Maintenance Manual

PANTUM

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M5000-M6000 Series

Maintenance Manual for Pantum Monochrome Laser MFP

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Version: V 1.0

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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 must bear the responsibility for any personal injury or product damage occurring during maintenance of the product and the components specified in this manual. Therefore, you must read this manual carefully before performing the maintenance in order to carry out correct operation and maintenance of this product.

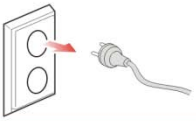
Please keep this manual for future maintenance purposes.

Hazard warnings, notices, and annotated instructions:

* To avoid personal injury, please play attention to all warnings.
* To maintain the printer properly and avoid damage, please follow the warnings.
* Please note the relevant prompts while maintaining the printer.
* Warnings listed in this manual are as follows:

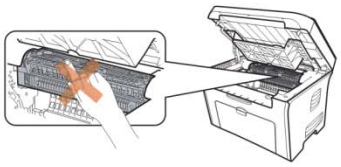
Warning

There are high-voltage electrodes 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!



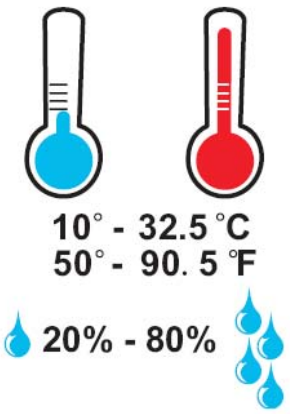
The fuser unit bears a high temperature warning label. Please do not remove or damage this label.

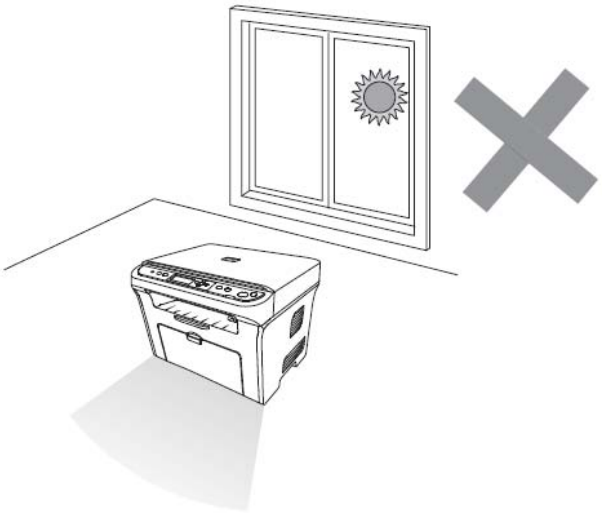
Installation

Place the machine on a flat, stable surface that is difficult to vibrate and to be hit, such as a desktop. Place the machine next to a standard and grounded electrical socket. The ambient temperature of the installation site should be between 50 to 90 degrees F (10 to 32.5 degrees C), with relative 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 adequate ventilation while using the printer for long periods or printing in bulk in a poorly ventilated room.





Laser Safety

Laser radiation is harmful to the human body. To avoid laser radiation, please do not disassemble the printer without reading the Maintenance Manual !

The printer follows the provisions of Class 1 laser products under the CFR standard. The printer has a Class III b laser diode, which has no laser radiation among the laser components.

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

Regulatory Information

This symbol indicates that this product cannot be thrown away together with other waste. Used electrical and electronic equipment must be sent to a designated collection point for recycling.

This product is only suitable for indoor use.

European Community (EC) Directive Compliance

This product complies with the protection requirements related to the electromagnetic compatibility and safety of electrical equipment (designed for use within certain voltage limits), as issued in the Member States Approximate and Coordinative Regulations of EU Directives 2004/108/EC and 2006/95/EC.

This product is manufactured by: Zhuhai Seine Technology Co., Ltd., No. 63 North Pearl Road, Xiangzhou District, Zhuhai City, Guangdong Province, People's Republic of China.

For information about the Compliance Statement for the requirements in these directives, please obtain these from an authorized representative.

This product complies with the Class B range of EN 55022 and the safety requirements of EN 60950.

This printer is fully compliant with ROHS Directive 2009/95/EC and the revised directive 2011/65/EU's requirements for managing toxic and hazardous substances.

This product is intended for safe use in non-tropical areas.

This product may only be safely used at altitudes of approx 6,500 ft (2,000 m) and below.

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1 An Introduction to the Product

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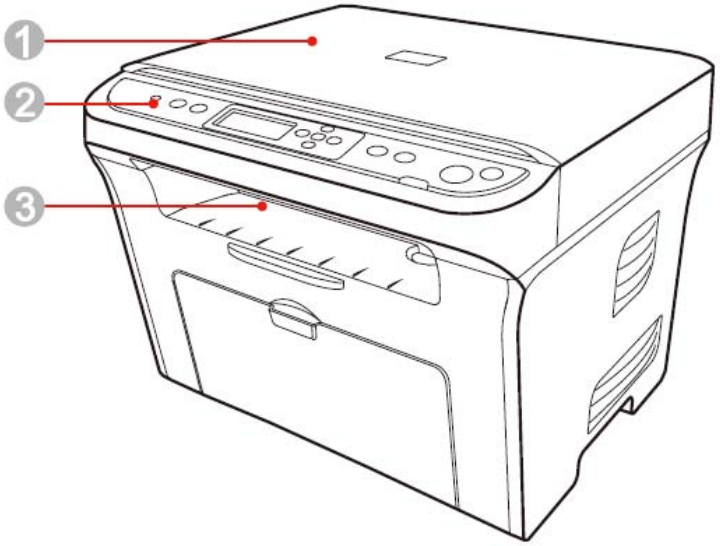
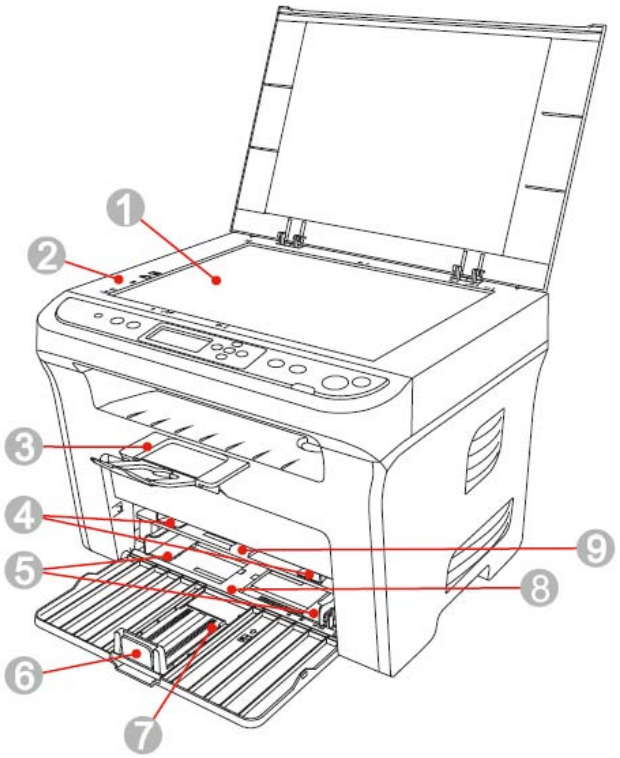
1.1 Overview

1.1.1 Front View (1)



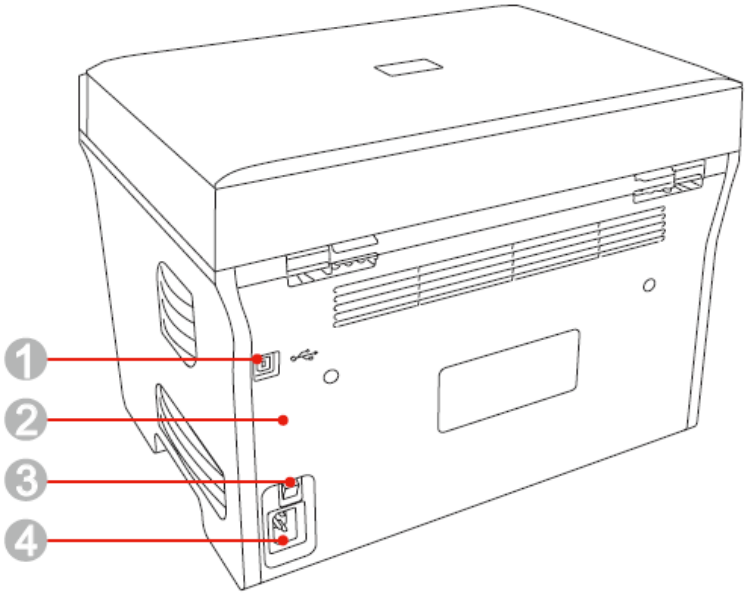
1	Scan Cover
2	Control Panel
3	Output Bin

1.1.2 Front View (2)



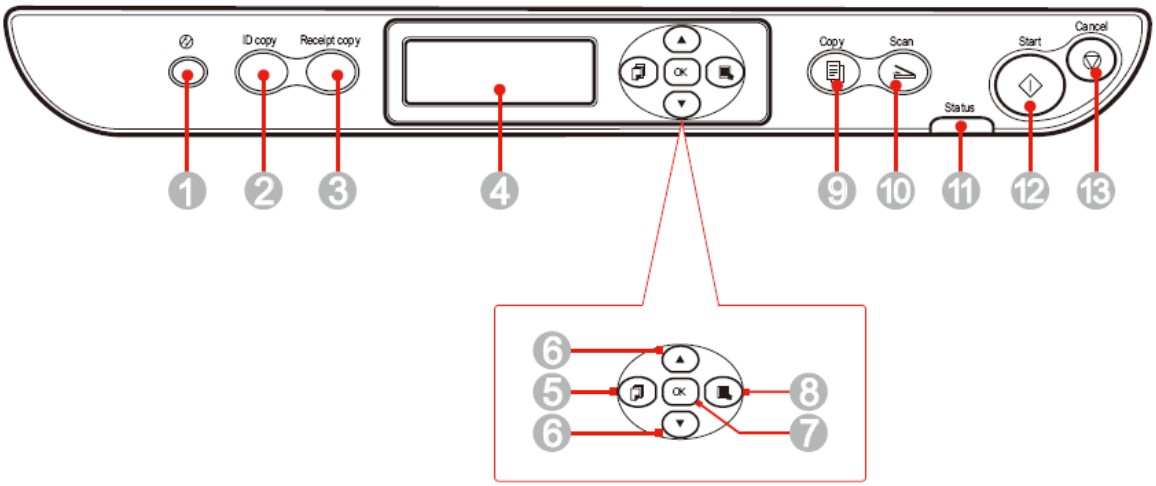
1	Glass Platen
2	Scanning Platform
3	Output Tray
4	Manual Feed Guide
5	Automatic Feed Guide
6	Paper Stop
7	Feeder Tray
8	Automatic Feeder Tray
9	Manual Feeder Tray

1.1.3 Rear View



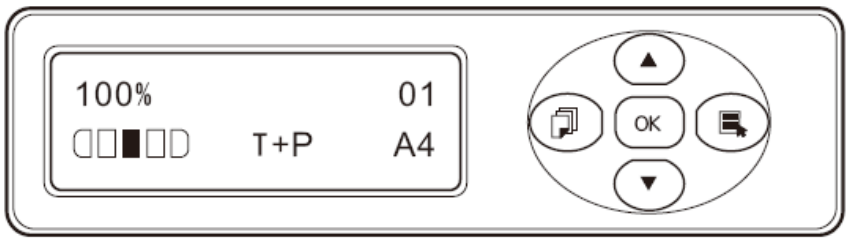
1	USB Interface
2	Rear Cover
3	Power Switch
4	Power Interface

1.1.4 Overview of the Control Panel



1	Power Saving Button
2	ID Card Copy Button
3	Bill Copy Button
4	LCD Display
5	Copies Setting
6	Direction Button (▲ ▼)
7	Enter Button
8	Menu Button
9	Copy Button/Indicator
10	Scan Button/Indicator
11	Status Indicator
12	Start Button
13	Cancel Button

1.1.5 Display Screen



| Copy Standby Mode	100% 01 T+P A4
| ID Copy Standby Mode	100% 01 ID A4
| Receipt Copy Standby Mode	100% 01 Receipt A4
| Single Page Scan Standby Mode	Scan/Merge 1.Scan mode
| N-UP Scan Standby Mode	Scan/Merge 2.Merge mode

1.2 Product Specifications

1.2.1 General Specifications

Functions		PC monochrome printing, PC colored/monochrome scanning, monochrome copying
PC Client Interface Type		Hi-Speed USB (2.0)
Supported operating systems		Windows（32bit） XP/2003/Vista/7/20082012/8 Windows（64bit） XP/2003/Vista/7/20082012/8 Mac X 10.5/10.6/10.7/10.8
Main Processor		300Mhz
Memory		128M
LCD Panel		16*2 (row)
Certification		CCC, China Environment Labeling, Chinese Energy Conservation Certification, Energy Efficiency Certification, domestic SRRC certification (different certifications in different regions)
Power Supply		AC220~240V (-15%,+10%), 50/60Hz±2Hz AC110~127V±10％, 60Hz±2Hz (Corresponding to different regions)
Noise	Work	54dB
	Stand-by	35dB
Environment		Operation Temperature: 50-90 degrees F (10-32 degrees C). Fahrenheit temperature should come first for US market, Operation Humidity: 20-80%
Product Size (W*D*H) mm		399*327*299
Product Weight		About 8kg (no packaging, toner cartridges)
Service Life of the Product		5 years or 100,000 pages

1.2.2 Scanning Specifications

Scan Source	Surface Plate
Original Paper Size	1. Full Platen, A4, A5 Port, A5 Land, B5, Letter, Business card.
Optical System	CIS，Maximum Optical Resolution 1200dpi
Scan Driver	TWAIN WIA Driver (Simplified Chinese/English/Other Languages)
Scan Preview (Flatbed)	Support
Scan Mode	Colored/Gray/Monochrome
Scan Resolution	1200dpi (Non-push-broom), 600dpi, 300dpi, 150dpi, 75dpi
Maximum scan size (Tablet)	216 x 297 mm
Scanned File Format	JPEG, TIFF, PDF
Bit Depth	24bit/8bit/1bit
Other Functions	Scan to PC

1.2.3 Printing Specifications

Maximum Print Size		Legal (216mm*356mm)	
Printing System		Laser Electrostatic Printing System	
First Page Out Time		M5000 Series	Less than 12 seconds (A4 80g/㎡)
		M6000 Series	Less than 10 seconds (A4 80g/㎡)
Print Speed		M5000 Series	16PPM (A4 80g/㎡)
		M6000 Series	20PPM (A4 80g/㎡)
Feed System		1. Auto Feed； 2. Manual Feed；	
Media Type		Plain, thick, special paper (OHP, postcard, label, envelope)	
Page Size		A4, A5, B5, A6, Letter, Legal, JIS B5, IS0 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 ~ 163g/m²	
Language		GDI	
Random Software	Printer Driver	Simplified Chinese/English/Other Languages	

1.2.4 Copy Specifications

Scan Source	Surface Plate
Maximum Copy Width	Original Manuscript: 216 x 297mm
Original Paper Size	A4, Letter, B5, A5, A6, Executive.
Optical System	CIS, Maximum Optical Resolution 1200dpi
Zoom	1. 100%
	2. 141% A5→A4
	3. 122% A5→B5
	4. 115% B5→A4
	5. 97% LTR→A4
	6. 94% A4→LTR
	7. 86% A4→B5
	8. 81% B5→A5
	9. 70% A4→A5
	Custom: 50% to 400%
Copies	1-99
Copy Quality	Text, Images, Text + Images
N-in-1	2-in-1
	4-in-1 (Land)
	4-in-1 (Port)
Copy Function	ID Card Copy, Bill Copy, Normal Copy

1.2.5 Consumables Specifications

PD-130S	A4，5% coverage rate, about 1200 pages
PD-100	A4，5% coverage rate, about 1500 pages
PD-100H	A4，5% coverage rate, about 2300 pages
PD-200	A4，5% coverage rate, about 1500 pages
PD-200H	A4，5% coverage rate, about 2300 pages

•Model specifications are subject to change without notice.

•Consumables capacity may vary depending on different varieties used.

Note:

Please change to: 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

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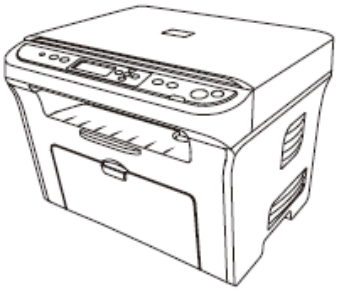
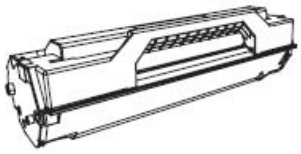
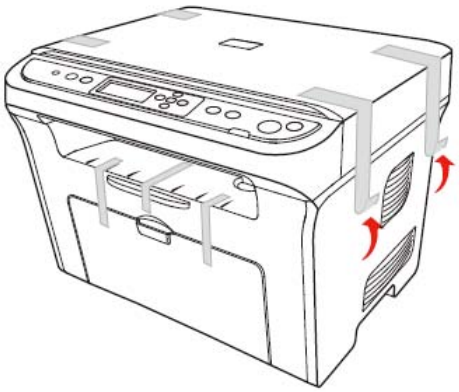
2.1 Packing List

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

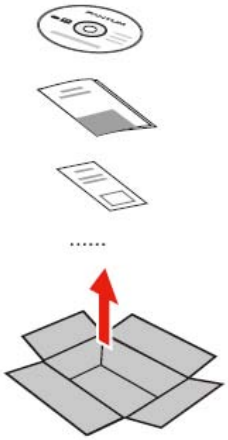
Parts	Name	Quantity
	Printer	1
	Toner Cartridges	1
	USB interface cable	1
	Power Cables	1
	CD-ROM	1
	Quick Setup Guide	1
	Warranty Certificate	1

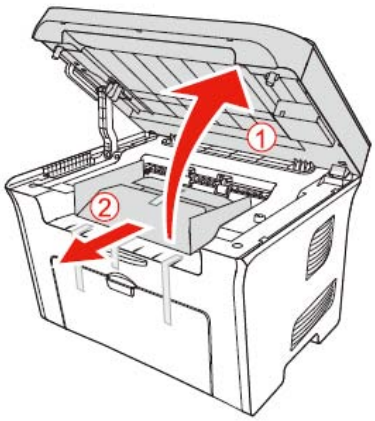
2.2 Machine Installation

1. Take out the printer and remove the fixed seal of the scanner cover.

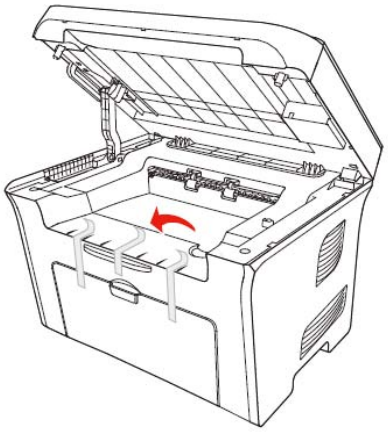


2. Lift the scanning platform and take out the accessory tray, which contains the driver CD, quick installation guide, warranty certificate, and other accessories.

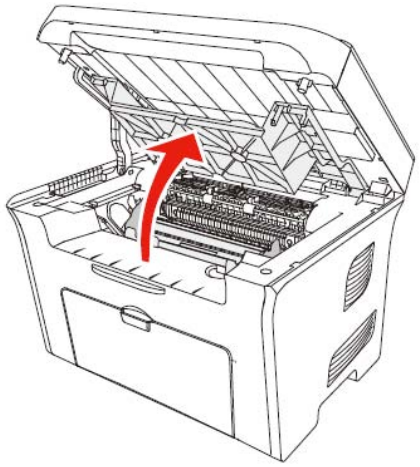




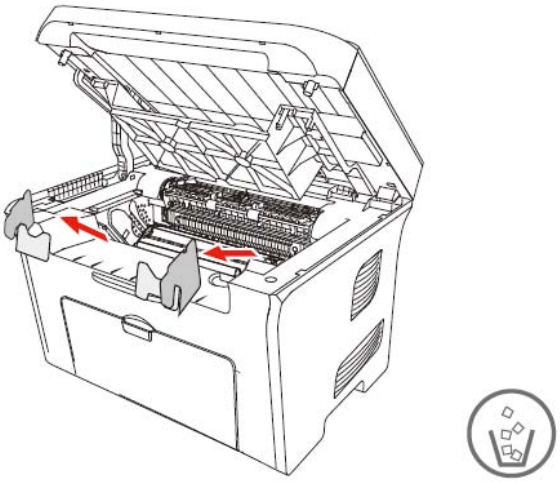
3. Remove the fixed seal of the feeder tray, the delivery tray and the output bin.



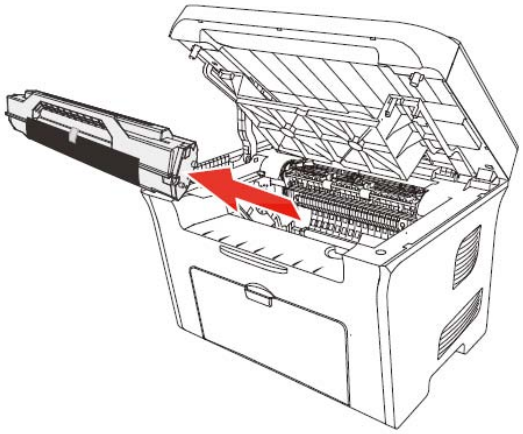
4. Open the output bin.



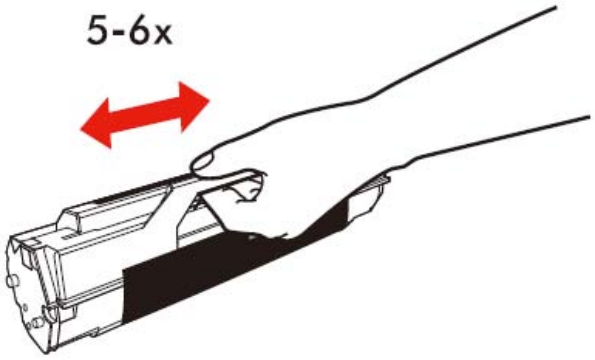
5. Take out the plate for fixing the toner cartridge.



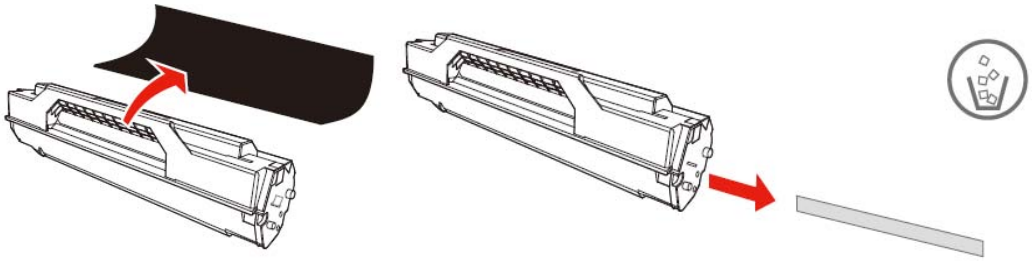
6. Remove the cartridge.



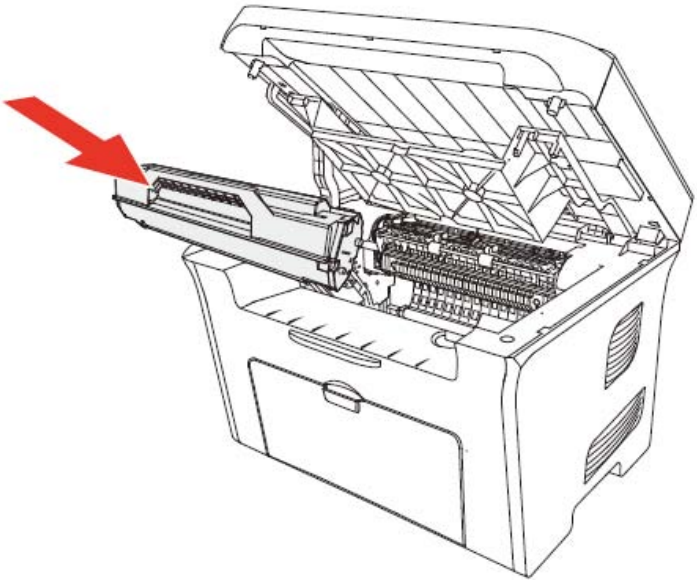
7. Hold the handle of the cartridge and shake it gently (horizontally) 5-6 times, so as to evenly distribute the toner inside the cartridge.



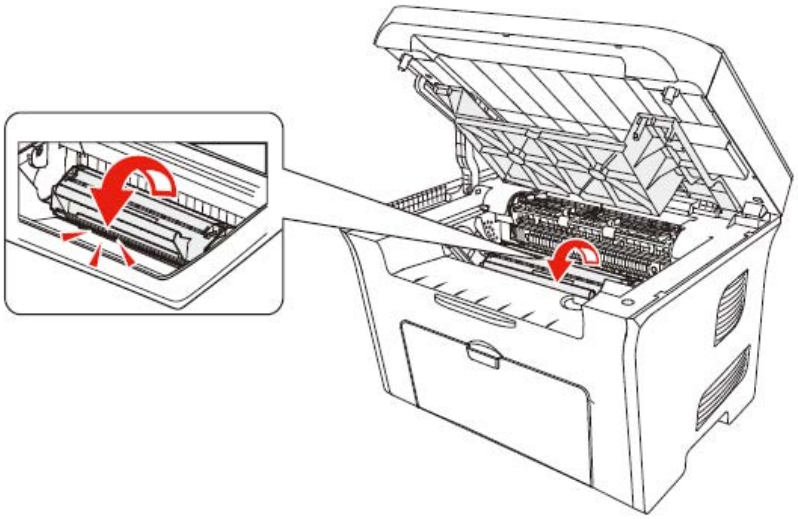
8. Remove the protective paper and seals of the photosensitive drum.



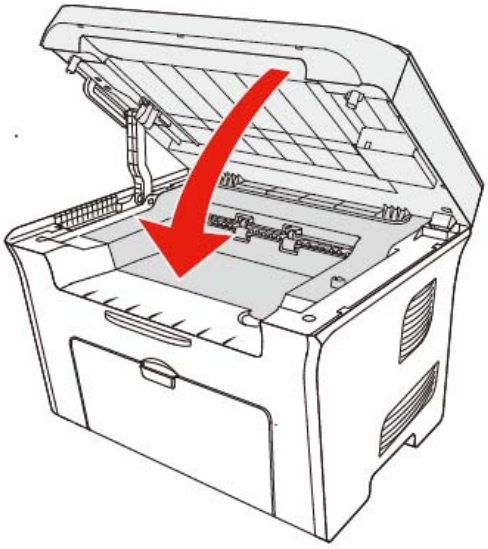
9. Place the cartridge into the printer along the guides.



10. Push it firmly in the direction of the arrow until you hear it click. This means that the cartridge is fully inserted.



11. Close the output bin and the scanning table.



2.3 Driver Installation and Uninstallation

2.3.1 Based on Windows® System

2.3.1.1 Program Introduction

This driver software helps users install and uninstall the program by means of the installation and uninstallation wizard.

The program can be installed in two ways:

Install the driver while connecting the printer;

Install the driver before the printer connection, and connect the printer after the installation.

For users of Windows XP and Windows Server 2003: when connecting the equipment for the first time, the "Find New Hardware Wizard" window will show. Please close this window. If this window is not closed, the printer may not be detected, resulting in incomplete installation

2.3.1.2 Installation Steps

There are two methods for installing the driver software for this product: "Install Now" and "Custom Installation." The specific installation steps are described below:

1) Install Now

a) Running Interface

After running the installation CD, the program will run automatically and display the following interface:

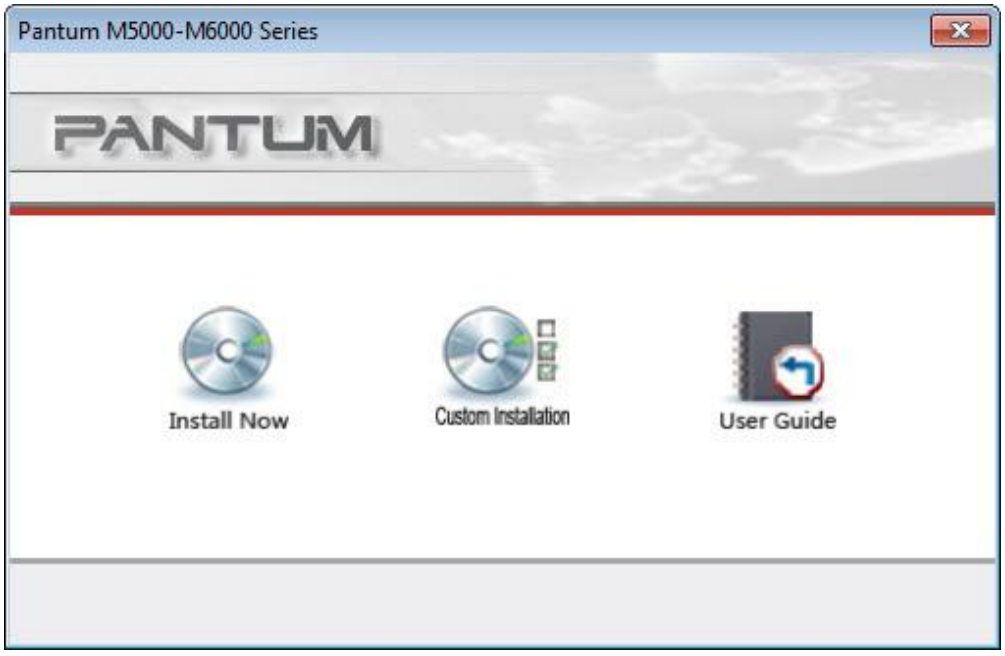
User identity will be verified before the program starts running. If the user is a non-administrator, the following pop-up box will show: "Insufficient privileges. Please install the pantum M5000-M6000 Series MFP with administrator privileges."

b) Installation Language

It will then show the next interface: Language Selection interface.

c) Installation Settings

Click Next to enter the Installation Settings interface.



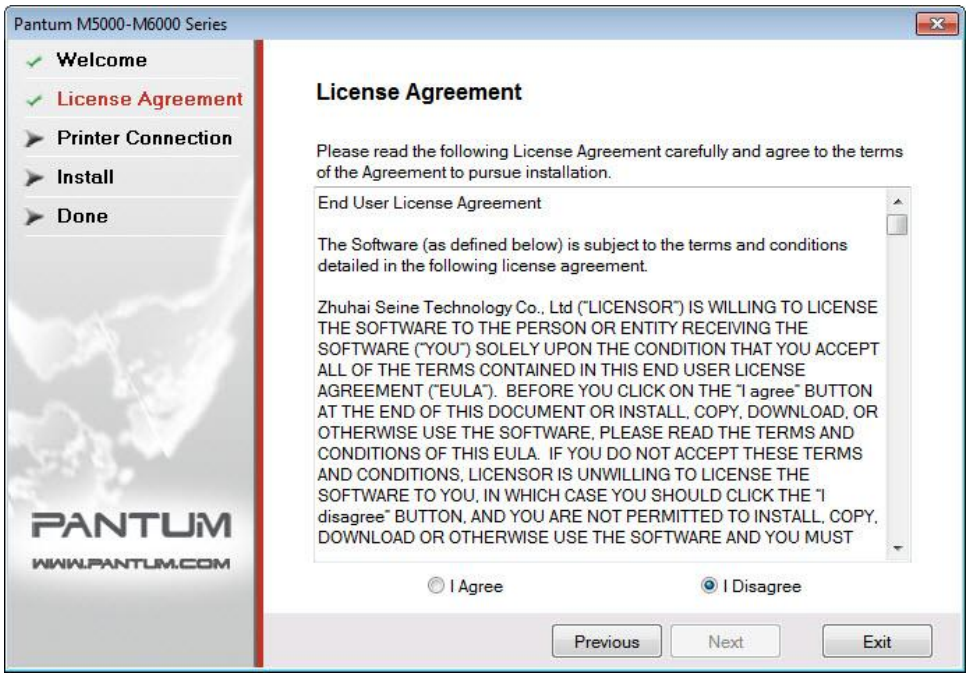
Note:

* "Install Now" will install the printer driver software, the scanner driver software, and the Pantum Push Scan Manager together.

* Install Now uses the default path, that is the "System disk:\Program Files" directory.

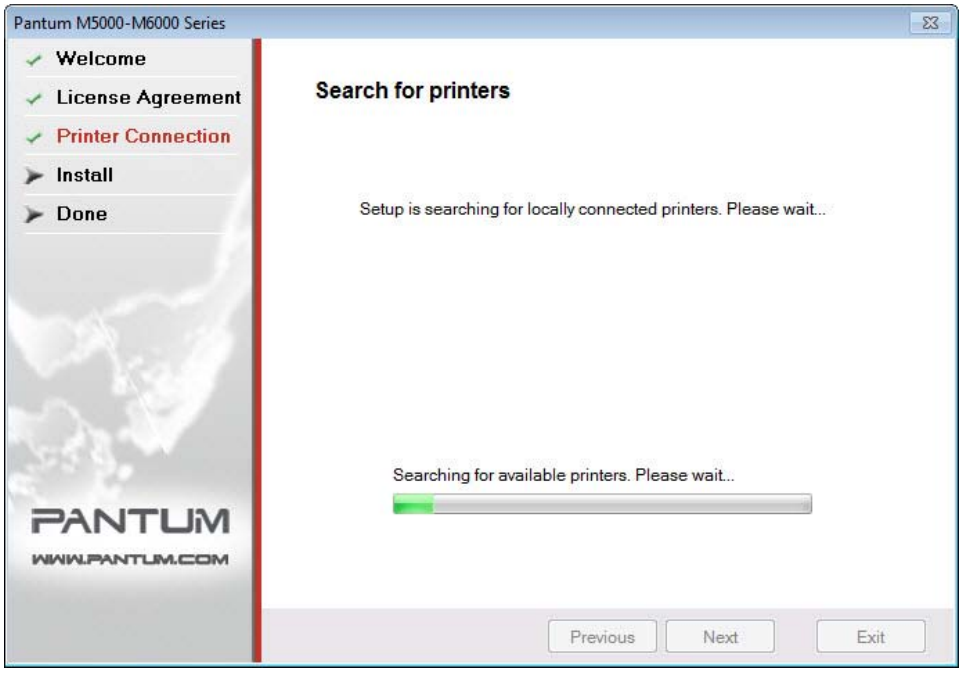
d) License Agreement

Click the "Install Now" button to enter the License Agreement interface. Then please carefully read the user license agreement, select the "I Agree" option, and click Next button to proceed with the installation.



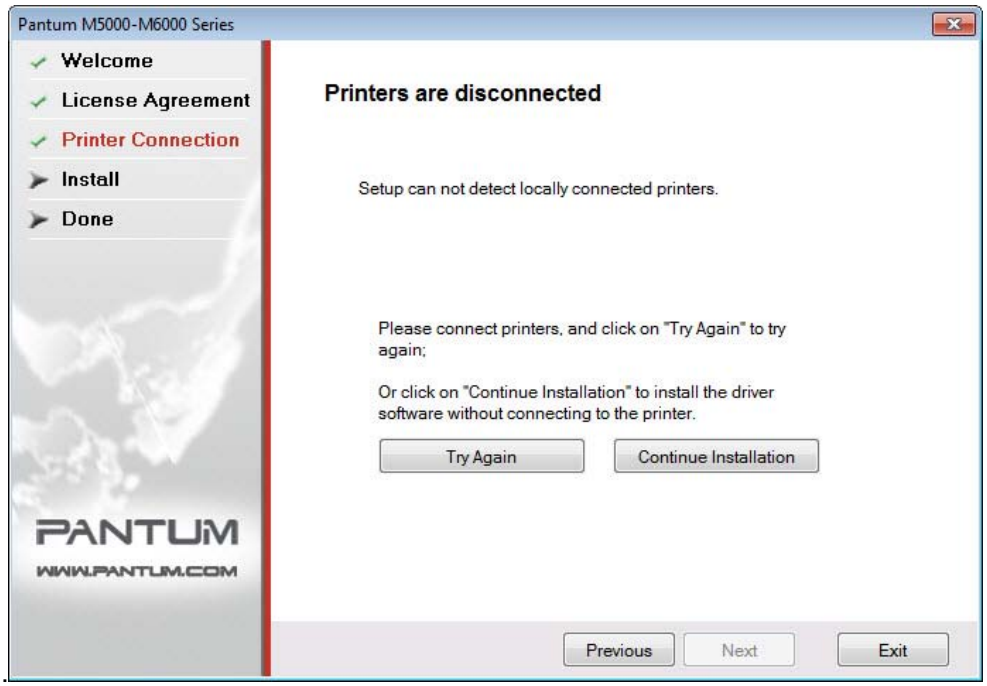
e) Search for Printers

After selecting Agree and clicking Next, the Search for Printers interface will show. The program will automatically search whether the computer has connected to the appropriate printer.



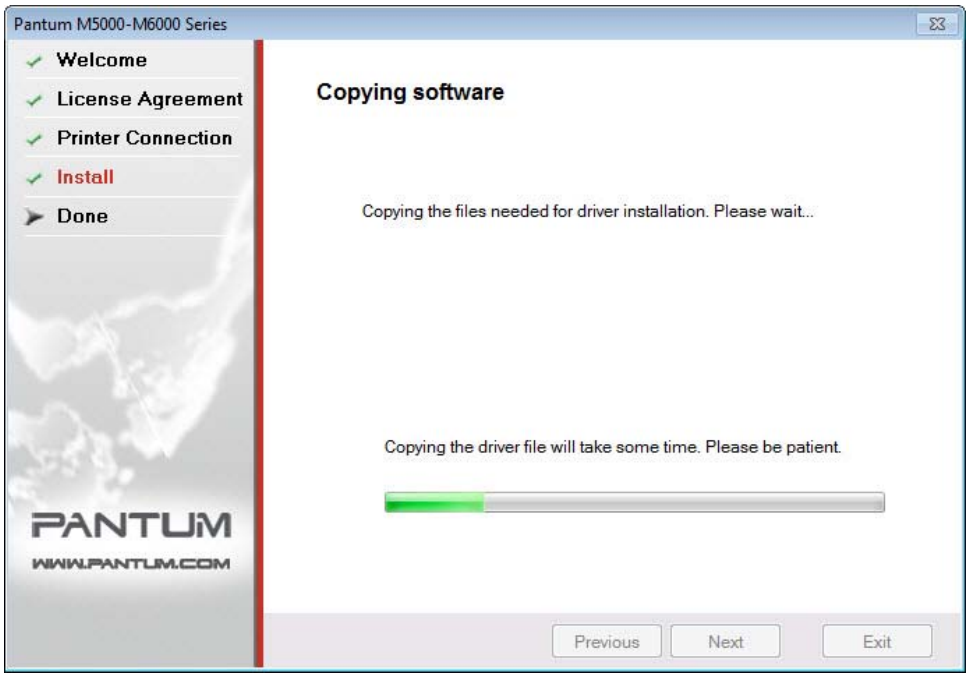
If the appropriate printer is detected, the Copying Files interface will show.

If the printer is plugged into the PC, please click "Try Again" to continue searching for the connected printer. If you want to connect the printer later, please click "Continue Installation."

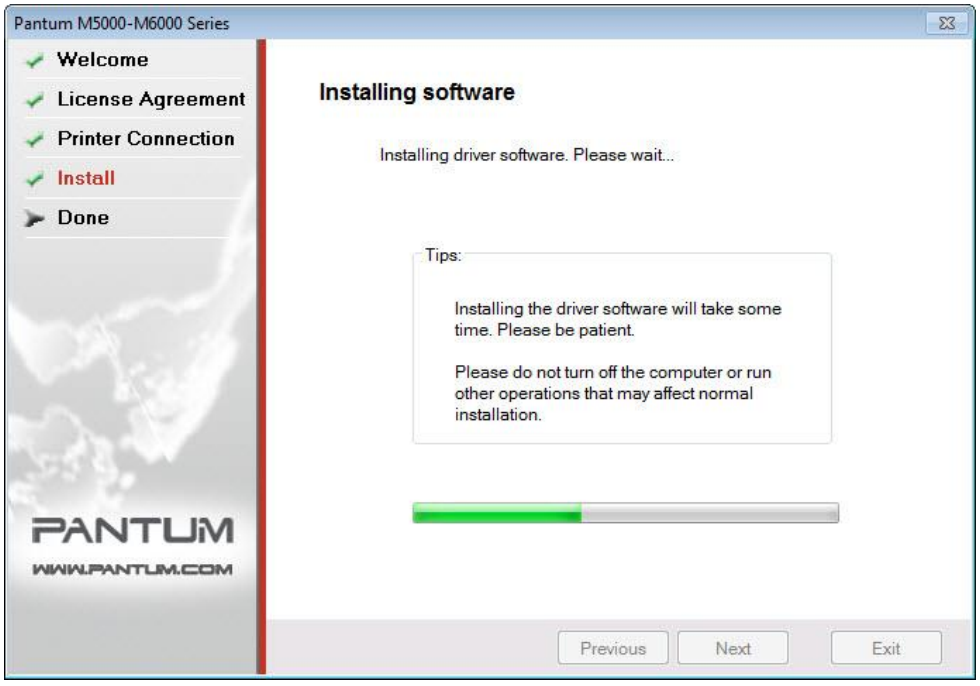


f) Copying Files

Copy the installation files to the installation path.

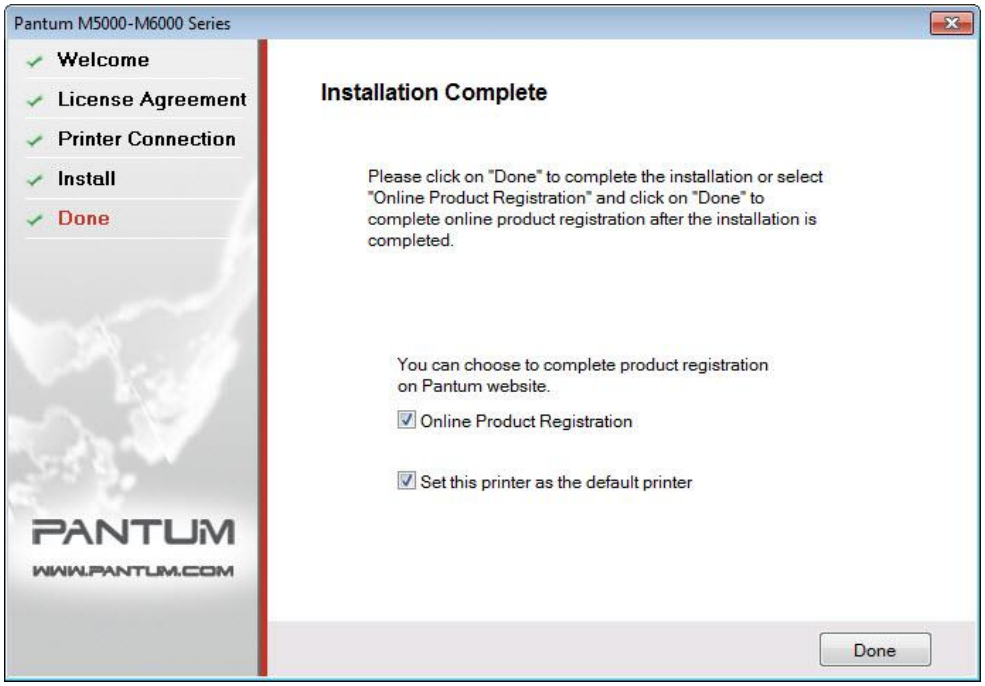


g) Driver Installation



h) Completing Installation

When the driver installation progress bar shows that the installation is complete, the Installation Complete interface will show.



Click the "Done" button to complete printer driver installation. You can then register the product online. This will allow you to set this printer as the default printer, as well as offering you online services and consultation, including ordering laster toner cartridges. These options may be cancelled, as required.

Note:

If the driver is installed with the printer unconnected, the option to "Set this printer as the default printer" will not be displayed.

2) Custom Installation

Note:

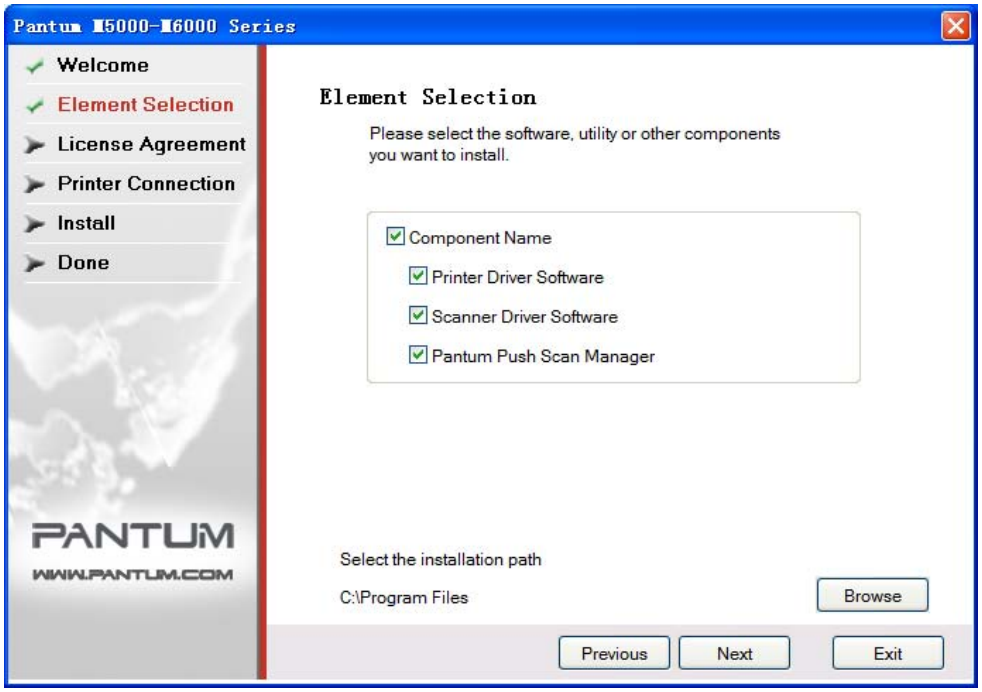
The running interface and installation language are the same as those of Install Now.

a) Installation Settings

Click Next to enter the Installation Settings interface

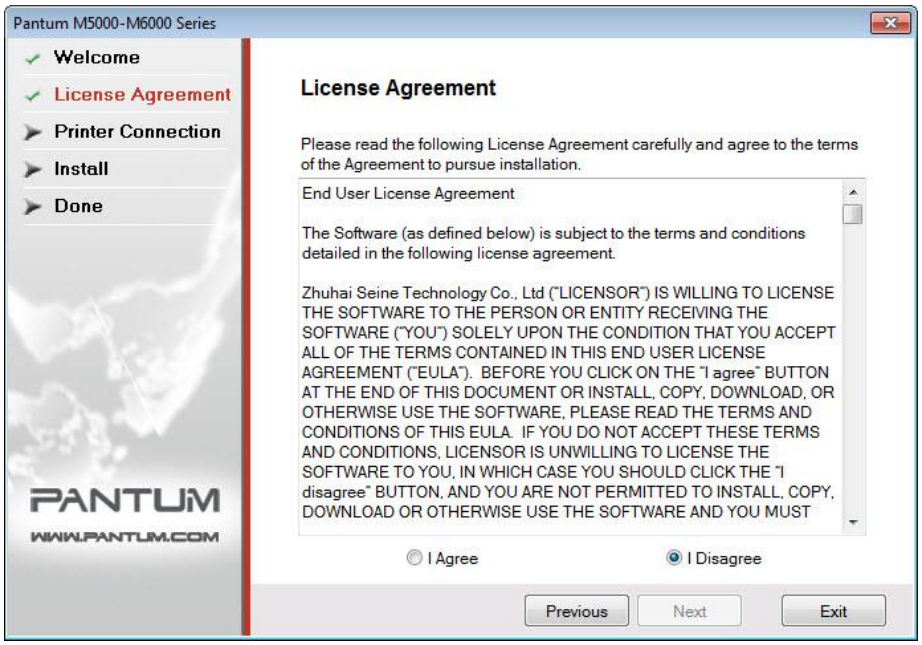
b) Setup Component Selection

Click the "Custom Installation" button to enter the Installation Component Selection. Select the printer to enter the Installation components Selection Interface, where you can select the desired installation components, as well as change the installation path.



c) License Agreement

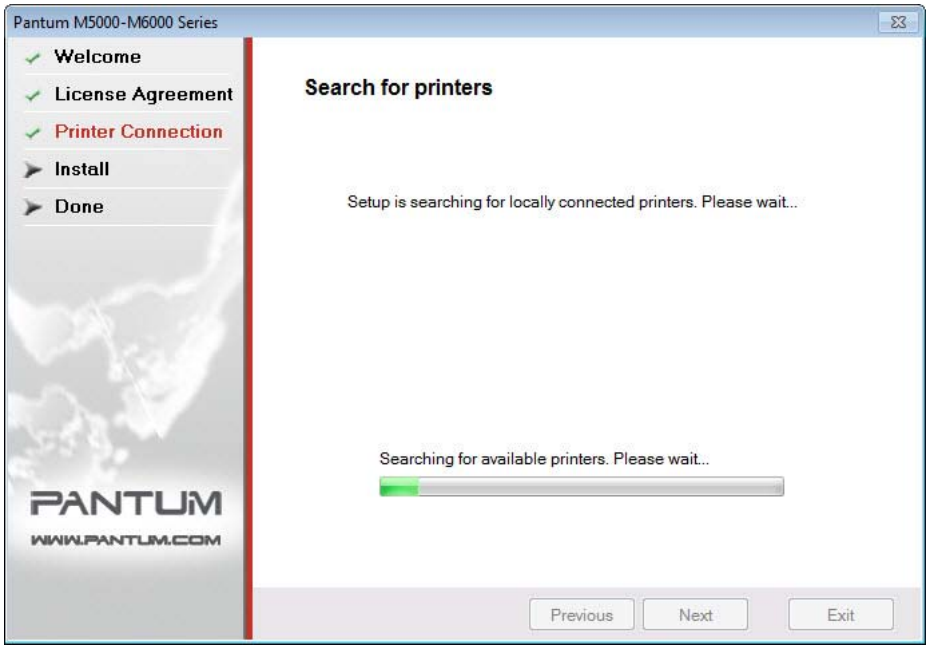
After selecting the components and installation path, click the "Next" button to enter the License Agreement interface. Please carefully read the user license agreement, select the "I Agree" option, and click the "Next" button to proceed with the installation



The "I Disagree" radio button is checked by default in the interface, and the "Next" button is grayed out. To proceed with the software installation, users must check the "I Agree" option to make the "Next" button available.

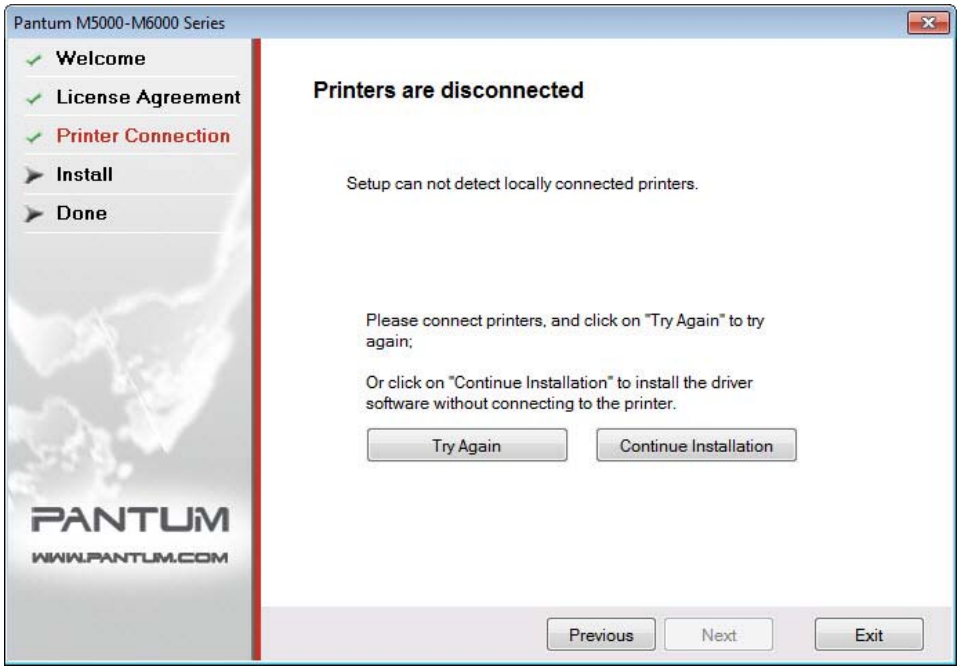
d) Search for Printers

After selecting "Agree" and clicking "Next", the Search for Printers interface will show. The program will automatically search whether the computer has connected to the appropriate printer.



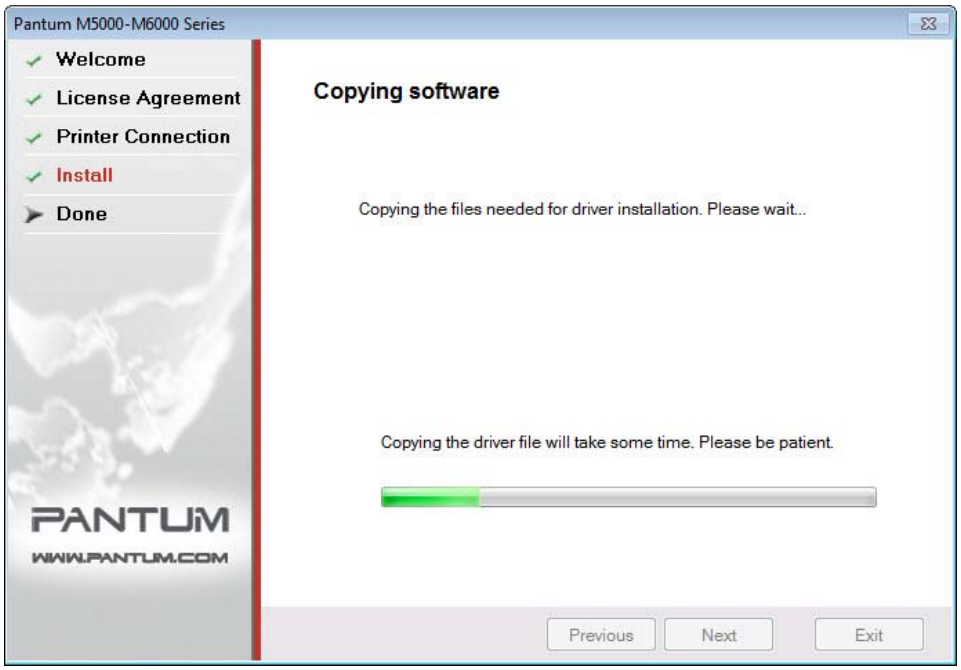
If the appropriate printer is detected, the Copying Files interface will automatically show.

If the printer is plugged into the PC, please click "Try Again" to continue searching for the connected printer. If you want to connect the printer later, please click "Continue Installation."

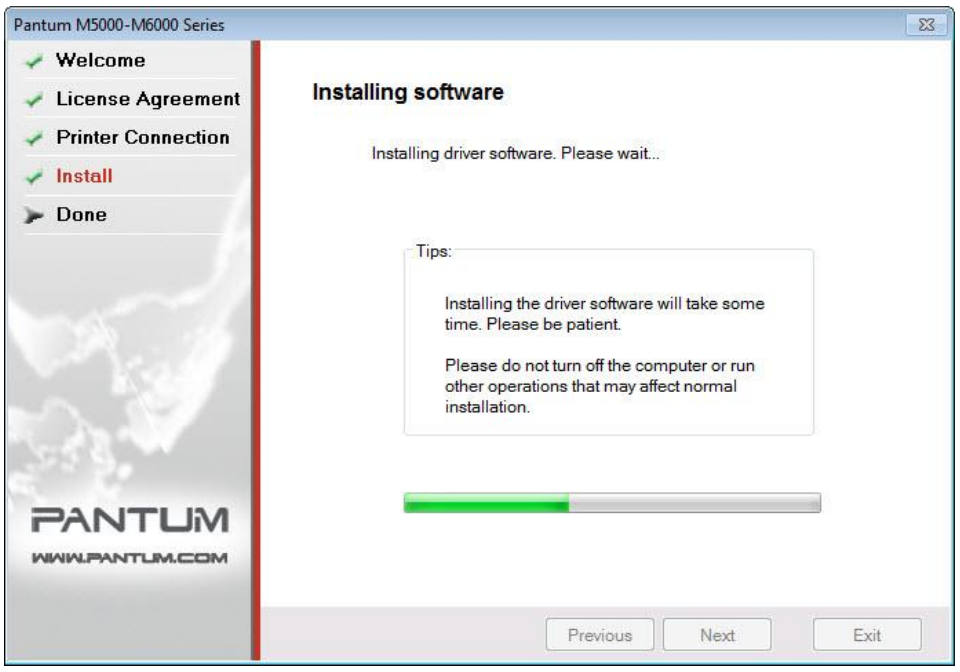


e) Copying Files

Copy the installation files to the installation path.



g) Driver Installation



h) Completing Installation

When the driver installation progress bar shows that the installation is complete, the Installation Complete interface will show.

Click the "Done" button to complete printer driver installation. You can then register the product online. This will allow you to set this printer as the default printer, as well as offering you online services and consultation, including ordering laster toner cartridges. These options may be cancelled, as required.

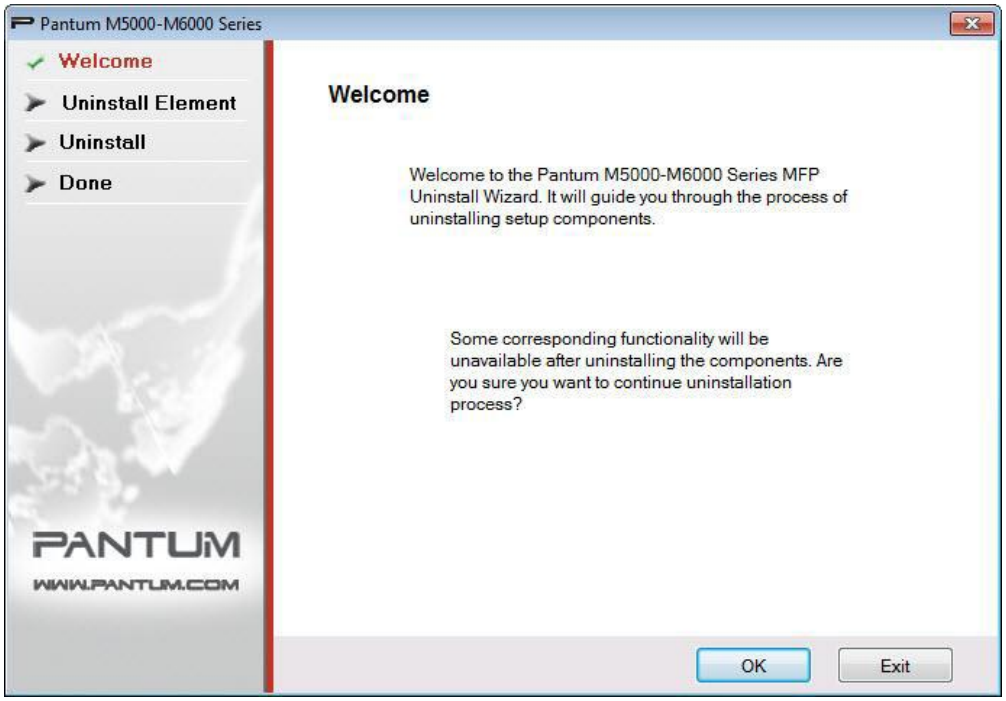
Note:

If the driver is installed with the printer unconnected, the option to "Set this printer as the default printer" will not be displayed.

2.3.1.3 Driver Uninstallation

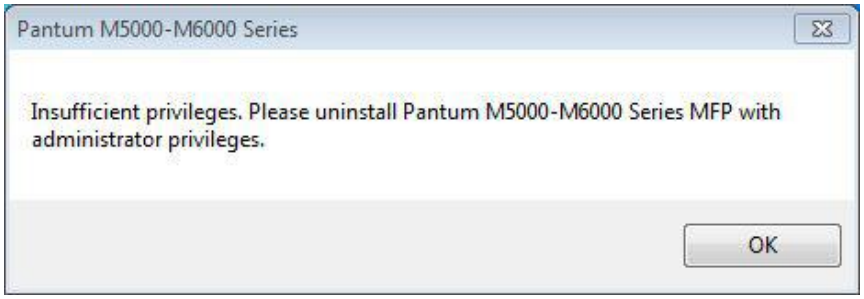
1. Select the uninstallation mode.

In the Start menu, select the path "Pantum - Pantum M5000 - M6000 Series uninstall Icon" to enter the uninstall interface, or find Add/Remove in the PC control panel to find relevant Pantum options. Then click "Change" and "Delete", and the Welcome interface will show.



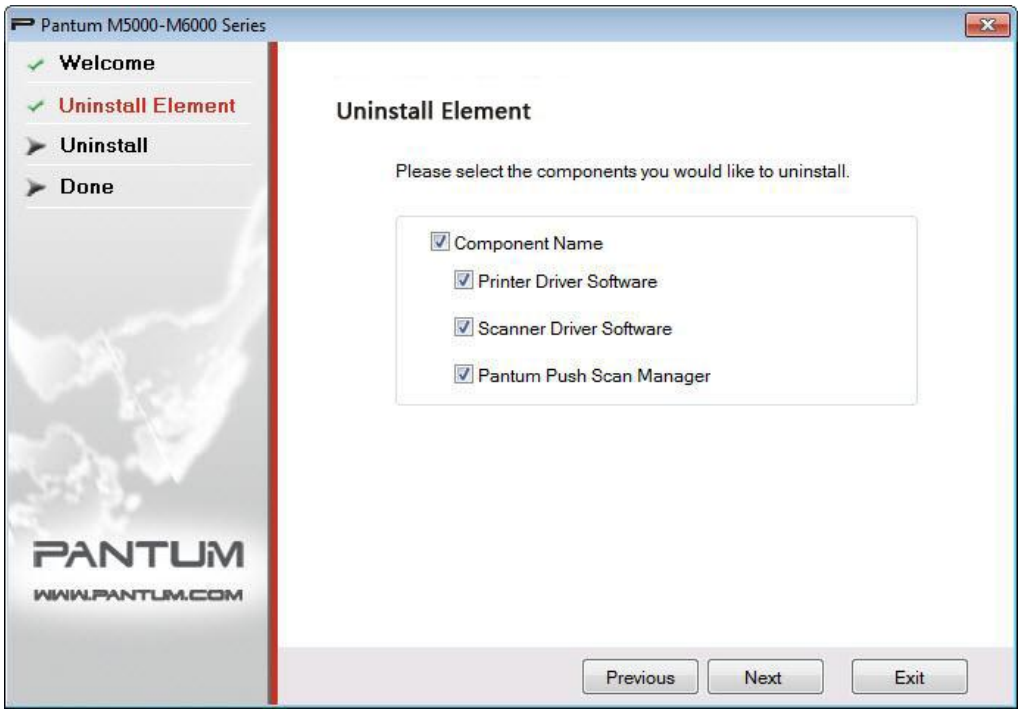
2. Uninstallation privilege verification prompt.

The administrator privilege is necessary for uninstallation. While running the uninstaller as a non-administrator, the prompt box that shows "Insufficient privileges. Please uninstall the Pantum M5000-M6000 Series MFP with administrator privileges. " will pop up, and the main interface of the uninstaller will not be displayed. Click OK in the prompt box, and the prompt box interface will disappear.



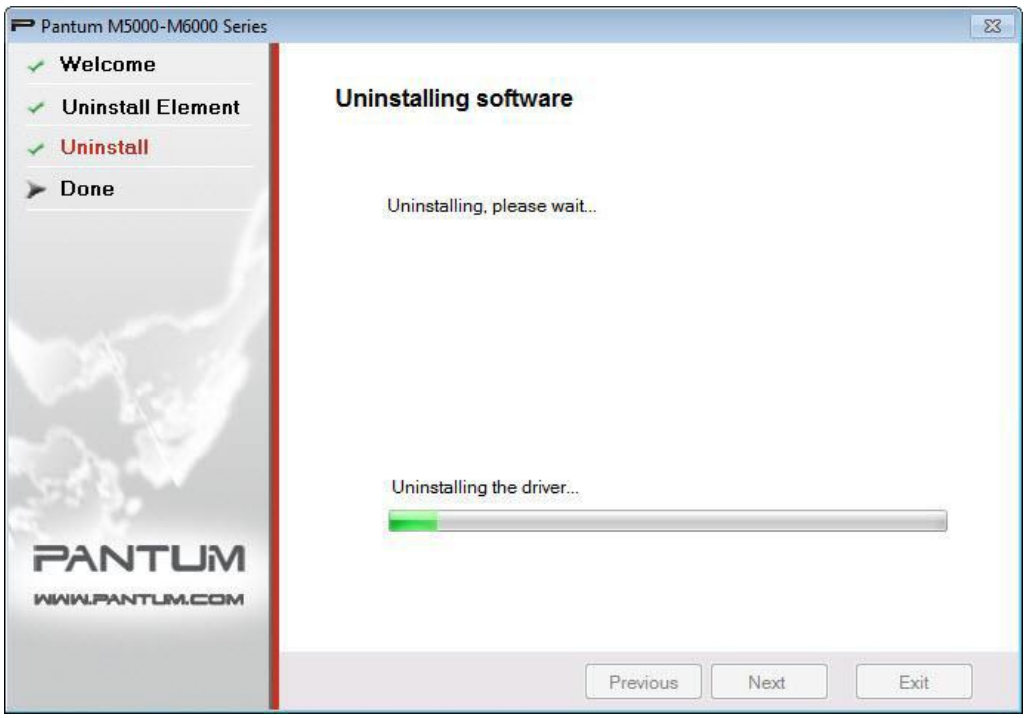
3. Uninstallation of Component Selection interface.

Click OK on the Welcome interface to enter the Uninstallation of Component Selection interface, where you can select the components to be uninstalled at your own discretion. Only all installed components will be displayed.



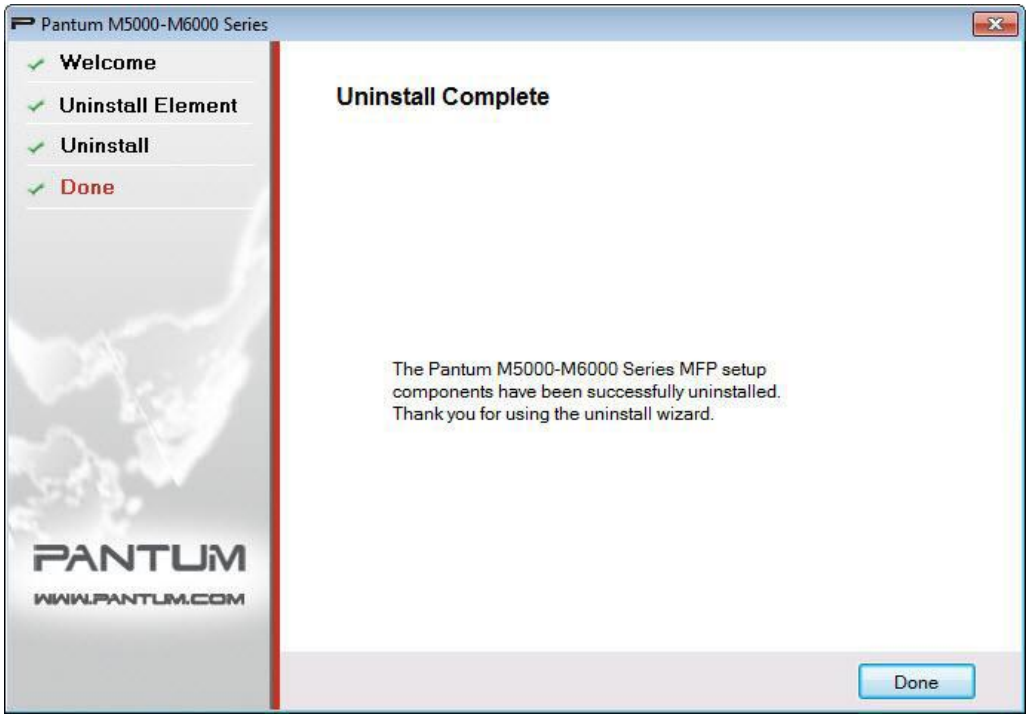
4. Uninstall progress interface

After selecting the components, click Next to enter the uninstallation interface.



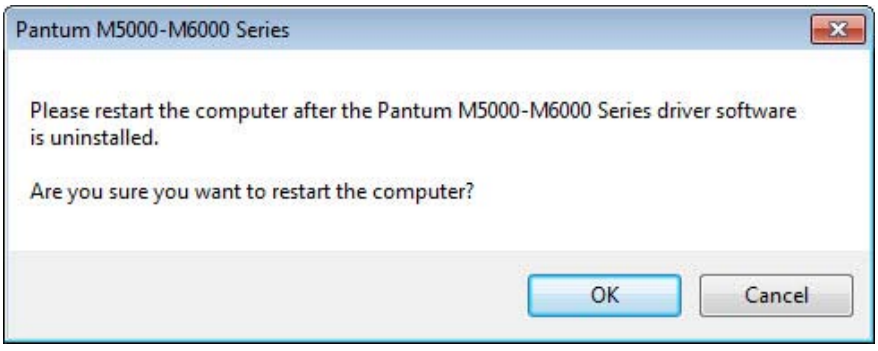
5. Done Interface

When the progress bar has advanced to the end, the Done interface will show.



Click the "Done" button, and the following window will show, prompting you to restart the computer.

Click OK to exit the uninstaller and restart the computer; click Cancel to exit the uninstaller.



Note:

• If you choose not to restart the computer after the uninstallation is complete, an unsuccessful installation or scan abnormality after installation may occur when reinstalling the driver.

• If you uninstall the "Pantum Push Scan Manager" component separately, the window prompting you to restart the computer will not show when you exit the program after the installation completes.

2.3.2 Based on MAC system

2.3.2.1 Introduction

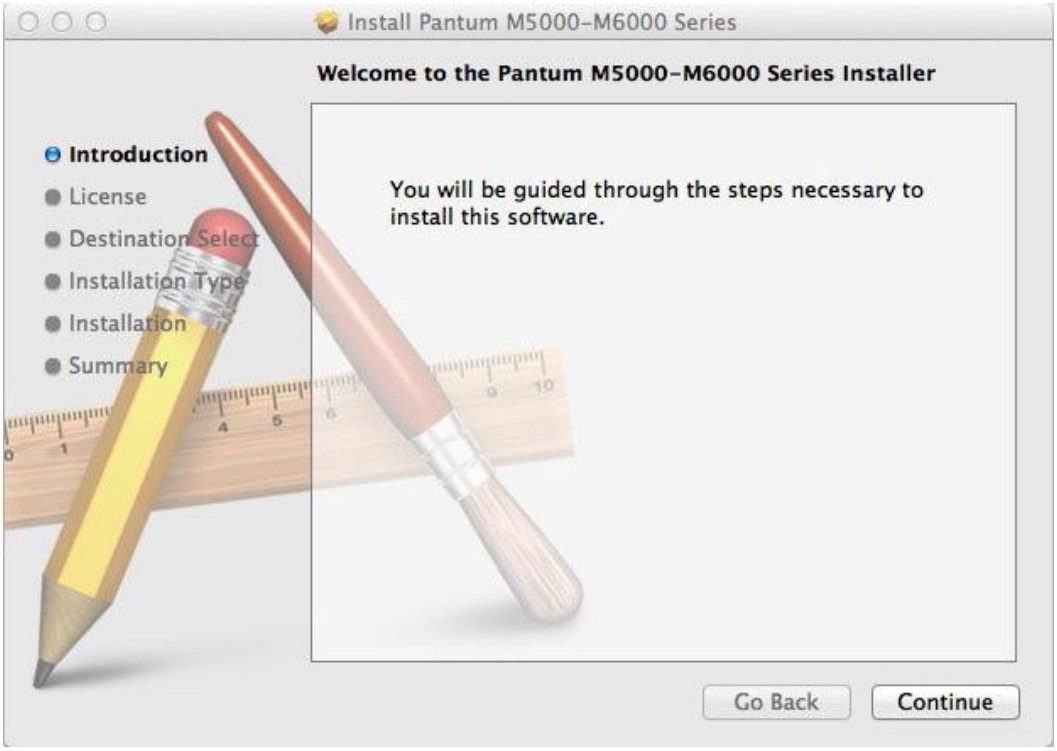
The Mac driver installer uses the PackageMaker software that comes with the Mac system. Installation is basically consistent with the installation of regular Mac software.

The installation is split into the following steps: introduction, license, destination volume, type of installation, installation, and summary.

2.3.2.2 Installation Steps

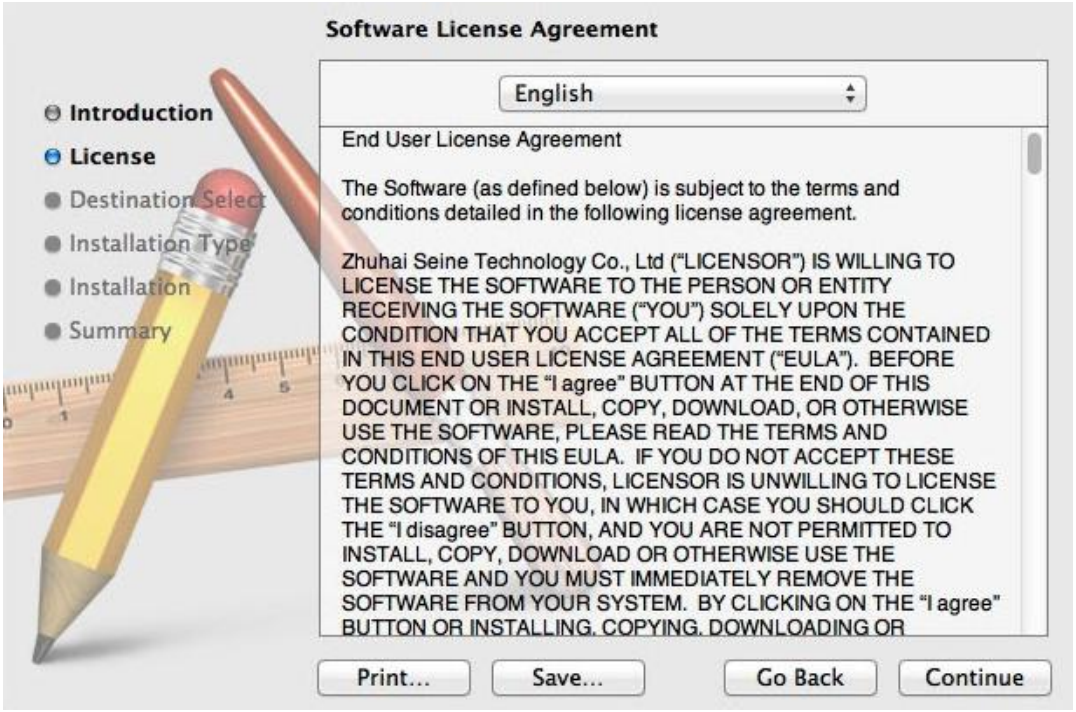
1. Introduction

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

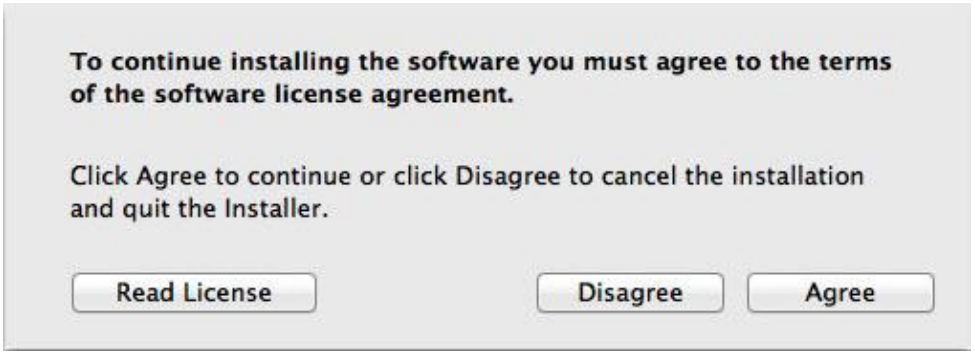


2. License Agreement

Click Continue on the above figure to display the contents of the License Agreement, as shown below:



Click "Continue", and the dialog box that shows "To continue installing the software, you must agree to the terms of the Software License Agreement. " will pop up.



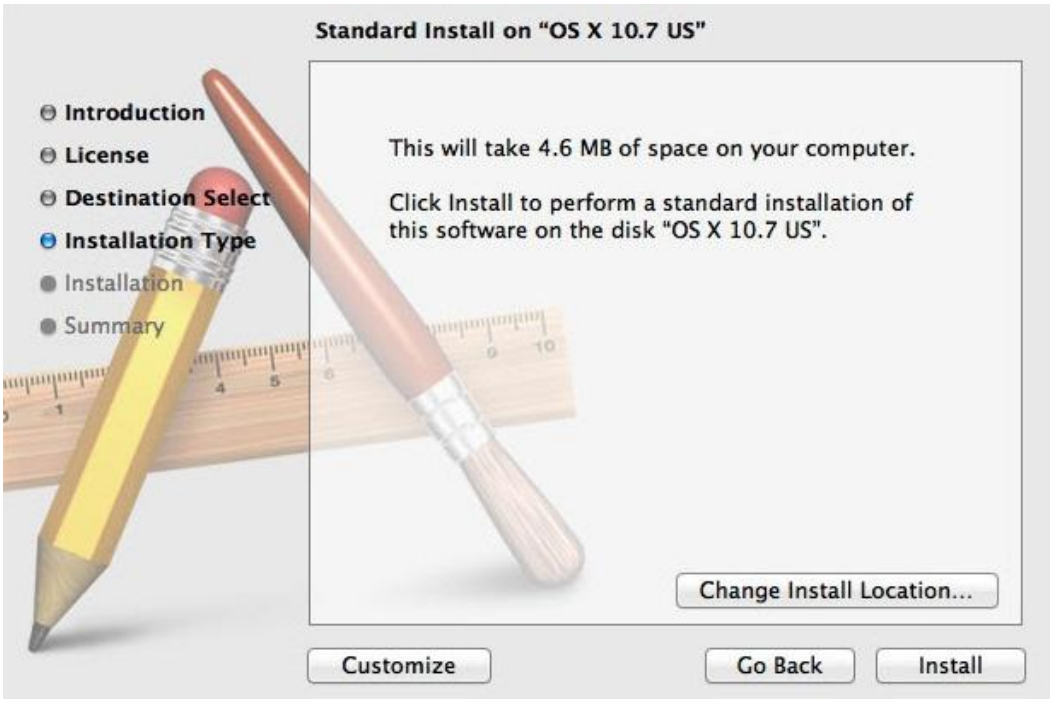
Click Agree to accept the License Agreement and continue the installation.

3. Destination Volume

Click "Continue" on the above figure to select the installation disk. The following view will then display.

4. Installation Type

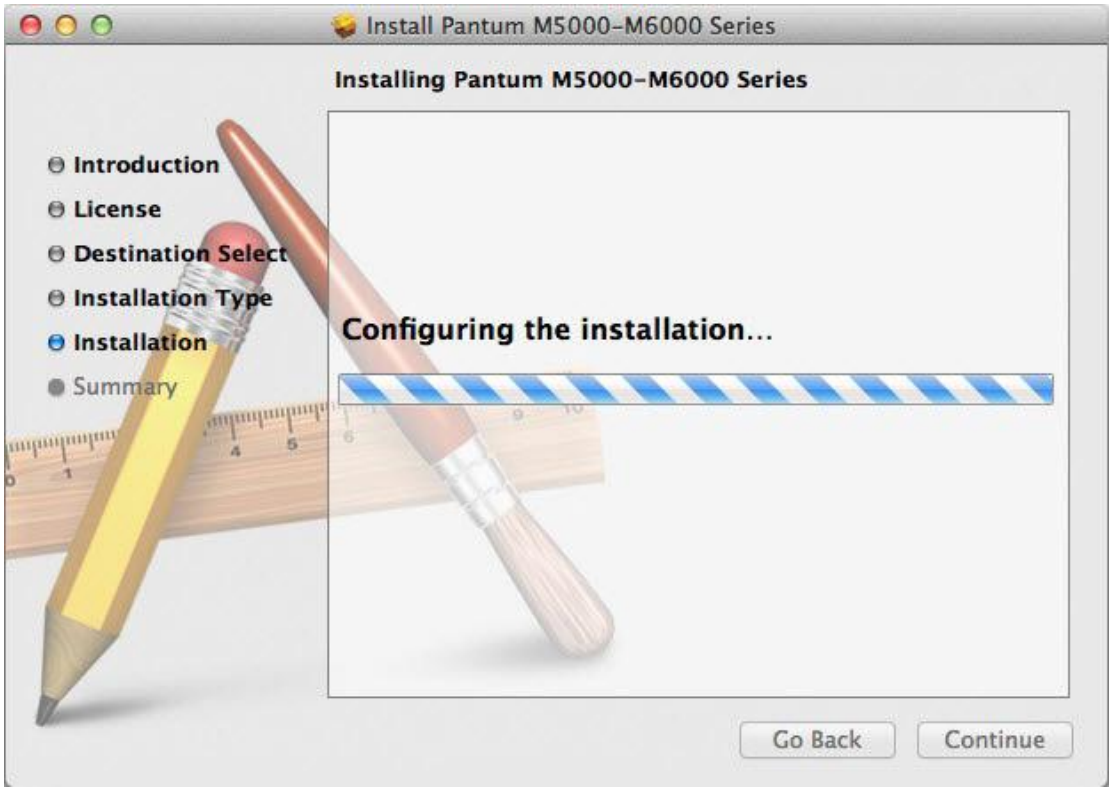
Click Continue on the above figure to display the relevant installation information, as shown below:



Click "Install", and the following prompt box will show. You can only continue with the installation after getting permission from the administrator user.

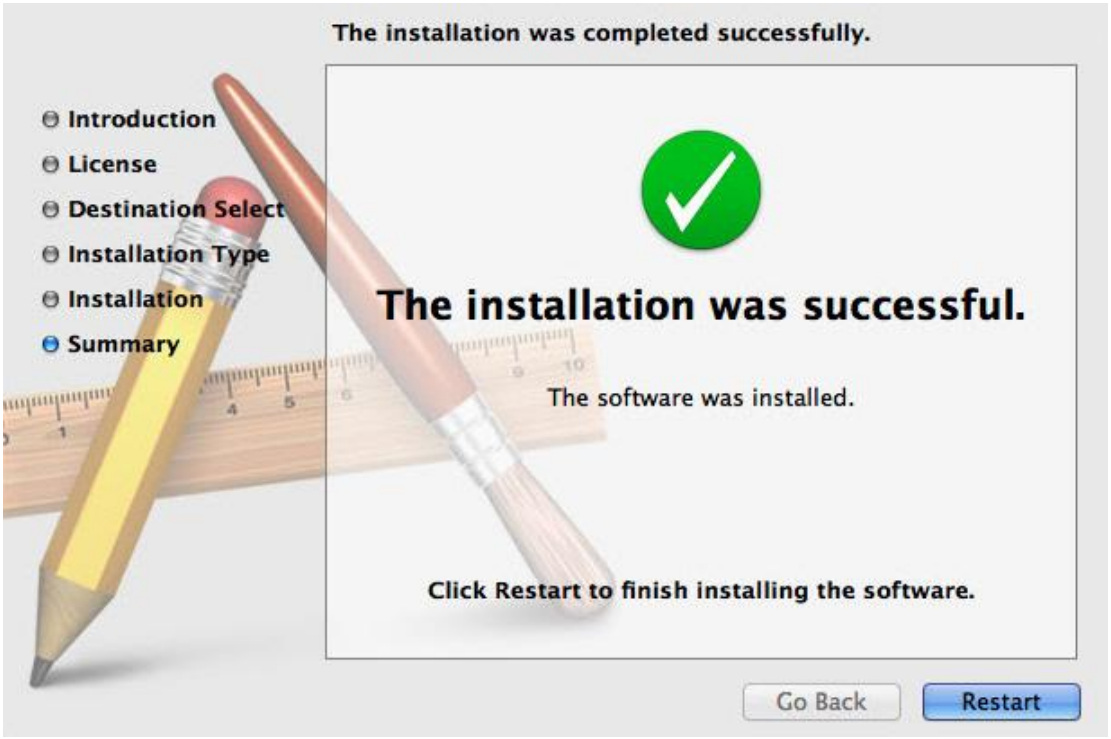
5. Install

Click "Done" after filling in the relevant information on the above figure. Installation progress will display as shown below:



6. Summary

Click "Continue" on the above figure, and the Installation Complete interface will display. Click the "Restart" button to restart the system, as shown below:



2.4 Print a test page

2.4.1 Offline Self-test Page Print

The offline self-test page can be set from the operation panel, using the following steps:

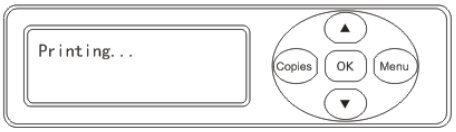
Click the "Menu" button, and this screen will display.

Click the "Direction" button to choose system settings.

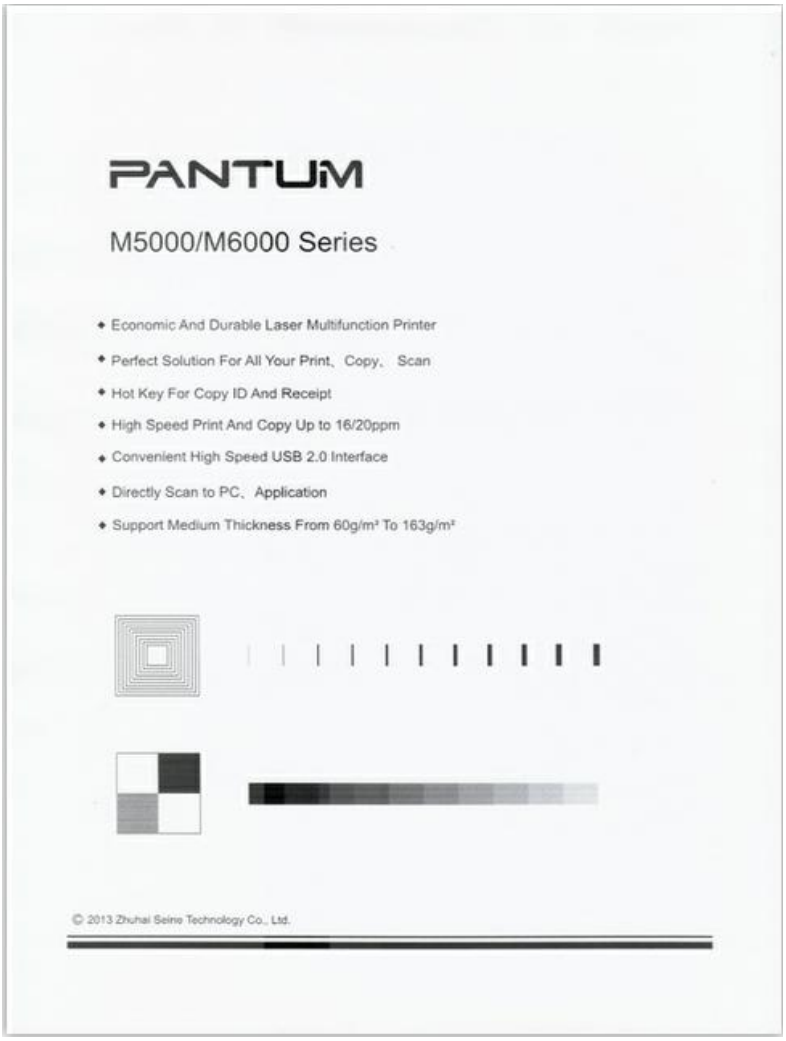
Click the "OK" button, and this screen will display.

Click the "Direction" button to print information page.

Click the "OK" button, and this screen will display.



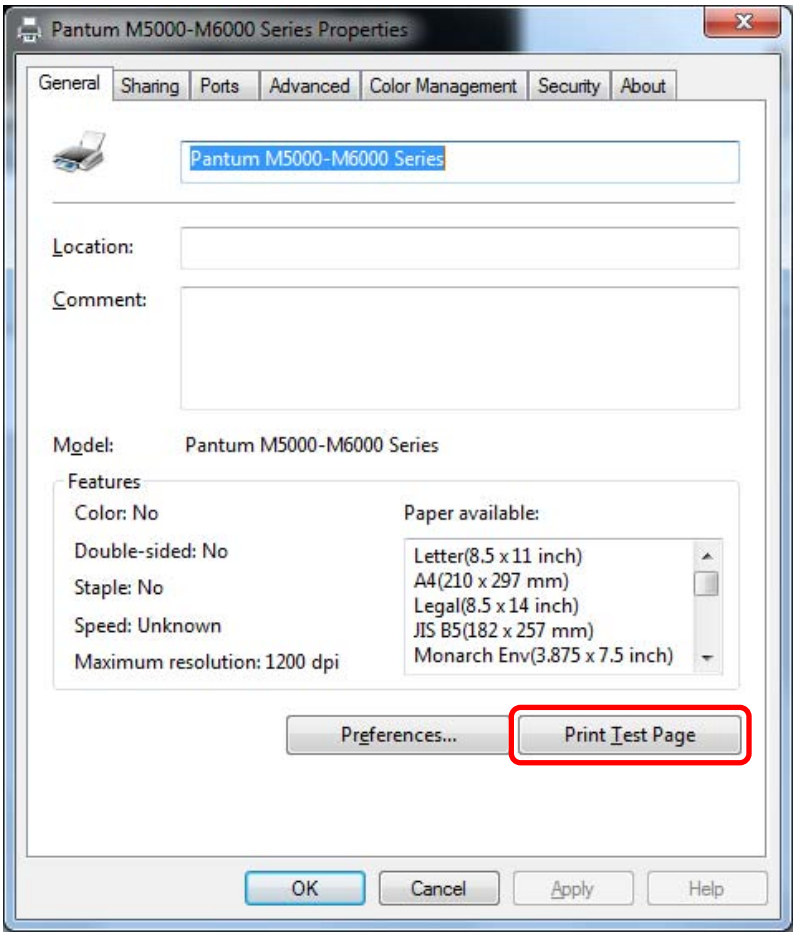
and the following image will be printed out.



2.4.2 Windows Test Print Online

After installing the driver, click the "Start" menu on the computer and select "Printer" and the M5000-M6000 Series Printer icon, as shown in the following figure:

Right-click "Printer Properties", and the following interface will appear:

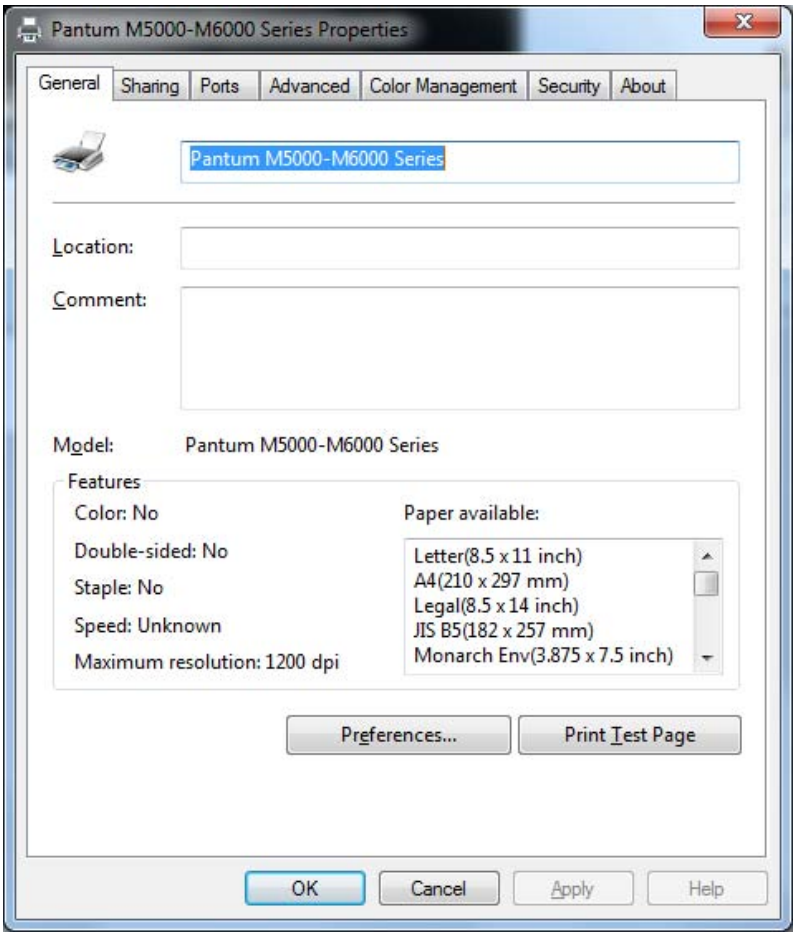


Click on Test Print to print a test page.

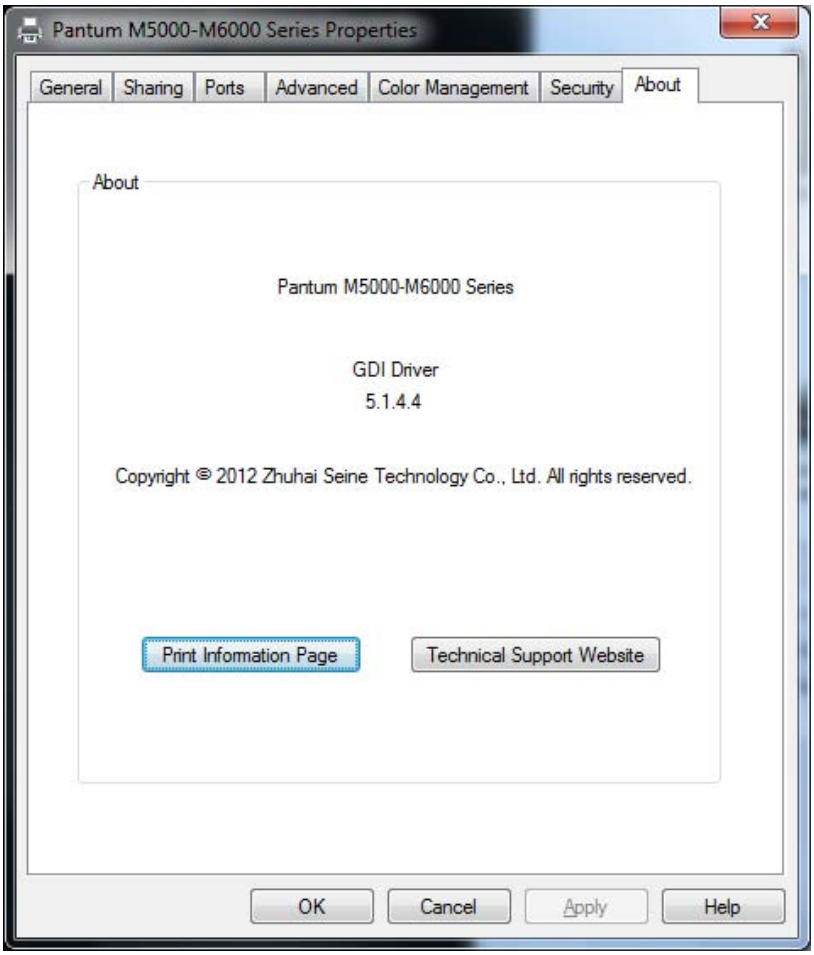
2.4.3 Printing the Online Information Page

After installing the driver, click the "Start" menu on the computer and select "Printer" and the M5000-M6000 Series Printer icon, as shown in the following figure:

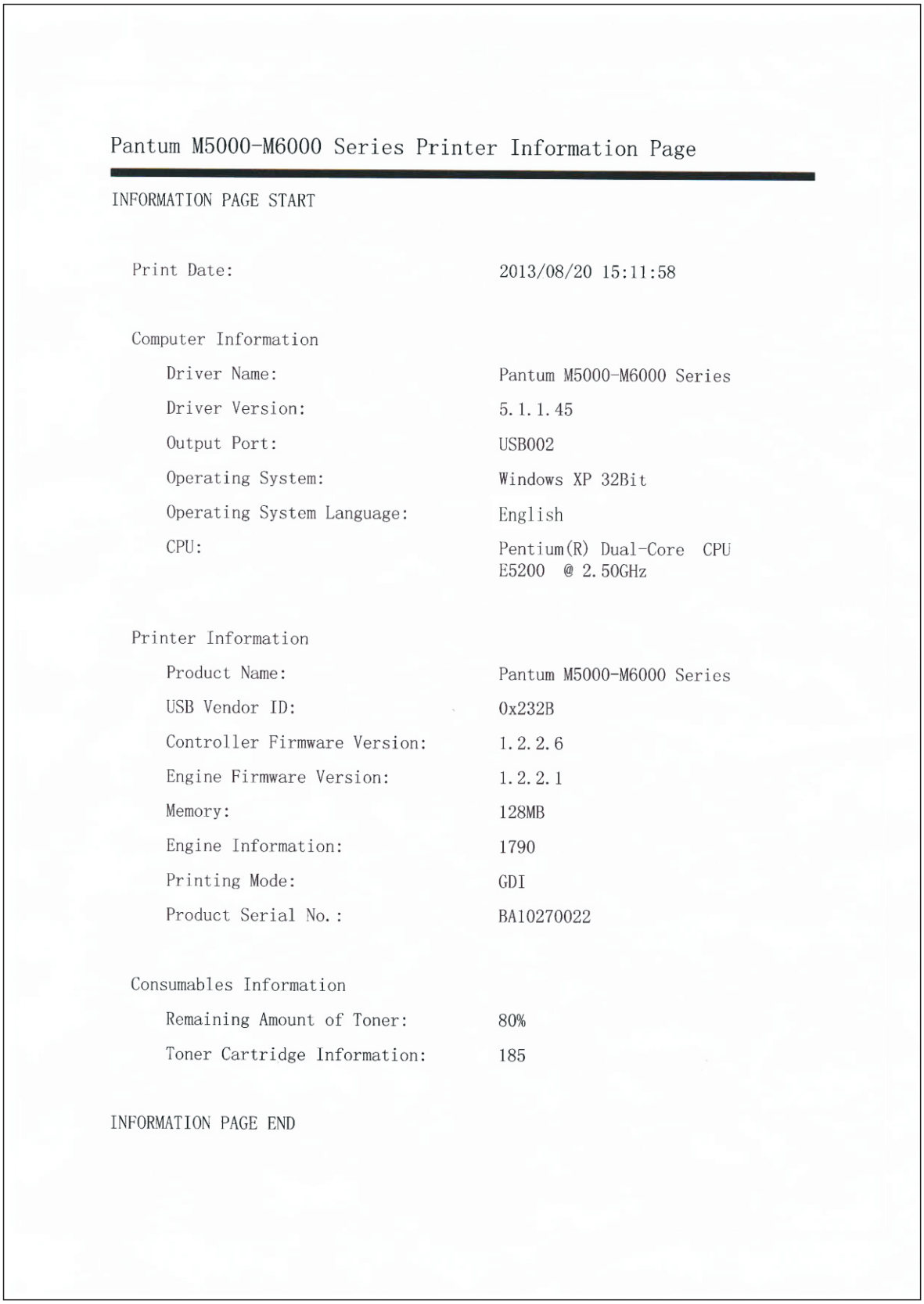
Right-click "Printer Properties", and the following interface will appear:



Select the "About" option, and the following interface will display:



Click the "Information Print" button to print the following information page.



Pantum M5000-M6000 Series Printer Information Page

INFORMATION PAGE START

Print Date:	2013/08/20 15:11:58
Computer Information	
Driver Name:	Pantum M5000-M6000 Series
Driver Version:	5.1.1.45
Output Port:	USB002
Operating System:	Windows XP 32Bit
Operating System Language:	English
CPU:	Pentium(R) Dual-Core CPU E5200 @ 2.50GHz
Printer Information	
Product Name:	Pantum M5000-M6000 Series
USB Vendor ID:	0x232B
Controller Firmware Version:	1.2.2.6
Engine Firmware Version:	1.2.2.1
Memory:	128MB
Engine Information:	1790
Printing Mode:	GDI
Product Serial No.:	BA10270022
Consumables Information	
Remaining Amount of Toner:	80%
Toner Cartridge Information:	185

INFORMATION PAGE END

3 Operating Principles

3.1 Components Summary 3–2
3.2 Mechanical Device 3–3
3.3 Feeder Circuit Diagram 3–4
3.4 Print Principles 3–5
3.4.1 Charging 3–5
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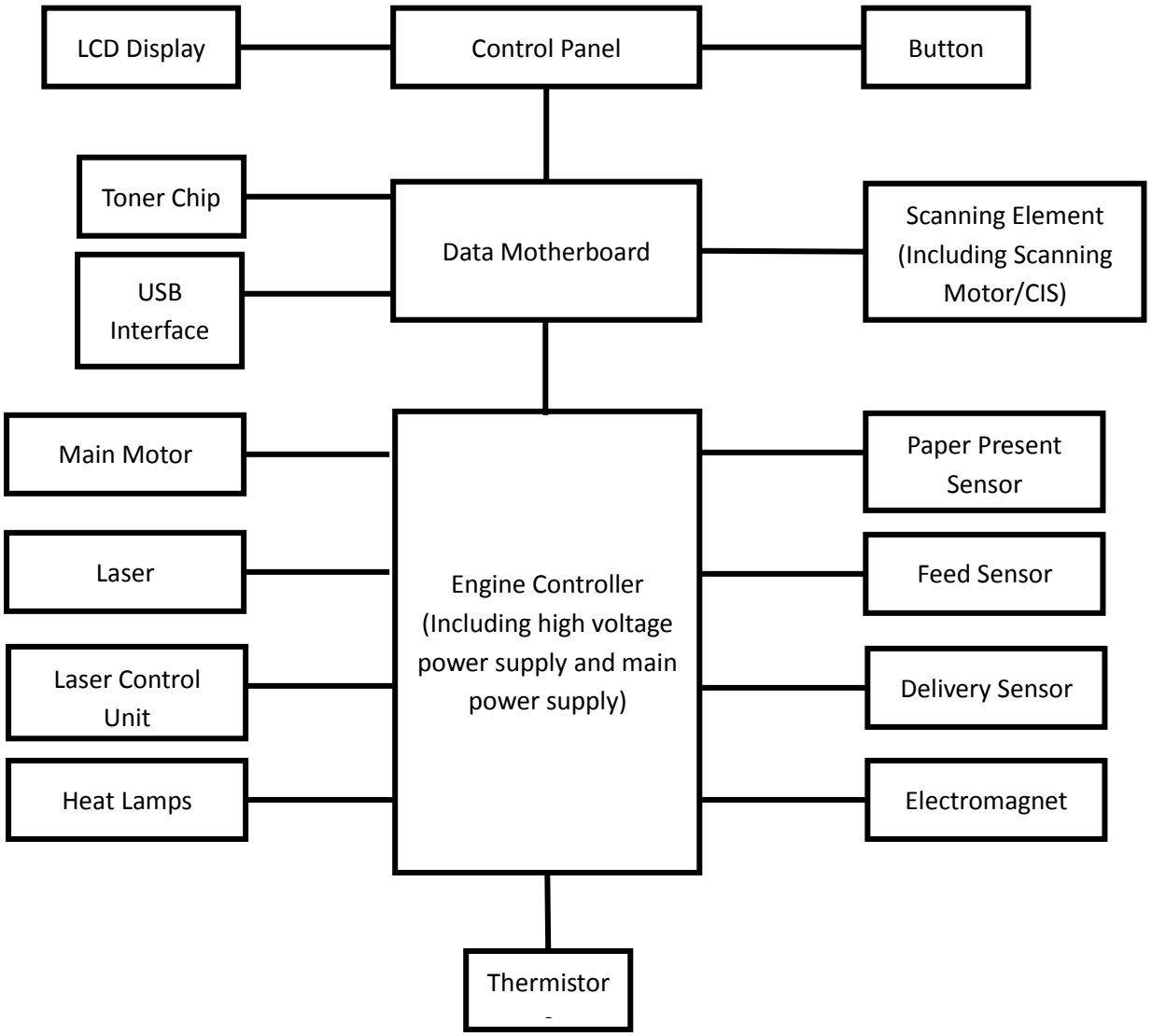
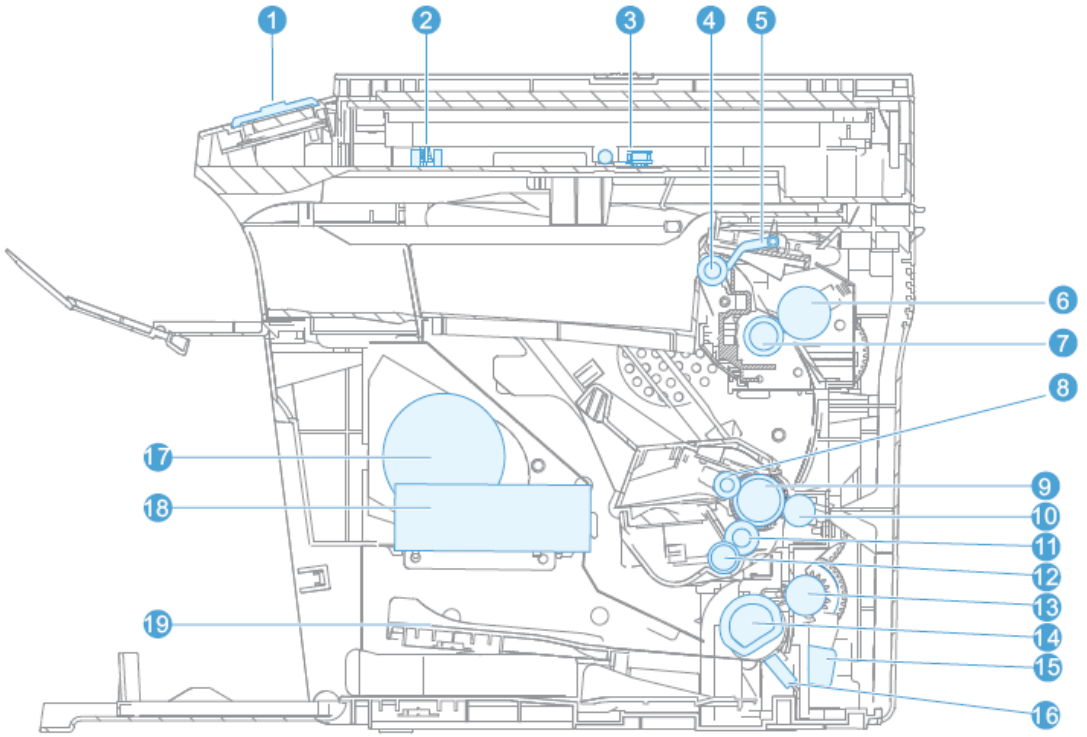
3.4.5 Separation 3–7
3.4.6 Fusing 3–7
3.4.7 Cleaning 3–7
3.5 Scanning/Copying Principles 3–8

3.1 Components Summary

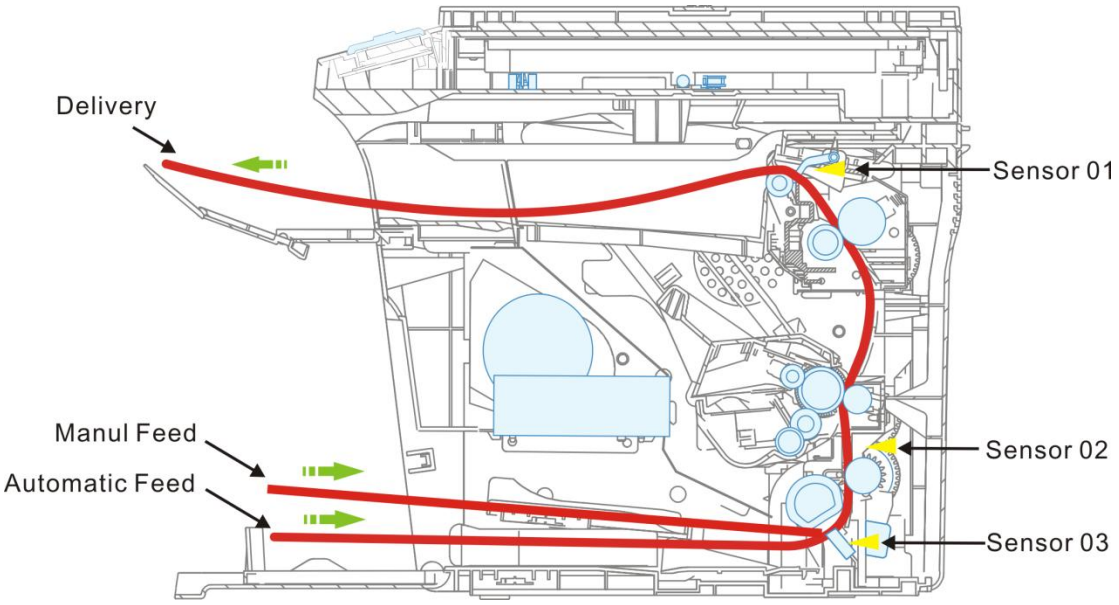


3.2 Mechanical Device



NO	Name
1	Control Panel
2	Scanner Home Position Sensor
3	Scanning Head
4	Discharge Roller
5	Delivery Sensor
6	Heating Roller
7	Pressure Roller
8	Charge Roller
9	OPC
10	Transfer Roller
11	Developing Roller
12	Supply Roller
13	Transporter Roller
14	Pickup Roller
15	Electromagnet
16	Separation Pad
17	Motor
18	Laser
19	Manual Feed Unit

3.3 Feeder Circuit Diagram



- Sensor 01: Delivery sensor

When the sensor is open, the paper is being discharged. When the sensor is closed, paper discharge will be complete.

- Sensor 02: Feed sensor

The sensor is used to detect the length of paper. If the tested length exceeds the paper size range, the printer will jam.

- Sensor 03: Paper presence sensor

The sensor is used to detect whether there is paper in the paper tray. When there is paper in the tray, it is closed.

Note:

For paper specification ranges, please refer to 1.2.3 Print Specifications

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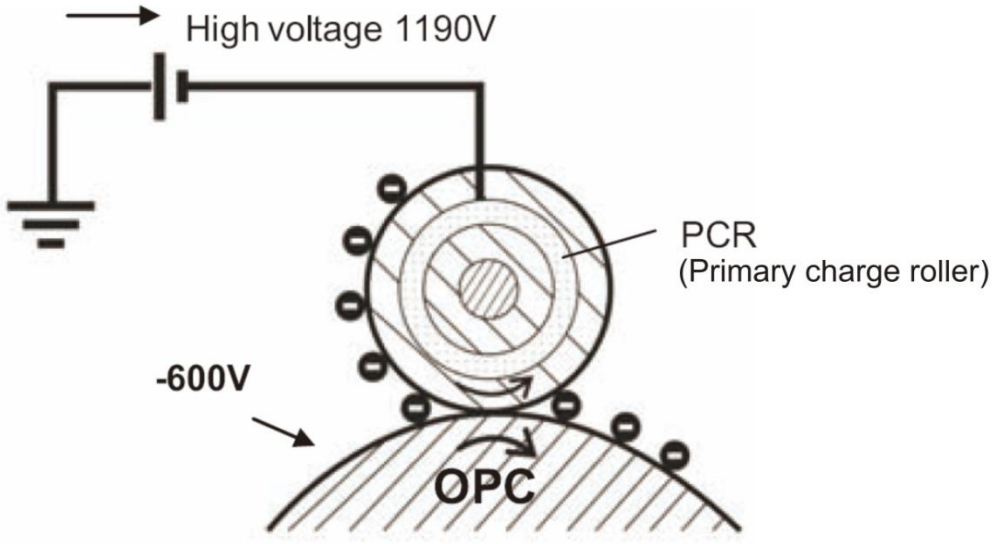
3.4 Print Principles

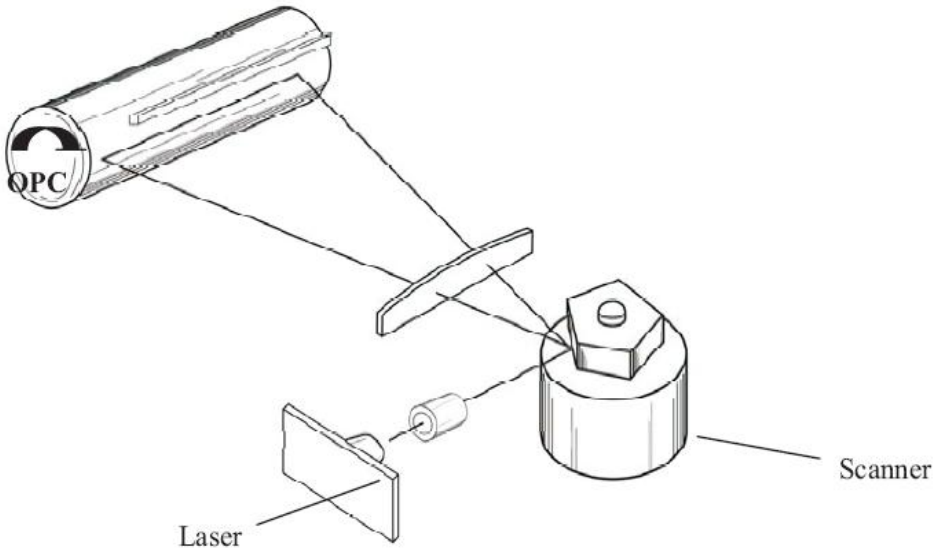
3.4.1 Charging

Using DC high voltage, the steel shaft of the charging roller will evenly charge the surface of the OPC with a negative 600V charge.



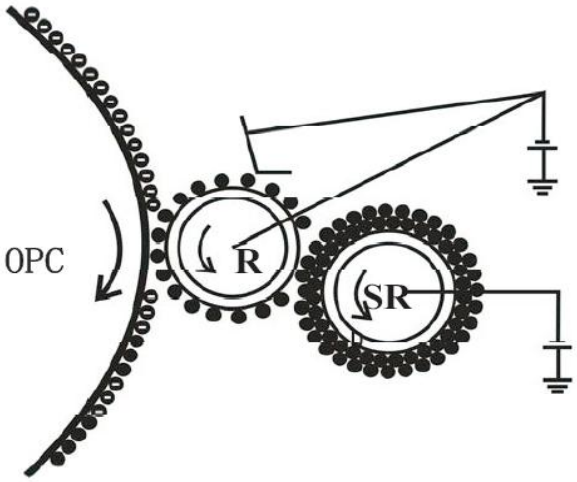
3.4.2 Exposure

When the light conductor is scanned by the laser beam, the irradiated portion meets the conductive layer of the photosensitive drum. This results in the removal of the electric charge. Conversely, the non-irradiated surface retains its electric charge, creating a potential difference image. This is often referred to as the "electrostatic latent image."



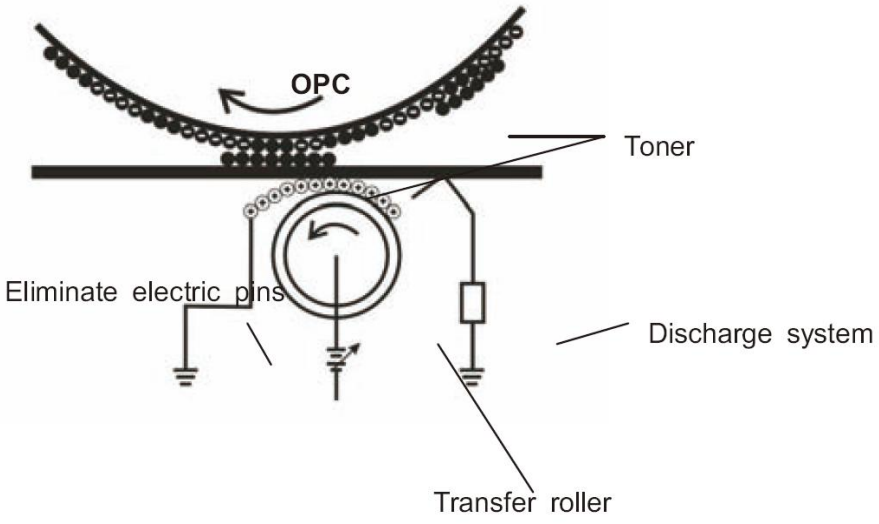
3.4.3 Development

When the toner has been moved through under friction between the Developing Roller (DR) and Supply Roller (SR), the surface of the Developing Roller will be covered with a layer of charged toner. After exposure, as the OPC goes through the DR, it will transmit the developing voltage to the DR. This voltage is greater than that of the exposed portion of the OPC and less than that of the unexposed portion. Toner will be attracted to the exposed area of the OPC due to the electrostatic field between the OPC and DR, and a visible image will form.



3.4.4 Print Transfer

When the paper moves through the interlayer between the Transfer Roller (TR) and the photosensitive drum (OPC), the TR will gain high pressure opposite to the toner charge polarity. The toner will therefore be affected by the TR's electrical field, transferring toner to the surface of the paper. After moving through the TR, the back of the paper is positively charged. This causes the toner, separated by the OPC, to be attracted to the paper.

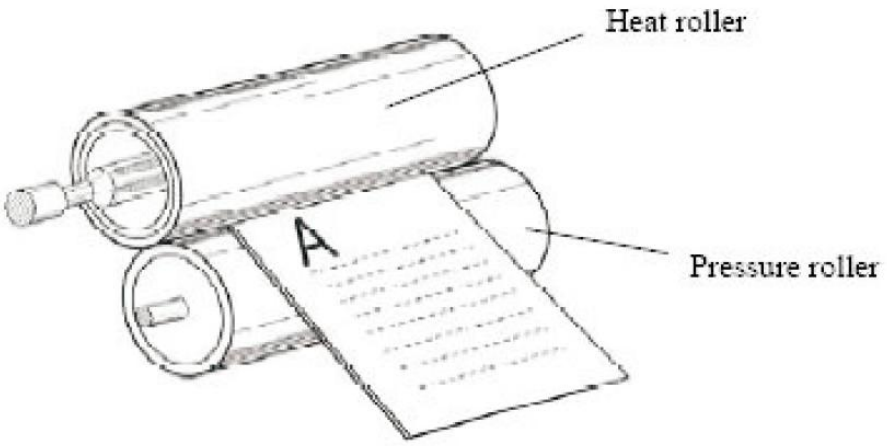


3.4.5 Separation

Paper that has moved through print transfer will be positively charged. When the paper leaves the paper guide next to the Transfer Roller, the zigzag separator, which should be negatively charged, ~1-2mm from, and parallel with the paper, starts working. Gravity will then cause the paper to separate from the OPC.

3.4.6 Fusing

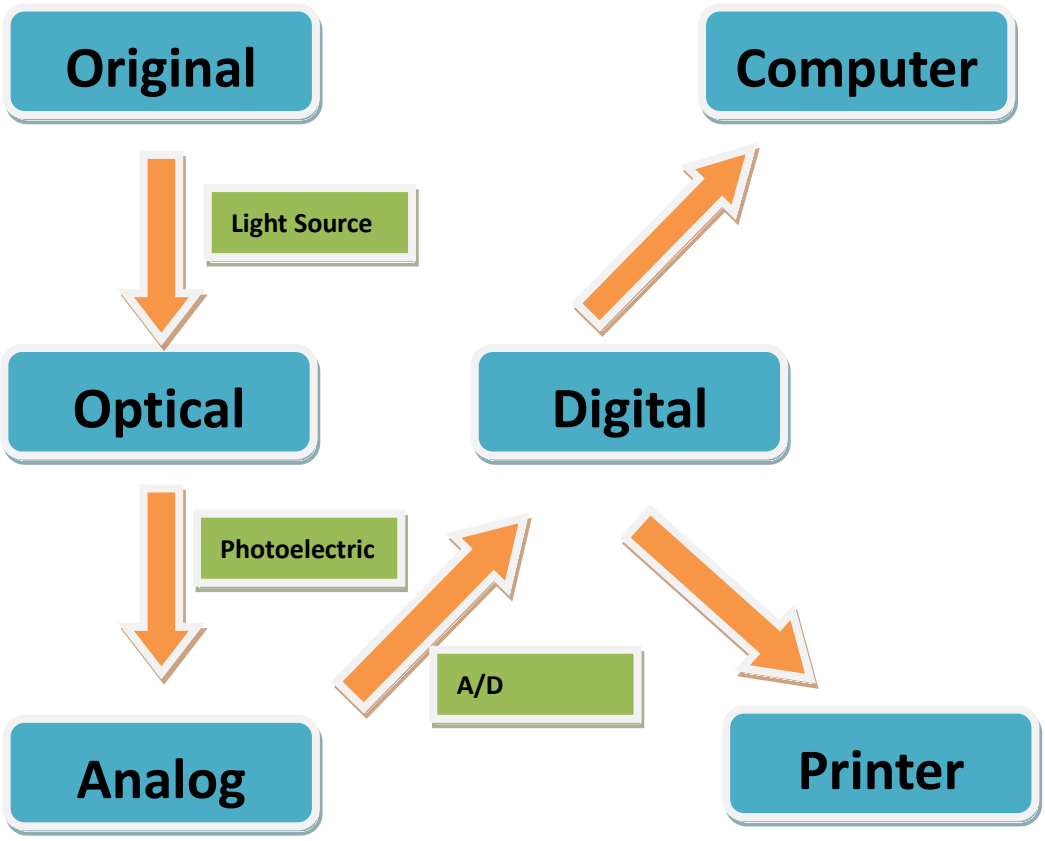
When the paper moves onto the heating roller, the toner is melted at a specific temperature. The Pressure Rollers (PR) then press the toner into the paper fibers, curing it to the paper. Note: If the fusing temperature is too high or too low, toner fusing results will be affected.



3.4.7 Cleaning

As the toner on the surface of the OPC is not completely transferred to the paper, it must then be cleaned by a blade before the next round of the imaging process.

3.5 Scanning/Copying Principles



Note:

The above A / D converter, i.e. the analog to digital converter (ADC), is an electronic component that converts an analog signal into a digital signal.

4 Disassembly and Installation

4.1 Parts 4–2
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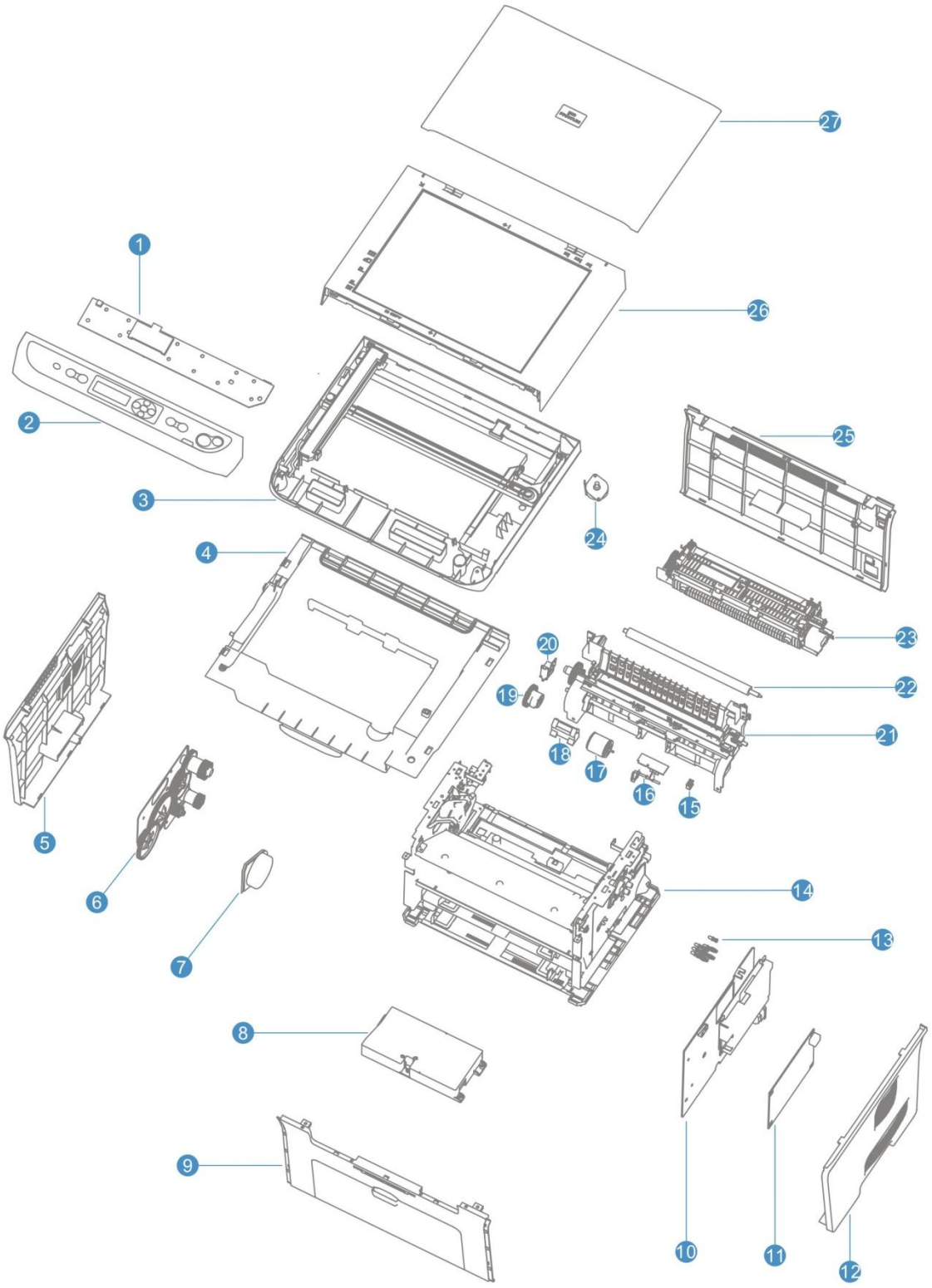
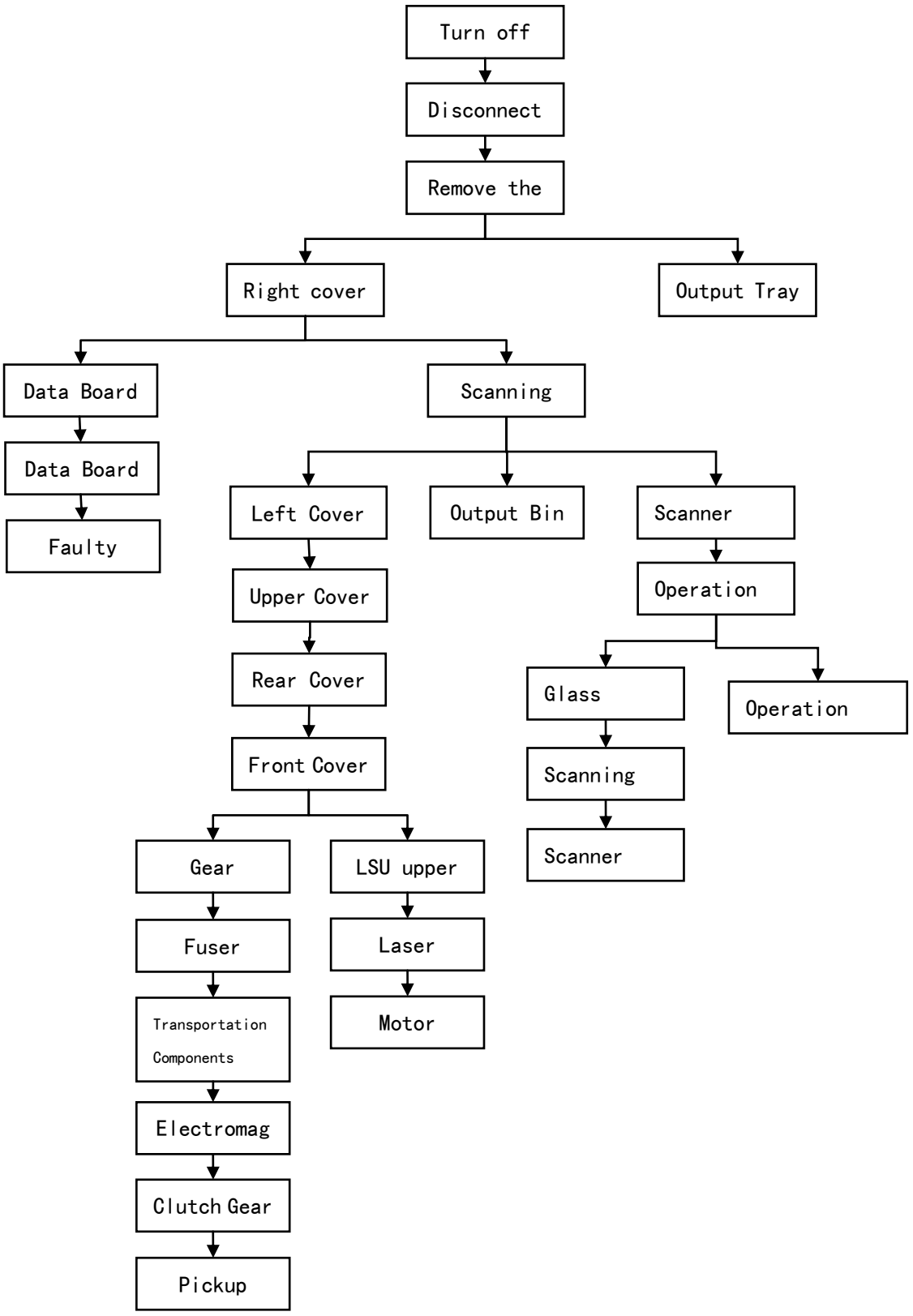
4.1 Parts



Serial Number	Name
1	Operation Panel Board
2	Operation Panel
3	Scanning Head
4	Upper Cover Components
5	Left Cover
6	Gear Assembly
7	Main Motor
8	Laser
9	Front Cover
10	Engine Board
11	Data Board
12	Right Cover
13	Conductive Contact
14	Frame
15	Right Transfer Roller Bearings
16	Paper Sensor
17	Pickup Roller
18	Separator
19	Clutch Gear
20	Electromagnet
21	Transportation Framework
22	Transfer Roller
23	Fuser Component
24	Scanner Motor
25	Rear Cover
26	Glass Platen
27	Scanner Cover

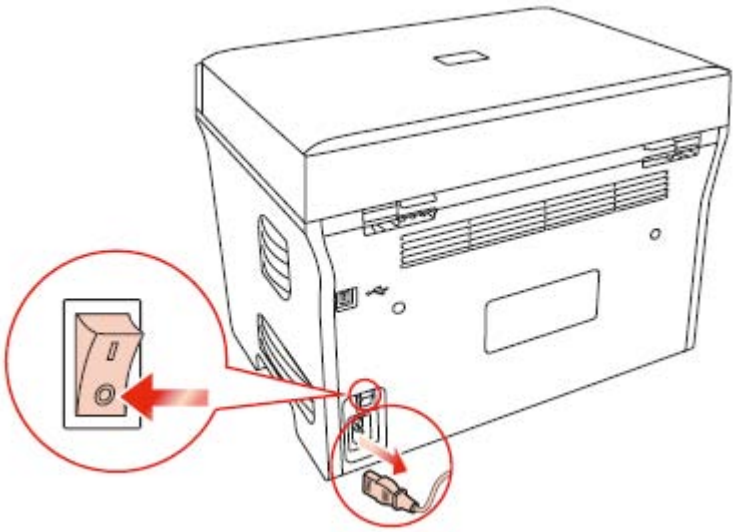
4.2 Step-by-Step Disassembly Diagram



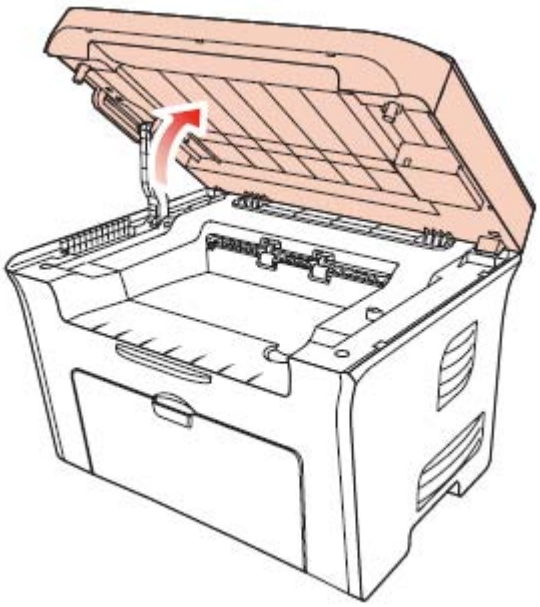
4.3 Disassembly Steps

4.3.1 Preparation for Disassembly

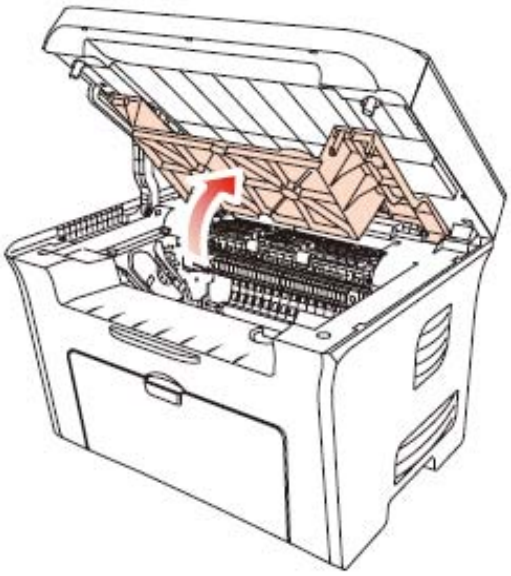
1. Before disassembling, please disconnect the printer and unplug the power cable.



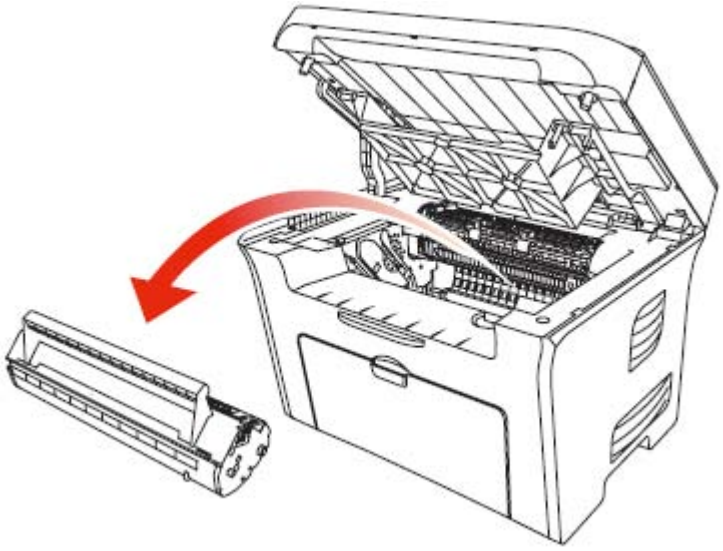
2. Remove the paper and close the paper tray and the output tray.
3. Remove the cartridge.
   a) Raise the scanning platform until it is locked.



b) Open the output bin.



c) Remove the toner cartridge along the guides.



Note:

Place the cartridge into a black plastic bag or thick paper after removal to avoid damaging the photosensitive drum by exposing it to light.

4.3.2 Right cover and Left cover

1. Lift the scanning platform and remove the screws.

2. Pry open the jaws, as shown in the figure, and remove the right cover.

3. Remove the left cover in the same way as the right cover.

4.3.3 Scanning Platform

1. Remove the right cover and disconnect the scanner cable, LCD cable, and panel board cable.

2. Separate the scan bracket and the scanning platform.

3. Remove the scanning platform.

4.3.4 Upper Cover, Rear Cover, and Front Cover

1. After removing the scanning platform, you can directly remove the output bin.

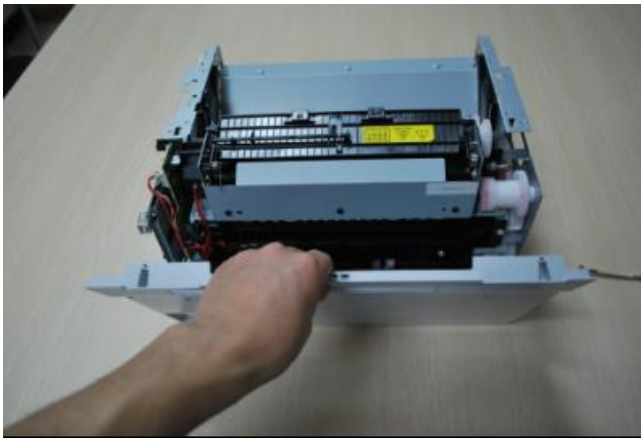
2. Remove the components of the delivery tray.

3. After removing the output bin, take out the upper cover screws.

4. Remove the upper cover.

5. After removing the upper cover, take out the rear cover screws.

6. Remove the rear cover.



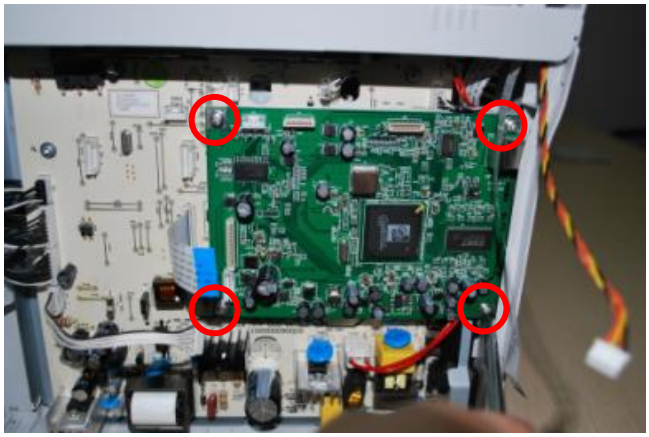
7. After removing the upper cover, take out the front cover screws.

8. Remove the front cover.

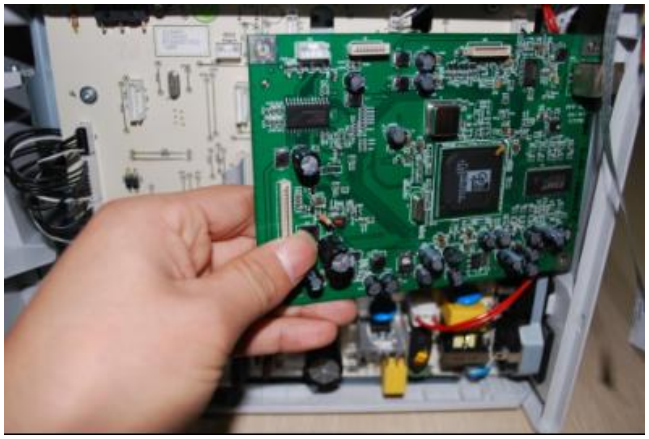
4.3.5 Data Board

1. After removing the right cover, unplug the cable, as shown in the figure.

2. Remove the screws.



3. Remove the board

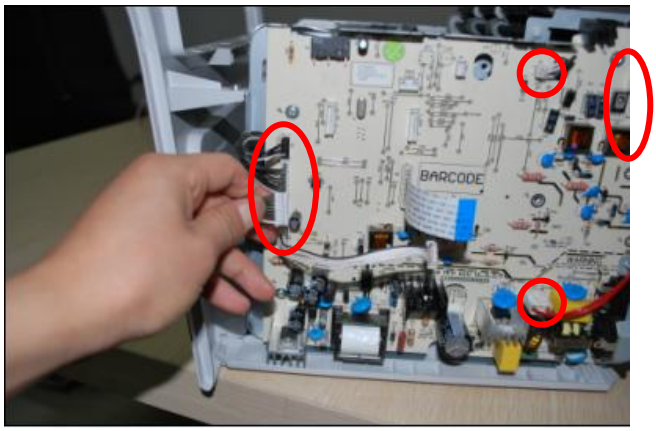


4.3.6 Faulty engine board

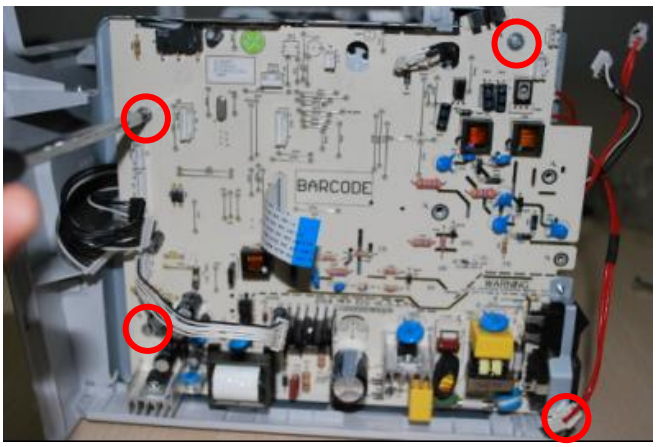
1. After removing the data board, take off the right cover according to Section 4.3.5.
2. Remove fixing plate screws from the data board.

3. Remove the data board fixing plate.

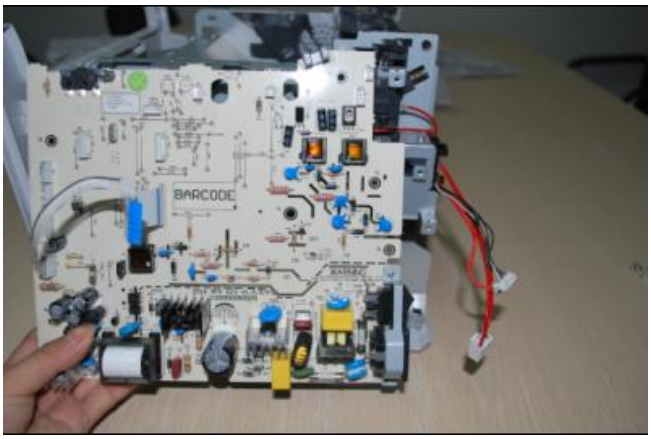
4. After removing the data board fixing plate, unplug the cable, as shown in the figure.



5. Remove the engine board screws.



6. Remove the engine board.



Note:

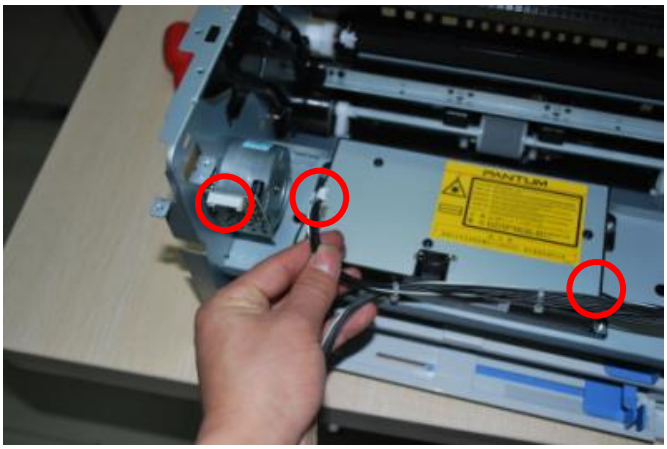
- After removing the engine board, there will be eight conductive cylinders. Please keep these safe to avoid losing them.
- Ensure the conductive cylinders are replaced correctly during installation, as one of them is an OPC and different from the other cylinders.

4.3.7 Laser

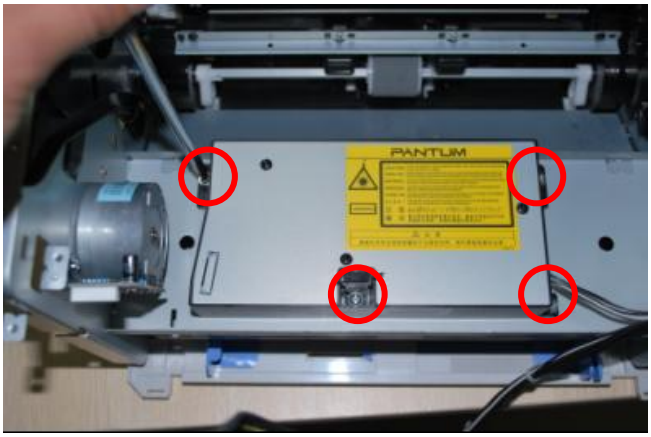
1. As in Session 4.3.4, take out the fixing screws after removing the upper cover, as shown in the figure.

2. Remove the shield on the laser.

3. Unplug the main motor and the laser cable.



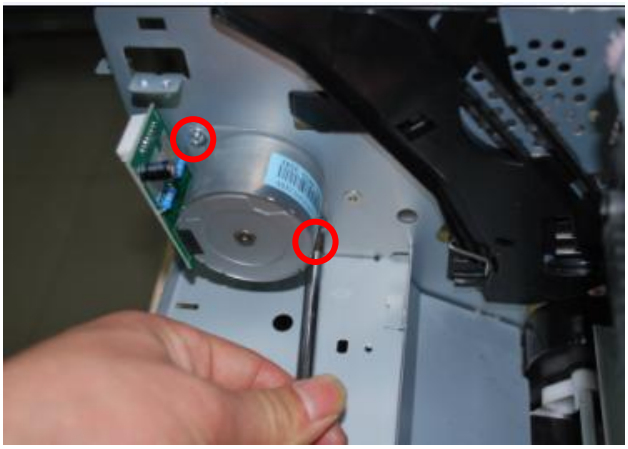
4. After disconnecting the cable, remove the laser fixing screws.



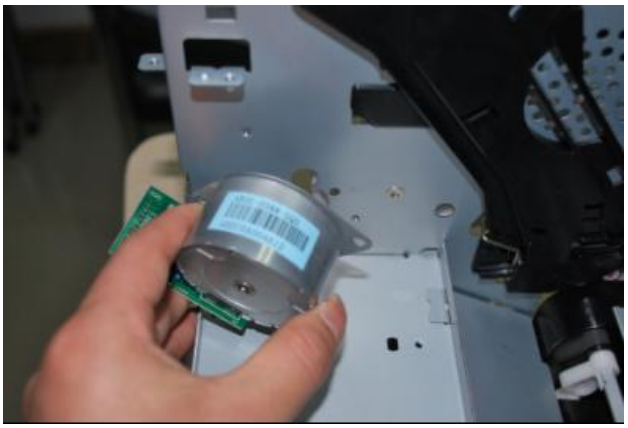
5. Remove the laser.

4.3.8 Main Motor

1. After removing the laser, take out the motor fixing screws.

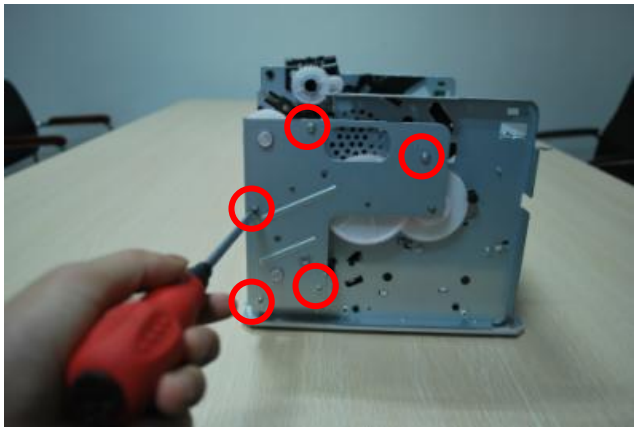


2. Remove the motor.



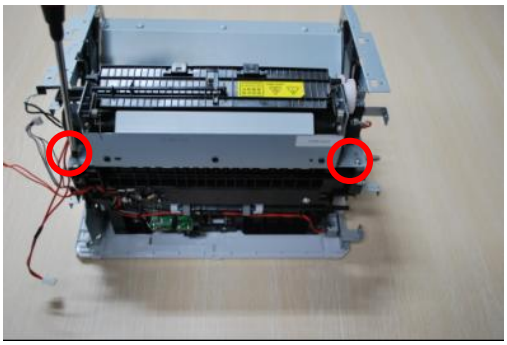
4.3.9 Fuser Component

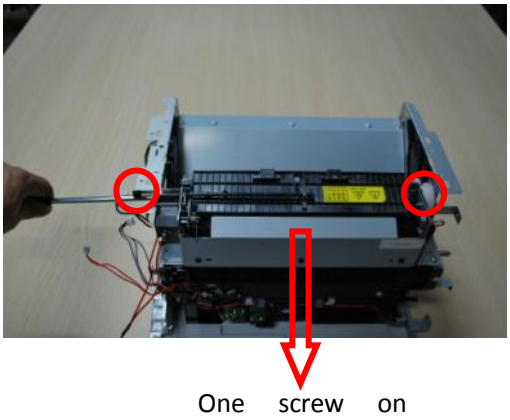
1. After removing the exterior components, take out the gear cover screws.



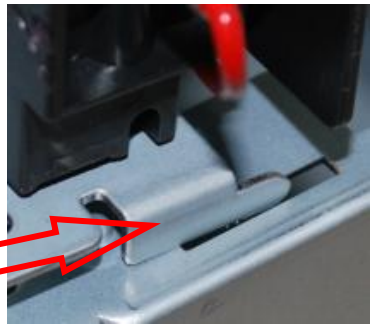
2. Remove the gear cover and the gear assembly.

3. Unscrew the fuser fixing screws.



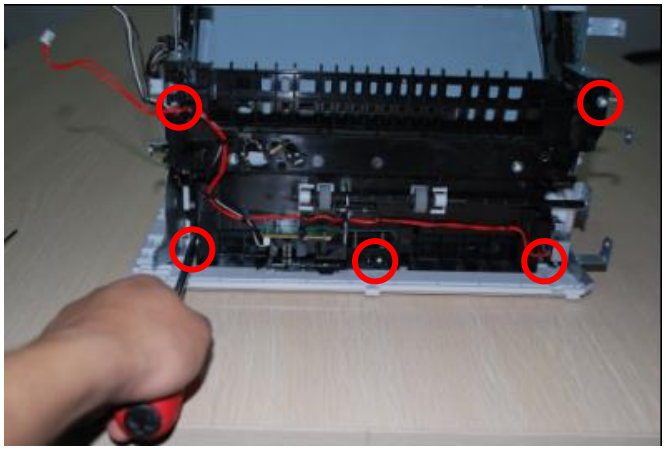


4. Remove the fuser.

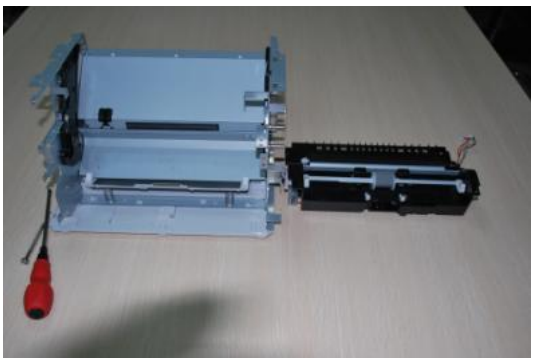


4.3.10 Transportation Components

1. After removing the fuser components, take out the transportation components fixing screws.

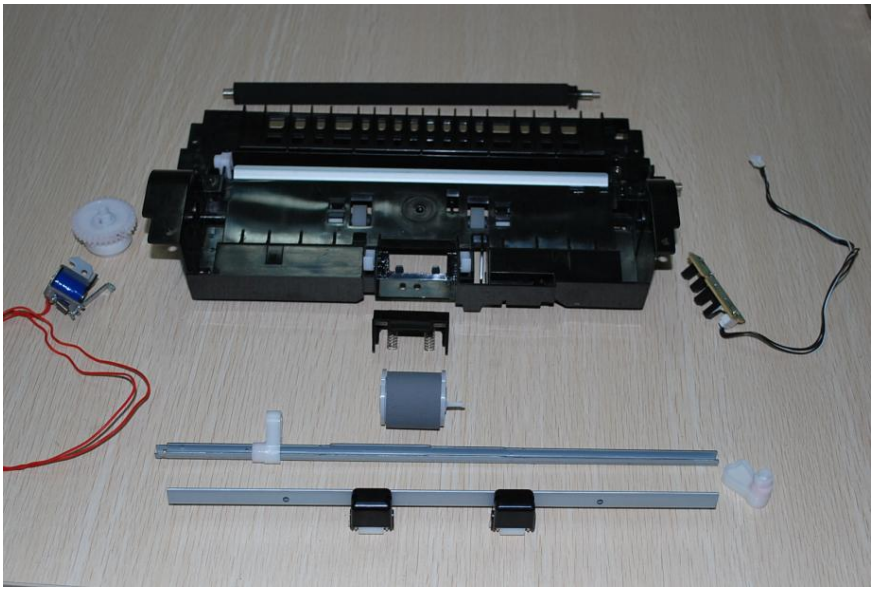


2. Remove the transportation components.

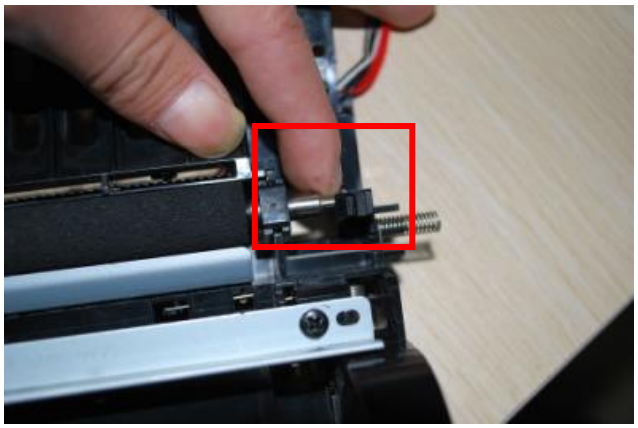


4.3.11 Transportation Components Disassembly

1. Transportation Components Disassembly Figure

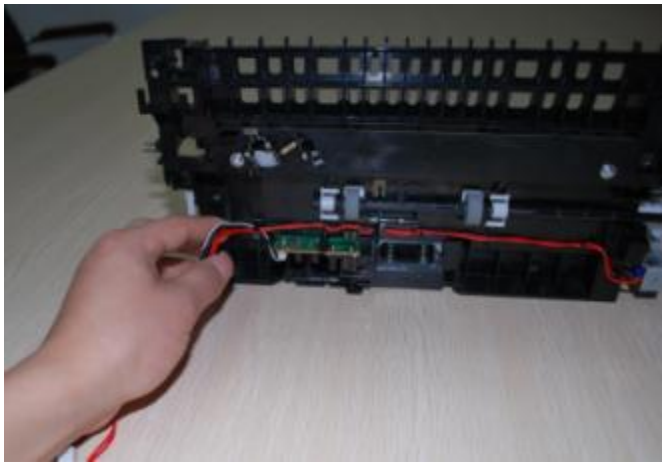


2. After removing the transportation components, open the claw on the right side of the transfer roller.

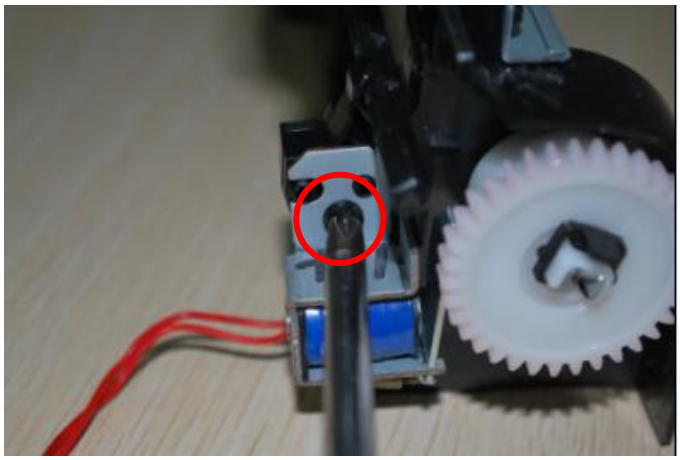


3. Remove the transfer roller.

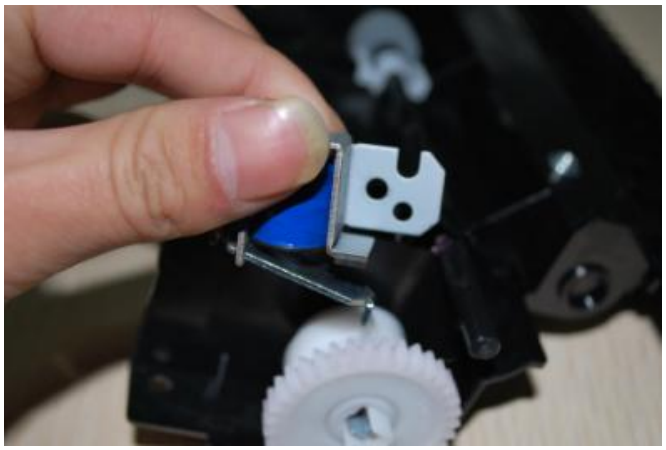
4. Take out the induction substrate and the electromagnet cable from the card slot.



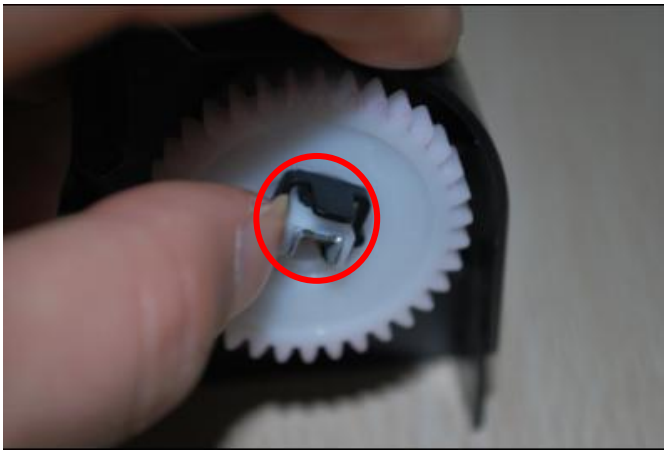
5. After that, remove the electromagnet screws.



6. Remove the electromagnet.

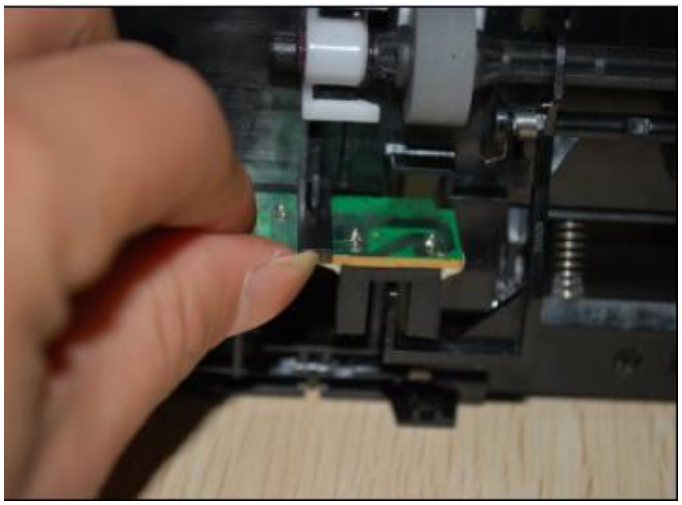


7. Remove the clutch gear retaining clips.

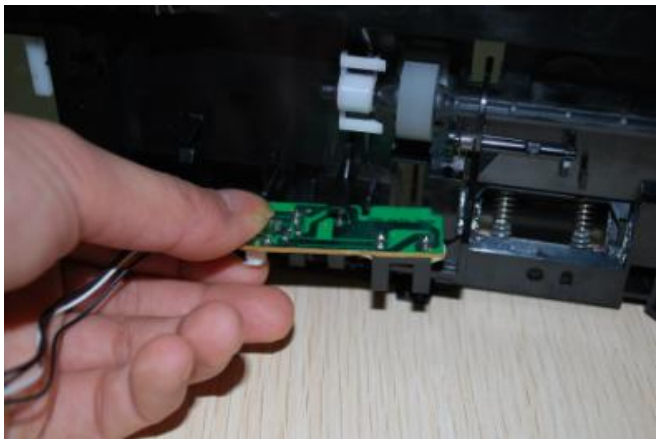


8. Remove the clutch gear.

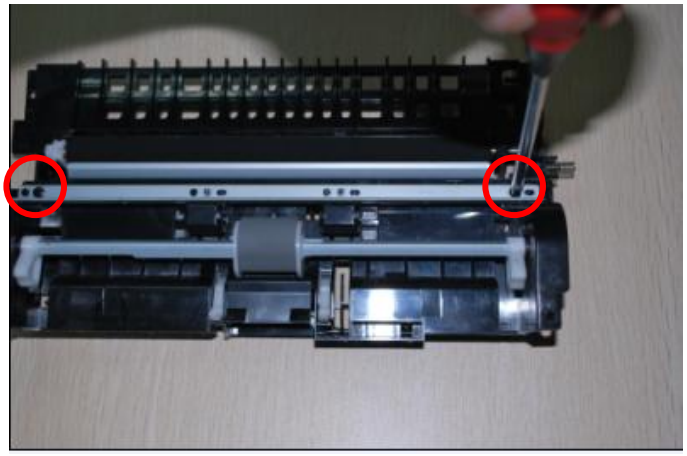
9. Pull open the induction substrate fixing jaw.



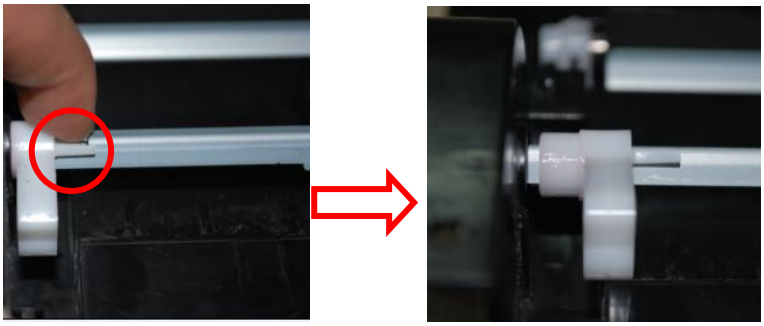
10. Remove the induction substrate.



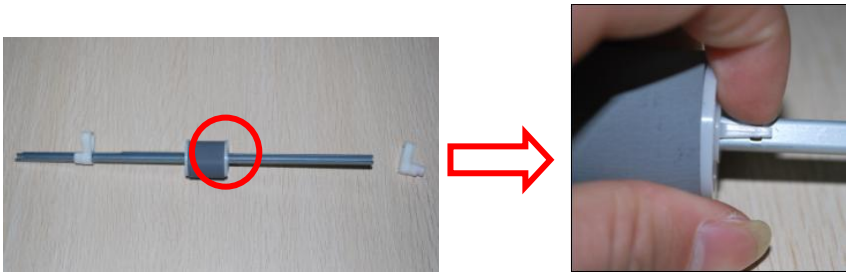
11. Remove the transport bracket screws, then take out the transport bracket.



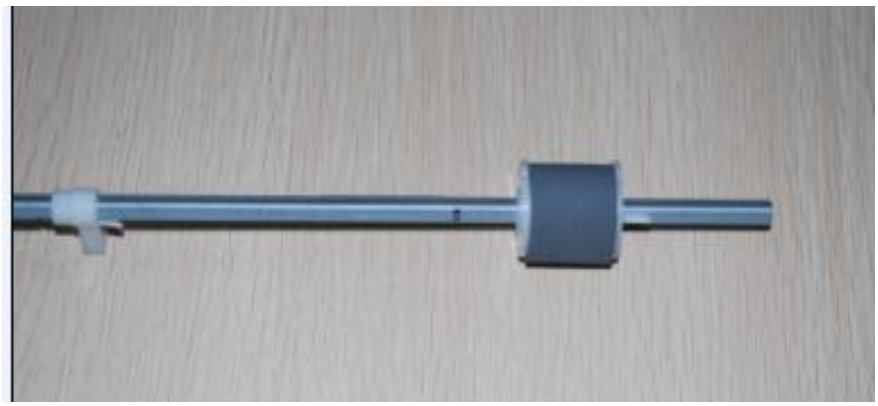
12. Release the fixed jaw on the cam on the left side of paper shaft assembly, push the cam to the right, and remove the paper feed shaft assembly.



13. Remove the right cam and loosen the pickup roller fixing jaw.



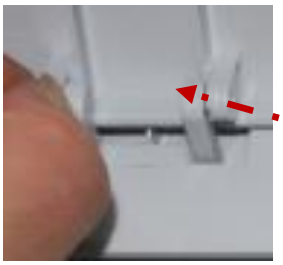
14. Pull out the pickup roller.



4.3.12 Scanning Platform Disassembly

1. Scanning Platform Disassembly Figure

2. After removing the scanning platform, release the scanner cover connectors and take off the scanner cover.

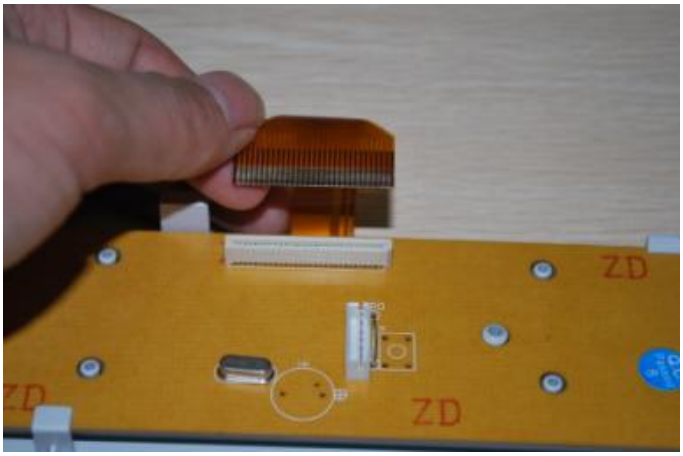


3. Remove the operation panel fixing screws.

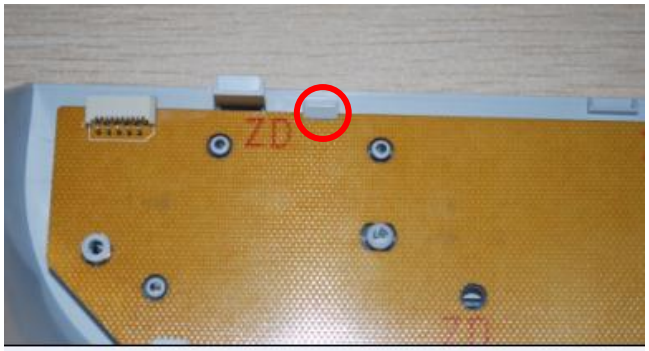
4. Remove the screws and loosen the jaws, as shown in the figure.

5. Unplug the cable, as shown in the figure, and remove the operation panel.

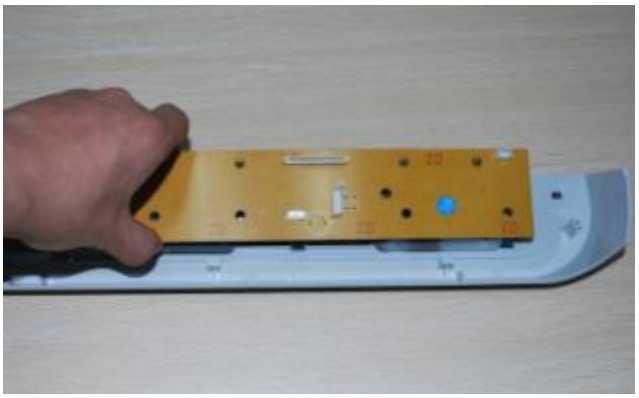
6. Unplug the LCD cable.



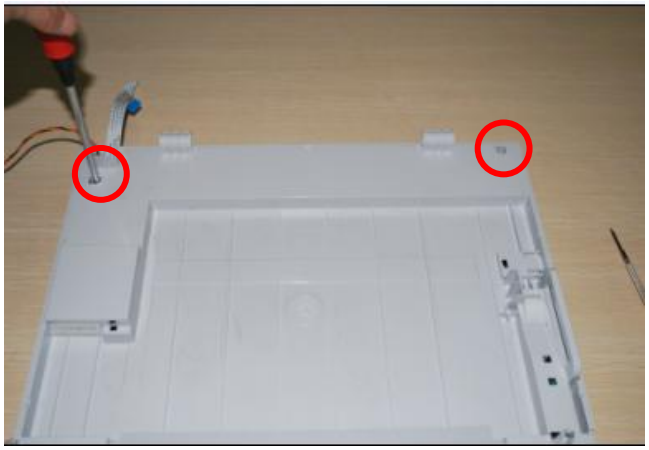
7. Loosen the three fixing jaws.



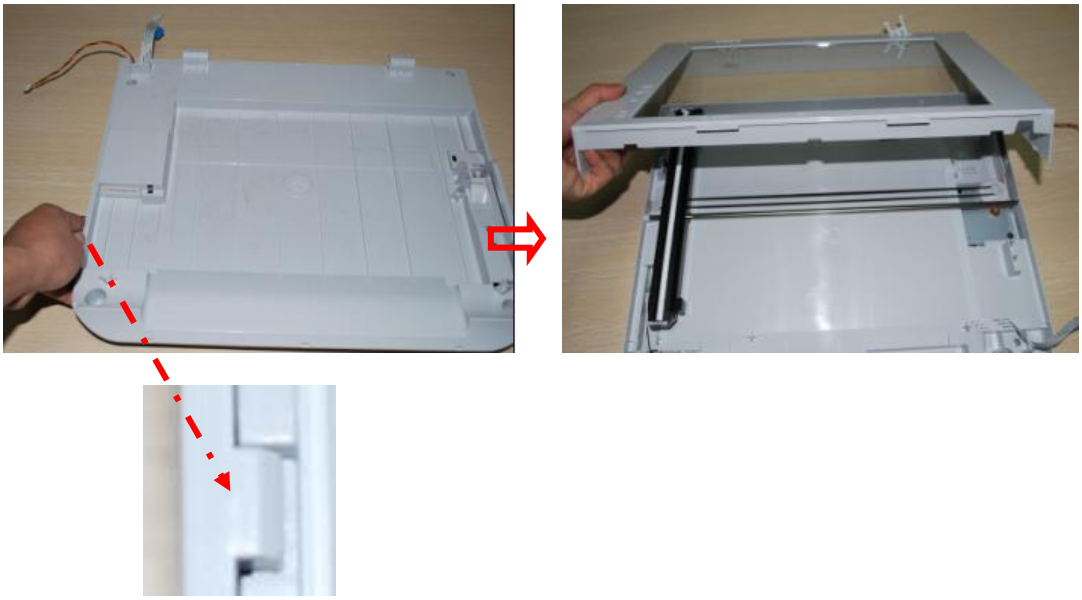
8. Remove the Operation Panel Substrates.



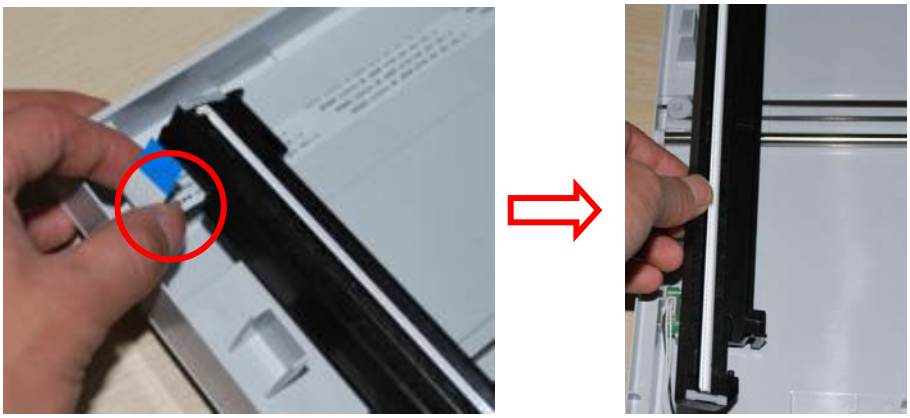
9. After removing the operation panel, take out the glass platen screws.



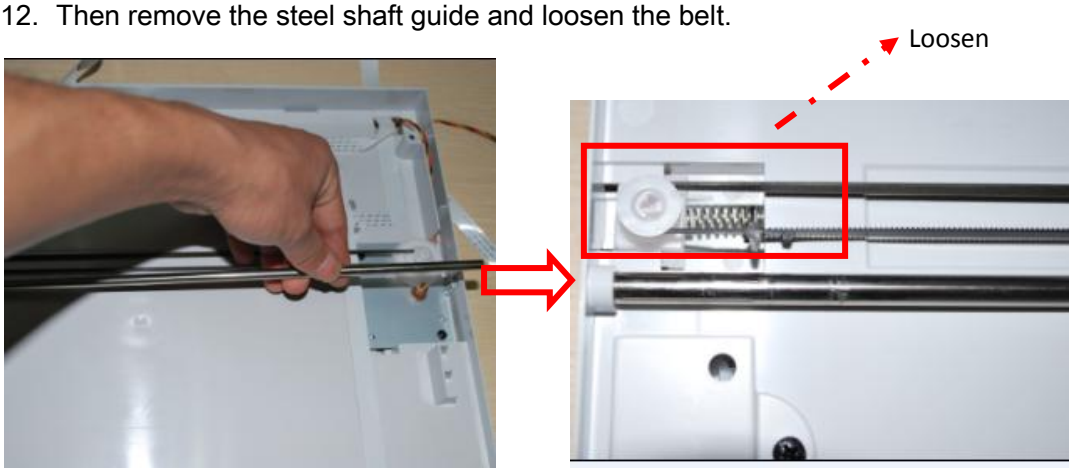
10. Loosen the fixing jaws and disassemble the glass platen.



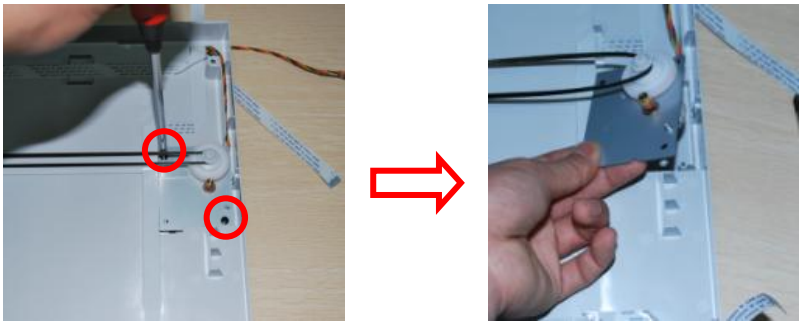
11. After that, unplug the scan data cable and remove the scanning head.



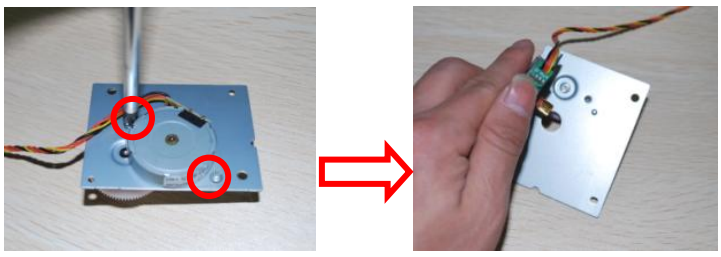
12. Then remove the steel shaft guide and loosen the belt.



13. Remove the scanner motor fixing plate screws and take out the scanner motor fixing plate.



14. Then remove the screws at the back of the scanner motor and take out the scanner motor.



5 Maintenance

5.1 Cleaning 5–2
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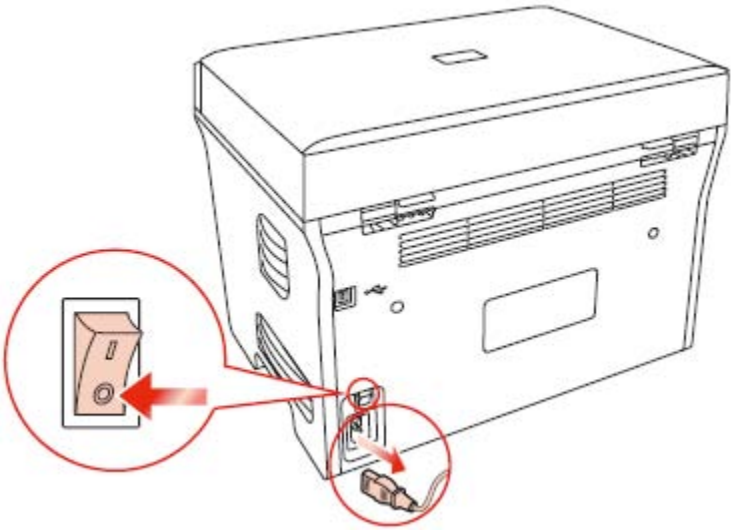
5.1 Cleaning

Note:

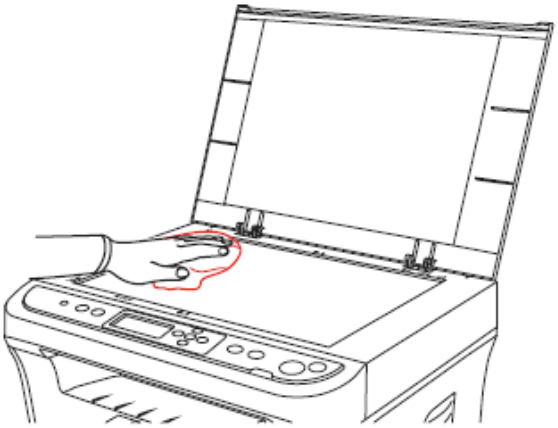
- Please use mild detergents.
- Do not use strongly corrosive liquids such as thinners or benzene-based liquids for cleaning, as these will damage the surface of the device.
- Do not use cleaning materials containing ammonia.
- Do not use isopropanol to remove dust from the control panel, as it may crack the panel.

1. Turn off the main power switch and unplug the power cable.

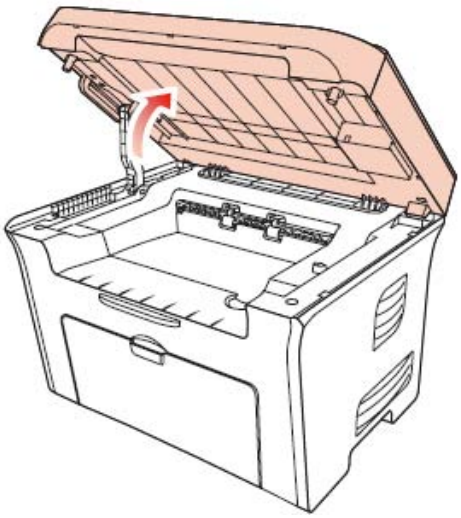


2. Use a soft cloth to wipe the outside of the printer clean.

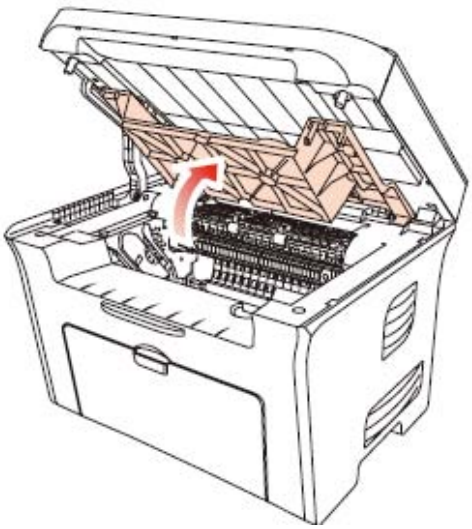
3. Raise the cover and gently wipe the platen glass with a soft cloth.



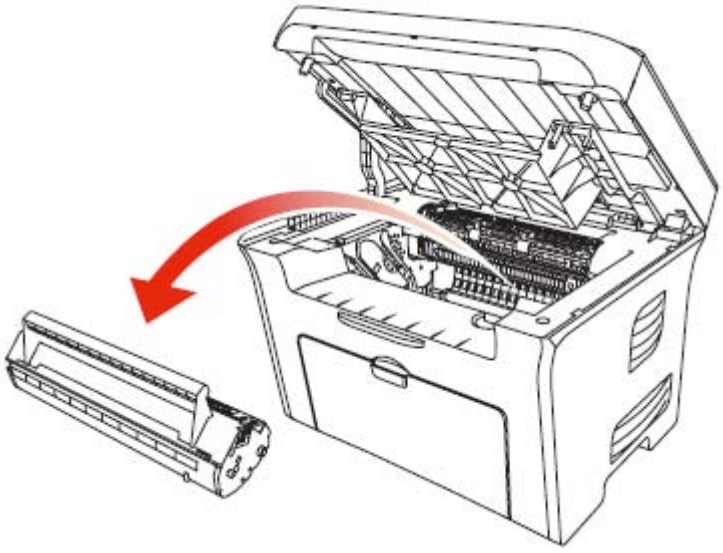
4. Raise the scanning platform until it is locked.



5. Open the output bin.



6. Remove the toner cartridge along the guides.

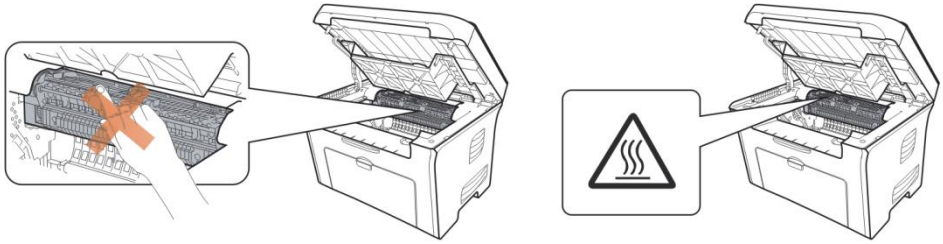


Note:

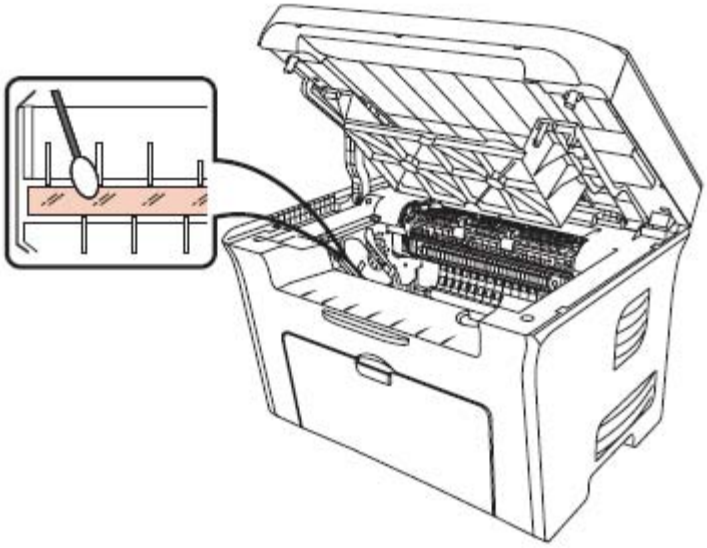
- Please remove metal objects such as watches or bracelets before removing the cartridge, as they may damage the inside of the machine.
- When removing the cartridge, put the cartridge in a protective bag or wrap it in thick paper to avoid direct light damaging the cartridge.
- After removing the cartridge,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

Warning

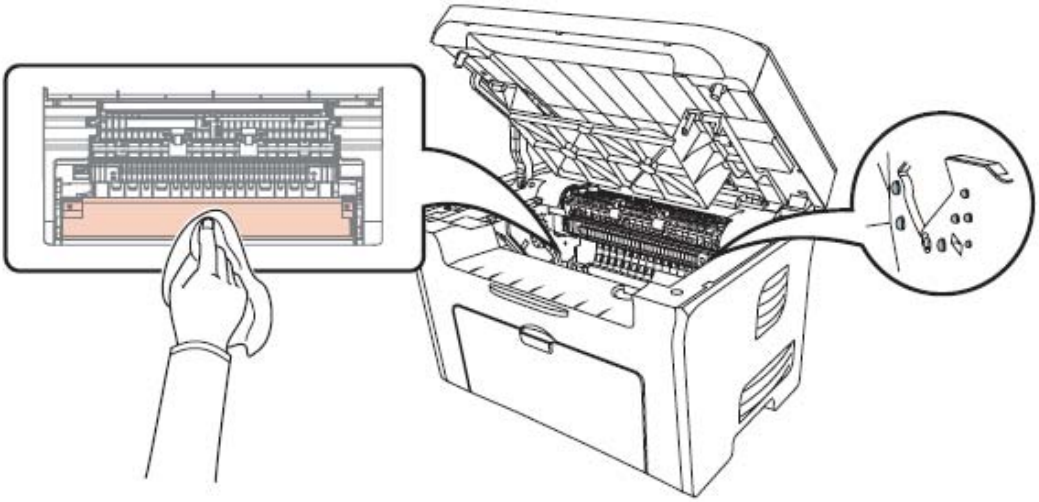
Some parts of the printer are still hot for a short time after use. When opening the front cover or rear cover to clean the parts inside the printer, please do not touch the parts in the shaded area, as shown below, so as to avoid burns.



7. Wipe the laser scanning unit's dustproof surface gently with a cotton swab or a damp, lint-free soft cloth.



8. Clean the inside of the printer by using a dry and lint-free cloth to gently wipe the shaded area, as shown in the picture below.



5.2 Consumables

5.2.1 About Consumables

(1) Utilization of consumables

Please only use genuine Pantum consumables.

(2)Cartridge Maintenance and Protection

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

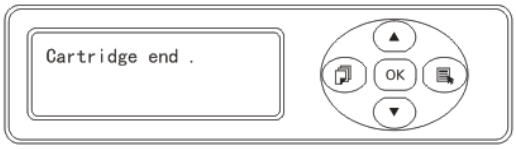
- Do not remove the cartridge from its packaging until you need to use it.
- The warranty excludes damage caused by refilling the cartridge.
- Store the cartridge in the same environment as that of the printer.
- To avoid damage, do not expose the cartridge to sunlight.

(3) Cartridge Service Life

The service life of the cartridge depends on the amount of toner required for print jobs. A new cartridge can print an average of 1,000 to 2,300 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 cartridge may need to be changed frequently if printing numerous graphs.

5.2.2 Replacement of Consumables

When the orange indicator on the printer flashes or the LCD screen shows that the toner is exhausted (as shown below), this means that the cartridge is almost or completely empty. To ensure print quality, please replace the cartridge when required.

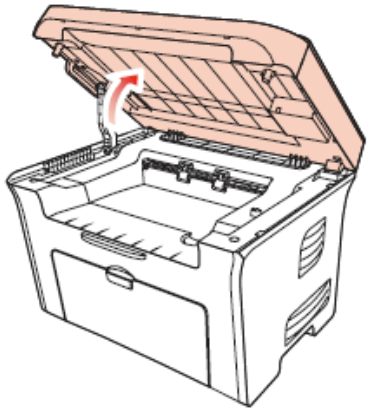


Follow the steps below to replace the cartridge:

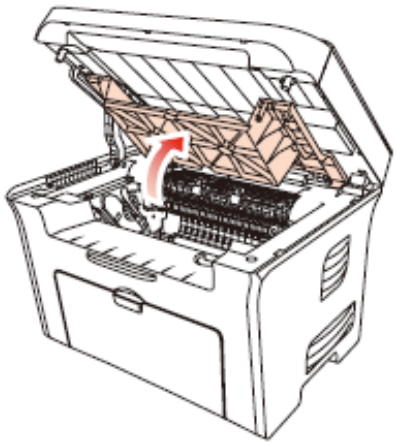
Note:

- The cartridge surface may contain toner. Please remove it carefully to avoid spillage.
- Put the empty cartridge on a piece of paper to avoid accidental spillage and contamination.
- After removing the protective cover from the new toner cartridge, load it immediately into the printer to avoid light damage.
- When installing, do not touch the surface of the cartridge to avoid scratching it.

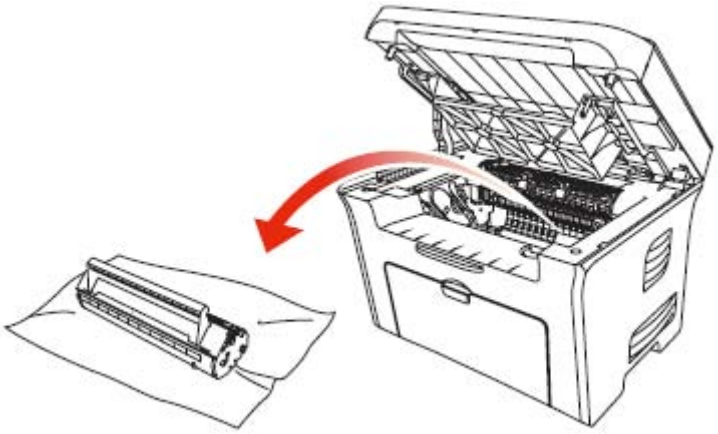
1. Raise the scanning platform until it is locked.



2. Open the output bin.



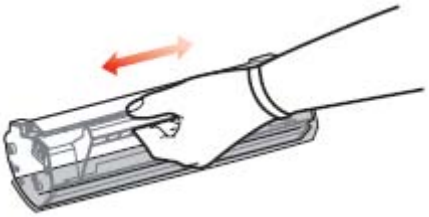
3. Remove the exhausted cartridge along the guides.



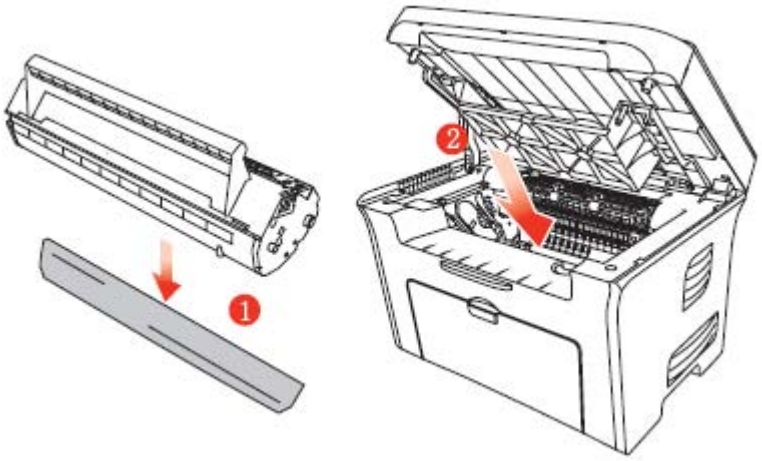
Note:

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

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

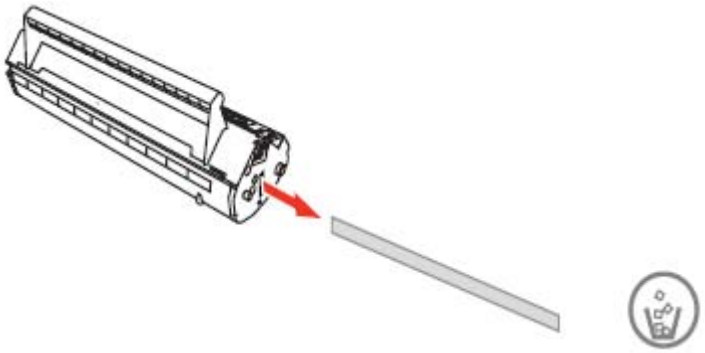


5. Remove the cartridge protector (blister cover), insert the cartridge along the guides, and then push it firmly along the direction of the arrow until you hear a click assuring you that the cartridge is fully inserted.

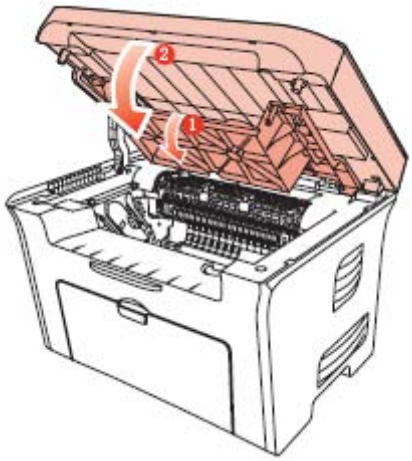


Note:

Please check whether there is a seal before put toner cartridge into the printer, if there is one, please tear off the seal before installation.



6. Cover the output bin and close the scanning platform.



7. Restart the printer power supply and use the product control panel to print a test page.

6 Error Display and Troubleshooting

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6.1 Pre- maintenance Check

Environment

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

About paper

1. 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]
2. 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]
3. Do not use short-grained paper or acid paper. [If you use short-grained paper or acid paper, it can cause print quality problems]

Consumables

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

6.2 Error Information

Error Information English	Cause	Measure
Please close the upper cover.	The upper cover has not been fully closed.	Close the upper cover.
Toner cartridge is not detected	Toner cartridge is not installed properly or has been damaged.	Install correctly or replace a new cartridge.
Cartridge mismatch	1. The cartridge is installed incorrectly. 2. Cartridge model mismatch.	1. Please make sure that the cartridge is installed correctly. 2. Please use an original Pantum cartridge made to fit this machine.
Toner life end	Cartridge toner is exhausted.	Please replace the cartridge.
Paper empty	1. The paper is not installed or is improperly installed. 2. Paper sensor is dirty or damaged.	1. Please correctly load the print paper. 2. Clean or replace the paper sensor.
Feed jam Restart: Start	1. The print paper is loaded incorrectly. 2. The feeder roller is dirty or aging.	1. Please correctly load the print paper. 2. Clean or replace the pickup roller.
Middle jam	1. The print paper is loaded incorrectly. 2. The pickup roller is dirty . 3. Feeder sensor failure	1. Please correctly load the print paper. 2. Clean the pickup roller. 3. Check and replace the sensor.
Exit jam	1. The print paper is loaded incorrectly. 2. Delivery sensor failure. 3. The fuser component is damaged.	1. Please correctly load the print paper. 2. Replace the engine board. 3. Replace the fuser component.
The computer is busy Cancel: OK	The computer is still processing the previous scan command.	Later to continue operating.
Scan failed Cancel: OK	1. Printer internal failure. 2. Scanner failure.	1. Check the inside firmware of the printer, verify that the printer can operate normally. 2. Replace the scanner.
Communication Failure Cancel: OK	1. USB cable is not properly connected. 2. Scan data cable failure. 3. The data board is faulty.	1. Please connect the USB cable correctly. 2. Replace the scanner data lines. 3. Replace the data board.

6.3 Error Code

Warning!

This product has a self-diagnostic function, if a fault is detected, the error code warning messages will be displayed on the screen. As shown:

Error Code	Cause	Checks and Measures
Printer Internal Error 04 Please call Customer Service	Laser Motor Abnormalities	● Check the laser cable, and make sure the laser cable is properly connected. ● Replace the laser cable or lasers. ● Replace the engine board.
Printer Internal Error 05 Please call Customer Service	The fuser component is faulty	● Check the cable associated with the heating elements, and make sure the connection cable is properly connected. ● Replace the fuser component. ● Replace the engine board.
Printer Internal Error 06 Please call Customer Service	Line Synchronous Exceptions	● Check the laser cable, and make sure the laser cable is properly connected. ● Replace the laser cable or lasers. ● Replace the engine board.
Printer Internal Error 07 Please call Customer Service	Data Transmission Error	● Make sure the USB cable is connected correctly. ● Check scan data cable, and make sure that the scan data cable is connected properly.
Scanner Internal Error 11 Please call Customer Service	Scanner self-test fails	● Check whether the scan data cable is properly connected. ● Check whether the scanning head is damaged or not. ● Check whether the scan initial sensor is damaged.
Scanner Internal Error 12 Please call Customer Service	Origin check error	● Check the scanner data lines. ● Check whether the scanning head is damaged or not. ● Check whether the scan initial sensor is damaged.
Scanner Internal Error 13 Please call Customer Service	Black Label Error	● Check the scanner data lines. ● Check whether the scanning head is damaged or not. ● Check whether the scan initial sensor is damaged.
Communication Error 22 Cancel: OK	Invalid Command	● Make sure the USB cable is connected correctly. ● Check scan parameter settings to confirm that the scan parameters are correctly set. ● The scanning head failure, check and replace it.
Communication Error 23 Cancel: OK	Invalid Parameter	

6.4 Clearing Jammed Paper

Please clear jammed paper using the following steps.

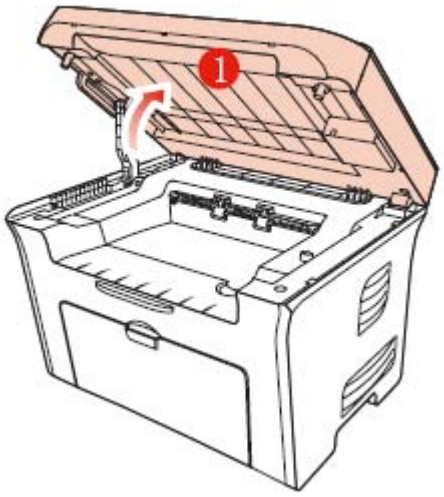
Remove the jammed paper in accordance with the following steps, close the output bin and tidy the paper in the feeder tray, then the printer will automatically resume printing. If the printer does not automatically start printing, please press the Cancel button. If the printer still does not start printing, please check whether all the jammed paper inside the printer has been cleared. Then try the print job again.

Note:

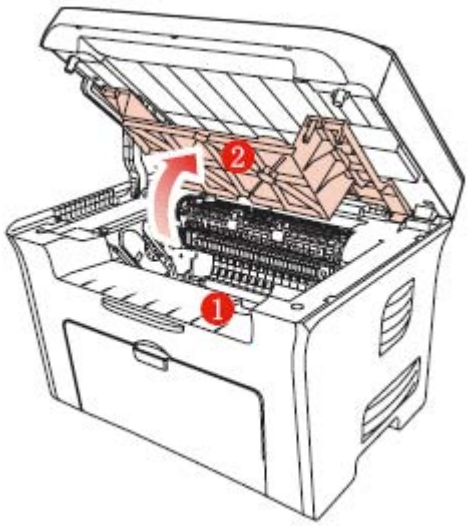
Take out all the paper in the paper tray and check paper level before loading new paper. This helps to prevent a printer jam caused by excessive feeding.

When the LCD screen prompts jam:

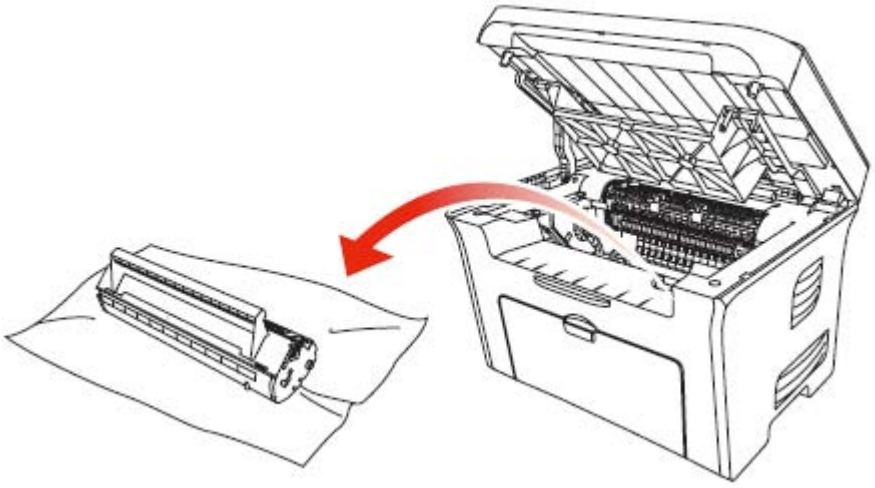
1. Raise the scanning platform ① until it is locked.



2. Open the output bin ② by the upper right ridge ① of the concave section.



3. Remove the toner cartridge along the guides.

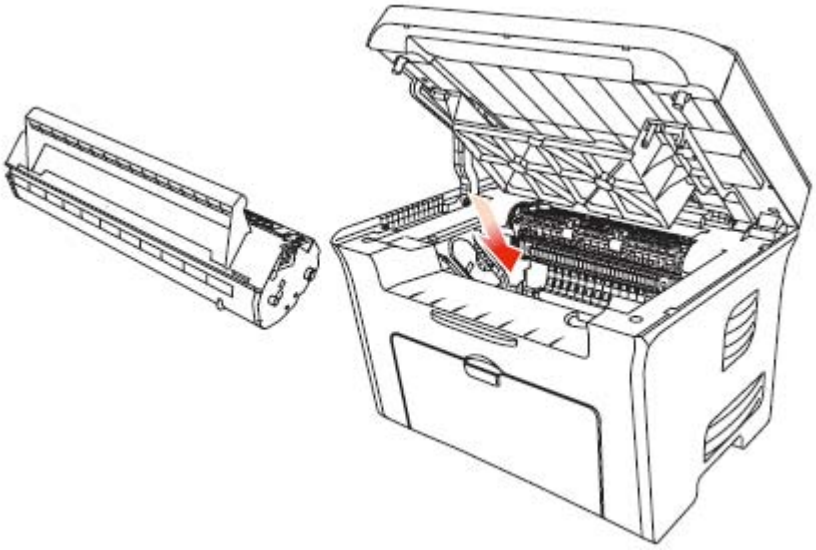


Note:

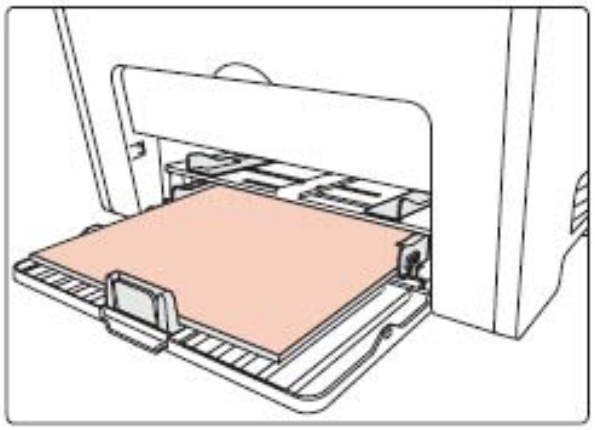
- Please remove metal objects, such as watches or bracelets before removing the cartridge, as they may damage the inside of the machine.
- When removing the cartridge, put the cartridge in a protective bag or wrap it in thick paper to avoid direct light damaging the cartridge.
- After removing the cartridge,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

4. Gently draw the jammed paper out along the paper output orientation.

5. After removing the jammed paper, insert the cartridge into the printer along the guides until you hear a click assuring you that the cartridge is fully inserted.



6. Put the paper in the tray neatly to carry out next print until the indicator resumes print-ready status.



6.5 Troubleshooting

6.5.1 Feed Paper Failure

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

Check	Solution
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.
Is the tray detent correctly placed to feed paper?	Slide the tray detent 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	Solution
There is no electromagnet signal.	Check the electromagnet signal input to ensure that the electromagnet signal line is normal.
The pickup roller is dirty.	Clean or replace the pickup roller.
Pickup roller wears down.	Replace the pickup roller.

M2 Continuous paper feed

Possible cause	Solution
Electromagnet signal error	Check the electromagnet signal input to ensure that the electromagnet signal line is normal.
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 Tilt Feeding

Possible cause	Solution
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.

M4 Resend

Possible cause	Solution
Paper is placed incorrectly.	Confirm that the paper is placed correctly.
The separator is contaminated or worn.	Clean or replace the separator.

6.5.2 Common Problems

6.5.2.1 Printing failure

P1 No AC power supply

Possible cause	Solution
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 engine board.

P2 No DC power supply

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

P3 Motor Failure

Possible cause	Solution
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 Heat lamps doesn't work

Possible cause	Solution
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 top of the page sensor is faulty.	Replace the top of the page 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	Solution
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	Solution
The cable is not connected correctly or is broken.	Reconnect it correctly or replace it.
The laser is damaged.	Change the laser.
Engine board failure.	Replace the engine board.

P7 Paper supply failure

Possible cause	Solution
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 Present sensor failure	Replace the Paper Present sensor.
Engine board failure.	Replace the engine board.

P8 Abnormal high-voltage output

Possible cause	Solution
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	Solution
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 power supply 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.	Check the data board to ensure that it supplies the right signal.
Engine board failure.	Replace the engine board.

P10 Page prints gibberish or whole page is dark

Possible cause	Solution
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.

P11 No image printed

Possible cause	Solution
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.
Cartridge faulty.	Replace the cartridge.
The laser is faulty.	Change the laser.

P12 No response when pressing the button on the control panel

Possible cause	Solution
The cable is damaged.	Replace the cable.
The button is damaged.	Replace the button.
The board button on the control panel is faulty.	Replace the board button on the control panel.
Engine board failure.	Replace the engine board.

P13 The cartridge cannot be identified

Possible cause	Solution
The cartridge is installed incorrectly.	Ensure correct installation of the cartridge.
Cartridge chip failure.	Replace the cartridge.
Data board failure.	Replace the data board.

6.5.2.2 Scanning failure

S1 The scanning picture faulty

Possible cause	Solution
Scanner cover is not completely covered, causing the scanning exposure.	Make sure that the scanner cover is completely covered.
Scanning software is set incorrectly.	Please check the scan settings, and ensure that the settings are correct.
Scanning head color handle exceptions.	Replace the scanning head.

S2 Scanner Failure

Possible cause	Solution
Internal wiring faulty.	Properly connect the scanning head cable.
Scanning head failure.	Replace the scanning head.
Data board failure.	Replace the data board.
Engine board failure.	Replace the engine board.

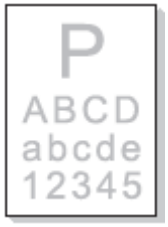
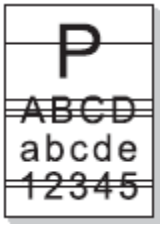
6.5.2.3 Copying failure

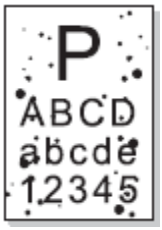
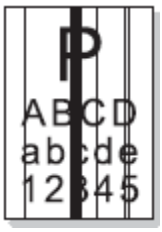
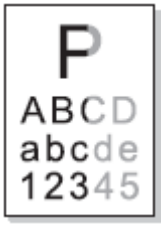
F1 Copy quality is abnormal

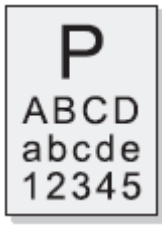
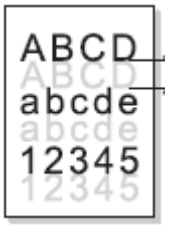
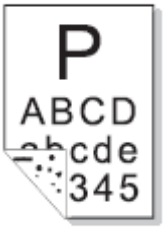
Possible cause	Solution
Scanner cover is not completely covered, causing the scanning exposure.	Make sure that the scanner cover is completely covered.
The glass platen is dirty.	Clean the glass platen.
The cartridge is damaged.	Replace the cartridge.
High voltage exception.	Clean the high-voltage contact or replace the engine board.
Scanning head faulty	Replace the scanning head.
Engine board failure.	Replace the engine board.

6.6 Image Defects

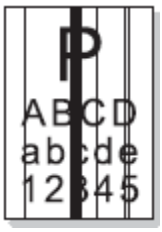
6.6.1 Printing

Status	Cause	Recommended Solutions
Lightly exposed image 	● The carbon powder in the cartridges is running out. ● A poor connection at the high-voltage contact of the engine board due to contaminated toner. ● The high-voltage output of the engine board is abnormal.	● Replace the cartridge. ● Clean the area contaminated with toner. ● Clean the high-voltage charge contacts of the engine board or replace the engine board.
Whole page is dark 	● The high-voltage charge output of the engine board is abnormal. ● The charge roller is faulty.	● Clean the high-voltage charge contacts or replace the engine board. ● Replace the cartridge.
Horizontal stripes 	● Poor connection between the high-voltage contact and the cartridge. ● The developing roller is contaminated; OPC or charge roller is damaged. ● Paper pickup skidding.	● Clean the high-voltage contact or replace the engine board. ● Replace the cartridge. ● Clean or replace the pickup roller.

Black/white spots 	● Some areas of the cartridge are contaminated or the OPC is damaged. ● If there are 45.2mm cyclical spots appearing on the imageAlthough I've changed this, I've left it highlighted, as am not 100% sure this is what is meant., it means that the high-voltage transfer is abnormal or the transfer roller is damaged.	● 1. Replace the cartridge. ● Clean the transfer high-voltage contact or replace the transfer roller. ● 3. Clean up paper scraps and dirt from inside of the printer regularly.
Vertical stripes 	● The blade is chipped or deformed. ● The OPC is damaged. ● There is a blockage between the developing roller and the doctor blade.	● Replace the cartridge.
White vertical stripes 	● The window glass of the laser is dirty. ● There is a blockage or toner particles between the developing roller and the doctor blade. ● The fuser component is faulty.	● Clean the window glass of the laser. ● Replace the cartridge. ● Clean or replace the fuser component.
There is an area of lightly exposed image on the page 	● The doctor blade is damaged. ● 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. ● Laser failure.	● Replace the cartridge. ● Replace the transfer roller sleeve. ● Replace laser.

Black background 	● Print media used are beyond the specified range. ● The cartridge is empty. ● The high-voltage output of the engine board is abnormal.	● Please use print media within the specified range. ● Replace the cartridge. ● Clean the high-voltage contact or replace the engine board.
Periodic image ghosting 	● If periodic 75.4mm image ghosting appears, it indicates that the OPC is damaged. ● If periodic 62.3mm image ghosting appears, it means that the surface of the heating roller is contaminated. ● The high-voltage output of the engine board is abnormal.	● Replace the cartridge. ● Clean the surface of the heating roller or replace the fuser component if the problem continues. ● Replace the engine board.
The back of the sheet is dirty 	● The transfer roller is contaminated. ● The fuser pressure roller is contaminated.	● Clean or replace the transfer roller. ● Clean the fuser pressure roller or replace the fuser component.
Whole page is white 	● Bad electricity elimination of the OPC. ● The laser is damaged.	● Clean the high-voltage contact or replace the engine board. If the problem continues, replace the cartridge. ● Change the laser.

6.6.2 Scanning and Copying

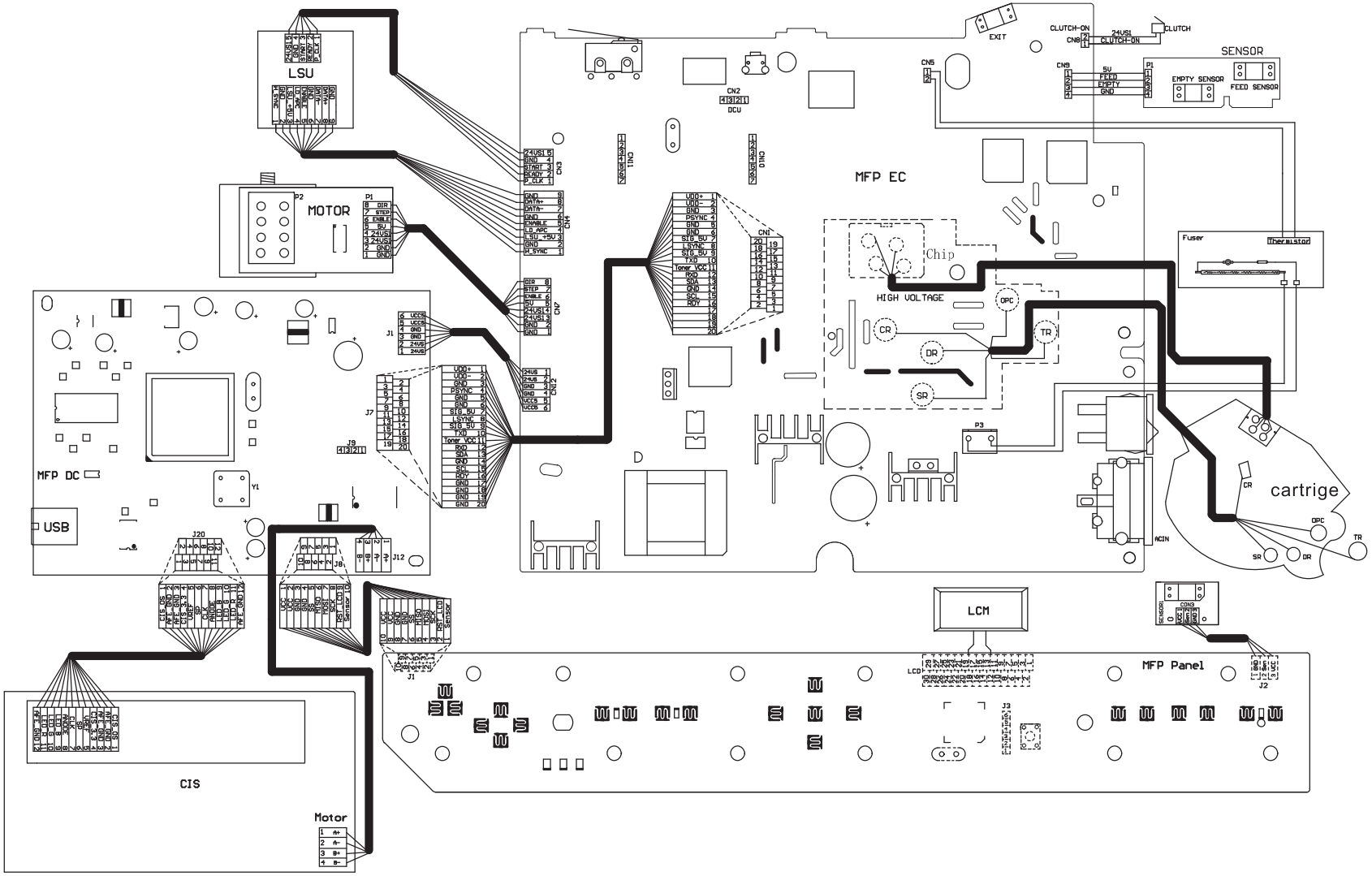
Status	Cause	Recommended Solutions
Whole page is dark	● Scanning exposure. ● Scanning head failure. ● Scan data cable failure. ● Data board failure.	● Please check the scanning cover to ensure that it is properly covered. ● Replace the scanning head. ● Check the scan data cable to ensure proper connection. If it has been damaged, replace it. ● Replace the data board.
Vertical stripes 	● The platen glass is dirty. ● The scanning head is dirty. ● Scanning head failure. ● Scan data cable failure. ● Data board failure.	● Clean the platen glass. ● Clean the scanning head. ● Replace the scanning head. ● Check the scan data cable to ensure proper connection. If it has been damaged, replace it. ● Replace the data board.
Whole page is white	● Scanning head failure. ● Scan data cable failure. ● Data board failure.	● Replace the scanning head. ● Check the scan data cable to ensure proper connection. If it has been damaged, replace it. ● Replace the data board.

Appendix1 Circumference of each roller in this device

Name	Circumference (mm)
Transfer roller	45.2
Heating roller	62.3
Pressure roller	75.4
OPC (photosensitive drum)	75.4
Developing roller	35.2
Supply roller	47.5
Primary Charge Roller	37.7

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

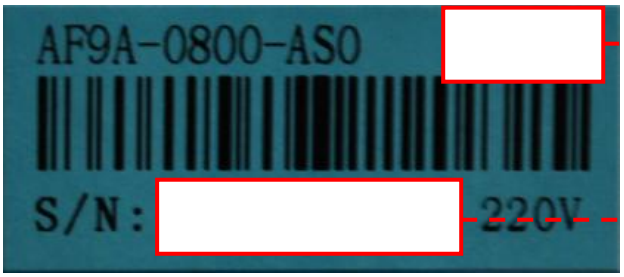
Appendix 2 Wiring diagram



Appendix 3 Product Serial Numbers

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:



Date of Manufacture

Product Serial No.

AF4 A 000001 7DC 01

Serial No. (6 numbers)

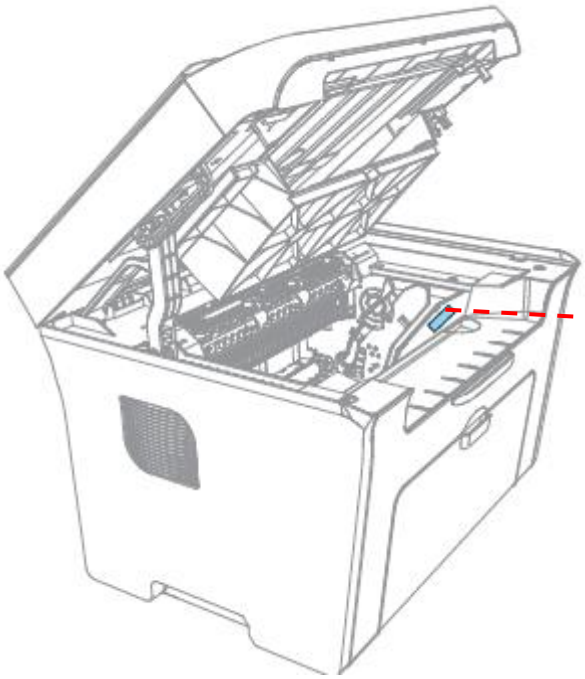
Product Line No.

Device Model

Month, written as (01~12).

Year, in hexadecimal

Label Attached Location: inside the device



Serial No. Label.

Appendix 4 Terminology

The following table shows the terminology used in this manual.

Terminology	Explanation
CFR	A type of safety standard for laser products
LCD	LCD panel
CIS	Scanner
dpi	The number of dots per inch
PPM	Pages printed per minute
g/m²	Paper weight in square meters
auto run	Run automatically
OPC	Photosensitive drum
PCR	Primary Charge Roller
Laser	Laser source
DR	Developing roller
TR	Transfer roller
PR	Pressure roller
LSU	Laser
FFC	Data board cable