

ASTA-P1022NW Series Laser Printer

Maintenance Handbook

type

P1022NW Series.

Read this manual carefully before performing repairs.
Keep this manual in a convenient location for quick and easy access.

October 2024

Catalogue

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Security Information

■ Definition of Warnings, Precautions, and Notes

This manual uses the following provisions:



warn

This is a warning symbol indicating a potential hazard that, if not avoided, may result in death or severe personal injury.



Pay Attention To

This is a warning sign indicating a potential hazard; failure to avoid it may result in minor or moderate personal injury.



material particulars

This is a critical warning indicating potential hazards that, if not avoided, may cause property damage or loss of product functionality.



It is a prohibited label indicating actions that must not be performed.



An electrical hazard icon indicating potential electric shock.



This is a fire hazard icon indicating the potential for a fire.



It is a hot surface icon warning not to touch hot components of the device.

Note: This section explains the actions you should take for potential scenarios and how to use other features.

■ For Safe Use of This Device

To facilitate future reference and ensure you read these safety precautions before performing any repairs, please keep them properly. Failure to comply with these precautions may result in accidents such as fires, electric shocks, burns, or suffocation.



warn

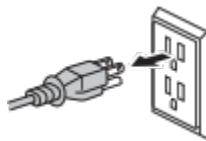


Risk of electric shock

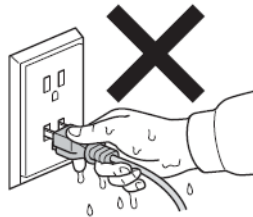
Failure to heed the following warnings may pose a risk of electric shock or cause a short circuit leading to fire.



The device contains high-voltage electrodes. Before accessing the interior of the device for routine maintenance tasks such as cleaning, ensure that the power cord plug has been removed from the AC power socket and the Ethernet cable has been disconnected from the network-connected device. **Do not** insert any objects through gaps in the housing, as this may expose you to hazardous high voltages or cause component short circuits.



Do not insert or remove the plug with wet hands, as this may cause electric shock.



Do not use this device during thunderstorms.



Always ensure the power cord plug is fully inserted into the socket. If the device's power cord is worn or damaged, **do not use** the device or handle the cord.



Do not expose the device to water.



The device must be connected to an AC power source within the range specified on the nameplate. **Do not connect the device to a DC power source or transformer.**



Safety precautions for power cords:

- This device uses a three-pin power plug with a grounding pin, which should only be inserted into a grounded three-prong power outlet. This is a safety feature; **do not** discard the grounding pin.
- Do not **pull the power cord from the middle**. This may cause the cord to detach from the plug, resulting in electric shock.
- Use only the power cord provided with this device (for certain models only).
- **Do not** use any unspecified cables (or optional devices). This may cause fire or personal injury. Install strictly according to the user manual.
- Place the device in a location where it can easily connect to the power cord.
- Do not **press any object against the power cord**.
- **Do not** place this device in areas where its power cord may be stepped on.
- **Do not** place this device in a position where its power cord may be stretched or pulled, as the cord could wear out or become damaged.
- **Do not** use devices with damaged or broken power cords, as this may cause electric shock or fire.
- We strongly recommend not using any type of power extension cable.
- **Do not** drop any metal parts or liquids onto the device's power plug, as this may cause electric shock or fire.



Never dispose of the toner cartridge or its components in a fire, as this may cause an explosion and result in personal injury.



Do not use flammable materials, any type of sprays, or organic solvents/liquids containing alcohol or ammonia inside or outside cleaning equipment. This may cause fires or electric shocks. Only use a lint-free dry cloth for cleaning.



Do not attempt to operate devices that contain paper jams or paper fragments inside. Prolonged contact of paper with the fusing unit may cause a fire.

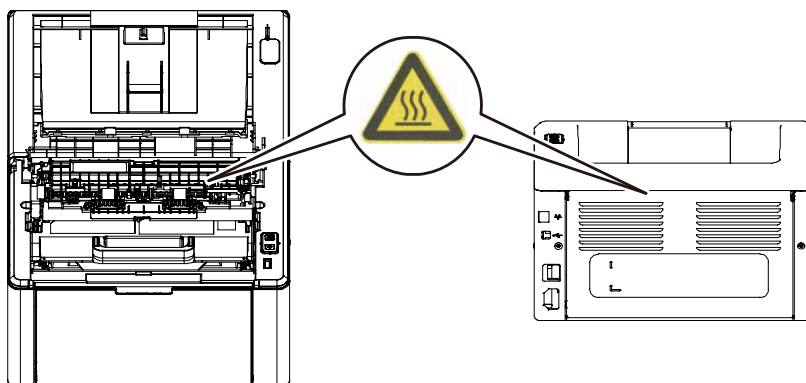


Do not use a vacuum cleaner to remove scattered toner. This may ignite the toner dust inside the vacuum and cause a potential fire. Clean the toner dust carefully with a soft, non-floshed cloth and dispose of used toner in accordance with local regulations.

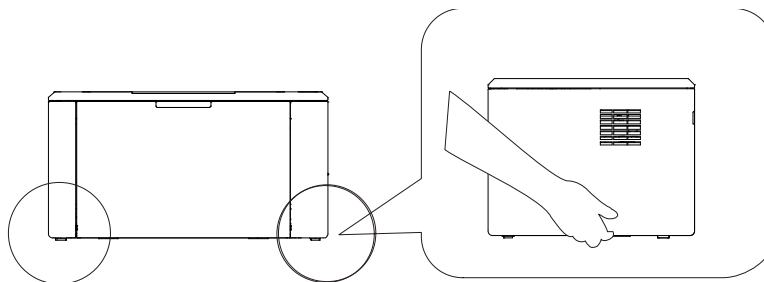


Surface burning sensation

Some internal components of the device may become very hot shortly after use! Wait at least 10 minutes for the device to cool before touching its internal parts.



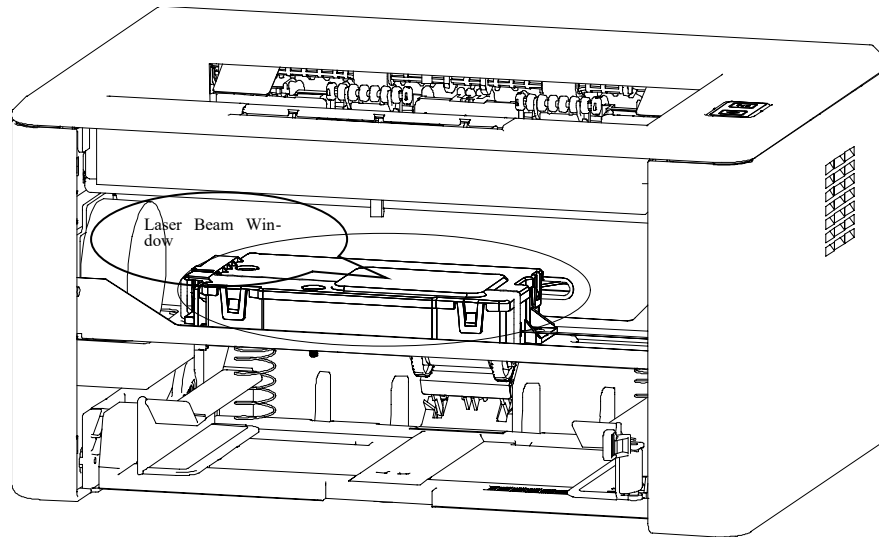
When moving the equipment, hold both sides at the bottom and lift it from the front.



■ Precautions for Laser Products

Note: If the laser has any issues, replace it. Do not attempt to open the laser housing to avoid direct exposure to the laser beam.

<Position of the Laser Beam Window>



■ AI

When maintaining the optical system of the equipment, avoid placing screwdrivers or other reflective objects on the laser beam path. Ensure that personal accessories such as watches and rings are removed before maintenance. Although reflected beams are invisible, they can cause permanent eye damage.

Chapter 1 Reference Specifications

1. Summary

The table below shows the functional specifications of the models described in this maintenance manual.

Type		P1022NW
Double-sided printing method		Manual Double-Sided
Supply voltage		AC 220-240V, 50/60Hz, 5A
Processor		1650 Clock speed: 200 MHz
Internal storage		Flash: 32MB
		DDR: 2Gb
Interface Type ^{*1}		USB2.0
		Ethernet: 10Base-T / 100Base-TX
		WLAN Direct Connection (IEEE 802.11b/g/n)
Enter Paper / Standard Carton		150 sheets (70 g/m ²)
Paper output capacity and paper consumption rate		100 sheets (70 g/m ²)
Print Speed (A4/Letter) ^{*2}		Single-sided printing on A4 paper (standard): 20 ppm/22 ppm
Home Print Time		Under 4 seconds
First Print Time		Under 10 seconds
Highest Resolution		1200×1200、600×600dpi
Print Life		100,000 pages (A4/LTR format) or 5 years
Selenium drum capacity		Random toner cartridge: 1500 pages (5% consumption)
		Commercial selenium drum: 1500 pages (5% consumption)
Size (Length x Width x Height)	With outer box	400×300×270 mm
	Without an outer box	334×230×178mm
Weight	Including the outer box	Approximately 5.5 kg
	Excluding the outer box; includes the toner cartridge.	Approximately 4.9 kg
	Excluding the outer box and selenium drum	Approximately 4.2 kg

*1. Different printer models support varying types of interfaces, including:

The P1022NW supports USB 2.0, Ethernet (10Base-T/100Base-TX), and direct WLAN connectivity (IEEE 802.11b/g/n). No further notice will be given in case of specification changes.

*2. Different printer models have varying printing speeds, as follows:

The printing speed of the P1022NW models is 22 ppm.

2. Network Connectivity

Model	P1022NW
Wired Network Printing	•
WLAN put a seal on	•

Specifications may change without prior notice.

3. Maintenance Information

Model		P1022NW Series
Equipment life		100,000 pages (A4/LTR) or 5 years
Maximum monthly load		Up to 10,000 pages
Life of parts replaced regularly	Fixation Unit	Up to 30,000 pages
	Laser (LSU)	Up to 100,000 pages
	Paper tray first-level page division rubber pad	Up to 100,000 pages
	Remove the paper adhesive sleeve assembly	Up to 50,000 pages
	Secondary Page Fragment Component	Up to 30,000 pages
Transfer roller		Up to 50,000 pages

Specifications may change without prior notice.

4. Consumptive Material

Type	P1022NW Series
Random toner cartridge	Approximately 1,500 pages
Commercial selenium drum	Approximately 1,500 pages
When printing on single-sided A4/Letter-sized paper according to the ISO/IEC 19752 standard, Storage duration: 2 years when sealed (6 months after opening).	
The shelf life of selenium drums can only be guaranteed under the following normal conditions: (Temperature) Normal range: 0 to 40°C (Humidity) Normal conditions: 35% RH to 85% RH (no condensation) * Storage duration under temperature and humidity conditions of 45°C/90% RH: up to 5 days. * shelf life at -20°C: up to 5 days.	

Note: The device comes with a pre-installed toner cartridge. Specifications may change without notice.

5. Hardware Configuration

5.1 System Composition

The P1022NW Series black-and-

white laser printer system includes the following components: 1、 Main Board Unit

2、 High Voltage Unit

3、 Keyboard Panel Unit

4、 Selenium Drum Certification Unit

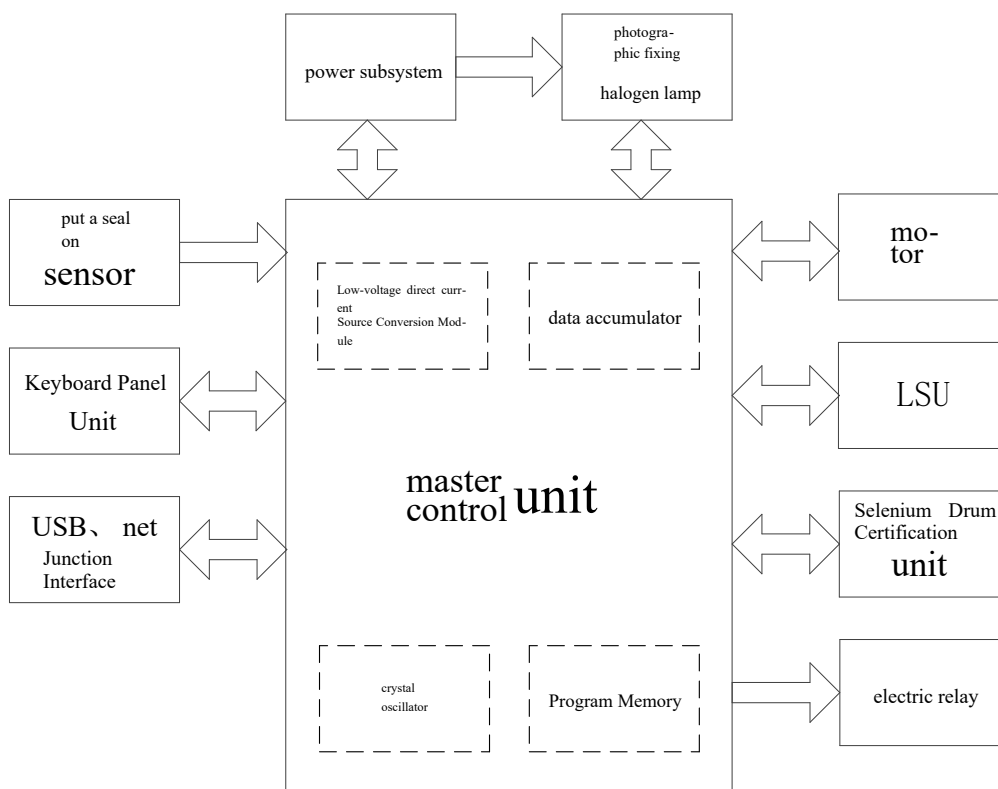
5、 Transfer Unit

6、 Fixation Unit

7、 Laserscanning Unit (LSU)

5.2 System Chart

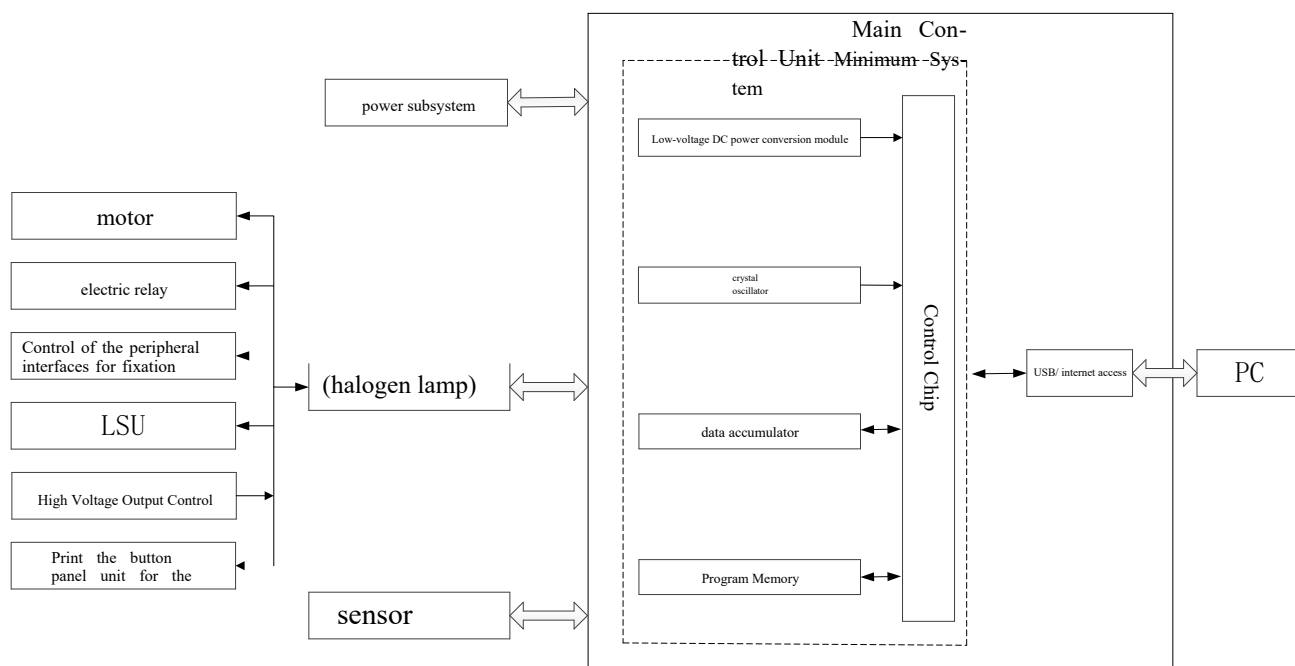
Schematic diagram of the P1022NW Series black-and-white laser printer system:

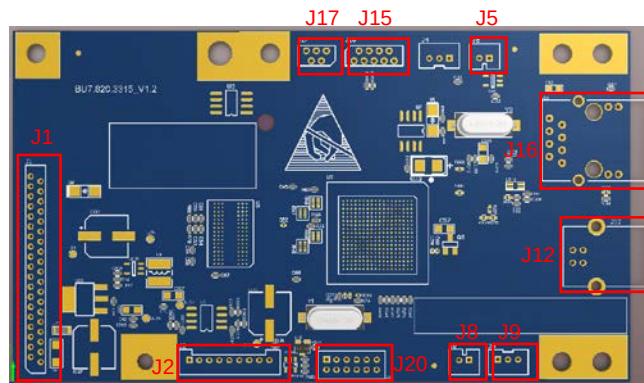


Based on system functionality and technical specifications, the circuit control system of the P1022NW Series black-and-white laser printers comprises four main components: the power unit, the main control unit, the keyboard unit, and the toner cartridge detection unit.

5.3 Main Board Unit

The main control unit serves as the central control hub for the entire printer and constitutes the core component of its circuitry system. Based on functionality, it comprises the following key modules: low-voltage DC power conversion module, CPU-based minimum system and control module, memory module, USB and network interface module, and peripheral interface control module. The schematic diagram illustrating the architecture of the main control unit is shown in the figure.



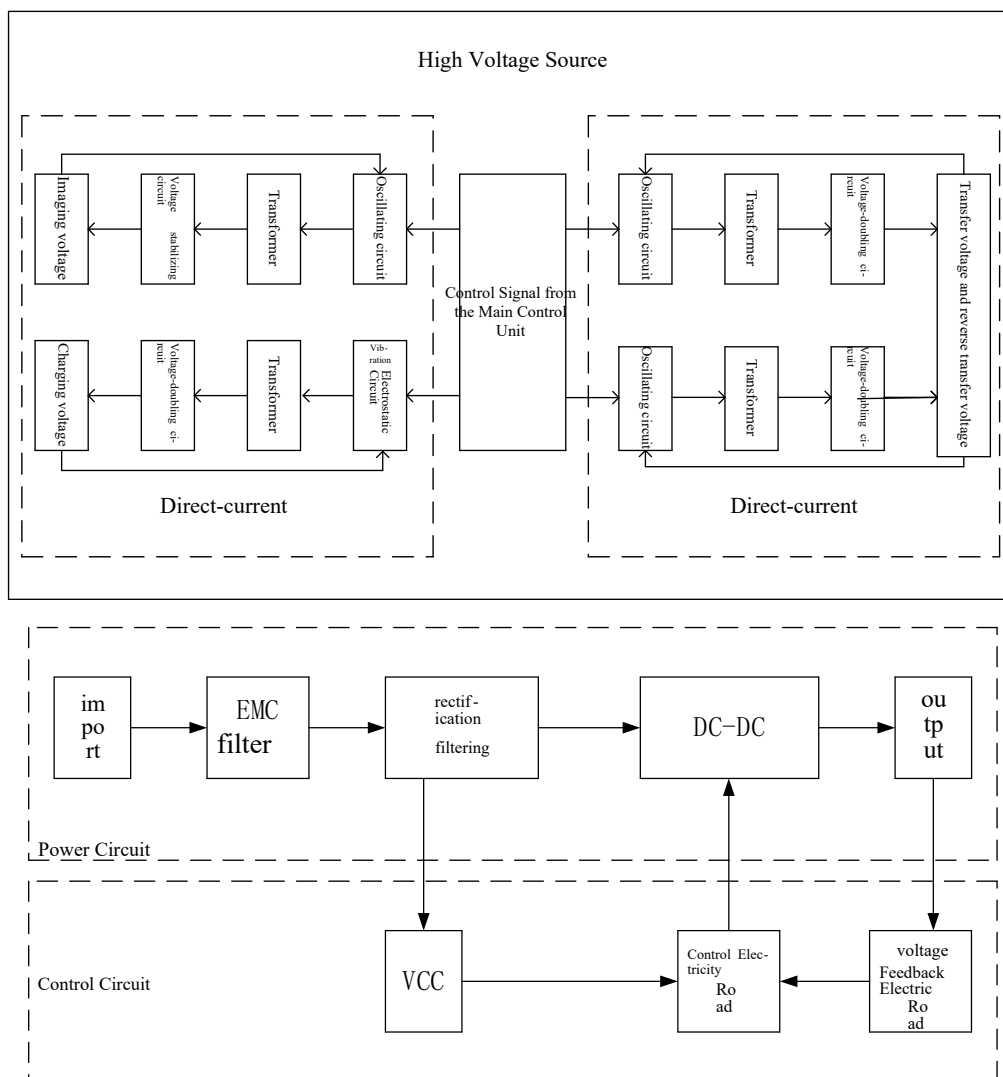


5.3.2 Interface Definition

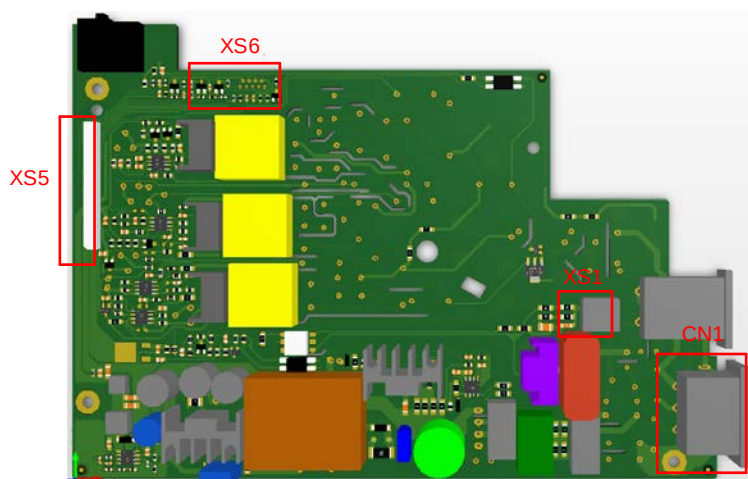
J1	Power Supply Connector
J2	Main Motor Connector
J5	Temperature Sensor Connector
J8	Relay Connector
J9	Print Sensor Connector
J12	USB Connector
J15	Laser Signal Connector
J16	Network Port Connector
J17	Laser Motor Connector
J20	WiFi Connector

5.4 High Voltage Unit

The high-voltage power supply provides the printer with the required high voltage, comprising transfer voltage, reverse-transfer voltage, charging voltage, and development voltage—all of which are DC voltages. The low-voltage power supply consists primarily of two components: an AC-to-DC conversion circuit and a halogen lamp heating control circuit. The system block diagram is shown below:



5.4.1 Photo of the high-voltage unit

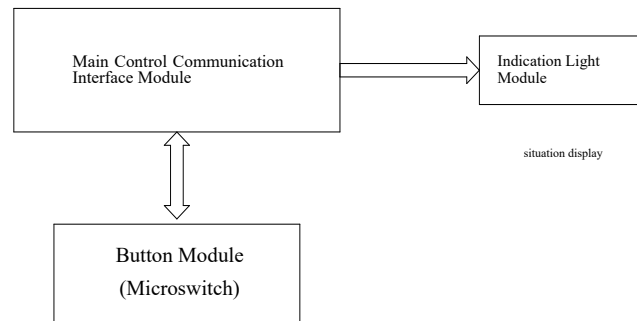


5.4.2 High and Low Voltage Plate Interface Specifications

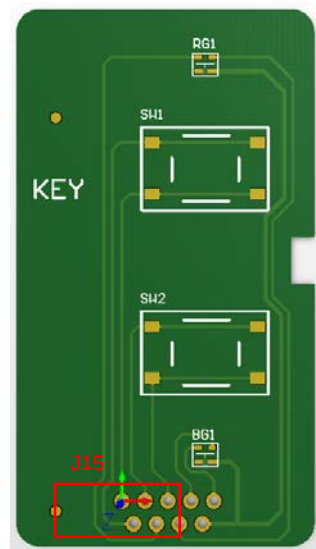
XS5	Main Control Unit Connector
XS6	Keyboard Panel Unit Connector
RTR	THV and RTR high-voltage output contacts
MHV	MHV High-Voltage Output Contact
DEV	DEV High-Voltage Output Contact
XS1	220V Interface
CN1	Fixation Heating Interface

5.5 Keyboard Panel Unit

The keyboard unit consists of three primary modules: the indicator light module, the main control communication interface module, and the key module. Its overall architecture is illustrated below:



5.5.1 Photo of the keyboard button unit



5.5.2 Interface Definition

J15	Main Control Communication Interface
-----	--------------------------------------

5.6 Selenium Drum Certification Unit

The toner cartridge certification unit primarily communicates with the toner cartridge.

5.6.1 Photo of the selenium drum certification unit



5.6.2 Interface Definition

1	Selenium drum contact point
---	-----------------------------

5.7 Transfer Unit

The transfer voltage is controlled by PWM (Pulse Width Modulation). Since the PWM duty cycle can be adjusted, the corresponding output voltage is variable. The resistance of the transfer roller varies depending on environmental conditions or preset settings; changes in resistance generate different currents when a test voltage is applied, which are then fed back to the main control unit via an AD converter. The transfer voltage applied to the roller is determined by the voltage feedback value resulting from these resistance variations induced by the test voltage.

5.8 Fixation Unit

The fixation unit employs a temperature sensor to convert temperature variations on the heating roller surface into resistance values, which are then transformed into voltage values via an AD converter. AC power is controlled by comparing the target temperature with the measured voltage value from the sensor. If the sensor's voltage exceeds the specified control range during heating, an error condition described below will occur.

- Preheat Error

During the preheating process, if the fusing unit's temperature fails to reach the specified level continuously, an open-circuit error (preheating error) is detected. Upon identification of this error, the machine will halt all functions and remain in error mode. Additionally, the machine will display an error message on the indicator light and notify the user via status monitoring about the current error condition.

- Overheating Error

When the machine is operating, if the temperature of the fixing unit exceeds the specified threshold and remains elevated for a continuous period, an overheating error is triggered. Upon detection, the machine will halt all functions and remain in error mode. Additionally, it will display an error message via indicator lights and notify users of the fault status through status monitoring.

5.9 Laserscanning Unit (LSU)

The LSU receives image data from PVC or HPVC and performs imaging on the OPC surface using a single beam. The errors associated with the LSU are listed below:

- Laser motor error

When printing begins, the machine drives the LSU's brushless motor. After the specified time, if the motor is not ready, the machine detects an error indicating the motor's unprepared state. Upon occurrence of this error, the machine halts all functions and remains in error mode. Additionally, an indicator light displays the error message to alert the user of the device's faulty condition.

- Laser synchronization error

When the brushless motor is ready, the LSU sends a signal called Hsync to synchronize with each image line. If the machine fails to receive consecutive signals within a specified time frame, an Hsync error is triggered. Upon occurrence, the machine halts all operations and remains in error mode. It simultaneously notifies the host system of the error status and displays an error message via indicator lights to alert the user. If no error occurs, printing proceeds as usual.

Chapter 2 Error Display and Troubleshooting

1. Introduce

Fault diagnosis is the standard procedure maintenance personnel should follow when equipment malfunctions. While we cannot predict all potential future issues or provide exhaustive troubleshooting steps, this chapter outlines common faults and their resolution methods, enabling technicians to identify similar problems and perform repairs effectively.

1.1 Preventive Measure

To avoid any secondary issues during troubleshooting, please adhere to the following preventive measures:

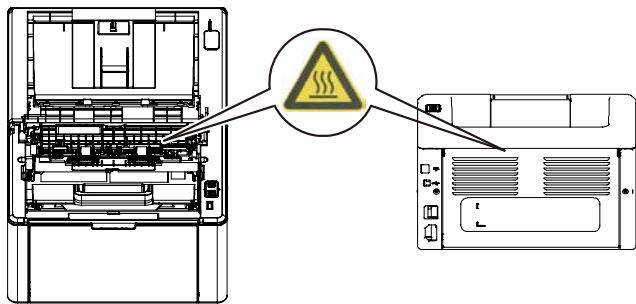
- (1) Before removing any cover plate or circuit board, adjusting equipment, or performing a circuit break test with an electricity meter, be sure to disconnect the power cord.
- (2) When connecting or disconnecting the cable, always hold the connector, not the cable.
- (3) The static electricity carried by the human body may damage electronic components of equipment.

Before handling the circuit board, touch its metal parts to discharge any static electricity. When moving the board, always wrap it with a conductive foil sheet. When replacing the board, wear an anti-static wrist strap and work on an anti-static mat. Also, avoid touching the conductor sections of flat cables.

- (4) Always comply with all warning instructions.

**warn**

The device is equipped with the warning label shown below. Please thoroughly understand the instructions on the label and strictly follow them during troubleshooting. Exercise extreme care to **never** remove or damage the warning label.



**warn**

Do not use any sprays containing flammable substances or solvents such as alcohol, light volatile oils, or diluents inside or around the device. This may cause fires or electric shocks.



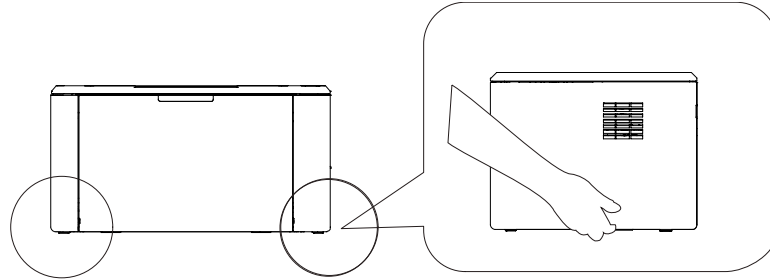
- (5) After completing the repairs, check that all repaired parts—including those that were removed and reinstalled—are functioning properly.

1.2 Check Before Troubleshooting

Before starting to repair the equipment, check the following items.

■ operational environment

- (1) Place the device in a flat and stable location.
- (2) Use this device in a clean environment with temperatures ranging from 15°C to 32°C and relative humidity between 20% and 80%.
- (3) The device should not be exposed to direct sunlight, overheating, humid conditions, or dusty environments.
- (4) When moving the device, hold both sides at the bottom and lift it from the front.



Graph 2-1

■ source

- (1) The supply voltage meets the specifications indicated on the equipment nameplate.
The power supply voltage fluctuates within $\pm 10\%$ of the rated voltage.
- (2) The input AC power supply is within the specified range.
- (3) The cable and plug are connected correctly.
- (4) The fuse has not blown.

■ paper

- (1) Use recommended paper.
- (2) The paper is not damp.
- (3) Do not use short fiber streams or acidic paper.

■ consumptive material

- (1) The selenium drum is installed correctly.

■ other

(1) condensation

When a device moves from a cold environment to a warm indoor space, condensation may form inside it, leading to the following issues:

- When condensation forms on the surfaces of optical components such as lenses, mirrors, and protective glass, it may cause printed images to appear lighter in color.
- If the photosensitive drum temperature is too low, the resistance of the photosensitive layer increases, preventing accurate print tonality.
- Condensation on the charging unit may cause corona charge leakage.
- Condensation on the base plate or separation pad may cause paper feeding failure.

If condensation has formed on the device, leave it for at least two hours until the temperature rises to room temperature.

If you open the toner cartridge packaging immediately after moving it from a cold environment to a warm indoor space, condensation inside the unit may cause printing failure. Allow the toner cartridge to sit for one to two hours until its temperature rises to room temperature before opening the packaging.

(2) low temperature

Driving in low temperatures may cause overload and prevent the motor from operating properly. If this occurs, raise the room temperature.

■ **cleaning**

Use soft, non-flocked fabric.



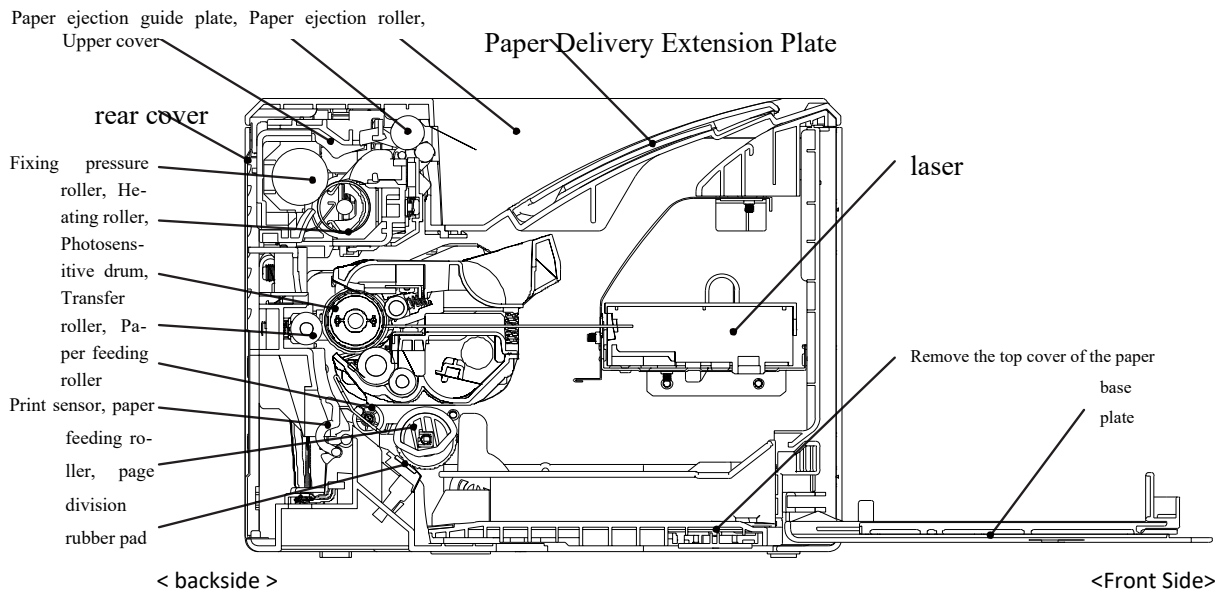
warn

When cleaning equipment, **do not use** any flammable sprays or solvents containing flammable substances such as alcohol, light volatile oils, or diluents. **Do not** use these items near the equipment.



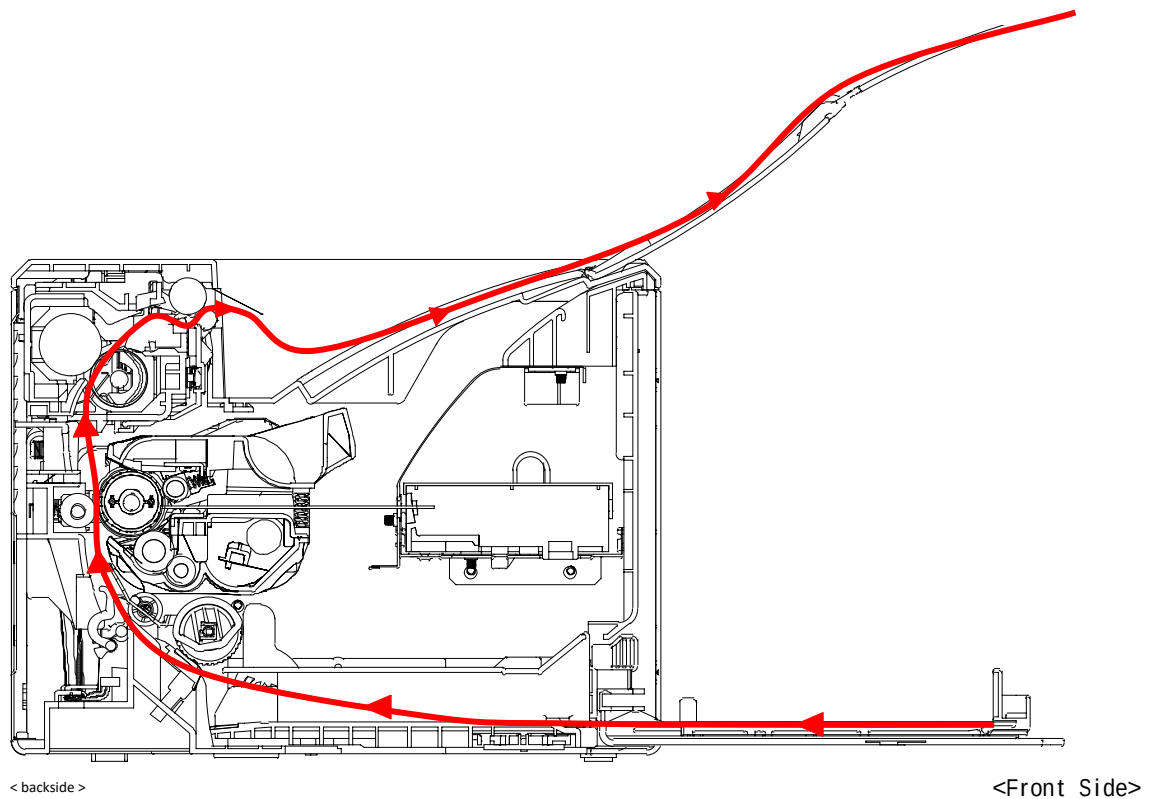
2. Product Overview

2.1 Sectional View



Graph 2-1

2.2 Paper Feeding Path

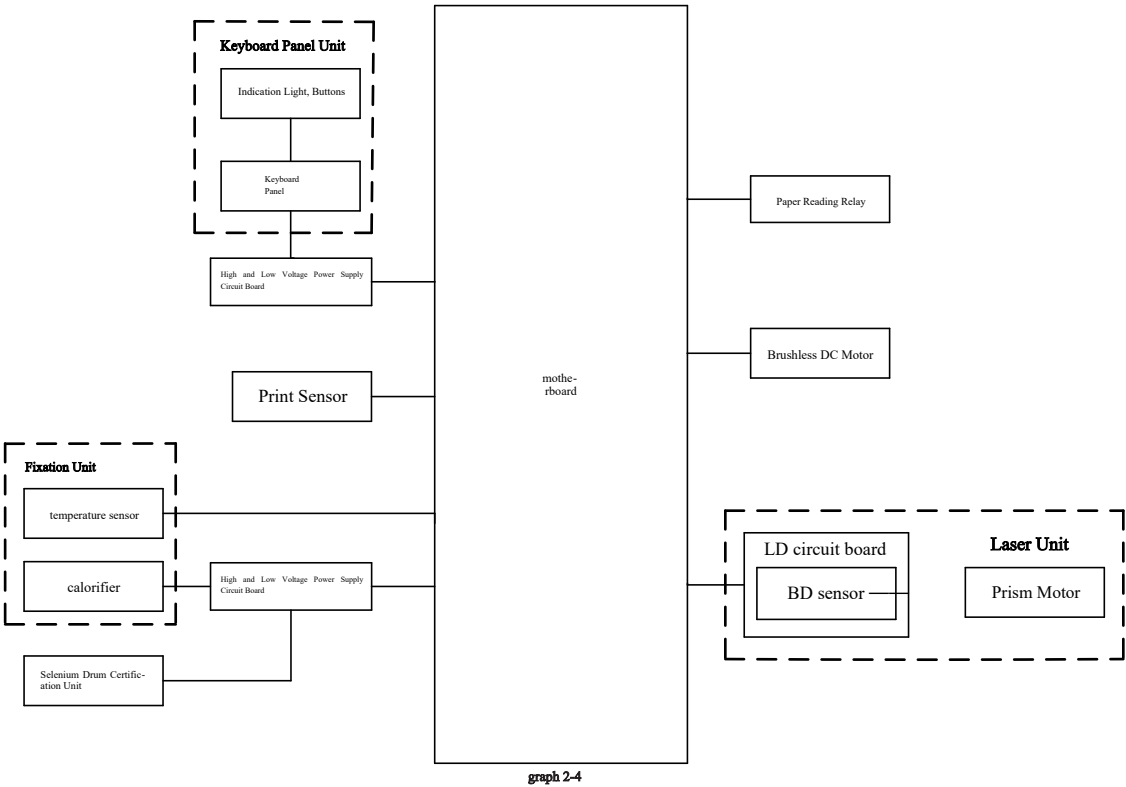


Graph 2-2

2.3 The Functions of Each Key Component in the Paper Feeding Path

Part Name	Act on
Paper Roll	Remove the paper from the box.
Page spacer pad	Separate the paper into individual sheets after feeding the cardboard box.
Print Sensor	Check if the paper is approved and adjust the printing start position. Detect paper jams inside the device. Check the back of the paper to determine its size.
Paper feed roller	Rotate the paper to feed it into the feeding path.
Heating roller, fixing pressure roller	After toner is fixed to the paper through heating and pressurization, the paper is sent to the discharge roller.
Paper ejection guide plate, paper ejection roller	Send the paper to the device's output port.
Top cover, paper outlet extension plate	Convey paper from the inlet to the outlet.

2.4 Overall Structure Diagram



2.5 Main Components

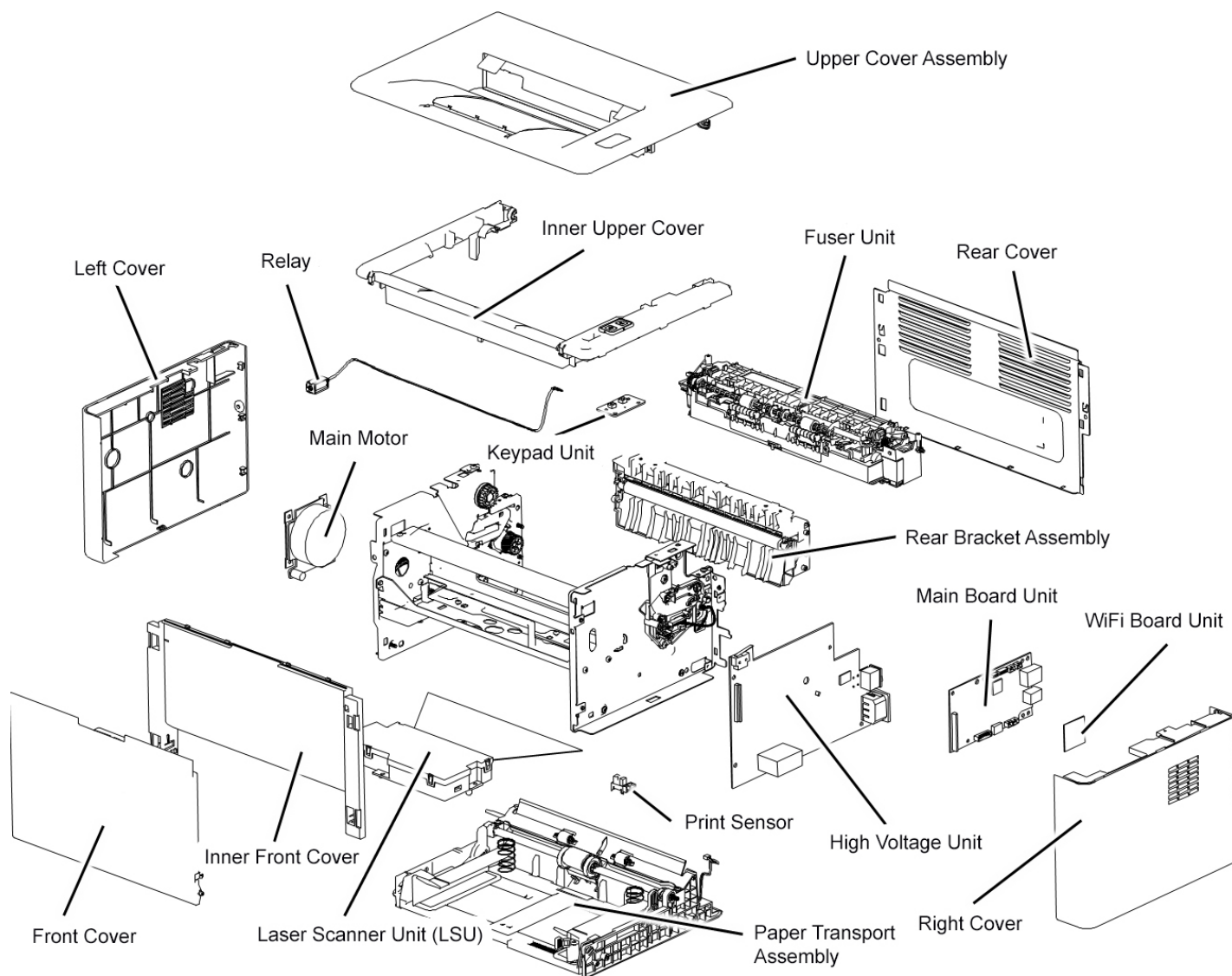


Figure 2.5 Exploded View of the Entire Black-and-White Laser Printer

3. Error

This device has a self-diagnostic function. If it operates abnormally, it will detect errors and display the corresponding error messages on the PC-based status monitor, helping maintenance personnel quickly identify the issue.

3.1 Error Message

Error Code	Status Monitoring Prompt Content	Reference page
2018	No toner cartridge; please insert one.	2-9
2019	The toner cartridge is mismatched. Replace it	2-10
2020	(Red exclamation mark) The toner cartridge has reached the end of its life; replace it	2-10
2021	The lifespan of a toner cartridge is short; please pay attention to its condition.	2-10
2022	The lid is open. Close it.	2-10
3038	Memory overflow. Click the "Restore/Cancel" button to cancel the current task	2-10
3065	Data format error. Click the "Restore/Cancel" button to cancel the current task	2-11
3068	Data decoding error. Click the "Restore/Cancel" button to cancel the current task	2-11
3069	Data reception timed out. Click the "Restore/Cancel" button to cancel the current task	2-11
3071	There is paper inside the mechanism. Open the top cover, remove the toner cartridge, and clear any paper jam	2-12
3073	Preheating error. Restart the printer	2-12
3074	The machine is overheating. Wait for cooling	2-12
3083	Paper retrieval failed/Paper tray empty. Reorganize or add paper. Click Restore/Cancel to continue printing	2-13
3173	Laser motor error. Restart the printer	2-13
3174	Laser synchronization error. Restart the printer	2-13
3175	Print motor error. Restart the printer	2-14
4444	Communication error. Check all cable connections and ensure the printer is turned on	2-14
7002	Place the paper in the tray into the paper box without changing its orientation, then click Restore/Cancel to continue printing	2-14
7005	(Yellow exclamation mark) The toner cartridge has reached the end of its life. Replace it. To continue printing, click the "Restore/Cancel" button	2-14
7006	(Yellow exclamation mark) The toner cartridge has reached the end of its lifespan. To ensure image quality, replace it as soon as possible	2-14

4. Debugging

4.1 Error Causes and Solutions

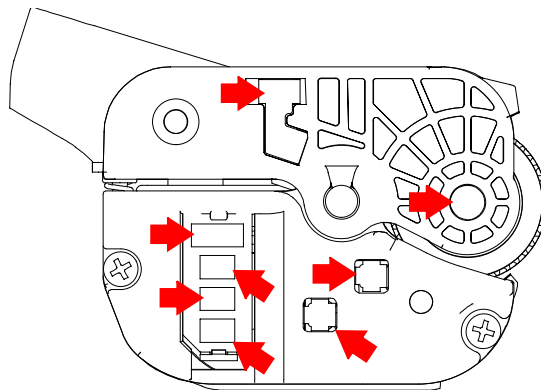
■ For Drums Without a Toner Cartridge, Insert One.

Detected that the toner cartridge unit is not installed. <User Check>

- Install the toner cartridge unit correctly.

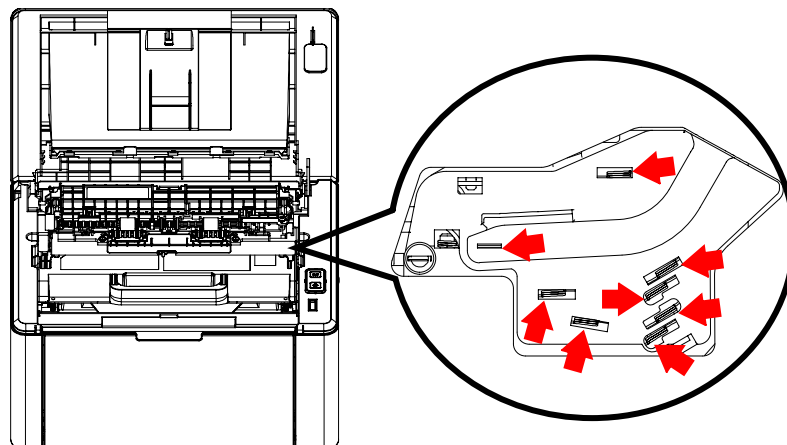
Step	Cause	Measure
1	Dirt on the equipment and toner cartridge unit certification ports	The certification port for the cleaning device and toner cartridge unit. (Refer to Figures 2-6 and 2-7)
2	Dirt on the ports of the high-voltage unit	Clean the high-voltage unit port.
3	High-voltage unit malfunction	Replace the high-voltage unit.
4	Mainboard malfunction	Replace the motherboard components.

■ Position of the selenium drum electrode



Graph 2-6

■ Equipment electrode position



Graph 2-7

■ **The Toner Cartridge Is Mismatched. Replace It.**

Detected an unused original toner cartridge. <User Check>

- Use genuine original toner cartridges.

Step	Cause	Measure
1	Replace with a genuine original toner cartridge. If this error message persists, the issue is likely a motherboard fault.	Replace the motherboard components.

■ **The Toner Cartridge Has Reached the End of Its Service Life. Replace It.**

The toner cartridge has reached the end of its life and cannot be used for printing.

■ **The Service Life of the Toner Cartridge Is Short; Please Pay Attention to Its Maintenance.**

The toner cartridge life has reached nearly its maximum limit.

■ **The Lid Is Open. Close It.**

The lid sensor detected that the lid is open. <User Check>

- Close the lid.

Step	Cause	Measure
1	The high-voltage unit has poor connection to the motherboard.	Reconnect the cable.
2	The wiring between the high-voltage unit and the motherboard is damaged.	Replace the wiring on the high-voltage unit's motherboard.
3	Top cover malfunction	Replace the top cover.
4	High-voltage unit malfunction	Change the high-voltage unit components
5	Mainboard malfunction	Replace the motherboard components.

■ **Memory Overflow. Click the Restore/Cancel Button to Cancel the Current Task**

The data transmission process is unstable.

< customer inspection >

- Turn off the power and restart the device.
- Cancel the task and issue it again.

Step	Cause	Measure
1	The USB cable is damaged.	Replace the USB cable.
2	The network cable is damaged.	Replace the network cable.
3	Driver installation issue	Reinstall the driver.
4	Mainboard malfunction	Replace the motherboard components.

■ **Data format error. Click Restore/Cancel to cancel the current task**

The data transmission process is unstable.

< customer inspection >

- Turn off the power and restart the device.
- Cancel the task and resend it.

Step	Cause	Measure
1	The USB cable is damaged.	Replace the USB cable.
2	The network cable is damaged.	Replace the network cable.
3	Driver installation issue	Reinstall the driver.
4	Mainboard malfunction	Replace the motherboard components.

■ **Data decoding error. Click Restore/Cancel to cancel the current task**

The data transmission process is unstable.

< customer inspection >

- Turn off the power and restart the device.
- Cancel the task and resend it.

Step	Cause	Measure
1	The USB cable is damaged.	Replace the USB cable.
2	The network cable is damaged.	Replace the network cable.
3	Driver installation issue	Reinstall the driver.
4	Mainboard malfunction	Replace the motherboard components.

■ **Data Reception Timed Out. Click the Restore/Cancel Button to Cancel the Current Task**

The data transmission process is unstable.

< customer inspection >

- Turn off the power and restart the device.
- Cancel the task and resend it.

Step	Cause	Measure
1	The USB cable is damaged.	Replace the USB cable.
2	The network cable is damaged.	Replace the network cable.
3	Driver installation issue	Reinstall the driver.
4	Mainboard malfunction	Replace the motherboard components.

■ **There Is Paper Inside the Mechanism. Open the Top Cover, Remove the Toner Cartridge, and Clear Any Paper Jam**

The paper touched the print sensor and failed to leave it promptly. Paper is stuck inside the mechanism; remove it, close the cover, and continue printing. <User Check>

- Clear jammed paper.
- When printing, ensure the lid is closed.

Step	Cause	Measure
1	There is a foreign object inside the device.	Remove foreign bodies.
2	The print sensor is stuck in place	Reinstall the print sensor
3	The top cover is not installed properly.	Reinstall the top cover.
4	Print sensor fault	Replace the print sensor.
5	Mainboard malfunction	Replace the motherboard components.

■ **Preheating Error. Restart the Printer**

Abnormal heating occurs during the preheating process, or the temperature sensor is malfunctioning.

Step	Cause	Measure
1	The temperature sensor has poor wiring connection.	Reconnect the temperature sensor cable
2	The halogen lamp has poor electrical connection.	Reconnect the halogen lamp plug
3	High-voltage unit malfunction	Change the high-voltage unit components
4	Focalizing unit malfunction	Change the fixing unit
5	Mainboard malfunction	Replace the motherboard components

■ **The Machine Is Overheating. Wait for Cooling**

Overheating detected during fixing. Turn off the power, wait for several minutes, then turn it back on and check if the error persists.

Step	Cause	Measure
1	Focalizing unit malfunction	Change the fixing unit
2	High-voltage unit malfunction	Change the high-voltage unit components
3	Mainboard malfunction	Replace the motherboard components

■ **Paper retrieval failed/Paper tray empty. Reorganize or add paper. Click Restore/Cancel to continue printing**

1. During printing, the device failed to retrieve paper from the cartridge.

2. No paper in the device carton.

< customer inspection >

- Check the paper and reposition it.
- Load paper.

Step	Cause	Measure
1	The paper is not properly placed or is damaged.	Insert the intact paper again.
2	Paper roller wear	Replace the paper roller.
3	The print sensor has dislocated or become stuck in place	Reinstall the print sensor
4	Poor connection between the print sensor and its cable	Reconnect the print sensor cable.
5	Paper boxes are paperless.	Load paper.
6	Poor connection of the relay plug	Reconnect the relay cable
7	Relay fault	Replace the relay
8	Mainboard malfunction	Replace the motherboard components.

■ **Laser Motor Error. Restart the Printer**

No signal was detected from the laser prism motor.

Step	Cause	Measure
1	Poor connection of the laser cable	Reconnect the laser cable
2	The laser cable is damaged.	Replace the laser cable.
3	Poor connection of the laser motor cable	Reconnect the laser motor cable
4	The laser motor cable is damaged.	Replace the laser motor cable
5	Laser malfunction	Replace the laser.
6	Mainboard malfunction	Replace the motherboard components.

■ **Laser Synchronization Error. Restart the Printer**

No laser synchronization signal was detected.

Step	Cause	Measure
1	Poor connection of the laser cable	Reconnect the laser cable
2	The laser cable is damaged.	Replace the laser cable.
3	Laser malfunction	Replace the laser.
4	Mainboard malfunction	Replace the motherboard components.

■ Print Motor Error. Restart the Printer

Motor fault detected: motor is stuck or not connected.

Step	Cause	Measure
1	The motor's power cord connection is poor.	Reconnect the motor plug.
2	Motor malfunction	Replace the motor.
3	Mainboard malfunction	Replace the motherboard components.

■ Communication Error. Check All Cable Connections and Ensure the Printer Is Turned On

Data transmission interrupted.

< customer inspection >

- Check all cable connections.
- The printer is ready.

Step	Cause	Measure
1	The USB cable is damaged.	Replace the USB cable.
2	The network cable is damaged.	Replace the network cable.
3	Mainboard malfunction	Replace the motherboard components.
4	The printer is not started	Start the printer.

■ Place the paper in the tray into the paper box without changing its orientation, then click Restore/Cancel to continue printing

The first side of manual double-sided printing is complete. Start printing the second side.

■ The toner cartridge has reached the end of its life. Replace it. To continue printing, click the "Restore/Cancel" button.

The toner cartridge has reached its maximum lifespan. Click the "Restore/Cancel" button to continue printing up to 150 pages.

■ The Toner Cartridge Has Reached the End of Its Life. To Ensure Image Quality, Replace It as Soon as Possible.

The toner cartridge has reached its maximum lifespan and is using the remaining 150 pages.

4.2 Image Defect Troubleshooting

4.2.1 Examples of Image Defects

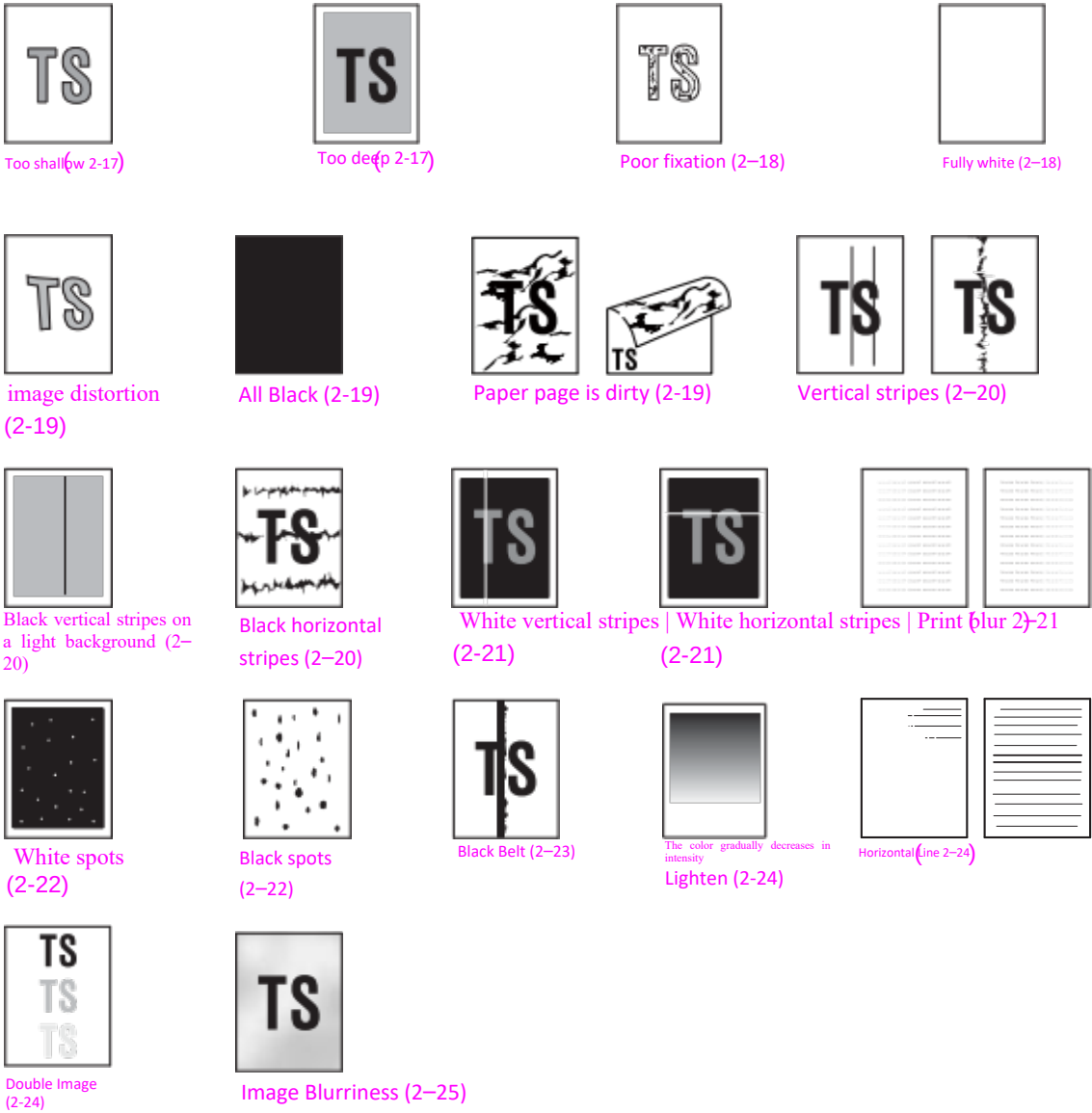


Figure 2-6

4.2.2 Image Defect Troubleshooting

After reviewing the instructions, end users can resolve image defects independently. If the issue persists, follow the steps in the table below sequentially.

■ Too shallow



< customer inspection >

- Check the operating environment of the device. High temperature and humidity or low temperature and humidity conditions may cause this issue.
- Replace with a new toner cartridge.
- Turn on the power and leave the device for a while. (Condensation)
- Check that the paper is not damp.
- Use the specified paper.

Step	Cause	Measure
1	There is dirt on the electrodes of both the device and the toner cartridge unit.	Clean the electrodes of the cleaning equipment and toner cartridge unit.
2	There is dirt on the equipment electrodes.	Clean the equipment electrodes.
3	Focalizing unit malfunction	Replace the fixing unit.
4	High-voltage unit malfunction	Replace the high-voltage unit component.
5	Mainboard malfunction	Replace the motherboard components.
6	Laser malfunction	Replace the laser.

■ Too deep



< customer inspection >

- Check the operating environment of the device. High temperature and humidity or low temperature and humidity conditions may cause this issue.
- Check whether another toner cartridge has been replaced after the current one was detected as new.
- Replace with a new toner cartridge.

Step	Cause	Measure
1	There is dirt on the electrodes of both the device and the toner cartridge unit.	Clean the electrodes of the cleaning equipment and toner cartridge unit.
2	There is dirt on the equipment electrodes.	Clean the equipment electrodes.
3	High-voltage unit malfunction	Replace the high-voltage unit component.
4	Mainboard malfunction	Replace the motherboard components.
5	Laser malfunction	Replace the laser.

■ Poor fixation



< customer inspection >

- Check the operating environment of the device. High temperature and humidity or low temperature and humidity conditions may cause this issue.
- Replace with a new toner cartridge.

Step	Cause	Measure
1	There is dirt on the equipment and the toner cartridge electrodes.	Clean the equipment and the electrodes of the toner cartridge.
2	Focalizing unit malfunction	Replace the fixing unit.
3	High-voltage unit malfunction	Replace the high-voltage unit component.
4	Laser malfunction	Replace the laser.
5	Mainboard malfunction	Replace the motherboard components.

■ Completely white



< customer inspection >

- Clean the electrode plates of the toner cartridge unit.
- Replace with a new toner cartridge.

Step	Cause	Measure
1	There is dirt on the electrodes of both the device and the toner cartridge unit.	Clean the electrodes of the cleaning equipment and toner cartridge unit.
2	Poor connection of the laser flat cable	Reconnect the laser flat cable.
3	Poor laser installation	Reinstall the laser
4	The flat cable of the laser is damaged.	Replace the flat cable of the laser.
5	There is dirt on the equipment electrodes.	Clean the equipment electrodes.
6	Laser malfunction	Replace the laser.
7	Mainboard malfunction	Replace the motherboard components.

■ image distortion



Step	Cause	Measure
1	Poor laser installation	Reinstall the laser
2	Laser malfunction	Replace the laser.
3	Mainboard malfunction	Replace the motherboard components.

■ Full Black



< customer inspection >

- Clean the electrode plates of the toner cartridge unit.
- Replace with a new toner cartridge.

Step	Cause	Measure
1	There is dirt on the electrodes of both the device and the toner cartridge unit.	Clean the electrodes of the cleaning equipment and toner cartridge unit.
2	The flat cable of the laser is damaged.	Replace the flat cable of the laser.
3	There is dirt on the equipment electrodes.	Clean the equipment electrodes.
4	High-voltage unit malfunction	Replace the high-voltage unit component.
5	Laser malfunction	Replace the laser.
6	Mainboard malfunction	Replace the motherboard components.

■ The paper page is dirty

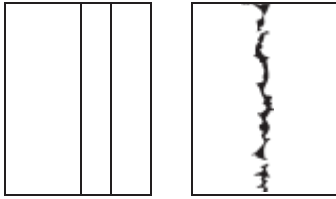


< customer inspection >

- This issue will resolve itself after printing several pages.
- Replace with a new toner cartridge.

Step	Cause	Measure
1	There is dirt in the paper feeding path	Wipe away the dirt.
2	There is dirt on the fixing unit.	Replace the fixing unit.
3	High-voltage unit malfunction	Replace the high-voltage unit component.

■ Vertical Stripes



< customer inspection >

- Clean the electrode plates of the toner cartridge unit.
- This issue will resolve itself after printing several pages.
- Wipe off dirt from the photosensitive drum with a cotton swab.
- Replace with a new toner cartridge.

Step	Cause	Measure
1	There is dirt in the paper feeding path	Wipe away the dirt.
2	The photosensitive drum of the selenium drum is contaminated.	Wipe off dirt from the photosensitive drum with a cotton swab.
3	There is dirt on the fixing unit.	Replace the fixing unit.
4	Laser malfunction	Replace the laser.

■ Black vertical stripes on a light background



< customer inspection >

- Clean the electrode plates of the toner cartridge unit.
- This issue will resolve itself after printing several pages.
- Use a cotton swab to remove dirt from the photosensitive drum.
- Turn on the power and leave the device running for a while.
(Condensation)
- Replace with a new toner cartridge.

Step	Cause	measure
1	There is dirt on the charging electrode.	Clean the electrodes of the cleaning equipment and toner cartridge unit.
2	Laser malfunction	Replace the laser.

■ Black horizontal stripes



< customer inspection >

- Clean the electrode plates of the toner cartridge unit.
- This issue will resolve itself after printing several pages.
- Use a cotton swab to remove dirt from the photosensitive drum.
- Replace with a new toner cartridge.

Step	Cause	Measure
1	There is dirt on the charging electrode.	Clean the electrodes of the cleaning equipment and toner cartridge unit.
2	The photosensitive drum of the selenium drum is contaminated.	Wipe off dirt from the photosensitive drum with a cotton swab.
3	The fixing unit has scratches or dirt.	Replace the fixing unit.
4	High-voltage unit malfunction	Replace the high-voltage unit component.

■ White vertical stripes



< customer inspection >

- Clean the electrode plates of the toner cartridge unit.
- Check that there is no dust in the toner cartridge.
- Use a cotton swab to remove dirt from the photosensitive drum.
- Replace with a new toner cartridge.

Step	Cause	Measure
1	There is dirt on the charging electrode.	Clean the electrodes of the cleaning equipment and toner cartridge unit.
2	Laser malfunction	Replace the laser.

■ White horizontal stripes



< customer inspection >

- This issue will resolve itself after printing several pages.
- Replace with a new toner cartridge.

Step	Cause	Measure
1	There is dirt on the charging electrode.	Clean the electrodes of the cleaning equipment and toner cartridge unit.
2	The fixing unit has scratches or dirt.	Replace the fixing unit.
3	High-voltage unit malfunction	Replace the high-voltage unit component.

■ Print Blurring



< customer inspection >

- Check if the device is placed horizontally.
- Replace with a new toner cartridge.

Step	Cause	Measure
1	Laser malfunction	Replace the laser.
2	Focalizing unit malfunction	Replace the fixing unit.
3	Mainboard malfunction	Replace the motherboard components.

■ White spots



< customer inspection >

- Use a cotton swab to remove dirt from the photosensitive drum.
- Replace with a new toner cartridge.

Step	Cause	Measure
1	The fixing unit has scratches or dirt.	Replace the fixing unit.
2	High-voltage unit malfunction	Replace the high-voltage unit component.

Pay attention to :

- Periodic image defects may result from various roller defects. Refer to the table below to determine the cause based on the diameter of each roller or the spacing in the image.

<Space between various rollers in the image>

Part Name	Diameter	Space in the image
Development roller (DR)	14.3 mm	44.9 mm
Photosensitive Drum (OPC)	24 mm	75.4 mm
Transfer roller	12.5 mm	39.3 mm
Heating roller in the fixing unit	20.3 mm	63.7 mm
Pressure roller in the fixing unit	22 mm	69 mm

■ Black spots



< customer inspection >

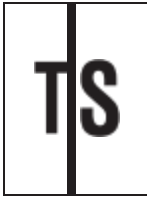
- Check that the paper is not damp.
- Use a cotton swab to remove dirt from the photosensitive drum.
- Replace with a new toner cartridge.

Step	Cause	Measure
1	The fixing unit has scratches or dirt.	Replace the fixing unit.
2	High-voltage unit malfunction	Replace the high-voltage unit component.

pay attention to :

- Periodic image defects may result from various roller defects. Refer to the table above to determine the cause based on the diameter of each roller or the spacing in the image.

■ black band

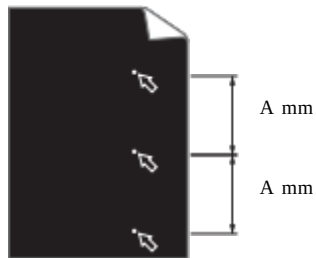


< customer inspection >

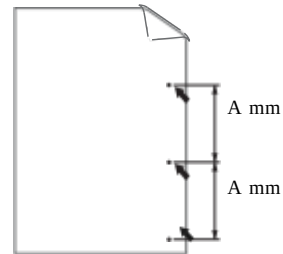
- Clean the electrode plates of the toner cartridge unit.
- This issue will resolve itself after printing several pages.
- Use a cotton swab to remove dirt from the photosensitive drum.
- Replace with a new toner cartridge.

Step	Cause	Measure
1	The photosensitive drum of the selenium drum is contaminated.	Wipe off dirt from the photosensitive drum with a cotton swab.
2	Laser malfunction	Replace the laser.

<Example with image defects>



White spots with a period of A mm appear on the fully black printed page.



Black spots with a period of A mm appear on the printed page.

Graph 2-8

Refer to "Space Between Various Rollers in the Image" for the value of A.

■ The color gradually fades downward

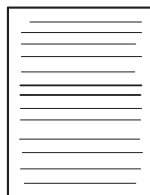
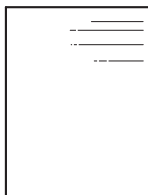


< customer inspection >

- Replace with a new toner cartridge.

Step	Cause	Measure
1	High-voltage unit malfunction	Replace the high-voltage unit component.
2	Mainboard malfunction	Replace the motherboard components.

■ horizontal lines



< customer inspection >

- This issue will resolve itself after printing several pages.
- Use a cotton swab to remove dirt from the photosensitive drum.
- Replace with a new toner cartridge.

Step	Cause	Measure
1	There is dirt on the charging electrode.	Clean the electrodes of the cleaning equipment and toner cartridge unit.
2	The fixing unit has scratches or dirt.	Replace the fixing unit.
3	High-voltage unit malfunction	Replace the high-voltage unit component.

■ Double Shadow



< customer inspection >

- Check the operating environment of the device. High temperature and humidity or low temperature and humidity conditions may cause this issue.
- Check if the correct paper type is selected in the driver.
- Replace with a new toner cartridge.

Step	Cause	Measure
1	The fixing unit has scratches or dirt.	Replace the fixing unit.
2	High-voltage unit malfunction	Replace the high-voltage unit component.

■ image blurring



< customer inspection >

- Check the equipment's operating environment. High temperature and humidity or low temperature and humidity conditions may cause this issue.
- Check whether acidic paper was used.
- This issue will resolve itself after printing several pages.
- Replace with a new toner cartridge.

Step	Cause	Measure
1	Malfunction in the selenium drum interface circuit board	Replace the toner cartridge adapter board.
2	High-voltage unit malfunction	Replace the high-voltage unit component.
3	Mainboard malfunction	Replace the motherboard components.

4.3 Software Troubleshooting

Although the device can perform self-checks or print settings pages, software-related issues such as computer-based printing cannot be resolved by end users; they should address these issues based on the troubleshooting guidelines provided. If the problem persists, follow the steps numbered in the table below sequentially.

4.3.1 Cannot Receive Data

< customer inspection >

- Check whether the USB or LAN cable is intact.
- If you are using an interface conversion device, verify that the correct device is selected.
- Check the driver settings.

Step	Cause	Measure
1	Mainboard malfunction	Replace the motherboard components.

4.4 Key Fault Diagnosis

4.4.1 LED Without Display

< customer inspection >

- Turn off the power switch and then turn it back on.

Step	Cause	Measure
1	The connection between the button and the flat cable is poor.	Reconnect the flat cable to the button.
2	The connection between the motherboard and the high-voltage unit via the flat cable is poor.	The flat cable connecting the motherboard to the high-voltage unit has poor conductivity.
3	Flaw in the flat cable connected to the buttons	Replace the flat cable with a new button cable.
4	Fault in the button circuit board assembly	Replace the key circuit board component.
5	Fault in the flat cable connecting the motherboard to the high-voltage unit	Replace the motherboard and the flat cable connecting the high-voltage unit.
6	Mainboard malfunction	Replace the motherboard components.
7	High-voltage unit malfunction	Replace the high-voltage unit.

4.5 Troubleshooting Issues With the Selenium Drum Unit

4.5.1 New Drum Not Detected

< customer inspection >

- Check whether the included toner cartridge is installed.
- Check if the new toner cartridge is installed.
- Check whether the original genuine toner cartridge is installed.

Step	Cause	Measure
1	Dirt on the equipment and toner cartridge unit certification ports	The certification port for the cleaning device and toner cartridge unit. (Refer to Figures 2-6 and 2-7)
2	Screw drum unit failure	Replace the toner cartridge unit.
3	High-voltage unit malfunction	Replace the high-voltage unit.
4	Mainboard malfunction	Replace the motherboard components.

4.5.2 The Prompt to Replace the Toner Cartridge Does Not Disappear

< customer inspection >

- Replace the new toner cartridge.

Step	Cause	Measure
1	Mainboard malfunction	Replace the motherboard components.

4.6 Troubleshooting Issues With the Fixing Unit

4.6.1 Focalizing Unit Malfunction

Step	Cause	Measure
1	Poor connection of the thermostat wires	Reconnect the thermostat wiring.
2	The halogen lamp has poor wiring connection.	Reconnect the halogen lamp wiring.
3	Poor connection between temperature sensors	Reconnect the temperature sensor cable.
4	High-voltage unit malfunction	Replace the high-voltage unit.
5	Focalizing unit malfunction	Replace the fixing unit.
6	Mainboard malfunction	Replace the motherboard components.

4.7 Laser Fault Diagnosis

4.7.1 Laser Malfunction

< customer inspection >

- After turning on the power switch, open both the front and rear covers. Allow the device to sit for a while to remove condensation.

Step	Cause	Measure
1	Poor laser installation	Reinstall the laser
2	Poor connection of the laser cable	Reconnect the laser cable
3	The prism motor has poor plug connection.	Reconnect the prism motor cable
4	Laser malfunction	Replace the laser
5	Mainboard malfunction	Replace the motherboard components

4.8 Circuit Board Troubleshooting

4.8.1 Mainboard Malfunction

< customer inspection >

- Turn off the power and then turn it back on.
- Write the latest version of the main firmware.
- Confirm the printed data is intact.

Step	Cause	Measure
1	Mainboard malfunction	Replace the motherboard components.

4.9 Troubleshooting Other Issues

4.9.1 Cannot Print

< customer inspection >

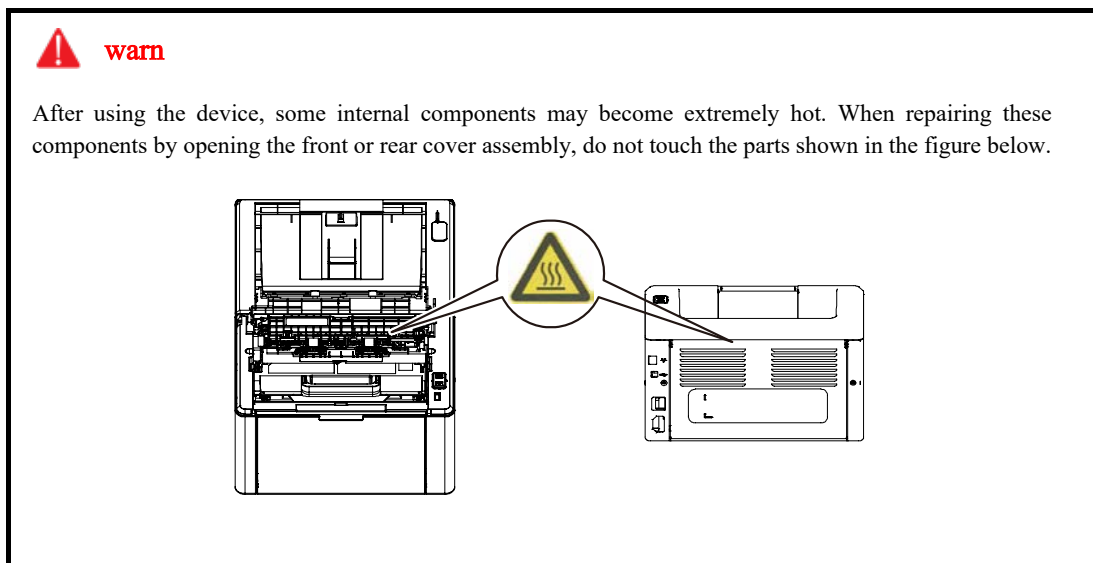
- Turn off the power and then turn it back on.
- Check whether the USB cable is properly inserted into the port.
- Check whether the LAN cable is connected correctly to the interface.
- Replace the USB cable.
- Replace the LAN cable.
- Confirm that computer printing is not prohibited.
- Check the network connection status.
- Confirm the relevant instructions in the Network Configuration Manual.
- Confirm that the printed data is intact.
- Write the latest version of the main firmware.
- Set the paper size specified in the driver to match the actual loaded size.

Step	Cause	Measure
1	Mainboard malfunction	Replace the motherboard components.

Chapter 3 Disassembly and Reinstallation

1. Precautions Before Performing Maintenance Operations:

To prevent secondary failures caused by improper operation, the following warnings and precautions must be strictly followed during equipment disassembly and reinstallation.



- Please do not lose removed screws, washers, or other parts.
- Be sure to apply grease at the locations specified in this chapter.
- When using an electric soldering iron or other heating tools, take care not to damage components made of synthetic resin, such as wires, circuit boards, and casings.
- Static electricity generated by the human body may damage electronic components. Therefore, when transporting circuit boards, it is essential to wrap them with conductive foil.
- When replacing the circuit board or any other components that contain a circuit board, please wear an anti-static wrist strap and work on an anti-static mat. Additionally, avoid touching the electrode conductor parts of flat cables and plugs.
- After removing the flat cable, ensure that its connector is intact and there are no short circuits in the cable.
- When inserting a flat cable, ensure it is inserted straight and check that it does not skew after insertion.
- When connecting or disconnecting the cable, hold the connector part rather than the cable itself. If the connector has a lock, be sure to unlock it first.
- After repair, please check not only the repaired parts but also the wiring connections. Additionally, verify that other related components are functioning properly.
- Do not force the top cover closed before installing the toner cartridge, as this may damage the device.
- After installation, it is recommended to perform insulation voltage testing and conductivity testing.
- Please do not damage the insulating sheet.
- When replacing a circuit board, carefully inspect both the component side and soldering surface for any foreign objects.

2. Disassembly Steps

2.1 Preparations

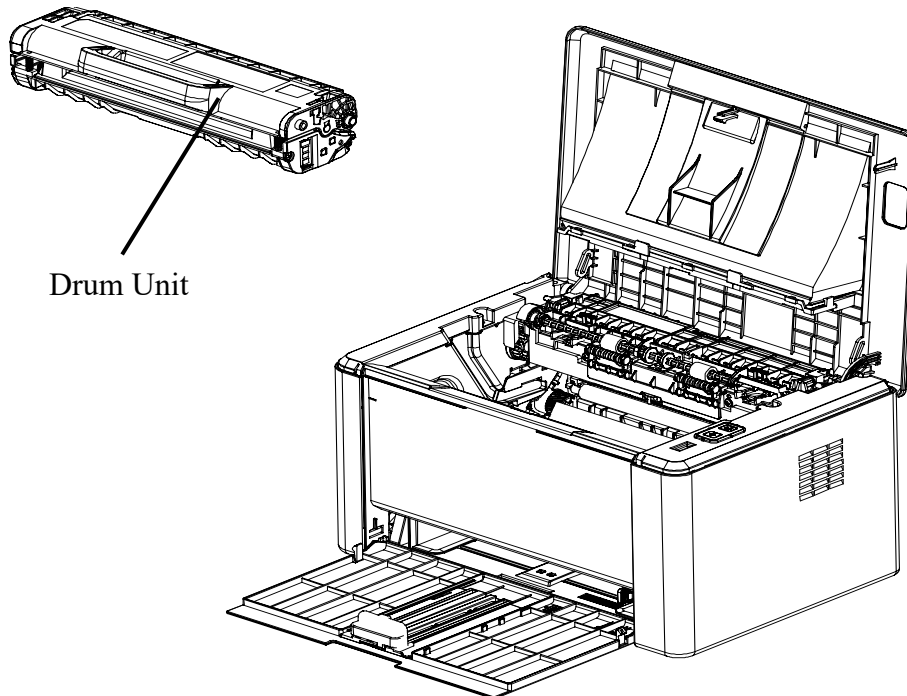
- Connect the wires and remove all accessories.
Before beginning the disassembly, complete the following preparations.

(1) Unplug the following cables:

- USB cable (if connected)

(2) Remove the following accessories:

- toner cartridge



Drum Unit

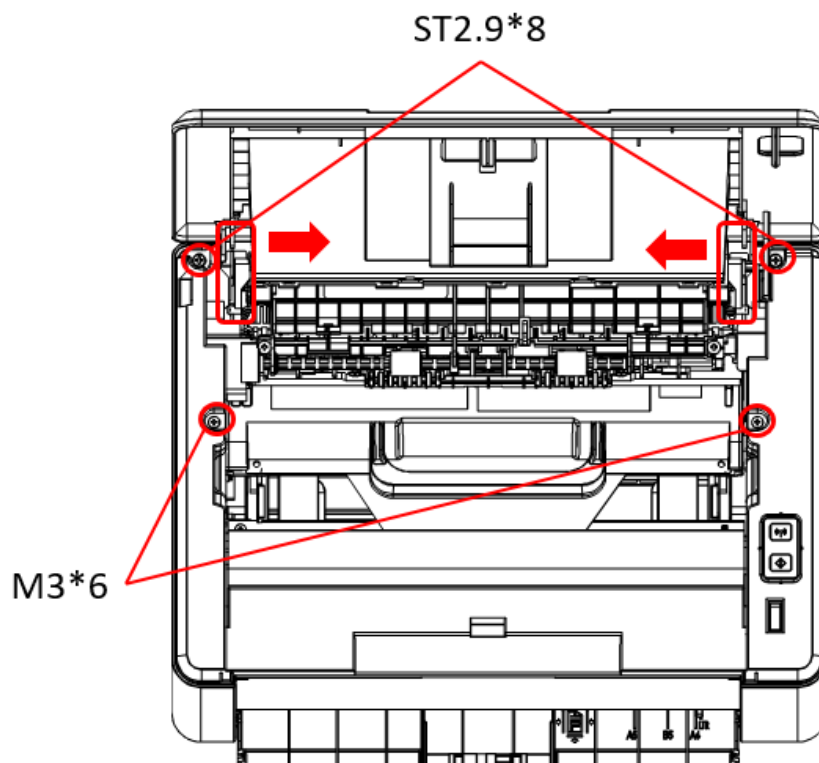
Graph 3-1

2.2 Top Cover Assembly/Inner Top Cover Assembly

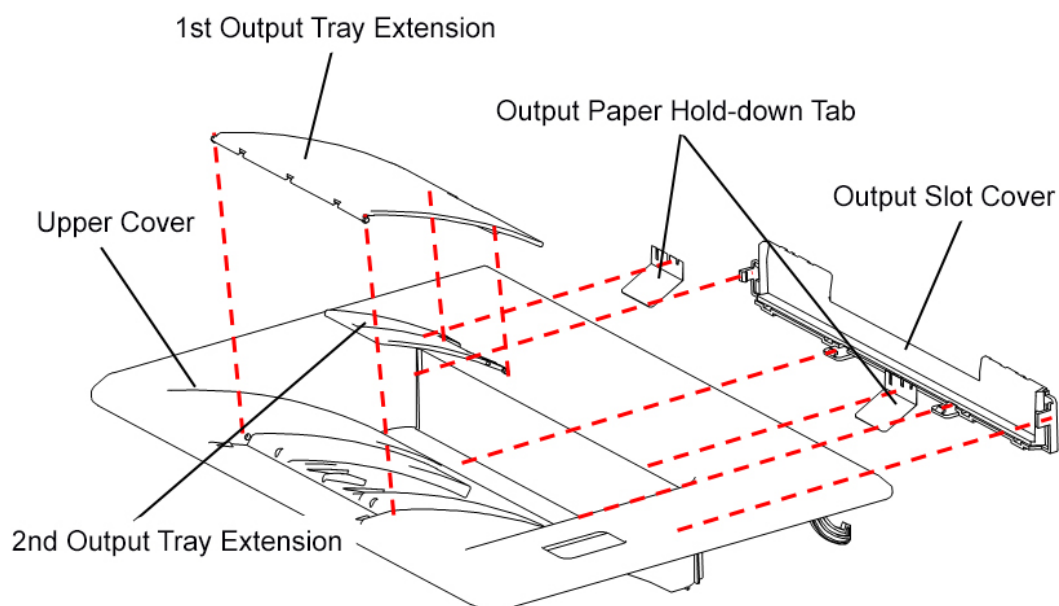
- (1) Open the top cover.
- (2) Turn the image-fixing release lever in the direction indicated by the arrow to disengage it from the groove on the top cover.
- (3) Remove the two ST2.9*8 and two M3*6 screws shown in the diagram.
- (4) Gently lift the inner top cover from the front by approximately 40° to expose the keyboard connection cable within the gap, then remove it from the keyboard panel.

pay attention to :

- When connecting or disconnecting cables, avoid damaging the cable by only touching the plug portion and never pulling the cable body.



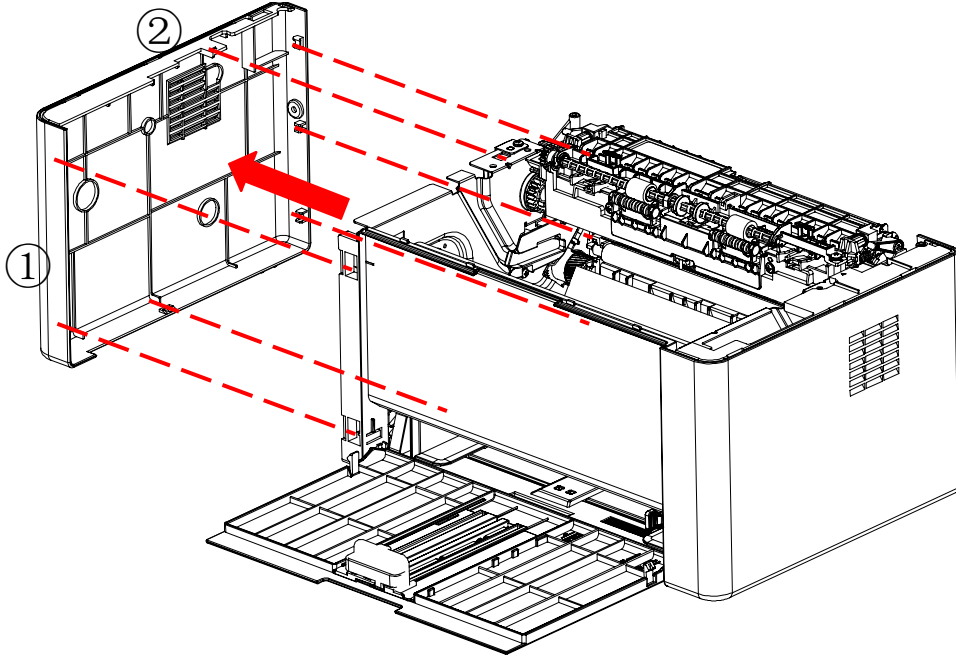
Graph 3-2



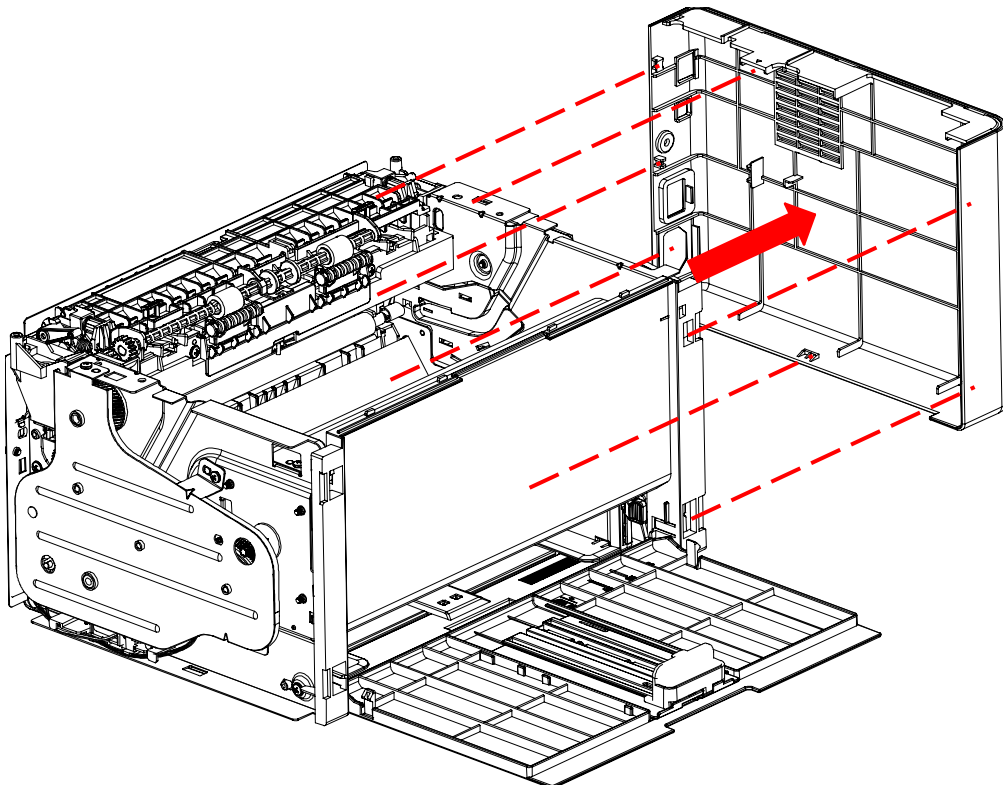
graph 3-3

2.3 Left Cover/Right Cover

- (1) Remove the two screws on the back of the machine.
- (2) Unfasten the two hooks on the front of the machine.
- (3) Then unfasten the hooks on both sides.
- (4) Using the rear end of the left and right covers as the axis, rotate their front ends outward by a certain angle, then remove the left cover in the direction indicated by the arrow.



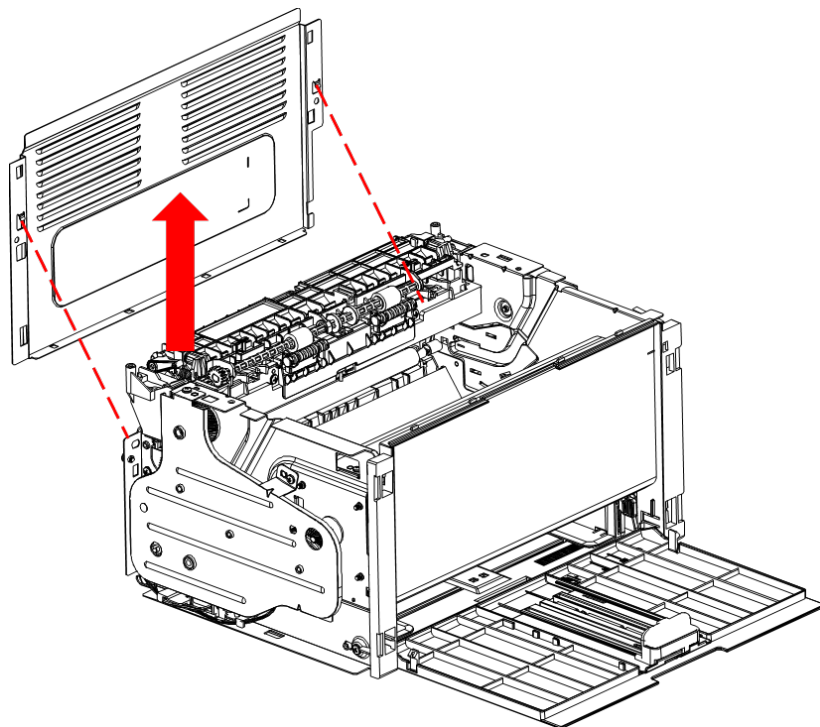
Graph 3-4



Graph 3-5

2.4 Rear Cover

- (1) Remove the rear cover vertically upward in the direction indicated by the arrow.



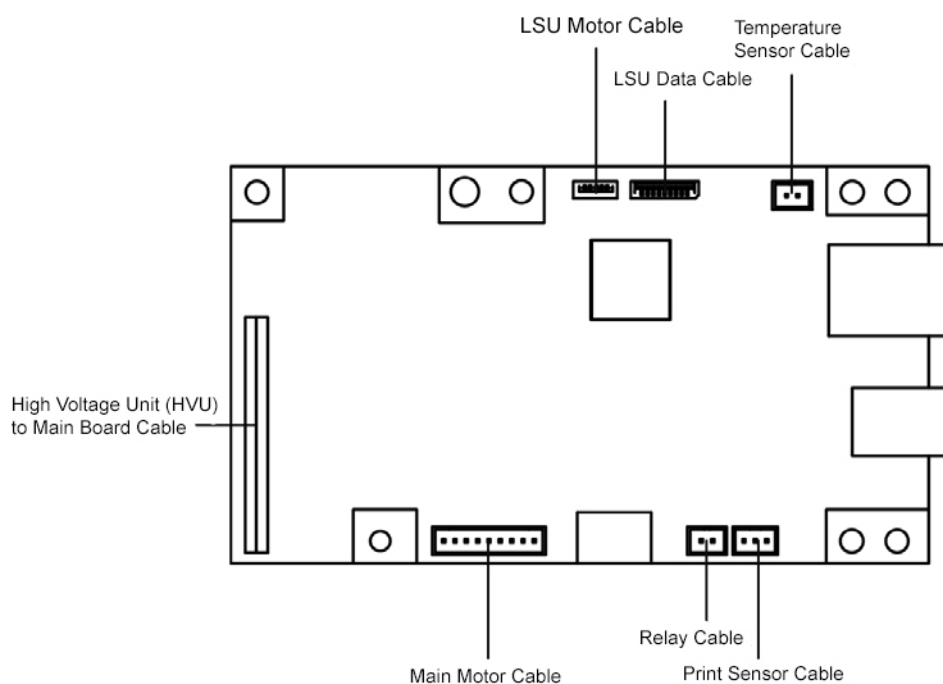
graph 3-6

Installation Notes:

- When installing the rear cover, insert the hook on the cover into the left and right brackets.

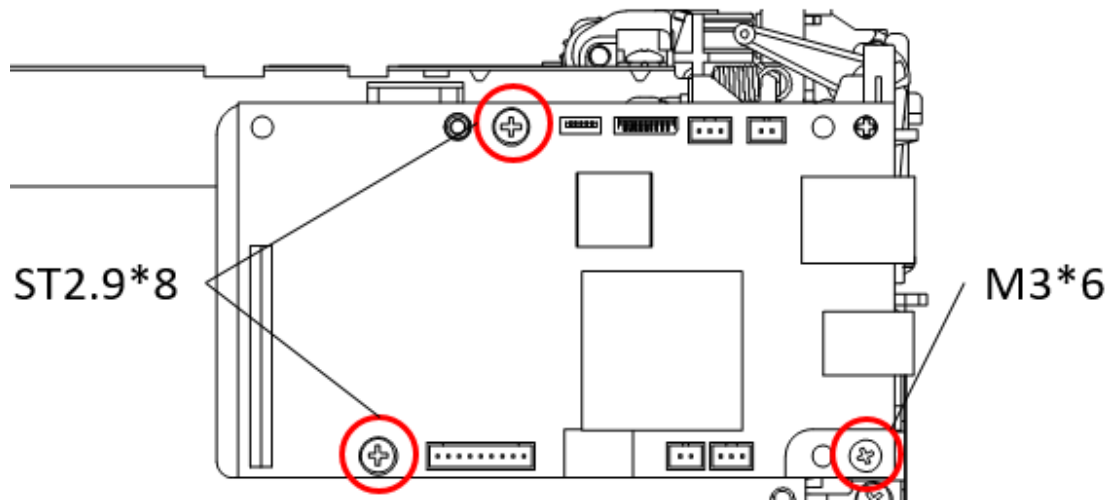
2.5 Main Board Unit

- (1) Unplug all connected cables and flat wires from the main board.



Graph 3-7

- (2) After removing two ST2.9×8 screws and one M3×6 screw, disassemble the motherboard unit.

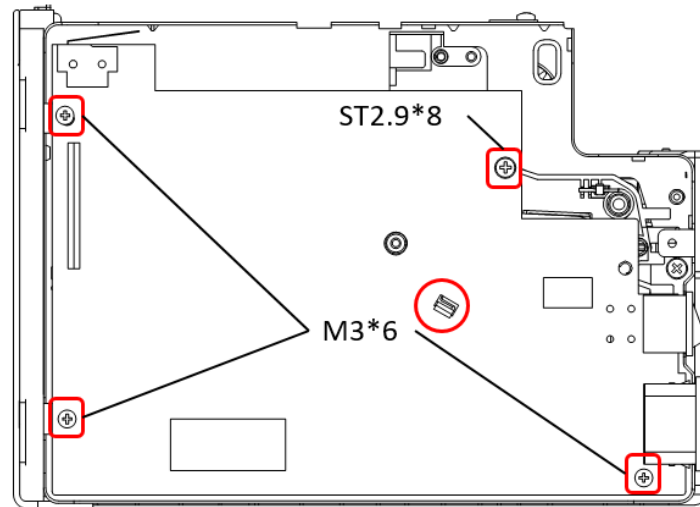


graph 3-8

- (3) Remove the motherboard insulation sheet behind the main board.

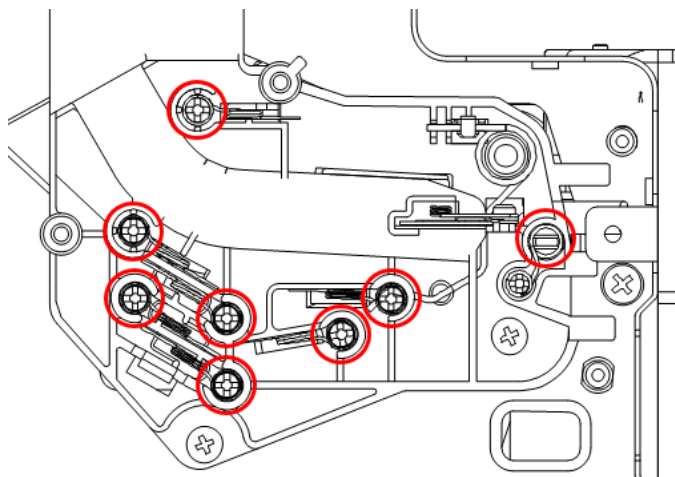
2.6 High Voltage Unit

- (1) Remove 3 M3×6 screws and 1 ST2.9×8 screw.
- (2) Press the hook at the circle-marked position on the diagram to remove the high-voltage unit.



Graph 3-9

(3) After removing the high-voltage unit, carefully store the spring at the location shown in the figure below to prevent loss.



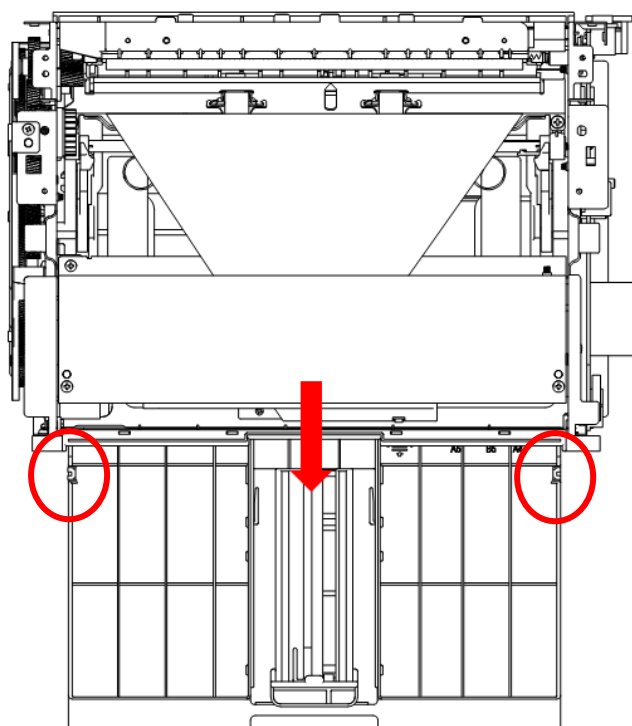
Graph 3-10

Installation Notes:

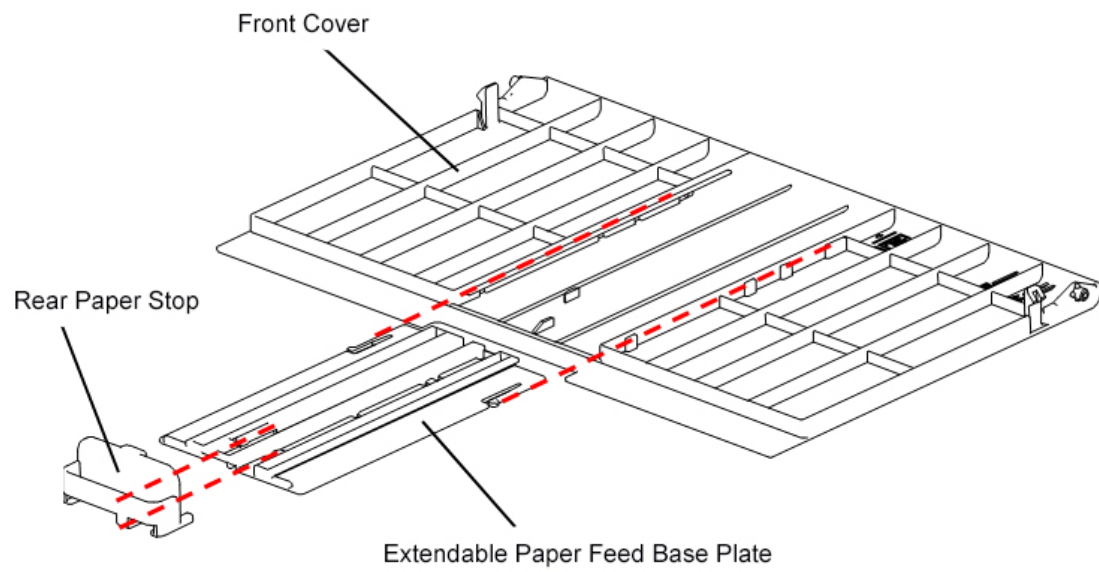
- When installing the transfer roller spring, apply an appropriate amount of conductive oil.

2.7 Front Cover Assembly/Inner Front Cover

(1) Place the machine flat on a surface, open the front cover, grip the base of both sides of the cover assembly with your hands, and press downward with both hands to depress and deform it toward the center, then remove the cover assembly.

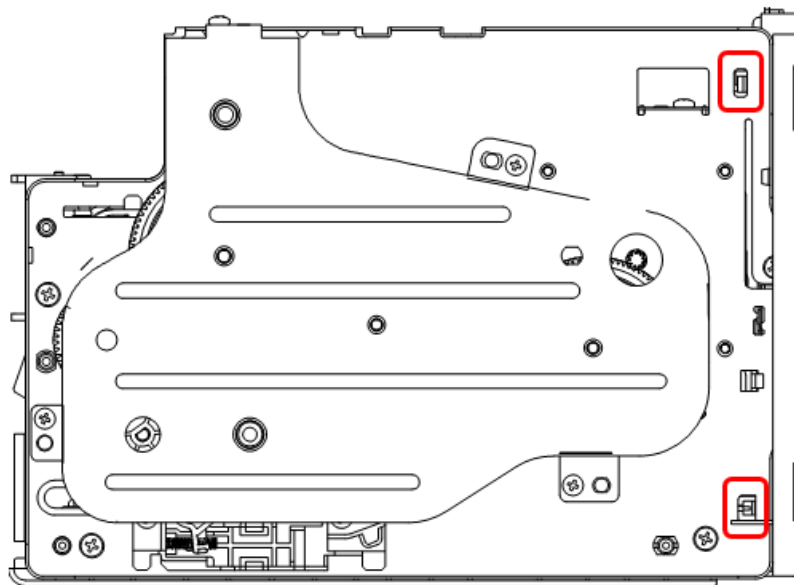


Graph 3-11



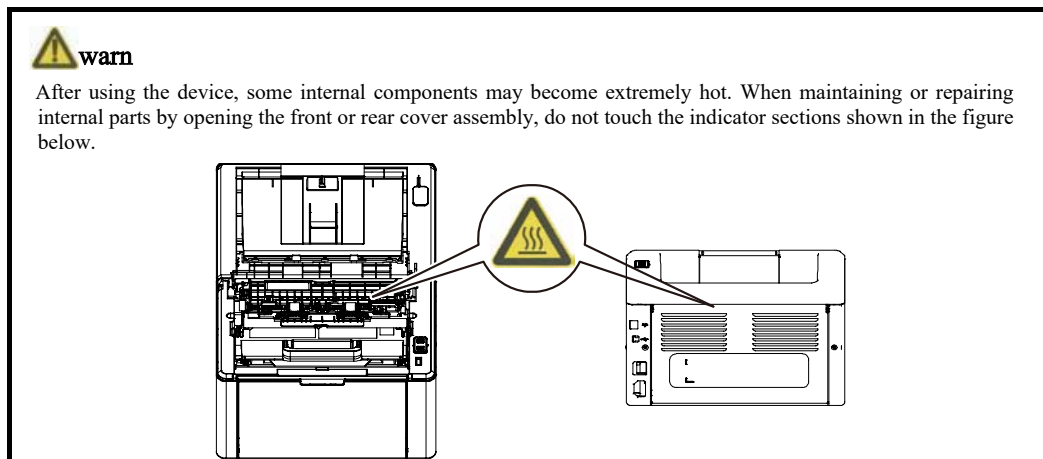
Graph 3-12

(2) Use a Tool to Remove the Hook at the Position Shown in Figure 3-11, Then Detach the Inner Front Cover.



Graph 3-13

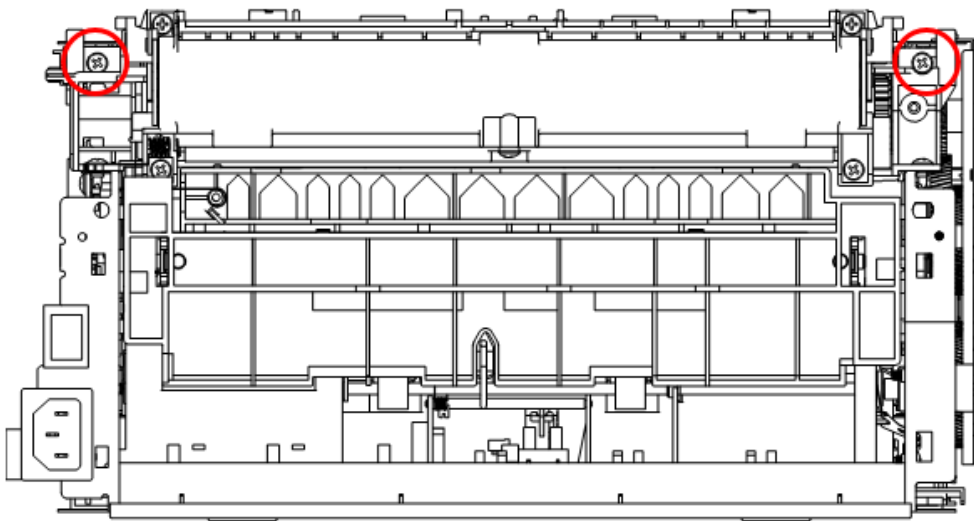
2.8 Fixation Unit



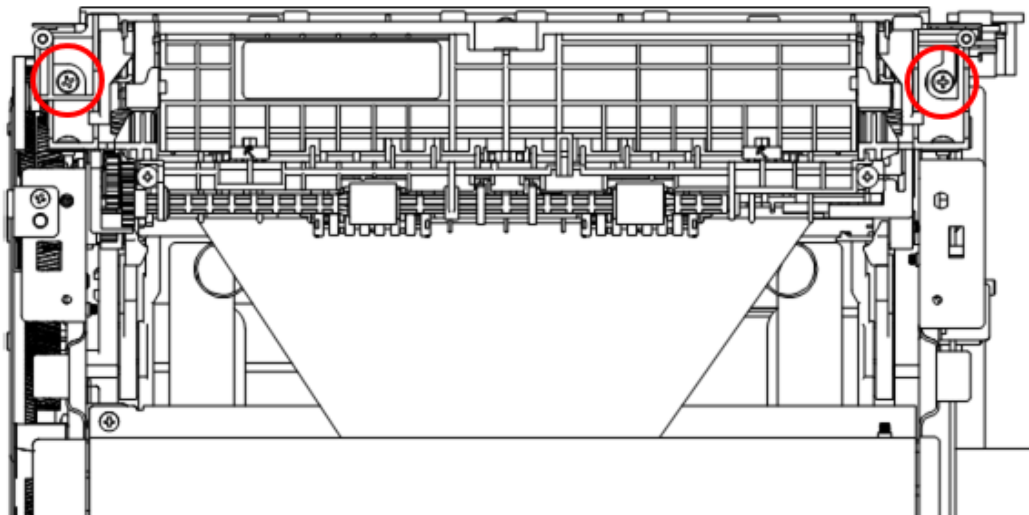
Tip:

- Do not touch the fixing unit directly, as this may cause it to malfunction.

- (1) Remove the wiring of the fixing halogen lamp connected to the high-voltage unit.
- (2) Remove the four black M3×8 screws marked on the diagram below.

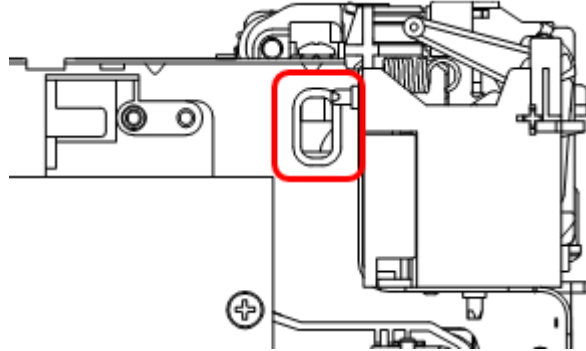


Graph 3-14



Graph 3-15

(3) Connect the removed fixing temperature sensor wire through the small hole shown in the diagram, then remove the fixing unit.

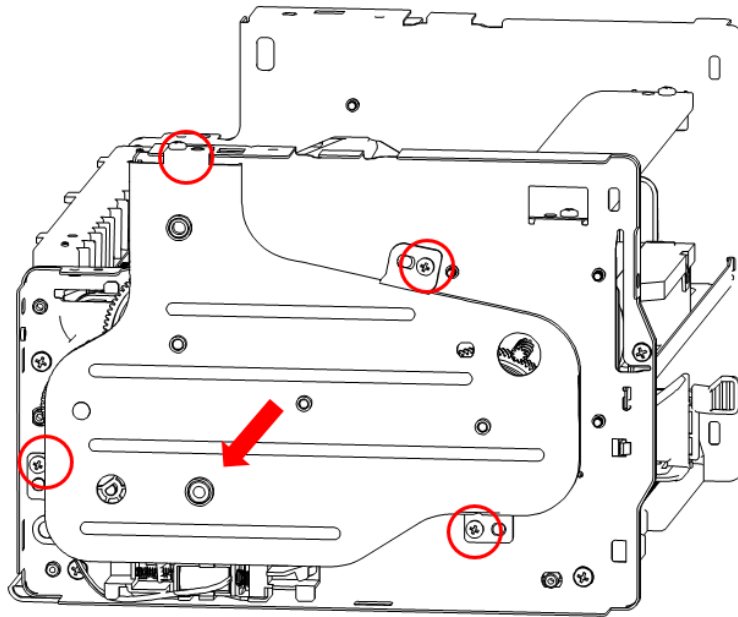


Graph 3-16

(4) When disassembling the fixing unit, maintenance personnel need only proceed to this step and are not required to further dismantle its internal components. If any malfunction is detected in the fixing unit, simply replace it.

2.9 Transmission Support Frame

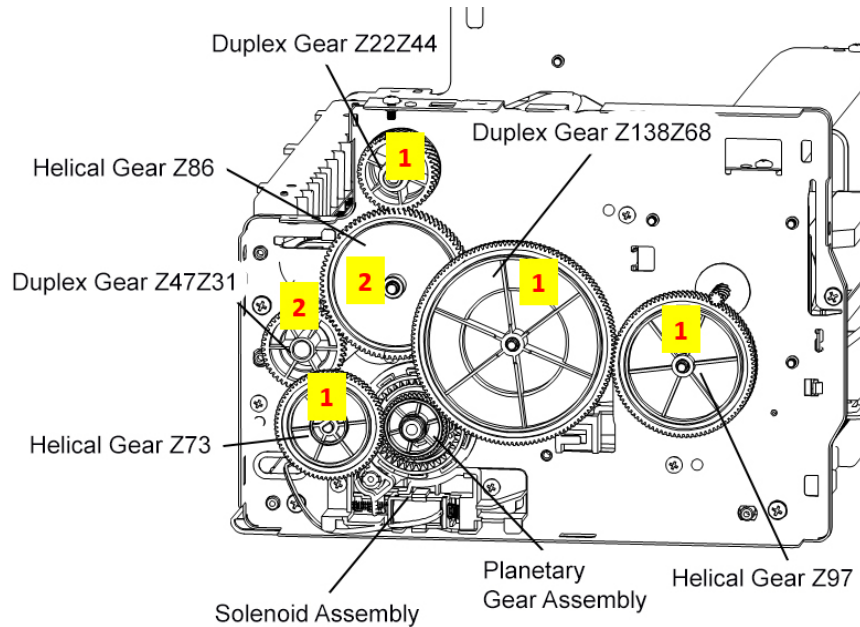
(1) Remove the four M3×6 screws at the circle-marked positions shown in the diagram, then disassemble the transmission bracket along the direction indicated by the arrows.



Graph 3-17

2.10 Drive Gear

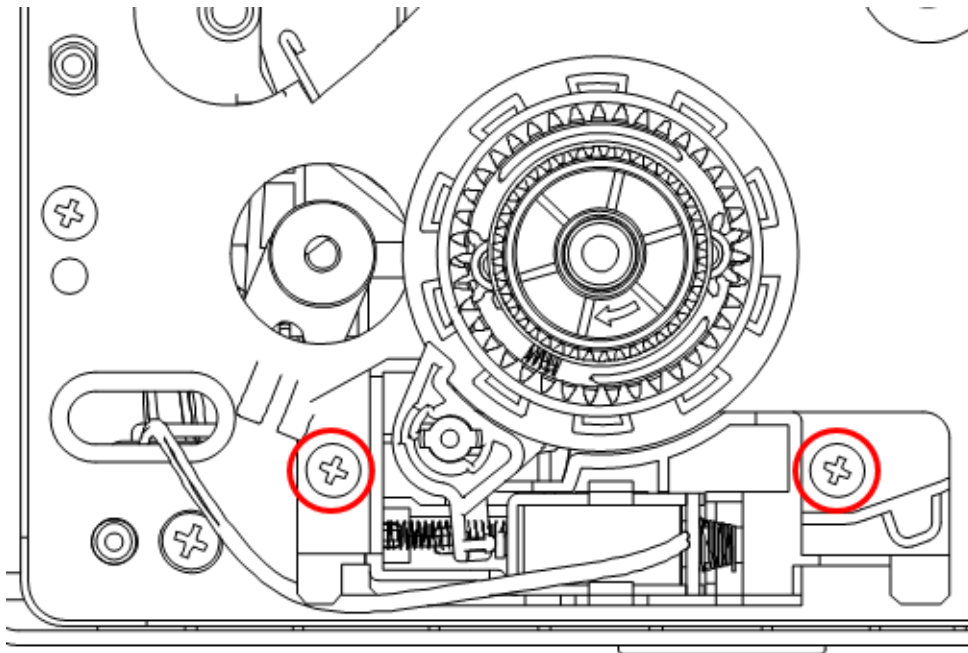
- (1) Remove the gear marked with 1 from the mechanism as shown in the figure.
- (2) Remove the gear marked with 2 from the mechanism as shown in the figure.



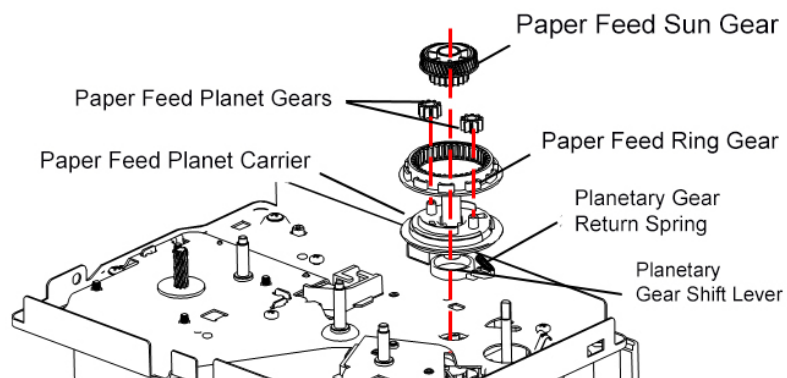
Graph 3-18

2.11 Electromagnetic Coil Assembly/Planetary Gear Assembly

- (1) Remove the two M3×8 screws marked with red circles in the diagram.
- (2) Remove both the electromagnetic magnet assembly and the planetary gear assembly simultaneously.



Graph 3-19



graph 3-20

2.12 Upper Bracket

- (1) Remove the four M3×8 screws at the positions marked by the red circle, then remove the upper bracket.

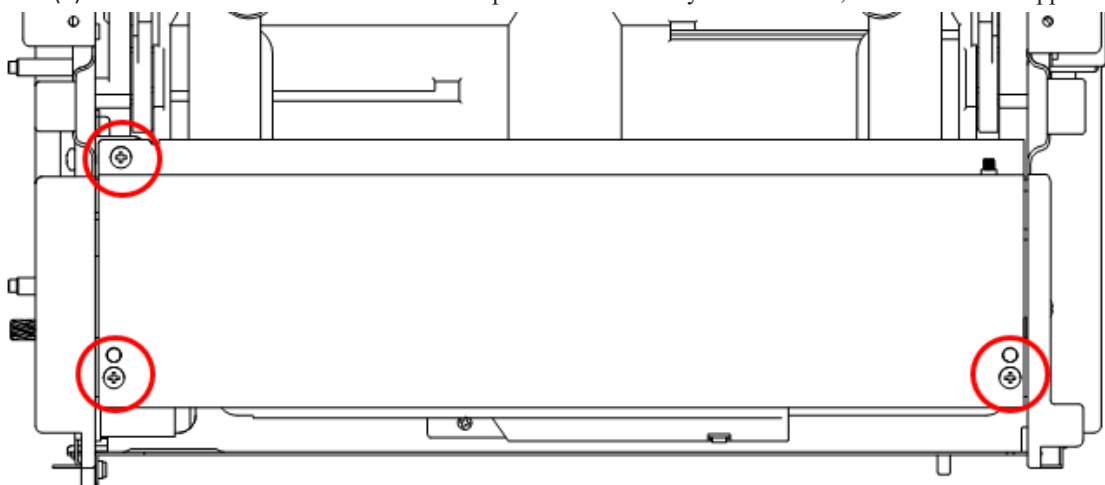


图3-21

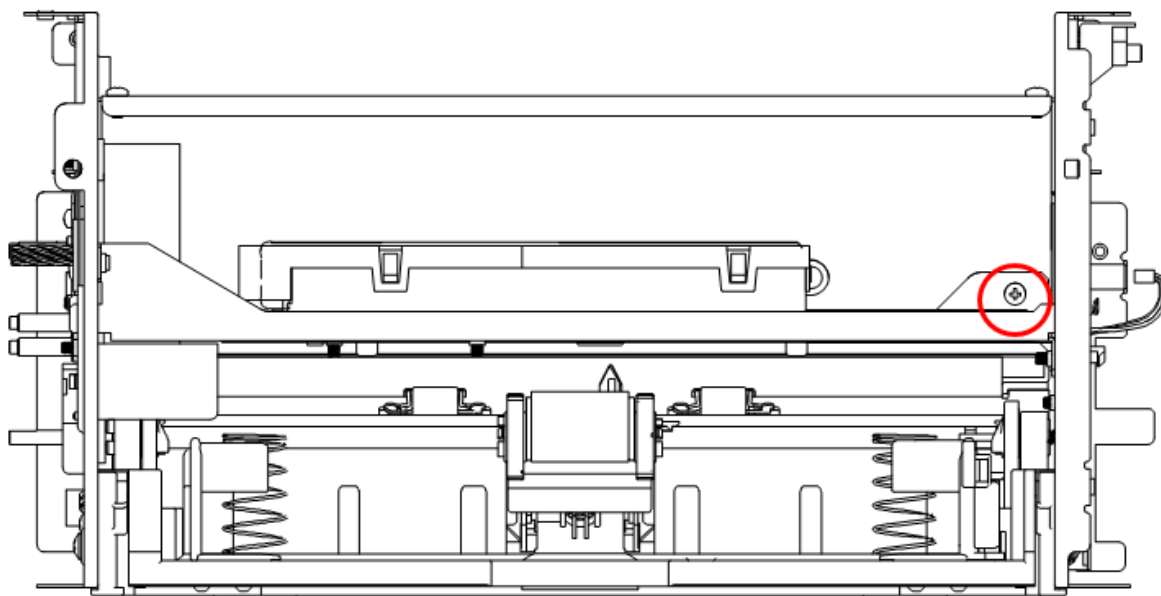
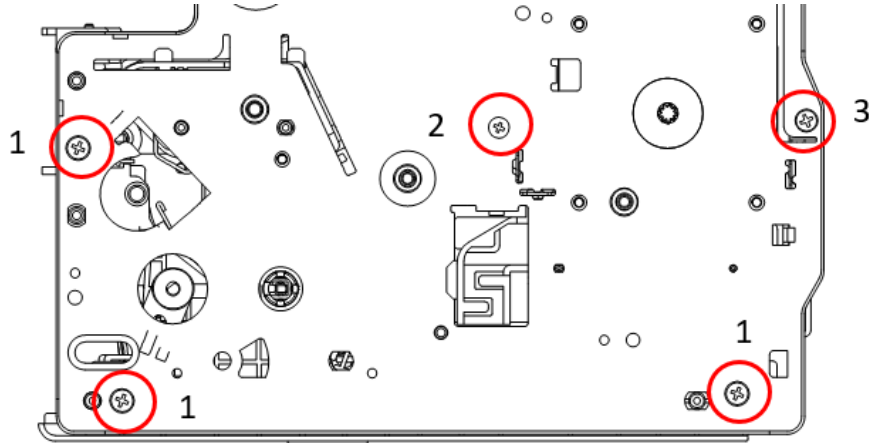


图3-22

2.13 Left Stent Assembly

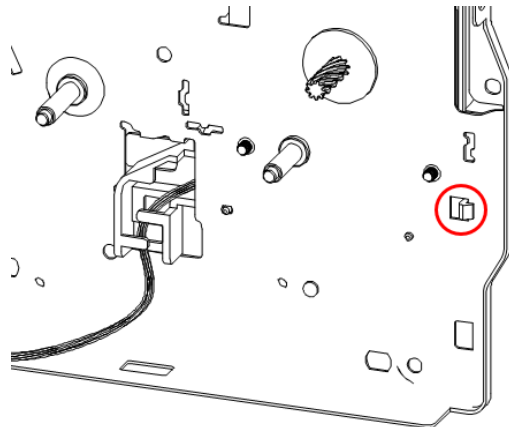
- (1) Remove the three ST2.9*8 screws marked with "1" in the diagram.
- (2) Remove the M3*6 screw marked with "2" in the diagram.
- (3) Remove the 4*4 screw marked with number 3 shown in the figure, and remove the left support assembly.



Graph 3-23

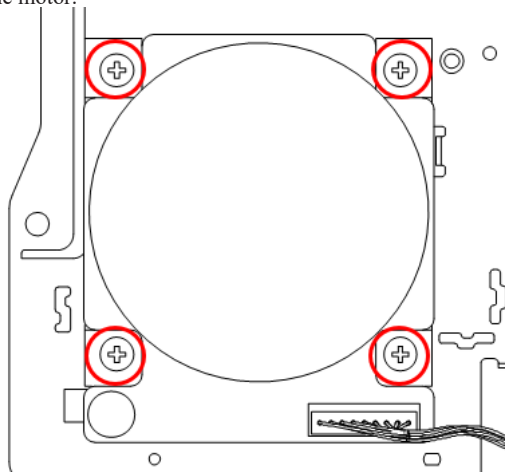
2.14 Motor

- (1) Use a tool to pry out the bolt at the marked location on the diagram and remove the motor cover.



Graph 3-24

- (2) Unplug the motor cable.
- (3) Remove the four M3*6 screws at the marked locations on the diagram, then disassemble the motor.

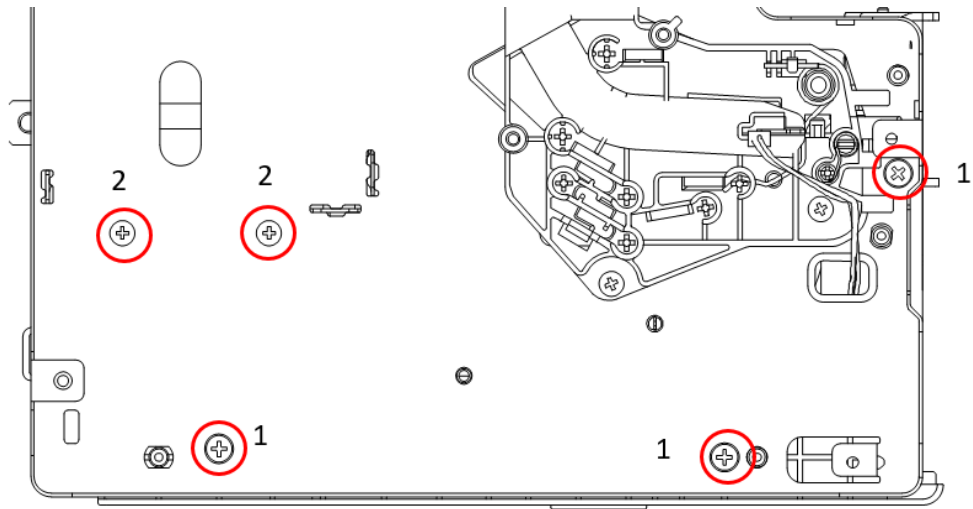


Graph 3-25

2.15 Right Support Component

(1) Remove the three ST2.9*8 screws marked with "1" in the diagram.

(2) Remove the two M3*6 screws marked with "2" in the diagram, and disassemble the right support assembly. °



Graph 3-26

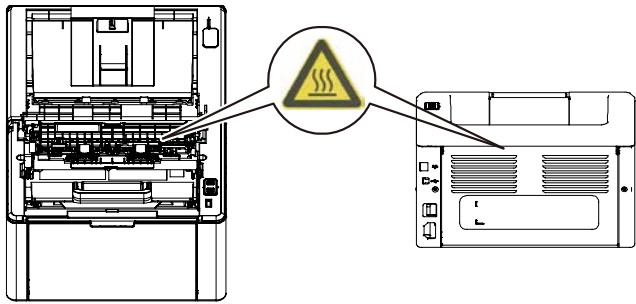
Chapter 4 Regular Maintenance

1. Precautions Before Performing Maintenance Operations:

To prevent secondary failures caused by improper operation, the following warnings and precautions must be observed during equipment disassembly and reinstallation.

**warn**

After using the device, some internal components may become extremely hot. When repairing these components by opening the front or rear cover assembly, do not touch the indicator areas shown in the figure below.



- Please do not lose removed screws, washers, or other parts.
- When using an electric soldering iron or other heating tools, take care not to damage components made of synthetic resin, such as wires, circuit boards, and casings.
- Static electricity generated by the human body may damage electronic components. Therefore, when transporting circuit boards, it is essential to wrap them with conductive foil.
- When replacing the circuit board or any other components that contain a circuit board, please wear an anti-static wrist strap and work on an anti-static mat. Additionally, avoid touching the electrode conductor parts of flat cables and plugs.
- After removing the flat cable, ensure that its connector is intact and there are no short circuits in the cable.
- When inserting a flat cable, ensure it is inserted straight and check that it does not skew after insertion.
- When connecting or disconnecting the cable, hold the connector part rather than the cable itself. If the connector has a lock, be sure to unlock it first.
- After repair, please check not only the repaired parts but also the wiring connections. Additionally, verify that other related components are functioning properly.
- Do not force close the front cover before installing the toner cartridge and drum unit, as this may damage the device.
- Please do not damage the insulating sheet.
- When replacing a circuit board, carefully inspect both the component side and the soldering surface for any foreign objects.

2. Replace Parts Regularly.

2.1 Preparations

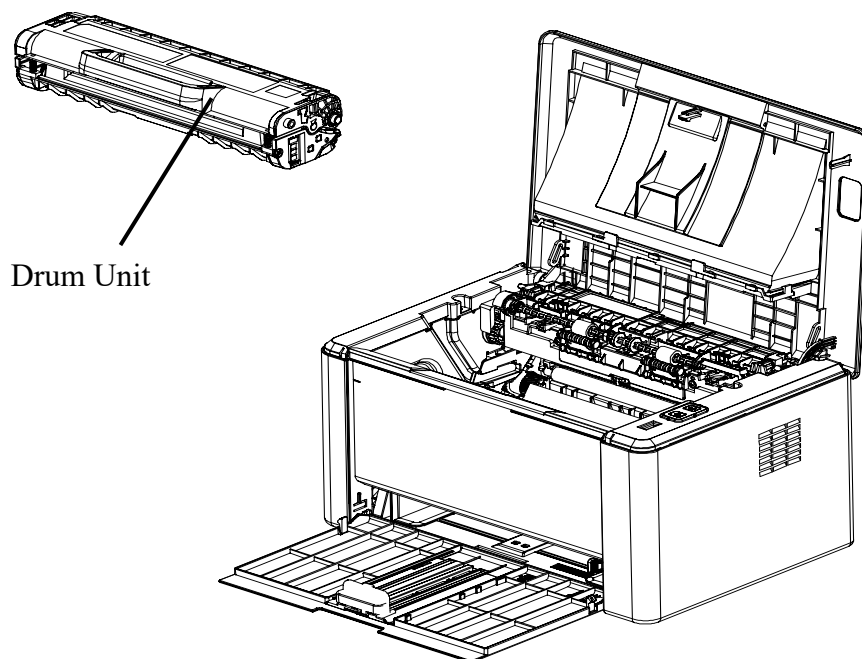
- Connect the wires and remove all accessories. Before beginning the disassembly, complete the following preparations.

(1) Unplug the following cables:

- USB cable (if connected)

(2) Remove the following accessories:

- toner cartridge



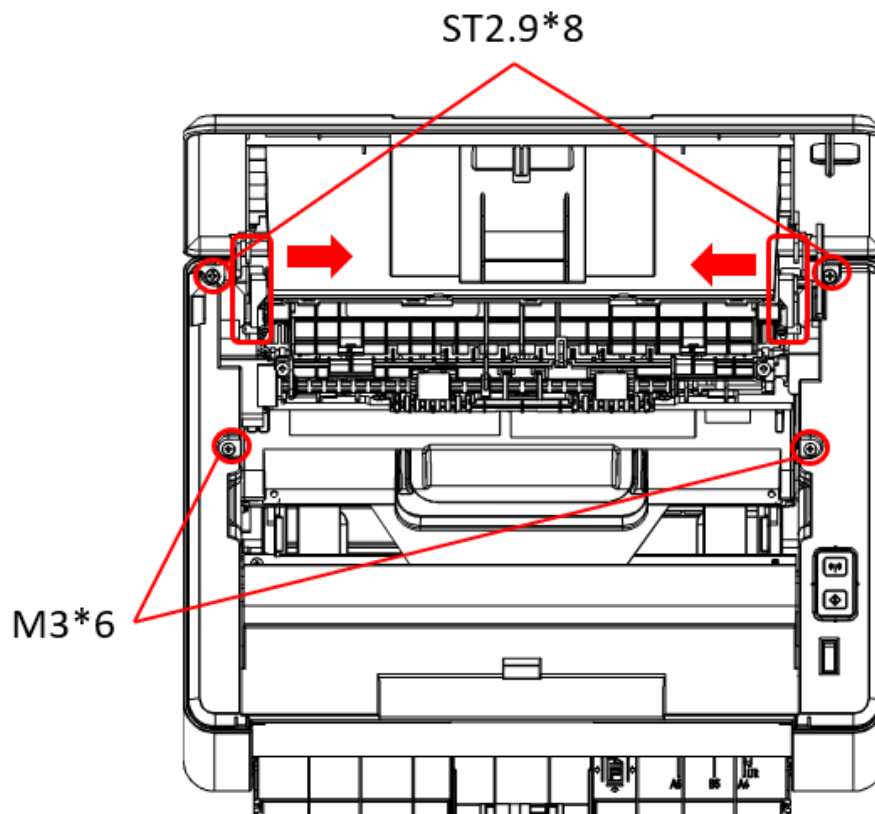
Graph 4-1

2.2 Fixation Unit

- (1) Open the top cover.
- (2) Turn the image-fixing release lever in the direction indicated by the arrow to disengage it from the groove on the top cover.
- (3) Remove the two ST2.9*8 and two M3*6 screws shown in the diagram.
- (4) Gently lift the inner top cover from the front by approximately 40° to expose the keyboard connection cable within the gap, then remove it from the keyboard panel.

pay attention to :

- When connecting or disconnecting cables, avoid damaging the cable by only touching the plug portion and never pulling the cable body.



Graph 4-2

- (5) Remove the two screws on the back of the machine.
- (6) Unfasten the two hooks on the front of the machine.
- (7) Then unfasten the hooks on both sides.
- (8) Using the rear end of the left and right covers as the axis, rotate their front ends outward by a certain angle, then remove the left cover in the direction indicated by the arrow.

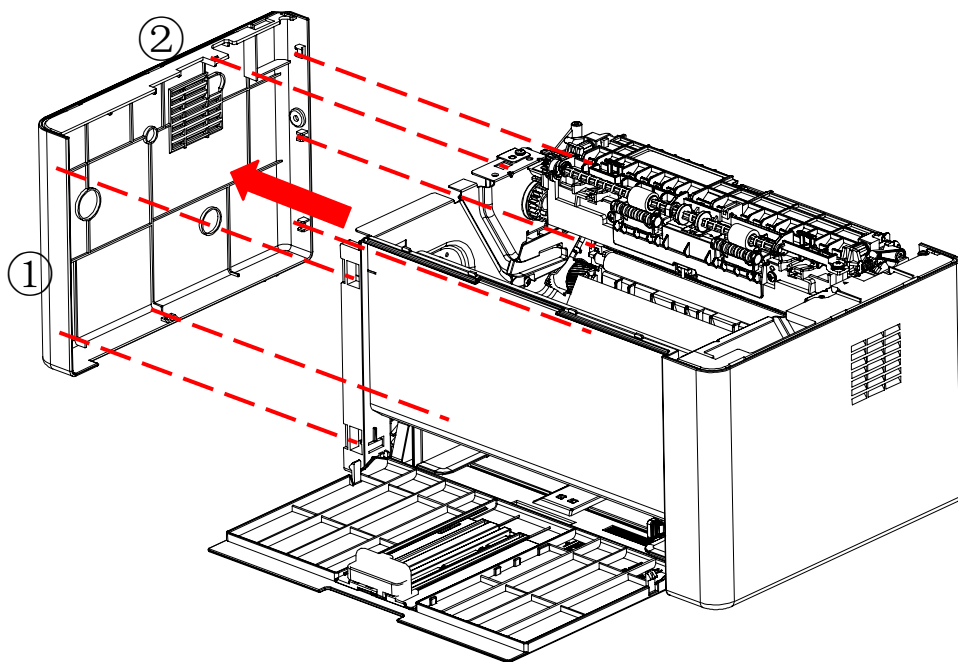
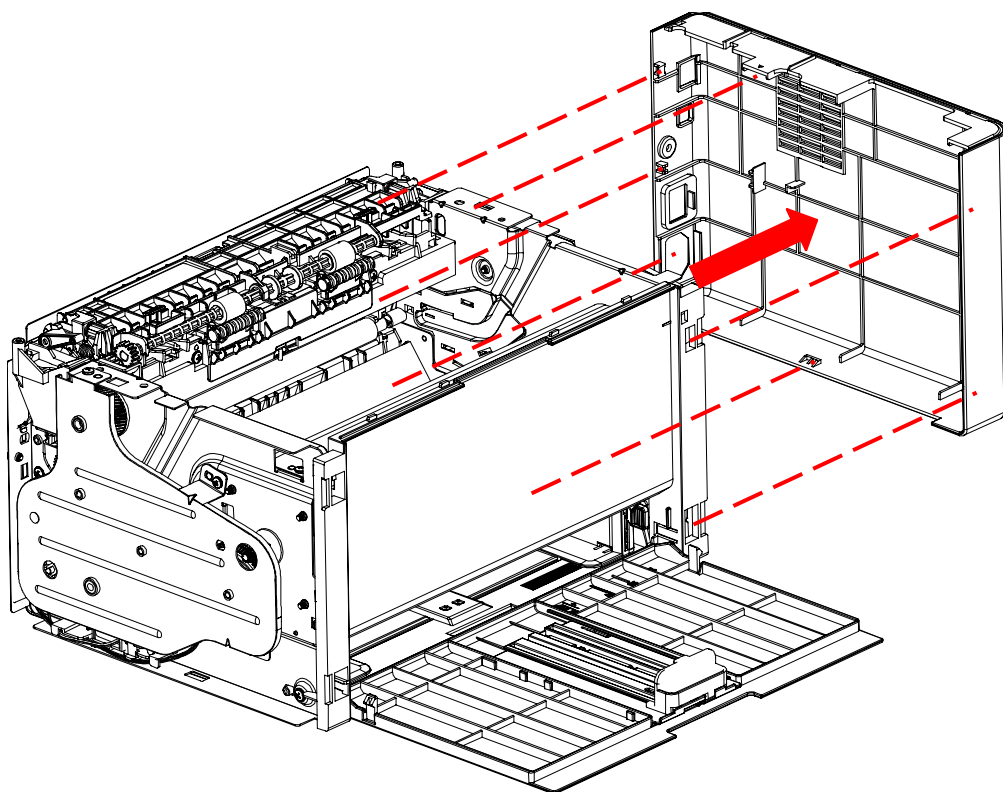
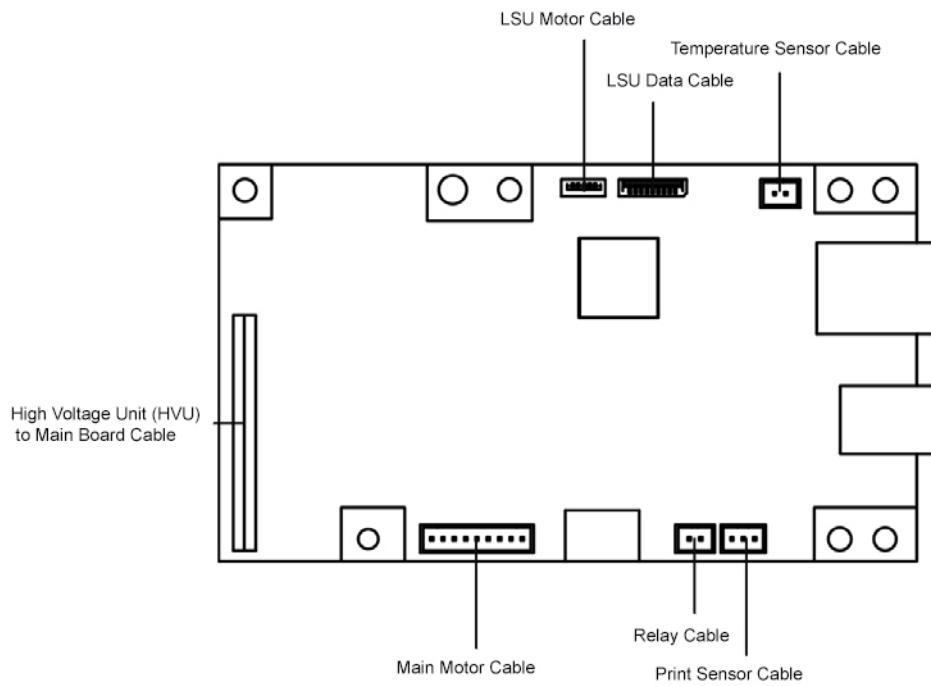


图4-3



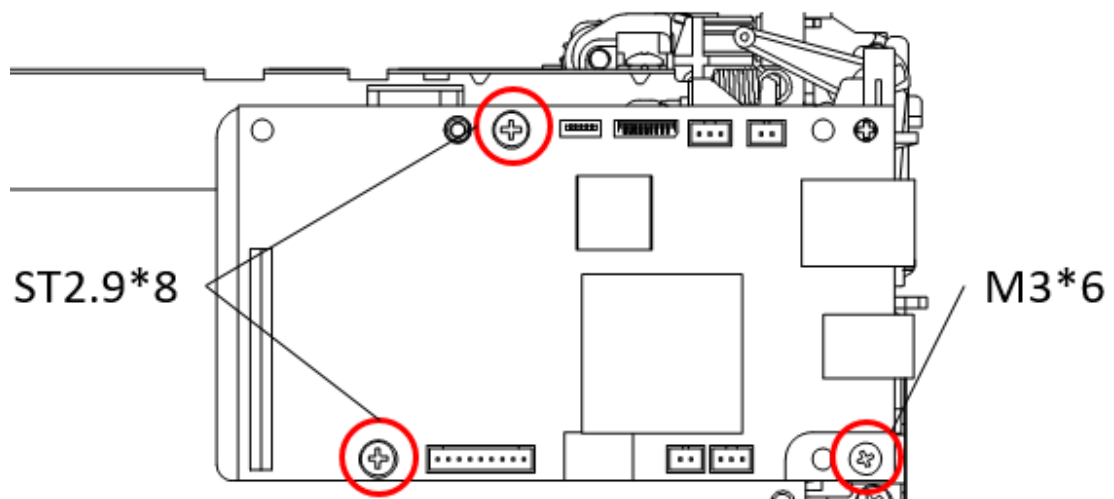
Graph 4-4

(9) Unplug All Connected Cables and Flat Wires from the Main Board.



graph 4-5

(10) After removing two ST2.9×8 screws and one M3×6 screw, remove the motherboard unit.

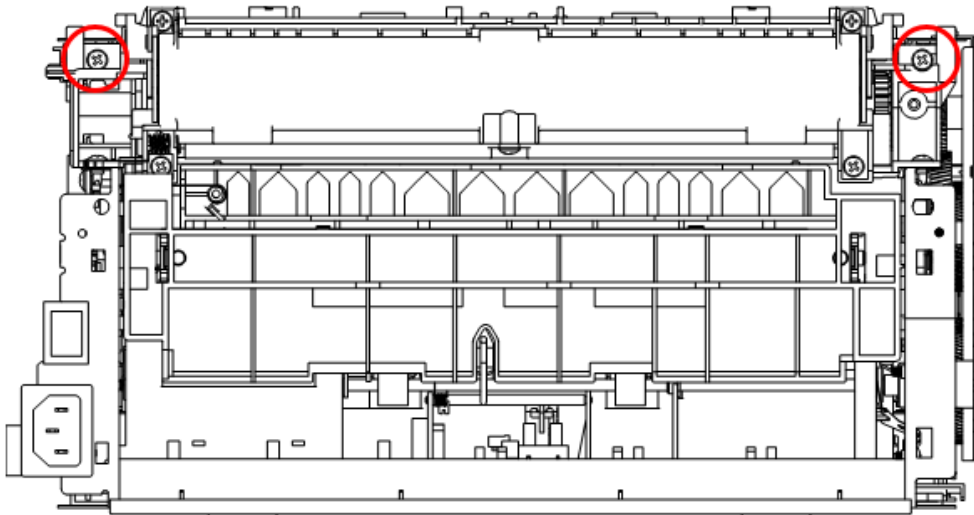


graph 4-6

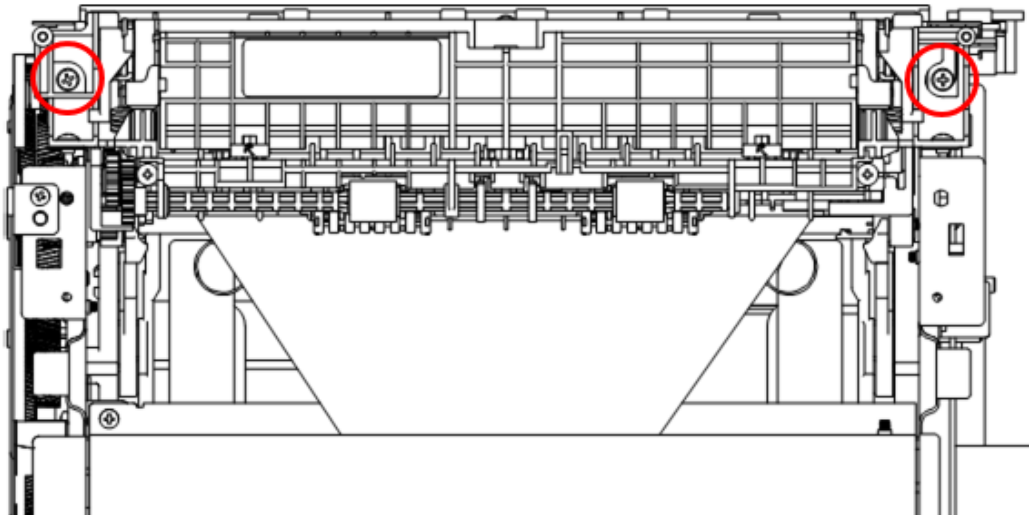
(11) Remove the motherboard insulation sheet behind the main board.

(12) Remove the wiring of the fixing halogen lamp connected to the high-voltage unit.

(13) Remove the four black M3×8 screws marked on the diagram below.

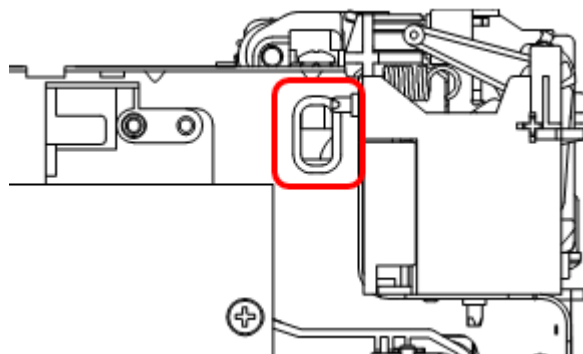


graph 4-7



graph 4-8

(14) Connect the removed fixing temperature sensor wire through the small hole shown in the diagram, then remove the fixing unit.

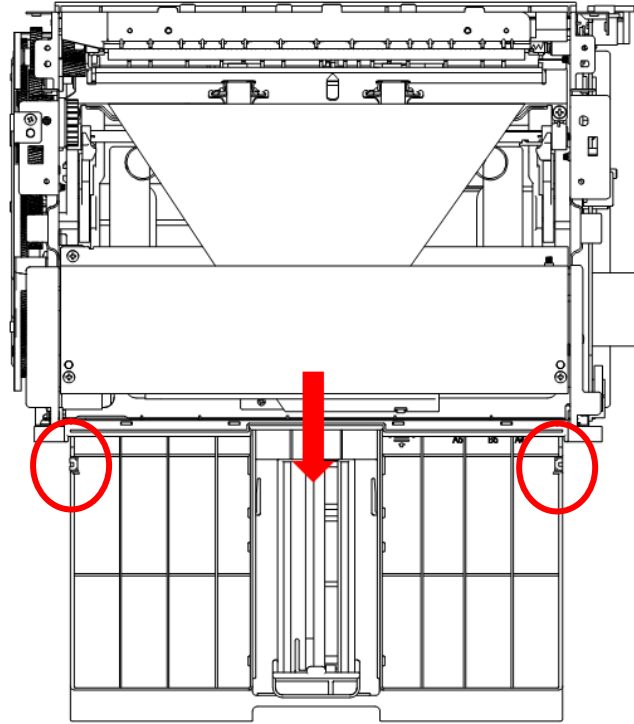


Graph 4-9

(15) When disassembling the fixing unit, maintenance personnel need only proceed to this step and are not required to further dismantle its internal components. If any malfunction is detected in the fixing unit, simply replace it.

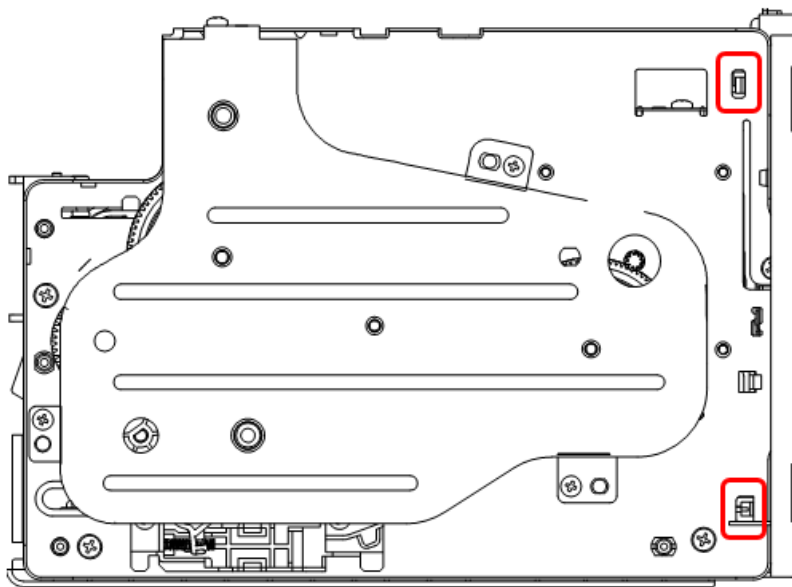
2.3 Laser (LSU)

- (1) Following steps 1 through 8 for removing the fixing unit from the previous section, sequentially remove the top cover/inside top cover, left cover, and right cover.
- (2) Place the machine flat on a surface, open the front cover, grasp the base of both sides of the cover assembly with your hands, and press downward with both hands to depress and deform it toward the center, then remove the cover assembly.



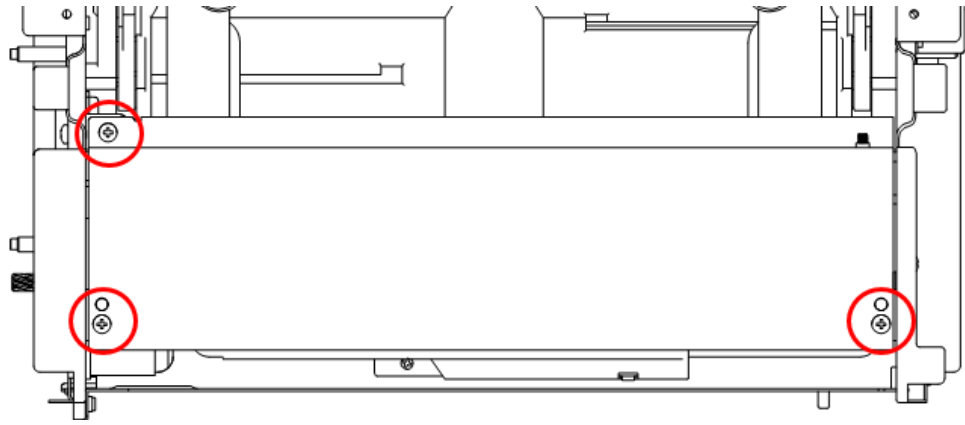
Graph 4-10

- (3) Use a tool to remove the hook at the position shown in Figure 4-11, then detach the inner front cover.

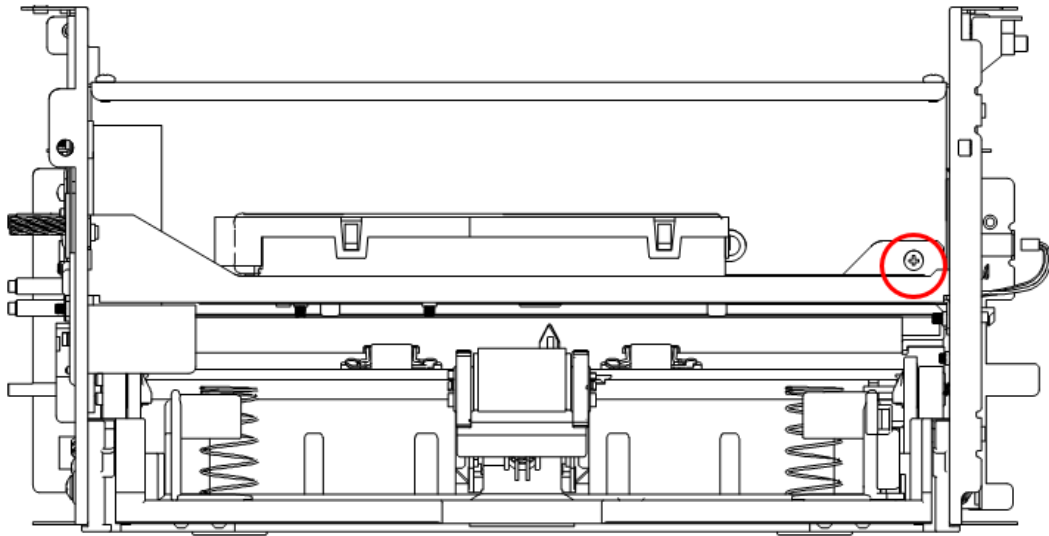


Graph 4-11

- (4) Remove the four M3×8 screws at the positions marked by red circles in Figures 4-12 and 4-13, then disassemble the upper bracket.



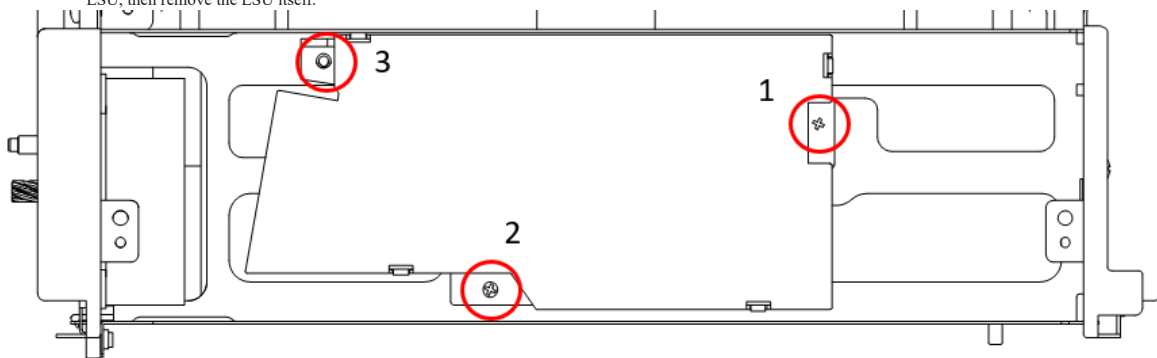
Graph 4-12



Graph 4-13

(5) Remove the three M3×8 screws located at the positions marked by red circles in Figure 4-14.

(6) Remove the connecting wires on both sides of the LSU, then remove the LSU itself.



Graph 4-14

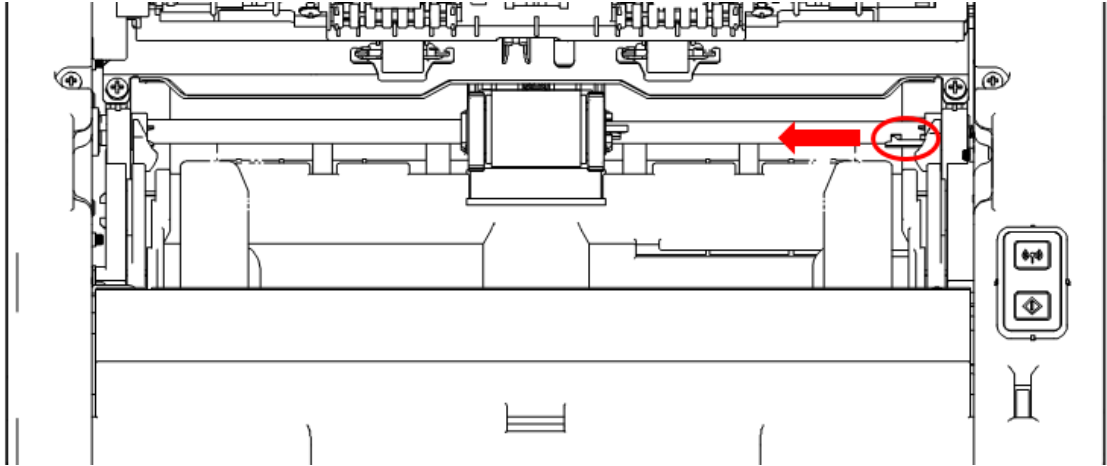
Installation Notes:

- When securing the LSU with screws, tighten them in the numerical order indicated on the diagram.
- Do not touch the lenses on the LSU during disassembly.

(7) When disassembling the laser unit (LSU), maintenance personnel need only proceed to this step and are not required to further dismantle its internal components. In case of any malfunction with the laser unit (LSU), it can be directly replaced.

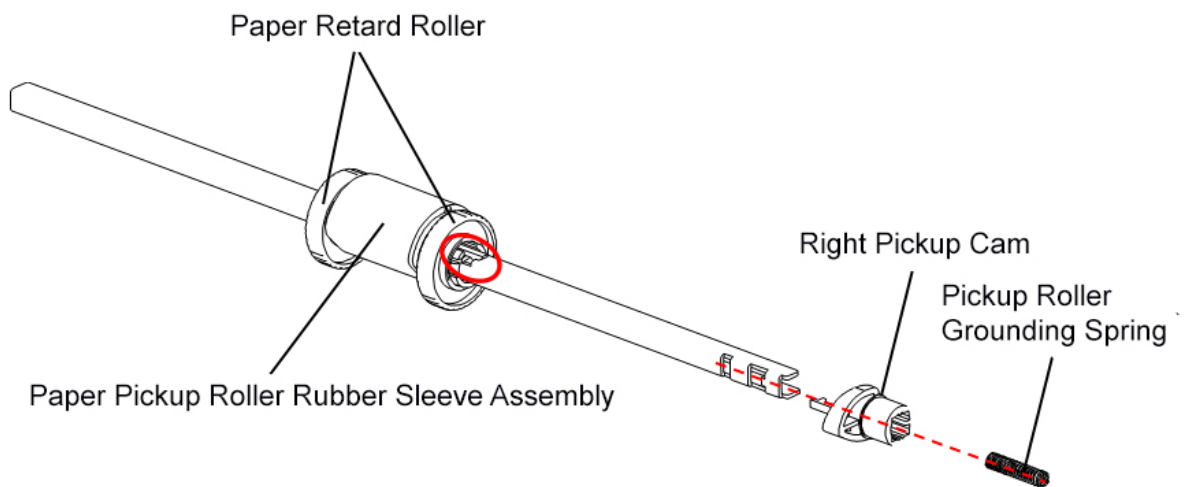
2.4 Remove the Paper Adhesive Sleeve Assembly

- (1) Open the machine cover.
- (2) Use your hand to release the cam hook marked by the red circle in the diagram, then move the white cam along the arrow direction until it extends fully.



graph 4-15

- (3) Move the paper take roller assembly to the right until its left side fully exits the left paper take cam, then lift the roller upward.
- (4) Remove the right paper-taking cam and the grounding spring of the paper-taking roller.
- (5) Unfasten the latch on the paper feed roller sleeve assembly and remove it to the right.

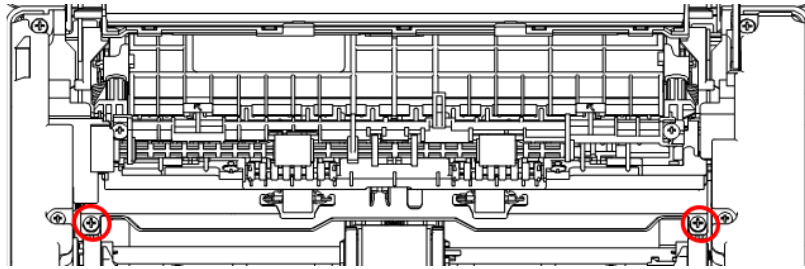


graph 4-16

- (6) When replacing the paper roller rubber sleeve assembly, maintenance personnel only need to follow this step.

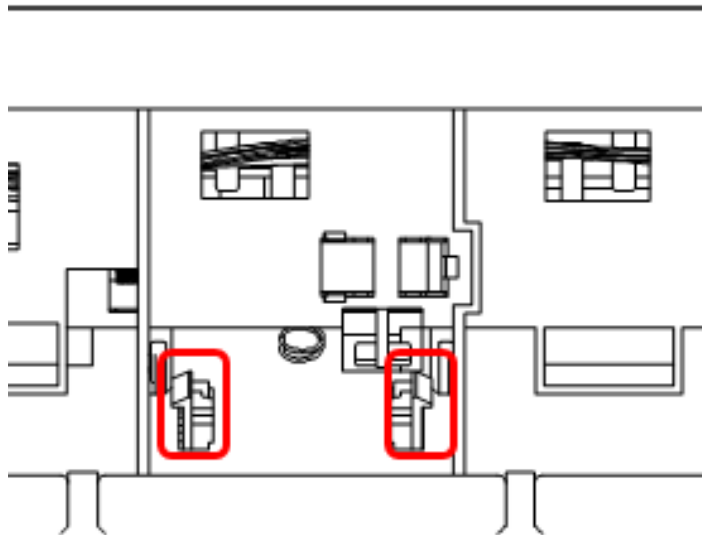
2.5 Secondary Page Fragment Component

- (1) Remove the two ST2.9*8 screws on both sides of the conveying guide plate, and disassemble the secondary conveying roller assembly.



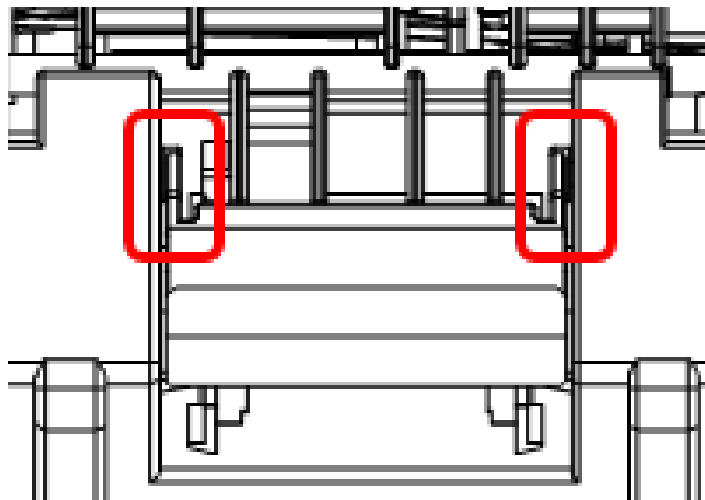
graph 4-17

- (2) Follow steps 1 through 3 in the previous section to remove the paper roller assembly.
- (3) Press the secondary page division component hook on the bottom of the machine inward with your hand to release it.



Graph 4-18

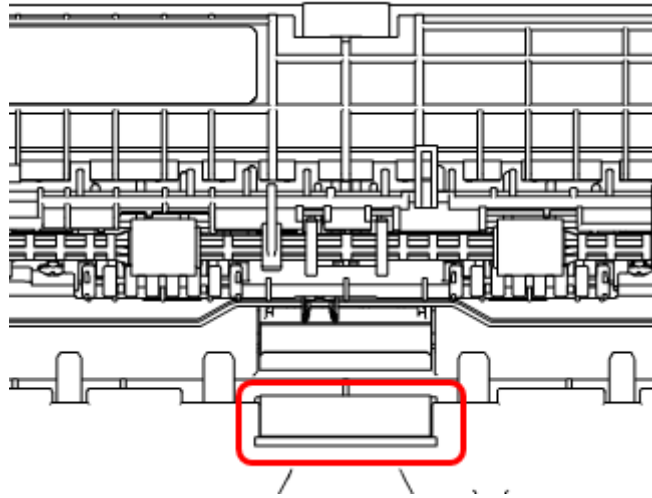
- (4) Simultaneously pinch the support arms on both sides of the page divider bracket inward to remove the secondary page divider assembly.



Graph 4-19

2.6 Paper Tray First-Level Page Division Rubber Pad

- (1) Remove the primary page-sealing adhesive pad from the paper tray and eliminate any remaining double-sided adhesive.

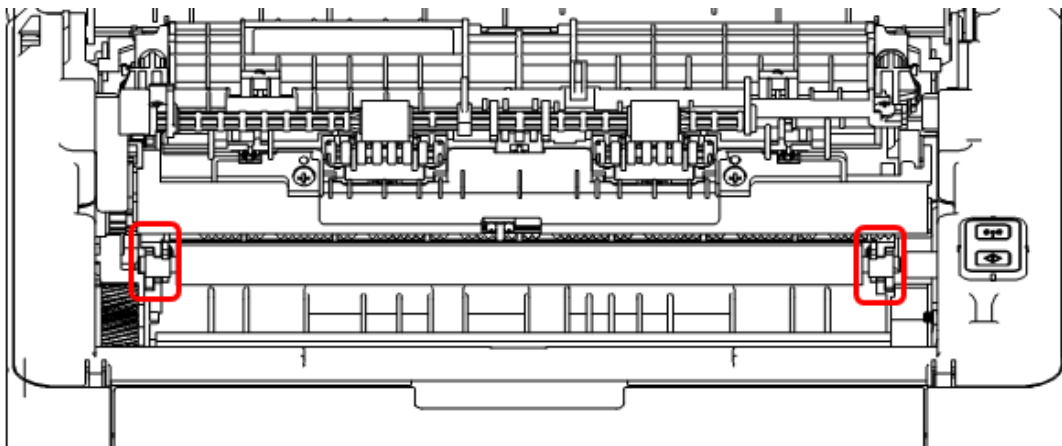


Graph 4-20

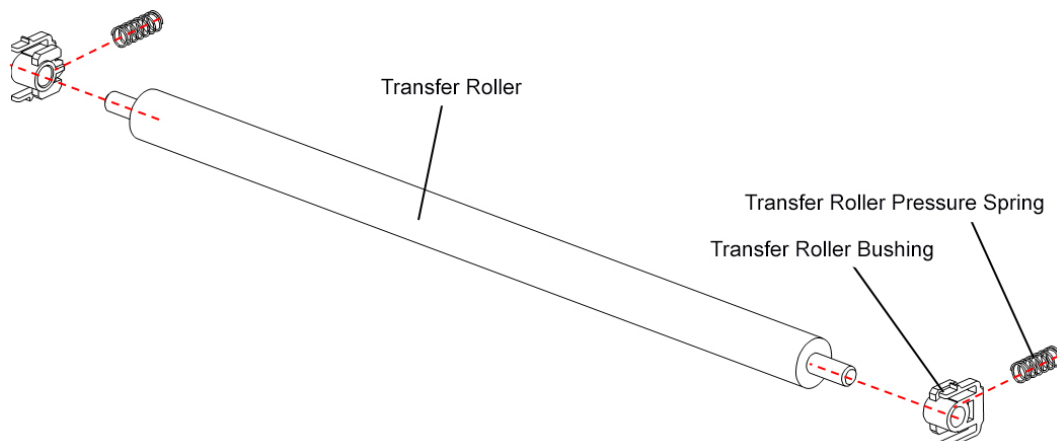
- (2) Apply the new first-level page division adhesive pad for the paper tray.

2.7 Transfer Roller

- (1) While holding both sides, press the latches on the transfer roller sleeves simultaneously to remove the transfer roller.



graph 4-21



Graph 4-22