USER'S MANUAL

Industrial Barcode printer

BTP-7400

Shandong New Beiyang Information Technology Co., Ltd

Declaration

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Version 1.0

Trademark

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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.

SNBC has passed the following certifications:

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 is 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 safety's sake.

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

2 Cautions

1) Install the printer on a flat and stable surface;
2) Reserve adequate space around the printer so that convenient operation and maintenance can be performed;
3) Keep the printer far away from water source, and do not expose the printer to direct sunlight, strong light and heat;
4) Do not use or store the printer in a place exposed to high temperature, high humidity or serious pollution;
5) Do not place the printer in a place exposed to vibration or impact;
6) No 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 printer power to an appropriate grounding outlet. Avoid sharing one electrical outlet with large power

motors or other devices that may cause the fluctuation of voltage;

8) Disconnect the power when the printer is deemed to idle for a long time;
9) Don't spill water or other electric materials into the printer (e.g. metal). In case this happens, turn off the power immediately;
10) Do not allow the printer to start printing when there is no recording paper installed; otherwise the print head and platen roller will be damaged;
11) To ensure quality print and normal lifetime, use recommended paper or its equivalent;
12) Shut down the printer when connecting or disconnecting interfaces 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) Avoid turning on and off the printer frequently when using the printer and turn on the printer at least 2 seconds after it is turned off;
15) Do not disassemble the printer without permission of a technician, even for repairing purpose;
16) Keep this manual safe and at hand for reference purpose.

Contents

1 Product introduction

1.1 Introduction

BTP-7400 industrial barcode printer, with high performance, is the ideal office barcode label printing equipment. It is suitable for real-time label printing / batch product label printing / transportation and logistics label printing /ticket printing at railways, airports and stations / postal bag tag printing, etc.

BTP-7400 industrial barcode printer can be connected with external devices via USB, serial or other interfaces and can provide common drivers for operating systems such as Windows XP / 2000 / server 2003 / 2008 / Win7 / Win8 / Win10 and SDK based on DLL.

The printer system adopts Linux platform with abundant resources and it is easy for follow-up function extensions, such as the use of standard function of off-line printing via adopting a scanner, keyboard, SD card, U disk and other input devices, and it also can be developed with functions like UHF tag reading and writing, BASIC explainer, etc.

Main features:

- Thermal / Thermal transfer printing;
- Low noise, high speed printing;
- Reliable, support continuous 7×24 hours standby operation;
- Easy paper loading, convenient operation;
- Intelligent and high effective, embedded Linux operating system

- Adopting heat history and auto temperature adaptation control;
- Adopting industrial print head with long lifetime and high printing quality;
- Supporting continuous paper, label paper, marked paper, perforated paper, etc.

1.2 Unpacking and checking

Open the packaging and check the items according to the packing list. Please contact your local dealer or the manufacturer if there is any shortage or damage.

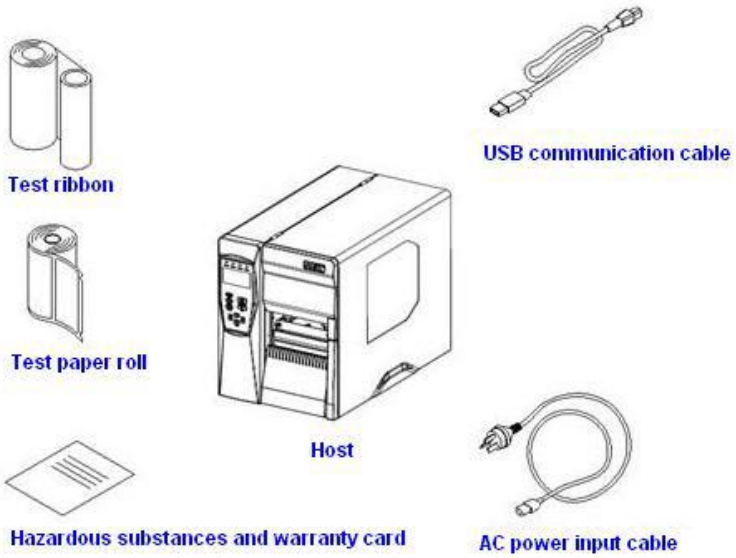


Fig. 1.2.1

1.3 Appearance and modules

1—Button
2—LCD
3—Indicator light
4—right cover
5—Transparent window
6—Tear-off bar, Peel-off bar
7—Ribbon peel-off plate
8—Pressure adjustment knob
9—Pressure position lock knob
10—Ribbon retraction roller
11—Ribbon release shaft
12—Paper holder
13—Right paper guide
14—Ribbon release spanner
15—End cover of upper path
16—Print head uplifting spanner
17—Buffer module
18—Platen roller
19—Print head
20—Print head adjustment block
21—Sensor module
22—Moveable paper guide
23—Wireless interface (optional)
24—SD card interface (optional)

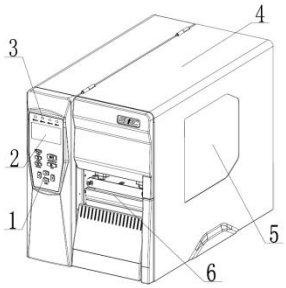


Fig.1.3.1

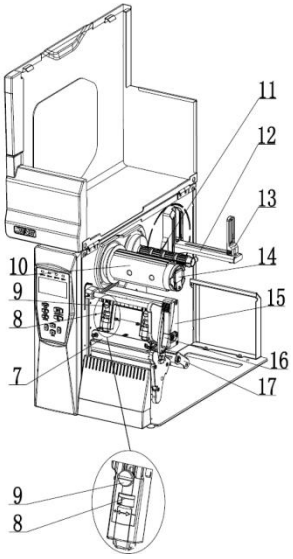


Fig.1.3.2

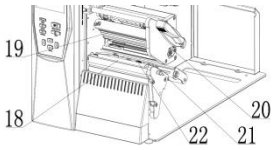


Fig.1.3.3

25—USB A interface

26—USB B interface

27—Ethernet interface

28—Serial interface

29—Parallel interface

30—Expansion interface (optional)

31—Power switch

32—Power interface

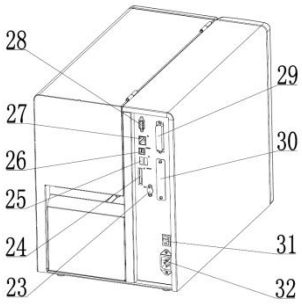


Fig. 1.3.4

1.4 Introduction of main modules

1) Buttons, LCD and indicator light (1,2,3): indicates the printer status, complete the print function;
2) Power switch (31): press "O" to turn off the power, press"-" to turn off the power;
3) Paper holder (12) and right paper guide (13): supports the paper roll, prevent the paper roll shake;
4) Moveable paper guide (22): prevent the paper moving from side to side in the paper path;
5) Sensor module (21): calibrate, detect and position the black mark paper, label paper and other media;
6) Print head uplifting spanner (16): control the print head status of lifting up/ pressing down.

2 Printer installation

2.1 Installation position

Flatly place the printer on the operation table, which must be waterproof, moisture proof and dustproof. The maximal tilted angle should not exceed 15° during installation.

2.2 Printer host connection

1) Ensure the printer is turned off;
2) Connect one end of the AC power input cable with the printer host;
3) Connect the other end of the AC power input cable with the 220V power socket.

Caution:

- If the printer will not be used for a long time, please turn off the printer power.

2.3 Communication cable connection

1) Ensure the printer is turned off;
2) Insert the communication cable into the suitable interface of printer, 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 communication cable when the power has not been turned off.

2.4 Paper roll installation (tear-off mode)

1) Open the right cover of printer, turn the print head uplifting spanner (16) backward to the angle shown in the figure, and turn the right paper guide (13) to horizontal position (see Fig. 2.4.1);

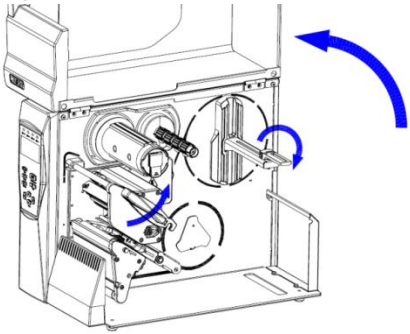


Fig. 2.4.1

2) Install the paper roll leftward on the paper holder, pull out and place the paper head flatly in the paper path, align it leftward and slightly tighten the paper with the movable paper guide (see Fig. 2.4.2);

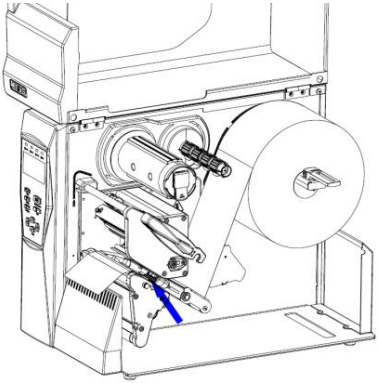


Fig. 2.4.2

3) Turn the right paper guide (13) leftward to make it vertically and abut the paper roll (ensure the paper roll can rotate smoothly), and turn the print head uplifting spanner (16) forward to press down the print head. Detail operation refers to the Fig. 2.4.3.

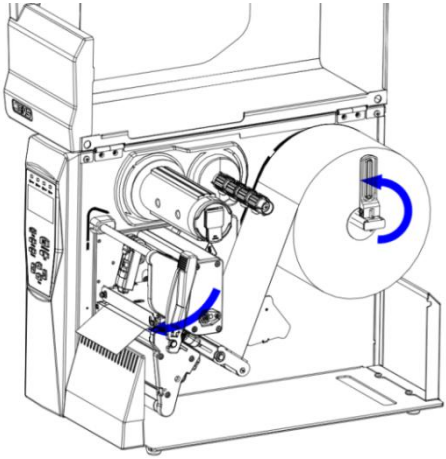


Fig. 2.4.3

Caution:

- The print side of paper is upward. If marked paper is used, the black mark is downward. Continuous paper with the black mark on the print side is not supported.

2.5 Ribbon installation

1) Open the right cover of printer, turn the print head uplifting spanner (16) backward to the angle shown in the figure (see Fig.2.5.1);
2) Install the ribbon on the ribbon release shaft (11) in the direction shown in the figure (pay attention to the outward/inward ribbon);

lead the ribbon head go under the print head module and wind the ribbon on the ribbon rewinding roller from its underside; rotate the roller to tighten the ribbon (see Fig. 2.5.1);

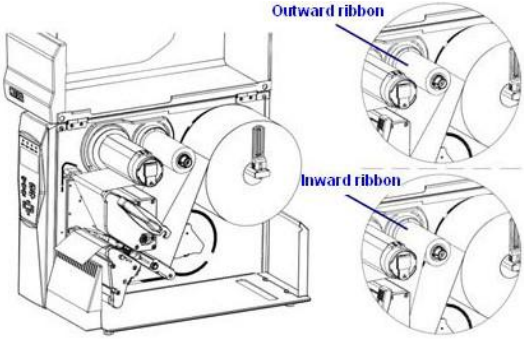


Fig. 2.5.1

3) Turn the print head uplifting spanner forward to press down the print head and lead it to lock status. Detail operation refers to Fig.2.5.2;

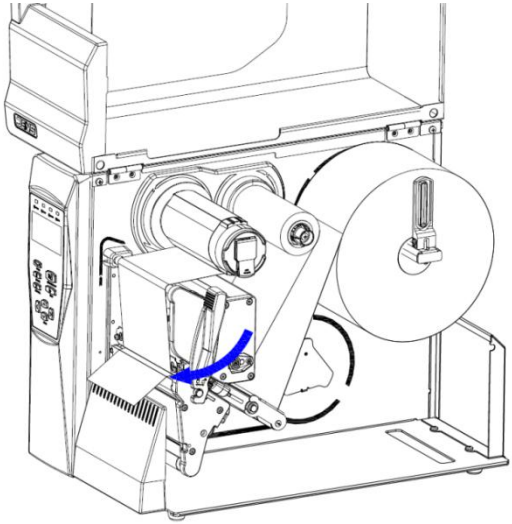


Fig. 2.5.2

Caution:

- Determine the print method: If thermal transfer printing is selected, the ribbon needs to be installed; if thermal printing is selected, the ribbon does not need to be installed.
- Under normal condition, the selected ribbon should be wider than the print media.
- Keep the ribbon as flat as possible during ribbon installation in case the ribbon is cockled or damaged during printing. If ribbon is cockled, please adjust the pressure position of print head or ask for support from the customer service.

2.6 Starting the printer

2.6.1 Power-on and self-test

1) Ensure the power adapter and the communication cable are connected correctly, and turn on the printer;
2) The printer starts the self-test. After the self-test is finished, the LCD screen displays the manufacturer LOGO and status information or product model;
3) If power-on action is set, the printer will perform power-on action.

Note:

Power-on action refers to the actions performed automatically after the printer being turned on, including feeding one label, starting calibration automatically (only valid under discontinuous paper mode). The power-on action can be set by commands or human-machine interface.

Caution

- If the printer cannot be started or cannot work normally after it is started, please contact your local dealer or the manufacturer in time.

2.6.2 Print the self-test page

1) Installed the media, turn on the power switch, click on the 'Menu / Set' button to enter the menu, select "Self-test", and click "Menu / Set" button, then the printer will feed the paper and print the self-test page (sample refers to Appendix 2.1) (functions of indicator light and button refers to section 3.3.
2) The self-test page lists the current printer configuration information.

2.7 Driver setup

The driver supports Windows XP / 2000 / server 2003/2008 / Win7 / Win8 / Win10 and Vista system. It is stored in one CD delivered with the printer, and the customer can also download it from the website www.snbc.cn.

Driver installation method:

1) Run "Setup.exe" in the driver package, and read the related software license agreement carefully. If you accept the items in the license agreement, please click "I accept the items in the software license agreement", and then click "Next" button;
2) Select the printer type and model to be installed. If you want to set the printer as default printer, please check "Set As Default Printer" and click "Next";
3) Select the setup type, and click "Next";

4) Select the current system type, and click "Next";

5) Set the printer port. "LPT1" is set as the default print port, but users can select it according to actual needs. If it is a serial port driver in Windows 2000 or above system, please select "BYCOMx" (x equals to 1, 2, 3, 4, 5, 6, 7 or 8), and then click "Install" to end the installation.

3 Printer operation

Caution

- The printer parameter settings are subject to the last settings. The printer parameters can be set via the menu of printer operation interface, user software (including drivers and the third-party software), printer commands, etc. For example, the printer menu and the printer drivers in computer can be used to set the print speed. Although the print speed has been set via the printer menu, it will be updated to the speed set by the driver in the computer after using the printer driver in computer to print.

3.1 Print head pressure and pressure position adjustment

The print head pressure adjustment device is equipped with two print head pressure adjustment knobs (8), and each knob can adjust the print head pressure steplessly. Turn the knob leftward, the print head pressure will increase (see Fig.3.1.1). The pressure position lock knob (9) can adjust the pressure position and lock the pressure size.

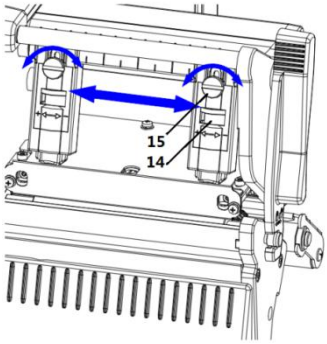


Fig. 3.1.1

The pressure needs to be adjusted under the following conditions:

1) When the print head pressure cannot meet the requirement (e.g. the ribbon cannot be rewound smoothly), turn the print head pressure adjustment knob to increase the pressure;
2) Different pressure size and pressure position can be selected when use label paper with different widths for printing. The two print head modules are symmetrical with the print contents.
3) If the print quality does not meet the requirements when adopts thicker media, the print head pressure can be increased appropriately.

Caution

- Set the print head pressure to a lower level as long as the print quality is acceptable;
- If ribbon crack occurs when print at a low temperature environment, the operation of increasing the print head pressure is the priority measure, and the operation of reducing the print darkness or print speed can also be taken when meet the use requirements.

3.2 Sensor position adjustment

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

1) Counter-clockwise rotates the thumb knob to loosen the sensor position limitation block (refer to the curved arrow in Fig. 3.2.1);
2) Observe the mark position, and move the sensor to the position below the mark;
3) Pull the sensor spanner and move the sensor to the required position(refer to the arrow direction in Fig. 3.2.1);
4) Clockwise rotate the thumb knob to lock the sensor position limitation block.

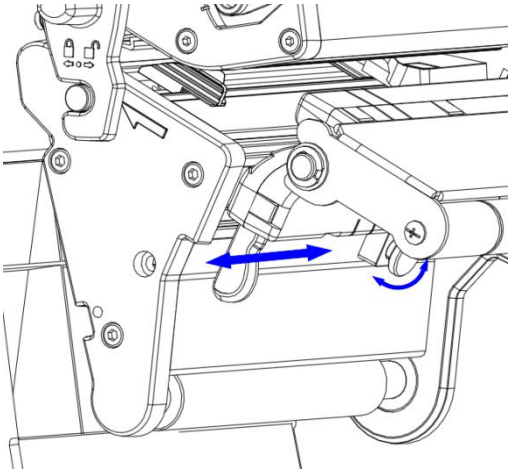


Fig. 3.2.1

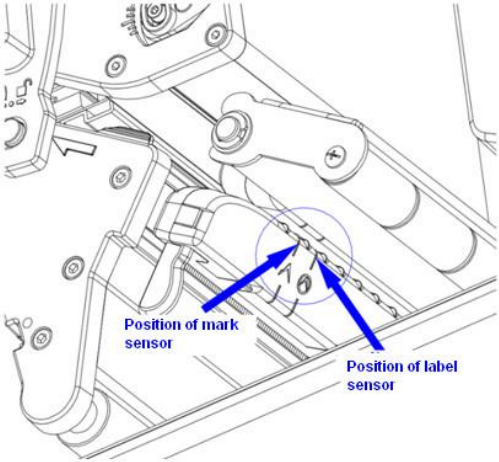


Fig. 3.2.2

3.3 Function of indicator light, button and LCD

3.3.1 Function of indictor light

1) Function of indicator light

LED Name	Status	Explanation
Power LED (Green)	Always on	Printer is already turned on.
Pause LED (Yellow)	Always off	Printer is not in pause status.
	Always on	Printer is in pause status.
Error LED (Red)	Always off	Printer is not in error status.
	Flash	Printer is in error status.
Data LED (Yellow)	Always off	Printer is not printing.
	Always on	Printer is printing.

Table 3.3.1-1

2) Error information and LED status

Error information	Error LED	LCD
Not take away the label	Not flash	
Print head lifts up	Circularly flashes 2 times	
Printer is out of paper	Circularly flashes 3 times	

Cutter error	Circularly flashes 4 times	
Out of ribbon	Circularly flashes 4 times	
Print head temperature is abnormal	Circularly flashes 5 times	
Cannot find the mark	Circularly flashes 6 times	
No print head	Circularly flashes 9 times	
Updating prompt	Always on	"xxx updating" example 

Table 3.3.1-2

Caution

- Troubleshooting method refers to section 5.1 "Abnormity and solution".

3.3.2 Function of Button

Button	Printer status	Function explanation
MENU	Standby ①	Under standby status, the user can press [Menu] button for a short time to enter the menu display interface.(① -⑥refer to below notes)
	Menu ②	In menu display interface, the [menu] and navigation buttons can be cooperated to perform relevant configuration or query operation.
	Text input ③	When the printer is in the status of text input, e.g. input wireless SSID, the user can press [Menu] button for a short time to select the current characters, and press [Menu] button for a long time to confirm the input at this time.
FEED	Non-printing status	When press the [FEED] button, the printer will feed one label if non-continuous paper is used, while feed paper for a distance of one label length if continuous paper is used (the label length parameter that printer saved).
PAUSE	Non-printing status	Under standby mode, the printer will enter pause status by pressing the [Pause] button, and the printer will return to standby status if press the [Pause] button again.
	Printing status ④	The printer will stop the current print job temporarily if press the [Pause] button during printing, and it will continue the previous print job if press the [Pause] button again.

CANCEL	Printing status	Press [Pause] button to stop the current print job temporarily, and then press the [Cancel] button to cancel the print job.
EXIT	Menu	Press [Exit] button for a short time to exit for one menu level, and press [Exit] button for a long time to exit directly.
	Menu	When exit to the standby interface, there will give a prompt that save or not if the printer configuration is changed, you can press the [Exit] button to exit directly without saving.
	Text input	Under text input status, press the [Exit] button for a short time to delete the current characters. Press the [Exit] button for a long time to give up the input and return to the previous menu.
Up navigation	Menu	When the operation interface is the menu bar, the user can move up one menu configuration.
	Digital input ⑤	When the operation interface is Leaf-menu ⑥ digital input interface, press [navigation up] button can add 1 to the current configuration number or switch the positive and negative number.
Down navigation (save button)	Menu	When the operation interface is the menu bar, the user can move down one menu configuration.
	Digital input	When the operation interface is Leaf-menu digital input interface, press [navigation down] button can subtract 1 to the current configuration number or switch the positive and negative number.
	Menu	When exit to the standby interface, there will give a prompt that save or not if the printer configuration is changed, you can press this

		button to save the configuration.
Navigation left	Menu	When in the mileage information page, press the [navigation left] button to switch to the power history and the total recording history (page turning function).
	Digital input	When in the Leaf-menu digital input interface, the current digital interface moves one unit to the left.
Navigation right	Menu	When in the mileage information page, press the [navigation right] button to switch to the power history and the total recording history (page turning function).
	Menu	When in the leaf-menu digital input interface, the current digital interface moves one unit to the right.

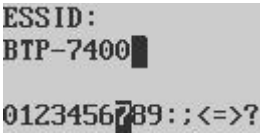
Table 3.1.2

Notes:

① Standby: Printer has no abnormality and r is in a ready status that waiting for operation or task. Printer model, manufacturer logo and version number are displayed at this time;

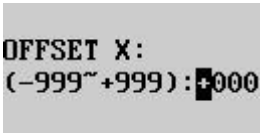
② Menu: The user can configure the printer parameters check the printer information and offline printing, etc. (menu contents refer to Appendix 8);

③ Text input: The interface that needs to input ASCII code from 0x20 (space) to 0x7e, e.g. to configure the SSID or password of Wi-Fi. Refer to the following figure:



④ Print status: The printer is printing, and the data indicator light is on at this time;

⑤ Digital input: When the printer needs to enter numbers, referring to the following figure:



⑥ Leaf-menu: The last menu level of the configuration, requiring a combination of direction buttons to input corresponding parameters. For example, the Leaf-menu which configures the print speed, referring to the following figure:

3.3.3 Function of LCD

The LCD is used to display the printer status and menus, and cooperates with the buttons to set the parameters of printer.

3.4 Function of calibration

3.4.1 Manual calibration

Select the calibration function via the menu as following:

1) Install the media;

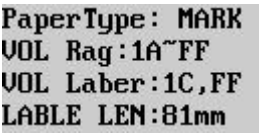
Caution

To ensure the accuracy of calibration, please pay attention to the following items about the use of media:

- Use a blank media for calibration (print contents on media may cause interfere to the sensor)
- The remaining media should be enough to complete the calibration (if paper end occurs during calibration, it may affect the calibration results)
- The label gap and mark on the media is normal (if absence of label or mark on the media occurs during the calibration, it may affect the calibration results)

2) When the printer is in standby status, select "Calibration" on the menu to start the calibration;
3) After the calibration, the human-machine interface will display the current calibration result in the format as shown in the following figure. If the displayed result (paper type and label length) is not the actual value of current paper, please confirm:
   - The corresponding sensor position of sensor module whether cover the current media;
   - Whether the type of paper installed is consistent with the type of paper set in the printer (check in the following method: HMI

→ Settings →Print settings→Paper type; or print self-test page).



Caution

The media should be manually calibrated in any one of the following conditions:

- The printer is installed for use for the first time;
- Replaced with paper of different parameters;
- The print position or stop position is not accurate;
- The printer alarms paper end when there is paper;
- The printer is used for the first time after cleaning the sensor;
- The mark cannot be identified effectively during printing;
- The working environment of printer is changed greatly.

3.4.2 Automatic calibration

During printing, the printer will automatically start calibration when it finds the current media used is not consistent with the media parameters stored. After calibration, the printer will re-print the previous incorrectly printed contents, and then continue the remaining printing tasks.

Caution

- The printer can print normally only after successful calibration;
- If the calibration fails, please confirm whether the sensor position is

correct (refer to 3.2 Sensor position adjustment);

- If the calibration fails, please confirm whether the sensor needs to be cleaned;
- If the calibration fails, please confirm whether the media is normal;
- If the calibration fails, please confirm whether the current paper type matches selected sensor type (method to check the sensor type: Menu → Settings → Sensor settings →Enter password →Select sensor);
- If the reason that why the calibration fails still cannot be found after above steps, please contact the maintenance people!

3.5 Print settings

3.5.1 Paper type

The paper currently used by the printer must be consistent with the parameters settings of printer; otherwise it will cause inaccurate print position, inaccurate positioning, print contents missing and other problems. Thus, the user should firstly correctly set the paper type when replace the paper in the following method: Menu →Settings→Print settings→Select paper type that consistent with current paper (after selecting the paper type, the printer will automatically switches to the corresponding sensor type), and then perform the calibration operation (refer to 3.4 Function of calibration). The relationship between the type of paper set in the printer and the type of paper actually used refers to the below table:

Paper type in driver	Actual paper type	Sensor type
Continuous paper	continuous paper without mark	Transmissive sensor or reflective sensor
Black marked paper	Paper with marks pre-printed, positioning basing on the mark	Reflective sensor
Label paper	Label paper with base paper, positioning basing on the gap between the adjacent label	Transmissive sensor
	Perforated paper with holes or notches for positioning	Transmissive sensor

Table 3.5.1

Paper parameters supported by the printer refer to Appendix 1.3 Technical specification of paper.

Caution

- The characteristics of selected paper itself may affect the print quality, thus select appropriate print darkness and speed according to the paper characteristics to achieve the best print quality.

3.5.2 Print mode

Sett method: Menu → Settings →Print settings→ Print mode→ Select appropriate print mode. The application of each print mode is as following:

Print mode	Paper stop position after printing	Application
Rewinding mode	Print head	The printed labels are no need to be taken away immediately, but can be put into use together after batch printing. Since the stop position is at the print head under this mode, the printer has no paper retraction action before printing.
Tear-off mode	Tear-off bar	After completing the label printing, the label space stops at the tear-off bar, so that the user can tear off the label easily.
Peel-off mode	Peel-off sensor	The label stops at the peel-off sensor after printing, and the printer is allowed to print the next label only after taking away the printed label. **Caution** This mode needs to configure the printer with peel-off module.
Cut mode	Cutter	After completing the label printing, the label space stops at the cutter and the cutter cuts off the label. **Caution** The printer should be configured with cutter module under this mode.

Table 3.5.2

3.5.3 Print method

Set method: Menu → Settings → Print settings → Print mode →Select appropriate print method. The printer supports following two print methods:

1) Thermal: need to use the thermal paper, no need to use the ribbon;
2) Thermal transfer: no need to use the thermal paper, need to use the ribbon.

Caution

- The print method set in the menu of printer should be consistent with the print method set in the user software;
- When the thermal mode is set in the menu of printer, the thermal transfer mode cannot be set successfully in the user software; only when the thermal transfer mode is set in the menu of printer, the thermal transfer mode can be set successfully in the user software;
- Under thermal mode, since the paper directly contacts with the print head, the print head life will be shortened if the paper has quality problems (e.g. too larger paper friction coefficient and hardness, etc.).

3.5.4 Print width

When the actual width of paper does not match with the width of print head, the print width needs to be set consistent with the actual paper width; otherwise, the contents cannot be printed correctly. The set method is as following: Menu → Settings →Print settings → Print width. The print unit is dot, the physical width of print head for

203DPI model is 832 dots, and the physical width of print head for 300DPI model is 1248 dots.

Caution

- If the user software can also set the print width, the print width parameters should be set in the user software.

3.5.5 Speed settings

1) Print speed

Set method: Menu → Settings → Print settings → Print speed (or Menu →Common settings →Print speed). This method is used to set the paper feeding speed during printing with a unit of inch/second.

2) Paper feeding speed under idle status

Set method: Menu → Settings → Print settings →Paper feeding speed under idle status. This method is used to set the paper feeding speed under idle status (i.e. does not print) with a unit of inch/second.

3) Paper retraction speed

Set method: Menu → Settings → Print settings →Paper retraction speed. This method is used to set the print speed during paper retraction (when the printer is set to rewinding mode, it has paper retraction speed before printing) with a unit of inch/second.

Caution

- If the user software can also set the print speed, the print speed parameters in the user software should be set;
- As for the paper / ribbon with poor quality, the print quality will be degraded if a higher print speed is set, e.g. the printout is in light color or has trails and other problems. Thus, the user should set an appropriate print speed according to the features of paper/ribbon with reference to the speed in the following table, in order to achieve the best match of work efficiency and print quality.

3.5.6 Darkness settings

Set method: Menu → Settings → Print settings →Print darkness (or Menu →Common settings →Print darkness).

Caution

- If the user software can also set the print darkness, the print darkness parameters in the user software should be set;
- The settings of darkness should match with the features of selected paper/ribbon; otherwise, the print quality will be degraded. If the darkness is set too high, it will cause trails, image adhesion and other issues; if the darkness is set too low, it will bring unclear printout;
- As for the limitation settings of recommended speed and darkness for ribbon with different materials, the printout may be unclear if the printer settings exceed the limitation settings. (for reference only, the actual result of the user's debugging will prevail):

Material of ribbon	Features of media	Max. darkness	Max. speed (inch/second)
Full wax	It can be Can be used for high-speed printing, the storability is poor, and the printout can be scraped easily.	30	12
Semi-wax and semi-resin	Used for medium-speed printing, the storability is intermediate between full wax and full resin.	30	10
Full resin	Used for low-speed printing, the storability is the best.	30	6

- The settings of darkness should match with the print speed. When the speed is low, the darkness should be set to an appropriate low value. Set the appropriate print speed and darkness according to the features of actual paper/ribbon, in order to achieve the best match of work efficiency and print quality.

3.5.7 Action when power on / press down the print head

Set method: Menu → Settings →Action when power on / press down the print head. The printer actions can set to be as the following table when power on / press down the print head:

Actions	Description
No action	The printer has no action after powering on / pressing down the print head. Advantages: no blank paper is fed after powering on / pressing down the print head, which can save paper. Disadvantages: Because the printer prints directly after powering on / pressing down the print head, without positioning basing on the mark, the print position of the first label depends on the manual paper loading position (e.g. the space between labels should be just at the tear-off bar under tear-off mode). If paper location is not correct, the print position of the first label will be incorrect.
Feed paper	The printer automatically position one label after powering on / pressing down the print head. Advantages: Because the printer automatically position one label after powering on / pressing down the print head, the print position of the first label is correct, not depending on the accuracy of manual paper loading position. Disadvantages: The printer feeds one blank label after powering on / pressing down the print head, which wastes one label.
Calibrate	The printer automatically performs calibration after powering on / pressing down the print head. Advantages: Because the printer automatically performs calibration after powering on / pressing down the print head, the user does not need to start manual calibration after replacing paper, which is convenient for operation. Disadvantages: The printer feeds paper for calibration after powering on / pressing down the print head, which wastes the paper.

Table 3.5.7

3.5.8 Print position adjustment

Caution

- The parameters for position adjustment that set in this section may be modified by the user software, and the settings in upper level software will prevail. In the actual application, if the upper level software is inconvenient to adjust, please refer to 3.6 physical distance setting.

The adjustment of position in the menu takes dot as the unit, for 203DPI, 1 mm equals to 8 dots; for 300DPI, 1 mm equals to12dots.Adjustment methods for different conditions are as following:

1) Longitudinal print position adjustment

When the printout is like Fig. A and Fig. B, the user should adjust the longitudinal print position to Fig.C. The adjustment method is: Menu → Settings → Print settings→ Longitudinal deviation(or Menu →Common settings →Longitudinal deviation).

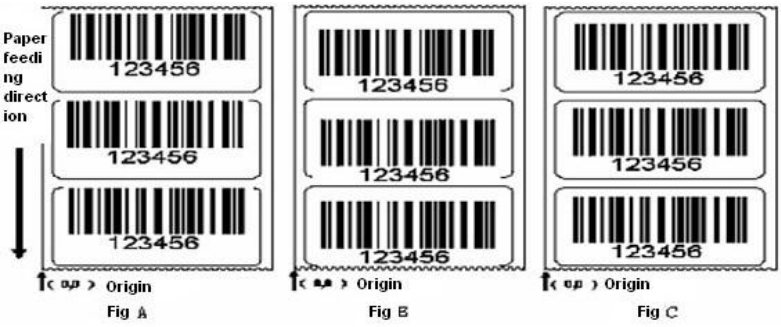


Fig. 3.5.8.1

Caution

- Fig. A indicates that the print position is upper than the correct position. Adjust it to the negative direction;
- Fig. B indicates that the print position is lower than the correct position. Adjust it to the positive direction.

2) Transversal print position adjustment

When the printout is like Fig. D and Fig. E, the user should adjust the transversal print position to Fig.F. The adjustment method is: Menu → Settings → Print settings→Transversal deviation(or Menu →Common settings → Transversal deviation).

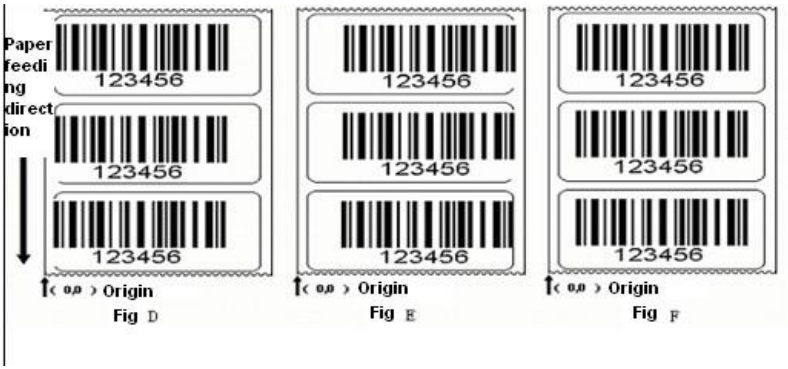


Fig. 3.5.8.2

Caution

- Fig. D indicates that the print position is at the left of the correct position. Adjust it to the negative direction;
- Fig. E indicates that the print position is at the right of the correct position. Adjust it to the positive direction.

3) Tear-off position/Cut position/Peel-off position

When the printout is like Fig. G and Fig. H, the user should adjust the tear-off position to Fig.J.

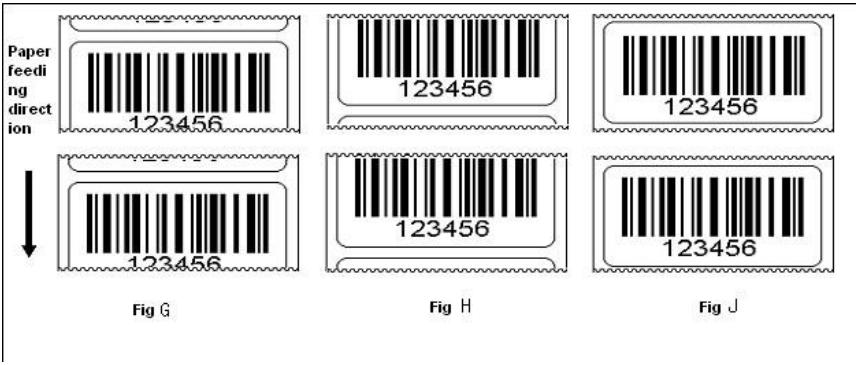


Fig. 3.5.8.3

Caution

- Fig. G indicates that the tear-off position is upper than the correct position. Adjust it to the negative direction;
- Fig. H indicates that the tear-off position is lower than the correct position. Adjust it to the positive direction.
- As for the label paper, the correct tear-off position is at the center of label space. Due to the stickiness of label paper, the label may stick to the print path and cause paper jam if following tear-off position occurs as shown in the figure.

3.6 Physical distance setting

⚠ Caution

- This function can be put into use only after getting the manufacturer's authorized password.

This function is used to set the physical distance between various components of the printer in the unit of dot. For 203DPI, 1 mm equals to 8 dots; for 300DPI,1 mm equals to12dots.Set method: Menu → Settings → Physical distance Settings →Enter password →Set related parameters. Content can be set are as following:

Setting	Application method	Remarks
From print head to transmission sensor	Distance from print head to transmission sensor, using to adjust the print position	To be effective when transmission sensor is selected
From print head to reflective sensor	Distance from print head to reflective sensor, using to adjust the print position	To be effective when reflective sensor is selected
From print head to tear-off bar	Distance from print head to tear-off bar, using to adjust the tear-off position	//
From print head to peel-off sensor	Distance from print head to peel-off sensor, using to adjust the peel-off position	//
From print head to cutter	Distance from print head to cutter, using to adjust the cut position.	//

3.7 Serial interface settings

Caution

- When the printer is connected to the host via the serial interface, if the printer does not work, firstly make sure that the cables are reliably connected, and then perform the settings according to this section to make the printer serial interface parameters match with the host serial interface parameters.

1) Baud rate

Query or set the baud rate to match with that of the host. The baud rate can be set to: 9600, 110, 300, 600, 1200, 2400, 4800, 19200, 38400, 57600, 115200. Set method: Menu → Settings →Serial interface settings→Baud rate.

2) Data bit

Query or set the data bit to match with that of the host. The baud rate can be set to: 7bits or 8bits. Set method: Menu → Settings →Serial interface settings→Data bit.

3) Stop bit

Query or set the stop bit to match with that of the host. The stop bit can be set to: 1 bit or 2 bits. Set method: Menu → Settings →Serial interface settings → Stop bit.

4) Parity bit

Query or set the parity bit to match with that of the host. The parity bit can be set to: no parity, even or odd. Set method: Menu → Settings →Serial interface settings→Parity bit.

5) Handshake mode

Query or set the handshake mode to match with that of the host. The handshake mode can be set to: hardware handshake, software handshake, or hardware handshake + software handshake. Set method: Menu → Settings →Serial interface settings→Handshake mode.

⚠ Caution

- To improve the reliability of serial interface communication, it is recommended to use the hardware handshake mode.

3.8 Network Settings

⚠ Caution

- Set the printer network configuration according to this section, and the printer can work normally only when the printer and the host are in the same local area network.

1) Network selection

Select the required type of network. The printer supports wired or wireless network and the printer factory default selection is a wired

network. The user can select wireless network in the following method: Menu → Settings → Network settings → Network selection →Wireless network.

Caution

- Before use a wireless network, please make sure the printer is configured with a wireless module; otherwise the wireless network will not function.

2) IP address

When the IP acquisition method is DHCP, the user can query the current acquired IP address.

When the IP acquisition method is fixed IP, the user can query the IP address or set the IP address according to the demands.

3) Subnet mask

When the IP acquisition method is DHCP, the user can query the current acquired subnet mask.

When the IP acquisition method is fixed IP, the user can query the subnet mask or set the subnet mask according to the demands.

4) Default gateway

When the IP acquisition method is DHCP, the user can query the current acquired default gateway.

When the IP acquisition method is fixed IP, the user can query the default gateway or set the default gateway according to the demands.

5) Port number

Query or set the Ethernet TCP port number of printer according to demands. The default value is 9100.

6) MAC address

Query the MAC address of current network (wired or wireless).

7) IP acquisition method

When the IP acquisition method is set to DHCP, the printer will automatically obtain the IP address, subnet mask, default gateway and other network parameters.

When the IP acquisition method is set to fixed IP, the printer will set the IP address, subnet mask, default gateway and other network parameters of the current configuration.

8) Wireless setting

This product supports two wireless modes: router mode and AP (access point) mode.

- **Router mode**

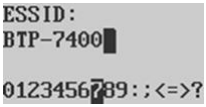
Under router mode, the printer will automatically connect to the user's router and add into the user's LAN after completing configuration. The user can operate in the following steps:

A) The user queries the router configuration, including SSID, security mode (NONE, WEP, WPA-PSK, WPA2-PSK), encryption mode (determined by the security mode), and the wireless password.

B) Basing on the setting methods described above, correctly set the printer's IP address, subnet mask, default gateway, port number, and IP acquisition method.

C) Set following contents of printer via the menu in the method: Wireless settings →Router mode.

a) Set the SSID configuration to be consistent with that of the router:



Select letters via the left/right navigation buttons, press the menu button for a short time to confirm the selection, and then press the menu for a long time to complete the input.

b) Set the security mode to be consistent with that of the router;

c) Set the encryption mode to be consistent with that of the router;

d) Set the wireless password to be consistent with that of the router (in the same method of setting the SSID);

e) Press the exit button for a long time to exit, and press the save button (i.e. the down navigation button) if it prompts to save, and then the printer will automatically restart.

Caution

- The menu of printer does not support Chinese language, if the user's router is Chinese, its SSID should be set to English or use the product's network setting tools to set the language.

D) After the printer completing the restart, query if the printer has successfully connected to the router in the following method: Network settings →Wireless status, the displayed contents include the SSID of current wireless network, connection status with the host (connected / not connected), signal strength (displayed in percentage) that from the printer to the base station when the wireless network is configured to base station mode.

Caution

- If the interface displays that the printer fails to access the network, please reconfirm if the above are correctly set, and contact the maintenance personnel if the settings are correct.

- **AP mode**

Under AP mode, no router is needed, and the printer will produce one WIFI access point. At this time, the printer will search and connect to the WIFI access point. The printer in AP mode needs to set the SSID and signal channel for the access point. The printer will produce the network access point after restarting.

3.9 Parallel interface settings

1) Parallel interface mode

Configure the mode of parallel interface. There are two modes can be selected: byte mode and compatibility mode. When the user needs to query the related parameters of printer from the host, the byte mode should be selected. When the host does not need to query the parameters of printer, the compatibility mode should be selected.

2) Set ACK of Parallel interface

Configure the ACK of printer's parallel interface. The user can select to enable or disable the ACK. When the user host and the printer are connected via some devices (such as partial USB-to-parallel, partial print servers, etc.), the ACK needs to be enabled; when the printer and the host are connected directly, the ACK can be disabled. The disability of ACK can improve the data transfer rate to some extent.

3.10 Date and time

If the printer is equipped with a clock module, the user can set the date and time in following method: Menu → Settings →Date and time.

1) Date

The user can query and configure the date for current system by this configuration, setting the date for current system via the cooperation of navigation and menu buttons.

2) Time

The user can query and configure the date for current system by this configuration, setting the date for current system via the cooperation of navigation and menu buttons. After entering the time page, the time will be updated by the unit of second. When set the time, the updating of seconds will stop, but if the user does not save the settings, the system will deemed to waive this change after 10s and display the time in second again.

Caution

- As for the printer without RTC configuration (i.e. the main control board needs button cell battery), the set date and time will not be kept after powering off the printer.

3.11 Offline printing

Under this mode, the printer can work independently without connecting to the computer, which can save the user's work space and cost. The user can copy the files to be printed in one U disk or SD card or download the files to the printer's internal FLASH disk in advance, and then select the files stored in corresponding drive letter, and input and confirm the quantity to be printed for the printer to start printing. Definition of printer drive letter is as following:

Drive letter	Description
R	The printer's internal RAM memory. Its data are lost after powering off.
E	The printer's internal FLASH memory
B	SD card
A	U disk

Table 3.11-1

⚠ Caution

- The recommended format of U disk or SD card for the system is FAT32. Other formats are not supported at present. If the U disk or SD card cannot be identified by the printer, please confirm whether the format is correct or use the PC to format it to FAT32 format, and try again.
- Print file: File consists of printer commands. As for the common word documents, the print file can be made by the function "Print to file" of printer driver. The name of print file only supports English, and all name suffixes can be displayed.

3.12 Service

1)Factory default settings

The printer can be recovered to the factory default settings via this configuration.

Caution

- When the parameters set by the user is in disorder or the printer has any functional problems, the user can try to solve the problems via recovering the factory default settings.

2)Mileage information

The user can query the following information of printer after powering on or after delivering from the factory (switch by the left/right button of navigation) via this menu: print distance, paper feeding distance, number of printer labels, cut times, etc.

3)Serial number information

The user can query the serial number information of printer via the menu. The serial number is set before delivering from the factory, and users cannot change it by themselves.

4)Change password

Caution

- This function settings need password authorized by the manufacturer.

The user can change the password of printer via this configuration. The user can input new password with four letters after correctly inputting the original password.

3.13 Consumables library

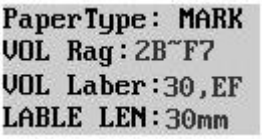
This function is suitable for applications that require frequent different paper switching. In the conventional mode, the printer needs to start manual calibration or automatically start calibration after changing with different paper, which wastes the paper. With this function, the printer can be calibrated when different paper is used for the first time, store the paper parameters and give a number, thus the printer can call this type of paper via the number in the follow-up printing without calibrating the printer, which can save the paper.

1) Consumables storage

The printer needs to be calibrated when the paper is used for the first time (Detail calibration method refers to 3.4 Function of calibration). After successful calibration, save the current paper information in the following method: Menu →Consumables library → Consumables storage →Enter number (default setting: the number adds 1 automatically). The number for consumables is 1-999.

2) Consumables switching and use

The user can select the number of consumables stored previously to call the related parameters, and the HMI will display the related parameters of the number. Please make sure the paper type and parameters are consistent with that stored in the printer. The display interface for calling the consumables is as following:



3) Delete all

If the previously stored consumables will not be used any more, or the relationship between the number and consumables is confused, all the stored numbers can be deleted.

4) Delete the specified number

With this function, the user can delete the corresponding number of a certain consumables that will not be used any more.

5) Update the number

With this function, the user can change the number to another number.

3.14 File operation

Caution

- This function settings need password authorized by the manufacturer.

1) Upgrading

The user can copy the upgrading files to a U disk in advance to upgrade the firmware via the U disk, including the upgrading of applications, LCD program, monitoring program, EEP configuration and all programs.

2) Delete

The user can delete certain files or file folders in the printer RAM disk, FLASH disk, U disk or SD card via this function in the following method: File operation → Delete → Select the letter → Select the file.

3) Cut

The user can cut certain files or file folders in the printer RAM disk, FLASH disk, U disk or SD card via this function in the following method: File operation →Cut→ Select the letter → Select the file.

4) Copy

The user can copy certain files or file folders in the printer RAM disk, FLASH disk, U disk or SD card via this function in the following method: File operation →Copy→ Select the letter → Select the file.

5) Paste

Configuration description:

This function cooperates with the above cut and copy functions. The user should perform copy and cut actions before pasting, and then select corresponding directory to paste the previously cut or copied files or directory. Operation method: File operation → Copy→ Select the letter→Select the directory.

6) Capacity

Configuration description:

The user can query the printer's internal RAM, flash or U disk capacity and usage conditions via this interface. Refer to the following figure:

```
    ALL:  USED:
FS: 201.8M 33.9M
RAM:15.5M 142.0K
SD: 14.6G 635.8M
```

⚠ Caution

- The recommended format of U disk or SD card for the system is FAT32. Other formats are not supported at present. If the U disk or SD card cannot be identified by the printer, please confirm whether the format is correct or use the PC to format it to FAT32 format, and then try again.

3.15 Printer debugging

⚠ Caution

- This function settings need password authorized by the manufacturer.

1) Run the data capture feature

When the printer runs abnormally and needs debugging, the original DUMP mode is to print out all the data, it wastes the consumables and the printout is inconvenient to use.

After enabling this feature, the data sent by the printer can be saved to the files, it can be directly saved to the U disk if a U disk is connected, or be saved to the printer internal FLASH and copied to one U disk via file operation. The file is named: "dump_rcv.dat", "dump_send.dat" and "dump.txt".

2) Exit from the data capture feature

The user can use this feature to exit from the data capture and complete the file copy (if one U disk is used).

3) Run the DUMP

It is the printer debugging mode. When the printer enters the dump mode, the data sent from the host will be printed on the consumables.

4) Exit from the DUMP

After the printer entering the dump mode, it can exit from the dump

mode via this operation. Also, the printer can exit from the DUMP mode via the FEED button.

3.16 Sensor settings

Caution

- This function settings need password authorized by the manufacturer.

1) Light emission intensity

Query and set the light emission intensity of sensors, including the transmissive sensor, reflective sensor and ribbon sensor. The parameters of light emission intensity are generally obtained by the calibration function (see 3.4 Function of calibration).

2) Reference threshold value

Query and set the threshold value of each sensor, used to judge the reference value of paper end or marks for continuous paper or non-continuous paper. The parameters of threshold value are generally obtained by the calibration function (see 3.4 Function of calibration).

3) Sensor selection

Select the sensor to be used (reflective or transmissive sensor) according to the current paper type used (correspondence relationship refer to Table 3.5.1).

4) Sensor calibration

The user can use this function to adjust the light emission intensity of sensor to the target AD, and calibrate the transmissive sensor,

reflective sensor and ribbon sensor.

5) Calibration method

The following three calibration methods can be selected:

1) Light emission intensity and threshold value: while calibrating the current light emission intensity, it also calibrates the parameters of current consumables, including the height of label, height of space and reference threshold value of voltage;
2) Threshold value only: comparing to item 1), it does not perform the light emission intensity calibration;
3) Fixed length: during calibration, regardless of the label size, it feeds paper for a fixed distance to complete the calibration.

6) Check the label quantity

This function is used to set the label quantity during calibration, and the minimum number is 2. The user can effectively reduce the paper feeding distance during calibration via adjusting this value, but too fewer labels will cause big calibration error.

7) Check the threshold value for paper end

This function is used to set the reference threshold value for judging paper end during calibration. If the value is set too small and special paper is used, the printer will alarm paper end when paper presence during calibration.

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 the 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 right 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 right cover.

4.2 Cleaning the sensor

When any of the following cases occurs, the 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 paper sensor:

1) Turn off the printer and open the right cover;
2) Release the rotation knob of sensor and pull the sensor to the outmost position;
3) Wipe off the dust and stains on the surface of the transmissive sensor (refer to Fig.4.2.1 and Fig.4.2.2) with alcohol cotton ball (it should be wrung out);
4) Wait for 5 to 10 minutes until the alcohol evaporates completely, and then tighten the rotation knob of sensor and close the right cover.

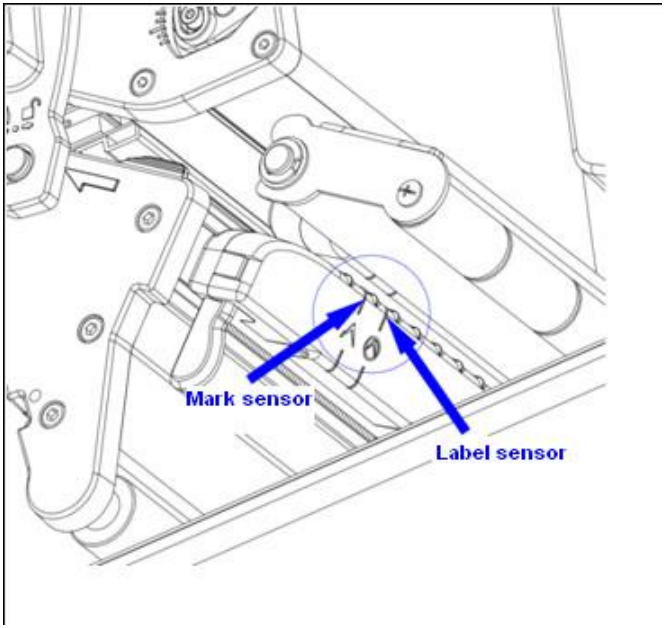


Fig. 4.2.1

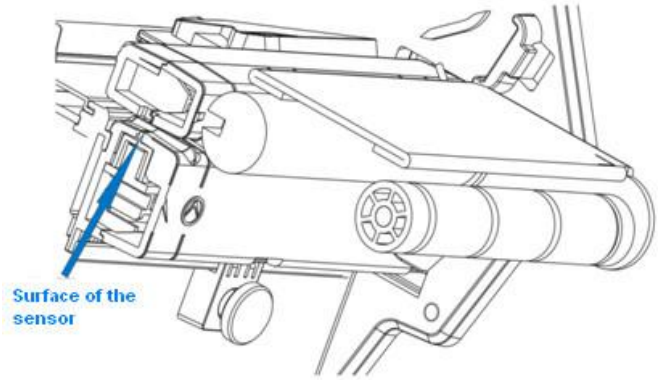


Fig. 4.2.2(Sectional view)

4.3 Cleaning the 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 right cover;
2) Lift up the print head module and find out the platen roller. Wait for the platen roller to cool down completely if it has just finished the 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 rotating the platen roller;
4) Wait for 5 to 10 minutes until the alcohol evaporates completely,

and then press down the print head module and close the right 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 cannot be cleared, please contact the manufacturer or your local dealer.

5.1 Abnormity and solution

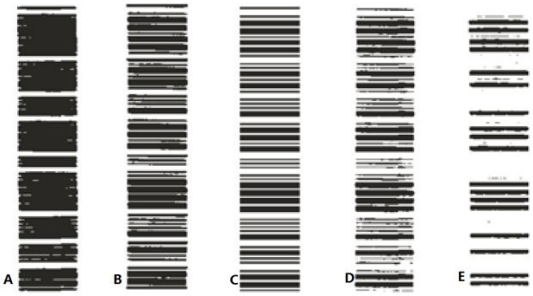
When the printer has malfunctions or abnormal conditions, the error LED will flash, and the LCD will display the current error. At this time, the print job will be stopped, and the communication between the host and the printer will be interrupted, please check the number of times that the LED indicator light flashes and handle it with reference to the following methods.

Errors	Reason	Solution
Print head lifts up	Print head lifts up	Please press down the print head.
	Photoelectric sensor failure	Please contact the maintainer.
Out of paper	Paper end or no paper roll is installed	Install the paper roll.
	Need to re-calibrate the printer after replacing with new paper roll	Operate the menu to start calibration.
	The sensor position does not align with the mark position	Adjust the sensor position.
	Paper jams	Clear the jammed paper.
	The paper roll surface is contaminated or damaged	Please jump over the contaminated or damaged part.
	The paper roll is far away from the mark sensor	Re-install the paper roll.

	The surface of mark sensor is contaminated	Clear the surface of mark sensor.
	The paper roll type dos not match with the mark sensor type	Set the paper type in the printer driver to be consistent with the actual paper type.
	Out of ribbon	Install the ribbon.
	Ribbon jams	Arrange the ribbon.
	Ribbon sensor failure	Replace the ribbon sensor.
Cutter abnormity	Poor communication	Reliably connect the communication cables.
	The printer does not be configured with cutter	Confirm whether the printer has a cutter configuration.
Print head temperature is abnormal	The working environment temperature is too high, and it leads to overheated print head	Please improve the ventilation system, and the system will return to normal situation after the temperature coming down
	Paper jams in the path and it leads to accumulation of heat and overheated print head	Clear the jammed paper, check if the print head test pattern is normal after the temperature coming down. If the pattern is abnormal, the printer can continues the work, otherwise please replace the print head. (The test pattern refers to Appendix 1).
Mark error	The sensor position is not corresponding with the mark position	Adjust the sensor position.
	Need to re-calibrate the printer after replacing with new paper roll	Operate the menu to start calibration.
No print head is installed	No print head	The print head or print head cable is removed; please confirm the print head connection.

Table 5.1.1

5.2 Print quality problems



As shown in the above figure, A is too dark, B is a little dark, D is a little light, E is too light, the user can adopt following methods for each print quality problem:

Malfunction	Reason	Solution
The printout is unclear or has stains	Print head or platen roller is dirty.	Clean the print head or platen roller.
	The paper does not match with the ribbon.	Use the recommended paper and ribbon.
	The print darkness is too low.	Increase the print darkness.
	The print speed is too high.	Firstly, reduce the print speed, and then adjust the print darkness.
	The pressure of print head is too small.	Increase the pressure of print head.
The printout is dark	The print darkness is too high.	Reduce the print darkness.
	The pressure of print head is too big.	Reduce the pressure of print head.
	The print speed is too high.	Firstly, reduce the print speed, and then adjust the print darkness.
The printout has broken lines	The printout has broken lines.	Replace the print head.

5.3 Ribbon problems

Malfunction	Reason	Solution
The ribbon wrinkles or cracks.	The ribbon is not installed correctly.	Correctly install the ribbon and paper roll.
	The pressure of print head is uneven.	Adjust the pressure of print head to obtain even pressure on both sides of paper.
	The print darkness is too high.	Reduce the print darkness.

5.4 Positioning and calibration problems

Malfunction	Reason	Solution
The positioning is incorrect, the calibration fails	Does not preform calibration after replacing paper.	Operate the printer to start calibration.
	The paper deviates from the sensor position.	Adjust the sensor position to make it be corresponding with the mark.
	The pressure of print head is uneven.	Adjust the pressure of print head to obtain even pressure on both sides of paper.
	The paper guide module is adjusted incorrectly.	Correctly adjust the position of paper guide module.
	The paper type is set wrong.	Correctly set the paper type.
	Incorrectly select the sensor.	Correctly select the sensor.
	The paper is dirty	Re-calibrate the printer with clean paper.
	Problems of the sensor.	Reliably connect the sensor cables.

Appendix

Appendix 1 Technical specification

Appendix 1.1 Main technical specifications

Item		BTP-7400(200DPI)parameters	BTP-7400(300 DPI) parameters
Print	Resolution	203DPI	300DPI
	Print method	Thermal/Thermal transfer	
	Print width (Max.)	104mm	106mm
	Print speed (Max.)	305mm/s	203mm/s
	CPU	32bit RISC embedded microprocessor	
	Memory	SDRAM：256MB FLASH：256MB Extended FLASH: supports U disk or SD card in FAT32 format.	
	Print head temperature detection	Thermal resistor	
	Print head position detection	Photoelectric sensor	
	Paper mark detection	Photoelectric sensor	
	Ribbon presence detection	Photoelectric sensor	
	Communication interface	RS-232 serial interface standard configuration IEEE1284 di-directional parallel interface USB 2.0 A-type or B-type interface IEEE802.3 10/100BASE-T/TX standard, RJ-45 interface	

Media	Paper type	Continuous paper, label paper, perforated paper, marked paper, etc.
	Paper roll OD (Max.)	Max Φ203mm
	Paper roll width (Max.)	120mm
	Paper roll ID(Min.)	Φ38mm(1 inch paper holder, optional)
	Paper roll ID(Max.)	Φ76.2mm
	Ribbon length(Max.)	600m
	Ribbon ID	Φ25.4mm
	Paper output mode	Rewinding, tear-off, peel-off, paper cut
Character Barcode Graphics	Character enlargement/rotation	Can be enlarged 1 to 8 times vertically and horizontally respectively; Support rotation printing(0°, 90°, 180°, 270°)
	Character set	Commonly used single-byte fonts: FONT0 to FONT8, 6 kinds of ASD smooth fonts, 8 kinds of Courier fonts.
		User-defined fonts: User-defined fonts can be downloaded to the FLASH or SDRAM.
	Graphics	Binary bitmap without format, HEX, PCX, BMP and IMG image files can be downloaded to the FLASH and RAM.
	Barcode	ID barcode: Code39, UPCA, UPCE, interleaved 2 of 5, Code 128, EAN13, EAN8, HBIC (Code39 with checkout), Codabar, industry 2 of 5, storage and transportation code, UPC2, UPC5, Code 93, Postnet 25 (China), UCC/EAN, Matrix 25, POSTNET code, etc. 2D barcode: PDF417, MAXICODE, QR, etc.
Operation interface	Button, LED	9 buttons, 4 LED lights
Power	Input	AC 110～240V，50/60Hz

adapter	Output	DC 24V，4.5A
Environmental requirements	Operating environment	+5℃～45℃，20%～90%(40℃)
	Storage environment	-40℃～60℃，20%～93%(40℃)
Power adapter	Overall size	480mm(L) ×280mm(W)×370mm(H)
	Weight	About 19 Kg

Appendix table 1.1.1

Appendix 1.2 Technical specifications of ribbon

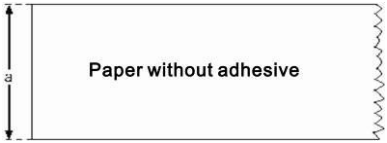
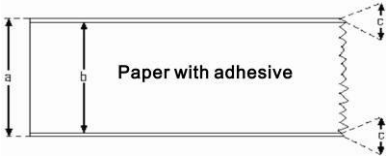
Item	Explanation
Ribbon size	Refer to Appendix table 1.1.1
Ribbon winding method	Outward
Ribbon type	Wax base: Suitable for common thermal transfer paper (copperplate paper, hectograph paper, etc.)
	Half-wax and half-resin: Suitable for hi-light paper (mirror copperplate paper, etc.), compound material (as PET, PVC, PE, etc.)
	Resin: Suitable for wash label or compound material (as PET, POLYIMIDE, etc.)

Appendix table1.2.1

Appendix 1.3 Technical specifications of paper

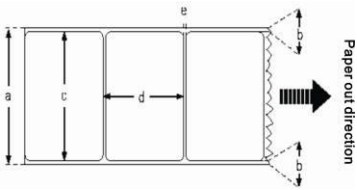
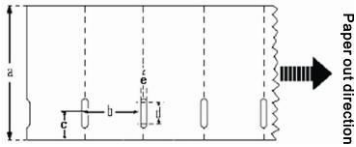
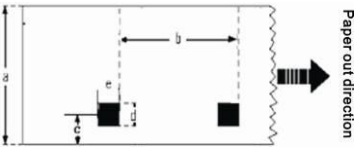
The maximum value of paper height depends on the size of printer configured memory.

1)Specification of continuous paper(unit：mm)

Type	Illustration	Index
Continuous paper without adhesive		Print paper width:25≤a≤118
Continuous paper with adhesive		Base paper width:25≤a≤118 Print paper width:25≤b≤118 Paper margin width: c≤1

Appendix table1.3.1

2)Specification of non-continuous paper(unit: mm)

Type	Illustration	Index
Non-continuous label paper with adhesive		Base paper width: 25≤a≤118 Paper margin width: b≤1 Label width: 25≤c≤118 Label height:: d≥10 Gap width: e≥2
Non-continuous perforated paper without adhesive		Punched paper width: 25≤a≤118 Perforated paper height: b≥10 Detection hole position: c≤a/2 Detection hole width: d≥5 Detection hole height: e≥2
Non-continuous marked paper without adhesive		Marked paper width: 25≤a≤118 Marked paper height: b≥10 Mark position: c≤a/2 Mark width: d≥10 Mark height: e≥4

Appendix table1.3.2

Caution

- Select appropriate ribbon according to detail media type and usage;
- User the ribbon recommended by the media supplier to print as much as possible.

Appendix 2 Self-test page

The self-test page includes printer configuration information, including printer name, version number, current configuration related to the printing, serial interface, Ethernet interface, etc.

Printer **configuration** information

BTP-7400(203DPI)..... MODEL
FV1.000..... MAIN FIRMWARE
V1.1/V2.1..... HARDWARE
15..... DARKNESS
+0..... TEAR OFF
TEAR OFF..... PRINT MODE
GAP/NOTCH..... MEDIA TYPE
WEB..... SENSER TYPE
AUTO..... SENSER SELECE
THERMAL-TRANS..... PRINT METHOD
832..... LABEL LENGTH
807..... LABEL LENGTH
43IN…1100MM.....MAXIMUM LENGTH
CONNECTED..... USB COMM.
BIDIRECTIONAL..... PARALLEL COMM.
115200.....BAUD

8.BITS..... DATA BITS
NONE..... PARITY
DTR/DSR..... HOST HANDSHAKE
NONE..... PROTOCOL
<~>..7EH..... CONTROL CHAR
<^>..5EH..... COMMAND CHAR
<,>..2EH..... DELIM CHAR
NO.MOTION.....MEDIA POWER UP
NO.MOTION.....HEAD CLOSE
BEFORE.....BACKFEED
+0..... LABEL TOP
+0..... LEFT POSITION
6IPS.....PRINT SPEED
6IPS.....BACKFEED SPEED
6IPS.....FEED SPEED
832.8/MM.FULL.....RESOLUTION
06/26/13..... RTC DATE
02:33.....RTC TIME
15722k.....R: RAM
175724k.....E: ONBOARD FLASH
0k.....B: MEMORY CARD
14988160k.....A: U DISK
NONE.....FORMAT CONVERT
WIRED.....ETHERNET TYPE
192.168.0.127.....IP
255.255.255.0.....SUBMASK

192.168.0.1.....GATEWAY

D0FF50317A56.....MAC

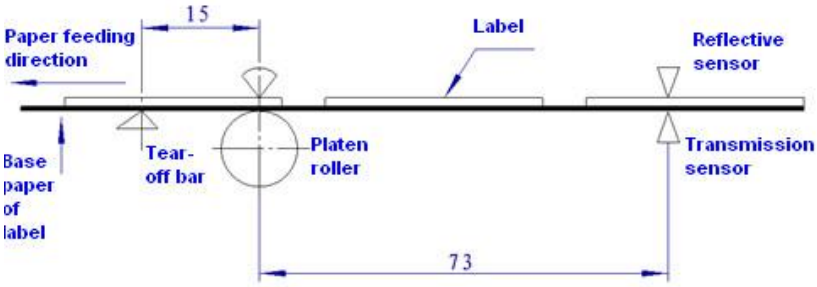
9100.....RAWPORT

ENABLE.....TIMEOUT CHECK

300.....TIMEOUT VELUE

PREMANENT.....IP RESOLUTION

Appendix 3 Print and paper output position



Appendix Fig.3.1

Caution

- The above figure takes the marked paper as an example to illustrate the print and paper output positions;
- Non-continuous paper positions according to the front edge of mark;
- Print and paper output position adjustments please refer to section 3.5.2.

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

Appendix table 4.1.1Printer 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, which only needs 3 wires. This method only applies to small data amount or XON/XOFF flow control:

PC Printer

TXD----------RXD

RXD----------TXD

SG ----------SG

Appendix 4.2 Parallel interface

Parallel interface works under IEEE1284 compatible mode.

Pin	Definition	Description	Pin	Definition	Description
1	Input	/STROBE	13	Output	SELECT
2	Input	Data1	14,15	Not defined	NC
3	Input	Data2	16	-	Ground
4	Input	Data3	17	-	Ground
5	Input	Data4	18		Vcc
6	Input	Data5	19 ~ 30	-	Ground
7	Input	Data6	31		Vcc
8	Input	Data7	32	Output	/Fault
9	Input	Data8	33		Ground
10	Output	/ACK	34 ~ 35	Not defined	/NC
11	Output	BUSY	36	-	Vcc
12	Output	PError			

Appendix table 4.2.1 Parallel signal list

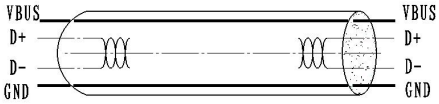
Caution

- In the process of data transmission, the host computer should not ignore the Busy signal; otherwise the print data may be lost;
- Parallel interface signal adopts TTL level. Ensure the rise and fall time of host computer signal is no longer than 0.5μs when it is used.

Appendix 4.3 USB interface

USB interface meets USB2.0 protocol standard.

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



Appendix Fig. 4.3.1 USB cable

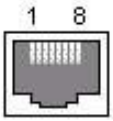
Wire D+ and D- in appendix Fig. 4.3.1 are used for signal transmission, and the VBUS is +5V.

Appendix 4.4 Ethernet interface

The Ethernet interface is an optional interface.

1) Network interface parameter

Meets the standard communication protocol of 10/100M BASE-T in IEEE802.3.



Appendix Fig. 4.4.1 Socket

Pin	Signal name	Function
1	TX+	Data transmit +
2	TX-	Data transmit -
3	RX+	Data receiving +
4	NC	Reserved
5	NC	Reserved
6	RX-	Data receiving -
7	NC	Reserved
8	NC	Reserved

Appendix table 4.4.2 Pin list of Ethernet interface

2) Electrical characteristics of interface

- Output signal

  The effective DMV (differential mode voltage) should be more than 450mV, and the peak voltage is no more than 13V;

  Common mode AC peak voltage is no more than 2.5V.

- Input signal

  If the DMV is more than 160mV, then it is effective signal.

Appendix 4.5 Wireless LAN interface

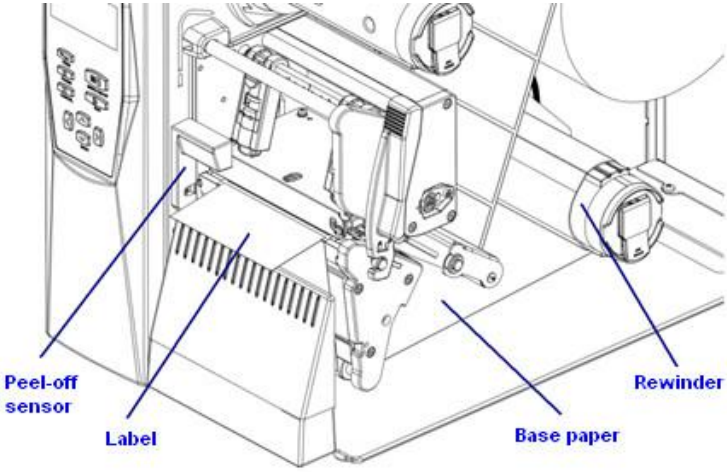
The wireless LAN interface is an optional interface.

- Supports IEEE 802.11b, IEEE 802.11g, IEEE 802.11n protocols;
- Supports WEP, WPA encryption methods;
- Supports ICMP protocol;
- Supports TCP, UDP protocols;
- Supports IPv4 protocol;
- Supports UDP protocol parameter configuration;
- Supports to recover the default configuration via buttons;
- Supports to configure the relevant information of wireless router via HMI (Notes: It needs to press the [Menu] or [Exit] button for a long time to complete the relevant information input of ESSID and password).
- Supports to check the SSID status of current Wi-Fi, connection status (connected / not connected) and the signal strength of router (shown in percentage %).

Appendix 5 Guide for paper loading under peel-off mode

When using label paper with adhesive, the user can set the paper output mode to peel-off mode. When the peel-off mode is selected, follow the steps below to wind the base paper on the rewinder during paper loading:

1) Remove the front labels for about 1 meter long and ensure the base paper is flat;



Appendix Fig. 5.1

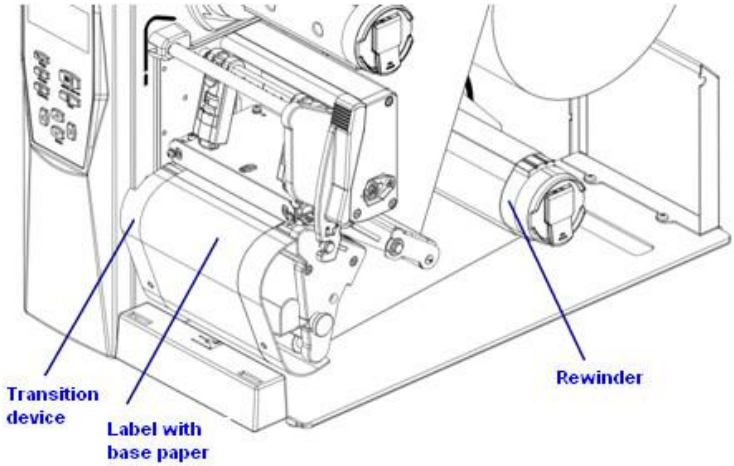
2) Push the print head lifting up spanner backward to lift up the print head module, and lead the base paper go through as the route shown in the figure;
3) Push the print head lifting up spanner forward to press down

the print head module to lock status, wind the base paper on the rewinder tightly for 2-3 circles to complete the paper loading (refer to Appendix Fig. 5.1).

Appendix 6 Guide for paper loading under label rewinding mode

When using label paper with the full roll that has been printed, the user can set the paper output mode to rewinding mode. When the rewinding mode is selected, follow the steps below to wind the label paper on the rewinder during paper loading:

1) Push the print head lifting up spanner backward to lift up the print head module, and lead the label paper go through as the route shown in the figure;
2) Push the print head lifting up spanner forward to press down the print head module to lock status, and wind the label paper on the rewinder tightly for 2-3 circles to complete the paper loading (refer to Appendix Fig. 6.1).

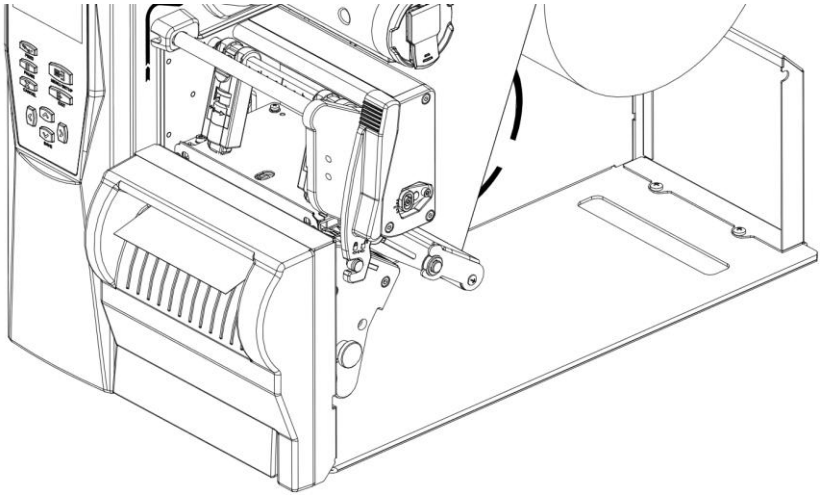


Appendix Fig.6.1

Appendix 7 Guide for paper loading under cutter mode

When using label paper with single label that has been printed, the user can set the paper output mode to cutter mode. When the cutter mode is selected, follow the steps below to lead the label paper pass through the cutter during paper loading:

1) Push the print head lifting up spanner backward to lift up the print head module, and lead the label paper go through the cutter as the route shown in the figure;
2) Push the print head lifting up spanner forward to press down the print head module to lock status, and then the paper loading is complete (refer to Appendix Fig. 7.1).



Appendix Fig. 7.1

Appendix 8 Menu on human-machine interface

1.COMMON SETTING

1.PRINT SPEED

203DPI:2-12 ips

300DPI:2-10 ips

2.DARKNESS (0-30)

3.SHIFT X (-999~+999 DOTS)

4.SHIFT Y (-99~+99 DOTS)

5.TEAROFF POS (-99~+99 DOTS)

2.SETUP

1.PRINTER SETUP

1.TRACKING MODE

1.CONTINUE PAPER

2.MARK PAPER

3.LABEL PAPER

2. OPERATION MODE

1. REWIND

2. TEAR OFF

3. PEEL OFF

4. CUTTER

3. MEDIA TYPE

1. TEM DIRECT

2. TEM TRANSFER

4.PRINT WIDTH

203DPI: 832(DOTS)

300DPI: 1248(DOTS)

5. FEED SPEED

203DPI:2-12 ips

300DPI:2-10 ips

6.BACKFEEDSPEED

203DPI:2-12 ips

300DPI:2-10 ips

7.POWER ON

1. NO ACTION

2. PAPER FEEDING

3. CALIBRATION

8. PRESS DWON PRINT HEAD

1. NO ACTION

2. PAPER FEEDING

3. CALIBRATION

9.PRINT SPEED

203DPI:2-12 ips

300DPI:2-10 ips

10.DARKNESS(0-30)

11.SHIFT X (-999-+999 DOTS)

12. SHIFT Y (-99-+99 DOTS)

13.TEAROFF POS(-99-+99 DOTS)

2.SENSOR

1.LIGHTINTENSITY

1.TRANSMISSENSOR

2.REFLECTSENSOR

3.RIBBONSENSOR

2.THRESHOLD

1.TRANS,CONTINU

2.TRANS,NONCONTINU

3.REFLECT,CONTINU

4.REFLECT,NONCONTINU

5.RIBBON

3.SENSER SELECT

1.REFLECTSENSOR

2.TRANSMISSENSOR

4.SENSER ADJ

1.TRANSMISSENSOR

2.REFLECTSENSOR

3.RIBBONSENSOR

3.SERIAL COM

1.BUAD RATE

1.9600

2.110

3.300

4.600

5.1200

6.2400

7.4800

8.19200

9.38400

10.57600

11.115200

2.DATA BITS

1.7bits

2.8bits

3.STOP BIT(S)

1.1 BITS

2.2 BITS

4.PARITY

1.NOME

2.EVEN

3.ODD

5.HANDSHAKE

1.RTS/CTS

2.XON/XOFF

3.RTX/CTS+XON/XOFF

4.IP NET

1.NET SELECTION

1.WIRED

2.WIRELESS

2. IP ADDRESS

3.SUBNET MASK

4. GATEWAY

5.PRNPORT

6. MAC ADDR

7.IP RESOLUTION

8.WIRELESS SET

1. ROUTER MODE

2. ACESS POINT MODE

9.WIRELESS STATUS)

5.LPT SETUP

1.LPT MODE

1.BYTE MODE

2.NIBBLE MODE

2.LPT ACK SETUP

1. DISABLE ACK

2. ENABLE ACK

6. DATETIME

1.DATE

2. TIME

7.DISTANCE SETUP

1. TPH TO TRANSMIS

2. TPH TO REFLECT

3 .TPH TO TEAR

4. TPH TO PEEL

5. TPH TO CUTTER

3.CALIBRATION

4.SELFTEST

5. MEDIA LIBRARY

1. MEDIA CALL

2. MEDIA STORAGE

3. DELETE ALL

4. DELETE THE SPECIFIED

5. UPDATE THE NUMBER

6.OFF LINE PRINT

R:RAM

E:FLASH

B:SD CARD

A:U DISK

7.SERVICE

1.FACTORY RESET

2. MILEAGE

3.SEQUNCENUM

4.PASSWORD

8.FILEOPERATE

1.UPGRADE

1.APP UPGRADE

2.LCD BOARD

3.MAIN UPGRADE

4.EEP UPGRADE

5.ALL UPGRADE

2.DELETE

3.CUT

4.COPY

5.PASTE

6.CAPACITY

9. PRINT TEST

1.RUN DATA CATPTURE

2.EXIT DATA CATPTURE

3.RUN DUMP PRINT

4.EXIT DUMP PRINT

10. LANGUAGE

ENGLISH

SIMPLIFIED CHINESE

Note: The above menu information is the configuration information V1.000 version, and the menu will be modified without further notice.

Appendix 9 FCC statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

Warning: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

RF warning statement:

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.