┌──────────┐
│ Back to  │  │   Usb    │  │  Serial  │  │ Rx Buff  │
│ last menu│  │Interface │  │Interface │  │   Size   │
│   >1     │  │   >2     │  │   >3     │  │   >4     │
└──────────┘  └──────────┘  └──────────┘  └──────────┘
```
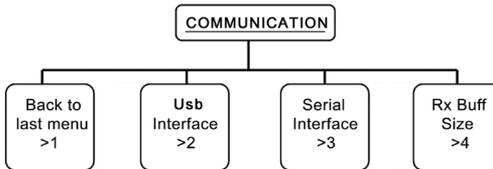
**Communication** USB Interface >2 Relevant Configuration Parameter of Communication Interface:

```
                        ┌─────────────────────────┐
                        │  USB MODE:WinDriver Mode │
                        └─────────────────────────┘
              ┌─────────────────┼─────────────────┐
        ┌───────────┐     ┌───────────┐     ┌───────────┐
        │  Back to  │     │ WinDriver │     │  API MODE │
        │ last menu │     │   Mode    │     │    >3     │
        │    >1     │     │    >2     │     │           │
        └───────────┘     └───────────┘     └───────────┘
```
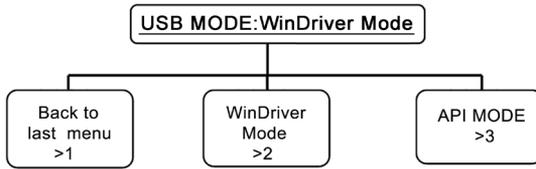
**Communication** Rx Buff Size >4 Relevant Configuration Parameter of Receive Buffer:

```
                      ┌─────────────────────────┐
                      │  Rx Buff Size: 4K Bytes  │
                      └─────────────────────────┘
           ┌──────────────┬──────────┴──────┬──────────────┐
     ┌───────────┐  ┌───────────┐    ┌───────────┐  ┌───────────┐
     │Back to last│  │ 4k Bytes  │    │ 45 Bytes  │  │ 64k Bytes │
     │   menu     │  │           │    │           │  │           │
     │    >1     │  │    >2     │    │    >3     │  │    >4     │
     └───────────┘  └───────────┘    └───────────┘  └───────────┘
```
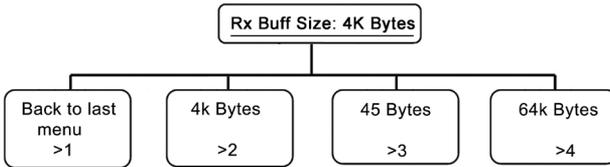
**Communication** Serial Interface >3 Relevant Configuration Parameter of Serial Interface:

```
                               ┌────────┐
                               │ Serial │
                               └────────┘
```

| Back To Last Menu >1 | Baud Rates (default: 9600 bps) >2 Choices: 9600 bps 19200 bps 38400 bps 57600 bps 4800 bps 2400 bps 1200 bps 115200 bps | Parity (default: none) >3 Choices: None Odd Even | Data Bits (default: 8 bits) >4 Choices: 7 Bits 8 Bits | Stop Bit(s) (default: 1 Bit) >5 Choices: 1 Bit 2 Bits | Handshaking (default: DTR/DSR) >6 Choices: DTR/DSR XON/XOFF | Data Receive Error (default: ignored) >7 Choices: Ignored Print "?" |
|---|---|---|---|---|---|---|

**Mech. & Hardware >4 Menu Structure:**

```
                    ┌──────────────────────┐
                    │ Mechanism & Hardware │
                    └──────────────────────┘
            ┌────────────────┴──────────────────┐
     ┌────────────┐                      ┌────────────────┐
     │  Back to   │                      │ Power Supply   │
     │ last menu  │                      │(default: normal)│
     │            │                      │      >2        │
     │    >1     │                      │   Choices:     │
     │            │                      │   Normal       │
     │            │                      │ Low power mode │
     └────────────┘                      └────────────────┘
```
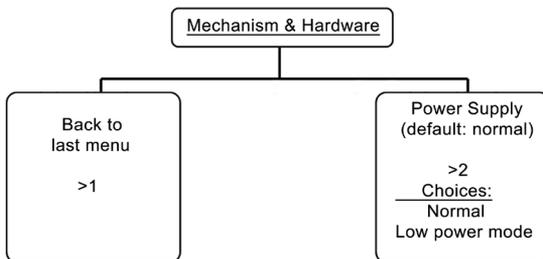
**Print Settings >5 Menu structure.**

```
                          ┌──────────────────┐
                          │  Print Settings  │
                          └──────────────────┘
   ┌──────┬───────┬────────┬────────┬───────┬──────────┬──────────┐
```

| Back to last menu<br><br>>1 | Darkness<br>(default: normal)<br><br>>2<br><br>Choices:<br>Low<br>Normal<br>High<br>Extra high | Left Margin<br>(default: 5 mm)<br><br>>3<br>Choices:<br>0 mm<br>1 mm<br>3 mm<br>5 mm<br>7 mm<br>9 mm | Right Margin<br>(default: 5 mm)<br><br>>4<br>Choices:<br>0 mm<br>1 mm<br>3 mm<br>5 mm<br>7 mm<br>9 mm | CR Command<br>(default: disabled)<br>>5<br><br>Choices:<br>Enabled<br>Disabled | Code Page<br>(default: PC 437)<br>>6<br>Choices:<br>PC 437<br>PC 850<br>PC 852<br>PC 858<br>PC 860<br>PC 862<br>PC 863<br>PC 865<br>PC 866<br>PC 737<br>PC 1252<br>PC 1253<br>**Katakana** | Save Paper Level<br>(default: Disable)<br>>7<br>Choices:<br>25%<br>50%<br>75%<br>100% |

**Set Default Config >6 Menu structure.**

```
              ┌──────────────────────────────┐
              │  Set Default Configuration   │
              └──────────────────────────────┘
        ┌─────────────────────┴─────────────────────┐
```

| Back to last menu<br><br>>1 | Set Printer To  Default Configuration<br>>2 |
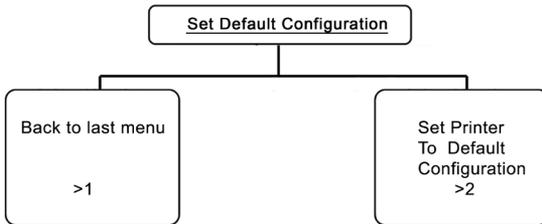
**Font Settings >7 Menu structure.**

```
              ┌──────────────────────┐
              │  Current Font: ELITE  │
              └──────────────────────┘
        ┌──────────────┼──────────────┐
```

| Back To Last Menu<br>> 1 | Select PICA<br>> 2 | Select ELITE<br>> 3 |
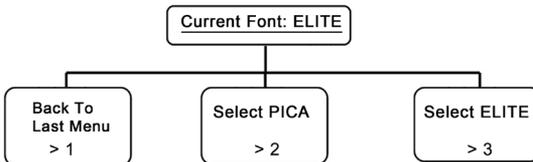
## Appendix 4. Printing and Paper Out Position
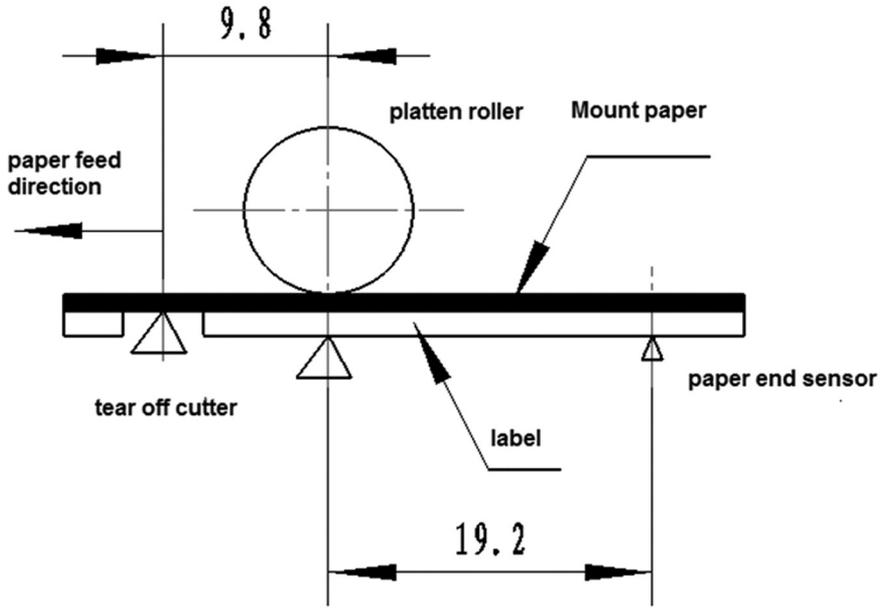


*Appendix figure 4.1*

⚠ **Caution:**

The above figure takes label mark paper as an example to explain printing and paper out position.

## Appendix 5. Communication Interface

### Appendix 5.1 Serial Interface

    1.    Interface signal

| PIN | Signal Name | Signal Direction | Function |
|-----|-------------|------------------|----------|
| 1 | None | | |
| 2 | RXD | Input | Data input terminal |
| 3 | TXD | Output | Data output terminal |
| 4 | DTR | Output | Data terminal is ready |
| 5 | SG | – | Signal ground |
| 6 | DSR | Input | Data device is ready |
| 7 | RTS | Output | Request transmission |
| 8 | CTS | Input | Allow transmission |
| 9 | FG | – | Frame ground |

*Appendix 4.1.1 printer signal and status*

2. Wiring Diagram

PC  --------- Printer

TXD -------- RXD

RXD -------- TXD

CTS -------- RTS

RTS -------- CTS

SG  --------- SG

## ⚠ Caution

The following connection method can be used with only 3 pcs of wire. This method is suitable for small data amount or XON/XOFF flow control:

PC  --------- Printer

TXD -------- RXD

RXD -------- TXD

SG  --------- SG

### Appendix 5.2 USB Interface

USB interface meets USB 2.0 protocol standard and the connector (at the printer terminal) is USB series B socket.

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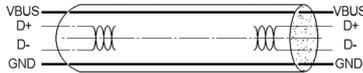


*Appendix figure 5.2.1 USB cable*

Wire D+ and D- in appendix figure 5.2.1 are used for signal transmission, the VBUS is +5V.

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## Warning and Caution

⚠ **Warning: Items shall be strictly followed to avoid injury or damage to body and equipment.**

⚠ **Caution:** Items with important information and prompts for operating the printer.

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