

Maintenance Manual

PANTUM

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P3000 Series Maintenance Manual for Pantum Laser Printers



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Safety Information

Please read the following safety warnings carefully and make sure you understand them before starting maintenance procedures.

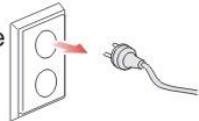
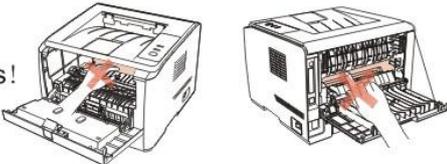
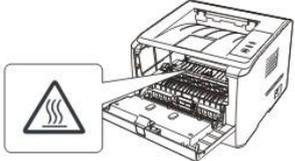
Important Precautions

To avoid the possible risk of damage to the product, it is strongly recommended that maintenance be carried out by trained technicians from Pantum, rather than untrained personnel. User will bear the responsibility for any personal injury or product damage occurring during maintenance of this product and the components specified in this manual.

Please keep this manual for future maintenance purposes.

Hazard warnings, notices, and annotated instructions:

- * To avoid personal injury, please pay attention to all hazard warnings.
- * To maintain the printer properly and avoid damage, please take note of the relevant hazard warnings.
- * Note the relevant prompts for maintaining the printer.
- * Hazard warnings used in this manual are listed below:

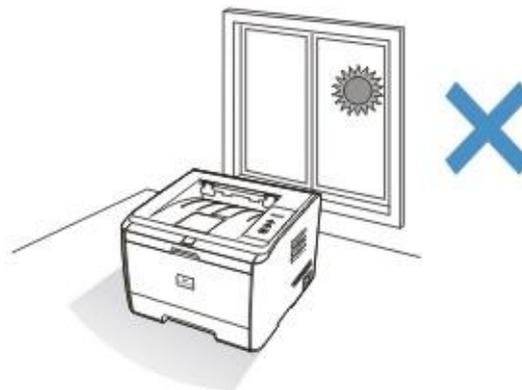
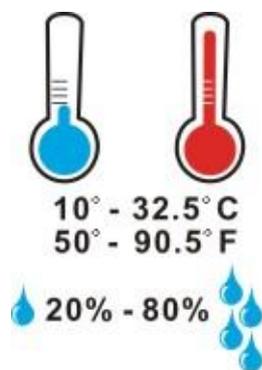
Warning	
 There is a high-voltage electrode inside the printer. Before cleaning the printer, make sure the power is turned off!	
 Plugging and unplugging the power cord plug with a wet hand may result in an electric shock.	
 The fuser unit is hot during and after printing. Touching the fuser unit (the shaded area as shown) may cause burns!	
 The fuser unit bears a high temperature warning label. Please do not remove or damage this label.	

Installation

The printer should be placed on a flat and stable surface, such as a desktop, away from people and from sources of vibration, and close to a regular, grounded power supply outlet. The ambient temperature of the installation site should be between 10°C and 32.5°C, with humidity between 20% and 80%.

Note:

- Do not install the printer in crowded areas.
- Do not place the printer near heaters, refrigerators, air conditioners, or fluid and chemical products.
- The printer must not be exposed to direct sunlight or installed in overheated, damp, and dusty areas.
- Do not connect the printer to a wall socket or power supply outlet controlled by an autotimer.
- A power failure will cause loss of the device's memory.
- Do not connect the printer to a power supply outlet that shares the same circuit as high-power appliances or other devices which could cause an overload.
- Avoid placing the printer near speakers or cordless telephone docks.
- Ensure the printer area is ventilated when using the printer for long periods or when printing in bulk in a poorly ventilated room.



Laser Safety

Laser radiation is harmful to the human body. Since laser components are completely sealed within the printer, there should be no radiation leaks. To prevent laser radiation leaks. **DO NOT RANDOMLY DISASSEMBLE THE PRINTER.**

The printer follows the provisions of Class 1 laser products under the CFR standard. The printer has a Class IIIB laser diode, which does not have laser components containing radiation.

The following label is attached to the laser components inside the printer.



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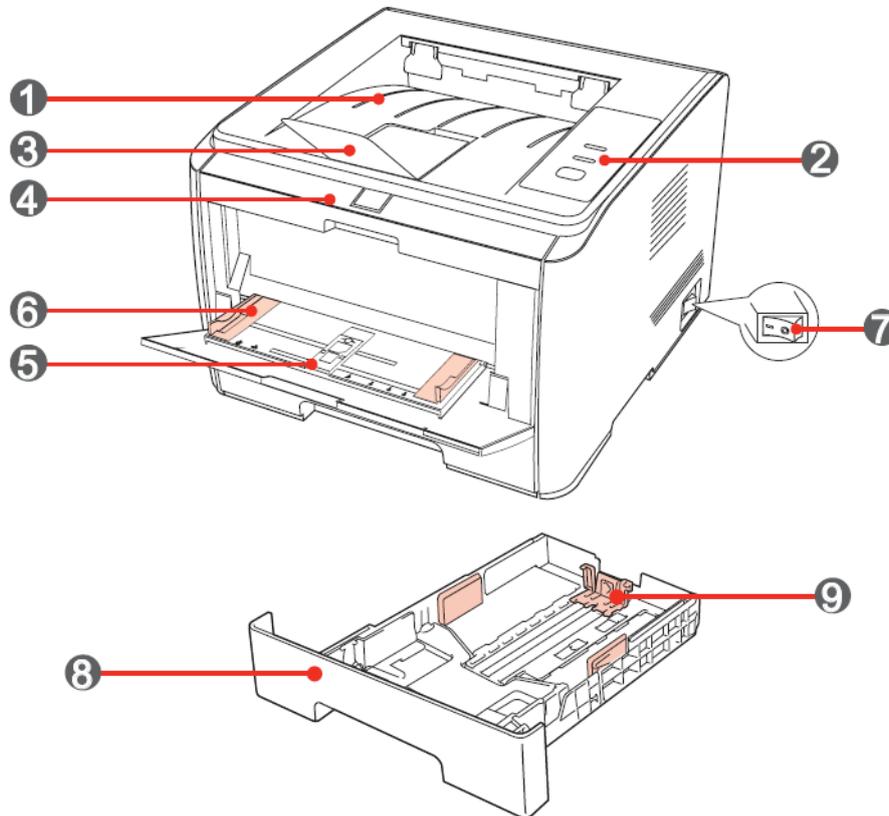
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1 An Introduction to the Product

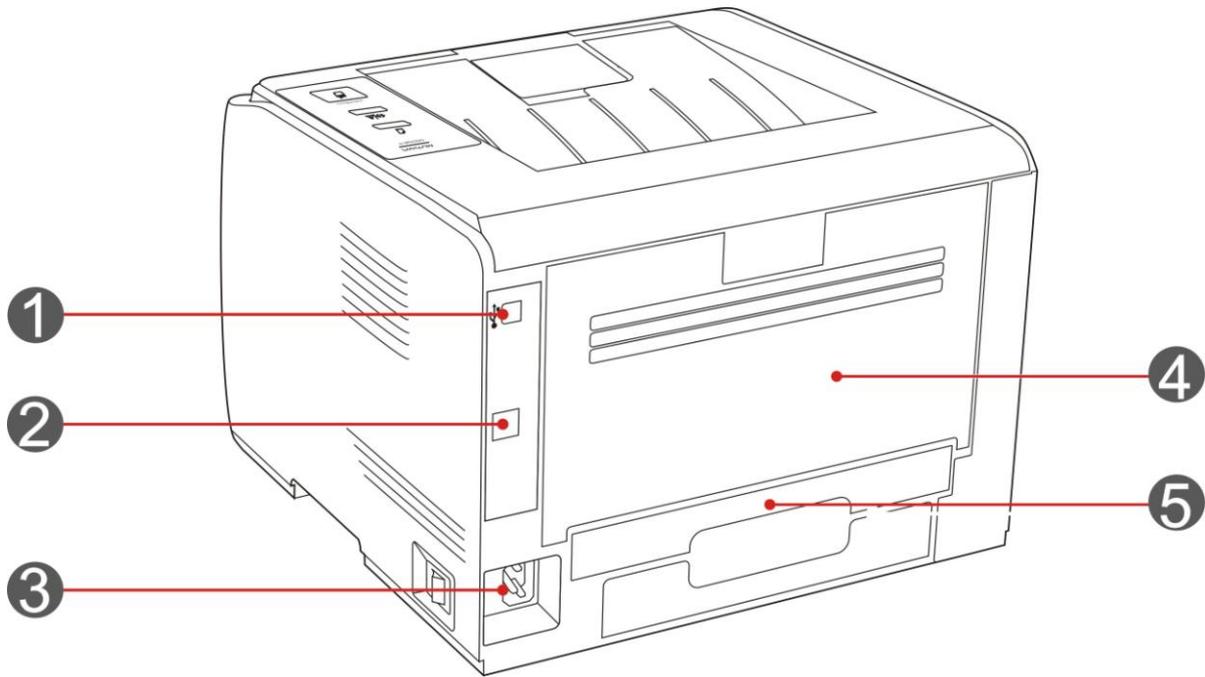
1.1 Overview

1.1.1 Front View



1	Output Bin: Used to store printed paper
2	Display Panel: Indicates the print status
3	Output Tray: Prevents printed paper from falling out
4	Front Cover: The laser toner cartridge can be removed by opening the front cover
5	Manual Feeder Tray: Print media can be manually inserted by opening the front cover of the manual feeder tray
6	Manual Feeder Tray Guide: Adjusts the paper width
7	Main Power Switch: Turns the power supply on and off
8	Automatic Feeder Tray: Holds the printing paper
9	Paper-width Guide: Used to adjust the width of the paper inside the automatic feeder tray

1.1.2 Rear View



1	USB Interface: Directly connects to the computer
2	Network Interface: Connects the printer to the network
3	Power Interface: Connects the power cord
4	Rear Cover: For dealing with paper jams
5	Duplex Unit: For duplex printing

1.2 Product Specifications

1.2.1 General Specifications

Memory	Standard	64MB
	Extensibility	None
Interface Type		USB2.0, 10BASE-T/100BASE-TX Ethernet
Operating System		Microsoft Windows Server2003/Server2008/Server2012/XP/Vista/7/Win8 (32bit & 64bit) Mac OS X 10.4/10.5/10.6/10.7/10.8
Power		AC 220V~240V 50/60Hz
Maximum Power Consumption		Under 780W
Average Power Consumption	Print	495W
	Stand-by	50W
	Sleep mode	Under 3.5W
	Typical Power Consumption	Under 2.2KW
Noise	Print	< 55dB
	Stand-by	< 30dB
Sleep Mode Setting		1 minute by default
Printing Environment		Operating Temperature: 10-32°C Operating Humidity: 20-80% relative humidity (without condensation)
Product Size (W*D*H) mm		Approx. 370*370*270
Product Weight		Approx. 10kg (including the toner cartridge)
Service Life of the Product		5 years or 200,000 pages
Conformity		CCC Certification: GB 4943, GB 9254, GB 17625.1-2003 China Energy Efficiency Certification, Energy Saving Certification: GB 25956-2010 China Environmental Labeling Certification: HJ/T 302-2006 WHQL Certification CE compliance Energy Star

1.2.2 Printing Specifications

Printing Mode	Laser	
Print Speed (PPM)	30 or 33 depending on model (standard A4)	
Resolution (dpi)	1200*600	
Maximum Print Size	Legal (216mm x 355.6mm)	
Automatic Duplex	Built-in	
Network Print Function	On Network models (wired network print)	
Input Capability	Multipurpose Tray	1 page
	Standard Tray	250 pages (standard 80g/m ²)
	Optional Tray	None
Output Capability	Print-side down	150 pages (standard 80g/m ²)
	Print-side up	None
Print Media	Paper Type	Plain, thick, special paper (OHP, postcard, label, envelope)
	Paper Size	A4, A5, B5, A6, Letter, Legal, JIS B5, ISO B5, Executive, Folio, Oficio, Statement, Japanese Postcard, Monarch Env, DL Env, C5 Env, C6 Env, No.10 Env, ZL, Big 16K, Big 32K, 16K, 32K, B6
	Paper Weight	60~200g/m ²
	Duplex	Standard 80g/m ² A4 paper
Toner Cartridge Performance (5% coverage on A4 paper)	3K (standard) 6K (high capacity)	
Operator Panel	2 LED's, 1 button	
Print Language	GDI	
First Page Print Time	< 8.5s	
Warm-up Time	Under 20s	

1.2.3 Consumables Specifications

Model	Print Service Life
P*-300	3,000 pages, 5% coverage on A4 paper
P*-300H	6,000 pages, 5% coverage on A4 paper
P*-310	3,000 pages, 5% coverage on A4 paper

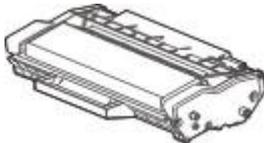
- Actual reference may vary depending on country.
- Model specifications are subject to change without notice.
- Consumables capacity may vary depending on different varieties used.

Note: For optimal print quality, please use only original Pantum products.
The warranty excludes damage caused by using non-Pantum original consumables.

2 Installation and Basic Instructions

2.1 Unpacking the Product

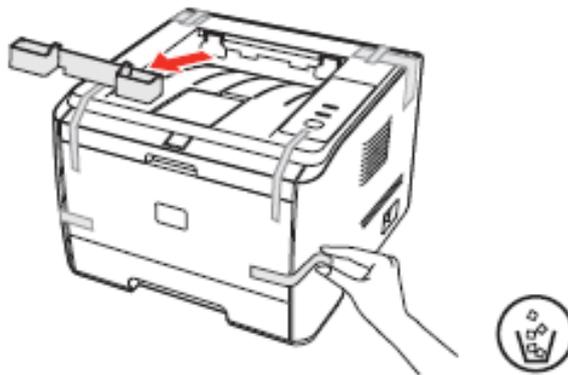
When you open the package, make sure that the following parts are included in the box:

Parts	Name	Quantity
	Printer	1
	Toner Cartridge	1
	USB interface cable	1
	Power cord	1
	CD-ROM	1
	Quick Setup Guide	1
	Pantum Warranty	1

2.2 Installing the Printer

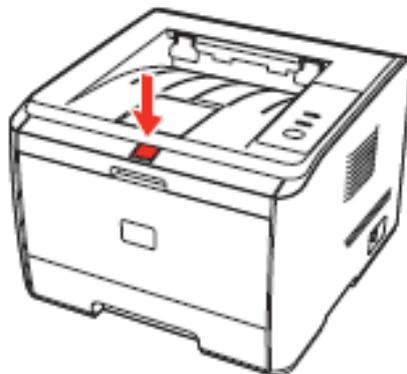
2.2.1 Removing the packaging materials

1. After unpacking the printer, dismantle the adhesive tape and the protective cover.

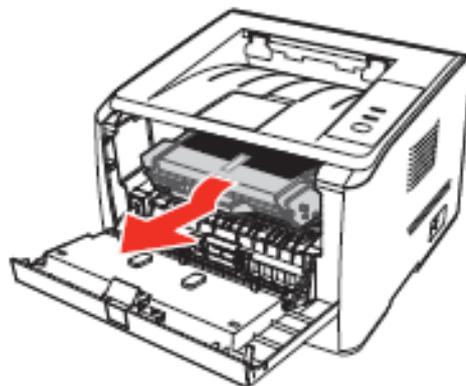


2.2.2 Installing Consumables

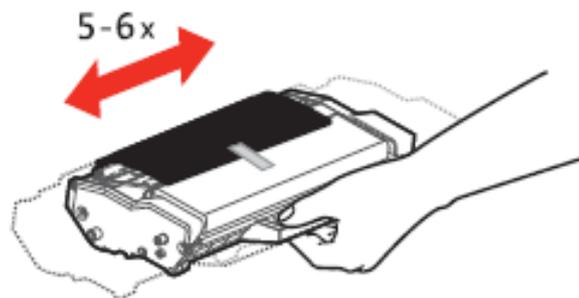
1. Press down the front cover button.



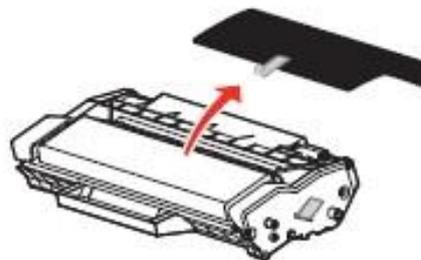
2. Open the front cover and remove the toner cartridge.



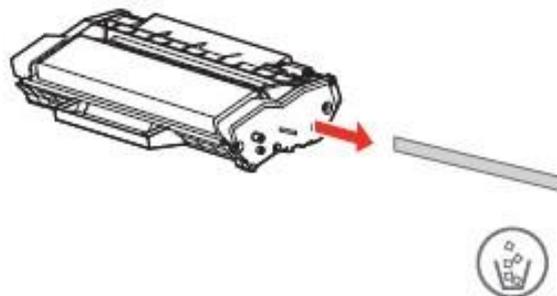
3. Hold the handle of the toner cartridge and shake gently (horizontally) 5-6 times, so as to evenly distribute the toner inside the cartridge.



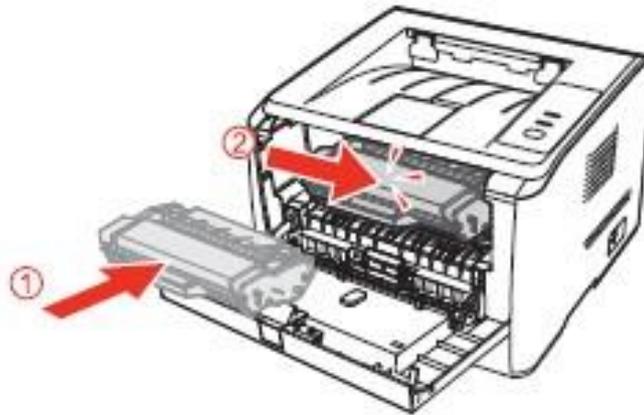
4. Remove the black paper protecting the toner cartridge.



5. Pull out the sealing tape.



6. Load the toner cartridge along the guides, and press along the direction of the arrow until you hear a click, indicating that the installation is complete.



7. Close the front cover.



2.3 Installing and Uninstalling Driver Software

2.3.1 Windows-Based Driver

2.3.1.1 Driver Install

1. Introduction

The driver software helps users to run the installer and uninstaller using the installation wizard and uninstall wizard. Its main functions are as follows:

- Auto-run launches automatically the installation procedure when the CD is inserted.
- Installation: To provide users with the printer installation wizard.
- Uninstall: To provide users with the printer uninstall wizard.

For users of Windows XP and Windows Server 2003, when connecting the equipment for the first time, a “Found New Hardware Wizard” window will pop up. Please close this window. If this window is not closed, the printer may not be detected and result in the installation not being completed.

2. Installation Steps

1) Running Interface

After inserting the installation CD, the program will run automatically and display the following window:



The user's identity will be verified before the program starts running. If the user is an administrator, this interface will display. If the user is not an administrator, the “Insufficient privileges. Please install Pantum P3000 Series Printer with administrator privileges.” prompt will pop up.

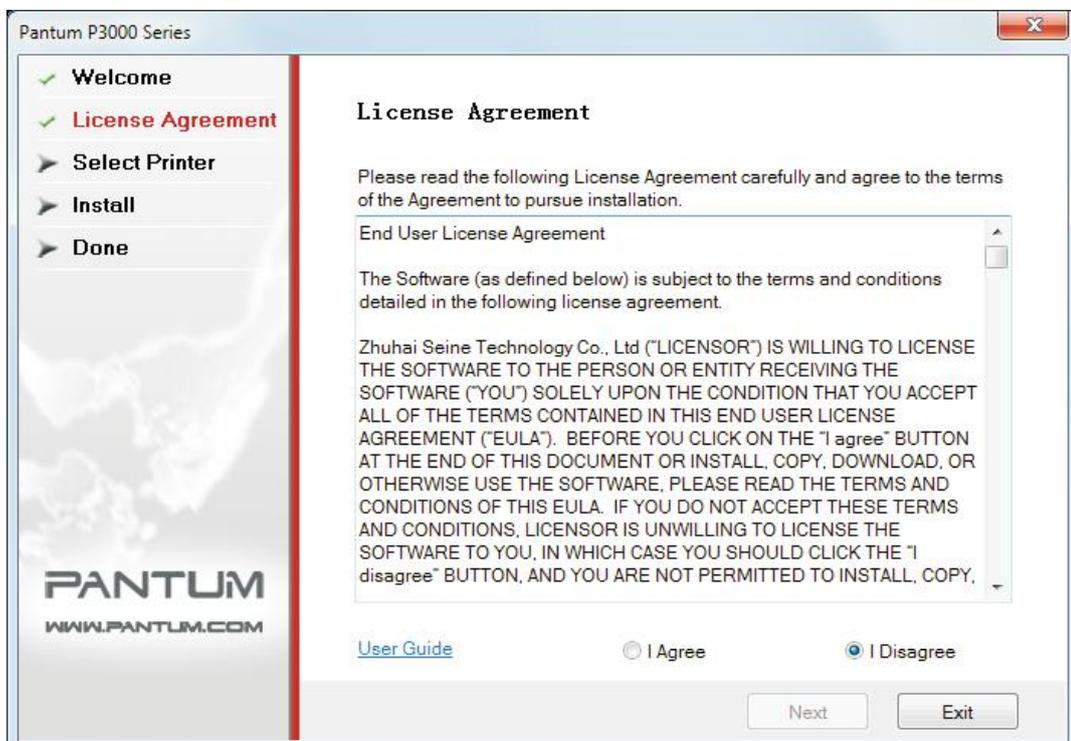
2) Installation Language

Once the program has started running, you will be taken to the next dialog where you can change the default installation language.



3) License Agreement

Click the Next button to enter the License Agreement interface. Please read the end user license agreement carefully and agree by selecting the “I Agree” option and clicking the Next button to continue with the installation.



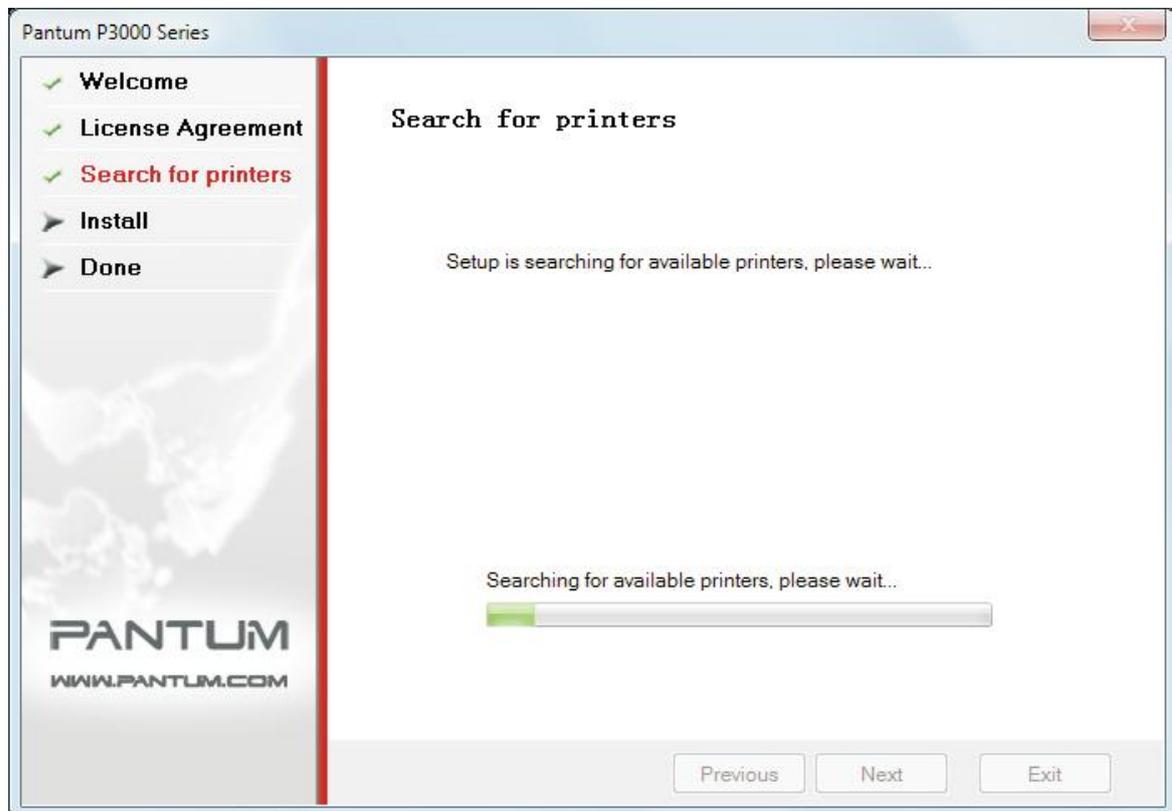
The “I Disagree” radio button is checked in the interface by default and the Next button is inactive. To proceed with the driver installation, users need to check the “I Agree” option. Then the Next button becomes active.

The driver installation software provides users with help and other resources in HTML format

relating to the Pantum P3000 Series printers. Users can click on User Guide on the interface to read the corresponding documents.

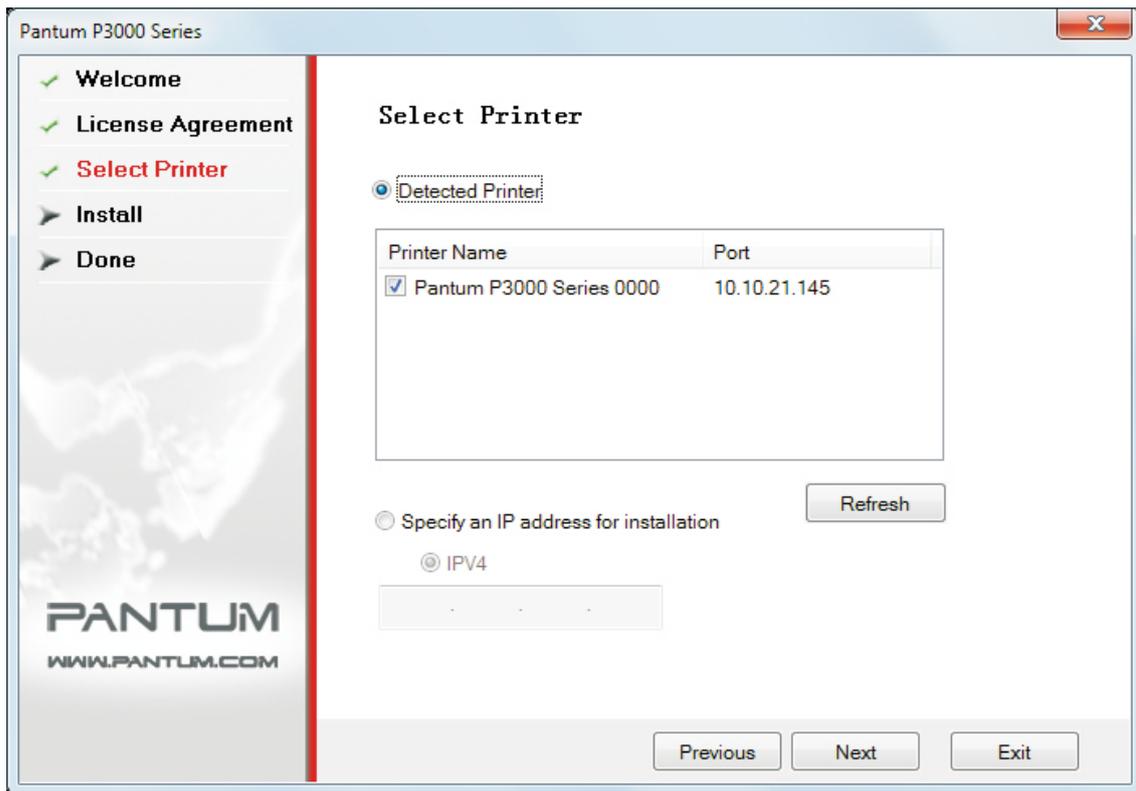
4) Search for Printers

After selecting "I Agree" and clicking Next, you will be taken to the Search for Printers interface and the program will automatically search for the appropriate printer device connected to the computer or to the network.



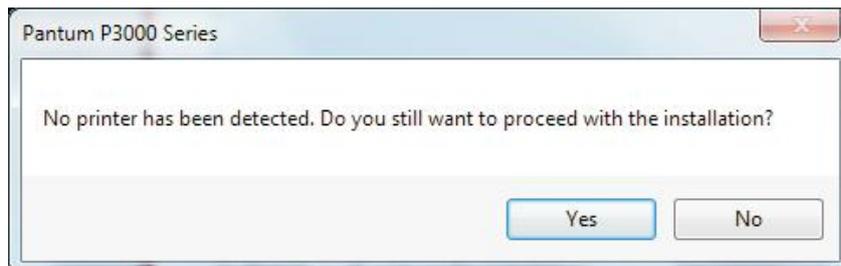
5) Select Printer

If the appropriate printer device is detected, you will be automatically taken to the Select Printer interface.



Note: • Detected Printer and Specify an IP Address for Installation cannot both be selected.

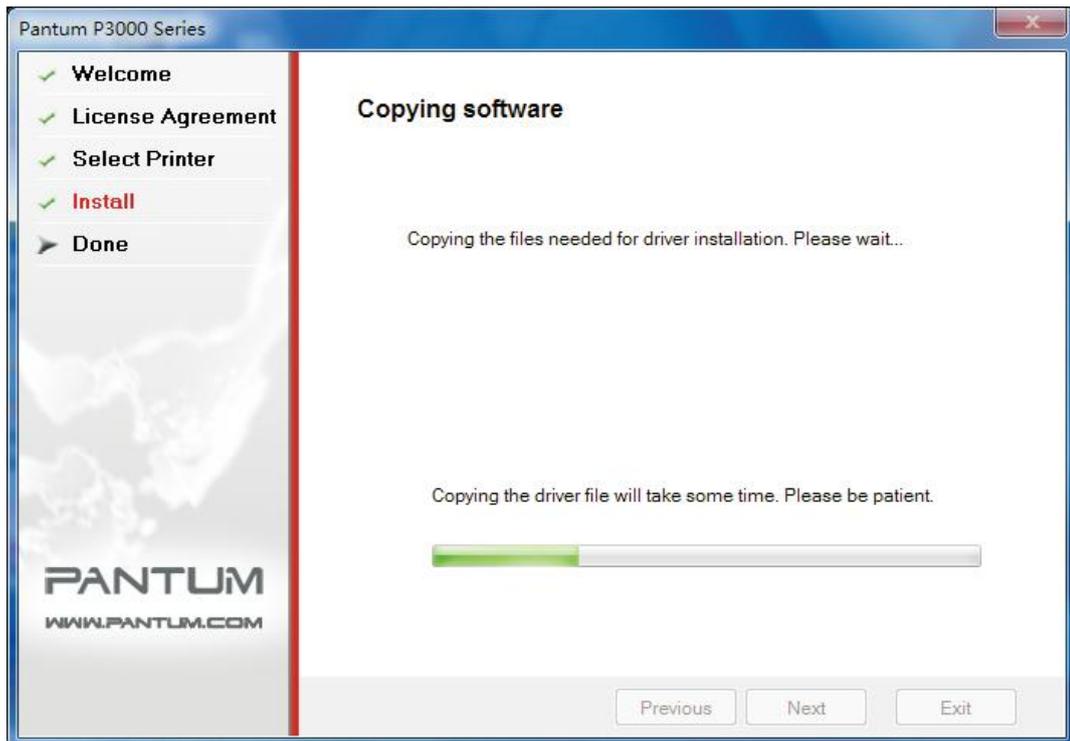
If the appropriate printer device is not detected, click “Next”, the dialog box “No printer has been detected. Do you still want to proceed with the installation?” will pop up.



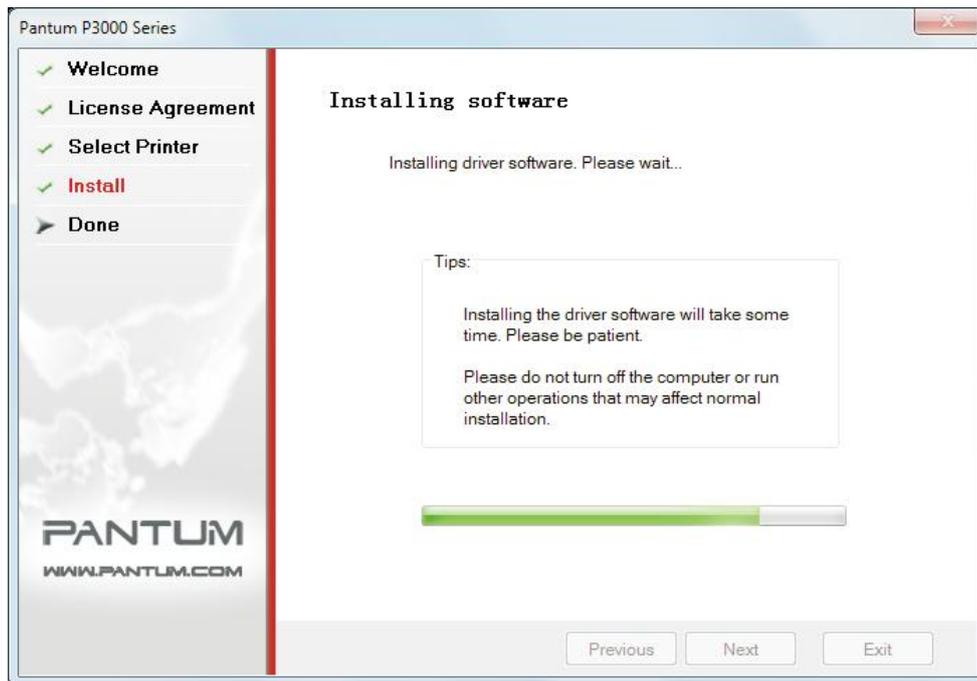
If you select “Yes”, the program will proceed with the installation and take you to the Copy interface. If you select No, the program will stay at the Select Printer interface. Select Yes and click Next to enter the Copy interface.

6) Copying Files

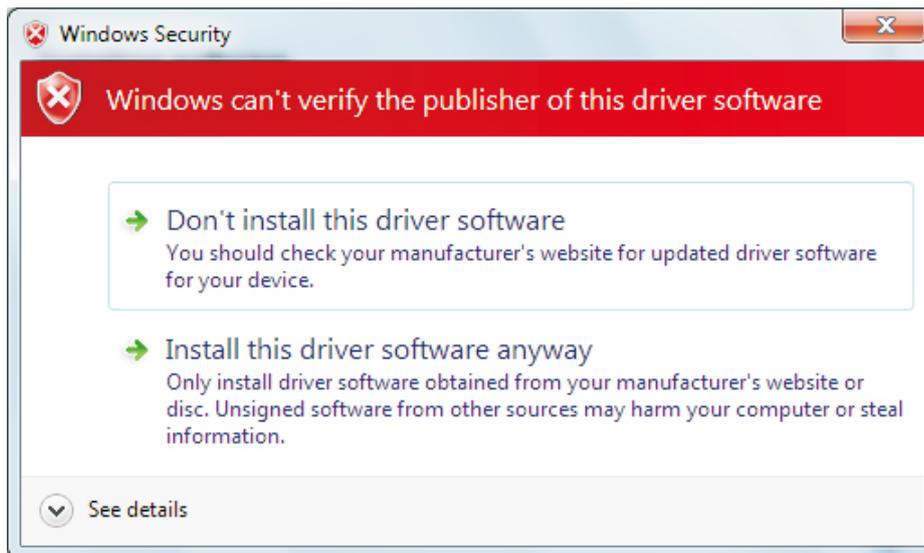
Copy the installation files to the installation path.



7) Driver Installation

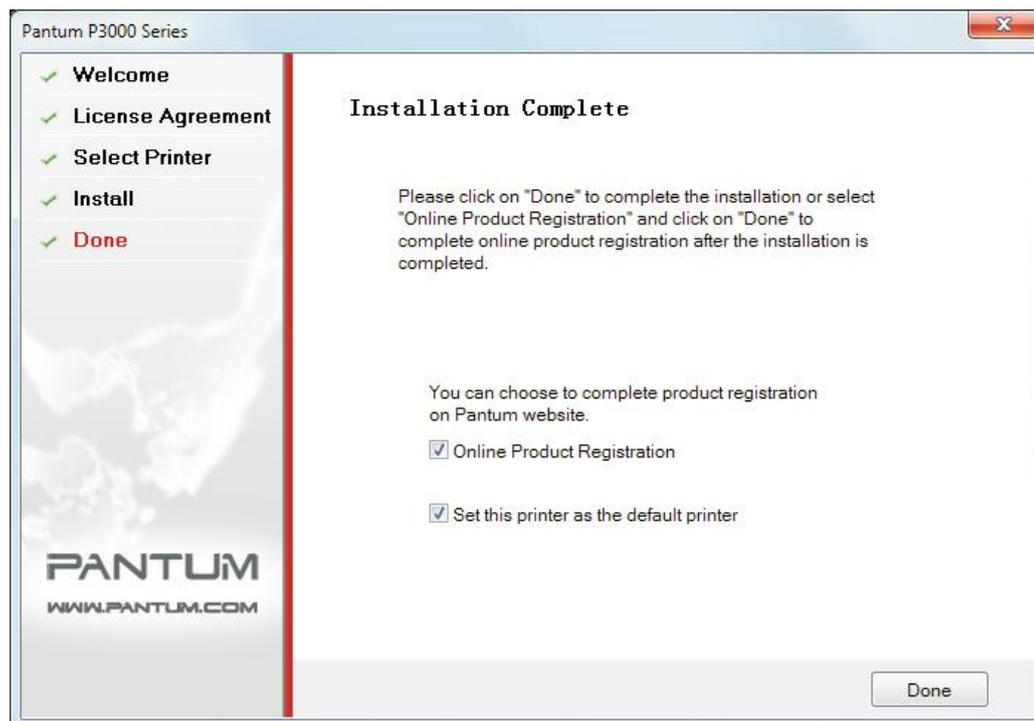


If Windows cannot verify the publisher of this driver software during the driver installation process, you will be asked if you still wish to proceed with the installation. You need to click “Continue Anyway” or “Always Install this Driver Software”, otherwise the installation will be unsuccessful (the warning pop-ups may differ slightly depending on the operating systems).



8) Completing Installation

After the driver installation progress bar shows that the installation is complete, you will be taken to the Installation Complete interface.



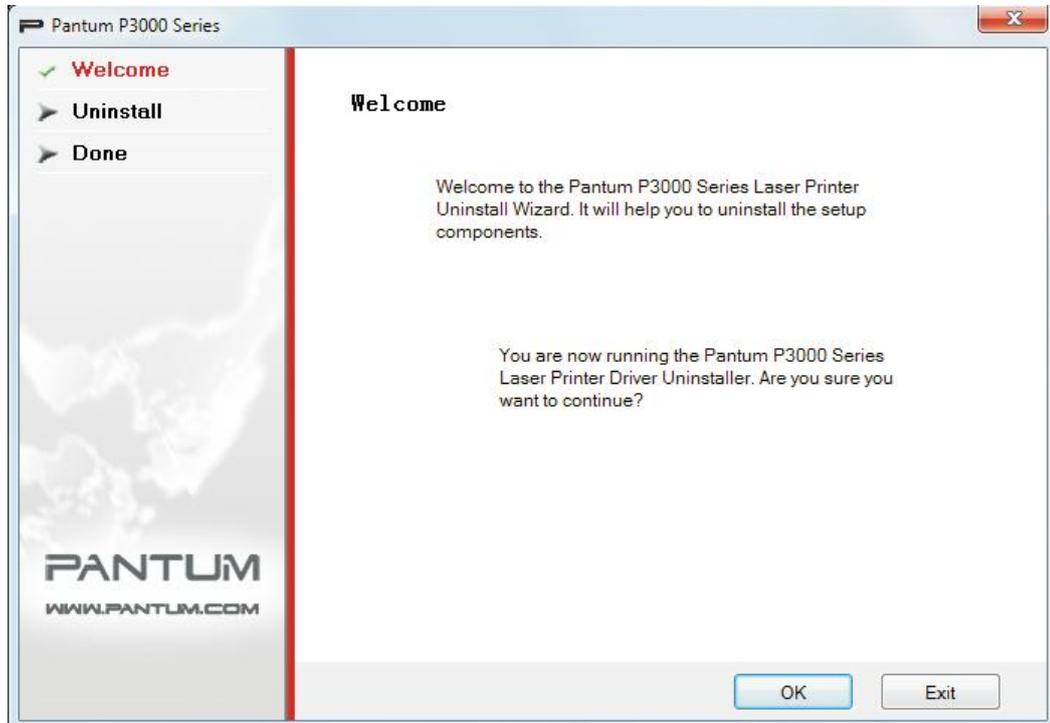
Click the Done button to complete the installation of the printer driver, carry out online product registration which can provide online services and other information, and set this printer as the default printer. You can also cancel these options as needed.

Note: • If the driver is installed while the printer is disconnected, the "Set this printer as the default printer" option will not be displayed.

2.3.1.2 Driver Uninstall

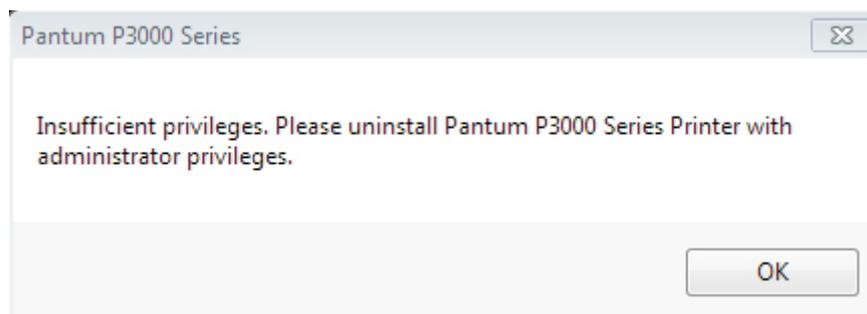
1) Selecting the Uninstall Mode

In the Start menu, select the Pantum Uninstall entry to launch the Uninstall wizard, or find the Add/Remove option in the control panel, find the relevant Pantum options, and click Change and Delete, a Welcome interface will pop up.



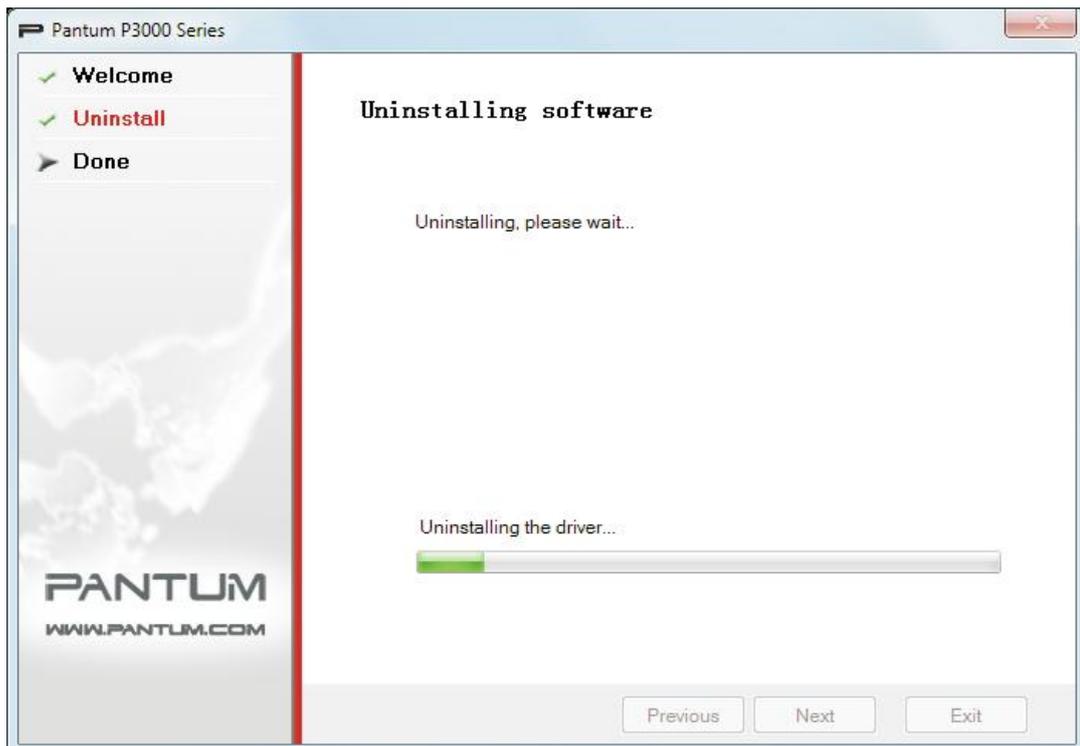
2) Uninstall Privilege Verification

Uninstall requires administrator privileges. If a non-administrator runs the uninstaller, the "Insufficient privileges. Please uninstall Pantum P3000 Series Printer with administrator privileges." prompt box will pop up and the main interface of the uninstaller will not be displayed. Click OK in the prompt box to close the window.



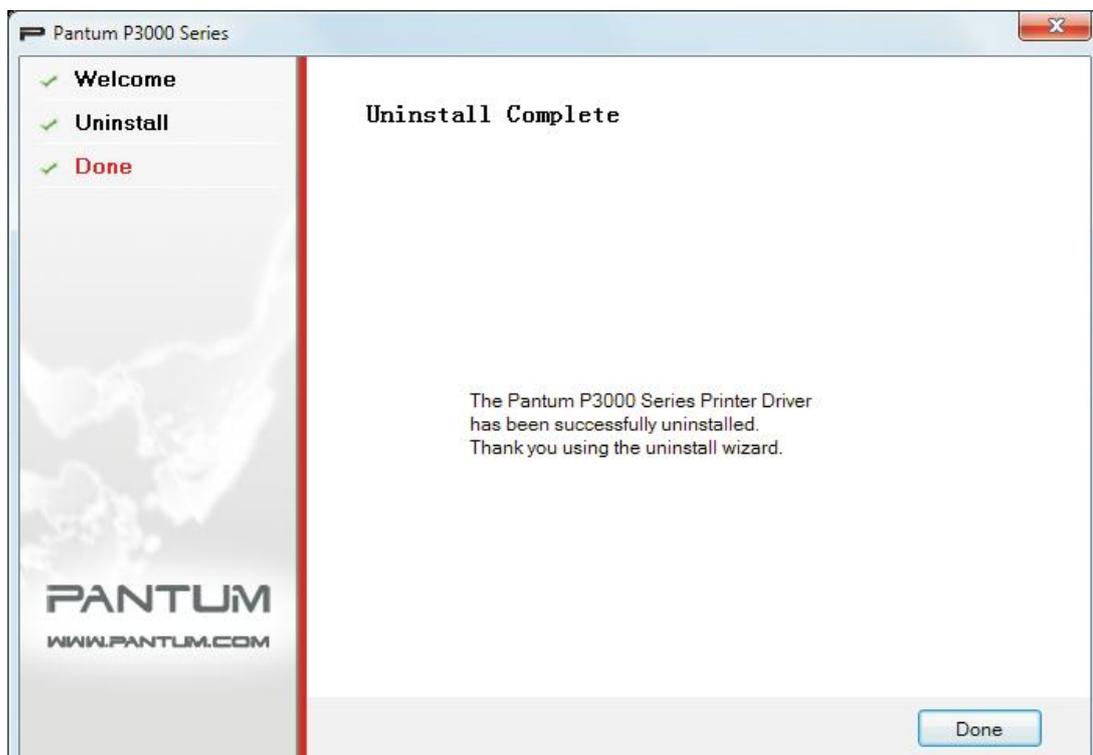
3) Uninstall Progress Interface

Click Next to enter the uninstall interface.



4) Done Interface

After the progress bar shows that the process is complete, you will be taken to the Done interface.



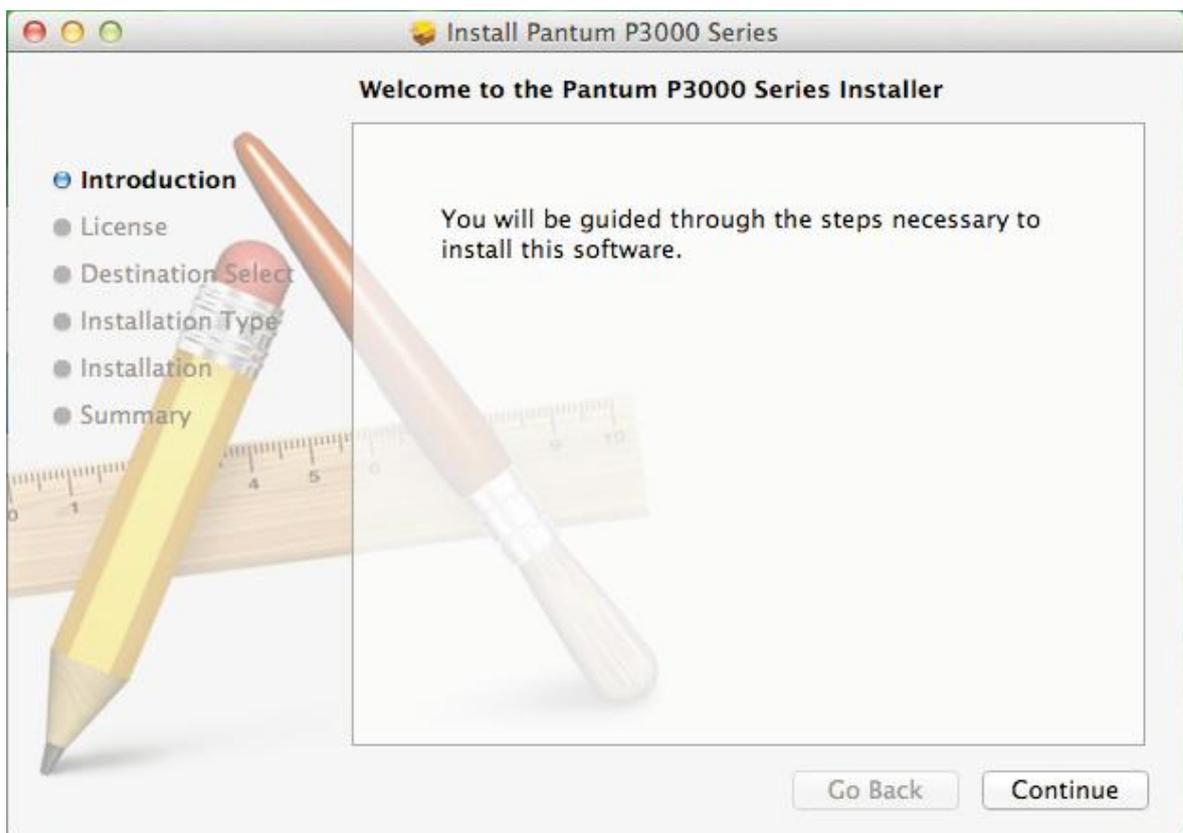
Click the Done button to complete the uninstall.

2.3.2 Installing the Driver Software On a Mac System

The Mac driver installer operates via the Package Maker software that comes with the Mac OS X system. The installation steps are basically the same as when installing other Mac software and are divided into: introduction, license, destination volume, type of installation, installation, summary.

1. Introduction

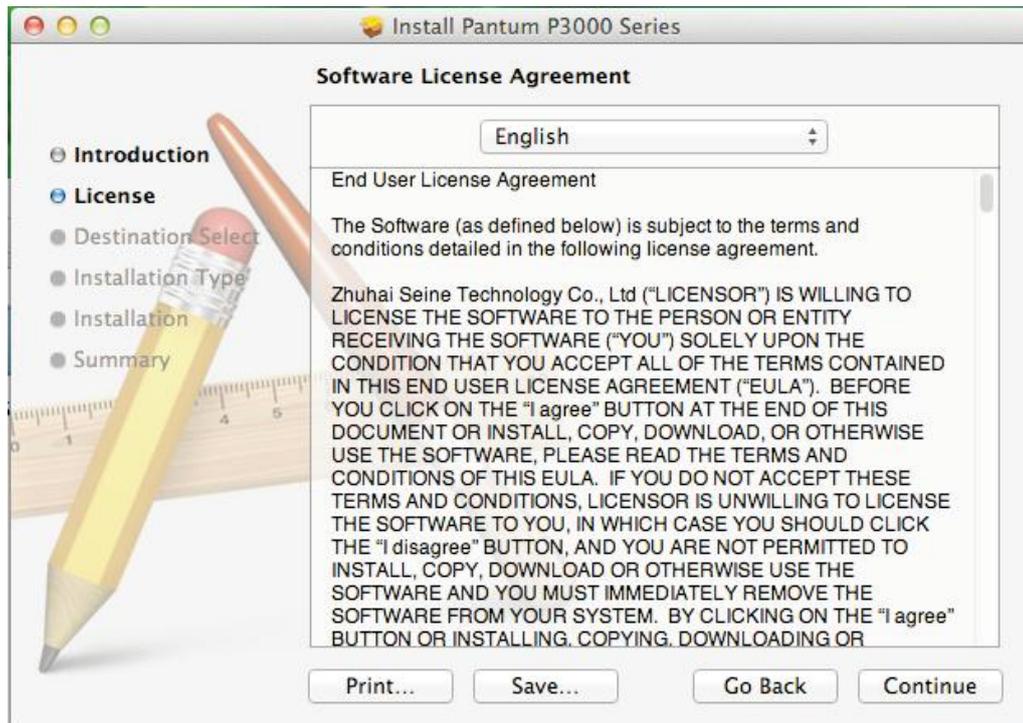
Insert the CD-ROM into the CD-ROM driver, run the CD-ROM and click on the Mac system installation package, then the following interface will display.



Click Continue to display the contents of the License Agreement.

2. License

An illustration of the contents of the License Agreement is shown below:



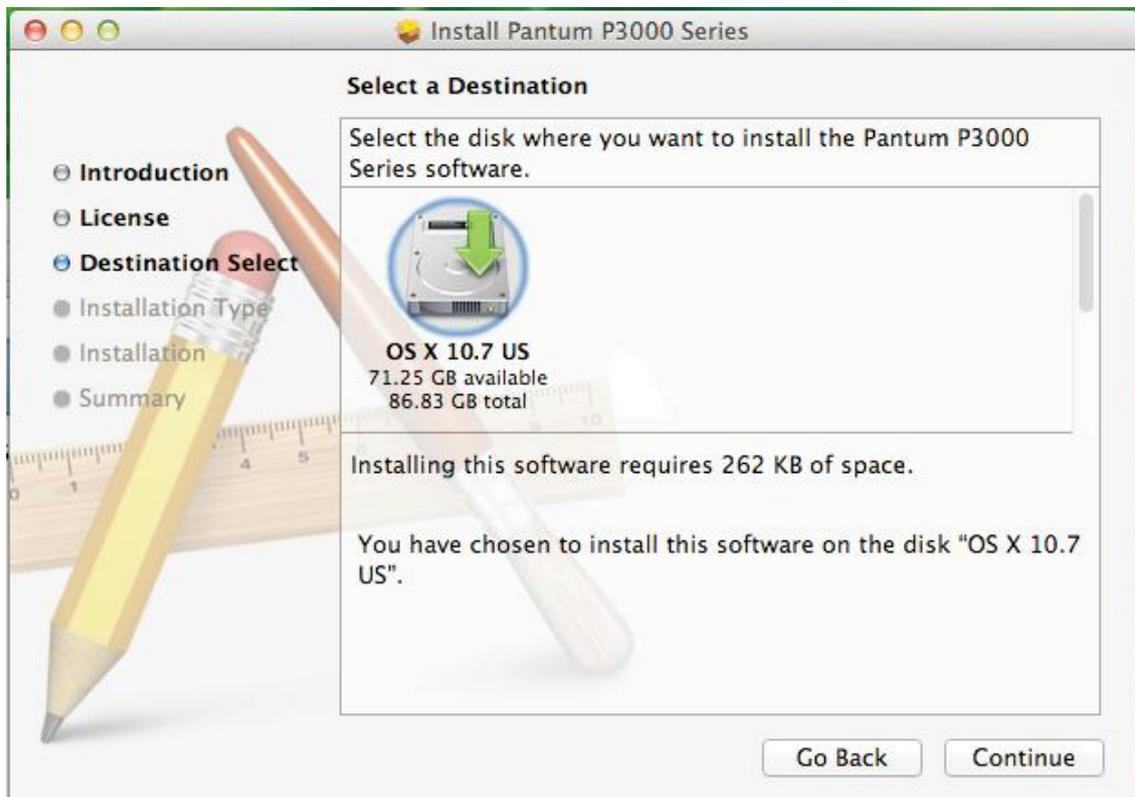
Click Continue, the License Agreement Acceptance dialog box will pop up.



Click "Agree" to accept the License Agreement and continue the installation.

3. Destination Volume

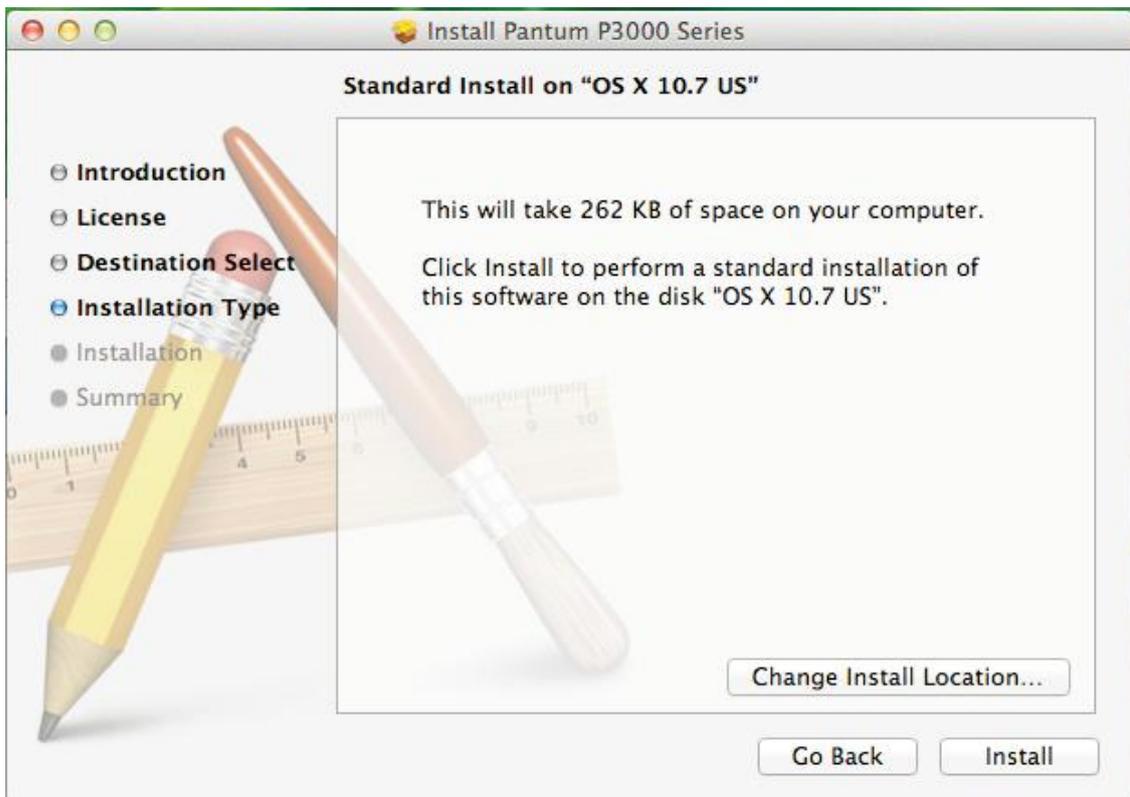
Select the installation disk, then the following view will display;
Click Continue to display the installation-related information.



Note: • In Mac OS X 10.4, you will enter this interface directly, but in Mac OS X 10.5 and later systems, you will enter the Installation Type option interface first. You should click the Change Install Location button to jump to the Destination Volume.

4. Installation Type

An illustration of the installation-related information is shown below:

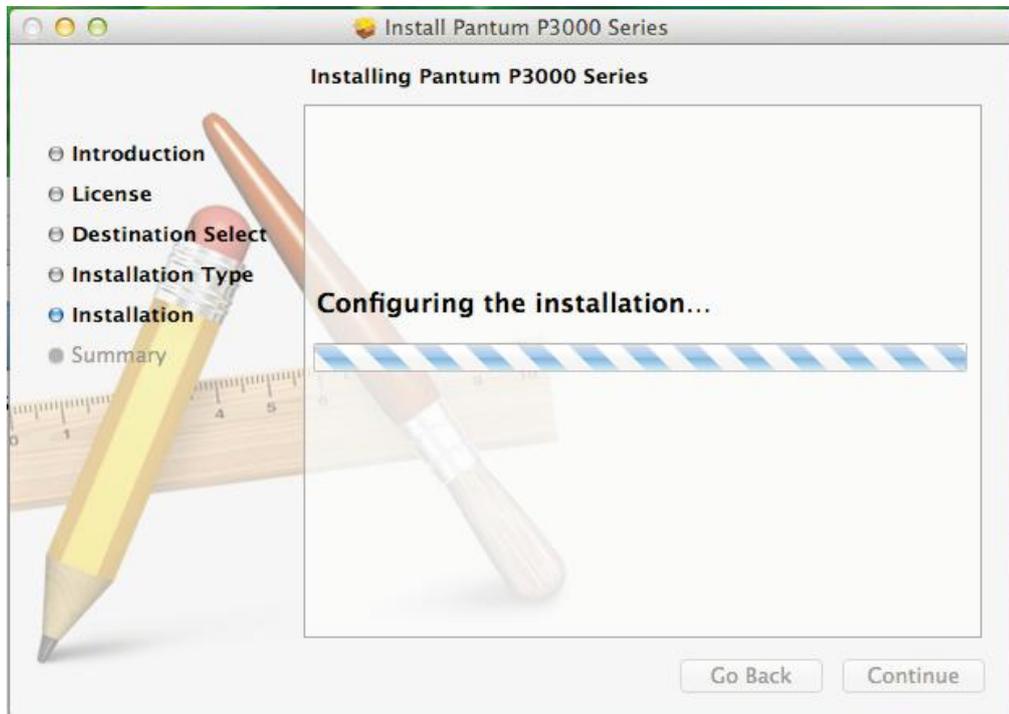


Click Install, the following prompt box will pop up. After logging in as an administrator and getting permission, you can continue with the installation.



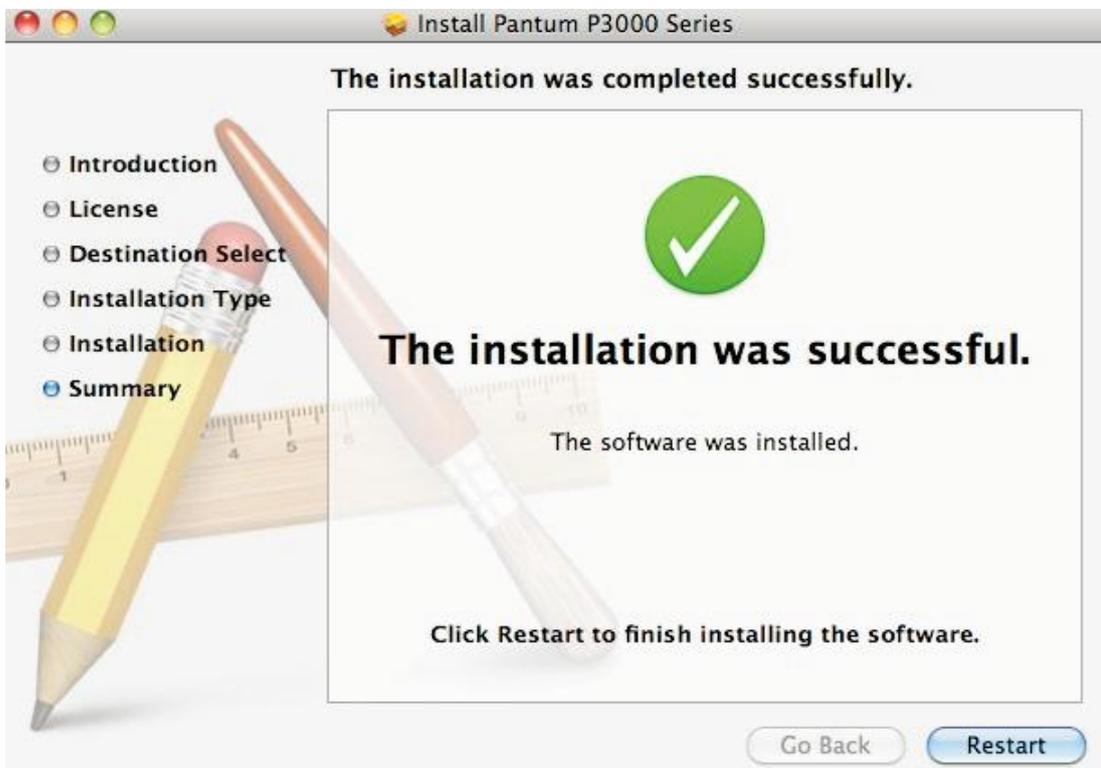
5. Install

An illustration of the installation progress bar is shown below:
Click Continue to display the Installation Complete interface.



6. Summary

An illustration of the Installation Complete interface is shown below:



2.4 Network Settings (For Network Models)

You may need to set some network parameters for the printer. These parameters can be set from the embedded Web server.

2.4.1 Installing the Printer onto the Network

In this configuration, the printer is directly connected to the network and can be set to allow all computers on the network to print directly to the printer.

1. Before turning on the printer, connect the network cable to the printer's network port so that it is directly connected to the network.
2. Turn on the printer and wait for the status indicator on the control panel to display the Ready status, as shown below.



3. Insert the printer's CD-ROM into your computer. If the installer software does not launch automatically, please browse to the "setup.exe" file on the CD-ROM, and then double-click to run the file.
4. Follow the operation instructions of the installer.
5. Continue to complete the installation.

Note:

- When the installer prompts you to select a printer, you can select the appropriate printer name from the Detected Printer list;
- If the printer name does not appear in the Detected Printer list, please click Refresh and search again for printers on the network;
- If you know the IP address of the printer to be connected, you can select "Specify an IP Address for Installation" to enter the IP address to enable connection.

2.4.2 Setting Network Products

2.4.2.1 Viewing or Changing Network Settings

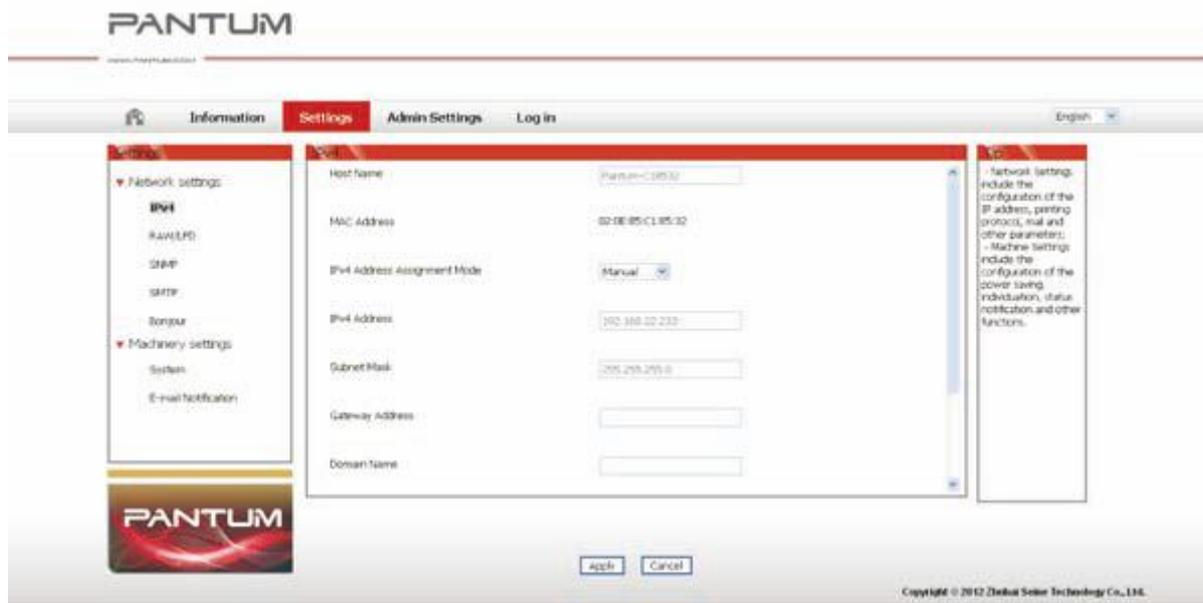
You can use the printer embedded Web server to view or change its IP settings.

1. Print DEMO Information Page, for viewing the printer's IP address information.

While the printer is in idle state, press the control panel button (as shown below) for 3 seconds to print the DEMO page.



2. Type the printer IP address into the Web browser's address line to open the embedded Web server.
3. Click the settings tab to obtain network information. Change the settings as needed.



2.4.2.2 Setting or Changing the Login Password of a Web Page

Use the embedded Web server to set a network password or change the existing password.

1. To open the embedded Web server, please log in first.
2. Click the Admin Settings tab.
3. Type the new password in the Password box and Confirm Password box.
4. At the bottom of the window, click on the Apply button to save the settings.

2.4.2.3 IP Address

The printer's IP address can be automatically set through the DHCP function and can also be set manually.

| Automatic Setting

The DHCP automatic setting function is enabled by default.

1. Connect the printer to the network via a network cable and complete the driver installation;
2. The printer will automatically obtain the IP address assigned by the DHCP server which can be used after a few seconds.

-
- Note:**
- If DHCP cannot automatically obtain an IP address, the printer will automatically use the default IP address: 169.254.1.1.
 - Due to the characteristics of DHCP, if the printer is not used for a long time or if the network access point is changed, the IP address assigned to the printer automatically by the network may change, resulting in the printer cannot be connected; therefore, it is recommended to enable the DHCP function and bind the IP address assigned automatically by the network with the MAC address of the printer.

| Manual Setting

Type the IP address into the Web browser's address line to open the embedded Web server.

1. Click Settings in the navigation bar to open the Settings interface;
2. Select Network Settings - IPV4 Settings;
3. Successively set the IP Address Assignment Mode (Manual), IP Address and Subnet Mask. Other items are optional;
4. Click Apply to save the settings.

-
- Note:**
- You can use the embedded Web server to change the IP Address Assignment Mode to Automatic or Manual.
 - If you want to reset all settings of the printer, you can restore the factory settings. This can be obtained by pressing down the button on the control panel (as shown below), power on the printer when it is powered off, and then releasing the button after 2-3 seconds. The reset is completed after the printer enters the ready status.



2.5 Test Printing

2.5.1 Printing the Offline Configuration Page

The offline configuration page can be set from the operation panel using the following steps:

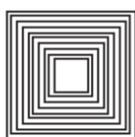
1. Power on, making sure the indicator display status reads as Ready.
2. Press down the button on the control panel for 3 seconds to print a test page.

PANTUM

P3000 Series

Printer name : Pantum P3000 Series
Serial Num : BH6A000001
Firmware Version : 0.2.0.9
Boot Version : 0.2.0.9
Engine Version : 6.2.4.9

Mac address : A0-EF-84-00-01-48
IPv4 address : 169.254.1.1
Subnetmask : 0.0.0.0
Gateway address : 0.0.0.0

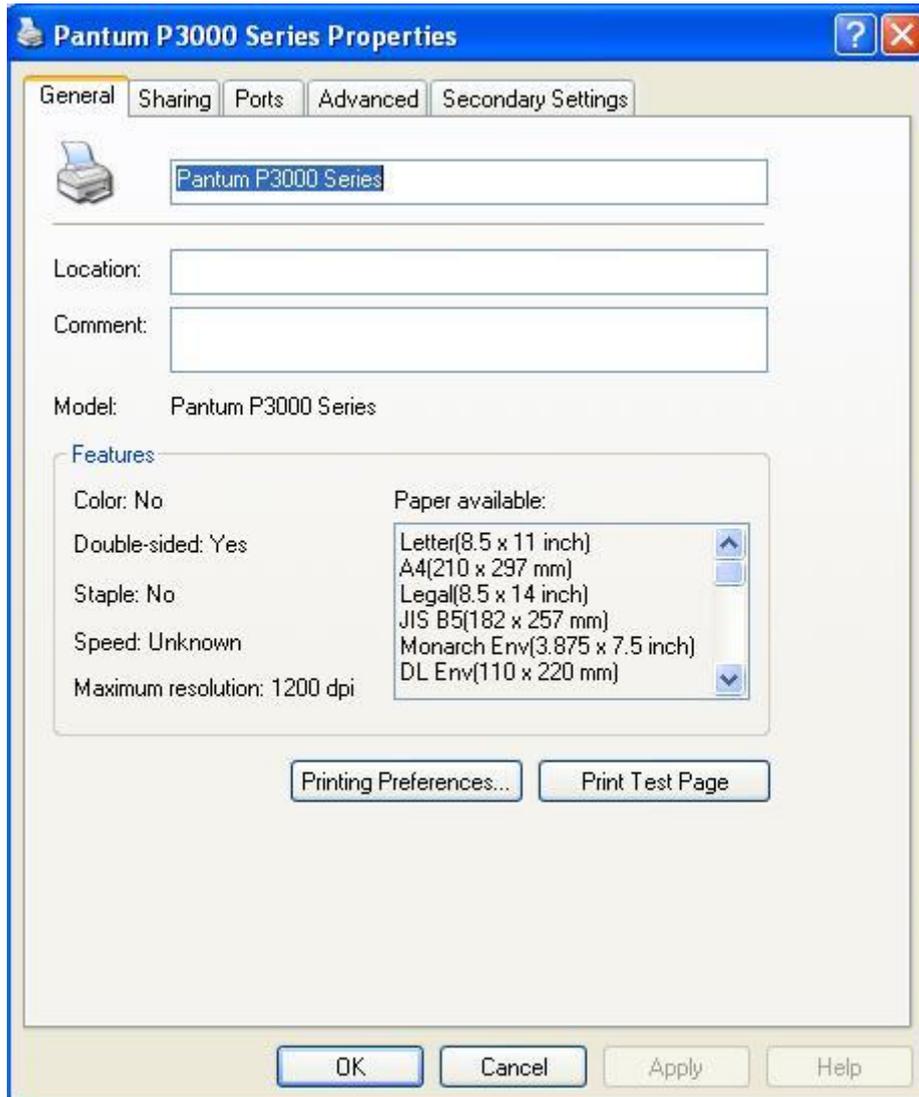


2.5.2 Printing the Windows Test Page Online

After installing the driver, click on the Start menu on the computer, and select Printer and Fax to



find the P3000 Series Printer icon, as shown: . Do a Right-click and select Properties: the following pop-up box will appear:

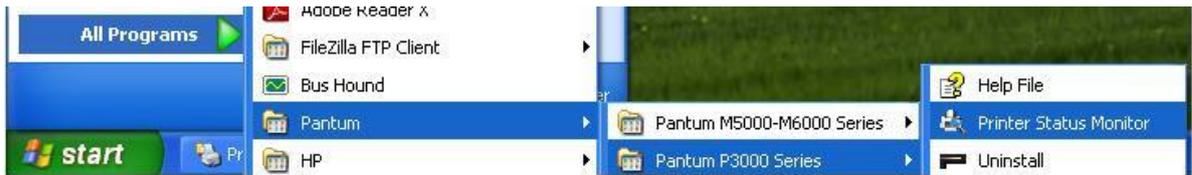


Click on Print Test Page to print a test page.

2.5.3 Printing the Printer Information Page

Follow these steps to print using a personal computer:

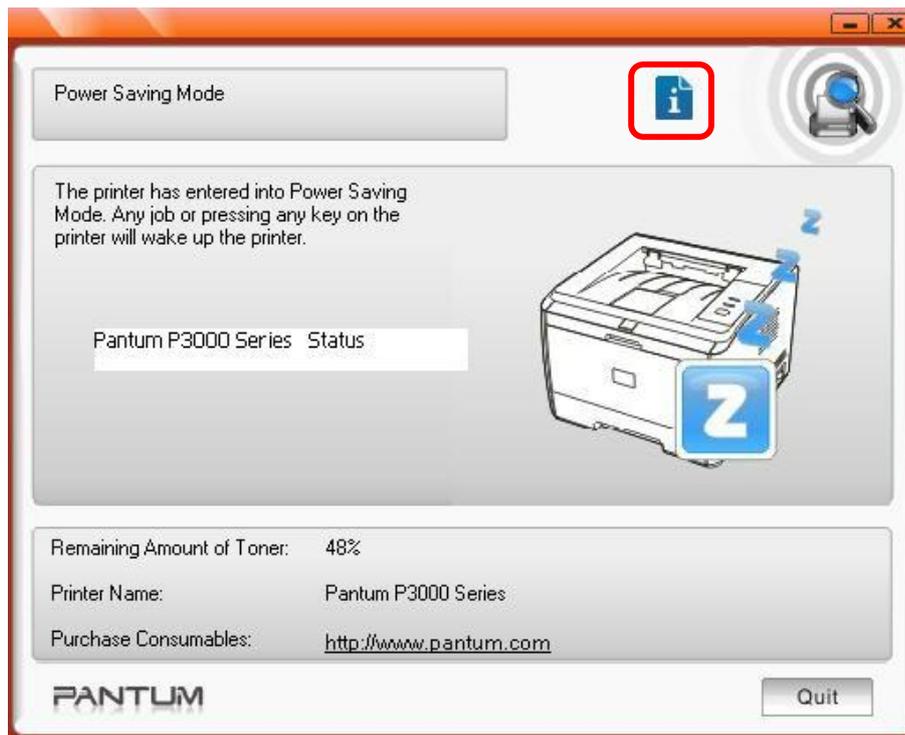
- 1) After installing the driver, click on the Start menu on the computer, select All Programs; then, select the P3000 Series Printer Driver and the Printer Status Monitor, as shown below:



2) The following box will appear with the list of P3000 printers: select the correct printer installed:



3) After double-clicking, the following box will appear: click on the Print Information Page button:



4) The Information Page is shown below.

Pantum P3000 Series Printers Information Page

INFORMATION PAGE START

Print Date: 05/02/2013 17:58:17

HOST INFORMATION

Driver Name:	Pantum P3000 Series
Driver Version:	7.1.1.21
Output Port:	USB004
Operating System:	Windows XP 32Bit
Operating System Language:	English
CPU:	Pentium(R) Dual-Core CPU E5700 @ 3.00GHz

PRINTER INFORMATION

Product Name:	Pantum P3000 Series
USB Vendor ID:	0x232B
Controller Firmware Version:	1.3.4.0
Engine Firmware Version:	7.1.6.9
Memory:	64MB
Printing Mode:	GDI
Product Serial No.:	BB09280049

CONSUMABLES INFORMATION

Remaining Amount of Toner:	46%
----------------------------	-----

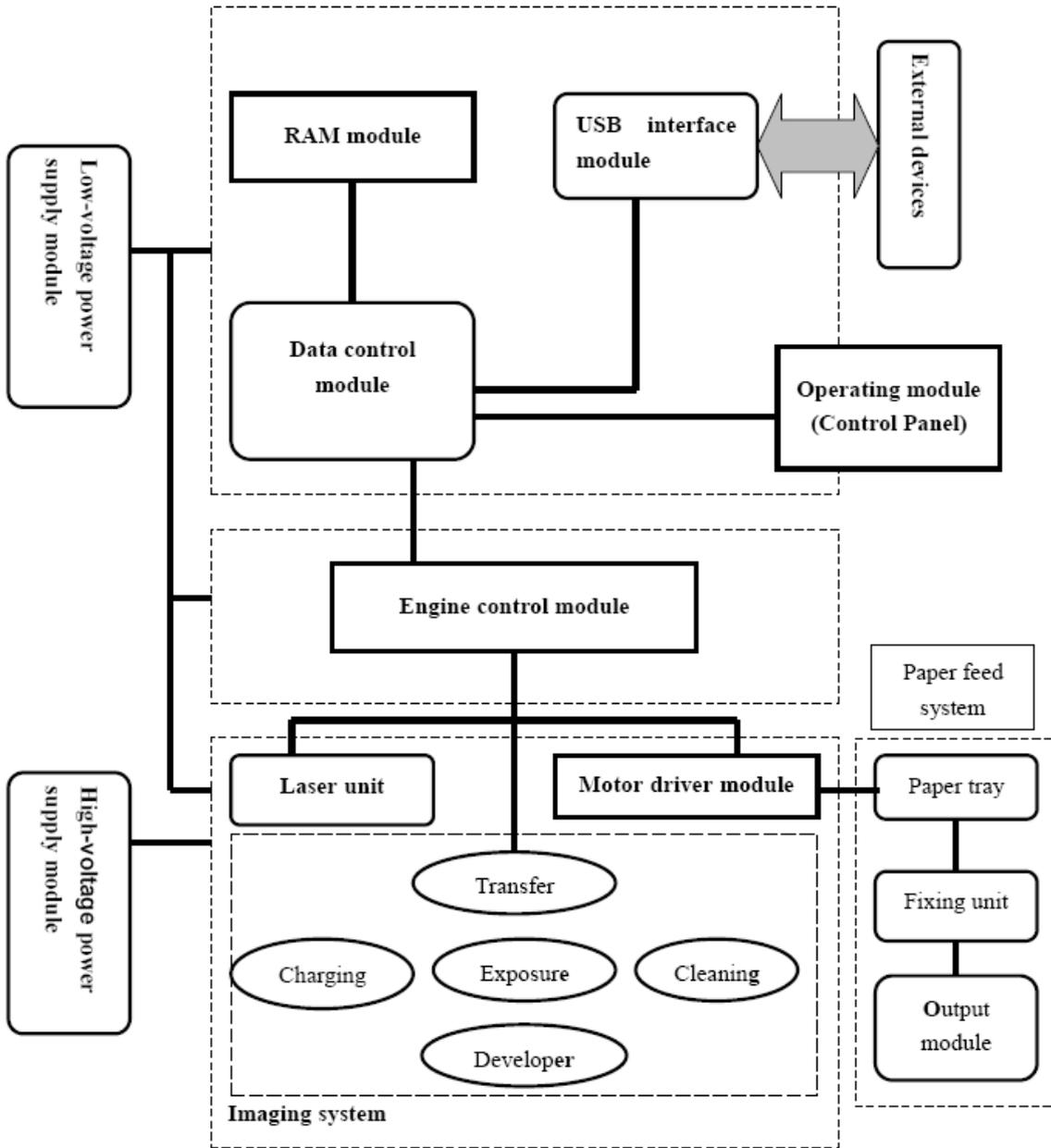
PRINT INFORMATION

# of pages printed:	0
# of A5 pages printed:	0
# of B6/B6 Env pages printed:	0
# of A4/Letter pages printed:	0
# of Legal/Folio pages printed:	0
# of B5/Executive pages printed:	0
# of other sizes pages printed:	0

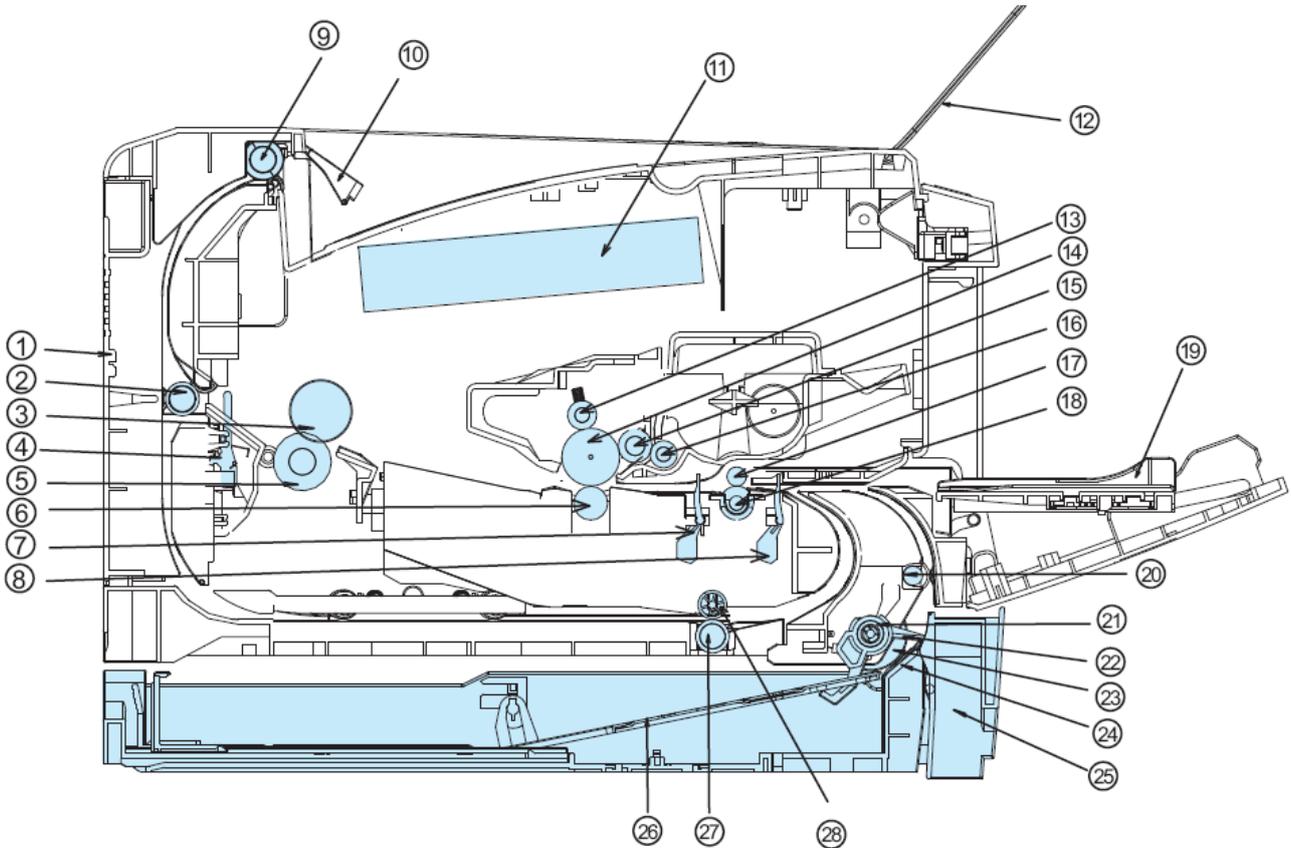
INFORMATION PAGE END

3 Electric Configuration

3.1 Whole Configuration

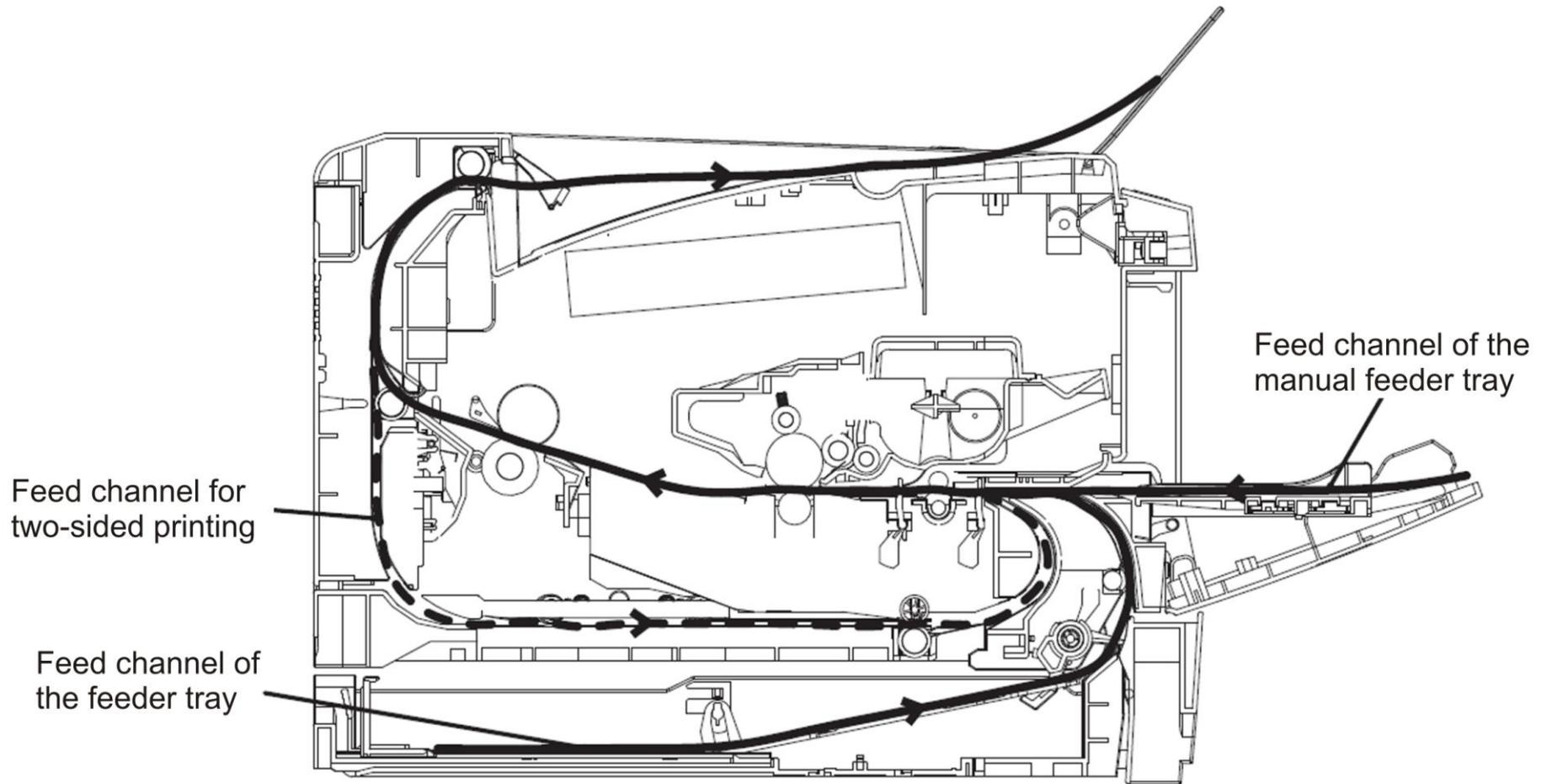


3.2 Mechanical Structural Diagram



1	Rear Cover	15	Developing Roller
2	Output Roller Component 1	16	Toner-feed Roller
3	Heating Roller	17	Correction Axis
4	Delivery Sensor	18	Correction Roller
5	Pressure Roller	19	Manual Feeder Tray
6	Transfer Roller	20	Transporter Roller
7	Paper Feed Sensor	21	Paper-end Sensor
8	Correction Sensor	22	Paper Presence Sensor
9	Output Roller Component 2	23	Pickup Roller
10	Platen	24	Separator
11	Laser	25	Feeder Tray
12	Delivery Tray	26	Paper-raising Board
13	Primary Charge Roller	27	Duplex Unit Transporter Roller
14	OPC	28	Duplex Unit Transporter Guide Roller

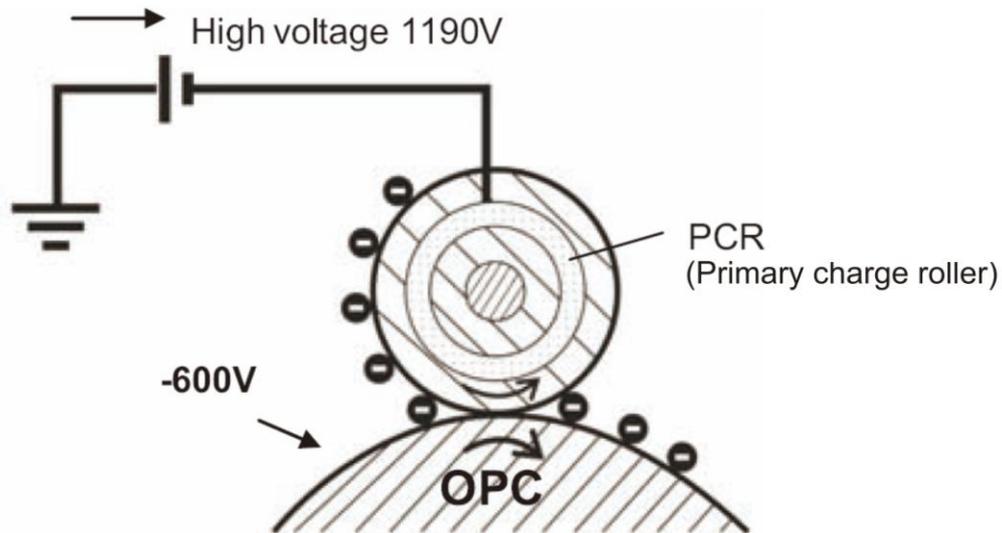
3.3 Feeder Circuit Diagram



3.4 Printing Process

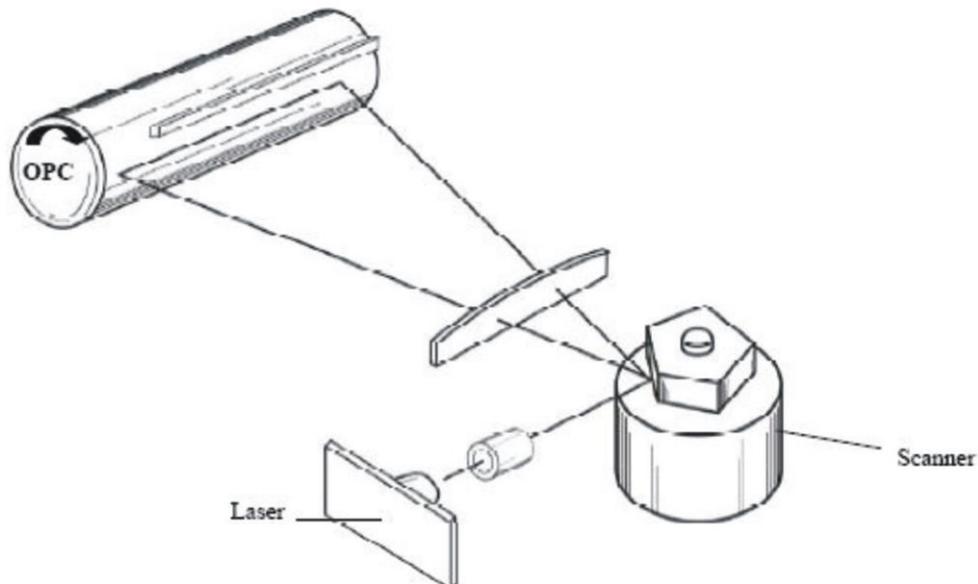
3.4.1 Charging

The steel shaft of the charge roller applies a high-voltage DC bias to the OPC, and evenly charges the surface of the OPC -600V with a negative charge.



3.4.2 Exposure

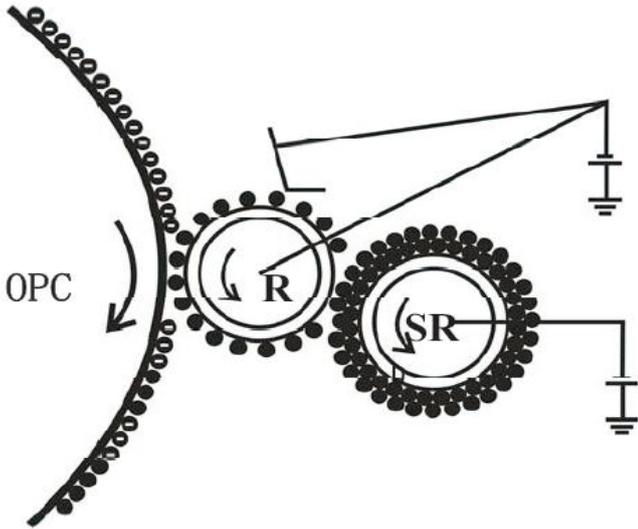
When the photoconductor is subjected to irradiation by the laser beam, the charge disappears. Other parts which are not irradiated, still keep their charge to form an electric potential difference image. This is usually called an electrostatic image.



3.4.3 Development

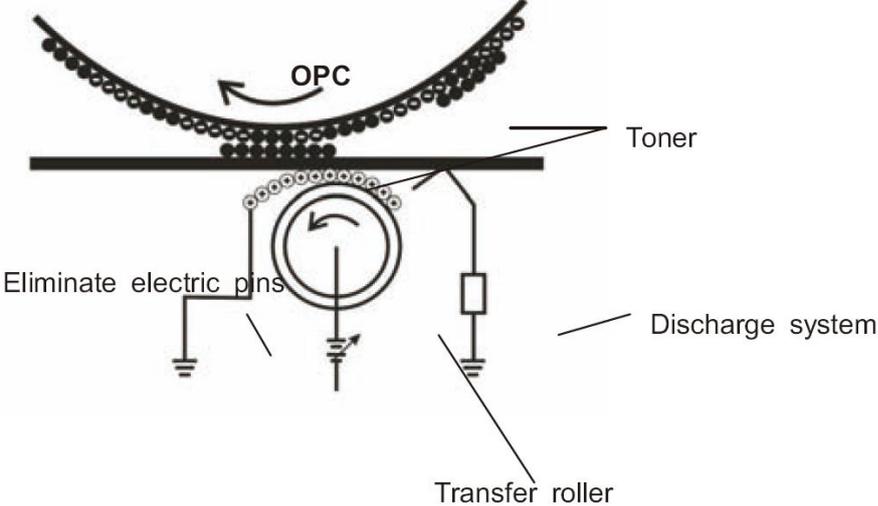
Toner is fed to the surface of the developing roller from the feeder roller. After the OPC is exposed, voltage is supplied to the developing roller when the OPC contact is exposed. The supplied

voltage is higher than the exposed area of the OPC but lower than the unexposed area. When the electrostatic field between the OPC and DR reacts, the toner will adhere to the exposed area of the OPC to form a visible image.



3.4.4 Transfer

When the sheet being printed goes through the layer between the transfer roller (TR) and the OPC, high voltage opposite the toner charger is fed to the transfer roller, causing an electric field between the TR and OPC, which affects the toner. The toner is then transferred to the sheet. Because the back of the sheet going through the transfer roller has an opposite charge, the toner will adhere to the sheet being printed after the next step, which is separation from the OPC.

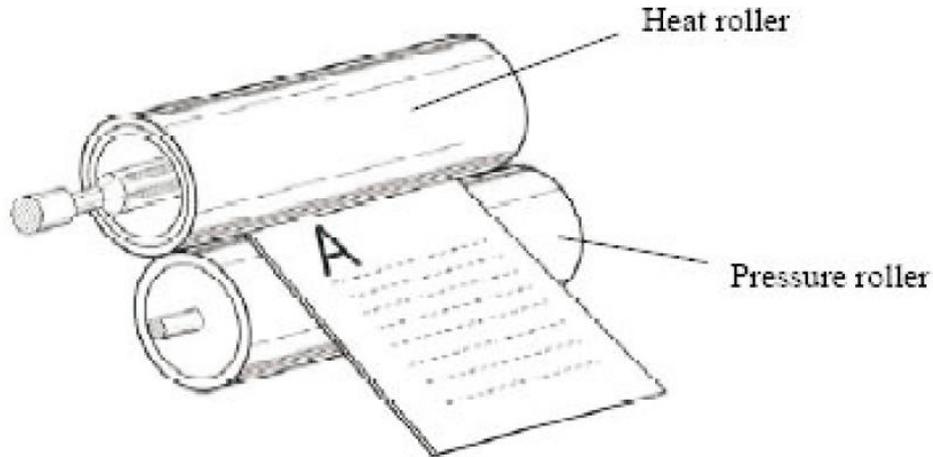


3.4.5 Separation

The transferred sheet is positively charged. The sheet being printed will be attracted to the OPC by a negative charge after separation from the transfer roller. Separation pads are then inserted near the paper guide path, parallel with the sheet when separated from the transfer roller. Separation pads are grounded and live, with the distance to the sheet being between 1-2mm. Gravity forces the separation pads to drop from the OPC.

3.4.6 Fixing

The heat roller should reach the designated temperature necessary to melt the toner when the sheet is in contact with it. At the same time, the toner solidifies when forced into the sheet under pressure. Note: toner fixation can be influenced by fixing temperatures that are too high or too low.

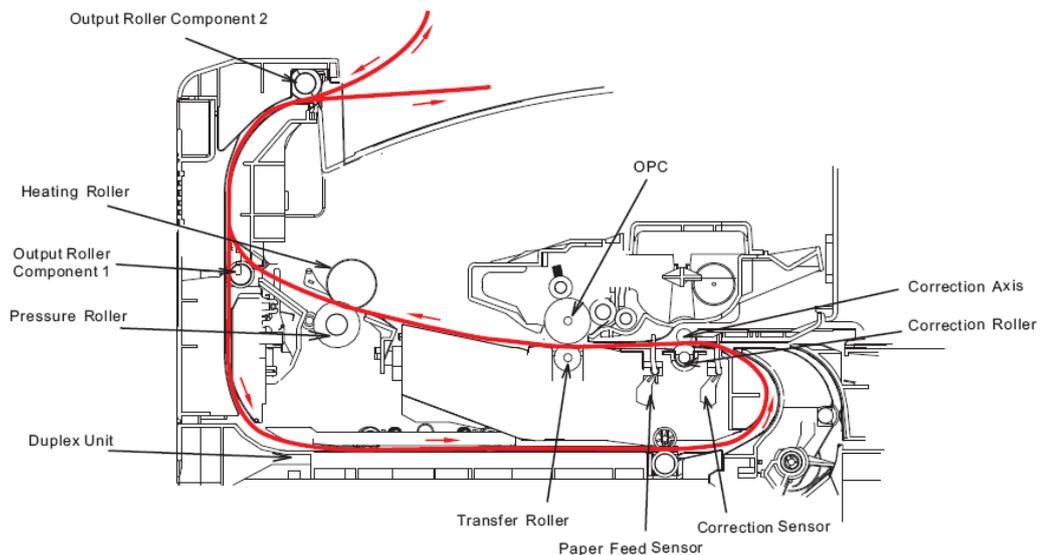


3.4.7 Cleaning

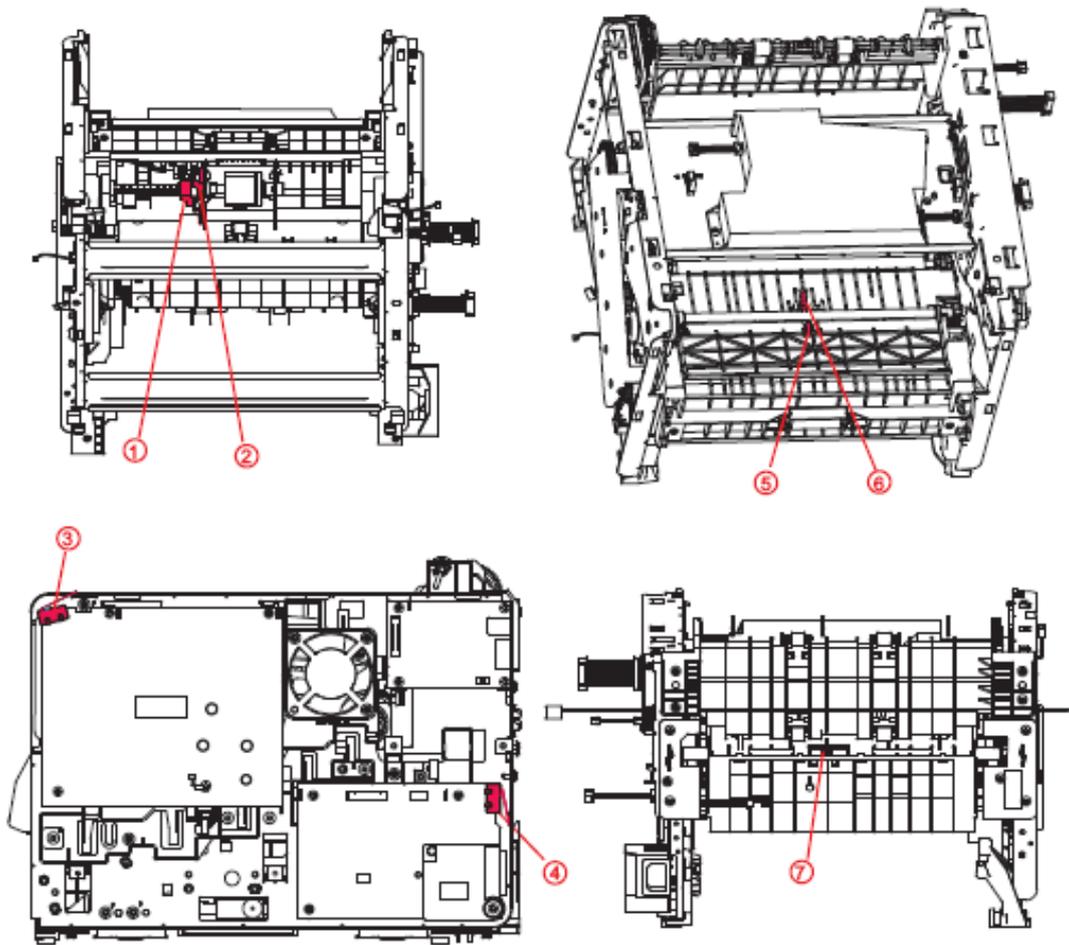
The toner on the surface of the OPC is not completely transferred to the sheet so the wiper blade cleans the OPC before the next sheet is printed.

3.5 Duplex Principle

When one side of paper has been printed and delivered from Output Roller Component 2, this component contra-rotates, supplying the paper to the duplex unit, where any paper skew is corrected. The paper is then moved from the duplex unit to the transfer module of the toner cartridge unit through the channel between the correction roller and transfer roller. The back of the page is then printed.



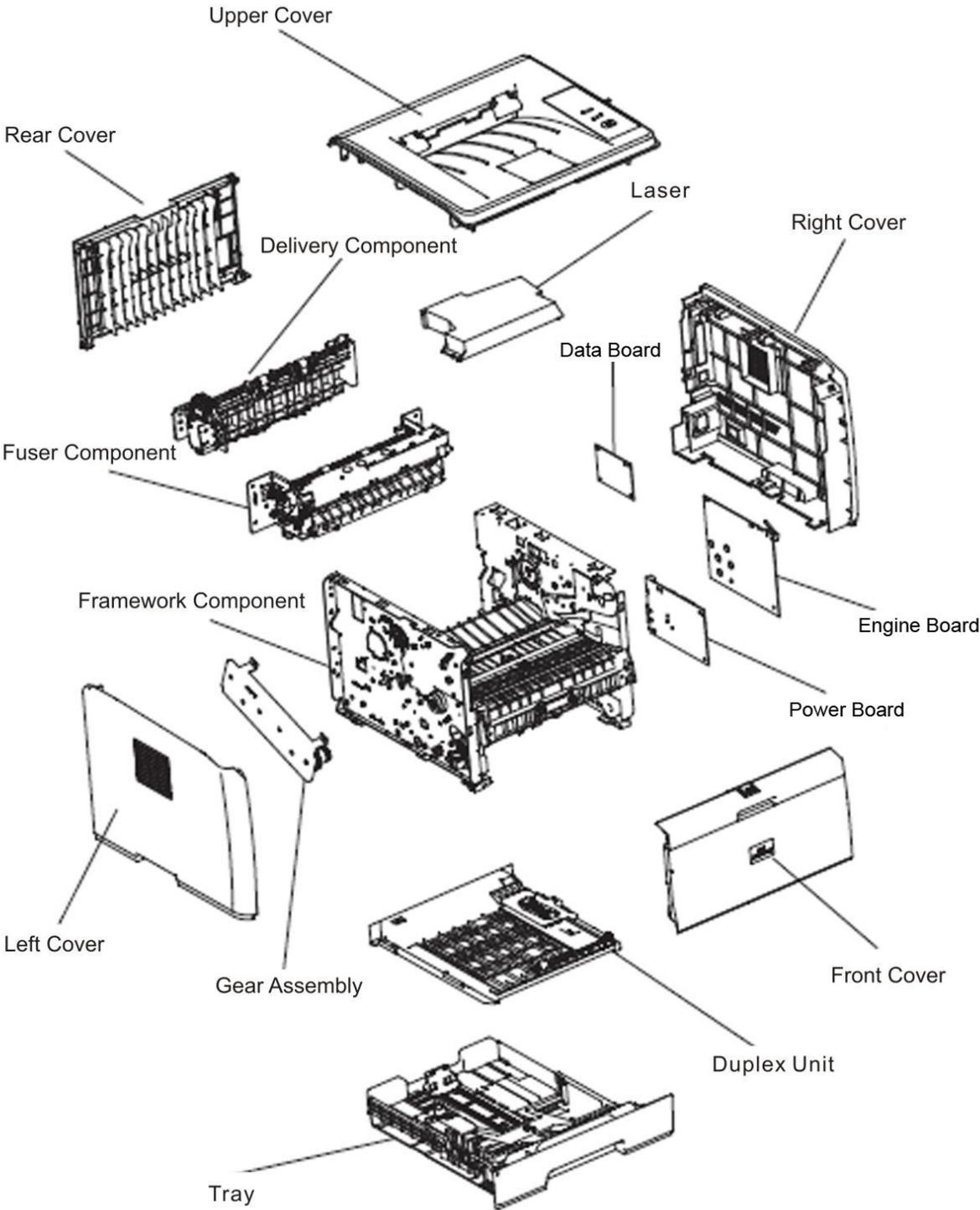
3.6 Sensor



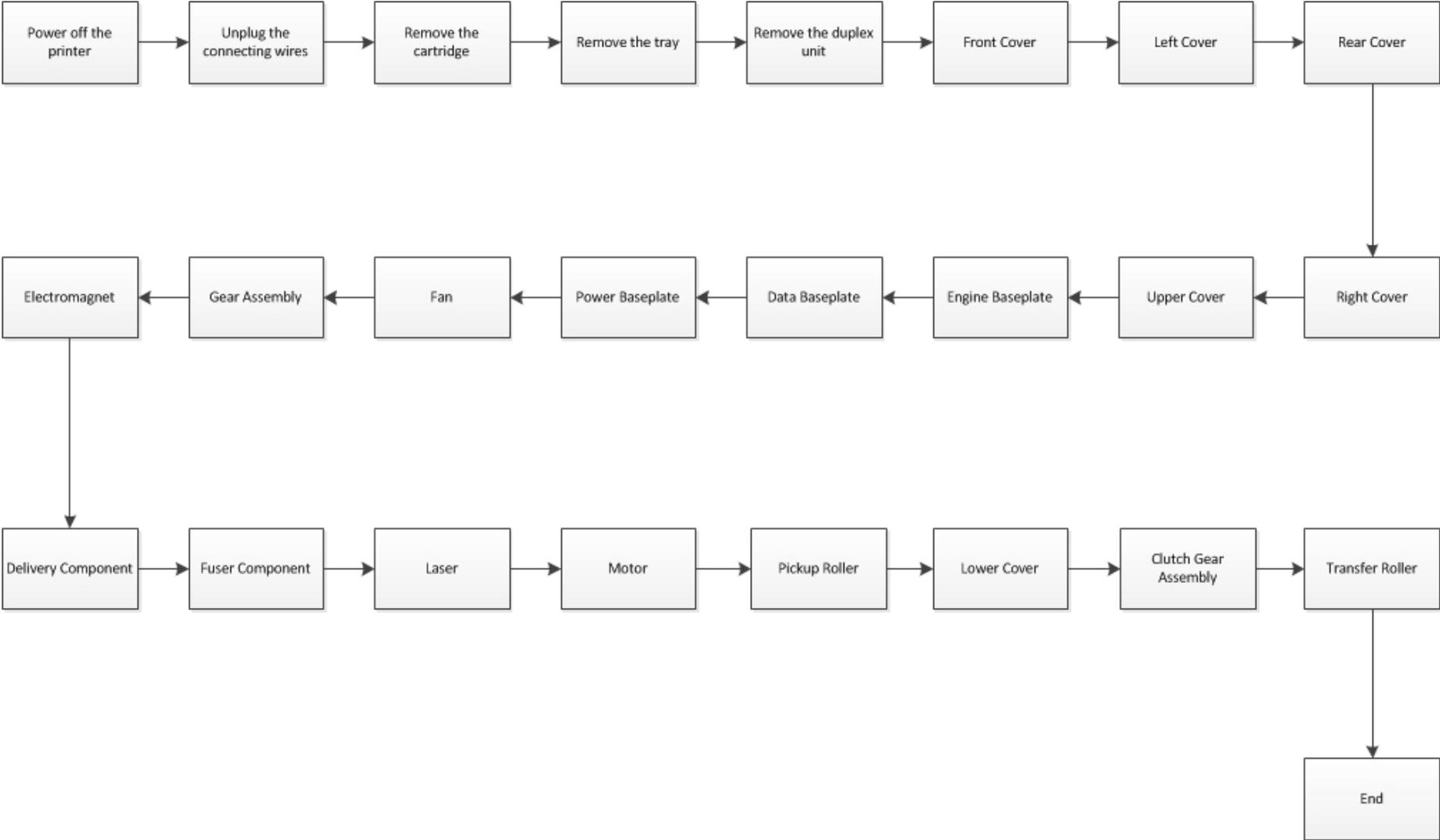
No.	Name	Type	Location
1	Paper Presence Sensor	optical sensor	On the left of pickup roller
2	Paper-end Sensor	optical sensor	On the left of pickup roller
3	Front Cover Switch	mechanical switch	Over engine board left side
4	Rear Cover Switch	mechanical switch	Over power board right side
5	Correction Sensor	optical sensor	In front of correction Axis
6	Paper Feed Sensor	optical sensor	In back of correction Axis
7	Paper Exit Sensor	optical sensor	Fixing paper guide (In the back of fuser component)

4 Disassembly and Installation

4.1 Disassembly Diagram



4.2 Step-by-Step Disassembly Diagram



4.3 Disassembly Steps

4.3.1 Preparation for Disassembly

1. Ensure that the power cord and the USB interface cable are disconnected before disassembling the device.
2. Remove the cartridge.



Note: Place the toner cartridge in a black plastic bag after removing it, as shown below, to avoid damage by exposure to sunlight.



3. Remove the tray.



4. Remove the duplex unit.



4.3.2 Front Cover

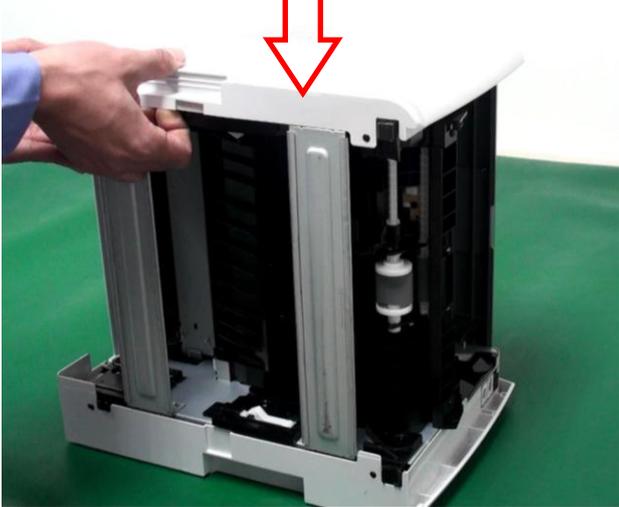
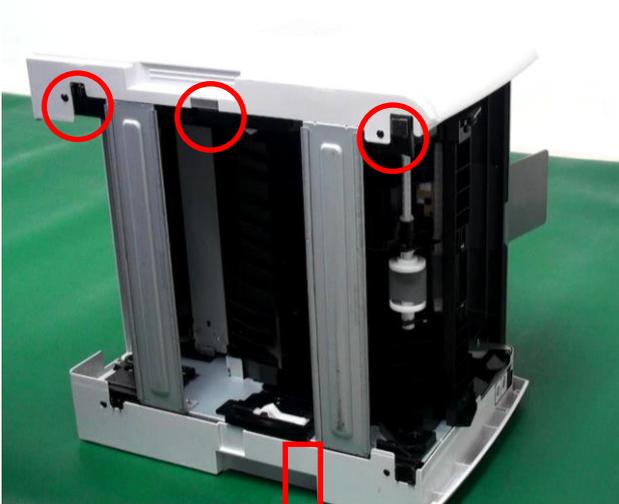
Press the switch on the front cover, open the front cover, remove the left pivot arm, and remove the front cover.



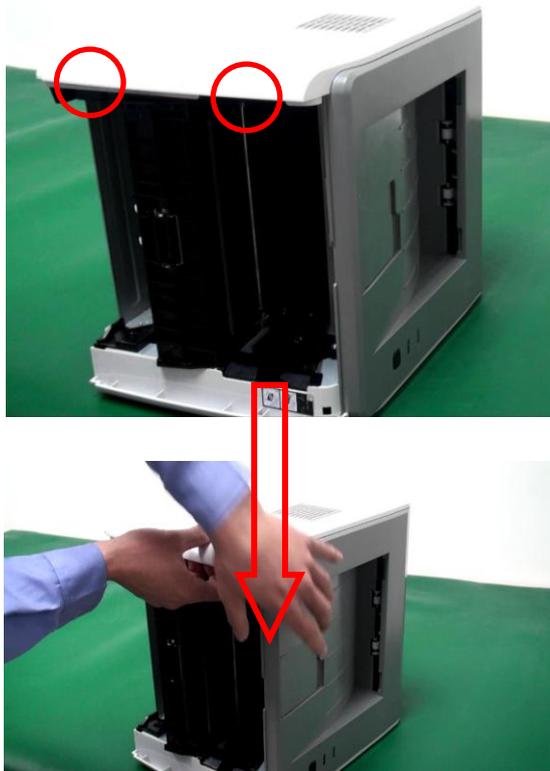
4.3.3 Left Cover

1. Open the rear cover and remove the screws fixed to the back of the left cover.

2. Pull out the bottom buckle.



3. Pull out the side buckle.



4. Raise the left cover by pulling hard, and remove it, as shown in the following picture:



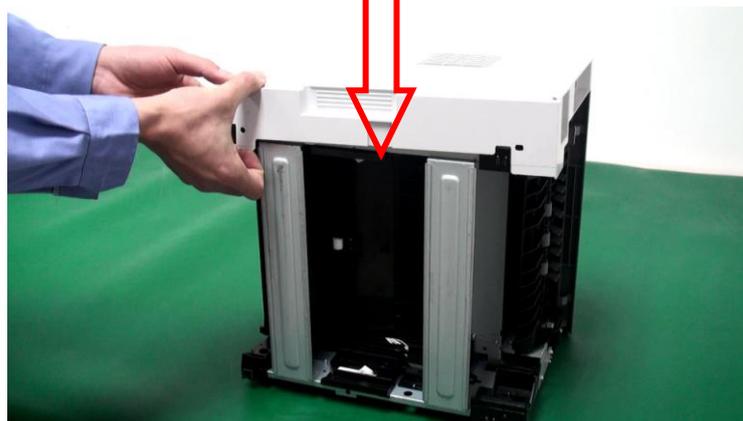
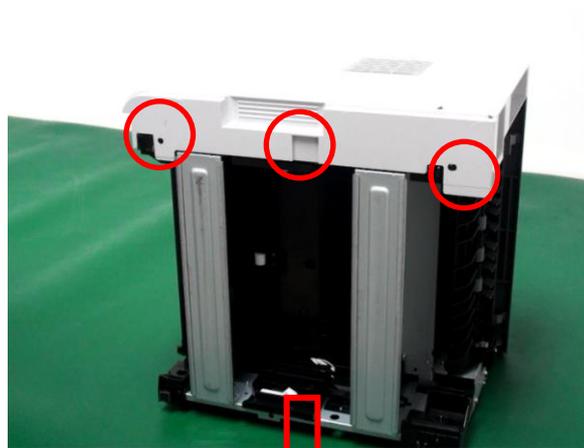
4.3.4 Rear Cover

Remove the rear cover.

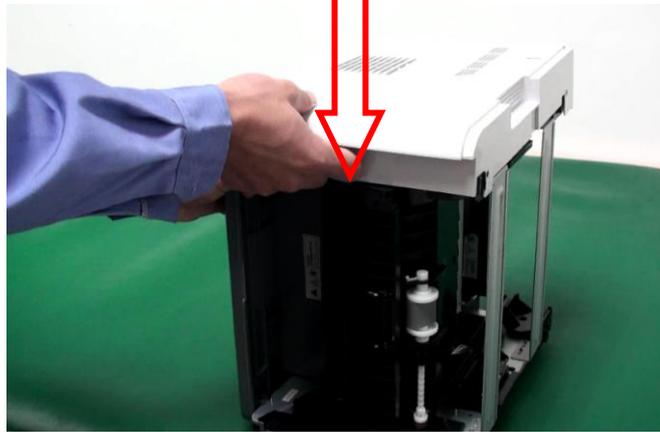


4.3.5 Right Cover

1. Remove the screws fixed to the back of the right cover.
2. Pull out the bottom buckle.



3. Pull out the side buckle.

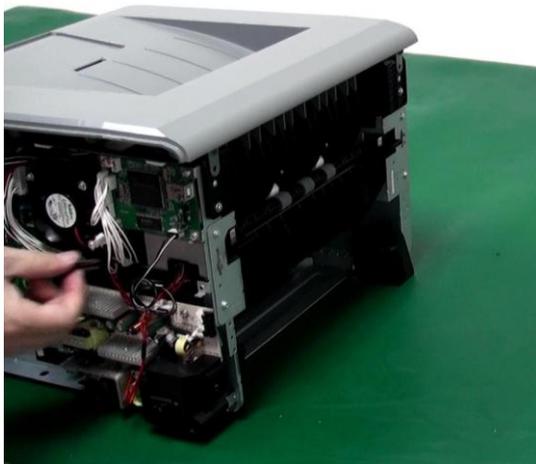


4. Raise the right cover by pulling firmly, and remove it, as shown in the following picture:



4.3.6 Upper Cover

1. Unscrew the four retaining screws.
2. Unplug the cable from the control panel.

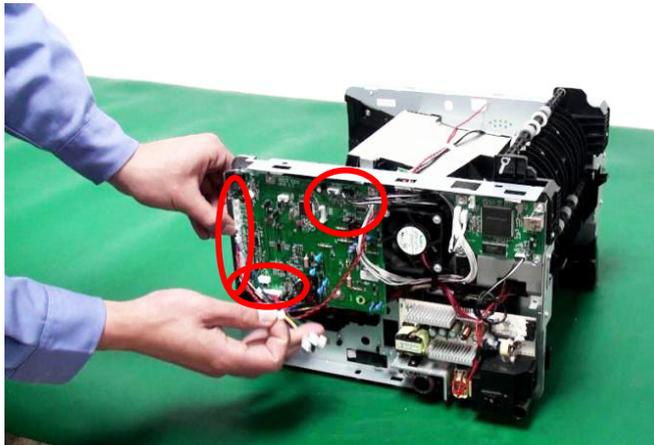


3. Press the buckles on the two sides of the upper cover and remove it.

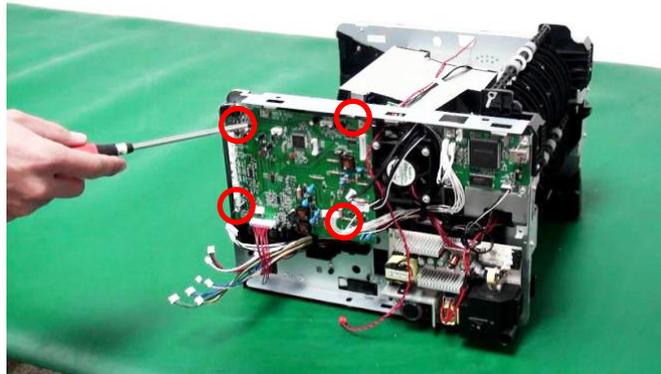


4.3.7 Engine Board

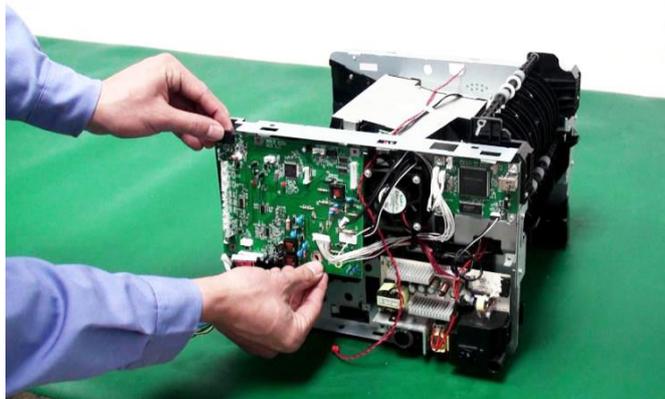
1. Unplug the connecting wires (a total of 13) from the engine board.



2. Unscrew the four retaining screws.

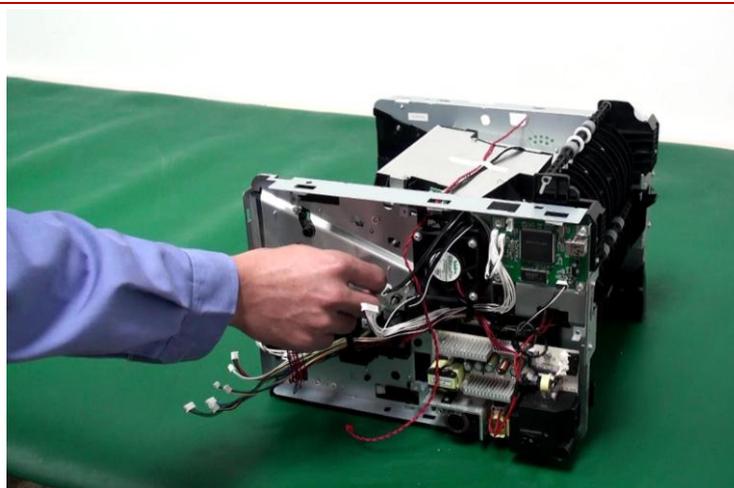


3. Remove the engine board.



Note:

- After removing the engine board, there will be four conductive cylinders. Please put these in a safe place to avoid losing them.
 - Ensure the conductive cylinders stay in place during the installation, as one of them is an OPC and different from the other cylinders.
-

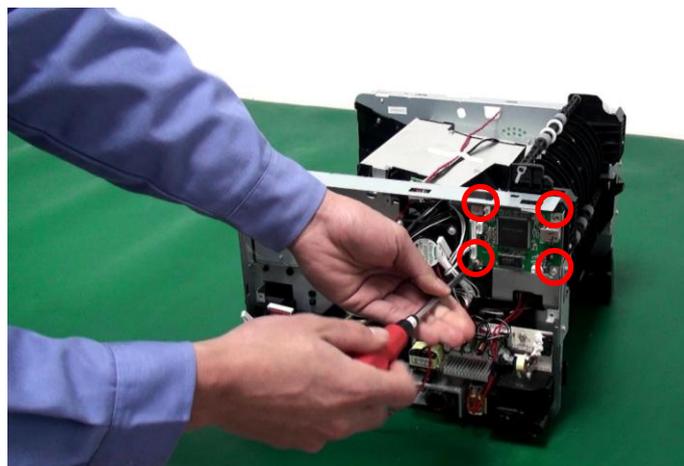


4.3.8 Data Board

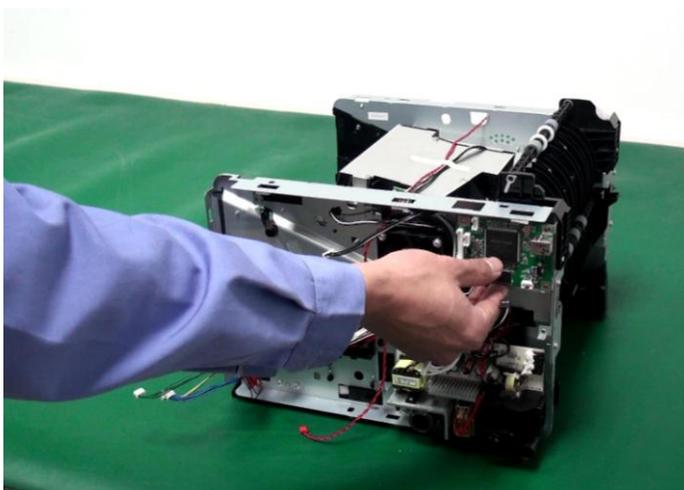
1. Unplug the connecting wires (a total of 4) from the data board.



2. Unscrew the four retaining screws.

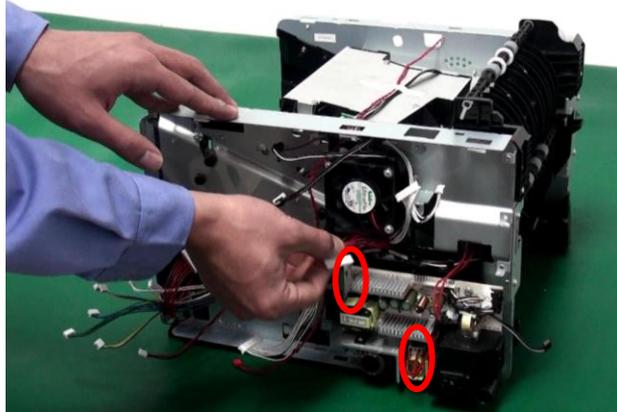


3. Remove the data board.

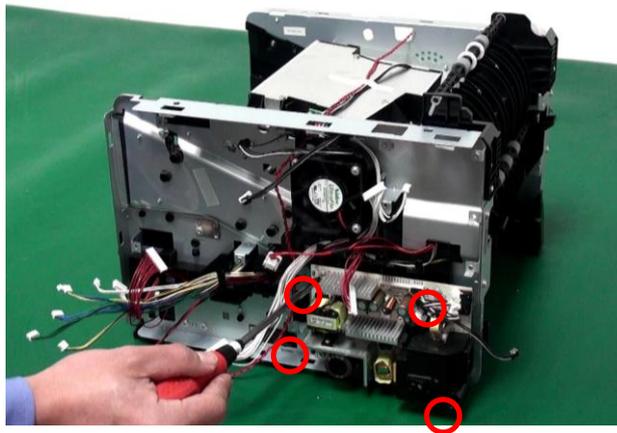


4.3.9 Power Board

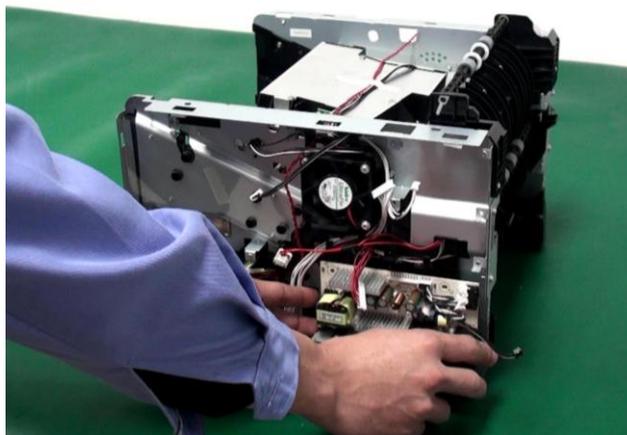
1. Unplug the connecting wires (a total of 2) from the power board.



2. Unscrew the four retaining screws.

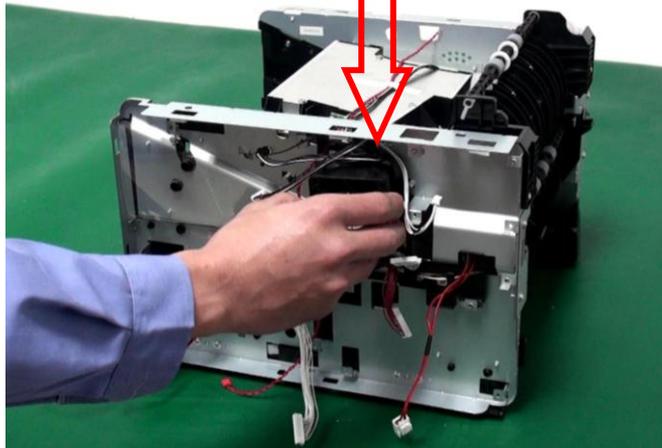
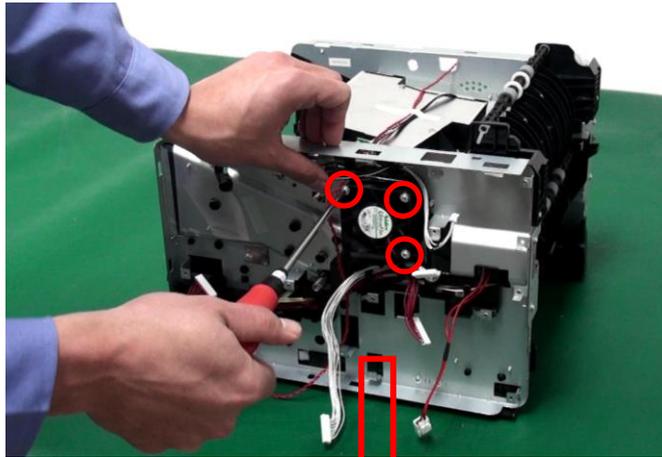


3. Remove the power board.



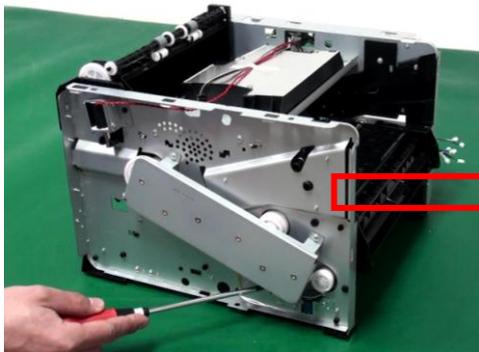
4.3.10 Fan

Unscrew the three retaining screws and remove the fan.



4.3.11 Gear Assembly

Unscrew the five retaining screws and remove the drive system.



4.3.12 Electromagnet

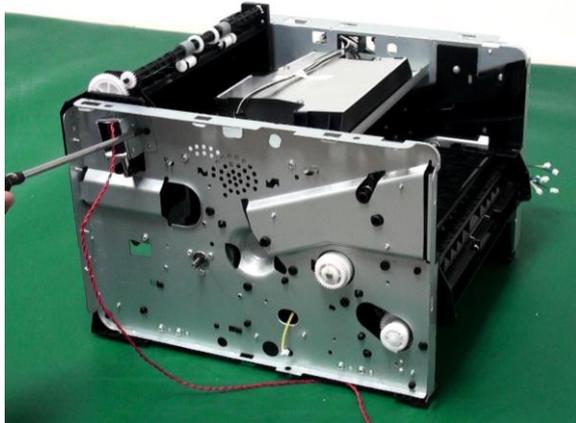
4.3.12.1 Electromagnet 1 (Feed)

Unplug the connecting wires from the electromagnet, unscrew the retaining screws, and remove the electromagnet.



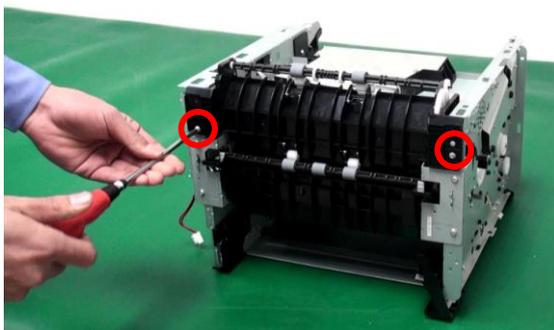
4.3.12.2 Electromagnet 2 (Duplex Mode)

Pull out the connecting wires from the electromagnet, unscrew the retaining screws, and remove the electromagnet.



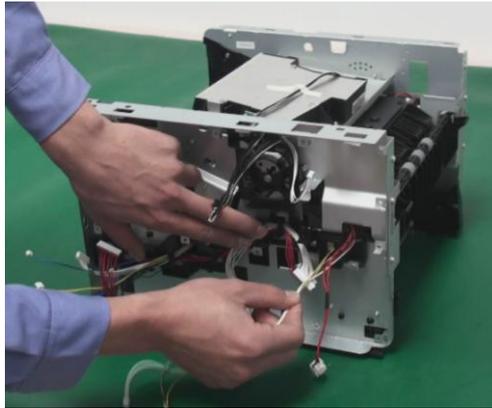
4.3.13 Delivery Component

Unscrew the retaining screws and remove the delivery component.

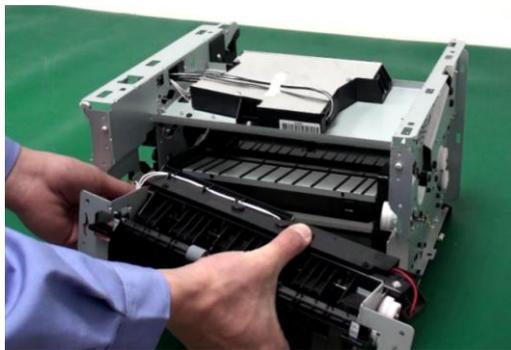


4.3.14 Fuser Component

1. Pull out the cable from the fuser component.

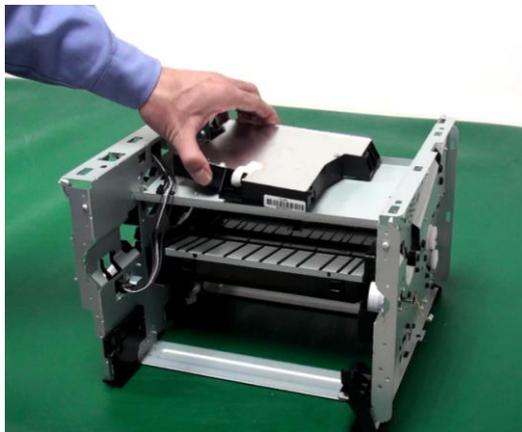


2. Unscrew the retaining screws (one on each side, 4 on the back, totaling 6) and remove the fuser component.



4.3.15 Laser Scanning Unit (LSU)

Unplug the connecting wires from the LSU, unscrew the retaining screws, and remove the LSU.

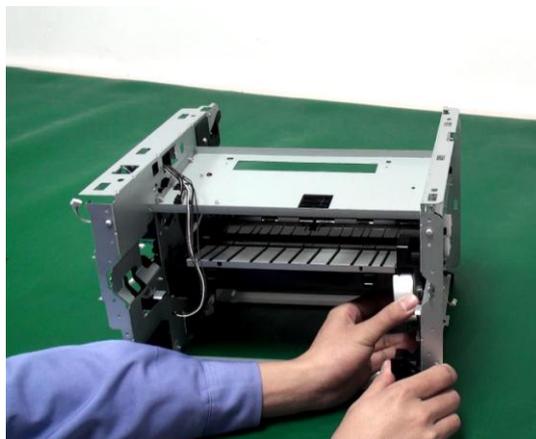


4.3.16 Motor

1. Push the fixed claw fittings on the motor's protective cover and remove the protective cover.

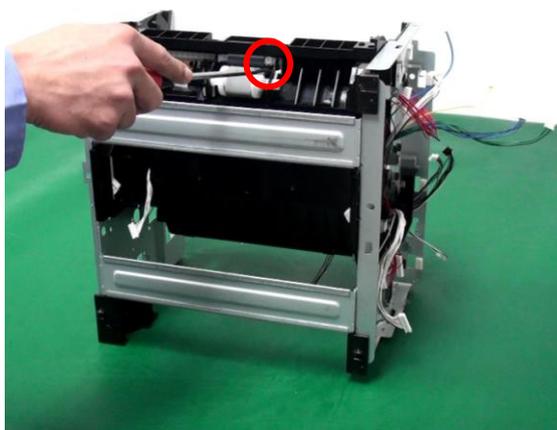


2. Unscrew the screw fixed to the motor and remove the motor.



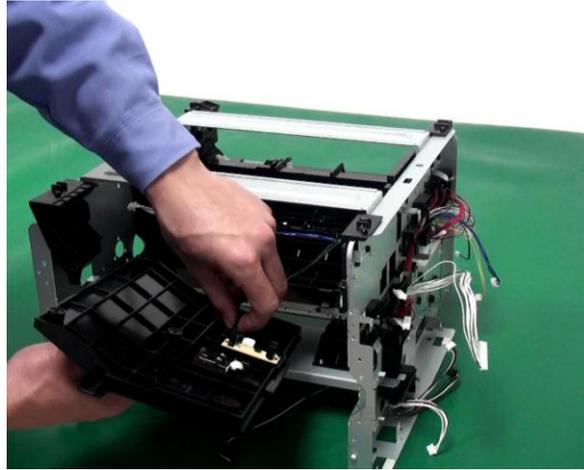
4.3.17 Pickup Roller

Unscrew the dowel on the pickup roller and remove the pickup roller.



4.3.18 Lower Cover

Unscrew the retaining screws on the lower cover, remove the lower cover, and unplug the connecting wires from the sensor board.

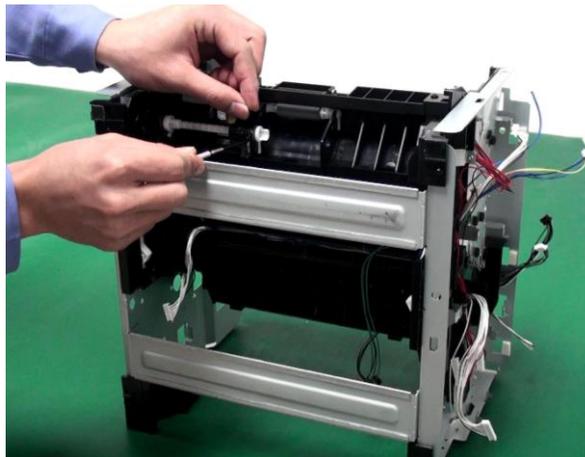


4.3.19 Clutch Gear Assembly

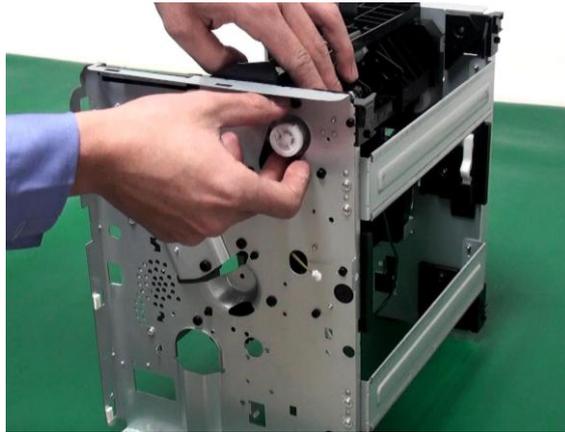
1. Remove the plastic holder masks from the clutch gear.



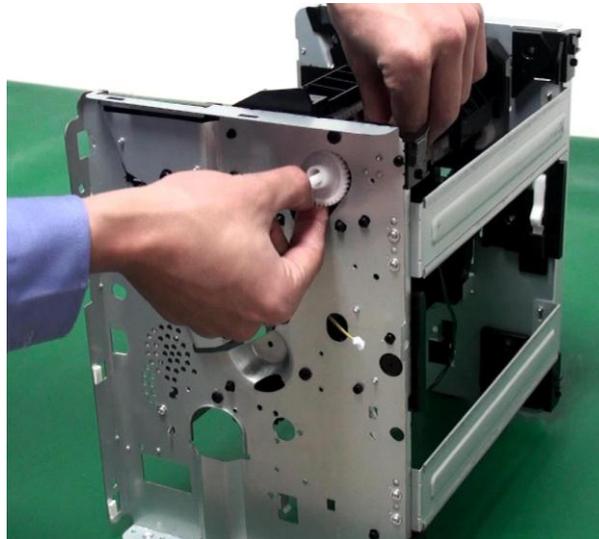
2. Remove the spring and the dowel.



3. Remove the clutch gear bushing and spring.



4. Move the feed clutch axis and remove the clutch gear.



4.3.20 Transfer Roller

Loosen the bearing claws on both sides of the transfer roller and remove the transfer roller.



5 Maintenance

5.1 Cleaning

Note:

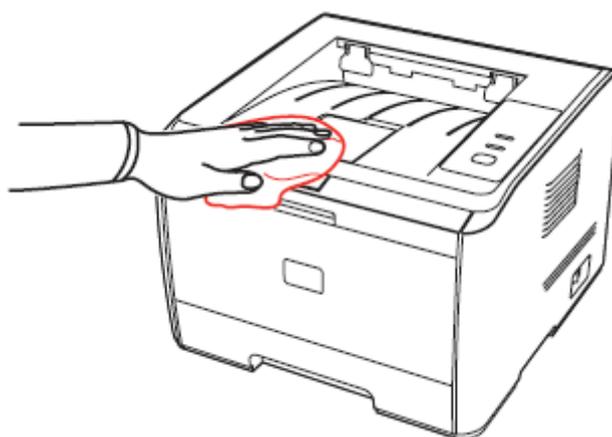
Please use mild detergents.

Do not use strongly corrosive liquids, such as thinners or benzene-based liquids for cleaning, as these will damage the surface of the device.

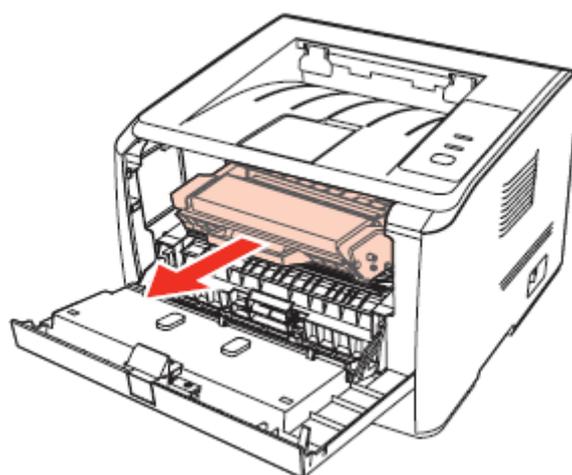
Do not use cleaning materials containing ammonia.

Do not use isopropanol to remove dust from the control panel, as it may damage the panel.

1. Disconnect the main power switch, and unplug the power cord and the USB interface cable.
2. Use a soft duster to clean the printer surface.



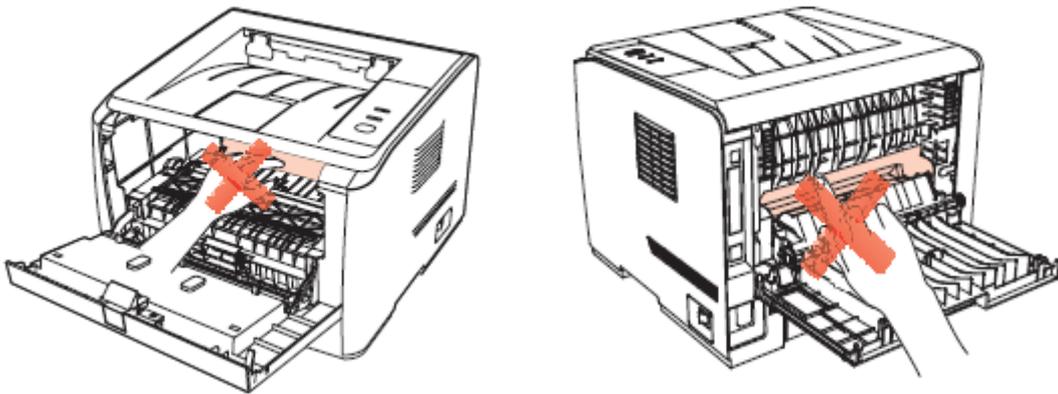
3. Remove the cartridge.



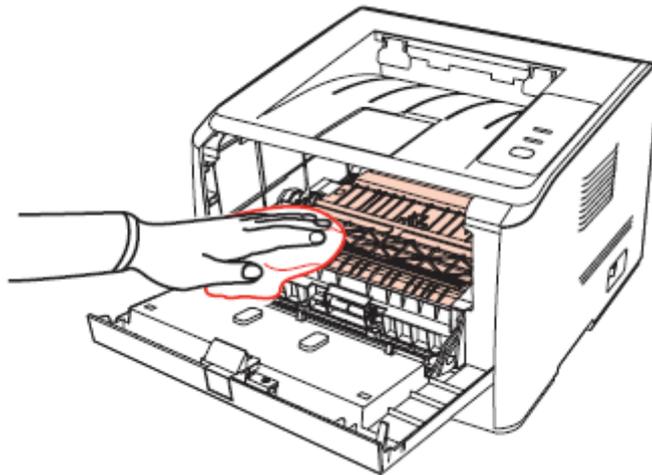
Note:

- Please remove all metal objects, such as watches or bracelets, before removing the toner cartridge to avoid damaging the inside of the device.
 - When removing the toner cartridge, put the toner cartridge in a protective bag or wrap it in thick paper to avoid the toner cartridge being damaged by direct light.
 - After removing the toner cartridge, do not touch the shaded area with your hands.
-

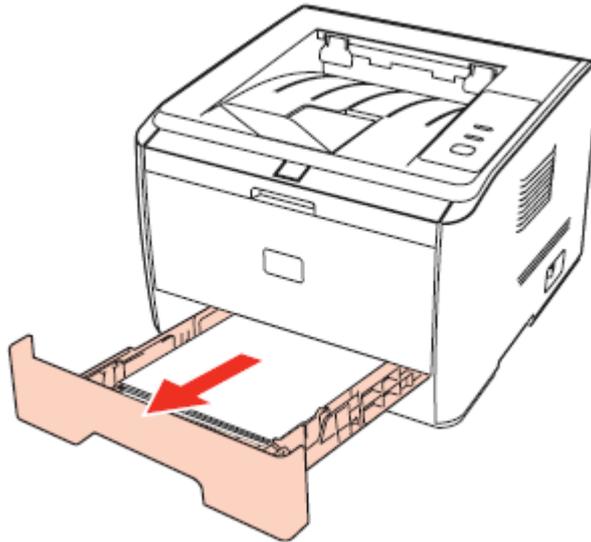
Some parts of the printer may still be hot for a short time after use. When opening the front or rear covers to clean inside the printer, please do not touch anything in the shaded area, as shown in the following picture.



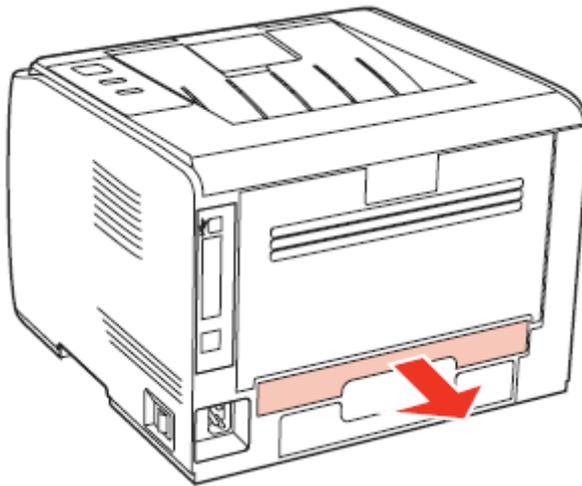
4. Use a dry duster to clean the feeder channel.



5. Remove the feeder tray to clean the separation pad and internal parts.



6. Remove the duplex unit to clean the inside of the duplex unit.



7. Clean the pickup roller and the feeder sensor.

5.2 Consumables

5.2.1 About Consumables

(1) Utilization of Consumables

Please only use genuine Pantum consumables.

(2) Toner Cartridge Maintenance and Protection

To maximize toner use, please bear the following guidelines in mind:

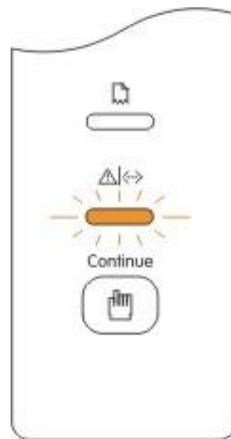
- Do not remove the toner cartridge from its packaging until you need to use it.
- The warranty excludes damage caused by refilling the toner cartridge.
- Store the toner cartridge in the same environment as that of the printer.
- To avoid damage, do not expose the toner cartridge to sunlight.

(3) Toner Cartridge Service Life

The service life of the toner cartridge depends on the amount of toner required for print jobs. A new toner cartridge can print an average of 3,000 pages, with 5% coverage, on A4 paper. The actual number of pages may vary according to print density, and is affected by the operating environment and print interval, as well as the type and size of media to be printed. The toner cartridge may need to be changed frequently if printing numerous graphs.

5.2.2 Replacement of Consumables

When the orange printer indicator flashes, as shown in the following figure, this indicates that the toner is low or has run out. The toner cartridge must be replaced to ensure continued print quality.

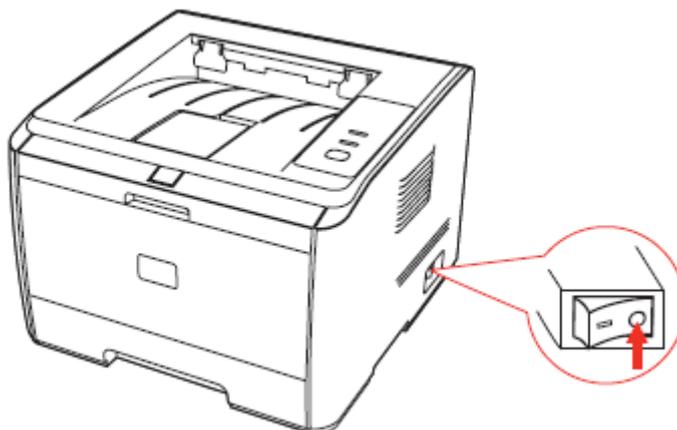


Note:

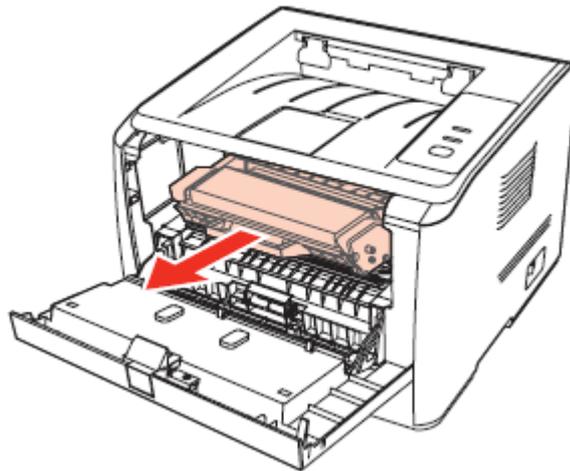
- The toner cartridge surface may contain toner. Please remove it carefully to avoid spillage.
 - Put the empty toner cartridge on a piece of paper to avoid accidental toner spillage.
 - After removing the protective cover, please immediately install the toner cartridge in the printer, so as to avoid damaged by exposure to too much direct sunlight or indoor lighting.
 - When installing, do not touch the surface of the toner cartridge to avoid scratching it.
-

Follow the steps below to replace the toner cartridge:

1. Power off the printer.



2. Open the front cover and remove the toner cartridge along the guides.



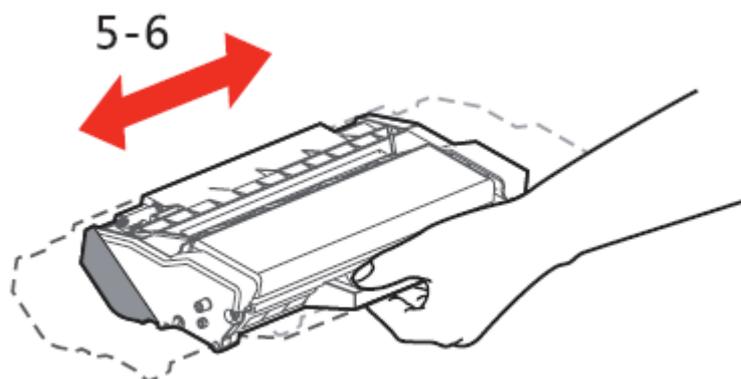
Note:

Please remove all metal objects, such as watches or bracelets, before removing the toner cartridge to avoid damaging the inside of the device.

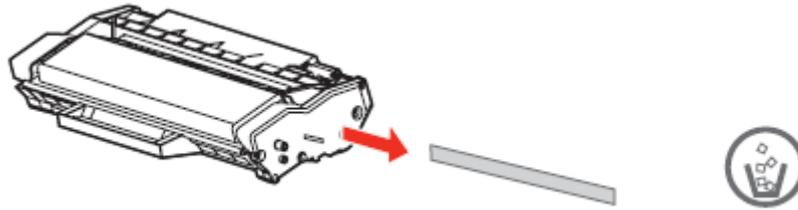
When removing the toner cartridge, put the toner cartridge in a protective bag or wrap it in thick paper to avoid the cartridge being damaged by direct light.

After removing the toner cartridge, do not touch the shaded area with your hands.

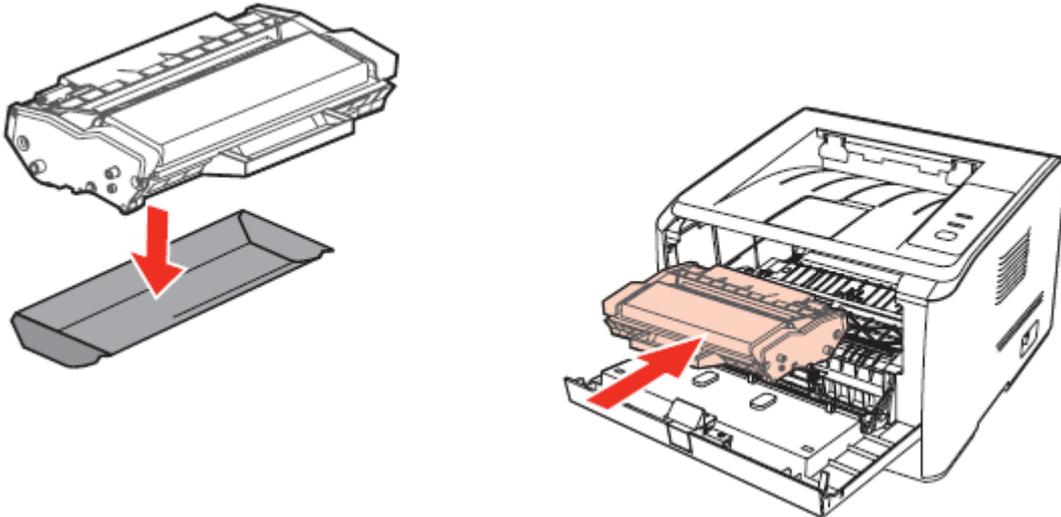
3. Take the new toner cartridge out of its packaging, hold the toner cartridge handle and shake it gently (horizontally) 5-6 times so as to evenly distribute the toner inside the toner cartridge.



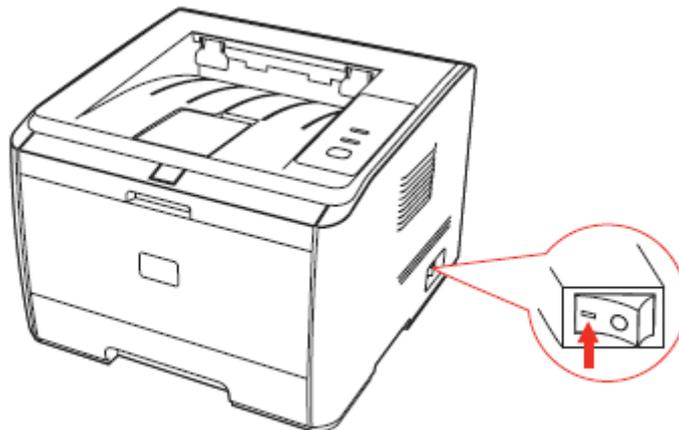
4. Pull out the seal.



5. Remove the protective cover, install the toner cartridge into the printer along the guides, and close the lid tightly.



6. Restart the printer, press down on the Control Panel button for three seconds, and print a test page.



6 Error Display and Troubleshooting

6.1 Pre-maintenance Check

I. Environment

- The power voltage must be in the range of 220~240 VAC, depending on the model.
- Place the equipment on a flat, stable surface.
- Keep the room temperature between 10°C and 32.5°C, and humidity at 20%-80%
- Do not expose the equipment to dust.
- Do not expose the equipment to ammonia or other noxious gases.
- Avoid exposing the equipment to heat or moisture (e.g. near water or a humidifier).
- Avoid exposing the equipment to direct sunlight.
- Use the printer in a well-ventilated room.
- Make sure the printer's air vent is not blocked.

II. About paper

- Check whether the paper used is within the specified range. [Printing with paper that is too thick, too thin, or curled may result in paper jams, feed problems or poor print quality]
- Do not use damp or wet paper. [If paper is damp or wet, please replace with dry paper and check to see if the quality improves]
- Do not use short grain or acid paper, as this will result in print quality problems

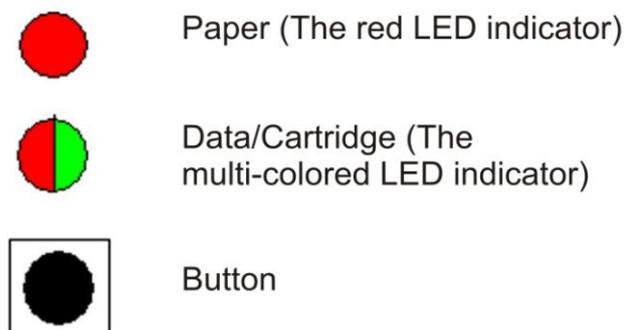
III. Consumables

- Replace the toner cartridge when the indicator on the printer control panel flashes yellow or the LCD display shows that the toner level is low.
- Check that the specified Pantum toner cartridge is being used. For more information, please refer to 5.2 "Consumables."

6.2 Indicators

6.2.1 LED Indicator Instructions

The LED panel includes a button, a multi-colored LED indicator (which will display in red, green, orange, and yellow), and a red LED indicator, as shown in the figure below:



LED indicator functions description:

- Monochrome red LED indicator
This light will show if the printer is out of paper, there is a paper jam (internal jam, exit jam), feed jam etc. or if there are some other problems related to paper use.
- Multi-colored LED indicator
A red light indicates a serious error. For specific errors, please see the error list;
An orange light indicates that a toner cartridge is not installed, there is a toner cartridge mismatch, the cartridge toner level is low, or there is some other problem with the toner cartridge;
A green light indicates any status other than those mentioned above (such as ready to print, warming up, sleep mode, ready, etc.).

6.2.2 LED Status Instructions

1. The basic status types of the LED indicators are as follows:

Status	Meaning
	Powered off
	Green indicator stays on
	Green indicator flashes
	Red indicator stays on
	Red indicator flashes
	Orange indicator stays on
	Orange indicator flashes

2. The combined status types of two indicators are as follows:

Status		Description
Paper (red LED indicator)	Other/toner cartridge (multi-color LED indicator)	
		Ready: multi-color (green) LED indicator stays on
		Sleep mode: multi-color (green) LED indicator flashes
		If there is no paper in the tray, the manual feeder is out of paper, or there is a feed jam during the printing process, the monochrome red indicator flashes
		If there is a paper jam (feed jam, internal jam, exit jam, or duplex printing unit jam) or a duplex printing paper mismatch, the monochrome red indicator stays on
		In the Ready or Sleep mode status, if the toner is low, the multi-colored indicator flashes orange
		If there is a toner cartridge error (toner cartridge is not installed, toner cartridge mismatch), the multi-colored indicator (orange) stays on
		Other printer errors

6.2.3 Button Instructions

There is a button at the top of the printer used to continue/cancel a print job. For specific functions, please see Button Function in table 2-1:

Printer status		Operation	Printer action
Sleep Mode		Short/long press	Wake up
Printing	Printing process	Long press	Cancel printing
	Paper mismatch during duplex printing	Short press	Continue printing
	Manual feeder is out of paper, or feed jam	Short press	Continue printing
	Feed failure	Short press	Continue pickup printing
	Feed jam	Short press	Continue pickup printing
Ready		Long press	Test printing

Note:

A short press is when you keep pressing the button for less than 2 seconds.

A long press is when you keep pressing the button for 2 seconds or more.

6.3 Error Information

Error	Cause	Solutions
Toner cartridge mismatch	<p>The toner cartridge is installed incorrectly.</p> <p>Toner cartridge model mismatch.</p>	<p>Please make sure that the toner cartridge is installed correctly.</p> <p>Please use an original Pantum toner cartridge made to fit this device.</p>
The front cover is open	<p>The front cover has not been fully closed.</p>	<p>Please close the front cover.</p>
Feed failure	<p>The print paper is loaded incorrectly.</p> <p>The pickup roller is dirty or aging.</p>	<p>Please correctly load the print paper.</p> <p>Clean or replace the pickup roller.</p>
Internal jam	<p>The print paper is loaded incorrectly.</p> <p>The pickup roller is dirty.</p> <p>Feeder sensor failure</p>	<p>Please correctly load the print paper.</p> <p>Clean the pickup roller.</p> <p>Check and replace the sensor.</p>
Exit jam	<p>The print paper is loaded incorrectly.</p> <p>Delivery sensor failure.</p> <p>The fuser component is damaged.</p>	<p>Please correctly load the print paper.</p> <p>Replace the delivery sensor.</p> <p>Replace the fuser component.</p>
Duplex printing unit jam	<p>Did not use print media within the specified range.</p> <p>Duplex printing unit is dirty.</p> <p>Duplex printing unit is damaged.</p>	<p>Please use print media within the specified range.</p> <p>Clean the duplex unit.</p> <p>Replace the duplex unit.</p>
Feed jam	<p>The print paper is loaded incorrectly.</p> <p>The pickup roller is dirty or aging.</p>	<p>Please correctly load the print paper.</p> <p>Clean or replace the pickup roller.</p>

6.4 Error Code

Code	Cause	Solutions
NO.32	General communication failure caused by a line fault between the EC and DC, or a corresponding pin fault in the IC	<ol style="list-style-type: none"> 1. Check the cable between the engine board and the data board, and make sure that the connection is normal. 2. Replace the engine board if there is a fault. 3. Replace the data board if there is a fault.
NO.33	The temperature of the heating roller is higher than 230°C	<ol style="list-style-type: none"> 1. Replace the fuser component if there is a fault. 2. Replace the engine board if there is a fault. 3. Replace the power board if there is a fault.
NO.34	The temperature of the heating roller is too low	
NO.35	The temperature rises too fast during the heating process	
NO.36	A slow temperature rise is detected because the thermistor is not touching the surface of the heating roller	
NO.37	Has not reached the operating temperature within the specified time	
NO.38	The LSU line synchronizing signal is abnormal	
NO.39	A fault is detected in the LSU motor	<ol style="list-style-type: none"> 1. Replace the laser if there is a fault in the LSU laser motor. 2. Replace the engine board if there is a fault in the LSU laser motor control gear. 3. Faulty connection of the motor cable. Make sure that the motor cable is connected correctly. 4. Replace the engine board if there is a fault.
NO.40	The main motor takes too long to start up or does not run at the specified speed	<ol style="list-style-type: none"> 1. Faulty main motor cable. Make sure that the main motor cable is connected correctly. Replace the main motor if it is faulty. 2. Replace the engine board if it is faulty.
NO.42	The external storage EEPROM of the engine controller cannot be read and written normally	<ol style="list-style-type: none"> 1. Make sure that the cable between the engine board and the data board is connected correctly. 2. Replace the data board if it is faulty. 3. Replace the engine board if it is faulty.

6.5 Clearing Jammed Paper

Please clear jammed paper using the following steps:

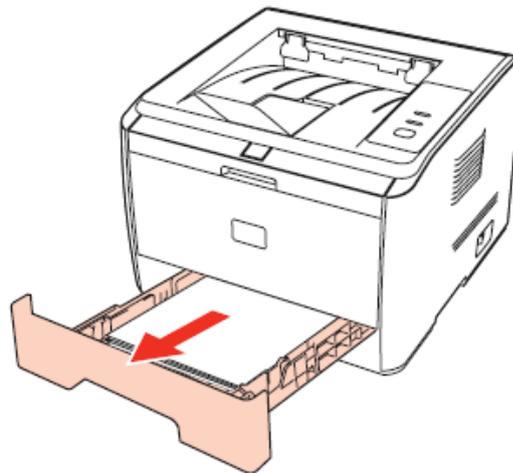
Remove the jammed paper. Close the front cover and check the stack of paper in the tray; the printer will automatically resume printing. If the printer does not automatically start printing, please press the Cancel button. If the printer still does not start printing, please check whether all the jammed paper inside the printer has been cleared. Then try the print job again.

Note:

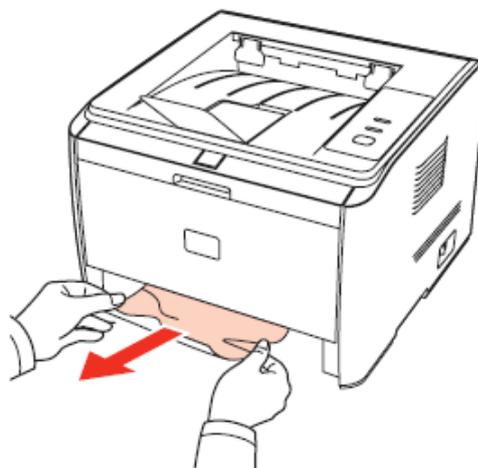
- Take out all the paper in the paper tray and check paper level before loading new paper. This helps to prevent paper jams resulting from overfilling the automatic paper tray.
-

6.5.1 Paper Jam in the Tray

- a. Open the tray.

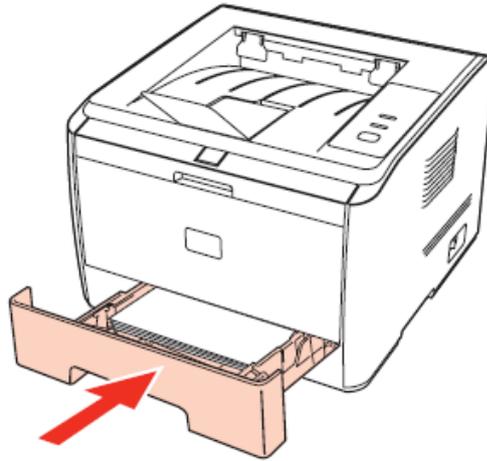


- b. Gently pull the jammed paper straight out.



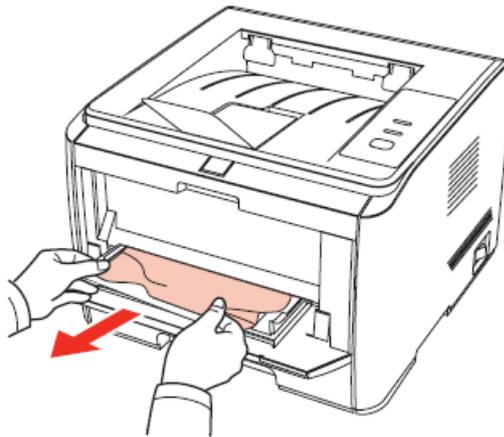
- c. After removing the jammed paper, reload the tray into the printer; the printer will then

automatically resume printing.

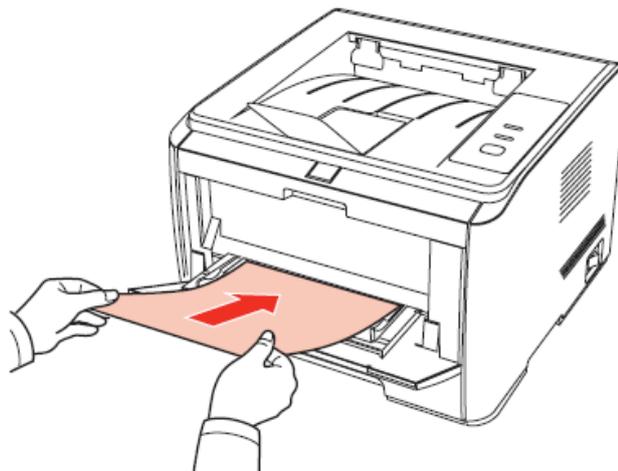


6.5.2 Paper Jam in the Manual Feeder Tray

- a. Gently pull the jammed paper out.



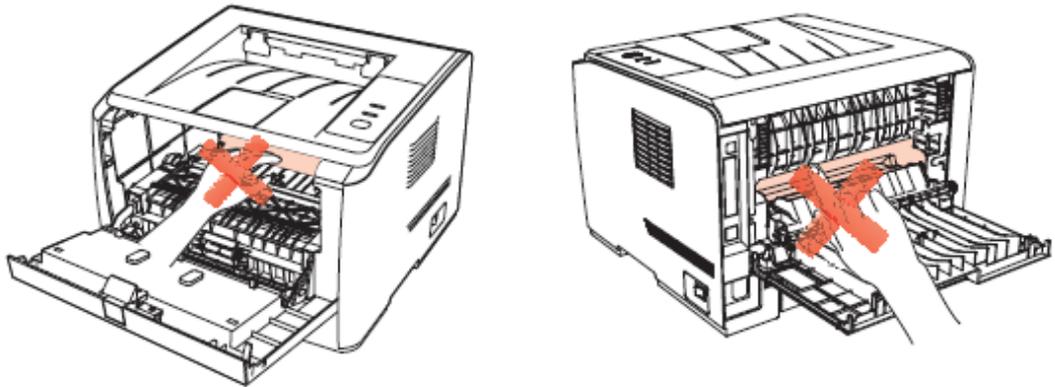
- b. After reloading the paper into the tray, the printer will automatically resume printing.



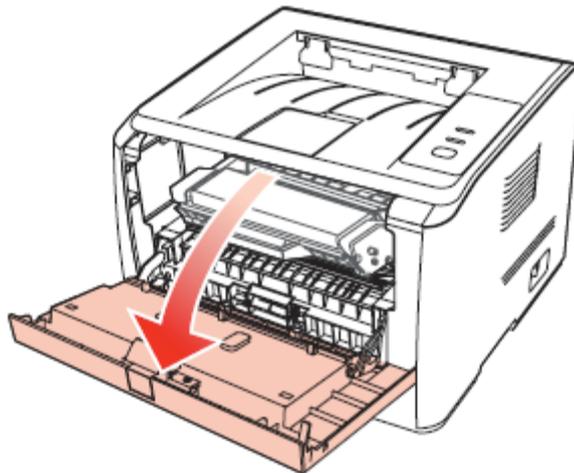
6.5.3 Internal Jam

Note:

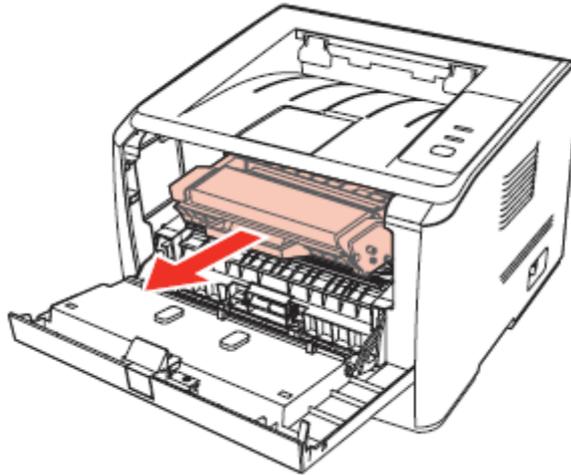
- Do not touch the shaded areas in the following pictures to avoid burns when removing jammed paper from inside the device or from the fuser unit.
-



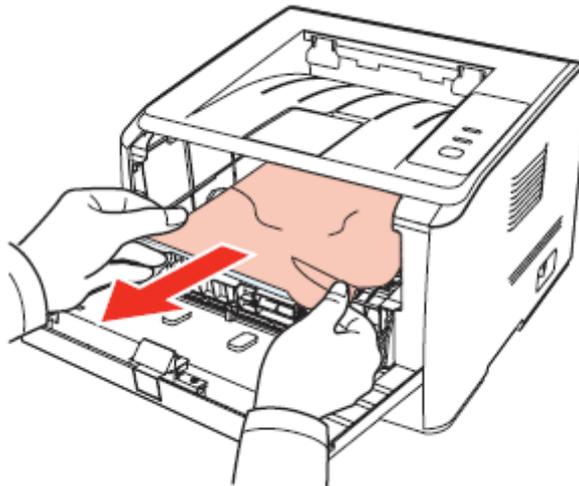
- a. Open the front cover.



- b. Remove the toner cartridge by pulling it straight out. (Put the removed toner cartridge in a black, sealable bag, or cover the toner cartridge with a piece of lightproof paper to avoid the toner cartridge being damaged by direct light.)



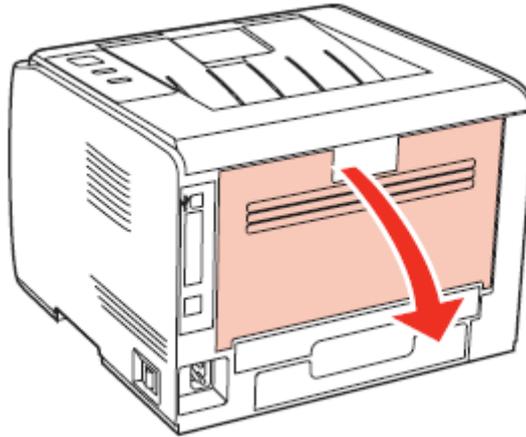
- c. Gently pull the jammed paper straight out.



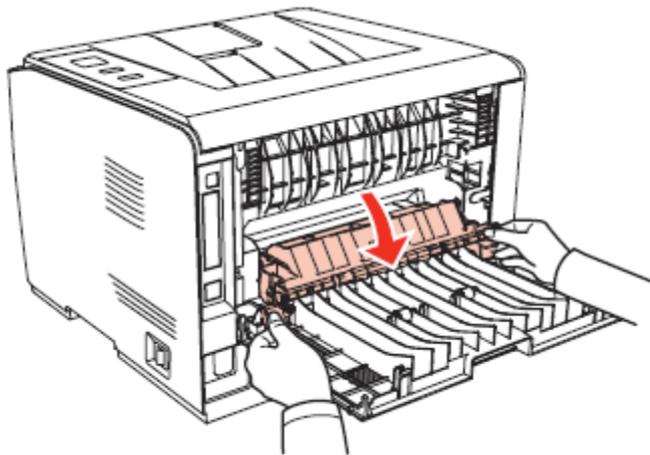
- d. After removing the jammed paper, reload the toner cartridge and close the front cover. The printer will then automatically resume printing.

6.5.4 Paper Jam in the Fuser Unit

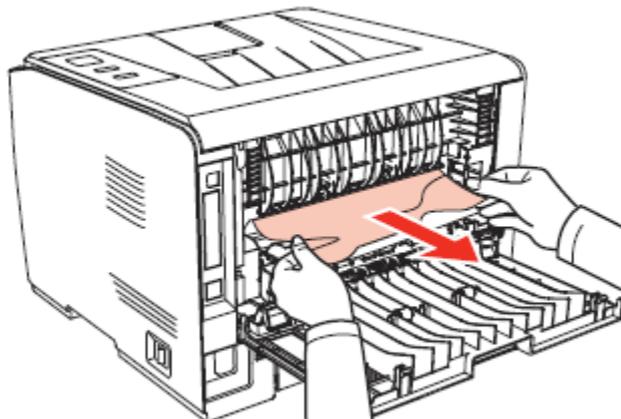
- a. Open the rear cover.



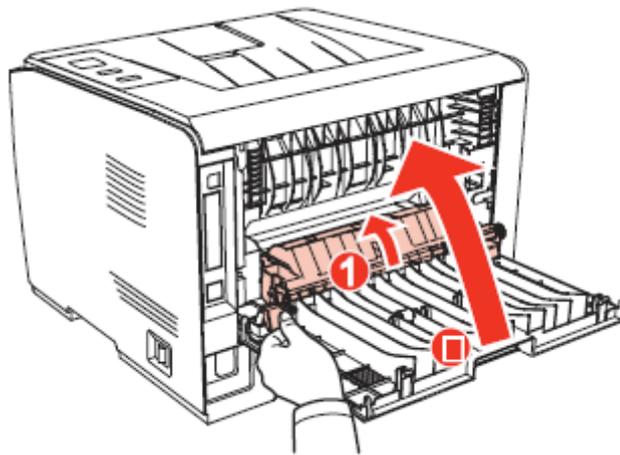
- b. Open the fuser door using the handles at each side.



- c. Gently pull the jammed paper out.

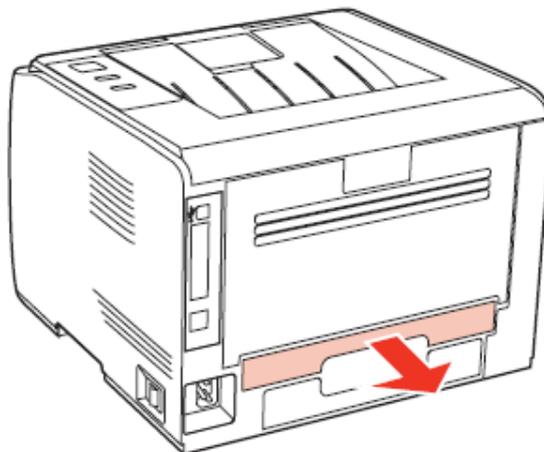


- d. Remove the jammed paper, and close the fuser door and the rear cover. The printer will then automatically resume printing.

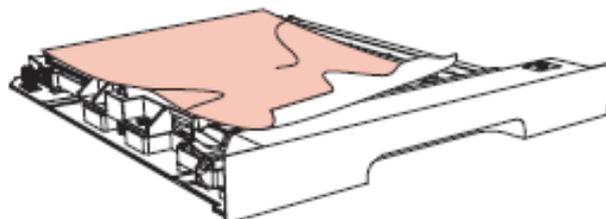


6.5.5 Paper Jam in the Duplex Unit

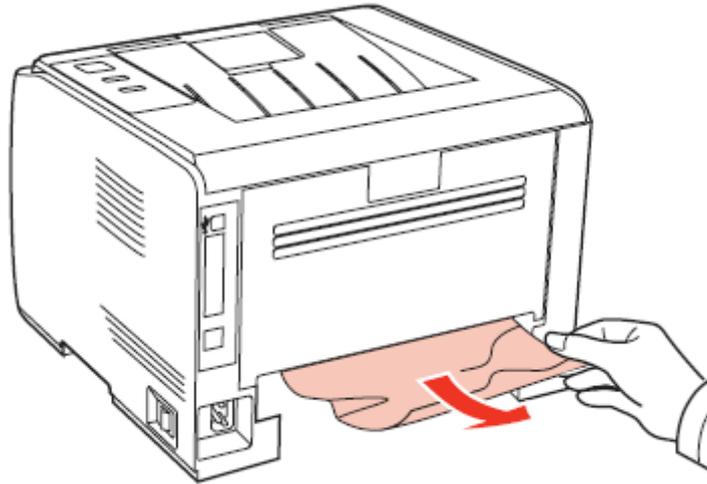
- a. Remove the duplex printing unit from the back of the printer.



- b. Remove the jammed paper from the duplex unit.



- c. If the paper does not come out together with the duplex unit, open the tray and remove the jammed paper directly from the bottom.



- d. After removing the jammed paper, reload the duplex unit, check other parts of the printer to ensure that there is no more jammed paper, and close the front cover. The printer will then automatically resume printing.

6.6 Troubleshooting

This chapter discusses what is needed to resolve various problems with the printer.

6.6.1 Paper Feed Failure

Initial checking:

Please conduct an initial check when there is a paper feed failure.

Check	Solutions
Do the print media meet product specifications?	Replace the print media.
Is the paper curled, wrinkled, or wet?	Replace the paper and tell users how to protect the paper.
Is the paper path deformed, dirty, or blocked up?	Clean the paper path and replace relevant accessories, if needed.
Is the separation claw dirty, deformed, or damaged?	Replace the fuser component.
Are the pickup roller and separation component dirty, deformed or, damaged?	Clean the pickup roller and separation component, and replace them, if needed.
Are the paper guides correctly placed to feed paper?	Slide the paper guides closer to the edge of the paper stack.
Is the clutch gear rotating properly?	Adjust or replace the clutch gear.
Is the electromagnet working properly?	Replace the electromagnet.

M1 Paper feed failure

Possible cause	Solutions
There is no electromagnet signal.	Check the electromagnet signal input to ensure that the electromagnet signal line is normal.
The pickup roller or the separator is contaminated.	Clean the pickup roller and the separator, or replace them.
The pickup roller or the separator is worn.	Replace the pickup roller or the separator.
Faulty feeder sensor	Check the feeder sensor, and clean or replace it.
The tray's paper-lifting plate cannot be lifted up.	Check whether the paper-lifting mechanism is blocked up or damaged.
Engine board failure	Replace the engine board.
Motor failure	Replace the motor.

M2 Continuous paper feed

Possible cause	Solutions
There is no electromagnet signal.	Check the electromagnet signal line to ensure that the electromagnet signal line is normal connection.
The electromagnet spring hook is not powerful enough	Replace the electromagnet.
Incorrect assembly phase of the clutch single set assembly.	Check the clutch single set to ensure that the assembly phase is right.

M3 Paper jam

Possible cause	Solutions
The feeder channel is dirty.	Check the feeder channel to ensure that the channel is clear.
The pickup roller is dirty.	Clean the pickup roller.
Faulty sensor	Clean or replace the sensor.
Faulty electromagnet	Replace the electromagnet.
Faulty engine board	Replace the engine board.

M4 Multipage feed

Possible cause	Solutions
Print media are not within the specified range.	Please use print media within the specified range.
The separator is contaminated or worn.	Clean or replace the separator.

M5 Wrinkled or curled paper

Possible cause	Solutions
Print media is damp.	Please load dry print media.
The paper path is blocked up.	Check the paper path and remove any blockage.

M6 Only printing on one side when using duplex printing

Possible cause	Solutions
Media size is incorrect.	Please use 80g/m ² standard A4 paper. This printer can only support duplex printing with 80g/m ² standard A4 paper.

6.6.2 Common Problems

P1 No AC power supply

Possible cause	Solutions
The voltage is unsuitable.	Ensure suitable voltage from the power supply.
The power cord is not connected to the outlet correctly.	Make sure that the power cord is connected to the outlet correctly.
The fuse has blown.	Replace the power board.

P2 No DC power supply

Possible cause	Solutions
There is no AC power supply.	Make sure the AC power supply is normal.
The low-voltage power supply is faulty.	Replace the power board.

P3 Motor failure

Possible cause	Solutions
The motor cable is faulty.	Make sure that the cable is connected correctly and there are no quality problems.
The main motor is faulty.	Replace any other motors, ensure that the main motor is working normally, and replace it if it is not.
Engine board failure.	Replace the engine board.

P4 Faulty heating light

Possible cause	Solutions
The high-voltage power supply circuit board is disconnected.	Reconnect the plug wire and ensure that the AC power supply is working normally.
There is jammed paper inside of the printer.	Check the printer and remove the jammed paper inside of it.
The output sensor cannot be closed.	Clean or replace the output sensor.
The Paper Feed Sensor is faulty.	Replace the Paper Feed Sensor.
Thermistor failure	Replace the fuser component.
The temperature relay is disconnected.	Replace the fuser component.
Engine board failure	Replace the engine board.

P5 Fuser unit failure

Possible cause	Solutions
There is a poor connection to the thermistor plug wire.	Reconnect the wire.
The temperature relay has burnt out.	Replace the fuser component.
Halogen heating light failure.	Replace the fuser component.

P6 Laser scanning failure

Possible cause	Solutions
The cable is not connected correctly or is broken.	Reconnect it correctly or replace it.
The LSU is damaged.	Replace the LSU.
Engine board failure	Replace the engine board.

P7 Paper supply failure

Possible cause	Solutions
Separator/pickup roller failure.	1) Clean the surface of the separator or pickup roller. 2) Replace the separator or pickup roller.
The electromagnet cable is not connected properly.	Make sure that the electromagnet cable is connected properly.
Electromagnet failure.	Replace the electromagnet.
Paper Presence sensor failure	Replace the Paper Presence sensor.
Engine board failure.	Replace the engine board.

P8 Abnormal high-voltage output

Possible cause	Solutions
The power cord is not plugged in or is damaged.	Make sure the power cord is connected correctly.
The high-voltage contact is dirty.	Clean the high-voltage contact.
Engine board failure.	Replace the engine board.

P9 USB cannot be identified by the PC

Possible cause	Solutions
The power cord is not plugged in, is poorly connected, or is damaged.	Make sure the power cord is connected correctly.
USB cable is poorly connected or damaged.	Make sure the USB cable is connected correctly.
The signal from the data board to the engine board is faulty.	Replace the data board.
The reset signal from the data board to the engine board is faulty.	Replace the data board.
Data board failure.	Replace it with a new one.

P10 Page prints gibberish, or whole page is dark

Possible cause	Solutions
USB cable is loose or damaged.	Make sure the USB cable is connected correctly.
FFC cable connection to the engine and data boards is bad or unreliable.	Replace the data board.
The engine board is damaged.	Replace the engine board.
The data board is damaged.	Replace the data board.
The toner cartridge is damaged.	Replace the toner cartridge.

P11 No image printed

Possible cause	Solutions
The USB cable and power cord are not connected correctly.	Check the USB cable and power cord to ensure the correct connection.
FFC cable connection to the engine and data boards is bad or unreliable.	Replace the data board.
The engine board is damaged.	Replace the engine board.
The data board is faulty.	Replace the data board.
The toner cartridge is faulty.	Replace the toner cartridge.
The LSU is faulty.	Replace the LSU.

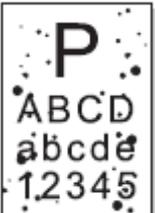
P12 No response when pressing the button on the control panel

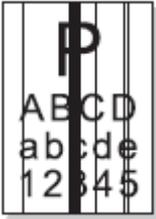
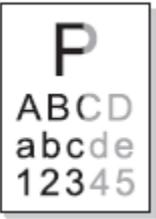
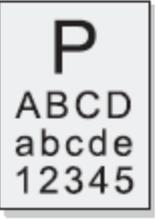
Possible cause	Solutions
The cable is damaged.	Replace the cable.
The button on the control panel is damaged.	Replace the button on the control panel.
The Control Panel board on the control panel is faulty.	Replace the Control Panel board on the control panel.
Data board failure.	Replace the data board.

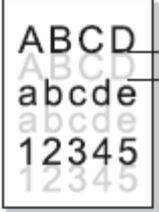
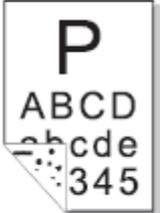
P13 The toner cartridge cannot be identified

Possible cause	Solutions
The toner cartridge is installed incorrectly.	Ensure correct installation of the toner cartridge.
The contacts and their springs are misplaced.	Make sure the contacts and their springs in the right place.
Toner cartridge chip failure.	Replace the toner cartridge.
Data board failure.	Replace the data board.

6.7 Image Defects

Status	Cause	Recommended Solutions
<p>Lightly exposed image</p> 	<ol style="list-style-type: none"> 1. Toner is low. 2. A poor connection at the high-voltage contact of the engine board due to contaminated toner. 3. The high-voltage output of the engine board is abnormal. 	<ol style="list-style-type: none"> 1. Replace the toner cartridge 2. Clean the area contaminated with toner. 3. Clean the high-voltage charge contacts of the engine board or replace the engine board.
<p>Whole page is dark</p> 	<ol style="list-style-type: none"> 1. The high-voltage charge output of the engine board is abnormal. 2. The primary charge roller is faulty. 	<ol style="list-style-type: none"> 1. Clean the high-voltage charge contacts or replace the engine board. 2. Replace the toner cartridge.
<p>Horizontal stripes</p> 	<ol style="list-style-type: none"> 1. Poor connection between the high-voltage contact and the toner cartridge. 2. The developing roller is contaminated; OPC or primary charge roller is damaged. 3. Paper pickup skidding. 	<ol style="list-style-type: none"> 1. Clean the high-voltage contacts or replace the engine board. 2. Replace the toner cartridge. 3. Clean or replace the pickup roller.
<p>Black/white spots</p> 	<ol style="list-style-type: none"> 1. Some areas of the toner cartridge are contaminated or the OPC is damaged. 2. If there are 43.99mm cyclical spots appearing on the image, it means that the high-voltage transfer is abnormal or the transfer roller is damaged. 	<ol style="list-style-type: none"> 1. Replace the toner cartridge. 2. Clean the transfer high-voltage contact or replace the transfer roller. 3. Clean up paper scraps and dirt from inside of the printer regularly.

<p>Vertical stripes</p> 	<ol style="list-style-type: none"> 1. The blade is chipped or deformed. 2. The OPC is damaged. 3. There is a blockage between the developing roller and the doctor blade. 	<ol style="list-style-type: none"> 1. Replace the toner cartridge.
<p>White vertical stripes</p> 	<ol style="list-style-type: none"> 1. The window glass of the laser is dirty. 2. There is a blockage or toner particles between the developing roller and the doctor blade. 3. The fuser component is faulty. 	<ol style="list-style-type: none"> 1. Clean the window glass of the laser. 2. Replace the toner cartridge. 3. Clean or replace the fuser component.
<p>There is an area of lightly exposed image on the page</p> 	<ol style="list-style-type: none"> 1. The doctor blade is damaged. 2. The spring pressures on the left and right side of the transfer roller are uneven; the spring is damaged; the transfer roller is installed improperly or the transfer roller sleeve is damaged. 3. Laser failure. 	<ol style="list-style-type: none"> 1. Replace the toner cartridge. 2. Replace the transfer roller sleeve. 3. Replace the laser.
<p>Black background</p> 	<ol style="list-style-type: none"> 1. Print media used are beyond the specified range. 2. The toner cartridge is empty. 3. The high-voltage output of the engine board is abnormal. 	<ol style="list-style-type: none"> 1. Please use print media within the specified range. 2. Replace the toner cartridge. 3. Clean the high-voltage contacts or replace the engine board.

<p>Periodic image ghosting</p> 	<ol style="list-style-type: none"> 1. If periodic 75.4mm image ghosting appears, it indicates that the OPC is damaged. 2. If periodic 77.60mm image ghosting appears, it means that the surface of the heating roller is contaminated. 3. The high-voltage output of the engine board is abnormal. 	<ol style="list-style-type: none"> 1. Replace the toner cartridge. 2. Clean the surface of the heating roller or replace the fuser component if the problem continues. 3. Replace the engine board.
<p>The back of the sheet is dirty</p> 	<ol style="list-style-type: none"> 1. The transfer roller is contaminated. 2. The fuser pressure roller is contaminated. 	<ol style="list-style-type: none"> 1. Clean or replace the transfer roller. 2. Clean the fuser pressure roller or replace the fuser component.
<p>Whole page is white</p> 	<ol style="list-style-type: none"> 1. Bad electrical suppression of the OPC. 2. The laser is damaged. 	<ol style="list-style-type: none"> 1. Clean the high-voltage contact or replace the engine board. If the problem continues, replace the toner cartridge. 2. Replace the LSU

Appendix 1 Circumference of each roller in the device

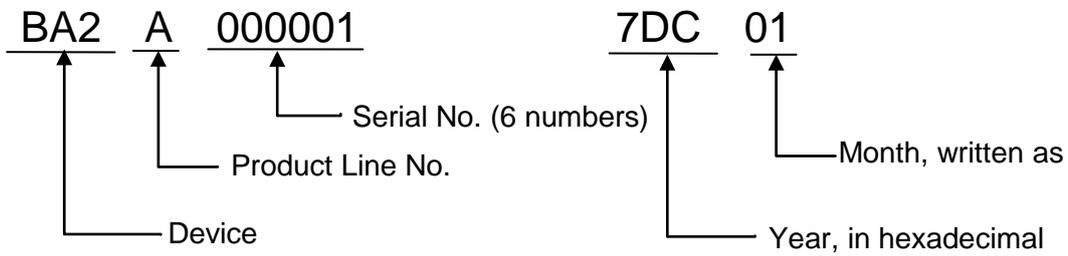
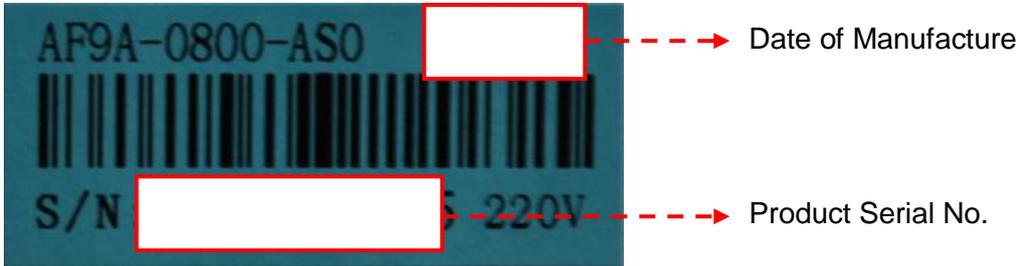
Name	Circumference (mm)
Transfer roller	43.99
Heating roller	77.60
Pressure roller	78.54
OPC	75.27
Developing roller	35.13
Toner-feed roller	46.64
Primary charge roller	38.01

The reason for relevant periodical image exception can be determined in accordance with the circumference of each roller above.

Appendix 3 Product serial number

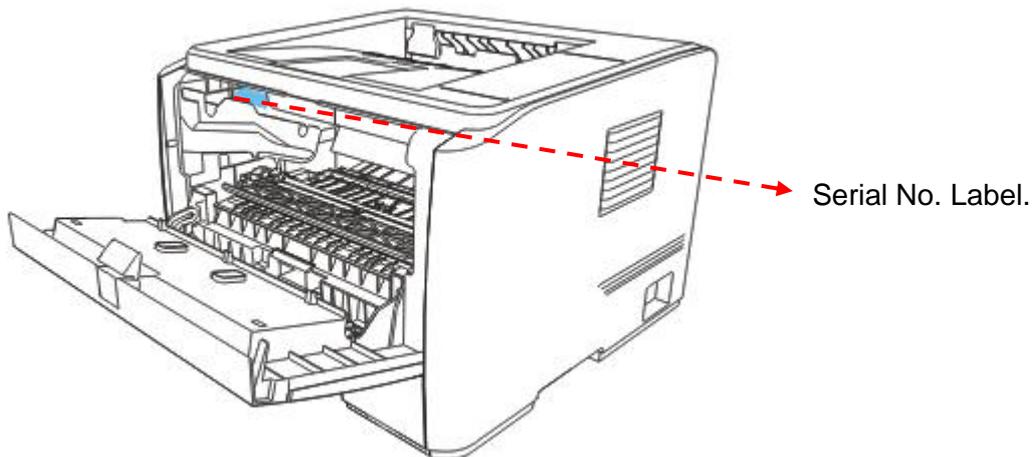
There is a serial number label on each product. Please see below for the meaning of the product serial number and its location.

● Meaning of the code:



● Label location:

Inside of the device



Appendix 4 Terminology

The following table shows the terminology used in this manual.

Terminology	Explanation
CFR	A type of safety standard for laser products
CIS	Contact Image Sensor
dpi	The number of dots per inch
PPM	Pages printed per minute
g/m ²	Paper weight in square meters
auto run	Run automatically
OPC	Organic Photoconductor
PCR	Primary charge roller
Laser	Laser source
DR	Developing roller
TR	Transfer roller
PR	Pressure roller
LSU	Laser scanning unit
DC	Data Controller
EC	Engine Controller

Appendix 5 The screw

Picture	P/N	Type	Colour	Size	Location (quantity)	Total
	YX0M-0006-PG0	Tapped, plain	Silver	M3x8	Top cover (4). Right side cover (1). Left side cover (1). LSU (3).Fixing unit(4).Delivery component (2).Paper feed solenoid (1). Engine side panel (5). Power board(1)	21
	YX0M-0010-PG0	Tapped,integral spring washer & washer	Silver	M3x8	Data board (4). Engine board (4).Power board(3)	11
	YX0M-0002-PG0	Self-tapping	Black	M3x8	Operator panel (1).Duplex unit (3) Fixing paper guide (2) Delivery Sensor base board (1) Bottom Board (5) Transfer Sensor base board (1).Paper Feed Sensor base board (1)	14
	YX0M-0004-PG0	Self-tapping,integral spring washer & washer	Silver	M3x8	Fuser heater (2)	2
	YXOM-0016-PG0	Tapped, plain	Silver	M3x3.5	Main motor(3). Duplex Electromagnet Fixing Plate (2)	5
	YX0M-0029-PG0	Self-tapping	Black	M4x8	Paper transport unit (12).Paper tray (2)	14
 	YX0M-0037-PG0	Tapped, plain	Silver	M3x48	Fan(3)	3