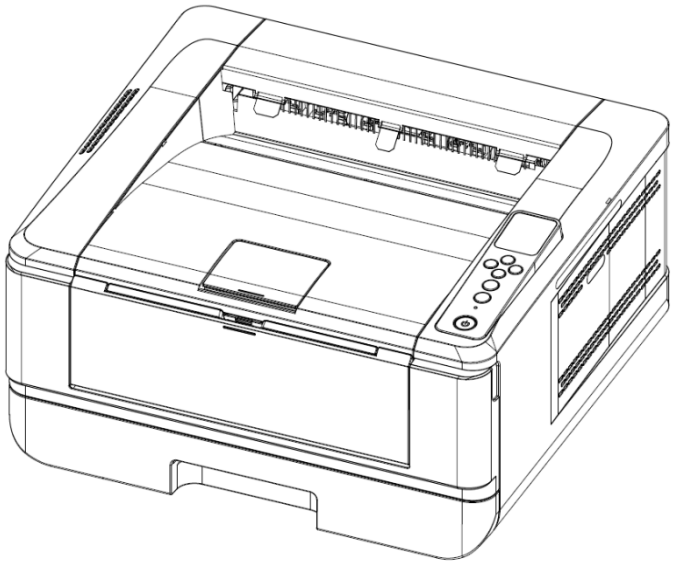
Capsul PB4000 Printer

Maintenance Manual v1.0



Please read this manual carefully before performing maintenance.

Keep this manual handy for quick reference at any time.

Confidential

Table of Contents

Chapter 1 Theory of Operation and Product Structure 4

1.1 Product Overview 4
1-2 Printing Material 4
1-3 Paper Types that do no recommend: 5
1-4 PCBA Connection Drawing 6

Chapter 2 Care and Maintenance 7

2.1 Notice before maintenance 7
2.2 Preparation before Replacement 8
2.3 Cleaning the LPH/LSU Unit 9
2.4 Regular Cleaning 10
2.4.1 Cleaning the Inside of the Printer 10
2.4.2 Cleaning the Corona Wire 10

(6).Close the front cover. 11

2.4.3 Cleaning the Separation Pad in the Paper Tray 11
2.4.4 Cleaning the Pick up Roller 12
2.5 Loading Paper 12
2.5.1 Loading Paper into the Main Tray 12
2.5.2 Loading Paper into the Manual Tray 14

Chapter 3 Troubleshooting of Error Codes 16

3.1 Preparation 16
3.2 Defect Image Illustration 18
3.3 Troubleshooting of Defect Images 19
3.4 Electrode on the device 25
3.5 Electrode on Drum Unit 26
3.6 Errors and Solutions 27
3.7 Paper Feeding Problems 35
3.8 Clear Paperjams 35
3.8.1 Jammed paper does not occur at Fuser 35
3.8.2 Jammed paper at Fuser 36
3.8.3 Jammed paper at the Duplex Unit 37

Chapter 4 Disassembling and Reassembling 38

4.1 Preparation 38
4.2 Disassembling Tools 39
4.2.1 Maintenance Tool List 39
4.2.2 Torque List 40
4.2.3 Lubricants 41
4.3 Disconnecting Cables Before Disassembling 42
4.4 Disassembling Notices 43
4.5 Basic Disassembling 43
4.5.1 Paper Tray 43
4.5.2 Assembling Duplex Module 44
4.5.3 EP_SEPARATION_LPH 45
4.5.4 Front Cover 45
4.5.5 Cover-Left 46
4.5.6 ASSY_HOUSING_RIGHT 48
4.5.7 ASSY_FUSER_PATH 49
4.5.8 ASSY_ID_UPPEER 50

4.6 Advanced Disassembling 50
4.6.1 Fuser 50
4.6.2 UI_Panel 53
4.6.3 IF113 Board 53
4.6.4 IFA99 Board 56
4.6.5 Main Board 56
4.6.6 Power Supply Board 59
4.6.7 Exit Path 60
4.6.8 Registration Sensor 60
4.6.9 Deskew Sensor 61
4.6.10 Paper-in Sensor 62
4.6.11 Duplex Sensor 62
4.6.12 Paper-Empty Sensor 64
4.6.13 Main Motor 65
4.6.14 Exit Motor 65
4.6.15 Main Fan 66
4.6.16 Pick-Up Clutch 66
4.6.17 Pick-Up Clutch (Manual Tray) 67
4.6.18 Deskew Clutch 68
4.6.19 Assembly Pad 68
4.6.20 Rear Door 70
4.6.21 LPH (for model with LED Print Head) 70
4.6.22 LSU (for model with LSU) 72
4.6.23 Check the Network Port 73

Chapter 5 Adjustment and Renew Settings after Replacement 74

5.1 Main Board Replacement 74
5.1.1 Adjustment after Replacement 74
5.1.1 Preparation 74
5.2 Power Supply Board Replacement 74
5.1.2 Adjustment After Replacement 74
5.1.3 Preparation 74

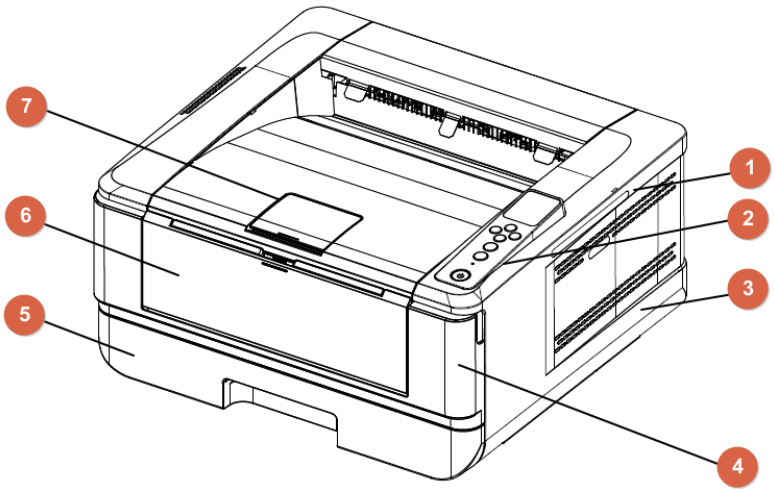
Appendix 1: AM3XTEST – The tool to find log 75

Appendix 2: AM3Xtest- The method to find the print image file 78

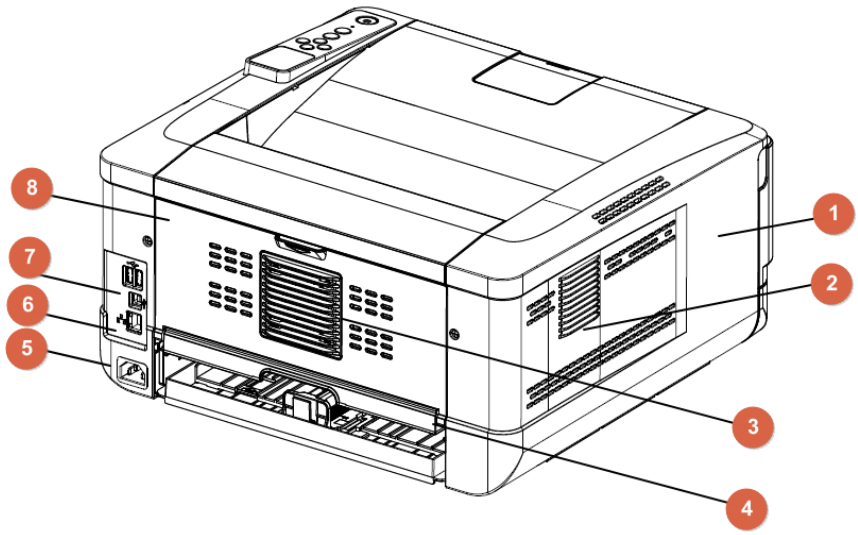
Appendix 3. How to use the Recovery Tool 81

Chapter 1 Theory of Operation and Product Structure

1.1 Product Overview



1	Right Cover
2	UI_PANEL
3	HOUSING RIGHT
4	COVER FRONT
5	ASSY CASSETTE
6	Manual Tray
7	Tray output stop



1	HOUSING LEFT USB HOST
2	Fan
3	Fan
4	ASSY_Duplex Module
5	AC POWER HOST
6	NETWORK HOST
7	USB TO PC HOST
8	REAR COVER WITH FAN

.

The pickup and feed System consists of several rollers that transport paper through the input trays, registration rollers, drum unit, fuser, and paper exit. The input trays include Main Tray, and Manual Tray. These rollers (including the drum unit, fuser, feeding, pickup, reverse, de-skew, and duplex rollers, etc.) are driven by the stepping motors or DC main motor, as shown in Figure 1-1.

Let's assume the lift-up operation has been performed (Refer to Paper Pickup Mechanism). After a print command is received, the main board sends a signal to the pickup motor. And then the pickup clutch is turned on, and transfers the driving force from the pickup motor to the pickup roller.

The transportation of a paper from an input tray begins at picking up a sheet of paper from the tray where the Paper Size, Paper Lift-up, and Paper-Empty sensors are used to detect the paper picking process.

Confidential

Before the paper is then transported to the registration rollers, the de-skew clutch turns on to correct any paper skewing by adjusting power to the de-skew roller. The registration rollers continue to drive the paper into EP where the image is transferred from the drum to the paper by attaching magnetic toner particles onto the paper.

At this point the EP moves the paper to the fuser until the fuser firmly receives the paper detected by the Fuser sensor. In the fuser, the toner is heated and melts down to the paper to fabricate the permanent image that is based on the original. The fuser is now in charge of sending the paper after the fusing process.

The fuser eventually transports the paper to its final destination, Output Tray, or back to the duplex unit after the Fuser Out and Paper Exit sensors detect the final coated paper.

The following figure illustrates the path of paper in the duplex printing unit: (The path of single-sided printing is indicated by dotted lines. The path of double-sided printing is indicated by solid lines.）

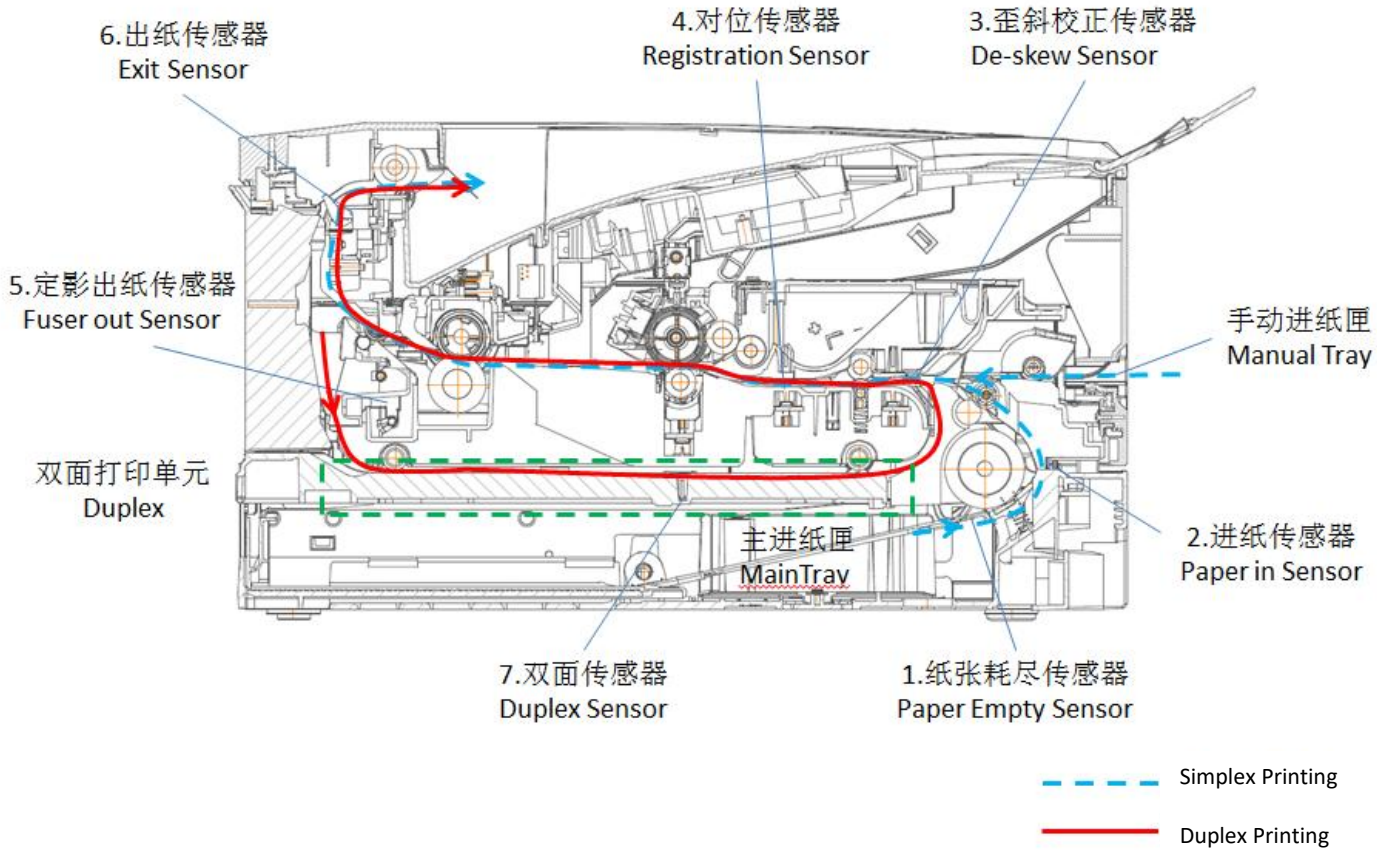
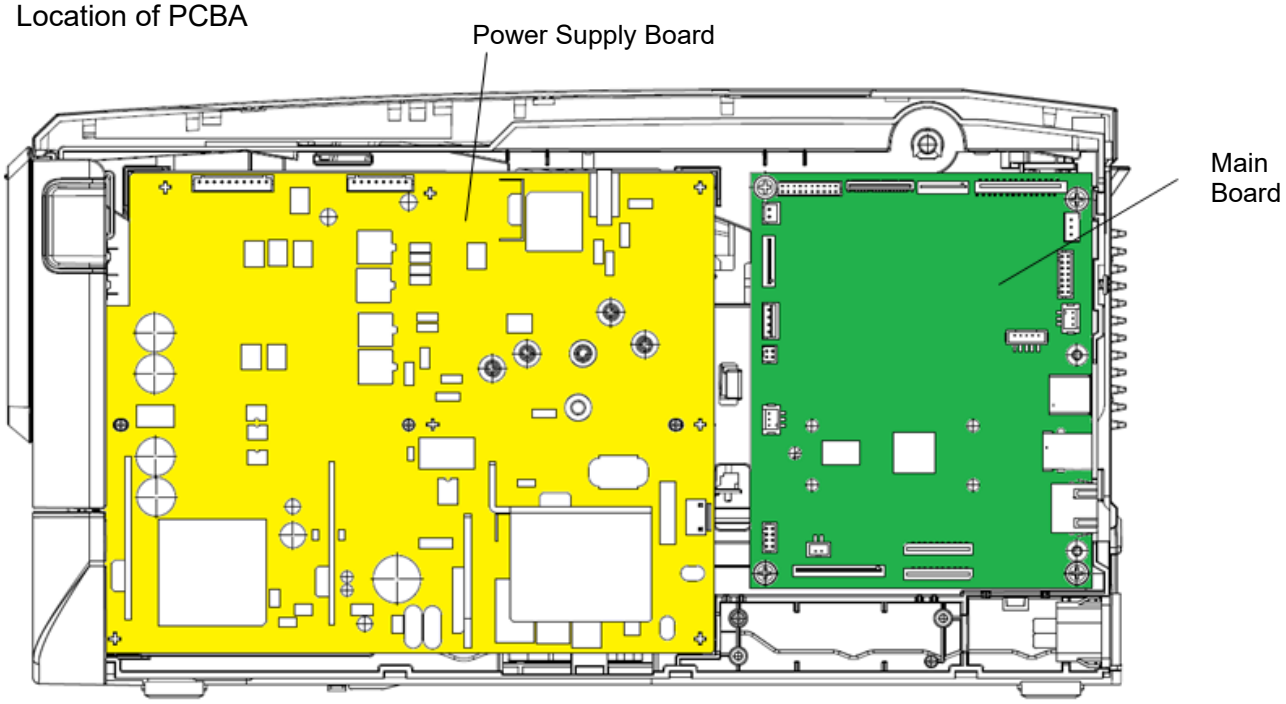


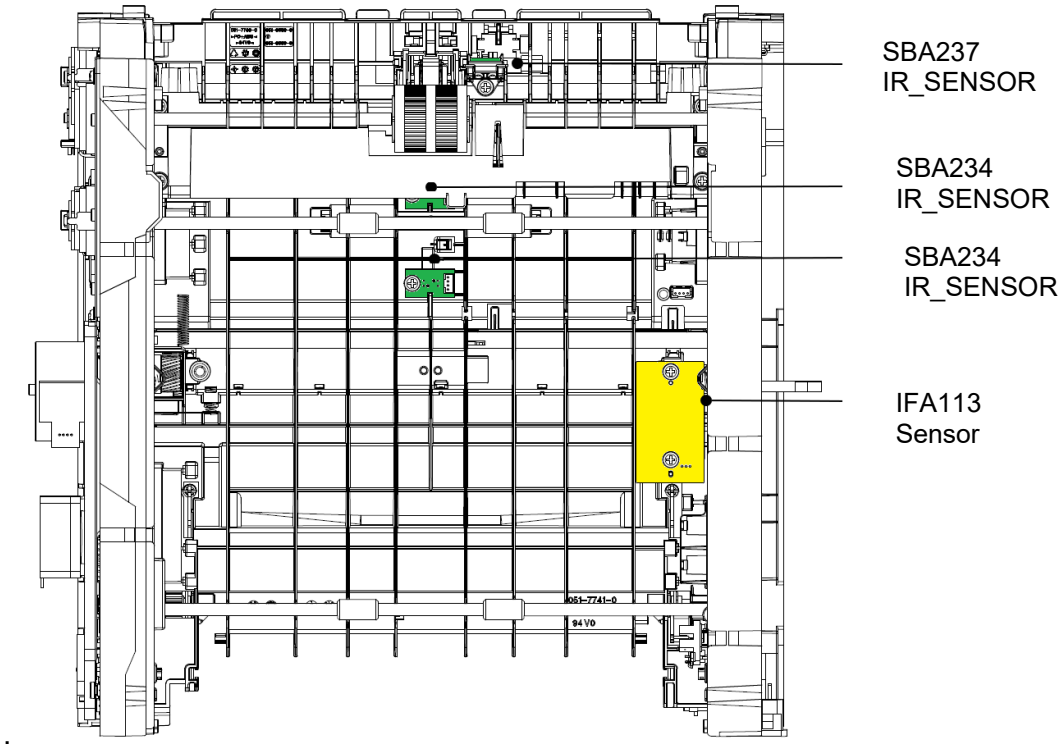
Fig. 1-1 Printing Path

1	PAPER EMPTY SENSOR(纸张耗尽传感器)	7	DUPLES SENSOR(双面传感器)
2	PAPER IN SENSOR(进纸传感器)	8	MANUAL PAPER IN SENSOR(手動进纸传感器)
3	DESKEW SENSOR(歪斜校正传感器)	*	DUPLEX MODULE(雙面打印單元)
4	REGISTRATION SENSOR(对位传感器)	*	MAIN TRAY(主要紙匣)
5	FUSER OUT SENSOR(定影出纸传感器)	*	MANUAL TRAY(手動進紙匣)
6	EXIT SENSOR (出纸传感器)		

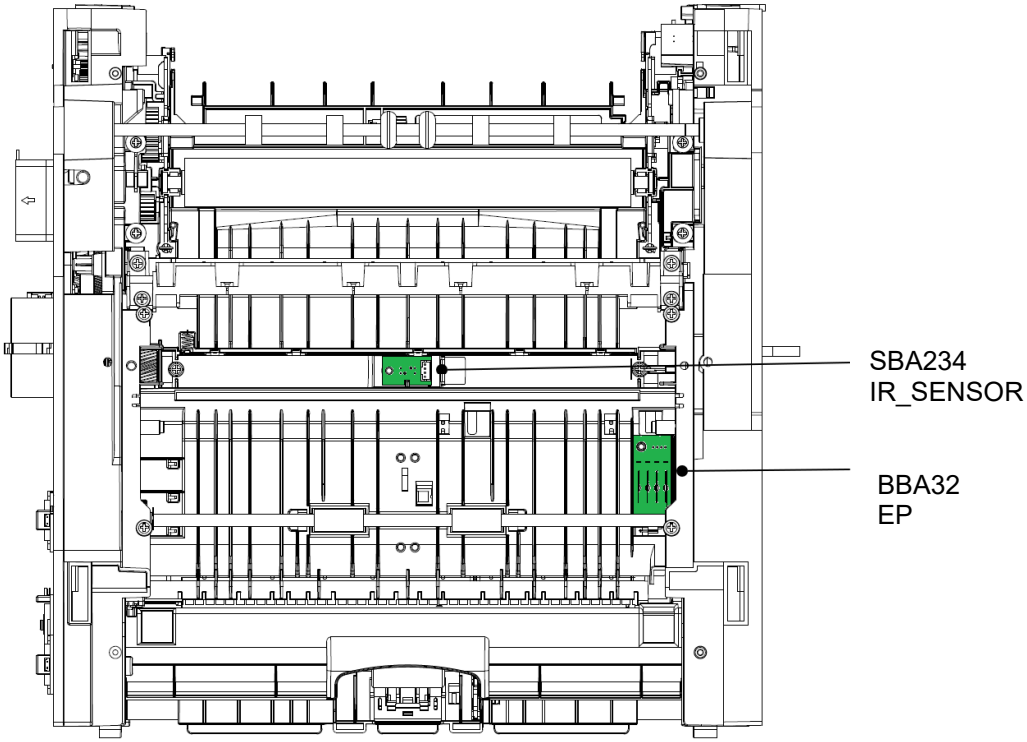
Confidential

■ Location of PCBA

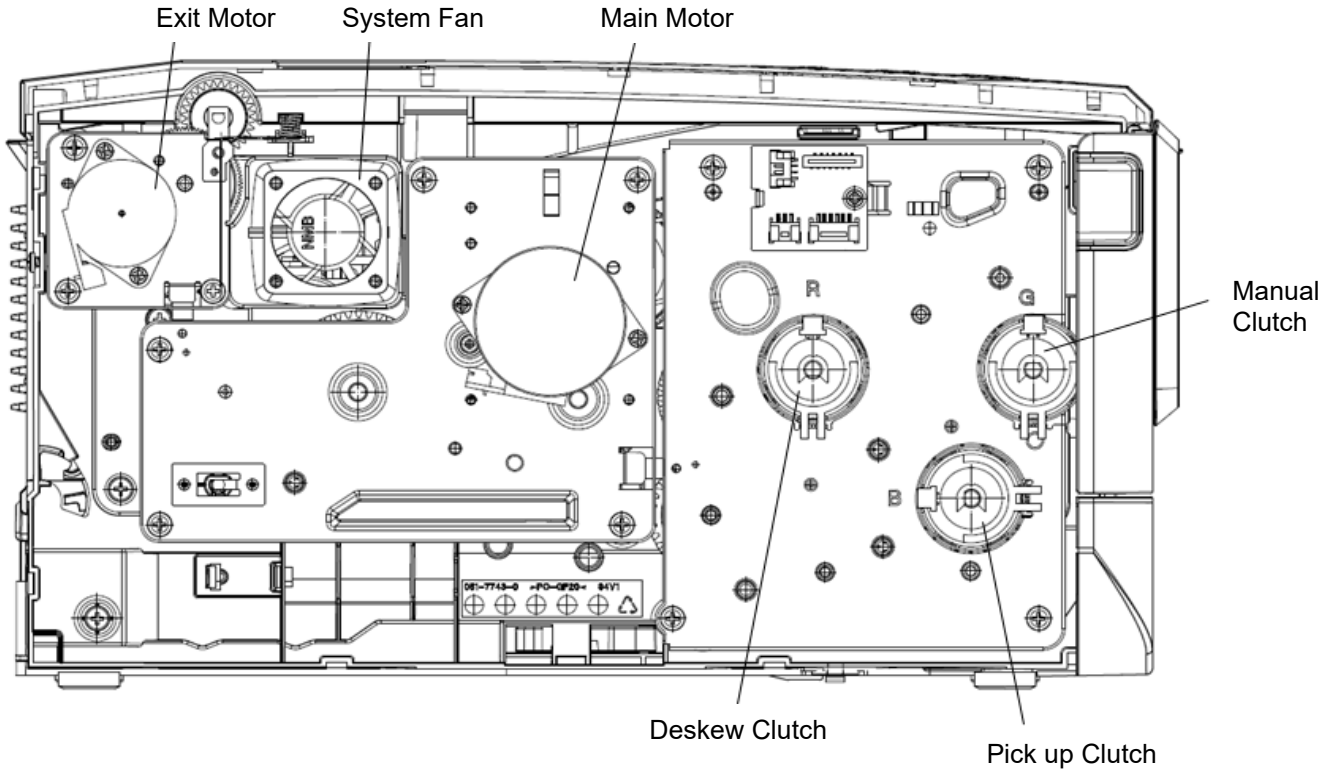




Confidential

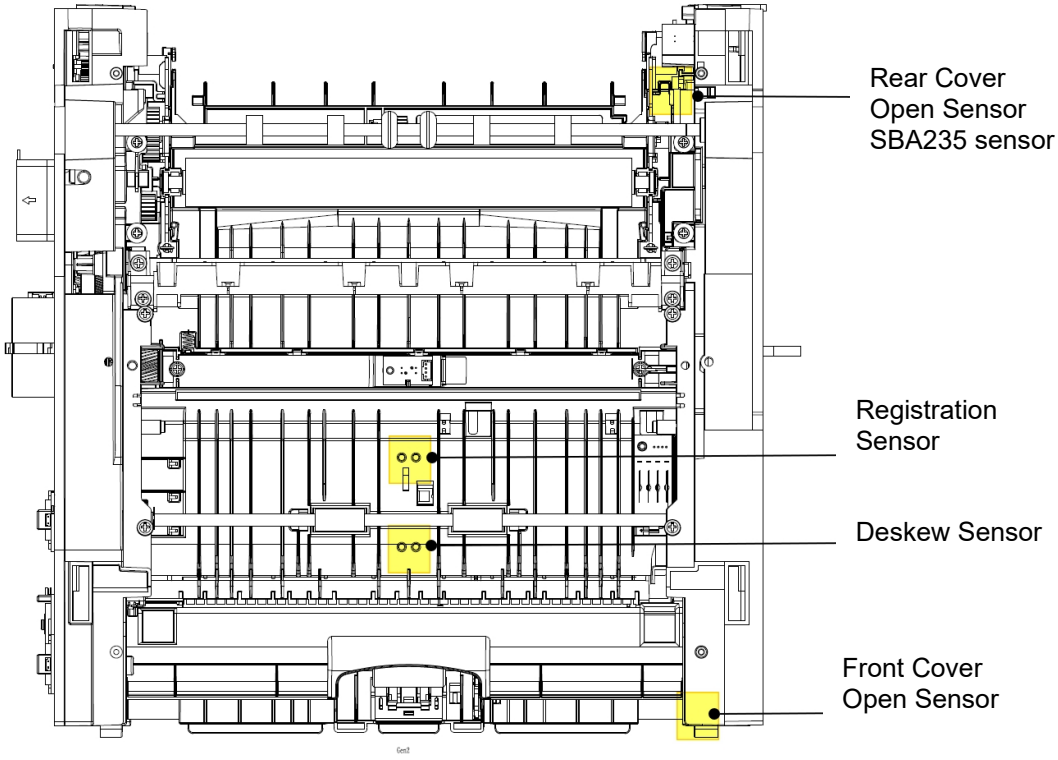


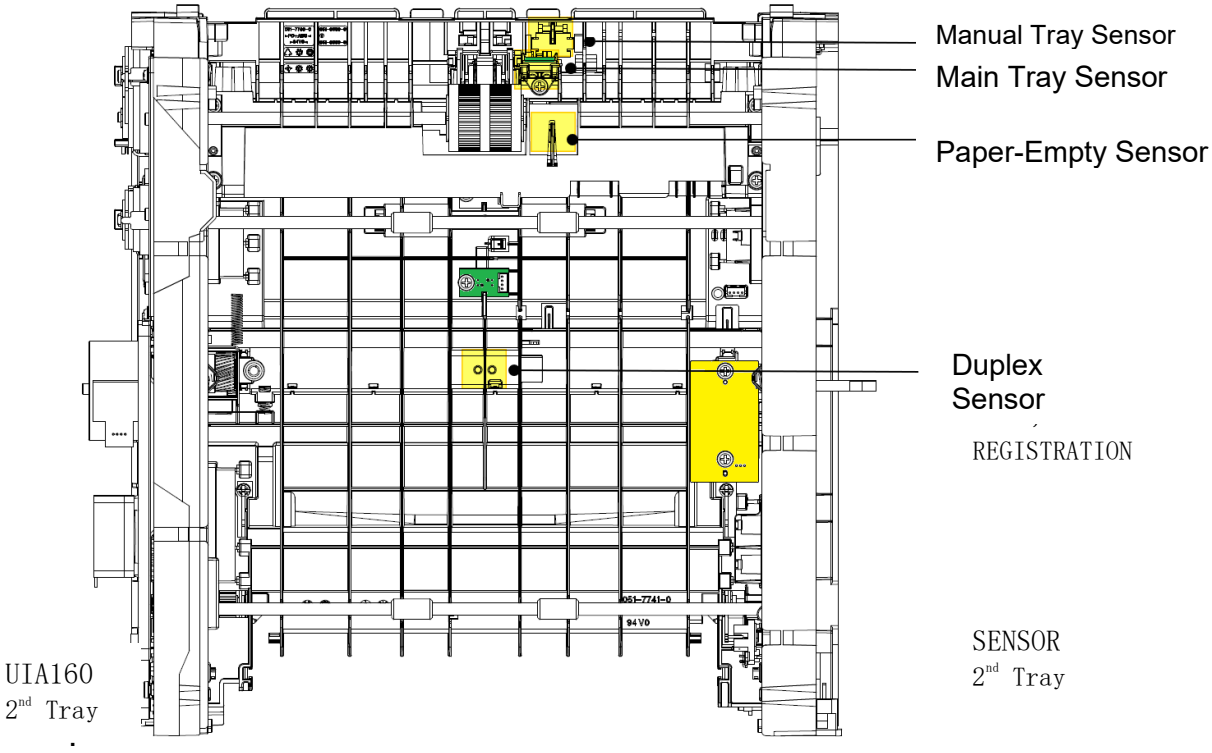
■ Location of Motor



Confidential

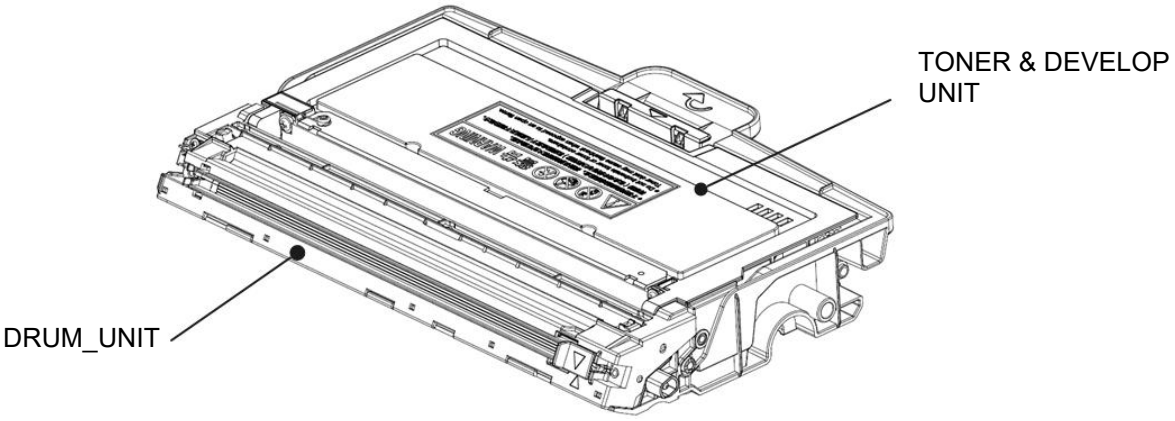
■ Location of sensors

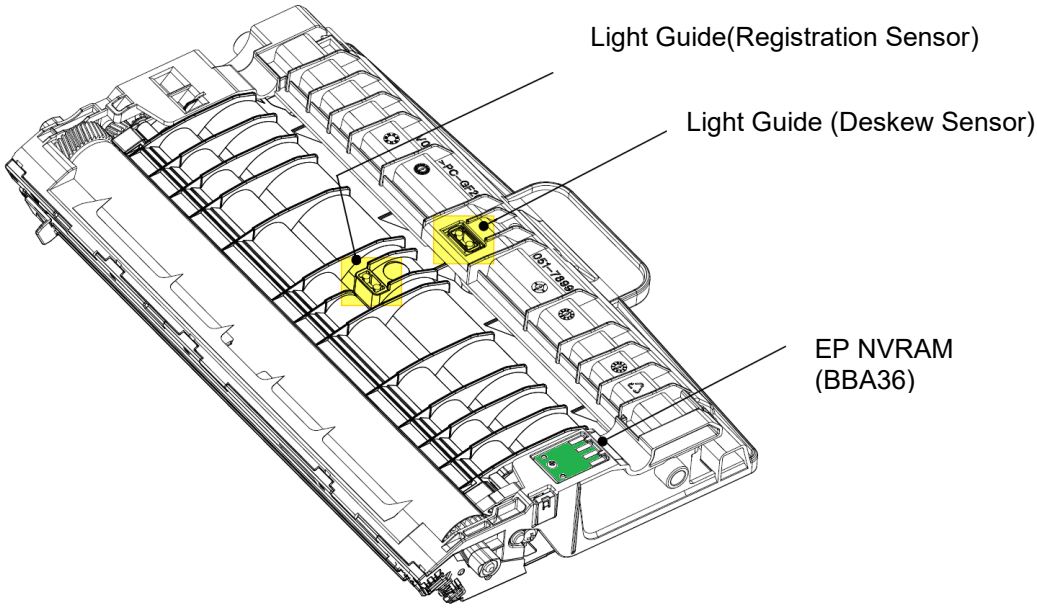




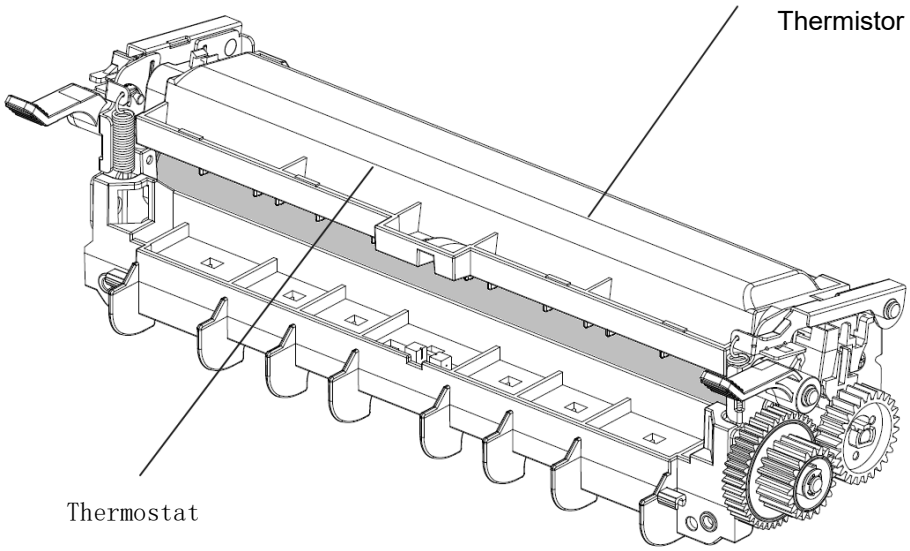
■ Drum Unit

Confidential





■ Fuser



1-2. Printing Material

1-2-1. Supported Paper Weight

1).Main Tray: 60g/m² - 105g/m²;

2).Manual Tray: 60g/m² - 163g/m²;

3).Duplex Printing: 60g/m² - 105g/m²;

1-2-2. Paper Capacity
1).Main Tray: Up to 250 sheets (70g/m²);

2).Manual Tray: Up to 50 sheets (70g/m²);

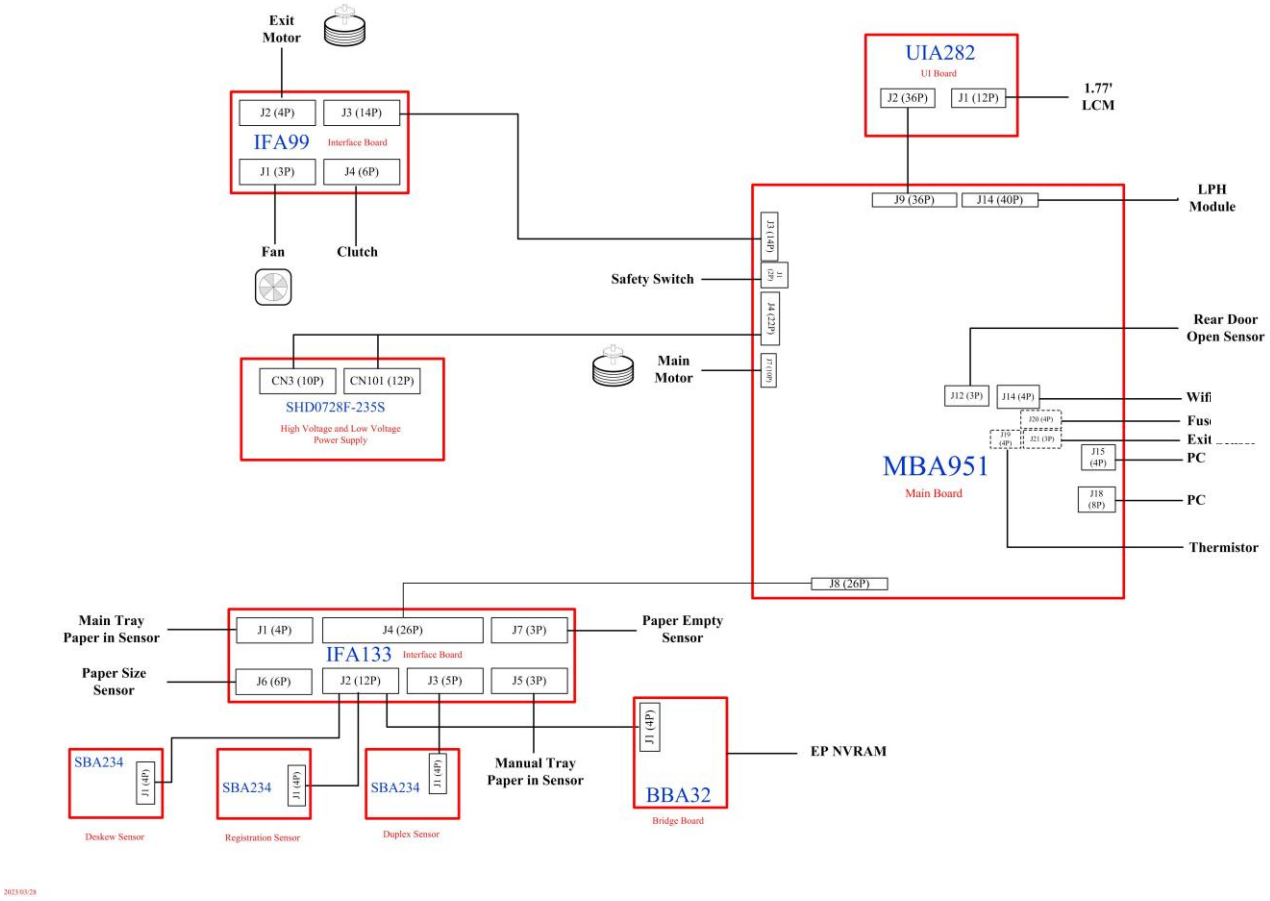
1-3 Paper Types that do no recommend:

Do not use the following types of paper:

■Professional paper for inkjet printers
■Adhesive ink special paper
■Bent, folded, or creased paper
■Curled or twisted paper
■Wrinkled paper
■Damp paper
■Dirty or torn paper
■Excessively dry paper prone to static electricity
■Pre-printed paper, other than paper with letterhead
■Special paper such as thermal paper and carbon paper
■Paper weight is heavier or lighter than the limit value
■Papers with windows, holes, perforations, patterns or embossments
■Adhesive label paper with adhesive paper or base paper on it
■Paper with clips or staples
■Envelope

Notice:
• Printing on improperly stored paper can also cause paper jams, poor print quality, or malfunction.
• If any of the above types of paper are used, the device may be damaged.

1-4 PCBA Connection Drawing



Chapter 2 Care and Maintenance

2.1 Notice before maintenance

In order to avoid secondary malfunction due to incorrect operation, the following warnings and precautions must be observed during the disassembly and reassembling of the equipment.

Warning

After using the equipment for a while, the temperature of some parts inside the equipment is very high! When opening the side door or the rear cover to repair parts inside the device, do not touch the parts shown in the high temperature mark.

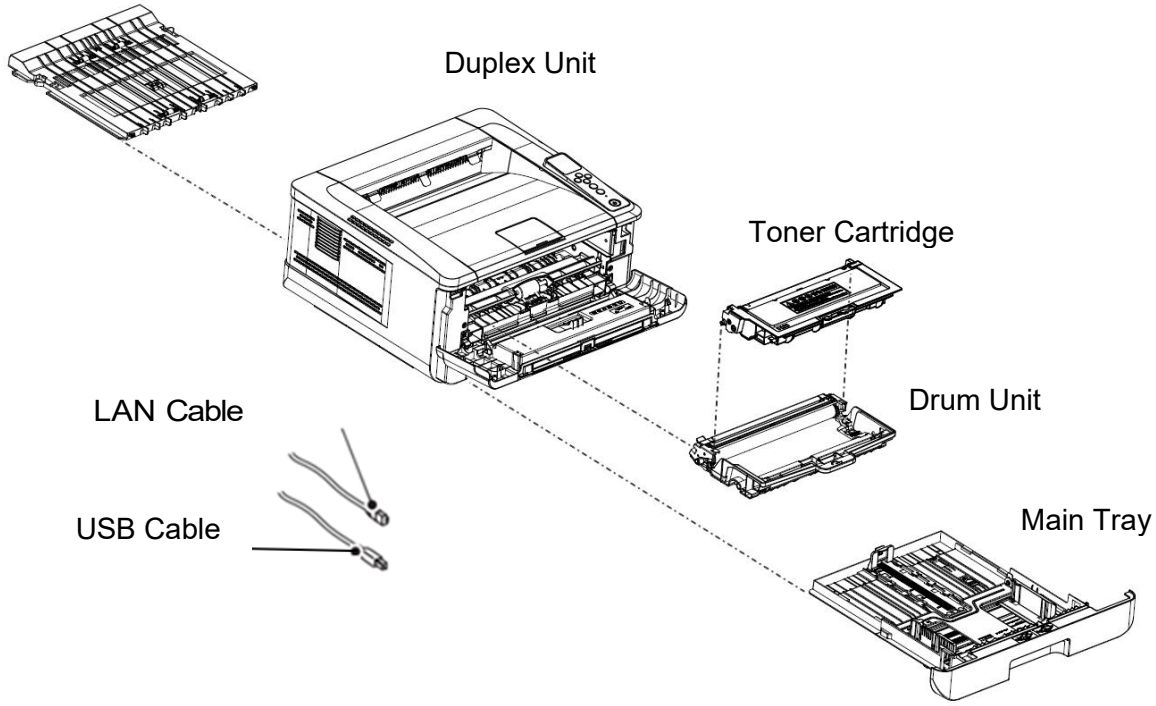
- Be careful not to lose the removed screws, washers and other parts.
- Be sure to apply grease to the parts specified in this chapter.
- When using an electric soldering iron or other heating tools, please be careful not to damage the wires, circuit boards, casings and other components made of synthetic resin.
- The static electricity charged by the human body may damage electronic components. Therefore, when transporting the circuit board, be sure to wrap the circuit board with conductive foil.
- When replacing circuit boards and all other parts with circuit boards, please wear a wrist strap for discharging static electricity and operate on an anti-static mat. In addition, please be careful not to touch the flat cable and the electrode conductor part of the wire.
- After unplugging the flat cable, be sure to check that the flat cable plug is in good condition and that the flat cable is not short-circuited.
- When inserting the flat cable, be sure to insert it straight, and check that the cable is not crooked after inserting it.
- When connecting or disconnecting the patch cord, do not hold the cable part but the connector part. If there is a lock on the connector, be sure to unlock the lock first.
- After repairing, please pay attention not only to check the repaired part, but also to check the connection of the patch cord. In addition, you need to check if other related parts are working properly.
- Do not close the front cover forcibly before installing the toner cartridge and drum unit, otherwise the machine may be damaged.
- After installation, it is recommended to conduct an insulation withstand voltage test and a conductivity test.
- Be careful not to damage the insulating sheet.
- When replacing the circuit board, be sure to check if there is any foreign matter on the component surface and soldering surface of the circuit board.

2.2 Preparation before Replacement

Disconnect power and remove key parts
Before performing replacement, do the following preparation:

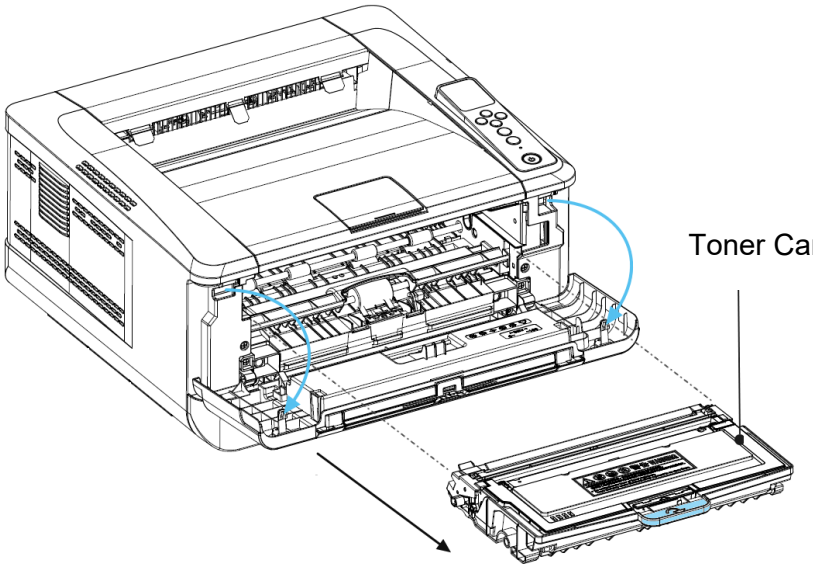
(1) Disconnect the following cables:
- USB cable (if connected)
- LAN cable (if connected)
- POWER cable (if connected)

(2) Remove the following parts:
- Paper Tray
- Toner Cartridge and Drum Unit

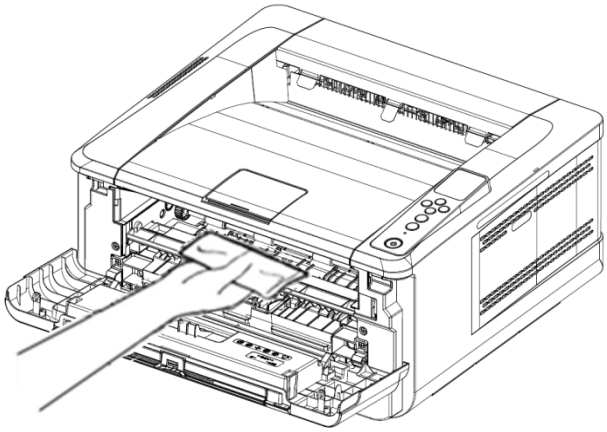


2.3 Cleaning the LPH/LSU Unit

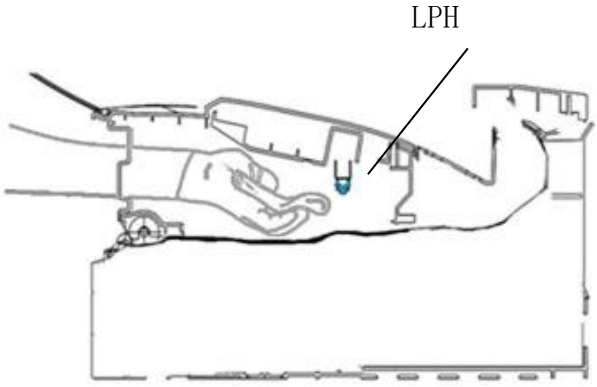
Prepare maintenance tool no. 11 (Refer to the maintenance tool list)
(1). Open the front cover and remove the drum unit as illustrated.

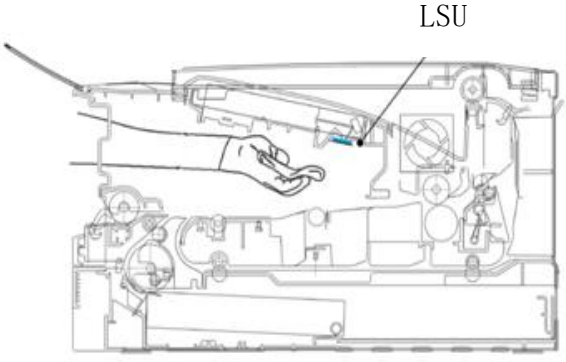


(2). Moisten a clean, soft cloth with 95% alcohol to clean the position marked in blue color of the LPH/LSU unit.



.





2.4 Regular Cleaning

Use a dry, lint-free cloth to clean the inside and outside of the printer regularly. When replacing the toner cartridge or drum unit, be sure to clean the inside of the printer. If the printed page is stained with toner, use a dry, lint-free cloth to clean the inside of the printer.

Important :
The basic cleaning of the drum unit and printer can be done by the users. Yet, the cleaning for the electronic parts inside the printer should be performed by the maintenance personnel. Inform the users do not touch these electrodes.

2.4.1 Cleaning the Inside of the Printer

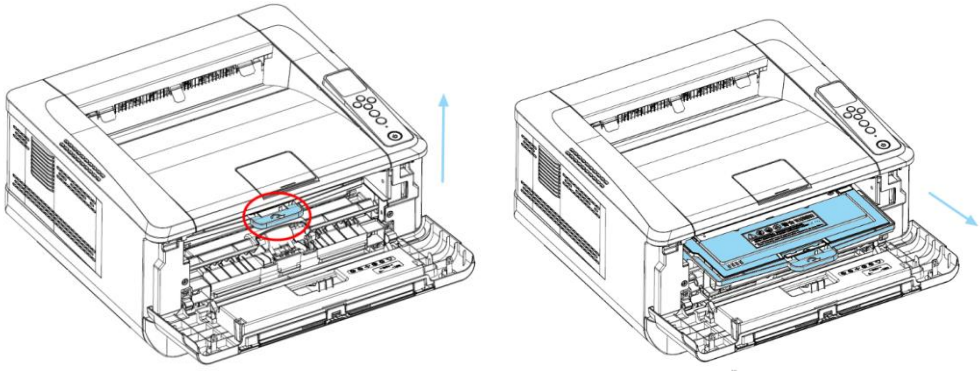
Follow the steps in below to clean the inside of the printer:
Turn off the printer, and unplug the power cable from the power outlet.
(1). Open the front cover of the printer.
(2). Remove the drum unit and toner cartridge assembly.
(3). Wipe the laser scanner window with a dry lint-free cloth.
(4). Install the toner cartridge/toner cartridge assembly back into the printer.
(5). Close the front cover of the printer.
(6). Plug the power cable to the power outlet, and then turn on the printer.

Important:
* Be careful as the drum unit contains toner. If toner gets on your hands or clothes, wipe it off immediately or scrub it with cold water.

* Do not touch the scanner window with your hands.

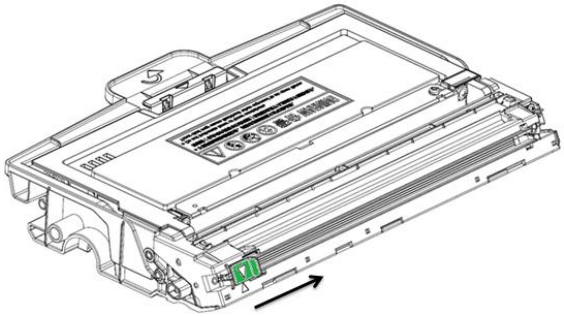
2.4.2 Cleaning the Corona Wire

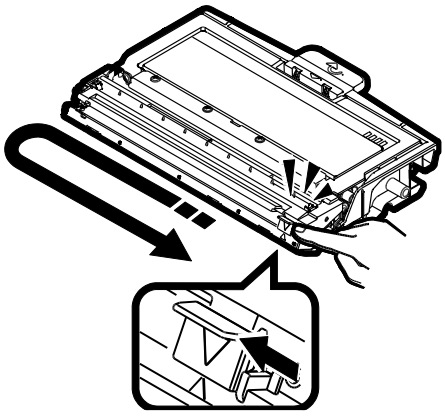
If you encounter the printing quality issues, please follow the steps in below to clean the corona wire.
(1). Turn off the power and unplug the power cord.
(2). Open the front cover of the printer.
(3). Lift up the handle of the toner cartridge assembly, and pull out the toner cartridge assembly.



(4). Clean the corona wire inside the drum unit by gently sliding the tab from left to right and right to left for several times. (After the toner cartridge has been used for a period of time, some amounts of toner may remain on the corona wire.)

Be sure to return the tab to the Home position (▲). The arrow on the tab must be aligned with the arrow on the drum unit. If it is not, printed pages may have a vertical stripe.





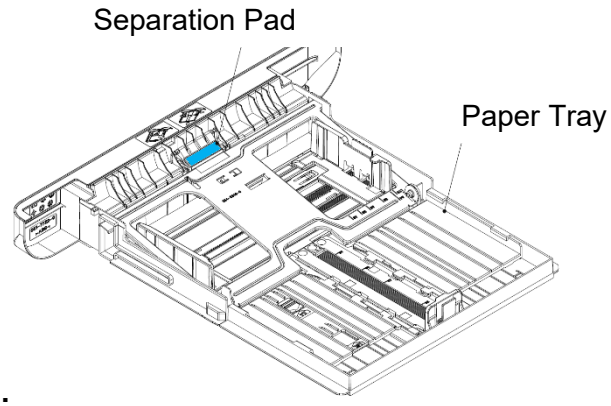
(5).Install the toner cartridge back to the printer.
(6).Close the front cover.

Note：

- The lifetime of the drum unit and toner cartridge depends on the amount of the print job. The lifetime is tested based on the "ISO/IEC 19752" paper. The frequency of replacement of the drum unit and toner cartridge varies according to the printed page, print coverage, and paper type used.
- Unless the toner cartridge has been replaced before end of lifetime, printing can not be continued. It is recommended to purchase the extra toner cartridge before the lifetime ends.
- The actual number of printable pages varies depending on the document contents, the number of pages to be printed at a time, the type and size of paper, and environmental conditions (such as temperature and humidity).
- Due to the deterioration of the quality of the toner cartridge with the extension of use time, it may need to be replaced before the relevant instructions appear.

2.4.3 Cleaning the Separation Pad in the Paper Tray

(1). Remove paper in the Paper Tray.
(2). Moisten a cotton swab with isopropyl alcohol (95%).
(3). Clean the rubber part of the pad.



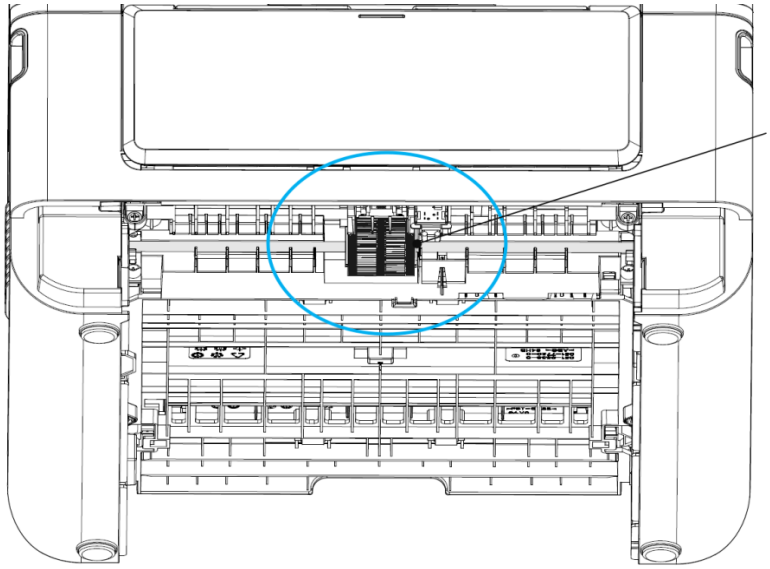
.

Note :
After cleaning the smeared Pad, dry it completely.

Confidential

2.4.4 Cleaning the Pick up Roller

(1). Remove the paper tray, and the drum unit and let the device stand on its side to reveal the bottom as indicated.
(2). Moisten a cotton swab with isopropyl alcohol (95%).
(3). Clean the rubber part of the roller.

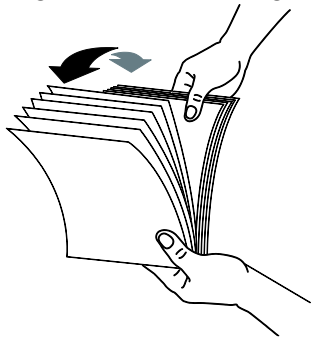


.

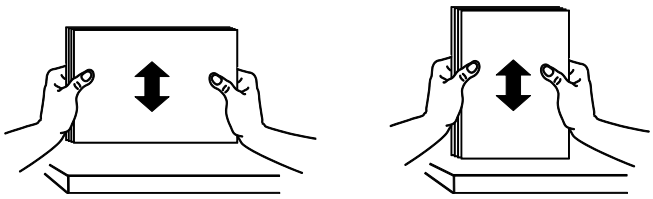
2.5 Loading Paper

2.5.1 Loading Paper into the Main Tray

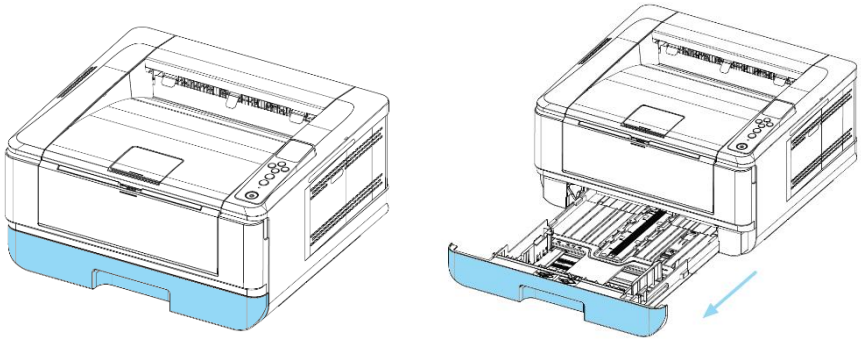
To insert paper to the main paper tray,
1）. Fan your paper first to ensure that the pages do not stick together.



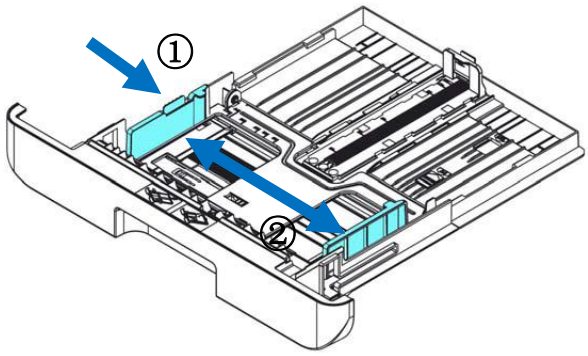
2）. Align the edges of the documents by tapping the bottom of the stack against the table top. Rotate the stack 90 degrees and repeat.



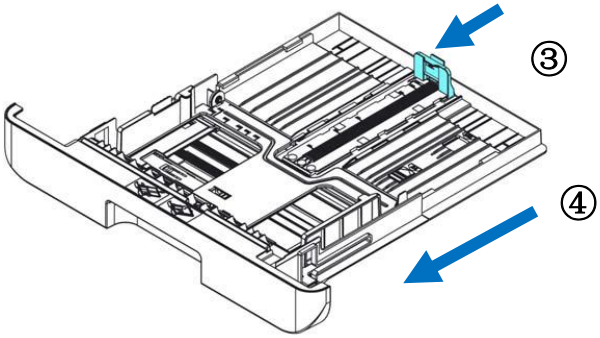
3）. Lift the handle of the main paper tray and then pull out the main tray.



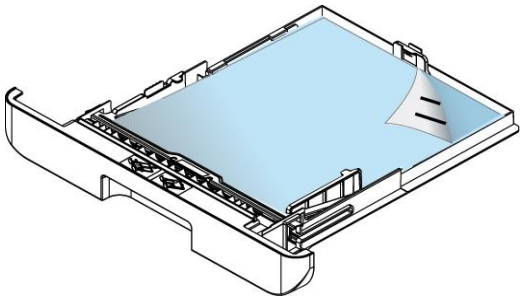
4). Push the width guide tab (①), and move the width guide (②)to the correct position for the paper size being loaded.



5）. Push the length guide (③), and slide the guide (④) to the correct position for the paper size being loaded.



6）. Load the paper stack with the **Printing Side Facing Down** as illustrated.



7）. Insert the tray to the printer.

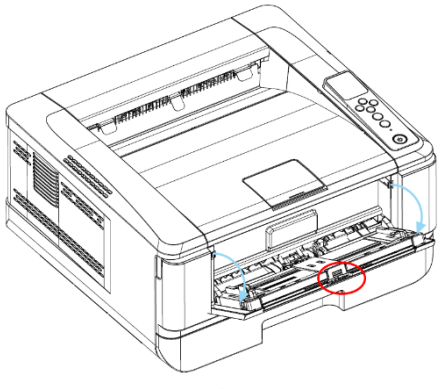
Confidential

Note：

- To ensure the best quality printing and copying, please use the paper or media which we have recommended.
- Make sure to fan your paper before loading it to the paper tray.
- If there are instructions about the printing side on the package of your paper, please follow the instructions to load your paper properly with the correct printing side to the paper tray.
- If the printing quality is not satisfactory or paper jams are easily to occur, turn over the paper stack so that the top page is now on bottom and then reload it to the paper tray.
- Pack and seal the remaining paper with the original packaging and store the paper in a dark and dry location away from the sunshine. Paper which collects much moisture is easy to cause jam during printing.

2.5.2 Loading Paper into the Manual Tray

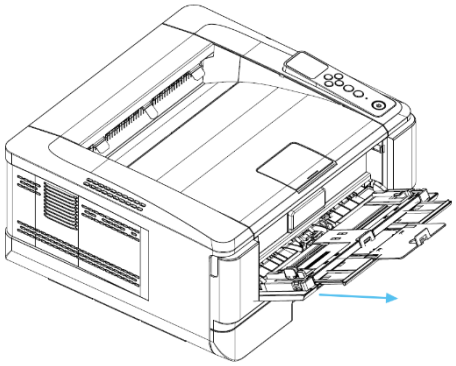
1). Repeat the preceding section 5.1 to fan to paper.
2). Hold the handle of the manual tray, and pull it down to open the manual tray。



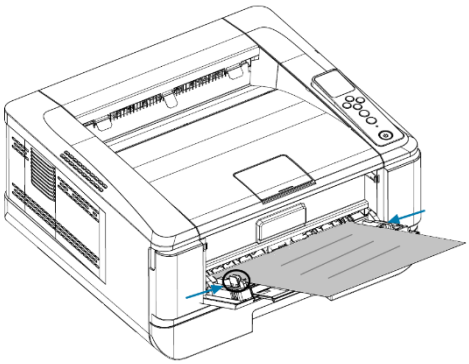
.

3). Pull out the tray extension to fit your desired paper length.

Confidential



4). Load the paper stack with the print side **Facing UP** as illustrated.
5). Slide the paper guides so that they lightly touch the paper stack.



Confidential

Chapter 3 Troubleshooting of Error Codes

3.1 Preparation

Before repairing the equipment, check the following items.
Operating Temperature:

(1) The equipment is placed in a flat and stable place.

(2) Use the equipment in a clean environment with a temperature of 10°C to 32°C and a relative humidity between 20% and 80%.

(3) The equipment is not exposed to direct sunlight, excessive heat, humidity, or dusty environment.

(4) When moving the device, please grasp the handle at the bottom of the device and lift the device from the front.

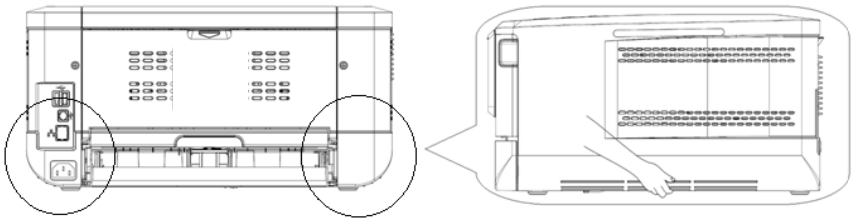


Figure **2-1**

Power:

(1) The power supply value meets the regulations on the equipment nameplate.

(2) The power supply voltage fluctuation range is within ±10% of the rated voltage.

(3) The input AC power is within the specified value.

(4) The cable and patch cord are connected correctly.

(5) The fuse is not blown.

Paper:

(1) Use recommended paper.

(2) The paper is not damp.

(3) No short grain or acid paper is used.

Consumables:

(1) Drum Unit (including Toner Cartridge) installed correctly.。

Other:

(1) Condensation

When the device moves from a cold place to a warm room, condensation may form inside the device, which may cause the following problems:

• When condensation occurs on the surface of optical components such as lenses, mirrors, and protective glass, the printed image may become lighter.

• If the temperature of the photosensitive drum is too low, the resistance of the photosensitive layer will increase, making it impossible to print with the correct print density.

• Condensation on the charging unit may cause corona charge leakage.

• Condensation on the bottom plate or separation pad may cause paper feeding problems.

If condensation has formed in the device, please leave the device for at least two hours until the device temperature rises to room temperature. If the drum unit is moved from a cold place

to a warm room, the package is immediately opened, the condensation that may be generated inside the unit can cause printing to fail. Please leave the drum unit for one to two hours until its temperature rises to room temperature before unpacking it.

(2) Low temperature

The drive may be overloaded in a low temperature environment and the motor cannot operate normally. In such cases, please increase the room temperature.

Cleaning: se a soft, lint-free cloth.

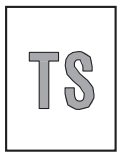
Warning

When cleaning the equipment, do not use any flammable sprays or those containing alcohol, light volatile oil, thin Solvents for flammable substances such as release agents. Do not use the above items near the equipment.

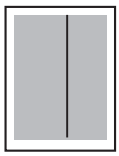


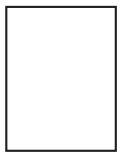
Confidential

3.2 Defect Image Illustration


Too light


White Vertical Line/Black Vertical Line




All White


Dirty


Dirty (rear side)


All Black


Vertical Line


Black/White Horizontal Line




Black Strips


Blur Printing


Blur Image

Roller Diameter

No.	Name of Roller	Diameter
1	Pickup Roller	102.8 mm
2	Transfer Roller(TR)	40mm
3	Drum(OPC)	75mm
4	Heating Roller(HR)	63.5mm
6	Developing Roller (DR)	33mm

Confidential

3.3 Troubleshooting of Defect Images

■ Too Light(partly)

TS

✓ User Check
(1) Check the operating environment. High temperature and high humidity or low temperature and low humidity conditions can cause this problem.
(2) Check if the Toner Cartridge has been correctly installed.
(3) Replaced the Toner Cartridge with a new one.

Step	Cause	Solution
1	Toner usage remains low.	Replace Toner Cartridge.
2	Toner Cartridge may not be correctly installed.	Install Toner Cartridge correctly.
3	Toner cartridge lifetime may not near end but transfer roller lifetime ends.	Replace transfer roller.

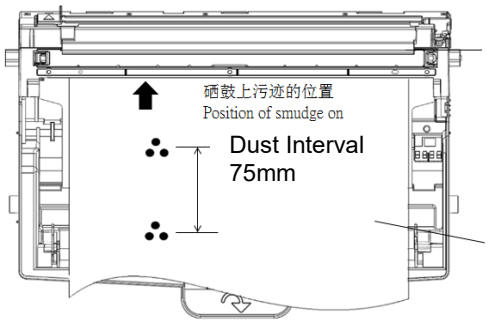
■ White Vertical Line

TS

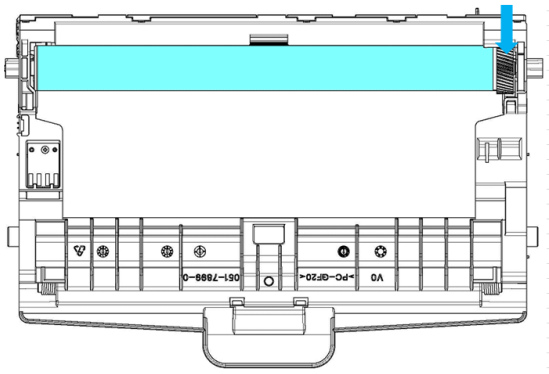
✓ User Check
(1)Clean corona wire of the Drum Unit.
(2)Clean the dust or powder on the roller of the Drum Unit. Refer to <Cleaning Method of the Drum Unit>.
(3)Check if there is trace on Toner Cartridge Roller.

Step	Cause	Solution
1	Dust or powder on the charger.	Clean the charger of the Drum unit.
2	Accumulated dust on the Drum unit.	Clean the drum unit or replace the drum unit with a new one. Refer to <Cleaning Method of the Drum unit>
3	LPH CABLE mal-function.	Replace LPH CABLE.
4	LPH malfunction.	Replace LPH.
5	Main board malfunction (Control Signal malfunction).	Replace main board.

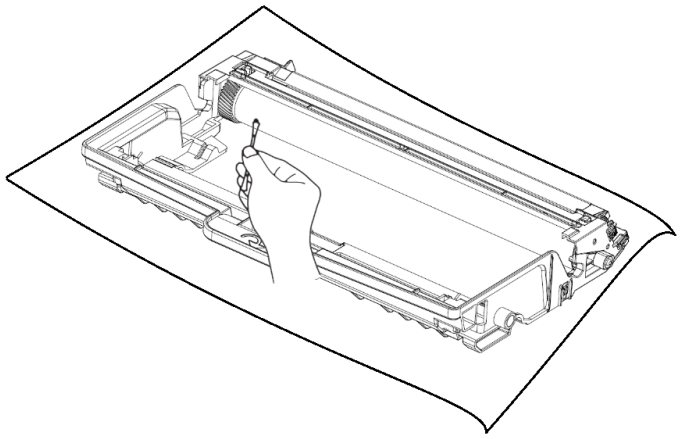
<Cleaning Method of the Drum Unit>(The actual drum unit used may be different from the one shown in the picture)
(1). Remove drum unit. Place the printing sample in front of the drum unit and find the location of the image defect.



(2). Use your hand to rotate the gear of the Drum Unit, turn the photosensitive side facing your.



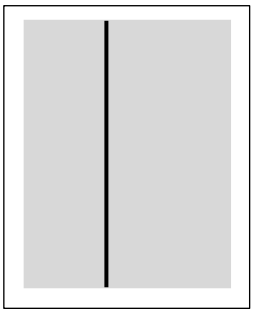
(3). If the position of the dirt on the drum is the same with the spot on the printed sample, please wipe off the dirt or paper dust on the photosensitive drum with a cotton swab.



Important:

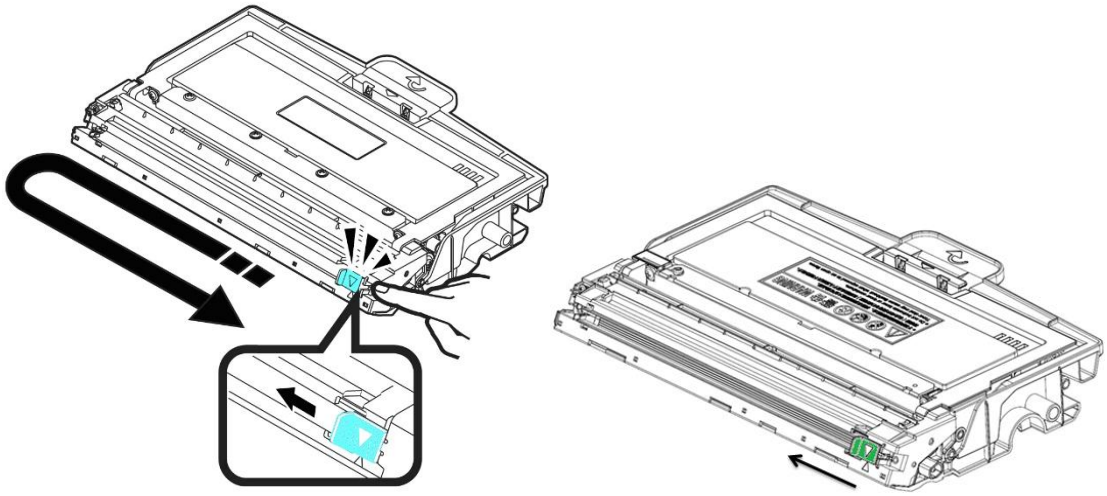
- Do not use pointed objects such as ballpoint pens to clean the surface of the photosensitive drum.
- Please clean with a mixture of ethanol and water (50%+50%).

■ Black Vertical Line



✓ User Check
(1) Clean the corona wire or the power grid of the drum unit.
(2) Refer to <Cleaning Method of the Drum Unit>，use a cotton swab to clear the dust on the drum unit.
(3) Replace a new drum unit.

Step	Cause	Solution
1	Corona wire has not been moved to the end during cleaning.	Clean again.
2	Dust or powder on the charger unit.	Clean the charger of the drum unit. Refer to the following Cleaning Method of the Corona Wire.
3	Fuser unit malfunction(heating rollers scratch)	Replace fuser unit.



<Cleaning Method of Colona Wire>, Slide the corona wire to the end and then back to the original place. Repeat this for at least 3 times.

■ Dirty Background



✓ User Check
(1) The problem may disappear after printing a few pages.
(2) The drum unit may be damaged. Install a new one.
(3) There is dirt on the paper path. Wipe off the dirt.

Step	Cause	Solution
1	There is dirt on the paper path.	Wipe off the dirt. Refer to < The Spacing of Various Rollers in the Image >Table
2	There is dirt on the heating roller of the fuser.	Replace the fuser unit.
3	There is dirt on the surface of the OPC or the drum is damaged.	Replace the drum unit.

Refer to < The Spacing of Various Rollers in the Image >Table

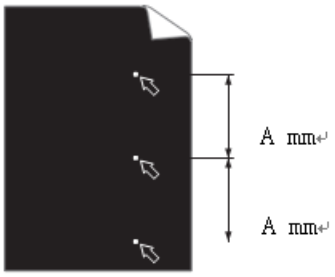
Important:
Periodic image defects may be caused by defects of various rollers. Please refer to the table below to determine the cause of the defect based on the diameter of various rollers or the spacing in the image.

<The Spacing of Various Rollers in the Image >

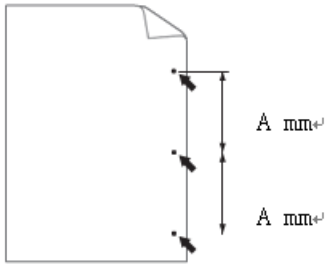
Component name	Spacing in the Image
Developing Roller(DR)	33mm
Drum Unit(OPC)	75mm
Heating Roller(HR)	63.5mm

Confidential

<Example of Image Defects> , Value of A: Refer to < The Spacing of Various Rollers in the Image >Table



Periodical white spots in A mm interval
On a black page



Periodical black spots in A mm interval
on a white page

■ Dirt on the rear side

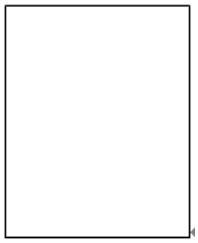


✓ User Check
(1)This problem may be solved after printing a few pages.
(2)There is dirt on the paper path. Wipe off the dirt.

Step	Cause	Solution
1	There is dirt on the paper path.	Wipe off the dirt. Refer to < The Spacing of Various Rollers in the Image >Table
2	Dirt on the Transfer Roller	Wipe off the dirt. Refer to < The Spacing of Various Rollers in the Image >Table
3	Dirt on the Pressure Roller (PR)	Replace the fuser.

Refer to < The Spacing of Various Rollers in the Image >Table

■ Blank Page



✓ User Check
(1) Replace the developing unit.
(2) Replace the drum unit.

Step	Cause	Solution
1	There is dirt on the electrode contacting the drum unit.	Clean the device and the electrode contacting the drum unit.
2	LPH malfunction.	Replace LPH unit.
3	Main board malfunction	Replace the main board.
4	No conducting between the device and OPC in the drum unit.	Replace high voltage board.

➢ <Step 1>,<Step 2>, use a three-purpose meter to check:

Possible Cause	Step	Check	Result	Action
Drum unit poor grounding	1	If it conducting between the drum unit and the high voltage	Yes	Replace the drum unit.
	2	If it conducting between the drum unit and the high voltage	No	Replace the high voltage board.

■ A Black Image



✓ User Check
(1) If the charger unit is correctly installed.
(2) Replace the charger unit.

Step	Cause	Solution
1	Charger malfunction or corona wire broken.	Replace the drum unit.
2	Dirt on the electrode between the corona wire and the high voltage board.	Clean the electrode between the corona wire and high voltage board.
3	HVPS malfunction	Replace high voltage board.
4	Main board malfunction	Replace the main board.

■ A Blur Image



✓ User Check
(1) If the printer has been evenly positioned.
(2) Reinstalled the drum unit.
(3) Replace the drum unit.

Step	Cause	Solution
1	DRUM unit positioning tab broken	Replace drum unit.
2	LPH out of focus	Check if the LPH grounding wire is in good order; Check if the LPH positioning post is worn or broken.

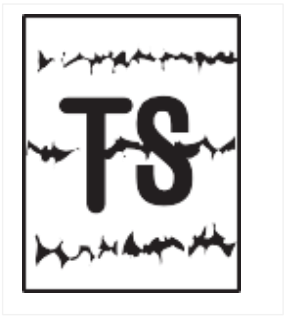
■ A White Horizontal Line



✓ User Check
(1) The problem could be disappeared after printing a few pages.
(2) Replace a new drum unit.

Step	Cause	Solution
1	The ground spring of the Drum unit defective.	Replace the drum unit.
2	Developing unit has been stored for a long time.	The problem may be disappeared after printing a few pages or try to clean the surface of the OPC of the drum unit.

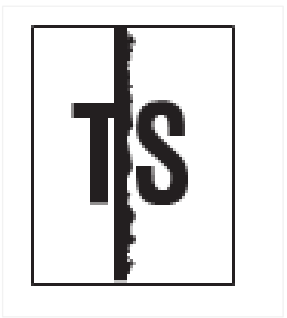
■ Black Horizontal Lines



✓ User Check
(1) Clean the corona wire on the drum unit.
(2) This problem will disappear after printing for a few pages.
(3) Wipe off the dirt on the drum unit with a cotton swab, refer to <Cleaning Method of the Drum Unit>
(4) Replace the drum unit.

Step	Cause	Solution
1	Scratches or dirt on the fuser.	Replace the fuser.
2	Scratches or dirt on the drum unit.	Replace the drum unit or clean the surface of the drum unit.

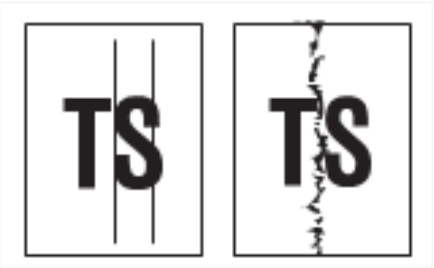
■ Black Strape



✓ User Check
(1) Clean the corona wire on the drum unit.
(2) Slide the corona wire back to the position marked "▲".
(3) This problem will disappear after printing for a few pages.
(4) Wipe off the dirt on the drum unit with a cotton swab, refer to <Cleaning Method of the Drum Unit>.
(5) Replace the drum unit.

Step	Cause	Solution
1	Dirt on the charger.	Clean the electrode between the device and the drum unit.
2	Dirt on the OPC of the drum unit.	Clean the OPC of the drum unit or replace the drum unit.
3	Toner remains on the paper path.	Clean paper path.

■ Vertical Lines



✓ User Check
(1). Clean the corona wire on the drum unit.
(2). Slide the corona wire back to the position marked "▲".
(3). This problem will disappear after printing for a few pages.
(4). Wipe off the dirt on the drum unit with a cotton swab, refer to <Cleaning Method of the Drum Unit>.
(5). Replace the drum unit.

Step	Cause	Solution
1	Dirts on the paper path.	Wipe off the dirts.
2	Dirts on the charger.	Clean the charger of the drum unit.
3	Scratches or dirts on the fuser.	Replace the fuser.
4	Toner Cartridge lifetime ends	Replace toner cartridge.
5	LPH malfunction.	Replace LPH.

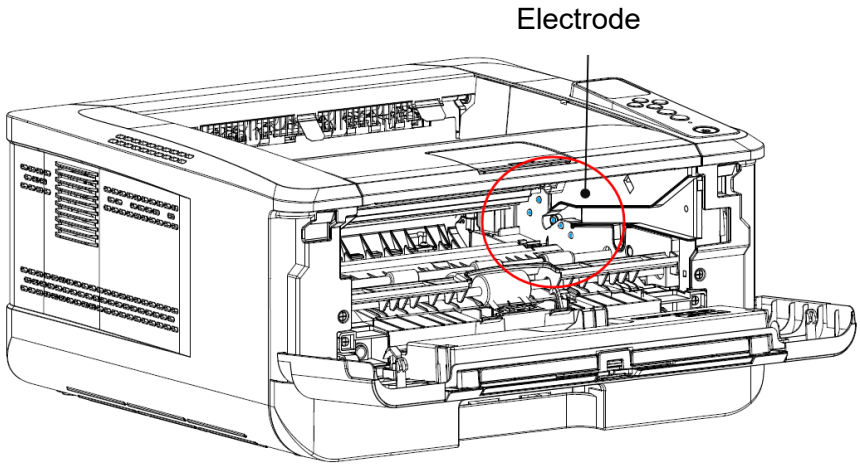
■ Blur Image



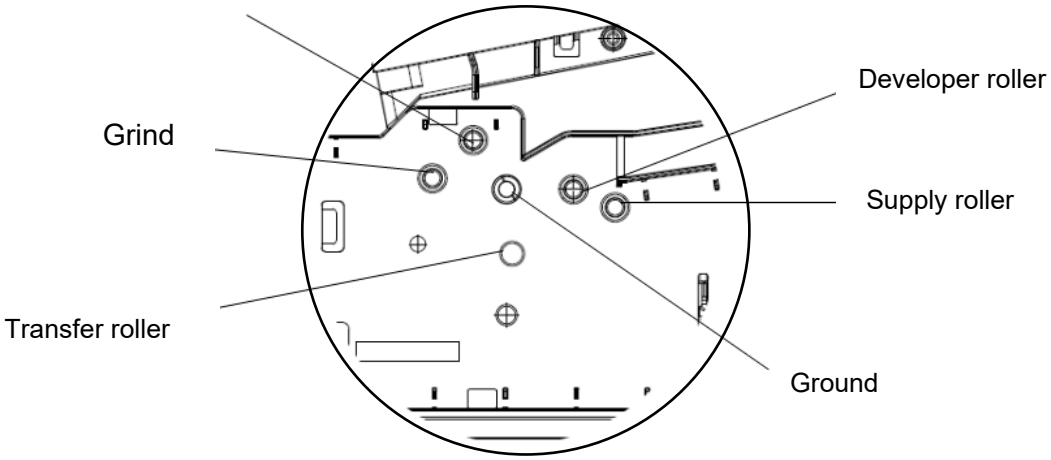
✓ User Check
(1) Check the operational environment. High or low temperature could cause this problem.
(2) Check if the paper is dampened.
(3) Replace Toner Cartridge.

Step	Cause	Solution
1	Toner remains low	Replace toner cartridge.
2	LPH position not good	Check if LPH is working OK, arrange the LPH ground cables; or replace drum if drum is damaged.

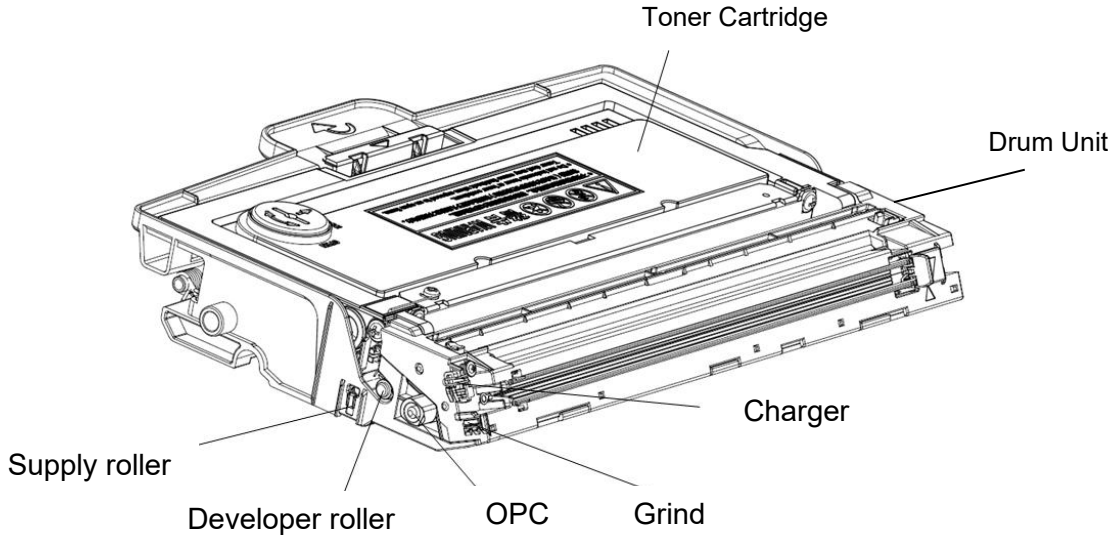
3.4 Electrode on the device



Confidential



3.5 Electrode on Drum Unit



3.6 Errors and Solutions

■ Error Code (201610)

Restart the device. Error in LPH. LPH FFC cable may not install well or is damaged.

< User Check >

(1)Restart printer.

Step	Cause	Solution
1	LPH activation abnormal	Reassemble the LPH FFC or replace LPH FFC.

■ Error Code (205101)

eEngError_HiVChargerError：Image error caused by abnormal charge of the drum unit.

< User Check >

(1) Slide the green tab of the drum unit to and fro for 2 or 3 times to clean the corona wire.
(2) Clean several contact points of the drum unit.
(3) Replace a drum unit.

Step	Cause	Solution
1	Corona wire contaminated.	Clean the corona wire.
2	Corona wire broken	Replace the drum unit.
3	High voltage board hit by strong current	Replace the high voltage board.

■ Paperjam Error (200301)

Printer Paper Jam(01)：Load paper from manual tray but fails to pick paper.

< User Check >

(1) Check if paper is correctly loaded into the manual tray.
(2) Open front cover and remove the drum unit to remove paper.
(3) Check if the paper has been removed.

Step	Cause	Solution
1	Paper not flattened.	Replace the paper or flatten the paper.
2	Feeding rollers and separation pad contaminated.	Regularly clean pad and rollers.
3	IFA99 Cable not connect well	Connect IFA99 cable correctly.
4	Pickup roller clutch failed.	Replace the clutch.
5	IF113 board defective	Replace the IF113 board.
6	Main board defective	Replace the main board.

■ Paperjam Error(200302)

Printer Paper Jam(02): Load paper from main tray but fails to pick paper. Paper stuck in paper tray.

< User Check >

(1) Check if paper is correctly loaded into the paper tray.
(2) Open front cover and remove the drum unit to remove paper.
(3) Check if the paper has been removed.

Step	Cause	Solution
1	Dirt on the pick up roller or Separation Pad.	Clean pickup roller and pad.
2	SB237 Cable not connect well	Reconnect the cable.

3	Main motor cable loosen.	Reconnect the cable.
4	IFA99 &IF113 Cable not connect well.	Reconnect the cable.
5	Feeding roller clutch failed.	Replace the clutch.
6	Paper feeding sensor failed.	Replace the feeding sensor.
7	Pickup roller clutch failed.	Replace the clutch.
8	Main motor failed.	Replace the main motor.
9	IF113 board defective	Replace the IF113 board.
10	Main board defective	Replace the main board.

- Check step: Check paper path and sensors (Refer to Sensor Setting information check)。

■ **Paperjam Error(200324)**

Printer Paper Jam(03) Load paper from main tray and paper jammed at feeding sensor.

< User Check >

(1) Open front cover and remove the drum unit to remove the jammed paper.
(2) Check paper path.
(3) Check if the light guide of the drum unit is contaminated.

Step	Cause	Solution
1	Light guide of the drum contaminated.	Clean the light guide.
2	Deskew sensor Cable loosen.	Reconnect the cable.
3	Deskew sensor board malfunctioned.	Replace the deskew sensor board.
4	IF113 board cable loosen.	Reconnect the cable.
5	Main board malfunctioned.	Replace the main board.

- Check step: Check paper path and sensors (Refer to Sensor Setting information check).

■ **Paperjam Error (200325)**

Printer Paper Jam(04) Load paper from the main tray and paper jammed between feeding sensor and deskew sensor.

< User Check >

(1) Open front cover and remove the drum unit to remove the jammed paper.
(2) Check paper path.

Step	Cause	Solution
1	Foreign objects on the paper path.	Clean the paper path.
2	IF113 board failed.	Replace the IF113 board.
3	Main board malfunctioned.	Replace the main board.

- Check step: Check paper path and sensors (Refer to Sensor Setting information check).

■ **Paperjam Error (200326)**

Printer Paper Jam(05) Paper jammed near the deskew sensor.

< User Check >

(1) Open front cover and remove the drum unit to remove the jammed paper.
(2) Check paper path.

Step	Cause	Solution
	Deskew sensor contaminated.	Clean the deskew sensor.
1	Deskew roller clutch cable loose.	Reconnect the cable.
2	IFA99 &IF113Cbale loose.	Reconnect the cable.
3	Registration roller cable loose.	Reconnect the cable.

4	Deskew roller clutch failed.	Replace the deskew roller clutch.
5	Deskew sensor failed.	Replace the SBA237 board.
6	IFA99 board failed.	Replace the IFA99 board.
7	IF113 board failed.	Replace the IF113 board.
8	Main board malfunctioned.	Replace the main board.

- Check step: Check paper path and sensors (Refer to Sensor Setting information check).

■ Paperjam Error(200327)

Printer Paper Jam(06) Paper jammed between deskew sensor and registration sensor.

< User Check >

(1) Please open front cover and remove drum unit to remove the jammed paper.
(2) Check paper path.

Step	Cause	Solution
1	Foreign objects on the paper path.	Clean the paper path.
2	IF113 board failed.	Replace the IF113 board.
3	Main board malfunctioned.	Replace the main board.

- Check step: Check paper path and sensors (Refer to Sensor Setting information check).

■ Paperjam Error (200328)

Printer Paper Jam(07) Paper jammed near the registration sensor.

< User Check >

(1) Open front cover and remove drum to remove the jammed paper.
(2) Check if there is any foreign object on the paper path.
(3) Check if the light guide of the drum is contaminated.

Step	Cause	Solution
1	Registration sensor contaminated.	Clean the registration sensor.
2	Registration sensor failed.	Replace the SBA237.
3	Exit sensor cable of the fuser loose.	Reconnect the cable.
4	Main board malfunctioned.	Replace the main board.
5	IF113 board failed.	Replace the IF113 board.

- Check step: Check paper path and sensors (Refer to Sensor Setting information check).

■ Paperjam Error (200329)

Printer Paper Jam(08) Paper jammed between registration sensor and exit sensor of fuser.

< User Check >

(1) Open front cover to remove the jammed paper.
(2) Check paper path.

Step	Cause	Solution
1	Foreign objects on the paper path.	Clean the paper path.
2	Main board malfunctioned.	Replace the main board.
3	IF113 board failed.	Replace the IF113 board.

- Check step: Check paper path and sensors (Refer to Sensor Setting information check).

■ Paperjam Error(200330)

Printer Paper Jam(09) Paper is jammed at the Exit Sensor of the Fuser.

< User Check >

(1) Open front cover and remove the jammed paper.
(2) Check paper path.

Step	Cause	Solution
1	Exit sensor of the fuser is loose.	Reconnect the cable.
2	Rear cover open sensor cable is loose.	Reconnect the cable.
3	Exit sensor of the fuser failed.	Replace the exit sensor.
4	Rear cover open sensor cable is loose.	Reconnect the cable.
5	Main board malfunctioned	Replace the main board.
6	IF113 board failed.	Replace the IF113 board.

- Check step: Check paper path and sensors (Refer to Sensor Setting information check).

■ Paperjam Error(200331)

Printer Paper Jam(10) Paper is jammed between Exist Sensor of Fuser and Exit Sensor.

< User Check >

(1). Open front cover and remove the jammed paper.

(2). Check paper path.

Step	Cause	Solution
1	Foreign objects on the paper path.	Clean the paper path.
2	Main board malfunctioned.	Replace the main board.

- Check step: Check paper path and sensors (Refer to Sensor Setting information check)

■ Paperjam Error(200332)

Printer Paper Jam(11) Paper is jammed at the Exit Sensor.

< User Check >

(1) Open the rear cover to remove the jammed paper.

(2) Check paper path.

(3) Check the exit sensor.

Step	Cause	Solution
1	Foreign objects on the paper path.	Clean the paper path.
2	Exit sensor cable is loose.	Reconnect the cable.
3	Spring of the exit sensor failed due to foreign objects.	Replace the exit sensor.
4	IF113 board failed.	Replace the IF113.
5	Main board malfunctioned.	Replace the main board.

- Check step: Check paper path and sensors (Refer to Sensor Setting information check)

■ Paperjam Error(200333)

Printer Paper Jam(12) Paper is jammed between Exit Sensor and Duplex sensor.

< User Check >

(1) Open the rear cover to remove the jammed paper.

(2) Check paper path.

Step	Cause	Solution
1	Foreign objects on the paper path.	Clean the paper path.
2	Main board malfunctioned.	Replace the main board.

- Check step: Check paper path and sensors (Refer to Sensor Setting information check)

■ Paperjam Error(200334)

Printer Paper Jam(13) Paper is jammed in the Duplex Sensor.

< User Check >

(1) Open the Duplex Unit to remove the jammed paper.

(2) Check paper path.

Step	Cause	Solution
1	Foreign objects on the paper path.	Clean the paper path.
2	Duplex sensor is contaminated.	Clean the duplex sensor.
3	Duplex roller failed.	Replace the duplex unit.
4	Main board malfunctioned.	Replace the main board.

➢ Check step: Check paper path and sensors (Refer to Sensor Setting information check)

■ Paperjam Error(200335)

Printer Paper Jam(14) Paper is jammed between Duplex Sensor and Deskew Sensor.

< User Check >

(1) Open the Duplex Unit to remove the jammed paper.

(2) Check paper path.

Step	Cause	Solution
1	Foreign objects on the paper path.	Clean the paper path.
2	IF113 board failed.	Replace the IF113 board.
3	Main board malfunctioned.	Replace the main board.

➢ Check step: Check paper path and sensors (Refer to Sensor Setting information check)

■ Fuser Error (201607)

Temperature difference between the center and the two sides of the lamp over 40 degrees.

< User Check >

(1) Turn off power and then turn on.

(2) Turn off the power.

Step	Cause	Solution
1	Operating temperature too low.	Change the operating temperature and restart the printer.
2	Used voltage too low	Check power and avoid using overloaded electrical appliances on the same line.

■ Fuser Error (201616)

Fuser heating from ready to printing exceeds 20 seconds.

< User Check >

(1) Turn off power and then turn on.

(2) Turn off the power.

Step	Cause	Solution
1	Used voltage too low	Check power and avoid using overloaded electrical appliances on the same line.
2	Thermistor failed.	Replace the fuser.
3	Main board malfunctioned	Replace the main board.

■ Fuser Error (201617)

Fuser heating from ready to warming up exceeds 155 seconds.

< User Check >

(1) Turn off power and then turn on.

(2) Turn off the power.

Step	Cause	Solution
1	Used voltage too low.	Check power and avoid using overloaded electrical appliances on the same line.
2	Thermistor failed.	Replace the fuser.
	The fuse of the fuser broken, activate protection mechanism	Replace the fuse.
3	Main board malfunctioned	Replace the main board.

4	High voltage board malfunctioned.	Replace the high voltage board.

■ Printer paper empty (manual tray) (200080)

No paper on the specified tray. (manual tray)

< User Check >

(1)Check if there is paper in the manual tray.

Step	Cause	Solution
1	IF113 board cable is loose.	Reconnect the cable.
2	IF113 board failed.	Replace the IF113 board.
3	Main board malfunctioned	Replace the main board.
4		
5		

■ Printer paper empty (Main Tray)(200081)

No paper in the specified paper tray. (Main Tray)

< User Check >

(1) Check if there is paper in the main tray.

Step	Cause	Solution
1	Paper Exhaust sensor cable is loose.	Reconnect the cable.
2	IF113 board cable is loose.	Reconnect the cable.
3	The Paper Empty Sensor failed.	Replace the Paper Empty Sensor.
4	IF113 board failed.	Replace the IF113 board.
5	Main board malfunctioned	Replace the main board.

■ Front Cover opens(200051)

Close Front Cover (200051) Printer Parts Error，When the Front Cover is opened.

< User Check >

(1) Close the Front Cover.

Step	Cause	Solution
1	The rib of Front Cover is broken	Replace the Front Cover.
2	Front cover open sensor poor installation	Reassemble the Front Cover Open Sensor.
3	Front cover open sensor poor connection	Reconnect the Front Cover Open Sensor.
4	Front Cover Open Sensor defective	Replace the Front Cover Open Sensor.
5	Main board malfunctioned	Replace the main board.

- Check method:1. Prepare new sensor and connect to main board to check if conducting. 2. Prepare main board.

■ Rear Cover opens(200054)

Rear cover opens during printing.

This error occurs when opening the Rear Cover before performing duplex printing.

< User Check >

(1)(Close the Rear Cover)

Step	Cause	Solution
1	The rib of Rear Cover is broken	Replace the Rear Cover.
2	Rear cover open sensor poor installation	Reassemble Rear Cover Open Sensor.
3	Rear cover open sensor poor connection	Reconnect the Rear Cover Open Sensor.

4	Rear Cover Open Sensor defective	Replace the Rear Cover Open Sensor.
5	Main board malfunctioned	Replace the main board.

■ Fan Error (200090)

There are two fans in the printer. This error occurs when the fan stops or rotation speed abnormal.

< User Check >

(1) Fan stops rotation.

Step	Cause	Solution
1	Fan cable is loose.	Reconnect fan cable.
2	Foreign objects in the fan.	Remove foreign objects.
3	Fan malfunctioned.	Replace the fan.
4	Main board malfunctioned	Replace the main board.

■ Multi-Feed Error (200000)

Open Side Door to remove the paper. This error occurs when multiple paper fed in the printer at the same time.

< User Check >

(1) Check if paper in the tray exceeds capacity.
(2) Check if paper loaded into the tray correctly.
(3) Turn the paper upside down or turn it 180° and then reload to the tray.
(4) Fan the paper and then reload into paper tray.

Step	Cause	Solution
1	One of the feeding rollers worn out.	Replace the worn-out feeding roller.
2	Separation Pad failed.	Replace the Separation Pad.
3	The surface of the Separation pad contaminated.	Clean the surface of the Separation Pad.

■ IP Conflict (500000)

Check network settings (500000)

< User Check >

(1) Check network settings

Step	Cause	Solution
1	IP Conflict	Reassign IP address

■ Net Cable Unplug (500001)

Plug the ethernet cable. (500001)

The machine detects no cable connected in the RJ-45 port.

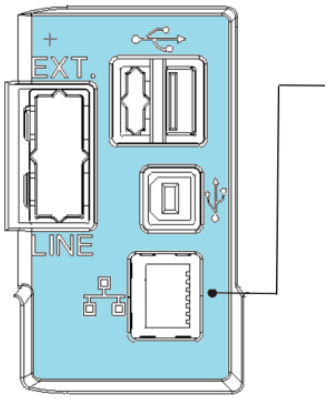
< User Check >

(1) Check network connection status.
(2) Reset network settings.
(3) Check LAN cable.

Step	Cause	Solution
1	LAN connection pin deformed.	Replace main board.

➢ Check LAN port:

Confidential



LAN Port (pin deformed)

■ DHCP no response (500002)
Check network settings. (500002)

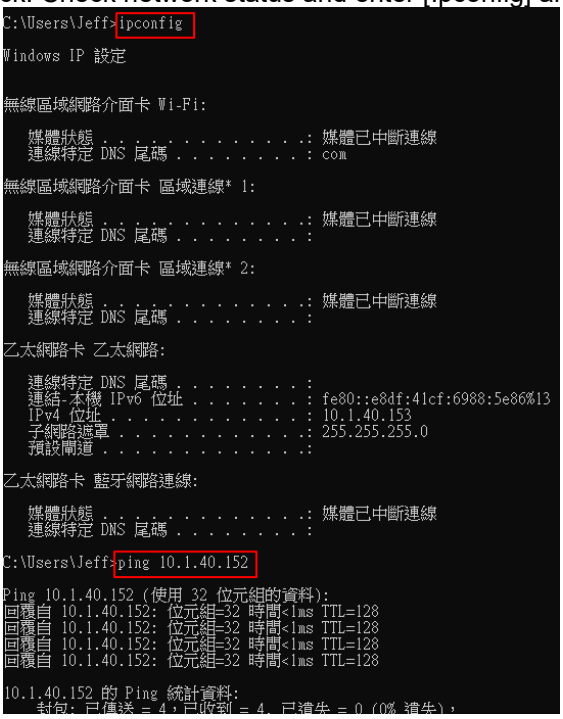
This error occurs when the printer requests information from the DHCP server and DHCP server does not respond.
Can not connect to network

< User Check >

(1) Check network settings.

Step	Cause	Solution
1	Main board malfunctioned	Replace main board.

Check: Check network status and enter [Ipconfig] and ping the device's IP address.



Confidential

3.7 Paper Feeding Problems

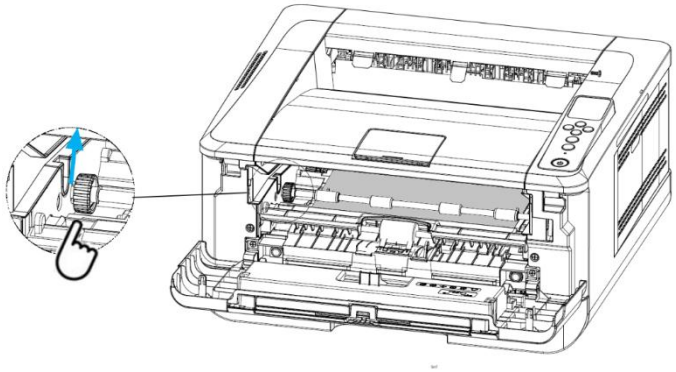
If the machine is operating normally, yet it can not feed paper or too many paperjams, pls check the machine and the paper conditions.

Problem	Possible Solution
Failed to feed paper.	■Use only the paper the printer supported. Refer to chapter 1 for printer supported material. ■Load the paper correctly. Make sure there is no space between the edge of paper and the paper guide. ■Flatten the paper if it is curled. ■Fan the paper and then turn the paper stack upside down and then reload it into paper tray.
Frequent paperjams	■Adjust the paper guide so that there is no space between paper and paper guide. ■Avoid using large amount of toner in duplex mode. ■Use only the paper the printer supported. Refer to chapter 1 for printer supported material. ■Make sure paper stack does not exceed allowable mark in the paper tray.
Multi-Feed	■Before loading paper, bend the paper back and forth to loosen the paper, and then fan the paper. Align the edges of the paper by tapping the bottom of the stack against the table top. ■Make sure the paper tray is installed correctly. ■Use only the paper the printer supported. Refer to chapter 1 for printer supported material. ■Make sure paper stack does not exceed allowable mark in the paper tray. ■Check if additional paper is loaded when there is a few pieces of paper in the paper tray.Remove the remaining paper in the tray and then fan them together with the additional paper and then reload them to the paper tray.
Paper with wrinkles.	■Paper is damp. Please use paper stored in good condition. ■Paper too thin. Refer to chapter 1 for printer supported material. ■Adjust the paper guide so that there is no space between paper and paper guide.
Paper is curled.	■Turn the paper upside down and then reload it into the paper tray. ■Paper is damp. Please use paper stored in good condition.
Printed image skewed.	■Make sure the edge of paper slightly touch the paper guide. Adjust the paper guide so that there is no space between paper and paper guide. ■Check if there is foreign obejcts on the paper path. If so, remove them.

3.8 Clear Paperjams

3.8.1 Jammed paper does not occur at Fuser

1）. Pull the paper tray and open the front cover. Remove the drum unit.
2）. Rotate the Release Arms as indicated and then remove the jammed paper.



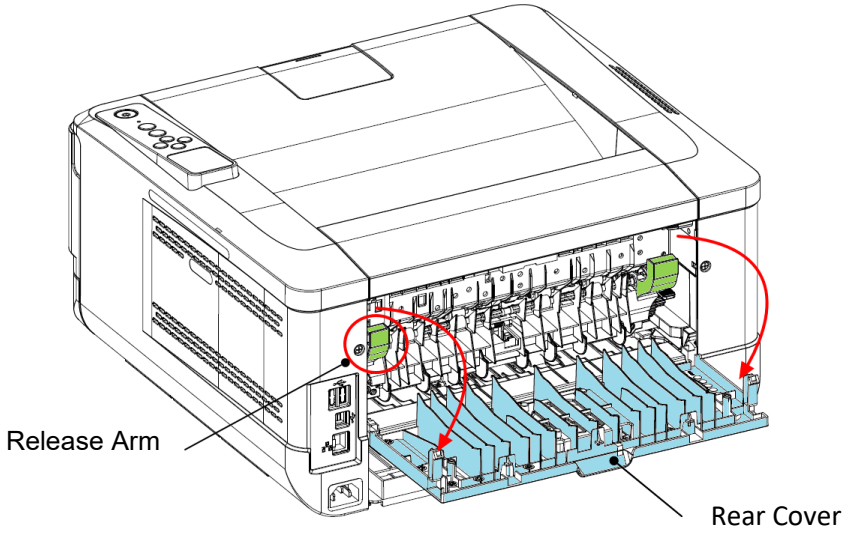
.

3.8.2 Jammed paper at Fuser

The area around the fuser is hot. To avoid a burn injury, be careful not to touch the fuser until it cools down and then remove the paper according to the following steps:

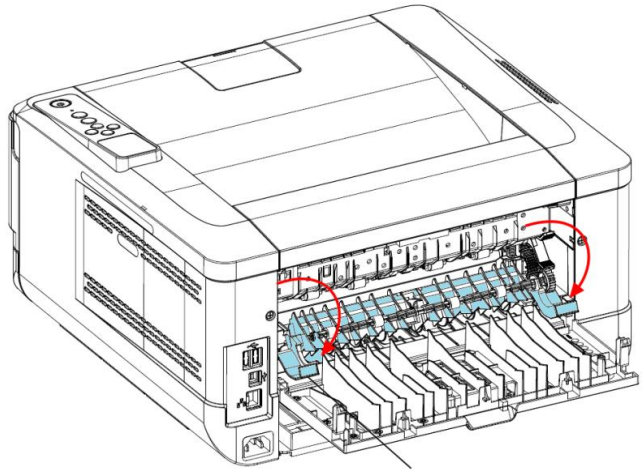
1）. Open Front Cover and Rear Cover and then remove the drum unit.

2）. At the back of the printer, pull down the Release Arms as indicated.



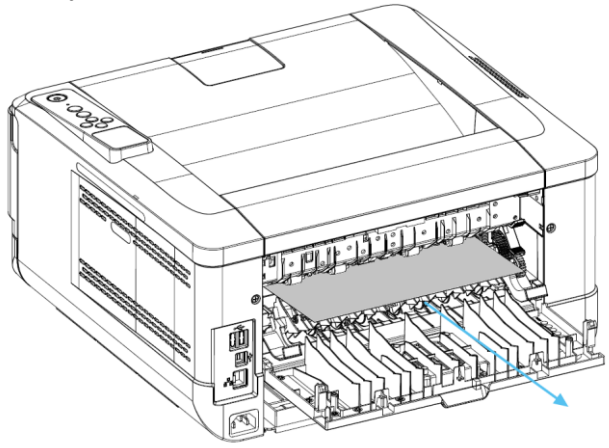
.

3）. Pull down the Paper Path.



.

4）. Gently pull out the paper.



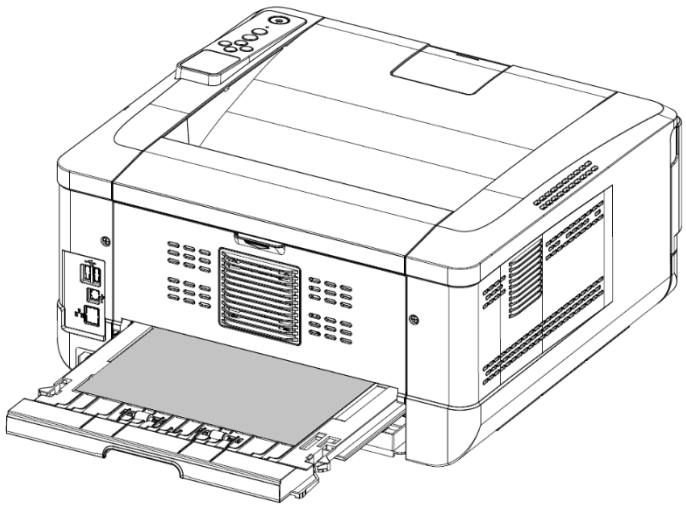
.

Notice：

- The area around the fuser is hot. To avoid a burn injury, be careful not to touch the fuser until it cools down and then remove the paper.
- After removing the jammed paper, return the green arms on both sides to their original positions as soon as possible. Do not stay in the pulled down status for too long to avoid affecting the spring force value.

3.8.3 Jammed paper at the Duplex Unit

1）. Pull the paper tray.
2）. Remove the Duplex Unit at the back of the device as illustrated. Remove the paper.



Confidential

Chapter 4 Disassembling and Reassembling

4.1 Preparation

Notice Before Performing Maintenance Operation:

In order to avoid secondary malfunction due to incorrect operation, the following warnings and precautions must be observed during the disassembly and reassembling of the equipment.

> **Warning**
>
> After using the printerfor a while, the temperature inside the printer is very high! When opening the Side Door or the Rear Cover to repair components, do not touch the areas shown in the high temperature mark.

- Be careful not to lose the removed screws, washers and other parts.
- Be sure to apply grease to the parts specified in this chapter.
- When using an electric soldering iron or other heating tools, please be careful not to damage the wires, circuit boards, casings and other components made of synthetic resin.
- The static electricity charged by the human body may damage electronic components. Therefore, when transporting the circuit board, be sure to wrap the circuit board with conductive foil.
- When replacing circuit boards and all other parts with circuit boards, please wear a wrist strap for discharging static electricity and operate on an anti-static mat. In addition, please be careful not to touch the flat cable and the electrode conductor part of the wire.
- After unplugging the flat cable, be sure to check that the flat cable plug is in good condition and that the flat cable is not short-circuited.
- When inserting the flat cable, be sure to insert it straight, and check that the cable is not crooked after inserting it.
- When connecting or disconnecting the patch cord, do not hold the cable part but the connector part. If there is a lock on the connector, be sure to unlock the lock first.
- After repairing, please pay attention not only to check the repaired part, but also to check the connection of the patch cord. In addition, you need to check if other related parts are working properly.
- Do not close the front cover forcibly before installing the toner cartridge and drum unit, otherwise the machine may be damaged.
- After installation, it is recommended to conduct an insulation withstand voltage test and a conductivity test.
- Be careful not to damage the insulating sheet.
- When replacing the circuit board, be sure to check if there is any foreign matter on the component surface and soldering surface of the circuit board.

Confidential

4.2 Disassembling Tools

4.2.1 Maintenance Tool List

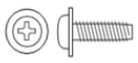
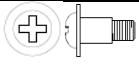
Table 4.1 The Maintenance Tool

No.	Tool Type	Quantity	Description
1.	Flat screwdriver(Small)	1	For disassembling
2.	Philips screwdriver(Small)	1	For removing M2 screw
3.	Philips screwdriver	1	For removing M3、M4 screws
4.	Philips screwdriver (Small Head)	1	For removing high-voltage board M3 screws
5.	ERING E-type tool holder	1	For installing no. 3 screw
6.	ERING E-type tool holder	1	For installing no. 4 screw
7.	ERING E-type tool holder	1	For installing no. 5 screw
8.	Needle nose pliers	1	For clamp
9.	Diagonal pliers	1	For cutting cable ties
10.	Tweezers	1	For picking up component
11.	Cleaning Kit(blowing ball, brush, wipe cloth, alcohol cotton)	1	For cleaning
12.	Latex Gloves	1	Anti-Static
13.	Utility Knife	1	For unpacking
14.	Digital meter	1	With 0.01 volt
15.	Headlamp	1	For illumination
16.	White Glue:076-0019-0	1	For sticking
17.	Grease(MS54)	1	For gears
18.	Grease(VG501)	1	For high-temperature gears
19.	Component Kits(ERING、Screw、Cable Tie)	1	For reassembling

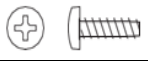
Table 4.1 Maintenance Tool

Screw Category

Screw (Mechanical teeth)

Screw(Mechanical teeth) M3X9	
Screw(Mechanical teeth) M3X6	
Screw(Mechanical teeth) M3X4	

Screw (Self-tapping)

Screw(Self-tapping)	

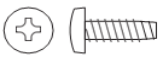
Confidential

M3X8	
Screw(Self-tapping) M3X8	
Screw(Self-tapping) M3X10	

Screw (Mechanical teeth)(W/SPRING-W)

Screw(Mechanical teeth) M3X6	
Screw(Mechanical teeth) M3X6	
Screw(Mechanical teeth) M4X10	

Screw (Mechanical teeth) (φ8 HEAD)

Screw(Mechanical teeth) M4X8	

E-RING ,

E-RING) D5	
E-RING D4	
E-RING D3	

4.2.2 Torque List

Screw Location	Screw Type	Quantity	Torque (kgf·cm)
Right cover	Screw M3X8	2	6±0.5kgf.cm
Left cover	Screw M3X8	2	6±0.5kgf.cm
Top cover	Screw M3X8	2	6±0.5kgf.cm
Gear	Screw TS3X8	12	6±0.5kgf.cm
Motor	Screw M3X5	4	6±0.5kgf.cm
Fan	Screw M3X15	4	6±0.5kgf.cm
IFA99 board	Screw M3x5	1	6±0.5kgf.cm
LPH&LSU HOLDER	Screw TS3X8	4	6±0.5kgf.cm
LPH	Screw M2x4	2	1.5±0.5kgf.cm
Fuser (Fuse) (Ground cable)	Screw M3x8	4 2 1	6±0.5kgf.cm 6±0.5kgf.cm 6±0.5kgf.cm
Exit Path (Paper-out roller)	Screw TS3X8 Screw TS3X11	4 2	6±0.5kgf.cm 6±0.5kgf.cm
SBA234 Sensor	Screw TS3X8	3	6±0.5kgf.cm
Insulation cover	Screw TS3X8	2	6±0.5kgf.cm
Manual Path	Screw TS3X8	2	6±0.5kgf.cm
Main frame	Screw M4X10	10	8±0.5kgf.cm
IF113 board	Screw TS3X8	2	6±0.5kgf.cm

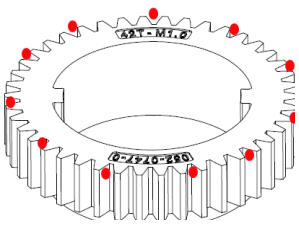
Confidential

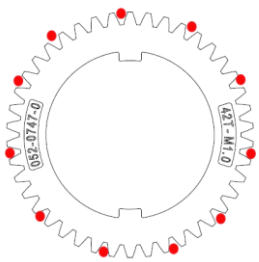
High voltage ground plate	Screw TS3X6	1	6±0.5kgf.cm
Power Supply Board	Screw TS3X8	7	6±0.5kgf.cm
Main board (Ground cable)	ScrewTS3X8 Screw TS3X10	2 2	6±0.5kgf.cm 6±0.5kgf.cm

4.2.3 Lubricants

Type of Lubricant (Manufacturer name)	Lubricating Position		Lubricating amount/each time
Lubricant VG501	Fuser gear G35T	11 drops	1.5 to 2.0 mm diameter drop
Lubricant SF420	Clutch 27T	8 drops	1.5 to 2.0 mm diameter drop

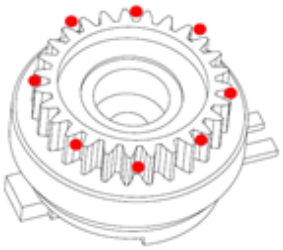
■ Fuser Gear G35T

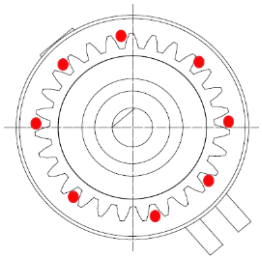




Confidential

■ CLUTCH 27T





4.3 Disconnecting Cables Before Disassembling

Disconnect the following cables:

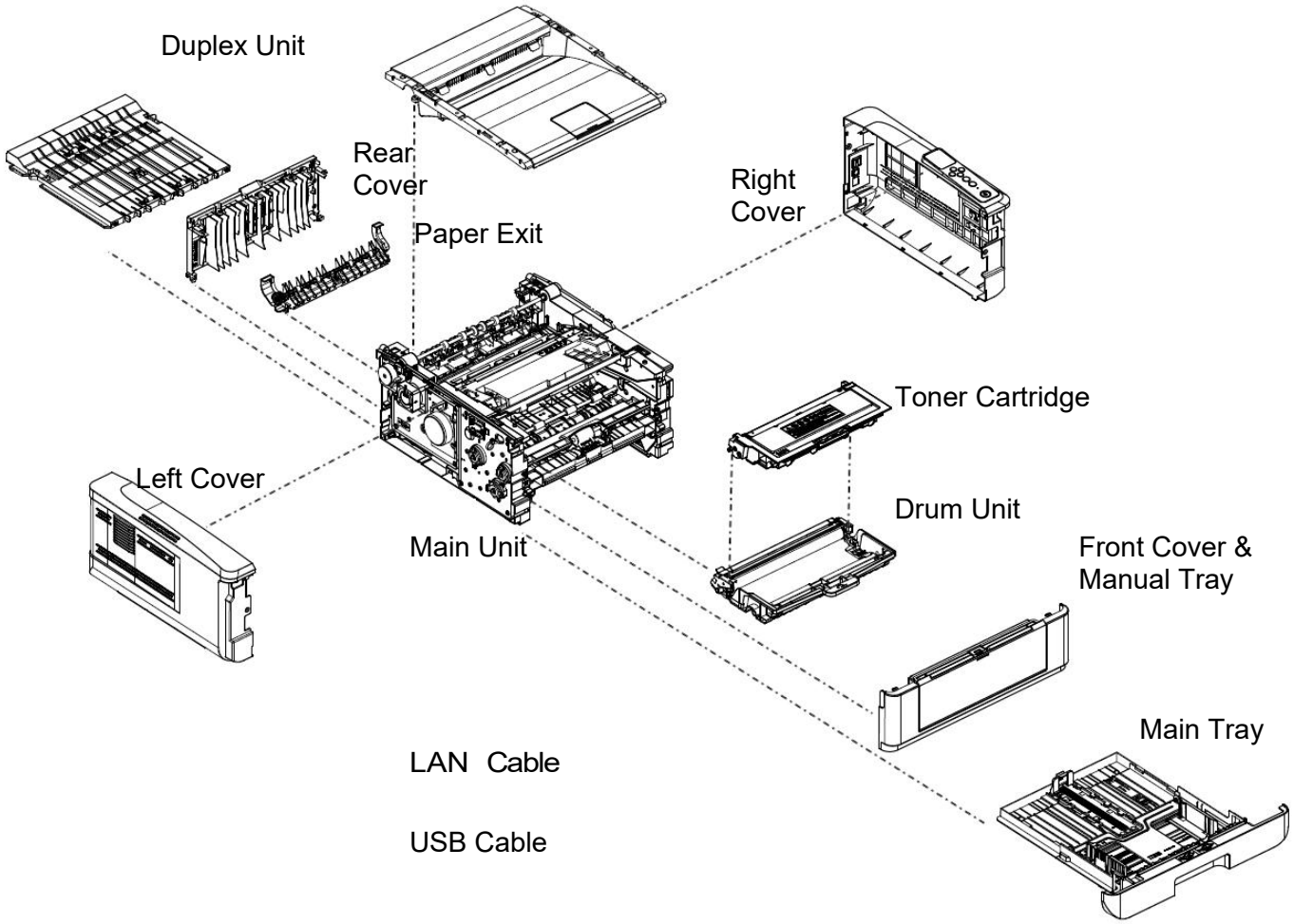
- USB cable
- LAN cable
- POWER cable

Remove the following parts:

- Paper Tray
- Toner Cartridge and Drum Unit

Top
Cover

Confidential



4.4 Disassembling Notices

(1) Clean the removal and assembly location.
(2) Please unplug the power cord and remove the AC power plug before disassembly and assembly.

(3) Please follow the disassembly and assembly procedures. Do not loosen the non-removable screws.

(4) Please store the disassembled parts in a clean place to avoid loss.

(5) After replacing the parts, please check the contact position and the base of the parts.

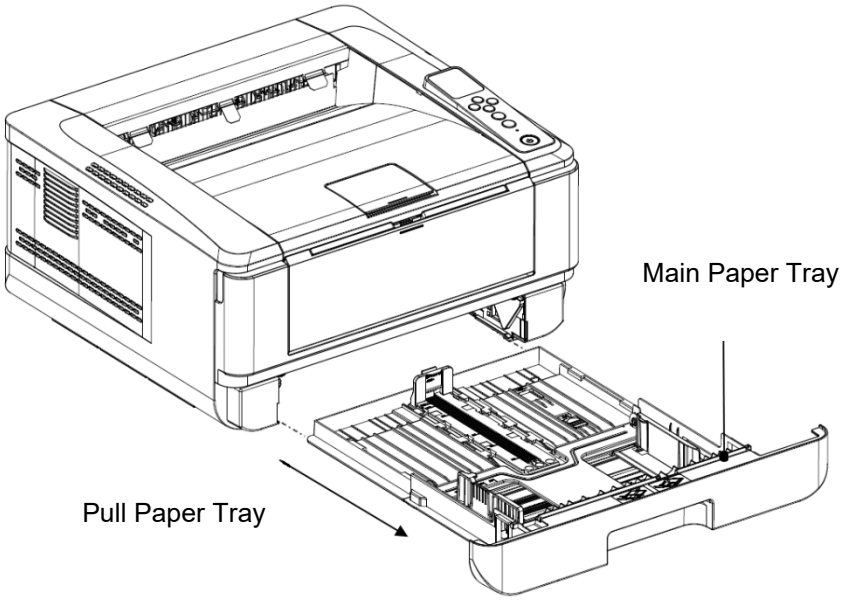
(6) Please assemble the parts in the reverse order of the disassembly procedure.

1.2 Basic Disassembling

4.4.1 Paper Tray

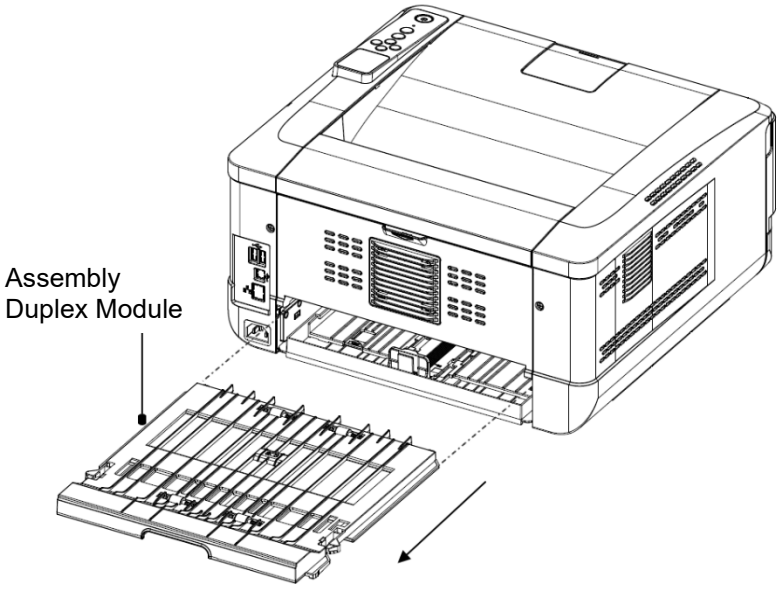
(1). Pull out the Main Paper Tray to remove it.





4.4.2 Assembling Duplex Module

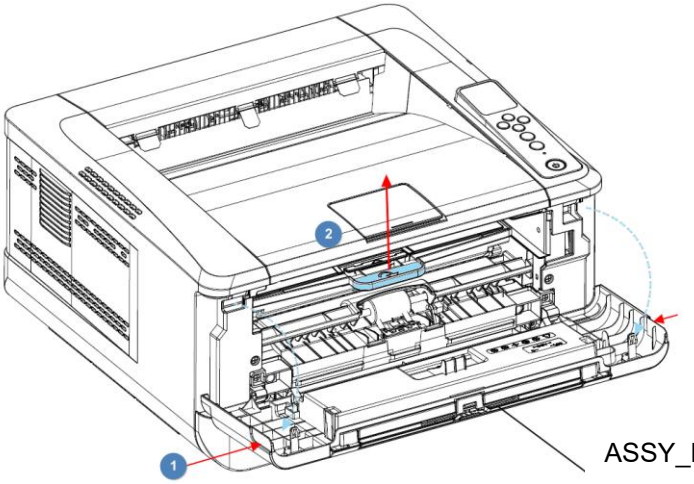
Remove the Assembly Duplex Module.



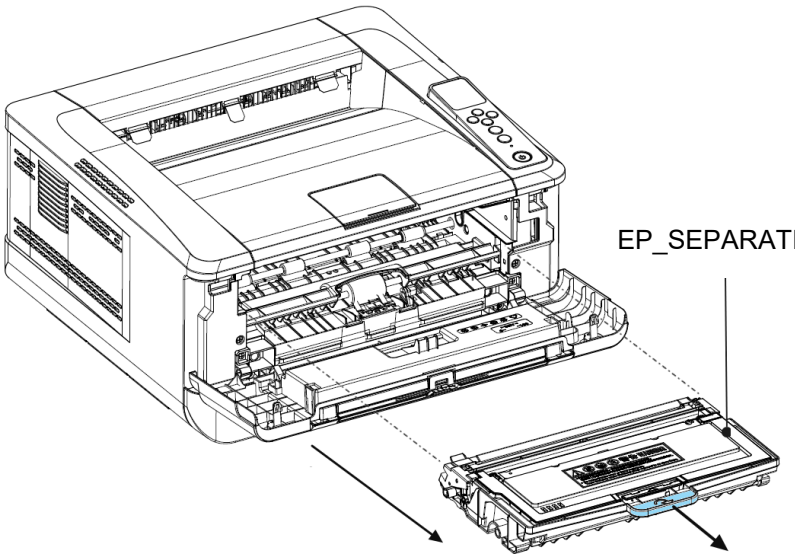
Confidential

4.4.3 EP_SEPARATION_LPH

(1). Open the Front Cover.
(2). Lift the handle of the EP_SEPARATION_LPH and then pull it out gently.



ASSY_FRONT_COVER



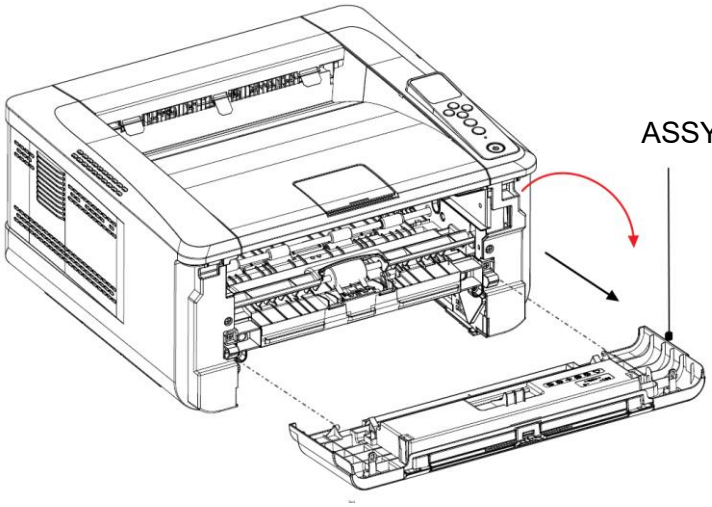
EP_SEPARATION_LPH

.

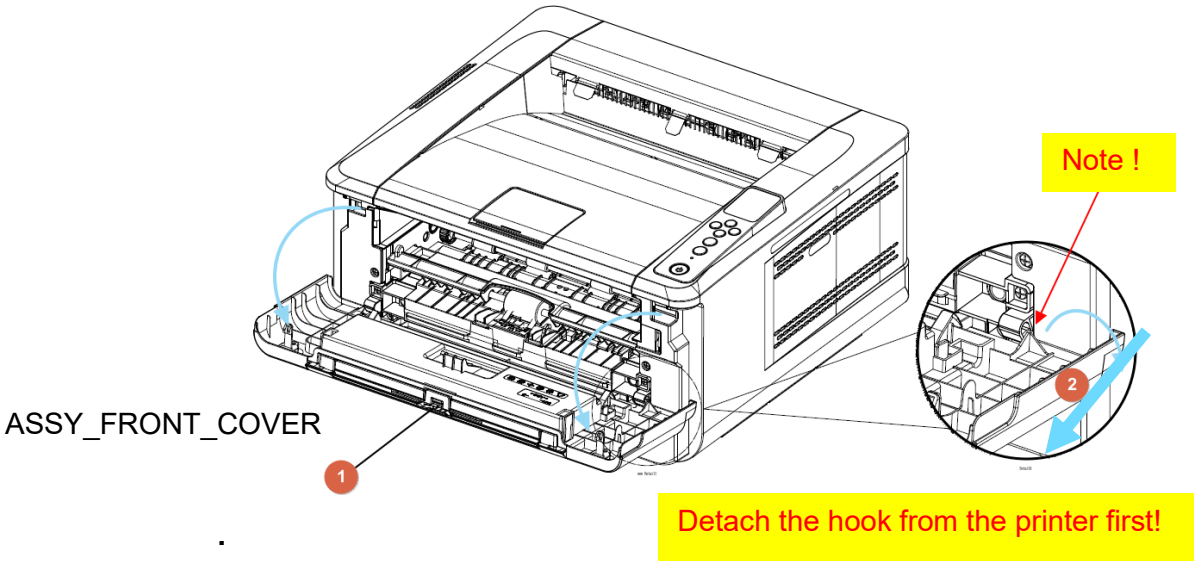
4.4.4 Front Cover

(1). Remove the EP_SEPARATION_LPH.
(2). Remove Main Paper Tray.
(3). Remove Front Cover.

Confidential



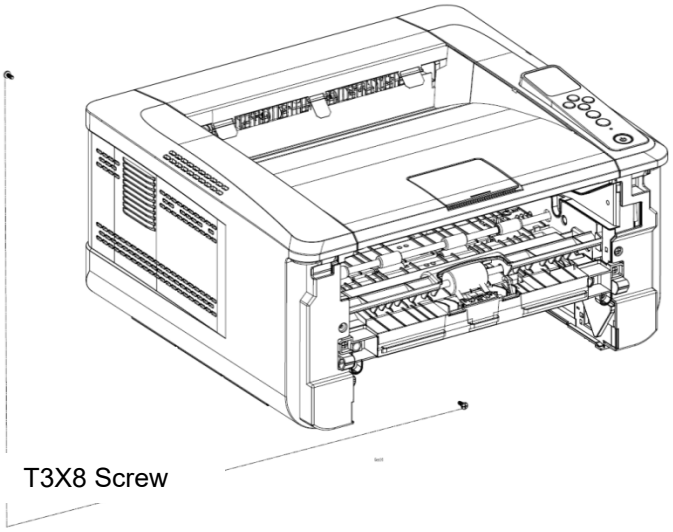
✧ **Tip：** Open the Front Cover. Hold the Front Cover with your left hand and use your right hand to remove the hook from the slot as illustrated.



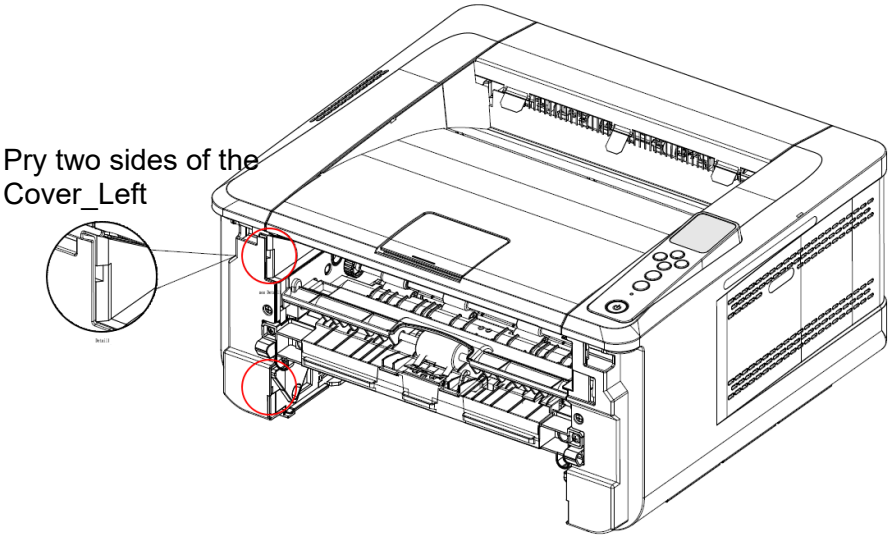
4.4.5 Cover-Left

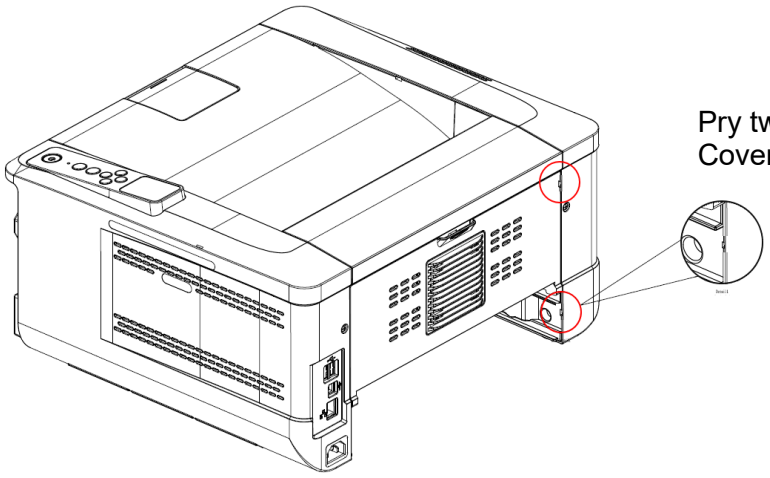
Tool Preparation: No. 1、3(Refer to Maintenance Tool List)
(1). Remove Front Cover、Main Paper Tray、and Drum Unit.
(2). Remove 2 fixing screws (M3X8) to remove the Cover_Left.

Confidential

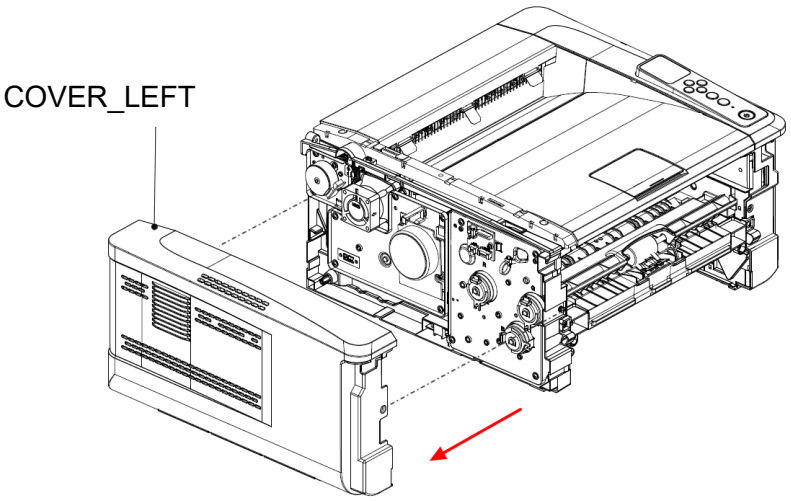


Tip： Let the machine stand on its right side as shown, use your left hand to hold the bottom of the machine. And then use your right hand to pry two sides of the Left Cover with a flat screwdriver.



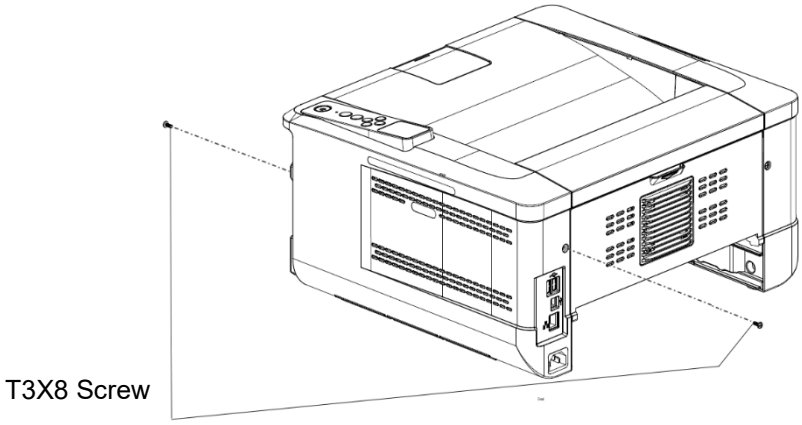


Confidential



4.4.6 ASSY_HOUSING_RIGHT

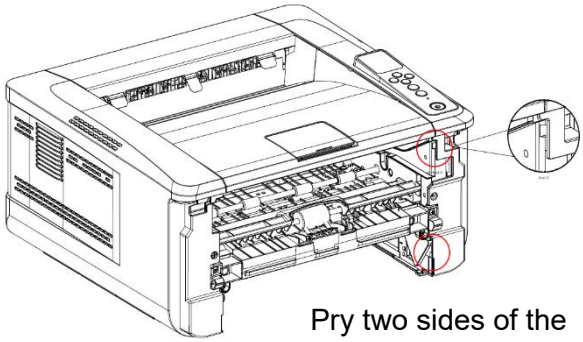
Tool Preparation: No. 1、3 (Refer to Maintenance Tool List)
(1). Remove Front Cover、Main Paper Tray、and Drum Unit.
(2). Remove 2 fixing screws (M3X8) to remove the Cover_Right.



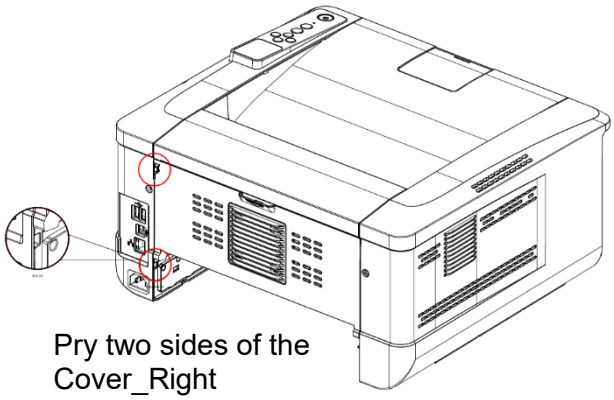
Tip： Make the machine stand on the left side, and hold the bottom with your left hand. Use your right hand to pry two sides of the Right Cover with a flat screwdriver.

Attention： Since there are main board and Power Supply Boards on the inside of the Right Cover, be careful not to damage the electronic boards when reassembling the machine. When reassembling the Right Cover, you need to first observe if the FFC cable has a raised pin on the UI board, and do not install the FFC cable reversely.

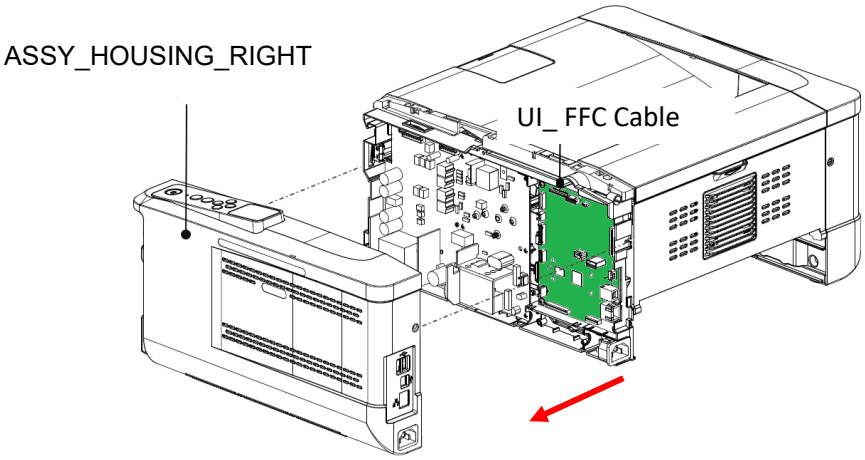
Confidential



Pry two sides of the Cover_Right

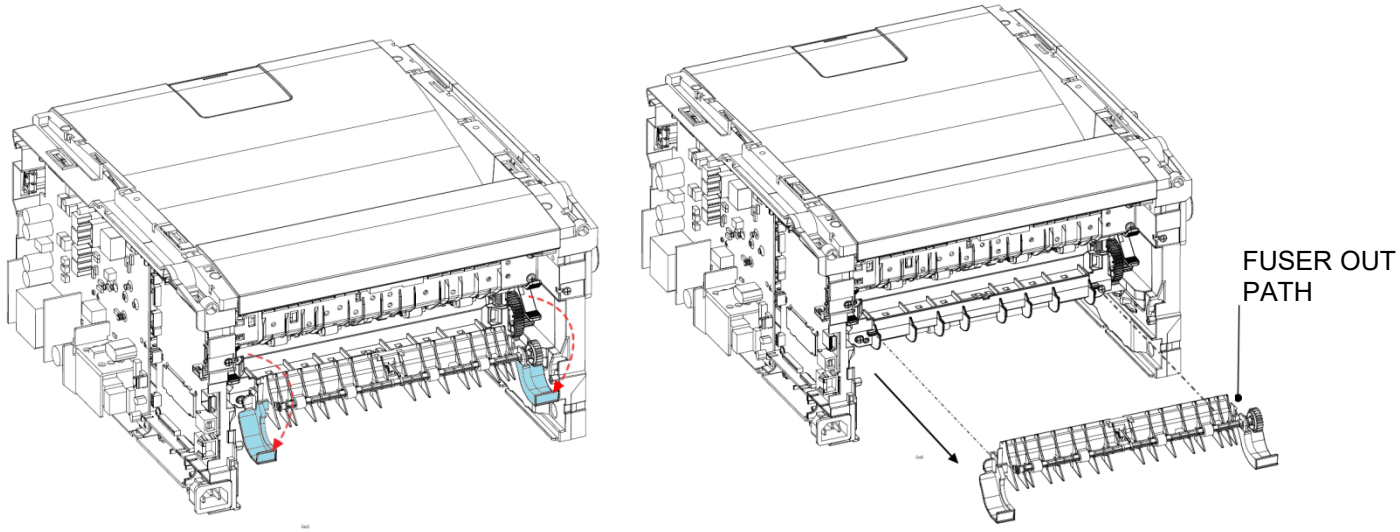


Pry two sides of the Cover_Right



4.4.7 ASSY_FUSER_PATH

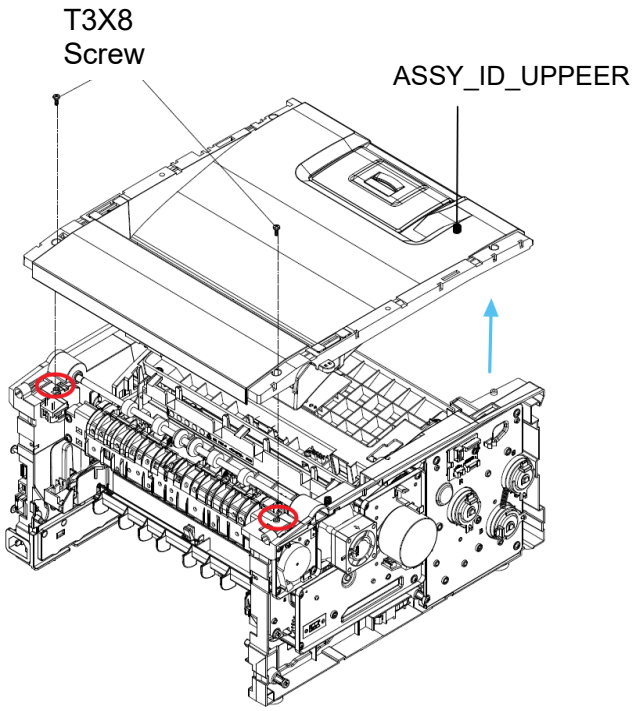
Tool Preparation: No. 1、3 (Refer to Maintenance Tool List)
(1). Remove Front Cover、Main Paper Tray、Drum Unit、Left Cover、Assembling Housing Right、ASSY_REAR_PATH).
(2). Press down the FUSER_PATH to remove it.



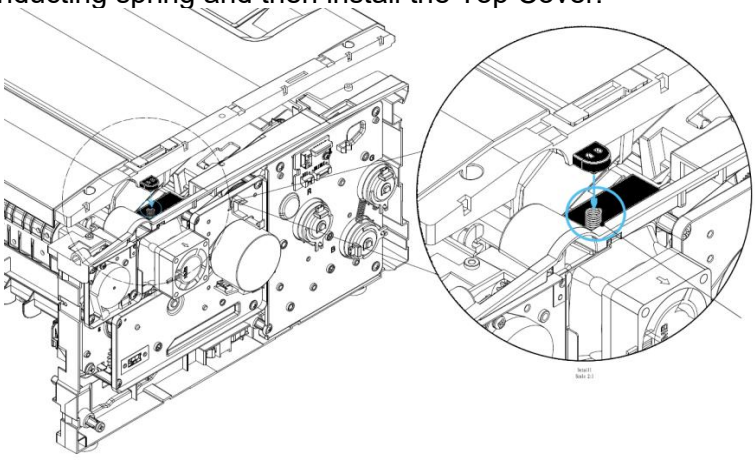
Confidential

4.4.8 ASSY_ID_UPPEER

Tool Preparation: No.3(Refer to Maintenance Tool List)
(1). Remove Front Cover、Main Paper Tray、and Drum Unit、ADF_FB Scanner.
(2). Remove 2 fixing screws (M3X8) to remove the ASSY_ID_UPPEER.



✧ Reassembling Note: Before reassembling the Top Cover, please first insert the positioning post into the static conducting spring and then install the Top Cover.



1.3 Advanced Disassembling

4.4.9 Fuser

Tool Preparation: No. 3、8 (Refer to Maintenance Tool List)
(1). Remove Front Cover, Paper Tray, Drum Unit, Assembling Housing Right /Left Cover, Duplex Unit, Exit Path).
(2). As shown in Fig. 1, remove 1 x T3X8 screw and disconnect the cable.
(3). Remove 2 x T3X8 screw and then disconnect the cable to remove the FUSER_UNIT.

Confidential

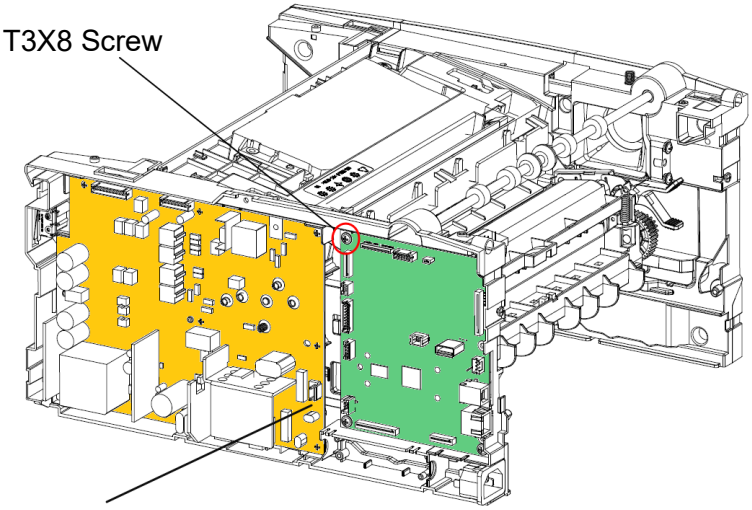
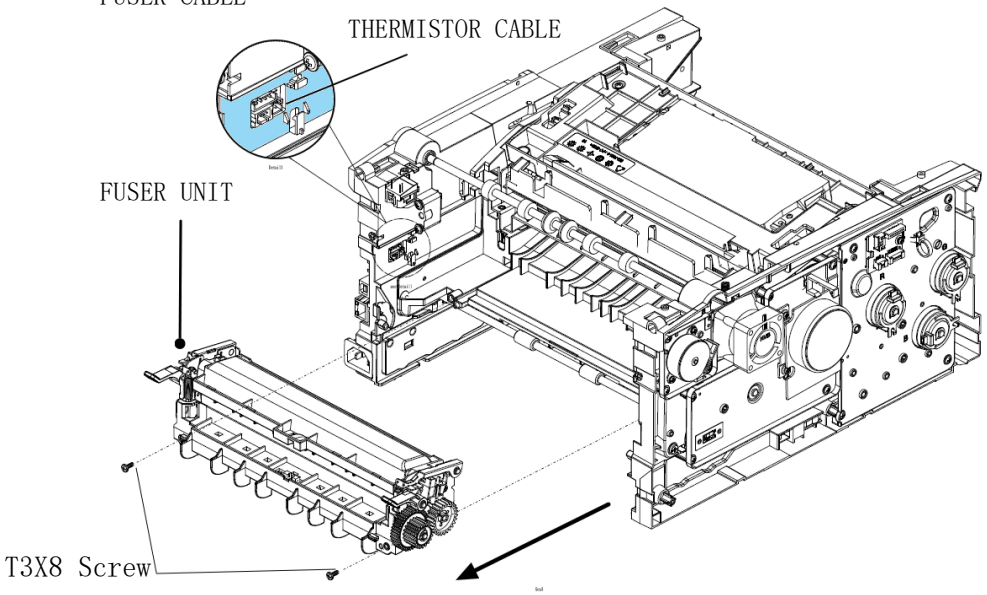


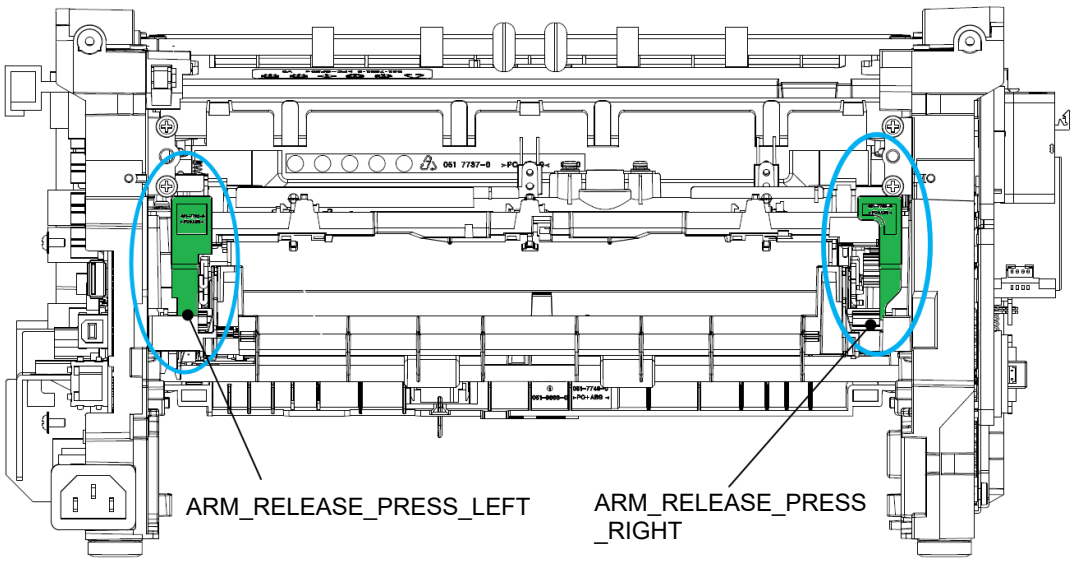
Fig 1



✧ **Tip：**

- Please first loosen the pressure spring before removing the fixing screws.
- The green arms as shown need to be pulled up while disassembling the pressure spring. Or the pressure spring will be deformed.

Confidential



.

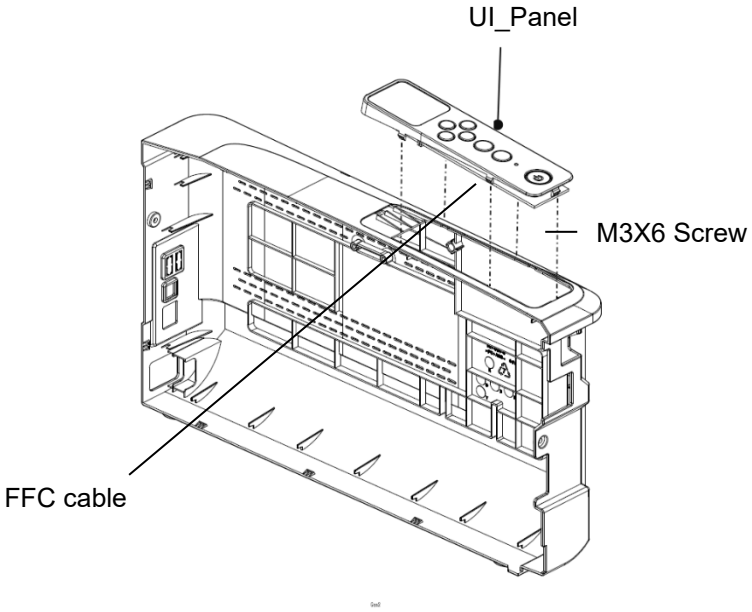
Confidential

4.4.10 UI_Panel

Tool Preparation: No. 3(Refer to Maintenance Tool List)
(1) Remove Front Cover, Paper Tray, Drum Unit, and the Right Cover.
(2) Remove M3X6 fixing screws x 2, and also remove the FFC cable.

Note :

- After unplugging the flat cable, be sure to check that the connectors of the flat cable are intact and that the flat cable is not short-circuited。
- When inserting the flat cable, be sure to insert it straight and make sure that it is not crooked.



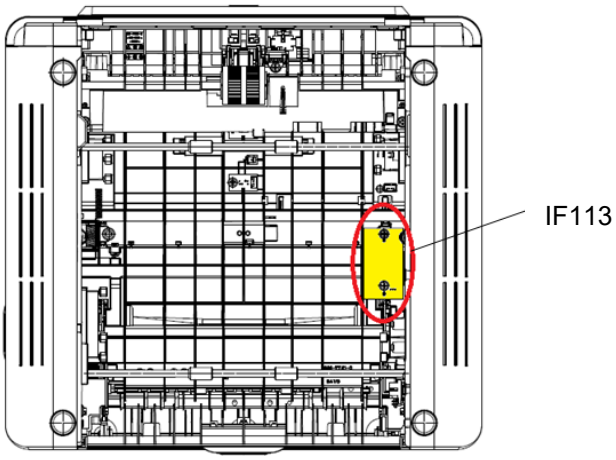
4.4.11 IF113 Board

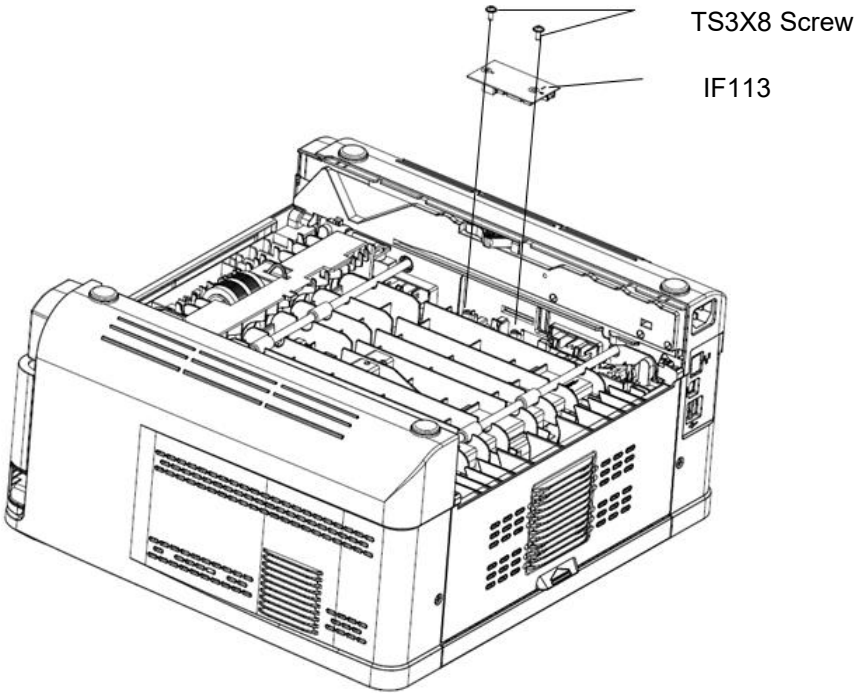
Tool Preparation: No. 3(Refer to Maintenance Tool List)
(1). Remove the Front Cover, and Drum Unit.
(2). Remove the Duplex Unit, and Paper Tray.
(3). Turn the machine over to reveal the bottom.
(4). Remove TS3X8 fixing screws x 2 and remove all cables including the FFC cable.

Note :

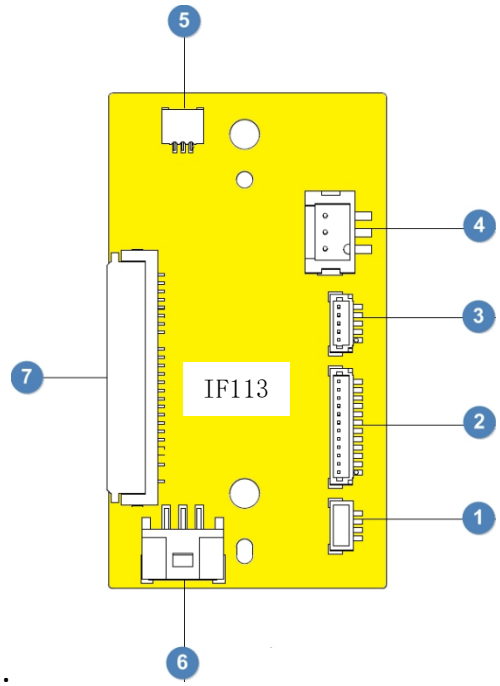
- After unplugging the flat cable, be sure to check that the connectors of the flat cable are intact and that the flat cable is not short-circuited。
- When inserting the flat cable, be sure to insert it straight and make sure that it is not crooked.

Confidential





Confidential



1	Main in Sensor
2	REG & Deskew (SENEP I2C)
3	Duplex Sensor
4	Manual in Sensor
5	Empty Sensor
6	Fuser out Sensor
7	CONN to Main Board

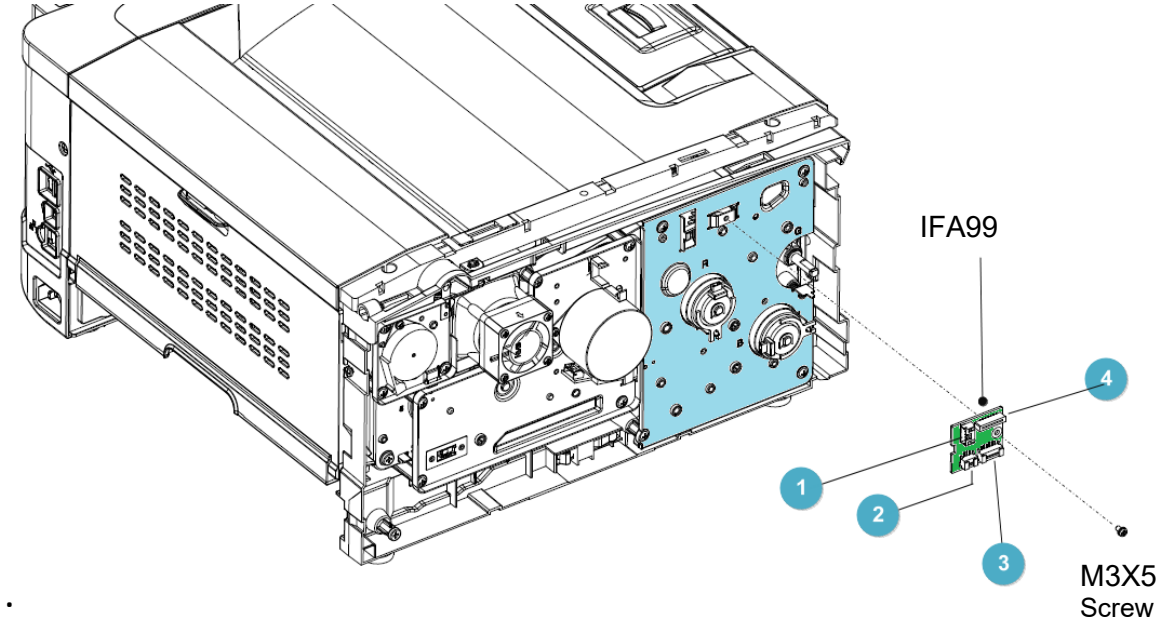
Confidential

4.4.12 IFA99 Board

Tool Preparation: No. 3(Refer to Maintenance Tool List)
(1). Remove the Front Cover, and Drum Unit, Paper Tray, Left Cover, and Duplex Unit.
(2). Remove M3x5 screw x 1, and disconnect all cables including FFC cable to remove IFA99 board.

Note :

- After unplugging the flat cable, be sure to check that the connectors of the flat cable are intact and that the flat cable is not short-circuited。
- When inserting the flat cable, be sure to insert it straight and make sure that it is not crooked.



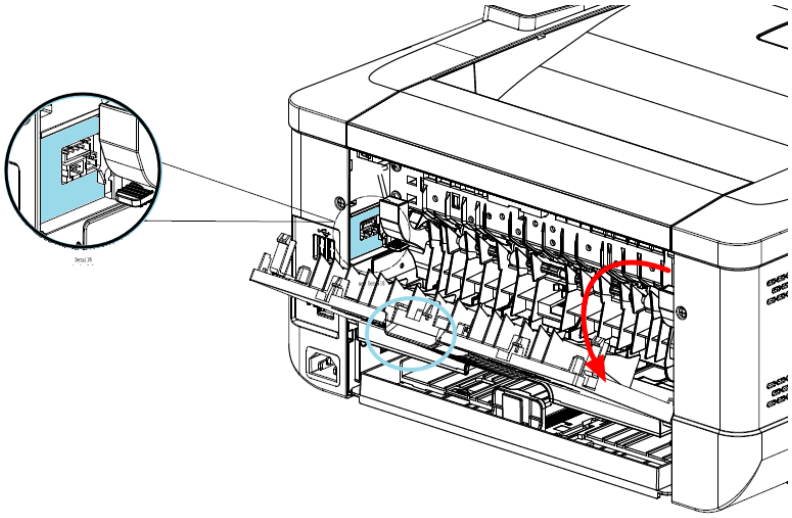
.

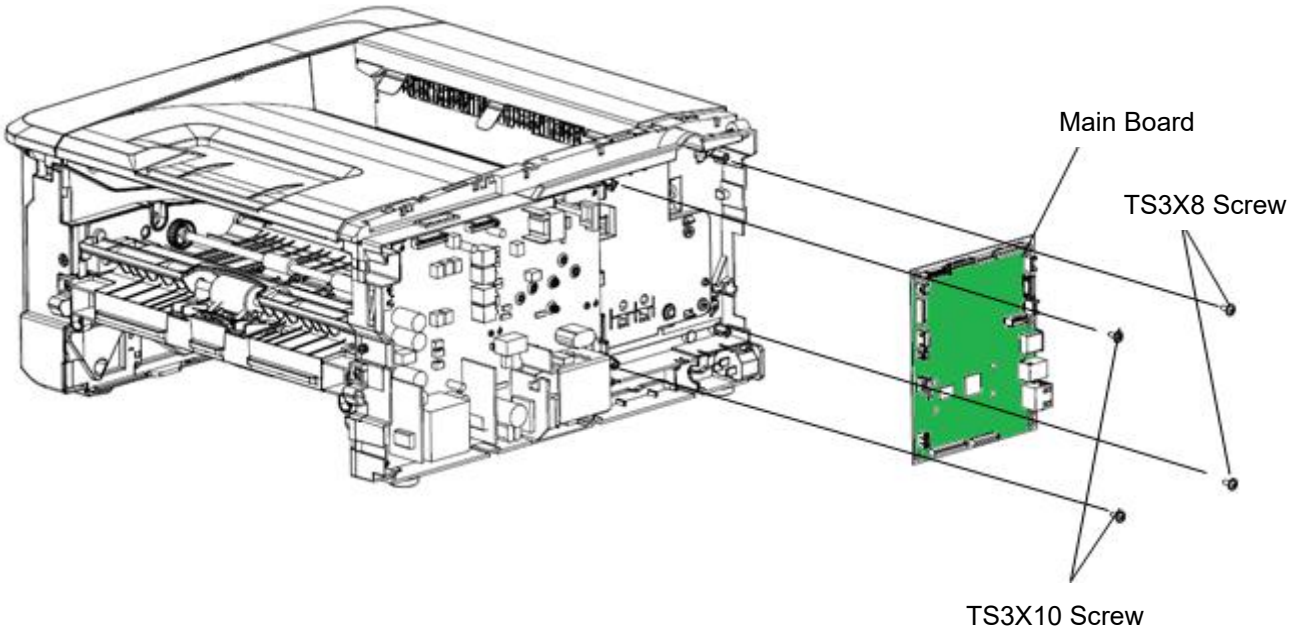
1	Exit motor
2	FAN
3	Clutch
4	Clutch & FAN & Exit motor

1.3.1 Main Board

Tool Preparation: No. 3(Refer to Maintenance Tool List)
(1). Remove the Front Cover, and Drum Unit, Paper Tray, Right Cover.
(2). Remove all cables including the FFC cables (total: 12).
(4). Remove TS3X8 screws x 2 and TS3X10 x 2 to remove the main board.

Confidential

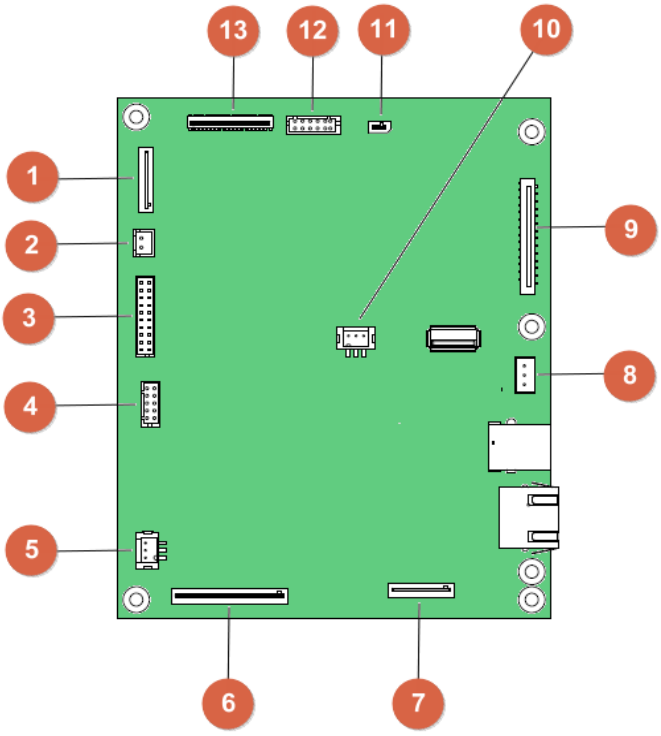




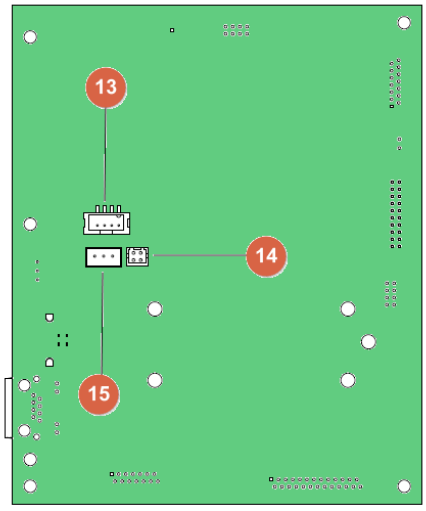
Note :

- After unplugging the flat cable, be sure to check that the connectors of the flat cable are intact and that the flat cable is not short-circuited.
- When inserting the flat cable, be sure to insert it straight and make sure that it is not crooked.

Confidential



1	IFA99 14P(j2)
2	Micro Switch 2P(j1)
3	High And Low Power Supply 22p(j3)
4	Main Motor 10P(j5)
5	Fan 3P (j6)
6.	IF 113 26P(j9)
7	USB Port
8	Check port
9	CSA4
10	Rear Door Open Sensor Harness J12 (3P)
11	LSU Module HarnessJ10 (5P)FFC
12	LSU Module SensorJ8 (12P)Wire Harness
13	Fuser Out Sensor J20 (4P)
14	Thermistor J19 (4P)
15	Exit Sensor J21 (3P)



Confidential

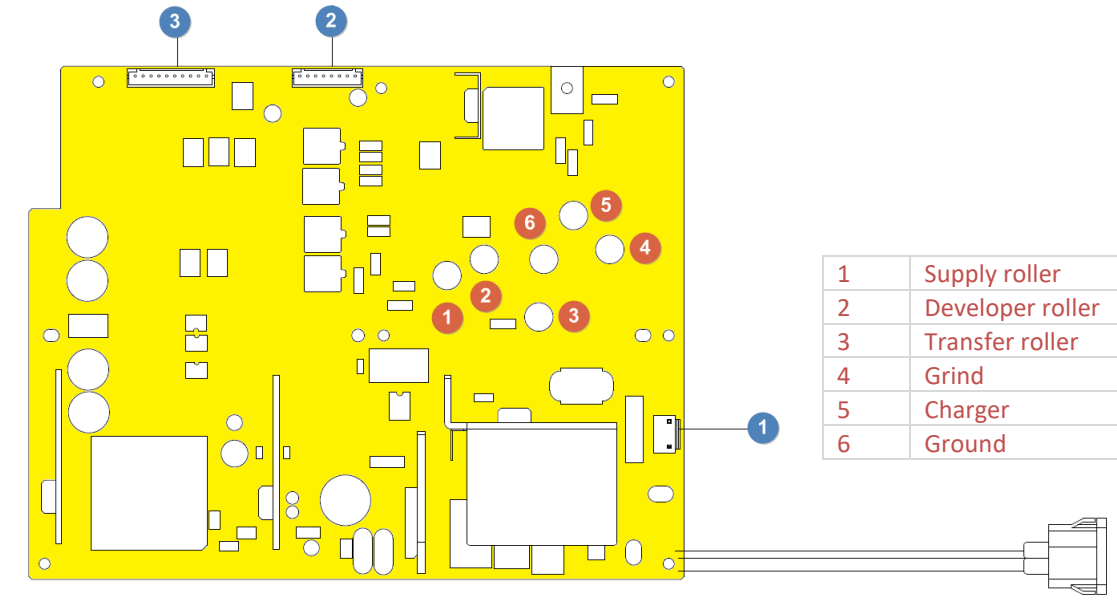
4.4.13 Power Supply Board

Tool Preparation: No. 3(Refer to Maintenance Tool List)

(1). Remove Front Cover, Paper Tray, Drum Unit, and the Right Cover.
(2). Remove all cables (3pcs) connecting to the Power Supply Board.
(3). Remove TS3X8 screws x 6 pcs, and TS3X10 ground screw x 1 to remove the Power Supply Board.

Note :

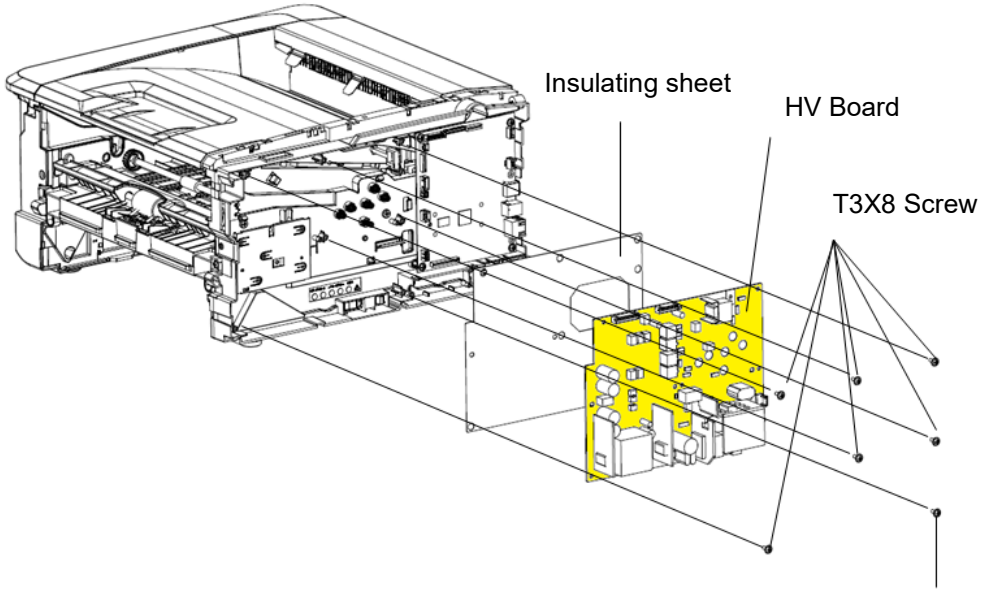
- After the high-voltage board is removed, some components will still be conductive. Please wear latex gloves to work. Do not touch the welding surface of the high-voltage board without gloves.
- After the high-voltage board is disassembled, it should be placed on a insulating surface to avoid damage to the high-voltage board due to power jump.



1	Supply roller
2	Developer roller
3	Transfer roller
4	Grind
5	Charger
6	Ground

1	Fuser (2P)
2	HV Signal (9P)
3	Low Voltage 24V(10P)

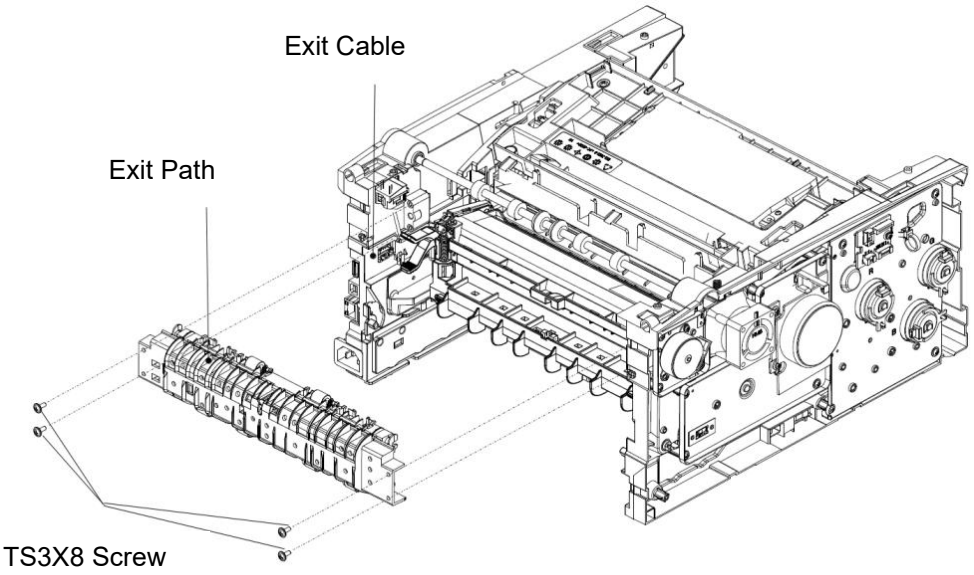
✧ Assembly Note: 1~6 high-voltage contact points must be connected during assembly inspection, and use a three-meter to switch to the ohm gear to confirm that they are connected.



Confidential

4.4.14 Exit Path

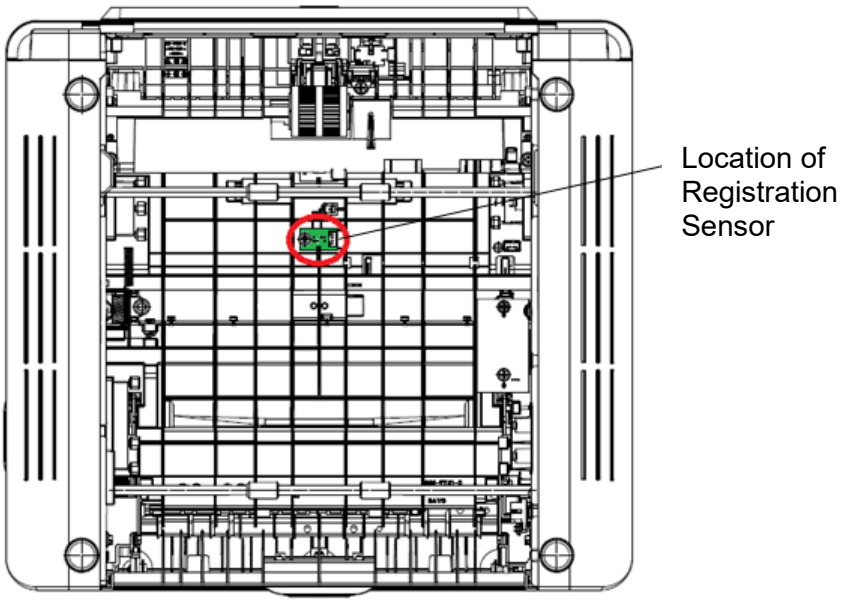
Tool Preparation: No. 3(Refer to Maintenance Tool List)
(1). Remove Front Cover, Paper Tray, Drum Unit, Right/Left Cover, Top Cover, Duplex Unit, and Fuser.
(2). Remove the cable connecting to the main board.
(3). Remove TS3x8 screws for 4 pcs to remove the Exit Path.



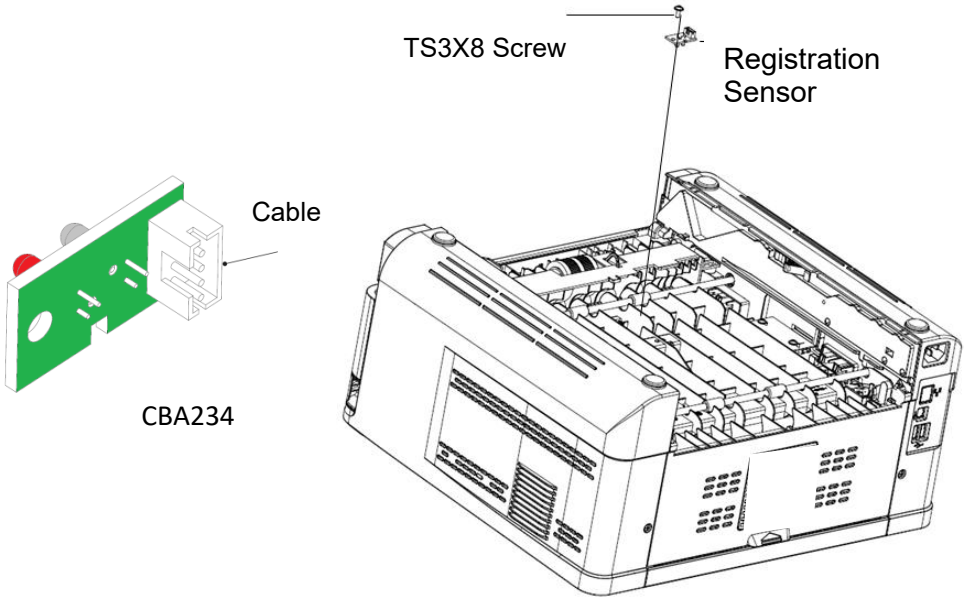
.

4.4.15 Registration Sensor

Tool Preparation: No. 3 (Refer to Maintenance Tool List)
(1). Remove the Front Cover and the Drum Unit.
(2). Remove the Duplex Unit and the Paper Tray.
(3). Turn the printer over to reveal the bottom.
(4). Remove TS3X8 screw x 1 pcs and disconnect all cables to remove the sensor.



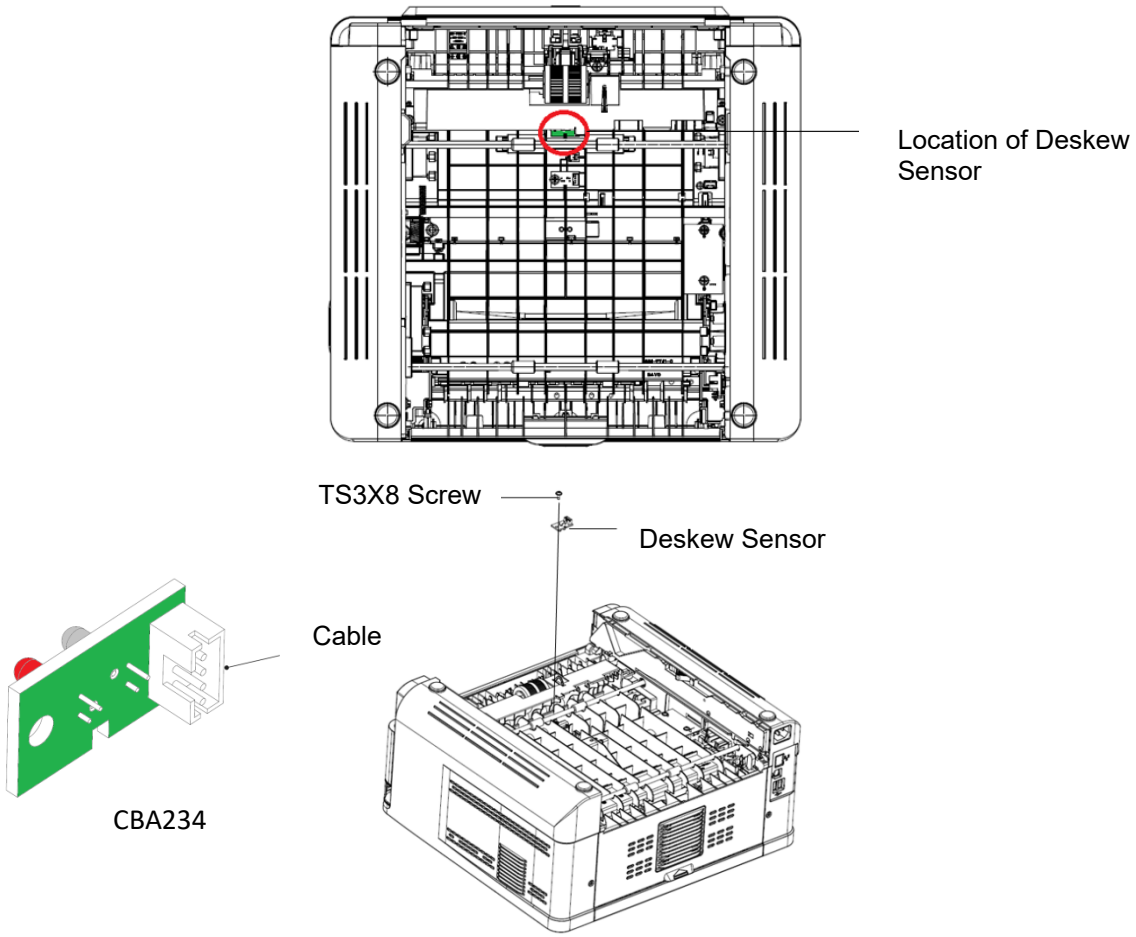
Confidential



4.4.16 Deskew Sensor

Tool Preparation: No. 3 (Refer to Maintenance Tool List)

(1). Remove Front Cover and Drum Unit.
(2). Remove Duplex Unit, and Paper Tray.
(3). Turn the printer over to reveal the bottom.
(4). Remove TS3X8 x 1 pc and disconnect all cables to remove the sensor.

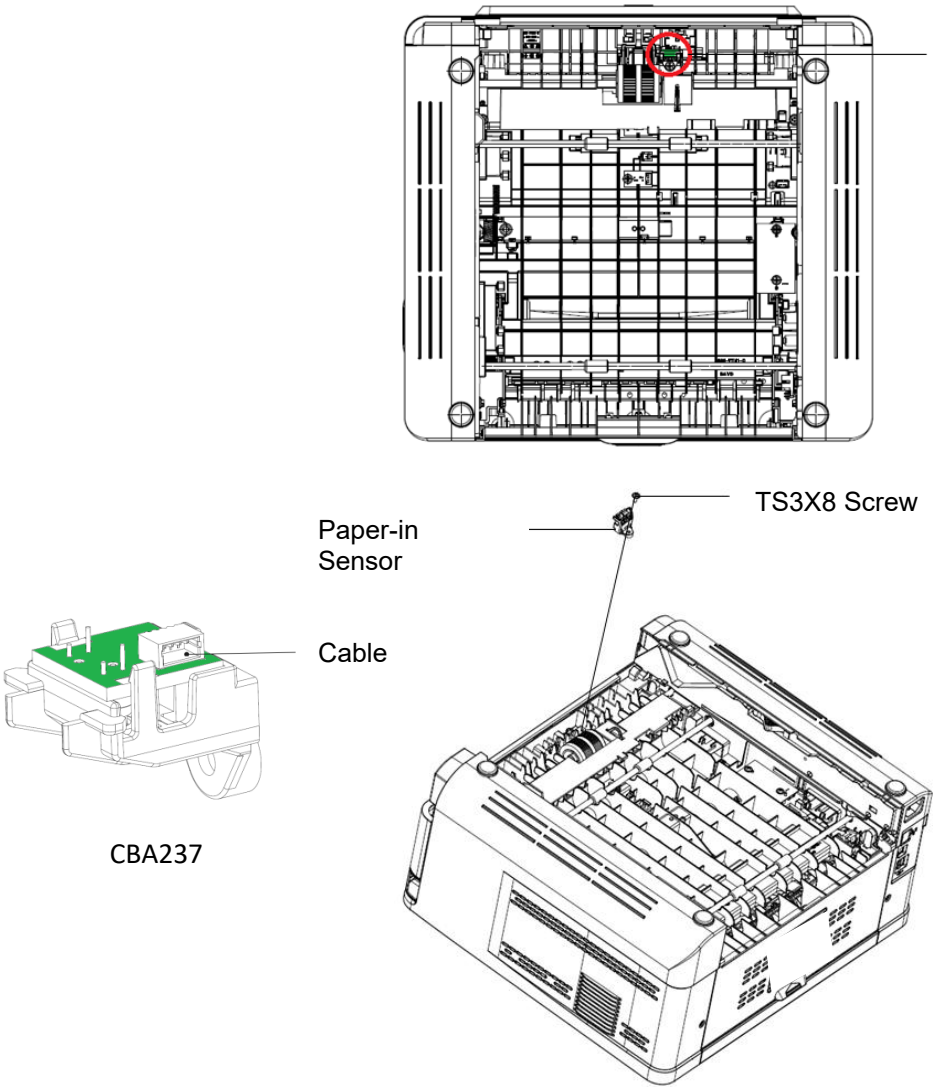


Confidential

4.4.17 Paper-in Sensor

Tool Preparation: No. 3 (Refer to Maintenance Tool List)

(1). Remove Front Cover and Drum Unit.
(2). Remove Duplex Unit, and Paper Tray.
(3). Turn the printer over to reveal the bottom.
(4). Remove TS3X8 x 1 pc and disconnect all cables to remove the sensor.



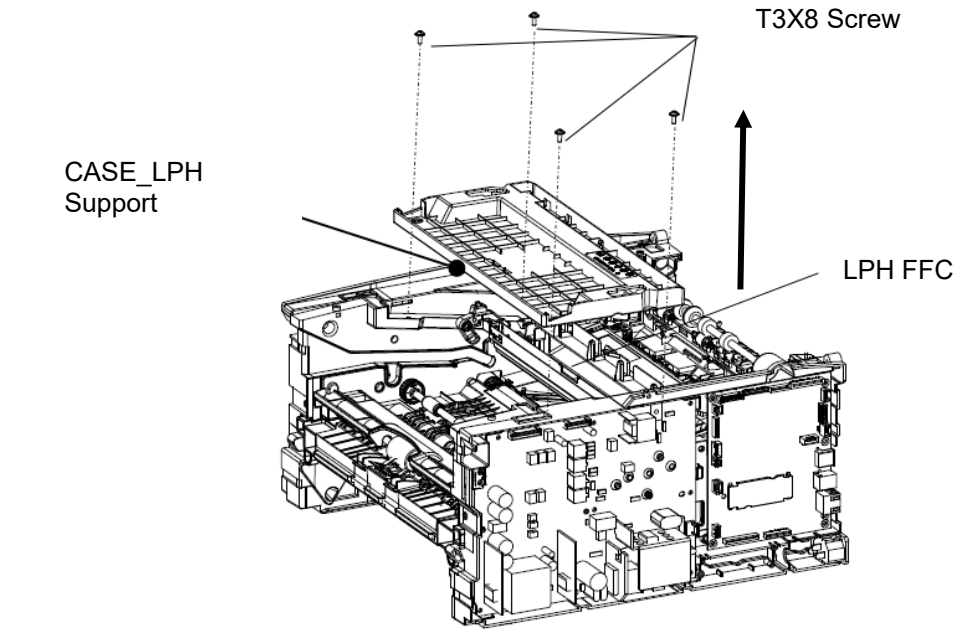
4.4.18 Duplex Sensor

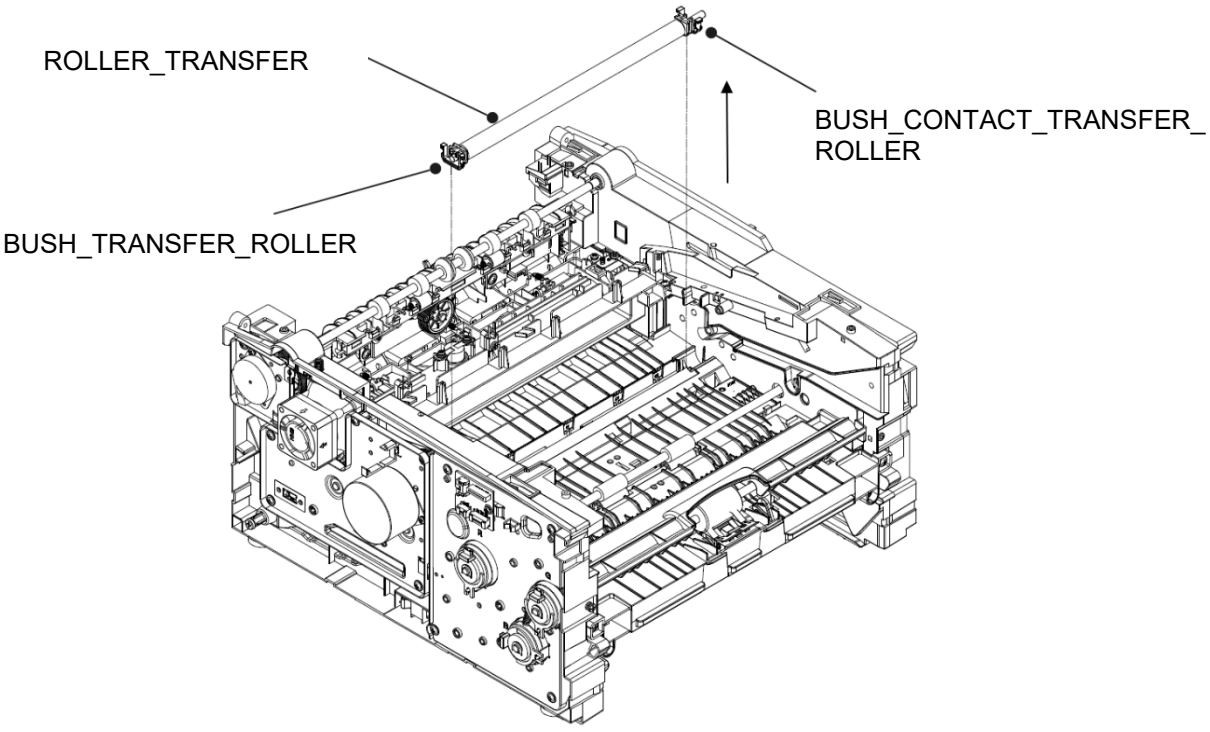
Tool Preparation: No. 3 (Refer to Maintenance Tool List)
(1). Remove Front Cover, Paper Tray, Drum Unit, Right/Left Cover, Top Cover, and Duplex Unit.
(2). Disconnect the FFC cable and then remove M3X8 screws for 4 pcs to remove the LPH Support.
(3). Remove the Transfer Roller.
(4). Remove M3X8 fixing screw x 1 to remove the sensor.

Note :

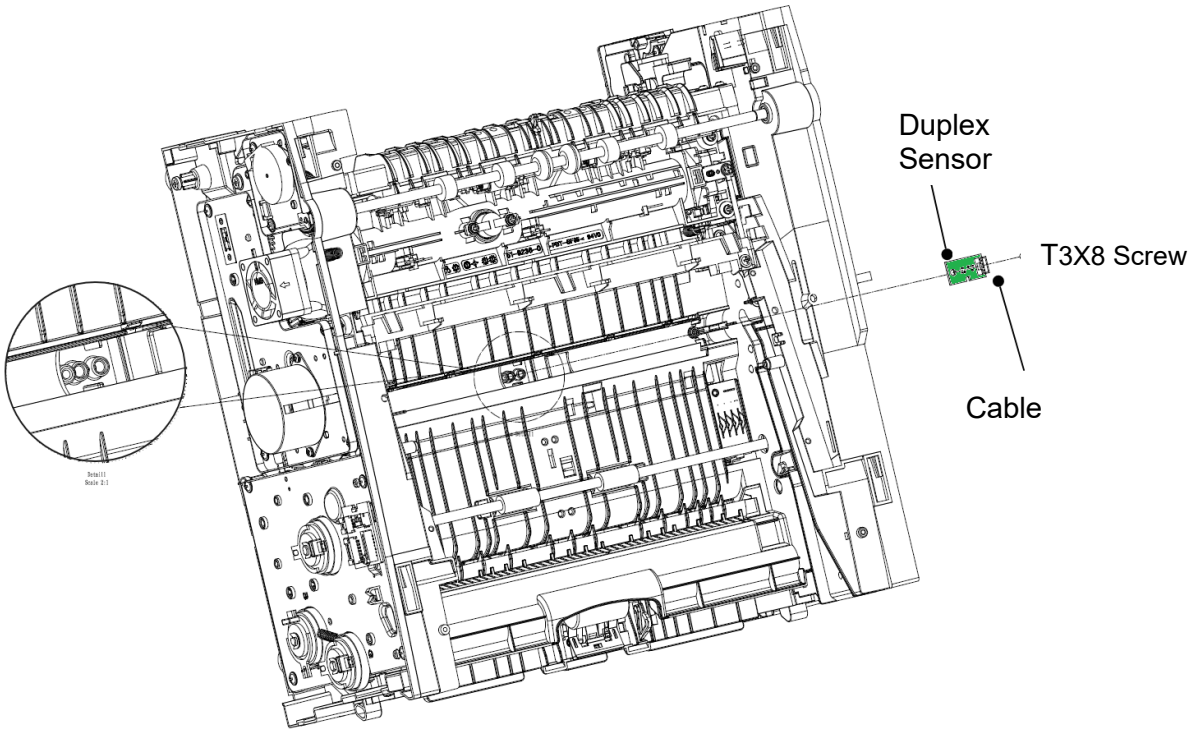
- After unplugging the flat cable, be sure to check that the connectors of the flat cable are intact and that the flat cable is not short-circuited.
- When inserting the flat cable, be sure to insert it straight and make sure that it is not crooked.

Confidential





Confidential

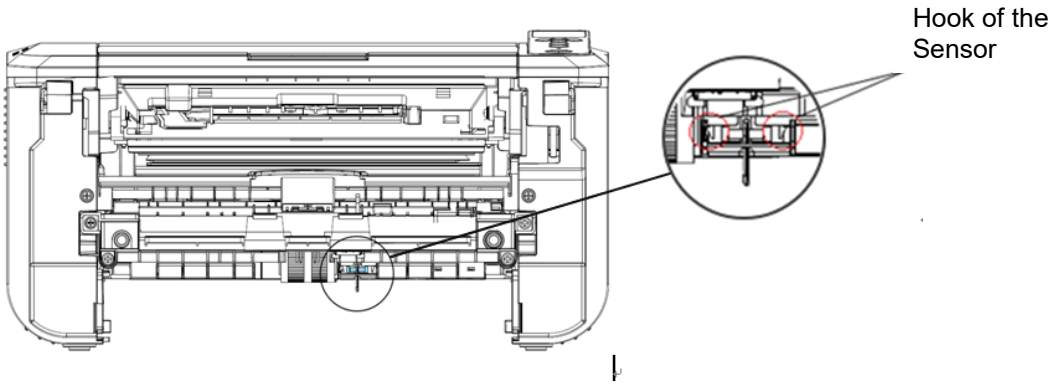


4.4.19 Paper-Empty Sensor

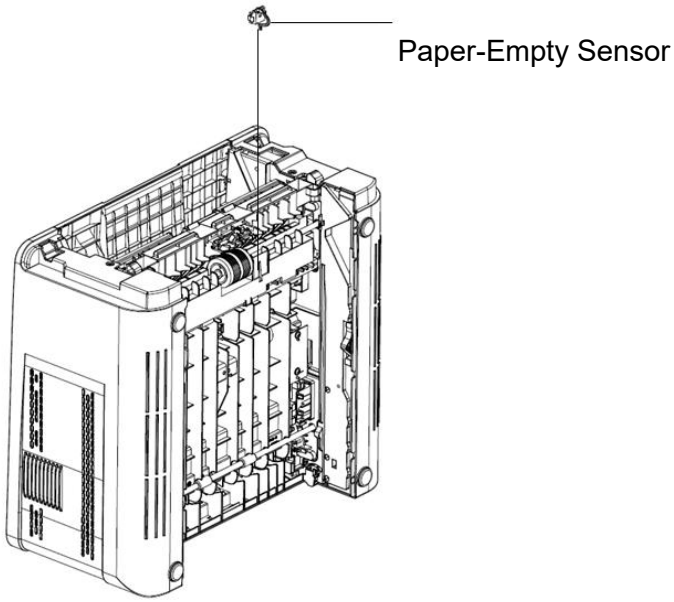
Tool Preparation: No. 1 (Refer to Maintenance Tool List)
(1). Remove Front Cover, Paper Tray, Drum Unit, and Duplex Unit.
(2). Turn the printer over and hold the Paper-Empty sensor to loosen the hook and remove the sensor with a flat screw driver.

Note :

- When reassemble the Paper-Empty Sensor, make sure the cables are properly inserted to the cable slot.

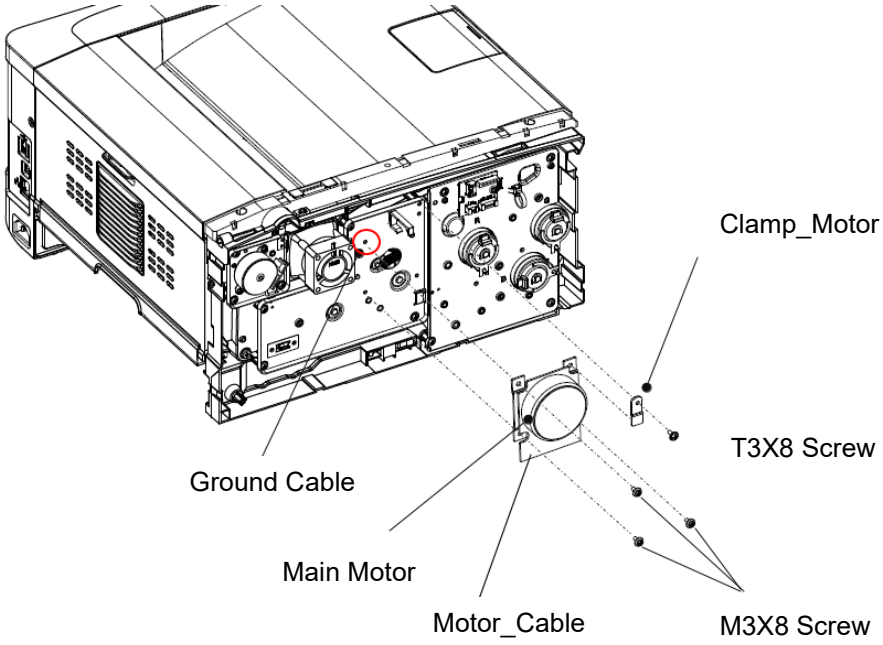


Confidential



4.4.20 Main Motor

Tool Preparation: No. 3 (Refer to Maintenance Tool List)
(1). Remove Front Cover, Paper Tray, Drum Unit, and Left Cover.
(2). Remove M3X8 screw for 3 pcs, and remove M3X8 screw for 1 pc.
(3) Remove Clamp Motor and disconnect the motor cable and ground cables x 2 pcs to remove the motor.

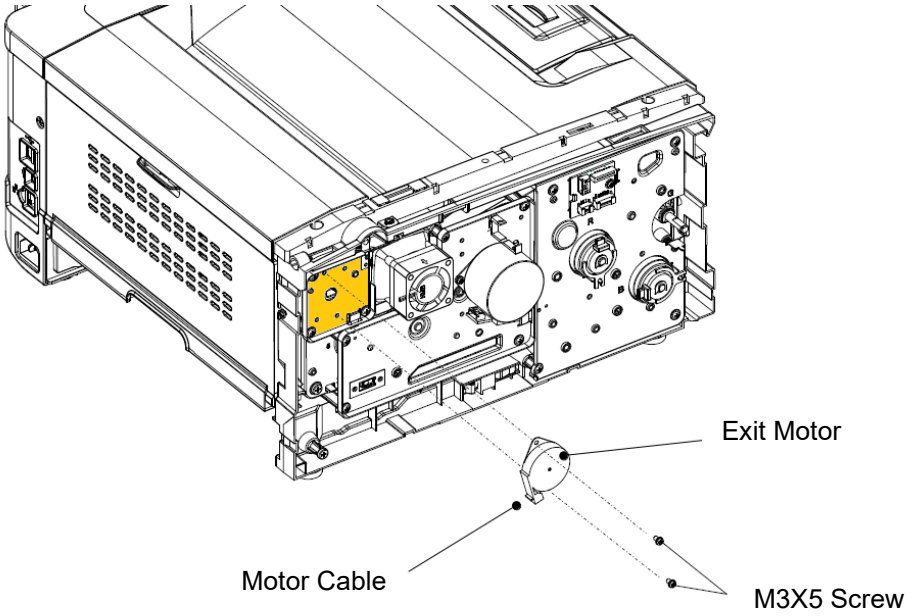


.

4.4.21 Exit Motor

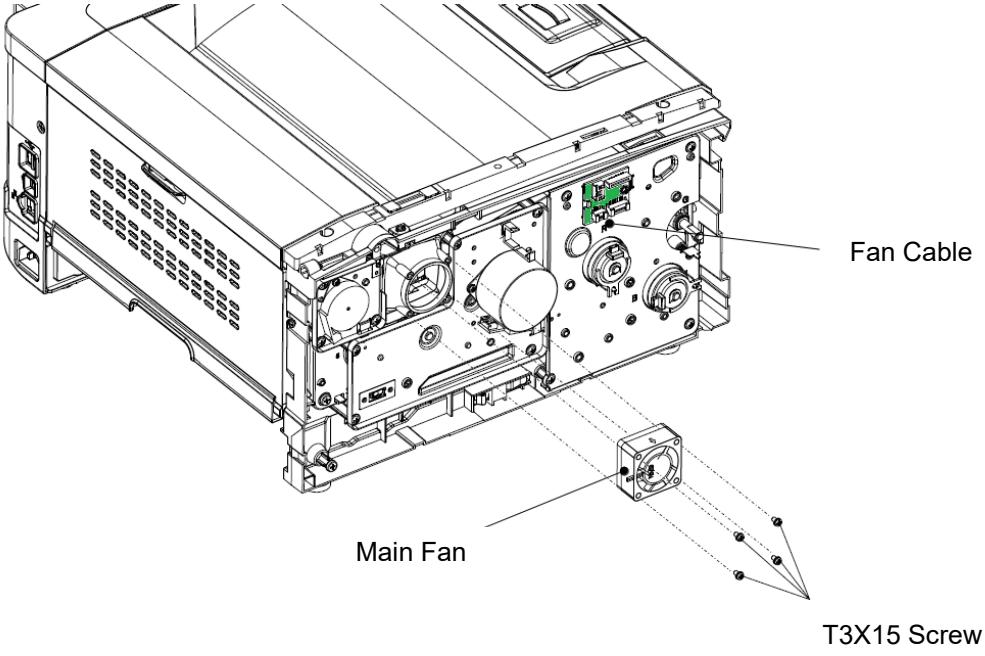
Tool Preparation: No. 3 (Refer to Maintenance Tool List)
(1). Remove Front Cover, Paper Tray, Drum Unit, and Left Cover.
(2). Remove M3X5 screw for 2 pcs and disconnect the motor cable to remove the motor.

Confidential



4.4.22 Main Fan

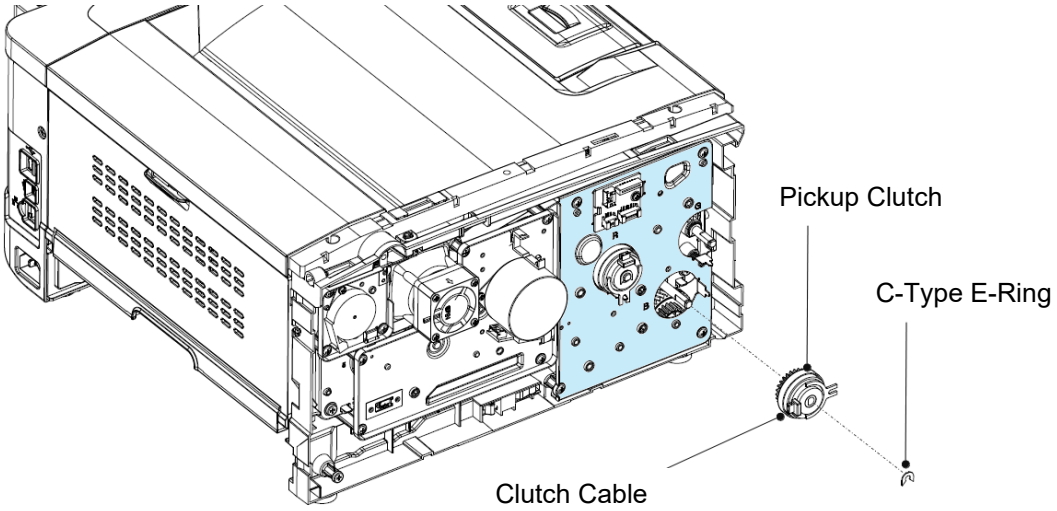
Tool Preparation: No. 3 (Refer to Maintenance Tool List)
(1). Remove Front Cover, Paper Tray, Drum Unit, and Left Cover.
(2). Remove TS3X15 screw for 4 pcs and disconnect the fan cable to remove the fan.



1.3.2 Pick-Up Clutch

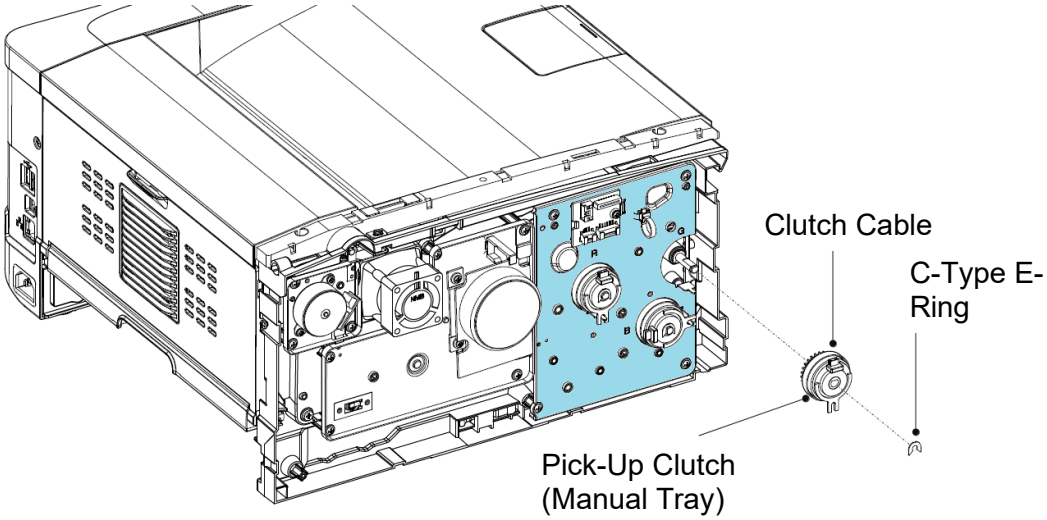
(1). Remove Front Cover, Paper Tray, Drum Unit, and Left Cover.
(2). Disconnect Pickup Clutch Cable and remove the C-Type E-Ring to remove the Pickup Clutch.

Confidential



4.4.23 Pick-Up Clutch (Manual Tray)

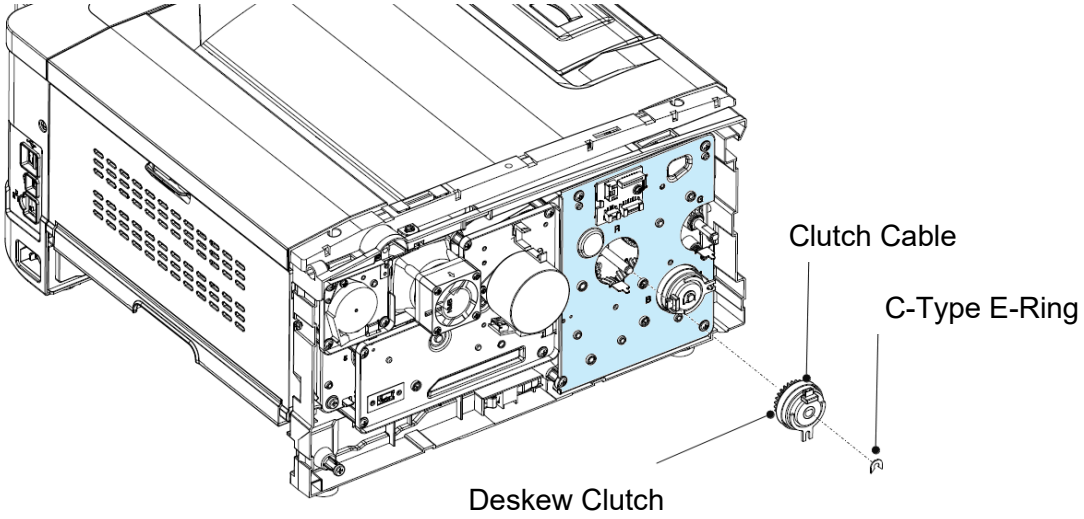
(1). Remove Front Cover, Paper Tray, Drum Unit, and Left Cover.
(2). Disconnect Pickup Clutch Cable and remove the C-Type E-Ring to remove the Pickup Clutch.



Confidential

4.4.24 Deskew Clutch

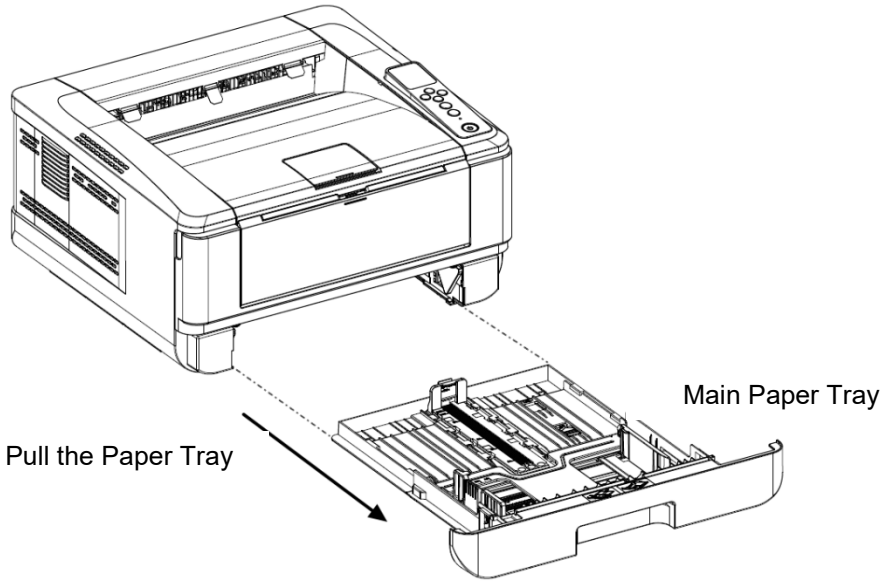
(1). Remove Front Cover, Paper Tray, Drum Unit, and Left Cover.
(2). Disconnect Deskew Clutch cable and remove the C-Type E-Ring to remove the Deskew Clutch.



.

4.4.25 Assembly Pad

(1).Pull the Paper Tray out of the printer.
(2).Replace the pad.



✧ Before removing ASSY_PAD, please first press the PLATE_LIFTUP_CASSETT and then remove the pad.

Confidential

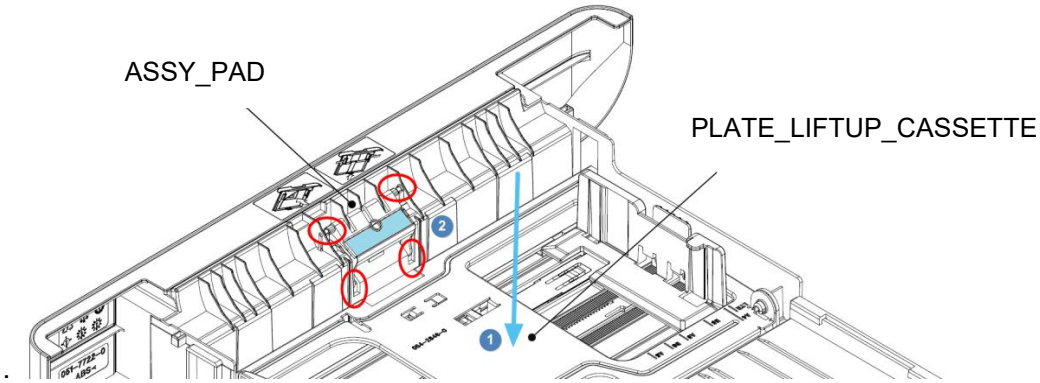
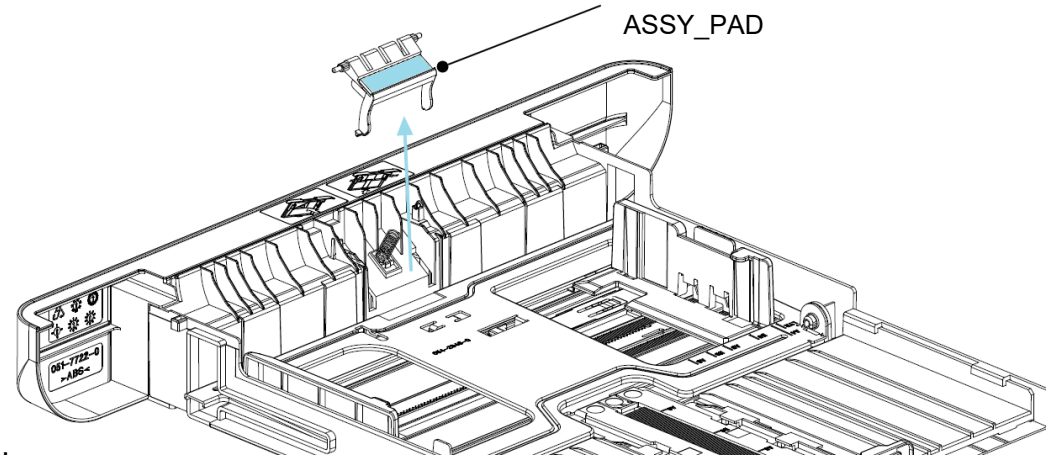
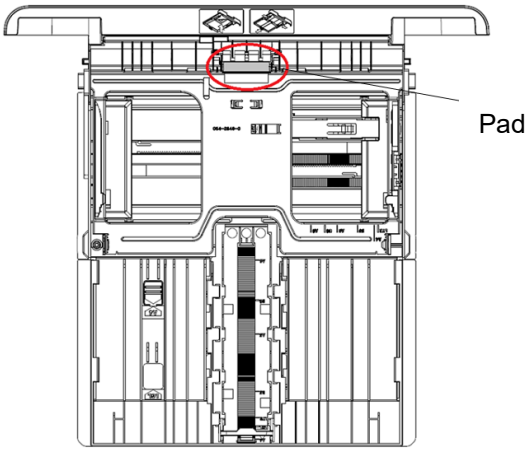


Fig.1

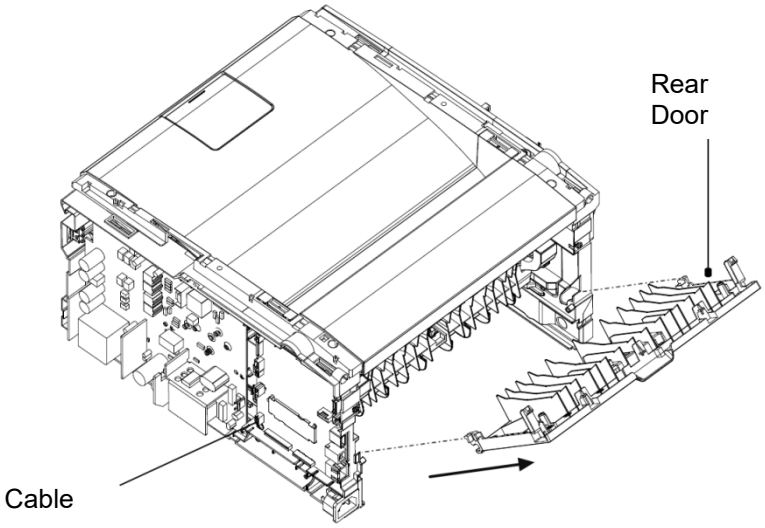




Confidential

4.4.26 Rear Door

Tool Preparation: No. 1、3 (Refer to Maintenance Tool List)
(1). Remove Front Cover, Paper Tray, Drum Unit, Duplex Unit, Right/Left Cover, and the Main Board.
(2). Disconnect the cable, and then remove the Rear Door.

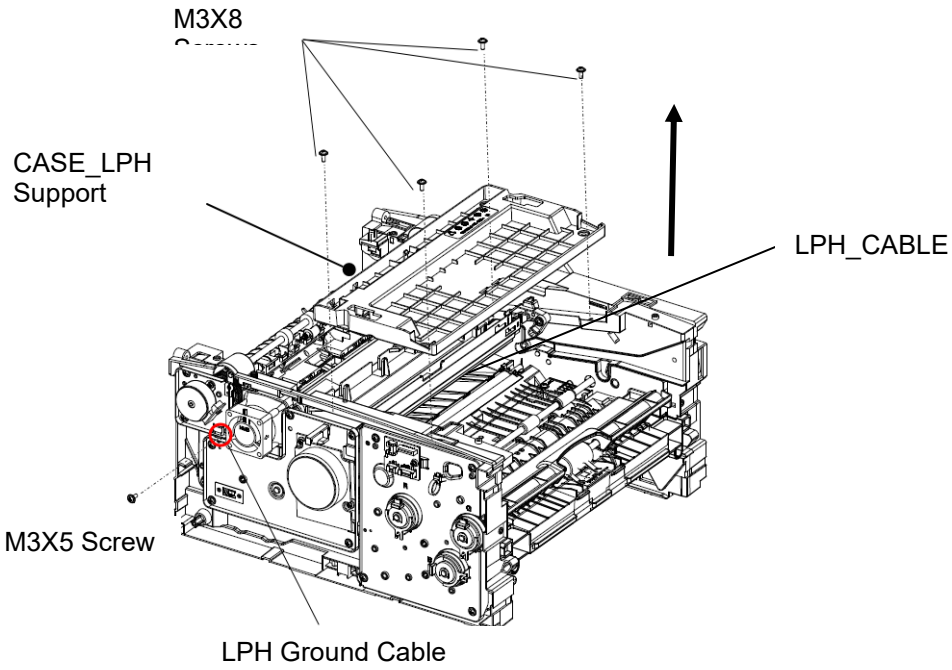


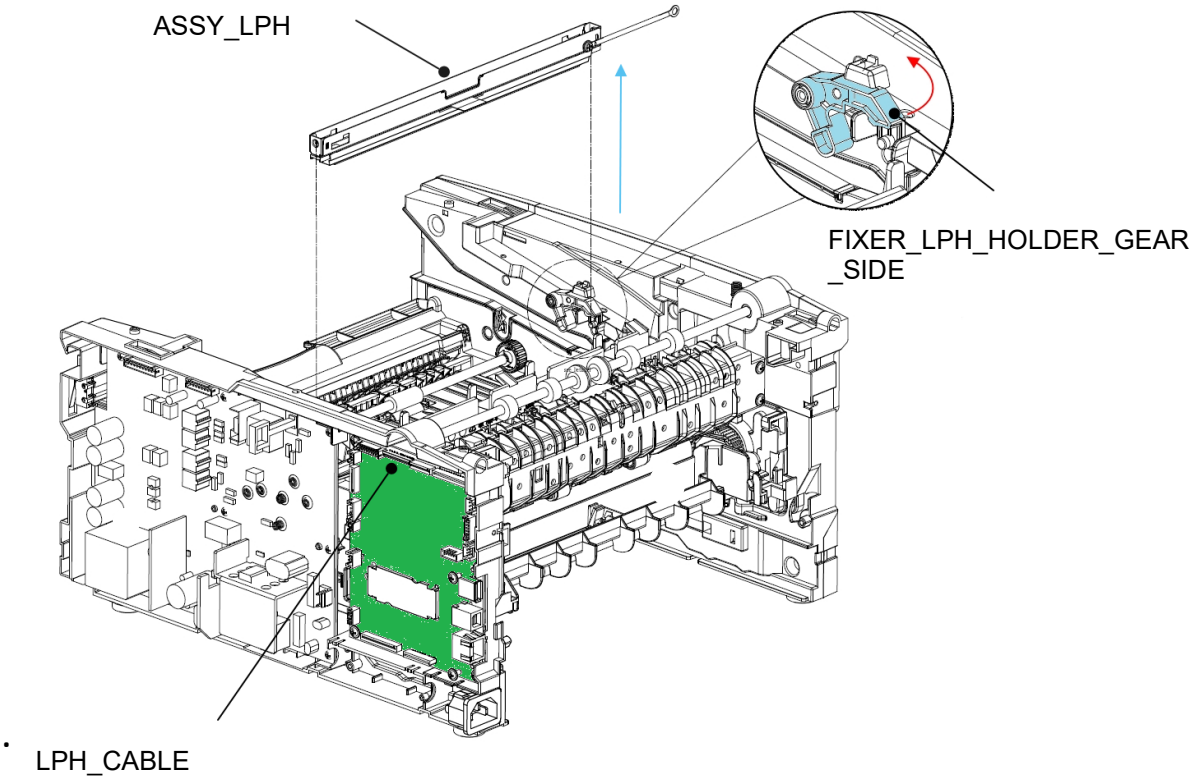
4.4.27 LPH (for model with LED Print Head)

Tool Preparation: No. 3 (Refer to Maintenance Tool List)
(1). Remove Front Cover, Paper Tray, Drum Unit, Right/Left Cover, and Top Cover.
(2). Remove M3x5 Screw, disconnect all cables and the FFC cable x 2, and remove M3X8 screws for 4 pcs to remove the LPH Support.
(3).Lift the hook of the LPH and slightly move it outward to remove the LPH.

Note：
- After unplugging the flat cable, be sure to check that the connectors of the flat cable are intact and that the flat cable is not short-circuited.
- When inserting the flat cable, be sure to insert it straight and make sure that it is not crooked.
- When disassembling the LPH, be sure to wear latex gloves and do not touch the metal surface of the LPH flat cable and the PCBA circuit board.

Confidential

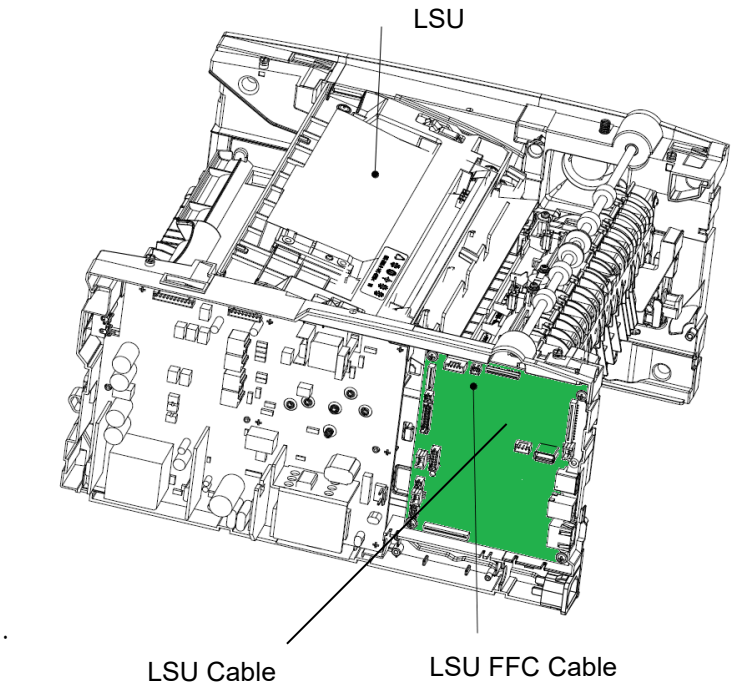


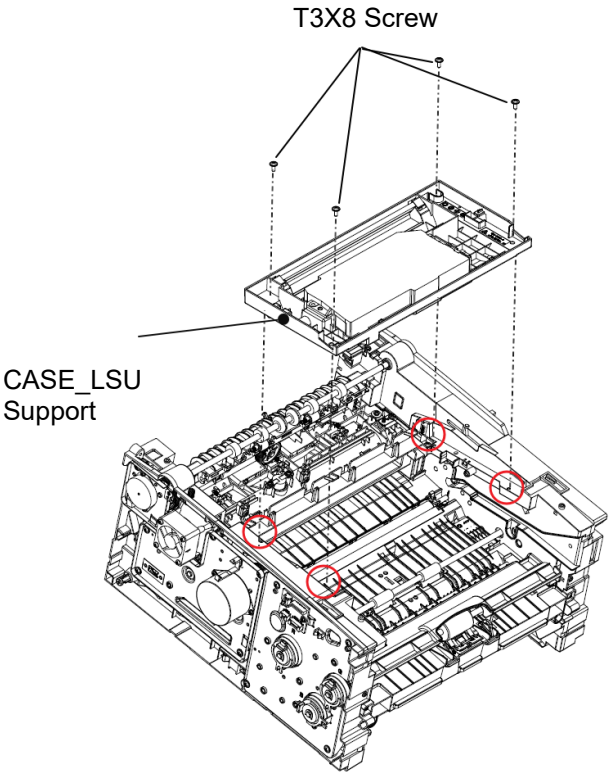


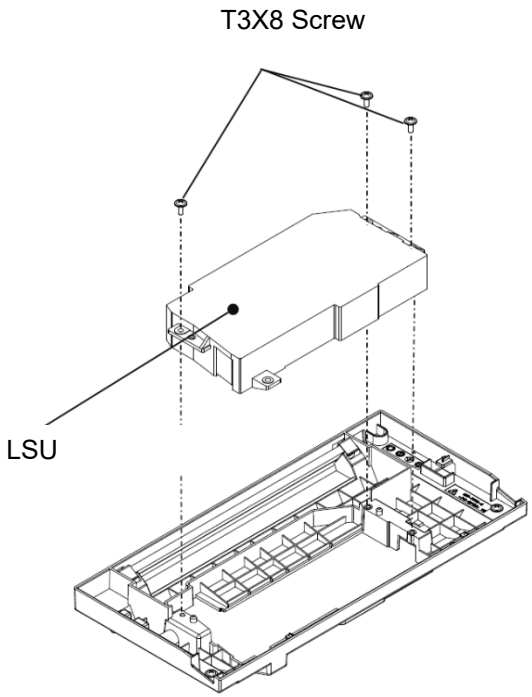
Confidential

4.4.28 LSU (for model with LSU)

Tool Preparation: No. 3 (Refer to Maintenance Tool List)
(1). Remove Front Cover, Paper Tray, Drum Unit, Right/Left Cover, and Top Cover.
(2). Disconnect all cables and the FFC cable x 2 pcs and remove M3X8 screws for 4 pcs to remove the CASE_LSU.
(3). Remove screws T3X8 for 3 pcs and then remove the LSU.





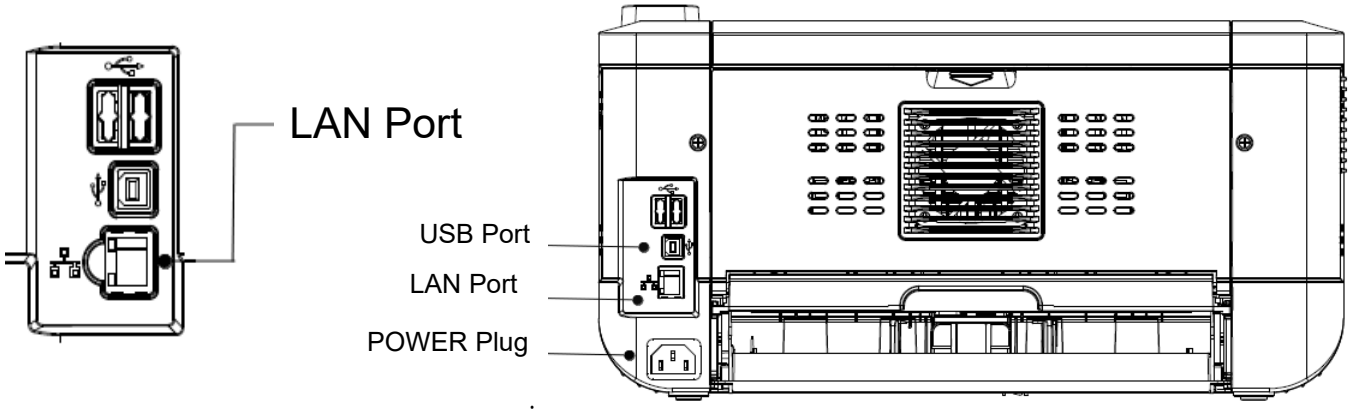


Confidential

Note:

- After unplugging the flat cable, be sure to check that the connectors of the flat cable are intact and that the flat cable is not short-circuited.
- When inserting the flat cable, be sure to insert it straight and make sure that it is not crooked.

4.4.29 Check the Network Port



Confidential

Chapter 5 Adjustment and Renew Settings after Replacement

5.1 Main Board Replacement

5.1.1 Adjustment after Replacement

- Reset of Firmware version
- Reset of leaning value of main board
- Reset of country/region
- Reset of serial number and fuser count
- Reset of factory default settings

5.1.1 Preparation

(1) A USB Cable
(2) Computer (Windows®7 or higher）
(3) Adjustment programs (Flowtest.zip, AM3XX.zip)
(4) Printer driver (Driver.zip)

5.2 Power Supply Board Replacement

5.1.2 Adjustment After Replacement

- TR Adjustment
- CHG and GRD Adjustment
- DEV,SUP, BLD Adjustment
- DEVR Adjustment
- TRR Adjustment

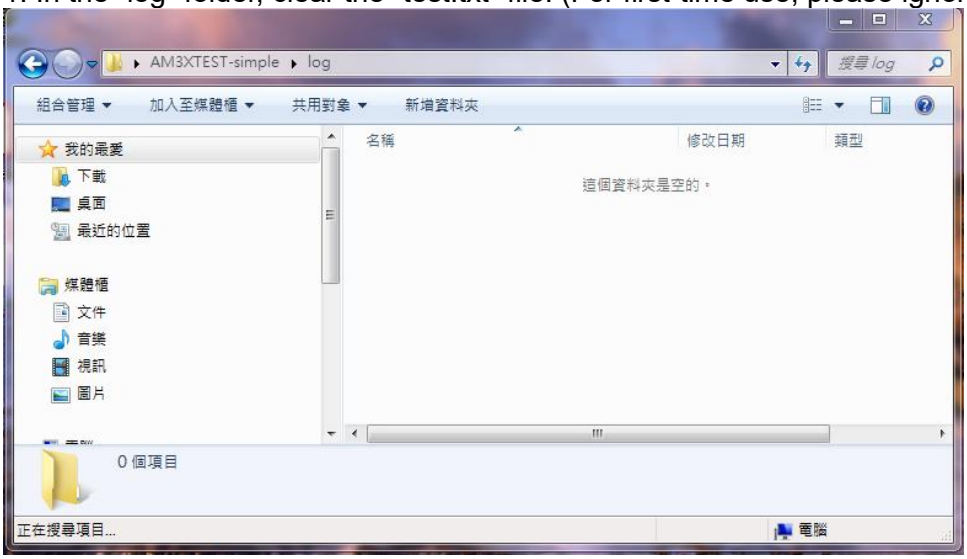
5.1.3 Preparation

(1) TBA314:004-2406-9 (HVPS TEST FIXTURE).
(2) Multi-Meter: FLUKE 15B (Voltage/Current Range: 1.DCV/ACV,1000V 2.DCA/ACA,10A/400uA.
(3) High Voltage Probe: FLUKE 80K-15 (Voltage Range: 0~15 kV DC or AC Peak Value.10kV rms AC Input Resistance: 1000Megohm.
(4) ADAPTER: 005-3043-19 (DESK-TOP,IEC 320-C6,3P,100~240Vac,24Vdc,2A.

Confidential

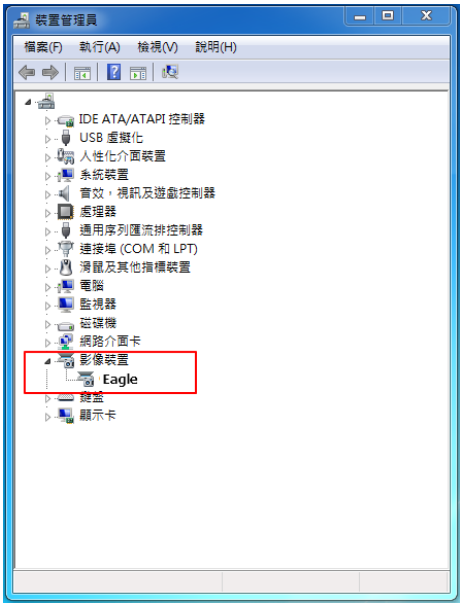
Appendix 1: AM3XTEST – The tool to find log

Notice before using the log tool:
1. In the “log” folder, clear the “test.txt” file. (For first-time use, please ignore this step.)



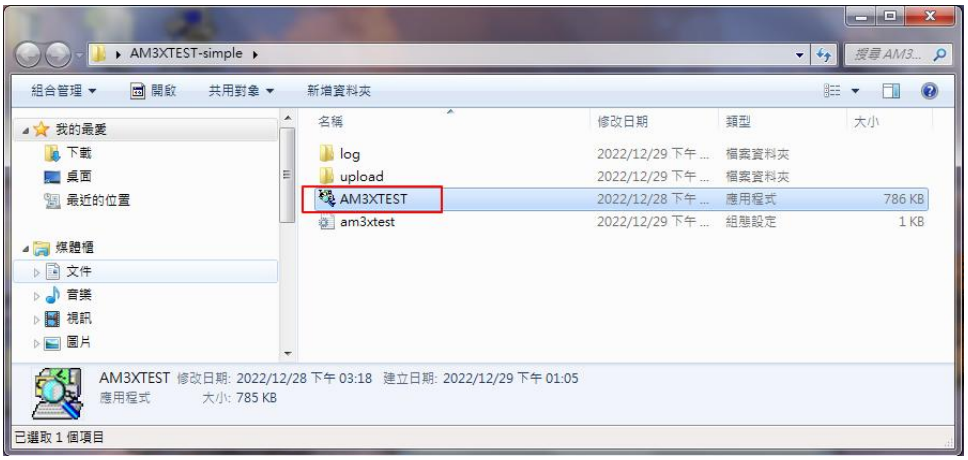
2. AM3X tool can be downloaded from the following link:
https://www.capsuloffice.com/_files/ugd/e6963d_906a86e1d7264ddca127098339fac056.pdf

3. Make sure the driver has been installed, and the device name can be found in the printer list and image devices.

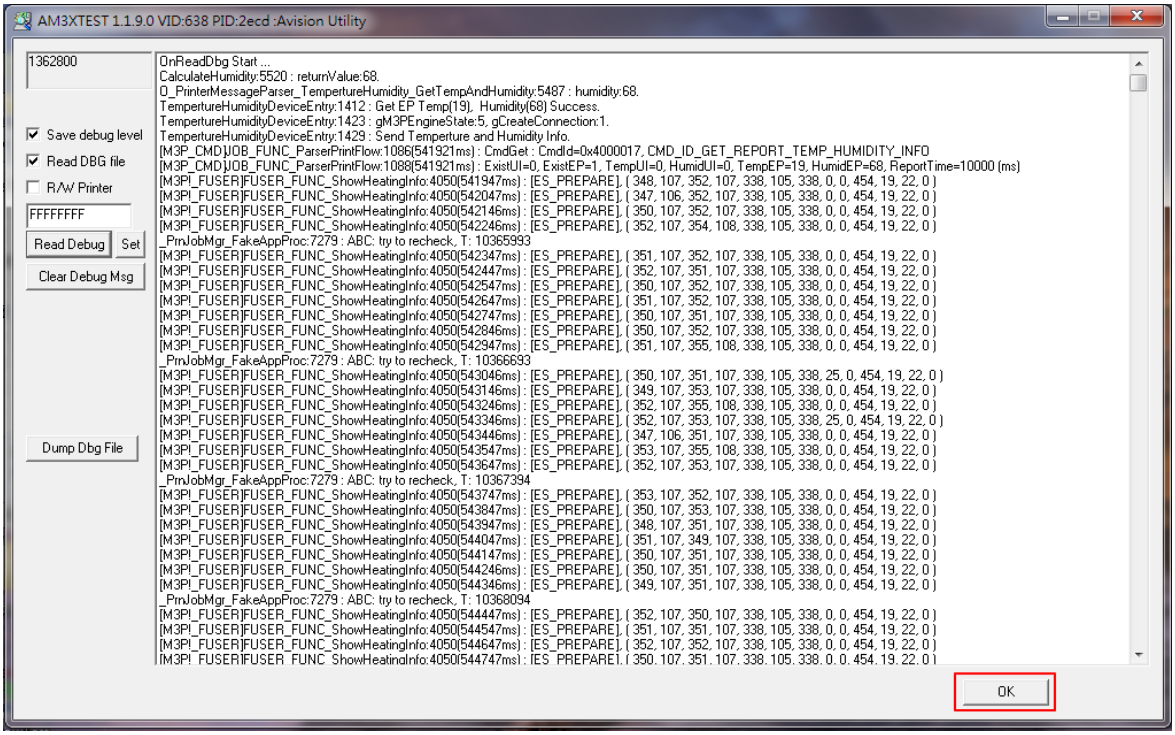


4. Double click AM3XTEST.

Confidential

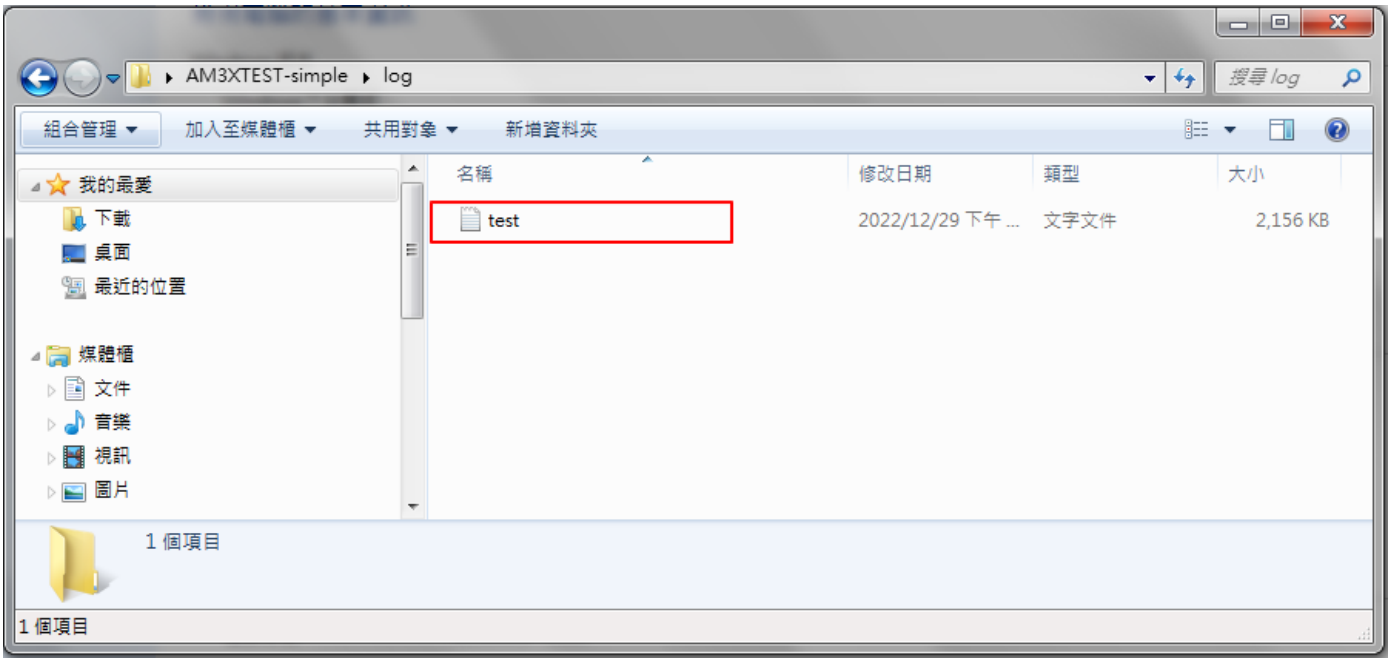


5.The error messages will be displayed.
6.Click OK to save.



7.Click the log folder, you can find the test.txt file.

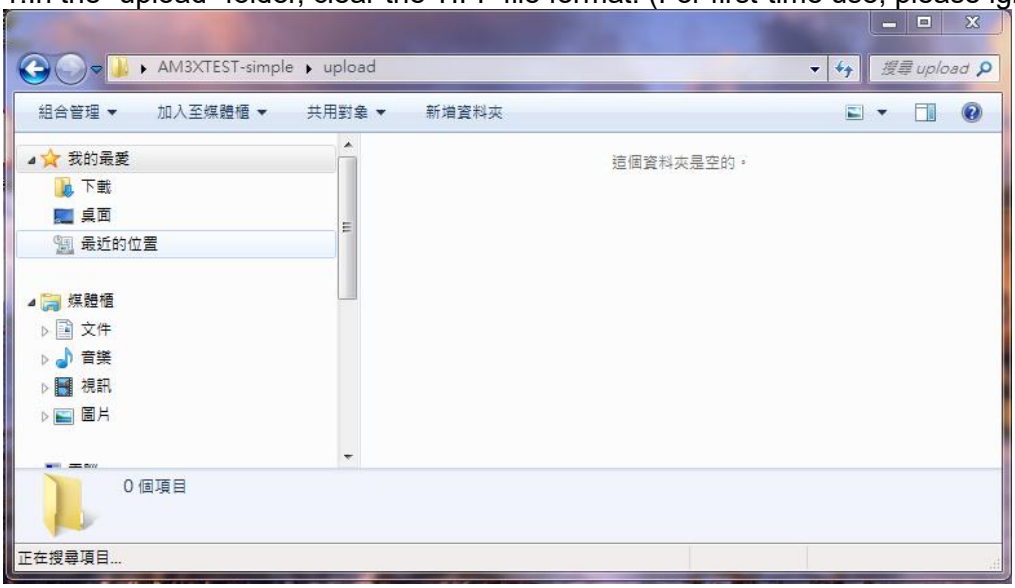
Confidential



Confidential

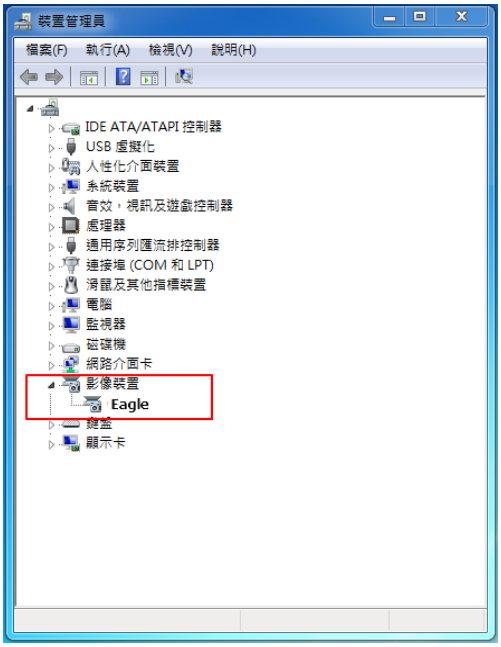
Appendix 2: AM3Xtest- The method to find the print image file

Notice before using the tool:
1.In the “upload” folder, clear the TIFF file format. (For first-time use, please ignore this step.)



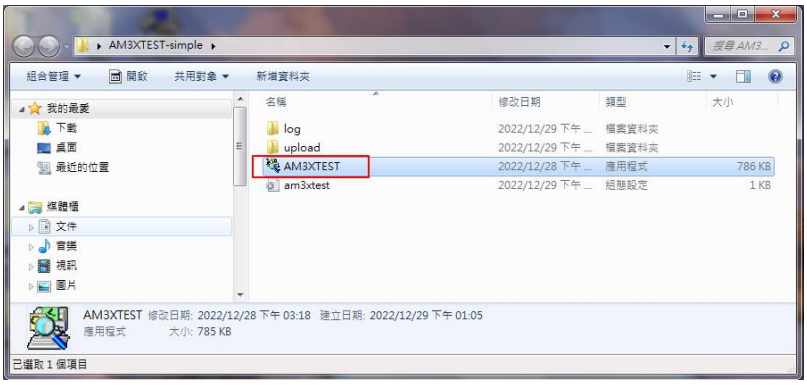
2. AM3X tool can be downloaded from the following link:
capsuloffice.com/_files/ugd/e6963d_29d392ca68644368ac804bd0297f9500.pdf

3. Make sure the driver has been installed, and the device name can be found in the printer list and image devices.



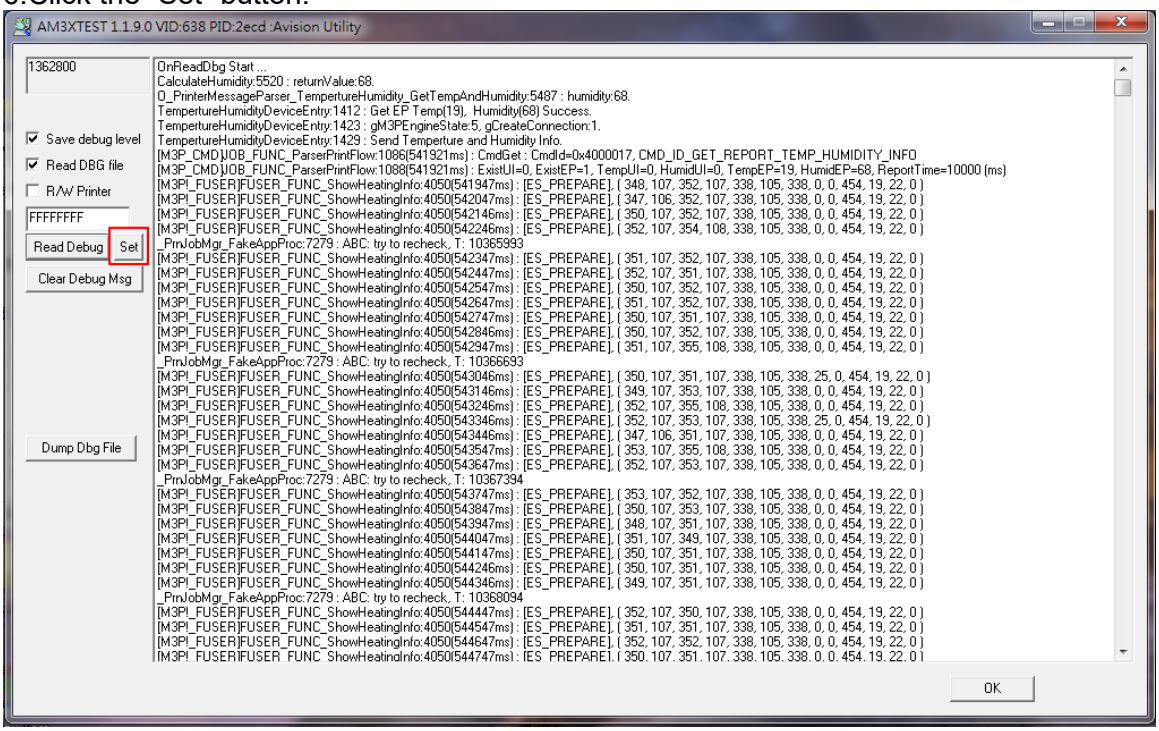
4. Double click “AM3XTEST”.

Confidential



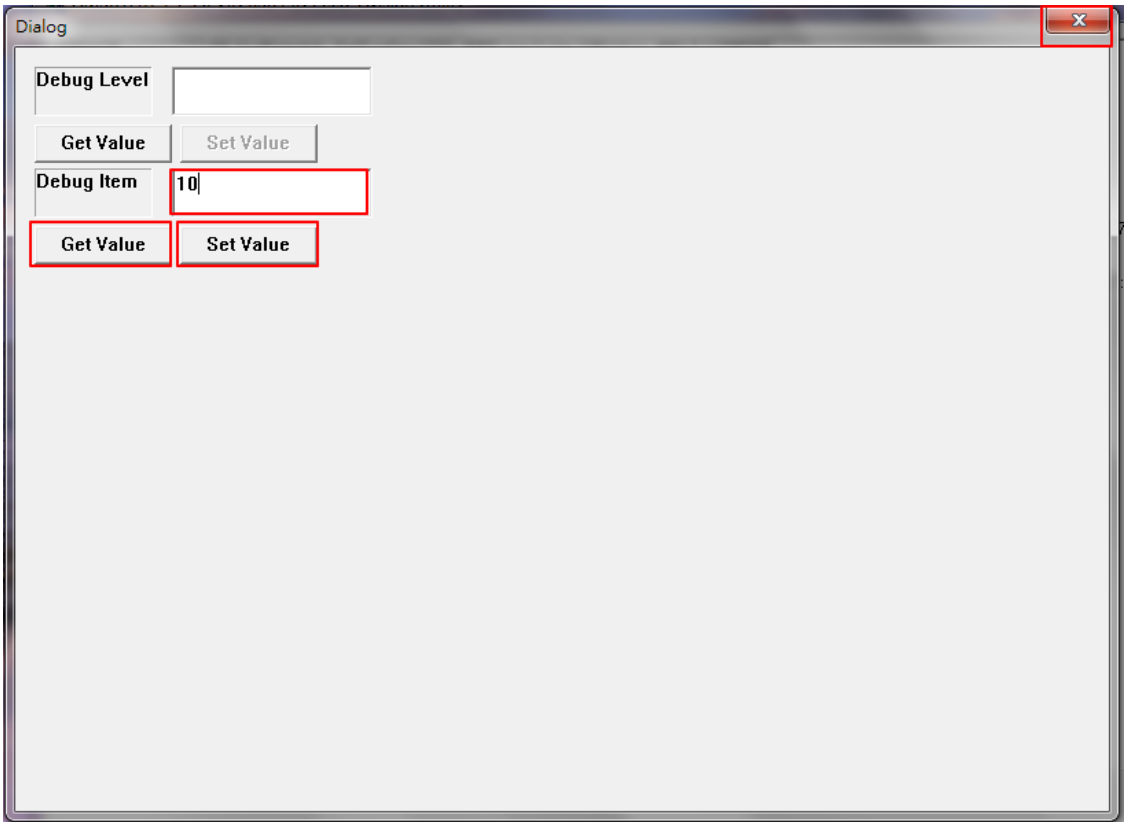
5.Use AM3XTEST

6.Click the “Set” button.



7. Click "Get Value", change 0 to 10 and then click “Set Value”, and click [X] to quit.

Confidential



8.Start to execute copy/print function, the image files will be automatically stored in “upload” folder in TIFF file format. Compare the print or copy result with the image files.

名稱	日期	類型	大小	標記
deltif.bat	2020/3/24 下午 05:20	Windows 批次檔案	1 KB	
00018_Front_IID_9_B.ref.tif	2020/4/30 下午 05:20	TIF 檔案	3,968 KB	
00017_Front_IID_9_R.ref.tif	2020/4/30 下午 05:20	TIF 檔案	3,968 KB	
00016_Front_IID_8_B.ref.tif	2020/4/30 下午 05:20	TIF 檔案	3,968 KB	
00015_Front_IID_8_R.ref.tif	2020/4/30 下午 05:20	TIF 檔案	3,968 KB	
00014_Front_IID_7_B.ref.tif	2020/4/30 下午 05:20	TIF 檔案	3,968 KB	
00013_Front_IID_7_R.ref.tif	2020/4/30 下午 05:20	TIF 檔案	3,968 KB	
00012_Front_IID_6_B.ref.tif	2020/4/30 下午 05:20	TIF 檔案	3,968 KB	
00011_Front_IID_6_R.ref.tif	2020/4/30 下午 05:20	TIF 檔案	3,968 KB	
00010_Front_IID_5_B.ref.tif	2020/4/30 下午 05:20	TIF 檔案	3,968 KB	
00009_Front_IID_5_R.ref.tif	2020/4/30 下午 05:20	TIF 檔案	3,968 KB	
00008_Front_IID_4_B.ref.tif	2020/4/30 下午 05:20	TIF 檔案	3,968 KB	
00007_Front_IID_4_R.ref.tif	2020/4/30 下午 05:20	TIF 檔案	3,968 KB	
00006_Front_IID_3_B.ref.tif	2020/4/30 下午 05:20	TIF 檔案	3,968 KB	
00005_Front_IID_3_R.ref.tif	2020/4/30 下午 05:20	TIF 檔案	3,968 KB	
00004_Front_IID_2_B.ref.tif	2020/4/30 下午 05:20	TIF 檔案	3,968 KB	
00003_Front_IID_2_R.ref.tif	2020/4/30 下午 05:20	TIF 檔案	3,968 KB	
00002_Front_IID_1_B.ref.tif	2020/4/30 下午 05:20	TIF 檔案	3,968 KB	
00001_Front_IID_1_R.ref.tif	2020/4/30 下午 05:20	TIF 檔案	3,968 KB	

Confidential

Appendix 3. How to use the Recovery Tool

Note:
The Recovery Tool can be downloaded from the following link:
capsuloffice.com/_files/ugd/e6963d_29d392ca68644368ac804bd0297f9500.pdf

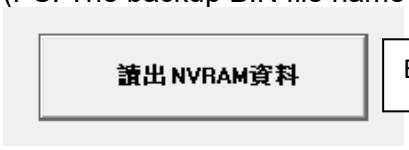
1. Set the device to be the default printer.



2. Double-click “Recovery_Tool.exe”, the main screen will be displayed.
(PS:Make sure the driver has been installed and the device name is displayed in the printer list and image device.



3. The Export button, after pressing the button, After pressing, the nvram backup of the machine will be stored as (.BIN file) in the same folder.
(PS: The backup BIN file name is the printer name + year, month, and day)



4. The Import button, After pressing, it will ask to open the previously back up file (.BIN file) to write to the machine.
(PS: The backup BIN file name is the printer name + year, month, and day)



Confidential

Confidential