

Service Manual

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Pantum CM230 Series Service Manual Color Laser Multifunction Printer



It is recommended to read this manual carefully before service

Version: V1.4

Pantum Color Laser Multifunction Printer

Service Manual

Suitable Model: CM23* (“*” represents any number and letter)



Change History

Version	Time	Changes
V1.0	2024/2/1	New issue
V1.1	2024/8/27	Add wiring diagram
V1.2	2025/2/28	Update 6.2.3.1.6.1
V1.3	2025/2/28	Add error code
V1.4	2025/8/13	Update 5.4

Remarks:

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This product can only be used safely in any region with the height of 2,000 m above sea level or below.

Safety Precautions

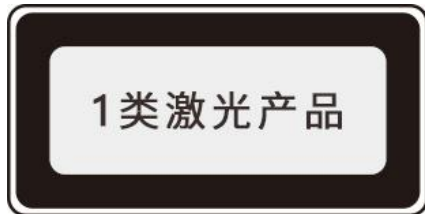
Disconnect the Product from the power.

The Product must be placed near and easily accessible to the power outlet, so that the power plug can be promptly removed from the power outlet to cut off power!

Laser Safety

Laser radiation is harmful to the human body. Since the laser modules are completely enclosed within the Printer, laser radiation will not leak. Do not disassemble the Printer without permission to avoid laser radiation!

The Printer is a Class 1 laser product in accordance with CFR and IEC 60825-1 standards.



The Printer contains Class IIIb laser diodes with no laser radiation leakage in the laser modules.

The laser module inside this machine is labeled as follows:



or



Pantum Electronics Recycling System

To protect the environment, Pantum Electronics has established a system for recycling of waste products. You can choose to deliver your discarded printers and consumables to local Pantum service centers for centralized recycling. These items will then be recycled and reused correctly by nationally certified waste management facilities to conserve resources, reduce environmental pollution, and alleviate user's concerns about environmental contamination from discarded products.



1. Cost paid by the users: From users to Service Center.
2. Cost paid by Pantum Electronics: From Pantum Service Center to Qualified Waste Management Facility.

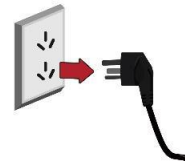
Safety Warning

Before using this Printer, please pay attention to the following safety warnings:

Warning



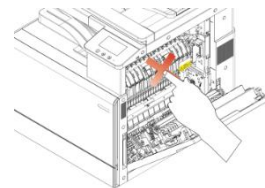
There are high-voltage electrodes inside the Printer. Before cleaning the Printer, make sure the power is disconnected!



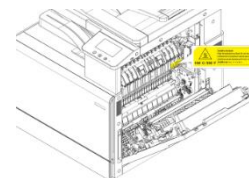
DO NOT plug or unplug the power cord with wet hands to avoid the risk of electric shock.



During and after printing, the fuser will be in a high-temperature state. DO NOT touch the fuser unit (as shown in the red shaded area) to avoid burns!



The fuser unit has a high-temperature warning label. DO NOT move or damage the label.



Safety Information

Agreements

Note: Note indicates the information that can help you or the things that may damage printer's hardware or software.

Caution: Caution indicates the potential dangerous situations that may cause personal injury.

The warning statements are classified into different types, including:



Caution - Possible injuries: indicating the risk of personal injury.



Caution - Electric shock: indicating the risk of electric shock.



Caution—Hot surface: indicating the risk of burns if touched.



Caution - Rollover: indicating the risk of crushing.



Caution—Risk of pinching: indicating the risk of getting caught between moving parts.



Caution—Rotating fan blades: indicating the risk of being cut by rotating fan blades.

Product Declaration



Caution - Possible injuries: To avoid the danger of fire or electric shock, please connect the power cord to a properly grounded power outlet with proper rated voltage, and the socket should be close to the product and easy to use.



Caution - Possible injuries: To avoid the risks of fire or electric shock, please only use the power cord provided with this product or alternatives approved by the Manufacturer.



Caution - Possible injuries: DO NOT use extension cords, multi-plug power strips, multi-plug extenders, or UPS devices with this product. The power capacity of such accessories may easily overload the laser printer, leading to fire risk, property loss, or poor printer performance.



Caution - Possible injuries: DO NOT use inline surge protection device with this product. The utilization of surge protection device may result in fire risk, property loss, or inferior printer performance.



Caution - Electric shock: To avoid the danger of electric shock, please do not place or use this product near water or wet places.



Caution - Electric shock: To avoid the risk of electric shock, DO NOT set up this product during thunderstorms or use the power cord for live operations or cable connections.



Caution - Possible injuries: DO NOT cut, twist, tie up, or crush the power cord, or place heavy objects on it. DO NOT allow the power cord to become worn or be pressed. DO NOT wedge the power cord between objects, such as furniture and walls. Doing so may cause a risk of fire or electric shock. Regularly inspect the power cord to promptly detect signs of such issues. Disconnect from the power outlet before inspecting the power cord.



Caution - Electric shock: To avoid the risk of electric shock, make sure all external connections (such as Ethernet) are properly installed in their designated sockets.



Caution - Electric shock: To avoid the risk of electric shock, if you access the controller mainboard or install any optional hardware or memory devices after setting up the printer, please turn off the printer power and unplug the power cord from the power outlet before doing so. If other devices are connected to the Printer, you should also turn off their power and unplug all cables connected to the Printer.



Caution - Electric shock: To avoid the risk of electric shock while cleaning the exterior of the Printer, please unplug the power cord from the power outlet and disconnect all cables connected to the Printer before cleaning.



Caution - Possible injuries: If the Printer weighs over 18 kg, two or more trained individuals are required to lift it for the sake of safety.



Caution - Possible injuries: When moving the Printer, please follow the following guidelines to prevent personal injury or printer damage:

- Ensure all covers and trays are closed.
- Turn off the printer power and unplug the power cord from the power outlet.
- Disconnect all power cords and cables from the Printer.
- If the Printer is equipped with a caster base, please carefully push the Printer with casters to the new location. Be cautious when passing over thresholds and floor cracks.
- Always lift the Printer with the handles on it.
- Any cart used to move the Printer should have a surface that can support the entire base of the Printer.
- Keep the Printer in an upright position.
- Protect the Printer from strong shocks during moving.
- Ensure that your fingers are not underneath the Printer when lowering it.
- Confirm that there is sufficient space around the Printer.



Caution—Hot surface: The inside of the printer may be very hot. To avoid being burned by heating components, please wait for the surface to cool before touching the components.



Caution—Hot surface: Some parts still remain at a high temperature within a short time after printer use. DO NOT immediately touch the position of the high-temperature warning label, when the front or rear cover is opened and internal parts are accessible, to avoid burns.



Caution—Risk of pinching: To avoid the risk of pinching, please handle with care within the area marked by this label. Pinching may occur near moving parts such as gears, covers, trays, and plates.



Caution—Rotating fan blades: To avoid the risk of being cut by rotating fan blades, please power off the Printer and unplug the

power cord from the power outlet before accessing any positions marked with this symbol.



Caution - Possible injuries: This Product utilizes laser technology. Any controls, adjustments, or procedures not specified in the User Manual may result in harmful radiation.

This Product has components made by specific manufacturers and is designed, tested, and validated according to strict global safety standards. The safety features of some parts may not be readily apparent. The Manufacturer is not responsible for any adverse consequences resulting from the replacement of parts made by other manufacturers.

For any matter related to service or repair other than described in the user's documentation, please consult the Customer Service Center.

This Product may increase the temperature of the print media during printing, which could result in the release of substances from the print media. Please read and understand the section in the Operation Instructions regarding the correct selection of print media to avoid the release of harmful substances.

This Product may produce a small amount of ozone during normal operation, so it may be equipped with filters designed to restrict ozone concentration far below recommended exposure limits. To avoid accumulation of high ozone concentration levels during frequent use, if indicated in the product maintenance instructions, please install the Product in a well-ventilated area and replace the ozone and exhaust filters as necessary. If there is no reference to filters in the product maintenance instructions, the replacement of filter is not required for the Product.

Please keep these safety instructions.

Important Notes

Precautions before using the Printer:

1. Read and understand all instructions;
2. Have basic knowledge of electrical appliances;
3. Follow the warnings and instructions on the Printer or in the attached manuals;
4. If there is a conflict between the Operation Instructions and the Safety Information, please follow the Safety Information; you may misinterpret the Operation Instructions; if you cannot resolve the conflict, please call the after-sales number or contact a service representative for assistance;
5. Before cleaning, please unplug the power cord from the AC power outlet. DO NOT use liquid or aerosol cleaners;
6. DO NOT place the Printer on an unstable surface to avoid serious damage caused by falling;
7. DO NOT place anything on top of the Printer to avoid damage or fire caused by overheating of printer components;
8. DO NOT place the Printer near radiators, air conditioners, or vents;
9. DO NOT place any objects on the power cord; DO NOT place the Printer where its power cord might be inadvertently trodden upon;
10. DO NOT overload sockets and extension cords; otherwise, it may cause performance reduction and even fires or electric shocks;
11. Beware of small animals gnawing on AC power cords and computer interface cables;
12. DO NOT let sharp objects pierce Printer slots to prevent contact with internal high-voltage devices, causing potential fires or electric shocks; DO NOT let any liquid splash onto the Printer;
13. DO NOT disassemble the Printer to avoid electric shocks; any required repairs should be conducted by professional maintenance personnel; there may be electric shocks or other dangers when the protective covers are opened or removed; improper disassembly may cause electric shocks in future use;
14. If any of the following situations occur, please disconnect the Printer from the computer and AC power outlet on the wall, and contact professional maintenance personnel for maintenance:
 - Liquid splashes into the Printer.
 - The Printer is exposed to rain or water.
 - The Printer falls or the casing is damaged.
 - There is a significant change in the printer performance.
15. Adjust the controls mentioned in the operation instructions only; incorrect adjustment of other controls may cause damage and may require professional maintenance personnel to spend more time in repair;
16. Avoid having the Printer working during thunderstorms to prevent the risk of electric shock; if possible, please unplug the AC power cord during thunderstorms;
17. Printing multiple pages continuously will make the surface of the output tray become very hot. Be careful not to touch the surface, and keep children away from it;
18. The signal cables of devices connected to the Printer should not be connected outdoors;
19. When the Printer is working for a long time or a large number of documents is printed in a poorly ventilated room, please ventilate the room in a timely manner;
20. In standby mode, if the Product does not receive job instructions for a period of time (e.g. 1 minute), it will automatically enter power-saving (sleep) mode; zero energy consumption can only be achieved when the Product is not connected to any external power source;
21. The Product is a Class I device, and must be connected to a power outlet with a protective grounding wire when in use.
22. Please place the product packaging box according to the packaging markings in the process of transportation;
23. The Product is a low-voltage device. If there is toner leaking inside the Printer or slow startup during use when the voltage is lower

than the specified voltage range for this Product, please refer to the product precautions or call the Pantum After-Sales Service Center;

24. The Product is sold as a whole unit, and consumers can purchase the required parts and accessories from the Pantum After-Sales Service Center. If the products do not match the packaging list, please go to the designated after-sales service center for handling;

25. Please install the Product in a place where the temperature is between 10°C and 32°C and the relative humidity is between 20% and 80%;

26. For safety reasons, in some cases, the Printer may switch to intermittent printing mode after printing a certain amount continuously;

27. To avoid the risks of fire or electric shock, please only use the power cord provided with this product or alternatives approved by the Manufacturer.

28. The power cord provided with this Product is intended solely for its use. DO NOT use it for other devices, as it may cause fire, electric shock, or other hazards.

29. DO NOT use flammable sprays or flammable solvents near or inside the Printer. Additionally, DO NOT place them near or inside the Printer, as it may cause fire or electric shock.

30. Please keep this manual properly.

Regulatory Information



This symbol indicates that the product should not be discarded with other waste. For proper disposal, you should deliver the discarded device to the designated collection points for recycling the discarded electrical and electronic devices.



This symbol indicates that the product is suitable for indoor use and not for outdoor use.



This symbol indicates that the product is only suitable for safe use under non-tropical climate conditions.



This symbol indicates that the product can only be used safely in any region with the height of 2,000 m above sea level or below.

The name and content of toxic and hazardous substances or elements in the product

Component	Hazardous substance					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Chromium VI (Cr ⁶⁺)	Polybrominated biphenyls (PBB)	Polybrominated diphenyl ether (PBDE)
Plastic components	○	○	○	○	○	○
Metal parts	×	○	○	○	○	○
Wires and cables	×	○	○	○	○	○
PCB modules	×	○	○	○	○	○
Glass components	○	○	○	○	○	○
Toner	○	○	○	○	○	○
Packaging materials	○	○	○	○	○	○

The form is prepared in accordance with the provisions of SJ/T11364:

1. ○: indicates that the content of the toxic and hazardous substance in all homogeneous materials of the component is below the limit requirement specified in GB/T26572.
2. ×: indicates that the content of the toxic and hazardous substance in at least one of the homogeneous materials of the component exceeds the limit requirement specified in GB/T26572.
3. Some components of this Product contain hazardous substances, which are temporarily irreplaceable at the current state of science and technology.
4. The environment-friendly use period depends on conditions such as the temperature and humidity at which the product works normally.

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1. Introduction to product series

Product series parameters		CM230DN	CM230ADN
Port Type	USB	●	●
	NET	●	●
Printing Language	PCL	●	●
Control Panel	Touch Screen	●	●
Print Speed	Single-sided 25ppm	●	●
	Duplex 18ppm	●	●
Print function	Auto Duplex Printing	●	●
	Color Print	●	●
Copy	Manual Duplex Copying	●	
	Auto Duplex Copying		●
	Color Copying	●	●
Scan	Color Scanning	●	●
ADF			●
Printing Environment		Printing Temperature Range: 10~32°C	
		Printing Humidity Range: 20% RH ~ 80% RH	
		Altitude: ≤ 2000 meters	
Noise		Print/Scan: ≤ 54 dB(A)	
		Copy: ≤ 57 dB(A)	
		Standby: ≤ 30 dB(A)	
Interval to Enter Network Standby Mode		1 min	

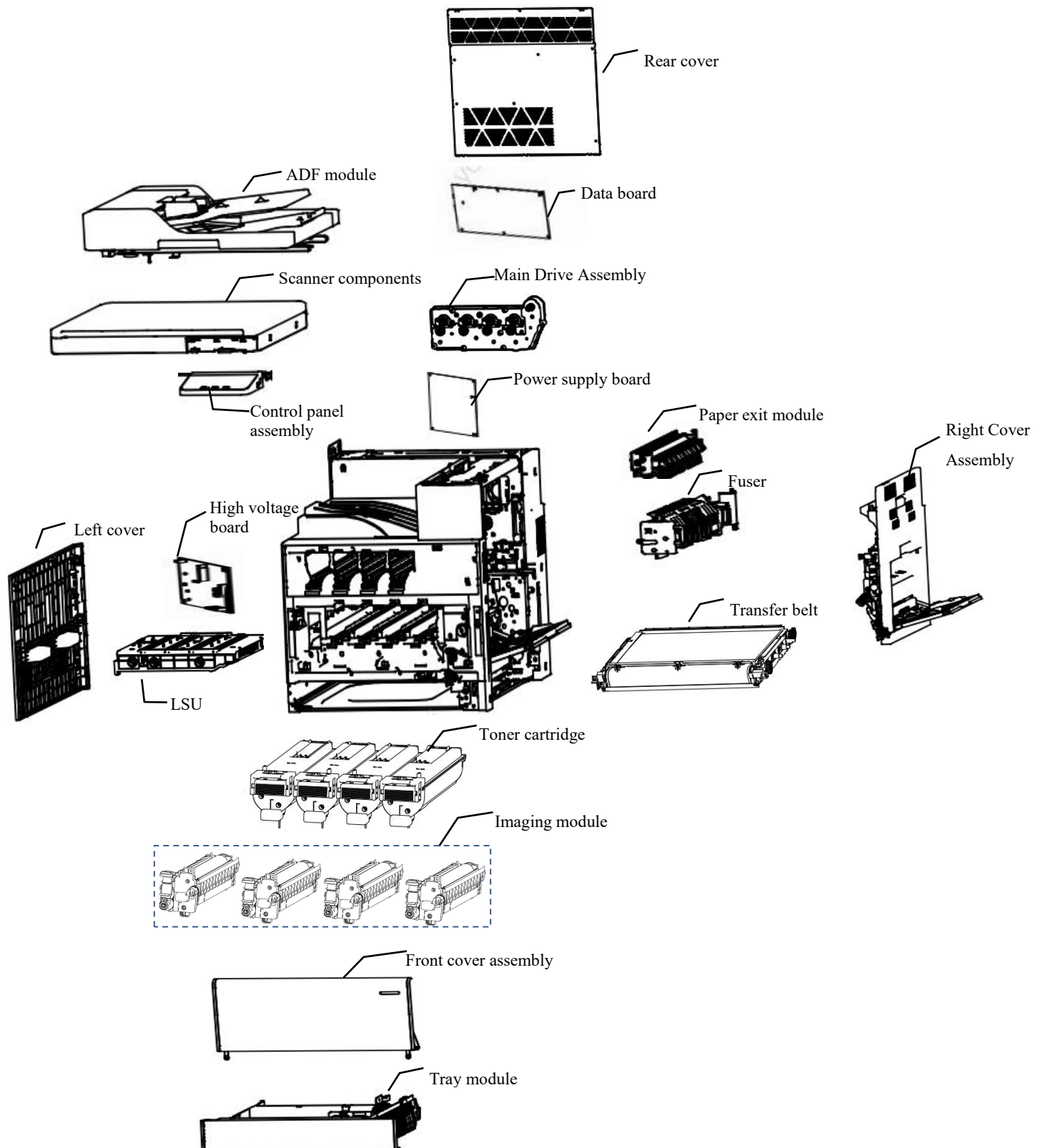
Copy Speed (Single-sided)	25 ppm
Copy Speed (Duplex)	16 spm
First Page Copy Time	Color: ≤ 9.4s, Monochrome: ≤ 7S
Other Copying Functions	ID card copy, bill copy, poster copy, clone copy, N-in-1 copy, collate copy, watermark copy, booklet copy, mixed copy, etc.

(●: supported, blank: not supported)

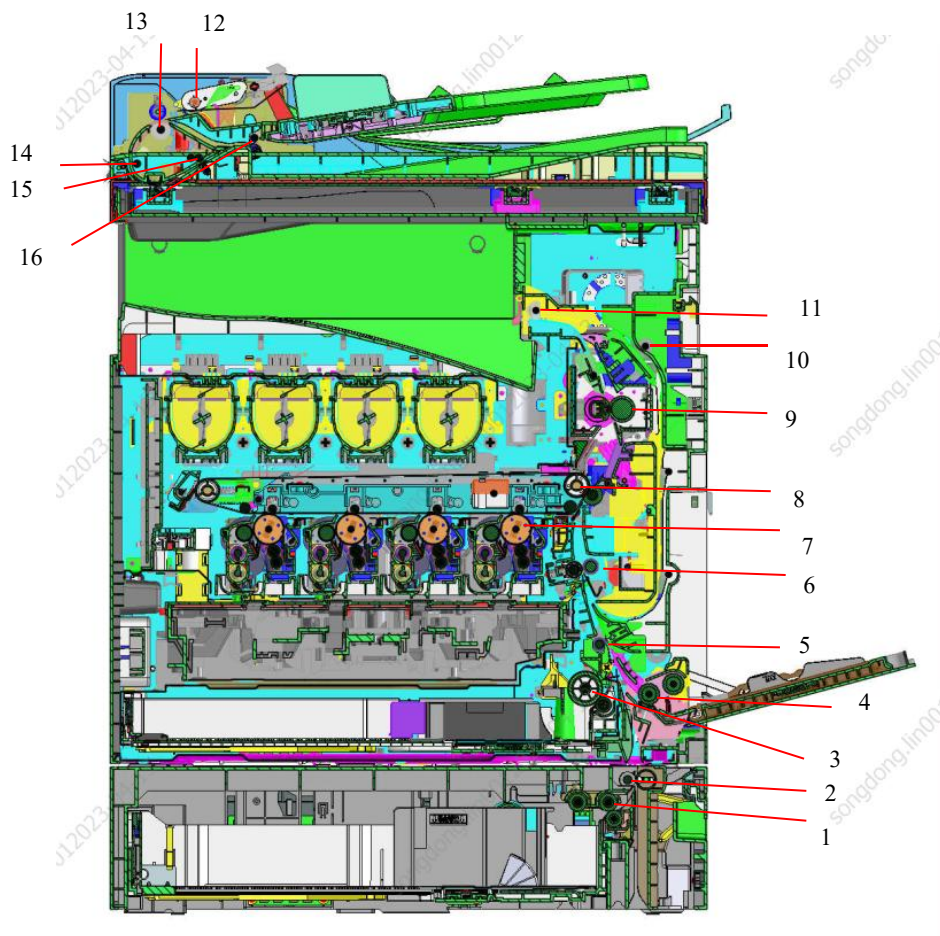
Note: This product series is subject to additions or changes without prior notice.

2. Printer Structure and Principle

2.1 Component structure diagram



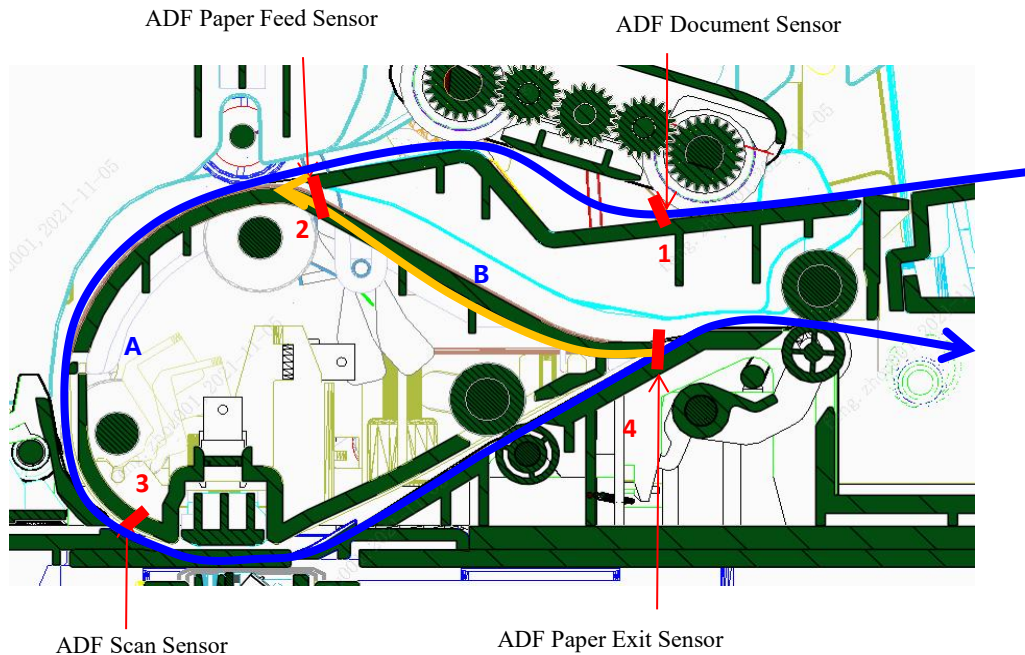
2.2 Mechanical Devices



No.	Name
1	Optional tray paper feed drive roller
2	Optional tray paper pickup roller
3	Standard tray paper feed roller
4	Multi-purpose tray paper feed roller
5	Level 1 Feed Drive Roller
6	Correction feed roller
7	OPC
8	ITU Drive Roller
9	Pressure roller
10	Duplex printing return roller
11	Paper exit roller
12	ADF paper feed roller
13	ADF paper feed roller
14	ADF scan paper feed roller
15	Paper Exit Roller 1
16	Paper Exit Roller 2

2.3 Media path

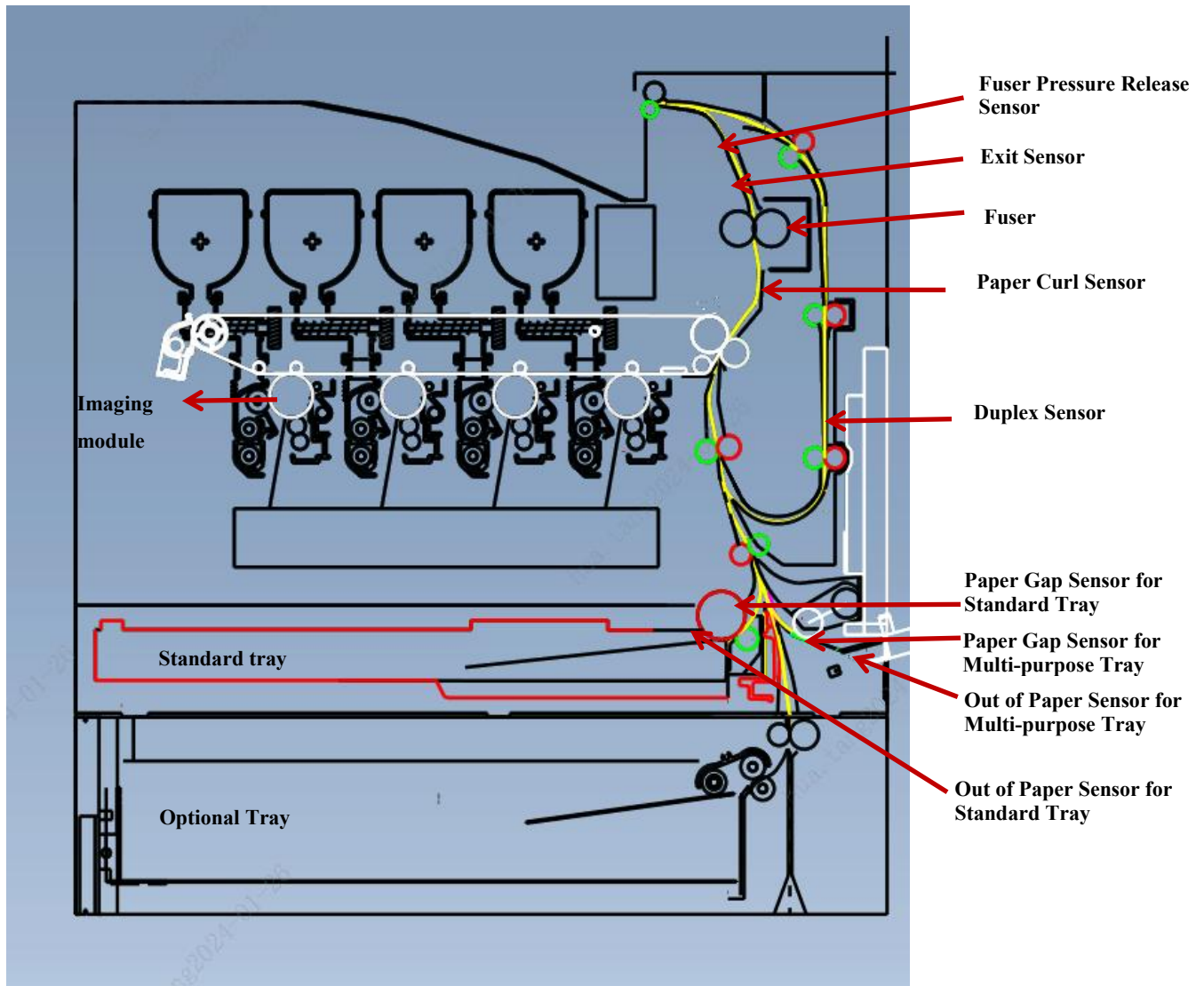
2.3.1 ADF paper path diagram



As shown in the figure above, the Blue Path A is the single-sided paper feeding route of the Printer, while the Yellow Path B is the double-sided paper feeding route of the Printer.

No.	Component	Main Functions
1	ADF Document Sensor	Detect whether there is paper in the tray
2	ADF Paper Feed Sensor	Determine whether there is paper feeding, and start/stop the paper feed roller clutch
3	ADF Scan Sensor	Determine the start and end time of CIS scanning
4	ADF Paper Exit Sensor	Detect whether paper is ejected and whether paper ejection is completed

2.3.2 Paper path diagram for printer



As shown in the figure above, the Orange Path A is the single-sided paper feeding route of the Printer, while the Yellow Path is the double-sided paper feeding route of the Printer.

No.	Component	Main Functions
1	Fuser Pressure Release Sensor	Detect whether the fuser is in decompression or pressurization state.
2	Exit Sensor	Detect paper exit status. If paper cannot be discharged for a long time, the Printer will report a paper jam error
3	Paper Curl Sensor	Detect the degree of paper bending by sensor to control the speed of the fuser motor
4	Duplex Sensor	Paper jam detection
5	Paper Gap Sensor for Standard Tray	Multifeed detection
6	Paper Gap Sensor for Multi-purpose Tray	Multifeed detection
7	Out of Paper Sensor for Multi-purpose Tray	1. Detect the paper availability in the multi-purpose tray 2. Detect the jam position
8	Out of Paper Sensor for Standard Tray	1. Detect the paper availability in the multi-purpose tray 2. Detect the jam position
9	Imaging module	The invisible image formed by laser irradiation on the OPC is transferred into a visible image through the transfer of toner
10	Fuser	The fuser applies heat and pressure to the passing paper, melting the toner on the paper and permanently bonding it to the paper surface

2.3.3 Working Principles

The CM230 series products are color multifunction laser printers with a brand new appearance. They are multifunctional machines that integrate printing, scanning, and copying functions. Printing, scanning, and copying tasks can be performed via USB, wired network, and wireless network connection. The CM230 series products consist of scanning components, laser scanners, high-voltage systems, control systems, fuser unit, toner cartridge module, paper feed systems and frames.

Print mode

The CM230 series products support color/monochrome printing, single-sided/duplex printing, and other printing modes. Users can send data to the Printer via USB cable, Ethernet cable, or optional WIFI module. The Printer takes this data signal as a reference to modulate the laser's illumination onto the photosensitive drum, makes the toner transferred to the photosensitive drum, and then to the printing paper. After the toner is transferred to the printing paper, it is dissolved on the printing paper through the fuser to complete the printing process.

Scan Mode

The scanning component of the CM230 series products includes an automatic document feeder, a flatbed platen, and a color CIS compatible with 300/600 DPI modes. After installing the driver program, you can select scan resolutions of 200/300/600 DPI through the interactive interface. The CIS horizontally moves to scan the document placed on the platen, or the document is continuously fed for CIS to scanning by the automatic document feeder. The scanned data will be sent to the user terminal.

Copy Mode

The CM230 series products can copy documents via the copy menu on the control panel. Copy modes include 300/600 DPI resolution mode, color mode, or monochrome mode.

Sleep Mode

The CM230 series products have a sleep mode. The sleep mode can save energy by reducing the power consumption when the products are inactive for a long time. The sleep mode is set to activate if the products are not operated within a specified period, which is set to 1 minute by default for factory settings, and can be modified between 1 minute and 60 minutes from the settings menu on control panel.

Power-off Mode

CM230 series products still have a small power consumption when in power-off mode. To completely stop the power consumption, please disconnect the power cord from the power outlet.

3. Maintenance

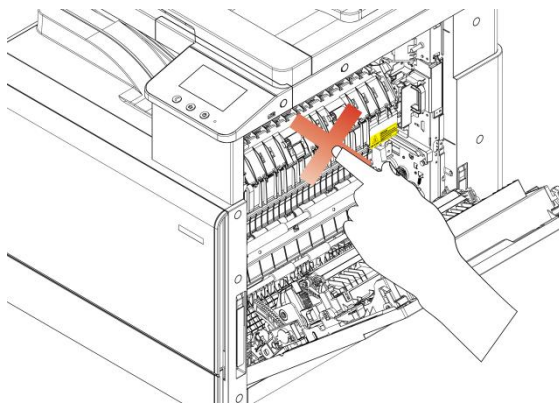
Note: • The appearance of the printer varies with different models and functions. The schematic diagram is for reference only.

3.1 Printer Cleaning

3.1.1 Printer Cleaning



: Some parts still remain at a high temperature within a short time after printer use. DO NOT immediately touch the position of the high-temperature warning label, when the front or rear cover is opened and internal parts are accessible, to avoid burns.



Note: • Disconnect the Printer from power source before cleaning.

- Please use neutral detergent.
 - Some parts still remain at a high temperature within a short time after printer use. DO NOT immediately touch the position of the high-temperature warning label, when the front or rear cover is opened and internal parts are accessible, to avoid burns.
 - Use the printer display screen with care to avoid pressing or damaging the touch screen. Please use a soft dry cloth or dip it in neutral detergent or ethanol to clean the surface of the display screen. DO NOT use any organic solvents, acidic or alkaline solutions for cleaning.
-

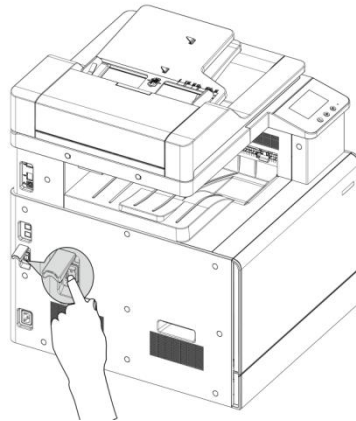


: To avoid the risk of electric shock while cleaning the exterior of the Printer, please unplug the power cord from the power outlet and disconnect all cables connected to the Printer before cleaning.

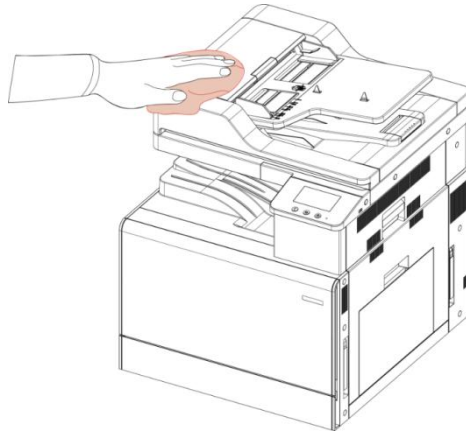
Note: • Please perform this task once every few months.

- Any damage caused to the Printer by improper handling is not covered by the printer warranty.
 - DO NOT use household cleaners or detergents as they may damage the printer surface.
 - Ensure that all parts of the Printer are dry after cleaning.
-

1. Turn off the printer power and unplug the power cord from the power outlet.



2. Take out the paper from the standard output support and multi-purpose feed tray.
3. Use a soft brush or vacuum cleaner to remove all dust, lint, and paper scraps around the Printer.
4. Wipe the casing and inside of the front cover of the Printer with a lint-free cloth.



Note: • DO NOT use household cleaners or detergents as they may damage the printer surface.

- Ensure that all parts of the Printer are dry after cleaning.

5. Connect the power cord to the power outlet, and then power on the Printer.

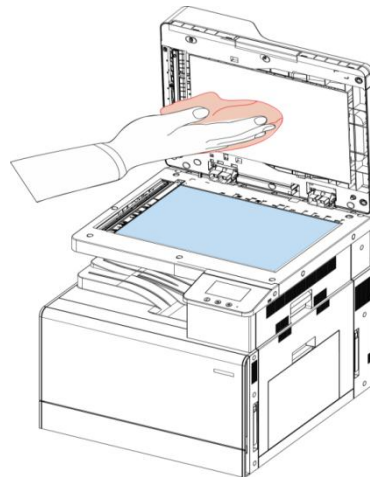
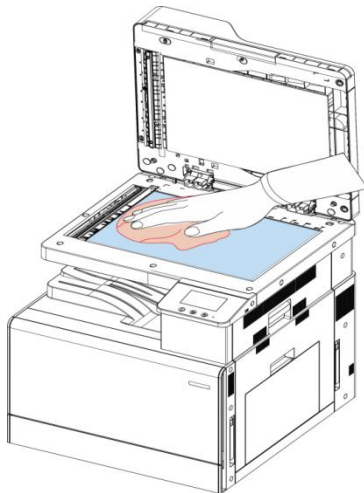
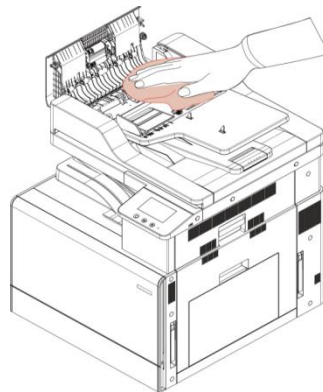
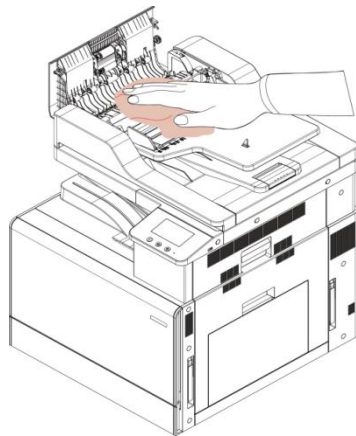


: To avoid the danger of fire or electric shock, please connect the power cord to a properly grounded power outlet with proper rated voltage, and the socket should be close to the product and easy to use.

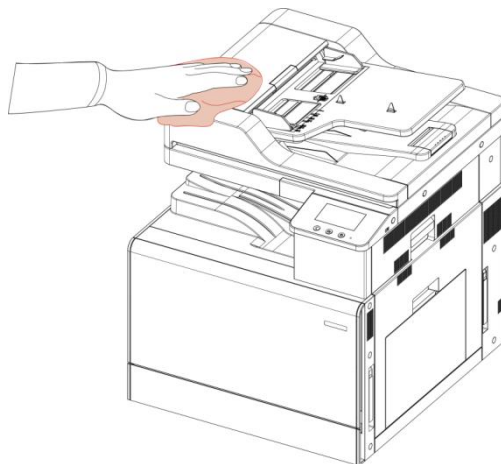
3.1.2 ADF Cleaning

Note: • In terms of the printers with document feeders, any dirt on the cover of the document feeder and glass needs to be regularly cleaned. Please wipe the position shown in the figure with a soft cloth.

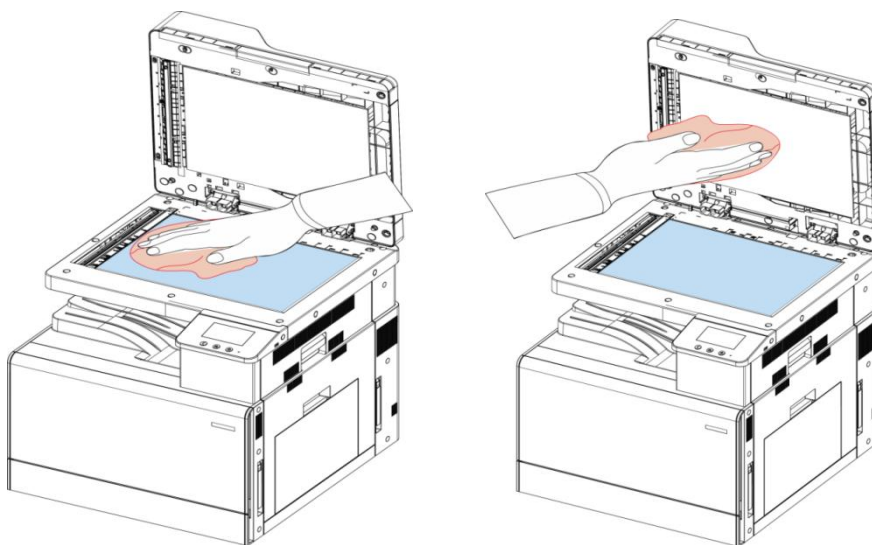
- Clean with a wet soft cloth (squeeze the wet cloth until it is not dripping), and then wipe dry with a dry soft cloth.
- Please use neutral detergent.
- Perform this task once a month or when the scan volume exceeds 5000 pages.



1. Use a lint-free cloth to wipe the exterior of the device to remove dust.



2. Lift the scanner cover and gently wipe the glass platen and scanning background with a lint-free cloth.



3.1.3 Clean the laser window

As shown in Fig. 1, open the front cover, remove the waste toner box, take out the cleaning brush from the front cover, and as shown in Fig. 2, insert the cleaning brush into the machine from the four windows (YMCK) on the inner front cover and slide it several times to clean the LSU window.

Fig. 1

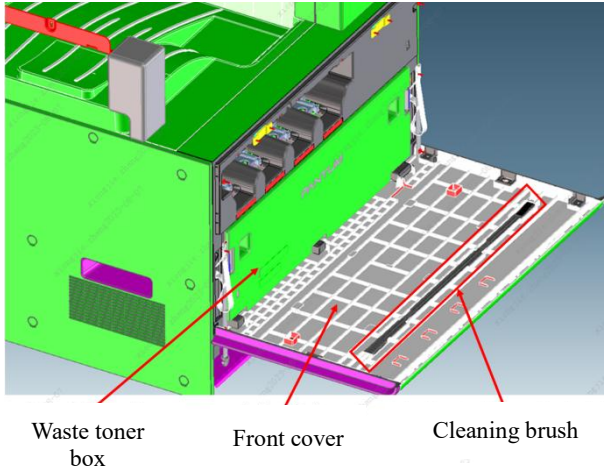
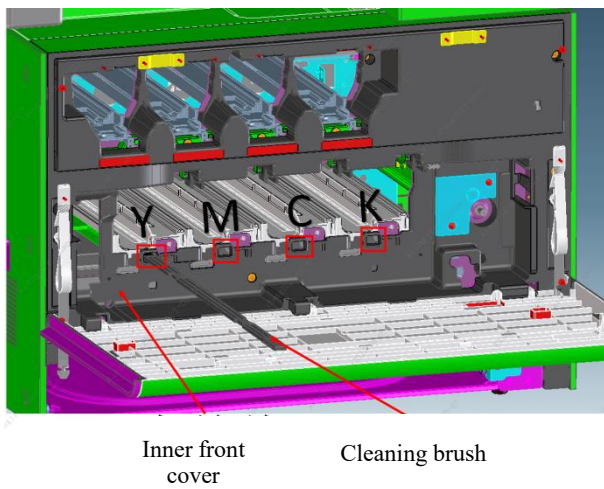


Fig. 2



3.1.4 Cleaning the static discharge lamp

As shown in the figure below, open the front cover, remove the waste toner box, and remove the YMCK-imaging unit. Insert a non-woven cloth or a long-handled cleaning brush (similar to the one with a long handle used for washing cups) into the machine and wipe the position of the static discharge lamp beads from front to back.



Note: When the imaging module is replaced or when problems such as vertical lines appear in the image, you can clean the LSU, ACR sensor, and static discharge lamp for troubleshooting.

3.2 Replace Parts and Consumables

1. Use and maintenance of toner cartridge.

For better prints, please use the original toner cartridge.

When using the toner cartridges, please pay attention to the following:

- Please store the toner cartridges in a dry dark place.
- Do not refill the toner cartridges by yourself. Any damage caused by this is not covered by the printer warranty.
- Please store the toner cartridges in a cool and dry environment.
- Do not place the toner cartridges near fire sources, as the toner in the cartridge is flammable and may cause a fire.
- When removing or disassembling the toner cartridge, pay attention to toner leakage, if any toner leakage cause toner contact with skin or splash into eyes and mouth, immediately rinse with clean water, and if there is any discomfort, seek medical attention immediately.
- When storing the toner cartridges, keep them away from areas where children can reach.

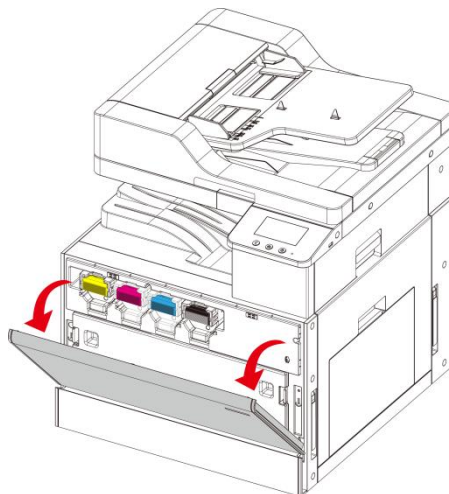
2. Service life of toner cartridge.

- The service life of the toner cartridge depends on the amount of toner required for print jobs.
- If the display screen shows “toner cartridge end of life”, it means the toner cartridge has reached its service life and needs to be replaced.

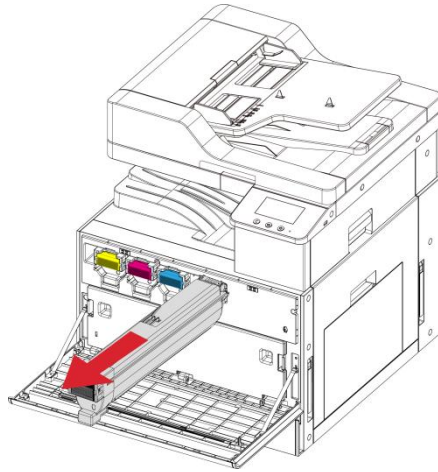
3.2.1 Replace the toner cartridge

Note: • If the tray is unfolded, remove it before replacing the toner cartridge.

1. Open the front cover, and push it down firmly.

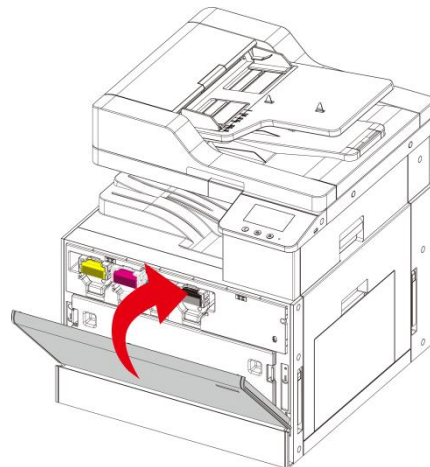
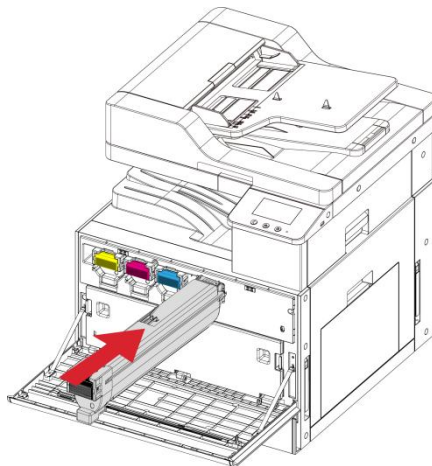


2. Remove the used toner cartridge.



3. Unpack the new toner cartridge.

4. Insert the new toner cartridge, then close the front cover.



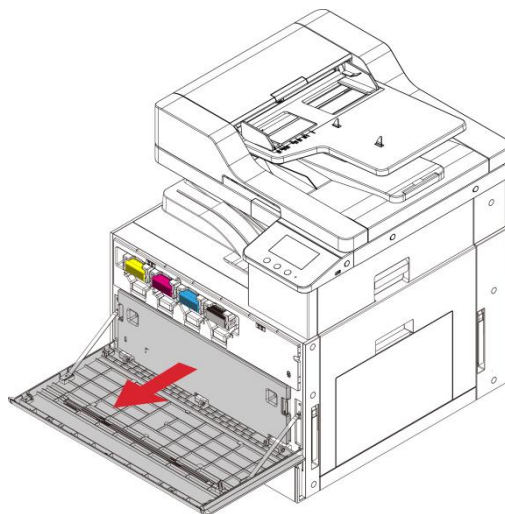
Note: • Do not expose the bottom of the toner cartridge to direct sunlight. Prolonged exposure to light may lead to print quality problems.

• Do not touch the bottom of the toner cartridge. Otherwise, the quality of future print jobs will be affected.



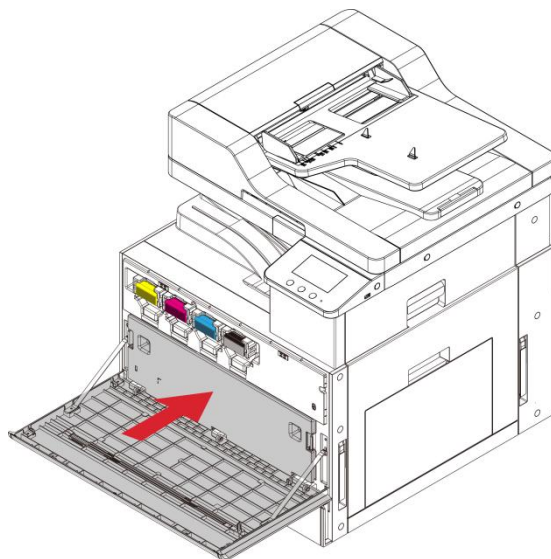
3.2.2 Replace the waste toner bottle

1. Remove the used waste toner bottle.



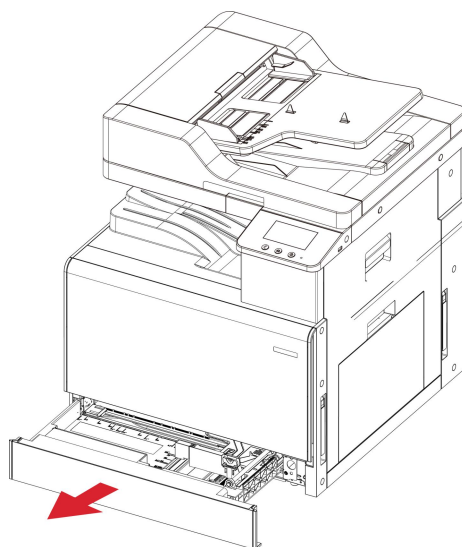
Note: • To prevent toner leakage, place the waste toner bottle upright.

2. Unpack the new waste toner bottle.
4. Insert the new waste toner bottle, and close the front cover.

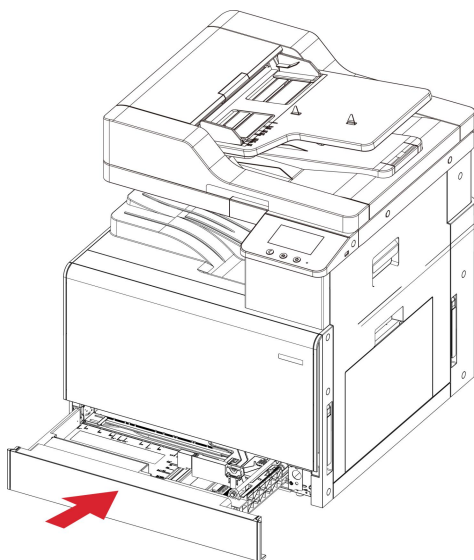


3.2.3 Replace the tray

1. Remove the used tray.



2. Unpack the new tray.
3. Insert the new tray.



3.2.4 Move the printer

Move the printer to another location



: To avoid the danger of electric shock, please do not place or use this product near water or wet places.



: If the Printer weighs over 18 kg, two or more trained individuals are required to lift it for the sake of safety.



: To avoid the risks of fire or electric shock, please only use the power cord provided with this product or alternatives approved by the Manufacturer



: When moving the Printer, please follow the following guidelines to prevent personal injury or printer damage:

- Ensure all covers and trays are closed.
- Turn off the printer power and unplug the power cord from the power outlet.
- Disconnect all power cords and cables from the Printer.
- If the Printer is equipped with a caster base, please carefully push the Printer with casters to the new location. Be cautious when passing over thresholds and floor cracks.
- Always lift the Printer with the handles on it.
- Any cart used to move the Printer should have a surface that can support the entire base of the Printer.
- Keep the Printer in an upright position.
- Protect the Printer from strong shocks during moving.
- Ensure that your fingers are not underneath the Printer when lowering it.
- Confirm that there is sufficient space around the Printer.

Note: • Any damage caused to the Printer by improper moving is not covered by the printer warranty.

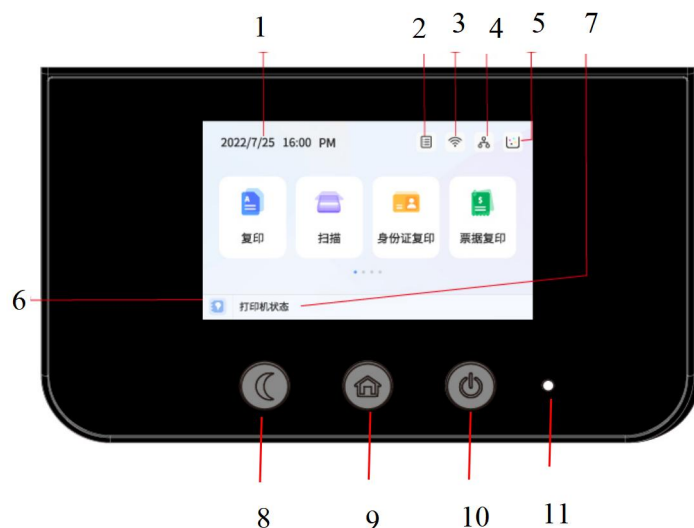
Transport the printer

When transporting the printer, please use the original packaging materials for packaging and transportation.

4. Panel Structure and Function Description of Printer

4.1 Panel Structure and Function Description

4.1.1 Panel Structure



4.1.2 Panel Buttons and Function Description

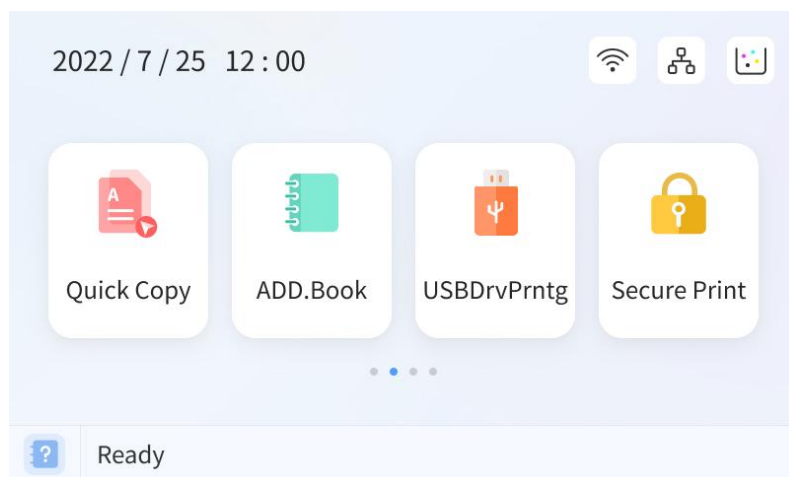
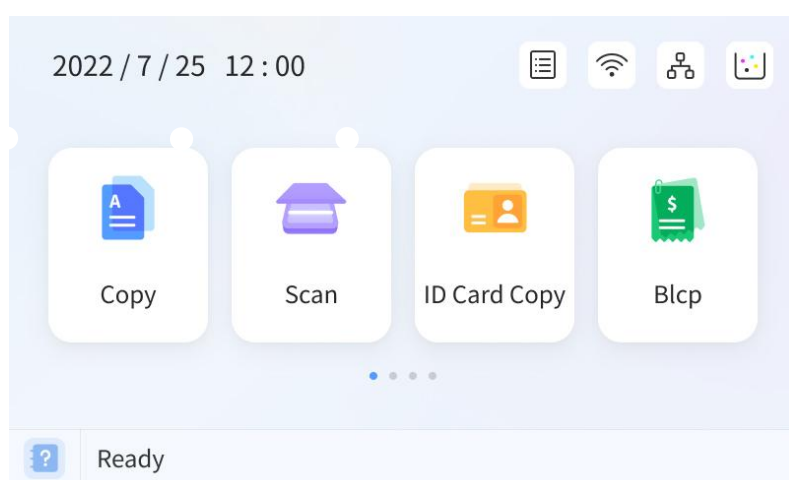
The Printer's panel consists of two parts: the upper part is a 4.3-inch TFT touch screen serving as the display area, and the lower part consists of three physical buttons: Power Saving/Wake-up button, HOME button, and Power button.

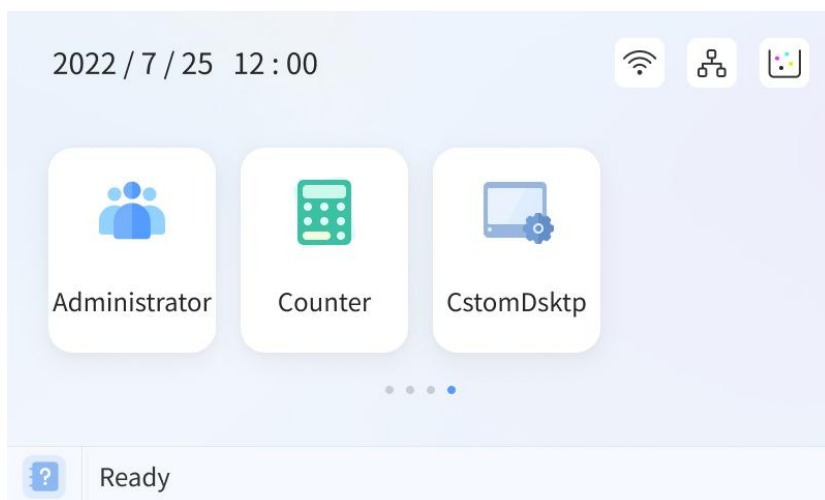
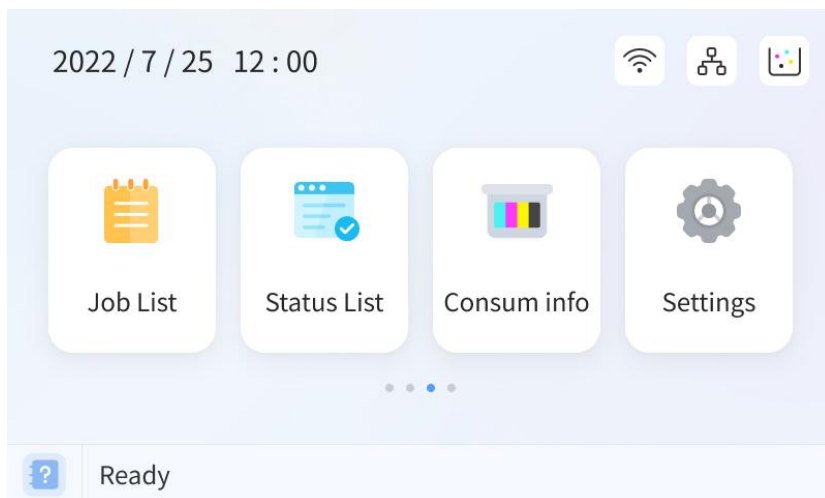
No.	Button	Function Description
1	Time/Date	Access the "Time/Date" menu and change the setting of time, date and year in the printer.
2	Job List	View the list of jobs in progress
3	Wireless network status icon	View the printer's wireless network information. (Wireless network accessories are optional)
4	Wired network status icon	View the printer's wired network information.
5	Consumable information	Access the "Consumables Information" menu and inquire the consumables information of printer.
6	Help menu	Click to display help information for the current screen; if on the Home, enter the help menu
7	Printer status	Status bar, in case of any warning, warning information will be displayed; if no warning, current screen information will be displayed
8	Power Saving/Wake-up	Press it to enter power-saving mode (Level 1 Sleep).
9	HOME	Return to printer standby screen.
10	Power	Control the printer to power on/off.

11	Status indicator	Indicate the current status of printer, and support tricolor flashing: red, green, and orange. The orange light is formed by the simultaneous illumination of the red and green lights.
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4.1.3 Home Interface

Upon startup, the printer will display Home screen (if there is an error, the error status screen will be displayed; after the error is resolved or hidden, the Home screen will be displayed, and the specific displayed screens are determined by printer status). Below is a basic introduction to the Home screen:





No.	Component	Description
1	Wireless Network Icon 	Display Wi-Fi connection status, and click the icon to enter wireless settings screen *Only models with Wi-Fi installed have this icon
2	Wired Network Icon 	Display wired network connection status, and click the icon to enter wired network settings screen
3	Toner Level Icon 	Click the icon to enter toner level display screen
4	Copy Button 	Click the button to enter copy function menu When function is restricted, a yellow exclamation mark is displayed on the icon, and clicking the button is invalid at this time
5	Scan Button 	Click the button to enter scan function menu When function is restricted, a yellow exclamation mark is displayed on the icon, and clicking the button is invalid at this time

6	ID Copy Button 	Click the button to enter ID copy function When function is restricted, a yellow exclamation mark is displayed on the icon, and clicking the button is invalid at this time
7	Bill Copy Button 	Click the button to enter bill copy function When function is restricted, a yellow exclamation mark is displayed on the icon, and clicking the button is invalid at this time
8	USB Drive Print Button 	Click the button to enter USB drive printing function When function is restricted, a yellow exclamation mark is displayed on the icon, and clicking the button is invalid at this time
9	Secure Print Button 	Click the button to enter secure printing function When function is restricted, a yellow exclamation mark is displayed on the icon, and clicking the button is invalid at this time
10	Counter Button 	Click the button to enter counter function
11	Consum Info Button 	Click the button to enter information report function When function is restricted, a yellow exclamation mark is displayed on the icon, and clicking the button is invalid at this time
12	Quick Copy Button 	Click the button to enter quick copy function When function is restricted, a yellow exclamation mark is displayed on the icon, and clicking the button is invalid at this time
13	Settings button 	Click the button to enter system setup function
14	Help Button 	Help icon. Click to display help information for the current screen; if on the Home, enter the help menu
15	Status Bar 	Status bar, in case of any warning, warning information will be displayed; if no warning, current screen information will be displayed
16		Display the position of the current standby screen

- For current function buttons (copy, scan, ID copy, bill copy, and settings), when the corresponding function is unrestricted, clicking the respective button will enter the corresponding function screen.
- As the main screen consists of several screens, you can swipe left and right to switch screens.   The icon indicates the current number of standby screen.
- Clicking wireless network, wired network, toner level, and help button function icons will enter the respective function screens.
- The status bar displays current printer warning information and current screen information.
- You can add shortcut items to the standby screen through shortcut settings, which will be added to pages 2 and 3 in sequence (but the default button positions cannot be changed), and clicking the shortcut will directly enter the corresponding function setting.

5. Error Display and Troubleshooting

5.1 Check before maintenance

5.1.1 Precautions before maintenance and inspection



Caution - Electric shock: This symbol you see on the Product means there is a dangerous voltage inside the working area. Before starting work, unplug the power plug of the Product. If the Product must be powered on to perform tasks, please take extra caution.



Caution - Electric shock: This Product is equipped with an electronic power switch, which cannot be physically disconnected from the input AC voltage. To avoid the risk of electric shock, if you need to disconnect the AC voltage, please make sure to unplug the power cord from the Printer.



Caution - Electric shock: To avoid the risk of electric shock when removing covers or opening doors for troubleshooting, if the Printer is connected to a power outlet, DO NOT touch the exposed wires or circuits.



Caution - Electric shock: To avoid the risk of electric shock and prevent the Printer from damage, before connecting or disconnecting any cables, circuit boards, or modules, you should unplug the power cord from the power outlet and disconnect the Printer from any external devices.



Caution—Hot surface: The inside of the Printer may be very hot. To reduce the risk of injury from hot components, please wait for them to cool down before touching their surfaces.

5.1.2 Operating environment

- 1) Check the power cord for breakage, short circuit, open circuit, or incorrect connection when it is unplugged from the power outlet.
- 2) Make sure the Printer is properly grounded.
- 3) Make sure the output voltage of power supply is within 10% of the rated voltage.
- 4) Place the printer on a stable, flat surface.
- 5) Maintain the room temperature between 10°C and 32°C. Maintain the relative humidity between 20% and 80%.
- 6) Do not place the printer in a dusty place.
- 7) Do not expose the printer to ammonia or other harmful gases.
- 8) Do not place the printer in a hot or humid place (for example, near the water or next to a humidifier).
- 9) Do not expose printer to direct sunlight.
- 10) The room where the printer is placed should be well ventilated.
- 11) Do not place the printer where the ventilation hole of the printer is blocked.

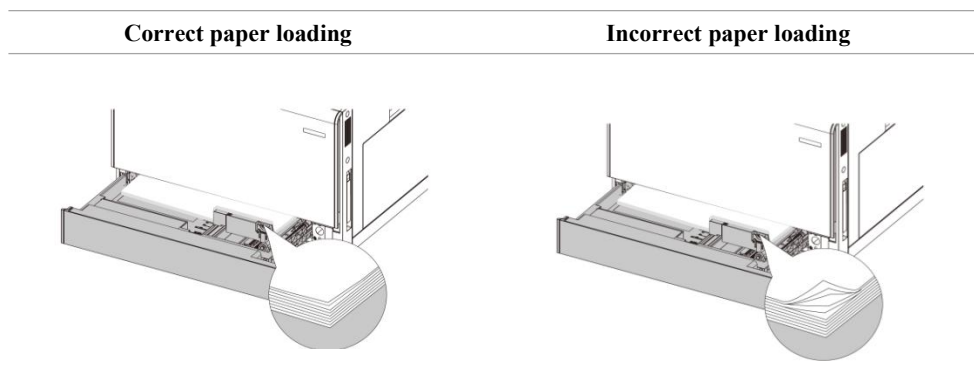
5.1.3 Preliminary Troubleshooting for the Printer

1. Check for physical damage to the Printer's appearance (for printer malfunctions may be related to the physical damage)
2. Check power-on and power-off (check if the Printer can warm up normally or what faults are reported by the Printer)
3. Check for excessive toner or dust inside the Printer and clean if necessary. (chip contact points, pick-up roller—image problems, toner cartridge unrecognized, failure to feed, paper jam, etc.)
4. Replace consumables for confirmation (image problems and toner cartridge errors are generally related to the toner cartridge)
5. Please replace the paper for testing (for paper feeding faults)
6. Restore factory settings (settings-related faults)
7. Print printer information page to check its condition (check the wear condition of wearable parts)
8. If there are color-related issues with printing, perform color calibration settings first (check the color-related problems)

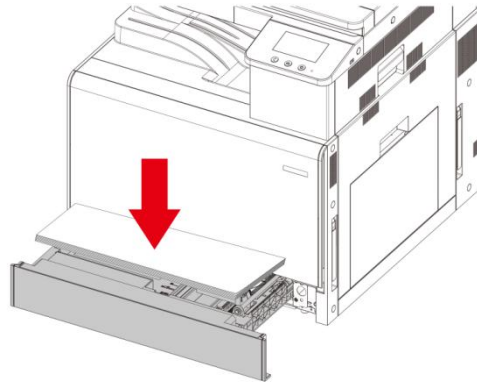
5.1.3.1 Paper requirements

1. Load the paper properly

- 1) Make sure paper is placed flat in the tray



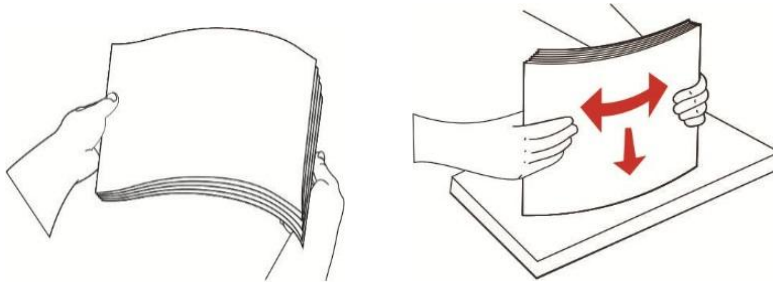
- 2) DO NOT load or remove the tray while the printer is printing.
- 3) DO NOT load too much paper. Make sure the stack height of paper is below the maximum paper capacity indicator line.
- 4) DO NOT slide paper into the tray. Load paper as shown in the figure.



- 5) Make sure paper guides are properly placed and not too tight against the paper or envelope.
- 6) After loading paper, firmly push the tray into the Printer.

2. Use recommended paper

- 1) It is recommended to use new and undamaged paper, as well as recommended paper.
- 2) DO NOT load wrinkled, creased, damp, folded, or curled paper.
- 3) Before loading the paper, stretch, unfold, and align the edges of the paper.



- 4) DO NOT use manually cut or trimmed paper.
- 5) DO NOT mix different sizes, weights, or types of paper in the same tray.
- 6) Make sure paper size and type are correctly set on the computer or printer's control panel.
- 7) Before loading paper, please understand the recommended printable surface of the paper. This information is usually indicated on the paper package.
- 8) DO NOT use coated papers unless they are specifically designed for electronic phototypesetting printing.
- 9) Store paper according to the manufacturer's recommendations.

5.1.3.2 Print Information Report

5.1.3.2.1 Printing the Information Page

You can print information report by operating the Control Panel. These pages can help you get to know product information, make diagnosis and troubleshoot product faults.

Click [Settings] - [System Setup] - [Information Report] icon from Home screen to enter the menu, and then enter the interface to print the information report, and you can print the product reports as needed.

Note: • The above product report is the most comprehensive product report available, but your actual product report for the specific model you are using may differ from the above product report.

5.1.3.2.2 Description of Information Page

CM230ADN Series

PANTUM

[Printer Information Page]

[Page 1]

■ Product Information

Product Name	Machine version	CM230ADN
USB Vendor ID		0x232B
Firmware Version		2. D. 1. 3
Scan Version		2. D. 1. 1-V0. 1. 06
Engine Version		2. D. 1. 3
Panel Version		2. D. 1. 3
Memory Size		2048MB
Print Language		PCL6, PS3, PDF
Serial Number		CR4A000087

■ System Setting

Sleep Time		minute
Toner save mode	Machine serial number	Close

■ Tray Setting

Paper Size for Multifunctional feed tray	A4 LEF
Paper Type for Multifunctional feed tray	Plain paper 1
Paper Size for Standard feed tray	A4 LEF
Paper Type for Standard feed tray	Plain paper 1

■ All Pages Info

Equivalent Print All Pages	137
Actually Print All Pages	21
Mono Print All Pages	0
Color Print All Pages	21

■ Print Information

Print Setting	
Print Density	Normal
Equivalent Pages Printed	135
Actually Pages printed	
Total pages printed	21
Number of mono printed pages	0
Number of color	21
Pages printed with	Machine page count for print
Pages printed with different paper specification	
> A3	24
> A4	87
> A5	0
> JIS B4	0
> JIS B5	0
> ISO B5	0
> 11"x17"	0
> Letter	0
> Legal	0
> Folio	0
> Oficio	0
> Executive	0
> Statement	0
> 8K	0
> 16K	0
> A6	0
> No. 10 Env	0
> Monarch Env	0
> C6 Env	0
> C5 Env	0
> DL Env	0
> Postcard	0
> User Define	0

5.1.3.2.3 Description of Network Configuration Information Page

CM230ADN Series PANTUM

[Network Configuration Information Page] [Page 1]

IP
information

■ Wired Network Configuration

Connection Status	Not Connected
Wired Hardware Address	AC:C5:1B:60:13:DE
Host Name	Pantum-6013DE
Device Location	

■ Wired Network IPv4 Information

Status	Open
Configuration Method	
IP Address	
Subnet Mask	
Default Gateway	
Bonjour Name	

■ Wired Network IPv6 Information

Status	Open
Link-Local Address	
Stateless Address	
Stateful Address	

■ E-mail Notification

Out of paper	Close
Low toner	Close
Paper Jam	Close
Cartridge end	Close
Waste toner box warning	Close

■ Wireless Network Configuration

Connection Status	Not Connected
Wireless Hardware Address	
Communication Mode	
Network Name (SSID)	
BSSID	
Authentication Method	

■ Wireless Network IPv4 Information

Status	Open
Configuration Method	
IP Address	
Subnet Mask	
Default Gateway	
Bonjour Name	

■ Wireless Network IPv6 Information

Status	Open
Link-Local Address	
Stateless Address	
Stateful Address	

■ Wireless Direct Information

Status	Close
Device Name	
IP Address	
Password	
Role	
Connected Device(s)	

5.2 Error information

Error information	Reason	Measures
Toner cartridge is not installed	The toner cartridge is not installed correctly or is damaged.	Install the toner cartridge correctly or replace it with a new one.
Insufficient toner	Insufficient toner in any toner cartridge.	Prepare the corresponding new toner cartridge.
Toner cartridge mismatch	The printer does not support the toner cartridge.	Replace it with the toner cartridge supported by the printer.
Toner cartridge end of life	The toner has been used up.	Replace it with the new toner cartridge.
Feed failed	The paper is not installed correctly. The paper specification is out of the range.	Please install the paper correctly.
Paper Settings mismatch	The paper size or type set on the driver side does not match the settings on the printer control panel.	Please change to the matching paper size or type on the printer.
Paper jam	The paper is not installed correctly/abnormal paper is detected in the printer.	Remove the abnormal jammed paper, and then load the correct paper.
The capacity of waste toner bottle is reaching full	Waste toner bottle will be full.	Please replace it with a new waste toner bottle.
The capacity of waste toner bottle is full	Waste toner bottle is either not installed or is full.	Please replace it with a new waste toner bottle.
Waste toner bottle is not detected	The waste toner bottle is not installed correctly.	Please unplug and reinsert the waste toner bottle.
Scanner is busy	There are other jobs.	Please cancel the job or wait for other jobs to complete.
Scan failed	Scanner internal fault.	Please refer to the corresponding entry in Section 5.4 based on the error code reported by the Printer for repair
ADF out of paper	When selecting ADF as the scan source, if ADF is not loaded with paper to start copying or scanning jobs, this message will be displayed.	1. Please load the original document correctly. 2. Replace the document sensor
ADF paper jam	When using ADF for copying or scanning jobs, if paper jams or paper feeding fails,	1. Please remove the paper jam, load the original properly into ADF, and perform

	this message will be displayed.	scanning operation again. 2. Check the ADF paper path (check for foreign objects on the paper path, whether the guides or bars are broken or have burrs) 3. Replace the document sensor 4. Replace the paper feed sensor
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5.3 Common Faults

Printing Problems	Poor printing quality	See image defects.	See image defects.
Copying Problems	Failure to copy	Scanner is damaged.	• Clean the scanner. • Replace the CIS.
	Abnormal copied image	• Scanner is dirty or defective. • Toner cartridge is dirty or damaged.	• Clean the scanner. • Clean or replace the toner cartridge.
Printer Problems	Printer fails to print	• Device power is not properly connected. • The connection between the computer and the Printer is not correct. • Incorrect printer port is specified. • The Printer is offline, as “Use Printer Offline” is checked. • Internal printer errors have not been resolved, such as paper jams, no paper, etc. • Printer driver installation is incorrect. • LCD screen prompts error message.	• Make sure the power cord is correctly connected. • Disconnect and then reconnect the printer cable. • Check Windows printer settings to ensure print jobs are sent to the correct port. If the computer has multiple ports, make sure the Product is connected to the correct one. • Make sure the Printer is in normal online status. • Troubleshoot errors to restore the Printer to normal status. • Uninstall and then reinstall the printer driver.
	No response during online printing	• The connection between the computer and the Printer is not correct. • Printer driver installation is incorrect. • Printer Internal Fault	• Disconnect and then reconnect the printer cable. • Uninstall and then reinstall the printer driver.
Scanning Problems	Scanning error	• The data cable of device is not correctly connected. • Scanner driver is not installed correctly. • LCD screen prompts error message.	• Make sure the data cable is correctly connected. • Reinstall the scanner driver.

5.4 Error Code

Warning!

The Product has self-diagnostic functionality, and if a fault is detected, the error code warning messages will be shown on the screen or computer.

Error code	Reason	Cause	Solutions
FE0103-00	Middle plate lifting failure	Paper Cassette 2 Error	1、 Restart the printer 2、 Replace the Cassette 2
FE0104-00	Middle plate lifting failure	Paper Cassette 3 Error	2、 Restart the printer 2、 Replace the Cassette 3
FE0130-00	Power supply cooling fan is abnormal	1. Fan connector is loose or poor contact; 2. Fan is not installed 3. Fan blades are obstructed by foreign objects	1. Reconnect the fan connector 2. Check the fan 3. Clean foreign objects
FE0132-00		4. Fan inlet/outlet is blocked 5. Fan malfunctions 6. Data board malfunctions	4. Remove obstructions 5. Replace the fan 6. Replace the data board
FE0133-00	LSU front exhaust cooling fan is abnormal	1. Fan connector is loose or poor contact; 2. Fan is not installed	1. Reconnect the fan connector 2. Check the fan
FE0134-00	LSU rear exhaust cooling fan is abnormal	3. Fan blades are obstructed by foreign objects 4. Fan inlet/outlet is blocked 5. Fan malfunctions 6. Data board malfunctions	3. Clean foreign objects 4. Remove obstructions 5. Replace the fan 6. Replace the data board
FE0135-00	Fuser cooling fan is abnormal	1. Fan connector is loose or poor contact; 2. Fan is not installed 3. Fan blades are obstructed by foreign objects 4. Fan inlet/outlet is blocked 5. Fan malfunctions 6. Data board malfunctions	1. Reconnect the fan connector 2. Check the fan 3. Clean foreign objects 4. Remove obstructions 5. Replace the fan 6. Replace the data board

FE0140-00	Fuser motor is abnormal	1. Motor wire is loose 2. Motor is not installed 3. Motor gear is attached with foreign objects 4. Motor malfunctions 5. Data board malfunctions 6. Power supply board malfunctions 7. Foreign object is stuck in the fuser	1. Check the motor cable 2. Reinstall the motor 3. Clean foreign objects 4. Replace the motor 5. Replace the data board 6. Replace the power supply board 7. Clean the foreign objects from the fuser
FE0141-00	Open circuit in fuser (thermistor is abnormal)	1. Fuser malfunctions 2. Power supply board malfunctions 3. Data board malfunctions	1. Replace the fuser; 2. Replace the power supply board 3. Replace the data board
FE0142-01	Fuser warm-up fails at normal voltage (the warm-up temperature rises slowly): 1	1. Fuser malfunctions	1. Replace the fuser;
FE0142-02		2. Power supply board malfunctions	2. Replace the power supply board
FE0142-03		3. Data board malfunctions	3. Replace the data board
FE0143-00	Fuser high temperature detection (software)	1. Fuser malfunctions 2. Data board malfunctions 3. Power supply board malfunctions	1. Replace the fuser; 2. Replace the data board; 3. Replace the power supply board; 4. Enter the service mode to clear error codes.
FE0144-00	Fuser high temperature detection (hardware)	1. Fuser malfunctions 2. Data board malfunctions 3. Power supply board malfunctions	1. Replace the fuser; 2. Replace the data board; 3. Replace the power supply board; 4. Enter the service mode to clear error codes.
FE0145-00	Thermistor is abnormal/Fuser heating abnormal	Fuser malfunctions	Replace the fuser; Note: After the maintenance, the error code needs to be cleared on the Service Menu, otherwise the code cannot be eliminated.

FE0146-00	Temperature instability	1. Fuser malfunctions 2. Data board malfunctions 3. Power supply board malfunctions	1. Replace the fuser; 2. Replace the data board; 3. Replace the power supply board.
FE0148-00	Fuser thermistor is abnormal	Fuser malfunctions	Replace the fuser
FE0151-00	Open circuit in fuser (thermistor 2 is abnormal)	1. Fuser malfunctions 2. Data board malfunctions 3. Power supply board malfunctions	1. Replace the fuser; 2. Replace the data board; 3. Replace the power supply board.
FE0152-02	Side thermistor error	1. Fuser malfunctions 2. Data board malfunctions	1. Replace the fuser; 2. Replace the data board; Note: After the maintenance, the error code needs to be cleared on the Service Menu, otherwise the code cannot be eliminated.
FE0153-00	Fuser high temperature detection (software) 2	1. Fuser malfunctions 2. Data board malfunctions 3. Power supply board malfunctions	1. Replace the fuser; 2. Replace the data board; 3. Replace the power supply board; Note: After the maintenance, the error code needs to be cleared on the Service Menu, otherwise the code cannot be eliminated.
FE0157-00	The fusing temperature is too low 2	1. Fuser malfunctions 2. Data board malfunctions 3. Power supply board malfunctions	1. Replace the fuser; 2. Replace the data board; 3. Replace the power supply board.
FE0158-00	Fuser thermistor is abnormal 2	1. Fuser malfunctions 2. Data board malfunctions 3. Power supply board malfunctions	1. Replace the fuser; 2. Replace the data board; 3. Replace the power supply board.
FE0161-00	Open circuit in fuser (thermistor 3 is abnormal)	1. Fuser malfunctions 2. Data board malfunctions 3. Power supply board malfunctions	1. Replace the fuser; 2. Replace the data board; 3. Replace the power supply board.

FE0163-00	Fuser high temperature detection 3 (software)	1. Fuser malfunctions 2. Data board malfunctions 3. Power supply board malfunctions	1. Replace the fuser; 2. Replace the data board; 3. Replace the power supply board; Note: After the maintenance, the error code needs to be cleared on the Service Menu, otherwise the code cannot be eliminated.
FE0167-00	The fusing temperature is too low 3	1. Fuser malfunctions 2. Data board malfunctions 3. Power supply board malfunctions	1. Replace the fuser; 2. Replace the data board; 3. Replace the power supply board.
FE0168-00	Fuser thermistor is abnormal 3	Fuser malfunctions	Replace the fuser
FE0171-01	Relay is short-circuited (or fuser has an unplugged connection/an open circuit)	1. Fuser connector cable is detached. 2. Fuser malfunctions 3. Data board malfunctions 4. Power supply board malfunctions	1. Check the power cable of fuser; 2. Replace the fuser; 3. Replace the data board; 4. Replace the power supply board.
FE0171-02	Silicon controlled rectifier is short-circuited	1. Fuser connector cable is detached. 2. Data board malfunctions 3. Power supply board malfunctions	1. Check the power cable of fuser;; 2. Replace the data board 3. Replace the power supply board.
FE0172-01	Fuser pressurization timeout	1. Fuser malfunctions	1. Replace the fuser
FE0172-02	Fuser decompression timeout	2. Fuser drive assembly malfunctions	2. Replace the fuser drive assembly
FE0174-00	Fuser is not inserted	Thermistor cable is not inserted;	Reinsert the thermistor cable
FE0175-00	The heating time at full power is too long (SOC detection)	1. Fuser malfunctions 2. Data board malfunctions 3. Power supply board malfunctions	1. Replace the fuser; 2. Replace the data board; 3. Replace the power supply board; Note: After the maintenance, the error code needs to be cleared on the Service Menu, otherwise the code cannot be eliminated.

FE0180-00	AC input voltage is too low	The user's voltage environment is abnormal, with an excessively low voltage input.	It can be solved by restart If restart is ineffective, please try to: 1. Replace the power supply board; 2. Replace the data board.
FE0180-01	AC input voltage is too high	The user's voltage environment is abnormal, with an excessively high voltage input	It can be solved by restart If restart is ineffective, please try to: 1. Replace the power supply board; 2. Replace the data board.
FE0181-00	The heating time at full power is too long (product safety MCU detection)	1. Fuser malfunctions 2. Data board malfunctions 3. Power supply board malfunctions	1. Replace the fuser; 2. Replace the data board; 3. Replace the power supply board; Note: After the maintenance, the error code needs to be cleared on the Service Menu, otherwise the code cannot be eliminated.
FE0182-00	Abnormal heating in sleep mode	1. Fuser malfunctions 2. Data board malfunctions 3. Power supply board malfunctions	1. Replace the fuser; 2. Replace the data board; 3. Replace the power supply board.
FE0183-00	Fuser overheating is abnormal (product safety MCU detection)	1. Fuser malfunctions 2. Data board malfunctions 3. Power supply board malfunctions	1. Replace the fuser; 2. Replace the data board; 3. Replace the power supply board; Note: After the maintenance, the error code needs to be cleared on the Service Menu, otherwise the code cannot be eliminated.
FE0184-00	Excessive difference in fuser temperature acquisition	1. Fuser malfunctions 2. Data board malfunctions	1. Replace the fuser; 2. Replace the data board;
FE0200-01	Charging output is abnormal - Black	1. High voltage board malfunctions 2. Data board malfunctions	1. Replace the high voltage board; 2. Replace the data board;

		3. The high-voltage board contact spring MHV_K has Poor contact / poor assembly; 4. Black drum unit is not grounded properly or grounding screw size is incorrect; 5. Drum unit chip cable is not connected; 6. OPC surface of black drum unit is worn; 7. The contact springs between internal black drum unit and contact points for high-voltage charging is deformed or not installed;	3. Check the contact performance of the relevant assembly points; 4. Screw the black drum unit with the grounding screw or replace the grounding screw; 5. Reinsert drum unit chip cable; 6. Replace the OPC assembly; 7. Check or replace the high-voltage contact springs for black drum unit.
FE0200-02	Charging output is abnormal - Magenta	1. High voltage board malfunctions	1. Replace the high voltage board; 2. Replace the data board; 3. Check the contact performance of the relevant assembly points; 4. Screw the magenta/yellow/cyan drum unit with the grounding screw or replace the grounding screw; 5. Reinsert drum unit chip cable; 6. Replace the OPC assembly; 7. Check or replace the high-voltage contact springs for magenta/yellow/cyan drum unit.
FE0200-03	Charging output is abnormal - Cyan	2. Data board malfunctions	
		3. The high-voltage board contact spring MHV_K has Poor contact / poor assembly;	
FE0200-04	Charging output is abnormal - Yellow	4. Magenta/Yellow/Cyan drum unit is not grounded properly or grounding screw size is incorrect; 5. Drum unit chip cable is not connected; 6. OPC surface of black drum unit is worn; 7. The contact springs between internal black drum unit and contact points for high-voltage charging is deformed or not installed;	
FE0241-01	Main motor K is abnormal	1. Motor wire is loose	1. Reinsert the motor cable;

		2. Motor malfunctions 3. Motor malfunctions for its attached foreign objects 4. Data board malfunctions	2. Replace the motor; 3. Clean foreign objects; 4. Replace the data board.
FE0241-02	Main motor YMC is abnormal	1. Motor wire is loose 2. Motor malfunctions 3. Motor malfunctions for its attached foreign objects 4. Data board malfunctions	1. Reinsert the motor cable; 2. Replace the motor; 3. Clean foreign objects; 4. Replace the data board.
FE0245-00	ITU mode switch failed	1. ITU malfunctions 2. Pressurization or decompression motor malfunctions 3. ITB pressurization drive malfunctions	1. Replace ITU; 2. Replace the motor; 3. Replace the ITB pressurization drive assembly.
FE0260-01	The density of developer is abnormally high in K channel	Excessive toner supply and high developer concentration result in abnormal sensor detection	1. Check the toner density sensor cable;
FE0260-02	The density of developer is abnormally high in Y channel		2. Restart the printer and print 20 sheets of the color image in A4 paper with 100% coverage. If no error is reported after printing is completed, it indicates that the repair is finished;
FE0260-03	The density of developer is abnormally high in M channel		If the error persists, repeat step 2 to print the color image in A4 paper with 100% coverage until the FE error is not reported any more.
FE0260-04	The density of developer is abnormally high in C channel		
FE0261-01	The output voltage of the density sensor is below the lower limit in K channel	1. Toner density sensor malfunctions 2. Toner density sensor FFC is not inserted or is detached	1. Replace the toner density sensor 2. Replace the wiring harness of toner density sensor
FE0261-02	The output voltage of the density sensor is	3. Data board malfunctions	3. Replace the data board

	below the lower limit in Y channel		
FE0261-03	The output voltage of the density sensor is below the lower limit in M channel		
FE0261-04	The output voltage of the density sensor is below the lower limit in C channel		
FE0261-11	The output voltage of the density sensor exceeds the upper limit in K channel		
FE0261-12	The output voltage of the density sensor exceeds the upper limit in Y channel	1. Toner density sensor malfunctions 2. Toner density sensor FFC is not inserted or is detached 3. Data board malfunctions	1. Replace the toner density sensor 2. Replace the wiring harness of toner density sensor 3. Replace the data board
FE0261-13	The output voltage of the density sensor exceeds the upper limit in M channel		
FE0261-14	The output voltage of the density sensor exceeds the upper limit in C channel		
FE0261-21	The output of the density sensor is abnormal in K channel		
FE0261-22	The output of the density sensor is abnormal in Y channel	1. Toner density sensor malfunctions 2. Toner density sensor FFC is not inserted or is detached 3. Data board malfunctions	1. Replace the toner density sensor 2. Replace the wiring harness of toner density sensor 3. Replace the data board
FE0261-23	The output of the density sensor is abnormal in M channel		
FE0261-24	The output of the density sensor is abnormal in C channel		
FE0262-01	Toner Supply Failure 1 in K channel	1. Toner clumping or blockage at the toner supply screw rod and at the toner inlet of developer result in abnormal toner supply motor;	1. Clean the toner supply screw rod 2. Replace the developer 3. Replace the toner supply motor
FE0262-02	Toner Supply Failure 1 in M channel		
FE0262-03	Toner Supply Failure 1 in C channel		

FE0262-04	Toner Supply Failure 1 in Y channel	2. Toner supply screw rod does not rotate properly; 3. Toner supply motor does not start properly;	
FE0280-01	Black phase sensor is abnormal	1. Black phase sensor malfunctions 2. Data board malfunctions	1. Replace the sensor 2. Replace the data board
FE0280-02	Color phase sensor is abnormal	3. Black phase sensor cable malfunctions 4. Black phase sensor is not installed 5. Poor installation of cable port 6. Main drive gear is not installed 7. Motor does not started properly 8. Gear slippage 9. Black phase sensor is covered by foreign objects	3. Replace the black/color phase sensor cable 4. Install the black/color phase sensor 5. Check if cable is loose, detached, or damaged 6. Install the main drive gear 7. Check if motor wire or board has any problems 8. Check or replace the gear 9. Clean foreign objects
FE0280-03	Color correction sensor is abnormal: Front	1. Color correction sensor malfunctions 2. Data board malfunctions	1. Replace the color correction sensor
FE0280-04	Color correction sensor is abnormal: Rear	3. Color correction sensor cable malfunctions 4. Color correction sensor is not installed 5. Poor installation of cable port 6. Sensor is dirty 7. Sensor is covered during color correction 8. Sensor is not completely covered, fully open, or partially open during normal printing	2. Replace the data board 3. Replace the color correction sensor cable 4. Install the color correction sensor 5. Check if cable is loose; if damaged, replace with new wires 6. Clean the sensor 7. Check if oneway slider is oily 8. Check if cleaning brush is delaminated and stick to CTD 9. Clean the drive gear/push rod, and

			check for wear and tear.
FE0280-05	Color Calibration Sensor Error	Sensor is dirty	Clear the sensor
FE0300-00/FE0301-00	High voltage of intermediate transfer is abnormal	1. Operational amplifier and plug-in transistor are damaged, which causes continuous output in the control hardware circuit 2. Buffer is damaged, which causes output floating 3. Firmware is out of control, which causes PWM remain in a high logic state continuously 4. Poor contact between output of primary transfer at high voltage and first transfer roller module causes high voltage output floating	It can be solved by restart. If not, please try to: 1. Replace the data board 2. Replace the high voltage board 3. Replace ITU module 4. Check the contact performance of the relevant assembly points 5. Reinsert ITU grounding screw
FE0322-00	Constant high voltage output for secondary transfer is abnormal	1. Operational amplifier and plug-in transistor are damaged, which causes continuous output in the control hardware circuit 2. Buffer is damaged, which causes output floating 3. Firmware is out of control, which causes PWM remain in a high logic state continuously	1. It can be solved by restart 2. Replace the high voltage spring contact with the second transfer roller 3. Replace the high voltage board 4. Replace the second transfer roller 5. Check the contact performance of the relevant assembly points 6. Check if the right cover of Printer is closed, and then reopen and close the right cover
FE0323-00	Constant current output for secondary transfer at high voltage is abnormal	1. Operational amplifier and plug-in transistor are damaged, which causes continuous output in the control hardware circuit	It can be solved by restart. If not, please try to: 1. Replace the high voltage spring contact with the second transfer roller

		2. Buffer is damaged, which causes output floating 3. Firmware is out of control, which causes PWM remain in a high logic state continuously 4. Poor contact between output of second transfer at high voltage and second transfer roller causes high voltage output floating	2. Replace the high voltage board 3. Replace the second transfer roller 4. Check the contact performance of the relevant assembly points 5. Check if the right cover of Printer is closed, and then reopen and close the right cover
FE0340-01	The static elimination indicator is abnormal: K	1. The static discharge lamp cable is short-circuited 2. The static discharge lamp cable has an unplugged connection or an open circuit	1. Replace the static discharge lamp 2. Reconnect or replace the static discharge lamp cable
FE0340-02	The static elimination indicator is abnormal: M		
FE0340-03	The static elimination indicator is abnormal: C		
FE0340-04	The static elimination indicator is abnormal: Y		
FE0350-00	High voltage board is abnormal due to not being inserted	1. High voltage FFC is not inserted; 2. The detection pin on the FFC is deformed or disconnected	1. Reinsert the high voltage board cable 2. Replace the high voltage board cable
FE0351-00	High voltage detection fault	1. Operational amplifier and plug-in transistor are damaged, which causes continuous output in the control hardware circuit 2. Buffer is damaged, which causes output floating. 3. Firmware is out of control, which causes PWM remain in a high logic state continuously 4. The second transfer roller has low	It can be solved by restart. If not, please try to: 1. Replace the data board 2. Replace the high voltage board 3. Replace the second transfer roller 4. Check the contact performance of the relevant assembly points 5. Check if the right cover of Printer is closed, and then reopen and close the right cover

		impedance 5. The 2THV high voltage socket on the high voltage board has poor contact/improper assembly or unplugged connection; 6. The jacket of 2THV high voltage cable on the high voltage board is damaged, and the cable is too close to the metal, which may result in high voltage discharge; 7. The right cover of Printer is not completely closed, which leads to the failure of second transfer roller shaft sleeve to contact with ITB contact points; 8. The second transfer roller is at the end of life, and shaft sleeve of the second transfer roller is worn severely, which causes poor contact	
FE0351-01	High voltage abnormal	High voltage abnormal	Replace the high voltage board.
FE0360-01	Both internal and external temperature and humidity sensors are abnormal	Connection is abnormal, or sensor malfunctions	1. Reconnect the internal and external temperature and humidity sensor cable
FE0360-02	Internal temperature and humidity sensor is abnormal		2. Replace the internal and external temperature and humidity sensor cable
FE0360-03	Air temperature and humidity sensor is abnormal		3. Replace the internal and external temperature and humidity sensor
FE0361-00	The room temperature is too low, and will affect normal printing, so please adjust the room temperature to	Ambient temperature is below -5 degrees Celsius	It can be solved by restart

	above 0°C as soon as possible		
FE0402-00	Prism motor is abnormal: Timeout when ON	1. Motor control board is abnormal, LSU data board is abnormal, printer data board is abnormal, and LSU data FFC is abnormal 2. The motor FFC has poor contact, and motor FFC is not installed 3. Abnormal control: CLK signal is unstable	1. Replace LSU 2. Replace the data board 3. Replace LSU data FFC 4. Replace LSU motor FFC 5. Restart the printer
FE0403-00	Prism motor is abnormal: Timeout when OFF	1. Motor control board is abnormal, LSU data board is abnormal, printer data board is abnormal, and LSU data FFC is abnormal 2. The motor FFC has poor contact	1. Replace LSU 2. Replace the data board 3. Replace LSU data FFC 4. Replace LSU motor FFC 5. Restart the printer
FE0404-00	Prism motor is abnormal: XFERDY signal error	1. Motor control board is abnormal, LSU data board is abnormal, printer data board is abnormal, and LSU data FFC is abnormal 2. The motor FFC has poor contact, and motor FFC is not installed 3. CLK signal (drive motor speed) is unstable	1. Replace LSU 2. Replace the data board 3. Replace LSU FFC 4. Replace LSU motor FFC 5. Restart the printer
FE0420-00	Black: Front End: LD0 Synchronization detection is abnormal	1. LSU malfunctions 2. Data board malfunctions 3. LSU data FFC is abnormal	1. Replace LSU 2. Replace the data board 3. Replace LSU FFC 4. Restart the printer
FE0422-00	Yellow: Front End: LD0 Synchronization detection is abnormal		
FE0424-00	Black: LD0 synchronization signal is unstable		
FE0426-00	Yellow: LD0		

	synchronization signal is unstable		
FE0450-00	LSU Temperature Sensor is abnormal	1. Data board malfunctions 2. LSU data FFC is abnormal 3. LSU LD PCBA is abnormal 4. The temperature sensor FFC has poor contact	1. Replace the data board 2. Replace LSU FFC 3. Replace the temperature sensor FFC 4. Restart the printer
FE0460-00	LSU FFC is abnormal due to not being inserted	1. Data board malfunctions 2. LSU data FFC is abnormal 3. LSU PCBA is abnormal 4. LSU FFC is not inserted	1. Replace the data board 2. Check or replace LSU FFC 3. Restart the printer
FE0500-00	Abnormal control of ADF Paper Release Lever	1. Dual teeth-uncompleted gears malfunction 2. Sensor malfunctions, and whether the circuit connections are reliable 3. Spring is detached	1. Replace the dual teeth-uncompleted gears 2. Check and confirm whether the sensor is properly installed and the cable is abnormal 3. Install the spring to ensure proper operation
FE0621-00	Origin check error	1. Origin sensor cable is not properly connected	Reinsert the origin sensor cable
FE0622-00	Fail to find the origin	1. Sensor is damaged or not properly installed, or the cable is not properly installed 2. Motor failure 3. Belt is not properly installed 4. Tensioner is not properly installed	1. Replace the scanner sensor, and check and confirm whether the sensor is properly installed 2. Reconnect the scanner sensor cable 3. Replace the scanner motor 4. Reinstall the belt
FE0641-01	AFE chip read/write detection failure	1. Poor contact of AFE FFC 2. AFE FFC is damaged 3. AFE board has problems	1. Unplug and replug AFE FFC 2. Replace AFE FFC 3. Replace AFE board
FE0641-02	AFE scan data is	1. Poor contact of AFE FFC	1. Unplug and replug AFE FFC

	abnormal	2. AFE FFC is worn 3. AFE board has problems	2. Replace AFE FFC 3. Replace AFE board
FE0642-00	AFE calibration failure (OFFSET)	1. Poor contact of AFE FFC 2. AFE FFC is damaged 3. AFE board has problems 4. Data board has any resistor which is not soldered 5. CIS has problems	1. Unplug and replug AFE FFC 2. Replace AFE FFC 3. Replace AFE board 4. Replace the data board 5. Replace CIS
FE0642-01	AFE calibration failure (GAIN)	1. Poor contact of AFE FFC 2. AFE FFC is damaged 3. AFE board has problems 4. Data board has any resistor which is not soldered 5. CIS has problems 6. There are contaminants on the white stripe or other defects in the white stripe	1. Unplug and replug AFE FFC 2. Replace AFE FFC 3. Replace AFE board 4. Replace the data board 5. Replace CIS 6. Remove the contaminants on the white stripe or replace with qualified white stripe
FE0642-02	AFE calibration failure (EXPOSURE)	1. Poor contact of AFE FFC 2. AFE FFC is damaged 3. AFE board has problems 4. Data board has any resistor which is not soldered 5. CIS has problems 6. There are contaminants on the white stripe or other defects in the white stripe	1. Unplug and replug AFE FFC 2. Replace AFE FFC 3. Replace AFE board 4. Replace the data board 5. Replace CIS 6. Remove the contaminants on the white stripe or replace with qualified white stripe
FE0643-00	Shading failure	1. Calibration white stripe is askew 2. There are contaminants on the calibration white stripe 3. CIS FFC is damaged or not properly installed	1. Check if the white stripe is properly installed, if both ends are installed on the alignment post, and if the middle of the white stripe is askew 2. Remove the contaminants, do not

		4. AFE FFC is damaged or not properly installed	get the white stripe dirty, or replace with qualified white stripe 3. Check the CIS FFC and reinstall 4. Check the AFE FFC and reinstall
FE0600-01	WiFi sensor error	1. WiFi sensor cable has poor contact or damage. 2. WiFi sensor is abnormal	1. Check the sensor cable or replace. 2. Replace WiFi sensor
FE0810-01	ADF communication is abnormal	1. The terminal wires between data board and ADF board have poor contact 2. The chip on ADF board has poor contact, there is no firmware in the chip, or firmware flashing or updating is abnormal	1. Replace the ADF cable 2. Replace the ADF board
FE0820-00	Optional communication is abnormal	1. Tray firmware is not burned; 2. Poor connection between the tray and the main machine;	1. Power off and restart; 2. If there is no optional tray firmware, burn the tray firmware; 3. Replace the cable between tray and the main machine or the socket;
FE0821-00	103 communication is abnormal	1. The secondary MCU and CM31 version are mismatched; 2. The secondary MCU firmware is not burned; 3. Secondary MCU execution is abnormal; 4. The printer is not restarted after the firmware is burnt; 5. The secondary MCU firmware is burning;	1. Power off and restart; 2. Replace the tray 3. Replace the cable between tray and the main machine or the socket;
FE0822-00	003 communication is abnormal (fuser safety	1. 003 MCU firmware has no data	1. Power off and restart;

	policy)	feedback and retransmits 3 times 2. 003 MCU firmware detects CRC error in main body data 3. 003 MCU firmware detects optional data CRC 4. 003 MCU firmware is mismatched	2. Replace the data board;
FE0822-01	003 communication is abnormal (IIC to PWM)	1. PWM 003 chip firmware is not burned 2. PWM 003 execution is abnormal	Replace the data board
FE0830-00	IUChip communication is abnormal	1. Chip malfunctions; 2. Communication CRC verification failed; 3. IIC communication is abnormal;	1. Check the chip cable 2. Replace the toner cartridge chip 3. Replace the data board
FE0840-00	EEPROM communication is abnormal	1. EEPROM is not installed or installed incorrectly 2. EEPROM chip is abnormal 3. EEPROM write-protect pin is pulled up	Replace the backup board
FE0900-00	Notification of consumables detection completion is not delivered	1. Chip malfunctions; 2. Communication CRC verification failed; 3. IIC communication is abnormal; 4. Consumables business logic is abnormal;	1. Check the chip cable 2. Replace the toner cartridge chip 3. Replace the data board
FE0901-00	AC Voltage Detection Circuit Error	1. High Voltage Board is abnormal 2. Data board is abnormal	1. Replace High Voltage Board 2. Replace data board
FE0902-00	Notification that "CTL side image preparation is OK" is not delivered	DC job did not send 0x82	1. Power off and restart; 2. Replace the data board;
FE0903-01	Engine firmware bug: The warm-up action of the internal monitoring	Warm-up timeout	1. Power off and restart; 2. Replace the data board;

	module cannot be completed.		
FE0903-02	Engine firmware bug: The management buffer of printed page is full	Too many jobs in the engine job queue	1. Power off and restart; 2. Replace the data board;
FE0903-03	Engine firmware bug: Printing a certain page cannot be started	The job of printing a certain page in the engine job queue timed out before printing started	1. Power off and restart; 2. Replace the data board;
FE0903-04	Engine firmware bug: Printing a certain page cannot be finished	The job of printing a certain page in the engine job queue timed out before printing finished	1. Power off and restart; 2. Replace the data board;
FE0903-05	Engine firmware bug: Printing the complete sequence cannot be finished	Engine print load timed out and failed to stop	1. Power off and restart; 2. Replace the data board;
FE0903-10	Engine firmware bug: Execution of color correction cannot be finished	Correction execution time exceeds 90 seconds (excluding toner supply time, normal correction time is within 60 seconds)	1. Power off and restart; 2. Replace the data board;
FE0903-11	Engine firmware bug: automatic toner supply execution cannot be finished	Timing interaction abnormality causes the toner supply action fail to end on time	1. Power off and restart; 2. Replace the data board;
FE0185-00	Paper gap sensor for standard tray is abnormal	1. The sensing arm of paper gap sensor is not installed properly 2. The sensing arm of paper gap sensor malfunctions 3. Paper gap sensor malfunctions 4. The sensor cable is abnormal	1. Check whether the sensing arm of paper gap sensor is installed properly; 2. Replace the sensing arm of paper gap sensor. 3. Detect if the sensor is functioning normally in service mode; 4. Replace the paper gap sensor. 5. Check the sensor cable.
FE0185-01	Paper gap sensor for multi-purpose tray is abnormal	1. The sensing arm of paper gap sensor is not installed properly	1. Check whether the sensing arm of paper gap sensor is installed properly;

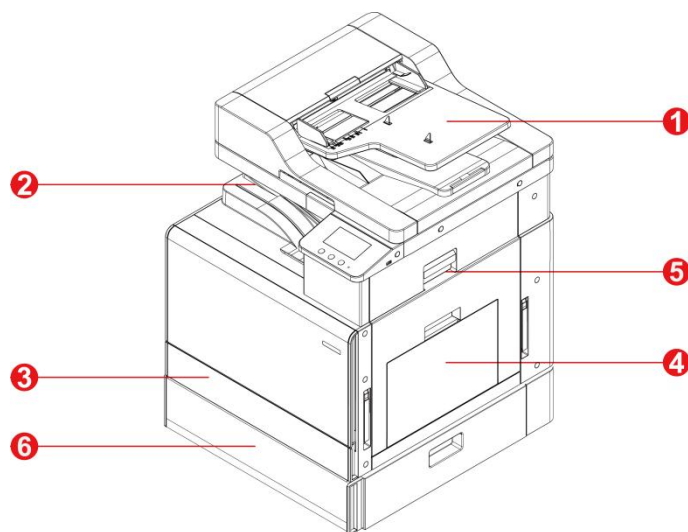
		2. The sensing arm of paper gap sensor malfunctions 3. Paper gap sensor malfunctions	2. Replace the sensing arm of paper gap sensor. 3. Detect if the sensor is functioning normally in service mode; 4. Replace the paper gap sensor.
FE0560-00	Optional tray stacking section is abnormal	1. Optional Tray is abnormal 2. Data board is abnormal	1. Replace the optional tray; 2. Replace the data board;

5.5 Software Faults

Fault Phenomena	Solutions
The printer icon is not displayed in the “Devices and Printers” folder.	1. Reinstall the printer driver. 2. Please ensure that the USB cable and power cord are correctly connected.
The printer is in “ready” mode, but does not execute any print jobs.	1. Restart the printer, and if the fault persists, please reinstall the printer driver. 2. Make sure the USB cable and network cable are correctly connected.
Driver installation failed.	1. Check if the Print Spooler service is enabled. 2. Check if the printer is powered on, and if the printer connection is normal.
After the printer IP address is changed, the driver cannot be used.	1. Modify the IP address of the printer driver’s port. If the above methods do not solve the problem, please reinstall the printer driver. 2. It is recommended to set the network printer to a fixed IP address. 3. In a DHCP network, it is recommended to bind the IP address to the printer MAC address.

5.6 Removal of Jammed Paper

5.6.1 Identify the jam position

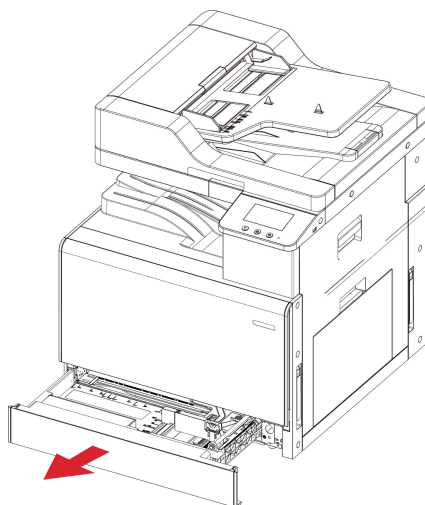


No.	Jam Position
1	Document Feeder (ADF)
2	Output Tray
3	Standard feed tray
4	Multi-Purpose Feed Tray
5	Right cover door
6	Optional Tray

5.6.2 Removal of Jammed Paper

1. The paper is jammed in the standard feed tray

1) Pull out the Standard Feed Tray.

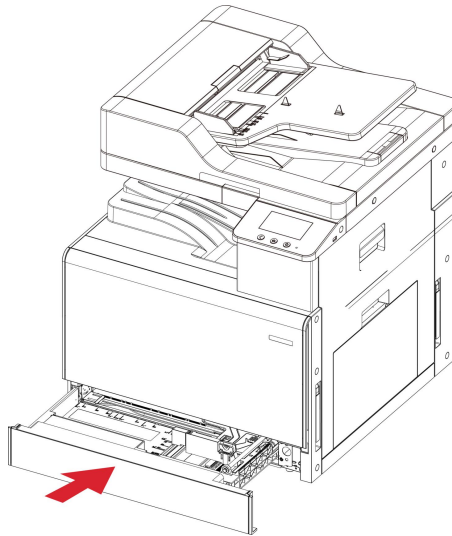


2) Gently pull out the jammed paper.

 **Note:** • Confirm all paper fragments have been removed.

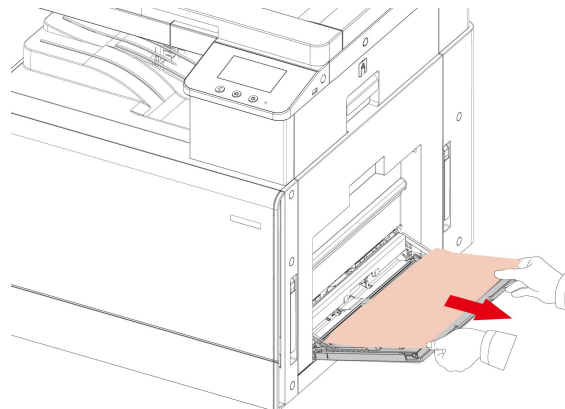


3) After removing the jammed paper, insert the Standard Feed Tray back into the printer, open and close the front cover, and the printer will automatically resume printing.



2. The paper is jammed in the multi-purpose feed tray

1). Gently pull out the jammed paper.

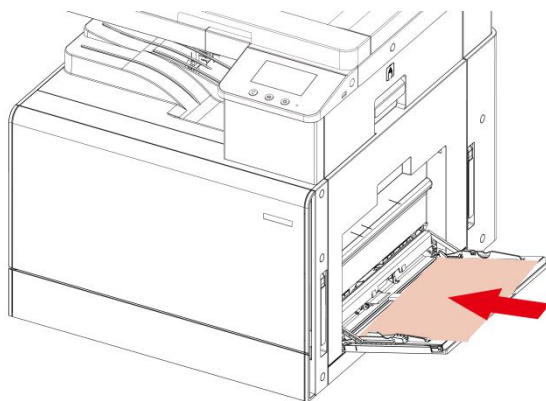


2) Open the right cover door to remove all paper fragments.

Note: • The inside of the printer may be very hot. To avoid being burned by heating components, please wait for the surface to cool before touching the components.

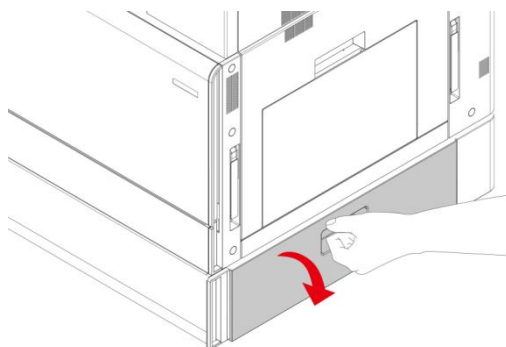
- Make sure that the door does not hit any cables connected to the printer.

- 3) Close the right cover door.
- 4) Before loading, flex and fan the paper, and align the edges of the paper.
- 5) Reload the paper.

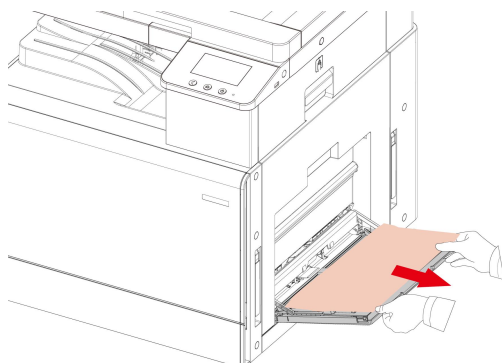


3. Paper is jammed in the Optional Tray

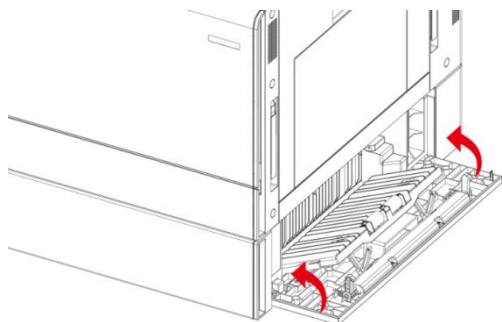
- 1) Open the right cover of Optional Tray.



- 2) Gently pull out the jammed paper.

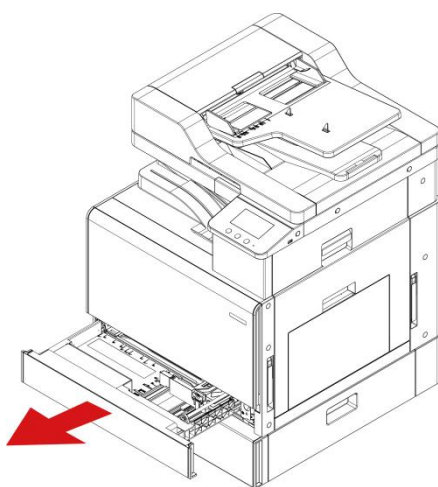


- 3) After removing the jammed paper, close the right cover of Optional Tray, and the printer will automatically resume printing.

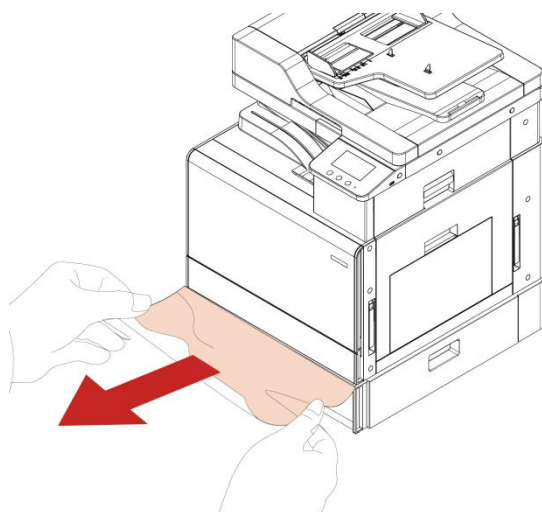


If you do not see paper in the area, stop and go to next step:

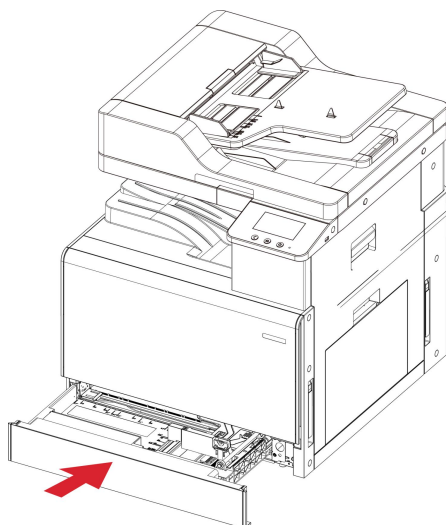
- 1) Pull out the Optional Tray.



2) Gently pull out the jammed paper.

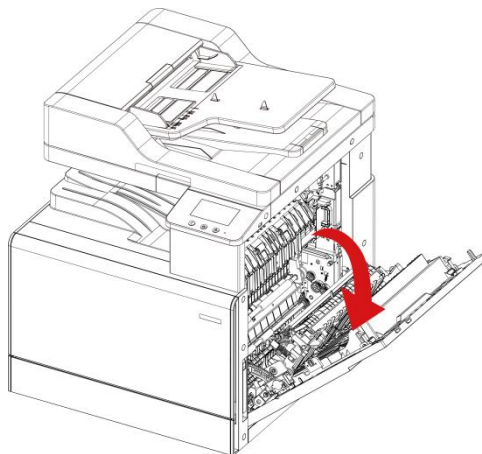


3) After removing the jammed paper, insert the Optional Tray back into the printer, open and close the front cover, and the printer will automatically resume printing.



The paper is jammed in the right cover door

- 1) Open the right cover door.

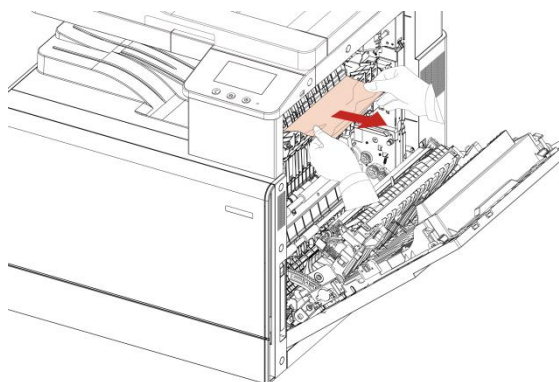


Note: • The inside of the printer may be very hot, please wait for the surface to cool before touching the components so as to avoid being burned by heating components.

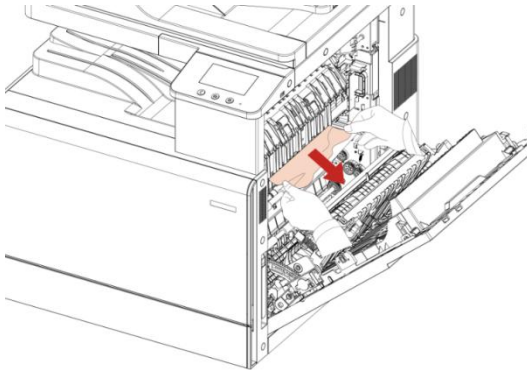
- Make sure that the door does not hit any cables connected to the printer.

- 2) Remove the jammed paper from any position below.

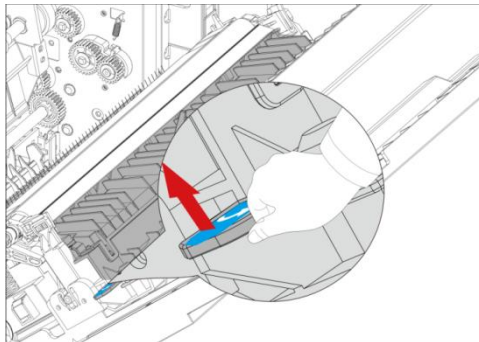
- Fuser area



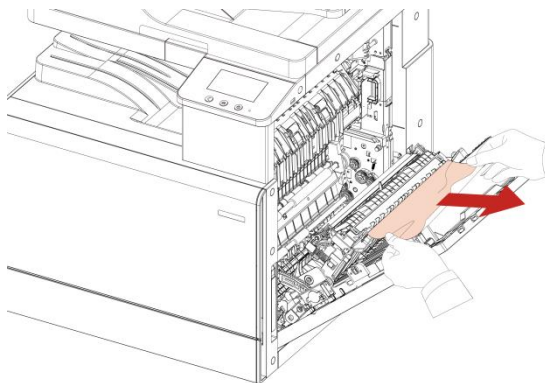
- Below the fuser area



- Duplex module



- Above the duplex printing area



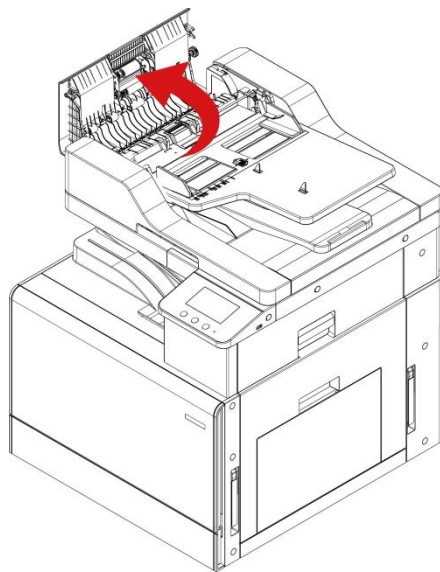
3) Open the Standard Feed Tray, and then take out the jammed paper.

Note: • Confirm all paper fragments have been removed.

4) Close the tray, and then close the right cover door.

4. The paper is jammed in the document feeder (ADF)

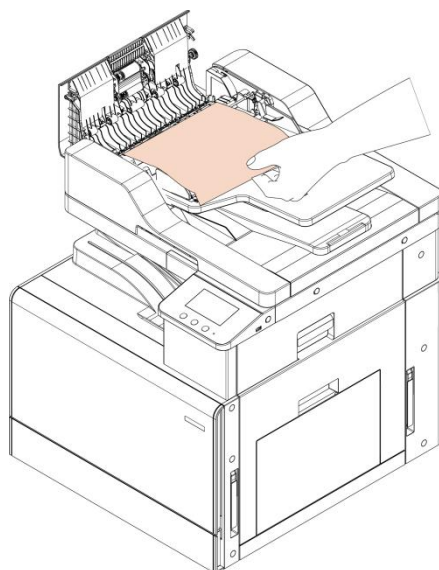
1) Open the top cover of the document feeder.



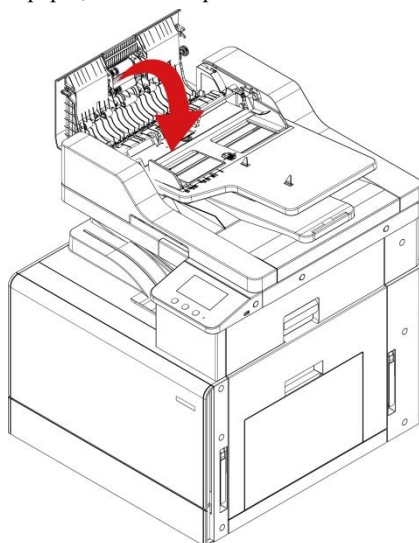
2) Remove the jammed paper from the document feeder.

Note: • If the paper is not jammed in the duplex channel, rotate the roller to eject the jammed paper.

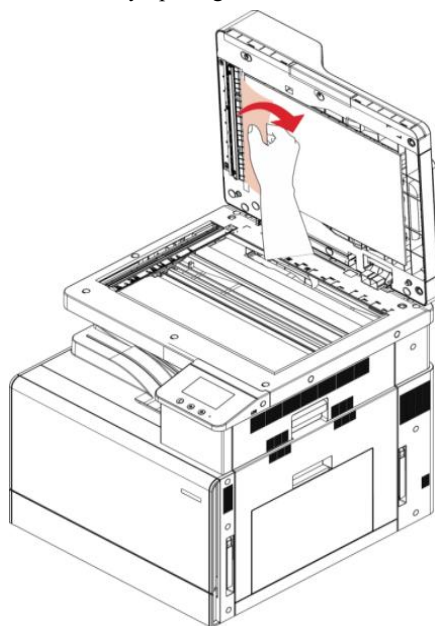
• If the paper is jammed in the duplex channel, open the duplex channel bracket, and then rotate the roller to eject the jammed paper.



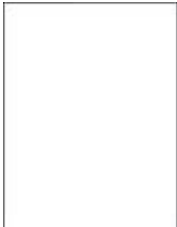
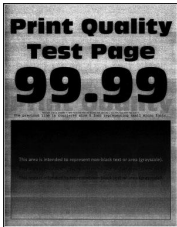
- 3) After removing the jammed paper, close the top cover of the document feeder, and the printer will resume normal operation.

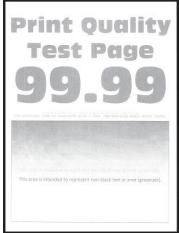


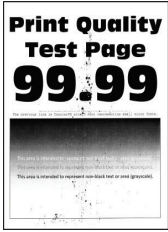
- 4) If the paper is difficult to remove, try opening the scanner cover and removing the paper from the pressure roller.



5.7 Image Defects 1

Fault Phenomena	Causes	Solution
 Blank or white page	Imaging module is damaged.	Replace the imaging module.
 Printout color is too dark	- The print density is set too high. - The print media does not meet specifications, e.g. the media have textures or are damp or too rough. - The paper has been stored in the air for too long. - Imaging module is not installed properly.	- Please adjust the toner density from “Print Preferences” based on your operating system, or adjust the print density from the printer’s control panel. - Please use the media within the specified range properly. - Before use, please store the paper in its original packaging. - Please perform “color calibration” settings. - Remove the imaging module and reinstall it.
 Ghosting occurs	- The tray is not loaded with the medium correctly. - Imaging module is not installed properly.	- Please load the paper correctly. - Please perform “color calibration” settings. - Remove the imaging module and reinstall it.
 Gray or colored background	- Paper feed path is dirty. - Exposure occurs during scanning. - Any grey or colored background appearing on the printout after copying or scanning may be caused by dirt on the glass platen.	- Clean the paper feed path. - Please cover the document cover before copying and scanning. - Clean the glass platen.

 Incorrect margins	• The paper guide of tray is not correctly locked. • The tray is not loaded with the medium correctly. • The print margin is not set correctly.	• Please place the paper guide correctly. • Please load the paper correctly. • Please set the correct print margins.
 Printout color is too light	• The print density is set too low. • The print media does not meet specifications, e.g. the media have textures or are damp or too rough. • The resolution is set too low in the printing program, and the density is set too low. • The paper has been stored in the air for too long. • The toner cartridge is not installed correctly. • The toner save mode is checked. • Imaging module is not installed properly.	• Please use the media within the specified range properly. • Please adjust the toner density from “Print Preferences” based on your operating system, or adjust the print density from the printer’s control panel. • Before use, please store the paper in its original packaging. • Pull out the toner cartridge, remove it, and then insert it again. • Please check if the ink toner save mode is enabled. • Please perform “color calibration” settings. • Remove the imaging module, and reinstall it.
 Jagged or irregular characters	• The printer does not support fonts installed in the computer. • Position calibration is abnormal.	• Please contact the Customer Service Center. • Please perform “color calibration” settings.
 Missing colors	• The toner cartridge is not installed correctly. • Toner is insufficient. • The imaging module with missing color is not installed properly. • The imaging module with missing color is damaged.	• Pull out the toner cartridge, remove it, and then insert it again. • Replace it with the new toner cartridge. • Remove the imaging module with missing color and reinsert it. • Replace the imaging module with missing color.



Mottles and spots

- Toner cartridge is dirty or leaking.
- The print media does not meet specifications, e.g. the media have textures or are damp or too rough.
- The paper has been stored in the air for too long.
- Transfer settings are incorrect.
- Paper feed path is dirty.
- Any dots and spots appearing on the printout after copying or scanning may be caused by dirt on the glass platen.
- Scanner is dirty or damaged.
- Imaging module is damaged.
- Please contact the Customer Service Center.
- Please use the media within the specified range properly.
- Before use, please store the paper in its original packaging.
- Please readjust the transfer parameters.
- Clean the paper feed path.
- Clean the glass platen.
- Replace the imaging module.



Paper curling

- The tray is not loaded with the medium correctly.
- The paper has been stored in the air for too long.
- Please load the paper correctly.
- Before use, please store the paper in its original packaging.



Printout is bent or skewed

- The tray is not loaded with the medium correctly.
- The print media does not meet specifications, e.g. the media have textures or are damp or too rough.
- The paper has been stored in the air for too long.
- The paper guide of tray is not moved to the appropriate position.
- Please load the paper correctly.
- Please use the media within the specified range properly.
- Before use, please store the paper in its original packaging.
- Use the correct paper guide position for matched paper.



Single-color or black

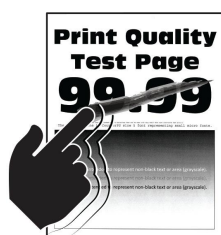
- If only all-black image appears after copying or scanning, it may be caused by exposure during scanning when the document cover is not closed.
- Scanner is damaged.
- Imaging module is not installed properly.
- Imaging module is damaged.
- Please cover the document cover before copying.
- Please contact the Customer Service Center.
- Remove the imaging module and reinstall it.
- Replace the imaging module.

image



- There is a foreign body inside the printer.
- Please contact the Customer Service Center.
- Imaging module is not installed properly.
- Remove the imaging module and reinstall it.

Text or image is cut off



- The unqualified print media are used, e.g. the media weight is not supported by the printer.
- Please use the media within the specified range properly.
- The paper has been stored in the air for too long.
- Before use, please store the paper in its original packaging.
- The working environment fails to meet the scope of printer's working environment.
- Please find an appropriate working environment for printer.
- Printer is abnormal.
- Please contact the Customer Service Center.

Toner flakes easily



- Imaging module is damaged.
- Replace the imaging module.
- Toner is insufficient.
- Replace it with the new toner cartridge.

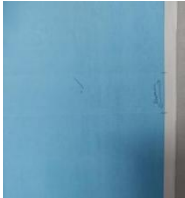
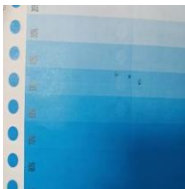
Uneven print density

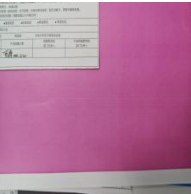


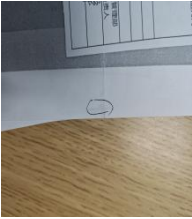
- The paper has been stored in the air for too long.
- Before use, please store the paper in its original packaging.
- Imaging module is not installed properly.
- Remove the imaging module and reinstall it.
- Imaging module is damaged.
- Replace the imaging module.

Horizontal dark lines

5.8 Image Defects 2

Fault Phenomena	Causes	Solution
 Irregular dots	When the paper is fed from the multi-purpose tray, the friction between the back of the paper and the paper separation pad makes the paper powder accumulate on the ITU, causing image problems.	It is recommended to use standard tray for plain paper printing to avoid such problem. If this problem occurs when printing from the multi-purpose tray, follow these steps: 1. Let the printer stand for 1 hour; 2. Feed about 50 pages from the standard tray 3. Wipe the surface of transfer belt with a cleaning paper (open the right cover, and separately drive the ITB to rotate in service mode while wiping it)
 Ghosting	To ensure transfer capability, the transfer voltage must be maintained sufficiently high. However, there is inevitably some error in the detection of the primary transfer voltage, which can make some printers have excessively high transfer voltage and cause ghosting. To find a balance between transfer capability and ghosting, with transfer capability being more important, it is necessary to allow for the presence of lighter ghosting.	Reduce the primary transfer voltage in service mode.
 White lines	Defects in the LSU F-theta2 lens molding cause a variation in the exit surface shape, forming vertical lines on the lens. The sidelobe energy of the LSU spot at that position is relatively lower than that in the nearby area, which makes the density appear lower, and results in white lines.	Replace LSU.
 Light colors	Oscillation of magnetic roller (specification $\leq 0.03\text{mm}$)	Replace the imaging module.

	1. It is caused by interaction between toner cartridge structure and developer 2. Due to limitations in the structure of the toner cartridge, the developer cannot move smoothly through the GAP between the toner blade and the magnetic roller, resulting in the accumulation of some developer which cannot be consumed. This leads to the inconsistent quality with normally discharged developer, resulting in the production of vertical black bars.	1. Replace the developer 2. Replace the imaging module
	Toner additives are not completely cleaned, moving from the OPC surface to the CR surface, where they are then adsorbed by the CCR. After continuous printing, under the combined effects of heat and lapse of time, the additives previously adsorbed by CCR contaminate the CR again, causing abnormal charging at this position and forming dark horizontal bars.	1. Print continuously for about 200 pages 2. Replace the cleaning roller and developer
	When the second transfer roller applies pressure on the ITB for an extended period, the ITB fails to complete the transfer of the image during printing. Reducing the NIP of the second transfer can improve this issue, but it does not meet the desired results due to a decrease in NIP tolerance. There is a risk of the second transfer roller not making proper contact with the ITU;	1. The phenomenon will disappear after printing about 30 pages; 2. Adjust or reinstall the second transfer roller
	The toner additive accumulates at the cleaning blade, forming a film after being left idle. When the OPC rotates back to this position again, it experiences a change in speed, leading to a significant variation in the spacing of imaging points at the exposure position, resulting in the formation of white lines.	Disappear after printing 5-10 pages

	In the process of long-lasting printing, it is inevitable that toner will scatter onto the paper path after the secondary transfer. After accumulating in printing a certain number of pages, the level of dirtiness will become more significant. There is a probability that the paper will randomly follow the guide ribs along the printed surface, resulting in dirtiness at the end of the paper.	Clean the paper path and the guide ribs on the printed surface
	The operation cycle of the developer in the dual-component imaging structure relies on screw transportation. In the later stages of its lifespan, the prolonged wear and tear of the developer may lead to a decrease in quality and smoothness of operation, as well as a reduction in the overall amount of developer (loss of developer during the lifespan). The defect of insufficient developer quantity at the position of the screw threads is reflected in the image, resulting in oblique stripes.	1. Adjust the developer screw 2. Replace the developer

6. Service Menu

6.1 “Diagnosis” menu

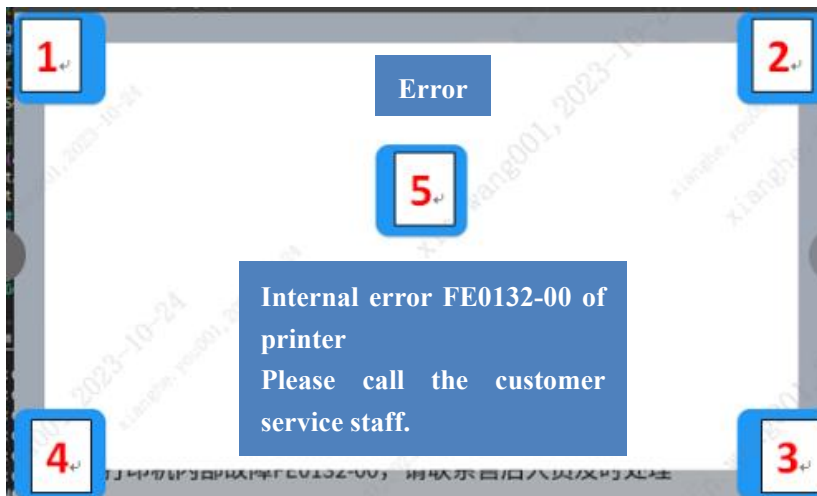
6.1.1 Enter the “Diagnosis” menu

There are two ways to enter the service mode menu based on the printer status.

1. When the Printer is in a ready state, enter the service mode by entering the password:

At the administrator password input interface on the panel, enter the password: **36 to enter. The password cannot be changed.

When the Printer is in error state, you can enter **36 in the password input box after sequentially pressing specific five points on the screen (four corners and the middle exclamation mark icon).



Fatal Error Status	Enable Service Mode	Maintaining method
Communication between Panel and DC failed	No	Firmware crash, restart the Printer
Others	Yes	/

6.1.2 Exit the service mode

When the service mode is exited, the Printer automatically restarts.

6.1.3 Job exclusion

After the printer enters the service mode, the service mode management module activates the STATUS_ID_MAINTENANCE status. The job management module, upon receiving a job, checks the STATUS_ID_MAINTENANCE status.

If this status exists, the job is rejected, and the job data is discarded.

6.2 Service Mode Menu

6.2.1 Printing Device Settings

Purpose: Printing all setting pages of the printer device is suitable for scenarios where the customer cannot connect to the web on-site.

Specifications: Users start the setting function of printing device through the panel. The printer prints out all the settings of the printer according to the information page printing process (A4 size).

When printing starts, the data firmware obtains all the printer settings from the panel, generates printing data, and during the printing process, the user can cancel the printing.

6.2.2 Advanced print quality test pages

Purpose: The preset quality test pages are printed to check the printing quality under the current printer settings.

Specifications: The print quality test page is the A4 Color Printing Comprehensive Test Version. Printing action specifications are the same as the general information page.

6.2.3 Print engine

6.2.3.1 Engine Maintenance Settings

6.2.3.1.1 Abnormality cleared

Panel control	Action Specifications
Execute button	Send execution request
Result display area	Abnormality clearing...
	Successfully clear the abnormality!

Note: After execution is completed, the printer should be restarted.

6.2.3.1.2 Input Detection

6.2.3.1.2.1 Cover detection

Front cover

After-sales instructions: Under normal status, panel will display the open and close status of covers

Purpose: Detect the front door switch sensor

Specifications: Users click the test button, and the test results are displayed on the panel

Panel control	Action Specifications
Detect button	Press it to send sensor detection command
Result display area	0: Open 1: Close

Right cover

After-sales instructions: Under normal status, panel will display the open and close status of covers

Purpose: Detect the right cover switch sensor

Specifications: Users click the test button, and the test results are displayed on the panel

Panel control	Action Specifications
Detect button	Press it to send sensor detection command
Result display area	0: Open 1: Close

6.2.3.1.2.2 Standard feed tray detection

Out of Paper Sensor

Purpose: Detect the paper availability in the standard tray

Specifications: The panel displays corresponding status information based on the paper availability in the standard tray, with specifications as follows:

Panel control	Action Specifications
Detect button	Send sensor detection command
Result display area	0: Out of Paper 1: Paper Available

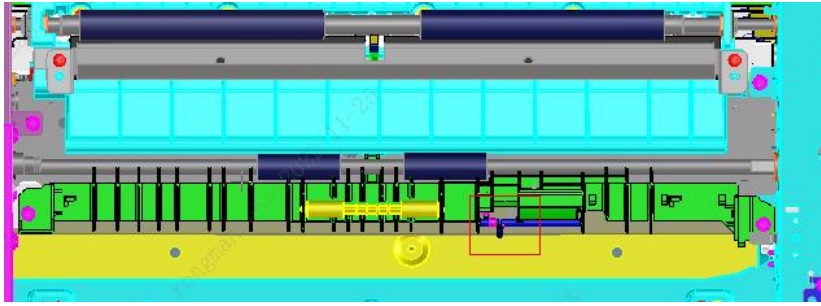
Paper gap sensor

Purpose: Multifeed detection

Specifications: The panel displays sensor status based on the detection results of each sensor. For example: if the user covers the paper feed failure sensor with his/her hand, the status of the paper feed failure sensor on the panel changes from 0 to 1.

Specifications displayed for each sensor are as follows:

Open the right cover and toggle the sensor detection lever.



Panel control	Action Specifications
Detect button	Press it to send sensor detection command
Result display area	0: Paper Available 1: Out of Paper

Paper Size Sensor

Purpose: Detect the length and width of paper size

Specifications: There are a total of 5 sensors for paper size detection to complete the test through 3 scenarios;

Panel control	Action Specifications
Detect button	Press it to send sensor detection command
Result display area	Paper type Size unknown

6.2.3.1.2.3 Multi-purpose feed tray detection

Out of Paper Sensor

Purpose: Detect the paper availability in the multi-purpose tray

Specifications: The panel displays corresponding status information based on the paper availability in the multi-purpose tray, with specifications as follows:

Panel control	Action Specifications
Detect button	Send sensor detection command
Result display area	0: Paper Available 1: Out of Paper

Paper gap sensor

Purpose: Multifeed detection

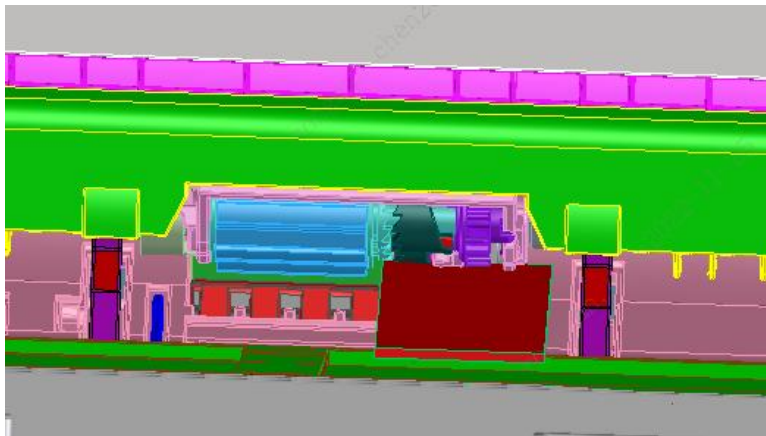
Specifications: The panel displays sensor status based on the detection results of each sensor. For example: if the user covers the paper feed failure sensor with his/her hand, the status of the paper feed failure sensor on the panel changes from 0 to 1. Specifications displayed for the sensor are as follows:

Open the multi-purpose tray, and insert a piece of cardboard into the internal detection sensor of printer at the area marked in red box as shown in Fig. 4.3. (See Fig. 2)

Fig. 1: Position of Detection Handle



Fig. 2: Illustration of Paper Insertion



Panel control	Action Specifications
Detect button	Press it to send sensor detection command
Result display area	0: Paper Available 1: Out of Paper

6.2.3.1.2.4 Optional Tray 1 detection

Out of Paper Sensor

Purpose: Detect the paper availability in the Optional Tray 1

Specifications: The panel displays corresponding status information based on the paper availability in the Optional Tray 1, with specifications as follows:

Panel control	Action Specifications
Detect button	Press it to send sensor detection command
Result display area	0: Paper Available 1: Out of Paper

Paper Pickup Sensor

Purpose: Detect if the tray of the Optional Tray 1 is lifted

Specifications: The panel displays corresponding status information based on if the tray of the Optional Tray 1 is lifted, with specifications as follows:

Panel control	Action Specifications
Detect button	Press it to send sensor detection command
Result display area	0: Base plate is in position 1: Base plate does not lift

Paper Feed Sensor

Purpose: Detect if the paper in the Optional Tray 1 has reached the specified position

Specifications: The panel displays corresponding status information based if the paper in the Optional Tray 1 has reached the specified position, with specifications as follows:

Panel control	Action Specifications
Detect button	Press it to send sensor detection command (paper feeding action is required)
Result display area	0: Out of Paper 1: Paper Available

6.2.3.1.2.5 Optional Tray 2 detection

Out of Paper Sensor

Purpose: Detect the paper availability in the Optional Tray 2

Specifications: The panel displays corresponding status information based on the paper availability in the Optional Tray 2, with specifications as follows:

Panel control	Action Specifications
Detect button	Press it to send sensor detection command
Result display area	0: Paper Available 1: Out of Paper

Paper Pickup Sensor

Purpose: Detect if the tray of the Optional Tray 2 is lifted

Specifications: The panel displays corresponding status information based on if the tray of the Optional Tray 2 is lifted, with specifications as follows:

Panel control	Action Specifications
Detect button	Press it to send sensor detection command
Result display area	0: Base plate is in position 1: Base plate does not lift

Paper Feed Sensor

Purpose: Detect if the paper in the Optional Tray 2 has reached the specified position

Specifications: The panel displays corresponding status information based if the paper in the Optional Tray 2 has reached the specified position, with specifications as follows:

Panel control	Action Specifications
Detect button	Press it to send sensor detection command (paper feeding action is required)
Result display area	0: Out of Paper 1: Paper Available

6.2.3.1.2.6 Paper Path Sensor Detection

Correction Sensor

Purpose: Control the timing of the clutch correction, and detect the paper jam

Specifications: Display the status of the front end correction sensor.

Panel control	Action Specifications
Detect button	Press it to send sensor detection command
Result display area	0: Paper Available 1: Out of Paper

Fuser Exit Sensor

Purpose: Control the timing of the fuser motor and paper exit motor; detect the paper jam

Specifications: Display the detection status of the sensors.

Panel control	Action Specifications
Detect button	Press it to send sensor detection command
Result display area	0: Paper Available 1: Out of Paper

Duplex entrance sensor

Purpose: Control the timing of the duplex clutch, and detect the paper jam

Specifications: Display the status of the duplex sensor

Panel control	Action Specifications
Result display area	0: Paper Available 1: Out of Paper

6.2.3.1.2.7 Waste toner bottle detection

Installation detection

Purpose: Check the status whether the waste toner bottle is installed

Specifications: The full level status of the waste toner bottle is displayed, with the following specifications:

Panel control	Action Specifications
Detect button	Press it to send sensor detection command
Result display area	0: Not installed 1: Installed

Status detection

Purpose: Obtain three states of toner level in the waste toner bottle (full (not installed), to be full, or not full).

Specifications: The full level status of the waste toner bottle is displayed, with the following specifications:

Panel control	Action Specifications
Detect button	Press it to send sensor detection command
Result display area	0: Not full 1: To be full 2: Full

6.2.3.1.2.8 Temperature and humidity detection

Ambient temperature

Panel control	Action Specifications
Detect button	Press it to send sensor detection command
Result display area	XXX°C XXX°F

Ambient humidity

Panel control	Action Specifications
Detect button	Press it to send sensor detection command
Result display area	XX%RH

Internal temperature

Panel control	Action Specifications
Detect button	Press it to send sensor detection command
Result display area	XXX°C XXX°F

Internal humidity

Panel control	Action Specifications
---------------	-----------------------

Detect button

Press it to send sensor detection command

Result display area

XX%RH

6.2.3.1.2.9 Fuser detection

Fuser sensor

Purpose: Detect whether the fuser is in decompression or pressurization state.

Specifications: Send pressurization or decompression action; display whether the fuser is in decompression or pressurization state.

Panel control	Action Specifications
Pressurization button	1. Send pressurization request 2. Read pressurization result;
Decompression button	1. Send decompression request 2. Read decompression result; Display: Fuser pressurization succeeded
Result display area	Fuser decompression succeeded Fuser compression failed Fuser decompression failed

Paper Curl Sensor 1/2

Purpose: Detect the degree of paper bending by sensor to control the speed of the fuser motor

Specifications: Display the detection status of the sensors.

Panel control	Action Specifications
Detect button	Press it to send sensor detection command
Result display area	0: Paper Curl 1 1: Paper Curl 2 2: Paper Curl 3

6.2.3.1.3 Output Detection

6.2.3.1.3.1 Power supply board fan detection

Purpose: Detect the power supply cooling fan

Specifications: Follow the panel operation instructions in the following table

Mechanical instructions: Cool for the power supply board, data board, and paper feed motor

Panel control	Action Specifications
Stop	Click to stop
High-Speed Rotation	Click high-speed rotation
Low-Speed Rotation	Click low-speed rotation
Result display area	Fan for power supply board is rotating at high speed...

Fan for power supply board has successfully rotated at high speed!

Fan for power supply board has failed to rotate at high speed!

Fan for power supply board is rotating at low speed...

Fan for power supply board has successfully rotated at low speed!

Fan for power supply board has failed to rotate at low speed!

6.2.3.1.3.2 LSU rear cooling fan detection

Purpose: Detect the rear cooling fan

Specifications: Follow the panel operation instructions in the following table

Mechanical instructions: Cool for LSU, OPC, ITU, etc.

Panel control	Action Specifications
Stop	Click to stop
High-Speed Rotation	Click high-speed rotation
Low-Speed Rotation	Click low-speed rotation
	LSU rear cooling fan is rotating at high speed...
	LSU rear cooling fan has successfully rotated at high speed!
	LSU rear cooling fan has failed to rotate at high speed!
Result display area	
	LSU rear cooling fan is rotating at low speed...
	LSU rear cooling fan has successfully rotated at low speed!
	LSU rear cooling fan has failed to rotate at low speed!

6.2.3.1.3.3 LSU front cooling fan detection

Purpose: Detect the front cooling fan

Specifications: Follow the panel operation instructions in the following table

Mechanical instructions: Cool for LSU, OPC, ITU, etc.

Panel control	Action Specifications
Stop	Click to stop
High-Speed Rotation	Click high-speed rotation
Low-Speed Rotation	Click low-speed rotation
	LSU front cooling fan is rotating at high speed...
	LSU front cooling fan has successfully rotated at high speed!
	LSU front cooling fan has failed to rotate at high speed!
Result display area	
	LSU front cooling fan is rotating at low speed...
	LSU front cooling fan has successfully rotated at low speed!
	LSU front cooling fan has failed to rotate at low speed!

6.2.3.1.3.4 Static Discharge Lamp

Purpose: Detect if the static discharge lamp is working normally

Specifications: The panel detects the status of right cover every 1 second. 0 for close, 1 for open;

The waste toner box should be removed for detection of static discharge lamp.

Panel control	Action Specifications
YMC	Press it to send sensor detection command
K	Press it to send sensor detection command
	YMC static discharge lamp is enabling...
	YMC static discharge lamp has enabled successfully!
	YMC static discharge lamp has failed to enable!
Result display area	
	K static discharge lamp is enabling...
	K static discharge lamp has enabled successfully!
	K static discharge lamp has failed to enable!

6.2.3.1.3.5 YMC main motor detection

Purpose: Detect the main motor YMC

Specifications: Rotation and stop are available; follow the panel operation instructions

Mechanical instructions: Drive Y/M/C_OPC+MR

Execute	Panel operation
Stop	Click to stop
Rotate	Click to rotate

6.2.3.1.3.6 K main motor detection

Purpose: Detect the main motor K

Specifications: Follow the panel operation instructions in the following table

Panel control	Action Specifications
Stop	Click to stop
Rotate	Click to rotate

6.2.3.1.3.7 Fuser motor detection

Purpose: Detect the fuser motor

Specifications: Fast clockwise rotation, slow clockwise rotation and stop are available; follow the panel operation instructions.

Mechanical instructions: Drive the fuser module by clockwise rotation + automatic fuser decompression

Panel control	Action Specifications
Stop	Click to stop
Slow	Click slow-speed rotation
Fast	Click fast-speed rotation

6.2.3.1.3.8 Paper feed motor detection

Purpose: Detect the paper feed motor

Specifications: Follow the panel operation instructions in the following table

Mechanical instructions: Drive duplex printing + paper feed + waste toner bottle

Panel control	Action Specifications
Stop	Click to stop
Slow-speed rotation	Click slow-speed rotation
Fast-speed rotation	Click fast-speed rotation

6.2.3.1.3.9 Paper exit motor detection

Purpose: Detect the paper exit motor

Specifications: Follow the panel operation instructions in the following table

Mechanical instructions: Drive the paper exit module by clockwise and counterclockwise rotation

Panel control	Action Specifications
Stop	Click to stop
Slow Clockwise Rotation	Click slow clockwise rotation
Fast Clockwise Rotation	Click fast clockwise rotation
Slow Counterclockwise Rotation	Click slow counterclockwise rotation
Fast Counterclockwise Rotation	Click fast counterclockwise rotation

6.2.3.1.3.10 CK toner supply motor detection

Purpose: Detect the toner supply motor CK for toner cartridge

Specifications: Follow the panel operation instructions in the following table

Mechanical instructions: Drive the mixing of C+K toner cartridge + toner supply by clockwise and counterclockwise rotation

Panel control	Action Specifications
Stop	Click to stop
Clockwise Rotation	Click clockwise rotation
Counterclockwise Rotation	Click counterclockwise rotation

6.2.3.1.3.11 YM toner supply motor detection

Purpose: Detect the toner supply motor YM for toner cartridge

Specifications: Follow the panel operation instructions in the following table

Mechanical instructions: Drive the mixing of Y+M toner cartridge + toner supply by clockwise and counterclockwise rotation.

Panel control	Action Specifications
Stop	Click to stop
Clockwise Rotation	Click clockwise rotation
Counterclockwise Rotation	Click counterclockwise rotation

6.2.3.1.3.12 Option 1 feed motor

Purpose: Provide power for the actuator inside the optional tray

Specifications: Follow the panel operation instructions in the following table

Panel control	Action Specifications
Stop	Click to stop
Clockwise Rotation	Click clockwise rotation

6.2.3.1.3.13 Option 2 feed motor

Purpose: Provide power for the actuator inside the optional tray

Specifications: Follow the panel operation instructions in the following table

Panel control	Action Specifications
Stop	Click to stop
Clockwise Rotation	Click clockwise rotation

6.2.3.1.4 Fuser unit**6.2.3.1.4.1 Fuser Temperature**

Purpose: Fuser malfunction caused by special environment

Specifications: Adjustment range: -10°C~10°C, accuracy: 1°C;

Panel control	Action Specifications
Set temperature	-10 - 10 deg

6.2.3.1.4.2 Low-temperature warm-up rotation time

Purpose: Suitable for climate differences between northern and southern regions, and the fuser warm-up time can be extended after the setting is adjusted,

Specifications: The time for warm-up rotation can be set, with a range of [0~20s]. (Effective when the temperature is below 10°C)

Panel control	Action Specifications
Set time	0 - 20s

6.2.3.1.4.3 Room-temperature warm-up rotation time

Purpose: Suitable for climate differences between northern and southern regions, and the fuser warm-up time can be extended after the setting is adjusted,

Specifications: The time for warm-up rotation can be set, with a range of [0~20s]. (Effective when the temperature is below

10°C)

	Panel control	Action Specifications
Set time		0 - 20s

6.2.3.1.4.4 Fusing curl

Purpose: The value can be set when there is an abnormality in the image or wrinkles on the paper, which facilitates adjustment and problem localization

Specifications: Set the amount of curl between the secondary transfer and fusing when feeding paper at normal speed, and set this value when image problem (scratches/wrinkles) occurs, with a range of Level 0-Level 1 (default value: Level 0). A higher value results in a larger amount of curling.

	Panel control	Action Specifications
Set Level		0 - 1 level

6.2.3.1.4.5 Machine Cooling Fan 1 Detection

Purpose: Detect the main duct fan

Specifications: Follow the panel operation instructions in the following table

Mechanical instructions: to cool the whole Printer and exhaust internal heat

	Panel control	Action Specifications
Stop		Click to stop
High-Speed Rotation		Click high-speed rotation
Low-Speed Rotation		Click low-speed rotation
		Cooling fan 1 for whole machine is rotating at high speed...
		Cooling fan 1 for whole machine has successfully rotated at high speed!
		Cooling fan 1 for whole machine has failed to rotate at high speed!
Result display area		Cooling fan 1 for whole machine is rotating at low speed...
		Cooling fan 1 for whole machine has successfully rotated at low speed!
		Cooling fan 1 for whole machine has failed to rotate at low speed!

6.2.3.1.5 Toner supply adjustment

6.2.3.1.5.1 Manual toner supply

Purpose: Used for manual toner supply to judge toner supply and toner density problem in developer detection in after-sales service. When the T/C ratio (ratio of toner to carrier) decreases due to a large amount of printing of high-concentration original images, causing low ID, auxiliary toner is replenished to set the T/C level for adjustment;

Specifications: C, M, Y, and K can be selected, and reconfirmed by EC to detect the automatic toner supply at TC level + start toner supply motor

Panel control	Action Specifications
Toner supply button Y	Supply toner separately for Y 5 times
Toner supply button M	Supply toner separately for M 5 times
Toner supply button C	Supply toner separately for C 5 times
Toner supply button K	Supply toner separately for K 5 times
Toner supply button All	Supply toner for YCMK each 5 times
Result	Manual replenishment of yellow toner is executing...
	Manual replenishment of yellow toner is completed successfully!
	Manual replenishment of yellow toner failed!
	Manual replenishment of magenta toner is executing...
	Manual replenishment of magenta toner is completed successfully!
	Manual replenishment of magenta toner failed!
	Manual replenishment of cyan toner is executing...
	Manual replenishment of cyan toner is completed successfully!
	Manual replenishment of cyan toner failed!
	Manual replenishment of black toner is executing...
	Manual replenishment of black toner is completed successfully!
	Manual replenishment of black toner failed!
	Manual toner supply is executing...
	Manual toner supply is completed successfully!
	Manual toner supply failed!

Note: To determine if toner is supplied, you have to open the front cover, remove the waste toner bottle and imaging module, hold the front cover switch sensor with a tool; then click on manual toner supply. The method for detection of TCR sensor for toner density has already provided in the preceding text.

6.2.3.1.5.2 Automatic gain

Purpose: When the developer or carrier is replaced, it is convenient for after-sales to manually search for Vcon and reset. (It is generally not set, for doing so may affect the image quality)

Specifications: Reset the Vcon flag and restart the printer after reset to allow the developer to search for the Vcon value again.

K

Panel control	Action Specifications
Radio control for marking new product in K channel	Valid: Set to 1 Invalid: Set to 0

Y

Panel control	Action Specifications
Radio control for marking new product in Y channel	Valid: Set to 1 Invalid: Set to 0

M

Panel control	Action Specifications
Radio control for marking new product in M channel	Valid: Set to 1 Invalid: Set to 0

C

Panel control	Action Specifications
Radio control for marking new product in C channel	Valid: Set to 1 Invalid: Set to 0

6.2.3.1.5.3 Toner Density Sensor

Developer K

Purpose: Check the ratio of toner to carrier inside the K developer.

Specifications: Display the working status of the sensors

Panel control	Action Specifications
Detect button	Press it to send sensor detection command
Result display area	T/D < 5%, T/D = 5%, T/D = 6%, T/D = 7%, T/D = 8%, T/D = 9%, T/D = > 9%

Developer Y

Purpose: Check the ratio of toner to carrier inside the Y developer.

Specifications: Display the working status of the sensors

Panel control	Action Specifications
Detect button	Press it to send sensor detection command
Result display area	T/D < 5%, T/D = 5%, T/D = 6%, T/D = 7%, T/D = 8%, T/D = 9%, T/D = > 9%

Developer M

Purpose: Check the ratio of toner to carrier inside the M developer.

Specifications: Display the working status of the sensors

Panel control	Action Specifications
Detect button	Press it to send sensor detection command
Result display area	T/D < 5%, T/D = 5%, T/D = 6%, T/D = 7%, T/D = 8%, T/D = 9%, T/D = > 9%

Developer C

Purpose: Check the ratio of toner to carrier inside the C developer.

Specifications: Display the working status of the sensors

Panel control	Action Specifications
Detect button	Press it to send sensor detection command
Result display area	T/D < 5%, T/D = 5%, T/D = 6%, T/D = 7%, T/D = 8%, T/D = 9%, T/D = > 9%

6.2.3.1.6 Color Correction

6.2.3.1.6.1 DMAX Level Adjustment

Purpose: Supplement the Dmax correction

Specifications: Set CMYK density levels [Level 0~Level 7], with level 0 by default (i.e., the default auto-correction parameters are applied). If the density value is still abnormal after manual Dmax correction, select the level manually. The bias voltage for developer and charging will be automatically adjusted according to the set value. After setting, Dmax correction will be performed according to the set level. Choose higher level (Level 5~Level 7) for light colors and lower level (Level 1~Level 3) for dark colors

Panel control	Action Specifications
0-7 setting controls	0: for auto-correction values 1-7: for fixed level values

Note: If the image appears color-shifted or reddish, open the Dmax adjustment interface and reduce the M (Magenta) color level (YMCK four colors are independently adjustable, each with 7 levels, where 1~7 corresponds to the image from light to dark).

6.2.3.1.6.2 Reset the color correction sensor

Purpose: Reset the initial background voltage after the CTD sensor is replaced in after-sales service. During use, after the maintenance personnel click the [Reset CTD Sensor] button, exit the service mode. The initial background voltage of the CTD sensor will be updated after the color correction is triggered on the panel.

Specifications: Set the [Reset Color Correction Sensor] button. After replacing the color correction sensor, the after-sales personnel clicks this button in service mode to reset the initial background voltage flag of the color correction sensor. The panel displays a reset success message after the user clicks Reset.

Panel control	Action Specifications
Color correction sensor reset button	Reset the initial background voltage flag of the color correction sensor

6.2.3.1.7 Image control

6.2.3.1.7.1 ITB control

Purpose: Determine the contact or separation status of TR1 and ITB. Based on the four combinations of shading and non-shading of the two sensors, determine the three states of contact or separation of TR1 and ITB.

Specifications: The panel sends ITB control commands and displays the control result of ITB.

Panel control	Action Specifications
Separation button	Press it to implement ITB separation
Monochrome mode button	Press it to implement ITB monochrome control mode
Color mode button	Press it to implement ITB color control mode

Result display area

Separation completed successfully
Monochrome mode is applied successfully
Color mode is applied successfully
Separation failed
Monochrome mode failed
Color mode failed;

6.2.3.1.7.2 Black Phase Sensor

Purpose: Detect the phase of the black OPC drive gear before printing

Specifications: Click the detection button on the panel to display the sensor detection result, and click to confirm if the motor is rotating normally as per the following panel operation

Panel control	Action Specifications
Execute button	Send execution command

6.2.3.1.7.3 Color Phase Sensor

Purpose: Detect the phase of the color OPC drive gear before printing

Specifications: Click the detection button on the panel to display the sensor detection result, and click to confirm if the motor is rotating normally as per the following panel operation

Panel control	Action Specifications
Execute button	Send execution command

6.2.3.1.7.4 Bias adjustment

Primary transfer

Purpose: Maintain the abnormal image in primary transfer caused by replacement of the high voltage board

Note: The primary transfer refers to the high voltage under which the toner is transferred to the transfer belt, and the secondary transfer refers to the high voltage under which the toner is adsorbed from the transfer belt to the paper.

(Adjusted separately by normal speed and reduced speed) (initial value of $\Delta y_1/\Delta y_2$ is 50v).

Level	Primary transfer bias (normal speed)	Primary transfer bias (reduced speed)
10	$+10*\Delta y_1$	$+10*\Delta y_2$
9	$+9*\Delta y_1$	$+9*\Delta y_2$
8	$+8*\Delta y_1$	$+8*\Delta y_2$
7	$+7*\Delta y_1$	$+7*\Delta y_2$
6	$+6*\Delta y_1$	$+6*\Delta y_2$
5	$+5*\Delta y_1$	$+5*\Delta y_2$
4	$+4*\Delta y_1$	$+4*\Delta y_2$
3	$+3*\Delta y_1$	$+3*\Delta y_2$
2	$+2*\Delta y_1$	$+2*\Delta y_2$
1	$+\Delta y_1$	$+\Delta y_2$
0	Meter reading voltage, without any bias	Meter reading voltage, without any bias

-1	$-\Delta y1$	$-\Delta y2$
-2	$-2*\Delta y1$	$-2*\Delta y2$
-3	$-3*\Delta y1$	$-3*\Delta y2$
-4	$-4*\Delta y1$	$-4*\Delta y2$
-5	$-5*\Delta y1$	$-5*\Delta y2$
-6	$-6*\Delta y1$	$-6*\Delta y2$
-7	$-7*\Delta y1$	$-7*\Delta y2$
-8	$-8*\Delta y1$	$-8*\Delta y2$
-9	$-9*\Delta y1$	$-9*\Delta y2$
-10	$-10*\Delta y1$	$-10*\Delta y2$

S

Specifications: The range can be set as [-10~10] (default value: 0) with a step size of 1

Panel control	Action Specifications
Preset value of normal speed	-10 - 10 level
Preset value of slow speed	-10 - 10 level

Secondary transfer

Purpose: Maintain the abnormal image in secondary transfer caused by replacement of the high voltage board

Specifications: The range can be set as [0~20] (default value: 10, indicating no bias) with a step size of 1

Panel control	Action Specifications
Preset value of normal speed	0 - 20
Preset value of slow speed	0 - 20

6.2.3.1.8 Others

6.2.3.1.8.1 Consumable Usage Counter Reset

Purpose: When the consumable components such as transfer belt, fuser, and developer unit are replaced when they reach the end of their service life, the counters cannot continue to work. They can be reset to work only after such consumables are replaced.

Specifications: Display transfer belt count, fuser unit count, transfer roller count, paper feed roller count of standard tray, and paper feed roller count of multi-purpose tray. Counters can be reset.

Panel control	Action Specifications
Transfer belt counter	Display the transfer belt counter
Reset (transfer belt counter)	Click to reset the transfer belt counter
Fuser unit counter	Display the fuser unit counter
Reset (fuser unit counter)	Click to reset the fuser unit counter
Transfer roller counter	Display the transfer roller counter
Reset (transfer roller counter)	Click to reset the transfer roller counter
Paper feed roller counter of standard tray	Display the paper feed roller counter of standard tray
Reset (paper feed roller counter of standard	Click to reset the paper feed roller counter of standard tray

tray)

Paper feed roller counter of multi-purpose
tray

Display the paper feed roller counter of multi-purpose tray

Reset (paper feed roller counter of
multi-purpose tray)

Click to reset the paper feed roller counter of multi-purpose tray

6.2.3.1.8.2 Quick Print from Feed Tray

6.2.3.1.8.2.1 Standard tray

Single-sided print detection

Purpose: Start the blank paper printing detection and check the paper feeding status in the paper path.

Specifications: The message that “This function only supports A4 long edge printing”, the input box of paper feed quantity, and the “Print” button are displayed on the panel menu. When the user sets the paper feed quantity and presses the “Print” button to start the function, the data firmware notifies the print engine to start printing blank pages through the protocol. During the printing process, the data firmware does not send any print data.

When this function is started, the data firmware is not affected by any engine status. The engine printing process cannot be affected by “non-paper path” (e.g. consumable error) status, but cannot block the paper jam errors.

Panel control	Action Specifications
Paper feed quantity setting	Enter the number (1-100)
Printing	Feed X pages
Display area	If an error occurs, error message will be displayed

Duplex print detection

Purpose: Start the blank paper printing detection and check the paper feeding status in the paper path.

Specifications: The message that “This function only supports A4 long edge printing”, the input box of paper feed quantity, and the “Print” button are displayed on the panel menu. When the user sets the paper feed quantity and presses the “Print” button to start the function, the data firmware notifies the print engine to start printing blank pages through the protocol. During the printing process, the data firmware does not send any print data.

When this function is started, the data firmware is not affected by any engine status. The engine printing process cannot be affected by “non-paper path” (e.g. consumable error) status, but cannot block the paper jam errors.

Panel control	Action Specifications
Paper feed quantity setting	Enter the number (1-100)
Printing	Feed X pages
Display area	If an error occurs, error message will be displayed

6.2.3.1.8.3 Multi-purpose Tray / Optional Tray 1/2

Single-sided print detection / Duplex print detection refer to 6.2.3.1.8.2.1

6.2.4 Scanner**6.2.4.1 Sensor Detection****6.2.4.1.1 ADF****6.2.4.1.1.1 ADF top cover open/close sensor**

Purpose: Detect the open and close status of ADF top cover

Specifications: The panel detects the status of ADF top cover every 1 second. 0 for close, 1 for open;

Panel control	Action Specifications
Result display area	0: Close 1: Open

6.2.4.1.1.2 ADF Document Sensor

Purpose: Detect whether there is paper in the tray

Specifications: The panel detects the document availability in the ADF every 1 second. 0 for close, 1 for open;

Panel control	Action Specifications
Result display area	0: Out of Paper 1: Paper Available

6.2.4.1.1.3 ADF Paper Feed Sensor

Purpose: Determine whether the paper is fed normally

Specifications:

1. The panel prompts the After-sales personnel to place a piece of A4 paper in the tray
2. After detecting the paper loaded in the tray, the panel prompts to press a certain button to send command for detection.
3. Perform the detection actions (ADF motor will start to complete paper pickup, paper feeding, and paper exit, rather than scanning) to display the detection results of the 3 sensors (paper feed sensor, scan sensor, and paper exit sensor) on the panel.
4. If the corresponding bit is "1", it indicates that the sensor is normal, e.g., displaying "111" indicates that all 3 sensors are working normally.
5. If the Printer is in FB model, ADF-related detection information needs to be hidden.

Panel control	Action Specifications
Detect button	Send sensor detection command
Result display area	Display: ADF paper feed sensor is normal/abnormal ADF scan sensor is normal/abnormal ADF paper exit sensor is normal/abnormal

6.2.4.1.1.4 ADF paper type sensor

6.2.4.1.1.4.1 ADF paper type recognition

Purpose: Detect the current ADF paper type document

Specifications:

1. Detect every 1 second, and display “no paper” if no paper is placed;
2. If there is paper but the paper type cannot be recognized, it will display “unrecognizable”; if there is paper and the paper type can be recognized, it will display the corresponding paper type text or paper type icon.

Combination type	Paper type	Size (Width * Length)	Feed edge
1	A3 Short Edge	297*420	A3 Short Edge
2	A4-Long Side	297*210	A4-Long Side
3	A4 Short Edge	210*297	A4 Short Edge
4	A5 long edge	210*148	A5 long edge
5	A5 Short Edge	148*210	A5 Short Edge
6	A6 Short Edge	105*148	A6 Short Edge
7	JIS B4 Short Edge	257*364	B4 Short Edge
8	JIS B5 Long Edge	257*182	B5 Long Edge
9	JIS B5 Short Edge	182*257	B5 Short Edge
10	Tabloid Short Edge	279.4*431.8	11' Short Edge
11	8K Short Edge	270*390	8K Short Edge
12	Legal Short Edge	216*356	8.5' Short Edge
13	Letter Short Edge	216*279.4	8.5' Short Edge
14	Letter Long Edge	279.4*216	8.5' Long Edge
15	Statement Long Edge	216*140	8.5' Long Edge
16	Statement Short Edge	140*216	5.5' Short Edge

6.2.4.1.1.4.2 ADF paper type sensor detection

Purpose: Detect ADF paper type

Specifications:

1. Display the status of 5 paper type sensors simultaneously on the panel.
2. Two paper length sensors can be directly touched by hand. By pressing or releasing with hand, observe whether the sensor status displayed on the panel changes.
3. Three paper width sensors cannot be directly touched by hand, but the status of these 3 width sensors can be judged by moving the slider on the ADF tray and observing the status of the sensors on the panel.
4. Move the slider to the A4 Long Edge or the A3 Short Edge as the reference, then push the slider to detect width sensor 1 at the A6 Long Edge, then push it again to detect width sensor 2 at JIS B4, and finally push it to Letter to detect width sensor 3.

Paper type	Size (Width * Length)	Feed edge	Paper type switch		
			①	②	③
A4	297*210	A4-Long Side	1	1	1
A6	105*148	A6 Short Edge	0	1	1
JIS B4	257*364	B4 Short Edge	1	0	1
Letter	216*279.4	8.5" Short Edge	1	1	0

5. The UI displays the results of 5 paper type sensors in the result display area as 0 or 1, and provides notes at the interface as "0 indicates Uncovered, 1 indicates Covered".

Panel control	Action Specifications
Detect button	Send sensor detection command
	Paper type sensor 1: 0 or 1
	Paper type sensor 2: 0 or 1
	Paper type sensor 3: 0 or 1
Result display area	Paper type sensor 4: 0 or 1
	Paper type sensor 5: 0 or 1
	(Note: 0 means uncovered; 1 means covered)

6.2.4.1.2 FB

6.2.4.1.2.1 Scanner Cover Sensor

Purpose: Detect the open and close status of FB

Specifications:

1. Display the sensor status on the panel.
2. After-sales personnel opens and closes the FB top cover to see if there is any change in the displayed sensor status on the panel. If there is a change, it indicates that the sensor is working normally.

Panel control	Action Specifications
Result display area	0: Close
	1: Open

6.2.4.1.2.2 FB Position Sensor

Purpose: CIS Start/Stop positioning, scanning positioning

Specifications:

1. Display the sensor status on the panel.
2. The panel prompts to press a button to send command for detection.
3. Perform the detection action (CIS performs leaving HOME - returning to HOME action), and return the execution result.
4. After-sales personnel sees if there is any change in the displayed sensor status on the panel. If there is a change, it

indicates that the sensor is working normally.

Panel control	Action Specifications
Detect button	Send sensor detection command
Result display area	0: Not returned to position 1: Returned to position

6.2.4.2 Motor Detection

6.2.4.2.1 ADF drive motor (stepper motor)

Purpose: Drive the ADF transmission device to operate

Specifications:

1. The panel prompts to press a button to send command for detection.
2. After receiving the command, the ADF motor rotates a sheet of A4 length paper, but in fact, the detection can be performed with A4 paper or without paper.
3. After-sales personnel determines if the motor is working normally based on the actual motor operation condition.

Panel control	Action Specifications
Running	Send ADF drive motor detection command

6.2.4.2.2 FB drive motor (stepper motor)

Purpose: Drive CIS scanning to move as above description

Specifications:

1. The panel prompts to press a button to send command for detection.
2. After receiving the command, the FB motor drives the CIS to perform reciprocating motion.
3. After-sales personnel determines if the motor is working normally based on the actual motor operation condition.

Panel control	Action Specifications
Running	Send FB drive motor detection command

6.2.4.3 Scanner Service Life Count

Purpose: As it is applicable for checking the service life of consumable parts such as the pickup roller, it is used for counting the scan times, which is used by the Product Department to determine the strategy for replacement - whether a new product confirmation process is required.

Specifications:

1. The panel displays the scanning count value of scanner components;
2. Count the number of ADF paper holder and ADF paper feed rollers separately, and the number of paper holder and paper feed rollers. The count does not increase for FB scanning, whereas for ADF single-sided and double-sided scanning, the counting method for the increase in count value is based on the paper type. For example, for scanning A4 Short Edge, add 1 to both counts when using ADF, and add 3 when using RADF; for scanning A3 Short Edge, add 2 to both counts when using ADF, and add 6 when using RADF.
3. Each scanning action will increase the count value, and the counting method is as follows:

Paper type	Paper length at paper feeding direction	ADF single-sided page count	ADF duplex page count	FB page count
A4L(297*210)	210	1	3	1
A4S(210*297)	297	1	3	1
LTRL(279*216)	216	1	3	1
LTRS(216*279)	279	1	3	1
A3S(297*420)	420	2	6	1
11x17(279.4*431.8)	431.8	2	6	1
LegalS(216*356)	356	2	6	1
JIS B4S(257*364)	364	2	6	1
JIS B5L(182*257)	257	1	3	1
JIS B5S(257*182)	182	1	3	1
StatementL(216*140)	140	1	3	1
StatementS(140*216)	216	1	3	1
A5S(158*210)	210	1	3	1
A5L(210*158)	158	1	3	1
A6S(158*210)	210	1	3	1
BIG 16KL(270*195)	195	1	3	1
BIG 16KS(195*270)	270	1	3	1
8KS(270*390)	390	2	6	1
Custom paper	<=320	1	3	1
	>320	2	6	1

4. Panel control needs to reset the counts for the ADF paper holder and ADF paper feed roller, used by maintenance personnel to replace the corresponding components and clear the counts. (For FB models do not have ADF paper holder and ADF paper feed roller, only FB scanning pages are displayed)

Panel control	Action Specifications
Paper holder count reset button	Clear the count of paper holder
Paper feed roller count reset button	Clear the count of paper feed roller
Display Area	ADF Paper Holder: xxxxx
	ADF Paper Feed Roller: xxxxx
	FB Scan Pages: xxxxxx
	ADF Scan Pages: xxxxxx
	RADF Scan Pages: xxxxxx

5. Test Method: In case of ADF scanning with A3, if the ADF paper holder, ADF paper feed roller, and ADF scanning page count increase by 2, it is normal when the FB scanning page count remains unchanged; in case of ADF scanning with A4, if the ADF paper holder, ADF paper feed roller, and ADF scanning page count increase by 1, it is normal when the FB scanning page count remains unchanged; in case of RADF scanning with A3, if the ADF paper holder, ADF feed rollers, and ADF scanning page count increase by 6, it is normal when the FB scanning page count remains unchanged; in case of RADF scanning with A4, if the ADF paper holder, ADF paper feed roller, and ADF scanning page count increase

by 3, it is normal when the FB scanning page count remains unchanged; in case of FB scanning with A4, if the FB scanning page count increases by 1, it is normal when the ADF scanning page count is not affected.

6.2.4.4 Scanner image quality detection and adjustment

6.2.4.4.1 Scanner white line detection

Purpose: Determine the contamination status of white stripe, and please perform the detection with the FB top cover closed.

Specifications: Service personnel judge whether there is contamination on the white stripes by running the detection and analyzing the results.

1. During execution, if the FB top cover is open, it will prompt “abnormal detection, please close the FB top cover”;
2. During execution, if the FB top cover is not open, detection is performed normally, and the running result (success or failure) is returned.

(Note: The calibration is based on 300 dpi-color-FB, 600 dpi-color-FB, and 300 dpi-color-ADF. As 600 dpi-color-ADF and 300 dpi-color-FB has consistent CIS frequencies, it is not required.)

Panel control	Action Specifications
Running	Send a command for white stripe detection
Results	Success, failure, please close the FB top cover, abnormal detection

6.2.4.4.2 Scanner Margin Adjustment

Purpose: Applicable to adjustments required due to margin changes caused by transportation, etc., after factory delivery.

Specifications: After-sales personnel scan images via computer PC to determine adjustment degree by judging the image.

Panel control	Action Specifications
FB Left Margin	-10mm – 10mm
FB Top Margin	-10mm – 10mm
ADF Front Left Margin	-10mm – 10mm
ADF Front Top Margin	-10mm – 10mm

The set value is to modify the factory tooling set value.

6.2.4.4.3 Scanner magnification adjustment

Purpose: Applicable to adjustments required due to magnification changes caused by transportation, etc., after factory delivery.

Specifications: After-sales personnel scan images via computer PC to determine adjustment degree by judging the image.

1. When scanning Y-direction magnification, Y-direction for flatbed (FB) scanning refers to the CIS operation direction, and for document feeder (ADF) scanning refers to the feeding direction. The magnification is scaled proportionally, with a scaling increment of 0.002, i.e., 0.2%, and adjustable range from -5 to 5, i.e., scaling range from -1% to 1%. For example, to enlarge by 0.4%, the parameter is set to be 2; to reduce by 1.0%, the parameter is set to be -5.

2. For each adjustment, the value will be reset, without accumulation from the previous adjustment;

Panel control	Action Specifications
FB magnification steps in vertical paper feed direction	-5mm – 5mm
ADF magnification steps in vertical paper feed direction	-5mm – 5mm

The set value is to modify the factory tooling set value.

6.2.4.5 Fast copy feed test

Purpose: Detect whether paper feed for scanning and scan functions are normal (job is performed according to normal job content, without image output, and CIS is lit up normally).

6.2.4.5.1 FB fast paper feed test

Purpose: Detect whether FB paper feed (light-up and CIS start) is normal.

Specifications:

1. Enter times in the panel, and press the Execute button to send command for FB paper feed detection;
2. After receiving the command, FB starts to light up and move CIS along the full platen, FB returns to turn off the light, so as to form reciprocating motion;
3. The panel displays the current FB paper feed times for after-sales personnel to view and click the Stop button;
4. Stop running when the set number of times is reached, or if the set number is not reached, click the Stop button on the panel to stop the detection;
5. After-sales personnel determines if the FB paper feed is working normally based on the actual operation condition.

Panel control	Action Specifications
Number of times	Within 200 times
Execute	Execute the test; when the [Execute] button is clicked, it changes to the [Stop] button for stopping paper feed, and the button switches back to [Execute] after paper feed stops

6.2.4.5.2 ADF fast paper feed test

Purpose: Detect whether the ADF paper feed is normal (and check for paper jams)

Specifications: (Not applicable for FB models)

1. After-sales personnel places paper for test into the ADF tray, preferably A4 paper;
2. Click the Execute button on the panel to start the detection;
3. Feed the paper placed on the ADF tray and stop (single-sided feeding), the panel displays the total number of fed paper (consumables information is not counted);
4. If you want to stop scanning, remove the document above the ADF tray, and it will stop scanning after the current sheet is scanned;
5. After-sales personnel determines if the ADF paper feed is working normally based on the actual operation condition.

Panel control	Action Specifications
Paper Feed Count	Display ADF Paper Feed Count
Execute	Execute the test

6.2.4.5.3 RADF fast paper feed test

Purpose: Detect whether the ADF paper feed is normal (and check for paper jams)

Specifications: (Not applicable for FB models)

1. After-sales personnel places paper for test into the ADF tray, preferably A4 paper;
2. Click the Execute button on the panel to start the detection;
3. Feed the paper placed on the ADF tray and stop (if duplex feeding, feed one double-sided sheet +1), the panel displays the total number of fed paper (consumables information is not counted);

- 4. If you want to stop scanning, remove the document above the ADF tray, and it will stop scanning after the current sheet is scanned;
- 5. After-sales personnel determines if the ADF paper feed is working normally based on the actual operation condition.

Panel control	Action Specifications
Paper Feed Count	Display ADF Paper Feed Count
Execute	Execute the test

6.2.5 Image Adjustment

6.2.5.1 Tray Margin Adjustment

Purpose: Correct deviations for Standard Tray, Optional Tray 1, Optional Tray 2, Multi-Purpose Tray, and Duplex Unit

Specifications:

I. The panel can set:

1. The top and left margins of the Standard Tray, Optional Tray 1, Optional Tray 2, and Multi-Purpose Tray;
2. The top and left margins of the Duplex Unit;

Ranges for each setting item: -5mm to 5mm, with a step size of 0.1mm

II. Calculation of printing margin

For single-sided printing: Printing Margin = Initial Margin (after Tooling) + Preset Menu Margin + Tray Margin

For duplex printing: Printing Margin = Initial Margin (after Tooling) + Preset Menu Margin + Duplex Margin

Panel control	Action Specifications
Left Margin of Standard Tray	Selectable Controls: -5mm to 5mm, with a step size of 0.1mm
Top Margin of Standard Tray	Selectable Controls: -5mm to 5mm, with a step size of 0.1mm
Left Margin of Multi-purpose Tray	Selectable Controls: -5mm to 5mm, with a step size of 0.1mm
Top Margin of Multi-purpose Tray	Selectable Controls: -5mm to 5mm, with a step size of 0.1mm
Left Margin of Optional Tray 1	Selectable Controls: -5mm to 5mm, with a step size of 0.1mm
Top Margin of Optional Tray 1	Selectable Controls: -5mm to 5mm, with a step size of 0.1mm
Left Margin of Optional Tray 2	Selectable Controls: -5mm to 5mm, with a step size of 0.1mm
Top Margin of Optional Tray 2	Selectable Controls: -5mm to 5mm, with a step size of 0.1mm
Duplex - left margin	Selectable Controls: -5mm to 5mm, with a step size of 0.1mm
Duplex - top margin	Selectable Controls: -5mm to 5mm, with a step size of 0.1mm

6.2.5.2 K margin adjustment

Purpose: Settle the inaccurate black margin problem

Specifications: Print K Margin adjustment image, set black margin parameters with the image scale, and make the calibration in the order of top margin/left margin/horizontal magnification (with the orientation of A4 long edge).

Panel control	Action Specifications
Print K Margin adjustment image	Print K Margin adjustment image
YK	Set YK parameter, with adjustment range [-120~120] dots, default value 0, and a step size of 24 dots
XK	Set XK parameter, with adjustment range [-120~120] dots, default value 0, and a step size of 24 dots
FK	Set FK parameter, with adjustment range [-24~120] dots, default value 0, and a step size of 24 dots

6.2.5.3 Left margin and horizontal magnification adjustment

Purpose: Settle the inaccurate left margin and horizontal magnification problem

Specifications: Print left margin and horizontal magnification adjustment image, set parameters with the image scale, and make the calibration in the order of left margin/horizontal magnification.

6.2.5.3.1 Cyan

Panel control	Action Specifications
Print left margin and horizontal magnification adjustment image in cyan	Print left margin and horizontal magnification adjustment image in cyan
XC	Set XC parameter, with adjustment range [-120~120] dots, default value 0, and a step size of 1 dot
FC	Set FC parameter, with adjustment range [- 24 ~120] dots, default value 0, and a step size of 1 dot

6.2.5.3.2 Magenta

Panel control	Action Specifications
Print left margin and horizontal magnification adjustment image in magenta	Print left margin and horizontal magnification adjustment image in magenta
XM	Set XM parameter, with adjustment range [-120~120] dots, default value 0, and a step size of 1 dot
FM	Set FM parameter, with adjustment range [-24~120] dots, default value 0, and a step size of 1 dot

6.2.5.3.3 Yellow

Panel control	Action Specifications
Print left margin and horizontal magnification adjustment image in yellow	Print left margin and horizontal magnification adjustment image in yellow
XY	Set XY parameter, with adjustment range [-120~120] dots, default value 0, and a step size of 1 dot
FY	Set FY parameter, with adjustment range [-24~120] dots, default value 0, and a step size of 1 dot

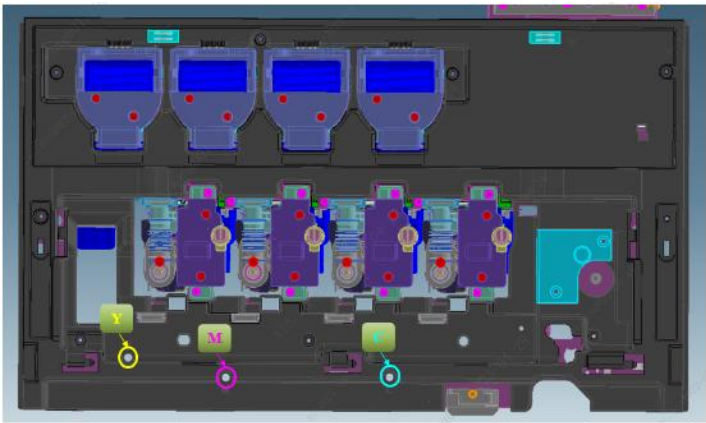
6.2.5.4 Top margin and skew adjustment

Purpose: Settle the inaccurate top margin and Skew problem

Specifications: Print top margin and skew adjustment image, set parameters and adjust skew screws with the image scale, and make the calibration in the order of top margin/skew.

6.2.5.4.1 Cyan

Panel control	Action Specifications
Print top margin and skew adjustment image in cyan	Print top margin and skew adjustment image in cyan
YC	Set YC parameter, with adjustment range [-120~120] dots, default value 0, and a step size of 1 dot
Skew-C	Its adjustment range is [-10~10] dots (1 dot = 1 rotation) to display adjustment position image



6.2.5.4.2 Magenta

Panel control	Action Specifications
Print top margin and skew image in magenta	Print top margin and skew image in magenta
YM	Set YM parameter, with adjustment range [-120~120] dots, default value 0, and a step size of 1 dot
Skew-M	Its adjustment range is [-10~10] dots (1 dot = 1 rotation) to display adjustment position image

6.2.5.4.3 Yellow

Panel control	Action Specifications
Print top margin and skew adjustment image in yellow	Print top margin and skew adjustment image in yellow
YY	Set YY parameter, with adjustment range [-120~120] dots, default value 0, and a step size of 1 dot
Skew-Y	Its adjustment range is [-10~10] dots (1 dot = 1 rotation) to display adjustment position image

6.2.5.5 Image Background Adjustment

6.2.5.5.1 Cyan

Print the background adjustment is mainly to deal with the gray background problem. When there is a gray background, adjust it with the positive level (1~5). When the color is light or the carrier is developed, adjust it with the negative level (-5~-1).

Function: To deal with the gray background problem, ± 5 levels are set. On the basis of MHV meter reading voltage, add the corresponding specific deviation value (with independent adjustment for normal speed and reduced speed, and CMYK 4 colors).

Level	MHV gray background adjustment (normal speed)	MHV gray background adjustment (reduced speed)
5	+50v	+50v
4	+40v	+40v
3	+30v	+30v
2	+20v	+20v
1	+10v	+10v
0	0, no MHV bias	0, no MHV bias
-1	-10v	-10v
-2	-20v	-20v
-3	-30v	-30v
-4	-40v	-40v
-5	-50v	-50v

Panel control	Action Specifications
Normal speed	-5 ~ +5
Slow	-5 ~ +5

For magenta/yellow/black, please refer to the above contents.

6.2.5.6 Implementation of DMAX correction

Purpose: Maintain the abnormal color density in image caused by replacement of the high voltage board

Specifications: Set Dmax correction options, manually trigger Dmax correction, and the bias voltage for developer and charging will be automatically adjusted according to the design scheme.

6.2.5.7 Correction Sensor

Purpose: Color calibration and image density calibration (diffuse reflection + specular reflection channel).

Specifications: Display the working status of the sensors

Panel control	Action Specifications
Detect button	Press it to send sensor detection command

6.2.6 Print Settings

Purpose: Applicable when the Printer fails to print normally, and the relevant information needs to be accessed in the panel service mode.

6.2.6.1 Display of basic information

Panel control	Action Specifications
Total printed pages	Display the counter
Pages of monochrome printing	Display the counter
Pages of color printing	Display the counter
Total copied pages	Display the counter
Pages of monochrome copying	Display the counter
Pages of color copying	Display the counter
Serial number	Display the serial number
Product name	Display the product name

6.2.6.2 Restore backup board data

Purpose: Restore data from the backup board to the data board after the data board is replaced.

Specifications: Click the Restore Backup Board Data button, and the firmware copies data from the backup board to the data board. During the restoration, the Restore button is not displayed, and it shows "Restoring, the Printer will automatically restart after restoration is complete."

After restoration is complete, the Printer will automatically restart.

Panel control	Action Specifications
Restore Backup Board Data button	Press the button to copy data from the backup board to the data board

6.2.7 Event log

Record the printer service logs (up to 1000 entries), including:

- 1) Time, number of printed pages, serial number of toner cartridge, and remaining amount of toner cartridge when consumables are replaced;
- 2) Time and number of printed pages when errors occur
- 3) Job type (copy/print/scan), job source (USB/Net/Wifi/File/Internal/Copy/IPP), job print count, and job scan count.
- 4) Firmware version after firmware update, and update time

6.2.7.1 Display log

Specifications: Users open the printer WebPage with the computer, enter the password for service mode, download logs (in text format) to the computer, and then open them with software.

6.2.7.2 Print Log

Purpose: Print out all log information

Specifications: Print out all log information

6.2.7.3 Print Log Summary

Purpose: No need to print all log information, only need to print consumable replacement information, error information, and firmware update information

Specifications: No need to print all log information, only need to print consumable replacement information, error information, and firmware update information

6.3 Set user password

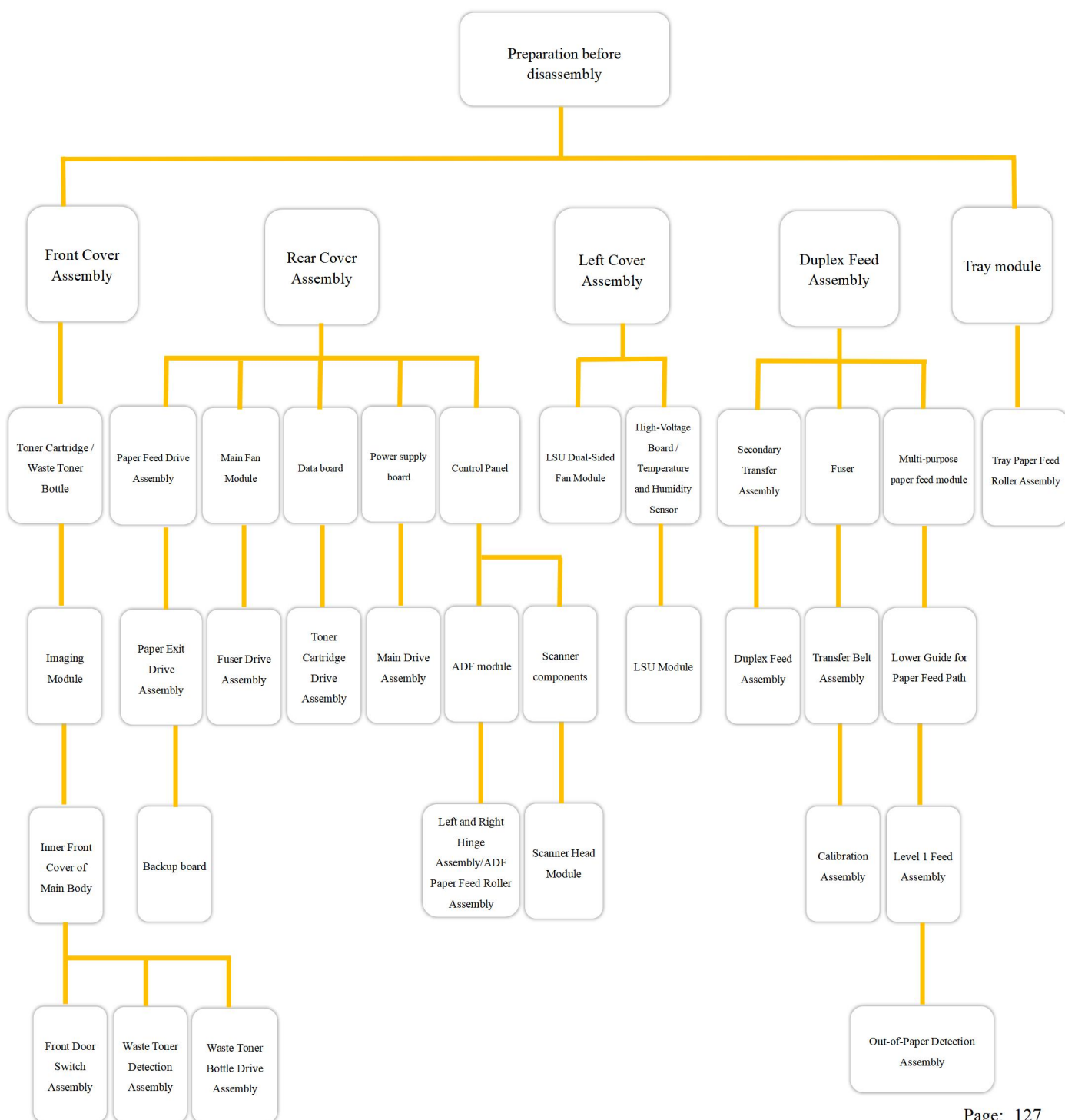
The administrator password reset function is added in diagnostic mode. The default password for factory settings is provided, which can be modified by the user. The default password is 000000, and the option to change the password is available in the administrator interface.

7. Removal and Installation

Preparation before disassembly:

1. When performing the removal procedure, all external power connections of the printer should be disconnected.
2. When performing the removal procedure, the cable tie should be removed. The cable tie must be replaced during reassembly to avoid wire pinching, obstruction of the paper path, or restricted mechanical movement.
3. After the toner cartridge module is removed, it must be kept away from light to avoid any impact on print quality.
4. Unless otherwise specified, components should be reinstalled in the reverse order of removal.
5. To prevent injury when disassembling the machine for the first time, please wear gloves before disassembling the printer.

7.1 Diagram of disassembling steps



7.2 Disassembly tools

Phillips screwdriver



Tweezers



Spring Hook



7.3 Removal steps

7.3.1 Disassemble the front cover

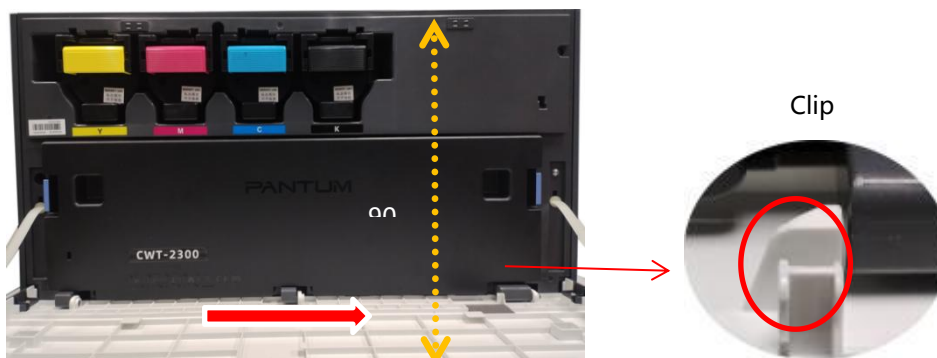
1. Open the front cover outward at the both ends of the arrow.



2. Remove the support belt of front cover.



3. Lay the front cover flat to 90°, press the clips outward, and push it to the right.

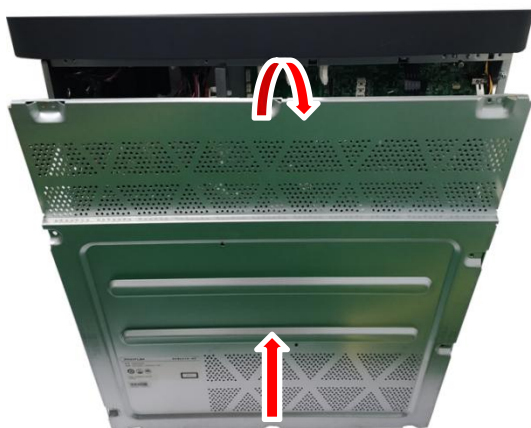


7.3.2 Disassemble the rear cover

1. Remove the screws (9) of the rear cover metal plate.



2. Open the rear cover metal plate and pull it upward.



7.3.3 Disassemble the left cover

1. Remove the rear cover
2. Remove 10 screws from the left cover. (The screw stopper must be removed first)

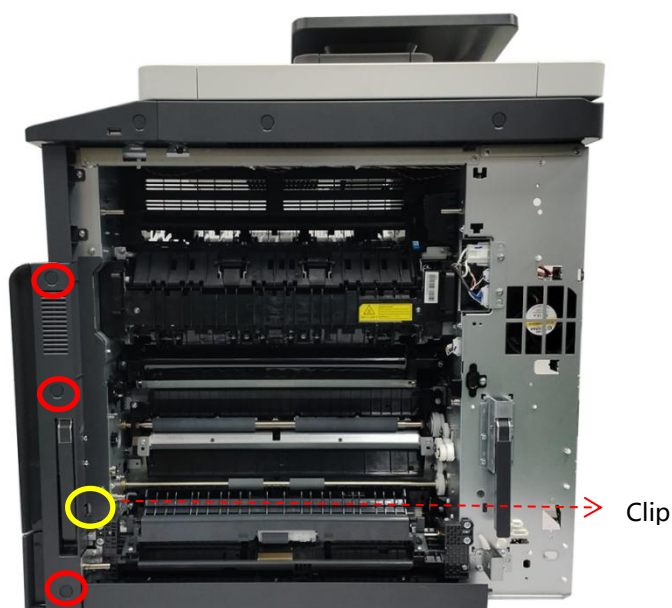


3. Pry up the left cover from the right side and push it to the left.



7.3.4 Disassemble the trim panel of right front cover

1. Open the duplex feed assembly.
2. Remove the screw stopper, unscrew the screws (3) of the right front cover, press the clips inward, and pull out the right cover outwards.



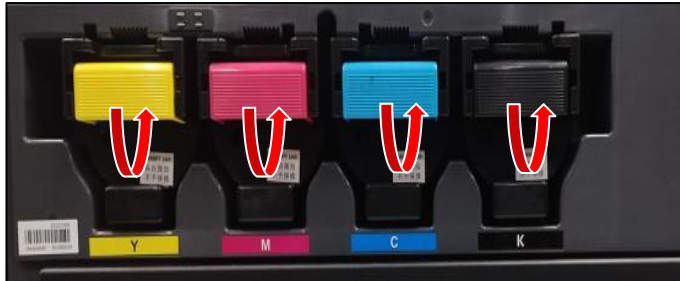
7.3.5 Disassemble the waste toner bottle assembly

1. Open the front cover.
2. Press inward with both hands to release the fastener and remove the waste toner bottle.



7.3.6 Disassemble the toner cartridge

1. Open the front cover.
2. Pull out the toner cartridge from the top.



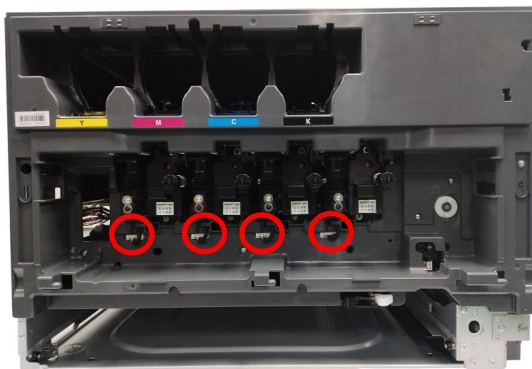
7.3.7 Disassemble the imaging module

1. Open the front cover.
2. Remove the waste toner bottle
3. Disconnect the imaging module cables, remove the imaging module screws (2), and pull it outward.

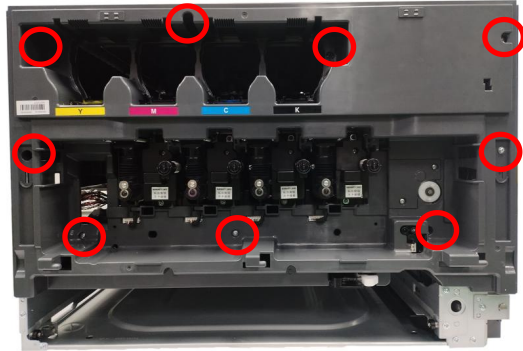


7.3.8 Disassemble the inner front cover

1. Remove the rear cover, left cover, and front cover assembly.
2. Remove the waste toner bottle, toner cartridge, imaging module, and tray module.
3. Remove the trim panel of right front cover.
4. Disconnect the imaging module cables.



5. Remove the screws (9) and pull out the inner front cover of main body outward.



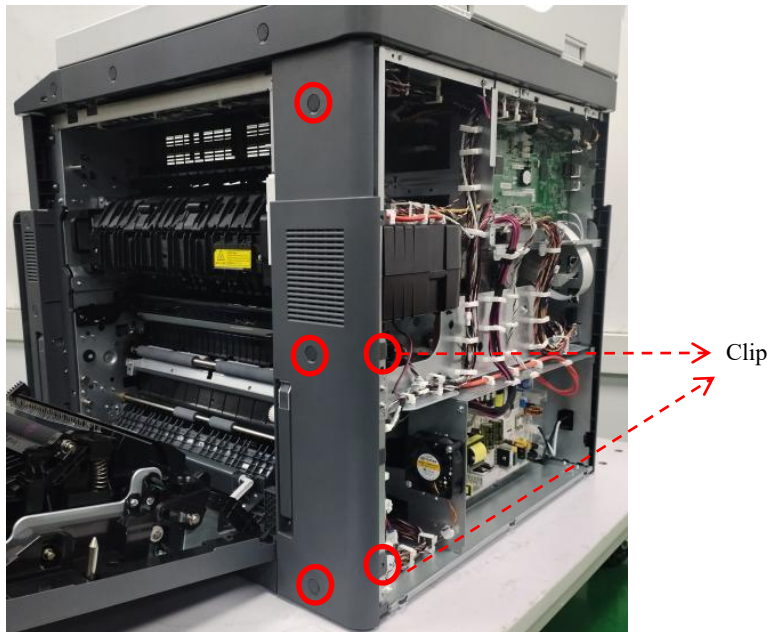
7.3.9 Disassemble the top cover

1. Remove the rear cover, left cover, and front cover assembly.
2. Remove the waste toner bottle, toner cartridge, tray module, and imaging module.
3. Remove the right cover.
4. Remove the inner front cover of main body.
5. Remove the screws (3) and fasteners (2) of the top cover on the main body, and remove the top cover.



7.3.10 Disassemble the right rounded corner decorative strip

1. Open the duplex feed assembly.
2. Remove the screws (3) and open the clips to remove the right rounded corner decorative strip outwards.

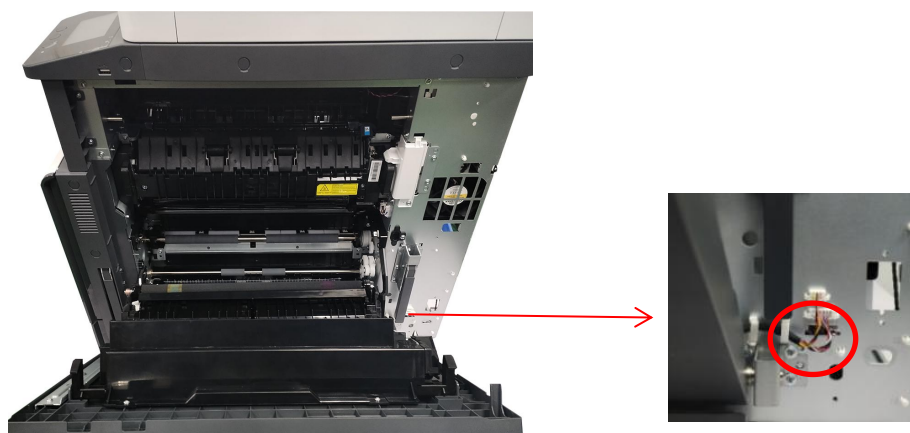


7.3.11 Disassemble the duplex feed assembly

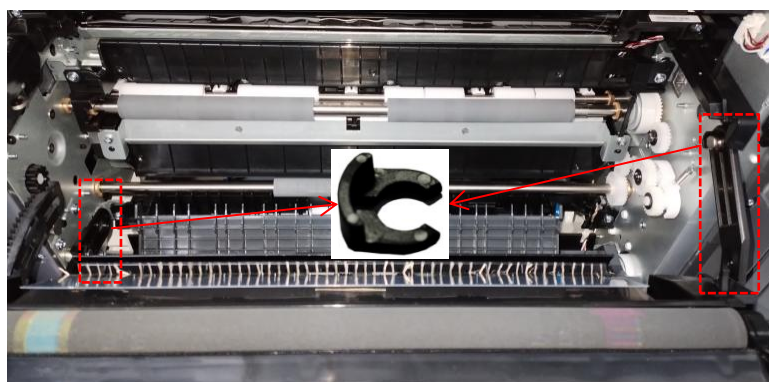
1. Remove the rear cover metal plate.
2. Open the fastener and pull out the duplex feed assembly outwards.



3. Remove the right rounded corner decorative strip.
4. Disconnect the duplex feed assembly cable.



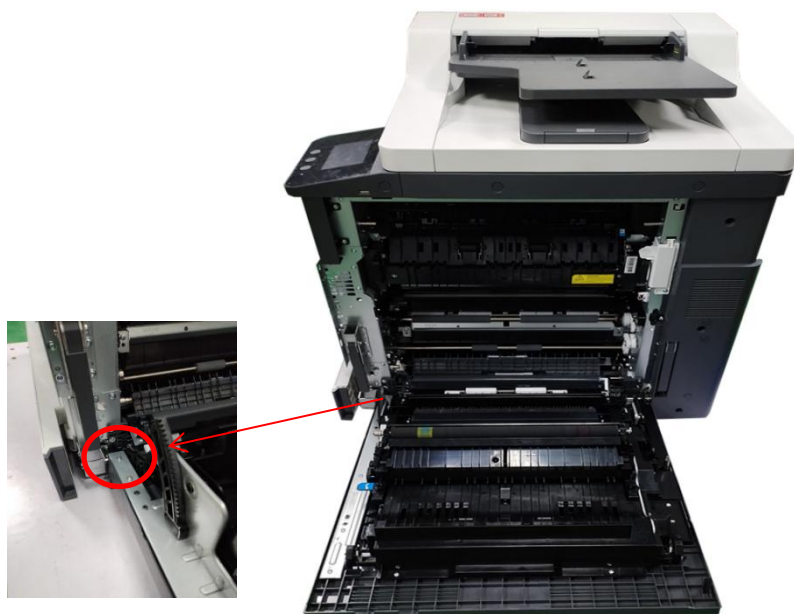
5. Remove the U-shaped retaining clip (white) of support rod for the duplex feed assembly and pull out the support rod inward.



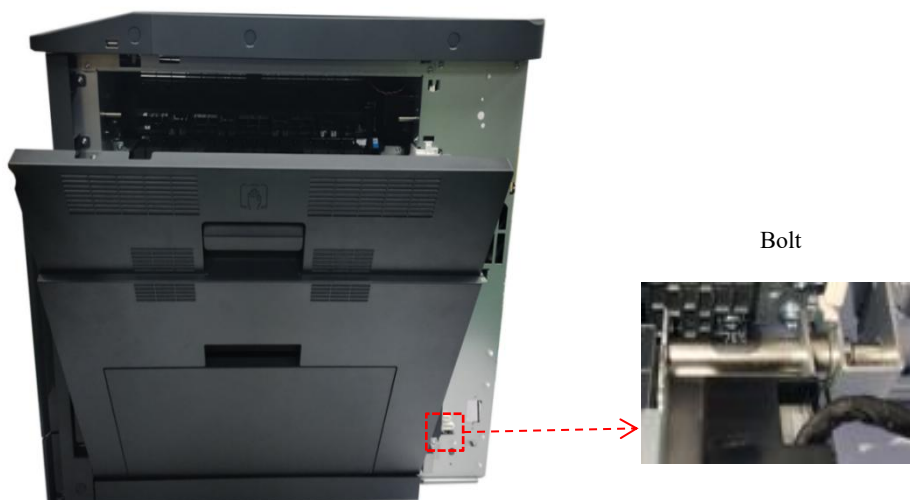
6. Remove the manual tray support rod upwards.



7. Open the duplex feed assembly, hold it with both hands, and pull out the left fastener outwards.

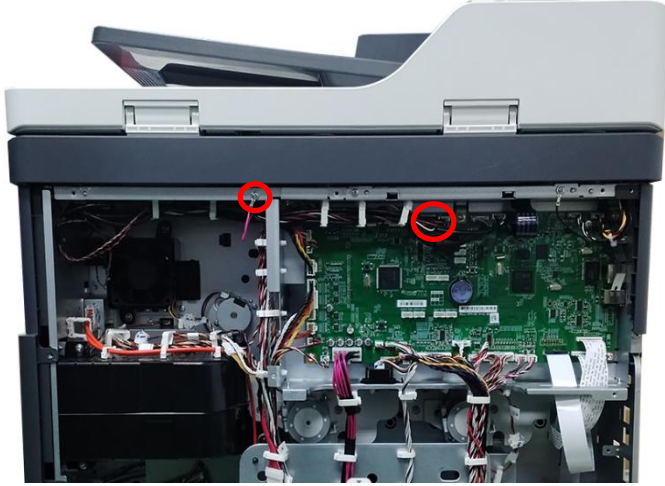


8. Push back the duplex feed assembly, keep it at a 30° angle from the platen, and slowly pull it out from the left while keeping the right bolt of duplex feed assembly loose.

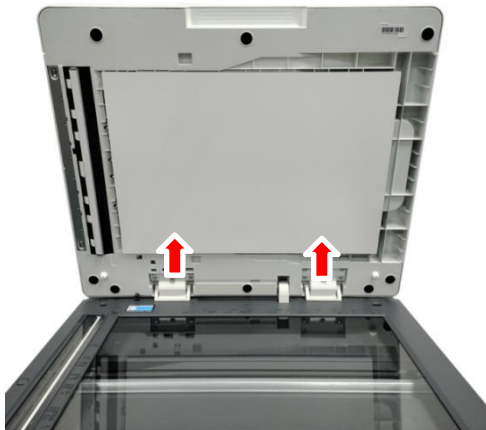


7.3.12 Disassemble the ADF module

1. Remove the rear cover.
2. Remove the ADF cable and grounding screw (1) to take out the cable.

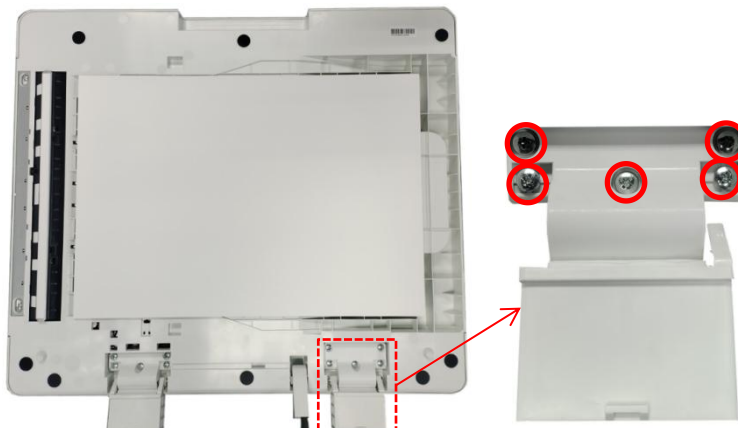


3. Hold the both sides of ADF to lift it up.



7.3.13 Disassemble the ADF left and right hinges

1. Remove the ADF module.
2. Place the ADF on a flat table, remove the screws (5), and take out the left and right hinges.

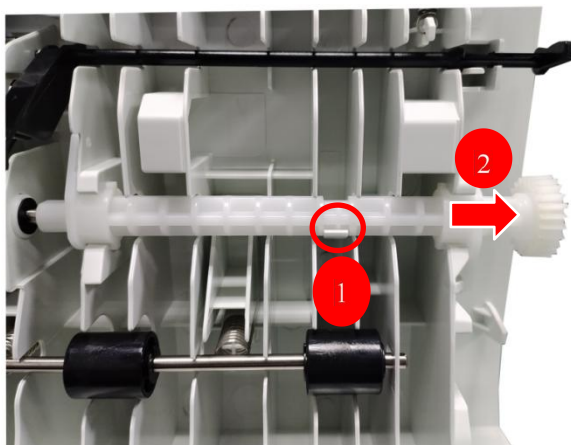


7.3.14 Disassemble the ADF paper feed roller assembly

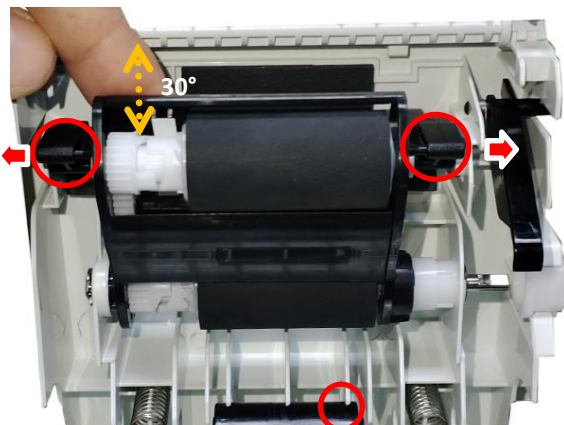
1. Open the ADF cover.



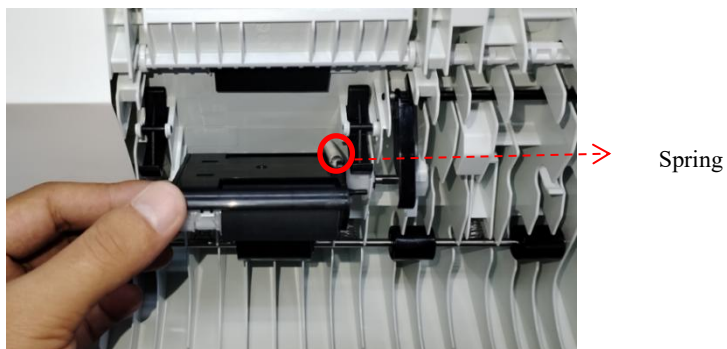
2. Press down the fastener and pull out the paper pick-up drive shaft from the right side as per Step ① and ②.



3. Press down the ADF paper pick-up roller assembly to 30°, and remove the paper pick-up roller bracket from both sides.



4. Press down the ADF paper pick-up roller, and remove the spring with the spring hook.



5. Pry to open the left support and slowly remove the ADF pick-up roller assembly from the upper left side.

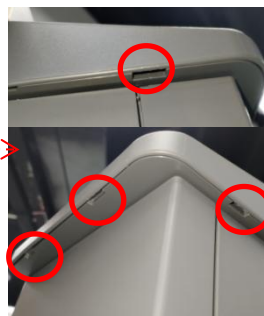


7.3.15 Disassemble the control panel assembly

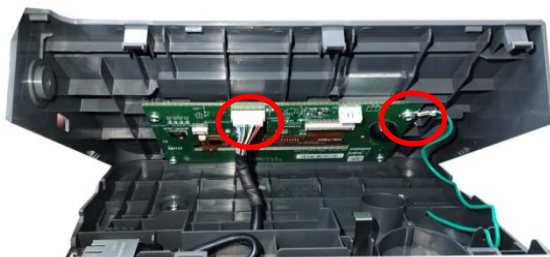
1. Remove the screw (1) on the right side of the panel.



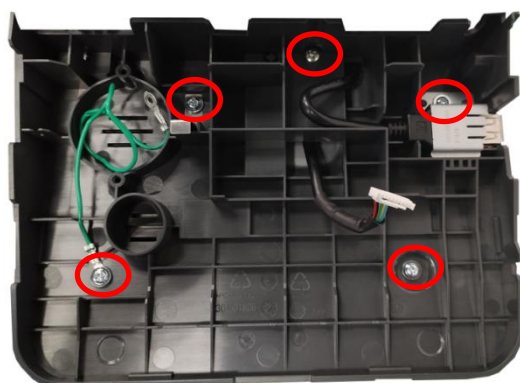
2. Pry up the bottom fasteners (4) of the panel with tweezers



3. Lift the panel to a 45° angle and remove the bottom cable of panel assembly.

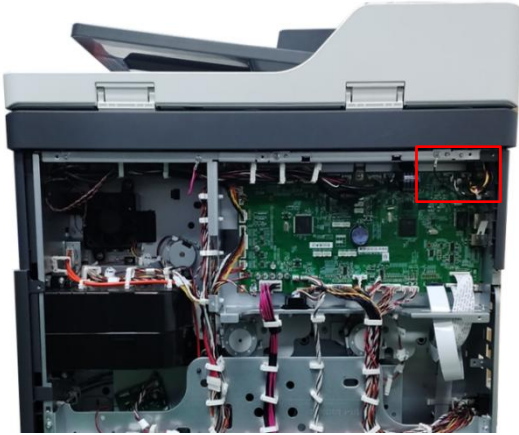


4. Remove the screws (5) and pull out the rear cover of control panel outwards.



7.3.16 Disassemble the scanner components

1. Remove the rear cover
2. Remove the ADF module.
3. Remove the control panel assembly.
4. Disconnect the cables (4) connected between scanner and data board.



5. Remove the screws (6).



6. Pry up the left clips (2) with tweezers, and lift up the scanner components from the back to remove it.



Clip

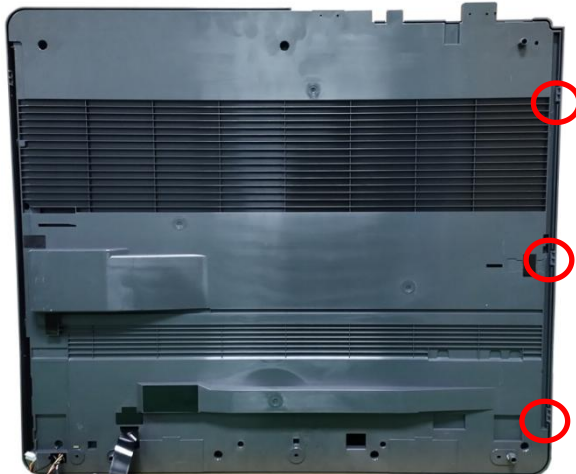


7.3.17 Disassemble the scanner head module

1. Remove the rear cover assembly.
2. Remove the ADF module.
3. Remove the panel assembly.
4. Disassemble the scanner components.
5. Remove the screws (9).



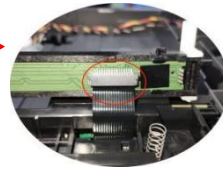
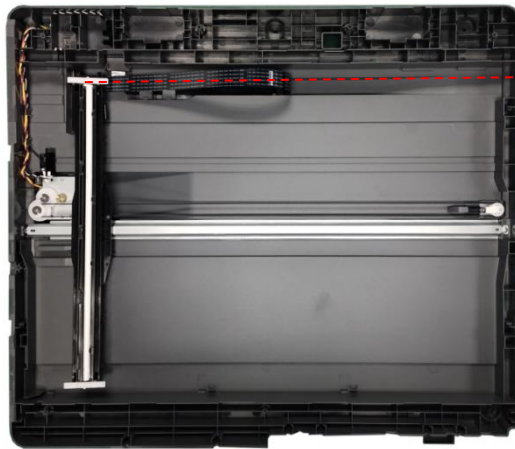
6. Lift up the scanner components, press down on the scanner bottom cover support rod with the left hand, and use tweezers to pry up the fasteners (3) on the right side of the scanner components.



7. Place the scanner components on a flat table, and grip both sides to slowly lift the glass platen upwards to remove it.



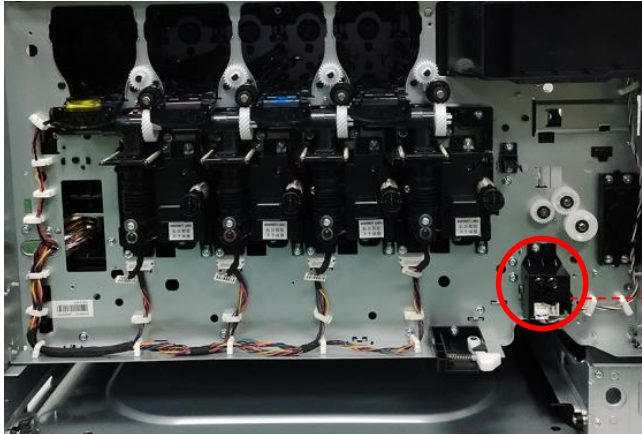
8. Pry up both ends of CIS with tweezers, lift it outward at a 30° angle, and unplug the CIS FFC.



Flat Flexible
Cable

7.3.18 Disassemble the waste toner detection assembly

1. Remove the rear cover, left cover, and front cover assembly.
2. Remove the waste toner bottle, toner cartridge, tray module, and 4 imaging modules.
3. Remove the right cover and the inner front cover of main body.
4. Remove the waste toner detection assembly.



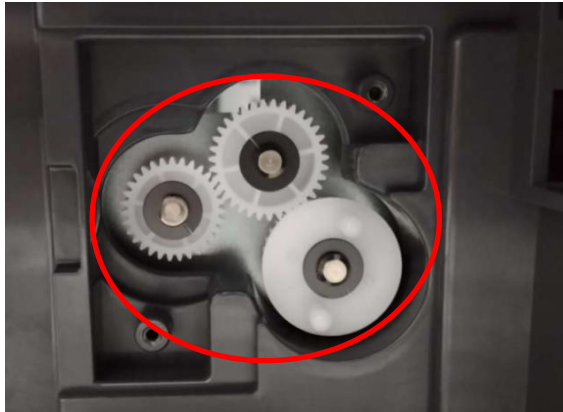
Front door switch for
waste toner detection

7.3.19 Disassemble the waste toner bottle drive assembly

1. Open the front cover.
2. Remove the waste toner bottle assembly.
3. Remove the screws (2) of the front cover plate inside the drive assembly

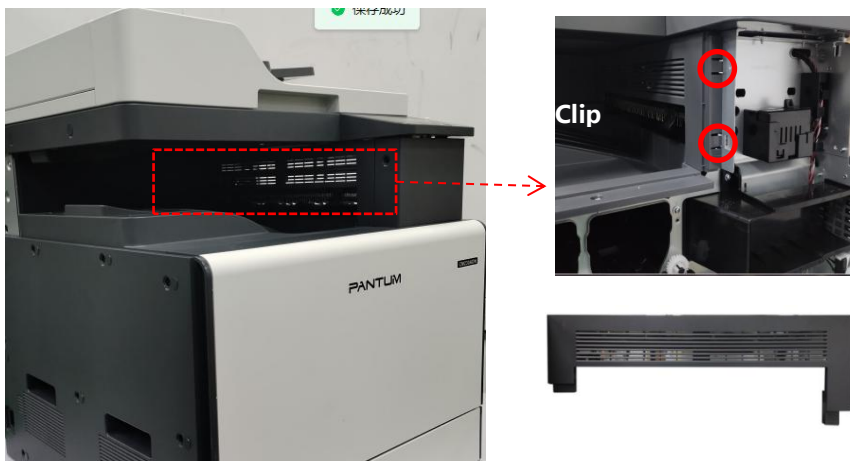


4. Remove the retaining clip and disassemble the waste toner bottle drive assembly.

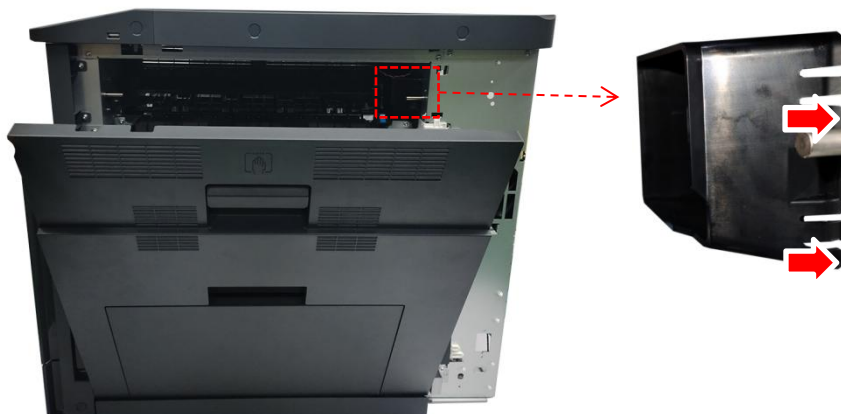


7.3.20 Disassemble the paper exit module

1. Remove the rear cover metal plate, left cover, and front cover assembly.
2. Remove the tray, waste toner bottle, and toner cartridge.
3. Remove the right front cover, the front cover of platen support, ADF module, panel assembly, rear cover of control panel, scanner components, top cover of main body, and inner front cover of main body.
4. Press the clips inward and remove the paper exit cover.



5. Press down the clips to remove the heat pipe on the upper right side of the fuser.

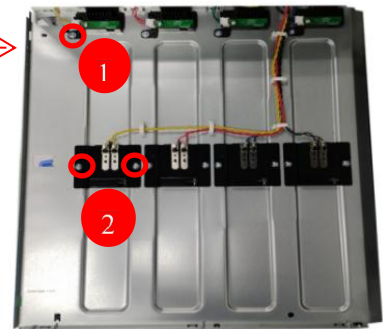


6. Remove the fixing screws of the paper exit module, lift the paper exit module up on the right side, pull out the left alignment post, lift the paper exit module upward until the alignment post is completely removed, and then remove the paper exit module.



7.3.21 Disassemble the toner cartridge chip contacts and toner cartridge mistake-proofing module

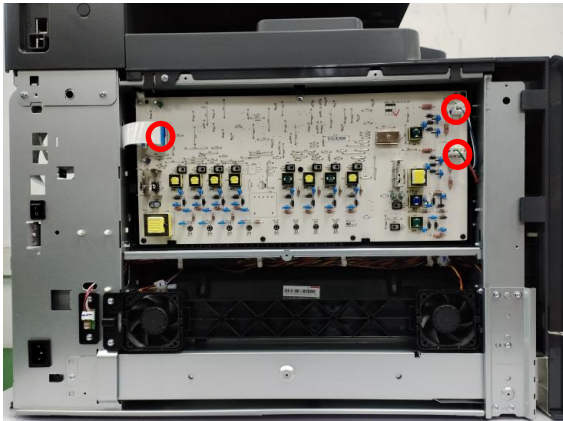
1. Remove the rear cover, left cover, and front cover assembly.
2. Remove the waste toner bottle, toner cartridge, tray module, and imaging module.
3. Remove the right cover, and front cover, top cover, and the inner front cover of main body.
4. Remove the screws of toner cartridge chip contacts and toner cartridge mistake-proofing module as per step ① and ② (with a screwdriver no more than 135mm in length)



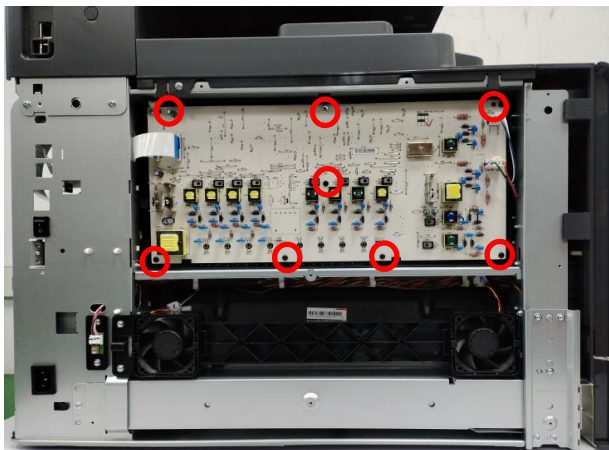
7.3.22 Disassemble the high voltage board

When the high voltage board is replaced, data calibration is required, please refer to Section 9: [Precautions for Spare Part Replacement](#)

1. Remove the rear cover, and left cover.
2. Pull out the three high voltage board cables as shown in the diagram.

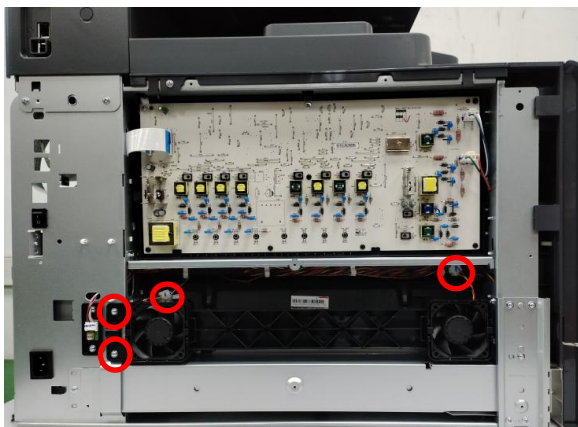


3. Remove the screws (8), and take out the high voltage board.



7.3.23 Disassemble the LSU dual-sided fan module

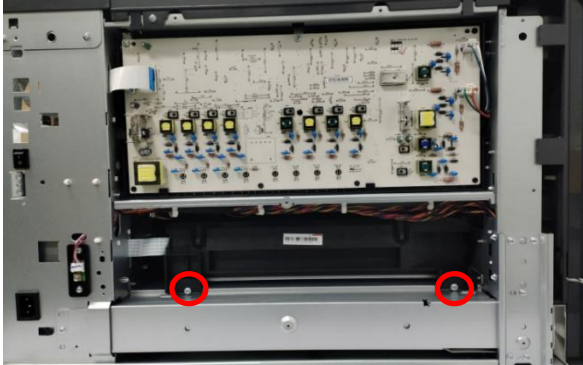
1. Remove the rear cover, and left cover.
2. Disconnect the fan cables, remove the screws (2), and tilt the LSU dual-sided fan module to remove it from the left side.



7.3.24 Disassemble the LSU module

When the LSU is replaced, data calibration is required, please refer to Section 9: [Precautions for Spare Part Replacement](#)

1. Remove the rear cover, left cover, and LSU Dual-sided fan module.
2. Remove the LSU screws (2)



3. Take out the LSU FFC from the clip.



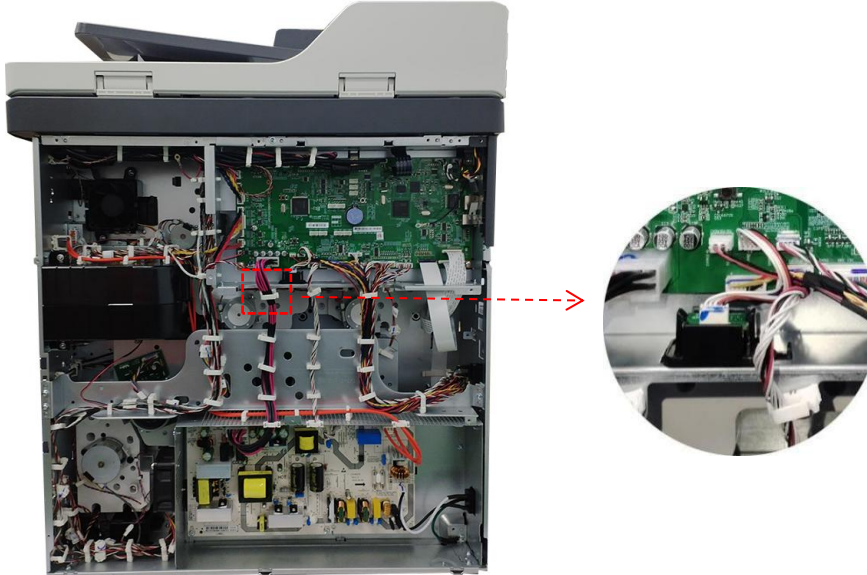
4. Hold the both sides of LSU and pull it out to a length of 30cm, and unplug the FFC to remove it.



7.3.25 Disassemble the backup board

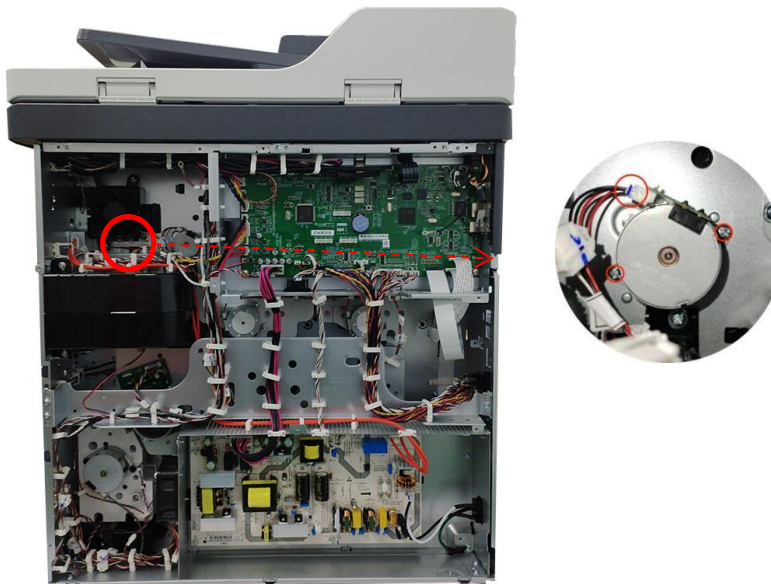
When the backup board is replaced, data calibration is required, please refer to Section 9: [Precautions for Spare Part Replacement](#)

1. Remove the rear cover.
2. Disconnect the data board cable, press the clip to the left to remove the backup board assembly.



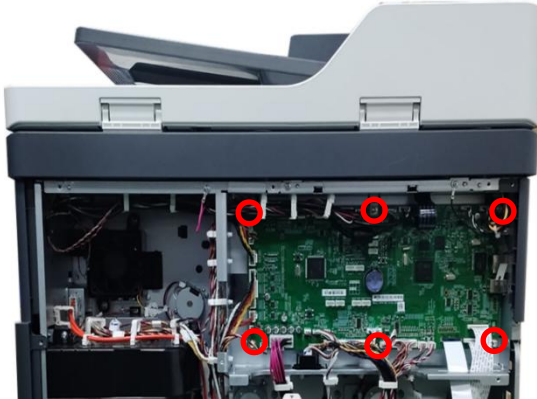
7.3.26 Disassemble the paper exit drive assembly

1. Remove the rear cover.
2. Unplug the cable, remove the screws (2), and take out the paper exit drive assembly.



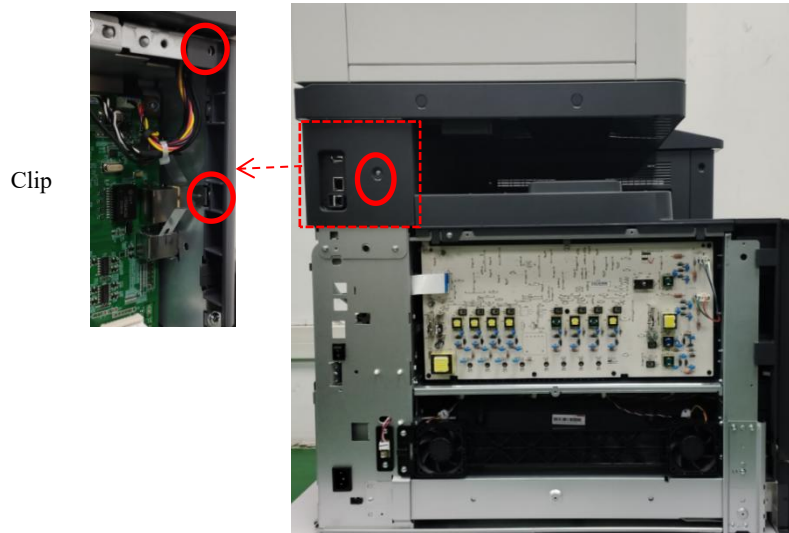
7.3.27 Disassemble the data board

1. Remove the rear cover and the rear left cover of platen support.
2. Unplug the data board cable, remove the grounding spring, remove the screws (6), and take out the data board by lifting it up slowly.

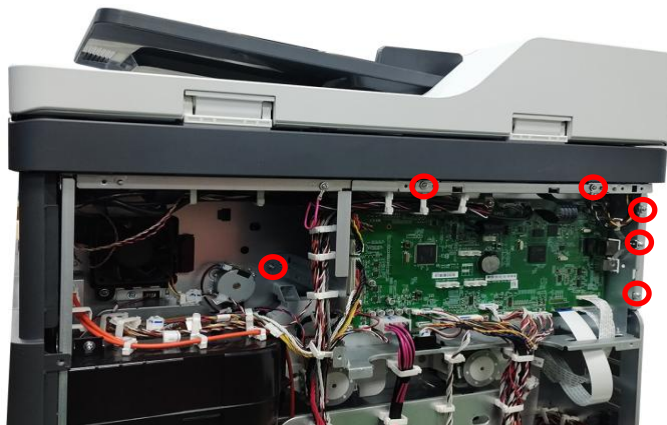


7.3.28 Disassemble the toner cartridge drive

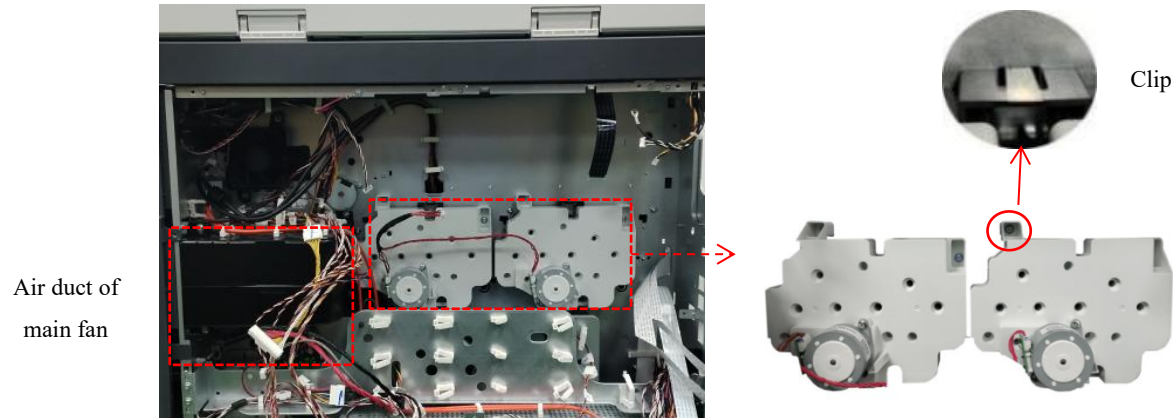
1. Remove the rear cover.
2. Remove the screw (1), and pry up the clips to take out the rear left cover of platen support.



3. Unplug all cables on the data board and lower metal plate, remove the screws (6), and take out the metal plate.

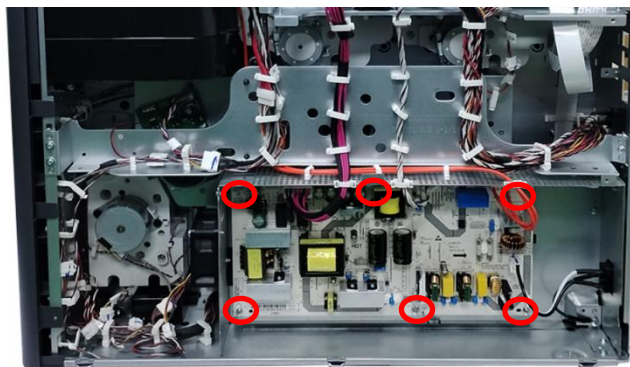


4. Remove the air duct of main fan, disconnect the cables, remove the screws (3), and press down the clips to take out the toner cartridge drive assembly.



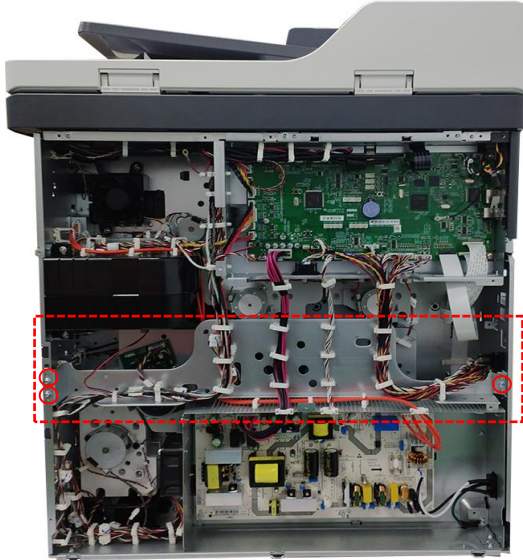
7.3.29 Disassemble the power supply board

1. Remove the rear cover.
2. Disconnect the cables (4), and remove the screws (6) to take out the power supply board.

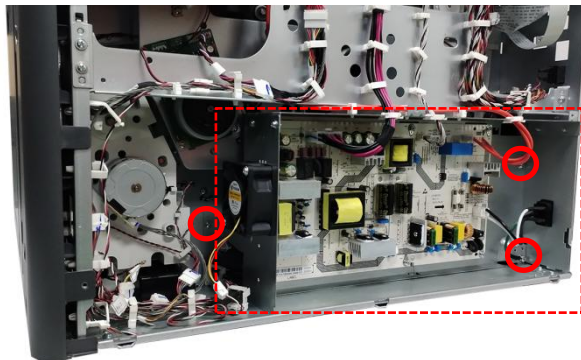


7.3.30 Disassemble the main drive assembly

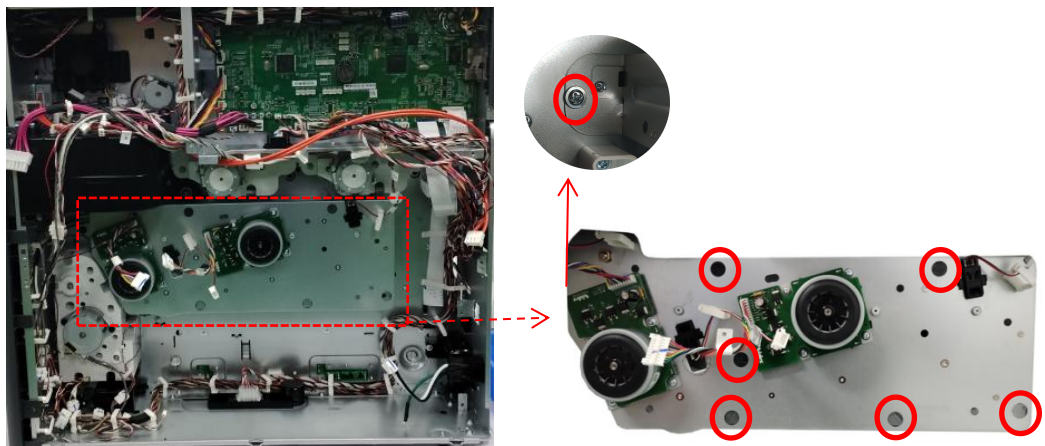
1. Remove the rear cover.
2. Unplug all cables, remove the screws (3), and take out the support metal plate in the middle of frame.



3. Unplug all cables, remove the screws (3), and take out the power supply board protective cover assembly.

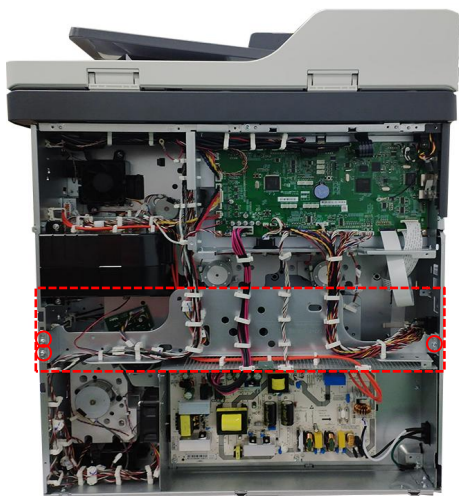


4. Unplug the cable, remove the screws (7), and take out the main drive assembly.

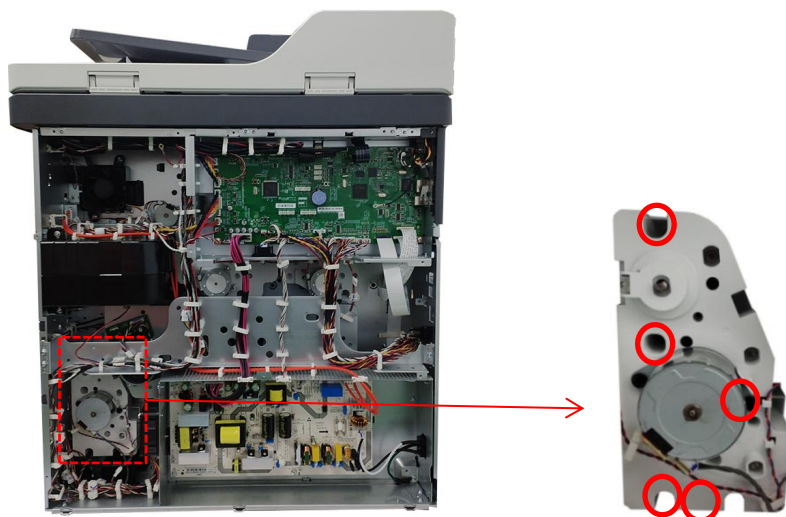


7.3.31 Disassemble the paper feed drive assembly

1. Remove the rear cover assembly.
2. Unplug all cables, remove the screws (3), and take out the support metal plate in the middle of frame.

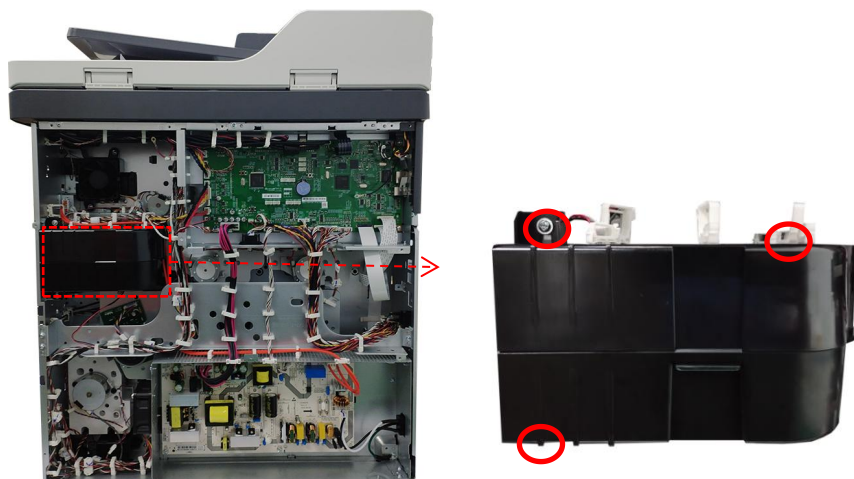


3. Unplug the cable, remove the screws (5), and take out the paper feed drive assembly.

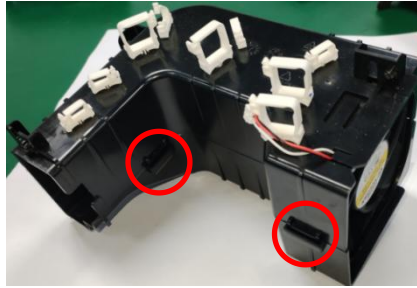


7.3.32 Disassemble the main fan

1. Remove the rear cover.
2. Unplug the cable, remove the screws (3 pieces), and take out the main cooling fan module bracket.

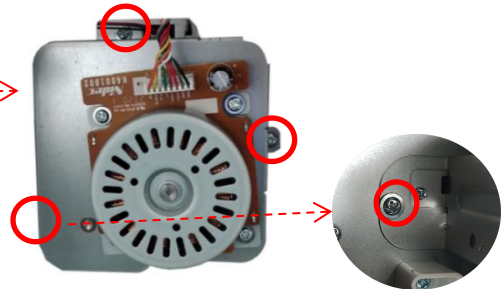
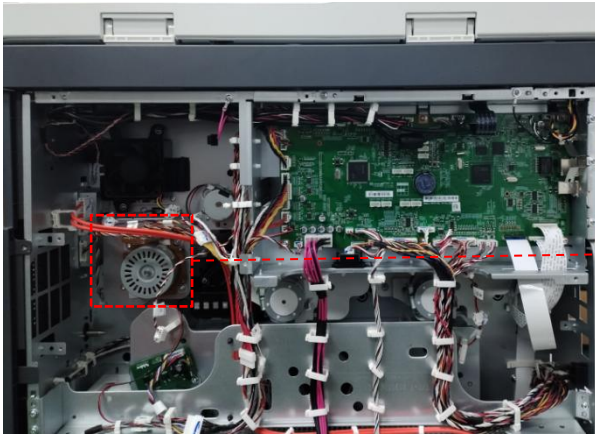


3. Remove the clips (4) to take out the main fan.



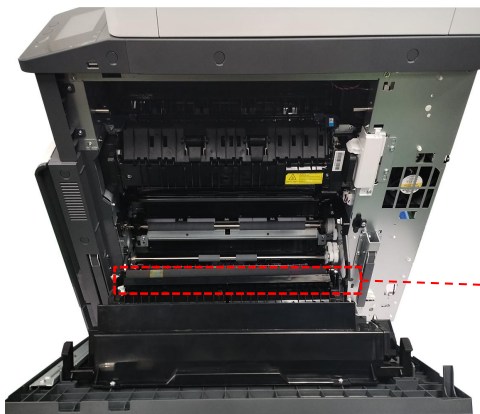
7.3.33 Disassemble the fuser drive assembly

1. Remove the rear cover.
2. Remove the upper bracket of the main cooling fan.
3. Disconnect the cables, and remove the screws (3) to take out the fuser drive assembly.



7.3.34 Disassemble the secondary transfer assembly

1. Open the duplex feed assembly.
2. Press the clip to the left and slowly remove the secondary transfer roller module outwards.



7.3.35 Disassemble the fuser

1. Open the duplex feed assembly.
2. Remove the support rod of the duplex feed assembly.
3. Remove the screw (1) and take out the protective cover of fuser wiring.

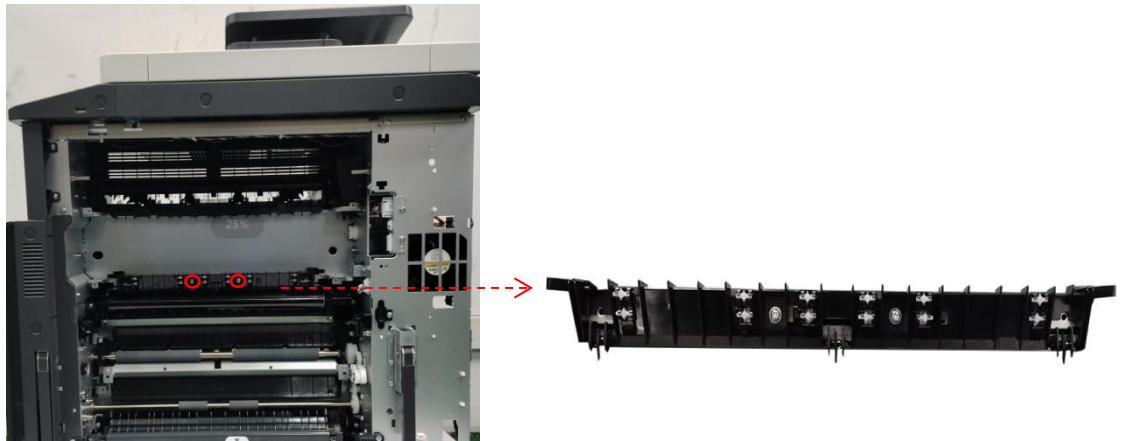


4. Disconnect the cables, and remove the screws (4) to take out the fuser slowly and carefully.



7.3.36 Disassemble the transfer belt assembly

1. Remove the imaging module. (Disassemble the imaging module first to prevent damage to the OPC surface when disassembling the transfer belt)
2. Open the duplex feed assembly.
3. Remove the support rod of the duplex feed assembly.
4. Remove the screws (2) and remove the installation bracket of transfer ratchet assembly.



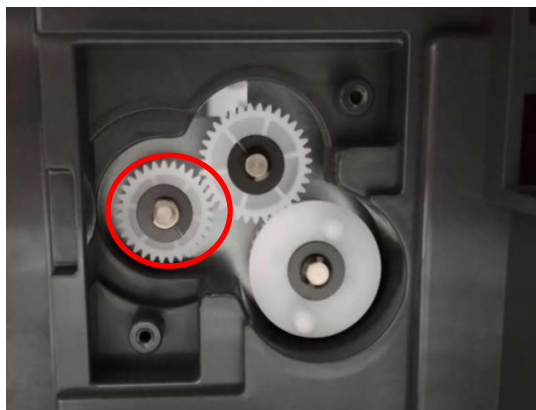
5. Unplug the cable, and remove the screws (2). After pulling out the transfer belt buckle, hold the arrow position with both hands and slowly remove the transfer belt assembly.

**7.3.37 Disassemble the calibration assembly**

1. Open the front cover
2. Remove the waste toner bottle assembly.
3. Remove the screws (2) and take out the front cover plate inside the drive assembly.



4. Remove the retaining clip and disassemble the waste toner bottle drive wheel.



5. Remove the duplex feed assembly.

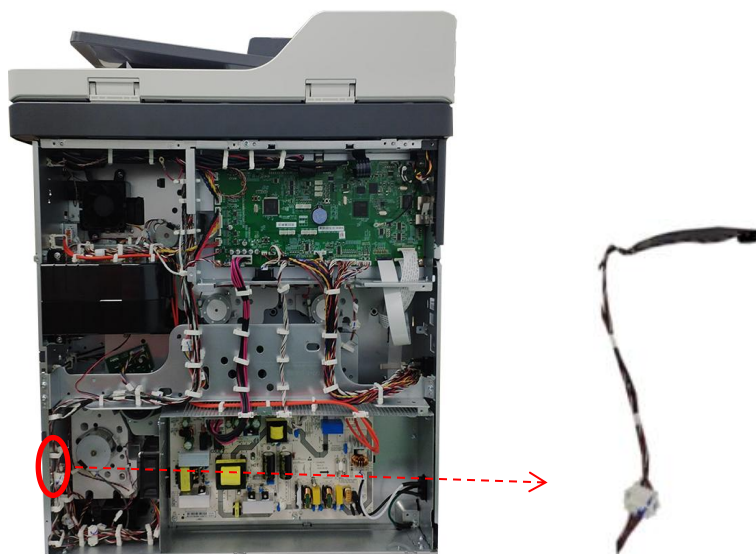
6. Remove the screws (2).



7. Push to the left according to ①②, and take out the calibration assembly slowly from the right side.

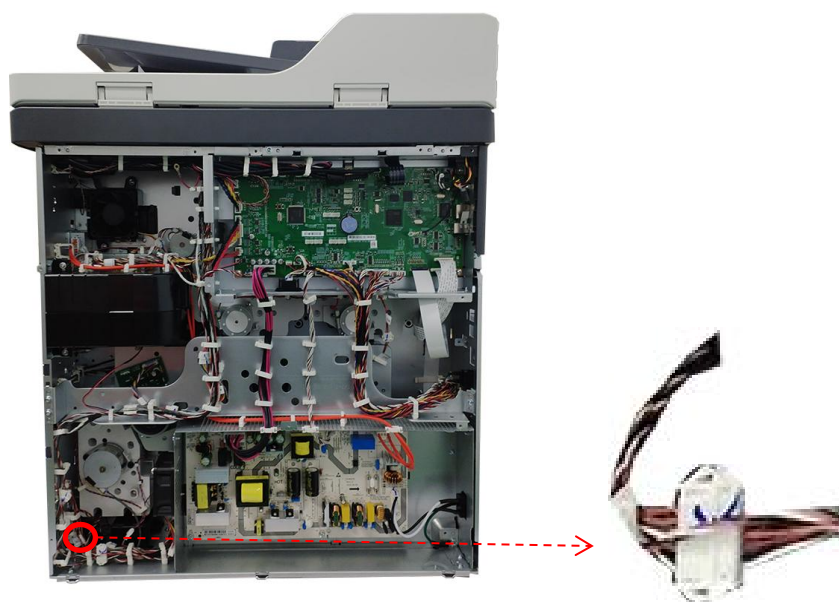


8. Remove the calibration assembly cable.



7.3.38 Disassemble the multi-purpose paper feed module

1. Remove the rear cover.
2. Unplug the multi-purpose paper feed module cable.



3. Remove the duplex feed assembly.
4. Remove the screws (6), and take out the multi-purpose paper feed module.

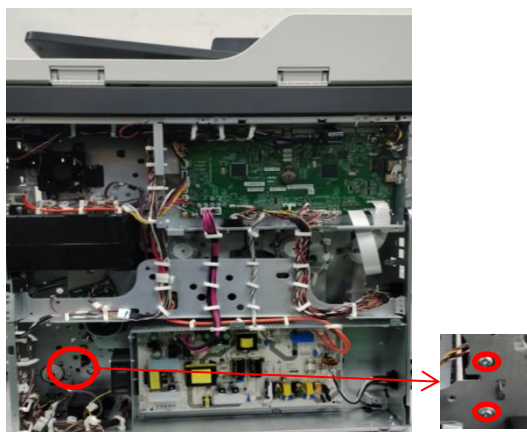


7.3.39 Disassemble the lower guide for paper feed path

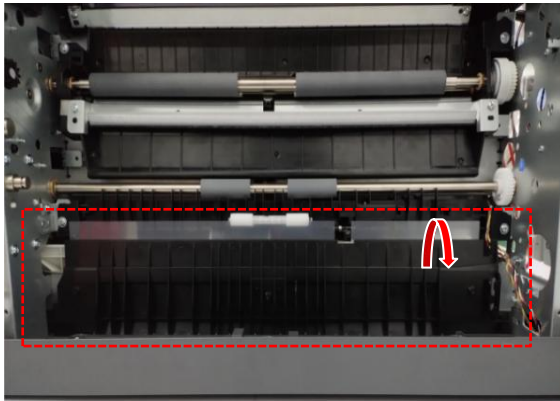
1. Remove the duplex feed assembly.
2. Remove the multi-purpose paper feed module.
3. Pull out the tray, and remove the screws (2)



4. Remove the rear cover.
5. Remove the paper feed drive assembly.
6. Remove the screws (2).

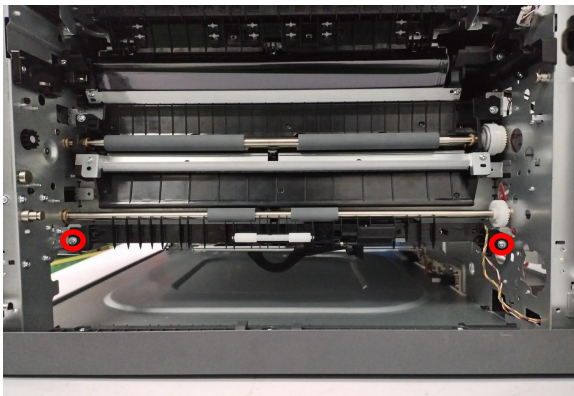


7. Take out the lower guide for paper feed path from the right side.



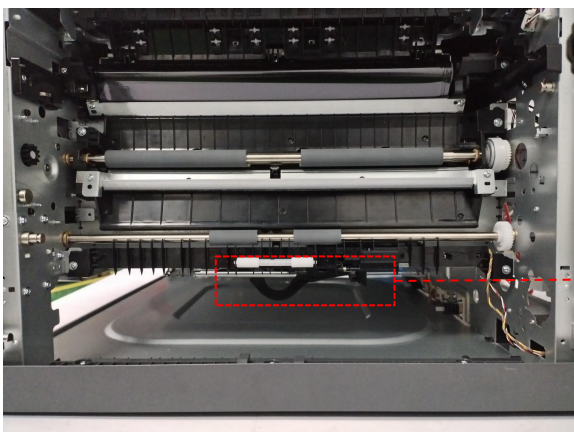
7.3.40 Disassemble the Level 1 feed assembly

1. Remove the duplex feed assembly.
2. Remove the multi-purpose paper feed module.
3. Remove the lower guide for paper feed path.
4. Unplug the cable (marked 2), remove the screws (2), and take out the Level 1 feed assembly.



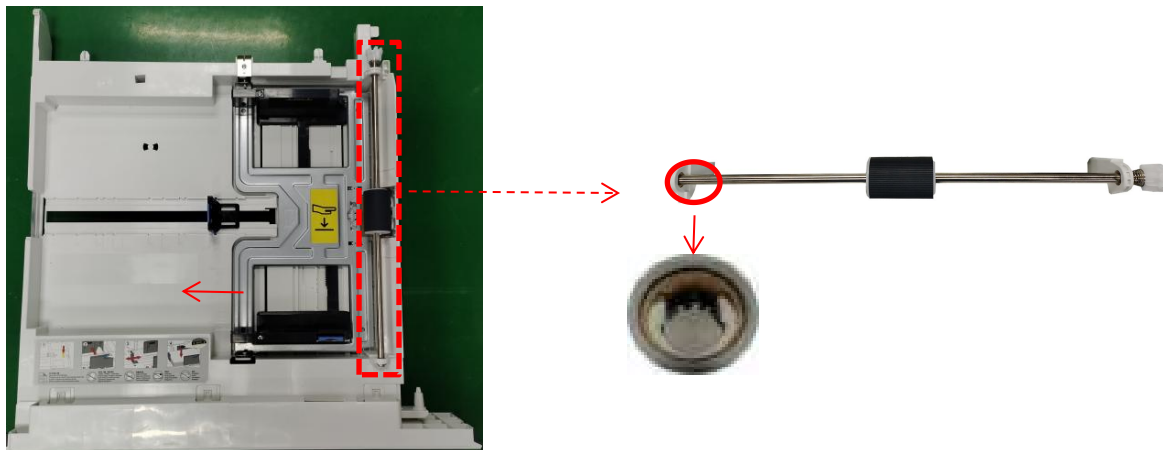
7.3.41 Disassemble the out-of-paper detection assembly

1. Remove the duplex feed assembly.
2. Remove the multi-purpose paper feed module.
3. Remove the lower guide for paper feed path.
4. Remove the Level 1 feed assembly.
5. Unplug the cable (marked 1), remove the screw (1), and take out the out-of-paper detection assembly.



7.3.42 Disassemble the tray paper feed roller assembly

1. Remove the tray module.
2. Remove the retaining clip and pull it out from the left side.



3. Pry up the fasteners (2) and remove the paper feed roller from the left side.



8. Precautions for Spare Part Replacement

8.1 Backup Board, Laser Scanner Unit (LSU), or High Voltage Board

When the backup board, laser scanner unit (LSU), or high voltage board in the Printer of this series are replaced, the corresponding calibration data of the spare parts must be imported into the Printer before use, otherwise it may affect the printing quality. The operation is as follows:

8.1.1 Replacement Instructions

1. Enter the serial number of the spare part (10 digits) in the “Accessory Information” interface of the CSS after-sales system. For the backup board, click the “Get EEPROM Parameter File” button. For the LSU, click the “Download Calibration Data File” button. For the high voltage board, click the “Download High Voltage Parameter File” button.

2. Send the downloaded files to the Printer by the “Calibration Data Transmission Tool”. The Printer will automatically calibrate and get ready after completion.

3. Replacement plan 2 for high voltage board

High Pressure Parameter Settings: After replacing the high voltage board, enter the menu. The panel displays the current settings, and the maintenance personnel directly inputs the high voltage setting parameters on the panel. After clicking the “Save” button, the panel displays the execution result (setting completed/setting failed).

Method to obtain high voltage parameters: Enter the 18-digit part number of the high voltage board in the “Accessory Information” interface of the CSS after-sales system, and click the “Download High Voltage Parameter File” button.

Open the file and find the corresponding voltage parameters. (Refer to Appendix 4 for the correspondence table between file voltage parameters and panel voltage parameters)

8.1.2 Tool Instructions

1. Open the “Calibration Data Transmission Tool”, select the model “7125/2621”, select the category of spare part (select “EEPROM” for the backup board, “Calibration Data” for the LSU, and “High Voltage Parameter” for the high voltage board).

2. Double-click to select the calibration file path, and then click “One-Key Setting”. The data is automatically sent to the Printer. After successful transmission, click “OK” as shown in the figure below. The Printer will automatically calibrate and get ready after completion.

8.2 Transfer Belt Assembly

After the transfer belt assembly is replaced, it is necessary to reset the transfer belt service life counter in service mode.

8.3 Fuser

After the fuser is replaced, it is necessary to enter the service mode on the operation panel to unlock and reset the fuser counter.

Service mode: Printer Engine - Engine Maintenance Settings - Others - Consumable Usage Counter Reset. Failure to reset the counter will result in an end-of-life error and prevent further printing.

8.4 Main Drive Assembly

After the main drive assembly is replaced, it is necessary to make color correction: Panel Settings → Print Settings → Color Correction.

8.5 Secondary Transfer Assembly

After the secondary transfer assembly is replaced, it is required to reset the counter in the following path: Service Mode → Print Engine → Engine Maintenance Settings → Others → Consumable Usage Counter Reset.

8.6 Standard tray module/tray paper feed roller assembly

After the standard tray or paper feed module is replaced, it is necessary to reset the paper feed page service life counter in service mode.

9. Color SKEW Correction

When the printer leaves the factory, or when the LSU(laser) is replaced, the lens in the LSU needs to be aligned.

Adjustment method: By printing the built-in specific portrait, measure the skew amount, and then manually rotate the LSU screws to adjust.



Appendix 1: Circumferences of All Rollers in the Device

Name	Image cycle mm
OPC	94.2
Primary charge roller	37.7
Magnetic roller	30
First transfer roller	25.1
Second transfer roller	59.7
ITB drive roller	78
Heating roller	77.3
Pressure roller	78.5
ITB	785
Paper exit drive roller	43.2
Level 1 feed roller	44.3
Correction roller	50.3
Duplex roller	44.3

Appendix 2: Description of Product Serial Number

Each printer carries its own product serial number label. The code meaning of serial number and the position where label is attached are described below.

Code meaning:



Label attaching position:



Appendix 3: Glossary of Special Terms for This Manual

The following table explains all the special terms involved in this Manual.

Terms	Explanations
CFR	Safety standards for laser products
LCD	Liquid Crystal Display
CIS	Scanner head
PPM	Pages per minute
HVPS	High-voltage power supply board
LVPS	LVPS board
OPC	Photosensitive drum
PCR	Primary charge roller
DR	Developer roller
TR	Transfer roller
LSU	Laser Scanning Unit
FFC	Flat Flexible Cable
ITB	Transfer belt
Y/M/C/K	Yellow/Red/Cyan/Black
TC_SENSOR	Toner Density Sensor
T/D	Toner density
RADF	Reversing Automatic Document Feeder

Appendix 4: Comparison Table of Panel High Voltage Parameters vs. CSS

Downloaded High Voltage Parameters

High Voltage Correction Procedure - Record of Test Data for High Voltage Formula Parameters			Numbers, negative sign, and decimal point can be entered
Title	Field of CSS High Voltage Parameter File	Printer Panel Display	Action Specifications
Charging Voltage			
Charging Voltage K Value A	MKA	K-Parameter A	Range: -30.24~-21.7
Charging Voltage K Value B	MKB	K - Parameter B	Range: 488.2~ 1090.4
Charging Voltage C Value A	MCA	C-Parameter A	Range: -30.24~-21.7
Charging Voltage C Value B	MCB	C - Parameter B	Range: 488.2~ 1090.4
Charging Voltage M Value A	MMA	M-Parameter A	Range: -30.24~-21.7
Charging Voltage M Value B	MMB	M - Parameter B	Range: 488.2~ 1090.4
Charging Voltage Y Value A	MYA	Y-Parameter A	Range: -30.24~-21.7
Charging Voltage Y Value B	MYB	Y - Parameter B	Range: 488.2~ 1090.4
Developing Voltage			
Developing Voltage K Value A	DKA	K-Parameter A	Range: -13.4~-9.9
Developing Voltage K Value B	DKB	K - Parameter B	Range 191.56~400.34
Developing Voltage C Value A	DCA	C-Parameter A	Range: -13.4~-9.9
Developing Voltage C Value B	DCB	C - Parameter B	Range 191.56~400.34
Developing Voltage M Value A	DMA	M-Parameter A	Range: -13.4~-9.9
Developing Voltage M Value B	DMB	M - Parameter B	Range 191.56~400.34
Developing Voltage Y Value A	DYA	Y-Parameter A	Range: -13.4~-9.9
Developing Voltage Y Value B	DYB	Y - Parameter B	Range 191.56~400.34
Developing AC High Voltage			

Developing AC High Voltage Value A	DAC_A	Parameter A	Range: 12.31~12.31
Developing AC High Voltage Value B	DAC_B	Parameter B	Range: -25~-21
High Voltage of Cleaning Needle			
High Voltage of Cleaning Needle Value A	SA	Parameter A	Range: -42.68~-42.68
High Voltage of Cleaning Needle Value B	SB	Parameter B	Range: 1129~1379
Primary transfer at high voltage			
First Segment of High Voltage of Primary Transfer Value A	T1A1	First Segment - Parameter A	Range: 21.34~31.08
First Segment of High Voltage of Primary Transfer Value B	T1B1	First Segment - Parameter B	Range: -427.69~-149.13
Second Segment of High Voltage of Primary Transfer Value A	T1A2	Second Segment-Parameter A	Range: 16.1~36.32
Second Segment of High Voltage of Primary Transfer Value B	T1B2	Second Segment - Parameter B	Range: -885.37~308.55
High voltage of secondary transfer			
First Segment of High Voltage of Secondary Transfer (Constant Voltage) Value A	T2A1	First Segment - Parameter A	Range: 41.91~63.89
First Segment of High Voltage of Secondary Transfer (Constant Voltage) Value B	T2B1	First Segment - Parameter B	Range: -1706.6~-762.96
Second Segment of High Voltage of Secondary Transfer (Constant Voltage) Value A	T2A2	Second Segment-Parameter A	Range: 31.33~74.47
Second Segment of High Voltage of Secondary Transfer (Constant Voltage) Value B	T2B2	Second Segment - Parameter B	Range: -2753.6~-284
High Voltage of Secondary Transfer (Constant Current) Value A	T2I_A	Constant Current - Parameter A	Range: 0.66~0.66
High Voltage of Secondary Transfer (Constant Current) Value B	T2I_B	Constant Current - Parameter B	Range: -28~-23

CSS Downloaded High Voltage Parameter File is shown as following figure:

307245007605AA0561-HPP.json[2]

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{
  "T1A2": "25.80",
  "T2I_P": "500",
  "T1A1": "25.21",
  "T1_3V": "302",
  "MYA": "-25.70",
  "WORKSTAGE_ID": "1619596809460662272",
  "EXECUTION_TIME": "2024-01-27 16:14:12.11700",
  "MYB": "795.63",
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  "IP": "10.110.65.97",
  "T2I_A": "0.66",
  "MYP": "62.08",
  "SN_INST_WORKSTAGE_ID": "1751156638598975488",
  "T1_3P": "22.81",
  "T2B2": "-1212.58",
  "T2B1": "-1180.52",
  "MAC": "88:AE:DD:10:F4:C0",
  "CLIENT_VERSIONS": "2.1.0.0",
  "MMV12": "-1200",
  "T2_7V": "695",
  "SN_INST_ID": "1751156638582198272",
  "MMV15": "-1506",
  "T1_17V": "1696",
  "T1_17P": "77.67",
  "COMPUTER_NAME": "IT-PO-10321",
  "DCV6": "-597",
  "DCV3": "-302",
  "DKV3": "-302",
  "DKV6": "-596",
  "USER_NAME": "122646",
  "DVB": "295.95",
  "DYA": "-11.65",
  "SA": "-42.68",
  "SB": "1275.92",
  "T2_2V": "1994",
  "DYP": "0.00",
  "SP": "58.01",
  "FACTORY_CODE": "6012",
  "ST": "PASS",
  "MKA": "-25.77",
  "SV": "-1196",
  "MKB": "788.04",
  "SN": "307245007605AA0561",
  "MMV8": "-807",
  "T2_2P": "62.29",
  "MYV8": "-792",
  "CM": "TE01",
  "MCA": "-25.65",
  "T1B1": "-274.98",
  "DAC_P": "500.00",
  "T1B2": "-303.81",
  "MCB": "786.72",
  "DAC_F": "5.00",
  "MKP": "61.63",
  "DAC_A": "12.31",
  "DAC_B": "-23.16",
  "DAC_D": "50.00",
  "MCP": "61.87",
  "DAC_VPP": "600.00",
  "DKB": "295.95",
  "DKA": "-11.65",
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  "MMA": "-25.67",
  "DCB": "295.95",
  "MMB": "790.13",
  "DCA": "-11.65",
  "ID": "1751156638607364096",
  "MATERIAL_DESC": "Bull-MFP-HV-A-R01-PCBA",
  "MS": "7125",
  "MYV15": "-1506",
  "DKP": "0.00",
  "T2I": "20",
  "MYV12": "-1195",
  "DCP": "0.00",
  "MMP": "61.95",
  "CRAFT_WORKSTAGE_ID": "1750041295528816640",
  "MATERIAL_NUMBER": "307245007605",
  "DMV3": "-301",
  "ORDER_ID": null,
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  "DMV6": "-597",
  "T2A2": "51.58",
  "T2_33P": "87.48",
  "T2_7P": "36.83",
  "ORDER_NUMBER": null,
  "T1_1V": "999",
  "DYV3": "-303",
  "DYV6": "-600",
  "T1_1P": "50.57",
  "T2_33V": "3290",
  "DMB": "295.95",
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  "DMA": "-11.65",
  "MKV8": "-808",
  "DMP": "0.00",
  "FIX": "001",
  "PRODUCT_LINE": null,
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  "MKV12": "-1202",
  "MKV15": "-1510",
  "MCV12": "-1197"
}
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Appendix5 Wiring Diagram

