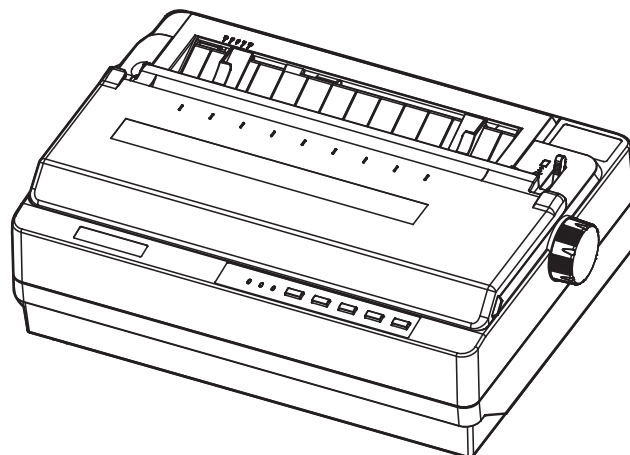JOlimark

User's Manual

DP350

Dot Matrix Printer

Declare

About Trademark

Corporation names and product names are the registered trademarks or commodity names of the corporation.

＊ **Jolimark is a registered trademark of Kong Yue Electronics & Information Industry (XIN HUI) LTD.**

＊ **EPSON and ESC/PK2 are registered trademarks of Seiko Epson Corporation.**

＊ **IBM and IBM 2391 are registered trademarks of International Business Machines Corporation.**

＊ **Windows is a registered trademark of Microsoft Corporation.**

Important Safety Instructions

Read all of these instructions carefully and thoroughly and save them for later reference. The unauthorized operation would lead to malfunction or accident. Manufacturers have no responsibilities for the problems which are led by misoperations.

1. Follow all warnings and instructions in the manual as well as marked on the product.

2. If the printer has been used just now, please not touch the print head for overheating.

3. Do not put your fingers under the left and right tractor sprocket covers of the tractor when installing the tractor paper.

4. Unplug this product from the power outlet before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.

5. Do not use this product near water.

6. Do not place this product on an unstable cart, stand or table. The product may fall, causing serious damage to you or the product.

7. Slots and openings on the cabinet and the back or bottom are provided for air ventilation. To ensure reliable operation of the product and to protect it from overheating, do not block or cover these openings. The openings should never be blocked by placing the product on a bed, sofa, rug or other similar surface. This product should never be placed near or over a radiator or heater. This product should not be placed in a built-in installation or kiosk stand unless proper ventilation is provided.

8. This product should never be placed near or over a radiator or heat origin, and should avoid of direct sunshine.

9. Do not locate this product where the cord would be walked on. When the cord or the plug is mangled, please stop using and get a new one replaced. Make sure the old one is far away from the printer, so it can avoid someone who does not know the inside story getting damage.

10. Do not use in locations subject to high humidity or dust levels. Excessive humidity and dust may cause equipment damage or fire.

11. Never push objects of any kind into this product though cabinet slots as they may touch dangerous voltage dots or short out parts.

12. Don't remove the printer's out-cover and repair the printer. When needed, call or take it to the professional.

13. To ensure safety, please unplug this product prior to leaving it unused for an extended period. The wall outlet you plan to connect to should be nearby and unobstructed.

14. This product belongs to the impact printer, it produces obviously noise during printing, so we suggest placing this printer in a relatively independent area.

15. When using the printer in room where ventilation is not good or printing a large amount of files, it is suggest that to change the air in time.

16. Unplug this product from the power outlet and leave servicing to qualified service personnel under the following conditions:

    A. When the power cord or plug is damaged or frayed.

    B. If liquid has been spilled into the product.

    C. If the product has been exposed to rain or water.

    D. If the product does not operate normally when the operating instructions are followed.

    E. If the product has been dropped or the cabinet has been damaged.

    F. If the product exhibits a distinct change in performance, it indicates a need for service.

Note: The contents of this manual are subject to change without notice.

* All parts of the printer can be recycled. When it is abandoned, we can call it back freely. Please contact us when you abandon it.

Warnings, Cautions, and Notes

Pay attention to the following promises when using this manual:

Warning:

Warnings must be followed carefully to avoid bodily injury.

Caution:

Cautions must be observed to avoid damage to your equipment.

Note:

Notes contain important information and useful tips on the operation of your printer.

The Guide

First thanks for purchasing this Jolimark printer. Your printer is a 24-pin 80-column dot matrix printer, offering a wide range of features and multiple functions. It can be widely used in tax, mail, telecom, police, hospital, insurance, finance, stock, customhouse, cabaret, aviation and transport etc.

Printer Features:

- **Install print paper easily**

  The installation design makes you operate easily, install paper rapidly and save your time.

- **Tear off function**

  This causes tractor paper to be automatically fed to the tear-off position at the edge of the window cover, for easy tear-off at the perforations after printing. This zero tear-off capability helps eliminate paper wastage.

- **Facility switch between cut-sheet and tractor paper**

  Feed the tractor paper back to the installing position through **LOAD/EJECT** key on the control panel, pull the paper select lever to the cut-sheet position. Insert the cut-sheet from front to print. If you want to use tractor paper again, pull the paper select lever back to the tractor paper position after cut-sheet printing. Then press **LOAD/EJECT** key, tractor paper may be fed to the printer again.

- **Eject function**

  The function allows the user eject the tractor paper through the facility key on the control panel.

- **Select the data transfer interface function automatically**

  The printer configures with a parallel interface, two USB interfaces, a serial interface or an Ethernet interface (according to the specific interface standards). Connect the printer to the computer with the correct cables. The printer would switch the correct interface according to the type of data automatically.

- **Emulation**

  The printer supports the Epson ESC/PK2 and IBM 2391 emulations as standard.

- **Break pin compensation function**

  User can set the printer to print using the pin which is in good condition to compensate the break pin.

- **Pin switch rotation function**

  User can set pins to switch while printing form transverse line in order to improve print head life.

Table of Contents

Chapter 1 Preparation

1.1 Unpacking and Checking

Check the following items in the packing box, if any of these items is missing, please contact your dealer.
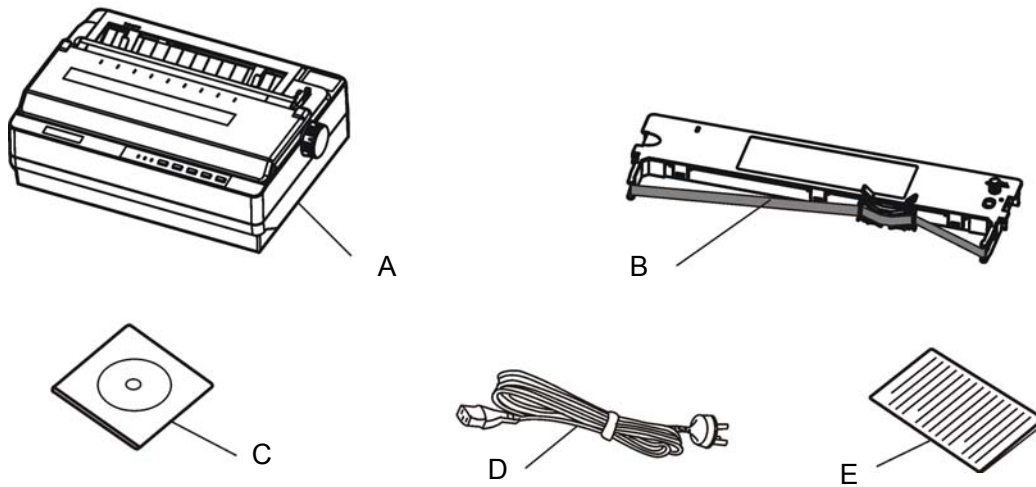
Figure 1-1 Packing list

A: Printer

B: Ribbon cartridge JMR120

C: Driver CD (Including *user's manual* and driver)

D: Power cord

E: Facility user's guide

1.2 Removing the Protective Materials

1. Open the packing box, take out the printer.

2. Save all the original packing materials, so that it can be used when transporting the printer.

1.3 Main Parts of the Printer

Figure1-2 and figure1-3 show the main parts of DP350.
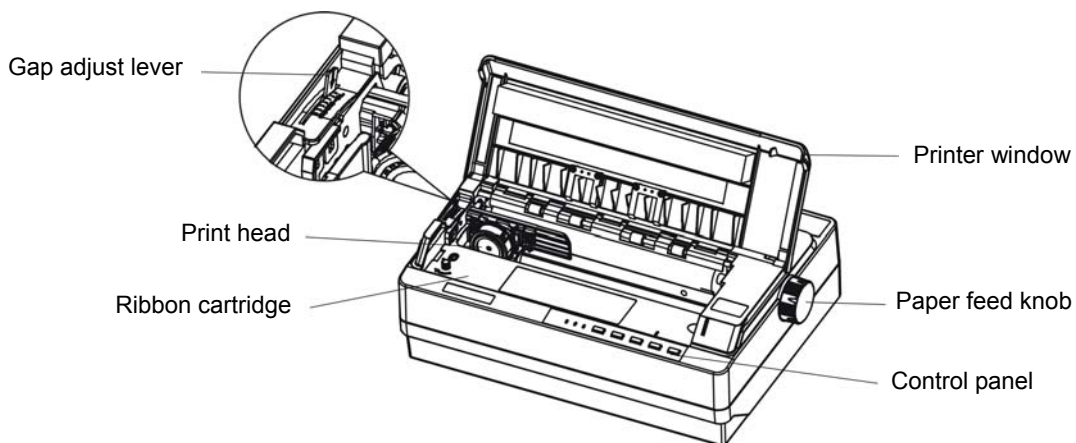
Figure 1-2 Main parts of the printer (front view)
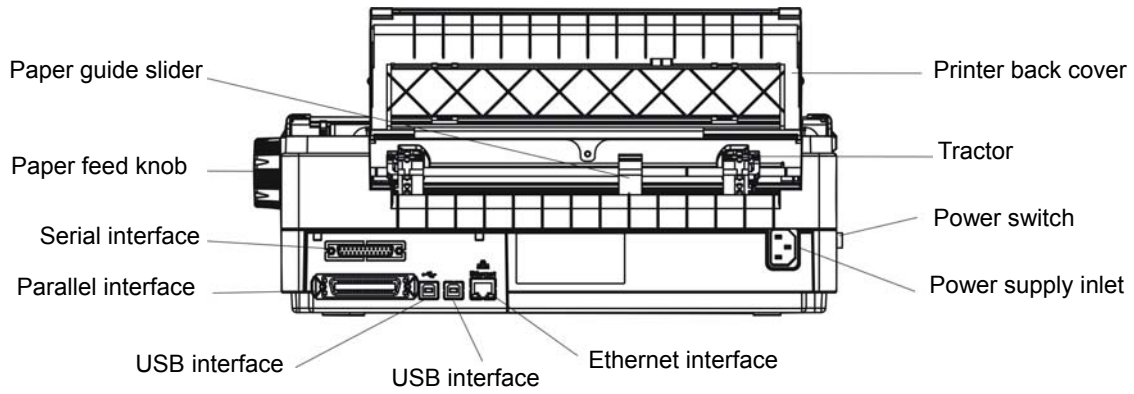
Figure 1-3 Main parts of the printer (rear view)

Note: According to specific interface standards

1.4 Choosing a Place for the Printer

When selecting a place to set up your printer, choose a convenient location that provides the following:

1. A flat, stable surface.

2. Adequate room around the printer to allow easy operation and maintenance. Make sure it's close enough to the computer for the printer cable to reach, and be sure you can easily unplug the power cord.

3. Moderate environmental conditions. Select a cool, dry area and protect your printer from direct sunlight, excessive heat, moisture, or dusty.

4. Appropriate power source. Make sure you use a grounded outlet; do not use an adapter plug. Avoid electrical outlets controlled by timers or wall switches; an interruption in power can wipe out the information in your computer or printer memory.

If you place the printer on a stand, follow these guidelines:

1. Use a stand that supports at least 9 kg (19 lb).

2. Never use a stand which is slant. Always keep it level.

3. Provide enough clearance below the stand and between the printer rack and the legs of the rack so the tractor paper flows smoothly.

4. Place cables so they do not interfere with paper feeding; secure them to a leg of the stand if possible.

1.5 Installing the Ribbon Cartridge

1. Before installing the ribbon cartridge, make sure the printer is turned off.

Note: Never replace the ribbon cartridge when the printer is connected with power. Printer may start to work suddenly which may hurt you.

2. Open the printer window. (As shown below)
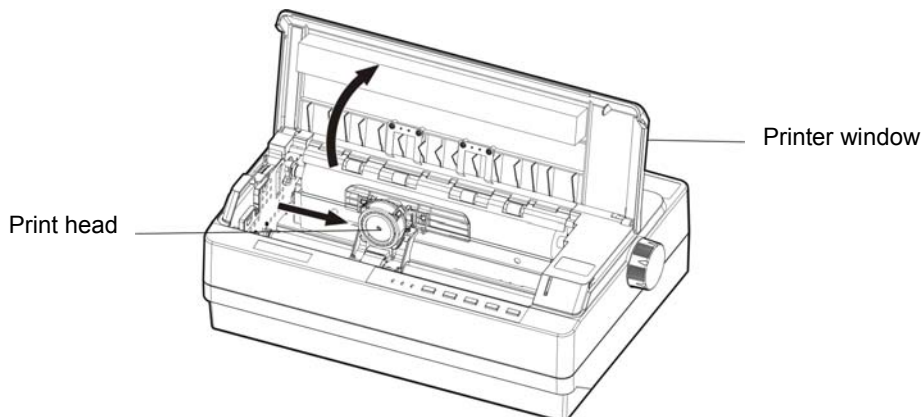
Figure 1-4 Open the window

3. Put the gap adjust lever to the uppermost position.

4. Slide the print head to the middle of the printer.（shown as figure 1-4）

   Note: Never move the print head while the printer is on, or it may damage the printer. Also, if you have just used the printer, let the print head cool for a few minutes before you touch it.

5. Please push out the ribbon nip according to the label on the ribbon cartridge.

Ribbon cartridge (JMR120)

Ribbon knob

Ribbon core
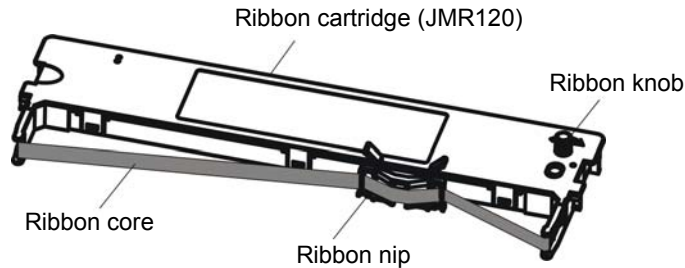
Ribbon nip

Figure 1-5 Ribbon cartridge

6. Hold both sides of the ribbon down firmly to fit the plastic hooks into the printer slots. Then put the ribbon nip between print head and ribbon guide slice, press it down until it click into place. (shown as figure 1-6)

Ribbon knob

Ribbon nip

Ribbon guide slice
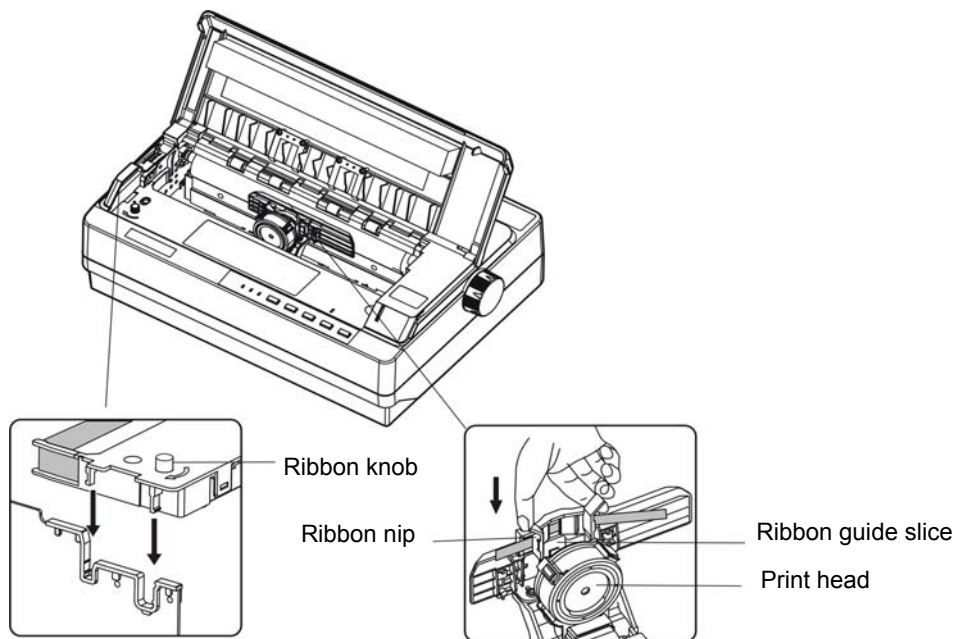
Print head

Figure 1-6 Install ribbon cartridge

7. Turn the ribbon knob in the direction of the arrow to remove any slack from the ribbon so it is easier to install.

8. Slide the print head from side to side several times to make sure it moves smoothly.

9. Please put the gap adjust lever to original place and close the window after the ribbon cartridge is installed.

NOTE: 1. When your printing becomes faint, you need to replace the ribbon cartridge. Otherwise, the print quality would be affected and the print head may be damaged.

2. To remove the old ribbon cartridge, first make sure the power is turned off, move the print head to the center of the printer. Then grasp the ribbon cartridge handle on either side and lift it out of the printer.

3. Please use the Jolimark JMR120 ribbon cartridge only. Manufacturer will not honor warranty when using unauthorized ribbon cartridge.

4. Please turn the ribbon knob in the direction as the arrow shown

1.6 Connecting the Power Cord

1. Make sure the printer's power is turned off. (O mark on the power switch is pressed down)

2. Make sure the voltage required by the printer matches that of your electrical outlet.

3. Plug one end of the power cord into the printer's power supply inlet. (As figure 1-7 shown)

4. Plug the other end of the power cord into a properly grounded electrical outlet.
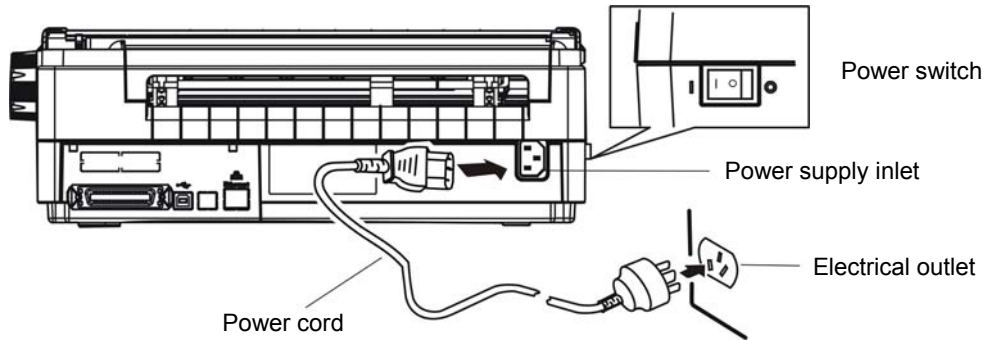
Figure 1-7 Turn off the printer

Note: 1. If the rated voltage and your outlet voltage do not match, contact your dealer for assistance. Do not plug in the power cord.

2. Adopt the electrical outlet connecting the ground properly.

1.7 Printer Self-test Function

The built-in self-test function demonstrates that the printer is working properly. You can run the test with either tractor paper or cut sheets; this section describes the easier way, with cut sheets.

Note: You should use paper at least 210 mm (8.3 inches) wide to run the self-test; otherwise, the print head would print directly on the platen.

1. Make sure the printer is turned off and the paper-select lever is at the cut sheet position. Raise the back cover.
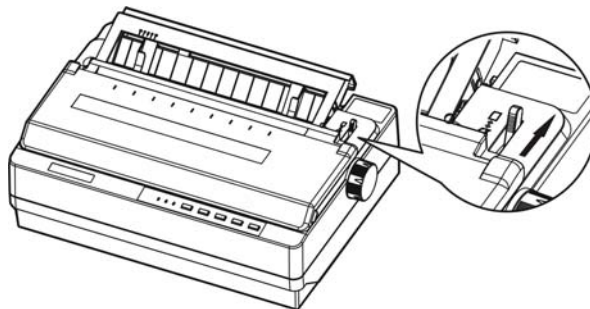
Figure 1-8 set paper-select lever

2. While holding down the **TEAR** key, turn on the printer. The **Paper Out** and **ONLINE** LEDs blink which indicates the printer is out of paper.

3. Adjust the right paper guide of the back cover to the range of the scale. Then adjust the left paper guide to make the distance match the width of the print paper (as shown below).
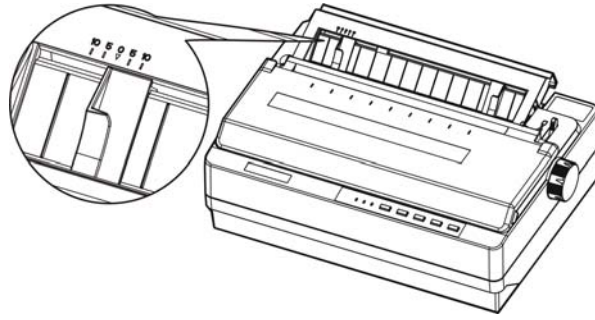
Figure 1-9 Adjust the right and the left paper guides of the back cover

4. Slide a piece of cut sheet down firmly between the right and left paper guides until it meets resistance. The printer loads the cut sheet automatically and begins printing when pressing **ONLINE** key.
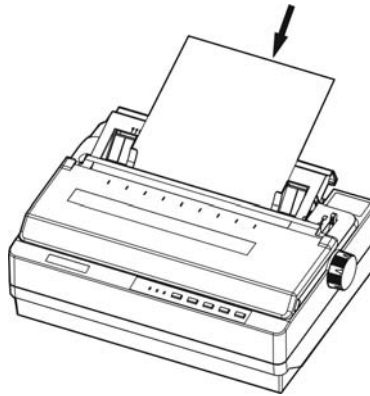
Figure 1-10 Install cut sheets

Warning: Always close the printer window while the printer is printing.

5. To stop printing temporarily, press the **ONLINE** key.

6. To end the self test, make sure the printer is not printing, press **LF/FF** or **LOAD/EJECT** key to eject cut sheet; then turn off the printer.

ASCII Self-test mode

Jolimark   DP350   VX.X XXXXXXX/XX/XX   SN: XXXXXXXXXXX

!"#$%&'( )*+-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`ab
!"#$%&'( )*+-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcd
"#$%&'( )*+-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcde

Figure 1-11 ASCII Self-test mode

Note: If the self test did not print satisfactorily, see Chapter 4. If it prints correctly, go on to the next section.

1.8 Connecting the Printer to Your Computer

The printer configures with a parallel interface, two USB interfaces, a serial interface or an Ethernet interface. (According to the specific interface standards) Connect the printer to the computer with the correct cables. Before you begin, place the printer upright, as shown in figure 1-12. (This makes it easier to connect the cable.)

Parallel interface

Serial interface

Ethernet interface

USB interface
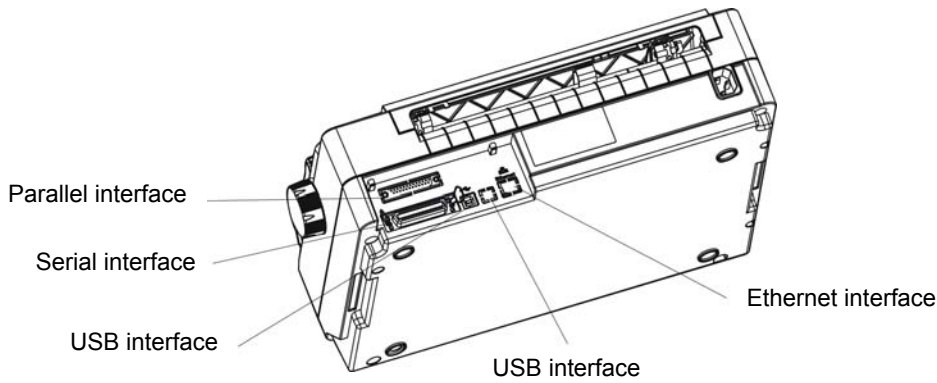
USB interface

Figure 1-12 Lay the back of the printer upwards

Note: Before connecting the parallel interface or the serial interface, please make sure the power of the printer is shut down. Only after tighten the cable, could turn on the printer, or it would damage the printer.

1.8.1 Connecting to the Parallel Interface

1. Turn off both the computer and the printer. Plug the parallel cable connector securely into the printer's parallel interface. Squeeze the wire clips together until they lock in place on either side of the connector. (Shown as figure 1-13)

Wire clip

Parallel interface
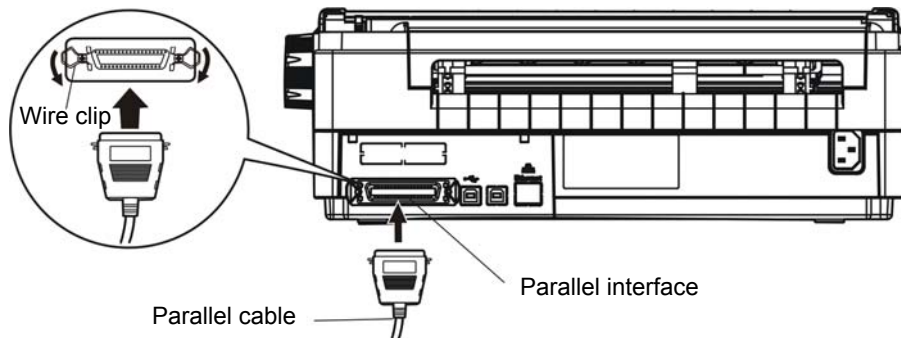
Parallel cable

Figure 1-13 Connect to the parallel interface

2. Plug the other end of the cable into the computer's parallel interface, and make sure it is connected fast.

1.8.2 Connecting to the USB Interface

1. Plug the USB cable A end (flat shape) into the computer's USB interface.

2. Plug the USB cable B end (square shape) into the printer's USB interface (As shown in figure 1-14).

Note: Don't impact the plug after connecting to the USB cable.

USB interface

USB interface
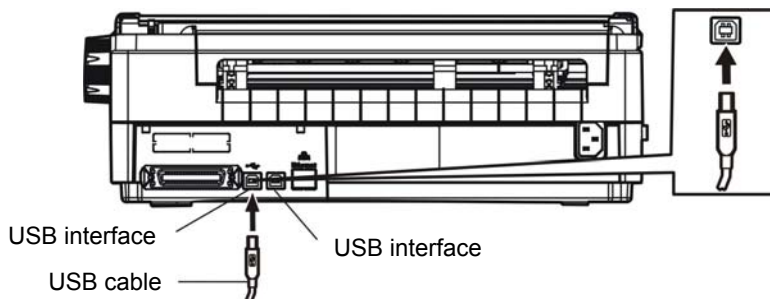
USB cable

Figure 1-14 Connect to USB cable

1.8.3 Connecting to the Serial Interface

1. Turn off both the computer and the printer. Plug the serial cable connector securely into the printer's serial interface. Tighten the screws on either side of the connector. (As shown in figure 1-15)

Screw

Serial interface
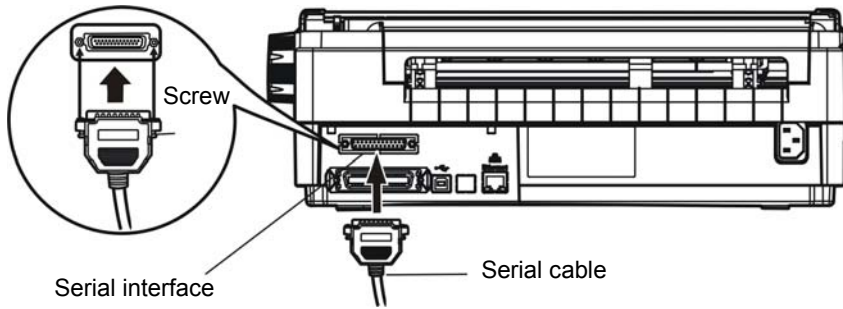
Serial cable

Figure 1-15 Connect to serial interface

2. Plug the other end of the cable into the computer's serial interface, make sure it connects tightly.

1.8.4 Connecting to the Ethernet Interface

Plug the RJ-45 crystal end of the Ethernet cable into the printer Ethernet interface, and plug the other end into the LAN. (Shown as figure 1-16)

Ethernet cable ——— Ethernet interface
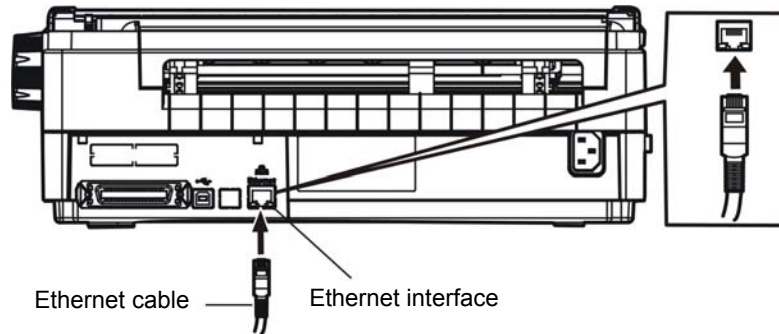
Figure 1-16 Connect to the Ethernet interface

Note: The detail instructions of network setting please refer to the *User's Manual*.

1.9 Installing Printer Driver

Please use the cable to connect computer with printer, then turn on the computer and the printer, put the driver CD into the CD-ROM. Install driver by the following ways:

Auto-installing way

Double click the file "Setup.exe" in the driver disc, install driver by the following direct.

Note: Auto-installing way needs the operating system of Windows 2000 or above.

Hand operated installing way

Note: The hand-operated installing ways of serial interface and parallel interface are the same.

1) The installing steps of parallel interface for Windows 2000/XP/Vista are as follows:

1 Click "Start" → "Settings" → Select "Printers".

2. Click "Add Printer", then it pops up a window of "Add Printer Wizard", click "Next", then please read the select guide carefully, such as, select "Local printer" in the "Local or Network Printer" window, then click "next".

3. A window of "Select a Printer Port" pops up, select a usable port. Such as, select "LPT1: (Recommended Printer Port)", (If you need to use other ports, please select the respective port), click "Next".

4. A window of "Install Printer Software" pops up, click "Have Disk...", click "Next".

5. A window of "Install From Disk" pops up. Please according to the operating system environment, you should select the path as follow: CD-ROM → "Drivers" → "WIN2000 (XP-Vista-Win7)", click "Open", then click "OK" to return to the window of "Install Printer Software", click "Next".

6. Follow the guide click "Next" gradually till the installation is finished.

2) The installing steps of parallel interface for Windows 7 are as follows:

1. Click "Start" → "Device and Printers".

2. Click "Add Printer", then it pops up a window of "Add Printer Wizard", click "Next", then please read the select guide carefully, such as, select "Local printer" in the "Local or Network Printer" window, then click "next".

3. A window of "Select a Printer Port" pops up, select a usable port. Such as, select "LPT1: (Recommended Printer Port)", (If you need to use other ports, please select the respective port), click "Next".

4. A window of "Install Printer Software" pops up, click "Have Disk...", click "Next".

5. A window of "Install From Disk" pops up. Please according to the operating system environment, such as Windows XP operating system, you should select the path as follow: CD-ROM → "Drivers" →"WIN2000 (XP-Vista-Win7)", click "Open", then click "OK" to return to the window of "Install Printer Software", click "Next".

6. Follow the guide click "Next" gradually till the installation is finished.

The USB interface installing steps for Windows 2000/XP/Vista/Win7 are as follows:

The following steps are used Windows XP as example. There are slight differences among different operating systems.

1. Connect the printer to computer with an USB cable and turn on the printer.

2. After the computer find out new hardware and finish searching, pop up a window of "Found New Hardware Wizard", choose "Install from a list or specific location (Advanced)", click "Next".

3. A window of "Found New Hardware Wizard" — "Please choose your search and installation options" pops up, choose "Don't search, I will choose the driver to install", click "Next".

4. A window of "Add Printer Wizard" pops up, click "Have Disk...", click "Browse".

5. A window of "Install From Disk" pops up. Please according to the operating system environment, you should select the path as follow: CD-ROM → "Drivers" → "WIN2000 (XP-Vista-Win7)", click "Open", then click "OK" to return to the window of "Add Printer Wizard", click "Next".

6. Follow the guide click "Next" gradually till the installation is finished.

The installing steps for Windows 98 are as follows:

(1) The installing steps with a parallel cable or a serial cable:

1. Click "Start" → "Settings" → "Printers".

2. Click "Add Printer", then a window of "Add Printer Wizard" pops up, click "Next", then please read the select guide carefully, such as, select "Local printer" in the "Local or Network Printer" window, then click "Next".

3. A window of "Click the manufacturer and model of your printer" pops up, click "Have Disk...", please click "Browse", select the path as follow: CD-ROM → "Drivers" → "WIN98 (WINME)", then click "OK".

4. A window of "Install From Disk" pops up, click "OK, return to a window of "Add Printer", select the respective model, then click "Next".

5. A window of "Printer port" pops up, select "Available ports", such as, select "LPT1: Printer Port", click "Next", and then show the printer's name. If the system is not installed by other printer driver process, the printer is treated as default printer by the application process of Window98 environment, click "Next". Otherwise according to prompt, choose the printer is default: "Yes", click "Next", choose "Yes-(recommended)", click "Finish". A window of "Printer test page completed"

pops up, click "Yes".

6. The printer driver process is installed successfully.

(2) The installing steps with an USB cable:

Note: 1. As the system of Windows 98/ME doesn't have integrated USB driver control, please install USB driver before using USB interface printing. Then install USB printer driver.

2. If it has installed the USB driver, please install the USB printer driver directly as the following steps.

USB driver installing steps:

1. Connect an USB cable and turn on the printer.

2. After the computer find out new hardware and finish searching, a window of "Add New Hardware Wizard" pops up, click "Next".

3. A window of "Add New Hardware Wizard" — "Windows operation" pops up, choose "Search the best driver for the device (recommended)", click "Next".

4. A window of "Search for new drivers" pops up, check "Specify a location", click "Browse", select the path as follows: CD → ROM → "Drivers"-"[WIN98 (WINME) \ USBdriver]", then click "OK".

5. Return to a window of "Search for new drivers", click "Next"; a window of "Windows driver file search for the device" pops up, click "Next".

6. After the system finishing installing the file automatically, a window of "USB Print Supported" pops up, click "Finish".

7. The printer USB driver process is installed successfully.

USB printer driver installing steps:

1. Click "Start" → "Settings" → "Printers".

2. Click "Add Printer", then a window of "Add Printer Wizard" pops up, click "Next".

3. A window of "Click the manufacturer and model of your printer" pops up, click "Have Disk...", please click "Browse", select the path as follow: CD-ROM → "Drivers" → "WIN98 (WINME)", and then click "OK".

4. A window of "Install From Disk" pops up, click "OK", return to a window of "Add Printer", then click "Next".

5. A window of "Printer port" pops up, select "Available ports", select "JMUSB", click "Next", and then show the printer's name. If the system is not installed by other printer driver process, the printer is treated as default printer by the application process of Window98 environment, click "Next". Otherwise according to prompt, choose the printer is default: "Yes", click "Next" choose "Yes-(recommended)", click "Finish". A window of "Printer test page completed" pops up, click "Yes".

6. The printer driver process is installed successfully.

1.10 Network Settings

Please use Jolimark network setting software NetFinder to set the IP address for Jolimark printers, which can be found in the CD or downloaded from www.jolimark.com.

Note: The network printing function needs the operation system of Windows 2000 or above.

1.10.1 Connecting Printer

Power on the printer, connect with the Ethernet cable which has been connected to LAN, and look into the information of Ethernet LED to ensure the printer has entered into the normal connection.

Yellow LED	Green LED	Description
ON	Blink	Connecting to network
OFF	OFF	Not connecting to network

1.10.2 Setting IP Address

1. Run NetFinder Software

Double click NetFinder.exe in the PC which connects the printer in the same LAN. The figure of the software is shown as follows:
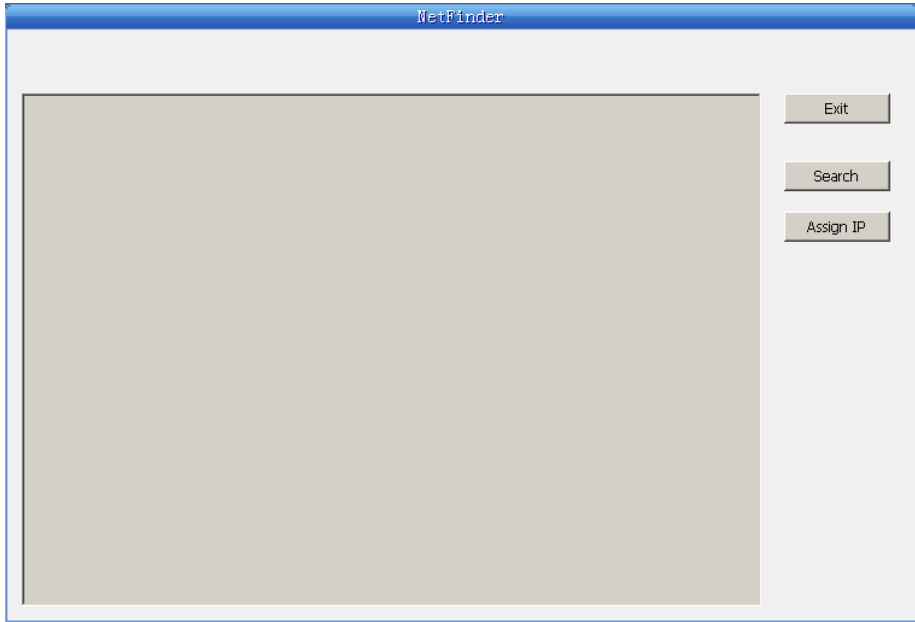
Button description:

Exit — Exit from the software

Search — Search printers in the same LAN

Assign IP — Modify the IP address and other settings for the specified printer.

2. Search printer

Click "Search" key in the main interface, the dialog box appearing would begin searching automatically and show appearance, listing a printer in the main interface if found. The time is counting down in the progress bar (10s in total) and the search would finish as soon as the time is over. When going on searching, press "search" key again.
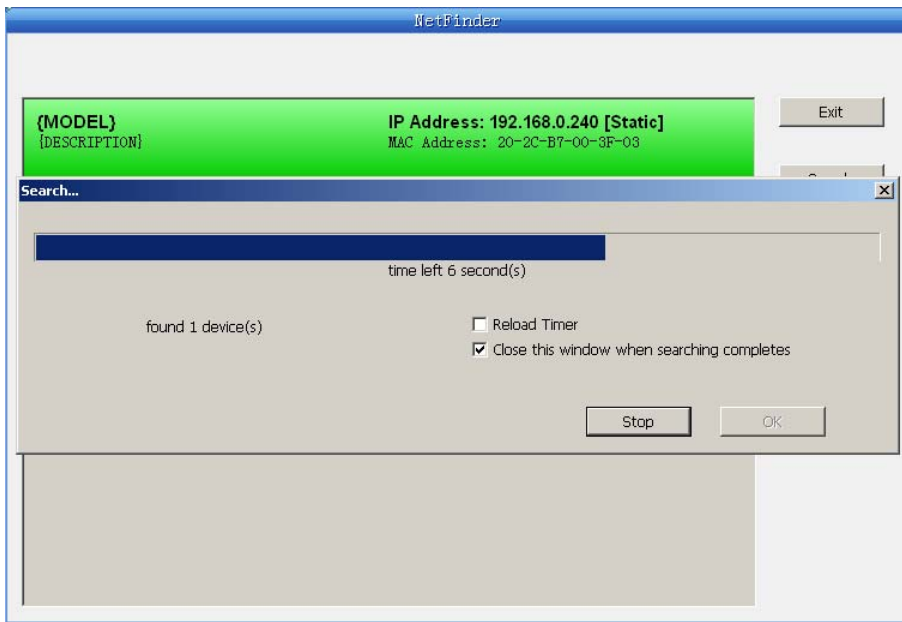
If the printer still can not be found out when the network connection is correct and in the same network, please check whether the network fire wall on the PC open or not. If there is fire wall, please close it temporarily, open again after finishing searching and setting a printer completely.

3. Setting printer's IP address

The printer's information is listed in the main interface, the left side of which is the model and description and the right are the IP address and MAC address. What's more, the assign mode (dynamic/static) is noted behind the IP address.
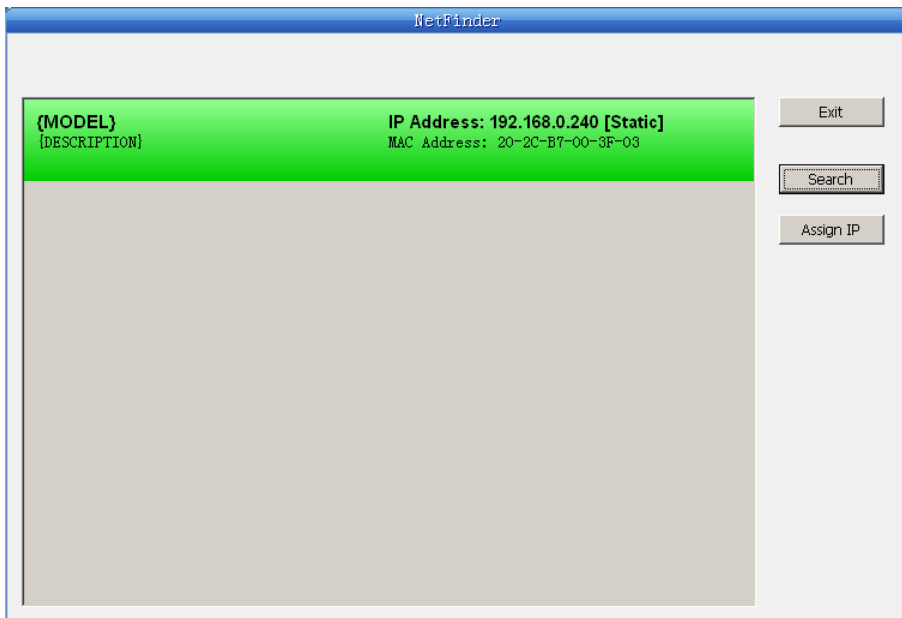
1) Correlative description for IP address settings

In order to search and set printer's IP address conveniently for the first time, the factory default setting is DHCP mode which assigns IP address dynamically. If there is no DHCP server in the connected LAN and printer is set to DHCP mode as well, then it would use the internal pre-set address (IP: 10.0.0.1, Subnet Mask: 255.255.255.0) automatically.

It is suggested that printer's IP set to static in actual usage, which can cut down the time when initializing the Ethernet interface as the printer is turned on and prevent IP conflicts (The dynamic address used in printer may conflict with another one). The network segment part of the IP address and Subnet Mask must be the same as those of PC connecting with a printer. For example, the

address of working PC is 192.168.0.1/255.255.255.0 (IP/Subnet Mask),then which of printer should be set to 192.168.0.x/255.255.255.0（x=2~254 and should avoid the IP in used. It is not restricted for NetFinder to search printers in the same network but different segment parts (can not stride gateway). Relative glossary of IP address may refer to corresponding information.

2) Setting printer's IP address

Select the printer information to be modified (black frame appears), click "Assign IP" key. Set the IP in the dialog box appearing.
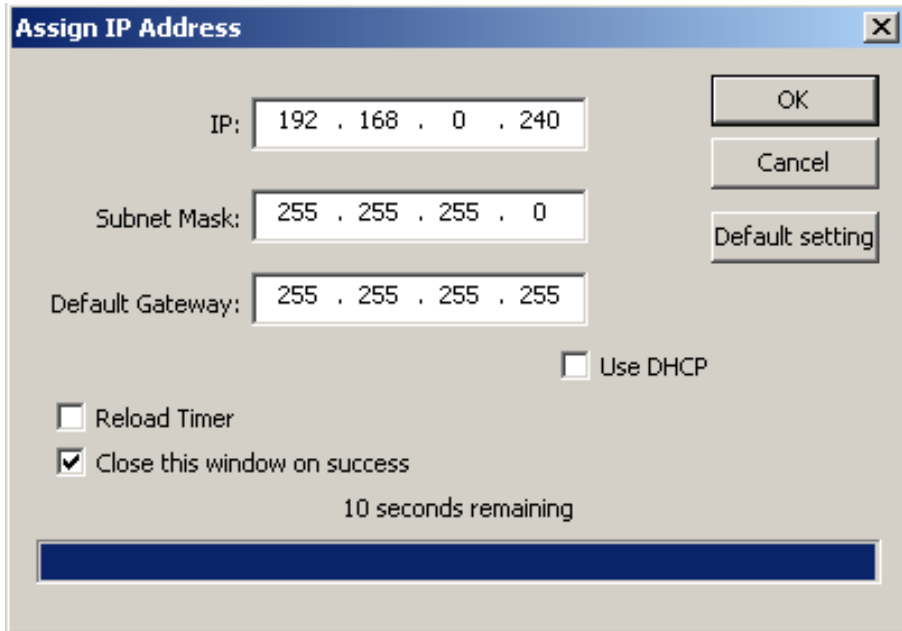
Check the "Use DHCP" if need to assign dynamic address, the settings above would be disabled automatically. Please make sure there is a DHCP server in the network, or the printer can not receive an effective IP address.

When to specify static address, uncheck "Use DHCP" and fill in "IP address", "Subnet Mask" and "Default Gateway". If there is no gateway in the network, fill 255.255.255.255 in the "Default gateway". "IP address" and "Subnet Mask" should obey the assigning rules of local LAN (Ethernet), please enquire the administrator of networks which the printer connects to for more details.

Click "OK" to send address setting information to the specified printer. Click "Cancel" if you abandon the modification.

Click "Search" in the main interface again to update printer information after modifying the printer's IP address.

3) Report printer's IP address

Report the printer's IP address, which would be used in the section "Newly-install printer network driver" or "Upgrade-install printer network driver (setting driver's network port)".

1.10.3 Installing Printer Network Driver

The ways of installing network driver are classified into Newly-install way and Upgrade-install way according to whether the PC installs the printer driver or not.

If the printer driver hasn't been installed on the PC, adopt newly-install way whose steps are shown in "Newly-install printer network driver".

If the printer driver has been installed on the PC, adopt Upgrade-install way whose steps are shown in "Upgrade-install printer network driver".

1. Newly-install printer network driver

1) Click "Start" → "Settings" → Select "Printers".

2) Click "Add printer", then a window of "Add Printer Wizard" pops up, click "next", then please read

the select guide carefully. Such as, select "Local or Network Printer", then click "next".

3) A window of "Select the Printer port" pops up, select a port you want your printer to use. For example, select "Create a new port", select "Standard TCP/IP Port" in the port, click "next".
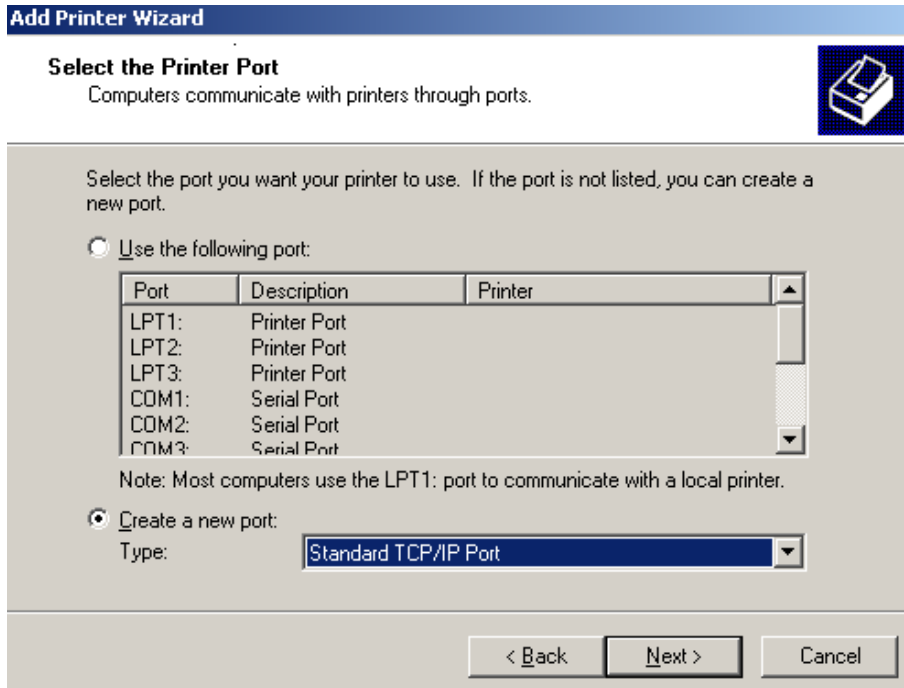
4) A window of "Add standard TCP/IP Printer Port Wizard", click "Next".

5) A window of "Add Port" pops up, enter the IP address reported by the "Setting printer's IP address" in the "Printer Name or IP Address" column. Take IP address "192.168.0.240" for example. "Port Name" is created automatically after finishing filling in IP address.
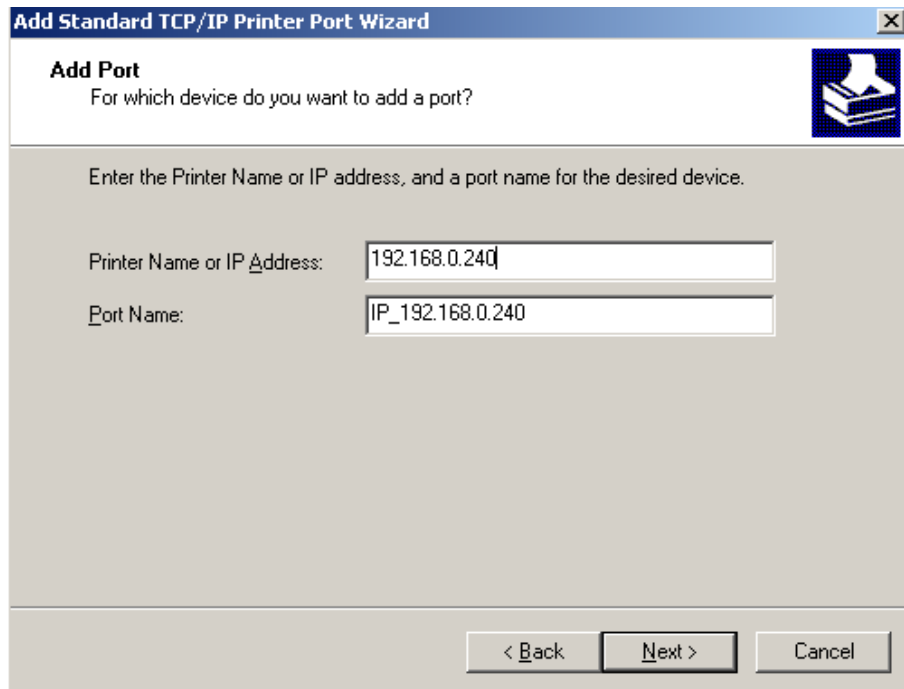
6) A window of "Additional Port Information Required" pops up, select "Custom" in the "Device Type", then click "Settings".
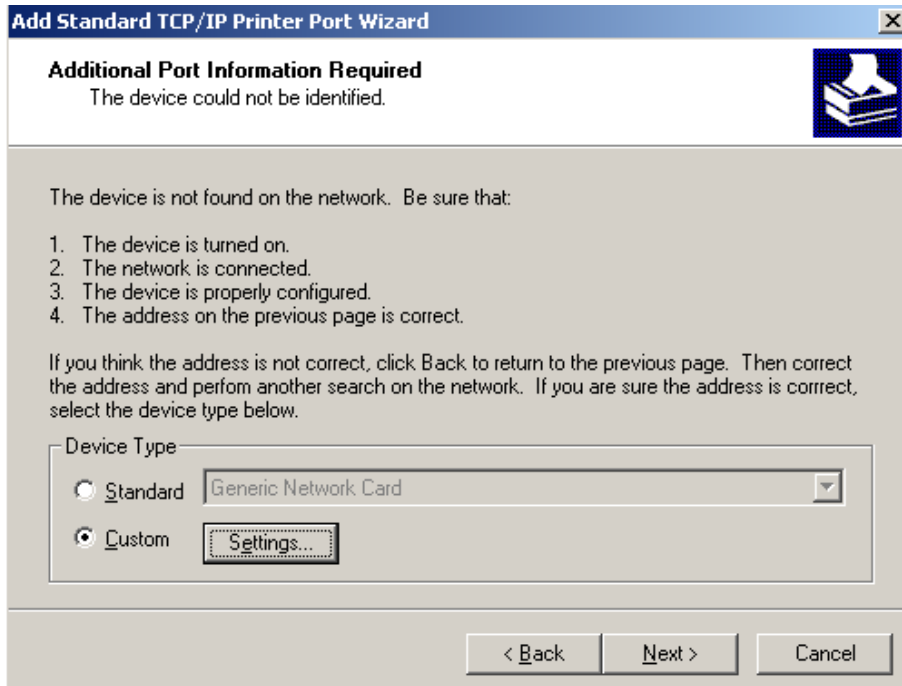
7) A window of "Port Settings" pops up. Affirm that "Port name" and "Printer name or IP address" are correct, "Protocol" is "RAW" and "Port Number" is "9100", click "OK".
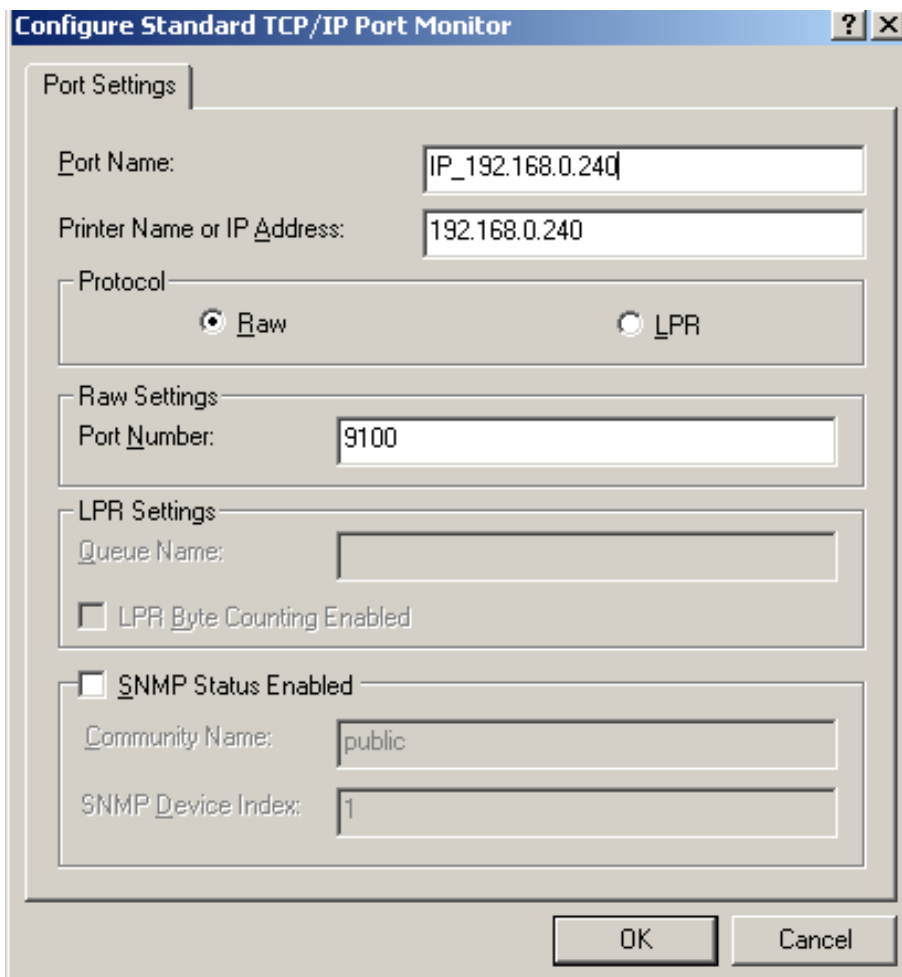
8) Return to "Additional Port Information Required", click "Next".

9) A window of "Completing the Add Standard TCP/IP Printer Port Wizard" pops up, click "Finish".

10) In the selection of "Manufacturers/Printers", click "Have Disk", and then click "Next".

11) A window of "Install From Disk" pops up. Please according to the operating system environment, such as Windows 2000/XP/Vista/Win7 operating system you should select the path as follows: CD-ROM → "Drivers" → "WIN2000 (XP-Vista-Win7)", click "Open", then click "OK" to return to the window of "Install Printer Software", click "Next".

12) Follow the direct click "next" gradually till the installation is finish. At this time, printer network driver is installed completely.

2. Upgrade-install printer network driver (setting driver's network port)

If PC has installed the printer's driver, set driver's network port to carry out network printing. The concrete steps are shown below:

1) Click "Start" → "Settings" → Select "Printers".

2) Right click DP350 driver, click "Properties" on the window popping up.

3) A window of "Properties" pops up, click "Ports" and "Add Ports".
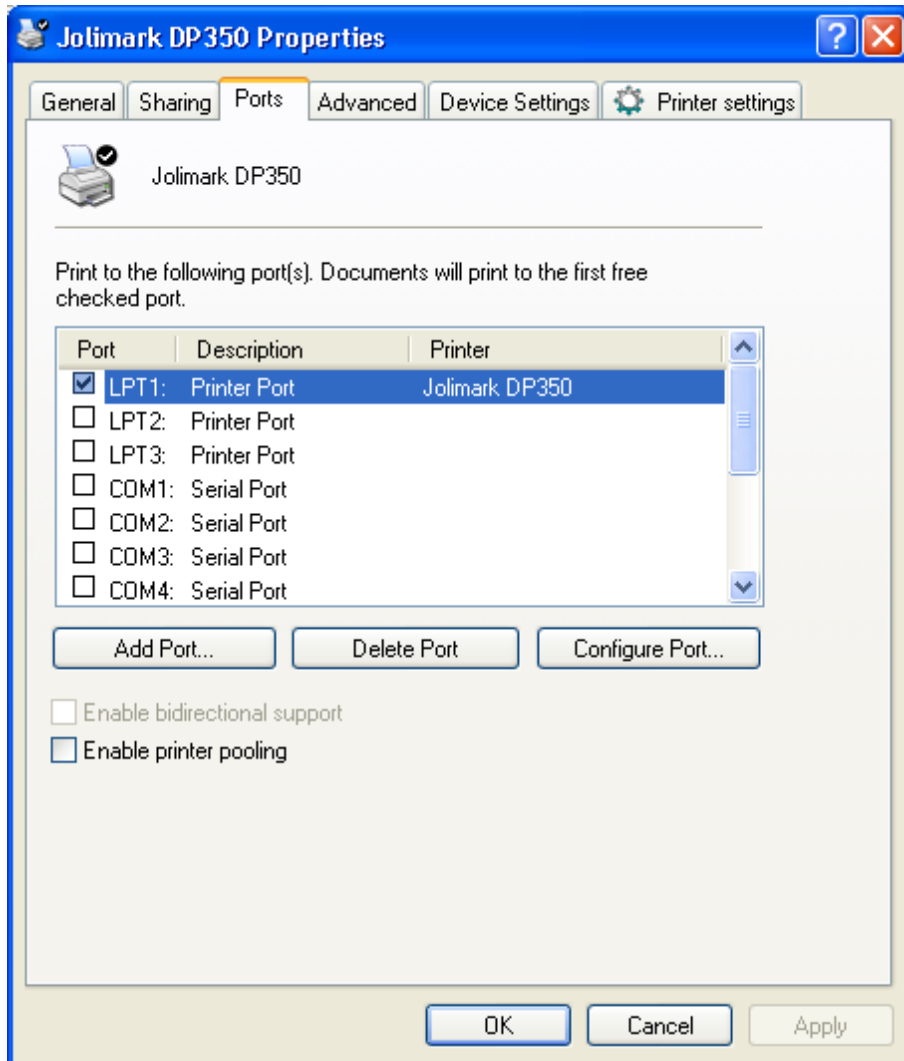
4) A window of "Printer port" pops up, select "Standard TCP/IP Port", click "New port".
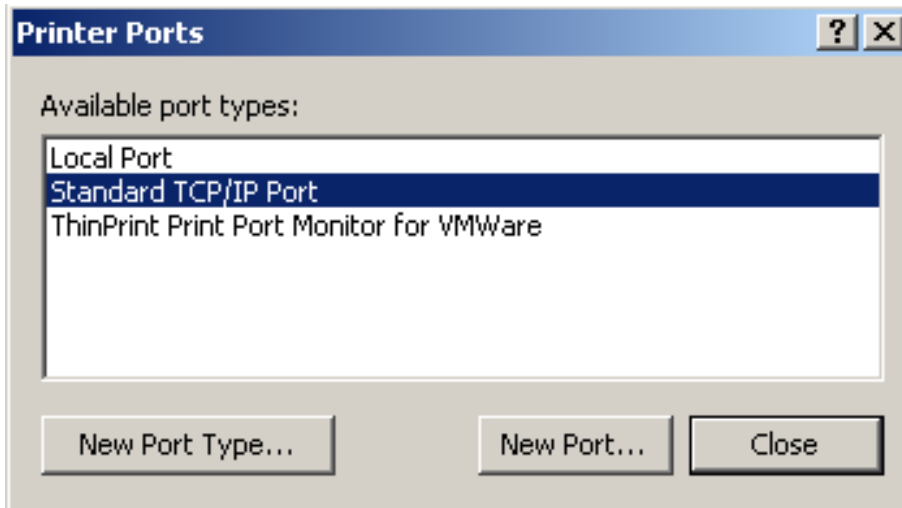
5) A window of "Add Standard TCP/IP Printer Port Wizard" pops up, click "Next".

6) A window of "Add a port" pops up, import the IP address reported by the "Setting printer's IP address" in the "Printer name or IP address" column. Take IP address "192.168.0.240" for example. "Port name" is created automatically after finishing filling in IP address. Click "Next".
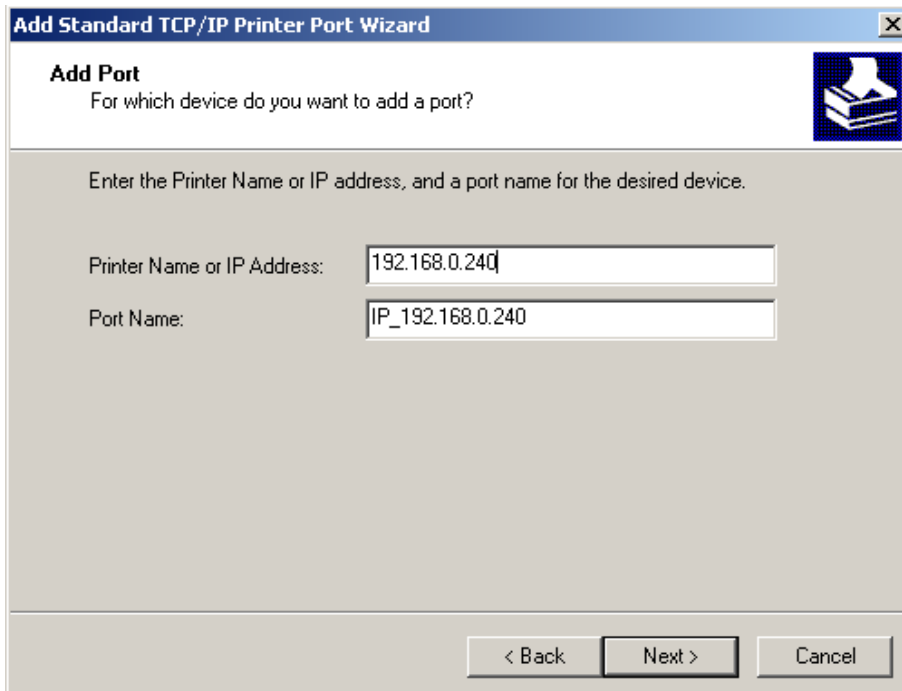
7) A window of "Additional Port Information Required" pops up, select "Custom" in the "Device Type", then click "settings".
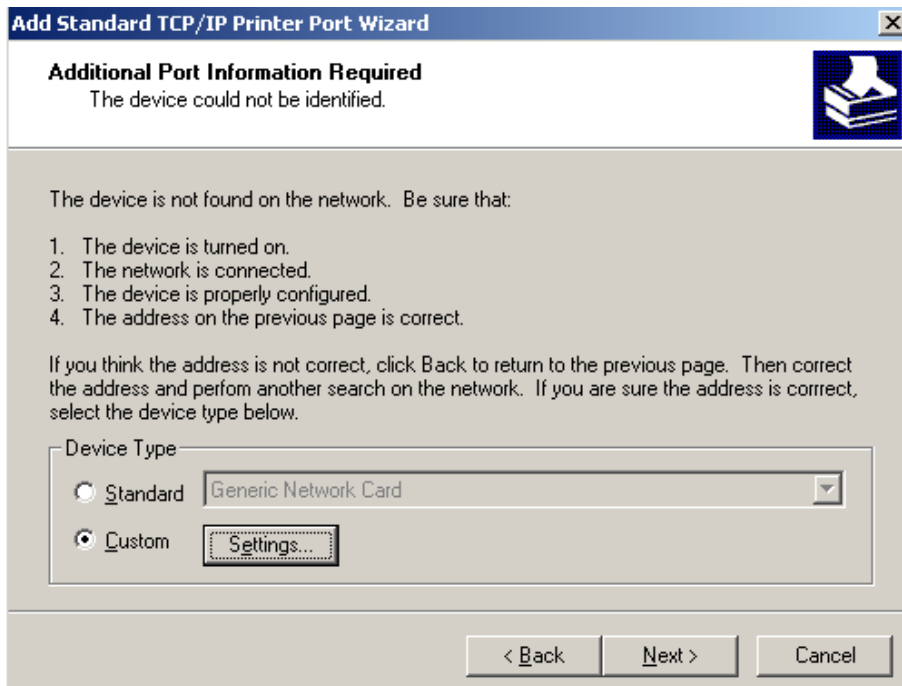
8) A window of "Port Settings" pops up. Affirm that "Port name" and "Printer name or IP address" are correct, "Protocol" is "RAW" and "Port Number" is "9100", click "OK".
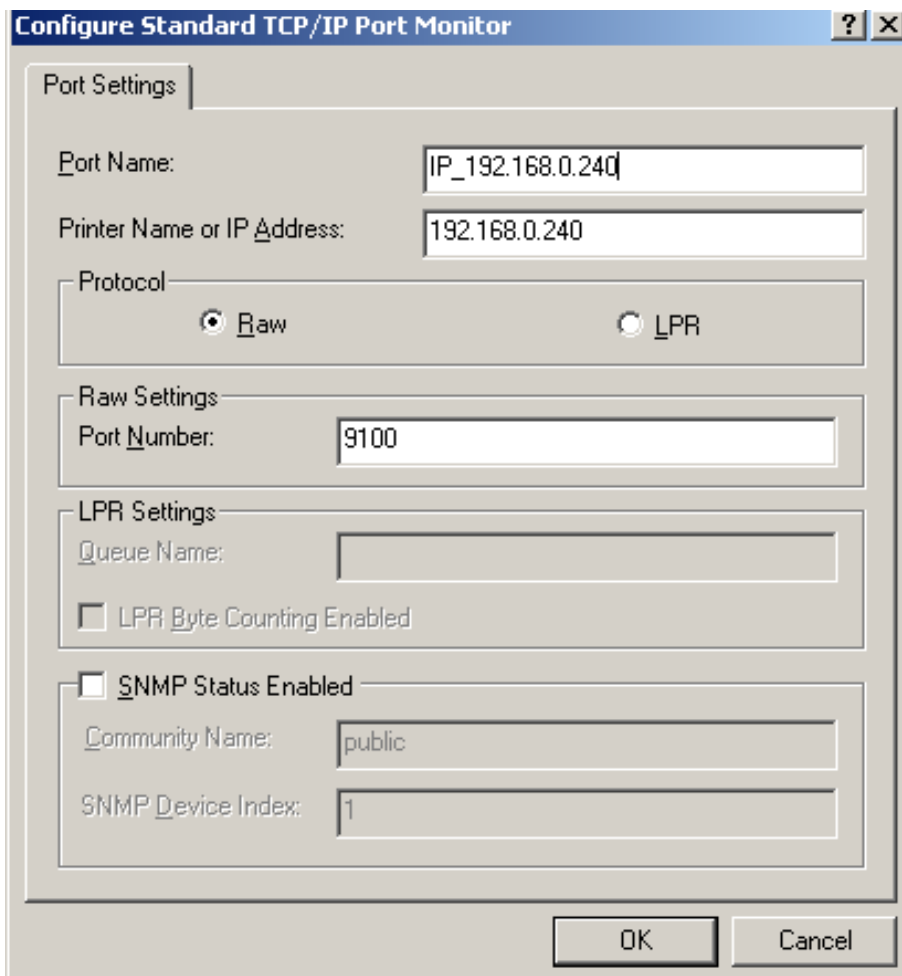
9) Return to "Additional Port Information Required", click "Next".

10) A window of "Completing the Add Standard TCP/IP Printer Port Wizard" pops up, click "Finish".

11) Return to "Printer Ports", click "Close".
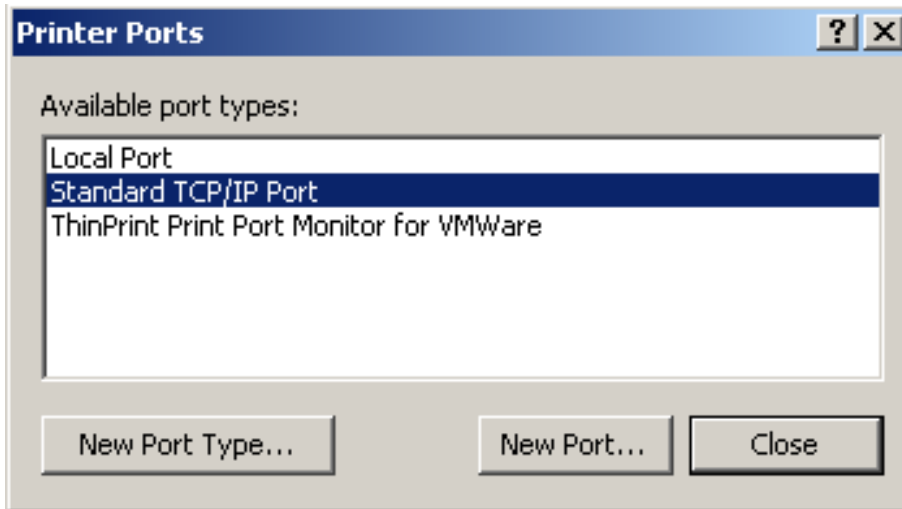
12) Return to "Properties", make sure the network port is selected, click "Apply", and then click "Close". Thus, printer's network port setting is finished.
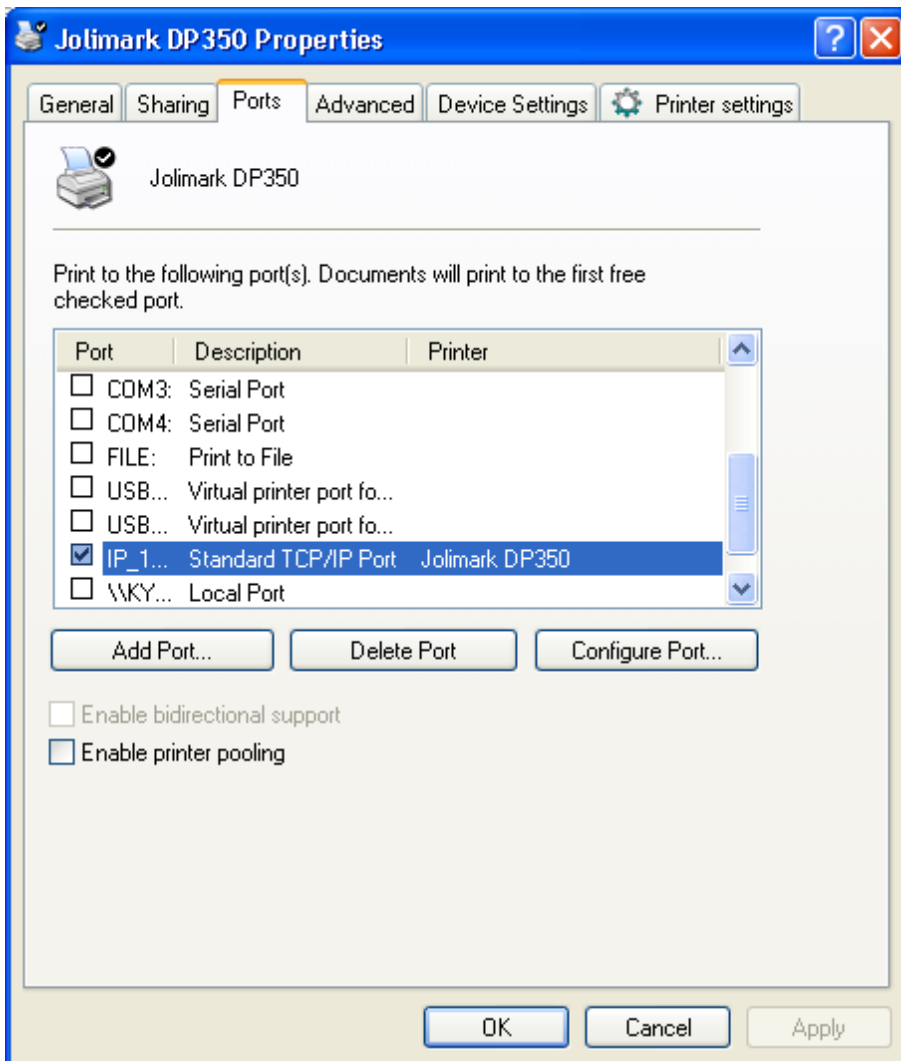
Chapter 2 Control Panel

2.1 Control Panel

Include 5 keys and 3 LEDs (shown as figure2-1).
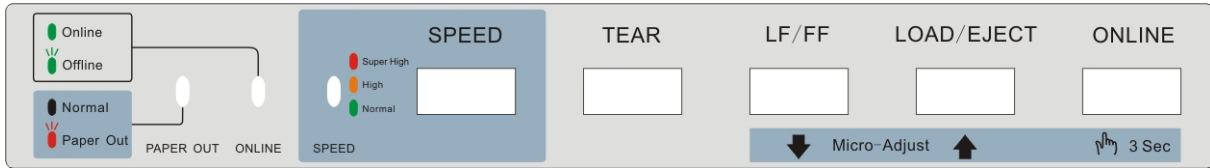
Figure 2-1 Control panel

2.2 LED Description

| LED	OFF	ON	BLINK
PAPER OUT	Normal	——	Paper out or malfunction
ONLINE	——	Online	Offline
SPEED	The green LED denotes normal speed mode (or letter speed mode), the yellow LED denotes the high speed mode and the red LED denotes the super high speed mode.		

2.3 Control Panel Basic Function Description

ONLINE	Press **ONLINE** key to switch between online mode and offline mode.
LOAD/ EJECT	At the state of paper out, press **LOAD/EJECT** key once, the paper would be fed into the printing home position automatically when the paper is at the ready position. In the tractor paper mode and press **LOAD/EJECT** key once, the paper would eject one page of tractor paper when it is at the tear position or just feed paper. When it is at other positions, press **LOAD/EJECT** key once, the tractor paper would eject one line, Alternatively, hold the **LOAD/EJECT** key down, the printer would eject one page of tractor paper. If in the cut sheet mode, press the **LOAD/EJECT** key, the paper would be entirely ejected from the printer.
LF/FF	If the paper is at the print position, press the **LF/FF** key once in sleep or offline mode, the printer would feed the paper one line. Alternatively, hold the **LF/FF** key down, the printer would feed one page of tractor paper or eject the cut sheet.
TEAR	In the tractor paper mode, in sleep or offline mode, press **TEAR** key to switch between the tear position and the printing home position.
SPEED	In the offline mode, pressing **SPEED** key can switch among normal speed mode (or letter speed mode), the high speed mode and the super high speed mode.

Note: Print speed is divided into Normal print mode (letter mode or normal speed mode), the high speed mode and the super high speed mode.

If Letter mode is set through online aptitude parameter setting or menu setup mode, press SPEED key on the control panel when offline, printer print speed will switch among letter mode, high speed mode and super high speed mode.

If any other modes (not including letter mode) is set through online aptitude parameter setting or menu setup mode, press SPEED key on the control panel when offline, printer print speed will switch among normal speed mode, high speed mode and super high speed mode.

Note: When using tractor paper, if paper is out, please press LOAD/EJECT key or LF/FF key to feed paper after loading paper again.

2.4 Other Function Descriptions of Control Panel

2.4.1 In the Tractor Paper Mode

TEAR

1. In the offline mode, if the paper is at the print position, press **TEAR** key once and the printer feeds paper to the tear position.

2. In the offline mode, if the paper is at the tear position, press **TEAR** key once and the printer ejects paper to the next page or the printing home position of the current page.

LF/FF

In the offline mode, if the paper is at the print position, press the **LF/FF** key once (less than 0.5 second), the printer would feed the paper one line base on current line spacing setting. Alternatively, hold the **LF/FF** key down, the printer would load one page of tractor paper.

LOAD/EJECT

1. When the paper is at the ready position, press **LOAD/EJECT** key once, the paper would be fed into the printing home position automatically.

2. When the paper is at the printing home position, press **LOAD/EJECT** key in the offline mode, the paper would return to the ready position.

3. When the paper is at the general print position (not the printing home position), press **LOAD/EJECT** key once in the offline mode less than 0.5 seconds, the paper is ejected one line. Alternatively, hold the **LOAD/EJECT** key down, the printer would eject one page of tractor paper if the ejectable page length is more than one page. If the paper ejectable length is less than one page, the paper would feed back to the ready position.

4. When the paper is at the tear position, press **LOAD/EJECT** key once, the printer would eject one page of tractor paper.

ONLINE

1. If the printer has loaded paper in the offline mode, press this key to enter **ONLINE** mode, the **ONLINE** LED is on and the printer enters into the print mode.

   Press this key in the online mode, the printer is offline, **ONLINE** LED blinks and the printer can not print.

2. If the paper is at the tear position in the offline mode, press **ONLINE** key, the printer would go back to the printing home position of current page or that of the next page.

2.4.2 In the Cut Sheet Mode

LF/FF

If the paper is at the print position in the offline mode, press the **LF/FF** key once (less than 0.5 second), the printer would feed the paper one line base on current line spacing setting. Alternatively, hold the **LF/FF** key down, the printer would eject the paper until the cut sheet is entirely ejected.

LOAD/EJECT

If the paper is at the print position in the offline mode, press the **LOAD/EJECT** key, the paper would be entirely ejected from the printer.

ONLINE

If the printer has loaded paper in the offline mode, press the key to enter **ONLINE** mode, the **ONLINE** LED is on and the printer enters into the print mode.

Press this key in the online mode, the printer is offline, **ONLINE** LED blinks and the printer can not print.

2.4.3 Print Speed

The setting method of the print speed:

In offline mode, press the **SPEED** key to switch the print mode among Normal Speed mode, High Speed mode and Super High Speed mode. The green LED denotes normal speed mode, the yellow one denotes the high speed mode and the red one denotes the super high speed mode.

2.4.4 Copy Setup Mode

Printer will turn on the Copy mode automatically when the gap adjust lever is set to 3 (or higher).

In order to improve the copy definition when using multi-ply paper, you can select the copy capability through the following steps:

1. In Online mode, long press **SPEED** key + **TEAR** key for about 3 seconds, after the printer beeps three times, the **PAPER OUT** LED and **ONLINE** LED blink at the same time, and the printer would present one beep every one or two seconds which indicates the printer has entered into Copy setup mode.

2. The **SPEED** LED indicates the current Copy setup mode:

   Green denotes the quiet mode, orange denotes the normal mode and Red denotes the copy mode.

3. In Copy setup mode, press **LF/FF** key can switch the printer among quiet mode, normal mode and copy mode.

4. After setting the Copy setup mode. Long press **SPEED** key + **TEAR** key for about 3 seconds, the printer presents 3, which indicates the printer has saved the setting and exited the Copy setup mode.

5. You could also set Copy setup mode through driver or menu setup mode. **(See details in *User's Manual*)**

2.4.5 Micro-Adjust of the Printing Home Position and the Tear Position

Operation steps of adjusting the printing home position: (the printing home position of cut sheet is separated with that of the tractor paper. The following is use tractor paper for example)

1. Turn on the printer. Pull the paper-select lever to tractor paper mode, press **LOAD/EJECT** key to load tractor paper.

2. Press **ONLINE** key to ensure the **ONLINE** LED blinks. Hold on pressing **ONLINE** key for about 3 seconds till the printer beeps once. The **ONLINE** LED and **PAPER OUT** LED blinks alternately.

   Note: Don't press SPEED key now, or the printer can't enter the micro-adjust mode.

3. Press **LF/FF** and **LOAD/EJECT** keys to adjust the printing home position.

4. Press the **ONLINE** key again to save and quit the alternate mode after finishing adjusment.

The operation step of adjusting the tear position is basically the same with that of the printing home position. But the exclusive difference is pressing **TEAR** to feed paper to the tear position after installing the tractor paper.

Note: Don't revolve the paper feed knob when the printer is in the process of the micro-adjust.

Remark: The adjustable range of printing home position is from -18/60 inch to +60/60 inch (base on default position set by the factory).

The adjustable range of tear position is from -15/60 inch to +15/60 inch (base on default position set by the factory).

2.4.6 Feed Paper to the Tear Position

1. Turn on the printer, hold the **ONLINE** key 3 seconds when offline till the **ONLINE** LED blinks with a beep.

2. Hold the **TEAR** key 3 seconds that you can switch the function of feeding paper to the tear position automatically **ON** or **OFF**.

2.4.7 Other Functions of the Control Panel

KEY	FUNCTION
ONLINE + POWER	Print current setting mode; If long press the **LOAD/EJECT+ LF/FF** keys down in online mode, the printer would enter into menu setup mode.
POWER + LOAD/EJECT	Chinese self-test mode
TEAR + POWER	ASCII self-test mode
TEAR + LF/FF + POWER	Hex dump mode
LF/FF + POWER	Print pin test, which to test whether the print pins are in good condition.

2.5 Paper Select Lever

Set paper-select lever toward the cut sheet or tractor paper position to select cut sheet mode or tractor paper mode.
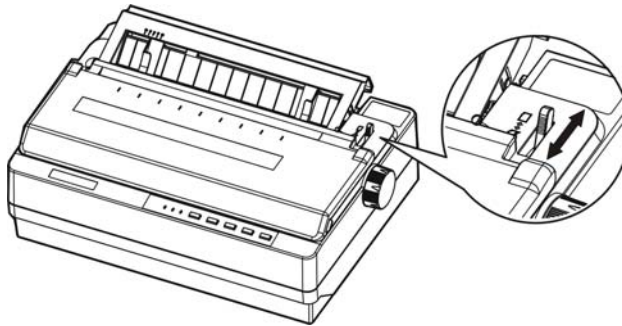
Figure 2-2 Paper-select lever

2.6 Paper Feed Knob

The paper feed knob is used to feed paper or eject paper manually. In general, it's better not to use it.

2.7 The Gap Adjust Lever

The gap adjust lever lets you specify the correct setting for your printing material. It is factory-set for standard office paper.

POSITION	PAPER TYPE	
-1	reserved	
0	Cut sheet	
1	2 plies	Fanfold paper
2	3 plies	
3	4 plies	
4	reserved	
5	reserved	
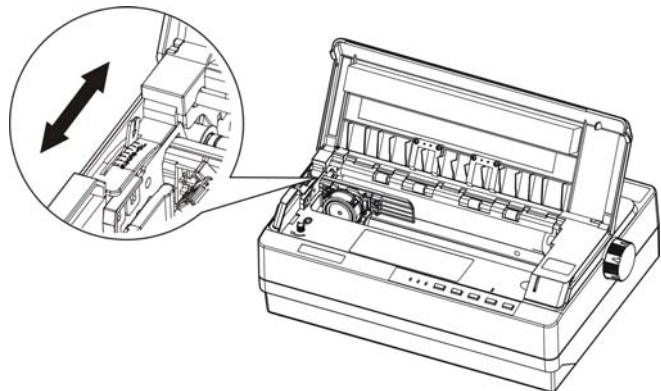
Figure 2-3 the gap adjust lever

Chapter 3 How to Use the Printer

Here are the steps of using printer:

1. Install the printer as the chapter 1, connect the printer to your computer and install the driver correctly.

2. Load the correct type of paper.

3. Set the printer if necessary.

4. Send the print command to the printer to print.

3.1 Loading the Paper

In addition to printing on cut sheets and tractor papers, your printer can also print on a wide variety of paper types, including multi-ply papers, labels and envelopes.

Caution: When printing on multi-ply paper, as it is thicker than general paper, it needs the bigger print force, so printing past or at the edge of these papers can damage the print head.

Please make sure the printing contents are all within the printable area while printing. The correlative printable area, see the Appendix.A for reference.

3.1.1 Loading Cut Sheets

1. Make sure the printer is powered off, and open the window of the printer, refers to chapter 2.7 of this manual, pull the gad adjust lever to cut sheet position according to the paper type.
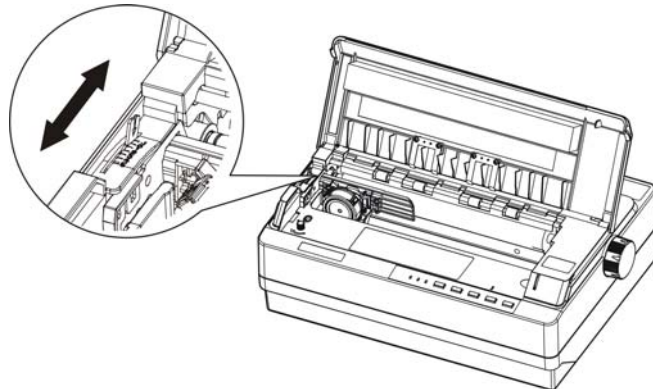
Figure 3-1 Adjust the gap adjust lever

2. Close the window, and pull paper select lever toward the cut sheet position.
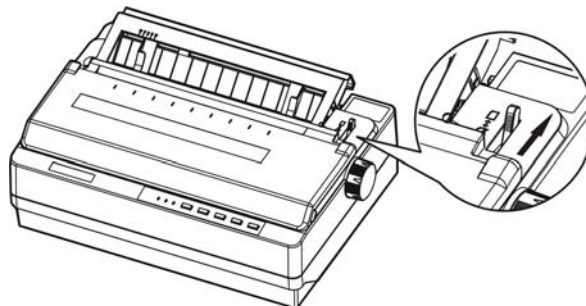
Figure 3-2 Adjust the paper select lever

3. Raise the printer back cover to the proper position (shown as figure 3-3), then turn on the printer.
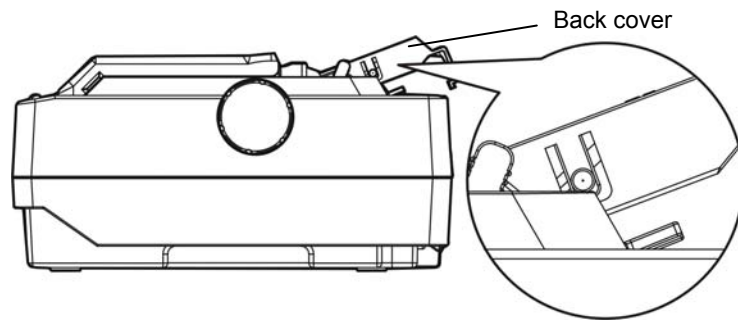
Figure 3-3 Adjust the position of the back cover

4. Slide the right paper guide of the back cover to the range of the scale. Then adjust the left paper guide to make the distance match the width of the print paper. (Shown as below)
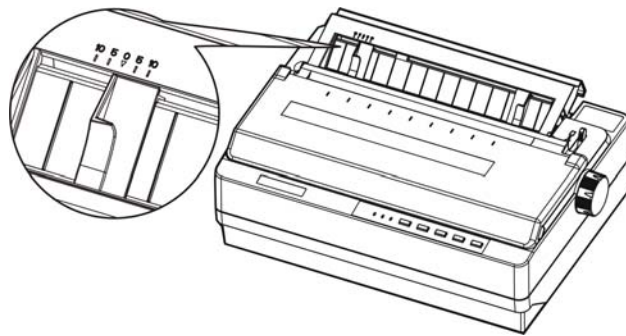
Figure 3-4 Adjust the right and the left paper guides

5. Slide a piece of cut sheet down firmly between the right and left paper guides until it meets resistance. The printer loads the sheet automatically. (shown as below)
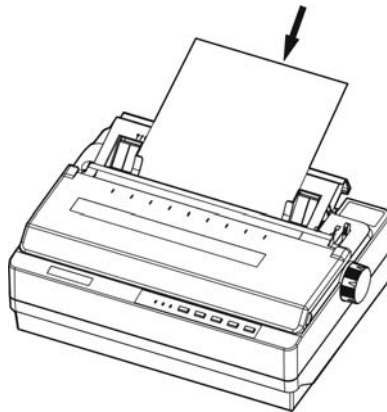
Figure 3-5 Install cut sheet

6. Adjust the printing home position according to the steps of chapter 2.4.5 if necessary.

Note: Don't feed the paper with paper feed knob, or it would influence the paper not feeding properly.

3.1.2 Loading Tractor Papers

If the print paper is the tractor paper, please refere to the following guide:

1. Make sure the printer is powered off, and open the window of the printer, refers to chapter 2.7 of this manual, pull the gad adjust lever to tractor paper position according to the paper type.
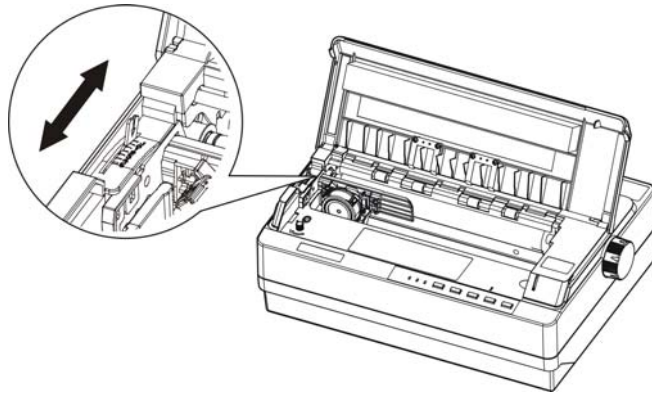
Figure 3-6 Adjust the gap adjust lever

2. Close the window, and set paper-select lever toward the tractor paper position.
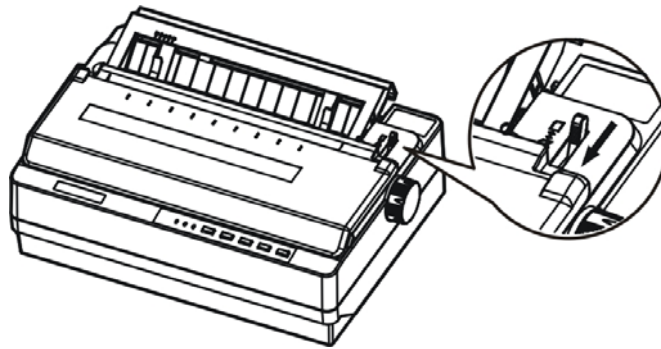
Figure 3-7 Adjust the paper-select lever

3. Pull up the right handle of the tractor to loose the right tractor. (Shown as below)
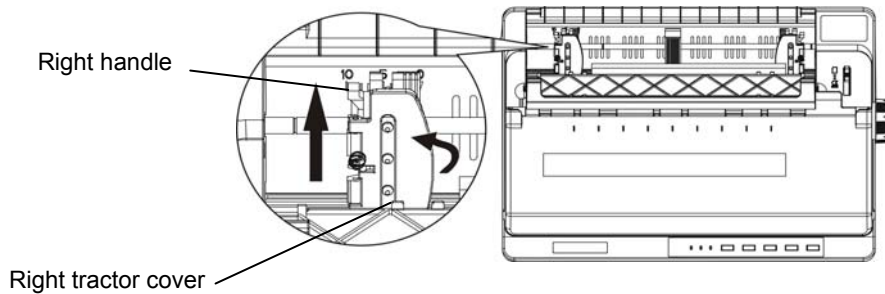
Figure 3-8 Loose the right tractor

4. Slide the right paper guide referring to the scale on the printer. The printer prints to the right of the 0 scale. Push the right handle of the tractor back to lock it in place. Then slide the left paper guide to match the width of your paper, but do not lock it. Move the paper support so it is midway between the tractors. (Shown as below)
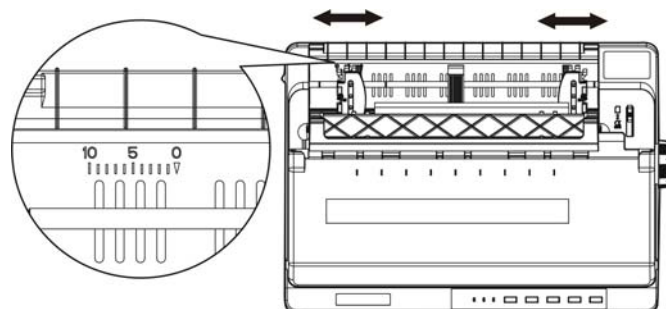
Figure 3-9 Adjust the distance between the right and left tractor

5. Make sure your paper has a clean, straight leading edge. Open the right and left tractor covers. Fit the first holes of the paper over the tractors pins and then close the tractors covers. Slide the left tractors to remove any slack in the paper and lock it in place. Now the paper is in the ready position. (Shown as below)
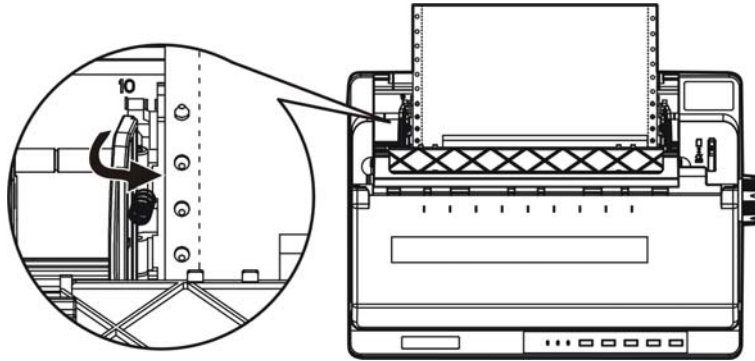
Figure 3-10 Install the tractor paper on the tractors

Note: Only to clean the paper jams when the printer is turned off, can use the paper feed knob on the right side of the printer. Otherwise, you may damage the printer or change the printing home position.

6. Make sure the printer window is closed. Turn on the printer, and press **LOAD/EJECT** key to feed paper. You can adjust the printing home position according to chapter 2.2.5. When the printer receives data, it begins printing automatically.

Note: Do not use the paper feed knob to adjust the paper-in position due to the micro-range is limited. When the adjustment exceeds the up-limit or down-limit, the beeper beeps and the position can not be adjusted further. The position is in effect before next adjustment. (The margin set in the software can cover this adjustment, so you had better adjust the printing home position with the software.)

7. When you finish printing (the printer receives no data for several seconds) the printer feeds the perforation of the tractor paper to the edge of the printer cover so that you can tear off easily.

Note: Set the auto tear off function ON in the Menu Setup Mode. Otherwise, the printer does not feed the perforation to the edge of the printer cover.

8. If the perforation and the edge of the printer cover do not match, you should adjust the tear off position following the steps in chapter 2.2.5, after adjusting, tear down the paper. When you send print data again, the paper automatically feeds back to the printing home position and begins to print.

How to switch tractor paper to cut sheet paper

Firstly, tear down the tractor paper which is having been printed, then hold **LOAD/EJECT** key down continuously to eject the paper in the offline mode. Pull the paper-select lever to the cut sheet position, and load the cut sheet according to chapter 3.1.1.

Caution: Make sure tractor paper which is having been printed is tore off before ejecting the tractor from the printer, as too many pages ejected could cause paper jammed.

3.1.3 Loading Multi-ply Papers

The installing ways of multi-ply papers and tractor paper are the same. Just pay attention to the following tips:

1. Must refer to the figure below to lift up the back cover, otherwise, it may cause paper jam during printing.

2. Never load multi-ply papers joined by metal staples, tape, or continuous gluing.

3. Avoid printing beyond the printable area of multi-ply papers, or it may damage the print head (see Appendix for details).
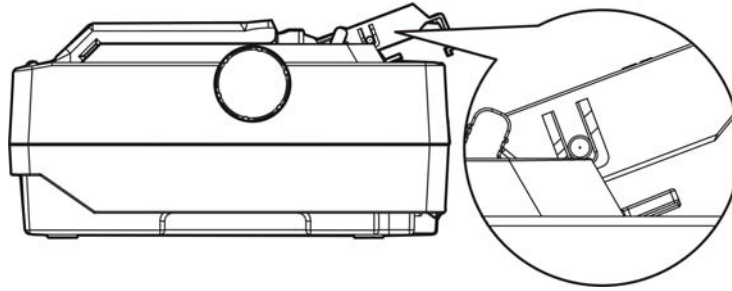
Figure 3-11 Raise the back cover

3.1.4 Loading Labels

The installing ways of label and tractor paper are the same. Keep these tips in mind:

1. Set the gap adjust lever to "1" position.

2. Make sure the printing stays entirely within the printable area. (See the Appendix for specifications.)

3. Because labels are especially sensitive to temperature and humidity, so please use them only under normal operating conditions.

4. Do not leave labels in the printer while doing other jobs, or they would curl around the platen and may jam when you resume printing.

5. Remove the labels from the printer, tear off the fresh supply at the rear of the printer; and then press **LF/FF** key to advance the remaining labels out of the printer.

Caution: Never feed labels in and out through the printer; they can easily peel off the backing and jam the printer. If a label does become stuck in the printer, contact your dealer.

3.1.5 Loading Envelopes

The method of loading envelopes is basically the same with that of the cut sheet. Just pay attention to the following tips:

1. Before loading an envelope, set the gap adjust lever to position 4 or 5.

2. Insert the envelope into the printer back cover (as shown below), push it down gently until it feeds into the printer.
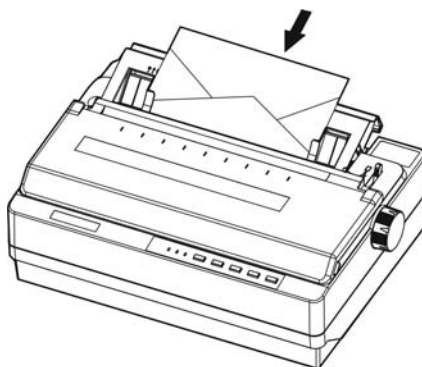
Figure 3-12 Loading the envelope

3. Make sure the printing stays entirely within the printable area. The print head must not go past the left or right edge of the envelope or other thick paper. (See the Appendix for specifications.) It's a good idea to print a test sample using a normal single sheet of paper before you print on the envelopes.

4. Use envelopes only under normal temperature and humidity conditions.

3.2 Changing the Printer Settings

3.2.1 Setting Printer Parameter Through the Control Panel

1. Press the **ONLINE** key on the control panel while turning on the printer. The print head returns with the printer beeping once. If the **ONLINE** LED and the **PAPER OUT** LED blink at the same time, it indicates that there is paper out.

2. Set the paper-select lever to the proper position. (If in cut sheet mode, the paper select lever should in the cut sheet position, otherwise, it should in the tractor paper position.)

3. After loading paper, in cut sheet mode, the printer would print out the current setting automatically. In tractor mode, after install the paper to the tractor, once you press **LOAD/EJECT** key, the printer would load paper to printing home position and start to print the current setting.

JOlimark DP350
Current Setting Report

VX.X XXX XXXX/XX/XX   SN: XXXXXXXXXXXXXXXXXXXX

CHARACTER

FONT	`ROMAN`	SANS SER	COURIER	PRESTIGE	SCRIPT	OCR-B	OCR-A
	ORATOR						
ENG PITCH	`10 CPI`	12 CPI	15 CPI	PROPORTIONAL			
CHI PITCH	`6.7 CPI`	7.5 CPI					

PAGE LAYOUT

LINE SPACING	`6 LPI`	8 LPI					
FORM LENGTH	3 INCH	3.5 INCH	11/3 INCH	4 INCH	5 INCH	5.5 INCH	6 INCH
	7 INCH	8.5 INCH	`LETTER`	A4	12 INCH		
FORM LOCK	`OFF`	ON					
L_SPACING LOCK	`OFF`	ON					
PAGE SKIP	`OFF`	ON					
COMPRESS PRINT	`OFF`	ON					

SYSTEM SETUP

LANGUAGE	`ENGLISH`	CHINESE					
EMULATION	`EPSON`	IBM					
PRT-QUALITY	`NORMAL`	LETTER					
PRINT DIR	BI-DIR	UNI-DIR	`AUTO`				
CHAR.MODE	`ASCII`	CHINESE					
INTL CHAR SET	`U.S.A.`	FRANCE	GERMANY	U.K.	DENMARK 1	SWEDEN	ITALY
	SPAIN 1	JAPAN	NORWAY	DENMARK 2	SPAIN 2	LATIN AM	KOREA
	LEGAL	HOLAND	TURKEY				
CHARACTER SET	ITALICS	`GRAPHICS`					
CODE PAGE	`U.S.A.`	MULTL	PORTUGAL	GANADA	NORWAY	EAST EURO	CYRILLIC
	RUSSIAN	HUNGARY	KAMENICKY	TURKEY	ICELAND	BULGARIA	MAZOVIA
	GRK 437	GRK 851	GRK8859-7	GRK 1253	ARAB NLS	ARAB EXT	WIN LAT1
	WIN LAT2	ISO LTN1	ISO LTN2	TUR8859-9	ISO LTN9	KBL	LATIN 7
COPY MODE	QUIET	`NORMAL`	COPY				
AUTO LF	`OFF`	ON					
TEAR OFF	OFF	`ON`					
TEAR POS	`OFF`	BY CONT	BY CONT1	BY CONT2	BY CONT3	FORM LEN	
COVER OPEN	OFF	`ON`					
BLACK MARK	`OFF`	ON					
PIN SWITCH	`OFF`	ON					

SERIAL 1/F

BAUD RATE	19200 BPS	`9600 BPS`	4800 BPS	2400 BPS	1200 BPS
PARITY	`NONE`	ODD	EVEN		
DATA BIT	`8 BIT`	7 BIT			
STOP BIT	`1 BIT`	2 BIT			
PROTOCOL	XON/XOFF	`DIR`			

Please press the ONLINE key to enter the online status,

the hole down the LF/FF key and PARK/LOAD key for 3 second to enter SETUP MENU SYSTEM.

PIN TEST

01 ——— 02 ——— 03 ——— 04 ——— 05 ——— 06 ——— 07 ——— 08 ———

09 ——— 10 ——— 11 ——— 12 ——— 13 ——— 14 ——— 15 ——— 16 ———

17 ——— 18 ——— 19 ——— 20 ——— 21 ——— 22 ——— 23 ——— 24 ———

Figure 3-13 Current menu setting

Note：**1. The items printed in shadow are the current settings.**

2. When select the compress printing in the setup menu, high speed printing is invalid.

3. Black mark function is optional. It can be set up according to the customers' requirement. If the fittings of black mark do not install, the black mark item should be closed.

4. Printer would print out the menu according to the selected interface.

1. Make sure the printer is in online mode. (**ONLINE** LED is on), at the same time, holding the **LOAD/EJECT + FF/LF** keys for 3 seconds.

   ● The **PAPER OUT** LED and **ONLINE** LED would blink twice simultaneously which indicates that the printer enters the menu setup system.

   ● The title and main menu are printed out firstly (as the following figure shown), the default settings are underlined. Print head stays under the current default item.

JOlimark DP350

SETUP MENU SYSTEM

Use the **LOAD/EJECT** key to point the print head to the desired setting.
Use the **LF/FF** key to confirm the current setting.
Use the **ONLINE** key to go back the previous menu (Press and hold the **ONLINE** key to go back the main menu).
Press and hold the **TEAR** key to save settings and exit.

Current settings are <u>UNDERLINE</u> New settings will be **FILLED**.

MAIN MENU   <u>CHARACTER</u>   PAGE LAYOUT   SYSTEM SETUP   SERIAL I/F   PIN TEST

Figure 3-14 Menu setup system

2. Using the following keys to modify the menu setting:

   LOAD/EJECT   Select the menu option or menu setting value.

   LF/FF   Enter into submenu or confirm menu setting value.

                Note: Newly setting option would be shown in **FILLED**.

   ONLINE   Return to upper menu (Hold on pressing **ONLINE** key would return to main menu directly).

   TEAR   Save and exit the menu setup system.

3. Give up the settings just modified, just turn off the printer directly. If you need to save the newly setting, hold on pressing **TEAR** key to save and exit the menu setup mode.

4. Turn off and restart the printer, newly settings are in operation.

3.2.2 Online-aptitude Parameter Settings

DP350 supports the function of online-aptitude parameter settings, which can be set in the PC with the driver installed in.

The concrete setting steps are shown as follows:

1. Make sure that the computer and the printer are connected with USB cable and both the computer and the printer are turned on, the printer should be in normal working condition as well.

2. Under the operation systems of WIN 2000/WIN XP/VISTA/WIN7, Click "Start" → "Settings" → "Printers".

   Under the operation system of Windows 8, click "Desktop" in the main panel firstly, and then double click and enter into the window of "Control panel", click "Hardware and Sound" to find "Devices and printers", at last, open the window of "Devices and printers".

3. Right click "DP350", select "Properties".

4. Click "Printer settings" in the property page.

5. Printer settings are classified into three levels: the first level is the normal items, the second level is maintenance items and the third level is non-driver settings. Items shown in Printer Settings are normal   items; Click Printer maintenance button in "Printer settings", the items which in the popped out window of "Printer maintenance" are the maintenance items; Click Non-driver print setup button in "Printer maintenance", the items which in the popped out window of "Non-driver print setup" are the non-driver settings.
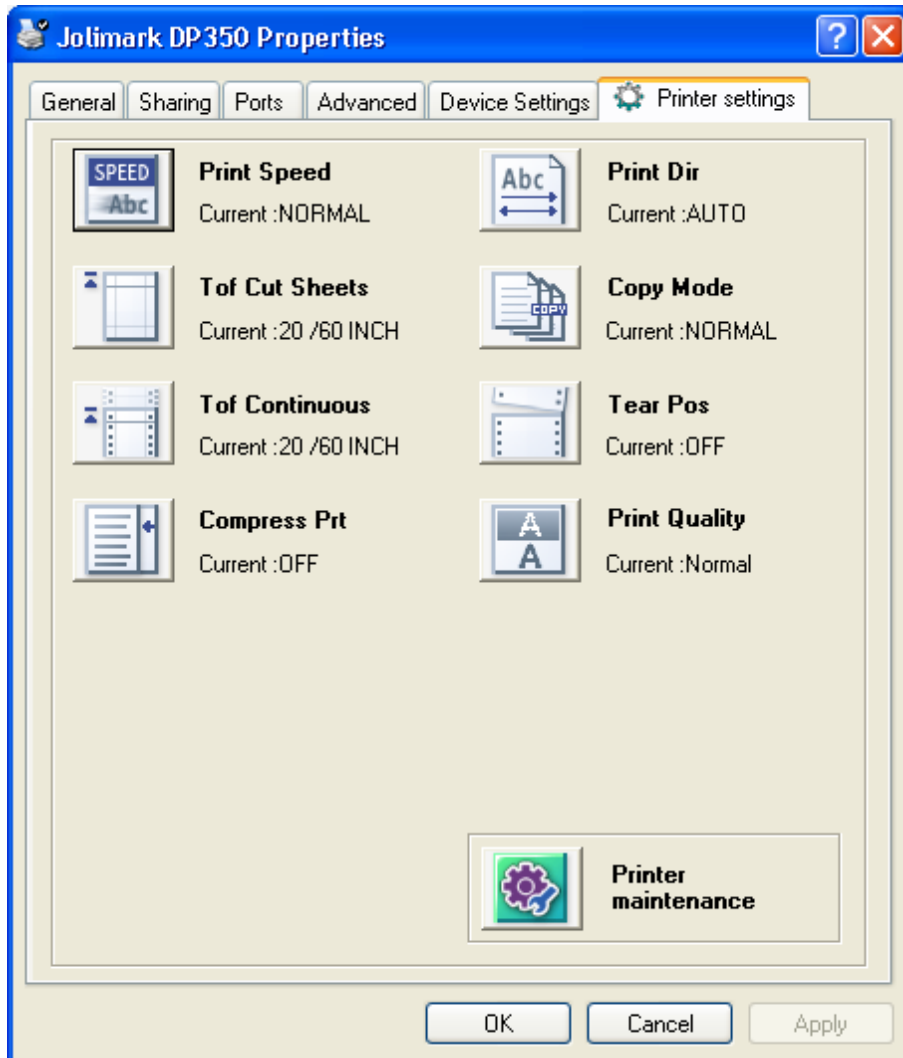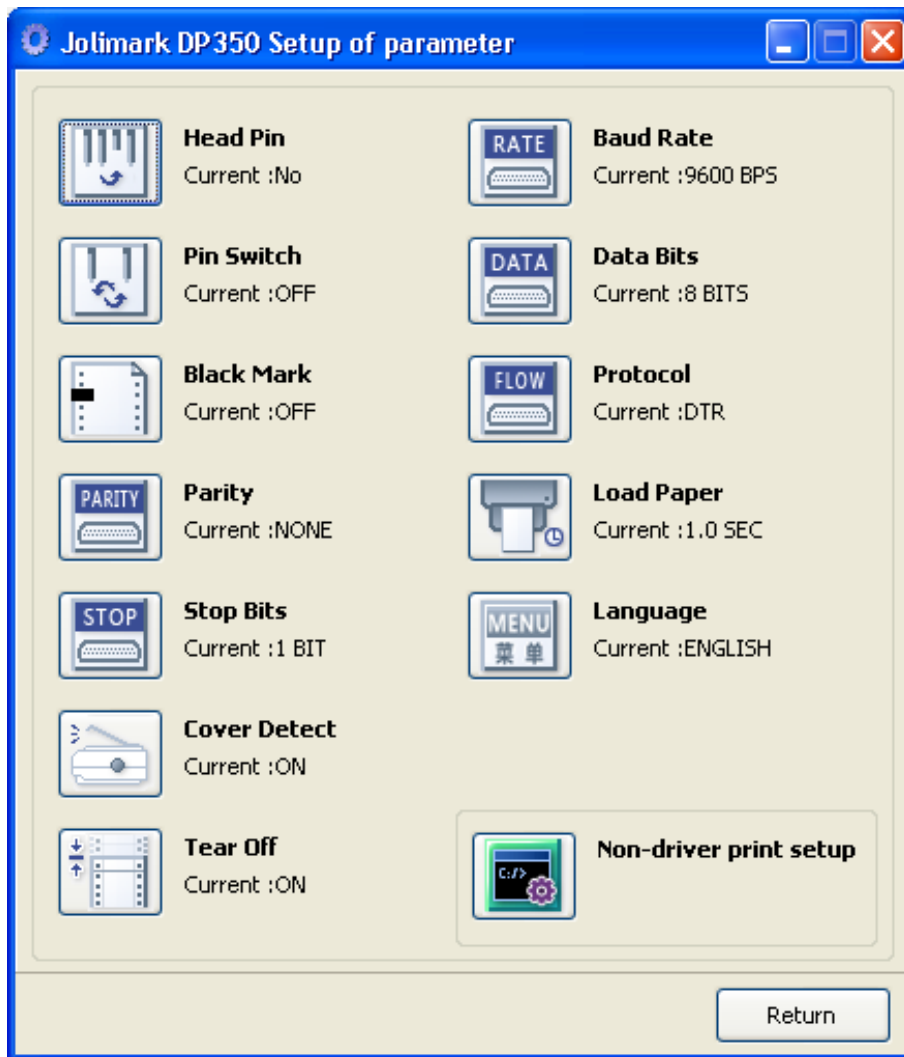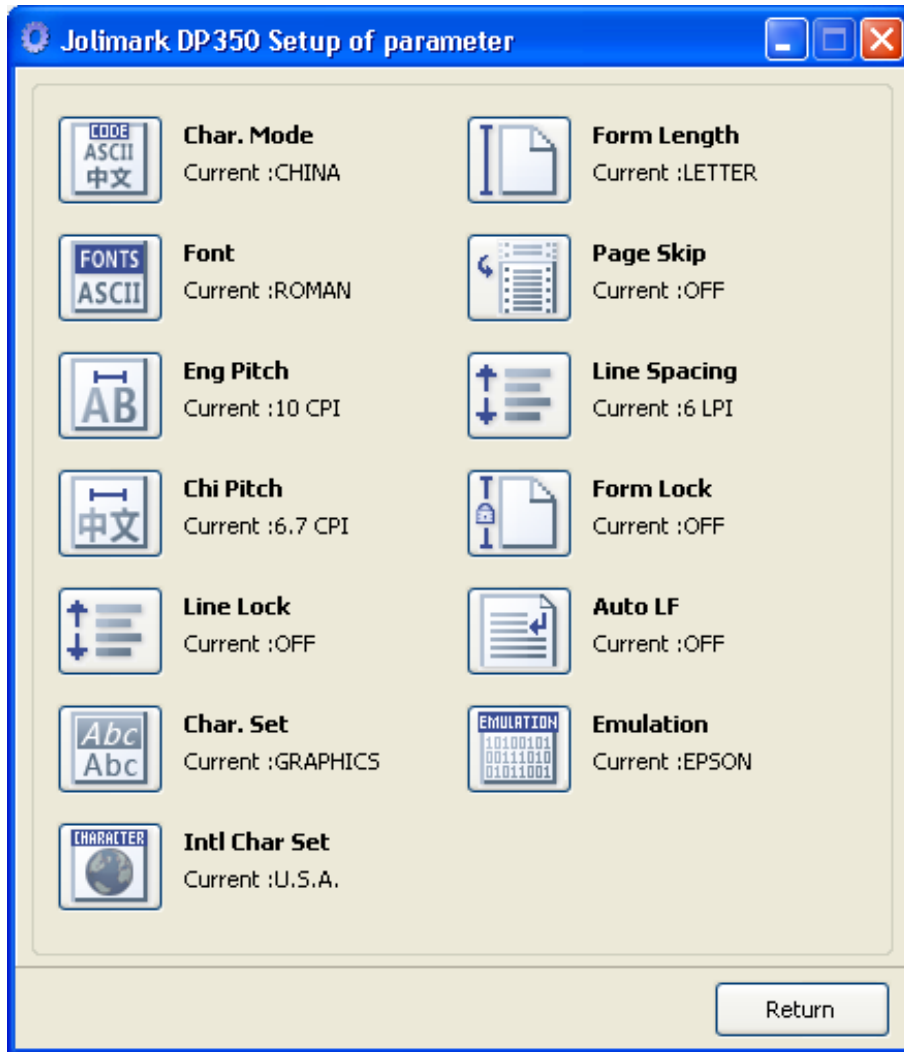
6. The left side of each items is the parameter icon, the top right is the item name and the bottom right is the current setting. The current settings of the printer will be loaded automatically when opening each parameters settings window. If the printer doesn't online or use the wrong port, the current settings will be blank, therefore, please make sure the printer is in ONLINE mode and the printer should connect the computer with the correct port.
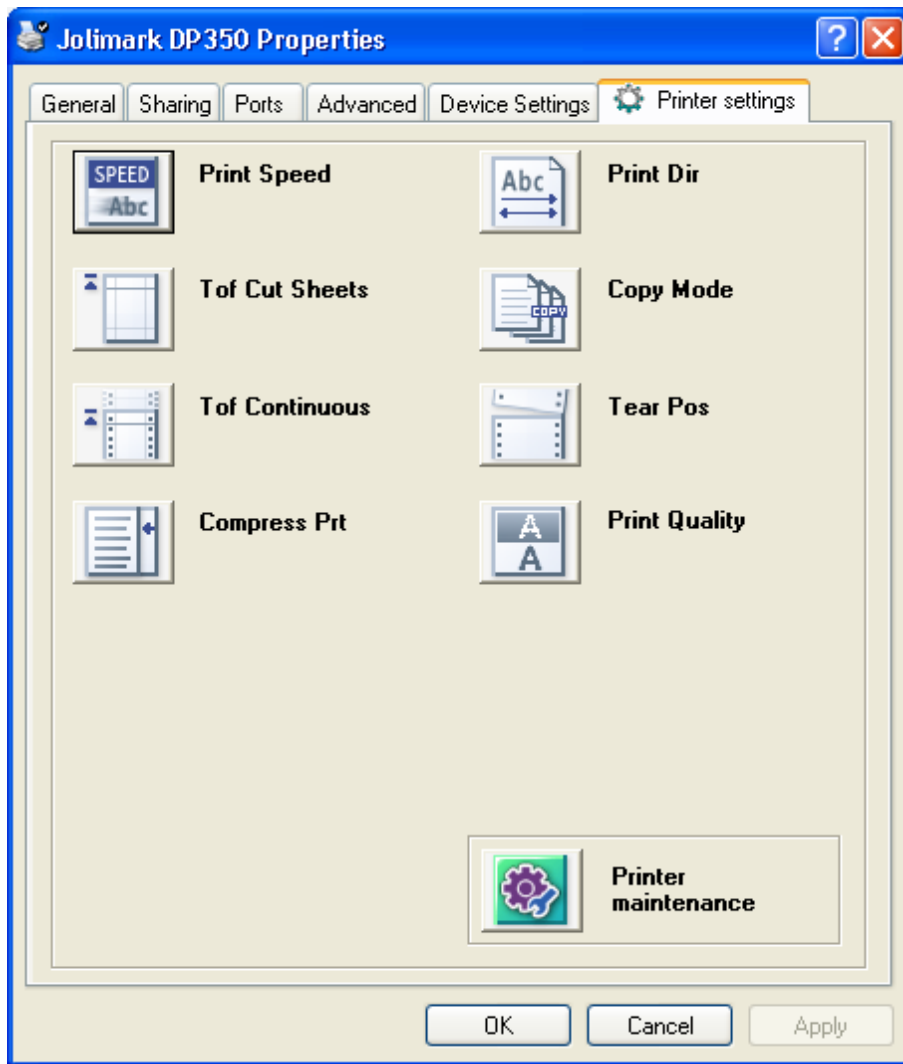
7. When setting the parameter, please click the parameter icon firstly to open the parameter setting window. In the parameter setting window, there are parameter options, item explanation and control buttons. After selecting the corresponding parameter, click "Set", the printer will change the setting at the moment it receives the change command. Click "Cancel" to return to the upper window. Click "Default" can show the default setting of this item.
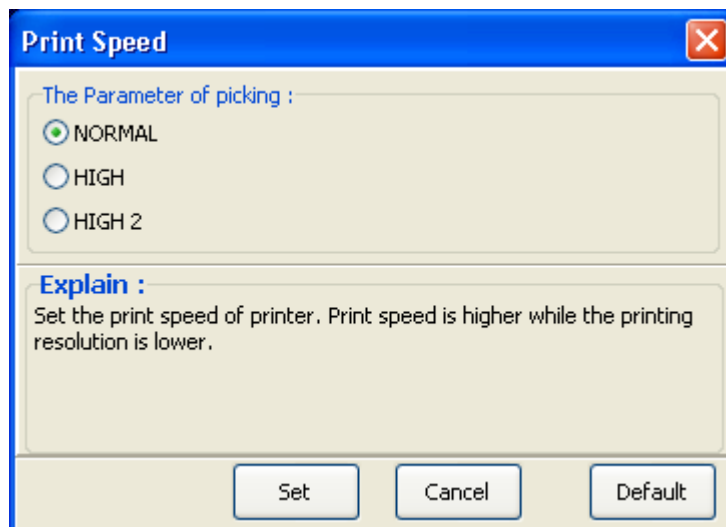
8. If you need to change multi-items, please refer the upper steps to modify them one by one.
9. After finishing setting, click "OK" to exit the Properties window.

3.3 Printer Setting Descriptions

Options	Description
FONT	Specify a kind of ASCII fonts to print when printer receives character printing task. If the print data with font instruction, printer gives priority to print data instruction. (Only valid when CHARACTER MODE is choosing ASCII)
ENG PITCH	Specify the ASCII character spacing in characters per inch (cpi).
CHI PITCH	Specify the Chinese character spacing in characters per inch (cpi).
LINE SPACING	Specify the line spacing in lines per inch (lpi).If the print data with vertical pitch instruction, printer would give priority to print data instruction.
FORM LENGTH	Specify the page length of the form to be used, for both cut sheet and continuous paper. Printer feeds to next page according to the specified page length. If the print data with page length instruction, printer would give priority to print data instruction.
FORM LOCK	After selecting this function on, the page length setting would be locked. Printer feeds to next page according to the current setting value and would not be affected by the page length instruction of the print data.
L_SPACING LOCK	After selecting this function on, line spacing setting would be locked. Printer feeds the paper according to the current setting parameter and do not affected by the line spacing instruction of the print data.
PAGE SKIP	After select this function on, printer would leave one inch (25.4mm) margin at the perforation of the tractor paper automatically. If the print data with page margin instruction, printer would give priority to print data instruction.
COMPRESS PRINT	After selecting this function on, printer would print out transverse compressed content according to the specified percentage in normal speed. When auto-compress mode is selected, printer would detect paper width automatically and choose the proper percentage to print.
LANGUAGE	Specify the printer menu language as English or Chinese.
EMULATION	Specify printer's control commands.
PRT-QUALITY	Choose the printing quality to normal or LQ, when setting to LQ, printer will print in the highest printing quality. **Note: Letter Quality is only valid when the printing speed is normal.**
PRINT DIR	Select the printing direction of the print head: unidirectional, bidirectional or selected via software.
CHAR. MODE	Select ASCII or Chinese character mode to print when printer receives character printing task.
INTL CHAR SET	Specify the printer internal character set according to different using circumstances of international characters.
CHARACTER SET	Specify character set as Italic Character or Graphic Character.
CODE PAGE	Select the code page according to different national characters use circumstances.
COPY MODE	According to customer's printing requirement, select the printing capability.
AUTO LF	If this function is on, printer would advance the paper one line automatically after receiving every carriage return instruction.
TEAR OFF	After select this function on, when the printer has finished printing, paper would be fed to the set tear off position automatically, and you should tear off the paper manually.
TEAR POS	Specify the compensated value to aim the continuous paper gap at the tear off bar of printer.
COVER OPEN	After select this function on, if the window is open, printer would stop printing

	with an alarm.
BLACK MARK	After select this function on, printer would carry out black mark detect instruction so that to make the vertical positioning printing precisely. (Bills or papers should have black mark on the surface.)
PIN SWITCH	After select this function on, printer would switch different pins to print table line automatically.
BAUD RATE	Specify the printer serial data transfer rate.
PARITY	Specify the parity bit for serial data transfer.
DATA BIT	Specify the serial data bits.
STOP BIT	Specify the serial data transfer stop bit.
PROTOCOL	Specify the protocol of printer serial data transfer as software control (XON/XOFF) or hardware control (DTR).
PIN TEST	Select the broken pin. Printer would automatically replace it with other pin to print.

3.4 Restore the Default Settings

1. Hold on **TEAR**, **LOAD/EJECT** and **LF/FF** keys on the control panel at the same time while turning on the printer. The LEDs of the **PAPER OUT** and **ONLINE** on the control panel blink 3 times respectively at the same time and the printer makes two beeps to confirm that the printer's factory settings have been restored.

2. Loosen the keys and switch the printer off and on again.

3. After these steps, the printer's factory settings work.

Note: After restoring all the factory default settings, network setting parameters resume default value at the same time.

Chapter 4 Troubleshooting

Most problems you may encounter while operating your printer, herein, have simple solutions for those problems.

You can check the operation of your printer using the self test. See "Printer self-test function" on chapter 1.7. If the self test works properly, the problem probably lies in the computer, the software, or the interface cable. If the self test does not work, contact your dealer or qualified service person for assistance.

Note: Press LOAD/EJECT key while turning on the printer, you can run the Chinese self test.

Press TEAR key while turning on the printer, you can run the English self test.

Note: If you are an experienced user or a programmer, you can print a hexadecimal dump to isolate communication problems between the printer and computer. To print a hex dump, firstly to install paper and turn off the printer. Next, hold down the LF/FF and TEAR keys while you turning on the printer. Then send data from your computer. The printer prints all the codes it receives in hexadecimal format.

4.1 Power Supply

Power is not being supplied normally.

Phenomenon 1: The LEDs on the control panel do not go on, and the printer has no action.

Solutions:

1. Check that the power cord is properly plugged into the electrical outlet.

2. If the electrical outlet is controlled by an outside switch or automatic timer, use another outlet.

3. Plug another electrical device, such as a lamp, into the outlet to determine whether the outlet is operating properly.

Phenomenon 2: The LEDs come on briefly and then go off. The LEDs stay off even when the power is turned on again.

Solutions: Check whether the printer's rating voltage is matched with the electrical outlet. If not, unplug the power cord immediately and contact your dealer or a specified Jolimark service center for advice. Do not plug the power cord to the electrical outlet again.

4.2 Printing Problem

The printer does not print.

Phenomenon 1: The ONLINE LED is on but nothing is printed.

Solutions:

1. Check whether the Driver is installed properly for your printer, as described on chapter 1.9. Check the driver's printer settings.

2. Check both ends of the interface cable. Make sure the cable meets both the printer and computer specifications.

Phenomenon 2: The ONLINE LED and PAPER OUT LED blink, the printer beeps once.

Solutions: The printer may be out of paper. Load paper in the printer.

Phenomenon 3: The printer sounds like it is printing, but nothing is printed.

Solutions:

1. The ribbon cartridge may not be installed properly. See chapter 1.5.

2. The ribbon may be worn out. Replace the ribbon.

3. The gap adjust lever may be too high. If so, move it to the corresponding thickness position with the paper.

4. Check if the printer entered into overheating protective state.

Phenomenon 4: The printer makes strange noise while printing.

Solutions: Turn off the printer and check for a paper jam, a ribbon jam, or other problems.

Phenomenon 5: The beeper sounds some times and the ONLINE LED is off.

Solutions:

1. Switch off the printer and power on again.

2. If the **ONLINE** LED stays off, check for a paper jam or ribbon jam. If it does, turn the printer off and clear the jam.

3. If an error occurs when you switching between cut sheets and tractor paper, make sure the paper-select lever is in the correct position.

4. If the printer still does not work correctly, turn off the printer and contact your dealer or a specified Jolimark service center.

● **The print is faint or uneven**

Phenomenon 1: Printed characters have parts missing at the top or bottom.

Solutions: The ribbon cartridge may not be installed properly. See chapter 1.5.

Phenomenon 2: The printout is faint.

Solutions: The ribbon may be worn out. Replace the ribbon as described on chapter 1.5.

● **The ribbon can not move smoothly.**

Solutions: The ribbon may be worn out. Replace the ribbon as described on chapter 1.5.

● **Dots are missing in printed characters or graphics**

Phenomenon 1: A line of dots is missing in the printout.

Solutions: The print head may be damaged. Stop printing and contact your dealer or a specified Jolimark service center to have the print head replaced.

Phenomenon 2: Dots are missing in random positions.

Solutions: The ribbon may be damaged. Replace a new one.

● **Printed characters are not what you expected**

Phenomenon 1: The fonts or characters you sent with your software did not print.

Solutions: Check whether the driver is correctly installed for your printer. For instructions, see chapter 1.9.

Phenomenon 2: The font selected on the control panel can not be printed.

Solutions: Your software may be overriding your control panel setting. Use the font setting in your software program.

● **The print position is not what you expected**

Phenomenon 1: The original print position is not correct or the bottom part of one page is printed at the top of the next page.

Solutions:

1. It is also possible to adjust the top of form position using the micro adjust mode. To use micro adjust mode, see "Micro-Adjust" on chapter 2.4.5.

2. Check the page length set by your software and adjust it in the software or in the printer to match the paper length.

Phenomenon 2: Regular gaps occur in the printout.

Solutions: Page skip function may be on. Set page skip function to off in the Menu setup mode. See "Changing the printer settings" on chapter 3.2.

4.3 Paper Handling

● Cut sheets do not be fed properly

Phenomenon 1: Paper does not feed.

Solutions:

1. Tractor paper may be left in the printer. Remove the tractor paper. Set the paper-select lever to the cut sheet position. Insert a new sheet.

2. Maybe the sensor can not check there is paper if there is no tractor paper in the printer and the paper-select lever is in the proper position. Try to move the paper a little left to make sure to touch the paper in sensor.

Phenomenon 2: Paper feeding is skew or the paper jammed.

Solutions: Turn off the printer and pull out the jammed paper. Reinsert a piece of cut sheet straight into the paper guide, and adjust the paper guide to match with paper width. Make sure that the printer window is closed, and power on again.

Phenomenon 3: Paper does not eject completely.

Solutions:

1. Press the **LOAD/EJECT** key to eject the page.

2. Make sure the printer window is closed.

3. The paper may be too long. Check whether the paper used meets the specifications specified in the Appendix, and the using paper must be within the specified range. See the paper specifications in the Appendix.

● Tractor paper does not feed properly

Phenomenon 1: The tractor does not feed the paper.

Solutions:

1. Check that the paper-select lever is pulled forward to the tractor paper position. If not, move the lever to the correct position.

2. If this problem still can not be solved, the paper may be has come off the tractor. Reattach the paper to the tractor.

Phenomenon 2: Paper feeding is crooked or the paper jammed.

Solutions:

1. Make sure the position of your paper supply can not prevent it from feeding.

2. Make sure your paper supply is positioned within 1 meter (3 feet) from the printer.

3. Make sure the printer window is closed.

4. Make sure the tractors positions are correct. Position the right tractor at the triangular guide marks.

5. Check that the holes on the both sides of the paper are aligned with each other. Also, make sure the tractors are locked and their covers are closed.

6. Check whether the paper specifications meet the standard request according to the Appendix A.

Phenomenon 3: The paper does not eject completely.

Solutions:

1. May be the page length is too long. When using the tractor, tear off the paper having entered the

printer, then press the **LF/FF** key to feed the paper forward. When using the tractors, tear off the last printed paper, then press the **LOAD/EJECT** key to feed the paper backward.

2. Please make sure the paper length is within specified range. (Refer to the paper specifications in Appendix A)

Phenomenon 4: When you switch between cut sheets and tractor paper, the beeper sounds some times and the ONLINE LED is off.

Solutions: There is paper left in the paper in channel while you are changing the paper-select lever position. Return the paper-select lever to the previous position and eject the paper. Then change the paper-select lever position again.

4.4 Alignment Adjust Mode

Enter the alignment adjust mode to improve the print quality when the printer is used for a long time.

Note: 1. When the gap adjust lever is in the position of 3 or above, the printer is in copy mode automatically. Users can set the gap adjust lever according to specific paper type (cut sheet or tractor paper), then adjust the alignment following the steps below.

2. You must use the 80 columns tractor paper when adjusting alignment.

Alignment adjustment includes normal print mode adjustment and copy mode adjustment.

Alignment test and adjusting procedure of normal mode adjustment:

1. Turn on the printer, and then install 80 columns tractor paper correctly.

2. In the online mode, press and hold on the **LOAD/EJECT** key and **TEAR** key until the **PAPER OUT** and **ONLINE** LEDs blink simultaneously, the printer enters the alignment adjust mode and print out the DPI alignment setting.

3. After entering the alignment adjust mode, press the following keys to adjust the degree of make columns:

EJECT/LOAD	Each press this key, the even line would move left with one step (the adjusted value is increased)
	Press **ONLINE** key to check the result.
LF/FF	Each press this key, the even line would move right with one step (the adjusted value is decrease)
	Press **ONLINE** key to check the result.
TEAR	Switch to the next DPI adjust state
ONLINE	Store and print the current settings

4. Restart the printer and exit the alignment adjust mode.

Alignment test and adjusting procedure of copy mode adjustment:

1. Turn on the printer, and then install 80 columns tractor paper correctly.

2. In the online mode, press and hold on the **LF/FF** key and **TEAR** key until the **PAPER OUT** and **ONLINE** LEDs blink simultaneously, the printer enters the alignment adjust mode and print out the DPI alignment setting.

3. After entering the alignment adjust mode, press the following keys to adjust the degree of make columns:

EJECT/LOAD	Each press this key, the even line would move left with one step (the adjusted value is increased)
	Press **ONLINE** key to check the result.
LF/FF	Each press this key, the even line would move right with one step (the adjusted value is decrease)
	Press **ONLINE** key to check the result.

TEAR   Switch to the next DPI adjust state

ONLINE   Store and print the current settings

4. Restart the printer and exit the alignment adjust mode.

Note: Alignment adjust mode would affect the printing quality, think over before adjust it and strict to the instructions while adjusting.

Chapter 5 Printer Maintenance and Technical Service

5.1 Printer Cleaning
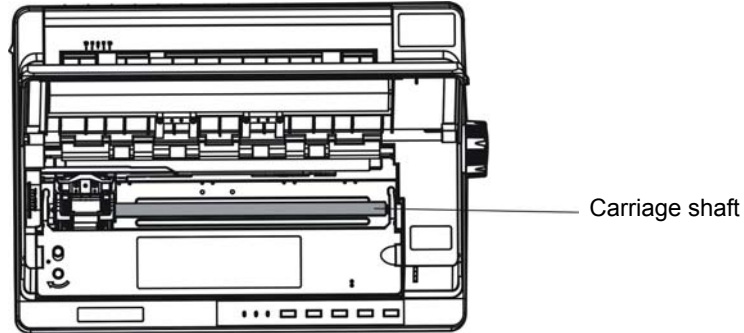
Figure 5-1 Printer cleaning

Periodical cleaning and cleaning tool

Periodical cleaning: Every three months or 300 working hours

Cleaning tool: Dry cloth (Use soft cloth while cleaning metal)

Cleaning carriage shaft:

There is a layer of oil covered on the carriage shaft which guarantees the carriage runs smoothly. But the oil is easy to absorb dust, please clean the dust with soft cloth first, and then add proper lube (NYE180 lube of NYE Company is recommended), move print head back and forth to make lube scattered.

Cleaning the form feed path:

Wipe off wastepaper, clean dirt and dust.

Note: 1. Turn off printer and pull out the power cord before cleaning.

2. Being used under dust circumstance, the carriage shaft may stack much dust and affect the print quality.

3. If you have just finished using the printer, let the print head cool for a few minutes before you touch it.

4. Please use a soft cloth for cleaning, do not use combustible solvent.

5.2 Contact the Technical Service Centre

If malfunction occurs and can not be solved through the operation shown in 4.2, the components of the printer are damage during using or you need to buy some consumables, please contact the nearest technical service centre.

Appendix A Specifications

A.1 General Specification

Item	Description		
Printing method	24-pin Dot Matrix Impact Printer		
Printing direction	Bidirectional logic seeking		
Printing width	80 columns (10cpi) / 203.2 mm		
Printing speed	**ASCII**		
	Speed	**10 CPI**	**12 CPI**
	Letter	102 CPS	122 CPS
	Normal speed	150 CPS	180 CPS
	High speed	300 CPS	360 CPS
	Super high speed	400 CPS	480 CPS
Print head	Wires: 24 Pins		
	Diameter of wire: 0.22 mm		
Resolution	360 x 360 dpi (Max.)		
Character set	ASCII: 17 international character sets (U.S.A, France, Germany, U.K., Denmark I, Sweden, Italy, Spain I, Japan, Norway, Denmark II, Spain II, Latin America, Korea, LEGAL, Holland, Turkey)		
Code page	U.S.A, MULTI, PORTUGAL, CANADA, NORWAY, EAST EURO, CYRILLIC, RUSSIAN, HUNGARY, KAMENICKY, TURKEY, ICELAND, BULGARIA, MAZOVIA, GRK 437, GRK 851, GRK8859-7, GRK 1253, ARAB NLS, ARAB EXT, WIN LAT1, WIN LAT2, ISL LTN1, ISO LTN2, TUR8859-9, ISO LTN9, KBL, LATIN 7		
Font	ASCII: Draft, Roman, Sans Serif, Courier, Prestige, Script, OCR-B, OCR-A , Orator **Note: In high speed mode or super high mode, printer would automatically change the ASCII font to Draft when printing ASCII characters.**		
Bar code	EAN-13, EAN-8, Interleaved 2 of 5, matrix 2 of 5, industry 2 of 5, code 39, code 128 B, code 128 C, NW-7		
Character pitch	ASCII: 10 CPI, 12 CPI, 15 CPI, proportional		
Line spacing	1/6 inch, 1/8 inch, programmable in 1/360 inch increments		
Maximum paper feed speed	152.4 mm/s		
Emulation	EPSON ESC/PK2, IBM 2391		
Interface	This printer can be configured with the following interfaces: Parallel Interface: Centronics (IEEE1284 NIBBLE) USB Interface 1: 2.0 Full-Speed USB Interface 2: 2.0 Full-Speed Serial Interface: RS-232C Ethernet Interface: 10/100Base-T **Note: Please take the specific interface as standard.**		
Buffer memory	132 KB		
Ribbon	Model: JMR120		
	Life: 10 million characters (draft mode)		
Noise	＜53 dB (A) (ISO7779 standard)		
Control panel	5 keys, 3 LEDs		

Paper feed type	Cut sheet: feed and eject from top		
	Tractor paper: feed from rear and eject from top		
Paper thickness	Set through gap adjust lever		
Paper specification	Cut sheet	Width: 48 ~ 261 mm	
		Thickness: 0.065 ~ 0.14 mm	
		Weight: 52 ~ 90 g/m^2	
	Tractor paper	Width: 56 ~ 267 mm	
		Thickness: 0.065 ~ 0.39 mm	
		Weight (single sheet) : 52 ~ 82 g/m^2	
		Multiple paper (each page): 40 ~ 58 g/m^2	
	Label	Width (mount): 101.6 ~ 254 mm	
		Smallest label: 63.5 mm × 23.8 mm	
		Thickness (mount): 0.07 ~ 0.09 mm	
		Total thickness: 0.16 ~ 0.19 mm	
		Weight: 68 g/m^2	
Maximum paper thickness	0.52 mm		
Copy capability	Copy capability: 1 + 4 　Quiet mode: Original + 1 page　　　　（0.065 mm/page）-- print twice 　Normal mode: Original + 2 ~ 3 pages　（0.065 mm/page）-- print once 　Copy mode: Original + 3 ~ 4 pages　　（0.065 mm/page）-- print once		
Auto function	Optional: Paper edge detect, Black mark detect.		
Compress printing	Support graph and character compress printing.		
Special function	Automatic Pin Break Compensation; Automatic Pin Rotation Replacement; Automatic Emulation Match; Online Aptitude Parameter Setting.		
Physical dimensions	384 (width) × 280 (depth) × 139 (height) mm		
Weight	Approx. 6 Kg		
Environmental conditions	Operating environment	Temperature: 5 ~ 35℃	
		Humidity: 25 ~ 80%RH (No condensation)	
	Storage environment	Temperature: -40 ~ 55℃	
		Humidity: ≤93%RH (40℃, No condensation)	
Power requirements	Rated voltage: 220 V(AC)		
	Rated frequency: 50Hz ~ 60Hz		
Power consumption	① Operation power: 53 W; ② Max. power: 236 W; ③ Standby power: 2.9 W. **Note: Only when the produce doesn't connect power supply, could consume zero energy.**		
Certificate	CE Certificate		

Note: All the technical instructions in this user's manual are the laboratorial measurements which achieved under national standard store and work environment (room temperature), the measuring paper accords with the specification in this user's manual.

A.2 Interface Specifications

Your printer can be equipped with a parallel interface, two USB interfaces, a serial interface or an Ethernet interface. The printer switches automatically to the appropriate interface when it receives data.

A.2.1 Parallel Interface

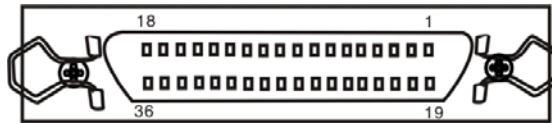| The parallel interface has the following characteristics:	
Data format:	8-bit
Synchronization:	/STROBE pulse
Handshaking:	BUSY and /ACKNLG signals
Signal level:	TTL compatible

Figure A-1 Parallel interface connector pin number

A.2.2 USB Interface

The following table provides the standardized contact terminating assignments by number and color for Series "A" and Series "B" connectors of Full-speed USB 2.0.

Contact Number	Signal Name	Color
1	VBUS	Red
2	D-	White
3	D+	Green
4	GND	Black
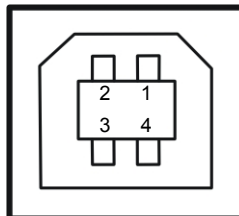
Figure A-2 USB-B type connector

A.2.3 Serial Interface

The serial interface has the following characteristics:

Baudrate (bps): 1200 bps, 2400 bps, 4800 bps, 9600 bps, 19200 bps (selectable)

Word length: 7 or 8-bit (selectable)

Start bit: 1 bit

Parity bit: Odd, even, or none (selectable)

Stop bit: 1 bit

Handshaking: DTR protocol, X-ON/X-OFF protocol (selectable)

Serial pin assignments

The following table lists the serial connector pin assignments and describes their respective interface signals.

Pin No.	Signal	Direction	Description
1	Frame Ground (FG)	—	Printer's chassis ground
2	Transmitted Data (TXD/SD)	Out	Printer has transmitted serial data
3	Received Data (RXD/RD)	In	Printer has received serial data
7	Signal Ground (SG)	—	Return path for data control signals
20	Data Terminal Ready (DTR)	Out	Positive when the printer is ready to receive data, and negative when the printer is not ready
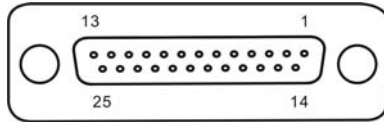
Figure A-3 Serial interface connector pin number

A.2.4 Ethernet Interface

10/100Base-T Ethernet interface can connect to 10/100M Ethernet.
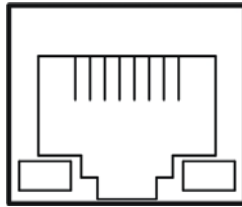
Figure A-4 Ethernet interface

A.3 Printable Area

Note: 1. To assure the print quality, please make sure the print contents are within the printable area.

2. If the print contents exceed the printable area, the print head may be damaged.

Cut Sheet:
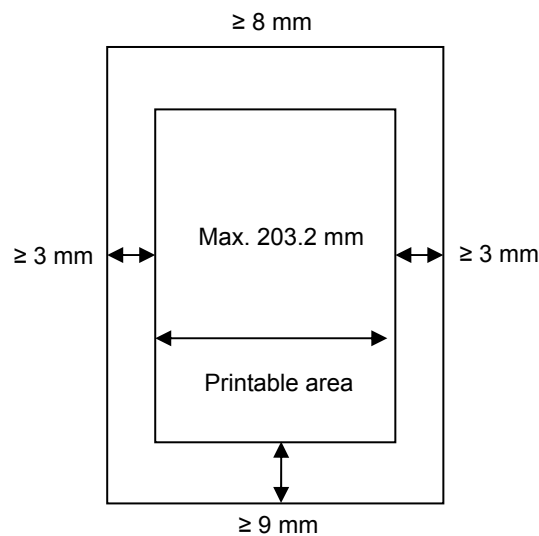
A: The top margin ≥ 8.0 mm.

B: The right/left margins ≥ 3.0 mm.

    However, the maximum printable width is 203.2 mm.

C: The bottom margin ≥ 9.0 mm.

Tractor paper:

A: The top and bottom margin above and below the perforation ≥ 8.0 mm.

B: The left and right margins ≥ 13.0 mm.

The maximum printable width is 203.2 mm.

Appendix B Command Summary

This printer supports EPSON ESC/PK2 control commands shown as the follow table:

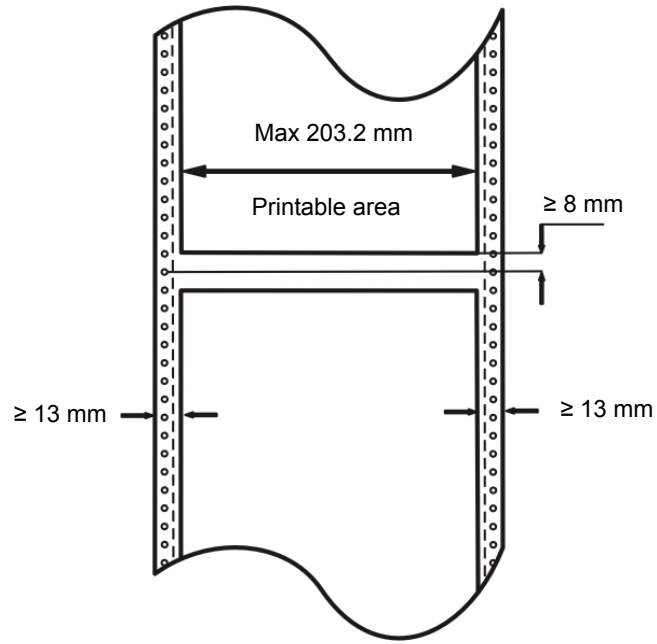| Classify	No	Command	Description
Printer control commands	1	ESC @	Initialize Printer
	2	CAN	Cancel Line
	3	DC1	Select Printer
	4	DC3	Deselect Printer
	5	DEL	Delete Character
	6	ESC #	Cancel MSB Control Sequence
	7	ESC >	Set MSB to 1
	8	ESC =	Reset MSB to 0
	9	BEL	Beeper
	10	BS	Backspace
	11	ESC U	Select Print Direction
	12	ESC <	Select character Unidirectional Mode (on one line)
	13	ESC s n	Select/Cancel Quiet Print Mode
	14	CR	Carriage Return
	15	LF	Line Feed
	16	FF	Form Feed
	17	ESC $	Set Absolute Horizontal print position
	18	ESC \	Set Relative Horizontal print position
	19	ESC (U	Define Unit
	20	ESC (V	Set Absolute Vertical Print Position
	21	ESC (v	Set Relative Vertical Print Position
	22	ESC J	n/180" Line Feed
	23	ESC j	n/180" Reverse Line Feed
	24	HT	Horizontal Tab
	25	VT	Vertical Tab
Image and color handling	26	ESC ? m n	Reassign Graphics Mode
	27	ESC *	Set Graphics Mode
	28	ESC (G	Select Graphics Mode
	29	ESC .	Print Raster Graphics
	30	ESC K	8 dot Single-Density Graphics Mode
	31	ESC L	8 dot Double-Density Graphics Mode
	32	ESC Y	8 dot High-speed, Double-Density Graphics Mode
	33	ESC Z	8 dot Quadruple-Density Graphics Mode
	34	FS &	Set Chinese character mode
	35	FS ·	Cancel Chinese character mode
	36	FS SO	Select Double Width Mode (Chinese)

Chinese character print command	37	FS	DC4	Cancel Double Width Mode
	38	FS	W	Select/Cancel quadruple-size mode for Chinese character
	39	FS	J	Select lengthways printing
	40	FS	K	Select transverse printing
	41	FS	D	Two character lengthways half-size mode paratactically printing
	42	FS	-	Select/Cancel Underline Mode for Chinese character
	43	FS	S	Select full-size mode pitch for Chinese character
	44	FS	T	Select half-size mode pitch for Chinese character
	45	FS	U	Select half-size mode pitch adjustment for character
	46	FS	V	Cancel half-size mode pitch adjustment for character
	47	FS	x	Select /Cancel high speed printing
	48	FS	2	Chinese character of user-defined
	49	FS	SI	Select half-size mode for Chinese character
	50	FS	DC2	Cancel half-size mode for Chinese character
	51	FS	r	Select demisemi-size mode for Chinese character
	52	FS	!	Select Chinese character print mode
	53	FS	v	Select/Cancel form connect line
	54	FS	k	Select Chinese font
	55	FS	Y	Select Chinese character dot-matrix and width
	56	FS	c	Set Chinese character HMI (Horizontal motion space)
	57	FS	b	Set Chinese character datum line
	58	ESC	I	Select Chinese CC-DOS print mode
ASCII Character	59	ESC	k	Select Font Style
	60	ESC	X	Select ASCII character width and height
	61	ESC	P	Select 10CPI Mode
	62	ESC	M	Select 12CPI Mode
	63	ESC	g	Select 15CPI Mode
	64	ESC	p	Select/Cancel Proportional Mode
	65	ESC	x	Select Print Quality
	66	ESC	4	Select Italic Mode
	67	ESC	5	Cancel Italic Mode
	68	ESC	E	Select Emphasized Mode
	69	ESC	F	Cancel Emphasized Mode
	70	ESC	! n	Select Print Mode
	71	ESC	q n	Select Character Style
	72	ESC	t n	Select Character Table
	73	ESC	(t	Assign Character Table
	74	ESC	R	Select International Character Set

	75	ESC &	Define Downloaded Characters
	76	ESC :	Copy ROM Characters Set into RAM
	77	ESC % n	Select/Deselect User-Defined Set
	78	ESC 6	Enable Character Set 2
	79	ESC 7	Cancel command ESC 6
Font enhancement	80	SI	Select Compressed Mode
	81	DC2	Cancel Compressed Mode
	82	SO	Select Double Width Mode
	83	DC4	Cancel Double Width Mode
	84	ESC W n	Select/Cancel Double Width Mode
	85	ESC w n	Select/Cancel Double height Mode
	86	ESC G	Select Double Strike Mode
	87	ESC H	Cancel Double Strike Mode
	88	ESC - n	Select/Cancel Underline Mode
	89	ESC (-	Define and Apply a Style of Scoring
	90	ESC (^	Print Data as Characters
	91	ESC S n	Select Superscript/Subscript Mode
	92	ESC T	Cancel Superscript/Subscript Mode
Format control	93	ESC C	Set Form Length in Lines
	94	ESC C NUL	Set Form Length in Inches
	95	ESC (C	Set Form Length in Defined Unit
	96	ESC (c	Define Form Format
	97	ESC N n	Select Skip-Over-Perforation
	98	ESC O	Cancel Skip-Over-Perforation
	99	ESC l	Set Left Margin
	100	ESC Q	Set right Margin
	101	ESC D	Set Horizontal Tab Positions
	102	ESC B	Set Vertical Tab Positions
	103	ESC /	Select a VFU Channel
	104	ESC b	Select VFU Positions
	105	ESC 0	Select 1/8-inch Line Spacing
	106	ESC 2	Select 1/6-inch Line Spacing
	107	ESC 3	Select n/180-inch Line Spacing
	108	ESC A	Select n/60-inch Line Spacing
	109	ESC +	Select n/360-inch Line Spacing
	110	ESC SP	Set Character Space
	111	ESC a n	Select Justification Mode